

**FINAL DRAFT ENGINEERING EVALUATION/COST ANALYSIS**

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**Bremerton Auto Wrecking Landfill - Gorst Creek Site  
Port Orchard, Washington  
TDD: 10-08-0011**



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# Table of Contents

|  |            |
|--|------------|
| <b>Executive Summary .....</b>   | <b>xi</b>  |
| <b>1 Introduction .....</b>  | <b>1-1</b> |
| 1.1 Site Description and History .....   | 1-1        |
| 1.2 Physical Characteristics of the Site .....   | 1-3        |
| 1.2.1 Hydrology.....   | 1-3        |
| 1.2.2 Geology .....  | 1-4        |
| 1.2.3 Hydrogeology.....  | 1-4        |
| 1.2.4 Meteorology .....  | 1-5        |
| 1.2.5 Sensitive Ecosystems .....   | 1-5        |
| 1.3 Previous Investigations and Removal Actions.....   | 1-7        |
| 1.3.1 Site Hazard Assessment .....   | 1-7        |
| 1.3.2 EPA Preliminary Assessment and Integrated Assessment.....  | 1-7        |
| 1.4 Sources, Nature, and Extent of Contamination .....   | 1-9        |
| 1.4.1 Landfill Characteristics and Contents .....  | 1-9        |
| 1.4.2 Topographic Survey and Landfill Extents .....  | 1-10       |
| 1.4.3 Analytical Data.....   | 1-10       |
| 2011 Field Sampling Events .....   | 1-10       |
| 1.5 Streamlined Risk Evaluation.....   | 1-11       |
| 1.5.1 Streamlined Human Health Risk Evaluation Summary .....   | 1-12       |
| 1.5.2 Streamlined Ecological Risk Evaluation Summary .....   | 1-14       |
| 1.5.4 Contaminants of Potential Concern.....   | 1-15       |
| <b>2 Removal Action Objectives .....</b>   | <b>2-1</b> |
| 2.1 Statutory Considerations on Removal Actions .....  | 2-1        |
| 2.2 Determination of Removal Scope and Objectives .....  | 2-1        |
| 2.2.1 Removal Action Scope.....  | 2-1        |
| 2.2.1 Removal Action Objectives .....  | 2-2        |
| 2.3 Applicable or Relevant and Appropriate Requirements.....   | 2-2        |
| 2.4 Determination of Removal Schedule .....  | 2-3        |
| <b>3 Identification and Development of Removal Action Alternatives.....</b>  | <b>3-1</b> |
| 3.1 Identification of Removal Action Alternatives .....  | 3-1        |
| 3.2 Development of Alternatives .....  | 3-2        |
| 3.2.1 Alternative 1. No Action .....   | 3-2        |
| 3.2.2 Alternative 2. Gorst Ravine Restoration: Landfill Material<br>Excavation, Off-Site Disposal, and Restoration of Gorst Creek..... | 3-2        |
| 3.2.3 Alternative 3. Gorst Creek Re-alignment: Install a Lateral<br>Bypass Channel .....   | 3-3        |
| 3.2.4 Alternative 4. Microtunneling/Pipe Jacking: Install Conveyance<br>Pipe.....  | 3-4        |
| 3.3 Common Components of Alternatives .....  | 3-5        |

## Table of Contents (cont.)

| Section  | Page       |
|--|------------|
| 3.3.1 Landfill Surface Restoration .....                               | 3-5        |
| 3.3.2 Access Road .....  | 3-6        |
| 3.3.3 Best Management Practices .....                                  | 3-6        |
| 3.4 Analysis of Removal Action Alternatives.....                       | 3-6        |
| 3.4.1 Alternative 1. No Action .....                                   | 3-7        |
| 3.4.2 Alternative 2. Gorst Ravine Restoration .....                    | 3-8        |
| 3.4.3 Alternative 3. Gorst Creek Re-alignment.....                     | 3-10       |
| 3.4.4 Alternative 4. Microtunneling/Pipe Jacking.....                  | 3-11       |
| <b>4 Comparative Analysis of Alternatives.....</b>                     | <b>4-1</b> |
| <b>5 Recommended Removal Action Alternative.....</b>                   | <b>5-1</b> |
| <b>6 References.....</b>   | <b>6-1</b> |
| <b>A ENVIRONMENTAL SAMPLING AND LABORATORY<br/>REPORTS.....</b>        | <b>A-1</b> |
| <b>B GEOTECHNICAL LABORATORY REPORTS AND<br/>BORING LOGS.....</b>      | <b>B-1</b> |
| <b>C STREAMLINED HUMAN HEALTH RISK EVALUATION .....</b>                | <b>C-1</b> |
| <b>D STREAMLINED ECOLOGICAL RISK EVALUATION .....</b>                  | <b>D-1</b> |
| <b>E APPLICABLE OR RELEVANT AND APPROPRIATE<br/>REQUIREMENTS .....</b> | <b>E-1</b> |
| <b>F HYDROLOGIC AND HYDRAULIC CALCULATIONS.....</b>                    | <b>F-1</b> |
| <b>G COST TABLES .....</b>   | <b>G-1</b> |



## List of Tables

|            |  |      |
|------------|--|------|
| Table 1-1  | Peak Flow Rates at the Bremerton Auto Wrecking Landfill – Gorst Creek Site ..... | 1-4  |
| Table 1-2A | Integrated Assessment Surface Soil Analytical Results – June 2004 .....          | 1-8  |
| Table 1-2B | Integrated Assessment Subsurface Soil Analytical Results – June 2004 .....       | 1-9  |
| Table 1-2C | Integrated Assessment Sediment Analytical Results – June 2004.....               | 1-9  |
| Table 1-3  | Surface Soil Sample Results – July 2011 .....                                    | 1-17 |
| Table 1-4A | Summary of Gorst Creek Sediment Data (July 2011 Samples).....                    | 1-19 |
| Table 1-4B | Gorst Creek Sediment Bioassay Results (July 2011 Samples).....                   | 1-21 |
| Table 1-5  | Hollow Stem Auger Boring Installation – August 2011 .....                        | 1-23 |
| Table 1-6  | Groundwater Sample Results – August 2011 .....                                   | 1-25 |
| Table 1-7  | Grain Size and Direct Shear Results – August 2011 .....                          | 1-27 |
| Table 3-1  | Five-Point Scaling System.....   | 3-7  |
| Table 4-1  | Summary of Criteria Comparison.....  | 4-1  |

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## List of Figures

|             |  |      |
|-------------|--|------|
| Figure 1-1  | Site Location Map.....                       | 1-29 |
| Figure 1-2A | Site Conditions 2000.....                    | 1-31 |
| Figure 1-2B | Site Conditions 2011.....                    | 1-33 |
| Figure 1-3  | Site Plan – 1968 .....                       | 1-35 |
| Figure 1-4  | Sample Location Map – July-August 2011 ..... | 1-37 |
| Figure 1-5  | Wetland Locations .....                      | 1-39 |
| Figure 1-6  | Human Health Conceptual Site Model .....     | 1-41 |
| Figure 1-7  | Ecological Conceptual Site Model.....        | 1-43 |
| Figure 3-1  | Alternative 2 – Landfill Removal .....       | 3-15 |
| Figure 3-2  | Alternative 3 – Creek Re-alignment .....     | 3-17 |
| Figure 3-3  | Alternative 4 – Pipe Jacking .....           | 3-19 |
| Figure 3-4  | Conceptual Pipe Jacking Detail .....         | 3-21 |

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## List of Abbreviations

| <b>Abbreviation</b> | <b>Definition</b>  |
|---------------------|--|
| ARAR                | applicable or relevant and appropriate requirement                                   |
| BMP                 | best management practices  |
| CERCLA              | Comprehensive Environmental Response, Compensation, and Liability Act                |
| CERCLIS             | Comprehensive Environmental Response, Compensation, and Liability Information System |
| cfs                 | cubic feet per second  |
| DDE                 | dichlorodiphenyldichloroethylene   |
| DDT                 | dichlorodiphenyltrichloroethane  |
| E & E               | Ecology and Environment, Inc.  |
| EE/CA               | Engineering Evaluation/Cost Analysis   |
| EPA                 | United States Environmental Protection Agency  |
| °F                  | degrees Fahrenheit   |
| HDPE                | high-density polyethylene  |
| J                   | estimated value  |
| JH                  | estimated value – quantified using peak heights rather than peak areas               |
| KCHD                | Kitsap County Health Department  |
| MCL                 | maximum contaminant level  |
| mg/kg               | milligrams/kilogram  |
| mph                 | mile per hour  |
| MTBE                | methyl tert-butyl ether  |
| MTCA                | Washington Model Toxics Control Act  |
| NCP                 | National Oil and Hazardous Substances Pollution Contingency Plan                     |
| NMFS                | National Marine Fisheries Service  |
| NOAA                | National Oceanic and Atmospheric Administration                                      |
| PCB                 | polychlorinated biphenyl   |
| PHS                 | priority habitats and species  |
| PRG                 | Preliminary Remediation Goals  |
| QA                  | quality assurance  |
| QC                  | quality control  |

|        |  |
|--------|--|
| RCRA   | Resource Conservation and Recovery Act                                       |
| RSL    | EPA's Regional Screening Levels for Chemical Contaminants at Superfund Sites |
| SQIRT  | Screening Quick Reference Tables   |
| START  | Superfund Technical Assessment and Response Team                             |
| SVOC   | semi-volatile organic compound   |
| TCLP   | toxicity characteristic leaching procedure                                   |
| TPHD   | total petroleum hydrocarbon – diesel range                                   |
| TPHG   | total petroleum hydrocarbon – gasoline range                                 |
| µg/kg  | micrograms/kilogram  |
| USFWS  | United States Fish and Wildlife Service                                      |
| USGS   | United States Geological Service   |
| VOC    | volatile organic compound  |
| U.S.C. | United States Code   |
| WDFW   | Washington Department of Fish and Wildlife                                   |
| WSDNR  | Washington State Department of Natural Resources                             |
| WSDOT  | Washington State Department of Transportation                                |

# Executive Summary

The Bremerton Auto Wrecking Landfill - Gorst Creek Site (the Site) is a former landfill site near Port Orchard in Kitsap County, Washington. The Site operated as a landfill from the 1950s until 1989 and contains approximately 150,000 cubic yards of waste. The landfill primarily received auto wrecking wastes but also received other wastes such as medical waste from Puget Sound Naval Shipyard as well as demolition debris and municipal solid waste.

In 1968, a 24-inch corrugated steel culvert was installed along the base of the Gorst Creek ravine so that the ravine could be filled with waste and Gorst Creek could flow through the culvert beneath the landfill. Waste was placed on top of the culvert until the top of the waste became approximately even with the top of the ravine. In 1997 and 2002, after significant storm events, Gorst Creek backed up on the southeast side (upstream side) of the landfill and overtopped the surface of the landfill, causing a portion of the northwest slope of the landfill to fail and wash downstream into Gorst Creek. Review of a 2003 inspection video revealed a collapse of the culvert approximately 460 feet upstream of the outflow, severely diminishing the maximum flow capacity of the culvert. A partial collapse was also noted approximately 20 feet downstream of the culvert inflow. Landfill debris was found approximately 0.5 miles downstream in Gorst Creek.

Previous sediment and groundwater sampling results had indicated the presence of contaminants associated with landfill waste. The eroded waste in the stream sediments and groundwater is being transported downgradient into the Gorst Creek watershed. The contamination at the Site includes pesticides, polychlorinated biphenyls, semi-volatile organic compounds, metals, and volatile organic compounds. Substances found at the Site, including the substances identified above, constitute “hazardous substances” as defined by Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 United States Code (U.S.C.) § 9601(14).

The actual or threatened release of hazardous substances within and from the Site may present an imminent and substantial endangerment to the public health, welfare, or the environment within the meaning of Section 106(a) of CERCLA, 42 U.S.C. § 9606(a). This engineering evaluation/cost analysis (EE/CA) identifies and evaluates removal action alternatives to mitigate off-Site migration of the contaminants of concern and the potential for surface water to become impounded behind the collapsed culvert.

The United States Environmental Protection Agency (EPA), through its Superfund Technical Assessment and Response Team (START) contractor, conducted field sampling in July and August 2011 to collect additional data for this EE/CA, including samples of surface soil, sediment, and groundwater for laboratory analyses of chemical constituents and toxicity and subsurface soil samples for geotechnical analyses. Data from the 2011 field sampling were primarily used to prepare streamlined human health and ecological risk evaluations.

The objectives for the proposed removal actions evaluated in this EE/CA are to protect human health and the environment by preventing human and ecological receptor contact with landfill contents and associated hazardous substances and to comply with applicable or relevant and

appropriate requirements to the extent practicable. Specific removal action objectives include either removing the contents of the landfill and transferring them to a secure off-Site facility or providing an engineered solution that affords sufficient hydraulic conveyance to prevent upstream surface water impoundment.

The alternatives developed to achieve the removal action objectives are described and evaluated in this report. The alternatives include contaminant excavation and off-Site disposal with restoration of Gorst Ravine or stabilization and covering of the landfill with alternative methods of bypassing surface water in Gorst Creek. Methods that were evaluated for bypassing Gorst Creek include constructing a natural bypass channel adjacent to the landfill or installing new conveyance piping beneath the landfill (microtunneling/pipe jacking). The removal action alternatives were analyzed individually and also compared against each other using the criteria of effectiveness, implementability, and cost. The estimated implementation costs for the removal action alternatives are \$2,630,000 for a bypass installed using microtunneling/pipejacking techniques, \$8,520,000 for a bypass channel constructed around the landfill, and \$34,080,000 for removal and off-Site disposal of the landfill contents. Microtunneling/pipe jacking is the recommended removal action alternative. Installing a creek bypass pipe would reduce the potential for backup and overtopping of the landfill during significant storm events by providing a new primary pathway for Gorst Creek beneath landfill. It would prevent further landfill embankment erosion mitigating potential contamination and waste migration to protect human health and the environment.



# 1 Introduction

The United States Environmental Protection Agency (EPA) has tasked the Superfund Technical Assessment and Response Team (START) contractor to prepare this Engineering Evaluation/Cost Analysis (EE/CA) for the Bremerton Auto Wrecking Landfill - Gorst Creek Site (Site) in Gorst, Washington. This EE/CA provides a vehicle for public involvement and evaluates and recommends the preferred removal action alternative for the Site. E & E performed the work under START-3 contract EP-S7-06-02, Technical Direction Document (TDD) 10-08-0011.

## 1.1 Site Description and History

The Bremerton Auto Wrecking Landfill - Gorst Creek Site (Comprehensive Environmental Response, Compensation, and Liability Information System [CERCLIS] ID No. WAN 001 002 414 and Site Identification Number 10GL) is located at 4275 State Highway 3 SW approximately 5 miles southwest of Port Orchard, 6 miles south-southwest of Bremerton, and 1.5 miles west of Gorst, Washington (see Figure 1-1, Site Location Map). The Site is identified by the Kitsap County Tax Assessor as parcel 012301-4-022-1005; it is located in the northwest quarter of the southwest quarter of Section 1, Township 23 North, Range 1 West (EPA 2003) (see Figure 1-2A, Site Conditions 2000, and Figure 1-2B, Site Conditions 2011). The latitude is 47°30' 36.40" North and the longitude is 122°44' 29.40" West. The Site is a closed landfill that has not accepted waste since 1989.

The Site encompasses an approximately 5.7 acre triangular parcel centered over approximately 880 feet of the Gorst Creek Ravine. The Site contains approximately 150,000 cubic yard of automotive wrecking debris, construction debris, medical wastes, and other waste from public dumping. Gorst Creek flows northwest under the property through an approximately 880 foot-long 24-inch corrugated steel culvert (E & E 2004). Immediately downstream of the landfill, Gorst Creek flows under State Highway 3 SW through a 48-inch box culvert. The Site is bordered by an auto wrecking and salvage facility (Airport Auto Wrecking), a privately owned property (Alpine Farms), McCormick Land Company, Washington State Department of Transportation (WSDOT) property, which includes State Highway 3 SW with an easement corridor on either side of the highway, and one private residential property.

Kitsap County Health Department (KCHD) records show that the Site began operating as a landfill in 1950 under the name Ames Auto Wrecking. At this time, the property was owned by Mel Marler of Bremerton, Washington, who operated the landfill until 1972. In 1972, the property was purchased by Earl King and Louis King. In 1973, K. R. Crawford and Clara D. Crawford and Northern, Inc. became partners with the Kings in ownership of the Site. Mr. and Mrs. King, Mr. and Mrs. Crawford, and Northern, Inc. operated the landfill under the name of Ames Refuse - Bremerton Auto Wrecking, Inc. until 1980. In 1980, the property was obtained by Sid Uhinck and Lucille Uhinck who operated the Site as Bremerton Auto Wrecking, Inc. until its closure in 1989. Ownership from the time of closure until 2001 is unknown, and at some point the property reverted to Kitsap County. In February 2001, the property was obtained from the Kitsap County Treasurer by Vern L. Padgett of Tacoma, Washington. In February 2002, Mr. Padgett deeded the property to the Carina Trust. In November 2002, the property was acquired from the Carina Trust by the current owner William Nilles.

In 1968, a 24-inch corrugated steel culvert was installed along the base of the Gorst Creek Ravine so that the ravine could be filled with waste, and the creek could pass through the landfill via the culvert (E & E 2004). Waste was placed on top of the culvert until the top of waste became level with the top of the ravine. There is some evidence that the landfill was extended beyond its original planned limits along the ravine, implying that the culvert may have been placed at two or more different times. The original planned limits of the landfill are depicted in Figure 1-3, Site Plan – 1968.

In March 1997, after a significant rainstorm (7.3 inches in a 24-hour period), Gorst Creek backed up on the upstream side (southeast side) of the landfill and overtopped the surface of the landfill, causing a portion of the northwest slope of the landfill (i.e., downgradient side) to fail and wash into Gorst Creek; landfill debris was found approximately 0.5 miles downstream (Hart Crowser 2000). Following this failure, two riprap catchment berms containing 24-inch corrugated metal pipes were installed in Gorst Creek in an attempt to prevent future possible failures from washing landfill debris downstream. In January 2002, after another significant storm, Gorst Creek again backed up and overtopped the landfill, resulting in another (smaller) slope failure. Landfill debris was released to Gorst Creek, and the upstream riprap catchment berm was destroyed. The lower riprap catchment berm was still in place as of May 2003 (E & E 2004).

In October 2003, a mobile camera was deployed into the culvert beneath the landfill to identify potential causes for the backup and flooding of the landfill. Review of the culvert inspection video revealed a collapse of the culvert approximately 460 feet upstream of the culvert outflow, severely diminishing the maximum flow capacity of the culvert. A partial collapse was also noted approximately 20 feet downstream of the culvert inflow. Approximately 400 feet of culvert was not inspected because the mobile camera was not able to pass the collapse points (E & E 2004; Bravo 2003).

The landfill is estimated to contain approximately 150,000 cubic yards of waste (Hart Crowser 2000). A sizable portion of the total waste disposed of in the Gorst Creek ravine originated from the Puget Sound Naval Shipyard under a contract to dispose of construction and other industrial debris between approximately 1969 and 1970 (Hart Crowser 2000). Subsequent to the end of the Puget Sound Naval Station contract, the landfill continued to accept residential waste and demolition debris until it was shut down by the Kitsap County Health Department in 1989. Chemicals of potential concern at the landfill include chlorinated pesticides, polychlorinated biphenyls (PCBs), metals, semi-volatile organic compounds (SVOCs), and volatile organic compounds (VOCs). Information also indicates that medical waste from the Puget Sound Naval Station was received and disposed of in the landfill (E & E 2004).

A population of 1,027 people resides within a 1-mile radius of the Site and 8,425 people are within a 4-mile radius (see Section 1.5.1, Streamlined Human Health Risk Evaluation, for additional detail). Sunnyslope Elementary School is located within 1 mile of the Site, and Pleasant Valley School is located within 3 miles of the Site. No other schools or daycare facilities are located within 1 mile of the Site (USGS 2011).

The Site and immediate properties to the northeast are zoned “business center” and are not occupied by residents. Adjoining land is zoned as incorporated city and rural residential (Kitsap County 2010a). Kitsap County comprehensive land use planning indicates that the zoning would remain the same in the future for the Site property and surrounding area (Kitsap County 2010b).

Several aquifers are present in the region. While not all of the aquifers are used for drinking water purposes, all are available to be used as drinking water. Within a 4-mile radius of the Site are 587 domestic wells and 40 municipal wells serving a population of more than 8,400 people (see Appendix C, Streamlined Human Health Risk Evaluation). The residential population relying on domestic wells is approximately 1,500 persons.<sup>1</sup>

Because of the collapsed culvert beneath the landfill, impoundment of surface water from Gorst Creek behind the landfill is a concern. The culvert’s reduced flow capacity may again result in water overtopping the landfill and eroding the landfill cover, carrying landfill debris into the creek and downstream. In addition, impounded water upstream of the landfill can potentially result in elevated water level within the landfill with saturation of landfill debris.

## **1.2 Physical Characteristics of the Site**

### **1.2.1 Hydrology**

The elevation of the Site ranges from approximately 350 to 420 feet above mean sea level, determined from a survey performed on the Site and surrounding vicinity on October 11, 2011, by START subcontractor White Shield, Inc. The top of the Site is mostly flat; however, the northwestern (downstream) and southeastern (upstream) ends of the landfill slope towards Gorst Creek ravine at an estimated grade of 30% to 45%. In the 2003 Preliminary Assessment, the EPA identified two probable points of entry (locations where the entry of contaminants of concern to surface water is most likely to occur) within the 15-mile target distance limit. The first probable point of entry was located in Gorst Creek upgradient of the property at the point where the creek enters the pipe under the landfill. The second probable point of entry was located in Gorst Creek on the downslope side of the landfill. At this second probable point of entry, a spring was observed flowing from the west face of the landfill into Gorst Creek. From this second probable point of entry, the creek flows for 3.72 miles to Puget Sound. The 15-mile target distance limit concludes as several radial arcs within Puget Sound.

The mean annual precipitation in Bremerton, Washington, which is located approximately 4 miles northeast of the Site, is 56.37 inches (WRCC 2012). The 2-year 24-hour rainfall event for the Site is 2.25 inches (NOAA 1973). A flood insurance rate map shows that the Site is located in Zone X, meaning it lies outside of both the 100- and 500-year flood plain. The drainage area for the Site was calculated at 300 acres. During large precipitation events, water from Gorst Creek backs up at the first probable point of entry and flows in a northwest direction over the landfill cover before dropping back into Gorst Creek upstream of State Highway 3 SW.

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<sup>1</sup> This number was determined by multiplying the number of domestic wells within 4 miles by the average number of persons per Kitsap County household.

A hydrologic analysis for the Site determined the anticipated flow rates during peak storms that could potentially cause the overtopping of the landfill under existing conditions. These flows were used as the basis of design for several of the alternatives proposed under this assessment. Flow rates were calculated using the Santa Barbara Urban Hydrograph method, as specified by the Kitsap County Stormwater Design Manual (Kitsap County 2010) and Washington State Department of Ecology's 2005 revision of the Stormwater Management Manual for Western Washington for flow control designs (see Table 1-1). This method simplifies the runoff hydrograph computations using Site-specific land area type, drainage area, time of concentration, runoff curve numbers, and historical precipitation depths at selected storm frequencies.

**Table 1-1 Peak Flow Rates at the Bremerton Auto Wrecking Landfill – Gorst Creek Site**

| <b>Storm Event</b> | <b>Estimated Peak Flow through Site<br/>(cubic feet per second [cfs])</b> |
|--------------------|---|
| 2-year             | 12.3  |
| 10-year            | 30.2  |
| 25-year            | 40.7  |
| 100-year           | 57.5  |
| 500-year           | 80.2  |

### **1.2.2 Geology**

Kitsap County lies entirely within the Puget Trough. The Puget Trough is a large structural basin in consolidated rocks of Tertiary and earlier age that extends south from Canada to the central part of western Oregon (Raisz 1965), running along a north/south-trending lowland located between the Cascade Mountains to the east and the Olympic and Coast Range Mountains to the west. The trough has been partly filled by unconsolidated deposits of clay, silt, sand, gravel, and glacial till. These unconsolidated sedimentary materials were deposited by water and ice during the Pleistocene glacial epoch (Ice Age), but recent alluvial deposits underlie the surface in some low-lying areas. The upper materials of this fill, except the recent deposits, were deposited by ice and glacial melt water streams during the latest glaciation of the area (Vashon glaciation). During that glaciation, a large tongue of ice moved southward from British Columbia and Vancouver Island and partly filled the Puget Sound basin (Bretz 1913). The northern portion of the Gorst Creek watershed contains a large deposit of recessional outwash that consists of fine-grained sand (Sceva 1957).

The Gorst area basin is underlain by three geologic units: Vashon till, Vashon recessional outwash, and Tertiary bedrock (EPA 2003). Geotechnical borings advanced by EPA in August 2011 on the north and south sides of Gorst Creek revealed sand and gravel deposits to depths up to 90 feet below grade, characteristic of the Vashon recessional outwash. During the drilling groundwater was encountered only in boring SB04, located near the creek channel, at a depth of 5 feet below the ground surface.

### **1.2.3 Hydrogeology**

In the Gorst area four aquifers have been described: the Twin Lakes aquifer, the Gorst Creek Valley aquifer, the upland aquifer, and the sea-level aquifer. In the Anderson Creek watershed area east of the Gorst Creek watershed five aquifers have been described: an upland aquifer, sea-level aquifer, a shallow artesian aquifer, the deep artesian aquifer, and the lower deep artesian aquifer. One Bremerton City Water Resource Division monitoring well (BR-11) is located

approximately 0.15 miles northeast of the Site. The well was installed in 1992 to a depth of 74 feet.

#### **1.2.4 Meteorology**

Records from 1981 through 2010 from the weather station closest to the Site, Bremerton Station, located in Bremerton, Washington, show that the Gorst Creek area has a mean maximum temperature of 60.4 degrees Fahrenheit (°F) and a mean minimum temperature of 43.6°F. The warmest months are July and August, when the monthly mean high temperatures are 75.9°F and 76.6°F, respectively, and the monthly mean low temperatures range from 54.1°F to 54.3°F, respectively. The coldest month has been observed to be December, with an average monthly high temperature of 45.0°F and an average monthly low temperature of 34.5°F (WRCC 2011a).

The mean annual precipitation from 1981 through 2010 was 56.37 inches. November and December receive the highest amount of precipitation, with averages of 9.39 and 10.07 inches, respectively. July and August are the driest months, with average precipitation amounts of 0.86 and 1.03 inches respectively. Gorst Creek receives 5.33 inches of snowfall each year, with most falling in December and January (1.73 and 3.55 inches as an annual average, respectively). Snowfall has been recorded from November through April (WRCC 2011).

Average annual wind speed in the region has been calculated as 0.7 miles per hour (mph), with a range of 0.53 mph in August to 1.0 mph in March (Western Regional Climate Center n.d.). The Quilcene, Washington, weather station was the nearest location that had available, verified wind records; measurements were available from 2001 through 2011.

#### **1.2.5 Sensitive Ecosystems**

Gorst Creek has many areas of unrestricted access downstream of the Site, as well as a recreational park (Otto Jarstad Park) located within 4 miles downstream of the Site. A tribal fishery is also located near the mouth of Gorst Creek, on Sinclair Inlet, approximately 3.7 miles downstream of the Site. The fishery is supported by a Suquamish Tribe Chinook salmon fish-rearing facility, located on Gorst Creek approximately 1 mile upstream of the confluence with Sinclair Inlet (Zischke 2003). Fishing reportedly does not occur on Gorst Creek downstream of the Site; rather, fish are harvested from Sinclair Inlet (Huff 2003). In addition, a golf course is located near the Site and Gorst Creek; however, it relies on City of Bremerton municipal water for irrigation and drinking water (Folk 2011).

There are 2.6 miles of wetland frontage along the 15-mile target distance limit and 633.7 acres of designated wetlands within 4 miles of the Site (EPA 2003). The wetland nearest to the Site along the surface water target distance limit is located on Sinclair Inlet approximately 3.72 miles downstream of the Site. All wetland frontage occurs on the waters of the Puget Sound (USFWS 1997a, 1997b, 1997c, 1997d, 1997e, 1997f, 1997g, and 1997h).

Available information from the Washington Department of Fish and Wildlife (WDFW), Washington State Department of Natural Resources (WSDNR), United States Fish and Wildlife Service (USFWS), and National Oceanic and Atmospheric Administration (NOAA) regarding the presence of sensitive plant and animal species in the Site vicinity were reviewed, and a summary of the information from these agencies is provided below.

The WDFW priority habitats and species (PHS) database (WDFW 2011) indicated that the Coho salmon (*Oncorhynchus kisutch* [federally listed as threatened]) and coast-resident cutthroat trout (*O. clarki* [PHS-listed]) occur or migrate in Gorst Creek. The information in the PHS database suggests that these species may occur throughout Gorst Creek, including the portion of the creek near the Site.

The WSDNR (2011) indicated that six rare plants species occur in Kitsap County: pink sand-verbena (*Abronia umbrellata* var. *brevifolia* [state-listed as endangered]); Vancouver ground-cone (*Boschniakia hookeri* [state-listed as of potential concern]); bog clubmoss (*Lycopodium inundata* [state-listed as sensitive]); western yellow oxalis (*Oxalis suksdorfii* [state-listed as threatened]); humped bladderwort (*Utricularia gibba* [state-listed as of potential concern]); and chain fern (*Woodwardia fimbriata* [state-listed as sensitive]). The Vancouver ground-cone, bog clubmoss, humped bladderwort, and chain fern were sighted in west Kitsap County within approximately 10 miles of the Site. However, none of these species would be expected to occur at the Site given their habitat requirements. Vancouver ground pine is a root parasite and typically is found growing in young forest stands near salt water. Associated tree species include western hemlock, western red cedar, Sitka spruce, and Douglas fir. Bog clubmoss, humped bladderwort, and chain fern prefer perennially wet habitats (bogs, lakeshores, etc.) that are not offered by the Site.

The USFWS (August 26, 2010) indicated that the bull trout (*Salvelinus confluentus*) – Coastal-Puget Sound distinct population segment and marbled murrelet (*Brachyramphus marmoratus*) are listed as threatened and endangered species, respectively, in Kitsap County. Also, the USFWS considers the yellow-billed cuckoo (*Coccyzus americanus*) as a candidate species in Kitsap County and 12 other animals as species of concern in Kitsap County, including the bald eagle (*Haliaeetus leucocephalus*), long-eared myotis (*Myotis evotis*), long-legged myotis (*Myotis volans*), northern goshawk (*Accipiter gentilis*), northern sea otter (*Enhydra lutris kenyoni*), northwestern pond turtle (*Emys* (= *Clemmys*) *marmorata marmorata*), Pacific lamprey (*Lampetra tridentata*), Pacific Townsend's big-eared bat (*Corynorhinus townsendii townsendii*), peregrine falcon (*Falco peregrinus*), river lamprey (*Lampetra ayresi*), tailed frog (*Ascaphus truei*), and western toad (*Bufo boreas*). Some of these species (e.g., marbled murrelet, northern sea otter, and peregrine falcon) would not be expected to occur in the Site vicinity given their habitat requirements. The marbled murrelet feeds in coastal marine water and nests in old growth forests. The northern sea otter is found in coastal marine habitats. The peregrine falcon requires high cliff environments or high-rise buildings for roosting and nesting. These habitat types are not provided by the Site. However, the possibility that the other above-mentioned species might occur in the Site vicinity cannot be definitely ruled out, although none were observed during field work at the Site in July 2011.

The National Marine Fisheries Service (NMFS), a branch of NOAA, identified the Puget Sound Chinook salmon (*O. tshawytscha*) as an evolutionarily significant unit and Puget Sound steelhead (*O. mykiss*) distinct population segment as federally listed as a threatened species in Puget Sound (National Marine Fisheries Service August 15, 2011). Because Gorst Creek is a tributary of Puget Sound, the occurrence of these species in Gorst Creek cannot be definitively ruled out.

## **1.3 Previous Investigations and Removal Actions**

### **1.3.1 Site Hazard Assessment**

In 1999 and 2000 Hart Crowser conducted a Site Hazard Assessment of the Site for the Puget Sound Naval Station to determine the nature and possible extent of contamination at the Site. Puget Sound Naval Station was working in accordance with the Kitsap County Department of Health to assist in the cleanup from previous disposal of medical wastes at the facility. During the study, Hart Crowser conducted a property boundary and elevation survey, a limited landfill soil and slope stability assessment, and a characterization of the area hydrogeology. As part of this study, Hart Crowser also sampled surface soils, sediments, groundwater, and surface water. Analytical results summary tables from this sampling event are included in Appendix A.

Four discrete surface soil samples were collected from the ravine walls surrounding the Site including a sample from a background location. Three 3-point composite surface soil samples were collected from northern slope of the landfill. The surface soil samples were analyzed for total gasoline and diesel-range petroleum hydrocarbons, pesticides and PCBs, priority pollutant metals, VOCs, and SVOCs. Sixteen pesticides and PCBs, 22 SVOCs, and nine priority pollutant metals were detected above the instrument detection limit. No VOCs were detected above the instrument detection limit in these soil samples.

Hart Crowser also collected four sediment samples, including one upstream sample and three composite samples from Gorst Creek downstream of the landfill. Sediment samples were analyzed for gasoline and diesel-range petroleum hydrocarbons, pesticides and PCBs, priority pollutant metals, SVOCs, VOCs, and total organic carbon. One pesticide, 14 SVOCs, and seven priority pollutant metals were detected above the instrument detection limit. No VOCs were detected above the instrument detection limit in the sediment samples.

One groundwater sample was collected from monitoring well BR-11, which is located near Gorst Creek approximately 0.15 miles downstream from the Site. No analytes were detected above the instrument detection limit. The well had been previously sampled on March 26, 1997, seven days after the first flood event at the Site. During that sampling cadmium was detected in the well at 42.7 micrograms per liter ( $\mu\text{g/L}$ ), copper was detected at 3.0  $\mu\text{g/L}$ , and zinc was detected at 75  $\mu\text{g/L}$  (Cahall January 27, 2003). Finally, Hart Crowser collected two surface water samples, one upstream and one downstream of the landfill. Mercury was detected in the sample at the upstream sample location. No analytes were detected in the sample from the downstream location.

### **1.3.2 EPA Preliminary Assessment and Integrated Assessment**

The EPA conducted a preliminary assessment in 2003. A preliminary assessment is an evaluation of available information about a site to determine whether the site poses a threat to human health and the environment and whether the threat requires further investigation. The preliminary assessment concluded that there was a threat posed by the Site, so EPA further investigated the Site through an integrated assessment. An integrated assessment is a combination of a site inspection, which involves the collection and analysis of site samples to

provide data for Hazard Ranking System scoring and documentation, and a removal screening, in which EPA determines whether a further removal assessment is justified at a site.

EPA conducted the integrated assessment at the Site in 2003-2004. Samples were collected from the Site and surrounding area in order to determine the presence or absence of contaminants at the source and target receptors. During the integrated assessment, subsurface samples were collected from six boreholes drilled directly into the landfill. Six surface soil samples were also collected at the same locations. Sediment samples were collected from Gorst Creek including a location downstream of the landfill between the landfill and State Highway 3, downstream of State Highway 3, and just upstream of the landfill near the southeastern slope of the landfill. The results of the integrated assessment indicated that the Aroclor 1254, benzo(a)pyrene, benzo(a)anthracene, and lead in Site soil samples exceeded health-based screening levels. Dichlorodiphenyltrichloroethane (DDT), dichlorodiphenyldichloroethylene (DDE), Aroclor 1254, and copper exceeded the NOAA Screening Quick Reference Tables (SQIRT) screening levels in sediment samples located between the landfill and State Highway 3 and downstream of State Highway 3. In addition to these contaminants of concern, the integrated assessment noted that medical waste may also be present in the landfill.

A summary of the sampling results from the integrated assessment are listed below.

**Table 1-2A Integrated Assessment Surface Soil Analytical Results – June 2004**

| <b>Compound</b>       | <b>Concentration</b> | <b>Region 6 PRGs<br/>Residential/Industrial</b> | <b>Detection<br/>frequency</b> |
|-----------------------|----------------------|---|--------------------------------|
| DDT                   | 4.9 – 54 JH µg/kg    | 1,700/7,800 µg/kg                               | 4 of 6                         |
| Aroclor 1254          | 50 J – 88 J µg/kg    | 220/2,900 µg/kg                                 | 2 of 6                         |
| <b>Benzo(a)pyrene</b> | <b>70 J µg/kg</b>    | <b>15/230 µg/kg</b>                             | <b>1 of 6</b>                  |
| Benzo(a)anthracene    | 73 J µg/kg           | 150/2300 µg/kg                                  | 1 of 6                         |
| Lead                  | 9.6 – 278 mg/kg      | 400/800 mg/kg                                   | 6 of 6                         |
| Mercury               | 0.19 – 0.62 mg/kg    | 23/610 mg/kg                                    | 2 of 6                         |

Key:

DDT Dichlorodiphenyltrichloroethane

J Estimated value

JH Estimated value – quantified using peak heights rather than peak areas

mg/kg milligrams/kilogram (equivalent to parts per million)

PRG Preliminary Remediation Goal

µg/kg micrograms/kilogram (equivalent to parts per billion)

**Bold:** indicates that the compound exceeds the screening level.



**Table 1-2B Integrated Assessment Subsurface Soil Analytical Results – June 2004**

| Compound                  | Concentration                     | Region 6 PRGs<br>Residential/Industrial | Detection<br>frequency |
|---------------------------|-----------------------------------|---|------------------------|
| DDT                       | 6.9 – 43 µg/kg (70 J)             | 1,700/7,800 µg/kg                       | 5 of 6                 |
| DDE                       | 7.5 – 40 µg/kg                    | 1,700/7,800 µg/kg                       | 5 of 6                 |
| <b>Aroclor 1254</b>       | <b>65 – 280 µg/kg<br/>(370 J)</b> | <b>220/2,900 µg/kg</b>                  | <b>5 of 6</b>          |
| <b>Benzo(a)pyrene</b>     | <b>55 J – 490 J µg/kg</b>         | <b>15/230 µg/kg</b>                     | <b>6 of 6</b>          |
| <b>Benzo(a)anthracene</b> | <b>43 J – 2,000 J µg/kg</b>       | <b>150/2,300 µg/kg</b>                  | <b>5 of 6</b>          |
| <b>Lead</b>               | <b>2.5 – 1,410 mg/kg</b>          | <b>400/800 mg/kg</b>                    | <b>6 of 6</b>          |
| Mercury                   | 0.13 – 1.1 mg/kg                  | 23/610 mg/kg                            | 3 of 6                 |

Key:

DDE Dichlorodiphenyldichloroethylene

DDT Dichlorodiphenyltrichloroethane

J Estimated value

JH Estimated value – quantified using peak heights rather than peak areas

mg/kg milligrams/kilogram (equivalent to parts per million)

PRG Preliminary Remediation Goal

µg/kg micrograms/kilogram (equivalent to parts per billion)

**Bold:** indicates that the compound exceeds the screening level.

**Table 1-2C Integrated Assessment Sediment Analytical Results – June 2004**

| Compound            | Concentration               | NOAA SQIRTS                           | Detection<br>frequency |
|---------------------|-----------------------------|---------------------------------------|------------------------|
| <b>DDT</b>          | <b>88 JH – 340 JH µg/kg</b> | <b>50 µg/kg (upper effects level)</b> | <b>2 of 3</b>          |
| <b>DDE</b>          | <b>33 JH – 110 JH µg/kg</b> | <b>8.51 µg/kg</b>                     | <b>2 of 3</b>          |
| <b>Aroclor 1254</b> | <b>750 – 2,500 J µg/kg</b>  | <b>277 µg/kg</b>                      | <b>2 of 3</b>          |
| <b>Copper</b>       | <b>201 JH mg/kg</b>         | <b>197 mg/kg</b>                      | <b>1 of 3</b>          |
| Lead                | 47 – 47.5 mg/kg             | 91.3 mg/kg                            | 2 of 3                 |
| Zinc                | 153 – 159 mg/kg             | 315 mg/kg                             | 2 of 3                 |

Key:

DDE Dichlorodiphenyldichloroethylene

DDT Dichlorodiphenyltrichloroethane

J Estimated value

JH Estimated value – quantified using peak heights rather than peak areas

mg/kg milligrams/kilogram (equivalent to parts per million)

NOAA National Oceanic and Atmospheric Administration

SQIRT Screening Quick Reference Tables

µg/kg micrograms/kilogram (equivalent to parts per billion)

**Bold:** indicates that the compound exceeds the screening level.

## 1.4 Sources, Nature, and Extent of Contamination

### 1.4.1 Landfill Characteristics and Contents

The landfill is a triangular-shaped parcel of approximately 5.7 acres centered along the Gorst Creek ravine. The ravine was 60 to 80 feet deep at this location before being used as a landfill.

Gorst Creek is located in the ravine and is conveyed under the landfill through a culvert that was constructed when landfill operations began in 1968. The pipe under the landfill is a approximately 880 feet in length. Presently, the top of the landfill is flush with the surrounding topography over much of the landfill surface and is overgrown with vegetation and covered with debris.

The landfill contains approximately 150,000 cubic yards of waste. In addition to automotive debris, the landfill accepted waste from public dumping, occasional demolition debris contracts, and refuse from the Puget Sound Naval Shipyard, including a limited amount of medical waste from that facility. Hazardous substances detected in environmental media at the landfill include chlorinated pesticides, PCBs, SVOCs, and VOCs.

#### **1.4.2 Topographic Survey and Landfill Extents**

A topographic survey of the Site in the summer and fall of 2011 used topographic elevations on a 50-foot grid to establish 1-foot contours. The survey data were used to develop the engineering alternatives and cost estimates presented in this report.

#### **1.4.3 Analytical Data**

Site analytical data is available from previous investigations (Hart Crowser October 2000; E & E 2004) and the 2011 field sampling events that were performed to support this EE/CA. The data from previous investigations were reviewed to assist in the planning for the 2011 field sampling events and to help develop the conceptual site model of potential pathways and receptors (see Section 1.4.3.1 below).

Analytical data used in the streamlined risk evaluation (see Section 1.5) were obtained primarily from the 2011 field sampling, with one exception. Because there was no surface water in Gorst Creek at the time of the 2011 field sampling events, surface water results from the Integrated Assessment Report (E & E 2004) were used in the streamlined human health risk evaluation.

#### **2011 Field Sampling Events**

To collect additional data for this EE/CA, EPA collected surface soil samples and sediment samples on July 27, 2011. Because there was no water in Gorst Creek during the sampling event, no surface water samples were collected. Sample locations are shown on Figure 1-4, Sample Location Map – July-August 2011. A Site-specific sampling plan was developed and approved by EPA before initiating the field sampling (E & E 2011). The Site-specific sampling plan described the sampling strategy, sampling methodology, and analytical methods.

Surface soil samples were collected from seven locations in the landfill. All samples were collected from the surface to 6 inches depth. The samples were submitted to GEL Laboratories in Charleston, South Carolina, for analyses of VOCs, SVOCs, pesticides, PCBs, and metals (see Appendix A). Summarized results of the soil samples are included in Table 1-3, Surface Soil Sample Results – July 2011. Laboratory results indicated that chromium occurred at concentrations ranging from 19.6 mg/kg in sample LF05SS to 47.8 mg/kg in sample LF03SS, exceeding the EPA Regional Screening Level of 5.6 mg/kg for industrial soils, and the Washington Model Toxics Control Act (MTCA) Method A level of 19 mg/kg.

Two sediment samples (samples GC01SD and GS02SD, respectively) were collected in Gorst Creek at locations 150 feet and 50 feet upstream of the corrugated metal pipe inlet on the southeastern (upstream) end of the landfill. Sediment sample GC03SD was collected between the landfill and Highway 3. Sediment sample GC04SD was collected approximately 150 feet downstream of Highway 3. Locations are shown on Figure 1-4.

The sediment samples were submitted to GEL Laboratories for analyses of VOCs, SVOCs, pesticides, PCBs, and metals and to Northwestern Aquatic Sciences Laboratory in Newport, Oregon for toxicity testing using 10-day midge (*Chironomus dilutus*) and 28-day amphipod (*Hyalella azteca*) sediment bioassays (see Appendix A). Results of the sediment sample analyses are summarized in Table 1-4A, Sediment Sample Results – July 2011 samples and Table 1-4B, Sediment Bioassay Results – July 2011. No EPA or MTCA screening level exceedances of chemicals of potential concern were observed in the sediment samples. A discussion of the toxicity testing results is included in the Streamlined Ecological Risk Evaluation in Section 1.5.2 below.

EPA remobilized to the Site on August 17 to 19, 2011, to collect subsurface samples. Five soil borings were installed at the Site using a hollow stem auger drilling rig operated by Cascade Drilling of Woodinville, Washington. The soil borings were designated SB01 through SB05 (Figure 1-4). Boring logs are included in Appendix B. The general location, total boring depth and geotechnical soil sample collection depths are shown in Table 1-5, Hollow Stem Auger Boring Installation – August 2011.

The only boring in which groundwater was encountered was SB04, located northwest and downstream of the landfill near Gorst Creek. A groundwater sample was collected from boring SB04 and submitted to GEL Laboratories for analyses for VOC, SVOCs, pesticides, PCBs, and metals. Table 1-6 summarizes the results of the groundwater sample, and the laboratory report is included in Appendix A. The chemicals of potential concern that exceeded the MTCA's cleanup levels and EPA's Regional Screening Levels for Chemical Contaminants at Superfund Sites (RSLs) included three metals (arsenic, chromium, and cobalt) and two VOCs (chloroform and methyl tert-butyl ether [MTBE]).

Geotechnical soil samples were submitted to GeoTesting Express in Acton, Massachusetts, for grain size analyses and/or direct shear testing. Results are summarized in Table 1-7, Grain Size and Direct Shear Results – August 2011. The geotechnical laboratory report is included in Appendix B.

## **1.5 Streamlined Risk Evaluation**

This section presents a streamlined human health and ecological risk evaluation for the Site. EPA guidance on conducting non-time-critical removal actions (EPA 1993) requires that a streamlined risk evaluation be included as a component of an EE/CA in order to assist in determining whether a removal action is justified and to identify the potential current and future exposures that should be prevented. This evaluation is consistent with federal guidance for conducting streamlined risk evaluations for non-time critical removal actions (EPA 1993) and other applicable federal and regional human health and ecological risk assessment guidance (EPA 1989 and 2010a, Ecology 2007). Substances found at the Site, including the substances

identified above in Section 1.4, constitute “hazardous substances” as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

The primary exposure pathway of concern for human populations, animals, and the food chain is the surface water pathway. A tribal fishery is located near the mouth of Gorst Creek, on Sinclair Inlet, approximately 3.72 miles downstream of the Site. The fishery is supported by a tribal Chinook salmon fish-rearing facility, located on Gorst Creek approximately 1 mile upstream of the confluence with Sinclair Inlet (Zischke August 25, 2003).

Federal-listed threatened species are documented to exist within the 15-mile target distance limit of the Site. The federal-listed threatened Chum salmon (*O. keta*) and Chinook salmon (*O. tshawtscha*) use Gorst Creek for spawning from the headwaters of the creek down to its mouth in Sinclair Inlet, including the portion of the creek that crosses underneath the Site (Huff 2003a, WDFW 2002).

There are 2.6 miles of wetland frontage along the 15-mile target distance limit and 633.7 acres of designated wetlands within 4 miles of the Site (EPA 2003b). The nearest wetland to the Site along the surface water target distance limit is located on Sinclair Inlet approximately 3.72 miles downstream of the Site (see Figure 1-5). All wetland frontage occurs on the waters of the Puget Sound (USFWS 1997a, 1997b, 1997c, 1997d, 1997e, 1997f, 1997g, and 1997h).

### **1.5.1 Streamlined Human Health Risk Evaluation Summary**

Figure 1-6, the human health conceptual site model, shows the pathways and potential ecological receptors that could be affected by exposure to landfill waste. The streamlined human health risk evaluation (see Appendix C) is a streamlined evaluation in which chemicals of potential concern for the Site were identified by comparing Site concentrations with screening levels. Screening levels included EPA published and calculated risk-based concentrations, Washington State MTCA cleanup levels, and applicable standards.

Exposure scenarios evaluated in the streamlined human health risk evaluation include current and future residents, current and future workers, current and future trespasser, and current and future recreational users. Human receptors at the Site could be exposed to chemicals through contact with surface soil, groundwater, sediment, and surface water. Routes of exposure include ingestion, dermal absorption, and inhalation. Screening levels were selected to be consistent with these exposure scenarios.

Screening levels were compared with maximum detected concentrations reported for surface soil, groundwater, and sediment samples collected in July and August 2011. Surface water samples were not collected at this time due to lack of water flow, so historical data from 2003 were used in the streamlined human health risk evaluation. If the maximum concentration of a chemical was above a screening value, the chemical was considered a chemical of potential concern for the Site. Generally, at sites where contaminant concentrations fall below screening and/or natural background levels, no further action or study is warranted to ensure the protection of human health for that compound. Results of the screening level comparison are as follows:

- As discussed in the streamlined human health risk evaluation in Appendix C, a conservative assumption was made that all of the chromium detected in surface soil samples was in the hexavalent form due to lack of Site-specific speciation data that would provide the proportions of the various forms of chromium in Site soil. The hexavalent form of chromium is considered carcinogenic and has lower screening levels, while trivalent chromium is not considered carcinogenic and typically has higher screening levels. The total chromium concentrations in all seven surface soil samples exceeded the EPA industrial worker RSL and MTCA Method A cleanup level for hexavalent chromium. The EPA RSL is conservatively based on a cancer target risk level of 1 in 1,000,000 which is typically used for screening chemicals to be carried forward in a risk assessment or in a streamlined screening level evaluation such as was done here. However, if a higher target risk level of 1 in 100,000 in the EPA RSL calculations, the RSL increases tenfold and no exceedences for hexavalent chromium occur. Assuming a 1 in 100,000 target risk level may be appropriate for industrial sites. Comparison of the total chromium concentrations to the EPA RSL for trivalent chromium results in no RSL exceedences. While the total chromium concentrations found at the Site are comparable to typical background levels (42 mg/kg state-wide, and 48 mg/kg in the Puget Sound area) and trivalent chromium is the form predominantly found in natural background soils, chromium cannot be completely ruled out as a chemical of potential concern given the prior landfill disposal useage of the Site. Without chromium speciation data the screening level comparison in this streamlined human health risk evaluation does not provide a definitive picture of chromium as a chemical of potential concern at this Site. However, based on the various comparisons made above, chromium is considered only nominally a chemical of potential concern at this Site.
- Arsenic, chromium, cobalt, chloroform, and MTBE concentrations exceeded respective EPA RSLs for residential tap water in the one sample collected in 2011. Arsenic also exceeded the MTCA Method B drinking water cleanup level. However, with the exception of cobalt and MTBE, which have no promulgated national standards, the other chemicals had concentrations that were well below the respective maximum contaminant levels (MCLs). The MTBE concentration is only slightly above EPA's drinking water advisory concentration range. This range is only for guidance and not mandatory regulation. Cobalt has no such advisory.
- All chemicals detected in sediment and historical surface water samples showed concentrations below applicable screening levels.

There are inherent uncertainties in the streamlined human health risk evaluation process. Significant sources of uncertainty in the human health risk evaluation include the use of fixed input parameters in risk estimates, cleanup levels, and screening level calculations; the use of published screening level and standards, which tend to rely on conservative default assumptions to represent conservative and protective estimate of exposure; and the use of maximum Site concentrations for comparison to screening levels due to the streamlined nature of the evaluation and the limited number of available data points.

### 1.5.2 Streamlined Ecological Risk Evaluation Summary

The streamlined ecological risk evaluation is presented in Appendix D. The ecological conceptual site model (Figure 1-7) shows the pathways and potential ecological receptors that could be affected by exposure to landfill waste. The assessment endpoints for the ecological risk evaluation included terrestrial vegetation, soil invertebrates, wildlife, benthic invertebrates, and fish and other aquatic organisms exposed to surface water. Potential ecological risks to one or more assessment endpoints using the landfill surface or Gorst Creek near the landfill were identified. On the landfill surface, terrestrial plants, soil invertebrates, and wildlife (songbird and small mammals) may be at risk from high levels of metals in soil: cadmium, lead, nickel, and zinc pose the greatest potential risks. In Gorst Creek downstream from the landfill, sediment PCB levels are great enough to reduce growth of benthic macroinvertebrates. Birds and mammals using the creek are unlikely to be adversely affected by current levels of chemicals in sediment. The following points are noteworthy.

- **Terrestrial Vegetation** – Potential risks to terrestrial plants on the landfill surface were evaluated by comparing soil chemical concentrations with screening benchmarks for effects on plant survival, growth, or reproduction. These comparisons indicate that copper, lead, manganese, mercury, nickel, and zinc in soil may pose a potential risk to terrestrial plants in some areas of the landfill surface.
- **Soil Invertebrates** – Potential risks to soil invertebrates on the landfill surface were evaluated by comparing soil chemical concentrations with screening benchmarks for effects on survival, growth, or reproduction or earthworms. These comparisons indicate that copper, manganese and zinc in soil may pose a potential risk to soil invertebrates in some areas of the landfill surface. Potential risks from copper and manganese are restricted to a single location, whereas the risks from zinc appear to be more widespread.
- **Birds and Mammals** – Food-chain modeling shows that cadmium, lead, nickel, and zinc in soil are likely to pose a risk to song birds and small mammals such as the American robin and masked shrew, which feed extensively on soil invertebrates. Risks to aquatic-dependent wildlife that may forage in Gorst Creek near the Site appear to be minimal.
- **Benthic Invertebrates** – Potential risks to benthic macroinvertebrates were evaluated by comparing sediment chemical concentrations with sediment screening levels and by toxicity tests of Gorst Creek sediment. The sediment screening results suggest that levels of PCBs in sediment downstream from the landfill are great enough to adversely affect benthic macroinvertebrates. The sediment toxicity tests found no effects on survival of laboratory-reared organisms (midges and amphipods) in Gorst Creek sediment. However, three sediment samples showed reduced midge growth and two samples showed reduced amphipod growth compared with clean control sediment. The sample with the lowest midge and amphipod growth (GC03SD) contained the greatest concentrations of Aroclor 1248 and 1254. This sample was collected downstream from the landfill and upstream from Highway 3.
- **Fish, Amphibian, and Other Aquatic Organisms Exposed to Surface Water** – No surface water samples were collected in July 2011 because Gorst Creek near the landfill

was dry. Hence, potential risks to this assessment endpoint from Site-related chemicals in surface water were not directly evaluated. However, while surface water was not directly sampled, sediment samples collected in Gorst Creek are an indicator of the creek contaminant levels, as contaminants tend to become deposited in sediments. The sediment screening results suggest that growth of benthic organisms may be impaired in Gorst Creek, and this could result in less prey for fish, amphibians, and other organisms that feed on benthic organisms. Consequently, sediment contamination may be having an impact on this assessment endpoint.

Significant sources of uncertainty in the streamlined ecological risk assessment include several factors. The bioavailability of chemicals in environmental media at the site is poorly understood; therefore, it was conservatively assumed that 100% of the chemicals in soil and sediment were bioavailable to all ecological receptors. Many soil screening benchmarks for plants and soil invertebrates were developed from laboratory studies in which the added chemicals are highly bioavailable. Comparing total chemical concentrations in field samples to solution-based soil benchmarks (developed from laboratory studies in which the added chemicals are highly bioavailable) is conservative and likely results in an overestimation of risk. Screening benchmarks are not available for all chemicals in all media; for example, soil screening benchmarks for plants and soil fauna are not available for many volatile and semivolatile organic compounds and pesticides. Food-chain transfer of chemicals at the site is poorly understood. The potential risks to wildlife at the site are largely driven by estimated concentrations of chemicals in wildlife prey. Prey concentrations were estimated from measured soil and sediment concentrations using uptake factors from the literature, if available, or it was assumed that the prey concentration was the same as the soil or sediment concentration which is likely to result in an overestimation of risk.

#### **1.5.4 Contaminants of Potential Concern**

If the maximum concentration of a chemical is above a screening value, the chemical is considered a chemical of potential concern for the Site. Generally, at sites where contaminant concentrations fall below screening and/or natural background levels, no further action or study is warranted to ensure the protection of human health or ecological function. While chromium is considered only nominally a chemical of potential concern related to human health on the Site, there are contaminants of ecological concern at the site include six metals (cadmium, copper, lead, manganese, mercury, nickel, and zinc) and two PCBs (Aroclor 1248 and Aroclor 1254).

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Table 1-3. Surface Soil Sample Results - July 2011

| Analyte   | Sample Number, Concentration, and Data Qualifier |          |          |          |          |          |          |
|---|--|----------|----------|----------|----------|----------|----------|
|   | LF01SS   | LF02SS   | LF03SS   | LF06SS   | LF04SS   | LF05SS   | LF07SS   |
|   | 11070005   | 11070006 | 11070007 | 11070008 | 11070009 | 11070010 | 11070011 |
| <b>Metals (mg/kg)</b>                               |  |          |          |          |          |          |          |
| Aluminum  | 11700  | 19300    | 11600    | 14200    | 10400    | 9160     | 13100    |
| Arsenic   | 10.1   | 6.0      | 8.9      | 2.1      | 3.2      | 3.5      | 1.3      |
| Barium  | 194  | 97.5     | 181      | 48.9     | 58       | 84.5     | 47.4     |
| Beryllium   | 0.184  | 0.269    | 0.244    | 0.177    | 0.132    | 0.161    | 0.176    |
| Cadmium   | 1.1  | 0.37     | 3.2      | 0.33     | 1.00     | 0.69     | 0.09     |
| Calcium   | 14100 JK   | 4880 JK  | 7390 JK  | 4440 JK  | 4940 JK  | 4610 JK  | 3150 JK  |
| Chromium  | 28.2 JK  | 34 JK    | 47.8 JK  | 29.1 JK  | 28.6 JK  | 19.6 JK  | 19.7 JK  |
| Cobalt  | 7.12 JK  | 9.93 JK  | 7.65 JK  | 7.78 JK  | 6.64 JK  | 5.08 JK  | 6.48 JK  |
| Copper  | 37.9 JK  | 20.4 JK  | 83.1 JK  | 30.2 JK  | 19.1 JK  | 15.2 JK  | 10.7 JK  |
| Iron  | 16100  | 23500    | 16400    | 17200    | 16500    | 9940     | 14200    |
| Lead  | 691  | 21.8     | 446      | 54.8     | 33.3     | 99.4     | 3.21     |
| Mercury   | 1.28   | 0.0595   | 0.647    | 0.103    | 0.123    | 0.185    | 0.00943  |
| Magnesium   | 4400   | 5320     | 5080     | 5520     | 4560     | 3170     | 4210     |
| Manganese   | 305 JK   | 654 JK   | 385 JK   | 289 JK   | 240 JK   | 168 JK   | 316 JK   |
| Nickel  | 40.9 JK  | 36.2 JK  | 40 JK    | 44.8 JK  | 28.6 JK  | 21.8 JK  | 28.8 JK  |
| Potassium   | 480  | 681      | 483      | 382      | 648      | 868      | 724      |
| Selenium  | 0.386 U  | 0.394 U  | 0.405    | 0.354 U  | 0.424 U  | 0.374 U  | 0.334 U  |
| Sodium  | 250  | 358      | 196      | 184      | 213      | 358      | 74.2     |
| Thallium  | 0.0701 U   | 0.088 U  | 0.0927 U | 0.0643 U | 0.0771 U | 0.0681 U | 0.0607 U |
| Zinc  | 364  | 59       | 565      | 112      | 836      | 173      | 31.1     |
| <b>Volatile Organic Compounds (µg/kg)</b>           |  |          |          |          |          |          |          |
| Acetone   | 6.71 UJL   | 30.3 JL  | 5.12 JQ  | 5.08 UJL | 10.7 JL  | 5.53 UJL | 4.62 UJL |
| 2-Butanone (MEK)                                    | 6.71 UJL   | 2.13 JQ  | 8.33 UJL | 5.08 UJL | 6.21 UJL | 5.53 UJL | 4.62 UJL |
| Ethylbenzene  | 1.34 U   | 0.51 JQ  | 1.67 U   | 1.02 U   | 1.24 U   | 1.11 U   | 0.923 U  |
| 4-Isopropyltoluene                                  | 1.34 U   | 0.956 JQ | 1.67 U   | 0.315 JQ | 1.24 U   | 1.11 U   | 0.923 U  |
| m,p-Xylene  | 0.416 JQ   | 2.55 U   | 0.5 JQ   | 2.6 U    | 2.6 U    | 2.21 U   | 2.6 U    |
| Methylene chloride                                  | 6.71 U   | 4.18 JQ  | 8.33 U   | 5.08 U   | 6.21 U   | 5.53 U   | 4.62 U   |
| Styrene   | 0.483 JQ   | 0.51 JQ  | 1.3 JQ   | 0.468 JQ | 0.423 JQ | 0.885 JQ | 0.305 JQ |
| Toluene   | 0.429 JQ   | 0.688 JQ | 1.12 JQ  | 1.02 U   | 1.24 U   | 1.11 U   | 0.923 U  |
| Xylenes (total)                                     | 0.416 JQ   | 1.27 U   | 0.5 JQ   | 1.02 U   | 1.24 U   | 1.11 U   | 0.923 U  |
| <b>Polychlorinated Biphenyls (µg/kg)</b>            |  |          |          |          |          |          |          |
| Aroclor-1248  | 243  | 3.92 U   | 20.4 U   | 37.8 U   | 44.5 U   | 40.5 U   | 3.53 U   |
| Aroclor-1254  | 345  | 3.92 U   | 20.4 U   | 37.8 U   | 44.5 U   | 40.5 U   | 3.53 U   |
| Aroclor-1260  | 171  | 3.92 U   | 136      | 37.8 U   | 44.5 U   | 40.5 U   | 3.53 U   |
| <b>Pesticides (µg/kg)</b>                           |  |          |          |          |          |          |          |
| alpha-BHC   | 7.85 U   | 7.96 U   | 8.2 U    | 7.56 U   | 8.93 U   | 25.2     | 7.13 U   |
| 4,4'-DDD  | 15.7 U   | 15.9 U   | 16.4 U   | 6.37 JQ  | 17.9 U   | 16.2 U   | 14.3 U   |
| 4,4'-DDT  | 89.9 JL  | 15.9 U   | 16.4 U   | 9.1 JQ   | 17.9 UJL | 15.8 JQ  | 14.3 UJL |
| endosulfan sulfate                                  | 15.7 U   | 15.9 U   | 16.4 U   | 15.1 U   | 17.9 U   | 42.1     | 14.3 U   |
| <b>Polycyclic Aromatic Hydrocarbons (µg/kg)</b>     |  |          |          |          |          |          |          |
| 2-Methylnaphthalene                                 | 78.6 U   | 39.8 U   | 82.1 U   | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Acenaphthylene                                      | 78.6 U   | 39.8 U   | 82.1 U   | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Acenaphthene  | 78.6 U   | 39.8 U   | 82.1 U   | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Anthracene  | 78.6 U   | 39.8 U   | 56.7 JQ  | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Benzo(a)anthracene                                  | 164  | 39.8 U   | 151      | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Benzo(a)pyrene                                      | 145  | 39.8 U   | 155      | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Benzo(b)fluoranthene                                | 291  | 39.8 U   | 82.1 U   | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Benzo(k)fluoranthene                                | 78.6 U   | 39.8 U   | 82.1 U   | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Benzo(ghi)perylene                                  | 117  | 39.8 U   | 89.5     | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Chrysene  | 210  | 39.8 U   | 204      | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Dibenzo(a,h)anthracene                              | 78.6 U   | 39.8 U   | 82.1 U   | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Fluoranthene  | 250  | 39.8 U   | 254      | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Fluorene  | 78.6 U   | 39.8 U   | 42.7 JQ  | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Indeno(1,2,3-cd)pyrene                              | 117  | 39.8 U   | 78.8 JQ  | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Naphthalene   | 78.6 U   | 39.8 U   | 82.1 U   | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Phenanthrene  | 91.1   | 39.8 U   | 409      | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| Pyrene  | 351  | 39.8 U   | 425      | 75.7 U   | 17 JQ    | 4040 U   | 35.6 U   |
| HPAH sum  | 1723.6   | 39.8 U   | 1480.45  | 75.7 U   | 218.15   | 4040 U   | 35.6 U   |
| LPAH sum  | 326.9  | 39.8 U   | 672.6    | 75.7 U   | 44.7 U   | 4040 U   | 35.6 U   |
| <b>Other Semivolatile Organic Compounds (µg/kg)</b> |  |          |          |          |          |          |          |
| bis(2-Ethylhexyl)phthalate                          | 335 JQ   | 398 U    | 568 JQ   | 757 U    | 447 U    | 40400 U  | 356 U    |
| Butylbenzylphthalate                                | 786 U  | 398 U    | 1230     | 757 U    | 447 U    | 40400 U  | 356 U    |

Key:  
 HPAH = high molecular weight PAH  
 JK = estimated value; direction of bias unknown  
 JL = estimated value; low bias  
 JQ = estimated value; direction of bias unknown; value lies between MDL and MQL  
 LPAH = low molecular weight PAH  
 MDL = method detection limit  
 mg/kg = milligrams per kilogram  
 MQL = method quantitation limit  
 PAHs = polycyclic aromatic hydrocarbons  
 U = undetected (value listed is quantitation limit)  
 µg/kg = micrograms per kilogram  
 UJL = undetected (value listed is quantitation limit); quantitation limit is estimated and biased low

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Table 1-4A. Sediment Sample Results - July 2011

| Analyte                     | Sediment Screening Levels |      |                    | E & E and Laboratory Sample Number       |                            |                            |                       |   | Remarks |
|-----------------------------|---------------------------|------|--------------------|--|----------------------------|----------------------------|-----------------------|---|---------|
|                             | TEL                       | PEL  | Other <sup>a</sup> | GC01SD                                   | GC02SD                     | GC03SD                     | GC04SD                |   |         |
|                             |                           |      |                    | 283018002                                | 283018001                  | 283018004                  | 283018003             |   |         |
|                             |                           |      |                    | 150' Upstream from Landfill (background) | 50' Upstream from Landfill | Between Landfill and Hwy 3 | Downstream from Hwy 3 |   |         |
| Metals (mg/kg)              |                           |      |                    |  |                            |                            |                       |   |         |
| Aluminum                    | --                        | --   | 58,000             | 11900                                    | 13400                      | 12300                      | 11200                 | No exceedances                            |         |
| Arsenic                     | 9.8                       | 33   | --                 | 2.03                                     | 2.42                       | 1.73                       | 1.11                  | No exceedances                            |         |
| Barium                      | --                        | --   | --                 | 43.6                                     | 68.4                       | 54.7                       | 44.8                  | --  |         |
| Beryllium                   | --                        | --   | --                 | 0.119                                    | 0.197                      | 0.168                      | 0.181                 | --  |         |
| Cadmium                     | 1                         | 4.98 | --                 | 0.111                                    | 0.133                      | 0.522                      | 0.605                 | No exceedances                            |         |
| Calcium                     | --                        | --   | --                 | 3100                                     | 3130                       | 3090                       | 2860                  | --  |         |
| Chromium                    | 43.4                      | 111  | --                 | 22.5                                     | 23.5                       | 18.1                       | 19.6                  | No exceedances                            |         |
| Cobalt                      | --                        | --   | 50                 | 7.32                                     | 16.9                       | 5.53                       | 6.13                  | No exceedances                            |         |
| Copper                      | 31.6                      | 149  | --                 | 9.94                                     | 8.94                       | 38.5                       | 30.5                  | One sample exceeds TEL                    |         |
| Iron                        | --                        | --   | 21,200             | 16600                                    | 17500                      | 14600                      | 14400                 | No exceedances                            |         |
| Lead                        | 35.8                      | 128  | --                 | 2.57                                     | 4.57                       | 35.3                       | 25.5                  | No exceedances                            |         |
| Magnesium                   | --                        | --   | --                 | 4360                                     | 3540                       | 4050                       | 4600                  | --  |         |
| Manganese                   | --                        | --   | 460                | 505                                      | 1160                       | 239                        | 237                   | Two exceedances of Ontario LEL benchmark. |         |
| Mercury                     | 0.18                      | 1.06 | --                 | 0.0251                                   | 0.00713                    | 0.0593                     | 0.0442                | No exceedances                            |         |
| Nickel                      | 22.7                      | 48.6 | --                 | 29.6                                     | 35.7                       | 33.4                       | 32.3                  | Three samples exceed TEL                  |         |
| Potassium                   | --                        | --   | --                 | 334                                      | 281                        | 426                        | 419                   | --  |         |
| Selenium                    | --                        | --   | 5                  | 0.0129                                   | 0.185                      | 0.0467                     | -0.00455              | No exceedances                            |         |
| Sodium                      | --                        | --   | --                 | 123                                      | 88.5                       | 94.4                       | 113                   | --  |         |
| Thallium                    | --                        | --   | --                 | 0.0488                                   | 0.101                      | 0.0449                     | 0.0362                | --  |         |
| Zinc                        | 121                       | 459  | --                 | 35.4                                     | 41                         | 130                        | 115                   | One sample exceeds TEL                    |         |
| SVOCs (ug/kg)               |                           |      |                    |  |                            |                            |                       |   |         |
| All compounds               | --                        | --   | --                 | ND                                       | ND                         | ND                         | ND                    | --  |         |
| PCBs (ug/kg) <sup>b</sup>   |                           |      |                    |  |                            |                            |                       |   |         |
| Aroclor 1248                | 60                        | 676  | --                 | ND                                       | ND                         | 746                        | 437                   | Two samples exceed TEL, one exceeds PEL.  |         |
| Aroclor 1256                | 60                        | 676  | --                 | ND                                       | ND                         | 908                        | 84                    | Two samples exceed TEL, one exceeds PEL.  |         |
| Aroclor 1260                | 60                        | 676  | --                 | ND                                       | 7.2                        | 516                        | 248                   | Two samples exceed TEL.                   |         |
| Pesticides (ug/kg)          |                           |      |                    |  |                            |                            |                       |   |         |
| All compounds               | --                        | --   | --                 | ND                                       | ND                         | ND                         | ND                    | --  |         |
| VOCs (ug/kg) <sup>b,c</sup> |                           |      |                    |  |                            |                            |                       |   |         |
| 4-Isopropyltoluene          | --                        | --   | --                 | ND                                       | ND                         | ND                         | 3.19                  | --  |         |
| Acetone                     | --                        | --   | --                 | 2.7                                      | ND                         | ND                         | 3.85                  | --  |         |
| Styrene                     | --                        | --   | --                 | ND                                       | ND                         | 0.426                      | ND                    | --  |         |

Key:

-- = Not available or not applicable  
E & E = Ecology and Environment, Inc.  
LEL = low effect level

ND = Non-detect

PCBs = Polychlorinated biphenyls

PEL = Probable effect level

SVOCs = Semivolatile organic compounds

TEL = Threshold effect level

Value = Exceeds TEL or other benchmark. Adverse effect possible.

Value = Exceeds PEL. Adverse effect likely.

VOCs = Volatile organic compounds

Notes:

a = From table of eco-risk screening levels provided to EPA in July 2011.

b = Detected chemicals only are listed.

c = VOCs do not accumulate in sediment; hence, sediment benchmarks typically are not available for VOCs.

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**Table 1-4B. Sediment Bioassay Results - July 2011**

| E & E<br>Sample ID  | Laboratory<br>Sample ID | Sample Location                 | 10-day <i>Chironomus dilutus</i> (Midge) Test Results |   |   | 28-day <i>Hyalella azteca</i> (Amphipod) Test Results         |                                  |   |
|---------------------|-------------------------|---------------------------------|---|---|---|---|----------------------------------|---|
|                     |                         |                                 | % Mortality<br>(mean $\pm$ s.d.)                      | Significantly<br>Different<br>than Control<br>( $p < 0.05$ )? | Average ash<br>free dry weight<br>per midge (mg)<br>(mean $\pm$ s.d.) | Significantly<br>Different<br>than Control<br>( $p < 0.05$ )? | % Mortality<br>(mean $\pm$ s.d.) | Significantly<br>Different<br>than Control<br>( $p < 0.05$ )? |
| Control             | --                      | Clean control sediment.         | 15.0 $\pm$ 5.3  | --  | 0.85 $\pm$ 0.13   | --  | 5.0 $\pm$ 10.7                   | --  |
| CG01SD <sup>a</sup> | 11070002                | 150 ft upstream from landfill.  | 16.3 $\pm$ 5.2  | No  | 0.73 $\pm$ 0.11   | Yes   | 11.3 $\pm$ 9.9                   | Yes   |
| GC02SD              | 11070001                | 50 ft upstream from landfill.   | 28.8 $\pm$ 19.6                                       | No  | 0.81 $\pm$ 0.18   | No  | 3.8 $\pm$ 5.2                    | No  |
| GC03SD              | 11070004                | Between landfill and Highway 3. | 11.4 $\pm$ 6.4  | No  | 0.59 $\pm$ 0.10   | Yes   | 3.8 $\pm$ 5.2                    | Yes   |
| GC04SD              | 11070003                | Downstream from Highway 3.      | 13.8 $\pm$ 11.9                                       | No  | 0.71 $\pm$ 0.09   | Yes   | 6.3 $\pm$ 7.4                    | No  |

Key:

ft = feet

p = probability

s.d. = standard deviation

Note: a = Site-specific background sample.

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**Table 1-5. Hollow Stem Auger Boring Installation – August 2011.**

| <b>Boring Number</b> | <b>Location</b>                     | <b>Total Depth</b> | <b>Geotechnical Soil<br/>Sample Depths</b>              | <b>Depth to Groundwater</b> |
|----------------------|-------------------------------------|--------------------|---|-----------------------------|
| SB01                 | >100 feet North/East of<br>Landfill | 90 feet            | 20.5 feet<br>25 feet<br>50 feet                         | >90 feet                    |
| SB02                 | >100 feet North of<br>Landfill      | 60 feet            | 22 feet<br>30.5 feet<br>50.5 feet<br>55 feet            | >60 feet                    |
| SB03                 | 200 feet North of<br>Landfill       | 80 feet            | 20.5 feet<br>21 feet<br>25 feet<br>50 feet<br>57.5 feet | >80 feet                    |
| SB04                 | 500 feet Northwest of<br>Landfill   | 13 feet            | 10 feet<br>10.5 feet<br>11 feet                         | 5 feet                      |
| SB05                 | 200 feet Southwest of<br>Landfill   | 61.5 feet          | 20 feet<br>25.5 feet<br>55 feet                         | >61.5 feet                  |

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**Table 1-6. Groundwater Sample Results - August 2011**

| Analyte <sup>a</sup>                  | Health-Based Screening Level Comparison |             |           |         |                   |          | Sample Results             | COPC? | Rationale   |
|---------------------------------------|---|-------------|-----------|---------|-------------------|----------|----------------------------|-------|-------------|
|                                       | USEPA RSL Resident Tap                  | Res RSL FoE | USEPA MCL | MCL FoE | MTCA Method B CUL | MTCA FoE | SB04                       |       |             |
|                                       |   |             |           |         |                   |          | 11080101                   |       |             |
|                                       |   |             |           |         |                   |          | Northwest of Landfill Site |       |             |
| Metals (µg/L)                         |   |             |           |         |                   |          |                            |       |             |
| Aluminum                              | 37000                                   | 0/1         | NA        | --      | 16000             | 0/1      | 8170                       | N     | < SLs       |
| Arsenic                               | 0.045                                   | 1/1         | 10        | 0/1     | 0.058             | 1/1      | 2                          | Y     | >RSL & MTCA |
| Barium                                | 7300                                    | 0/1         | 2000      | 0/1     | 3200              | 0/1      | 112                        | N     | < SLs       |
| Beryllium                             | 73                                      | 0/1         | 4         | 0/1     | 32                | 0/1      | 0.21                       | N     | < SLs       |
| Calcium                               | NA                                      | --          | NA        | --      | NA                | --       | 4930                       | N     | NUT         |
| Chromium <sup>b</sup>                 | 0.031                                   | 1/1         | 100       | 0/1     | 48                | 0/1      | 14.5                       | Y     | >RSL        |
| Cobalt                                | 4.7                                     | 1/1         | NA        | --      | NA                | --       | 5.1                        | Y     | >RSL        |
| Copper                                | 1500                                    | 0/1         | 1300      | 0/1     | 640               | 0/1      | 10                         | N     | < SLs       |
| Iron                                  | 26000                                   | 0/1         | NA        | --      | 11000             | 0/1      | 6850                       | N     | < SLs       |
| Lead                                  | NA                                      | --          | 15        | 0/1     | NA                | --       | 3.6                        | N     | < SLs       |
| Magnesium                             | NA                                      | --          | NA        | --      | NA                | --       | 2590                       | N     | NUT         |
| Manganese                             | 880                                     | 0/1         | NA        | --      | 2200              | 0/1      | 275                        | N     | < SLs       |
| Nickel                                | 730                                     | 0/1         | NA        | --      | 320               | 0/1      | 16.4                       | N     | < SLs       |
| Potassium                             | NA                                      | --          | NA        | --      | NA                | --       | 907                        | N     | NUT         |
| Sodium                                | NA                                      | --          | NA        | --      | NA                | --       | 3590                       | N     | NUT         |
| Zinc                                  | 11000                                   | 0/1         | NA        | --      | 4800              | 0/1      | 14.9                       | N     | < SLs       |
| Semivolatile Organic Compounds (µg/L) |   |             |           |         |                   |          |                            |       |             |
| bis(2-Ethylhexyl)phthalate            | 4.8                                     | 0/1         | 6         | 1/1     | 6.3               | 1/1      | 4.6                        | N     | < SLs       |
| Volatile Organic Compounds (µg/L)     |   |             |           |         |                   |          |                            |       |             |
| 1,3,5-Trimethylbenzene                | 370                                     | 0/1         | NA        | --      | 80                | 0/1      | 2.9                        | N     | < SLs       |
| 2-Butanone (MEK)                      | 7100                                    | 0/1         | NA        | --      | 4800              | 0/1      | 12.1                       | N     | < SLs       |
| 4-Methyl-2-pentanone (MIBK)           | 2000                                    | 0/1         | NA        | --      | 640               | 0/1      | 7.8                        | N     | < SLs       |
| Acetone                               | 22000                                   | 0/1         | NA        | --      | 7200              | 0/1      | 959                        | N     | < SLs       |
| Chloroform                            | 0.19                                    | 1/1         | 80        | 0/1     | 80                | 0/1      | 0.43                       | Y     | >RSL        |
| Methyl tert-butyl Ether (MTBE)        | 12                                      | 1/1         | NA        | --      | NA                | --       | 55                         | Y     | >RSL        |

<sup>a</sup>Includes only analytes detected at least once in groundwater sample

<sup>b</sup>In the absence of speciated chromium data, RSL and MTCA CUL are for hexavalent chromium (Cr VI) (see text); MCL is for total chromium. Chromium III screening levels are 55,000 ug/L (RSL resident tap) and 24,000 ug/L (MTCA Method B).

-- = Not applicable  
COPC = chemical of potential concern  
CUL = cleanup level  
FoE = frequency of exceedence (number of samples that exceed screening level over total number of samples)  
MCL = maximum contaminant level  
MTCA = Model Toxics Control Act  
NA = Not available  
NUT = essential nutrient for humans  
µg/L = micrograms per liter  
RSL = Regional Screening Level  
USEPA = United States Environmental Protection Agency

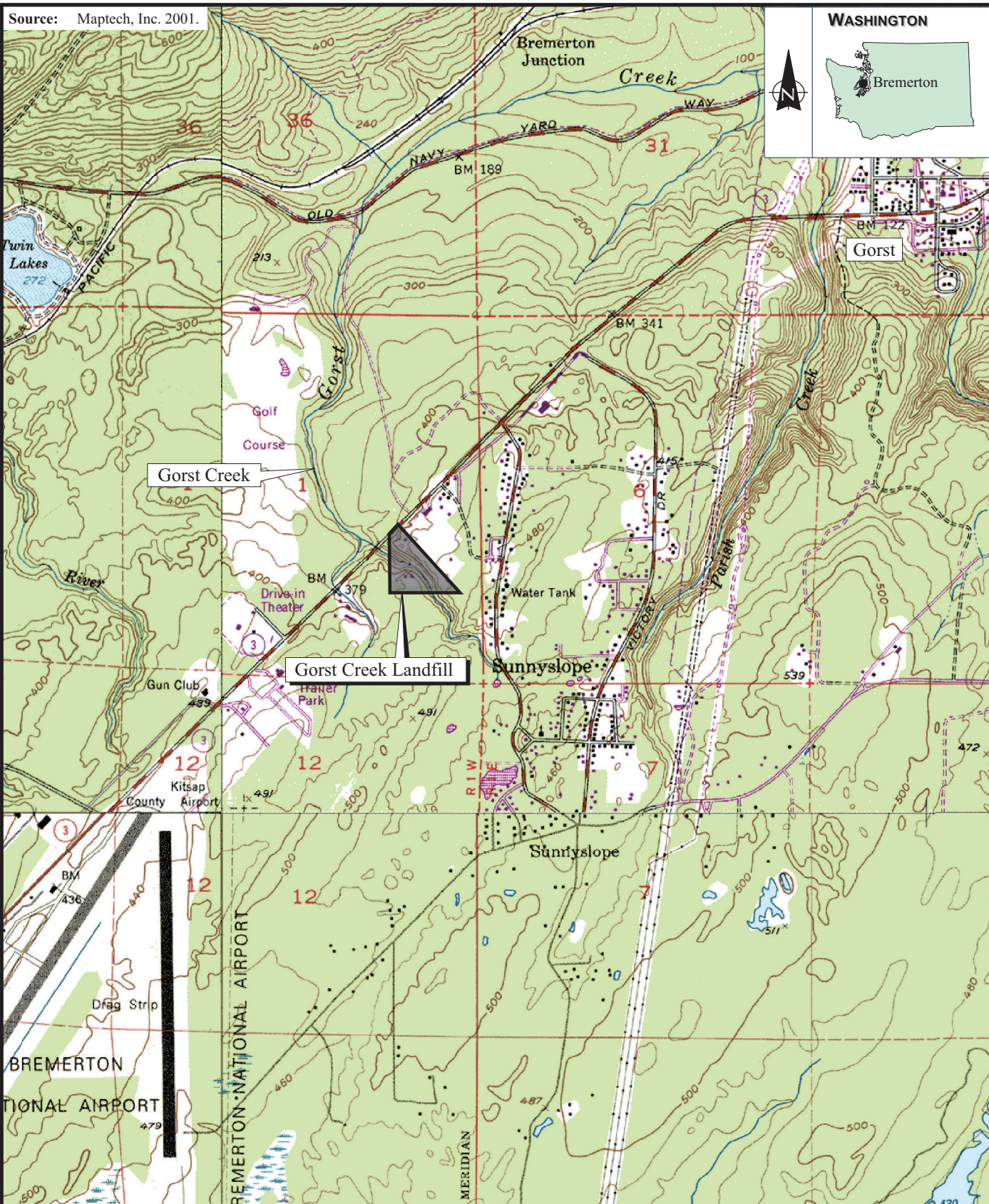
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Table 1-7. Grain Size (ASTM D 422) and Direct Sheer (ASTM D 3080) Results - August 2011

| Boring ID | Depth,<br>ft | Grain Size   |            |             | Percent Finer than Designated Sieve Size, % |                   |                 |                   |                   |                   |                |                 |                 |                 |                 |               |                  | Direct Shear          |                              |
|-----------|--------------|--------------|------------|-------------|---|-------------------|-----------------|-------------------|-------------------|-------------------|----------------|-----------------|-----------------|-----------------|-----------------|---------------|------------------|-----------------------|------------------------------|
|           |              | Gravel,<br>% | Sand,<br>% | Fines,<br>% | 2.0-inch<br>Sieve                           | 1.5-inch<br>Sieve | 1-inch<br>Sieve | 3/4-inch<br>Sieve | 1/2-inch<br>Sieve | 3/8-inch<br>Sieve | No. 4<br>Sieve | No. 10<br>Sieve | No. 20<br>Sieve | No. 40<br>Sieve | No. 60<br>Sieve | No. 100 Sieve | No. 200<br>Sieve | Normal<br>Stress, psf | Maximum Shear<br>Stress, psf |
| SB-01     | 20.5         | ---          | ---        | ---         | ---   | ---               | ---             | ---               | ---               | ---               | ---            | ---             | ---             | ---             | ---             | ---           | ---              | 2400                  | 2044                         |
| SB-01     | 25           | 38.3         | 53.4       | 8.3         | 100   | 94                | 89              | 83                | 76                | 71                | 62             | 50              | 37              | 23              | 15              | 11            | 8                | ---                   | ---                          |
| SB-01     | 50-52        | 34.9         | 56.3       | 8.8         | ---   | ---               | 100             | 90                | 84                | 79                | 65             | 48              | 33              | 23              | 16              | 11            | 9                | ---                   | ---                          |
| SB-02     | 22           | 2.0          | 87.3       | 10.7        | ---   | ---               | ---             | ---               | 100               | 99                | 98             | 96              | 92              | 74              | 34              | 16            | 11               | ---                   | ---                          |
| SB-02     | 30.5         | ---          | ---        | ---         | ---   | ---               | ---             | ---               | ---               | ---               | ---            | ---             | ---             | ---             | ---             | ---           | ---              | 3600                  | 3755                         |
| SB-02     | 50.5         | ---          | ---        | ---         | ---   | ---               | ---             | ---               | ---               | ---               | ---            | ---             | ---             | ---             | ---             | ---           | ---              | 6000                  | 7794                         |
| SB-02     | 55           | 46.1         | 48.4       | 5.5         | ---   | 100               | 89              | 86                | 76                | 68                | 54             | 38              | 22              | 15              | 11              | 7             | 6                | ---                   | ---                          |
| SB-03     | 20.5         | ---          | ---        | ---         | ---   | ---               | ---             | ---               | ---               | ---               | ---            | ---             | ---             | ---             | ---             | ---           | ---              | 2401                  | 2522                         |
| SB-03     | 21           | ---          | ---        | ---         | ---   | ---               | ---             | ---               | ---               | ---               | ---            | ---             | ---             | ---             | ---             | ---           | ---              | 2400                  | 2210                         |
| SB-03     | 25           | 36.5         | 53.1       | 10.4        | ---   | 100               | 86              | 80                | 780               | 67                | 64             | 59              | 52              | 34              | 18              | 12            | 10               | ---                   | ---                          |
| SB-03     | 50           | 37.4         | 52.7       | 9.9         | ---   | 100               | 85              | 85                | 81                | 77                | 63             | 47              | 34              | 24              | 17              | 13            | 10               | ---                   | ---                          |
| SB-03     | 57.5         | ---          | ---        | ---         | ---   | ---               | ---             | ---               | ---               | ---               | ---            | ---             | ---             | ---             | ---             | ---           | ---              | 6800                  | 8687                         |
| SB-04     | 10           | 12.4         | 83.4       | 4.2         | ---   | ---               | 100             | 96                | 95                | 91                | 88             | 77              | 59              | 34              | 14              | 6             | 4                | ---                   | ---                          |
| SB-04     | 10.5         | ---          | ---        | ---         | ---   | ---               | ---             | ---               | ---               | ---               | ---            | ---             | ---             | ---             | ---             | ---           | ---              | 1201                  | 1452                         |
| SB-04     | 11           | ---          | ---        | ---         | ---   | ---               | ---             | ---               | ---               | ---               | ---            | ---             | ---             | ---             | ---             | ---           | ---              | 1300                  | 1756                         |
| SB-05     | 20           | 45.8         | 45.4       | 8.8         | ---   | 100               | 94              | 87                | 71                | 63                | 54             | 41              | 32              | 25              | 16              | 11            | 9                | ---                   | ---                          |
| SB-05     | 25.5         | ---          | ---        | ---         | ---   | ---               | ---             | ---               | ---               | ---               | ---            | ---             | ---             | ---             | ---             | ---           | ---              | 3000                  | 2833                         |
| SB-05     | 55           | 1.2          | 87.3       | 11.5        | ---   | ---               | ---             | ---               | ---               | 100               | 99             | 97              | 93              | 74              | 36              | 16            | 11               | ---                   | ---                          |

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Source: Maptech, Inc. 2001.



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# **GORST CREEK LANDFILL** Gorst, Washington

0 1000 2000  
Approximate Scale in Feet

Figure 1-1

## **SITE LOCATION MAP**

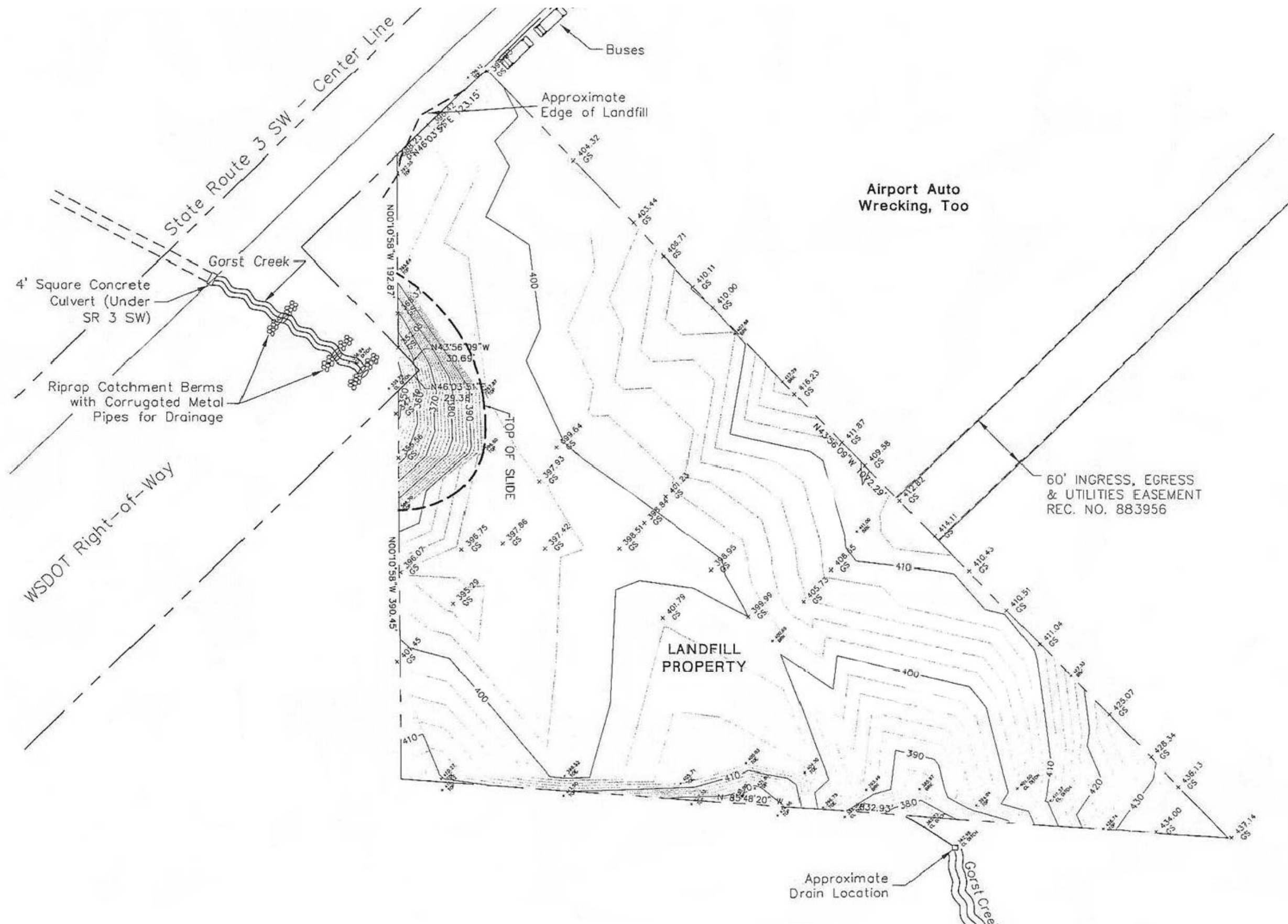
Date:  
1-20-12

Drawn by:  
AES

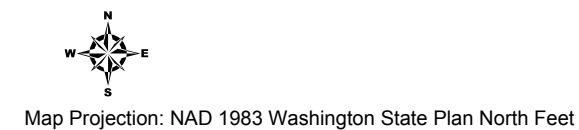
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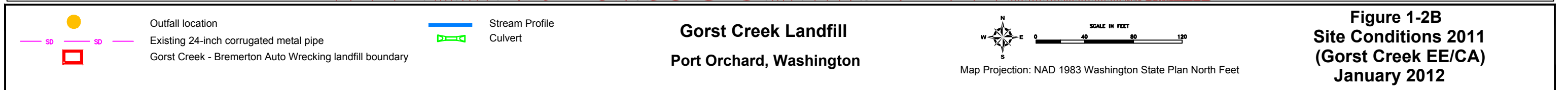
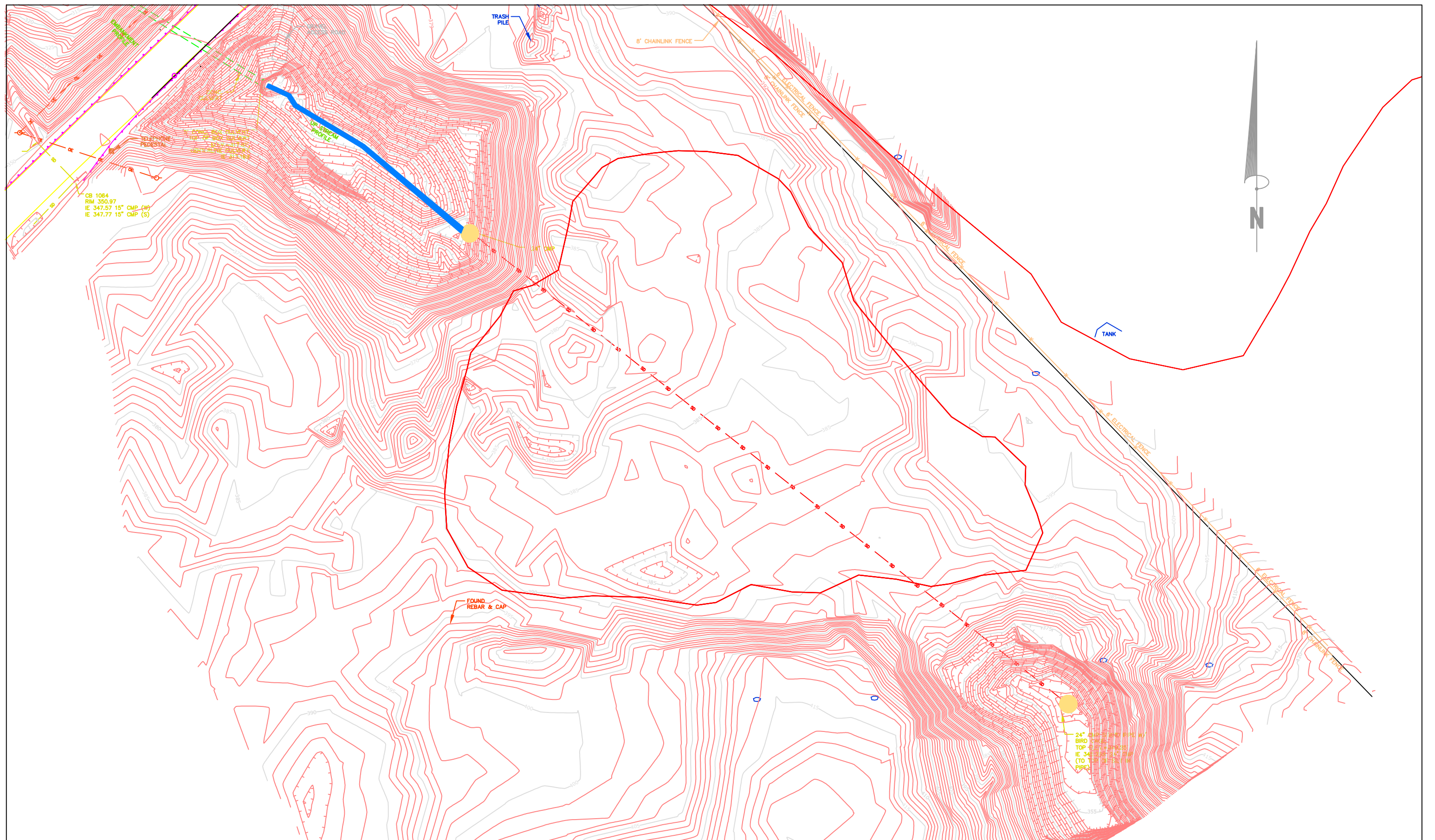
**Gorst Creek Landfill**  
Port Orchard, Washington



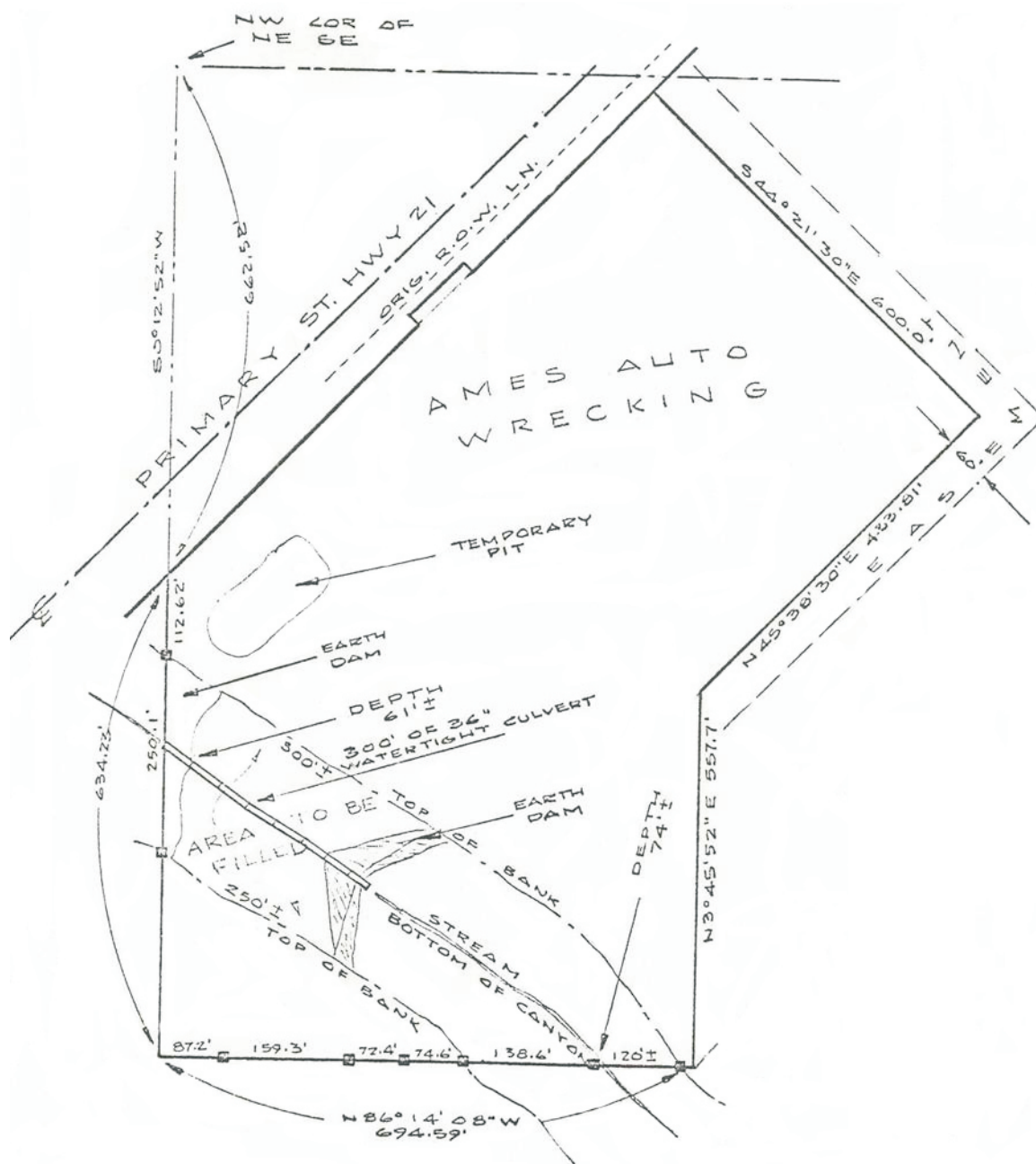
**Figure 1-2A**  
**Site Conditions 2000**  
**(Gorst Creek EE/CA)**  
**January 2012**

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# GORST CREEK LANDFILL Gorst, Washington

Source: EPA, 2002.

Date:  
1-20-12

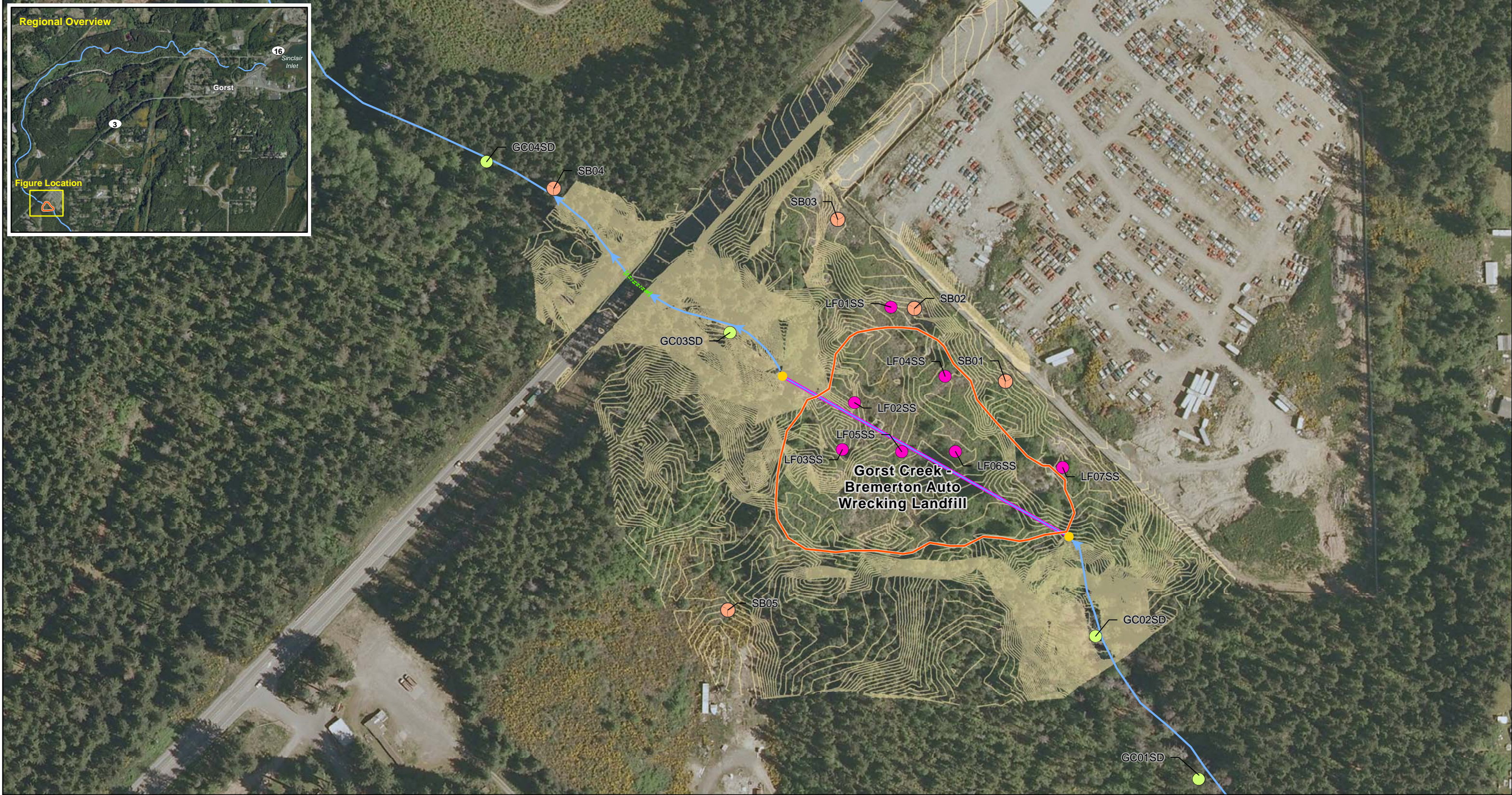
Drawn by:  
AES

Figure 1-3  
SITE PLAN (1968)

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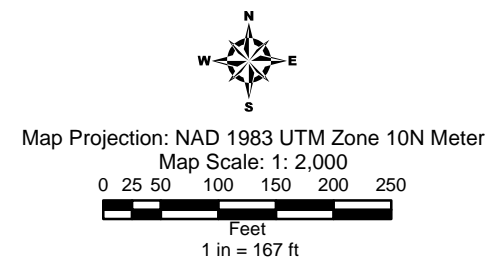




- Soil Boring Locaitons
- G Series Samples; GC01S
- L Series Samples
- Existing well
- Outfall location
- 24-inch corrugated metal pipe under the landfill
- Gorst Creek - Bremerton Auto Wrecking landfill boundary

### Gorst Creek Landfill

Port Orchard, Washington



**Figure 1-4**  
**Sample Location Map**  
**July - August 2011**



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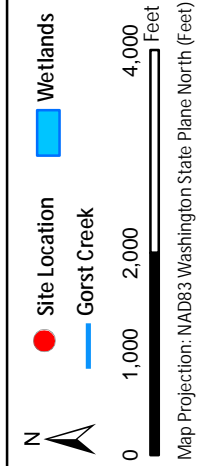
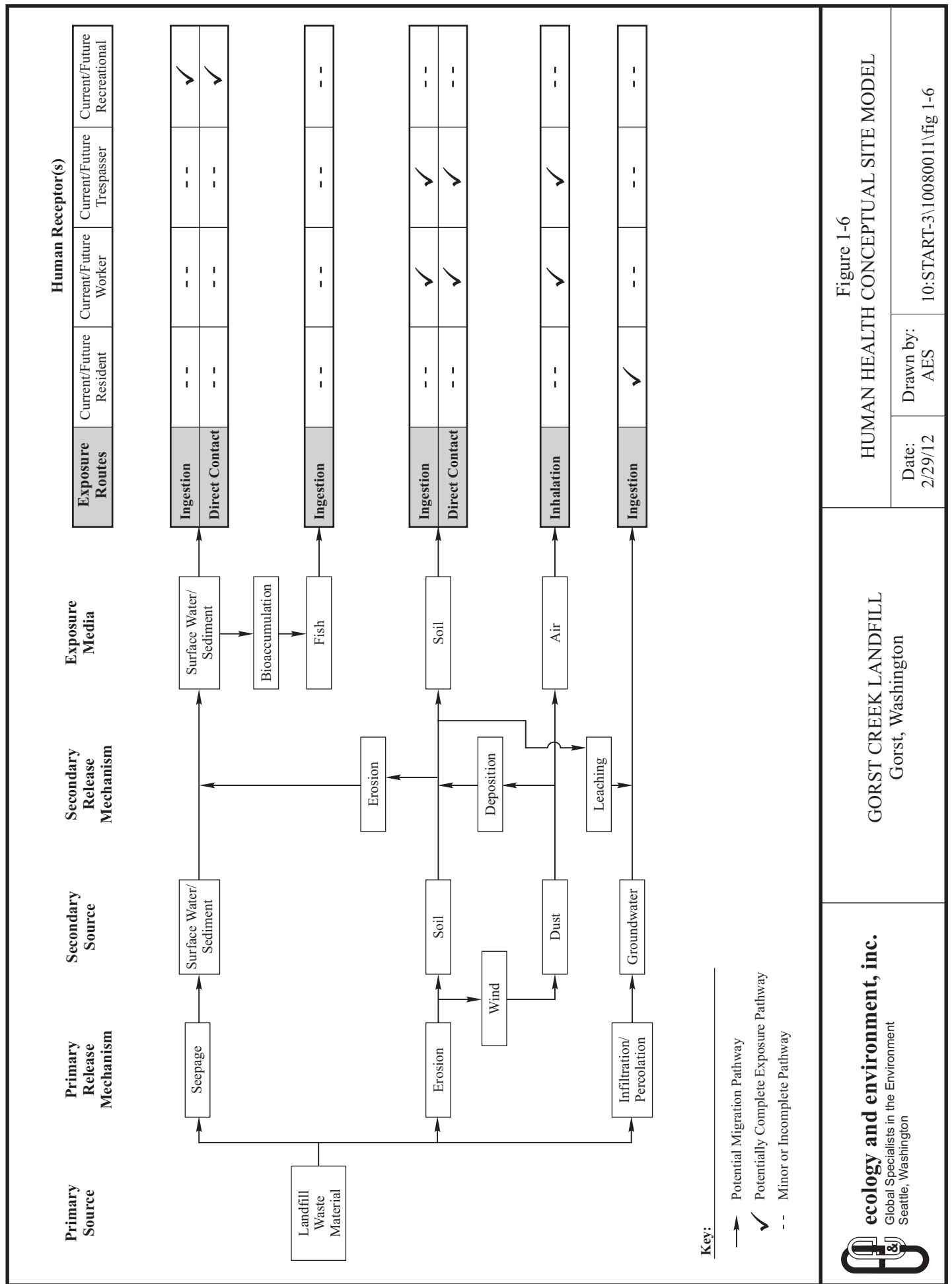


Figure 1-5  
Wetland Locations  
(Gorst Creek EE/CA)  
February 2012

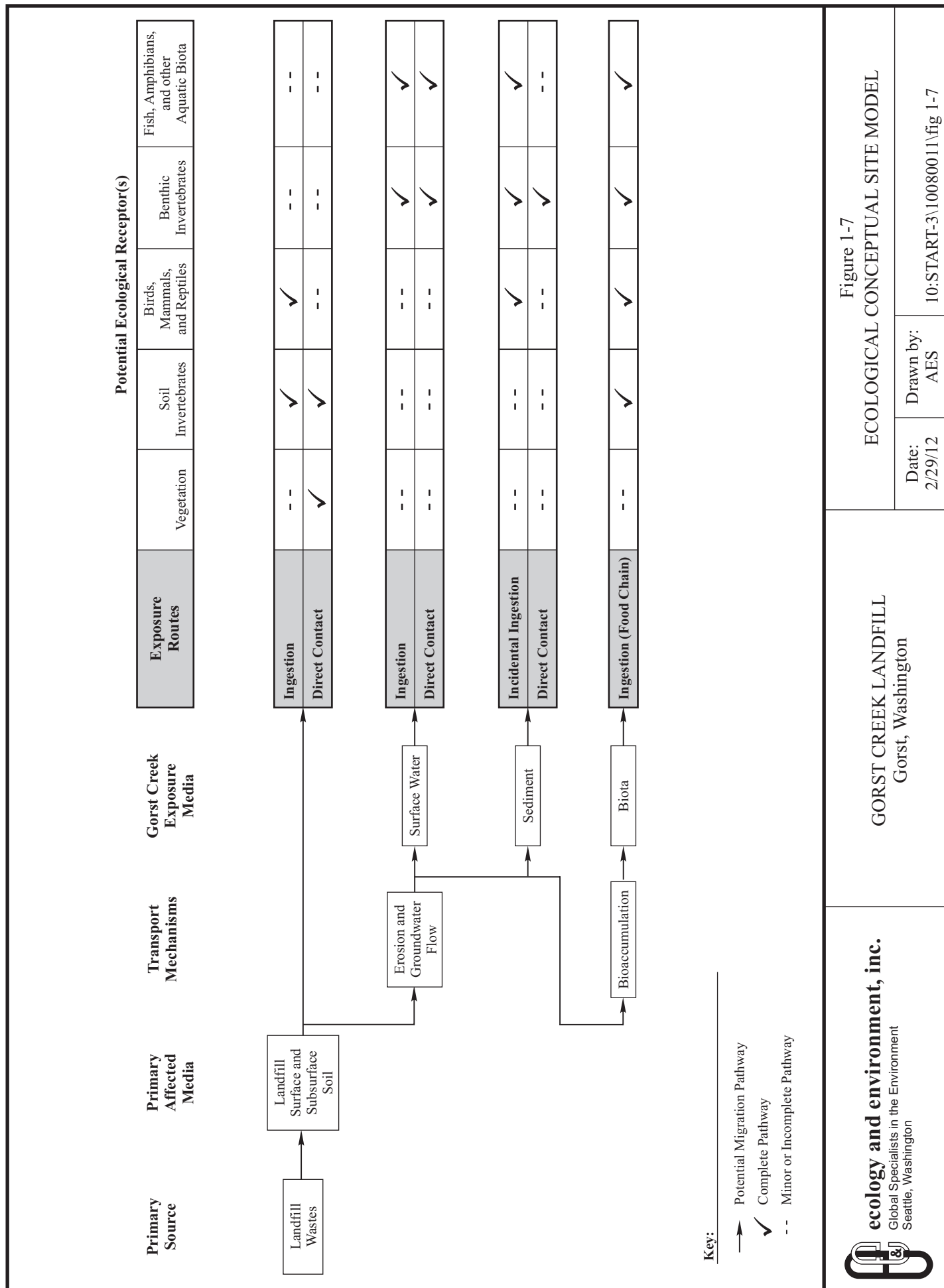
Gorst Creek Landfill  
Port Orchard, Washington

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## 2 Removal Action Objectives

According to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), EPA must decide whether the Site poses a threat to public health or welfare or to the environment in order for a removal action to be conducted. If EPA determines that a threat exists, a removal action can be implemented in order to abate, prevent, minimize, stabilize, mitigate, or eliminate the release or threat of release of hazardous substances.

This section describes the statutory considerations on removal actions, the objectives of the proposed removal action, the scope of the removal action, and compliance with potential applicable or relevant and appropriate requirements (ARARs), and the general schedule for removal activities.

### 2.1 Statutory Considerations on Removal Actions

Section 300.415(b)(5) of the NCP stipulates that cost and duration of a removal action be limited to \$2 million and 12 months for EPA-financed removal actions. Cost and implementation time exemptions may be granted if the EPA determines that the removal action is necessary to mitigate an immediate risk to human health, welfare, or the environment or that the removal action is otherwise appropriate and consistent with an anticipated long-term remedial action. EPA funds expended to conduct an EE/CA are CERCLA §104(b)(1) monies and are not counted toward the \$2 million statutory limit for removal actions.

### 2.2 Determination of Removal Scope and Objectives

#### 2.2.1 Removal Action Scope

Multiple collapses in the culvert beneath the landfill has severely diminished the maximum flow capacity of the culvert. The diminished capacity of the culvert causes the creek to become impounded upstream of the landfill following significant storm events. The elevated water level within the landfill can result in saturation of landfill debris. Large storm events have resulted in the level of the impounded water reaching the upper elevation of the landfill and overtopping the landfill, saturating and eroding the soil cover. Overtopping has caused two documented slope failures on the northwest end of the landfill (approximately 300 feet southwest of State Highway 3 SW). A sudden erosion of the landfill could send a surge of landfill material downstream, potentially impacting human health and the environment or overtopping and eroding the State Highway 3 SW embankment. Furthermore, potential migration of chemicals of potential concern from the landfill could be exacerbated by the collapsed culvert and overtopping of the landfill.

The scope of the potential removal action ranges from removing the entire landfill contents to re-directing or conveying surface water flows laterally around, through, or beneath the landfill contents. The proposed removal action would protect human health and the environment from exposure to landfill refuse and associated hazardous substances by preventing the release of chemicals of potential concern, eliminating exposure pathways, and preventing contaminant migration. By completing the removal action, Gorst Creek surface water would flow unimpeded through, beneath, or adjacent to the Gorst Creek Landfill to Sinclair Inlet, thus mitigating the continued release of hazardous substances from the landfill.

The landfill contains approximately 150,000 cubic yards of waste. Removing the landfill contents would require finding a suitable landfill repository to accept the waste. The waste contents are reported to contain automobile wrecking yard waste, construction debris, medical waste, and municipal waste. If removed for off-Site disposal, these waste materials may need to be separated for disposal at separate repositories. Landfill waste would need to be examined during the removal to identify any hazardous waste components because this type of waste stream would require appropriate licensed waste transportation and landfill facilities. Examples of regulated or hazardous waste that may be present in the landfill include asbestos, medical waste, and oily residual waste.

Installing a bypass channel, siphon, or microtunneled/jacked bypass pipe would require engineering considerations (see Section 4 below).

### **2.2.1 Removal Action Objectives**

The goal of the proposed removal action are to protect human health and the environment by preventing human and ecological receptor contact with landfill contents and associated hazardous substances, and to comply with ARARs to the extent practicable.

To achieve these goals, the following removal action objectives have been developed:

1. If the selected removal alternative is to remove the contents of the landfill and transfer them to a secure off-Site facility, then the goals of the removal action would be obtained, and no other removal action objective apply.
2. If the selected alternative involves an engineered solution that does not require the removal of the landfill contents (i.e., the landfill contents would remain in place), the following removal action objective would apply:
  - Provide sufficient hydraulic conveyance to prevent upstream surface water impoundment, thus preventing saturation of the landfill and potential for overtopping;
  - Provide measures to appropriately cover waste at the landfill; and
  - Provide measures to stabilize slopes and prevent further erosion.

## **2.3 Applicable or Relevant and Appropriate Requirements**

Potential ARARs have been screened to aid in technology and alternative evaluation. For the removal action, on-Site actions are to comply with the substantive requirements of any identified ARARs, to the extent practicable considering the exigencies of the situation. On-Site actions do not have to comply with the corresponding procedural requirements such as permit applications, reporting, and recordkeeping. Off-Site actions are to comply with ARARs to the extent practicable considering the exigencies of the situation.

ARARs are divided into the following categories:

- **Chemical-specific requirements** are health- or risk-based concentration limits or ranges in various environmental media for specific hazardous substances, pollutants, or contaminants.

- **Action-specific requirements** are controls or restrictions on particular types of activities, such as hazardous waste management or wastewater treatment. Examples of action-specific requirements would be state and federal air emissions standards as applied to an in situ soil vapor extraction treatment unit.
- **Location-specific requirements** are restrictions on activities that are based on the characteristics of a site or its immediate environment. An example would be restrictions on work performed in wetlands or wetland buffers.

Additionally, to-be-considered materials are advisories, criteria, guidance or policy documents, or proposed standards that are not legally binding but that may provide useful information or recommended procedures relevant to a cleanup action. The potential chemical-, location-, and action-specific ARARs and to-be-considered materials for the EE/CA are summarized in Appendix E.

## 2.4 Determination of Removal Schedule

The removal action may be initiated after approximately four to six months of design and planning and, depending on the chosen alternative, is estimated to require from three to nine months to complete. The removal alternatives described in Section 3 include estimates on the time required for implementation. The removal schedule considers “fish windows”<sup>2</sup> for any critical species that inhabit Gorst Creek. The schedule is also dependent upon appropriate construction weather conditions, available funding, and commitment by partners to post-removal Site maintenance requirements. The general schedule for removal activities, including both the start and completion time for the non-time-critical removal action, will be subject to determinations to be made by the EPA.

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<sup>2</sup> A fish window is a seasonal in-water work period that coincides with construction permit restrictions intended to minimize negative impacts to critical fish species.

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# **3 Identification and Development of Removal Action Alternatives**

## **3.1 Identification of Removal Action Alternatives**

This EE/CA is intended to help define the scope of the removal action. Based on the analysis of the nature and extent of contamination and on the removal action objectives developed as part of the EE/CA, a limited number of removal action alternatives have been identified and evaluated against the scope of the removal action and against each specific objective. The technology alternatives that are analyzed in detail include no action; contaminant excavation and off-Site disposal with restoration of the Gorst ravine; and stabilization and covering of the landfill with alternative methods of bypassing surface water in Gorst Creek. The methods evaluated for bypassing Gorst Creek include construction of a natural bypass channel parallel to the landfill or installation of new conveyance piping beneath the landfill (microtunneling/pipe jacking). The evaluation of alternatives also takes into consideration engineering principles that would affect the passage of the creek.

Some options were considered impracticable because of various engineering and technical reasons and thus were not included with the alternatives evaluated herein. These options include rehabilitating the existing pipe or creating a bypass that impounds the water behind the landfill. The options for pipe rehabilitation include slip lining, pipe lining using various methods (close-fit lining, cured-in-place lining, cement-mortar lining, epoxy-resin lining), or excavation and targeted section repair. Options for a bypass include using siphon tubes and elevated discharge pipes.

### **Pipe Rehabilitation**

Slip lining involves placing a new, structurally supportive, but smaller pipe into the existing pipe to restore creek flow. Since slip lining reduces the inside diameter and flow rate through the pipe, this may result in water continuing to impound behind the landfill, increasing infiltration from landfill waste and potentially leading to additional overtopping.

Pipe lining involves lining the pipe with new material but relies on the existing pipe for structural support. Since the condition of the existing pipe is known to be compromised in several areas and the remaining sections are likely deteriorated and would continue to deteriorate externally even after a lining was applied, pipe lining is not a viable option.

Excavation and targeted repair of the pipe sections is not considered viable because it results in most of the landfill being excavated, based on the known location of the identified blockage. The integrity of the remaining pipe is unknown, but it is likely that the entire pipe should be replaced.

Pipe bursting is the only method of pipeline rehabilitation and replacement that can increase the size of an existing utility without trenching. However, replacement of the pipe using pipe

bursting technology is not being further evaluated because of engineering limitations. Although pipe bursting is a well-established method for trenchless replacement of most pipes, it is not a successful method for steel corrugated pipes, the type of pipe that is currently under the Gorst Creek landfill. Corrugated steel pipe does not split when the expander head is pulled through the pipe; rather it tends to accordion in on itself. This tendency causes the expander head to jam inside the pipe.

There are several options that would carry water at a higher elevation over the landfill, including siphon tubes and elevated discharge pipes. These options result in water being impounded behind the landfill which would increase infiltration through the waste material and would trigger ARARs for dam construction. Since the landfill was not constructed as a dam, structural changes, permitting, and continued inspection and reporting would be required. Therefore, any option that results in impounded water behind the dam is not included.

## **3.2 Development of Alternatives**

To address the objectives identified in Section 2.2.1, the following potentially viable removal action alternatives have been identified:

1. No action
2. Gorst ravine restoration
3. Gorst Creek re-alignment
4. Microtunneling/pipe-jacking

Brief descriptions and analyses of the removal action alternatives are provided in the following sections. The alternatives are discussed with regard to the identified removal action objectives.

### **3.2.1 Alternative 1. No Action**

Under this alternative, no action would be taken to alter the hydraulic conveyance to prevent upstream surface water impoundment and preclude overtopping. Additionally, exposed waste at the landfill would not be covered and slopes would not be stabilized to prevent further erosion. Because all landfill material would remain in place, the potential for continued migration (erosion and landslide) of landfill material would not be mitigated. The No Action alternative provides a baseline for comparison with the remaining alternatives evaluated in this report.

This alternative does not improve on the protection already provided by the existing cover soils, nor is it considered a permanent removal alternative because it does not reduce the toxicity, volume, or mobility of the waste through treatment. The resultant risks associated with the No Action alternative would be the same as those identified in the streamlined human health risk evaluation and the streamlined ecological risk evaluation.

### **3.2.2 Alternative 2. Gorst Ravine Restoration: Landfill Material Excavation, Off-Site Disposal, and Restoration of Gorst Creek**

Gorst Ravine restoration includes removing all landfill contents, off-Site disposal, and restoration of the original creek channel. The landfill is 5.7 acres and contains an estimated 150,000 cubic yards of waste. Creek flow would be temporarily diverted around the landfill and

away from construction activities. Figure 3-1 shows the expected configuration of the Site following implementation of Alternative 2.

Excavation of the landfill waste would likely trigger Resource Conservation and Recovery Act (RCRA) requirements if it is found that the waste exhibits characteristics of hazardous waste. Removing the landfill contents would require identifying suitable landfill repositories to accept the differing wastes. The waste contents are reported to contain automobile wrecking yard waste, construction debris, medical waste, and municipal wastes. If removed for off-Site disposal, these waste materials may need to be separated for disposal at separate repositories. Landfill waste would need to be examined during the removal to identify any hazardous waste components, which would be segregated into the appropriate waste stream and disposed of at an appropriately licensed facility. Examples of hazardous waste could be asbestos-containing material, PCBs, medical waste, and oily residual waste.

This alternative improves on the protection provided by the existing cover soils and is considered a permanent on-Site removal alternative because it reduces the toxicity, volume, and mobility of the waste on the Site. It does not eliminate the toxicity, volume, and mobility of the waste through treatment, and therefore the off-Site facility where it is accepted takes on this liability. The resultant risks associated with the Gorst Creek and ravine restoration alternative would be less than those identified in the streamlined human health risk evaluation and the streamlined ecological risk evaluation.

### **3.2.3 Alternative 3. Gorst Creek Re-alignment: Install a Lateral Bypass Channel**

In this alternative, Gorst Creek would be re-aligned to flow around the southern and western boundary of the landfill by constructing a new channel. The landfill contents would not be removed. Figure 3-2 shows the location of Gorst Creek in relation to the landfill following re-alignment. AutoCAD Civil 3D was used to determine the optimum channel location, channel slope, and side slopes. Due to the existing terrain and anticipated soil type, it was assumed for cost estimating purposes that the average depth of required excavation would be 60 feet and the required channel profile would have 3 to 1 (horizontal to vertical) side slopes. The approximate length of the channel is estimated to be 1,300 feet, which would require excavating approximately 500,000 cubic yards of soil. A portion of the excavated soil would be redistributed and used to restore the landfill surface (see Section 3.3.1). The remaining excavated soil would be taken to an off-Site borrow source facility. Creek flow would be temporarily diverted around the landfill and away from construction activities. Following completion of the creek re-alignment the existing pipe would be plugged with a cement grout.

To minimize erosion, a layer of cobblestone would be installed on the bottom of the channel, below the anticipated high water flow line. A portion of the trees that would be removed as part of excavation activities would be placed around the creek bends and serve as erosion control. Bendway weirs and other flow-altering features would be constructed to minimize erosion. Other long-term erosion protection measures may include plantings, erosion control fabric, seeding, and mulch. Excess trees would be chipped on-Site and used to restore the landfill surface. It is anticipated that the bypass channel would have more than enough capacity to convey and contain the 100-year peak storm event within the channel banks, given the proposed channel geometry; flooding of adjacent properties is highly unlikely under this design.

This alternative improves on the protection already provided by the existing cover soils, but is not considered a permanent removal alternative because it does not reduce the toxicity, volume, or mobility of the waste through treatment. The short-term mobility of waste material would be lessened because the landfill slopes would be stabilized and potential overtopping would be prevented. The resultant risks associated with Alternative 3 would be less than those identified in the streamlined human health risk evaluation and the streamlined ecological risk evaluation.

### **3.2.4 Alternative 4. Microtunneling/Pipe Jacking: Install Conveyance Pipe**

In this alternative, a new culvert would be installed under the landfill via microtunneling/pipe-jacking to allow Gorst Creek to pass beneath the landfill. Figure 3-3 shows the potential location of the new pipe in relation to the landfill following construction. Microtunneling is a trenchless construction method that consists of digging the launch shaft, installing the jacking frame and tunneling machine, lowering pipes to the jacking frame, and advancing them (see Figure 3-4). Excavated tunnel spoils are removed from the tunnel via a closed loop slurry and slurry cleaning system.

The launch shaft would be located at the downstream end of the landfill, between the landfill and State Route 3. It would be excavated and reinforced with sheet piling to support the jacking frame and the generated forces. Once microtunneling operations began, sections of pipe would be lowered to the jacking frame with a crane, seamed to the previous pipe, and pushed behind the tunneling machine. This would be repeated until the pipeline reached the inlet location approximately 880 feet upstream from the outlet. The exact location of the new pipe would be determined in the final engineering design for the alternative.

Kitsap County requires conveyance systems to be designed to have the capacity to contain and transport the 100-year peak storm event (Kitsap County 2010). Based on this requirement, the pipe size recommended to be placed under the Site would meet the requirement. The proposed pipe size, 32 inches at minimum, is larger than the existing, failed 24-inch pipe and would provide a significantly greater conveyance capacity than the original design and would reduce the potential for surface water backing up and eroding the landfill embankment.

Appendix F contains the hydrologic and hydraulic calculations that determine the size of pipe required. A 32-inch diameter pipe was chosen as the required size for passing flow if contained gravity flow of Gorst Creek flow is part of the alternative. A 32-inch pipe can convey the 500-year flood at 100% capacity. The 1997 event that caused significant damage appears to have been a 500-year flood (based on precipitation depths frequency), so this pipe size should handle extreme events to reduce impoundment and potential overtopping with erosion on the upstream end of the landfill. Final design of this alternative would include a thorough hydraulic study and modeling to ensure adequate flow capacity for the design minimum storm event to prevent water impoundment behind the landfill and the triggering of Washington dam ARARs.

All necessary equipment and materials related to microtunneling/pipe-jacking operations would be transported to the launch shaft location via an access road leading from State Route 3 to a staging pad that would be constructed next to the launch shaft location. An access road leading to the exit location of the tunneling machine would also be constructed. Earthwork and armoring

at the inlet and outlet of the drainage pipe would ensure proper entry and exit of flow. The pipe is anticipated to require an offset from the original pipe to avoid potentially large, dense debris that could have been placed near or against it. The offset would also prevent drilling through landfill waste, which might then require off-Site disposal.

Material from excavation of the jacking and receiving bore pits and channel restoration would be redistributed and used to restore the landfill surface (see Section 3.3.1 below). Creek flow would be temporarily diverted around the landfill and away from construction activities. Following completion of the new conveyance pipe installation the existing pipe would be plugged with a cement grout.

This alternative improves on the protection already provided by the existing cover soils but is not considered a permanent removal alternative because it does not reduce the toxicity, volume, or mobility of the waste through treatment. The short-term mobility of waste material would be lessened because the landfill slopes would be stabilized and potential overtopping would be prevented under most precipitation events. The resultant risks associated with Alternative 4 would be less than those identified in the streamlined human health risk evaluation and the streamlined ecological risk evaluation.

ARARs would necessitate continued monitoring of the cover. The Site would also require periodic inspections to ensure that the channel remains free of debris that could potentially clog the pipe. If the flow through the pipe became impaired, maintenance would be required to return it to a free-flowing condition.

### **3.3 Common Components of Alternatives**

With the exception of Alternative 1 (No Action) and, in some instances, Alternative 2 (Gorst ravine restoration), each of the removal action alternatives would use similar construction methods and/or require similar actions. These common components are identified and described below.

#### **3.3.1 Landfill Surface Restoration**

Alternatives 3 and 4 would restore the downstream landfill slope. As part of the landfill slope restoration activities, the downstream slope would be laid back at a 3 to 1 (horizontal to vertical) slope in the previously eroded area and slope drains would be installed to remove stormwater from the top of the slope. The cost is anticipated to be the same under both alternatives.

Alternatives 3 and 4 include the restoration of the landfill cover. The cost for landfill surface restoration activities is anticipated to be the same under both alternatives.

As part of the landfill surface restoration activities, the entire landfill surface would be inspected for visible waste and eroded areas. A crew of laborers and an operator with a crawler loader could accomplish the task. Restoration activities would include knocking down vegetation to allow for visual inspection of the landfill surface and removal of exposed waste on landfill surface. The recovered waste would be transported to an off-Site disposal facility. Eroded areas would be backfilled with soil, graded, and seeded. For cost estimating purposes, it was assumed that 20 tons of waste would be removed and require disposal, 10% of the landfill surface would

require one foot of imported soil to repair the erosion damage, and 25% of the landfill surface would require seeding. Seeding would be accomplished through hydroseeding.

Restoration activities would also include laying back the downstream slope of the landfill surface at a 3 to 1 (horizontal to vertical) slope in the previously eroded areas, and installing slope drains to direct stormwater from the top of the slope.

### **3.3.2 Access Road**

As part of all removal alternatives, except for the No Action alternative, an access road would be constructed to allow heavy equipment to access the Site. For cost estimating purposes, it was assumed that the length of the access road would be 1,500 feet. Access road construction activities would include clearing, grading, compaction, and placement of a gravel course suitable for heavy equipment. The amount of traffic this road would carry under each alternative varies, so costs for access road maintenance also vary.

### **3.3.3 Best Management Practices**

Best management practices (BMPs) will be implemented to control for potential short-term cleanup-related impacts such as air emissions, erosion and sediment control, and noise levels, along with BMPs for achieving EPA's Region 10 Clean and Green Policy. Specific BMPs would be determined during design.

## **3.4 Analysis of Removal Action Alternatives**

The individual analysis of alternatives is intended to provide the relevant information required to select a removal alternative. The evaluation of alternatives was conducted using EPA's evaluation criteria, which are listed in the guidance for conducting an EE/CA (EPA 1993). These criteria are:

**Effectiveness** - This criterion refers to the ability of each alternative to meet the removal action objectives as well as fulfill the following:

- Overall protectiveness of human health and the environment
- Compliance with ARARs
- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume through treatment
- Short-term impacts and effectiveness.

**Implementability** - Each alternative is evaluated to determine the degree of difficulty in construction, scheduling considerations, compliance with applicable regulations, coordination with regulatory agencies, and off-Site treatment, storage and disposal requirements. The following criteria are used to evaluate implementability of the alternatives:

- Technical feasibility
- Administrative feasibility
- Availability of services and materials
- State acceptance

- Community acceptance.

**Cost-** An estimate of direct and indirect capital costs and future costs are also considered in the evaluation. Cost is a factor in comparing alternatives that provide similar levels of protection.

It should be noted that the final two implementability criteria (state and community acceptance) are used to modify the selection of an alternative. Therefore, these two criteria are not used in the current evaluations with the exception of Alternative 1. Only the No Action alternative uses these two criteria, which are based upon anticipated acceptance given the current conditions at the Site. A public comment period will be used to gauge actual State and community acceptance and the evaluations will be modified based upon actual responses.

The remaining implementability criteria are used as the basis of the individual analysis, which will provide in-depth information that can be used in selecting an interim removal action alternative for implementation. The individual evaluation makes use of the following five-point scaling system:

**Table 3-1 Five-Point Scaling System**

| Score | Rating       |
|-------|--------------|
| 1     | Unacceptable |
| 2     | Poor         |
| 3     | Acceptable   |
| 4     | Superior     |
| 5     | Excellent    |

Thus, if an alternative scores a “1” on this scale with regard to a particular criterion, it is assumed that it does not meet the requirements or is unacceptably poor; if it scores a “2” then its performance against the criterion is considered inferior, etc.

Removal action alternatives in this section have been evaluated using the best available information. Technical information was gathered from vendors, available EPA guidance documents, and cost estimating publications such as RS Means Heavy Construction Cost Data.

### **3.4.1 Alternative 1. No Action**

The no action alternative was evaluated in order to provide a baseline against which the other alternatives can be compared. Under this alternative no action would be taken to alter the hydraulic conveyance to prevent upstream surface water impoundment and prevent overtopping; exposed waste would not be covered; and slopes would not be stabilized. The landfill material would remain at the Site without mitigating the potential for continued erosion of the landfill and migration of landfill debris downstream along Gorst Creek.

**No Action Effectiveness:** The protection of human health and the environment is not provided by this alternative, as levels of contaminants and existing and future risks to human health and

the environment would remain unchanged. The potential would still exist for landfill debris to be carried downstream during heavy precipitation events.

ARARs would not be met. Requirements for solid waste and dangerous waste would not be met under this alternative and no post-closure care requirements would be implemented. Since construction would not occur, the action specific ARARs would not apply. No location specific ARARs are applicable.

Alternative 1 offers no long-term effectiveness or permanence. Additionally, this alternative provides no reduction in the toxicity, mobility, or volume of contaminants through treatment. There would be no short-term impacts and effectiveness since no work would occur at the Site.

*Effectiveness Rating 1: Unacceptable.* Contamination would remain on-Site and no additional measures would be taken to reduce the potential for landfill debris migrating downstream. Because the current hydraulic conveyance, erosion potential, and current slopes have proven unacceptable, this alternative would not achieve the removal action objectives.

**No Action Implementability:** This alternative is readily implementable based on technical feasibility, administrative feasibility, and the availability of services because there are no technologies that have to be implemented, administrative coordination is not required, and there are no labor, equipment, material or laboratory services to be obtained.

The potential to adversely affect downstream receptors when a large precipitation event occurs is highly likely and considered inevitable. State and community acceptance of this alternative are not expected to rate it above unacceptable.

*Implementability Rating 1: Unacceptable.* Although this alternative does not require any construction or coordination and appears highly implementable, continued deterioration of the landfill will follow and will require future action to mitigate environmental damage; therefore, the implementability of this alternative is rated unacceptable.

**No Action Cost:** \$0. The current cost is non-existent because no work would occur under the alternative. Although no future cost was calculated, the ineffectiveness of the removal alternative likely results in future overtopping of the landfill. This would lead to erosion of the landfill cover and eventual failure of the downstream slope, sending landfill contents throughout the Gorst Creek channel. The cleanup efforts would be extensive and would come at a higher cost than if the removal action objectives were achieved while the landfill waste remained accessible.

*Cost Rating 1: Unacceptable.* Although there are no present costs associated with this alternative, the anticipated future costs that would result from inaction make this an unacceptable rating.

### **3.4.2 Alternative 2. Gorst Ravine Restoration**

This alternative involves removal of all landfill material (approximately 150,000 cubic yards) and restoration of the ravine/creek to its natural condition. If the selected removal alternative is



to remove the contents of the landfill and transfer them to a secure off-Site facility, then the removal action objectives would be achieved.

**Gorst Ravine Restoration Effectiveness:** Removal of all landfill waste and restoring Gorst Creek to its original configuration would mitigate possible exposure pathways and prevent future landfill debris migration that could result from overtopping of the landfill. This alternative is effective in protecting human health and the environment.

Meeting most ARARs is achievable under this alternative. Since the removal of the landfill debris is unlikely to remove all contaminants that may be present, this alternative would likely meet ARARs for the Site only if additional post-removal cleanup alternatives and monitoring are implemented. While the landfill material would be removed, certain ARARs related to landfill closure (i.e., long-term groundwater monitoring) may be required.

The long-term effectiveness and permanence of the removal alternative effectively meet the removal action objectives. Furthermore, by removing landfill contents from the Site, a significant reduction in on-Site toxicity, mobility, and volume would be achieved; however, it should be noted that toxicity, mobility, and volume concerns would be transferred to the off-Site disposal facility.

Short-term potential risks should be considered as workers and adjacent properties may be exposed to contaminated media during excavation and transportation of landfill material. Truck traffic along the highway next to the Site would increase significantly and noise, dust, and odor may prove problematic to control. Additionally, BMPs would need to be put in place to ensure excavation and creek restoration activities do not cause significant increases in contaminated sediment downstream of the landfill. All construction-related ARARs would have to be met during the removal, including ARARs associated with hazardous waste shipping and disposal, which would be met through appropriate facility selection and transportation methods.

*Effectiveness Rating 4: Superior.* Because all contamination would be removed from the Site under this alternative all removal action objectives would be met. Some short-term potential hazards from construction and transportation activities are expected, and the overall long-term risks associated with the hazardous material at the Site would be displaced to an off-Site disposal facility.

**Gorst Ravine Restoration Implementability:** Implementation of this alternative is technically and administratively feasible. It is anticipated that labor and equipment is readily available for excavation and restoration activities. Trucking would be a major component of this alternative and staging trucks before loading would likely present the largest of the operational challenges.

*Implementability Rating 3: Acceptable.* Excavation and restoration activities are easily implemented; however, a large quantity of landfill waste would need to be transported and disposed off-Site. The time frame for the completing the removal is anticipated to be six months.

**Gorst Ravine Restoration Cost:** \$34,080,000. It would be necessary to find a nearby disposal facility that has the capacity to accept the type and volume of waste material that may be

excavated to keep this alternative cost-effective. Other methods of hauling the waste may also be available if trucking all the way to a disposal facility is not feasible. Future costs were not calculated but would involve continued monitoring as required by ARARs. Details of this cost are presented in Appendix G.

*Cost Rating 1: Unacceptable.* The cost for this alternative is high.

### **3.4.3 Alternative 3. Gorst Creek Re-alignment**

This alternative involves excavating a lateral bypass channel around the landfill at stream grade and leaving the existing culvert in place but abandoned. To implement this removal alternative, the channel would have to be approximately 60 feet deep in order to provide a consistent channel slope transition between the existing stream elevation just upstream of Gorst landfill and the inlet elevation at State Highway 3. With 3 to 1 (horizontal to vertical) side slopes and a 10-foot wide channel bottom, the top of the cut would have to be approximately 210 feet wide. The existing culvert would be abandoned in place (e.g., filled with a cement grout) to prevent infiltration into the pipe with a direct channel to Gorst Creek. This alternative would achieve the Site removal action objectives.

**Gorst Creek Re-alignment Effectiveness:** Alternative 3 would reduce the potential for backup and overtopping of the landfill during significant storm events by providing a new primary pathway for streamflow. The diversion of Gorst Creek to the bypass channel would reduce surface water contact with contaminated material and prevent further erosion of the landfill embankments, which in turn mitigates the potential for migration of landfill waste. By preventing further erosion and slope failure this alternative is effective in protecting human health and the environment.

ARARs related to landfill closure would not be met. Requirements for solid waste and dangerous waste would not be met under this alternative and no post-closure care requirements would be implemented. Construction-related ARARs would apply and would be met. No location-specific ARARs are applicable.

The bypass channel would be a permanent feature and would offer long-term effectiveness. The on-Site mobility of landfill debris due to erosion would be drastically reduced, but treatment options to reduce mobility, toxicity, or volume of contamination would not be implemented. Additionally, the landfill cover would be repaired to a 12-inch depth of soil with vegetative cover and would not be otherwise improved upon except to prevent erosion and landslide potential.

Short-term impacts include a potential influx of sedimentation to Gorst Creek downstream of the bypass channel during installation. BMPs would be put in place during the implementation of this alternative to ensure excavation and creek restoration activities do not cause significant increases in contaminated sediment in the surface waters of Gorst Creek downstream of the landfill. No landfill material should be disturbed or removed from the Site during construction of the bypass channel, so there are no additional short-term risks associated with on-Site contamination. Excess soil would be removed from the Site. This soil is anticipated to be uncontaminated and can be beneficially used but would lead to a significant increase in truck traffic along the highway.

*Effectiveness Rating 3: Acceptable.* This alternative would reduce the potential for landfill waste to migrate downstream and reduce impacts on the integrity of the landfill embankments; however, landfill material would remain on-Site. Not all ARARs would be met.

**Gorst Creek Re-alignment Implementability:** Implementation of this alternative is feasible as labor and equipment is readily available for excavation and channel construction activities; however, given the Site topography, construction of the channel may be difficult and would produce a significant amount of excavated material. Some of the excavated material can be used to restore the landfill embankments; however, it would be necessary to find a nearby beneficial use for the remainder of the soil.

Administrative feasibility is uncertain because the channel cannot be placed on the parcel of land containing the landfill. Additional property south and west of the landfill would have to be acquired. The ability to acquire the land would affect project scheduling.

*Implementability Rating 2: Poor.* Although constructing the bypass channel is feasible and would use common construction practices, the Site terrain and hydraulic requirements of Gorst Creek mean that a substantial quantity of material would be excavated and transported off-Site. The new channel also would be positioned off-Site, which requires that property be acquired.

**Gorst Creek Re-alignment Cost:** \$8,520,000. Costs for land acquisition are not included in this cost. In order to keep this alternative cost-effective, given the quantity of soil required for removal, a nearby beneficial use needs to be identified. Future costs were not calculated, but would involve continued monitoring as required by ARARs. Details of this cost are presented in Appendix G.

*Rating 3: Acceptable.* This cost can fluctuate based on options for beneficial use soil and on land acquisition.

#### **3.4.4 Alternative 4. Microtunneling/Pipe Jacking**

This alternative involves installing approximately 880 feet of new conveyance piping (i.e., culvert) beneath or through the landfill at approximately the existing stream grade. A 32-inch diameter or larger pipe would be installed using horizontal jacking and auger-boring. The jacking and receiving bore pits would need to be continuously dewatered during the installation and be of sufficient size to accommodate the pipe segments and jacking/augering machinery. The pipe would need to be of sufficient size to convey the Gorst Creek flow during significant storm events and be of sufficient strength to prevent collapse from the landfill overburden. The existing culvert would be abandoned in place (e.g., filled with a cement grout) to prevent infiltration into the pipe with a direct channel to Gorst Creek. This alternative would achieve the Site removal action objectives.

**Microtunneling/Pipe Jacking Effectiveness:** Pipe installation through horizontal jacking would reduce the potential for backup and overtopping of the landfill during significant storm events by providing a new primary pathway for streamflow under Gorst Landfill. This alternative would prevent further erosion of the landfill embankments and in turn mitigate the

potential for migration of contaminated waste, making it effective in protecting human health and the environment.

ARARs related to landfill closure would not be met. Requirements for solid waste and dangerous waste would not be met under this alternative and no post-closure care requirements would be implemented. Construction-related ARARs would apply and would be met. No location-specific ARARs are applicable.

The conveyance pipe would be a permanent feature and would offer long-term effectiveness up to the expected life of the pipe material (pipe material would be chosen during design, but high-density polyethylene (HDPE) pipe has a life expectancy of at least 100 years). The on-Site mobility of landfill debris due to erosion would be drastically reduced but treatment options to reduce mobility, toxicity, or volume of contamination would not be implemented. Additionally, the landfill cover would be repaired to a 12-inch depth of soil with vegetative cover and would not be otherwise improved upon except to prevent erosion and landslide potential.

Short-term impacts on workers and adjacent properties should be minimal under this alternative because pipe-jacking utilizes subgrade pipe placement technologies. No landfill material would be removed from the Site under this alternative and protocols associated with minimizing dust generation during excavation and transportation activities would be incorporated in the removal design to ensure that all appropriate mitigation measures are satisfied. Additionally, BMPs would need to be put in to place during the implementation of this alternative to ensure excavation activities associated with the temporary trenches required for the pipe-jacking equipment do not cause significant increases in sediment in the surface waters of Gorst Creek downstream of the Site.

*Rating 3: Acceptable.* This alternative would reduce the potential for landfill contents to migrate downstream and reduce impacts on the integrity of the landfill embankments; however, landfill waste would remain on-Site. Not all ARARs would be met.

**Microtunneling/Pipe Jacking Implementability:** This alternative is both technically and administrative feasible. Labor and equipment is readily available for microtunneling/pipe-jacking because this is an industry-accepted procedure for pipe placement. Some of the excavated material from the equipment trenches can be used to restore the landfill embankments; however, it may be necessary to find an additional source of fill material to stabilize the slope of the landfill. Additional geotechnical information would be needed to determine if the Site soils in the intended location of placement are suitable for this pipe installation method.

*Rating 4: Superior.* This alternative can be implemented at the Site without removal and disposal of large quantities of material or disturbance of landfill material. Additionally, it is anticipated that no property acquisition would be required for pipe placement.

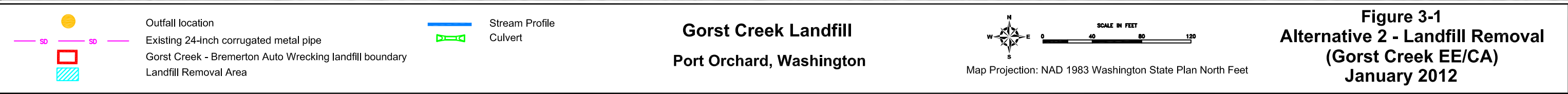
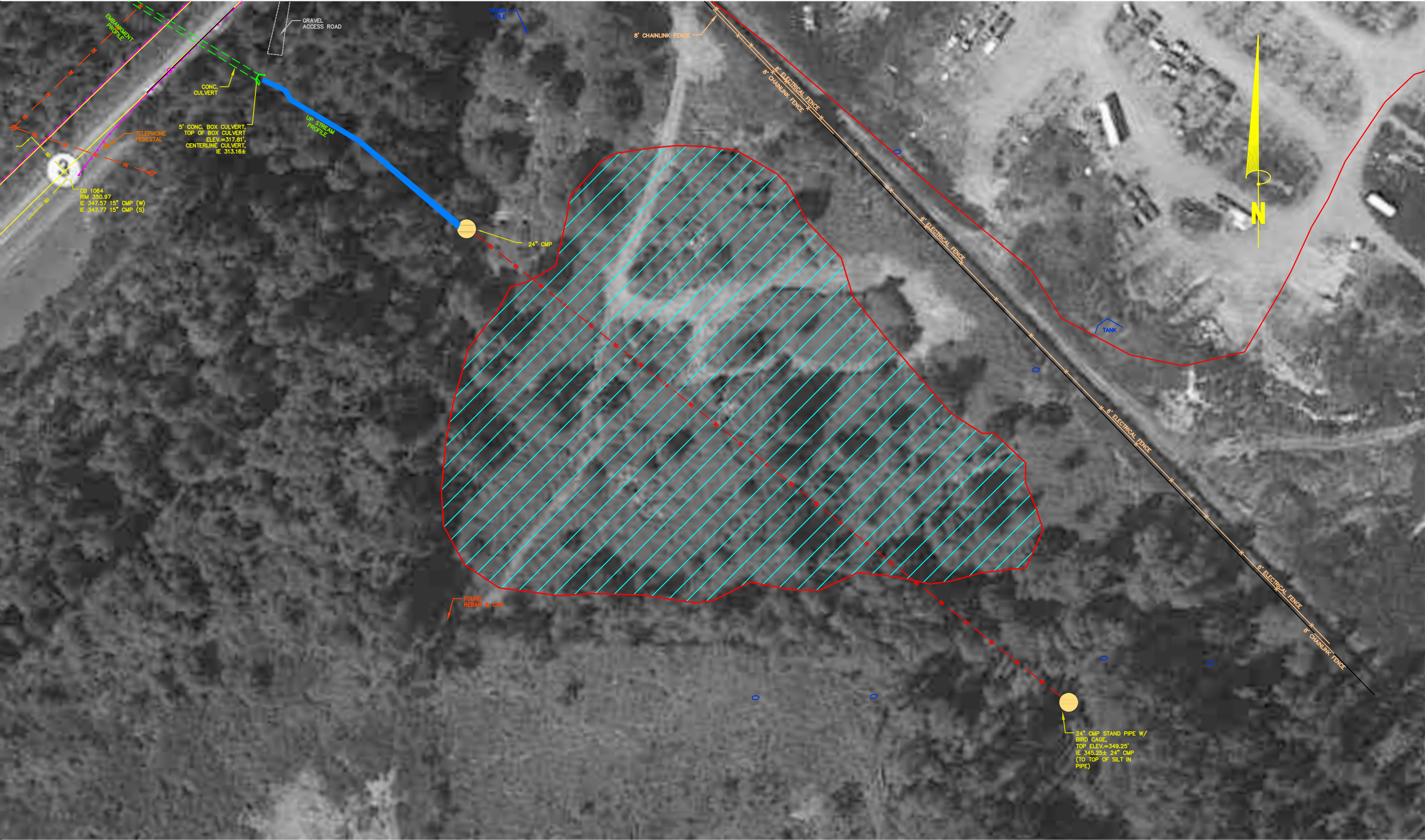
**Microtunneling/Pipe Jacking Cost:** \$2,630,000. Details of this cost are presented in Appendix G. Future costs were not calculated, but would involve continued monitoring as required by ARARs. The Site would also require periodic inspections to ensure that the channel remained

free of debris that could potentially clog the pipe. If flow through the pipe was found to be impaired, maintenance would be required to return it to a free-flowing condition.

*Rating 5: Excellent.* The cost of this alternative is low. The alternative does not rely on excavating, hauling, and disposal of significant amounts of material, which should reduce escalating costs.

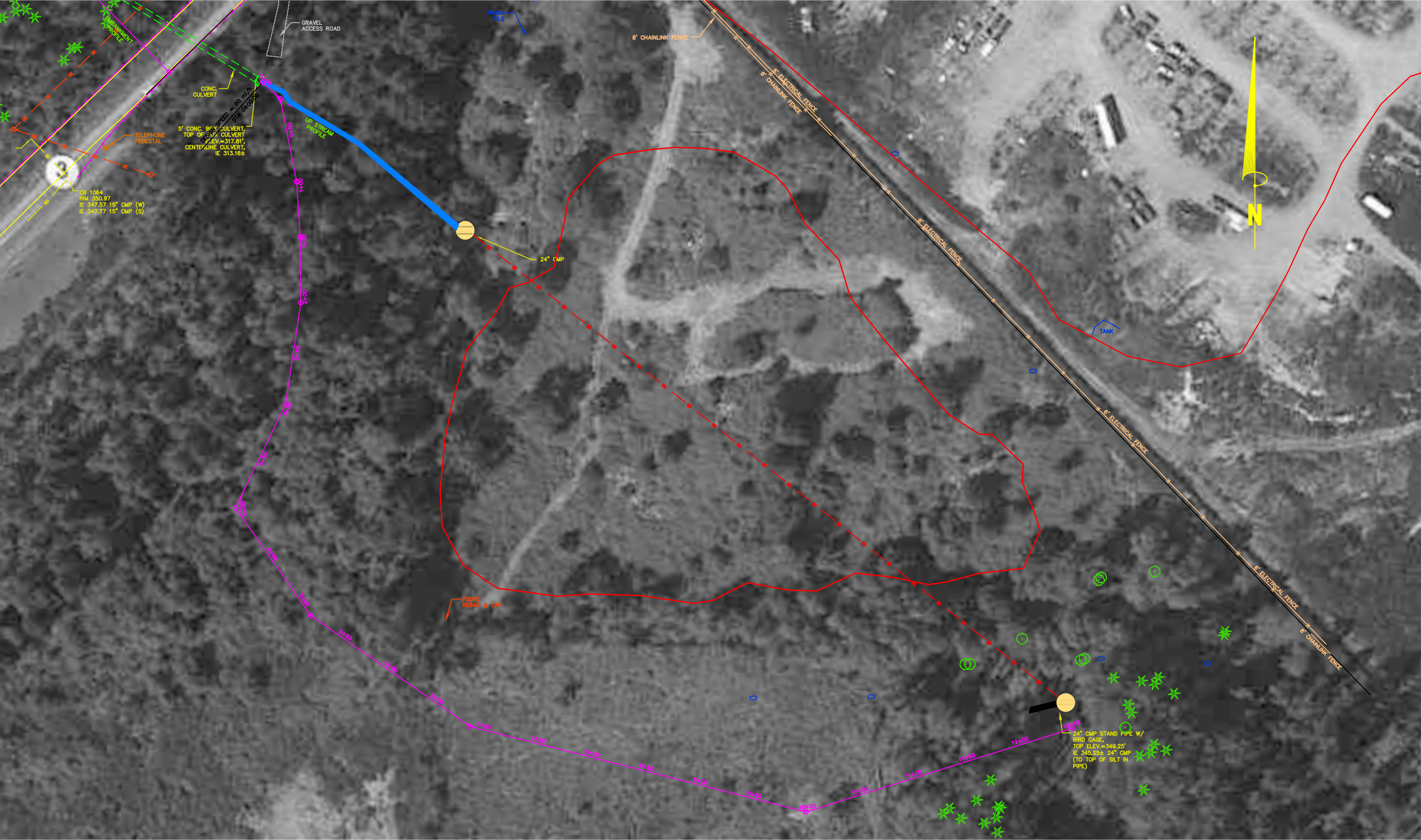
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**Gorst Creek Landfill**  
**Port Orchard, Washington**

**Figure 3-2**  
**Alternative 3 - Creek Re-alignment**  
**(Gorst Creek EE/CA)**  
**January 2012**

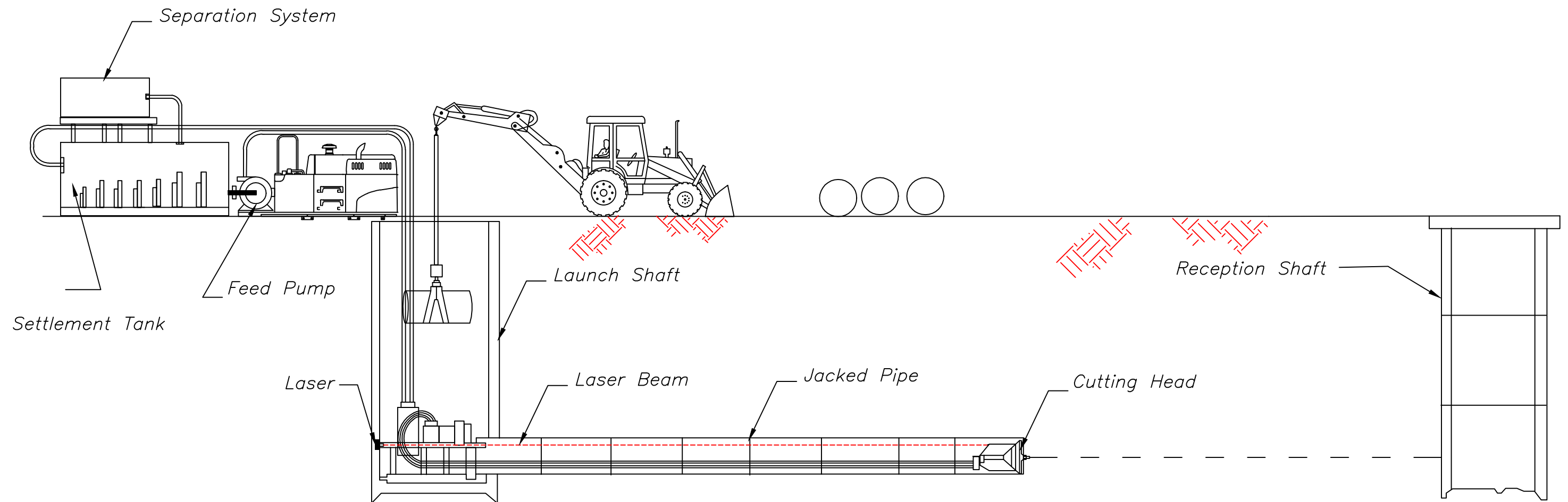
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**Gorst Creek Landfill**  
**Port Orchard, Washington**

  
 Map Projection: NAD 1983 Washington State Plan North Feet

**Figure 3-4**  
**Conceptual Pipe Jacking Detail**  
**(Gorst Creek EE/CA)**  
**January 2012**

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## 4 Comparative Analysis of Alternatives

The removal action alternatives developed and individually analyzed using EPA's three broad criteria of effectiveness, implementability, and cost are compared here using the same broad criteria. The comparative analysis is intended to provide the relevant information required to select a removal alternative.

As part of the individual removal action alternative analysis, a numeric value was assigned to each alternative representing its ability to meet the specific criteria. Table 4-1 provides a summary of this analysis.

**Table 4-1 Summary of Criteria Comparison**

| <b>Criterion</b> | <b>Alternative 1<br/>No Action</b> | <b>Alternative 2<br/>Landfill<br/>Removal</b> | <b>Alternative 3<br/>Bypass<br/>Channel</b> | <b>Alternative 4<br/>Microtunneling/<br/>Pipe Jacking</b> |
|------------------|------------------------------------|---|---|---|
| Effectiveness    | 1                                  | 4   | 3   | 3   |
| Implementability | 1                                  | 3   | 2   | 4   |
| Cost             | 1                                  | 1   | 3   | 5   |
| Total            | 3                                  | 8   | 8   | 12  |
| Average          | 1                                  | 2.7   | 2.7   | 4   |

### 4.1 Effectiveness

With the exception of Alternative 1 (No Action), the remaining three removal alternatives provide at least an acceptable level of effectiveness.

Of the three action alternatives, Alternative 2 (landfill removal) provides the most protection of human health and the environment because the waste would be removed from the Site. Both Alternatives 3 and 4 provide a similar level of protection in that the eroded areas of the landfill cover would be repaired and Gorst Creek would be rerouted to prevent further contact with waste materials.

The landfill cover would be restored to provide a vegetated soil cover as required in Washington Administrative Code 173-304-461; however, no alternative would fully meet the ARARs associated with landfills. Alternative 4 can more easily meet its associated ARARs than Alternatives 2 and 3. Alternative 4 does not involve obtaining land or disposal of more than 150,000 cubic yards of mixed waste. In comparing Alternative 2 to Alternative 3, Alternative 2 would meet the ARARs better than Alternative 3 given that more of the ARARs associated with landfills would be met since waste materials would be removed from Site.

For long-term effectiveness and permanence, Alternative 2 is the most effective and permanent action because the landfill contents would be removed and transported off-Site. Alternative 3 is considered to be slightly more effective and permanent than Alternative 4. While both

alternatives would grout the existing culvert closed and repair the eroded section of the existing landfill cover, under Alternative 3 a new channel would be constructed and under Alternative 4 a new culvert would be installed. The new culvert, like the current culvert, could fail over a long-period of time. Additionally, Alternative 3 has a greater capacity for handling flood events.

None of the waste under any of the proposed removal alternatives would be treated, so none of the alternatives provide a reduction in toxicity. Alternative 2 provides the greatest reduction in on-site mobility because the landfill contents would be removed and disposed of at other disposal facilities. Alternatives 3 and 4 provide the same amount of mobility reduction in that Gorst Creek would be redirected and the existing culvert would be grouted closed. Under Alternative 2, there is the potential for metal to be reclaimed. Therefore, Alternative 2 provides for a better reduction in volume of contaminants than Alternatives 3 and 4, which do not address the landfill contents.

In the short-term, Alternative 4 would be the most effective because construction activities would be limited compared with the other action alternatives. Under Alternatives 2 and 3 a minimum of 100,000 cubic yards of materials would have to be excavated, hauled, and disposed. Because Alternative 3 only involves handling native, undisturbed earth, it has better short-term effectiveness compared to Alternative 2, which requires handling over 150,000 cubic yards of waste material.

#### **4.2 Implementability**

While all of the removal alternatives are technically implementable, Alternative 4 (micro-tunneling/pipe jacking) is considered to be the most implementable. Unlike Alternative 2 (landfill removal) and Alternative 3 (bypass channel), the amount of earthwork, material handling, and disposal needed is much less. Given that land acquisition is a major component of Alternative 3 and Alternative 4 does not require it, Alternative 4 is more implementable than Alternative 3.

Alternative 3 is considered to be more implementable than Alternative 2. A considerable amount of material handling is involved with both Alternatives 2 and 3. However, under Alternative 2, multiple types of waste streams would be excavated that would require sorting, characterization, and potentially multiple disposal sites. Alternative 3, on the other hand, involves excavating and handling native, undisturbed materials. Implementation of Alternative 3 requires the acquisition of property. Alternative 2 requires manifesting, characterizing, and transporting multiple waste streams.

While technically implementable, from an administrative, state, and community acceptance standpoint, Alternative 1 (no action) is not considered to be implementable because inaction will result in continued deterioration of the landfill, necessitating future mitigation action; therefore, the implementability of this alternative is rated unacceptable.

#### **4.3 Cost**

While there is no initial cost associated with Alternative 1 (no action), as previously stated, there are unknown costs associated with on-going landfill debris washing into Gorst Creek and traversing the adjacent highway. Therefore, this alternative has unacceptable costs associated



with it when compared with the costs associated with the remaining action alternatives. Of the three remaining removal alternatives, Alternative 4 (microtunneling/pipe jacking) has the least cost (\$2,630,000). Alternative 3 (bypass channel) costs more (\$8,520,000) than Alternative 4 but significantly less than Alternative 2 (landfill removal), which has an estimated cost of \$34,080,000.

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## **5 Recommended Removal Action Alternative**

The actual or threatened release of hazardous substances within and from the Site may present an imminent and substantial endangerment to the public health, welfare, or the environment within the meaning of Section 106(a) of CERCLA, 42 U.S.C. § 9606(a). This EE/CA was prepared to identify alternatives, effectiveness, implementability, and cost associated with mitigating off-Site migration of the landfill contaminants of concern and the potential impounding of surface water.

EPA criteria were used as the basis of a comparative analysis, which provided in-depth information that was used in selecting an interim removal action alternative for implementation. The comparative evaluation makes use of the following five-point scaling system:

- 1-Unacceptable
- 2-Poor
- 3-Acceptable
- 4-Superior
- 5-Excellent

Alternative 1 (no action) was evaluated as a requirement of the NCP and scored 3 out of a possible 15 points for a 1 point average. Alternative 2 (Gorst ravine restoration) and Alternative 3 (Gorst Creek re-alignment) both scored 8 out of a possible 15 points for a 2.7 point average. Alternative 4 (microtunneling/pipe jacking) scored 12 out of a possible 15 points for a 4 point average.

Based upon the scoring and the comparative analysis Alternative 4 (microtunneling/pipe jacking) is recommended as the preferred alternative. The reader should note, however, that funding a removal action is not guaranteed by completion of the EE/CA report.

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# **A**

## **ENVIRONMENTAL SAMPLING LABORATORY REPORTS**

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August 25, 2011

Mr. Steve Hall  
US EPA Equipment Warehouse  
1620 S. 92nd Place, Unit B  
Seattle, Washington 98108

Re: Project No. 002233.0599.01SF  
Work Order: 284538

Dear Mr. Steve Hall:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 23, 2011. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4422.

Sincerely,

Jennifer Pellegrini for  
Jake Crook  
Project Manager

Purchase Order: 002233.0599.01SF  
Enclosures



**Ecology and Environment, Inc. Start-3 002233.2008**  
**Project No. 002233.0599.01SF**  
**SDG: 284538**

## Table of Contents

|  |     |
|--|-----|
| Case Narrative.....                                | 1   |
| Chain of Custody and Supporting Documentation..... | 4   |
| Data Review Qualifier Definitions.....             | 7   |
| Volatile Analysis.....                             | 9   |
| Case Narrative.....                                | 10  |
| Sample Data Summary.....                           | 15  |
| Quality Control Summary.....                       | 25  |
| Sample Data.....                                   | 39  |
| Standards.....                                     | 81  |
| Quality Control Data.....                          | 197 |
| Miscellaneous.....                                 | 246 |
| Semi-Volatile Analysis.....                        | 253 |
| Case Narrative.....                                | 254 |
| Sample Data Summary.....                           | 260 |
| Quality Control Summary.....                       | 263 |
| Sample Data.....                                   | 273 |
| Standards.....                                     | 279 |
| Quality Control Data.....                          | 375 |
| Miscellaneous.....                                 | 419 |
| GC Semivolatile Pesticide Analysis.....            | 426 |

|                                   |     |
|-----------------------------------|-----|
| Case Narrative.....               | 427 |
| Sample Data Summary.....          | 434 |
| QC Summary.....                   | 437 |
| Sample Data.....                  | 443 |
| Standard Data.....                | 449 |
| QC Data.....                      | 622 |
| Miscellaneous Data.....           | 653 |
| GC Semivolatile PCB Analysis..... | 663 |
| Sample Data Summary.....          | 670 |
| QC Summary.....                   | 672 |
| Sample Data.....                  | 678 |
| Standard Data.....                | 684 |
| QC Data.....                      | 802 |
| Miscellaneous Data.....           | 831 |
| Metals Analysis.....              | 838 |
| Case Narrative.....               | 839 |
| Sample Data Summary.....          | 844 |
| Quality Control Summary.....      | 847 |
| Standards.....                    | 879 |
| Raw Data.....                     | 883 |
| Miscellaneous.....                | 985 |

# Case Narrative

**Case Narrative  
for  
Ecology and Environment, Inc. Start-3 002233.2008  
SDG: 284538**

**August 25, 2011**

**Laboratory Identification:**

GEL Laboratories LLC  
2040 Savage Road  
Charleston, South Carolina 29407  
(843) 556-8171

**Summary**

**Sample Receipt** The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on August 23, 2011 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

**Sample Identification** The laboratory received the following samples:

| <b><u>Laboratory ID</u></b> | <b><u>Client ID</u></b> |
|-----------------------------|-------------------------|
| 284538001                   | 11080101                |
| 284538002                   | 11080106                |

**Case Narrative**

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

**Data Package**

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: GC Semivolatile PCB, GC Semivolatile Pesticide, GC/MS Semivolatile, GC/MS Volatile and Metals.



Jennifer Pellegrini for  
Jake Crook  
Project Manager



**List of current GEL Certifications as of 25 August 2011**

| <b>State</b>              | <b>Certification</b> |
|---------------------------|----------------------|
| Arkansas                  | 88-0651              |
| CLIA                      | 42D0904046           |
| California – NELAP        | 01151CA              |
| Colorado                  | E87156 (FL/NELAP)    |
| Connecticut               | PH-0169              |
| DoD ELAP – A2LA           | 2567.01              |
| Florida – NELAP           | E87156               |
| Foreign Soils Permit USDA | P330-09-00191        |
| Georgia                   | E87156 (FL/NELAP)    |
| Georgia SDWA              | 967                  |
| Hawaii                    | E87156 (FL/NELAP)    |
| ISO 17025                 | 2567.01              |
| Idaho                     | SC00012              |
| Illinois – NELAP          | 200029               |
| Indiana                   | C-SC-01              |
| Kansas – NELAP            | E-10332              |
| Kentucky                  | 90129                |
| Louisiana – NELAP         | 03046 (A133904)      |
| Louisiana SDWA            | LA110006             |
| Maryland                  | 270                  |
| Massachusetts             | M-SC012              |
| Mississippi               | E87156 (FL/NELAP)    |
| Nevada                    | SC00012              |
| New Hampshire             | 2054                 |
| New Jersey – NELAP        | SC002                |
| New Mexico                | E87156 (FL/NELAP)    |
| New York – NELAP          | 11501                |
| North Carolina            | 233                  |
| North Carolina DW         | 45709                |
| Oklahoma                  | 9904                 |
| Pennsylvania – NELAP      | 68-00485             |
| South Carolina            | 10120001/10120002    |
| Tennessee                 | TN 02934             |
| Texas – NELAP             | T104704235-10-3      |
| Utah – NELAP              | SC00012              |
| Vermont                   | VT87156              |
| Virginia                  | 00151                |
| Washington                | C780                 |
| Wisconsin                 | 999887790            |

# **Chain of Custody and Supporting Documentation**

2011 0881830

## USEPA

DateShipped:

CarrierName:

**AirbillNo:**

## CHAIN OF CUSTODY RECORD

Site #: 10GL

**Contact Name:**

**Contact Phone:**

**No: 10-081611-104804-0002**

Cooler #:

**Lab: GEL Laboratories, LLC**

**Lab Phone: 843-556-8171**

[illegible]

~~TH 8-22-2011~~

**Special Instructions:**

**SAMPLES TRANSFERRED FROM**

**CHAIN OF CUSTODY #**

[illegible]

|  |   |  |  |
|--|---|--|--|
| Client: <u>ECOL</u>                      |   | SDG/AR/COC/Work Order: <u>284538</u>   |  |
| Received By: <u>BD</u>                   |   | Date Received: <u>8-23-11</u>  |  |
| Suspected Hazard Information             | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | *If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group for further investigation. |  |
| COC/Samples marked as radioactive?       | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Maximum Counts Observed*: <u>600cpm</u>  |  |
| Classified Radioactive II or III by RSO? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |  |  |
| COC/Samples marked containing PCBs?      | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |  |  |
| Shipped as a DOT Hazardous?              | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Hazard Class Shipped: UN#:   |  |
| Samples identified as Foreign Soil?      | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |  |  |

| Sample Receipt Criteria   | Yes                                 | NA                       | No                       | Comments/Qualifiers (Required for Non-Conforming Items)   |
|---|-------------------------------------|--------------------------|--------------------------|---|
| 1 Shipping containers received intact and sealed?                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Circle Applicable:<br>Seals broken Damaged container Leaking container Other (describe)                               |
| 2 Samples requiring cold preservation within (0 ≤ deg. C)?        | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 5°C<br>Preservation Method:<br>Ice bags Blue ice Dry ice None Other (describe)  |
| 2a Daily check performed and passed on IR temperature gun?        | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Temperature Device Serial #: <u>3105004</u><br>Secondary Temperature Device Serial # (If Applicable):                 |
| 3 Chain of custody documents included with shipment?              | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |
| 4 Sample containers intact and sealed?                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Circle Applicable:<br>Seals broken Damaged container Leaking container Other (describe)                               |
| 5 Samples requiring chemical preservation at proper pH?           | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sample ID's, containers affected and observed pH:<br>If Preservation added, Lot#:                                     |
| 6 VOA vials free of headspace (defined as < 6mm bubble)?          | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sample ID's and containers affected:  |
| 7 Are Encore containers present?                                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (If yes, immediately deliver to Volatiles laboratory)   |
| 8 Samples received within holding time?                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ID's and tests affected:  |
| 9 Sample ID's on COC match ID's on bottles?                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sample ID's and containers affected:  |
| 10 Date & time on COC match date & time on bottles?               | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sample ID's affected:   |
| 11 Number of containers received match number indicated on COC?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sample ID's affected:   |
| 12 Are sample containers identifiable as GEL provided?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |
| 13 COC form is properly signed in relinquished/received sections? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |
| 14 Carrier and tracking number.                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Circle Applicable:<br>FedEx Air FedEx Ground UPS Field Services Courier Other<br><br>8664 1445 3486<br>7955 4012 7418 |

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials gmsDate 08/27/11Page 1 of 1

# **Data Review Qualifier Definitions**

## Data Review Qualifier Definitions

| Qualifier | Explanation   |
|-----------|---|
| *         | A quality control analyte recovery is outside of specified acceptance criteria  |
| **        | Analyte is a surrogate compound   |
| <         | Result is less than value reported  |
| >         | Result is greater than value reported   |
| ^         | RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  |
| A         | The TIC is a suspected aldol-condensation product   |
| B         | Target analyte was detected in the associated blank   |
| B         | Metals-Either presence of analyte detected in the associated blank, or<br>MDL/IDL < sample value < PQL  |
| BD        | Results are either below the MDC or tracer recovery is low  |
| C         | Analyte has been confirmed by GC/MS analysis  |
| D         | Results are reported from a diluted aliquot of the sample   |
| d         | 5-day BOD-The 2:1 depletion requirement was not met for this sample   |
| E         | Organics-Concentration of the target analyte exceeds the instrument calibration range   |
| E         | Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria   |
| H         | Analytical holding time was exceeded  |
| h         | Preparation or preservation holding time was exceeded   |
| J         | Value is estimated  |
| N         | Metals-The Matrix spike sample recovery is not within specified control limits  |
| N         | Organics-Presumptive evidence based on mass spectral library search to make a tentative<br>identification of the analyte (TIC). Quantitation is based on nearest internal standard<br>response factor |
| N/A       | Spike recovery limits do not apply. Sample concentration exceeds spike concentration<br>by 4X or more   |
| ND        | Analyte concentration is not detected above the reporting limit   |
| UI        | Gamma Spectroscopy-Uncertain identification   |
| X         | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  |
| Y         | QC Samples were not spiked with this compound   |
| Z         | Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.  |

# **Volatile Analysis**

# Case Narrative



**ChemStation Case Narrative**  
**Ecology and Environment, Inc. Start-3 002233.2008 (ECOL)**  
**SDG 284538**

**Method/Analysis Information**

**Procedure:** Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer  
Analytical Method: SW846 8260B  
Analytical Batch Number: 1137563

**Sample Analysis**

The following client and quality control samples were analyzed to complete this SDG using the methods referenced in the Analysis Information section:

| <b>Sample ID</b> | <b>Client ID</b>                               |
|------------------|--|
| 284538001        | 11080101                                       |
| 284538002        | 11080106                                       |
| 1202477757       | Method Blank (MB)                              |
| 1202477758       | 284538001(11080101) Post Spike (PS)            |
| 1202477759       | 284538001(11080101) Post Spike Duplicate (PSD) |
| 1202477760       | Laboratory Control Sample (LCS)                |
| 1202478370       | Method Blank (MB)                              |
| 1202478371       | Laboratory Control Sample (LCS)                |

NOTE: For volatile organic analyses the matrix spike designations may be indicated as "PS" or "PSD". The "PS" designation (post spike) indicates that the matrix was fortified prior to analysis but after applying any prep factors, such as a dilution. The laboratory considers the MS/MSD and PS/PSD designations interchangeable.

The samples in this SDG were analyzed on an "as received" basis.

**Preparation/Analytical Method Verification**

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-038 REV# 16.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP) section 19.1.2. False positive analytes are designated on the quantitation report with a 'd' qualifier.

**Calibration Information**

Please note that the 'Cal Date' indicated on each quantitation report reflects the date and time of the most recent calibrated analyte(s) in the processing method. Since the laboratory may calibrate with multiple solutions on different days using the same processing method, the software will update the 'Cal Date' to the last calibration file, date and time. The correct dates and times for all calibration files are located on the Calibration History report in the Standard Data section in the data package.

The surrogate compounds were calibrated using a minimum five-point calibration curve. The surrogates were added by the auto sampler at a concentration of 50 ug/L. GEL Laboratories LLC will not have surrogate recoveries reported for Dibromofluoromethane. This is due to increased regulations for this analyte and an industry shortage.

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package.

#### **Initial Calibration**

All initial calibration requirements have been met for this sample delivery groups (SDG). A second source initial calibration verification (ICV) was included in the standard section directly behind the initial calibration.

#### **Continuing Calibration Verification Requirements**

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

#### **Quality Control (QC) Information**

##### **Method Blank (MB) Statement**

The MBs analyzed with this SDG met the acceptance criteria.

##### **Surrogate Recoveries**

Surrogate recoveries in all client and quality control samples were within the acceptance limits.

##### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

##### **QC Sample Designation**

Sample 284538001 (11080101) was designated for spike analysis.

##### **Matrix Spike (PS) Recovery Statement**

The matrix spike recoveries within the acceptance limits.

##### **Matrix Spike Duplicate (PSD) Recovery Statement**

The matrix spike duplicate recoveries within the acceptance limits.

##### **Relative Percent Difference (RPD) Statement**

The RPD(s) between the matrix spike pair met the acceptance limits.

##### **Internal Standard (ISTD) Acceptance**

The internal standard responses in all client and quality control samples met the required acceptance criteria.

#### **Technical Information**

##### **Holding Time Specifications**

GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection or sample receipt. Those holding times expressed in hours are calculated in the ALPHALIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

##### **Sample Preservation and Integrity**

All samples met the sample preservation and integrity requirements.

**Sample Dilutions/Methanol Dilutions**

Sample 284538002 (11080106) was diluted because target analyte concentrations exceeded the calibration range.

**Sample Re-extraction/Re-analysis**

Re-analyses were not required for samples in this SDG.

**Miscellaneous Information****Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

**Data Exception (DER) Documentation**

A Data Exception Report was not required for this SDG.

**Manual Integrations**

Data files associated with the initial calibration, continuing calibration check, and samples did not require manual integrations.

**TIC Comment**

Tentatively identified compounds (TIC) were not required for this SDG.

**Additional Comments**

Additional comments were not required for this SDG.

**Residual Chlorine**

Residual Chlorine was not detected in any of the samples in this SDG.

**System Configuration**

The Volatile-GC/MS analysis was performed on the following instrument configuration:

| <b>Instrument ID</b> | <b>Instrument</b>                                     | <b>System Configuration</b> | <b>Column ID</b> | <b>Column Description</b> | <b>P &amp; T Trap</b> |
|----------------------|---|-----------------------------|------------------|---------------------------|-----------------------|
| VOA3.I               | Agilent 6890/5973 GC/MS w/ OI 4560/Archon Autosampler | HP6890/HP5973               | DB-624           | J&W, 60m x 0.25mm x 1.4um | Trap 10               |

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Qualifier Definition Report for

ECOL008 Ecology and Environment, Inc. Start-3 002233.2008

Client SDG: 284538 GEL Work Order: 284538

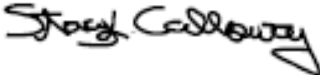
#### The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

#### Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Stacy Calloway

Date: 14 SEP 2011

Title: Data Validator

# **Sample Data Summary**

**Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 284538  
**Lab Sample ID:** 284538001

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50

**Matrix:** GROUND WATER

**Client ID:** 11080101  
**Batch ID:** 1137563  
**Run Date:** 08/30/2011 23:28  
**Prep Date:** 08/30/2011 23:28  
**Data File:** 083011V3\3B232.D

**Client:** ECOL008  
**Method:** SW846 8260B  
**Inst:** VOA3.I  
**Analyst:** SYK1

**Project:** ECOL00111  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL

**Column:** DB-624

| CAS No.    | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------|-----------|--------|-------|---------|---------|
| 75-71-8    | Dichlorodifluoromethane    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 74-87-3    | Chloromethane              | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-01-4    | Vinyl chloride             | U         | 0.500  | ug/L  | 0.500   | 1.00    |
| 74-83-9    | Bromomethane               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-00-3    | Chloroethane               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-69-4    | Trichlorofluoromethane     | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 60-29-7    | Ethyl ether                | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 67-64-1    | Acetone                    | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-05-8    | Acetonitrile               | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 75-35-4    | 1,1-Dichloroethylene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 79-20-9    | Methyl acetate             | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 74-88-4    | Iodomethane                | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 75-09-2    | Methylene chloride         | U         | 2.00   | ug/L  | 2.00    | 5.00    |
| 75-15-0    | Carbon disulfide           | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 1634-04-4  | tert-Butyl methyl ether    | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 156-60-5   | trans-1,2-Dichloroethylene | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 108-05-4   | Vinyl acetate              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-34-3    | 1,1-Dichloroethane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 78-93-3    | 2-Butanone                 | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 156-59-2   | cis-1,2-Dichloroethylene   | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 594-20-7   | 2,2-Dichloropropane        | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 67-66-3    | Chloroform                 | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 74-97-5    | Bromochloromethane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 71-55-6    | 1,1,1-Trichloroethane      | U         | 0.325  | ug/L  | 0.325   | 1.00    |
| 110-82-7   | Cyclohexane                | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 563-58-6   | 1,1-Dichloropropene        | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 71-36-3    | n-Butyl alcohol            | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 56-23-5    | Carbon tetrachloride       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 107-06-2   | 1,2-Dichloroethane         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 71-43-2    | Benzene                    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 79-01-6    | Trichloroethylene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 78-87-5    | 1,2-Dichloropropane        | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-87-2   | Methylcyclohexane          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 75-27-4    | Bromodichloromethane       | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 74-95-3    | Dibromomethane             | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 110-75-8   | 2-Chloroethylvinyl ether   | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 108-10-1   | 4-Methyl-2-pentanone       | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 10061-01-5 | cis-1,3-Dichloropropylene  | U         | 0.250  | ug/L  | 0.250   | 1.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

|                                    |   |                             |
|------------------------------------|---|-----------------------------|
| <b>SDG Number:</b> 284538          | <b>Date Collected:</b> 08/18/2011 12:00 | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 284538001    | <b>Date Received:</b> 08/23/2011 08:50  |                             |
|                                    | <b>Client:</b> ECOL008                  | <b>Project:</b> ECOL00111   |
| <b>Client ID:</b> 11080101         | <b>Method:</b> SW846 8260B              | <b>SOP Ref:</b> GL-OA-E-038 |
| <b>Batch ID:</b> 1137563           | <b>Inst:</b> VOA3.I                     | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/30/2011 23:28  | <b>Analyst:</b> SYK1                    | <b>Purge Vol:</b> 5 mL      |
| <b>Prep Date:</b> 08/30/2011 23:28 |   |                             |
| <b>Data File:</b> 083011V3\3B232.D | <b>Column:</b> DB-624                   |                             |

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-88-3    | Toluene                     | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 79-00-5     | 1,1,2-Trichloroethane       | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 591-78-6    | 2-Hexanone                  | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 142-28-9    | 1,3-Dichloropropane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 127-18-4    | Tetrachloroethylene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 124-48-1    | Dibromochloromethane        | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 106-93-4    | 1,2-Dibromoethane           | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-90-7    | Chlorobenzene               | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 100-41-4    | Ethylbenzene                | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 | U         | 0.500  | ug/L  | 0.500   | 2.00    |
| 95-47-6     | o-Xylene                    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 100-42-5    | Styrene                     | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 75-25-2     | Bromoform                   | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 79-34-5     | 1,1,2,2-Tetrachloroethane   | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 96-18-4     | 1,2,3-Trichloropropane      | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 108-86-1    | Bromobenzene                | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 103-65-1    | n-Propylbenzene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 95-49-8     | 2-Chlorotoluene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 98-82-8     | Isopropylbenzene            | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-67-8    | 1,3,5-Trimethylbenzene      | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 106-43-4    | 4-Chlorotoluene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 98-06-6     | tert-Butylbenzene           | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 95-63-6     | 1,2,4-Trimethylbenzene      | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 135-98-8    | sec-Butylbenzene            | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 99-87-6     | 4-Isopropyltoluene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 541-73-1    | 1,3-Dichlorobenzene         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 106-46-7    | 1,4-Dichlorobenzene         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 104-51-8    | n-Butylbenzene              | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 96-12-8     | 1,2-Dibromo-3-chloropropane | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 87-68-3     | Hexachlorobutadiene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 91-20-3     | Naphthalene                 | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 87-61-6     | 1,2,3-Trichlorobenzene      | U         | 0.332  | ug/L  | 0.332   | 1.00    |
| 107-02-8    | Acrolein                    | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 107-05-1    | Allyl chloride              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 107-13-1    | Acrylonitrile               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 126-99-8    | 2-Chloro-1,3-butadiene      | U         | 0.300  | ug/L  | 0.300   | 1.00    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

|                                    |   |                             |
|------------------------------------|---|-----------------------------|
| <b>SDG Number:</b> 284538          | <b>Date Collected:</b> 08/18/2011 12:00 | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 284538001    | <b>Date Received:</b> 08/23/2011 08:50  |                             |
|                                    | <b>Client:</b> ECOL008                  | <b>Project:</b> ECOL00111   |
| <b>Client ID:</b> 11080101         | <b>Method:</b> SW846 8260B              | <b>SOP Ref:</b> GL-OA-E-038 |
| <b>Batch ID:</b> 1137563           | <b>Inst:</b> VOA3.I                     | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/30/2011 23:28  | <b>Analyst:</b> SYK1                    | <b>Purge Vol:</b> 5 mL      |
| <b>Prep Date:</b> 08/30/2011 23:28 |   |                             |
| <b>Data File:</b> 083011V3\3B232.D | <b>Column:</b> DB-624                   |                             |

| CAS No.    | Parmname                     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|------------------------------|-----------|--------|-------|---------|---------|
| 107-12-0   | Propionitrile                | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 126-98-7   | Methacrylonitrile            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 78-83-1    | Isobutyl alcohol             | U         | 12.5   | ug/L  | 12.5    | 50.0    |
| 80-62-6    | Methyl methacrylate          | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 97-63-2    | Ethyl methacrylate           | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 79-46-9    | 2-Nitropropane               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 108-94-1   | Cyclohexanone                | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 1476-11-5  | cis-1,4-Dichloro-2-butene    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 110-57-6   | trans-1,4-Dichloro-2-butene  | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 76-01-7    | Pentachloroethane            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 100-44-7   | Benzyl chloride              | U         | 1.30   | ug/L  | 1.30    | 5.00    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether  | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 540-59-0   | 1,2-Dichloroethylene (total) | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 1330-20-7  | Xylenes (total)              | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 630-20-6   | 1,1,1,2-Tetrachloroethane    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 120-82-1   | 1,2,4-Trichlorobenzene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 95-50-1    | 1,2-Dichlorobenzene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |



**Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 284538  
**Lab Sample ID:** 284538002

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50

**Matrix:** WATER

**Client ID:** 11080106

**Client:** ECOL008

**Project:** ECOL00111

**Batch ID:** 1137563

**Method:** SW846 8260B

**SOP Ref:** GL-OA-E-038

**Run Date:** 08/30/2011 22:58

**Inst:** VOA3.I

**Dilution:** 1

**Prep Date:** 08/30/2011 22:58

**Analyst:** SYK1

**Purge Vol:** 5 mL

**Data File:** 083011V3\3B231.D

**Column:** DB-624

| CAS No.    | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------|-----------|--------|-------|---------|---------|
| 75-71-8    | Dichlorodifluoromethane    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 74-87-3    | Chloromethane              | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-01-4    | Vinyl chloride             | U         | 0.500  | ug/L  | 0.500   | 1.00    |
| 74-83-9    | Bromomethane               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-00-3    | Chloroethane               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-69-4    | Trichlorofluoromethane     | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 60-29-7    | Ethyl ether                | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 67-64-1    | Acetone                    | E         | 1040   | ug/L  | 1.50    | 5.00    |
| 75-05-8    | Acetonitrile               | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 75-35-4    | 1,1-Dichloroethylene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 79-20-9    | Methyl acetate             | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 74-88-4    | Iodomethane                | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 75-09-2    | Methylene chloride         | U         | 2.00   | ug/L  | 2.00    | 5.00    |
| 75-15-0    | Carbon disulfide           | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 1634-04-4  | tert-Butyl methyl ether    |           | 55.0   | ug/L  | 0.250   | 1.00    |
| 156-60-5   | trans-1,2-Dichloroethylene | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 108-05-4   | Vinyl acetate              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-34-3    | 1,1-Dichloroethane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 78-93-3    | 2-Butanone                 |           | 12.1   | ug/L  | 1.25    | 5.00    |
| 156-59-2   | cis-1,2-Dichloroethylene   | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 594-20-7   | 2,2-Dichloropropane        | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 67-66-3    | Chloroform                 | J         | 0.430  | ug/L  | 0.250   | 1.00    |
| 74-97-5    | Bromochloromethane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 71-55-6    | 1,1,1-Trichloroethane      | U         | 0.325  | ug/L  | 0.325   | 1.00    |
| 110-82-7   | Cyclohexane                | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 563-58-6   | 1,1-Dichloropropene        | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 71-36-3    | n-Butyl alcohol            | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 56-23-5    | Carbon tetrachloride       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 107-06-2   | 1,2-Dichloroethane         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 71-43-2    | Benzene                    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 79-01-6    | Trichloroethylene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 78-87-5    | 1,2-Dichloropropane        | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-87-2   | Methylcyclohexane          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 75-27-4    | Bromodichloromethane       | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 74-95-3    | Dibromomethane             | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 110-75-8   | 2-Chloroethylvinyl ether   | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 108-10-1   | 4-Methyl-2-pentanone       |           | 7.81   | ug/L  | 1.25    | 5.00    |
| 10061-01-5 | cis-1,3-Dichloropropylene  | U         | 0.250  | ug/L  | 0.250   | 1.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 284538  
**Lab Sample ID:** 284538002

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50

**Matrix:** WATER

**Client ID:** 11080106

**Client:** ECOL008

**Project:** ECOL00111

**Batch ID:** 1137563

**Method:** SW846 8260B

**SOP Ref:** GL-OA-E-038

**Run Date:** 08/30/2011 22:58

**Inst:** VOA3.I

**Dilution:** 1

**Prep Date:** 08/30/2011 22:58

**Analyst:** SYK1

**Purge Vol:** 5 mL

**Data File:** 083011V3\3B231.D

**Column:** DB-624

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-88-3    | Toluene                     | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 79-00-5     | 1,1,2-Trichloroethane       | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 591-78-6    | 2-Hexanone                  | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 142-28-9    | 1,3-Dichloropropane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 127-18-4    | Tetrachloroethylene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 124-48-1    | Dibromochloromethane        | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 106-93-4    | 1,2-Dibromoethane           | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-90-7    | Chlorobenzene               | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 100-41-4    | Ethylbenzene                | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 | U         | 0.500  | ug/L  | 0.500   | 2.00    |
| 95-47-6     | o-Xylene                    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 100-42-5    | Styrene                     | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 75-25-2     | Bromoform                   | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 79-34-5     | 1,1,2,2-Tetrachloroethane   | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 96-18-4     | 1,2,3-Trichloropropane      | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 108-86-1    | Bromobenzene                | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 103-65-1    | n-Propylbenzene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 95-49-8     | 2-Chlorotoluene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 98-82-8     | Isopropylbenzene            | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-67-8    | 1,3,5-Trimethylbenzene      |           | 2.90   | ug/L  | 0.250   | 1.00    |
| 106-43-4    | 4-Chlorotoluene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 98-06-6     | tert-Butylbenzene           | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 95-63-6     | 1,2,4-Trimethylbenzene      | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 135-98-8    | sec-Butylbenzene            | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 99-87-6     | 4-Isopropyltoluene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 541-73-1    | 1,3-Dichlorobenzene         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 106-46-7    | 1,4-Dichlorobenzene         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 104-51-8    | n-Butylbenzene              | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 96-12-8     | 1,2-Dibromo-3-chloropropane | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 87-68-3     | Hexachlorobutadiene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 91-20-3     | Naphthalene                 | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 87-61-6     | 1,2,3-Trichlorobenzene      | U         | 0.332  | ug/L  | 0.332   | 1.00    |
| 107-02-8    | Acrolein                    | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 107-05-1    | Allyl chloride              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 107-13-1    | Acrylonitrile               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 126-99-8    | 2-Chloro-1,3-butadiene      | U         | 0.300  | ug/L  | 0.300   | 1.00    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 284538  
**Lab Sample ID:** 284538002

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50

**Matrix:** WATER

**Client ID:** 11080106  
**Batch ID:** 1137563  
**Run Date:** 08/30/2011 22:58  
**Prep Date:** 08/30/2011 22:58

**Client:** ECOL008  
**Method:** SW846 8260B  
**Inst:** VOA3.I  
**Analyst:** SYK1

**Project:** ECOL00111  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL

**Data File:** 083011V3\3B231.D

**Column:** DB-624

| CAS No.    | Parmname                     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|------------------------------|-----------|--------|-------|---------|---------|
| 107-12-0   | Propionitrile                | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 126-98-7   | Methacrylonitrile            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 78-83-1    | Isobutyl alcohol             | U         | 12.5   | ug/L  | 12.5    | 50.0    |
| 80-62-6    | Methyl methacrylate          | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 97-63-2    | Ethyl methacrylate           | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 79-46-9    | 2-Nitropropane               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 108-94-1   | Cyclohexanone                | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 1476-11-5  | cis-1,4-Dichloro-2-butene    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 110-57-6   | trans-1,4-Dichloro-2-butene  | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 76-01-7    | Pentachloroethane            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 100-44-7   | Benzyl chloride              | U         | 1.30   | ug/L  | 1.30    | 5.00    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether  | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 540-59-0   | 1,2-Dichloroethylene (total) | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 1330-20-7  | Xylenes (total)              | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 630-20-6   | 1,1,1,2-Tetrachloroethane    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 120-82-1   | 1,2,4-Trichlorobenzene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 95-50-1    | 1,2-Dichlorobenzene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 284538  
**Lab Sample ID:** 284538002

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50

**Matrix:** WATER

**Client ID:** 11080106DL

**Client:** ECOL008

**Project:** ECOL00111

**Batch ID:** 1137563

**Method:** SW846 8260B

**SOP Ref:** GL-OA-E-038

**Run Date:** 08/31/2011 10:54

**Inst:** VOA3.I

**Dilution:** 5

**Prep Date:** 08/31/2011 10:54

**Analyst:** SYK1

**Purge Vol:** 5 mL

**Data File:** 083111V3\3B309.D

**Column:** DB-624

| CAS No.    | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------|-----------|--------|-------|---------|---------|
| 75-71-8    | Dichlorodifluoromethane    | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 74-87-3    | Chloromethane              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-01-4    | Vinyl chloride             | U         | 2.50   | ug/L  | 2.50    | 5.00    |
| 74-83-9    | Bromomethane               | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-00-3    | Chloroethane               | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-69-4    | Trichlorofluoromethane     | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 60-29-7    | Ethyl ether                | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 67-64-1    | Acetone                    |           | 959    | ug/L  | 7.50    | 25.0    |
| 75-05-8    | Acetonitrile               | U         | 31.3   | ug/L  | 31.3    | 125     |
| 75-35-4    | 1,1-Dichloroethylene       | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 79-20-9    | Methyl acetate             | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 74-88-4    | Iodomethane                | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 75-09-2    | Methylene chloride         | U         | 10.0   | ug/L  | 10.0    | 25.0    |
| 75-15-0    | Carbon disulfide           | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 1634-04-4  | tert-Butyl methyl ether    |           | 69.0   | ug/L  | 1.25    | 5.00    |
| 156-60-5   | trans-1,2-Dichloroethylene | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 108-05-4   | Vinyl acetate              | U         | 7.50   | ug/L  | 7.50    | 25.0    |
| 75-34-3    | 1,1-Dichloroethane         | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 78-93-3    | 2-Butanone                 |           | 32.6   | ug/L  | 6.25    | 25.0    |
| 156-59-2   | cis-1,2-Dichloroethylene   | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 594-20-7   | 2,2-Dichloropropane        | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 67-66-3    | Chloroform                 | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 74-97-5    | Bromochloromethane         | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 71-55-6    | 1,1,1-Trichloroethane      | U         | 1.63   | ug/L  | 1.63    | 5.00    |
| 110-82-7   | Cyclohexane                | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 563-58-6   | 1,1-Dichloropropene        | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 71-36-3    | n-Butyl alcohol            | U         | 75.0   | ug/L  | 75.0    | 250     |
| 56-23-5    | Carbon tetrachloride       | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 107-06-2   | 1,2-Dichloroethane         | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 71-43-2    | Benzene                    | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 79-01-6    | Trichloroethylene          | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 78-87-5    | 1,2-Dichloropropane        | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 108-87-2   | Methylcyclohexane          | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 75-27-4    | Bromodichloromethane       | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 74-95-3    | Dibromomethane             | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 110-75-8   | 2-Chloroethylvinyl ether   | U         | 7.50   | ug/L  | 7.50    | 25.0    |
| 108-10-1   | 4-Methyl-2-pentanone       |           | 35.1   | ug/L  | 6.25    | 25.0    |
| 10061-01-5 | cis-1,3-Dichloropropylene  | U         | 1.25   | ug/L  | 1.25    | 5.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 284538  
**Lab Sample ID:** 284538002

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50

**Matrix:** WATER

**Client ID:** 11080106DL  
**Batch ID:** 1137563  
**Run Date:** 08/31/2011 10:54  
**Prep Date:** 08/31/2011 10:54  
**Data File:** 083111V3\3B309.D

**Client:** ECOL008  
**Method:** SW846 8260B  
**Inst:** VOA3.I  
**Analyst:** SYK1

**Project:** ECOL00111  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 5  
**Purge Vol:** 5 mL

**Column:** DB-624

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-88-3    | Toluene                     | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 79-00-5     | 1,1,2-Trichloroethane       | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 591-78-6    | 2-Hexanone                  | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 142-28-9    | 1,3-Dichloropropane         | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 127-18-4    | Tetrachloroethylene         | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 124-48-1    | Dibromochloromethane        | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 106-93-4    | 1,2-Dibromoethane           | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 108-90-7    | Chlorobenzene               | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 100-41-4    | Ethylbenzene                | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 179601-23-1 | m,p-Xylenes                 | U         | 2.50   | ug/L  | 2.50    | 10.0    |
| 95-47-6     | o-Xylene                    | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 100-42-5    | Styrene                     | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 75-25-2     | Bromoform                   | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 79-34-5     | 1,1,2,2-Tetrachloroethane   | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 96-18-4     | 1,2,3-Trichloropropane      | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 108-86-1    | Bromobenzene                | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 103-65-1    | n-Propylbenzene             | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 95-49-8     | 2-Chlorotoluene             | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 98-82-8     | Isopropylbenzene            | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 108-67-8    | 1,3,5-Trimethylbenzene      | J         | 2.80   | ug/L  | 1.25    | 5.00    |
| 106-43-4    | 4-Chlorotoluene             | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 98-06-6     | tert-Butylbenzene           | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 95-63-6     | 1,2,4-Trimethylbenzene      | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 135-98-8    | sec-Butylbenzene            | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 99-87-6     | 4-Isopropyltoluene          | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 541-73-1    | 1,3-Dichlorobenzene         | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 106-46-7    | 1,4-Dichlorobenzene         | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 104-51-8    | n-Butylbenzene              | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 96-12-8     | 1,2-Dibromo-3-chloropropane | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 87-68-3     | Hexachlorobutadiene         | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 91-20-3     | Naphthalene                 | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 87-61-6     | 1,2,3-Trichlorobenzene      | U         | 1.66   | ug/L  | 1.66    | 5.00    |
| 107-02-8    | Acrolein                    | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 107-05-1    | Allyl chloride              | U         | 7.50   | ug/L  | 7.50    | 25.0    |
| 107-13-1    | Acrylonitrile               | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 126-99-8    | 2-Chloro-1,3-butadiene      | U         | 1.50   | ug/L  | 1.50    | 5.00    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

|                                    |   |                             |
|------------------------------------|---|-----------------------------|
| <b>SDG Number:</b> 284538          | <b>Date Collected:</b> 08/18/2011 12:00 | <b>Matrix:</b> WATER        |
| <b>Lab Sample ID:</b> 284538002    | <b>Date Received:</b> 08/23/2011 08:50  |                             |
|                                    | <b>Client:</b> ECOL008                  | <b>Project:</b> ECOL00111   |
| <b>Client ID:</b> 11080106DL       | <b>Method:</b> SW846 8260B              | <b>SOP Ref:</b> GL-OA-E-038 |
| <b>Batch ID:</b> 1137563           | <b>Inst:</b> VOA3.I                     | <b>Dilution:</b> 5          |
| <b>Run Date:</b> 08/31/2011 10:54  | <b>Analyst:</b> SYK1                    | <b>Purge Vol:</b> 5 mL      |
| <b>Prep Date:</b> 08/31/2011 10:54 |   |                             |
| <b>Data File:</b> 083111V3\3B309.D | <b>Column:</b> DB-624                   |                             |

| CAS No.    | Parmname                     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|------------------------------|-----------|--------|-------|---------|---------|
| 107-12-0   | Propionitrile                | U         | 7.50   | ug/L  | 7.50    | 25.0    |
| 126-98-7   | Methacrylonitrile            | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 78-83-1    | Isobutyl alcohol             | U         | 62.5   | ug/L  | 62.5    | 250     |
| 80-62-6    | Methyl methacrylate          | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 97-63-2    | Ethyl methacrylate           | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 79-46-9    | 2-Nitropropane               | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 108-94-1   | Cyclohexanone                | U         | 75.0   | ug/L  | 75.0    | 250     |
| 1476-11-5  | cis-1,4-Dichloro-2-butene    | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 110-57-6   | trans-1,4-Dichloro-2-butene  | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 76-01-7    | Pentachloroethane            | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 100-44-7   | Benzyl chloride              | U         | 6.50   | ug/L  | 6.50    | 25.0    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether  | U         | 7.50   | ug/L  | 7.50    | 25.0    |
| 540-59-0   | 1,2-Dichloroethylene (total) | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 1330-20-7  | Xylenes (total)              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 630-20-6   | 1,1,1,2-Tetrachloroethane    | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 120-82-1   | 1,2,4-Trichlorobenzene       | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 95-50-1    | 1,2-Dichlorobenzene          | U         | 1.25   | ug/L  | 1.25    | 5.00    |

# **Quality Control Summary**

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**Volatile**  
**Surrogate Recovery Report**

Page 1 of 1

**SDG Number: 284538****Matrix Type: LIQUID**

---

| Sample ID  | Client ID             | DCED4<br>%REC | TOL<br>%REC | BFB<br>%REC |
|------------|-----------------------|---------------|-------------|-------------|
| 1202477760 | LCS for batch 1137563 | 99            | 95          | 101         |
| 1202477757 | MB for batch 1137563  | 100           | 101         | 103         |
| 284538002  | 11080106              | 90            | 96          | 101         |
| 284538001  | 11080101              | 96            | 99          | 102         |
| 1202477758 | 11080101PS            | 96            | 97          | 103         |
| 1202477759 | 11080101PSD           | 97            | 99          | 102         |
| 1202478371 | LCS for batch 1137563 | 97            | 97          | 100         |
| 1202478370 | MB for batch 1137563  | 101           | 100         | 100         |
| 284538002  | 11080106DL            | 94 D          | 96 D        | 101 D       |

**Surrogate****Acceptance Limits**

DCED4 = 1,2-Dichloroethane-d4

(79%-124%)

TOL = Toluene-d8

(80%-120%)

BFB = Bromofluorobenzene

(80%-120%)

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted



Volatile  
Quality Control Summary  
Spike Recovery Report

Page 1 of 2

SDG Number: 284538

Sample Type: Post Spike

Client ID: 11080101PS

Matrix: GROUND WATER

Lab Sample ID: 1202477758

Instrument: VOA3.I

Analysis Date: 08/31/2011 00:28

Dilution: 1

Analyst: SYK1

Prep Batch ID: 1137563

Purge Vol: 5 mL

Batch ID: 1137563

| CAS No   | Parmname                | Amount<br>Added<br>ug/L | Sample<br>Conc.<br>ug/L | Spike<br>Conc.<br>ug/L | Recovery<br>% | Acceptance<br>Limits |
|----------|-------------------------|-------------------------|-------------------------|------------------------|---------------|----------------------|
| 75-35-4  | PS 1,1-Dichloroethylene | 50.0                    | 0.00                    | U 42.5                 | 85            | 64-127               |
| 71-43-2  | PS Benzene              | 50.0                    | 0.00                    | U 44.3                 | 89            | 75-118               |
| 79-01-6  | PS Trichloroethylene    | 50.0                    | 0.00                    | U 43.5                 | 87            | 69-128               |
| 108-88-3 | PS Toluene              | 50.0                    | 0.00                    | U 43.5                 | 87            | 67-119               |
| 108-90-7 | PS Chlorobenzene        | 50.0                    | 0.00                    | U 44.1                 | 88            | 73-123               |

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 2 of 2

SDG Number: 284538

Sample Type: Post Spike Duplicate

Client ID: 11080101PSD

Matrix: GROUND WATER

Lab Sample ID: 1202477759

Instrument: VOA3.I

Analysis Date: 08/31/2011 00:58

Dilution: 1

Analyst: SYK1

Prep Batch ID: 1137563

Purge Vol: 5 mL

Batch ID: 1137563

| CAS No   | Parmname                 | Amount<br>Added<br>ug/L | Sample<br>Conc.<br>ug/L |   | Spike<br>Conc.<br>ug/L | Recovery<br>% | Acceptance<br>Limits | RPD<br>% | Acceptance<br>Limits |
|----------|--------------------------|-------------------------|-------------------------|---|------------------------|---------------|----------------------|----------|----------------------|
| 75-35-4  | PSD 1,1-Dichloroethylene | 50.0                    | 0.00                    | U | 42.1                   | 84            | 64-127               | 1        | 0-20                 |
| 71-43-2  | PSD Benzene              | 50.0                    | 0.00                    | U | 43.3                   | 87            | 75-118               | 2        | 0-20                 |
| 79-01-6  | PSD Trichloroethylene    | 50.0                    | 0.00                    | U | 42.3                   | 85            | 69-128               | 3        | 0-20                 |
| 108-88-3 | PSD Toluene              | 50.0                    | 0.00                    | U | 43.6                   | 87            | 67-119               | 0        | 0-20                 |
| 108-90-7 | PSD Chlorobenzene        | 50.0                    | 0.00                    | U | 44.0                   | 88            | 73-123               | 0        | 0-20                 |

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 1 of 1

SDG Number: 284538

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1137563

Matrix: GROUND WATER

Lab Sample ID: 1202477760

Instrument: VOA3.I

Analysis Date: 08/30/2011 21:28

Dilution: 1

Analyst: SYK1

Prep Batch ID: 1137563

Purge Vol: 5 mL

Batch ID: 1137563

| CAS No   | Parmname                 | Amount<br>Added<br>ug/L | Sample<br>Conc.<br>ug/L | Spike<br>Conc.<br>ug/L | Recovery<br>% | Acceptance<br>Limits |
|----------|--------------------------|-------------------------|-------------------------|------------------------|---------------|----------------------|
| 75-35-4  | LCS 1,1-Dichloroethylene | 50.0                    | 0.0                     | 43.3                   | 87            | 73-125               |
| 71-43-2  | LCS Benzene              | 50.0                    | 0.0                     | 45.2                   | 90            | 80-120               |
| 79-01-6  | LCS Trichloroethylene    | 50.0                    | 0.0                     | 44.9                   | 90            | 80-120               |
| 108-88-3 | LCS Toluene              | 50.0                    | 0.0                     | 44.2                   | 88            | 77-120               |
| 108-90-7 | LCS Chlorobenzene        | 50.0                    | 0.0                     | 45.9                   | 92            | 80-120               |

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 1 of 1

SDG Number: 284538

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1137563

Matrix: GROUND WATER

Lab Sample ID: 1202478371

Instrument: VOA3.I

Analysis Date: 08/31/2011 07:53

Dilution: 1

Analyst: SYK1

Prep Batch ID: 1137563

Purge Vol: 5 mL

Batch ID: 1137563

| CAS No   | Parmname                 | Amount<br>Added<br>ug/L | Sample<br>Conc.<br>ug/L | Spike<br>Conc.<br>ug/L | Recovery<br>% | Acceptance<br>Limits |
|----------|--------------------------|-------------------------|-------------------------|------------------------|---------------|----------------------|
| 75-35-4  | LCS 1,1-Dichloroethylene | 50.0                    | 0.0                     | 45.4                   | 91            | 73-125               |
| 71-43-2  | LCS Benzene              | 50.0                    | 0.0                     | 45.2                   | 90            | 80-120               |
| 79-01-6  | LCS Trichloroethylene    | 50.0                    | 0.0                     | 45.9                   | 92            | 80-120               |
| 108-88-3 | LCS Toluene              | 50.0                    | 0.0                     | 45.4                   | 91            | 77-120               |
| 108-90-7 | LCS Chlorobenzene        | 50.0                    | 0.0                     | 46.0                   | 92            | 80-120               |

## Method Blank Summary

Page 1 of 1

|                |                      |                |                  |            |                   |
|----------------|----------------------|----------------|------------------|------------|-------------------|
| SDG Number:    | 284538               | Client:        | ECOL008          | Matrix:    | GROUND WATER      |
| Client ID:     | MB for batch 1137563 | Instrument ID: | VOA3.I           | Data File: | 083011V3\3B230A.D |
| Lab Sample ID: | 1202477757           | Prep Date:     | 08/30/2011 22:28 | Analyzed:  | 08/30/11 22:28    |
| Column:        | DB-624               |                |                  |            |                   |

This method blank applies to the following samples and quality control samples:

| Client Sample ID         | Lab Sample ID | File ID           | Date Analyzed | Time Analyzed |
|--------------------------|---------------|-------------------|---------------|---------------|
| 01 LCS for batch 1137563 | 1202477760    | 083011V3\3B228A.D | 08/30/11      | 2128          |
| 02 11080106              | 284538002     | 083011V3\3B231.D  | 08/30/11      | 2258          |
| 03 11080101              | 284538001     | 083011V3\3B232.D  | 08/30/11      | 2328          |
| 04 11080101PS            | 1202477758    | 083011V3\3B234.D  | 08/31/11      | 0028          |
| 05 11080101PSD           | 1202477759    | 083011V3\3B235.D  | 08/31/11      | 0058          |

## Method Blank Summary

Page 1 of 1

|                |                      |                |                  |            |                   |
|----------------|----------------------|----------------|------------------|------------|-------------------|
| SDG Number:    | 284538               | Client:        | ECOL008          | Matrix:    | GROUND WATER      |
| Client ID:     | MB for batch 1137563 | Instrument ID: | VOA3.I           | Data File: | 083111V3\3B308A.D |
| Lab Sample ID: | 1202478370           | Prep Date:     | 08/31/2011 10:24 | Analyzed:  | 08/31/11 10:24    |
| Column:        | DB-624               |                |                  |            |                   |

This method blank applies to the following samples and quality control samples:

| Client Sample ID         | Lab Sample ID | File ID           | Date Analyzed | Time Analyzed |
|--------------------------|---------------|-------------------|---------------|---------------|
| 01 LCS for batch 1137563 | 1202478371    | 083111V3\3B303A.D | 08/31/11      | 0753          |
| 02 11080106DL            | 284538002     | 083111V3\3B309.D  | 08/31/11      | 1054          |

## Instrument Performance Check

## BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC

Client SDG: 284538

Instrument ID: VOA3.I

Injection Date/Time: 24-AUG-11 11:37

Column Description: DB-624

Lab File ID 082411V3\3A309.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 50  | 15.0 - 40.0% of mass 95            | 18.6                 |
| 75  | 30.0 - 60.0% of mass 95            | 47.9                 |
| 95  | Base Peak, 100% Relative Abundance | 100                  |
| 96  | 5.0 - 9.0% of mass 95              | 6.9                  |
| 173 | Less than 2.0% of mass 174         | 0                    |
| 174 | 50.0 - 100.0% of mass 95           | 77.3                 |
| 175 | 5.0 - 9.0% of mass 174             | 7.1                  |
| 176 | 95.0 - 101.0% of mass 174          | 96.6                 |
| 177 | 5.0 - 9.0% of mass 176             | 6.6                  |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID | Lab File ID      | Time Analyzed   |
|------------------|---------------|------------------|-----------------|
| ICALMIX[A]       | W3VM110824-01 | 082411V3\3A310.D | 24-AUG-11 12:07 |
| ICALMIX[A]       | W3VM110824-02 | 082411V3\3A311.D | 24-AUG-11 12:37 |
| ICALMIX[A]       | W3VM110824-03 | 082411V3\3A312.D | 24-AUG-11 13:07 |
| ICALMIX[A]       | W3VM110824-04 | 082411V3\3A313.D | 24-AUG-11 13:37 |
| ICALMIX[A]       | W3VM110824-05 | 082411V3\3A314.D | 24-AUG-11 14:07 |
| ICALMIX[A]       | W3VM110824-06 | 082411V3\3A315.D | 24-AUG-11 14:37 |
| ICALMIX[A]       | W3VM110824-07 | 082411V3\3A316.D | 24-AUG-11 15:07 |
| ICALMIX[A]       | W3VM110824-08 | 082411V3\3A317.D | 24-AUG-11 15:37 |
| ICALMIX[A]       | W3VM110824-09 | 082411V3\3A318.D | 24-AUG-11 16:07 |
| ICVMIX[A]01      | W3VM110824-11 | 082411V3\3A321.D | 24-AUG-11 17:38 |
| ICALMIX[B]       | W3VM110824-12 | 082411V3\3A323.D | 24-AUG-11 18:38 |
| ICALMIX[B]       | W3VM110824-13 | 082411V3\3A324.D | 24-AUG-11 19:08 |
| ICALMIX[B]       | W3VM110824-14 | 082411V3\3A325.D | 24-AUG-11 19:38 |
| ICALMIX[B]       | W3VM110824-15 | 082411V3\3A326.D | 24-AUG-11 20:08 |
| ICALMIX[B]       | W3VM110824-16 | 082411V3\3A327.D | 24-AUG-11 20:38 |
| ICALMIX[B]       | W3VM110824-17 | 082411V3\3A328.D | 24-AUG-11 21:08 |

## Instrument Performance Check

## BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC

Client SDG: 284538

Instrument ID: VOA3.I

Injection Date/Time: 25-AUG-11 08:52

Column Description: DB-624

Lab File ID 082511V3\3A401.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 50  | 15.0 - 40.0% of mass 95            | 18                   |
| 75  | 30.0 - 60.0% of mass 95            | 46.1                 |
| 95  | Base Peak, 100% Relative Abundance | 100                  |
| 96  | 5.0 - 9.0% of mass 95              | 7.2                  |
| 173 | Less than 2.0% of mass 174         | 0                    |
| 174 | 50.0 - 100.0% of mass 95           | 77.8                 |
| 175 | 5.0 - 9.0% of mass 174             | 7.5                  |
| 176 | 95.0 - 101.0% of mass 174          | 100                  |
| 177 | 5.0 - 9.0% of mass 176             | 6.5                  |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID | Lab File ID      | Time Analyzed   |
|------------------|---------------|------------------|-----------------|
| ICALMIX[B]       | W3VM110825-01 | 082511V3\3A402.D | 25-AUG-11 09:22 |
| ICALMIX[B]       | W3VM110825-02 | 082511V3\3A403.D | 25-AUG-11 09:52 |
| ICVMIX[B]02      | W3VM110825-03 | 082511V3\3A405.D | 25-AUG-11 10:53 |



## Instrument Performance Check

## BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC

Client SDG: 284538

Instrument ID: VOA3.I

Injection Date/Time: 30-AUG-11 20:28

Column Description: DB-624

Lab File ID 083011V3\3B226.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 50  | 15.0 - 40.0% of mass 95            | 17.4                 |
| 75  | 30.0 - 60.0% of mass 95            | 47.1                 |
| 95  | Base Peak, 100% Relative Abundance | 100                  |
| 96  | 5.0 - 9.0% of mass 95              | 6.9                  |
| 173 | Less than 2.0% of mass 174         | 0                    |
| 174 | 50.0 - 100.0% of mass 95           | 88.5                 |
| 175 | 5.0 - 9.0% of mass 174             | 6.8                  |
| 176 | 95.0 - 101.0% of mass 174          | 95.1                 |
| 177 | 5.0 - 9.0% of mass 176             | 6.8                  |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD, BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID | Lab File ID       | Time Analyzed   |
|------------------|---------------|-------------------|-----------------|
| CCVMIX[A]03      | W3VM110830-06 | 083011V3\3B227.D  | 30-AUG-11 20:58 |
| BLK01LCS         | 1202477760    | 083011V3\3B228A.D | 30-AUG-11 21:28 |
| CCVMIX[B]04      | W3VM110830-08 | 083011V3\3B229.D  | 30-AUG-11 21:58 |
| BLK01            | 1202477757    | 083011V3\3B230A.D | 30-AUG-11 22:28 |
| 11080106         | 284538002     | 083011V3\3B231.D  | 30-AUG-11 22:58 |
| 11080101         | 284538001     | 083011V3\3B232.D  | 30-AUG-11 23:28 |
| 11080101MS       | 1202477758    | 083011V3\3B234.D  | 31-AUG-11 00:28 |
| 11080101MSD      | 1202477759    | 083011V3\3B235.D  | 31-AUG-11 00:58 |

**Instrument Performance Check**  
**BROMOFLUOROBENZENE**

Lab Name GEL Laboratories LLC

Client SDG: 284538

Instrument ID: VOA3.I

Injection Date/Time: 31-AUG-11 06:53

Column Description: DB-624

Lab File ID 083111V3\3B301.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 50  | 15.0 - 40.0% of mass 95            | 16.8                 |
| 75  | 30.0 - 60.0% of mass 95            | 44.8                 |
| 95  | Base Peak, 100% Relative Abundance | 100                  |
| 96  | 5.0 - 9.0% of mass 95              | 6.8                  |
| 173 | Less than 2.0% of mass 174         | 0                    |
| 174 | 50.0 - 100.0% of mass 95           | 76.8                 |
| 175 | 5.0 -9.0% of mass 174              | 7.2                  |
| 176 | 95.0 - 101.0% of mass 174          | 98.3                 |
| 177 | 5.0 - 9.0% of mass 176             | 6.2                  |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID | Lab File ID       | Time Analyzed   |
|------------------|---------------|-------------------|-----------------|
| CCVMIX[A]05      | W3VM110831-01 | 083111V3\3B302.D  | 31-AUG-11 07:23 |
| BLK02LCS         | 1202478371    | 083111V3\3B303A.D | 31-AUG-11 07:53 |
| CCVMIX[B]06      | W3VM110831-04 | 083111V3\3B305.D  | 31-AUG-11 08:53 |
| BLK02            | 1202478370    | 083111V3\3B308A.D | 31-AUG-11 10:24 |
| 11080106DL       | 284538002     | 083111V3\3B309.D  | 31-AUG-11 10:54 |

Internal Standard  
Area and RT Summary

Lab Name : GEL Laboratories LLC

Instrument: VOA3.I

GC Column: DB-624

Client SDG: 284538

STD Analysis Time: 30-AUG-11 20:58

Data File: 083011V3\3B227.D

|             | Fluorobenzene |   |      | Chlorobenzene-d5 |   |      | 1,4-Dichlorobenzene-d4 |   |      |
|-------------|---------------|---|------|------------------|---|------|------------------------|---|------|
|             | Area          | # | RT # | Area             | # | RT # | Area                   | # | RT # |
| 12 Hour STD | 1334304       |   | 12.0 | 578506           |   | 15.6 | 580207                 |   | 18.2 |
| Upper Limit | 2668608       |   | 12.5 | 1157012          |   | 16.1 | 1160414                |   | 18.7 |
| Lower Limit | 667152        |   | 11.5 | 289253           |   | 15.1 | 290104                 |   | 17.7 |
| Sample ID   |               |   |      |                  |   |      |                        |   |      |
| BLK01LCS    | 1329586       |   | 12.0 | 580493           |   | 15.6 | 592456                 |   | 18.2 |
| BLK01       | 1359890       |   | 12.0 | 576500           |   | 15.6 | 585807                 |   | 18.2 |
| 11080106    | 1297699       |   | 12.0 | 551713           |   | 15.6 | 552655                 |   | 18.2 |
| 11080101    | 1333681       |   | 12.0 | 559493           |   | 15.6 | 556848                 |   | 18.2 |
| 11080101MS  | 1280033       |   | 12.0 | 553520           |   | 15.6 | 548589                 |   | 18.2 |
| 11080101MSD | 1287143       |   | 12.0 | 543824           |   | 15.6 | 543506                 |   | 18.2 |

Area Upper Limit = +100% of internal standard area  
Area Lower Limit = - 50% of internal standard area  
RT Upper Limit = + 0.50 minutes of internal standard RT  
RT Lower Limit = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk  
\* Value outside of QC Limits

Internal Standard  
Area and RT Summary

Lab Name : GEL Laboratories LLC  
  
Instrument: VOA3.I  
  
GC Column: DB-624

Client SDG: 284538  
  
STD Analysis Time: 31-AUG-11 07:23  
  
Data File: 083111V3\3B302.D

|             | Fluorobenzene |        | Chlorobenzene-d5 |        | 1,4-Dichlorobenzene-d4 |        |
|-------------|---------------|--------|------------------|--------|------------------------|--------|
|             | Area          | # RT # | Area             | # RT # | Area                   | # RT # |
| 12 Hour STD | 1352307       | 12.0   | 580645           | 15.6   | 602656                 | 18.2   |
| Upper Limit | 2704614       | 12.5   | 1161290          | 16.1   | 1205312                | 18.7   |
| Lower Limit | 676154        | 11.5   | 290323           | 15.1   | 301328                 | 17.7   |
| Sample ID   |               |        |                  |        |                        |        |
| BLK02LCS    | 1352348       | 12.0   | 584102           | 15.6   | 602470                 | 18.2   |
| BLK02       | 1344594       | 12.0   | 572255           | 15.6   | 588335                 | 18.2   |
| 11080106DL  | 1335142       | 12.0   | 566062           | 15.6   | 571151                 | 18.2   |

Area Upper Limit = +100% of internal standard area  
Area Lower Limit = - 50% of internal standard area  
RT Upper Limit = + 0.50 minutes of internal standard RT  
RT Lower Limit = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk  
\* Value outside of QC Limits

# Sample Data

**Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 284538  
**Lab Sample ID:** 284538001

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50

**Matrix:** GROUND WATER

**Client ID:** 11080101  
**Batch ID:** 1137563  
**Run Date:** 08/30/2011 23:28  
**Prep Date:** 08/30/2011 23:28  
**Data File:** 083011V3\3B232.D

**Client:** ECOL008  
**Method:** SW846 8260B  
**Inst:** VOA3.I  
**Analyst:** SYK1

**Project:** ECOL00111  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL

**Column:** DB-624

| CAS No.    | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------|-----------|--------|-------|---------|---------|
| 75-71-8    | Dichlorodifluoromethane    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 74-87-3    | Chloromethane              | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-01-4    | Vinyl chloride             | U         | 0.500  | ug/L  | 0.500   | 1.00    |
| 74-83-9    | Bromomethane               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-00-3    | Chloroethane               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-69-4    | Trichlorofluoromethane     | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 60-29-7    | Ethyl ether                | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 67-64-1    | Acetone                    | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-05-8    | Acetonitrile               | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 75-35-4    | 1,1-Dichloroethylene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 79-20-9    | Methyl acetate             | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 74-88-4    | Iodomethane                | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 75-09-2    | Methylene chloride         | U         | 2.00   | ug/L  | 2.00    | 5.00    |
| 75-15-0    | Carbon disulfide           | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 1634-04-4  | tert-Butyl methyl ether    | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 156-60-5   | trans-1,2-Dichloroethylene | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 108-05-4   | Vinyl acetate              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-34-3    | 1,1-Dichloroethane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 78-93-3    | 2-Butanone                 | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 156-59-2   | cis-1,2-Dichloroethylene   | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 594-20-7   | 2,2-Dichloropropane        | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 67-66-3    | Chloroform                 | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 74-97-5    | Bromochloromethane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 71-55-6    | 1,1,1-Trichloroethane      | U         | 0.325  | ug/L  | 0.325   | 1.00    |
| 110-82-7   | Cyclohexane                | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 563-58-6   | 1,1-Dichloropropene        | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 71-36-3    | n-Butyl alcohol            | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 56-23-5    | Carbon tetrachloride       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 107-06-2   | 1,2-Dichloroethane         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 71-43-2    | Benzene                    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 79-01-6    | Trichloroethylene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 78-87-5    | 1,2-Dichloropropane        | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-87-2   | Methylcyclohexane          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 75-27-4    | Bromodichloromethane       | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 74-95-3    | Dibromomethane             | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 110-75-8   | 2-Chloroethylvinyl ether   | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 108-10-1   | 4-Methyl-2-pentanone       | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 10061-01-5 | cis-1,3-Dichloropropylene  | U         | 0.250  | ug/L  | 0.250   | 1.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 284538  
**Lab Sample ID:** 284538001

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50

**Matrix:** GROUND WATER

**Client ID:** 11080101  
**Batch ID:** 1137563  
**Run Date:** 08/30/2011 23:28  
**Prep Date:** 08/30/2011 23:28  
**Data File:** 083011V3\3B232.D

**Client:** ECOL008  
**Method:** SW846 8260B  
**Inst:** VOA3.I  
**Analyst:** SYK1

**Project:** ECOL00111  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL

**Column:** DB-624

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-88-3    | Toluene                     | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 79-00-5     | 1,1,2-Trichloroethane       | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 591-78-6    | 2-Hexanone                  | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 142-28-9    | 1,3-Dichloropropane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 127-18-4    | Tetrachloroethylene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 124-48-1    | Dibromochloromethane        | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 106-93-4    | 1,2-Dibromoethane           | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-90-7    | Chlorobenzene               | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 100-41-4    | Ethylbenzene                | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 | U         | 0.500  | ug/L  | 0.500   | 2.00    |
| 95-47-6     | o-Xylene                    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 100-42-5    | Styrene                     | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 75-25-2     | Bromoform                   | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 79-34-5     | 1,1,2,2-Tetrachloroethane   | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 96-18-4     | 1,2,3-Trichloropropane      | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 108-86-1    | Bromobenzene                | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 103-65-1    | n-Propylbenzene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 95-49-8     | 2-Chlorotoluene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 98-82-8     | Isopropylbenzene            | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-67-8    | 1,3,5-Trimethylbenzene      | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 106-43-4    | 4-Chlorotoluene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 98-06-6     | tert-Butylbenzene           | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 95-63-6     | 1,2,4-Trimethylbenzene      | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 135-98-8    | sec-Butylbenzene            | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 99-87-6     | 4-Isopropyltoluene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 541-73-1    | 1,3-Dichlorobenzene         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 106-46-7    | 1,4-Dichlorobenzene         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 104-51-8    | n-Butylbenzene              | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 96-12-8     | 1,2-Dibromo-3-chloropropane | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 87-68-3     | Hexachlorobutadiene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 91-20-3     | Naphthalene                 | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 87-61-6     | 1,2,3-Trichlorobenzene      | U         | 0.332  | ug/L  | 0.332   | 1.00    |
| 107-02-8    | Acrolein                    | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 107-05-1    | Allyl chloride              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 107-13-1    | Acrylonitrile               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 126-99-8    | 2-Chloro-1,3-butadiene      | U         | 0.300  | ug/L  | 0.300   | 1.00    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

|                                    |   |                             |
|------------------------------------|---|-----------------------------|
| <b>SDG Number:</b> 284538          | <b>Date Collected:</b> 08/18/2011 12:00 | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 284538001    | <b>Date Received:</b> 08/23/2011 08:50  |                             |
|                                    | <b>Client:</b> ECOL008                  | <b>Project:</b> ECOL00111   |
| <b>Client ID:</b> 11080101         | <b>Method:</b> SW846 8260B              | <b>SOP Ref:</b> GL-OA-E-038 |
| <b>Batch ID:</b> 1137563           | <b>Inst:</b> VOA3.I                     | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/30/2011 23:28  | <b>Analyst:</b> SYK1                    | <b>Purge Vol:</b> 5 mL      |
| <b>Prep Date:</b> 08/30/2011 23:28 |   |                             |
| <b>Data File:</b> 083011V3\3B232.D | <b>Column:</b> DB-624                   |                             |

| CAS No.    | Parmname                     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|------------------------------|-----------|--------|-------|---------|---------|
| 107-12-0   | Propionitrile                | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 126-98-7   | Methacrylonitrile            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 78-83-1    | Isobutyl alcohol             | U         | 12.5   | ug/L  | 12.5    | 50.0    |
| 80-62-6    | Methyl methacrylate          | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 97-63-2    | Ethyl methacrylate           | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 79-46-9    | 2-Nitropropane               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 108-94-1   | Cyclohexanone                | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 1476-11-5  | cis-1,4-Dichloro-2-butene    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 110-57-6   | trans-1,4-Dichloro-2-butene  | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 76-01-7    | Pentachloroethane            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 100-44-7   | Benzyl chloride              | U         | 1.30   | ug/L  | 1.30    | 5.00    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether  | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 540-59-0   | 1,2-Dichloroethylene (total) | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 1330-20-7  | Xylenes (total)              | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 630-20-6   | 1,1,1,2-Tetrachloroethane    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 120-82-1   | 1,2,4-Trichlorobenzene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 95-50-1    | 1,2-Dichlorobenzene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B232.D  
Acq On : 30 Aug 2011 23:28  
Operator : SYK1  
InstName : VOA3  
Sample : |284538001|1137563|1|VOA|1|VOA8260BL|  
Misc : ECOL 5ML pH2  
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Aug 31 07:19:27 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1333681  | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.635 | 15.636 | 1.000  | 559493   | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 556848   | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1333681  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.635 | 15.636 | 1.000  | 559493   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 556848   | 50.00 | ug/L  | 0.00     |

|                             |     |        |        |       |         |       |      |          |
|-----------------------------|-----|--------|--------|-------|---------|-------|------|----------|
| System Monitoring Compounds |     |        |        |       |         |       |      | Dev(Min) |
| 29) 1,2-Dichloroethane-d4   | 102 | 11.568 | 11.568 | 0.963 | 72959   | 47.84 | ug/L | 0.00     |
| 43) Toluene-d8              | 98  | 13.952 | 13.952 | 0.892 | 1233664 | 49.65 | ug/L | 0.00     |
| 61) Bromofluorobenzene      | 95  | 16.916 | 16.916 | 0.930 | 535952  | 50.86 | ug/L | 0.00     |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 29) 1,2-Dichloroethane-d4 | 50.000 | 79 - 124 | 95.68%   |
| 43) Toluene-d8            | 50.000 | 80 - 120 | 99.30%   |
| 61) Bromofluorobenzene    | 50.000 | 80 - 120 | 101.72%  |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.666  | 0.000  | 0        | N.D.      |       |        |
| 3) Chloromethane              |      | 0.000  | 5.068  | 0.000  | 0        | N.D.      |       |        |
| 4) Vinyl chloride             |      | 0.000  | 5.365  | 0.000  | 0        | N.D.      |       |        |
| 5) Bromomethane               |      | 0.000  | 6.125  | 0.000  | 0        | N.D.      |       |        |
| 6) Chloroethane               |      | 0.000  | 6.327  | 0.000  | 0        | N.D.      |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.849  | 0.000  | 0        | N.D.      |       |        |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 635      | N.D.      |       |        |
| 9) Acetone                    | 43   | 7.773  | 7.762  | 0.647  | 19625    | Below Cal |       | 85     |
| 10) 1,1-Dichloroethylene      |      | 0.000  | 7.774  | 0.000  | 0        | N.D.      |       |        |
| 11) Iodomethane               |      | 0.000  | 8.070  | 0.000  | 0        | N.D.      |       |        |
| 12) Acetonitrile              | 41   | 8.248  | 8.224  | 0.687  | 3306     | Below Cal | #     | 86     |
| 13) Methyl acetate            | 43   | 8.307  | 8.295  | 0.692  | 576      | N.D.      |       |        |
| 14) Carbon disulfide          | 76   | 8.200  | 8.212  | 0.683  | 2945     | N.D.      |       |        |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 9099     | N.D.      |       |        |
| 16) tert-Butyl methyl ether   |      | 0.000  | 8.936  | 0.000  | 0        | N.D.      |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 8.971  | 0.000  | 0        | N.D.      |       |        |
| 18) Vinyl acetate             | 43   | 9.611  | 9.612  | 0.800  | 1214     | N.D.      |       |        |
| 19) 1,1-Dichloroethane        |      | 0.000  | 9.623  | 0.000  | 0        | N.D.      |       |        |
| 20) 2-Butanone                | 43   | 10.181 | 10.406 | 0.848  | 5025     | N.D.      |       |        |
| 21) cis-1,2-Dichloroethylene  |      | 0.000  | 10.465 | 0.000  | 0        | N.D.      |       |        |
| 22) 2,2-Dichloropropane       |      | 0.000  | 10.489 | 0.000  | 0        | N.D.      |       |        |
| 23) Bromochloromethane        |      | 0.000  | 10.797 | 0.000  | 0        | N.D.      |       |        |
| 24) Chloroform                |      | 0.000  | 10.869 | 0.000  | 0        | N.D.      |       |        |
| 25) 1,1,1-Trichloroethane     |      | 0.000  | 11.201 | 0.000  | 0        | N.D.      |       |        |
| 26) Cyclohexane               | 56   | 11.295 | 11.307 | 0.941  | 607      | N.D.      |       |        |
| 27) 1,1-Dichloropropene       |      | 0.000  | 11.402 | 0.000  | 0        | N.D.      |       |        |
| 28) Carbon tetrachloride      |      | 0.000  | 11.438 | 0.000  | 0        | N.D.      |       |        |
| 30) 1,2-Dichloroethane        |      | 0.000  | 11.663 | 0.000  | 0        | N.D.      |       |        |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 1047     | N.D.      |       |        |
| 32) Cyclohexene               |      | 0.000  | 11.829 | 0.000  | 0        | N.D.      |       |        |
| 33) n-Butyl alcohol           |      | 0.000  | 12.185 | 0.000  | 0m       | N.D.      | d     |        |
| 34) Trichloroethylene         |      | 0.000  | 12.481 | 0.000  | 0        | N.D.      |       |        |
| 35) 1,2-Dichloropropane       |      | 0.000  | 12.766 | 0.000  | 0        | N.D.      |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B232.D  
Acq On : 30 Aug 2011 23:28  
Operator : SYK1  
InstName : VOA3  
Sample : |284538001|1137563|1|VOA|1|VOA8260BL|  
Misc : ECOL 5ML pH2  
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Aug 31 07:19:27 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 404      | N.D.      |       |
| 37) Dibromomethane            |      | 0.000  | 12.920 | 0.000  | 0        | N.D.      |       |
| 38) Bromodichloromethane      |      | 0.000  | 13.062 | 0.000  | 0        | N.D.      |       |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D.      |       |
| 40) cis-1,3-Dichloropropylene |      | 0.000  | 13.596 | 0.000  | 0        | N.D.      |       |
| 42) 4-Methyl-2-pentanone      |      | 0.000  | 13.715 | 0.000  | 0        | N.D.      |       |
| 44) Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 2391     | N.D.      |       |
| 45) trans-1,3-Dichloroprop... |      | 0.000  | 14.213 | 0.000  | 0        | N.D.      |       |
| 46) 1,1,2-Trichloroethane     |      | 0.000  | 14.462 | 0.000  | 0        | N.D.      |       |
| 47) 2-Hexanone                | 58   | 14.687 | 14.675 | 0.939  | 821      | Below Cal | # 1   |
| 48) 1,3-Dichloropropane       |      | 0.000  | 14.663 | 0.000  | 0        | N.D.      |       |
| 49) Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 195      | N.D.      |       |
| 50) Dibromochloromethane      |      | 0.000  | 14.960 | 0.000  | 0        | N.D.      |       |
| 51) 1,2-Dibromoethane         |      | 0.000  | 15.138 | 0.000  | 0        | N.D.      |       |
| 52) Chlorobenzene             |      | 0.000  | 15.671 | 0.000  | 0        | N.D.      |       |
| 53) 1,1,1,2-Tetrachloroethane |      | 0.000  | 15.742 | 0.000  | 0        | N.D.      |       |
| 54) Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 206      | N.D.      |       |
| 55) m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 578      | N.D.      |       |
| 56) o-Xylene                  |      | 0.000  | 16.335 | 0.000  | 0        | N.D.      |       |
| 57) Styrene                   | 104  | 16.347 | 16.335 | 1.046  | 415      | N.D.      |       |
| 59) Bromoform                 |      | 0.000  | 16.608 | 0.000  | 0        | N.D.      |       |
| 60) Isopropylbenzene          | 105  | 16.916 | 16.715 | 0.930  | 450      | N.D.      |       |
| 62) 1,1,2,2-Tetrachloroethane |      | 0.000  | 17.011 | 0.000  | 0        | N.D.      |       |
| 63) 1,2,3-Trichloropropane    |      | 0.000  | 17.094 | 0.000  | 0        | N.D.      |       |
| 64) Bromobenzene              |      | 0.000  | 17.142 | 0.000  | 0        | N.D.      |       |
| 65) n-Propylbenzene           | 91   | 17.106 | 17.165 | 0.940  | 391      | N.D.      |       |
| 66) 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 633      | N.D.      |       |
| 67) 2-Chlorotoluene           |      | 0.000  | 17.320 | 0.000  | 0        | N.D.      |       |
| 68) 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 405      | N.D.      |       |
| 69) tert-Butylbenzene         |      | 0.000  | 17.711 | 0.000  | 0        | N.D.      |       |
| 70) 1,2,4-Trimethylbenzene    | 105  | 17.746 | 17.747 | 0.975  | 441      | N.D.      |       |
| 71) sec-Butylbenzene          |      | 0.000  | 17.948 | 0.000  | 0        | N.D.      |       |
| 72) 4-Isopropyltoluene        | 119  | 18.066 | 18.067 | 0.993  | 4195     | N.D.      |       |
| 73) 1,3-Dichlorobenzene       |      | 0.000  | 18.126 | 0.000  | 0        | N.D.      |       |
| 74) 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 692      | N.D.      |       |
| 75) n-Butylbenzene            | 91   | 18.339 | 18.529 | 1.008  | 1244     | N.D.      |       |
| 76) 1,2-Dichlorobenzene       |      | 0.000  | 18.660 | 0.000  | 0        | N.D.      |       |
| 77) 1,2-Dibromo-3-chloropr... |      | 0.000  | 19.573 | 0.000  | 0        | N.D.      |       |
| 78) 1,2,4-Trichlorobenzene    |      | 0.000  | 20.676 | 0.000  | 0        | N.D.      |       |
| 79) Hexachlorobutadiene       |      | 0.000  | 20.865 | 0.000  | 0        | N.D.      |       |
| 80) Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 1754     | N.D.      |       |
| 81) 1,2,3-Trichlorobenzene    |      | 0.000  | 21.435 | 0.000  | 0        | N.D.      |       |
| 83) Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.      |       |
| 84) 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.      |       |
| 85) Acrolein                  | 56   | 7.548  | 7.524  | 0.629  | 880      | N.D.      |       |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.      |       |
| 87) Isopropyl Alcohol         |      | 0.000  | 7.928  | 0.000  | 0        | N.D.      |       |
| 88) Allyl chloride            | 41   | 8.248  | 8.331  | 0.687  | 3306     | Below Cal | # 18  |
| 89) tert-Butyl Alcohol        | 59   | 8.568  | 8.580  | 0.714  | 2550     | N.D.      |       |
| 90) Acrylonitrile             |      | 0.000  | 8.864  | 0.000  | 0        | N.D.      |       |
| 91) Isopropyl ether           |      | 0.000  | 9.647  | 0.000  | 0        | N.D.      |       |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 9.766  | 0.000  | 0        | N.D.      |       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B232.D  
Acq On : 30 Aug 2011 23:28  
Operator : SYK1  
InstName : VOA3  
Sample : |284538001|1137563|1|VOA|1|VOA8260BL|  
Misc : ECOL 5ML pH2  
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Aug 31 07:19:27 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

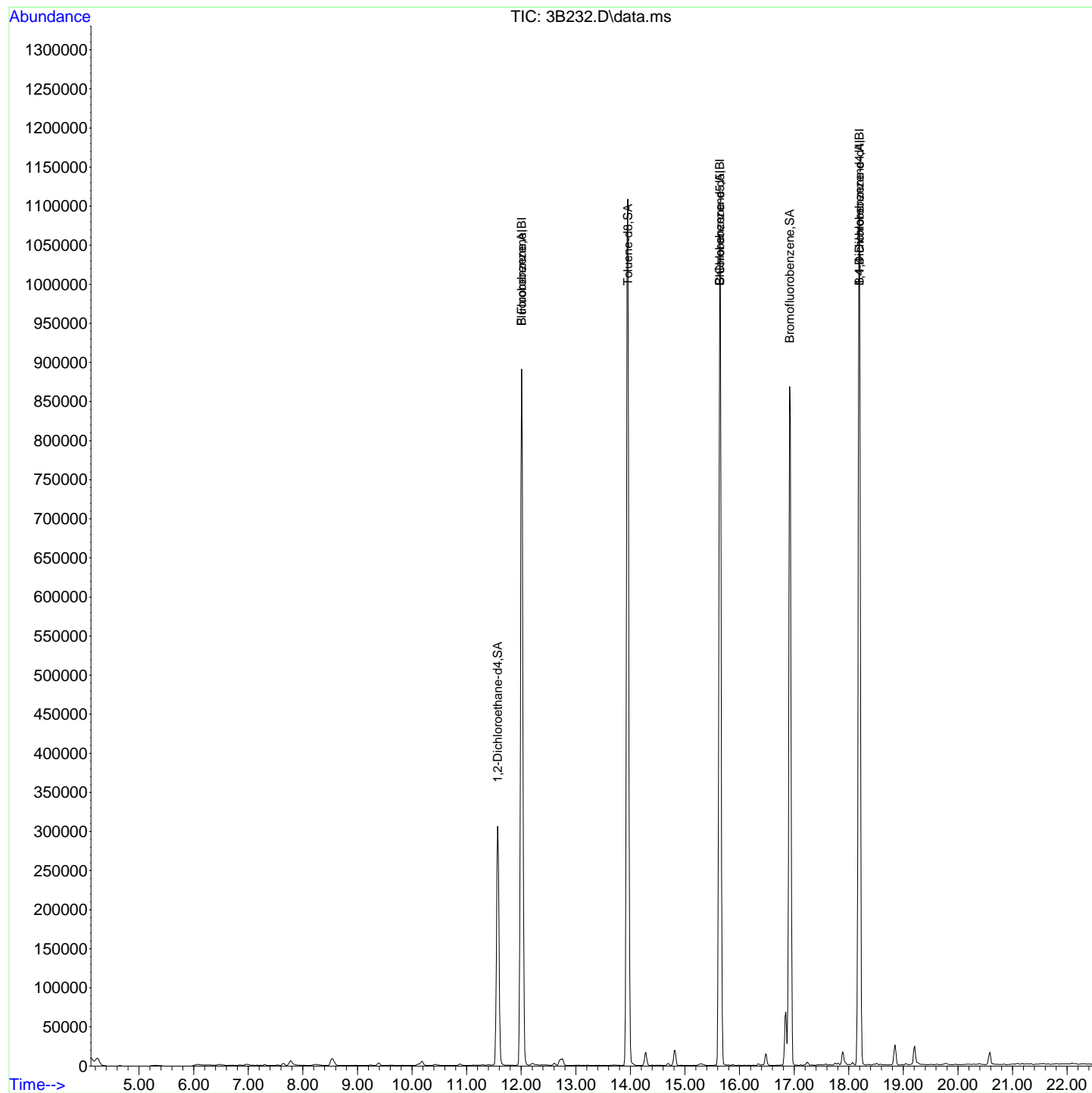
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 93) Ethyl tert-butyl ether     |      | 0.000  | 10.181 | 0.000  | 0        | N.D.      |       |
| 94) Ethyl acetate              | 43   | 10.418 | 10.454 | 0.868  | 5167     | N.D.      |       |
| 95) Propionitrile              |      | 0.000  | 10.501 | 0.000  | 0        | N.D.      |       |
| 96) Methacrylonitrile          | 41   | 10.868 | 10.726 | 0.905  | 1521     | N.D.      |       |
| 97) Tetrahydrofuran            | 42   | 10.880 | 10.869 | 0.906  | 1745     | Below Cal | # 42  |
| 98) Isobutyl alcohol           | 41   | 11.390 | 11.343 | 0.949  | 573      | N.D.      |       |
| 99) Methyl tert-amyl ether     |      | 0.000  | 11.746 | 0.000  | 0        | N.D.      |       |
| 100) Methyl methacrylate       |      | 0.000  | 12.778 | 0.000  | 0        | N.D.      |       |
| 101) 1,4-Dioxane               |      | 0.000  | 12.884 | 0.000  | 0        | N.D.      |       |
| 102) 2-Nitropropane            | 43   | 13.216 | 13.300 | 1.101  | 791      | N.D.      |       |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D.      |       |
| 106) 1-Chlorohexane            |      | 0.000  | 15.553 | 0.000  | 0m       | N.D.      | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 0.000  | 16.762 | 0.000  | 0        | N.D.      |       |
| 108) Cyclohexanone             |      | 0.000  | 16.869 | 0.000  | 0        | N.D.      |       |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 17.059 | 0.000  | 0        | N.D.      |       |
| 110) Pentachloroethane         |      | 0.000  | 17.782 | 0.000  | 0        | N.D.      |       |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 1244     | N.D.      |       |
| 112) bis(2-Chloroisopropyl)... | 45   | 18.837 | 18.754 | 1.035  | 2354     | N.D.      |       |

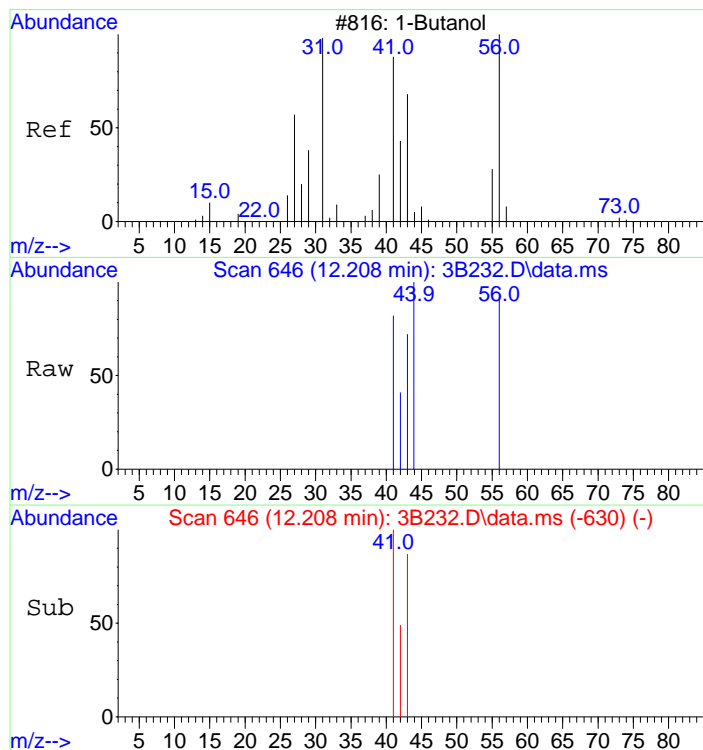
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B232.D  
Acq On : 30 Aug 2011 23:28  
Operator : SYK1  
InstName : VOA3  
Sample : |284538001|1137563|1|VOA|1|VOA8260BL|  
Misc : ECOL 5ML pH2  
ALS Vial : 32 Sample Multiplier: 1

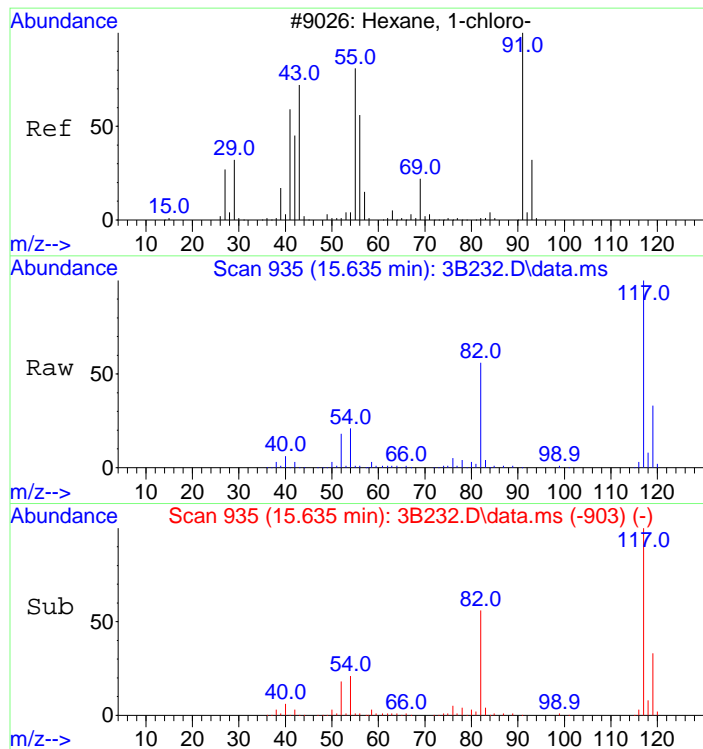
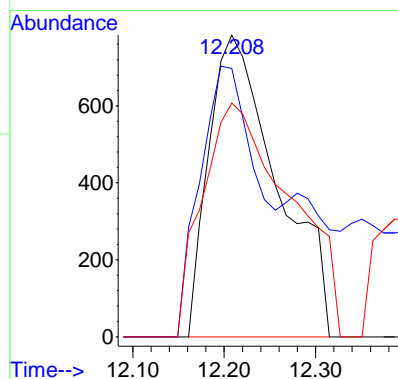
Quant Time: Aug 31 07:19:27 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE





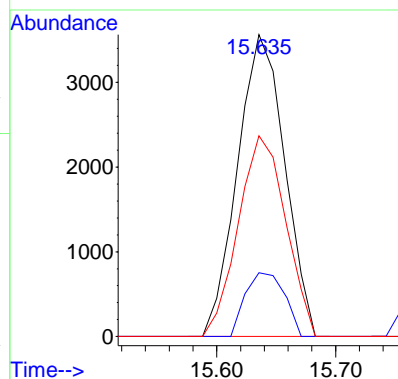
#33 BEFORE analyst DELETION  
n-Butyl alcohol  
Concen: 72.92 ug/L  
RT: 12.208 min Scan# 646  
Delta R.T. 0.023 min  
Lab File: 3B232.D  
Acq: 30 Aug 2011 23:28

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 56      | 100   |       |       |
| 41      | 104.7 | 37.4  | 97.4# |
| 43      | 99.3  | 25.1  | 85.1# |



#106 BEFORE analyst DELETION  
1-Chlorohexane  
Concen: 1.45 ug/L  
RT: 15.635 min Scan# 935  
Delta R.T. 0.082 min  
Lab File: 3B232.D  
Acq: 30 Aug 2011 23:28

| Tgt Ion | Ratio | Lower | Upper  |
|---------|-------|-------|--------|
| 55      | 100   |       |        |
| 91      | 17.6  | 123.6 | 183.6# |
| 56      | 66.7  | 31.5  | 91.5   |



**Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 284538  
**Lab Sample ID:** 284538002

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50

**Matrix:** WATER

**Client ID:** 11080106

**Client:** ECOL008

**Project:** ECOL00111

**Batch ID:** 1137563

**Method:** SW846 8260B

**SOP Ref:** GL-OA-E-038

**Run Date:** 08/30/2011 22:58

**Inst:** VOA3.I

**Dilution:** 1

**Prep Date:** 08/30/2011 22:58

**Analyst:** SYK1

**Purge Vol:** 5 mL

**Data File:** 083011V3\3B231.D

**Column:** DB-624

| CAS No.    | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------|-----------|--------|-------|---------|---------|
| 75-71-8    | Dichlorodifluoromethane    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 74-87-3    | Chloromethane              | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-01-4    | Vinyl chloride             | U         | 0.500  | ug/L  | 0.500   | 1.00    |
| 74-83-9    | Bromomethane               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-00-3    | Chloroethane               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-69-4    | Trichlorofluoromethane     | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 60-29-7    | Ethyl ether                | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 67-64-1    | Acetone                    | E         | 1040   | ug/L  | 1.50    | 5.00    |
| 75-05-8    | Acetonitrile               | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 75-35-4    | 1,1-Dichloroethylene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 79-20-9    | Methyl acetate             | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 74-88-4    | Iodomethane                | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 75-09-2    | Methylene chloride         | U         | 2.00   | ug/L  | 2.00    | 5.00    |
| 75-15-0    | Carbon disulfide           | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 1634-04-4  | tert-Butyl methyl ether    |           | 55.0   | ug/L  | 0.250   | 1.00    |
| 156-60-5   | trans-1,2-Dichloroethylene | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 108-05-4   | Vinyl acetate              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-34-3    | 1,1-Dichloroethane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 78-93-3    | 2-Butanone                 |           | 12.1   | ug/L  | 1.25    | 5.00    |
| 156-59-2   | cis-1,2-Dichloroethylene   | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 594-20-7   | 2,2-Dichloropropane        | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 67-66-3    | Chloroform                 | J         | 0.430  | ug/L  | 0.250   | 1.00    |
| 74-97-5    | Bromochloromethane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 71-55-6    | 1,1,1-Trichloroethane      | U         | 0.325  | ug/L  | 0.325   | 1.00    |
| 110-82-7   | Cyclohexane                | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 563-58-6   | 1,1-Dichloropropene        | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 71-36-3    | n-Butyl alcohol            | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 56-23-5    | Carbon tetrachloride       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 107-06-2   | 1,2-Dichloroethane         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 71-43-2    | Benzene                    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 79-01-6    | Trichloroethylene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 78-87-5    | 1,2-Dichloropropane        | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-87-2   | Methylcyclohexane          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 75-27-4    | Bromodichloromethane       | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 74-95-3    | Dibromomethane             | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 110-75-8   | 2-Chloroethylvinyl ether   | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 108-10-1   | 4-Methyl-2-pentanone       |           | 7.81   | ug/L  | 1.25    | 5.00    |
| 10061-01-5 | cis-1,3-Dichloropropylene  | U         | 0.250  | ug/L  | 0.250   | 1.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 284538  
**Lab Sample ID:** 284538002

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50

**Matrix:** WATER

**Client ID:** 11080106

**Client:** ECOL008

**Project:** ECOL00111

**Batch ID:** 1137563

**Method:** SW846 8260B

**SOP Ref:** GL-OA-E-038

**Run Date:** 08/30/2011 22:58

**Inst:** VOA3.I

**Dilution:** 1

**Prep Date:** 08/30/2011 22:58

**Analyst:** SYK1

**Purge Vol:** 5 mL

**Data File:** 083011V3\3B231.D

**Column:** DB-624

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-88-3    | Toluene                     | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 79-00-5     | 1,1,2-Trichloroethane       | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 591-78-6    | 2-Hexanone                  | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 142-28-9    | 1,3-Dichloropropane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 127-18-4    | Tetrachloroethylene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 124-48-1    | Dibromochloromethane        | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 106-93-4    | 1,2-Dibromoethane           | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-90-7    | Chlorobenzene               | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 100-41-4    | Ethylbenzene                | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 | U         | 0.500  | ug/L  | 0.500   | 2.00    |
| 95-47-6     | o-Xylene                    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 100-42-5    | Styrene                     | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 75-25-2     | Bromoform                   | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 79-34-5     | 1,1,2,2-Tetrachloroethane   | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 96-18-4     | 1,2,3-Trichloropropane      | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 108-86-1    | Bromobenzene                | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 103-65-1    | n-Propylbenzene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 95-49-8     | 2-Chlorotoluene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 98-82-8     | Isopropylbenzene            | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-67-8    | 1,3,5-Trimethylbenzene      |           | 2.90   | ug/L  | 0.250   | 1.00    |
| 106-43-4    | 4-Chlorotoluene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 98-06-6     | tert-Butylbenzene           | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 95-63-6     | 1,2,4-Trimethylbenzene      | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 135-98-8    | sec-Butylbenzene            | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 99-87-6     | 4-Isopropyltoluene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 541-73-1    | 1,3-Dichlorobenzene         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 106-46-7    | 1,4-Dichlorobenzene         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 104-51-8    | n-Butylbenzene              | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 96-12-8     | 1,2-Dibromo-3-chloropropane | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 87-68-3     | Hexachlorobutadiene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 91-20-3     | Naphthalene                 | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 87-61-6     | 1,2,3-Trichlorobenzene      | U         | 0.332  | ug/L  | 0.332   | 1.00    |
| 107-02-8    | Acrolein                    | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 107-05-1    | Allyl chloride              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 107-13-1    | Acrylonitrile               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 126-99-8    | 2-Chloro-1,3-butadiene      | U         | 0.300  | ug/L  | 0.300   | 1.00    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 284538  
**Lab Sample ID:** 284538002

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50

**Matrix:** WATER

**Client ID:** 11080106  
**Batch ID:** 1137563  
**Run Date:** 08/30/2011 22:58  
**Prep Date:** 08/30/2011 22:58  
**Data File:** 083011V3\3B231.D

**Client:** ECOL008  
**Method:** SW846 8260B  
**Inst:** VOA3.I  
**Analyst:** SYK1

**Project:** ECOL00111  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL

**Column:** DB-624

| CAS No.    | Parmname                     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|------------------------------|-----------|--------|-------|---------|---------|
| 107-12-0   | Propionitrile                | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 126-98-7   | Methacrylonitrile            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 78-83-1    | Isobutyl alcohol             | U         | 12.5   | ug/L  | 12.5    | 50.0    |
| 80-62-6    | Methyl methacrylate          | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 97-63-2    | Ethyl methacrylate           | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 79-46-9    | 2-Nitropropane               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 108-94-1   | Cyclohexanone                | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 1476-11-5  | cis-1,4-Dichloro-2-butene    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 110-57-6   | trans-1,4-Dichloro-2-butene  | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 76-01-7    | Pentachloroethane            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 100-44-7   | Benzyl chloride              | U         | 1.30   | ug/L  | 1.30    | 5.00    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether  | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 540-59-0   | 1,2-Dichloroethylene (total) | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 1330-20-7  | Xylenes (total)              | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 630-20-6   | 1,1,1,2-Tetrachloroethane    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 120-82-1   | 1,2,4-Trichlorobenzene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 95-50-1    | 1,2-Dichlorobenzene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B231.D  
Acq On : 30 Aug 2011 22:58  
Operator : SYK1  
InstName : VOA3  
Sample : |284538002|1137563|1|VOA|1|VOA8260BL|  
Misc : ECOL 5ML pH2  
ALS Vial : 31 Sample Multiplier: 1

Quant Time: Aug 31 07:43:23 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon   | R.T.     | Exp RT | Rel RT   | Response | Conc      | Units |          |
|-------------------------------|--------|----------|--------|----------|----------|-----------|-------|----------|
| Internal Standards            |        |          |        |          |          |           |       | Dev(Min) |
| 1) Fluorobenzene              | 96     | 12.007   | 12.007 | 1.000    | 1297699  | 50.00     | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82     | 15.635   | 15.636 | 1.000    | 551713   | 50.00     | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152    | 18.197   | 18.197 | 1.000    | 552655   | 50.00     | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96     | 12.007   | 12.007 | 1.000    | 1297699  | 50.00     | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82     | 15.635   | 15.636 | 1.000    | 551713   | 50.00     | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152    | 18.197   | 18.197 | 1.000    | 552655   | 50.00     | ug/L  | 0.00     |
| System Monitoring Compounds   |        |          |        |          |          |           |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102    | 11.568   | 11.568 | 0.963    | 66409    | 44.76     | ug/L  | 0.00     |
| 43) Toluene-d8                | 98     | 13.952   | 13.952 | 0.892    | 1178137  | 48.08     | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95     | 16.916   | 16.916 | 0.930    | 528069   | 50.49     | ug/L  | 0.00     |
| Compound                      | Amount | Range    |        | Recovery |          |           |       |          |
| 29) 1,2-Dichloroethane-d4     | 50.000 | 79 - 124 |        | 89.52%   |          |           |       |          |
| 43) Toluene-d8                | 50.000 | 80 - 120 |        | 96.16%   |          |           |       |          |
| 61) Bromofluorobenzene        | 50.000 | 80 - 120 |        | 100.98%  |          |           |       |          |
| Target Compounds              | QIon   | R.T.     | Exp RT | Rel RT   | Response | Conc      | Units | QValue   |
| 2) Dichlorodifluoromethane    |        | 0.000    | 4.666  | 0.000    | 0        | N.D.      |       |          |
| 3) Chloromethane              |        | 0.000    | 5.068  | 0.000    | 0m       | N.D.      | d     |          |
| 4) Vinyl chloride             |        | 0.000    | 5.365  | 0.000    | 0        | N.D.      |       |          |
| 5) Bromomethane               |        | 0.000    | 6.125  | 0.000    | 0        | N.D.      |       |          |
| 6) Chloroethane               |        | 0.000    | 6.327  | 0.000    | 0        | N.D.      |       |          |
| 7) Trichlorofluoromethane     |        | 0.000    | 6.849  | 0.000    | 0        | N.D.      |       |          |
| 8) Ethyl ether                | 59     | 7.311    | 7.299  | 0.609    | 585      | N.D.      |       |          |
| 9) Acetone                    | 43     | 7.761    | 7.762  | 0.646    | 3891527  | 1035.04   | ug/L  | 98 A     |
| 10) 1,1-Dichloroethylene      |        | 0.000    | 7.774  | 0.000    | 0        | N.D.      |       |          |
| 11) Iodomethane               |        | 0.000    | 8.070  | 0.000    | 0        | N.D.      |       |          |
| 12) Acetonitrile              | 41     | 8.248    | 8.224  | 0.687    | 3780     | Below Cal | #     | 75       |
| 13) Methyl acetate            | 43     | 8.307    | 8.295  | 0.692    | 1159     | N.D.      |       |          |
| 14) Carbon disulfide          | 76     | 8.200    | 8.212  | 0.683    | 3156     | N.D.      |       |          |
| 15) Methylene chloride        |        | 0.000    | 8.532  | 0.000    | 0m       | N.D.      | d     |          |
| 16) tert-Butyl methyl ether   | 73     | 8.935    | 8.936  | 0.744    | 1214869  | 54.99     | ug/L  | 100      |
| 17) trans-1,2-Dichloroethy... |        | 0.000    | 8.971  | 0.000    | 0        | N.D.      |       |          |
| 18) Vinyl acetate             | 43     | 9.789    | 9.612  | 0.815    | 379      | N.D.      |       |          |
| 19) 1,1,1-Trichloroethane     |        | 0.000    | 9.623  | 0.000    | 0        | N.D.      |       |          |
| 20) 2-Butanone                | 43     | 10.418   | 10.406 | 0.868    | 68549    | 12.06     | ug/L  | 92       |
| 21) cis-1,2-Dichloroethylene  |        | 0.000    | 10.465 | 0.000    | 0        | N.D.      |       |          |
| 22) 2,2-Dichloropropane       |        | 0.000    | 10.489 | 0.000    | 0        | N.D.      |       |          |
| 23) Bromochloromethane        |        | 0.000    | 10.797 | 0.000    | 0        | N.D.      |       |          |
| 24) Chloroform                | 83     | 10.868   | 10.869 | 0.905    | 5703     | 0.43      | ug/L  | 84       |
| 25) 1,1,1-Trichloroethane     |        | 0.000    | 11.201 | 0.000    | 0        | N.D.      |       |          |
| 26) Cyclohexane               | 56     | 11.295   | 11.307 | 0.941    | 191      | N.D.      |       |          |
| 27) 1,1-Dichloropropene       |        | 0.000    | 11.402 | 0.000    | 0        | N.D.      |       |          |
| 28) Carbon tetrachloride      |        | 0.000    | 11.438 | 0.000    | 0        | N.D.      |       |          |
| 30) 1,2-Dichloroethane        |        | 0.000    | 11.663 | 0.000    | 0        | N.D.      |       |          |
| 31) Benzene                   | 78     | 11.687   | 11.687 | 0.973    | 651      | N.D.      |       |          |
| 32) Cyclohexene               |        | 0.000    | 11.829 | 0.000    | 0        | N.D.      |       |          |
| 33) n-Butyl alcohol           |        | 0.000    | 12.185 | 0.000    | 0m       | N.D.      | d     |          |
| 34) Trichloroethylene         |        | 0.000    | 12.481 | 0.000    | 0m       | N.D.      | d     |          |
| 35) 1,2-Dichloropropane       |        | 0.000    | 12.766 | 0.000    | 0m       | N.D.      | d     |          |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B231.D  
Acq On : 30 Aug 2011 22:58  
Operator : SYK1  
InstName : VOA3  
Sample : |284538002|1137563|1|VOA|1|VOA8260BL|  
Misc : ECOL 5ML pH2  
ALS Vial : 31 Sample Multiplier: 1

Quant Time: Aug 31 07:43:23 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc         | Units |    |
|-------------------------------|------|--------|--------|--------|----------|--------------|-------|----|
| 36) Methylcyclohexane         | 83   | 12.706 | 12.766 | 1.058  | 1864     | N.D.         |       |    |
| 37) Dibromomethane            |      | 0.000  | 12.920 | 0.000  | 0        | N.D.         |       |    |
| 38) Bromodichloromethane      |      | 0.000  | 13.062 | 0.000  | 0        | N.D.         |       |    |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D.         |       |    |
| 40) cis-1,3-Dichloropropylene |      | 0.000  | 13.596 | 0.000  | 0        | N.D.         |       |    |
| 42) 4-Methyl-2-pentanone      | 58   | 13.714 | 13.715 | 0.877  | 22596    | 7.81 ug/L    | #     | 1  |
| 44) Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 3050     | N.D.         |       |    |
| 45) trans-1,3-Dichloroprop... | 75   | 14.272 | 14.213 | 0.913  | 186      | N.D.         |       |    |
| 46) 1,1,2-Trichloroethane     |      | 0.000  | 14.462 | 0.000  | 0        | N.D.         |       |    |
| 47) 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 2051     | Below Cal    | #     | 1  |
| 48) 1,3-Dichloropropane       |      | 0.000  | 14.663 | 0.000  | 0        | N.D.         |       |    |
| 49) Tetrachloroethylene       |      | 0.000  | 14.699 | 0.000  | 0        | N.D.         |       |    |
| 50) Dibromochloromethane      |      | 0.000  | 14.960 | 0.000  | 0        | N.D.         |       |    |
| 51) 1,2-Dibromoethane         |      | 0.000  | 15.138 | 0.000  | 0        | N.D.         |       |    |
| 52) Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 381      | N.D.         |       |    |
| 53) 1,1,1,2-Tetrachloroethane |      | 0.000  | 15.742 | 0.000  | 0        | N.D.         |       |    |
| 54) Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 824      | N.D.         |       |    |
| 55) m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 3367     | N.D.         |       |    |
| 56) o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 201      | N.D.         |       |    |
| 57) Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 193      | N.D.         |       |    |
| 59) Bromoform                 |      | 0.000  | 16.608 | 0.000  | 0        | N.D.         |       |    |
| 60) Isopropylbenzene          | 105  | 16.833 | 16.715 | 0.925  | 182      | N.D.         |       |    |
| 62) 1,1,2,2-Tetrachloroethane | 83   | 16.999 | 17.011 | 0.934  | 1217     | N.D.         |       |    |
| 63) 1,2,3-Trichloropropane    |      | 0.000  | 17.094 | 0.000  | 0        | N.D.         |       |    |
| 64) Bromobenzene              |      | 0.000  | 17.142 | 0.000  | 0        | N.D.         |       |    |
| 65) n-Propylbenzene           |      | 0.000  | 17.165 | 0.000  | 0        | N.D.         |       |    |
| 66) 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 80409    | 2.90 ug/L    |       | 96 |
| 67) 2-Chlorotoluene           | 126  | 17.272 | 17.320 | 0.949  | 369      | N.D.         |       |    |
| 68) 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 689      | N.D.         |       |    |
| 69) tert-Butylbenzene         |      | 0.000  | 17.711 | 0.000  | 0        | N.D.         |       |    |
| 70) 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 687      | N.D.         |       |    |
| 71) sec-Butylbenzene          |      | 0.000  | 17.948 | 0.000  | 0        | N.D.         |       |    |
| 72) 4-Isopropyltoluene        |      | 0.000  | 18.067 | 0.000  | 0        | N.D.         |       |    |
| 73) 1,3-Dichlorobenzene       | 146  | 18.138 | 18.126 | 0.997  | 409      | N.D.         |       |    |
| 74) 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 906      | N.D.         |       |    |
| 75) n-Butylbenzene            | 91   | 18.470 | 18.529 | 1.015  | 956      | N.D.         |       |    |
| 76) 1,2-Dichlorobenzene       |      | 0.000  | 18.660 | 0.000  | 0        | N.D.         |       |    |
| 77) 1,2-Dibromo-3-chloropr... |      | 0.000  | 19.573 | 0.000  | 0        | N.D.         |       |    |
| 78) 1,2,4-Trichlorobenzene    | 180  | 20.675 | 20.676 | 1.136  | 401      | N.D.         |       |    |
| 79) Hexachlorobutadiene       |      | 0.000  | 20.865 | 0.000  | 0        | N.D.         |       |    |
| 80) Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 3292     | N.D.         |       |    |
| 81) 1,2,3-Trichlorobenzene    |      | 0.000  | 21.435 | 0.000  | 0        | N.D.         |       |    |
| 83) Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.         |       |    |
| 84) 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.         |       |    |
| 85) Acrolein                  | 56   | 7.524  | 7.524  | 0.627  | 916      | N.D.         |       |    |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.         |       |    |
| 87) Isopropyl Alcohol         |      | 0.000  | 7.928  | 0.000  | 0m       | N.D. d       |       |    |
| 88) Allyl chloride            | 41   | 8.378  | 8.331  | 0.698  | 364      | Below Cal    | #     | 27 |
| 89) tert-Butyl Alcohol        | 59   | 8.568  | 8.580  | 0.714  | 3218167  | 3636.02 ug/L |       | 98 |
| 90) Acrylonitrile             |      | 0.000  | 8.864  | 0.000  | 0m       | N.D. d       |       |    |
| 91) Isopropyl ether           |      | 0.000  | 9.647  | 0.000  | 0        | N.D.         |       |    |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 9.766  | 0.000  | 0m       | N.D. d       |       |    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B231.D  
Acq On : 30 Aug 2011 22:58  
Operator : SYK1  
InstName : VOA3  
Sample : |284538002|1137563|1|VOA|1|VOA8260BL|  
Misc : ECOL 5ML pH2  
ALS Vial : 31 Sample Multiplier: 1

Quant Time: Aug 31 07:43:23 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

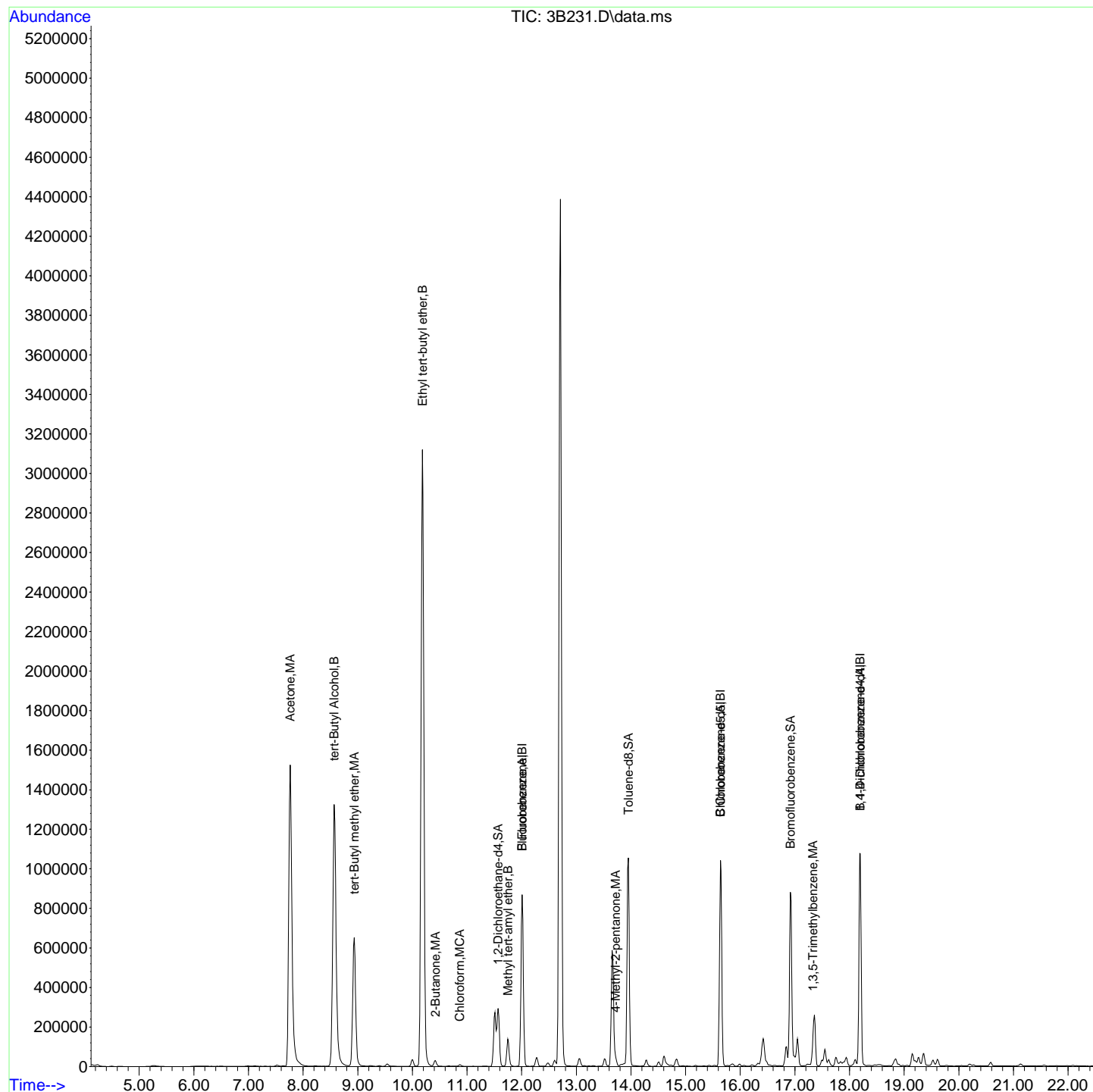
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |      |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|------|
| 93) Ethyl tert-butyl ether     | 59   | 10.181 | 10.181 | 0.848  | 4788585  | 200.21    | ug/L  | 98 A |
| 94) Ethyl acetate              |      | 0.000  | 10.454 | 0.000  | 0m       | N.D.      | d     |      |
| 95) Propionitrile              |      | 0.000  | 10.501 | 0.000  | 0        | N.D.      |       |      |
| 96) Methacrylonitrile          |      | 0.000  | 10.726 | 0.000  | 0m       | N.D.      | d     |      |
| 97) Tetrahydrofuran            | 42   | 10.868 | 10.869 | 0.905  | 2918     | Below Cal | #     | 51   |
| 98) Isobutyl alcohol           | 41   | 11.307 | 11.343 | 0.942  | 1951     | N.D.      |       |      |
| 99) Methyl tert-amyl ether     | 73   | 11.746 | 11.746 | 0.978  | 174897   | 7.98      | ug/L  | 98   |
| 100) Methyl methacrylate       |      | 0.000  | 12.778 | 0.000  | 0m       | N.D.      | d     |      |
| 101) 1,4-Dioxane               |      | 0.000  | 12.884 | 0.000  | 0        | N.D.      |       |      |
| 102) 2-Nitropropane            | 43   | 13.442 | 13.300 | 1.120  | 1840     | N.D.      |       |      |
| 104) Ethyl methacrylate        | 69   | 14.248 | 14.248 | 0.911  | 376      | N.D.      |       |      |
| 106) 1-Chlorohexane            |      | 0.000  | 15.553 | 0.000  | 0m       | N.D.      | d     |      |
| 107) cis-1,4-Dichloro-2-butene | 53   | 16.904 | 16.762 | 0.929  | 1474     | N.D.      |       |      |
| 108) Cyclohexanone             | 42   | 16.904 | 16.869 | 0.929  | 3149     | Below Cal | #     | 39   |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 17.059 | 0.000  | 0m       | N.D.      | d     |      |
| 110) Pentachloroethane         |      | 0.000  | 17.782 | 0.000  | 0        | N.D.      |       |      |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 2480     | N.D.      |       |      |
| 112) bis(2-Chloroisopropyl)... | 45   | 18.837 | 18.754 | 1.035  | 3217     | N.D.      |       |      |

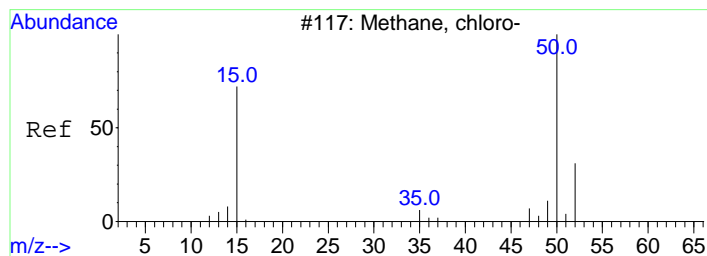
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B231.D  
Acq On : 30 Aug 2011 22:58  
Operator : SYK1  
InstName : VOA3  
Sample : |284538002|1137563|1|VOA|1|VOA8260BL|  
Misc : ECOL 5ML pH2  
ALS Vial : 31 Sample Multiplier: 1

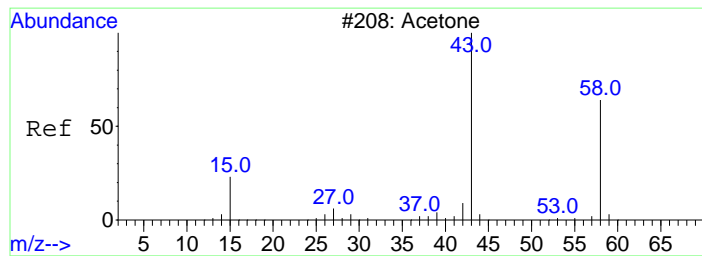
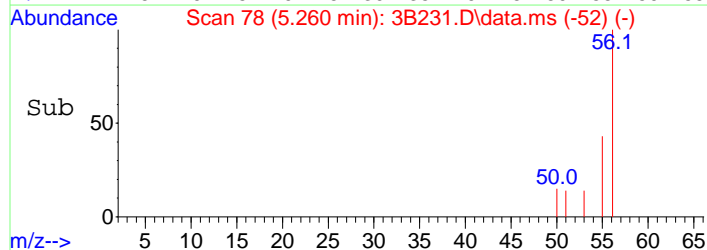
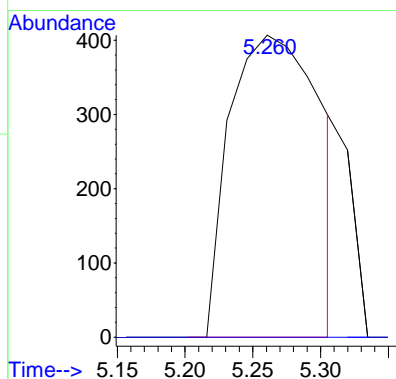
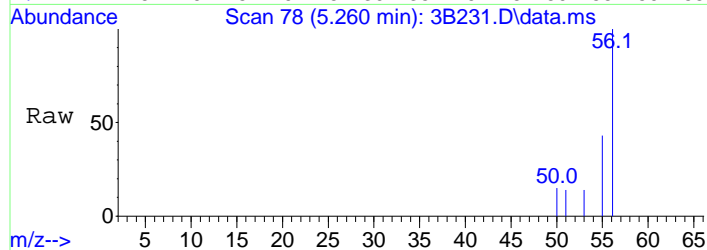
Quant Time: Aug 31 07:43:23 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE





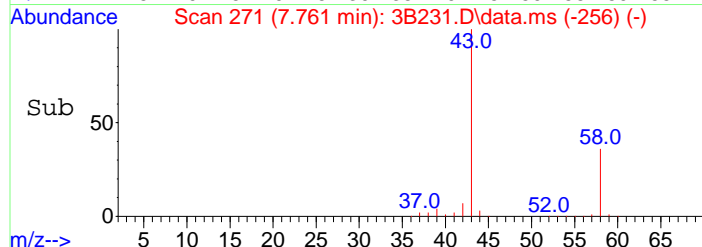
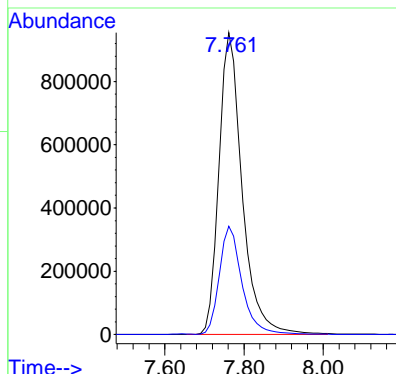
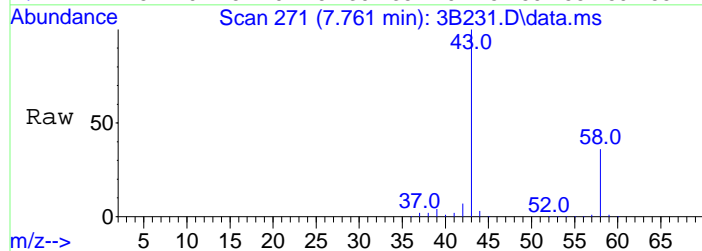
#3 BEFORE analyst DELETION  
Chloromethane  
Concen: 0.30 ug/L  
RT: 5.260 min Scan# 78  
Delta R.T. 0.192 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

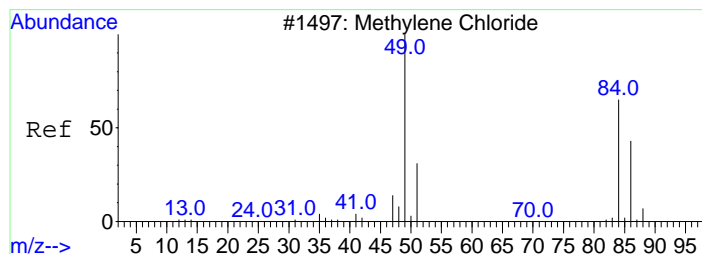
Tgt Ion: 50 Resp: 1886  
Ion Ratio Lower Upper  
50 100  
52 0.0 2.2 62.2#



#9  
Acetone  
Concen: 1035.04 ug/L  
RT: 7.761 min Scan# 271  
Delta R.T. -0.001 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

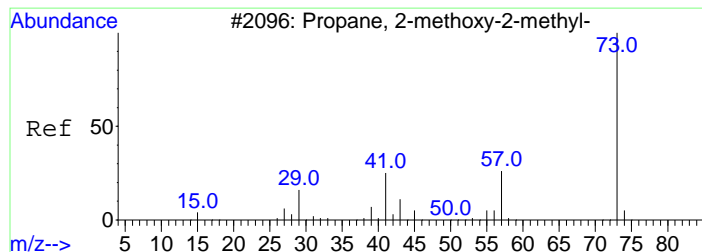
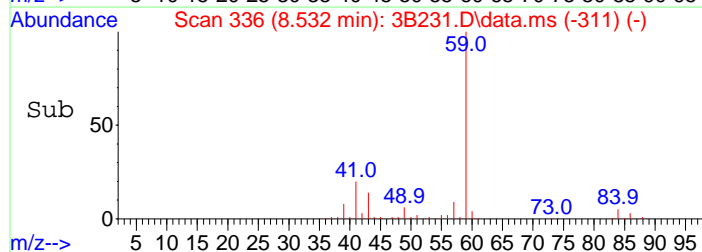
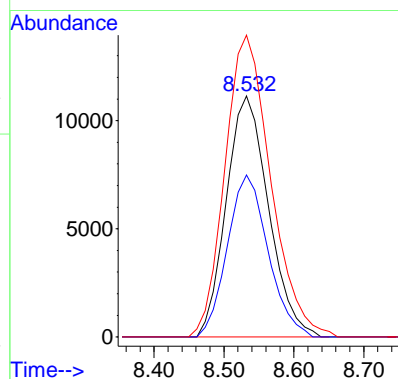
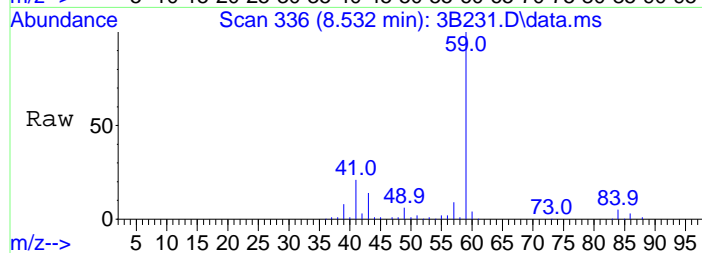
Tgt Ion: 43 Resp: 3891527  
Ion Ratio Lower Upper  
43 100  
58 34.6 3.6 63.6





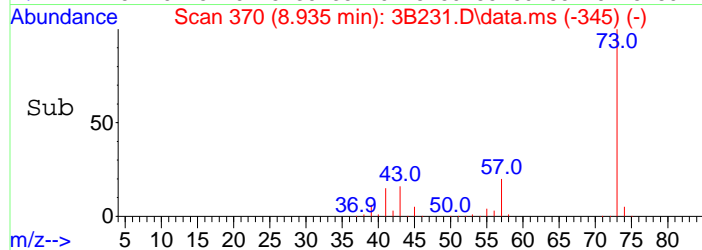
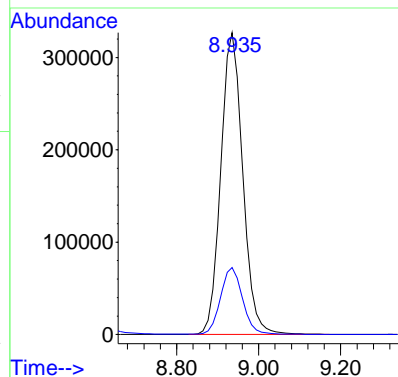
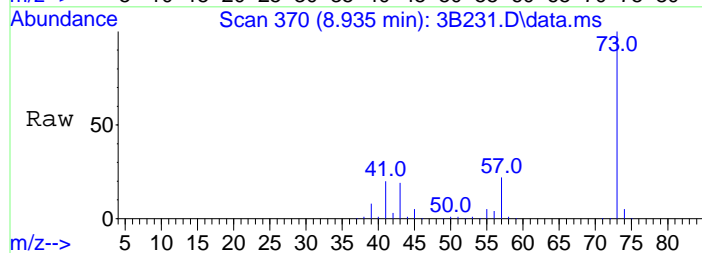
#15 BEFORE analyst DELETION  
Methylene chloride  
Concen: 5.12 ug/L  
RT: 8.532 min Scan# 336  
Delta R.T. 0.000 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

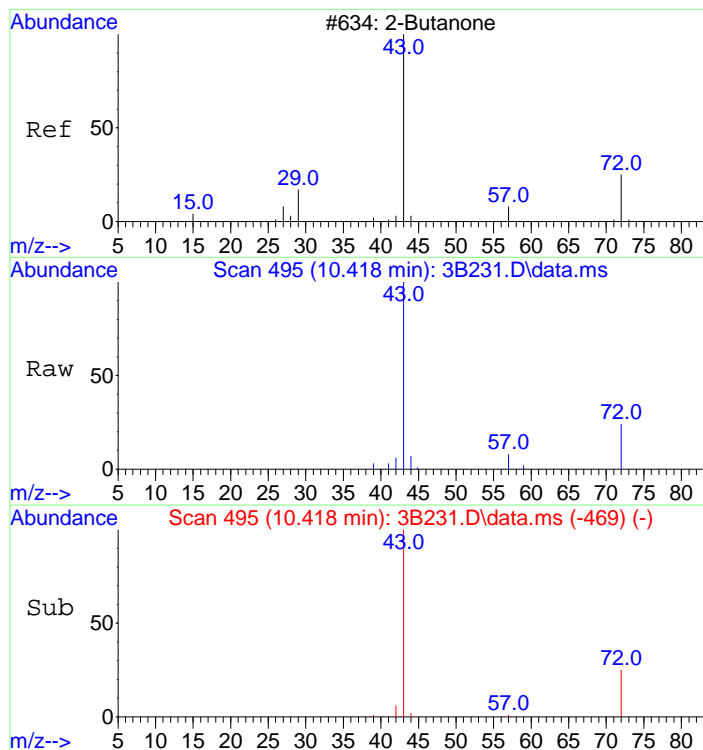
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 84      | 100   |       |       |
| 86      | 64.7  | 35.0  | 95.0  |
| 49      | 135.8 | 92.2  | 152.2 |



#16  
tert-Butyl methyl ether  
Concen: 54.99 ug/L  
RT: 8.935 min Scan# 370  
Delta R.T. -0.001 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

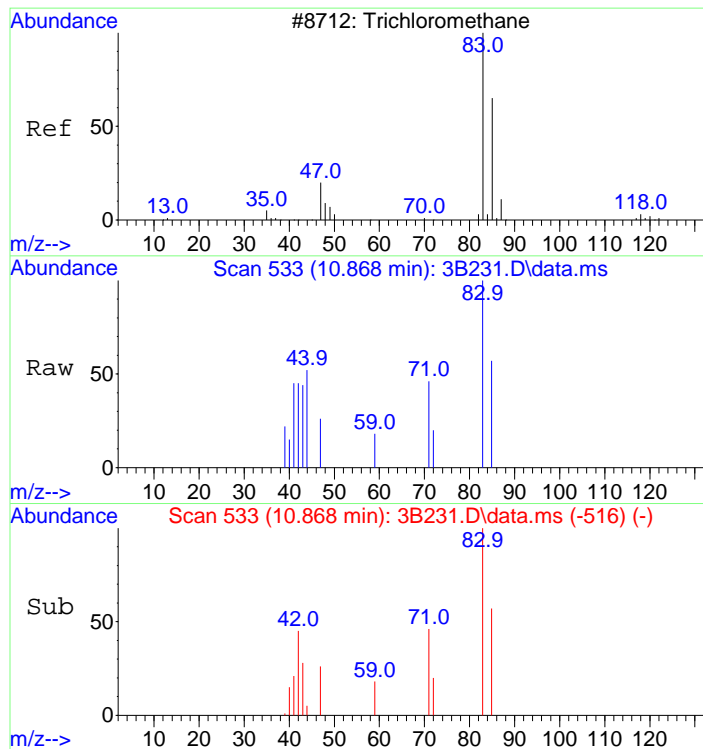
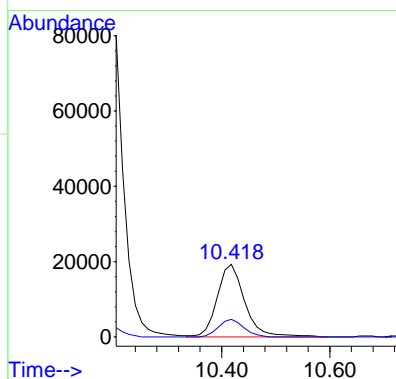
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 73      | 100   |       |       |
| 57      | 22.3  | 0.0   | 52.2  |





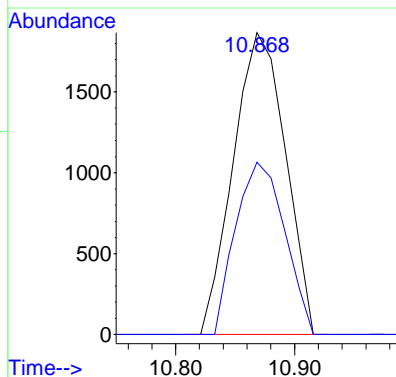
#20  
2-Butanone  
Concen: 12.06 ug/L  
RT: 10.418 min Scan# 495  
Delta R.T. 0.012 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

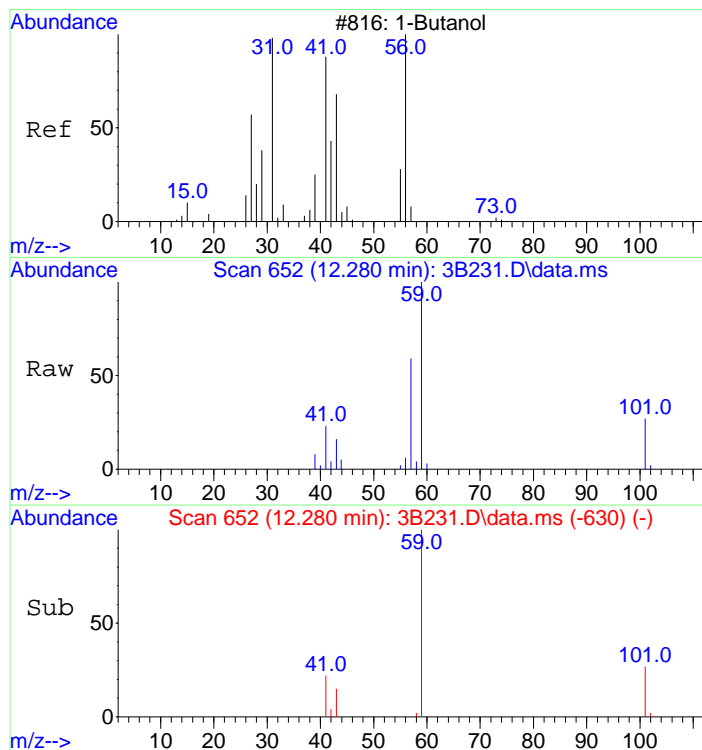
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 43      | 100   |       |       |
| 72      | 22.4  | 0.0   | 56.6  |



#24  
Chloroform  
Concen: 0.43 ug/L  
RT: 10.868 min Scan# 533  
Delta R.T. -0.001 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

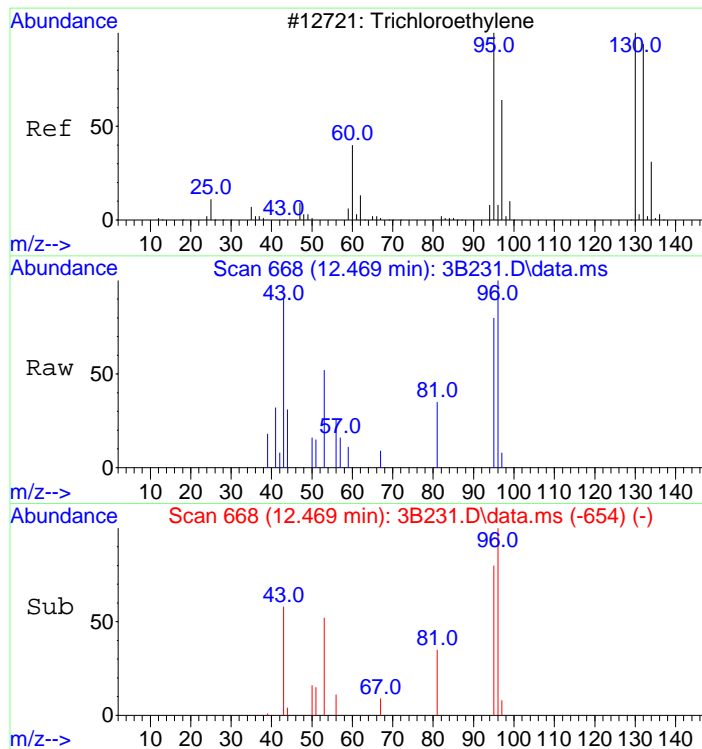
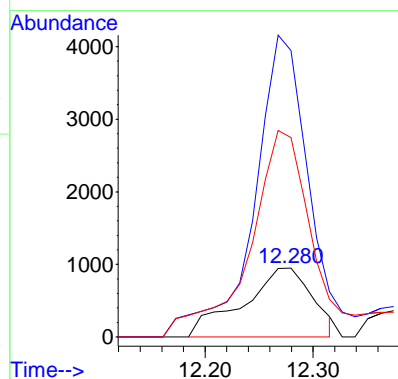
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 83      | 100   |       |       |
| 85      | 53.6  | 36.8  | 96.8  |





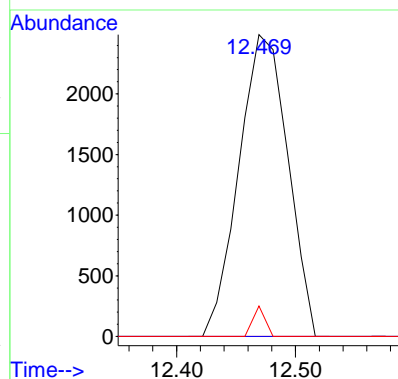
#33 BEFORE analyst DELETION  
n-Butyl alcohol  
Concen: 74.24 ug/L  
RT: 12.280 min Scan# 652  
Delta R.T. 0.095 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 56      | 100   |       |       |
| 41      | 333.5 | 37.4  | 97.4# |
| 43      | 252.1 | 25.1  | 85.1# |

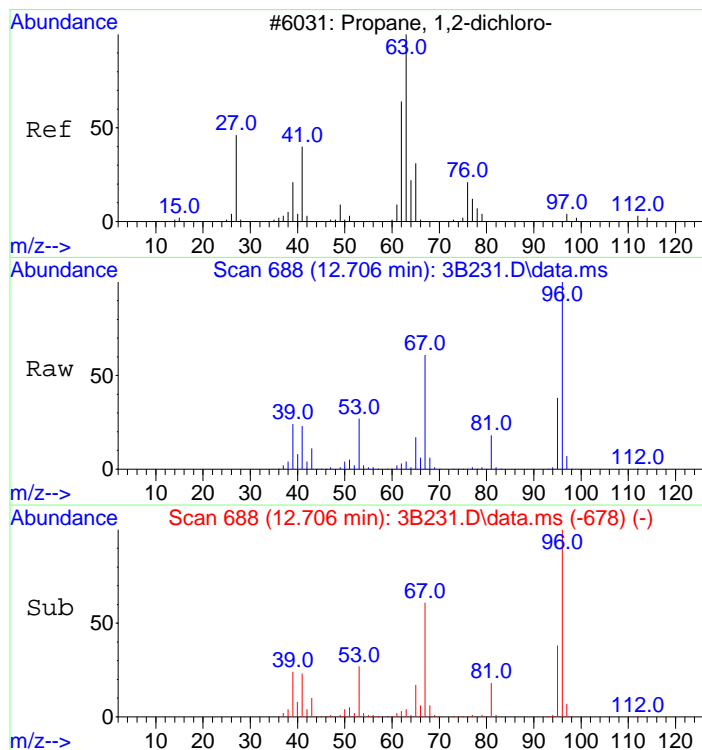


#34 BEFORE analyst DELETION  
Trichloroethylene  
Concen: 0.95 ug/L  
RT: 12.469 min Scan# 668  
Delta R.T. -0.012 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

| Tgt Ion | Ratio | Lower | Upper  |
|---------|-------|-------|--------|
| 95      | 100   |       |        |
| 130     | 0.0   | 72.9  | 132.9# |
| 97      | 2.5   | 35.9  | 95.9#  |

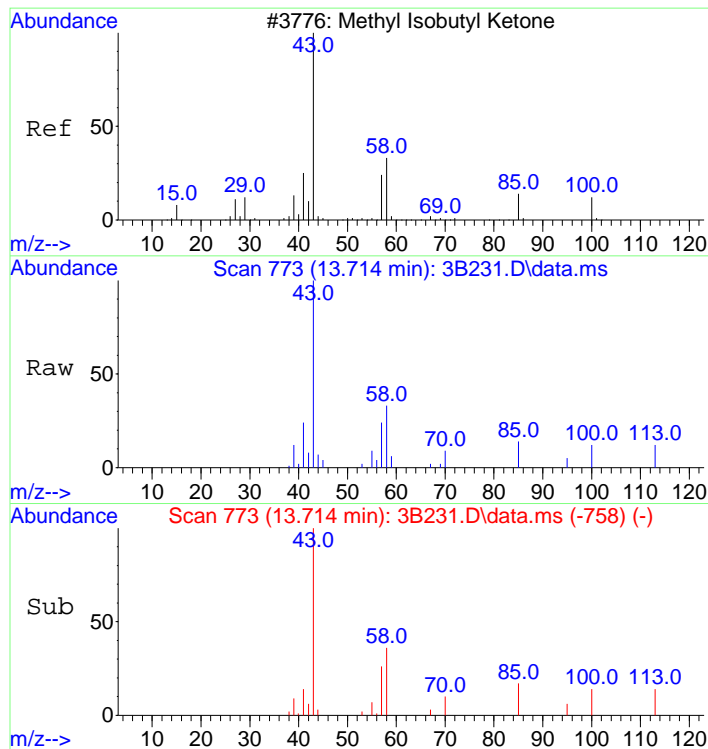
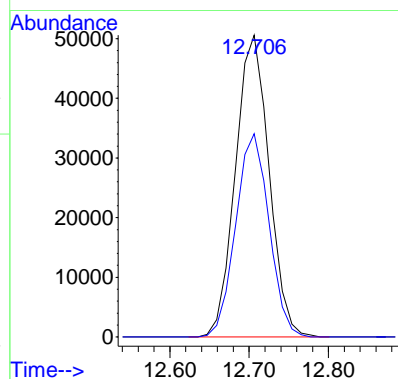






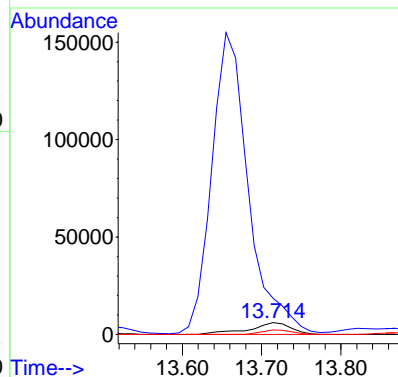
#35 BEFORE analyst DELETION  
1,2-Dichloropropane  
Concen: 20.87 ug/L  
RT: 12.706 min Scan# 688  
Delta R.T. -0.060 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

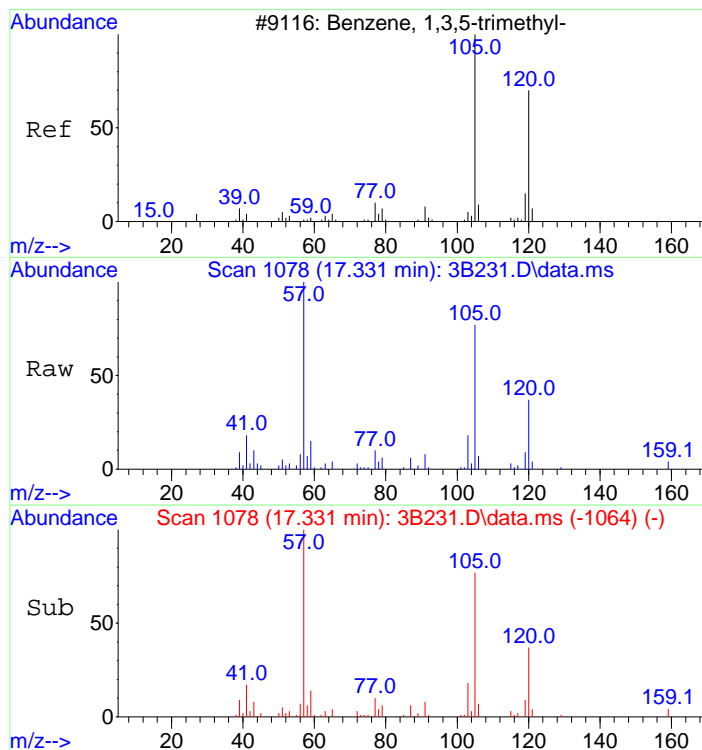
Tgt Ion: 63 Resp: 149281  
Ion Ratio Lower Upper  
63 100  
62 66.8 39.9 99.9



#42  
4-Methyl-2-pentanone  
Concen: 7.81 ug/L  
RT: 13.714 min Scan# 773  
Delta R.T. -0.001 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

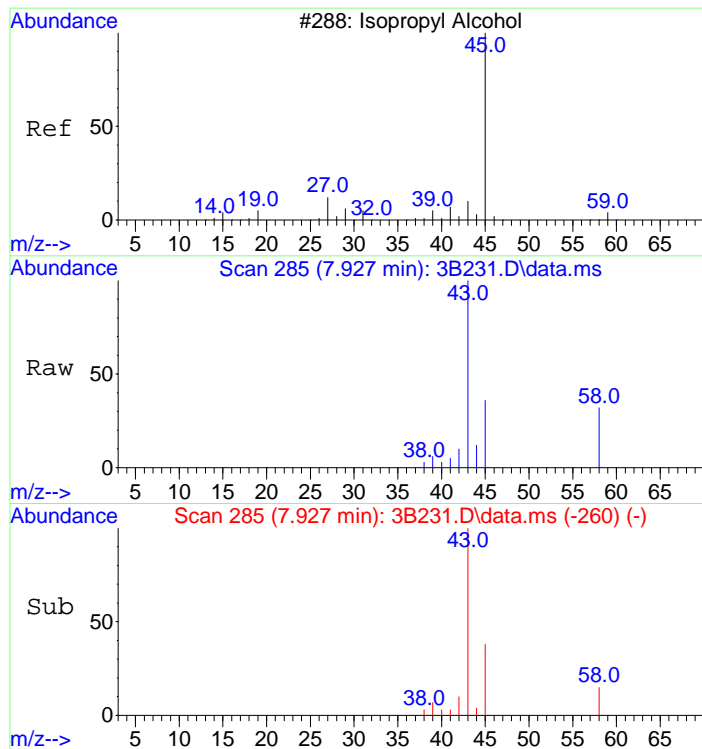
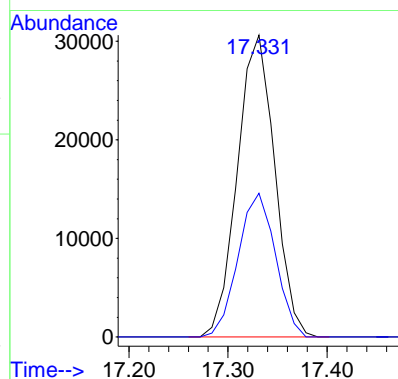
Tgt Ion: 58 Resp: 22596  
Ion Ratio Lower Upper  
58 100  
43 0.0 206.5 266.5#  
100 26.7 7.6 67.6





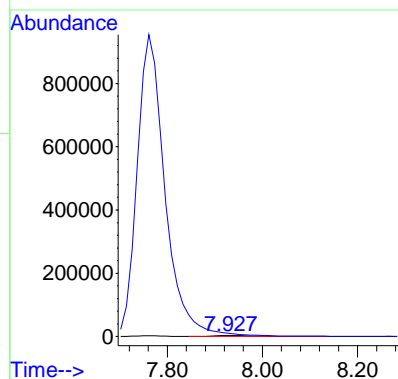
#66  
1,3,5-Trimethylbenzene  
Concen: 2.90 ug/L  
RT: 17.331 min Scan# 1078  
Delta R.T. 0.000 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

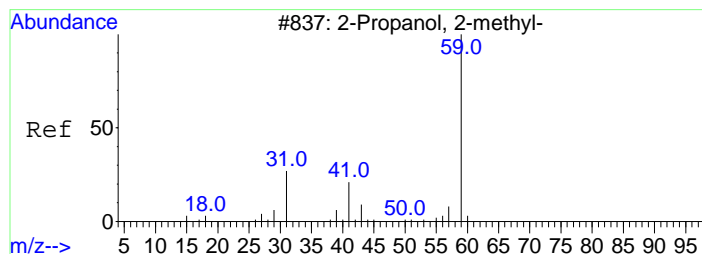
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 105     | 100   |       |       |
| 120     | 47.6  | 20.6  | 80.6  |



#87 BEFORE analyst DELETION  
Isopropyl Alcohol  
Concen: 42.09 ug/L  
RT: 7.927 min Scan# 285  
Delta R.T. -0.001 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

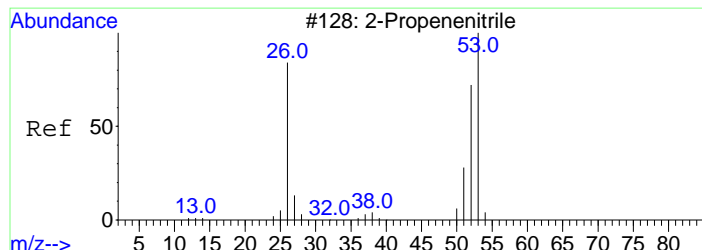
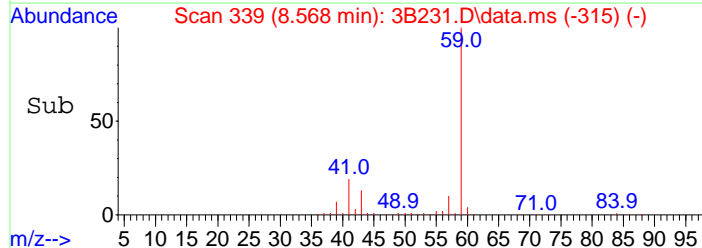
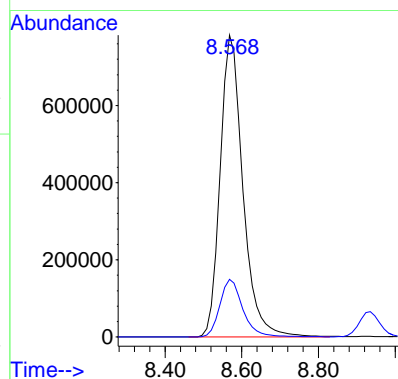
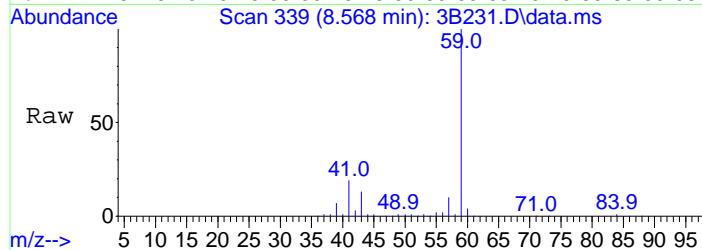
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 45      | 100   |       |       |
| 43      | 0.0   | 0.0   | 47.0  |





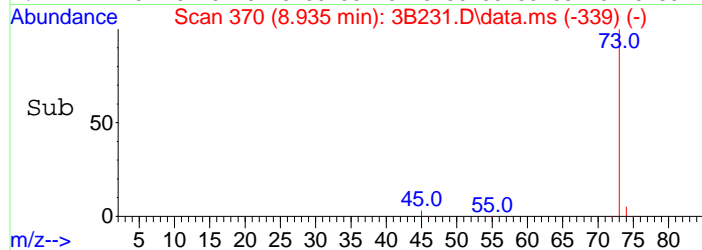
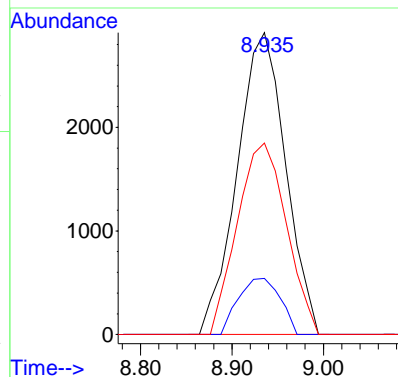
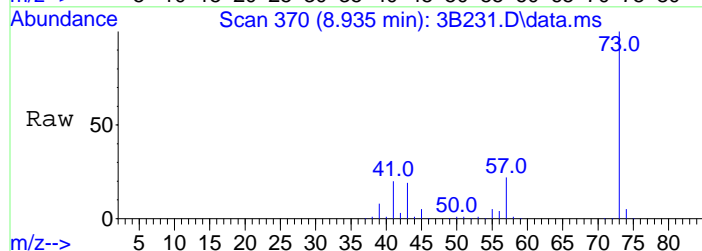
#89  
tert-Butyl Alcohol  
Concen: 3636.02 ug/L  
RT: 8.568 min Scan# 339  
Delta R.T. -0.012 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

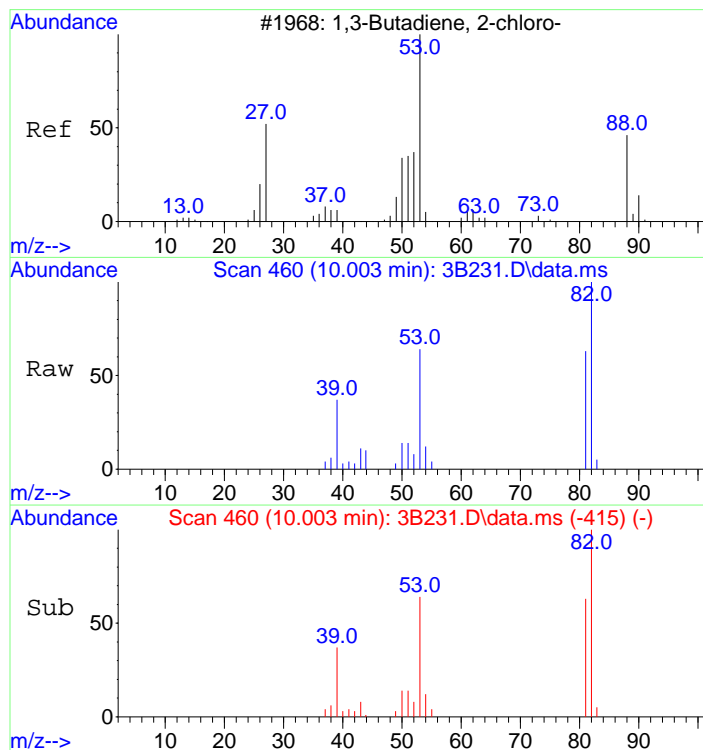
Tgt Ion: 59 Resp: 3218167  
Ion Ratio Lower Upper  
59 100  
41 19.4 0.0 48.5



#90 BEFORE analyst DELETION  
Acrylonitrile  
Concen: 4.40 ug/L  
RT: 8.935 min Scan# 370  
Delta R.T. 0.071 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

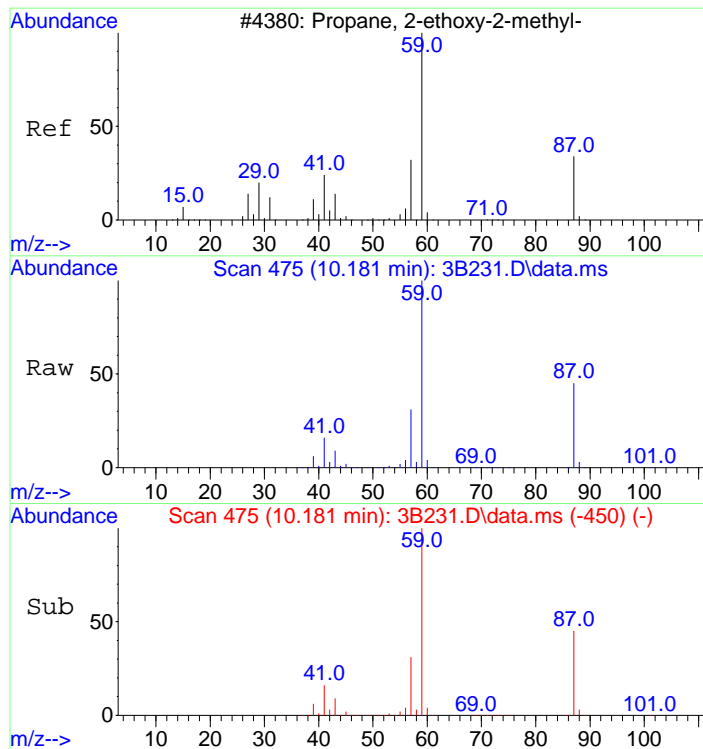
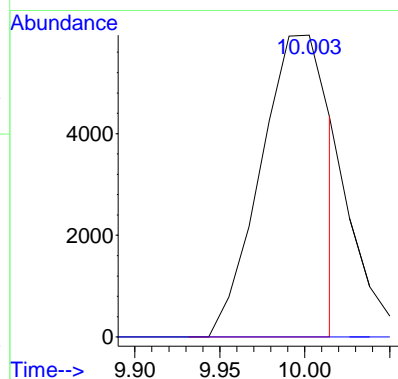
Tgt Ion: 53 Resp: 10714  
Ion Ratio Lower Upper  
53 100  
52 16.1 50.4 110.4#  
51 64.2 4.8 64.8





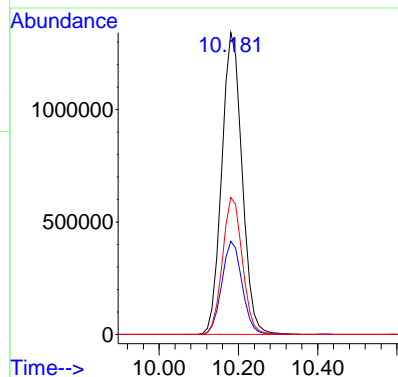
#92 BEFORE analyst DELETION  
2-Chloro-1,3-butadiene  
Concen: 1.82 ug/L  
RT: 10.003 min Scan# 460  
Delta R.T. 0.237 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

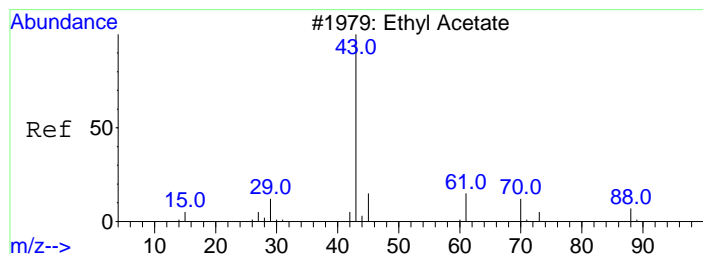
Tgt Ion: 53 Resp: 16645  
Ion Ratio Lower Upper  
53 100  
88 0.0 30.7 90.7#



#93  
Ethyl tert-butyl ether  
Concen: 200.21 ug/L  
RT: 10.181 min Scan# 475  
Delta R.T. -0.000 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

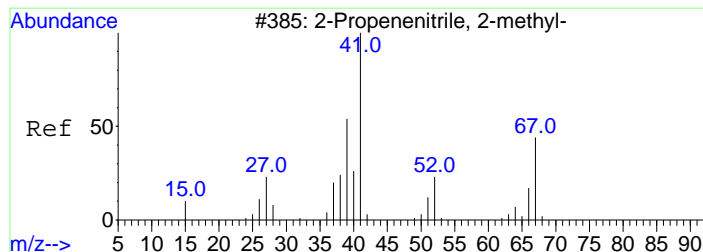
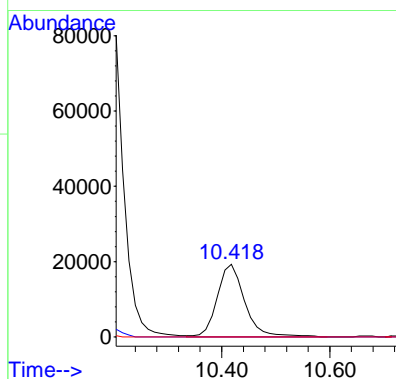
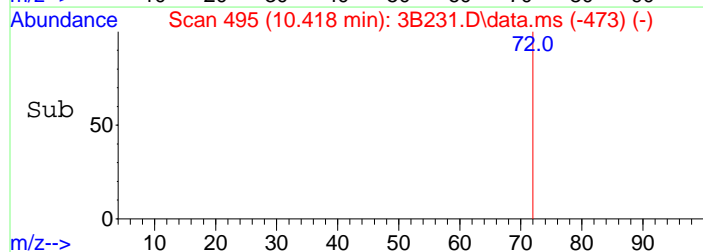
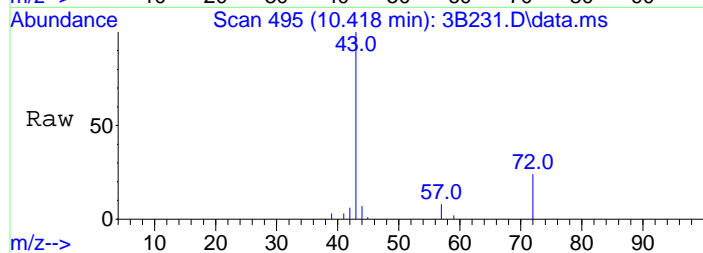
Tgt Ion: 59 Resp: 4788585  
Ion Ratio Lower Upper  
59 100  
57 30.8 0.9 60.9  
87 44.6 12.1 72.1





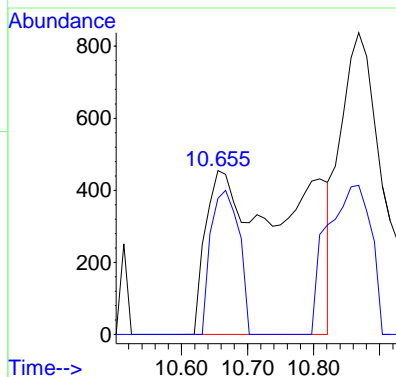
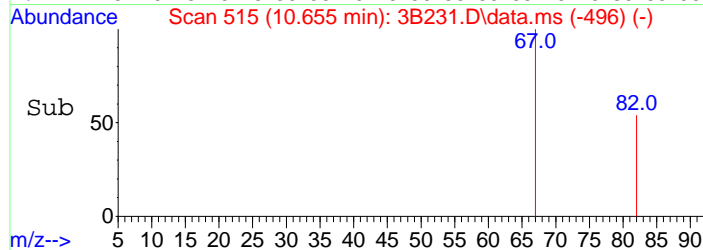
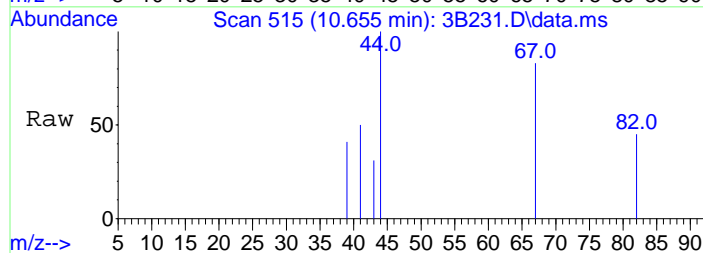
#94 BEFORE analyst DELETION  
Ethyl acetate  
Concen: 10.52 ug/L  
RT: 10.418 min Scan# 495  
Delta R.T. -0.036 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

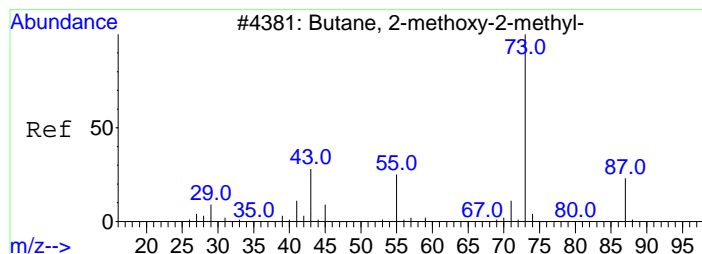
Tgt Ion: 43 Resp: 68549  
Ion Ratio Lower Upper  
43 100  
61 0.0 0.0 44.8  
70 0.0 0.0 42.4



#96 BEFORE analyst DELETION  
Methacrylonitrile  
Concen: 1.09 ug/L  
RT: 10.655 min Scan# 515  
Delta R.T. -0.071 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

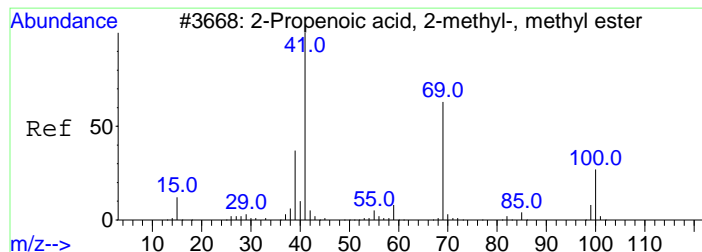
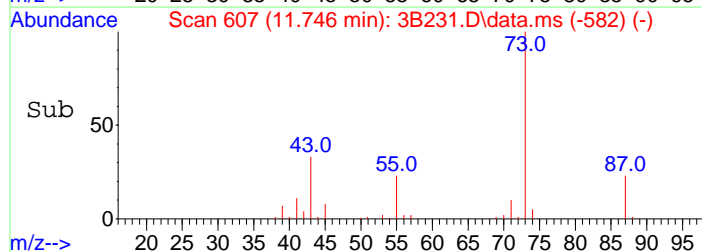
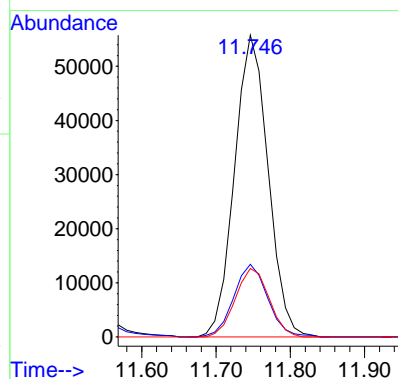
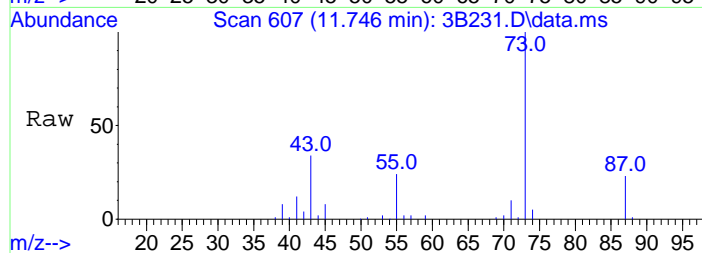
Tgt Ion: 41 Resp: 4339  
Ion Ratio Lower Upper  
41 100  
39 27.3 21.7 81.7





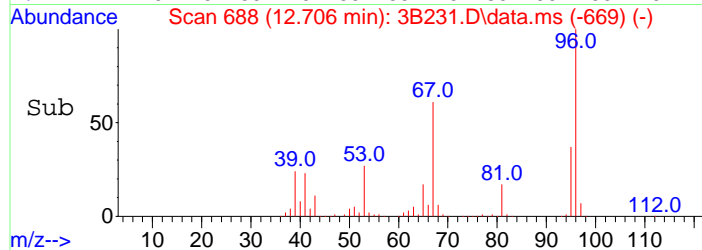
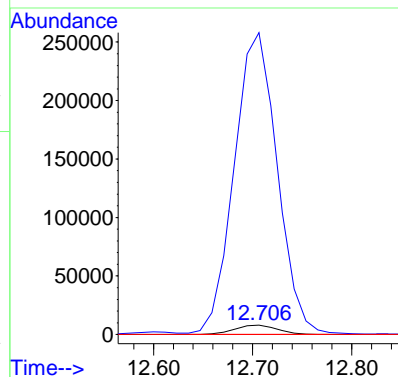
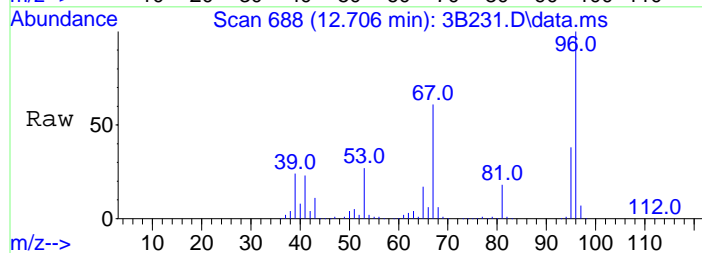
#99  
Methyl tert-amyl ether  
Concen: 7.98 ug/L  
RT: 11.746 min Scan# 607  
Delta R.T. -0.000 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

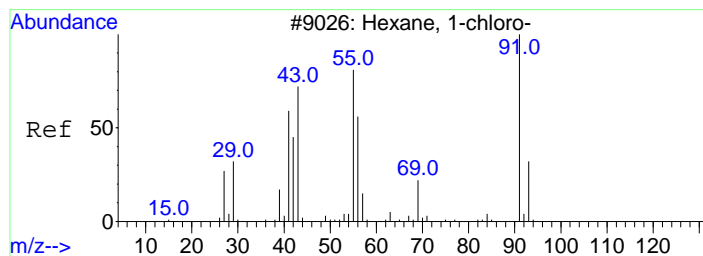
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 73      | 100   |       |       |
| 55      | 24.4  | 0.0   | 53.6  |
| 87      | 22.8  | 0.0   | 54.4  |



#100 BEFORE analyst DELETION  
Methyl methacrylate  
Concen: 5.19 ug/L  
RT: 12.706 min Scan# 688  
Delta R.T. -0.072 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

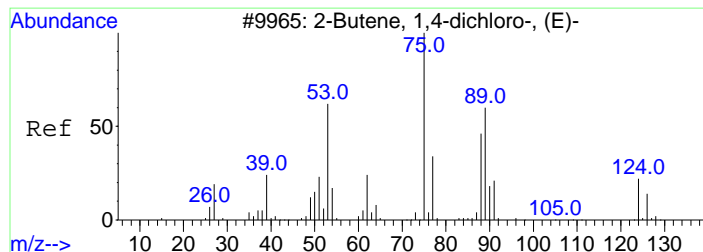
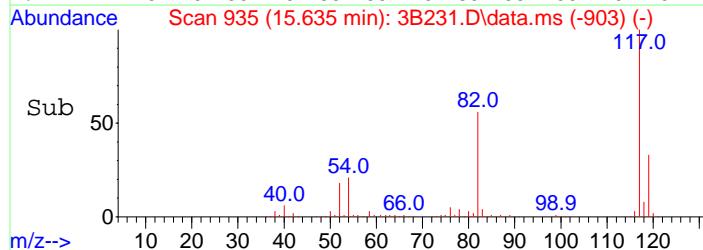
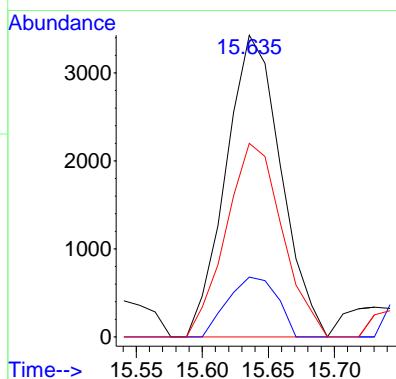
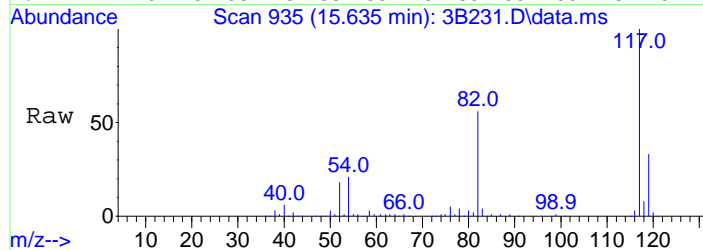
| Tgt Ion | Ratio  | Lower | Upper  |
|---------|--------|-------|--------|
| 69      | 100    |       |        |
| 41      | 3273.2 | 91.0  | 151.0# |
| 100     | 0.0    | 8.4   | 68.4#  |





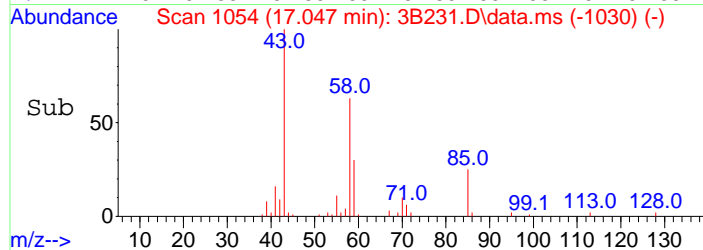
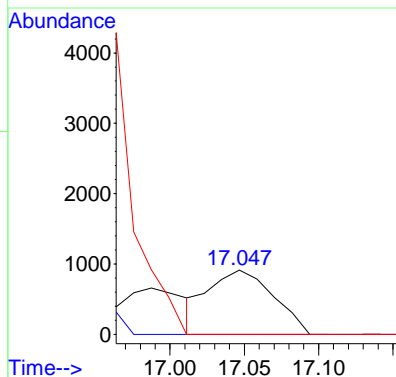
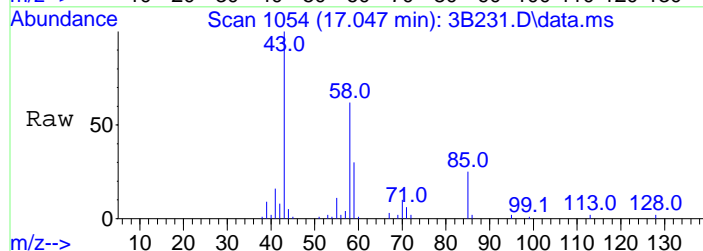
#106 BEFORE analyst DELETION  
1-Chlorohexane  
Concen: 1.48 ug/L  
RT: 15.635 min Scan# 935  
Delta R.T. 0.082 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

| Tgt Ion | Ratio | Lower | Upper  |
|---------|-------|-------|--------|
| 55      | 100   |       |        |
| 91      | 17.9  | 123.6 | 183.6# |
| 56      | 65.5  | 31.5  | 91.5   |



#109 BEFORE analyst DELETION  
trans-1,4-Dichloro-2-butene  
Concen: 1.36 ug/L  
RT: 17.047 min Scan# 1054  
Delta R.T. -0.012 min  
Lab File: 3B231.D  
Acq: 30 Aug 2011 22:58

| Tgt Ion | Ratio | Lower | Upper  |
|---------|-------|-------|--------|
| 53      | 100   |       |        |
| 88      | 0.0   | 29.1  | 89.1#  |
| 75      | 0.0   | 116.7 | 176.7# |



**Volatile  
Certificate of Analysis  
Sample Summary**

|                       |                         |                        |                         |                   |                    |
|-----------------------|-------------------------|------------------------|-------------------------|-------------------|--------------------|
| <b>SDG Number:</b>    | <b>284538</b>           | <b>Date Collected:</b> | <b>08/18/2011 12:00</b> | <b>Matrix:</b>    | <b>WATER</b>       |
| <b>Lab Sample ID:</b> | <b>284538002</b>        | <b>Date Received:</b>  | <b>08/23/2011 08:50</b> | <b>Project:</b>   | <b>ECOL00111</b>   |
| <b>Client ID:</b>     | <b>11080106DL</b>       | <b>Method:</b>         | <b>SW846 8260B</b>      | <b>SOP Ref:</b>   | <b>GL-OA-E-038</b> |
| <b>Batch ID:</b>      | <b>1137563</b>          | <b>Inst:</b>           | <b>VOA3.I</b>           | <b>Dilution:</b>  | <b>5</b>           |
| <b>Run Date:</b>      | <b>08/31/2011 10:54</b> | <b>Analyst:</b>        | <b>SYK1</b>             | <b>Purge Vol:</b> | <b>5 mL</b>        |
| <b>Prep Date:</b>     | <b>08/31/2011 10:54</b> |                        |                         |                   |                    |
| <b>Data File:</b>     | <b>083111V3\3B309.D</b> | <b>Column:</b>         | <b>DB-624</b>           |                   |                    |

| CAS No.    | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------|-----------|--------|-------|---------|---------|
| 75-71-8    | Dichlorodifluoromethane    | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 74-87-3    | Chloromethane              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-01-4    | Vinyl chloride             | U         | 2.50   | ug/L  | 2.50    | 5.00    |
| 74-83-9    | Bromomethane               | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-00-3    | Chloroethane               | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-69-4    | Trichlorofluoromethane     | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 60-29-7    | Ethyl ether                | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 67-64-1    | Acetone                    |           | 959    | ug/L  | 7.50    | 25.0    |
| 75-05-8    | Acetonitrile               | U         | 31.3   | ug/L  | 31.3    | 125     |
| 75-35-4    | 1,1-Dichloroethylene       | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 79-20-9    | Methyl acetate             | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 74-88-4    | Iodomethane                | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 75-09-2    | Methylene chloride         | U         | 10.0   | ug/L  | 10.0    | 25.0    |
| 75-15-0    | Carbon disulfide           | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 1634-04-4  | tert-Butyl methyl ether    |           | 69.0   | ug/L  | 1.25    | 5.00    |
| 156-60-5   | trans-1,2-Dichloroethylene | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 108-05-4   | Vinyl acetate              | U         | 7.50   | ug/L  | 7.50    | 25.0    |
| 75-34-3    | 1,1-Dichloroethane         | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 78-93-3    | 2-Butanone                 |           | 32.6   | ug/L  | 6.25    | 25.0    |
| 156-59-2   | cis-1,2-Dichloroethylene   | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 594-20-7   | 2,2-Dichloropropane        | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 67-66-3    | Chloroform                 | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 74-97-5    | Bromochloromethane         | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 71-55-6    | 1,1,1-Trichloroethane      | U         | 1.63   | ug/L  | 1.63    | 5.00    |
| 110-82-7   | Cyclohexane                | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 563-58-6   | 1,1-Dichloropropene        | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 71-36-3    | n-Butyl alcohol            | U         | 75.0   | ug/L  | 75.0    | 250     |
| 56-23-5    | Carbon tetrachloride       | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 107-06-2   | 1,2-Dichloroethane         | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 71-43-2    | Benzene                    | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 79-01-6    | Trichloroethylene          | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 78-87-5    | 1,2-Dichloropropane        | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 108-87-2   | Methylcyclohexane          | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 75-27-4    | Bromodichloromethane       | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 74-95-3    | Dibromomethane             | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 110-75-8   | 2-Chloroethylvinyl ether   | U         | 7.50   | ug/L  | 7.50    | 25.0    |
| 108-10-1   | 4-Methyl-2-pentanone       |           | 35.1   | ug/L  | 6.25    | 25.0    |
| 10061-01-5 | cis-1,3-Dichloropropylene  | U         | 1.25   | ug/L  | 1.25    | 5.00    |



**Volatile  
Certificate of Analysis  
Sample Summary**

|                       |                         |                        |                         |                   |                    |
|-----------------------|-------------------------|------------------------|-------------------------|-------------------|--------------------|
| <b>SDG Number:</b>    | <b>284538</b>           | <b>Date Collected:</b> | <b>08/18/2011 12:00</b> | <b>Matrix:</b>    | <b>WATER</b>       |
| <b>Lab Sample ID:</b> | <b>284538002</b>        | <b>Date Received:</b>  | <b>08/23/2011 08:50</b> | <b>Project:</b>   | <b>ECOL00111</b>   |
| <b>Client ID:</b>     | <b>11080106DL</b>       | <b>Client:</b>         | <b>ECOL008</b>          | <b>SOP Ref:</b>   | <b>GL-OA-E-038</b> |
| <b>Batch ID:</b>      | <b>1137563</b>          | <b>Method:</b>         | <b>SW846 8260B</b>      | <b>Dilution:</b>  | <b>5</b>           |
| <b>Run Date:</b>      | <b>08/31/2011 10:54</b> | <b>Inst:</b>           | <b>VOA3.I</b>           | <b>Purge Vol:</b> | <b>5 mL</b>        |
| <b>Prep Date:</b>     | <b>08/31/2011 10:54</b> | <b>Analyst:</b>        | <b>SYK1</b>             |                   |                    |
| <b>Data File:</b>     | <b>083111V3\3B309.D</b> | <b>Column:</b>         | <b>DB-624</b>           |                   |                    |

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-88-3    | Toluene                     | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 79-00-5     | 1,1,2-Trichloroethane       | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 591-78-6    | 2-Hexanone                  | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 142-28-9    | 1,3-Dichloropropane         | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 127-18-4    | Tetrachloroethylene         | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 124-48-1    | Dibromochloromethane        | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 106-93-4    | 1,2-Dibromoethane           | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 108-90-7    | Chlorobenzene               | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 100-41-4    | Ethylbenzene                | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 179601-23-1 | m,p-Xylenes                 | U         | 2.50   | ug/L  | 2.50    | 10.0    |
| 95-47-6     | o-Xylene                    | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 100-42-5    | Styrene                     | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 75-25-2     | Bromoform                   | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 79-34-5     | 1,1,2,2-Tetrachloroethane   | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 96-18-4     | 1,2,3-Trichloropropane      | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 108-86-1    | Bromobenzene                | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 103-65-1    | n-Propylbenzene             | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 95-49-8     | 2-Chlorotoluene             | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 98-82-8     | Isopropylbenzene            | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 108-67-8    | 1,3,5-Trimethylbenzene      | J         | 2.80   | ug/L  | 1.25    | 5.00    |
| 106-43-4    | 4-Chlorotoluene             | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 98-06-6     | tert-Butylbenzene           | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 95-63-6     | 1,2,4-Trimethylbenzene      | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 135-98-8    | sec-Butylbenzene            | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 99-87-6     | 4-Isopropyltoluene          | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 541-73-1    | 1,3-Dichlorobenzene         | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 106-46-7    | 1,4-Dichlorobenzene         | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 104-51-8    | n-Butylbenzene              | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 96-12-8     | 1,2-Dibromo-3-chloropropane | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 87-68-3     | Hexachlorobutadiene         | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 91-20-3     | Naphthalene                 | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 87-61-6     | 1,2,3-Trichlorobenzene      | U         | 1.66   | ug/L  | 1.66    | 5.00    |
| 107-02-8    | Acrolein                    | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 107-05-1    | Allyl chloride              | U         | 7.50   | ug/L  | 7.50    | 25.0    |
| 107-13-1    | Acrylonitrile               | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 126-99-8    | 2-Chloro-1,3-butadiene      | U         | 1.50   | ug/L  | 1.50    | 5.00    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

|                                    |   |                             |
|------------------------------------|---|-----------------------------|
| <b>SDG Number:</b> 284538          | <b>Date Collected:</b> 08/18/2011 12:00 | <b>Matrix:</b> WATER        |
| <b>Lab Sample ID:</b> 284538002    | <b>Date Received:</b> 08/23/2011 08:50  |                             |
|                                    | <b>Client:</b> ECOL008                  | <b>Project:</b> ECOL00111   |
| <b>Client ID:</b> 11080106DL       | <b>Method:</b> SW846 8260B              | <b>SOP Ref:</b> GL-OA-E-038 |
| <b>Batch ID:</b> 1137563           | <b>Inst:</b> VOA3.I                     | <b>Dilution:</b> 5          |
| <b>Run Date:</b> 08/31/2011 10:54  | <b>Analyst:</b> SYK1                    | <b>Purge Vol:</b> 5 mL      |
| <b>Prep Date:</b> 08/31/2011 10:54 |   |                             |
| <b>Data File:</b> 083111V3\3B309.D | <b>Column:</b> DB-624                   |                             |

| CAS No.    | Parmname                     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|------------------------------|-----------|--------|-------|---------|---------|
| 107-12-0   | Propionitrile                | U         | 7.50   | ug/L  | 7.50    | 25.0    |
| 126-98-7   | Methacrylonitrile            | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 78-83-1    | Isobutyl alcohol             | U         | 62.5   | ug/L  | 62.5    | 250     |
| 80-62-6    | Methyl methacrylate          | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 97-63-2    | Ethyl methacrylate           | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 79-46-9    | 2-Nitropropane               | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 108-94-1   | Cyclohexanone                | U         | 75.0   | ug/L  | 75.0    | 250     |
| 1476-11-5  | cis-1,4-Dichloro-2-butene    | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 110-57-6   | trans-1,4-Dichloro-2-butene  | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 76-01-7    | Pentachloroethane            | U         | 5.00   | ug/L  | 5.00    | 25.0    |
| 100-44-7   | Benzyl chloride              | U         | 6.50   | ug/L  | 6.50    | 25.0    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether  | U         | 7.50   | ug/L  | 7.50    | 25.0    |
| 540-59-0   | 1,2-Dichloroethylene (total) | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 1330-20-7  | Xylenes (total)              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 630-20-6   | 1,1,1,2-Tetrachloroethane    | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 120-82-1   | 1,2,4-Trichlorobenzene       | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 95-50-1    | 1,2-Dichlorobenzene          | U         | 1.25   | ug/L  | 1.25    | 5.00    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B309.D  
Acq On : 31 Aug 2011 10:54  
Operator : SYK1  
InstName : VOA3  
Sample : |284538002|1137563|5|VOA|2|VOA8260BL|  
Misc : ECOL 1ML pH2  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 31 11:17:15 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1335142  | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 566062   | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 571151   | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1335142  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 566062   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 571151   | 50.00 | ug/L  | 0.00     |

|                             |     |        |        |       |         |       |      |      |
|-----------------------------|-----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |     |        |        |       |         |       |      |      |
| 29) 1,2-Dichloroethane-d4   | 102 | 11.568 | 11.568 | 0.963 | 71637   | 46.93 | ug/L | 0.00 |
| 43) Toluene-d8              | 98  | 13.952 | 13.952 | 0.892 | 1208925 | 48.09 | ug/L | 0.00 |
| 61) Bromofluorobenzene      | 95  | 16.916 | 16.916 | 0.930 | 543832  | 50.31 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 29) 1,2-Dichloroethane-d4 | 50.000 | 79 - 124 | 93.86%   |
| 43) Toluene-d8            | 50.000 | 80 - 120 | 96.18%   |
| 61) Bromofluorobenzene    | 50.000 | 80 - 120 | 100.62%  |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.666  | 0.000  | 0        | N.D.      |       |        |
| 3) Chloromethane              |      | 0.000  | 5.068  | 0.000  | 0        | N.D.      |       |        |
| 4) Vinyl chloride             |      | 0.000  | 5.365  | 0.000  | 0        | N.D.      |       |        |
| 5) Bromomethane               |      | 0.000  | 6.125  | 0.000  | 0        | N.D.      |       |        |
| 6) Chloroethane               |      | 0.000  | 6.327  | 0.000  | 0        | N.D.      |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.849  | 0.000  | 0        | N.D.      |       |        |
| 8) Ethyl ether                |      | 0.000  | 7.299  | 0.000  | 0        | N.D.      |       |        |
| 9) Acetone                    | 43   | 7.761  | 7.762  | 0.646  | 788229   | 191.87    | ug/L  | 98     |
| 10) 1,1-Dichloroethylene      |      | 0.000  | 7.774  | 0.000  | 0        | N.D.      |       |        |
| 11) Iodomethane               |      | 0.000  | 8.070  | 0.000  | 0        | N.D.      |       |        |
| 12) Acetonitrile              | 41   | 8.248  | 8.224  | 0.687  | 2531     | Below Cal | #     | 86     |
| 13) Methyl acetate            | 43   | 8.295  | 8.295  | 0.691  | 1962     | N.D.      |       |        |
| 14) Carbon disulfide          | 76   | 8.200  | 8.212  | 0.683  | 1182     | N.D.      |       |        |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 15600    | N.D.      |       |        |
| 16) tert-Butyl methyl ether   | 73   | 8.935  | 8.936  | 0.744  | 313743   | 13.80     | ug/L  | 100    |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 8.971  | 0.000  | 0        | N.D.      |       |        |
| 18) Vinyl acetate             | 43   | 9.623  | 9.612  | 0.801  | 813      | N.D.      |       |        |
| 19) 1,1-Dichloroethane        |      | 0.000  | 9.623  | 0.000  | 0        | N.D.      |       |        |
| 20) 2-Butanone                | 43   | 10.418 | 10.406 | 0.868  | 38151    | 6.52      | ug/L  | 92     |
| 21) cis-1,2-Dichloroethylene  |      | 0.000  | 10.465 | 0.000  | 0        | N.D.      |       |        |
| 22) 2,2-Dichloropropane       |      | 0.000  | 10.489 | 0.000  | 0        | N.D.      |       |        |
| 23) Bromochloromethane        |      | 0.000  | 10.797 | 0.000  | 0        | N.D.      |       |        |
| 24) Chloroform                | 83   | 10.868 | 10.869 | 0.905  | 1151     | N.D.      |       |        |
| 25) 1,1,1-Trichloroethane     |      | 0.000  | 11.201 | 0.000  | 0        | N.D.      |       |        |
| 26) Cyclohexane               |      | 0.000  | 11.307 | 0.000  | 0        | N.D.      |       |        |
| 27) 1,1-Dichloropropene       |      | 0.000  | 11.402 | 0.000  | 0        | N.D.      |       |        |
| 28) Carbon tetrachloride      |      | 0.000  | 11.438 | 0.000  | 0        | N.D.      |       |        |
| 30) 1,2-Dichloroethane        |      | 0.000  | 11.663 | 0.000  | 0        | N.D.      |       |        |
| 31) Benzene                   |      | 0.000  | 11.687 | 0.000  | 0        | N.D.      |       |        |
| 32) Cyclohexene               |      | 0.000  | 11.829 | 0.000  | 0        | N.D.      |       |        |
| 33) n-Butyl alcohol           |      | 0.000  | 12.185 | 0.000  | 0        | N.D.      |       |        |
| 34) Trichloroethylene         |      | 0.000  | 12.481 | 0.000  | 0m       | N.D.      | d     |        |
| 35) 1,2-Dichloropropane       |      | 0.000  | 12.766 | 0.000  | 0m       | N.D.      | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B309.D  
Acq On : 31 Aug 2011 10:54  
Operator : SYK1  
InstName : VOA3  
Sample : |284538002|1137563|5|VOA|2|VOA8260BL|  
Misc : ECOL 1ML pH2  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 31 11:17:15 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc        | Units |    |
|-------------------------------|------|--------|--------|--------|----------|-------------|-------|----|
| 36) Methylcyclohexane         |      | 0.000  | 12.766 | 0.000  | 0        | N.D.        |       |    |
| 37) Dibromomethane            |      | 0.000  | 12.920 | 0.000  | 0        | N.D.        |       |    |
| 38) Bromodichloromethane      |      | 0.000  | 13.062 | 0.000  | 0        | N.D.        |       |    |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D.        |       |    |
| 40) cis-1,3-Dichloropropylene |      | 0.000  | 13.596 | 0.000  | 0        | N.D.        |       |    |
| 42) 4-Methyl-2-pentanone      | 58   | 13.714 | 13.715 | 0.877  | 20814    | 7.01 ug/L   | #     | 1  |
| 44) Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 924      | N.D.        |       |    |
| 45) trans-1,3-Dichloroprop... |      | 0.000  | 14.213 | 0.000  | 0        | N.D.        |       |    |
| 46) 1,1,2-Trichloroethane     |      | 0.000  | 14.462 | 0.000  | 0        | N.D.        |       |    |
| 47) 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 2917     | Below Cal   | #     | 62 |
| 48) 1,3-Dichloropropane       |      | 0.000  | 14.663 | 0.000  | 0        | N.D.        |       |    |
| 49) Tetrachloroethylene       |      | 0.000  | 14.699 | 0.000  | 0        | N.D.        |       |    |
| 50) Dibromochloromethane      |      | 0.000  | 14.960 | 0.000  | 0        | N.D.        |       |    |
| 51) 1,2-Dibromoethane         |      | 0.000  | 15.138 | 0.000  | 0        | N.D.        |       |    |
| 52) Chlorobenzene             |      | 0.000  | 15.671 | 0.000  | 0        | N.D.        |       |    |
| 53) 1,1,1,2-Tetrachloroethane |      | 0.000  | 15.742 | 0.000  | 0        | N.D.        |       |    |
| 54) Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 199      | N.D.        |       |    |
| 55) m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 412      | N.D.        |       |    |
| 56) o-Xylene                  |      | 0.000  | 16.335 | 0.000  | 0        | N.D.        |       |    |
| 57) Styrene                   |      | 0.000  | 16.335 | 0.000  | 0        | N.D.        |       |    |
| 59) Bromoform                 |      | 0.000  | 16.608 | 0.000  | 0        | N.D.        |       |    |
| 60) Isopropylbenzene          |      | 0.000  | 16.715 | 0.000  | 0        | N.D.        |       |    |
| 62) 1,1,2,2-Tetrachloroethane |      | 0.000  | 17.011 | 0.000  | 0        | N.D.        |       |    |
| 63) 1,2,3-Trichloropropane    |      | 0.000  | 17.094 | 0.000  | 0        | N.D.        |       |    |
| 64) Bromobenzene              |      | 0.000  | 17.142 | 0.000  | 0        | N.D.        |       |    |
| 65) n-Propylbenzene           |      | 0.000  | 17.165 | 0.000  | 0        | N.D.        |       |    |
| 66) 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 16046    | 0.56 ug/L   |       | 92 |
| 67) 2-Chlorotoluene           |      | 0.000  | 17.320 | 0.000  | 0        | N.D.        |       |    |
| 68) 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 935      | N.D.        |       |    |
| 69) tert-Butylbenzene         |      | 0.000  | 17.711 | 0.000  | 0        | N.D.        |       |    |
| 70) 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 196      | N.D.        |       |    |
| 71) sec-Butylbenzene          |      | 0.000  | 17.948 | 0.000  | 0        | N.D.        |       |    |
| 72) 4-Isopropyltoluene        |      | 0.000  | 18.067 | 0.000  | 0        | N.D.        |       |    |
| 73) 1,3-Dichlorobenzene       | 146  | 18.126 | 18.126 | 0.996  | 410      | N.D.        |       |    |
| 74) 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 699      | N.D.        |       |    |
| 75) n-Butylbenzene            | 91   | 18.339 | 18.529 | 1.008  | 958      | N.D.        |       |    |
| 76) 1,2-Dichlorobenzene       |      | 0.000  | 18.660 | 0.000  | 0        | N.D.        |       |    |
| 77) 1,2-Dibromo-3-chloropr... |      | 0.000  | 19.573 | 0.000  | 0        | N.D.        |       |    |
| 78) 1,2,4-Trichlorobenzene    | 180  | 20.675 | 20.676 | 1.136  | 189      | N.D.        |       |    |
| 79) Hexachlorobutadiene       |      | 0.000  | 20.865 | 0.000  | 0        | N.D.        |       |    |
| 80) Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 2137     | N.D.        |       |    |
| 81) 1,2,3-Trichlorobenzene    |      | 0.000  | 21.435 | 0.000  | 0        | N.D.        |       |    |
| 83) Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.        |       |    |
| 84) 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.        |       |    |
| 85) Acrolein                  |      | 0.000  | 7.524  | 0.000  | 0        | N.D.        |       |    |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.        |       |    |
| 87) Isopropyl Alcohol         | 45   | 7.928  | 7.928  | 0.660  | 3635     | N.D.        |       |    |
| 88) Allyl chloride            | 41   | 8.248  | 8.331  | 0.687  | 2531     | Below Cal   | #     | 45 |
| 89) tert-Butyl Alcohol        | 59   | 8.568  | 8.580  | 0.714  | 906486   | 995.46 ug/L |       | 97 |
| 90) Acrylonitrile             | 53   | 8.935  | 8.864  | 0.744  | 2180     | N.D.        |       |    |
| 91) Isopropyl ether           |      | 0.000  | 9.647  | 0.000  | 0        | N.D.        |       |    |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 9.766  | 0.000  | 0m       | N.D.        | d     |    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B309.D  
Acq On : 31 Aug 2011 10:54  
Operator : SYK1  
InstName : VOA3  
Sample : |284538002|1137563|5|VOA|2|VOA8260BL|  
Misc : ECOL 1ML pH2  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 31 11:17:15 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

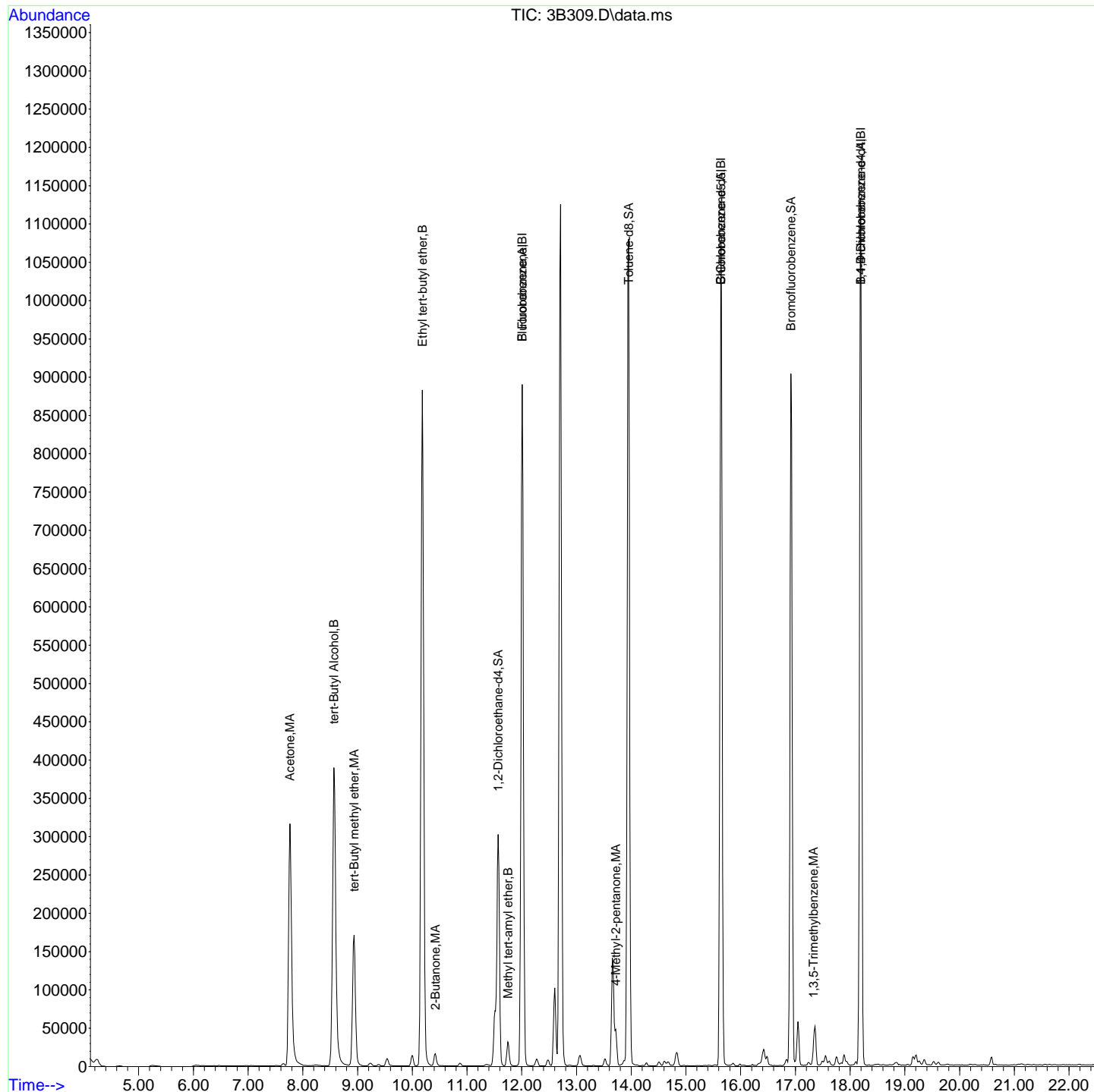
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |     |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|-----|
| 93) Ethyl tert-butyl ether     | 59   | 10.181 | 10.181 | 0.848  | 1319741  | 53.63     | ug/L  | 100 |
| 94) Ethyl acetate              |      | 0.000  | 10.454 | 0.000  | 0m       | N.D.      | d     |     |
| 95) Propionitrile              |      | 0.000  | 10.501 | 0.000  | 0        | N.D.      |       |     |
| 96) Methacrylonitrile          | 41   | 10.868 | 10.726 | 0.905  | 1887     | N.D.      |       |     |
| 97) Tetrahydrofuran            | 42   | 10.868 | 10.869 | 0.905  | 3077     | Below Cal |       | 89  |
| 98) Isobutyl alcohol           |      | 0.000  | 11.343 | 0.000  | 0m       | N.D.      | d     |     |
| 99) Methyl tert-amyl ether     | 73   | 11.746 | 11.746 | 0.978  | 40082    | 1.78      | ug/L  | 97  |
| 100) Methyl methacrylate       |      | 0.000  | 12.778 | 0.000  | 0m       | N.D.      | d     |     |
| 101) 1,4-Dioxane               |      | 0.000  | 12.884 | 0.000  | 0        | N.D.      |       |     |
| 102) 2-Nitropropane            |      | 0.000  | 13.300 | 0.000  | 0m       | N.D.      | d     |     |
| 104) Ethyl methacrylate        | 69   | 14.201 | 14.248 | 0.908  | 396      | N.D.      |       |     |
| 106) 1-Chlorohexane            |      | 0.000  | 15.553 | 0.000  | 0m       | N.D.      | d     |     |
| 107) cis-1,4-Dichloro-2-butene |      | 0.000  | 16.762 | 0.000  | 0        | N.D.      |       |     |
| 108) Cyclohexanone             | 42   | 16.893 | 16.869 | 0.928  | 876      | Below Cal | #     | 21  |
| 109) trans-1,4-Dichloro-2-b... | 53   | 17.047 | 17.059 | 0.937  | 1084     | N.D.      |       |     |
| 110) Pentachloroethane         |      | 0.000  | 17.782 | 0.000  | 0        | N.D.      |       |     |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 958      | N.D.      |       |     |
| 112) bis(2-Chloroisopropyl)... |      | 0.000  | 18.754 | 0.000  | 0        | N.D.      |       |     |

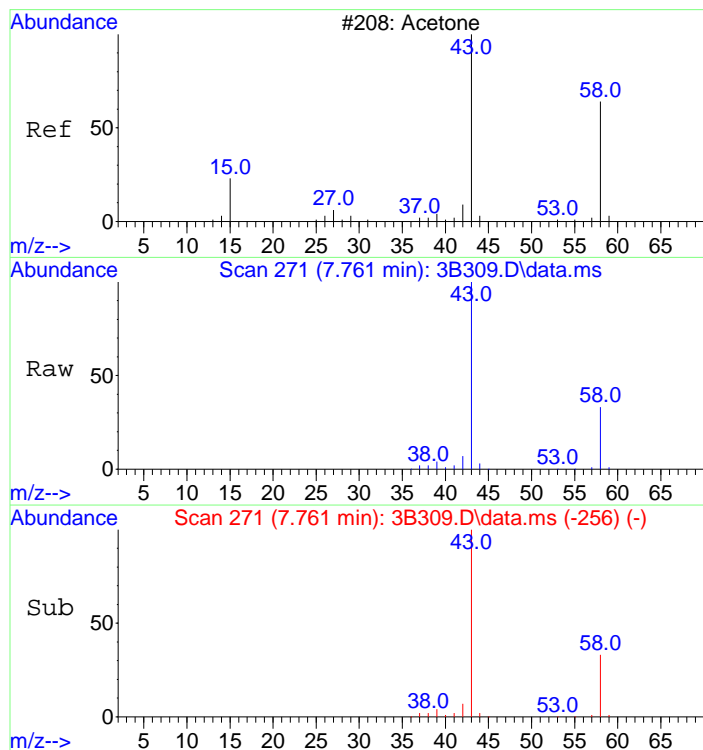
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B309.D  
Acq On : 31 Aug 2011 10:54  
Operator : SYK1  
InstName : VOA3  
Sample : |284538002|1137563|5|VOA|2|VOA8260BL|  
Misc : ECOL 1ML pH2  
ALS Vial : 9 Sample Multiplier: 1

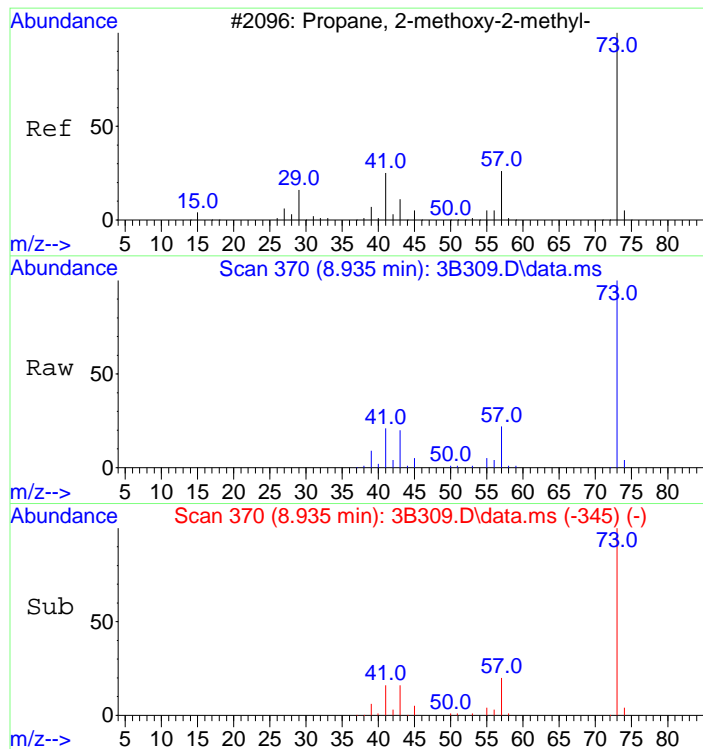
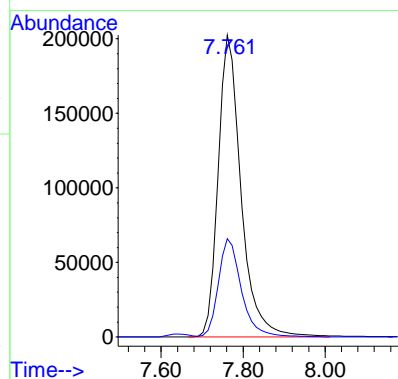
Quant Time: Aug 31 11:17:15 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE





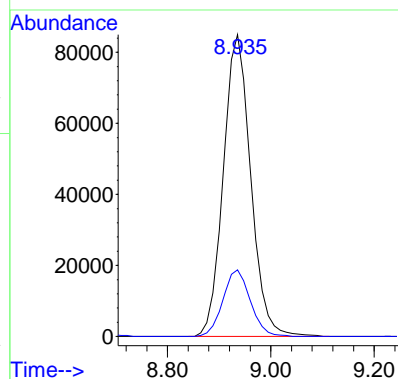
#9  
Acetone  
Concen: 191.87 ug/L  
RT: 7.761 min Scan# 271  
Delta R.T. -0.000 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

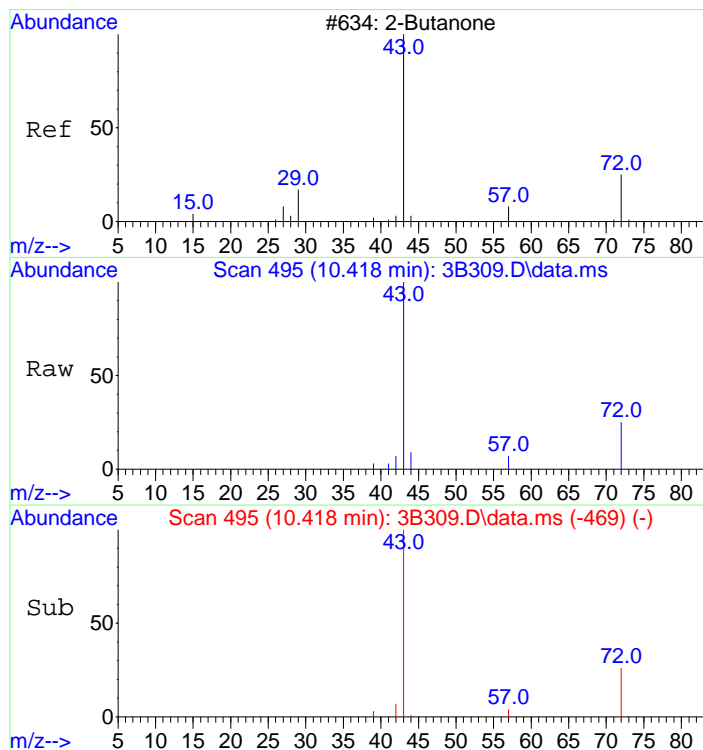
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 43      | 100   |       |       |
| 58      | 32.6  | 3.6   | 63.6  |



#16  
tert-Butyl methyl ether  
Concen: 13.80 ug/L  
RT: 8.935 min Scan# 370  
Delta R.T. -0.001 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

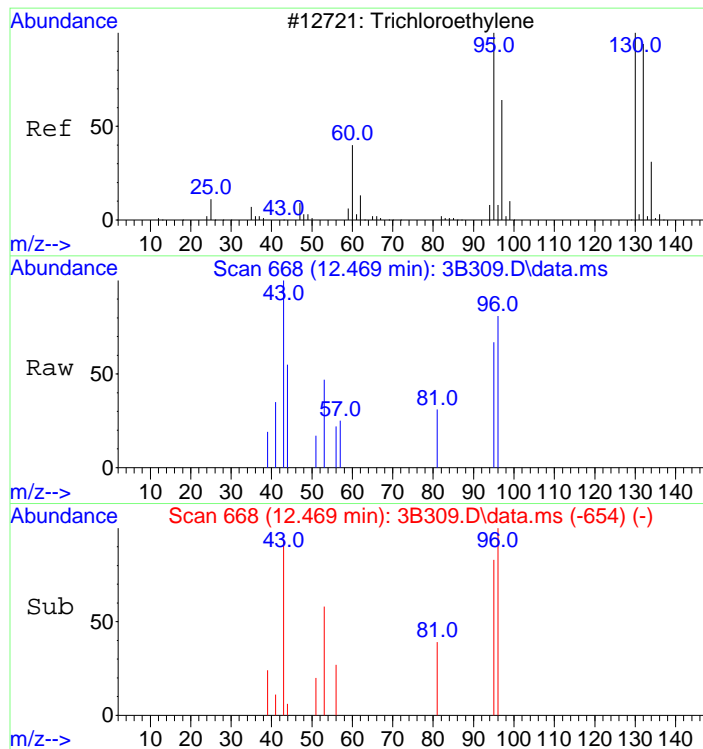
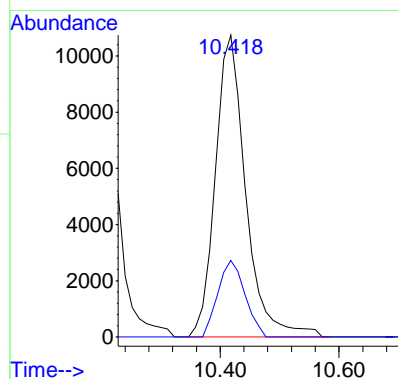
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 73      | 100   |       |       |
| 57      | 22.1  | 0.0   | 52.2  |





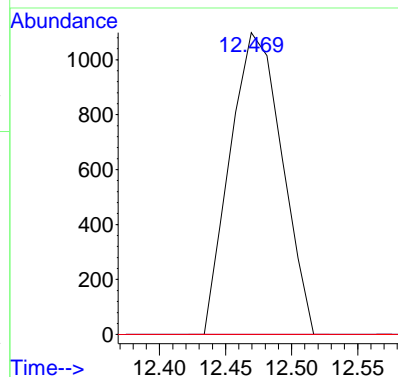
#20  
2-Butanone  
Concen: 6.52 ug/L  
RT: 10.418 min Scan# 495  
Delta R.T. 0.012 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 43      | 100   |       |       |
| 72      | 22.6  | 0.0   | 56.6  |

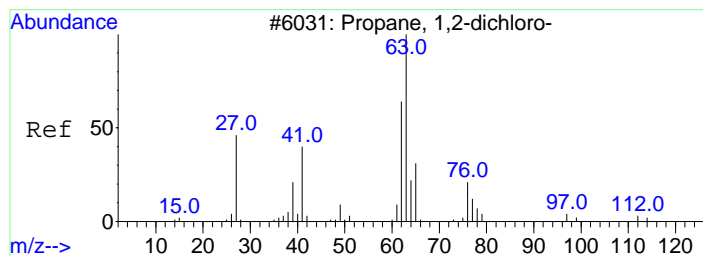


#34 BEFORE analyst DELETION  
Trichloroethylene  
Concen: 0.39 ug/L  
RT: 12.469 min Scan# 668  
Delta R.T. -0.012 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

| Tgt Ion | Ratio | Lower | Upper  |
|---------|-------|-------|--------|
| 95      | 100   |       |        |
| 130     | 0.0   | 72.9  | 132.9# |
| 97      | 0.0   | 35.9  | 95.9#  |

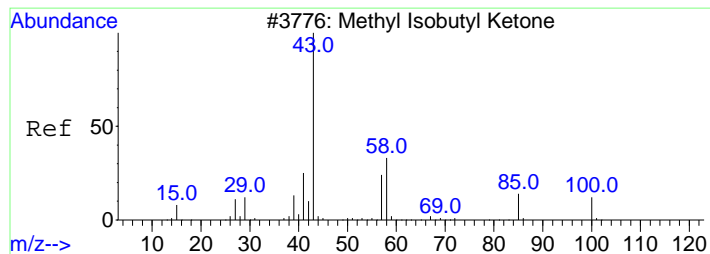
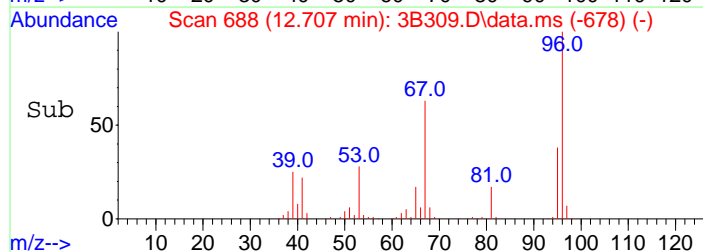
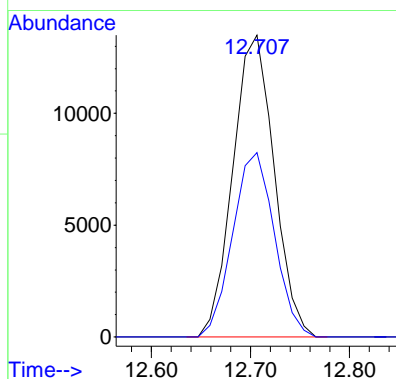
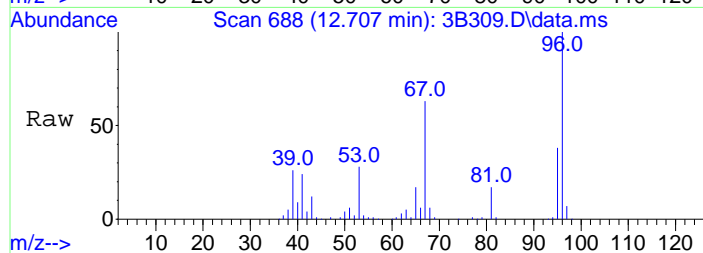






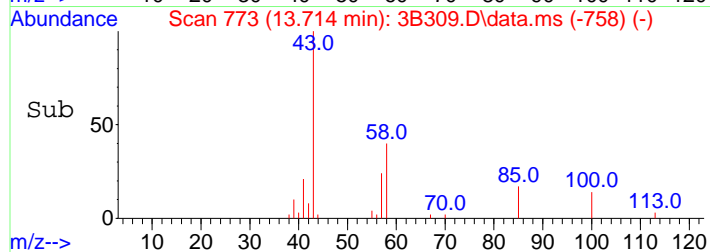
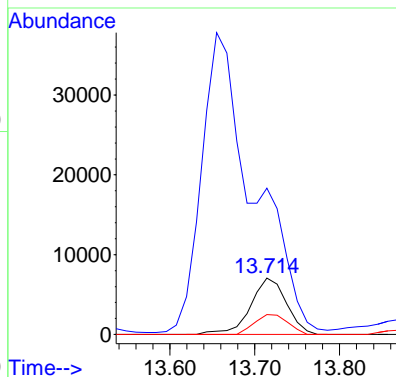
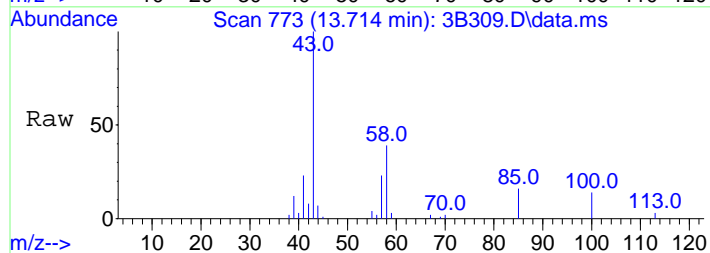
#35 BEFORE analyst DELETION  
1,2-Dichloropropane  
Concen: 5.31 ug/L  
RT: 12.707 min Scan# 688  
Delta R.T. -0.059 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

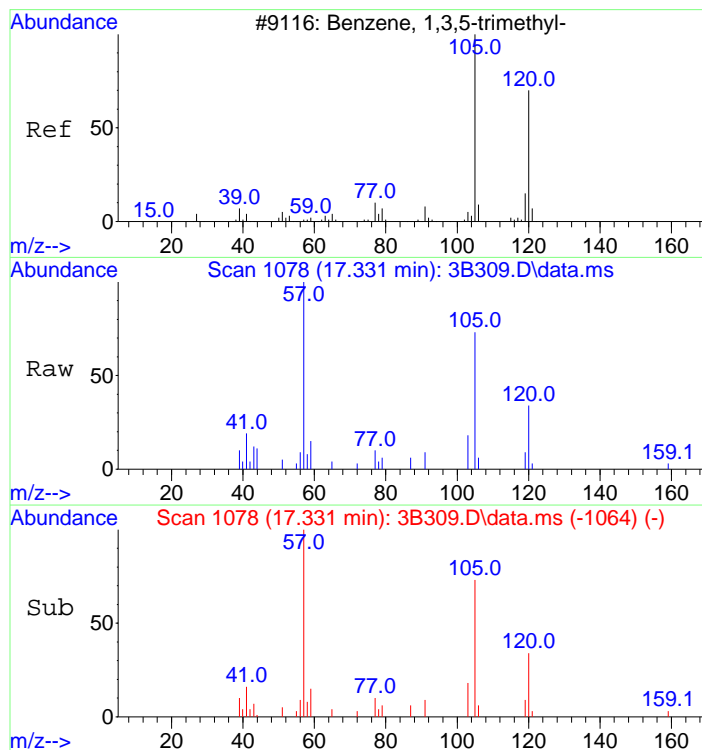
Tgt Ion: 63 Resp: 39096  
Ion Ratio Lower Upper  
63 100  
62 61.7 39.9 99.9



#42  
4-Methyl-2-pentanone  
Concen: 7.01 ug/L  
RT: 13.714 min Scan# 773  
Delta R.T. -0.001 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

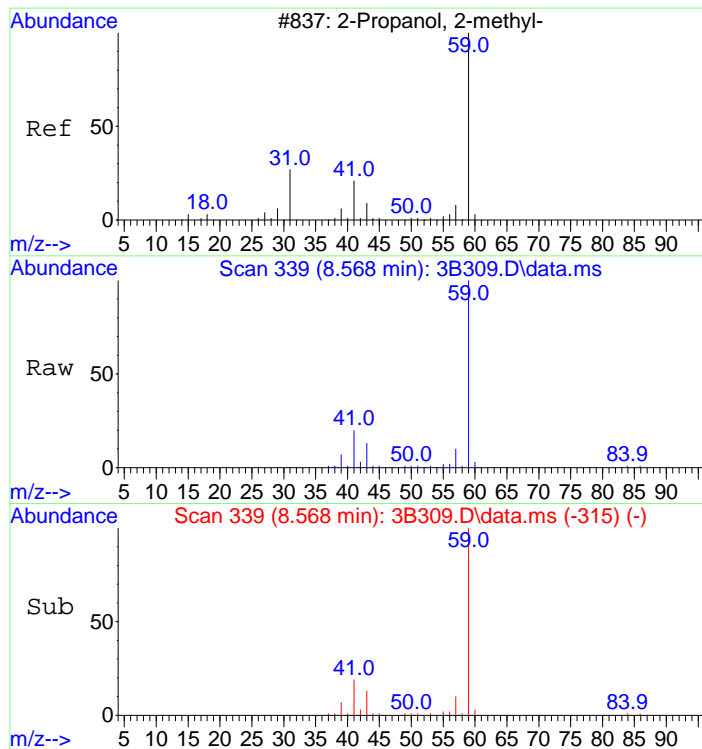
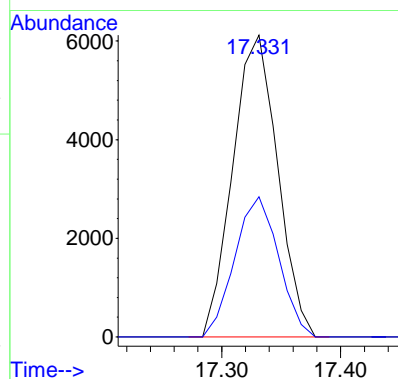
Tgt Ion: 58 Resp: 20814  
Ion Ratio Lower Upper  
58 100  
43 0.0 206.5 266.5#  
100 32.8 7.6 67.6





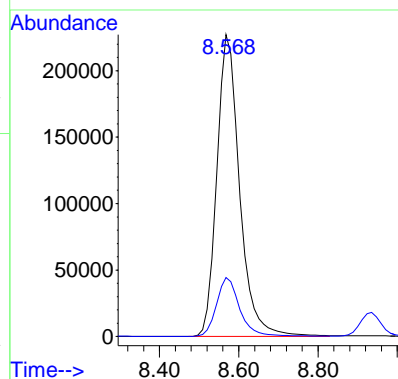
#66  
1,3,5-Trimethylbenzene  
Concen: 0.56 ug/L  
RT: 17.331 min Scan# 1078  
Delta R.T. 0.000 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

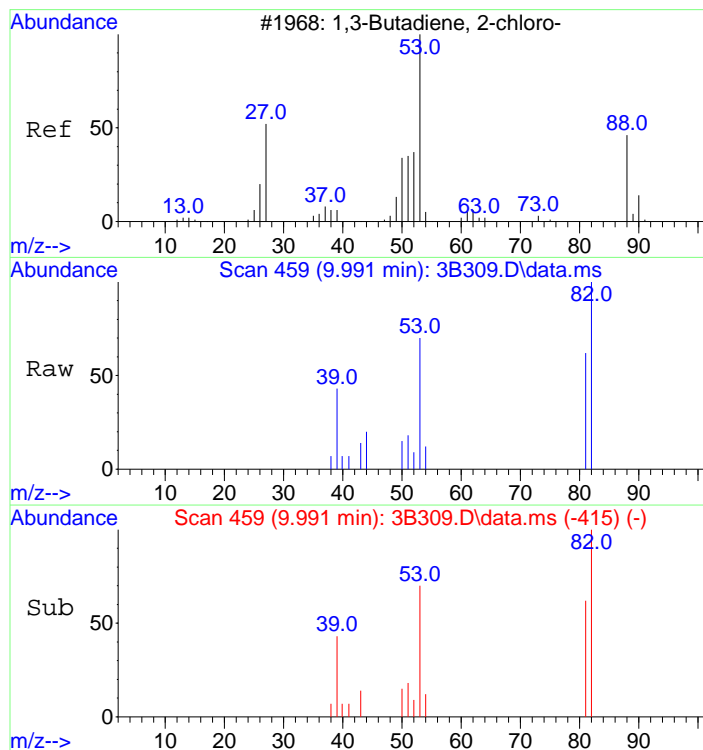
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 105     | 100   |       |       |
| 120     | 45.4  | 20.6  | 80.6  |



#89  
tert-Butyl Alcohol  
Concen: 995.46 ug/L  
RT: 8.568 min Scan# 339  
Delta R.T. -0.012 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

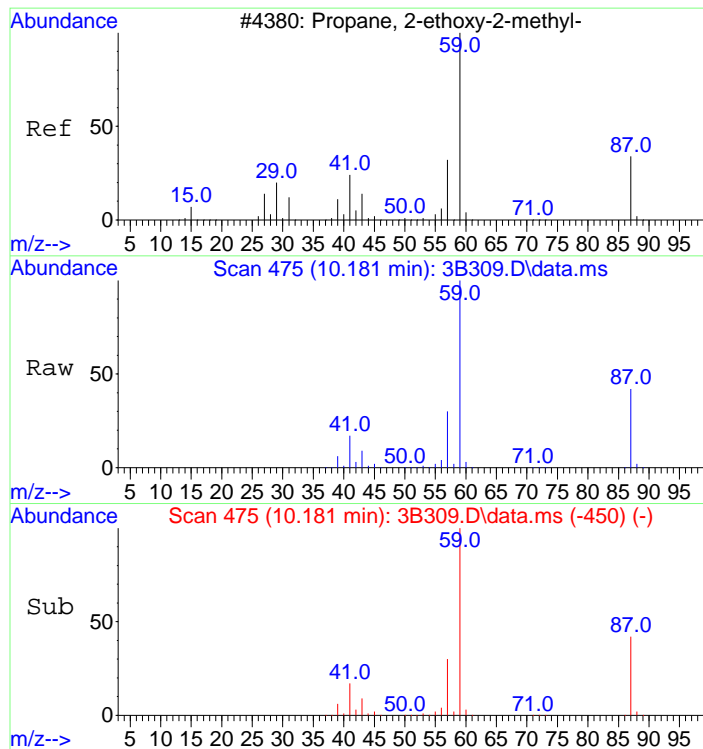
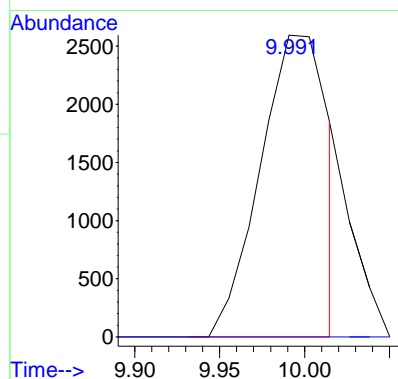
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 59      | 100   |       |       |
| 41      | 20.0  | 0.0   | 48.5  |





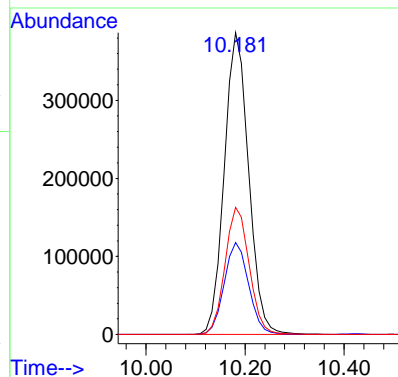
#92 BEFORE analyst DELETION  
2-Chloro-1,3-butadiene  
Concen: 0.77 ug/L  
RT: 9.991 min Scan# 459  
Delta R.T. 0.225 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

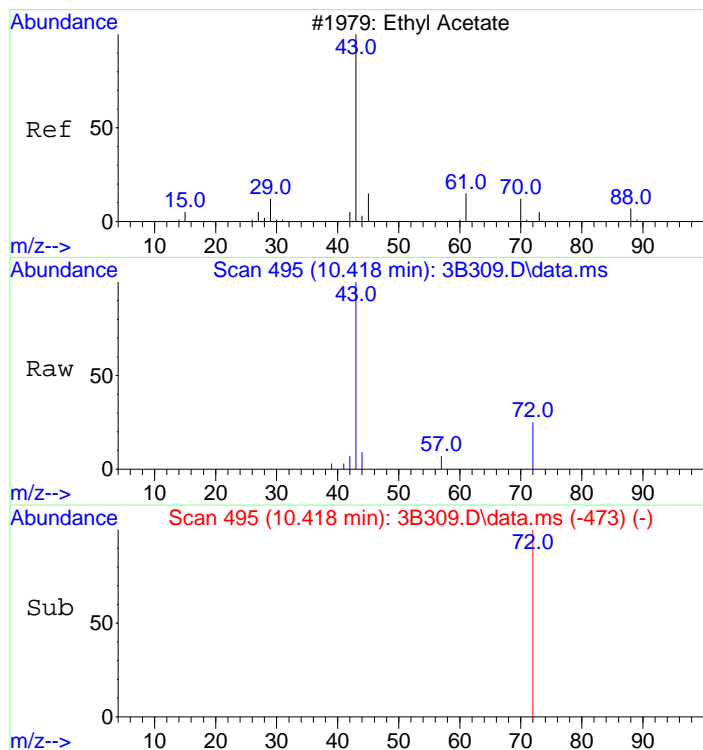
Tgt Ion: 53 Resp: 7242  
Ion Ratio Lower Upper  
53 100  
88 0.0 30.7 90.7#



#93  
Ethyl tert-butyl ether  
Concen: 53.63 ug/L  
RT: 10.181 min Scan# 475  
Delta R.T. -0.000 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

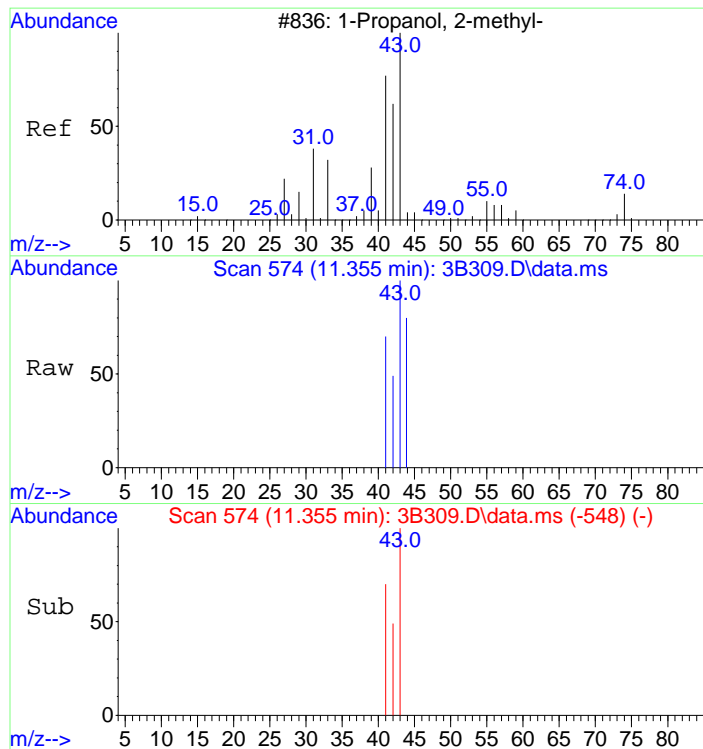
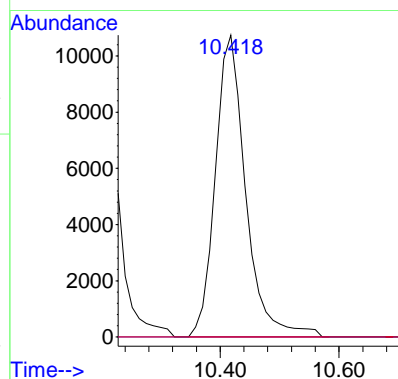
Tgt Ion: 59 Resp: 1319741  
Ion Ratio Lower Upper  
59 100  
57 30.6 0.9 60.9  
87 41.9 12.1 72.1





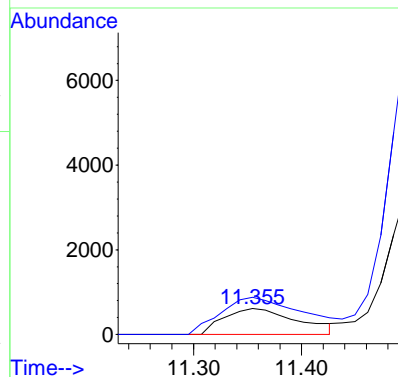
#94 BEFORE analyst DELETION  
Ethyl acetate  
Concen: 5.69 ug/L  
RT: 10.418 min Scan# 495  
Delta R.T. -0.036 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

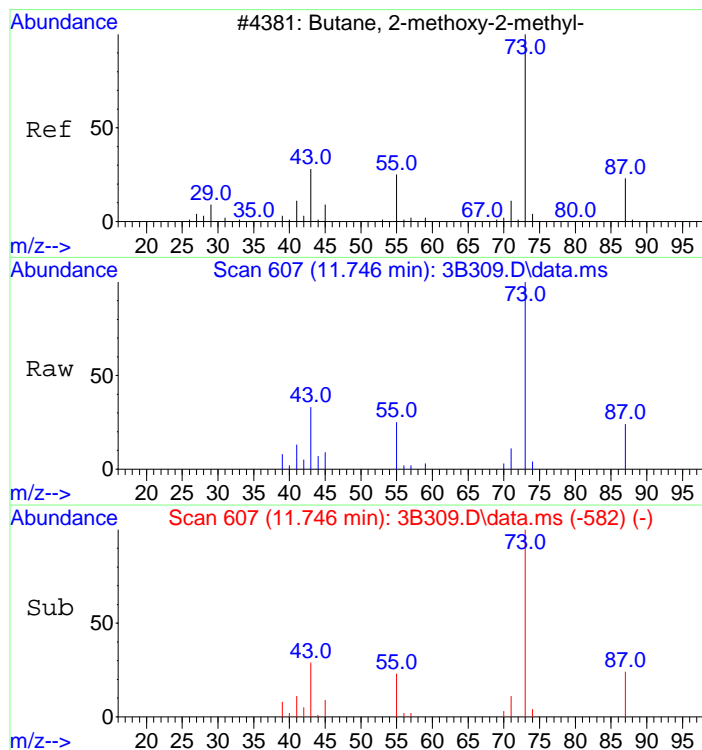
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 43      | 100   |       |       |
| 61      | 0.0   | 0.0   | 44.8  |
| 70      | 0.0   | 0.0   | 42.4  |



#98 BEFORE analyst DELETION  
Isobutyl alcohol  
Concen: 13.57 ug/L  
RT: 11.355 min Scan# 574  
Delta R.T. 0.012 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

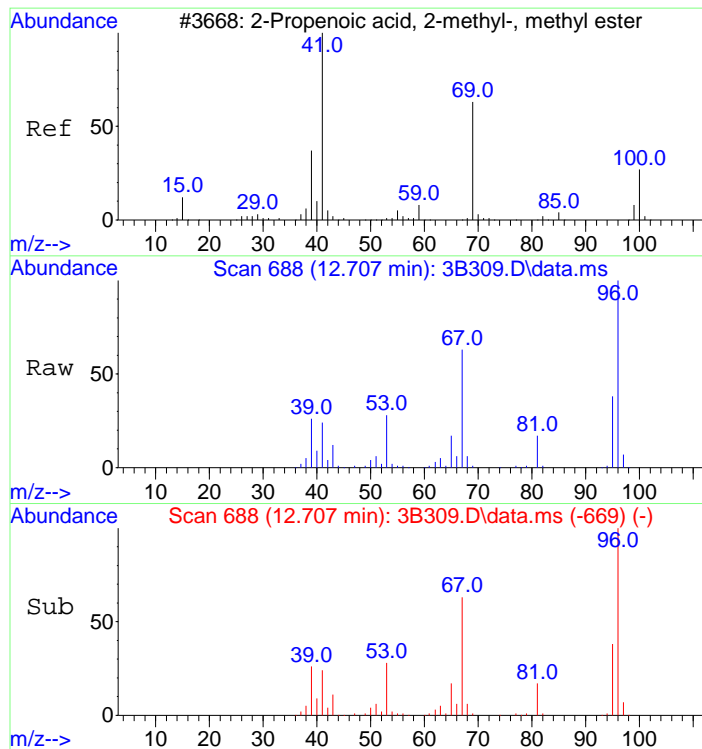
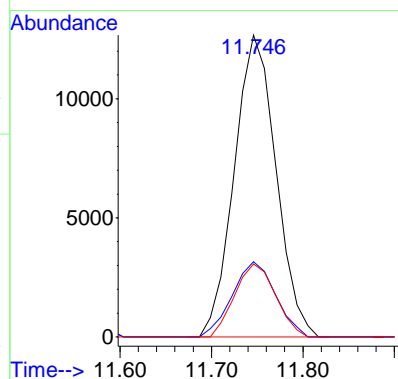
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 41      | 100   |       |       |
| 43      | 166.0 | 114.9 | 174.9 |





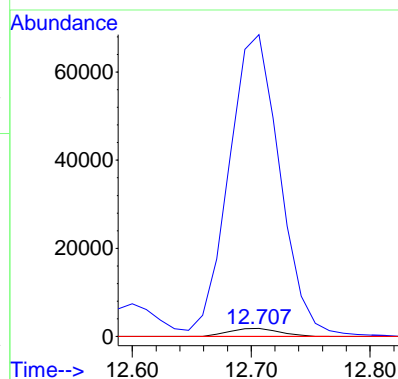
#99  
Methyl tert-amyl ether  
Concen: 1.78 ug/L  
RT: 11.746 min Scan# 607  
Delta R.T. -0.000 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

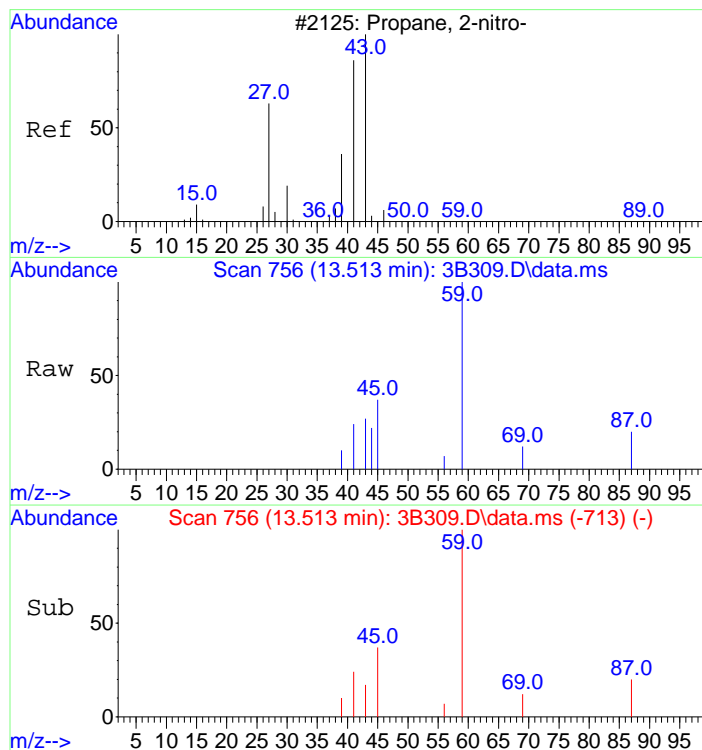
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 73      | 100   |       |       |
| 55      | 25.9  | 0.0   | 53.6  |
| 87      | 23.7  | 0.0   | 54.4  |



#100 BEFORE analyst DELETION  
Methyl methacrylate  
Concen: 1.13 ug/L  
RT: 12.707 min Scan# 688  
Delta R.T. -0.072 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

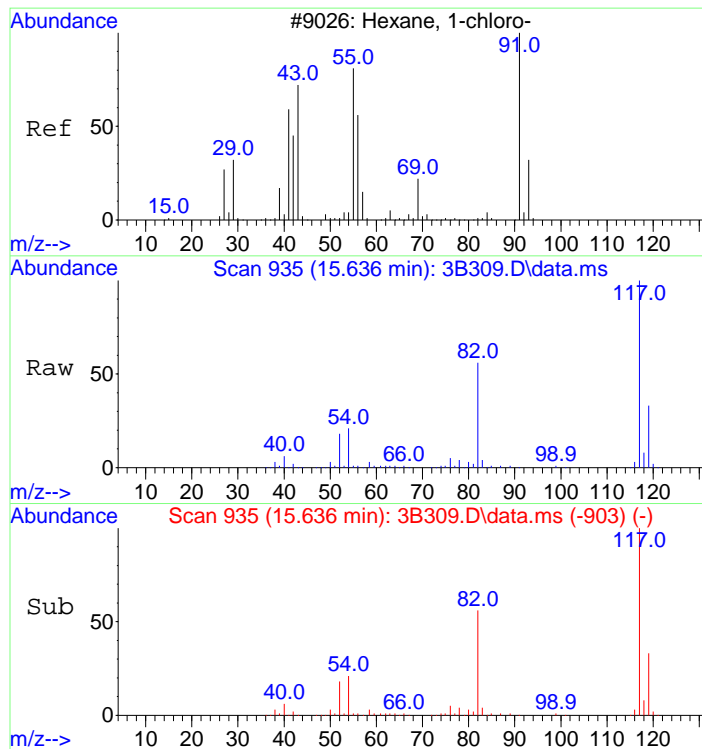
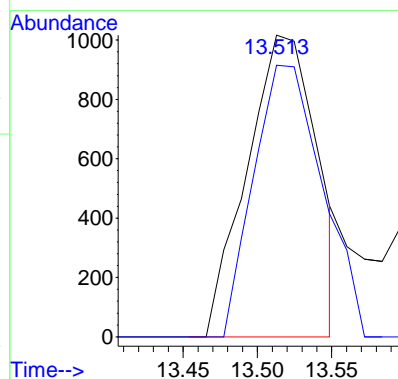
| Tgt Ion | Ratio  | Lower | Upper  |
|---------|--------|-------|--------|
| 69      | 100    |       |        |
| 41      | 3808.8 | 91.0  | 151.0# |
| 100     | 0.0    | 8.4   | 68.4#  |





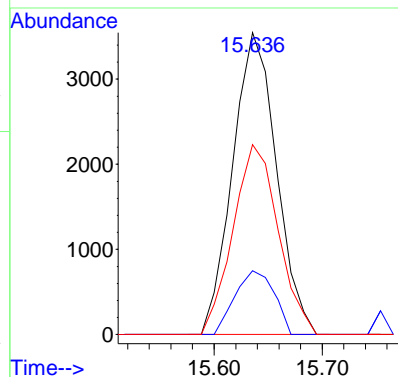
#102 BEFORE analyst DELETION  
2-Nitropropane  
Concen: 1.50 ug/L  
RT: 13.513 min Scan# 756  
Delta R.T. 0.213 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

Tgt Ion: 43 Resp: 3341  
Ion Ratio Lower Upper  
43 100  
41 82.4 50.5 110.5



#106 BEFORE analyst DELETION  
1-Chlorohexane  
Concen: 1.44 ug/L  
RT: 15.636 min Scan# 935  
Delta R.T. 0.083 min  
Lab File: 3B309.D  
Acq: 31 Aug 2011 10:54

Tgt Ion: 55 Resp: 10006  
Ion Ratio Lower Upper  
55 100  
91 18.9 123.6 183.6#  
56 64.9 31.5 91.5



# Standards









## Calibration History Report VOA3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M

Last Update : Thu Aug 25 11:40:17 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

Cal Lvl:8 Amt:0.00 Last Updated with: C:\msdchem\1\DATA\082411V3\3A310.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 24 Aug 2011 12:07 | A   | C:\msdchem\1\DATA\082411V3\3A310.D |

Cal Lvl:1 Amt:1.00 Last Updated with: C:\msdchem\1\DATA\082411V3\3A323.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 24 Aug 2011 12:37 | A   | C:\msdchem\1\DATA\082411V3\3A311.D |
| 24 Aug 2011 18:38 | B   | C:\msdchem\1\DATA\082411V3\3A323.D |

Cal Lvl:2 Amt:2.00 Last Updated with: C:\msdchem\1\DATA\082411V3\3A324.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 24 Aug 2011 13:07 | A   | C:\msdchem\1\DATA\082411V3\3A312.D |
| 24 Aug 2011 19:08 | B   | C:\msdchem\1\DATA\082411V3\3A324.D |

Cal Lvl:3 Amt:5.00 Last Updated with: C:\msdchem\1\DATA\082411V3\3A325.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 24 Aug 2011 13:37 | A   | C:\msdchem\1\DATA\082411V3\3A313.D |
| 24 Aug 2011 19:38 | B   | C:\msdchem\1\DATA\082411V3\3A325.D |

Cal Lvl:4 Amt:10.00 Last Updated with: C:\msdchem\1\DATA\082411V3\3A326.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 24 Aug 2011 14:07 | A   | C:\msdchem\1\DATA\082411V3\3A314.D |
| 24 Aug 2011 20:08 | B   | C:\msdchem\1\DATA\082411V3\3A326.D |

Cal Lvl:5 Amt:20.00 Last Updated with: C:\msdchem\1\DATA\082411V3\3A327.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 24 Aug 2011 14:37 | A   | C:\msdchem\1\DATA\082411V3\3A315.D |
| 24 Aug 2011 20:38 | B   | C:\msdchem\1\DATA\082411V3\3A327.D |

Cal Lvl:6 Amt:50.00 Last Updated with: C:\msdchem\1\DATA\082411V3\3A328.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 24 Aug 2011 15:07 | A   | C:\msdchem\1\DATA\082411V3\3A316.D |
| 24 Aug 2011 21:08 | B   | C:\msdchem\1\DATA\082411V3\3A328.D |

Cal Lvl:7 Amt:100.00 Last Updated with: C:\msdchem\1\DATA\082511V3\3A403.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 24 Aug 2011 16:07 | A   | C:\msdchem\1\DATA\082411V3\3A318.D |
| 25 Aug 2011 09:52 | B   | C:\msdchem\1\DATA\082511V3\3A403.D |

Cal Lvl:9 Amt:80.00 Last Updated with: C:\msdchem\1\DATA\082511V3\3A402.D

| Injection Date | Mix | Calibration File |
|----------------|-----|------------------|
|----------------|-----|------------------|

# Calibration History Report VOA3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M

Last Update : Thu Aug 25 11:40:17 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

|                   |   |                                    |
|-------------------|---|------------------------------------|
| 24 Aug 2011 15:37 | A | C:\msdchem\1\DATA\082411V3\3A317.D |
| 25 Aug 2011 09:22 | B | C:\msdchem\1\DATA\082511V3\3A402.D |

VOA3-8260-082411.M Wed Sep 07 11:18:01 2011

Method File : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M

Last Update : Thu Aug 25 11:40:17 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

| b      | Compound<br>ml   m2                    | 8<br>6    | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r^2 |
|--------|--|-----------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|----------|
| 2)MA   | Dichlorodifluoromethane                | 0.2195281 | 0.2066334<br>0.2063447 | 0.1620559<br>0.2100296 | 0.2118402 | 0.1834713 | 0.2116538 | 0.2014 | AVRG  |     | 9.4532   |
| 3)MPA  | Chloromethane                          | 0.2380538 | 0.2750444<br>0.2201670 | 0.2121559<br>0.2295825 | 0.2487080 | 0.2329658 | 0.2542693 | 0.2389 | AVRG  |     | 8.4142   |
| 4)MCA  | Vinyl chloride                         | 0.2413465 | 0.2665231<br>0.2300347 | 0.2257862<br>0.2360064 | 0.2495386 | 0.2395662 | 0.2545830 | 0.2429 | AVRG  |     | 5.5186   |
| 5)MA   | Bromomethane                           | 0.2789268 | 0.3515368<br>0.2719602 | 0.2982162<br>0.2749791 | 0.3003132 | 0.2982980 | 0.3001584 | 0.2968 | AVRG  |     | 8.4823   |
| 6)MA   | Chloroethane                           | 0.1829379 | 0.1780688<br>0.1811698 | 0.1652139<br>0.1821610 | 0.1885747 | 0.1873411 | 0.1922242 | 0.1822 | AVRG  |     | 4.5197   |
| 7)MA   | Trichlorofluoromethane                 | 0.3803117 | 0.4065857<br>0.3718496 | 0.3850711<br>0.3779977 | 0.4093624 | 0.3930551 | 0.4036742 | 0.3910 | AVRG  |     | 3.6558   |
| 8)MA   | Ethyl ether                            | 0.2288364 | 0.2402388<br>0.2223173 | 0.2381533<br>0.2251809 | 0.2419480 | 0.2457800 | 0.2468808 | 0.2362 | AVRG  |     | 4.0087   |
| 9)MA   | Acetone<br>0.0423   0.1428   0.00      | 1016561   | 33416<br>1808359       | 48962<br>1450597       | 127595    | 221461    | 476084    |        | LINR  | #   | 0.9952   |
| 10)MCA | 1,1-Dichloroethylene                   | 0.3959441 | 0.4547135<br>0.3820435 | 0.4382884<br>0.3937460 | 0.4539444 | 0.4385210 | 0.4288891 | 0.4233 | AVRG  |     | 6.7639   |
| 11)MA  | Iodomethane                            | 0.4850503 | 0.5720284<br>0.4530934 | 0.5492500<br>0.4688803 | 0.5617469 | 0.5361779 | 0.5185386 | 0.5181 | AVRG  |     | 8.5859   |
| 12)MA  | Acetonitrile<br>0.0331   0.0291   0.00 | 990077    | 30128<br>1847153       | 46069<br>1474096       | 124958    | 226302    | 449275    |        | LINR  | #   | 0.9979   |
| 13)MA  | Methyl acetate                         | 0.1913368 | 0.2504005<br>0.1825882 | 0.2061129<br>0.1835553 | 0.2317305 | 0.2164088 | 0.2246026 | 0.2108 | AVRG  |     | 11.5722  |
| 14)MA  | Carbon disulfide                       | 0.8102015 | 1.0371116<br>0.7352041 | 0.9920166<br>0.7675222 | 1.0041926 | 0.9474983 | 0.8998458 | 0.8992 | AVRG  |     | 12.8285  |
| 15)MA  | Methylene chloride                     | 0.3165256 |                        | 0.4455416<br>0.3095636 | 0.3896004 | 0.3503236 | 0.3378137 | 0.3516 | AVRG  |     | 14.2435  |
| 16)MA  | tert-Butyl methyl ether                | 0.8115046 | 0.9084268<br>0.7858636 | 0.8470139<br>0.7804093 | 0.9224122 | 0.8823403 | 0.8712392 | 0.8512 | AVRG  |     | 6.3721   |

Method File : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M

Last Update : Thu Aug 25 11:40:17 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

| b      | Compound<br>ml   m2      | 8<br>6    | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r^2 |
|--------|--------------------------|-----------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|----------|
| 17)MA  | trans-1,2-Dichloroethyle | 0.3669922 | 0.4186677<br>0.3525394 | 0.4115983<br>0.3600271 | 0.4310818 | 0.4053687 | 0.3952020 | 0.3927 | AVRG  |     | 7.4635   |
| 18)MA  | Vinyl acetate            | 0.4676471 | 0.5690120<br>0.4166238 | 0.5446006<br>0.4268733 | 0.5707225 | 0.5601744 | 0.4966682 | 0.5065 | AVRG  |     | 12.5723  |
| 19)MPA | 1,1-Dichloroethane       | 0.4473872 | 0.5629310<br>0.4206305 | 0.5291163<br>0.4281950 | 0.5290617 | 0.5072755 | 0.4767236 | 0.4877 | AVRG  |     | 10.7544  |
| 20)MA  | 2-Butanone               | 0.2109306 | 0.2748684<br>0.1889550 | 0.2185085<br>0.1864803 | 0.2426865 | 0.2142618 | 0.2159552 | 0.2191 | AVRG  |     | 13.0703  |
| 21)MA  | cis-1,2-Dichloroethylene | 0.3020914 | 0.3766209<br>0.2962615 | 0.3404518<br>0.2972067 | 0.3583988 | 0.3387303 | 0.3270070 | 0.3296 | AVRG  |     | 9.0045   |
| 22)MA  | 2,2-Dichloropropane      | 0.3335597 | 0.4476723<br>0.3230060 | 0.4193812<br>0.3281337 | 0.4125698 | 0.3873825 | 0.3687099 | 0.3776 | AVRG  |     | 12.4314  |
| 23)MA  | Bromochloromethane       | 0.1545783 | 0.1792290<br>0.1544848 | 0.1539062<br>0.1535339 | 0.1663618 | 0.1641300 | 0.1620185 | 0.1610 | AVRG  |     | 5.5624   |
| 24)MCA | Chloroform               | 0.4645402 | 0.5802538<br>0.4493563 | 0.5389773<br>0.4561742 | 0.5556332 | 0.5141444 | 0.5033054 | 0.5078 | AVRG  |     | 9.5674   |
| 25)MA  | 1,1,1-Trichloroethane    | 0.4159358 | 0.4503128<br>0.3977659 | 0.4678512<br>0.4087194 | 0.4662391 | 0.4517706 | 0.4396061 | 0.4373 | AVRG  |     | 6.1065   |
| 26)MA  | Cyclohexane              | 0.4436163 | 0.5514091<br>0.4204578 | 0.5513241<br>0.4361260 | 0.5293002 | 0.5010373 | 0.4715128 | 0.4881 | AVRG  |     | 10.7859  |
| 27)MA  | 1,1-Dichloropropene      | 0.3303667 | 0.4181876<br>0.3132446 | 0.3802425<br>0.3274051 | 0.3962535 | 0.3822267 | 0.3570192 | 0.3631 | AVRG  |     | 10.2312  |
| 28)MA  | Carbon tetrachloride     | 0.3406402 | 0.4008248<br>0.3317829 | 0.3882903<br>0.3416743 | 0.3969525 | 0.3802979 | 0.3614804 | 0.3677 | AVRG  |     | 7.4640   |
| 29)SA  | 1,2-Dichloroethane-d4    | 0.0569194 | 0.0576557<br>0.0563775 | 0.0558537<br>0.0554055 | 0.0584516 | 0.0580937 | 0.0586041 | 0.0572 | AVRG  |     | 2.1244   |
| 30)MA  | 1,2-Dichloroethane       | 0.3259343 | 0.3672593<br>0.3072522 | 0.3643303<br>0.3104612 | 0.3894605 | 0.3674797 | 0.3543791 | 0.3483 | AVRG  |     | 8.6349   |
| 31)MA  | Benzene                  | 1.0040088 | 1.2209173<br>0.9635532 | 1.1424592<br>0.9796109 | 1.1792125 | 1.1229156 | 1.0761645 | 1.0861 | AVRG  |     | 8.8431   |

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

| b      | Compound                                   |    | 8               | 1                      | 2                      | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r^2 |
|--------|--|----|-----------------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|----------|
|        | ml   | m2 | 6               | 7                      | 9                      |           |           |           |        |       |     |          |
| 32)MA  | Cyclohexene                                |    | 0.5075100       | 0.6455043<br>0.4865031 | 0.5669714<br>0.5027754 | 0.5961361 | 0.5777308 | 0.5470413 | 0.5538 | AVRG  |     | 9.7171   |
| 33)MA  | n-Butyl alcohol<br>-0.0087   0.0081   0.00 |    | 5757<br>1021924 | 11982<br>2011802       | 22414<br>1586582       | 84720     | 171501    | 409242    |        | LINR  | #   | 0.9994   |
| 34)MA  | Trichloroethylene                          |    | 0.2719307       | 0.3006486<br>0.2579379 | 0.3051638<br>0.2641227 | 0.3205440 | 0.3039502 | 0.2927842 | 0.2896 | AVRG  |     | 7.7221   |
| 35)MCA | 1,2-Dichloropropane                        |    | 0.2552848       | 0.3099701<br>0.2390916 | 0.2902907<br>0.2437849 | 0.3050337 | 0.2858745 | 0.2758541 | 0.2756 | AVRG  |     | 9.8180   |
| 36)MA  | Methylcyclohexane                          |    | 0.4461527       | 0.5438079<br>0.4276130 | 0.5034652<br>0.4413509 | 0.5192670 | 0.5001054 | 0.4853567 | 0.4834 | AVRG  |     | 8.5255   |
| 37)MA  | Dibromomethane                             |    | 0.1688301       | 0.1981520<br>0.1687955 | 0.1679032<br>0.1678734 | 0.1950798 | 0.1827510 | 0.1805884 | 0.1787 | AVRG  |     | 7.0001   |
| 38)MA  | Bromodichloromethane                       |    | 0.3783667       | 0.4232684<br>0.3665335 | 0.3973567<br>0.3697492 | 0.4219286 | 0.3981050 | 0.4019733 | 0.3947 | AVRG  |     | 5.5113   |
| 39)MA  | 2-Chloroethylvinyl ether                   |    | 0.1299272       | 0.1409908<br>0.1266274 | 0.1270898<br>0.1294564 | 0.1821250 | 0.1437495 | 0.1491914 | 0.1411 | AVRG  |     | 13.1779  |
| 40)MA  | cis-1,3-Dichloropropylene                  |    | 0.4440559       | 0.4845983<br>0.4349291 | 0.4732300<br>0.4397446 | 0.5059854 | 0.4910594 | 0.4766645 | 0.4688 | AVRG  |     | 5.5935   |
| 42)MA  | 4-Methyl-2-pentanone                       |    | 0.2446821       | 0.3055974<br>0.2265066 | 0.2500061<br>0.2268734 | 0.3043635 | 0.2699051 | 0.2708923 |        |       |     |          |
| 43)SA  | Toluene-d8                                 |    | 2.1962226       | 2.2188205<br>2.2291198 | 2.2249867<br>2.2243843 | 2.2401525 | 2.2119854 | 2.2190059 | 0.2624 | AVRG  |     | 11.8568  |
| 44)MCA | Toluene                                    |    | 2.4173532       | 3.0263082<br>2.2944280 | 2.7906630<br>2.3568235 | 2.8425271 | 2.6816037 | 2.5979795 | 2.2206 | AVRG  |     | 0.5804   |
| 45)MA  | trans-1,3-Dichloropropyl                   |    | 0.9515509       | 1.0474898<br>0.9309503 | 0.9585801<br>0.9447760 | 1.0675258 | 1.0238647 | 1.0182298 | 2.6260 | AVRG  |     | 9.8050   |
| 46)MA  | 1,1,2-Trichloroethane                      |    | 0.4698415       | 0.5245329<br>0.4524734 | 0.4691977<br>0.4583294 | 0.5379396 | 0.5105647 | 0.5117223 | 0.9929 | AVRG  |     | 5.2736   |
| 47)MA  | 2-Hexanone<br>0.0767   0.2639   0.00       |    | 840120          | 23856<br>1432295       | 36464<br>1153887       | 105278    | 181482    | 359336    | 0.4918 | AVRG  |     | 6.7036   |
|        |  |    |                 |                        |                        |           |           |           |        | LINR  | #   | 0.9941   |

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

| b      | Compound<br>ml   m2      | 8<br>6    | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r^2 |
|--------|--------------------------|-----------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|----------|
| 48)MA  | 1,3-Dichloropropane      | 0.8797514 | 1.1134040<br>0.8172306 | 0.9759822<br>0.8362419 | 1.0747401 | 1.0092176 | 0.9902477 | 0.9621 | AVRG  |     | 11.2766  |
| 49)MA  | Tetrachloroethylene      | 0.4865635 | 0.6442169<br>0.4597443 | 0.5808261<br>0.4781455 | 0.5798774 | 0.5457774 | 0.5251810 | 0.5375 | AVRG  |     | 11.6486  |
| 50)MA  | Dibromochloromethane     | 0.7251846 | 0.7491605<br>0.7225720 | 0.6739205<br>0.7207383 | 0.7608613 | 0.7281233 | 0.7459892 | 0.7283 | AVRG  |     | 3.6197   |
| 51)MA  | 1,2-Dibromoethane        | 0.6241601 | 0.6729559<br>0.6199735 | 0.6019539<br>0.6153071 | 0.6815610 | 0.6582674 | 0.6614355 | 0.6420 | AVRG  |     | 4.6678   |
| 52)MPA | Chlorobenzene            | 1.6526962 | 1.9072491<br>1.6168378 | 1.8209060<br>1.6307123 | 1.8361710 | 1.7685674 | 1.7586132 | 1.7490 | AVRG  |     | 6.0749   |
| 53)MA  | 1,1,1,2-Tetrachloroethan | 0.6425989 | 0.6706382<br>0.6282381 | 0.6261943<br>0.6355051 | 0.7033748 | 0.6817456 | 0.6791574 | 0.6584 | AVRG  |     | 4.3977   |
| 54)MCA | Ethylbenzene             | 2.6247176 | 3.3402121<br>2.3873374 | 3.2245848<br>2.5003621 | 3.2231761 | 3.0127352 | 2.9051127 | 2.9023 | AVRG  |     | 12.4545  |
| 55)MA  | m,p-Xylenes              | 1.0988077 | 1.3034986<br>1.0209081 | 1.2484036<br>1.0609662 | 1.2868309 | 1.2317472 | 1.2036530 | 1.1819 | AVRG  |     | 9.0808   |
| 56)MA  | o-Xylene                 | 1.1616285 | 1.3185633<br>1.1081386 | 1.2680459<br>1.1357922 | 1.3192857 | 1.2505438 | 1.2545836 | 1.2271 | AVRG  |     | 6.6507   |
| 57)MA  | Styrene                  | 1.8984476 | 2.2604605<br>1.7437648 | 2.1405113<br>1.7872643 | 2.1791347 | 2.0682950 | 2.0761290 | 2.0193 | AVRG  |     | 9.3289   |
| 59)MPA | Bromoform                | 0.4985620 | 0.4234955<br>0.4909865 | 0.4447950<br>0.5200758 | 0.4733194 | 0.4853358 | 0.5008265 | 0.4797 | AVRG  |     | 6.5970   |
| 60)MA  | Isopropylbenzene         | 2.7784262 | 3.3758308<br>2.4907504 | 3.2715688<br>2.7638883 | 3.2015631 | 3.1810764 | 3.0177952 | 3.0101 | AVRG  |     | 10.1396  |
| 61)SA  | Bromofluorobenzene       | 0.9368384 | 0.9321574<br>0.9236921 | 0.9624566<br>0.9764053 | 0.9449437 | 0.9485299 | 0.9450058 | 0.9463 | AVRG  |     | 1.7758   |
| 62)MPA | 1,1,2,2-Tetrachloroethan | 0.7566946 | 0.8334993<br>0.7095533 | 0.7452364<br>0.7470161 | 0.8129669 | 0.7810672 | 0.7846956 | 0.7713 | AVRG  |     | 5.1799   |
| 63)MA  | 1,2,3-Trichloropropane   | 0.2203637 | 0.2280918<br>0.2134478 | 0.2231878<br>0.2235084 | 0.2381269 | 0.2291168 | 0.2271938 | 0.2254 | AVRG  |     | 3.1949   |



Last Update : Thu Aug 25 11:40:17 2011  
Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x = \text{concentration ratio}$ ,  $y = \text{response ratio}$ .  $y = b + m1(x) + m2(xE2)$

| b     | Compound<br>ml   m2      | 8<br>6    | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r <sup>2</sup> |
|-------|--------------------------|-----------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|---------------------|
| 64)MA | Bromobenzene             | 0.7746836 | 0.8708053<br>0.7330879 | 0.8557766<br>0.7857833 | 0.8347474 | 0.8238638 | 0.8139307 | 0.8116 | AVRG  |     | 5.5773              |
| 65)MA | n-Propylbenzene          | 3.1405191 | 3.9704631<br>2.8105641 | 3.9037266<br>3.1364054 | 3.7401692 | 3.6228887 | 3.4307897 | 3.4694 | AVRG  |     | 11.8900             |
| 66)MA | 1,3,5-Trimethylbenzene   | 2.2890839 | 2.7989460<br>2.0302890 | 2.8046944<br>2.2460032 | 2.6987900 | 2.6502208 | 2.5346065 | 2.5066 | AVRG  |     | 11.4319             |
| 67)MA | 2-Chlorotoluene          | 0.7108220 | 0.7875007<br>0.6548525 | 0.7879103<br>0.7211112 | 0.7731242 | 0.7884269 | 0.7415211 | 0.7457 | AVRG  |     | 6.4513              |
| 68)MA | 4-Chlorotoluene          | 2.1026109 | 2.5425125<br>1.9146381 | 2.4928063<br>2.0916227 | 2.4514587 | 2.3709292 | 2.2902225 | 2.2821 | AVRG  |     | 9.8315              |
| 69)MA | tert-Butylbenzene        | 0.5648981 | 0.5951756<br>0.5294885 | 0.6304815<br>0.5746033 | 0.5805631 | 0.5829071 | 0.5748231 | 0.5791 | AVRG  |     | 4.8913              |
| 70)MA | 1,2,4-Trimethylbenzene   | 2.4062615 | 2.8855104<br>2.1688928 | 2.8264864<br>2.3696052 | 2.7543438 | 2.6771297 | 2.5784682 | 2.5833 | AVRG  |     | 9.6751              |
| 71)MA | sec-Butylbenzene         | 3.2159248 | 3.7175610<br>2.8795231 | 3.6970145<br>3.1356984 | 3.5961448 | 3.5497792 | 3.4460132 | 3.4047 | AVRG  |     | 8.7871              |
| 72)MA | 4-Isopropyltoluene       | 2.5987255 | 2.9445481<br>2.3675749 | 2.9217962<br>2.5427238 | 2.8667820 | 2.8362006 | 2.7549640 | 2.7292 | AVRG  |     | 7.5484              |
| 73)MA | 1,3-Dichlorobenzene      | 1.4684500 | 1.7008638<br>1.3866523 | 1.6270676<br>1.4474295 | 1.6247309 | 1.5609200 | 1.5295127 | 1.5432 | AVRG  |     | 6.8537              |
| 74)MA | 1,4-Dichlorobenzene      | 1.4391592 | 1.5635922<br>1.3618674 | 1.5606381<br>1.4122914 | 1.5397416 | 1.5082245 | 1.4876585 | 1.4841 | AVRG  |     | 4.9634              |
| 75)MA | n-Butylbenzene           | 2.5770952 | 3.0458719<br>2.2839569 | 2.9103494<br>2.4580865 | 2.9612672 | 2.9150046 | 2.8128871 | 2.7456 | AVRG  |     | 9.9387              |
| 76)MA | 1,2-Dichlorobenzene      | 1.4491875 | 1.6238070<br>1.3644541 | 1.5259626<br>1.4304525 | 1.5914861 | 1.5472217 | 1.5345088 | 1.5084 | AVRG  |     | 5.7699              |
| 77)MA | 1,2-Dibromo-3-chloroprop | 0.1738074 | 0.1416179<br>0.1814149 | 0.1455031<br>0.1694221 | 0.1669531 | 0.1650966 | 0.1779969 | 0.1652 | AVRG  |     | 8.7580              |
| 78)MA | 1,2,4-Trichlorobenzene   | 0.9675130 | 1.0201199<br>0.9521536 | 0.9721600<br>0.8880779 | 1.0511668 | 1.0070377 | 1.0441538 | 0.9878 | AVRG  |     | 5.4754              |

Last Update : Thu Aug 25 11:40:17 2011  
Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x = \text{concentration ratio}$ ,  $y = \text{response ratio}$ .  $y = b + m1(x) + m2(xE2)$

| b     | Compound<br>ml   m2                      | 8<br>6    | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r^2 |
|-------|--|-----------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|----------|
| 79)MA | Hexachlorobutadiene                      | 0.5698001 | 0.6284974<br>0.5654031 | 0.5704699<br>0.5343442 | 0.6147374 | 0.6007820 | 0.6028736 | 0.5859 | AVRG  |     | 5.2930   |
| 80)MA | Naphthalene                              |           | 2.0930296<br>1.9714412 | 1.7781743<br>1.8062262 | 2.0792225 | 2.0424471 | 2.1426453 | 1.9844 | AVRG  |     | 6.7110   |
| 81)MA | 1,2,3-Trichlorobenzene                   |           | 0.8374835<br>0.8030136 | 0.7679863<br>0.7261116 | 0.8728222 | 0.8426771 | 0.8647010 | 0.8146 | AVRG  |     | 6.1397   |
| 83)B  | Chlorotrifluoroethylene                  |           | 0.1258434<br>0.0909428 | 0.1046332<br>0.0967930 | 0.1085185 | 0.1049998 | 0.1068877 | 0.1052 | AVRG  |     | 9.6304   |
| 84)B  | 2-Chloro-1,1,1-trifluoro                 |           | 0.3025450<br>0.2668083 | 0.2977154<br>0.2843286 | 0.2895566 | 0.2776973 | 0.2705728 | 0.2801 | AVRG  |     | 6.0239   |
| 85)B  | Acrolein                                 |           | 0.0538869<br>0.0476929 | 0.0410052<br>0.0507783 | 0.0528690 | 0.0502029 | 0.0519501 | 0.0491 | AVRG  |     | 8.9432   |
| 86)B  | Trichlorotrifluoroethane                 |           | 0.1060320<br>0.0704489 | 0.0967823<br>0.0759735 | 0.0992119 | 0.0939009 | 0.0925368 | 0.0897 | AVRG  |     | 13.5551  |
| 87)B  | Isopropyl Alcohol                        |           | 0.0189271<br>0.0161527 | 0.0166137<br>0.0193936 | 0.0197125 | 0.0197370 | 0.0199722 | 0.0184 | AVRG  |     | 8.8413   |
| 88)B  | Allyl chloride<br>0.1116   0.3130   0.00 |           | 62132<br>4271263       | 114723<br>2747424      | 295316    | 564331    | 1080822   |        | LINR  | #   | 0.9901   |
| 89)B  | tert-Butyl Alcohol                       |           | 0.0380488<br>0.0267291 | 0.0332823<br>0.0324596 | 0.0385179 | 0.0381218 | 0.0370748 | 0.0341 | AVRG  |     | 13.4967  |
| 90)B  | Acrylonitrile                            |           | 0.0964676<br>0.0801580 | 0.0875231<br>0.0904338 | 0.1035842 | 0.1030220 | 0.1043361 | 0.0939 | AVRG  |     | 9.8578   |
| 91)B  | Isopropyl ether                          |           | 1.0238749<br>0.8304564 | 1.0027980<br>0.8740896 | 0.9968590 | 0.9986328 | 0.9865477 | 0.9499 | AVRG  |     | 7.7871   |
| 92)B  | 2-Chloro-1,3-butadiene                   |           | 0.3800644<br>0.3147460 | 0.3538349<br>0.3317068 | 0.3727182 | 0.3666853 | 0.3610841 | 0.3517 | AVRG  |     | 6.5372   |
| 93)B  | Ethyl tert-butyl ether                   |           | 0.9700507<br>0.8073728 | 0.9760707<br>0.8544283 | 0.9822924 | 0.9589455 | 0.9577174 | 0.9215 | AVRG  |     | 7.3838   |
| 94)B  | Ethyl acetate                            |           | 0.2958916              | 0.2451128<br>0.2169031 | 0.2690954 | 0.2692442 | 0.2568611 | 0.2511 | AVRG  |     | 12.6396  |

For Linear Calibration:  $x = \text{concentration ratio}$ ,  $y = \text{response ratio}$ .  $y = b + m1(x) + m2(xE2)$

| b     | Compound<br>ml   m2                       | 8<br>6    | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r^2 |
|-------|---|-----------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|----------|
| 95)B  | Propionitrile                             | 0.0319138 | 0.0387204<br>0.0309013 | 0.0357142<br>0.0346392 | 0.0389215 | 0.0395162 | 0.0396589 | 0.0362 | AVRG  |     | 9.6596   |
| 96)B  | Methacrylonitrile                         | 0.1328370 | 0.1759485<br>0.1198751 | 0.1570179<br>0.1390257 | 0.1688028 | 0.1681478 | 0.1642901 | 0.1532 | AVRG  |     | 13.1626  |
| 97)B  | Tetrahydrofuran<br>0.0217   0.0646   0.00 | 450754    | 15020<br>879306        | 22862<br>609743        | 59272     | 116822    | 223672    |        | LINR  | #   | 0.9900   |
| 98)B  | Isobutyl alcohol                          |           | 0.0076193<br>0.0075399 | 0.0058691<br>0.0092823 | 0.0082712 | 0.0087360 | 0.0094600 | 0.0081 | AVRG  | #   | 14.3927  |
| 99)B  | Methyl tert-amyl ether                    | 0.7947954 | 0.8848422<br>0.7413892 | 0.8711068<br>0.7935536 | 0.9060705 | 0.8819819 | 0.8822739 | 0.8445 | AVRG  |     | 7.0277   |
| 100)B | Methyl methacrylate                       | 0.1533490 | 0.2034568<br>0.1396765 | 0.1811852<br>0.1656551 | 0.1961867 | 0.1939994 | 0.1902208 | 0.1780 | AVRG  |     | 12.7835  |
| 101)B | 1,4-Dioxane                               | 0.0024639 | 0.0028089<br>0.0024047 | 0.0024175<br>0.0027239 | 0.0027784 | 0.0029330 | 0.0028651 | 0.0027 | AVRG  | #   | 7.9652   |
| 102)B | 2-Nitropropane                            | 0.0748098 | 0.0912735<br>0.0703453 | 0.0819403<br>0.0829347 | 0.0890608 | 0.0889763 | 0.0895666 | 0.0836 | AVRG  |     | 9.1459   |
| 104)B | Ethyl methacrylate                        | 0.7093556 | 0.8941451<br>0.6062902 | 0.8397013<br>0.7142966 | 0.8997172 | 0.8887281 | 0.8357004 | 0.7985 | AVRG  |     | 13.6039  |
| 106)B | 1-Chlorohexane                            | 0.5409185 | 0.7425768<br>0.5276735 | 0.6952003<br>0.5591123 | 0.6216893 | 0.5995022 | 0.5941291 | 0.6101 | AVRG  |     | 12.3085  |
| 107)B | cis-1,4-Dichloro-2-buten                  | 0.1963744 | 0.2356933<br>0.1827962 | 0.2228384<br>0.2121648 | 0.2430724 | 0.2480103 | 0.2358122 | 0.2221 | AVRG  |     | 10.4766  |
| 108)B | Cyclohexanone<br>0.0117   0.0149   0.00   | 216689    | 9401<br>289584         | 9214<br>289584         | 29045     | 51990     | 101123    |        | LINR  | #   | 0.9979   |
| 109)B | trans-1,4-Dichloro-2-but                  | 0.1670315 | 0.1835531<br>0.1578152 | 0.1791798<br>0.1842341 | 0.2025683 | 0.2044984 | 0.2000922 | 0.1849 | AVRG  |     | 9.1772   |
| 110)B | Pentachloroethane                         |           | 0.4177334<br>0.3610877 | 0.4024236<br>0.4181338 | 0.4039802 | 0.4139435 | 0.4127129 | 0.4020 | AVRG  |     | 4.8888   |
| 111)B | Benzyl chloride                           | 1.0342070 | 1.2392090<br>1.0654744 | 1.1564966<br>1.2782708 | 1.2591838 | 1.2527115 | 1.2140677 | 1.1875 | AVRG  |     | 7.8201   |

For Linear Calibration:  $x = \text{concentration ratio}$ ,  $y = \text{response ratio}$ .  $y = b + m1(x) + m2(xE2)$

| b     |                          | Compound |    | 8         | 1         | 2         | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r^2 |
|-------|--------------------------|----------|----|-----------|-----------|-----------|-----------|-----------|-----------|--------|-------|-----|----------|
|       | m1                       |          | m2 | 6         | 7         | 9         |           |           |           |        |       |     |          |
| 112)B | bis(2-Chloroisopropyl)et |          |    |           | 0.3723764 | 0.3378757 | 0.3743594 | 0.3792479 | 0.3724486 |        |       |     |          |
|       |                          |          |    | 0.3005188 | 0.2825156 | 0.3441934 |           |           |           | 0.3454 | AVRG  |     | 10.6479  |
|       |                          |          |    |           |           |           |           |           |           |        |       |     |          |

(#) = Out of Range (\$) = Individual RF Out of Range  
AVRG = Average, LINR = Linear Regression,  $1/x = \text{the inverse of concentration}$ ,  $1/x^2 = \text{the inverse square of concentration}$

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A310.D  
Acq On : 24 Aug 2011 12:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-01|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD0005L 5ML n/a MIX[A] 0723-01B+0727-01C  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 25 11:41:36 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |          |
|-------------------------------|------|--------|--------|--------|----------|-------|--------|----------|
| Internal Standards            |      |        |        |        |          |       |        | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1244680  | 50.00 | ug/L   | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 534627   | 50.00 | ug/L   | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 558132   | 50.00 | ug/L   | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00 | ug/L   | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 0m       | 50.00 | ug/L   | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00 | ug/L   | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |        | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 74085    | 52.06 | ug/L   | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1201002  | 50.58 | ug/L   | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 514417   | 48.70 | ug/L   | 0.00     |
| Target Compounds              |      |        |        |        |          |       |        |          |
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  | QValue   |
| 2) Dichlorodifluoromethane    | 85   | 4.652  | 4.666  | 0.387  | 3283     | 0.65  | ug/L   | 66       |
| 3) Chloromethane              | 50   | 5.053  | 5.068  | 0.421  | 3959     | 0.67  | ug/L   | 78       |
| 4) Vinyl chloride             | 62   | 5.350  | 5.365  | 0.446  | 3735     | 0.62  | ug/L   | 86       |
| 5) Bromomethane               | 94   | 6.101  | 6.125  | 0.508  | 2785     | 0.38  | ug/L   | 95       |
| 6) Chloroethane               | 64   | 6.327  | 6.327  | 0.527  | 2204     | 0.49  | ug/L # | 42       |
| 7) Trichlorofluoromethane     | 101  | 6.837  | 6.849  | 0.569  | 5165     | 0.53  | ug/L   | 78       |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 2936     | 0.50  | ug/L   | 71       |
| 9) Acetone                    | 43   | 7.774  | 7.762  | 0.647  | 19642    | Below | Cal    | 95       |
| 10) 1,1-Dichloroethylene      | 61   | 7.762  | 7.774  | 0.646  | 5195     | 0.49  | ug/L   | 95       |
| 11) Iodomethane               | 142  | 8.058  | 8.070  | 0.671  | 33916    | 2.63  | ug/L   | 97       |
| 12) Acetonitrile              | 41   | 8.236  | 8.224  | 0.686  | 18609    | Below | Cal    | 71       |
| 13) Methyl acetate            | 43   | 8.307  | 8.295  | 0.692  | 15573    | 2.97  | ug/L   | 94       |
| 14) Carbon disulfide          | 76   | 8.212  | 8.212  | 0.684  | 63886    | 2.85  | ug/L   | 99       |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 10103    | N.D.  |        |          |
| 16) tert-Butyl methyl ether   | 73   | 8.936  | 8.936  | 0.744  | 11534    | 0.54  | ug/L   | 87       |
| 17) trans-1,2-Dichloroethy... | 61   | 8.971  | 8.971  | 0.747  | 4882     | 0.50  | ug/L   | 95       |
| 18) Vinyl acetate             | 43   | 9.612  | 9.612  | 0.800  | 36286    | 2.88  | ug/L   | 92       |
| 19) 1,1-Dichloroethane        | 63   | 9.623  | 9.623  | 0.801  | 6225     | 0.51  | ug/L   | 93       |
| 20) 2-Butanone                | 43   | 10.418 | 10.406 | 0.868  | 17977    | 3.30  | ug/L   | 91       |
| 21) cis-1,2-Dichloroethylene  | 96   | 10.465 | 10.465 | 0.872  | 4410     | 0.54  | ug/L   | 95       |
| 22) 2,2-Dichloropropane       | 77   | 10.489 | 10.489 | 0.874  | 5497     | 0.58  | ug/L   | 94       |
| 23) Bromochloromethane        | 128  | 10.809 | 10.797 | 0.900  | 1905     | 0.48  | ug/L   | 97       |
| 24) Chloroform                | 83   | 10.869 | 10.869 | 0.905  | 7236     | 0.57  | ug/L   | 98       |
| 25) 1,1,1-Trichloroethane     | 97   | 11.201 | 11.201 | 0.933  | 5828     | 0.54  | ug/L   | 97       |
| 26) Cyclohexane               | 56   | 11.307 | 11.307 | 0.942  | 8074     | 0.66  | ug/L   | 86       |
| 27) 1,1-Dichloropropene       | 75   | 11.402 | 11.402 | 0.950  | 5076     | 0.56  | ug/L # | 65       |
| 28) Carbon tetrachloride      | 117  | 11.438 | 11.438 | 0.953  | 4773     | 0.52  | ug/L   | 99       |
| 30) 1,2-Dichloroethane        | 62   | 11.675 | 11.663 | 0.972  | 4679     | 0.54  | ug/L   | 90       |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 15767    | 0.58  | ug/L   | 97       |
| 32) Cyclohexene               | 67   | 11.829 | 11.829 | 0.985  | 7444     | 0.54  | ug/L   | 96       |
| 33) n-Butyl alcohol           | 56   | 12.220 | 12.185 | 1.018  | 5757     | 82.55 | ug/L   | 91       |
| 34) Trichloroethylene         | 95   | 12.481 | 12.481 | 1.040  | 4256     | 0.59  | ug/L   | 90       |
| 35) 1,2-Dichloropropane       | 63   | 12.766 | 12.766 | 1.063  | 4144     | 0.60  | ug/L   | 89       |
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 6757     | 0.56  | ug/L # | 72       |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 2391     | 0.54  | ug/L   | 92       |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 5258     | 0.54  | ug/L # | 92       |
| 39) 2-Chloroethylvinyl ether  | 63   | 13.347 | 13.347 | 1.112  | 8324     | 2.37  | ug/L   | 95       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A310.D  
Acq On : 24 Aug 2011 12:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-01|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD0005L 5ML n/a MIX[A] 0723-01B+0727-01C  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 25 11:41:36 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |     |
|-----|---------------------------|------|--------|--------|--------|----------|-----------|-------|-----|
| 40) | cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 6321     | 0.54 ug/L |       | 97  |
| 42) | 4-Methyl-2-pentanone      | 58   | 13.715 | 13.715 | 0.877  | 8312     | 2.96 ug/L |       | 89  |
| 44) | Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 17759    | 0.63 ug/L |       | 91  |
| 45) | trans-1,3-Dichloroprop... | 75   | 14.225 | 14.213 | 0.910  | 5472     | 0.52 ug/L |       | 77  |
| 46) | 1,1,2-Trichloroethane     | 83   | 14.462 | 14.462 | 0.925  | 2732     | 0.52 ug/L |       | 98  |
| 47) | 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 11836    | Below Cal |       | 87  |
| 48) | 1,3-Dichloropropane       | 76   | 14.675 | 14.663 | 0.939  | 5490     | 0.53 ug/L | #     | 67  |
| 49) | Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 3292     | 0.57 ug/L |       | 92  |
| 50) | Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 3760     | 0.48 ug/L |       | 100 |
| 51) | 1,2-Dibromoethane         | 107  | 15.138 | 15.138 | 0.968  | 3307     | 0.48 ug/L |       | 98  |
| 52) | Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 10103    | 0.54 ug/L | #     | 24  |
| 53) | 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 3860     | 0.55 ug/L |       | 96  |
| 54) | Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 18657    | 0.60 ug/L |       | 95  |
| 55) | m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 14359    | 1.14 ug/L |       | 80  |
| 56) | o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 7345     | 0.56 ug/L |       | 81  |
| 57) | Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 12166    | 0.56 ug/L |       | 89  |
| 59) | Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 2273     | 0.42 ug/L |       | 96  |
| 60) | Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 19124    | 0.57 ug/L |       | 95  |
| 62) | 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 4360     | 0.51 ug/L |       | 91  |
| 63) | 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 905      | 0.36 ug/L | #     | 1   |
| 64) | Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 4625     | 0.51 ug/L |       | 89  |
| 65) | n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 22523    | 0.58 ug/L |       | 93  |
| 66) | 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 16245    | 0.58 ug/L |       | 92  |
| 67) | 2-Chlorotoluene           | 126  | 17.320 | 17.320 | 0.952  | 4285     | 0.51 ug/L | #     | 66  |
| 68) | 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 14592    | 0.57 ug/L |       | 95  |
| 69) | tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 3305     | 0.51 ug/L | #     | 81  |
| 70) | 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 17224    | 0.60 ug/L |       | 90  |
| 71) | sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 20807    | 0.55 ug/L |       | 96  |
| 72) | 4-Isopropyltoluene        | 119  | 18.079 | 18.067 | 0.993  | 16159    | 0.53 ug/L |       | 95  |
| 73) | 1,3-Dichlorobenzene       | 146  | 18.126 | 18.126 | 0.996  | 9541     | 0.55 ug/L |       | 94  |
| 74) | 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 9390     | 0.57 ug/L | #     | 63  |
| 75) | n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 16822    | 0.55 ug/L |       | 95  |
| 76) | 1,2-Dichlorobenzene       | 146  | 18.660 | 18.660 | 1.025  | 8925     | 0.53 ug/L |       | 96  |
| 77) | 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 461      | N.D.      |       |     |
| 78) | 1,2,4-Trichlorobenzene    | 180  | 20.676 | 20.676 | 1.136  | 6273     | 0.57 ug/L |       | 93  |
| 79) | Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 3336     | 0.51 ug/L |       | 93  |
| 80) | Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 11314    | 0.51 ug/L |       | 94  |
| 81) | 1,2,3-Trichlorobenzene    | 180  | 21.435 | 21.435 | 1.178  | 4543     | 0.50 ug/L |       | 97  |
| 83) | Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.      |       |     |
| 84) | 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.      |       |     |
| 85) | Acrolein                  |      | 7.548  | 7.524  | 0.629  | 0m       | N.D.      | d     |     |
| 86) | Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.      |       |     |
| 87) | Isopropyl Alcohol         |      | 7.951  | 7.928  | 0.662  | 0m       | N.D.      | d     |     |
| 88) | Allyl chloride            |      | 8.236  | 8.331  | 0.686  | 0m       | N.D.      | d     |     |
| 89) | tert-Butyl Alcohol        |      | 0.000  | 8.580  | 0.000  | 0        | N.D.      |       |     |
| 90) | Acrylonitrile             |      | 0.000  | 8.864  | 0.000  | 0        | N.D.      |       |     |
| 91) | Isopropyl ether           |      | 9.612  | 9.647  | 0.800  | 0m       | N.D.      | d     |     |
| 92) | 2-Chloro-1,3-butadiene    |      | 0.000  | 9.766  | 0.000  | 0        | N.D.      |       |     |
| 93) | Ethyl tert-butyl ether    |      | 0.000  | 10.181 | 0.000  | 0        | N.D.      |       |     |
| 94) | Ethyl acetate             |      | 10.418 | 10.454 | 0.868  | 0m       | N.D.      | d     |     |
| 95) | Propionitrile             |      | 0.000  | 10.501 | 0.000  | 0        | N.D.      |       |     |
| 96) | Methacrylonitrile         |      | 10.726 | 10.726 | 0.893  | 0m       | N.D.      | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A310.D  
Acq On : 24 Aug 2011 12:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-01|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD0005L 5ML n/a MIX[A] 0723-01B+0727-01C  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 25 11:41:36 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

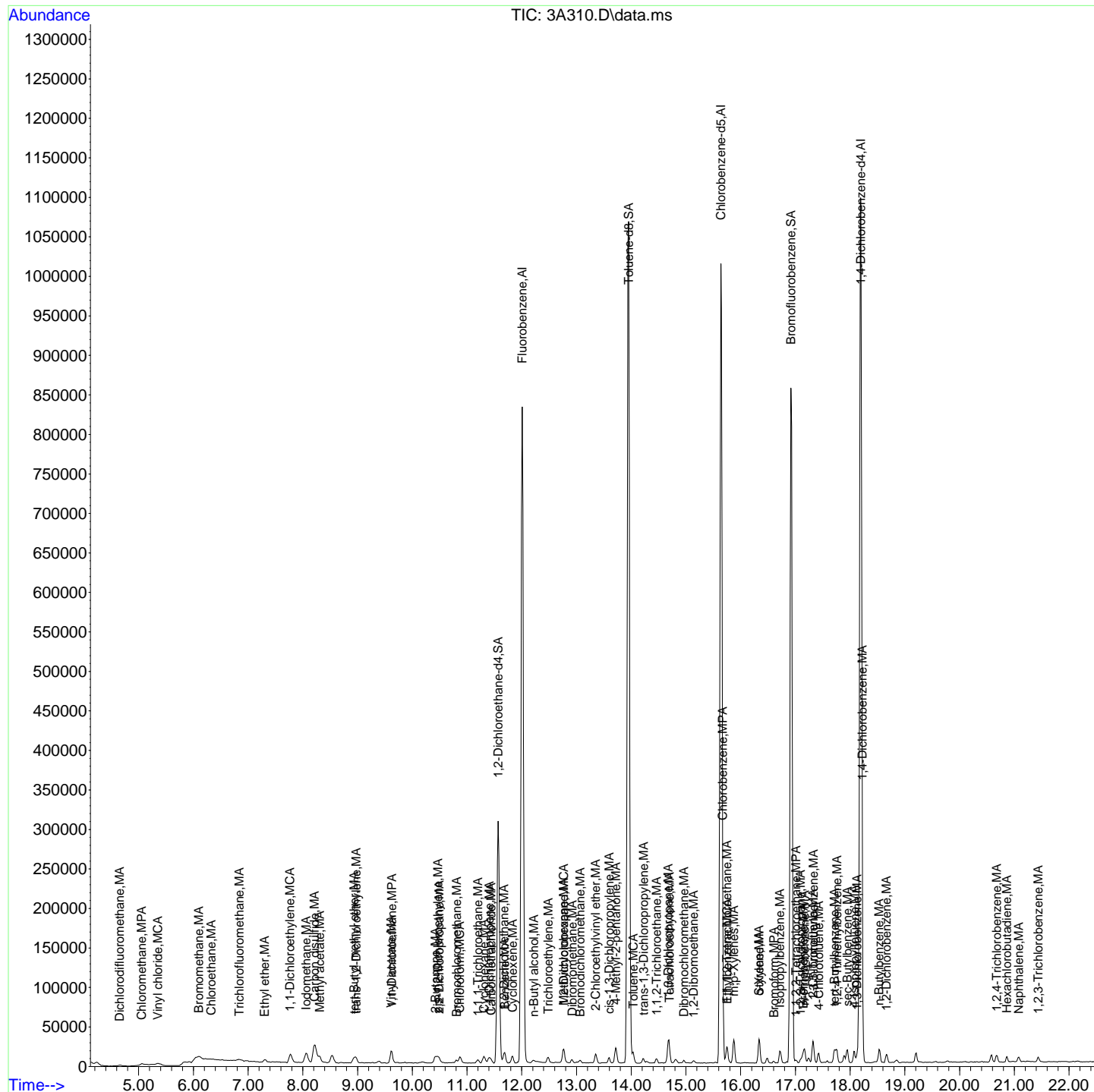
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 97) Tetrahydrofuran            |      | 10.869 | 10.869 | 0.905  | 0m       | N.D. | d     |
| 98) Isobutyl alcohol           |      | 11.201 | 11.343 | 0.933  | 0m       | N.D. | d     |
| 99) Methyl tert-amyl ether     |      | 0.000  | 11.746 | 0.000  | 0        | N.D. |       |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 0.000  | 12.884 | 0.000  | 0        | N.D. |       |
| 102) 2-Nitropropane            |      | 13.347 | 13.300 | 1.112  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 15.553 | 15.553 | 0.855  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 0.000  | 16.762 | 0.000  | 0        | N.D. |       |
| 108) Cyclohexanone             |      | 16.869 | 16.869 | 0.927  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 17.059 | 0.000  | 0        | N.D. |       |
| 110) Pentachloroethane         |      | 0.000  | 17.782 | 0.000  | 0        | N.D. |       |
| 111) Benzyl chloride           |      | 18.185 | 18.339 | 0.999  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 18.719 | 18.754 | 1.029  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A310.D  
Acq On : 24 Aug 2011 12:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-01|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD0005L 5ML n/a MIX[A] 0723-01B+0727-01C  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 25 11:41:36 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE





Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A311.D  
Acq On : 24 Aug 2011 12:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-02|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD001L 5ML n/a MIX[A] 0723-02B+0727-02C  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 25 11:41:40 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |          |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|----------|
| Internal Standards            |      |        |        |        |          |        |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1249798  | 50.00  | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 539337   | 50.00  | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 552190   | 50.00  | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00  | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 0m       | 50.00  | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00  | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |        |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 72058    | 50.42  | ug/L  | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1196692  | 49.96  | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 514728   | 49.26  | ug/L  | 0.00     |
| Target Compounds              |      |        |        |        |          |        |       |          |
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units | QValue   |
| 2) Dichlorodifluoromethane    | 85   | 4.666  | 4.666  | 0.389  | 5165     | 1.03   | ug/L  | 84       |
| 3) Chloromethane              | 50   | 5.053  | 5.068  | 0.421  | 6875     | 1.15   | ug/L  | 93       |
| 4) Vinyl chloride             | 62   | 5.350  | 5.365  | 0.446  | 6662     | 1.10   | ug/L  | 94       |
| 5) Bromomethane               | 94   | 6.101  | 6.125  | 0.508  | 8787     | 1.18   | ug/L  | 99       |
| 6) Chloroethane               | 64   | 6.327  | 6.327  | 0.527  | 4451     | 0.98   | ug/L  | 91       |
| 7) Trichlorofluoromethane     | 101  | 6.837  | 6.849  | 0.569  | 10163    | 1.04   | ug/L  | 83       |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 6005     | 1.02   | ug/L  | 82       |
| 9) Acetone                    | 43   | 7.773  | 7.762  | 0.647  | 33416    | Below  | Cal   | 97       |
| 10) 1,1-Dichloroethylene      | 61   | 7.761  | 7.774  | 0.646  | 11366    | 1.07   | ug/L  | 97       |
| 11) Iodomethane               | 142  | 8.058  | 8.070  | 0.671  | 71492    | 5.52   | ug/L  | 99       |
| 12) Acetonitrile              | 41   | 8.236  | 8.224  | 0.686  | 30128    | Below  | Cal   | 71       |
| 13) Methyl acetate            | 43   | 8.307  | 8.295  | 0.692  | 31295    | 5.94   | ug/L  | 95       |
| 14) Carbon disulfide          | 76   | 8.212  | 8.212  | 0.684  | 129618   | 5.77   | ug/L  | 99       |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 15225    | N.D.   |       |          |
| 16) tert-Butyl methyl ether   | 73   | 8.935  | 8.936  | 0.744  | 22707    | 1.07   | ug/L  | 95       |
| 17) trans-1,2-Dichloroethy... | 61   | 8.971  | 8.971  | 0.747  | 10465    | 1.07   | ug/L  | 97       |
| 18) Vinyl acetate             | 43   | 9.611  | 9.612  | 0.800  | 71115    | 5.62   | ug/L  | 94       |
| 19) 1,1-Dichloroethane        | 63   | 9.623  | 9.623  | 0.801  | 14071    | 1.15   | ug/L  | 97       |
| 20) 2-Butanone                | 43   | 10.418 | 10.406 | 0.868  | 34353    | 6.27   | ug/L  | 94       |
| 21) cis-1,2-Dichloroethylene  | 96   | 10.465 | 10.465 | 0.872  | 9414     | 1.14   | ug/L  | 96       |
| 22) 2,2-Dichloropropane       | 77   | 10.489 | 10.489 | 0.874  | 11190    | 1.19   | ug/L  | 72       |
| 23) Bromochloromethane        | 128  | 10.809 | 10.797 | 0.900  | 4480     | 1.11   | ug/L  | 93       |
| 24) Chloroform                | 83   | 10.868 | 10.869 | 0.905  | 14504    | 1.14   | ug/L  | 95       |
| 25) 1,1,1-Trichloroethane     | 97   | 11.200 | 11.201 | 0.933  | 11256    | 1.03   | ug/L  | 94       |
| 26) Cyclohexane               | 56   | 11.307 | 11.307 | 0.942  | 13783    | 1.13   | ug/L  | 96       |
| 27) 1,1-Dichloropropene       | 75   | 11.402 | 11.402 | 0.950  | 10453    | 1.15   | ug/L  | 82       |
| 28) Carbon tetrachloride      | 117  | 11.438 | 11.438 | 0.953  | 10019    | 1.09   | ug/L  | 98       |
| 30) 1,2-Dichloroethane        | 62   | 11.675 | 11.663 | 0.972  | 9180     | 1.05   | ug/L  | 96       |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 30518    | 1.12   | ug/L  | 95       |
| 32) Cyclohexene               | 67   | 11.829 | 11.829 | 0.985  | 16135    | 1.17   | ug/L  | 97       |
| 33) n-Butyl alcohol           | 56   | 12.208 | 12.185 | 1.017  | 11982    | 113.18 | ug/L  | 87       |
| 34) Trichloroethylene         | 95   | 12.481 | 12.481 | 1.040  | 7515     | 1.04   | ug/L  | 97       |
| 35) 1,2-Dichloropropane       | 63   | 12.766 | 12.766 | 1.063  | 7748     | 1.12   | ug/L  | 96       |
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 13593    | 1.12   | ug/L  | 83       |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 4953     | 1.11   | ug/L  | 91       |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 10580    | 1.07   | ug/L  | 96       |
| 39) 2-Chloroethylvinyl ether  | 63   | 13.347 | 13.347 | 1.112  | 17621    | 4.99   | ug/L  | 95       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A311.D  
Acq On : 24 Aug 2011 12:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-02|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD001L 5ML n/a MIX[A] 0723-02B+0727-02C  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 25 11:41:40 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |     |
|-----|---------------------------|------|--------|--------|--------|----------|-------|--------|-----|
| 40) | cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 12113    | 1.03  | ug/L   | 80  |
| 42) | 4-Methyl-2-pentanone      | 58   | 13.714 | 13.715 | 0.877  | 16482    | 5.82  | ug/L # | 83  |
| 44) | Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 32644    | 1.15  | ug/L   | 96  |
| 45) | trans-1,3-Dichloroprop... | 75   | 14.224 | 14.213 | 0.910  | 11299    | 1.06  | ug/L   | 84  |
| 46) | 1,1,2-Trichloroethane     | 83   | 14.462 | 14.462 | 0.925  | 5658     | 1.07  | ug/L   | 96  |
| 47) | 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 23856    | Below | Cal    | 93  |
| 48) | 1,3-Dichloropropane       | 76   | 14.675 | 14.663 | 0.939  | 12010    | 1.16  | ug/L   | 84  |
| 49) | Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 6949     | 1.20  | ug/L   | 97  |
| 50) | Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 8081     | 1.03  | ug/L   | 100 |
| 51) | 1,2-Dibromoethane         | 107  | 15.137 | 15.138 | 0.968  | 7259     | 1.05  | ug/L   | 98  |
| 52) | Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 20573    | 1.09  | ug/L # | 60  |
| 53) | 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 7234     | 1.02  | ug/L   | 93  |
| 54) | Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 36030    | 1.15  | ug/L   | 96  |
| 55) | m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 28121    | 2.21  | ug/L   | 85  |
| 56) | o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 14223    | 1.07  | ug/L   | 80  |
| 57) | Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 24383    | 1.12  | ug/L   | 97  |
| 59) | Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 4677     | 0.88  | ug/L   | 100 |
| 60) | Isopropylbenzene          | 105  | 16.727 | 16.715 | 0.919  | 37282    | 1.12  | ug/L   | 93  |
| 62) | 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 9205     | 1.08  | ug/L   | 95  |
| 63) | 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 2519     | 1.01  | ug/L # | 73  |
| 64) | Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 9617     | 1.07  | ug/L   | 94  |
| 65) | n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 43849    | 1.14  | ug/L   | 96  |
| 66) | 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 30911    | 1.12  | ug/L   | 98  |
| 67) | 2-Chlorotoluene           | 126  | 17.319 | 17.320 | 0.952  | 8697     | 1.06  | ug/L # | 75  |
| 68) | 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 28079    | 1.11  | ug/L   | 97  |
| 69) | tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 6573     | 1.03  | ug/L # | 88  |
| 70) | 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 31867    | 1.12  | ug/L   | 95  |
| 71) | sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 41056    | 1.09  | ug/L   | 98  |
| 72) | 4-Isopropyltoluene        | 119  | 18.078 | 18.067 | 0.993  | 32519    | 1.08  | ug/L   | 97  |
| 73) | 1,3-Dichlorobenzene       | 146  | 18.138 | 18.126 | 0.997  | 18784    | 1.10  | ug/L   | 98  |
| 74) | 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 17268    | 1.05  | ug/L # | 79  |
| 75) | n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 33638    | 1.11  | ug/L   | 93  |
| 76) | 1,2-Dichlorobenzene       | 146  | 18.671 | 18.660 | 1.026  | 17933    | 1.08  | ug/L   | 99  |
| 77) | 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 1564     | 0.86  | ug/L   | 88  |
| 78) | 1,2,4-Trichlorobenzene    | 180  | 20.675 | 20.676 | 1.136  | 11266    | 1.03  | ug/L   | 99  |
| 79) | Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 6941     | 1.07  | ug/L   | 97  |
| 80) | Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 23115    | 1.05  | ug/L   | 97  |
| 81) | 1,2,3-Trichlorobenzene    | 180  | 21.434 | 21.435 | 1.178  | 9249     | 1.03  | ug/L   | 99  |
| 83) | Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.  |        |     |
| 84) | 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.  |        |     |
| 85) | Acrolein                  |      | 7.429  | 7.524  | 0.619  | 0m       | N.D.  | d      |     |
| 86) | Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.  |        |     |
| 87) | Isopropyl Alcohol         |      | 7.880  | 7.928  | 0.656  | 0m       | N.D.  | d      |     |
| 88) | Allyl chloride            |      | 8.236  | 8.331  | 0.686  | 0m       | N.D.  | d      |     |
| 89) | tert-Butyl Alcohol        |      | 0.000  | 8.580  | 0.000  | 0        | N.D.  |        |     |
| 90) | Acrylonitrile             |      | 0.000  | 8.864  | 0.000  | 0        | N.D.  |        |     |
| 91) | Isopropyl ether           |      | 9.623  | 9.647  | 0.801  | 0m       | N.D.  | d      |     |
| 92) | 2-Chloro-1,3-butadiene    |      | 0.000  | 9.766  | 0.000  | 0        | N.D.  |        |     |
| 93) | Ethyl tert-butyl ether    |      | 0.000  | 10.181 | 0.000  | 0        | N.D.  |        |     |
| 94) | Ethyl acetate             |      | 10.418 | 10.454 | 0.868  | 0m       | N.D.  | d      |     |
| 95) | Propionitrile             |      | 0.000  | 10.501 | 0.000  | 0        | N.D.  |        |     |
| 96) | Methacrylonitrile         |      | 10.785 | 10.726 | 0.898  | 0m       | N.D.  | d      |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A311.D  
Acq On : 24 Aug 2011 12:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-02|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD001L 5ML n/a MIX[A] 0723-02B+0727-02C  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 25 11:41:40 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

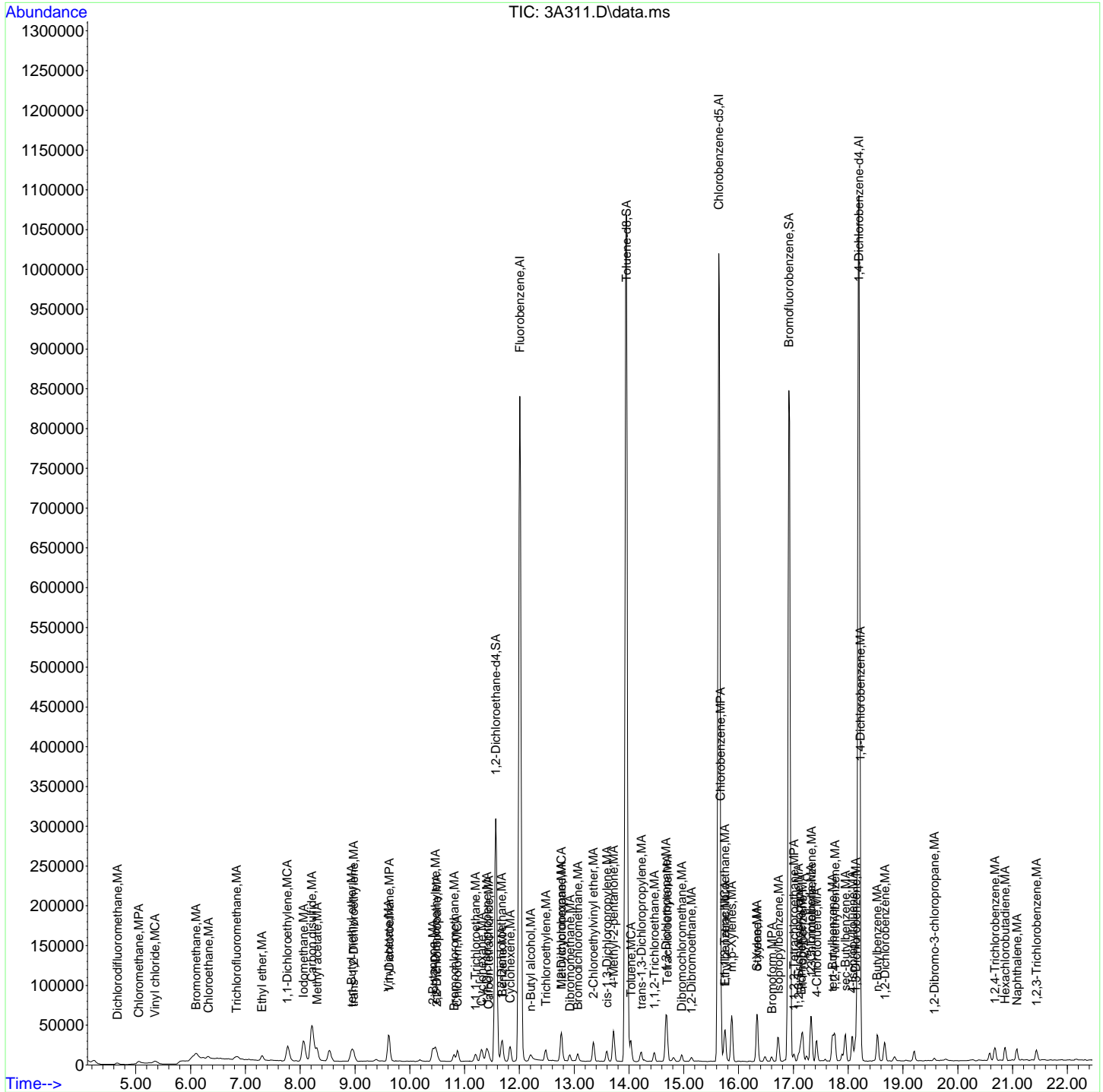
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 97) Tetrahydrofuran            |      | 10.868 | 10.869 | 0.905  | 0m       | N.D. | d     |
| 98) Isobutyl alcohol           |      | 11.307 | 11.343 | 0.942  | 0m       | N.D. | d     |
| 99) Methyl tert-amyl ether     |      | 0.000  | 11.746 | 0.000  | 0        | N.D. |       |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 0.000  | 12.884 | 0.000  | 0        | N.D. |       |
| 102) 2-Nitropropane            |      | 13.193 | 13.300 | 1.099  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 15.636 | 15.553 | 0.859  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 0.000  | 16.762 | 0.000  | 0        | N.D. |       |
| 108) Cyclohexanone             |      | 0.000  | 16.869 | 0.000  | 0        | N.D. |       |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 17.059 | 0.000  | 0        | N.D. |       |
| 110) Pentachloroethane         |      | 0.000  | 17.782 | 0.000  | 0        | N.D. |       |
| 111) Benzyl chloride           |      | 18.185 | 18.339 | 0.999  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 18.707 | 18.754 | 1.028  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A311.D  
Acq On : 24 Aug 2011 12:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-02|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD001L 5ML n/a MIX[A] 0723-02B+0727-02C  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 25 11:41:40 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A312.D  
Acq On : 24 Aug 2011 13:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-03|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD002L 5ML n/a MIX[A] 0723-03B+0727-03C  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 25 11:41:44 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|----------|
| Internal Standards            |      |        |        |        |          |           |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1227046  | 50.00     | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 530107   | 50.00     | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 521982   | 50.00     | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00     | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 0m       | 50.00     | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00     | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |           |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 68535    | 48.85     | ug/L  | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1179481  | 50.10     | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 502385   | 50.86     | ug/L  | 0.00     |
| Target Compounds              |      |        |        |        |          |           |       |          |
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units | QValue   |
| 2) Dichlorodifluoromethane    | 85   | 4.666  | 4.666  | 0.389  | 7954     | 1.61      | ug/L  | 87       |
| 3) Chloromethane              | 50   | 5.053  | 5.068  | 0.421  | 10413    | 1.78      | ug/L  | 99       |
| 4) Vinyl chloride             | 62   | 5.350  | 5.365  | 0.446  | 11082    | 1.86      | ug/L  | 95       |
| 5) Bromomethane               | 94   | 6.113  | 6.125  | 0.509  | 14637    | 2.01      | ug/L  | 95       |
| 6) Chloroethane               | 64   | 6.327  | 6.327  | 0.527  | 8109     | 1.81      | ug/L  | 98       |
| 7) Trichlorofluoromethane     | 101  | 6.837  | 6.849  | 0.569  | 18900    | 1.97      | ug/L  | 95       |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 11689    | 2.02      | ug/L  | 94       |
| 9) Acetone                    | 43   | 7.773  | 7.762  | 0.647  | 48962    | Below Cal |       | 96       |
| 10) 1,1-Dichloroethylene      | 61   | 7.762  | 7.774  | 0.646  | 21512    | 2.07      | ug/L  | 98       |
| 11) Iodomethane               | 142  | 8.058  | 8.070  | 0.671  | 134791   | 10.60     | ug/L  | 99       |
| 12) Acetonitrile              | 41   | 8.236  | 8.224  | 0.686  | 46069    | 7.66      | ug/L  | 82       |
| 13) Methyl acetate            | 43   | 8.307  | 8.295  | 0.692  | 50582    | 9.78      | ug/L  | 98       |
| 14) Carbon disulfide          | 76   | 8.212  | 8.212  | 0.684  | 243450   | 11.03     | ug/L  | 98       |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 21868    | 2.53      | ug/L  | 97       |
| 16) tert-Butyl methyl ether   | 73   | 8.936  | 8.936  | 0.744  | 41573    | 1.99      | ug/L  | 95       |
| 17) trans-1,2-Dichloroethy... | 61   | 8.971  | 8.971  | 0.747  | 20202    | 2.10      | ug/L  | 99       |
| 18) Vinyl acetate             | 43   | 9.612  | 9.612  | 0.800  | 133650   | 10.75     | ug/L  | 96       |
| 19) 1,1-Dichloroethane        | 63   | 9.623  | 9.623  | 0.801  | 25970    | 2.17      | ug/L  | 98       |
| 20) 2-Butanone                | 43   | 10.418 | 10.406 | 0.868  | 53624    | 9.97      | ug/L  | 94       |
| 21) cis-1,2-Dichloroethylene  | 96   | 10.465 | 10.465 | 0.872  | 16710    | 2.07      | ug/L  | 98       |
| 22) 2,2-Dichloropropane       | 77   | 10.489 | 10.489 | 0.874  | 20584    | 2.22      | ug/L  | 98       |
| 23) Bromochloromethane        | 128  | 10.809 | 10.797 | 0.900  | 7554     | 1.91      | ug/L  | 90       |
| 24) Chloroform                | 83   | 10.869 | 10.869 | 0.905  | 26454    | 2.12      | ug/L  | 97       |
| 25) 1,1,1-Trichloroethane     | 97   | 11.201 | 11.201 | 0.933  | 22963    | 2.14      | ug/L  | 98       |
| 26) Cyclohexane               | 56   | 11.307 | 11.307 | 0.942  | 27060    | 2.26      | ug/L  | 95       |
| 27) 1,1-Dichloropropene       | 75   | 11.402 | 11.402 | 0.950  | 18663    | 2.09      | ug/L  | 97       |
| 28) Carbon tetrachloride      | 117  | 11.438 | 11.438 | 0.953  | 19058    | 2.11      | ug/L  | 99       |
| 30) 1,2-Dichloroethane        | 62   | 11.675 | 11.663 | 0.972  | 17882    | 2.09      | ug/L  | 98       |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 56074    | 2.10      | ug/L  | 96       |
| 32) Cyclohexene               | 67   | 11.829 | 11.829 | 0.985  | 27828    | 2.05      | ug/L  | 96       |
| 33) n-Butyl alcohol           | 56   | 12.197 | 12.185 | 1.016  | 22414    | 166.78    | ug/L  | 86       |
| 34) Trichloroethylene         | 95   | 12.481 | 12.481 | 1.040  | 14978    | 2.11      | ug/L  | 98       |
| 35) 1,2-Dichloropropane       | 63   | 12.766 | 12.766 | 1.063  | 14248    | 2.11      | ug/L  | 98       |
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 24711    | 2.08      | ug/L  | 86       |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 8241     | 1.88      | ug/L  | 96       |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 19503    | 2.01      | ug/L  | 99       |
| 39) 2-Chloroethylvinyl ether  | 63   | 13.347 | 13.347 | 1.112  | 31189    | 9.00      | ug/L  | 98       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A312.D  
Acq On : 24 Aug 2011 13:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-03|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD002L 5ML n/a MIX[A] 0723-03B+0727-03C  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 25 11:41:44 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |    |
|-----|---------------------------|------|--------|--------|--------|----------|-------|--------|----|
| 40) | cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 23227    | 2.02  | ug/L   | 90 |
| 42) | 4-Methyl-2-pentanone      | 58   | 13.715 | 13.715 | 0.877  | 26506    | 9.53  | ug/L   | 85 |
| 44) | Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 59174    | 2.13  | ug/L   | 97 |
| 45) | trans-1,3-Dichloroprop... | 75   | 14.213 | 14.213 | 0.909  | 20326    | 1.93  | ug/L   | 88 |
| 46) | 1,1,2-Trichloroethane     | 83   | 14.462 | 14.462 | 0.925  | 9949     | 1.91  | ug/L   | 94 |
| 47) | 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 36464    | Below | Cal    | 89 |
| 48) | 1,3-Dichloropropane       | 76   | 14.663 | 14.663 | 0.938  | 20695    | 2.03  | ug/L   | 87 |
| 49) | Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 12316    | 2.16  | ug/L   | 98 |
| 50) | Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 14290    | 1.85  | ug/L   | 98 |
| 51) | 1,2-Dibromoethane         | 107  | 15.138 | 15.138 | 0.968  | 12764    | 1.88  | ug/L   | 98 |
| 52) | Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 38611    | 2.08  | ug/L   | 83 |
| 53) | 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 13278    | 1.90  | ug/L   | 95 |
| 54) | Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 68375    | 2.22  | ug/L   | 95 |
| 55) | m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 52943    | 4.23  | ug/L   | 88 |
| 56) | o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 26888    | 2.07  | ug/L   | 85 |
| 57) | Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 45388    | 2.12  | ug/L   | 97 |
| 59) | Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 9287     | 1.85  | ug/L   | 98 |
| 60) | Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 68308    | 2.17  | ug/L   | 96 |
| 62) | 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 15560    | 1.93  | ug/L   | 96 |
| 63) | 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 4660     | 1.98  | ug/L # | 77 |
| 64) | Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 17868    | 2.11  | ug/L   | 95 |
| 65) | n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 81507    | 2.25  | ug/L   | 95 |
| 66) | 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 58560    | 2.24  | ug/L   | 95 |
| 67) | 2-Chlorotoluene           | 126  | 17.320 | 17.320 | 0.952  | 16451    | 2.11  | ug/L # | 81 |
| 68) | 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 52048    | 2.18  | ug/L   | 97 |
| 69) | tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 13164    | 2.18  | ug/L   | 96 |
| 70) | 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 59015    | 2.19  | ug/L   | 95 |
| 71) | sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 77191    | 2.17  | ug/L   | 96 |
| 72) | 4-Isopropyltoluene        | 119  | 18.067 | 18.067 | 0.993  | 61005    | 2.14  | ug/L   | 96 |
| 73) | 1,3-Dichlorobenzene       | 146  | 18.126 | 18.126 | 0.996  | 33972    | 2.11  | ug/L   | 98 |
| 74) | 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 32585    | 2.10  | ug/L   | 88 |
| 75) | n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 60766    | 2.12  | ug/L   | 96 |
| 76) | 1,2-Dichlorobenzene       | 146  | 18.660 | 18.660 | 1.025  | 31861    | 2.02  | ug/L   | 97 |
| 77) | 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 3038     | 1.76  | ug/L   | 93 |
| 78) | 1,2,4-Trichlorobenzene    | 180  | 20.676 | 20.676 | 1.136  | 20298    | 1.97  | ug/L   | 98 |
| 79) | Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 11911    | 1.95  | ug/L   | 96 |
| 80) | Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 37127    | 1.79  | ug/L   | 98 |
| 81) | 1,2,3-Trichlorobenzene    | 180  | 21.434 | 21.435 | 1.178  | 16035    | 1.89  | ug/L   | 99 |
| 83) | Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.  |        |    |
| 84) | 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.  |        |    |
| 85) | Acrolein                  |      | 7.548  | 7.524  | 0.629  | 0m       | N.D.  | d      |    |
| 86) | Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.  |        |    |
| 87) | Isopropyl Alcohol         |      | 7.999  | 7.928  | 0.666  | 0m       | N.D.  | d      |    |
| 88) | Allyl chloride            |      | 8.236  | 8.331  | 0.686  | 0m       | N.D.  | d      |    |
| 89) | tert-Butyl Alcohol        |      | 0.000  | 8.580  | 0.000  | 0        | N.D.  |        |    |
| 90) | Acrylonitrile             |      | 0.000  | 8.864  | 0.000  | 0        | N.D.  |        |    |
| 91) | Isopropyl ether           |      | 9.612  | 9.647  | 0.800  | 0m       | N.D.  | d      |    |
| 92) | 2-Chloro-1,3-butadiene    |      | 0.000  | 9.766  | 0.000  | 0        | N.D.  |        |    |
| 93) | Ethyl tert-butyl ether    |      | 0.000  | 10.181 | 0.000  | 0        | N.D.  |        |    |
| 94) | Ethyl acetate             |      | 10.418 | 10.454 | 0.868  | 0m       | N.D.  | d      |    |
| 95) | Propionitrile             |      | 0.000  | 10.501 | 0.000  | 0        | N.D.  |        |    |
| 96) | Methacrylonitrile         |      | 10.489 | 10.726 | 0.874  | 0m       | N.D.  | d      |    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A312.D  
Acq On : 24 Aug 2011 13:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-03|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD002L 5ML n/a MIX[A] 0723-03B+0727-03C  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 25 11:41:44 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

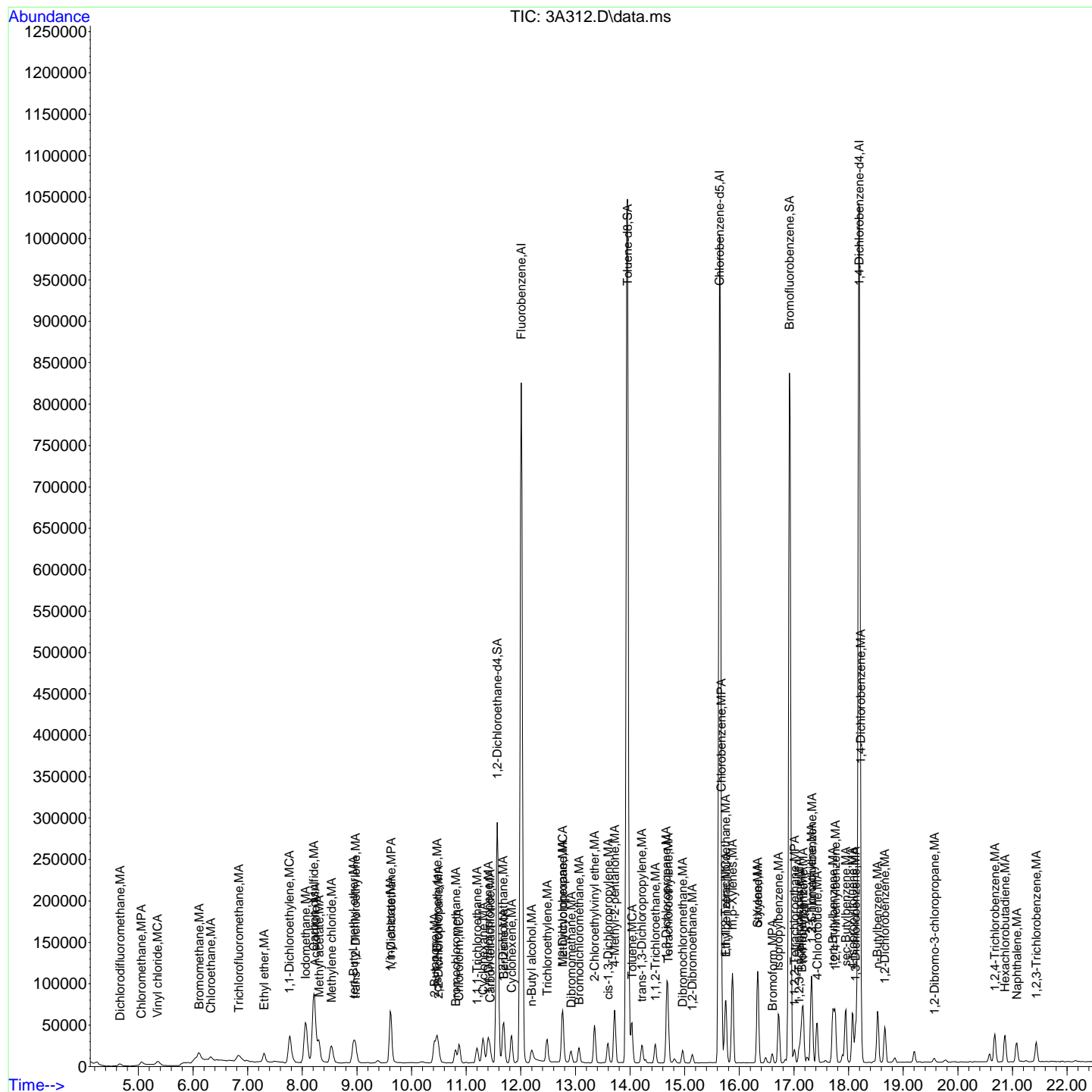
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 97) Tetrahydrofuran            |      | 10.869 | 10.869 | 0.905  | 0m       | N.D. | d     |
| 98) Isobutyl alcohol           |      | 11.556 | 11.343 | 0.962  | 0m       | N.D. | d     |
| 99) Methyl tert-amyl ether     |      | 11.687 | 11.746 | 0.973  | 0m       | N.D. | d     |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 0.000  | 12.884 | 0.000  | 0        | N.D. |       |
| 102) 2-Nitropropane            |      | 13.347 | 13.300 | 1.112  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 15.636 | 15.553 | 0.859  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 16.715 | 16.762 | 0.919  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 16.988 | 16.869 | 0.934  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 17.059 | 0.000  | 0        | N.D. |       |
| 110) Pentachloroethane         |      | 0.000  | 17.782 | 0.000  | 0        | N.D. |       |
| 111) Benzyl chloride           |      | 18.185 | 18.339 | 0.999  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 18.671 | 18.754 | 1.026  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A312.D  
Acq On : 24 Aug 2011 13:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-03|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD002L 5ML n/a MIX[A] 0723-03B+0727-03C  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 25 11:41:44 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE





Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A313.D  
Acq On : 24 Aug 2011 13:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-04|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD005L 5ML n/a MIX[A] 0723-04B+0727-04C  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 25 11:41:48 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |          |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|----------|
| Internal Standards            |      |        |        |        |          |        |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1215964  | 50.00  | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 526732   | 50.00  | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 548657   | 50.00  | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00  | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 0m       | 50.00  | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00  | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |        |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 71075    | 51.12  | ug/L  | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1179960  | 50.44  | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 518450   | 49.93  | ug/L  | 0.00     |
| Target Compounds              |      |        |        |        |          |        |       |          |
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units | QValue   |
| 2) Dichlorodifluoromethane    | 85   | 4.666  | 4.666  | 0.389  | 25759    | 5.26   | ug/L  | 96       |
| 3) Chloromethane              | 50   | 5.053  | 5.068  | 0.421  | 30242    | 5.21   | ug/L  | 98       |
| 4) Vinyl chloride             | 62   | 5.350  | 5.365  | 0.446  | 30343    | 5.14   | ug/L  | 98       |
| 5) Bromomethane               | 94   | 6.113  | 6.125  | 0.509  | 36517    | 5.06   | ug/L  | 97       |
| 6) Chloroethane               | 64   | 6.327  | 6.327  | 0.527  | 22930    | 5.17   | ug/L  | 97       |
| 7) Trichlorofluoromethane     | 101  | 6.837  | 6.849  | 0.569  | 49777    | 5.23   | ug/L  | 99       |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 29420    | 5.12   | ug/L  | 97       |
| 9) Acetone                    | 43   | 7.774  | 7.762  | 0.647  | 127595   | 21.93  | ug/L  | 97       |
| 10) 1,1-Dichloroethylene      | 61   | 7.762  | 7.774  | 0.646  | 55198    | 5.36   | ug/L  | 99       |
| 11) Iodomethane               | 142  | 8.058  | 8.070  | 0.671  | 341532   | 27.11  | ug/L  | 98       |
| 12) Acetonitrile              | 41   | 8.236  | 8.224  | 0.686  | 124958   | 119.56 | ug/L  | 92       |
| 13) Methyl acetate            | 43   | 8.307  | 8.295  | 0.692  | 140888   | 27.48  | ug/L  | 99       |
| 14) Carbon disulfide          | 76   | 8.212  | 8.212  | 0.684  | 610531   | 27.92  | ug/L  | 99       |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 47374    | 5.54   | ug/L  | 97       |
| 16) tert-Butyl methyl ether   | 73   | 8.936  | 8.936  | 0.744  | 112162   | 5.42   | ug/L  | 98       |
| 17) trans-1,2-Dichloroethy... | 61   | 8.971  | 8.971  | 0.747  | 52418    | 5.49   | ug/L  | 98       |
| 18) Vinyl acetate             | 43   | 9.612  | 9.612  | 0.800  | 346989   | 28.17  | ug/L  | 96       |
| 19) 1,1-Dichloroethane        | 63   | 9.623  | 9.623  | 0.801  | 64332    | 5.42   | ug/L  | 99       |
| 20) 2-Butanone                | 43   | 10.418 | 10.406 | 0.868  | 147549   | 27.69  | ug/L  | 97       |
| 21) cis-1,2-Dichloroethylene  | 96   | 10.465 | 10.465 | 0.872  | 43580    | 5.44   | ug/L  | 99       |
| 22) 2,2-Dichloropropane       | 77   | 10.489 | 10.489 | 0.874  | 50167    | 5.46   | ug/L  | 94       |
| 23) Bromochloromethane        | 128  | 10.809 | 10.797 | 0.900  | 20229    | 5.17   | ug/L  | 93       |
| 24) Chloroform                | 83   | 10.869 | 10.869 | 0.905  | 67563    | 5.47   | ug/L  | 97       |
| 25) 1,1,1-Trichloroethane     | 97   | 11.201 | 11.201 | 0.933  | 56693    | 5.33   | ug/L  | 99       |
| 26) Cyclohexane               | 56   | 11.307 | 11.307 | 0.942  | 64361    | 5.42   | ug/L  | 99       |
| 27) 1,1-Dichloropropene       | 75   | 11.402 | 11.402 | 0.950  | 48183    | 5.46   | ug/L  | 94       |
| 28) Carbon tetrachloride      | 117  | 11.438 | 11.438 | 0.953  | 48268    | 5.40   | ug/L  | 100      |
| 30) 1,2-Dichloroethane        | 62   | 11.675 | 11.663 | 0.972  | 47357    | 5.59   | ug/L  | 99       |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 143388   | 5.43   | ug/L  | 98       |
| 32) Cyclohexene               | 67   | 11.829 | 11.829 | 0.985  | 72488    | 5.38   | ug/L  | 98       |
| 33) n-Butyl alcohol           | 56   | 12.197 | 12.185 | 1.016  | 84720    | 484.21 | ug/L  | 95       |
| 34) Trichloroethylene         | 95   | 12.481 | 12.481 | 1.040  | 38977    | 5.53   | ug/L  | 96       |
| 35) 1,2-Dichloropropane       | 63   | 12.766 | 12.766 | 1.063  | 37091    | 5.53   | ug/L  | 99       |
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 63141    | 5.37   | ug/L  | 92       |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 23721    | 5.46   | ug/L  | 98       |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 51305    | 5.35   | ug/L  | 100      |
| 39) 2-Chloroethylvinyl ether  | 63   | 13.347 | 13.347 | 1.112  | 88583    | 25.81  | ug/L  | 99       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A313.D  
Acq On : 24 Aug 2011 13:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-04|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD005L 5ML n/a MIX[A] 0723-04B+0727-04C  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 25 11:41:48 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |     |
|-----|---------------------------|------|--------|--------|--------|----------|-------|--------|-----|
| 40) | cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 61526    | 5.40  | ug/L   | 94  |
| 42) | 4-Methyl-2-pentanone      | 58   | 13.715 | 13.715 | 0.877  | 80159    | 29.00 | ug/L   | 91  |
| 44) | Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 149725   | 5.41  | ug/L   | 97  |
| 45) | trans-1,3-Dichloroprop... | 75   | 14.213 | 14.213 | 0.909  | 56230    | 5.38  | ug/L   | 93  |
| 46) | 1,1,2-Trichloroethane     | 83   | 14.462 | 14.462 | 0.925  | 28335    | 5.47  | ug/L   | 99  |
| 47) | 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 105278   | 23.34 | ug/L   | 94  |
| 48) | 1,3-Dichloropropane       | 76   | 14.675 | 14.663 | 0.939  | 56610    | 5.59  | ug/L   | 89  |
| 49) | Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 30544    | 5.39  | ug/L   | 97  |
| 50) | Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 40077    | 5.22  | ug/L   | 98  |
| 51) | 1,2-Dibromoethane         | 107  | 15.138 | 15.138 | 0.968  | 35900    | 5.31  | ug/L   | 98  |
| 52) | Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 96717    | 5.25  | ug/L   | 91  |
| 53) | 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 37049    | 5.34  | ug/L   | 99  |
| 54) | Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 169775   | 5.55  | ug/L   | 97  |
| 55) | m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 135563   | 10.89 | ug/L   | 90  |
| 56) | o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 69491    | 5.38  | ug/L   | 87  |
| 57) | Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 114782   | 5.40  | ug/L   | 94  |
| 59) | Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 25969    | 4.93  | ug/L   | 99  |
| 60) | Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 175656   | 5.32  | ug/L   | 96  |
| 62) | 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 44604    | 5.27  | ug/L   | 97  |
| 63) | 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 13065    | 5.28  | ug/L # | 90  |
| 64) | Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 45799    | 5.14  | ug/L   | 95  |
| 65) | n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 205207   | 5.39  | ug/L   | 97  |
| 66) | 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 148071   | 5.38  | ug/L   | 97  |
| 67) | 2-Chlorotoluene           | 126  | 17.320 | 17.320 | 0.952  | 42418    | 5.18  | ug/L # | 83  |
| 68) | 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 134501   | 5.37  | ug/L   | 96  |
| 69) | tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 31853    | 5.01  | ug/L # | 85  |
| 70) | 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 151119   | 5.33  | ug/L   | 96  |
| 71) | sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 197305   | 5.28  | ug/L   | 97  |
| 72) | 4-Isopropyltoluene        | 119  | 18.079 | 18.067 | 0.993  | 157288   | 5.25  | ug/L   | 98  |
| 73) | 1,3-Dichlorobenzene       | 146  | 18.126 | 18.126 | 0.996  | 89142    | 5.26  | ug/L   | 97  |
| 74) | 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 84479    | 5.19  | ug/L   | 96  |
| 75) | n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 162472   | 5.39  | ug/L   | 95  |
| 76) | 1,2-Dichlorobenzene       | 146  | 18.660 | 18.660 | 1.025  | 87318    | 5.28  | ug/L   | 100 |
| 77) | 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 9160     | 5.05  | ug/L   | 96  |
| 78) | 1,2,4-Trichlorobenzene    | 180  | 20.676 | 20.676 | 1.136  | 57673    | 5.32  | ug/L   | 97  |
| 79) | Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 33728    | 5.25  | ug/L   | 98  |
| 80) | Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 114078   | 5.24  | ug/L   | 99  |
| 81) | 1,2,3-Trichlorobenzene    | 180  | 21.435 | 21.435 | 1.178  | 47888    | 5.36  | ug/L   | 99  |
| 83) | Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.  |        |     |
| 84) | 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.  |        |     |
| 85) | Acrolein                  |      | 7.524  | 7.524  | 0.627  | 0m       | N.D.  | d      |     |
| 86) | Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.  |        |     |
| 87) | Isopropyl Alcohol         |      | 7.868  | 7.928  | 0.655  | 0m       | N.D.  | d      |     |
| 88) | Allyl chloride            |      | 8.236  | 8.331  | 0.686  | 0m       | N.D.  | d      |     |
| 89) | tert-Butyl Alcohol        |      | 0.000  | 8.580  | 0.000  | 0        | N.D.  |        |     |
| 90) | Acrylonitrile             |      | 8.924  | 8.864  | 0.743  | 0m       | N.D.  | d      |     |
| 91) | Isopropyl ether           |      | 9.612  | 9.647  | 0.800  | 0m       | N.D.  | d      |     |
| 92) | 2-Chloro-1,3-butadiene    |      | 0.000  | 9.766  | 0.000  | 0        | N.D.  |        |     |
| 93) | Ethyl tert-butyl ether    |      | 0.000  | 10.181 | 0.000  | 0        | N.D.  |        |     |
| 94) | Ethyl acetate             |      | 10.418 | 10.454 | 0.868  | 0m       | N.D.  | d      |     |
| 95) | Propionitrile             |      | 0.000  | 10.501 | 0.000  | 0        | N.D.  |        |     |
| 96) | Methacrylonitrile         |      | 10.750 | 10.726 | 0.895  | 0m       | N.D.  | d      |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A313.D  
Acq On : 24 Aug 2011 13:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-04|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD005L 5ML n/a MIX[A] 0723-04B+0727-04C  
ALS Vial : 6 Sample Multiplier: 1

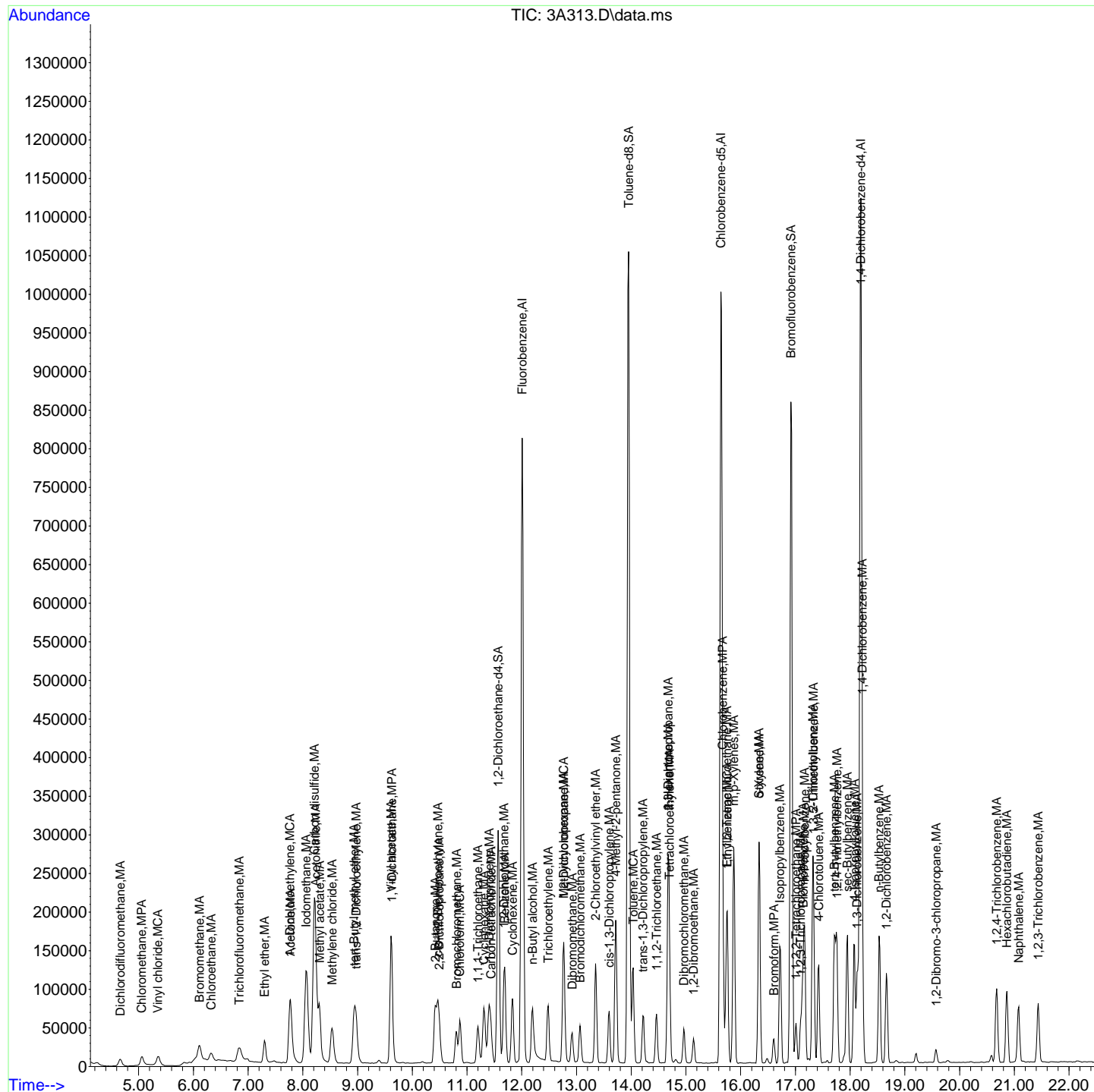
Quant Time: Aug 25 11:41:48 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 97) Tetrahydrofuran            |      | 10.869 | 10.869 | 0.905  | 0m       | N.D. | d     |
| 98) Isobutyl alcohol           |      | 11.307 | 11.343 | 0.942  | 0m       | N.D. | d     |
| 99) Methyl tert-amyl ether     |      | 11.687 | 11.746 | 0.973  | 0m       | N.D. | d     |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 0.000  | 12.884 | 0.000  | 0        | N.D. |       |
| 102) 2-Nitropropane            |      | 13.347 | 13.300 | 1.112  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 15.529 | 15.553 | 0.853  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 16.715 | 16.762 | 0.919  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 16.893 | 16.869 | 0.928  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 17.165 | 17.059 | 0.943  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 0.000  | 17.782 | 0.000  | 0        | N.D. |       |
| 111) Benzyl chloride           |      | 18.185 | 18.339 | 0.999  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 18.826 | 18.754 | 1.035  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

```
Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A313.D  
Acq On : 24 Aug 2011 13:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-04|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD005L 5ML n/a MIX[A] 0723-04B+0727-04C  
ALS Vial : 6 Sample Multiplier: 1
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Quant Time: Aug 25 11:41:48 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A314.D  
Acq On : 24 Aug 2011 14:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-05|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD010L 5ML n/a MIX[A] 0723-05B+0727-05C  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 25 11:41:53 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |          |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|----------|
| Internal Standards            |      |        |        |        |          |        |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1228721  | 50.00  | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 535603   | 50.00  | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 543500   | 50.00  | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00  | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 0m       | 50.00  | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00  | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |        |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 71381    | 50.81  | ug/L  | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1184746  | 49.81  | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 515526   | 50.12  | ug/L  | 0.00     |
| Target Compounds              |      |        |        |        |          |        |       |          |
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units | QValue   |
| 2) Dichlorodifluoromethane    | 85   | 4.666  | 4.666  | 0.389  | 45087    | 9.11   | ug/L  | 96       |
| 3) Chloromethane              | 50   | 5.067  | 5.068  | 0.422  | 57250    | 9.75   | ug/L  | 99       |
| 4) Vinyl chloride             | 62   | 5.350  | 5.365  | 0.446  | 58872    | 9.86   | ug/L  | 98       |
| 5) Bromomethane               | 94   | 6.113  | 6.125  | 0.509  | 73305    | 10.05  | ug/L  | 98       |
| 6) Chloroethane               | 64   | 6.327  | 6.327  | 0.527  | 46038    | 10.28  | ug/L  | 98       |
| 7) Trichlorofluoromethane     | 101  | 6.837  | 6.849  | 0.569  | 96591    | 10.05  | ug/L  | 100      |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 60399    | 10.41  | ug/L  | 97       |
| 9) Acetone                    | 43   | 7.761  | 7.762  | 0.646  | 221461   | 48.29  | ug/L  | 97       |
| 10) 1,1-Dichloroethylene      | 61   | 7.761  | 7.774  | 0.646  | 107764   | 10.36  | ug/L  | 99       |
| 11) Iodomethane               | 142  | 8.058  | 8.070  | 0.671  | 658813   | 51.75  | ug/L  | 98       |
| 12) Acetonitrile              | 41   | 8.236  | 8.224  | 0.686  | 226302   | 259.25 | ug/L  | 96       |
| 13) Methyl acetate            | 43   | 8.307  | 8.295  | 0.692  | 265906   | 51.32  | ug/L  | 98       |
| 14) Carbon disulfide          | 76   | 8.212  | 8.212  | 0.684  | 1164211  | 52.69  | ug/L  | 98       |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 86090    | 9.96   | ug/L  | 98       |
| 16) tert-Butyl methyl ether   | 73   | 8.935  | 8.936  | 0.744  | 216830   | 10.37  | ug/L  | 100      |
| 17) trans-1,2-Dichloroethy... | 61   | 8.971  | 8.971  | 0.747  | 99617    | 10.32  | ug/L  | 99       |
| 18) Vinyl acetate             | 43   | 9.611  | 9.612  | 0.800  | 688298   | 55.29  | ug/L  | 97       |
| 19) 1,1-Dichloroethane        | 63   | 9.623  | 9.623  | 0.801  | 124660   | 10.40  | ug/L  | 100      |
| 20) 2-Butanone                | 43   | 10.418 | 10.406 | 0.868  | 263268   | 48.90  | ug/L  | 98       |
| 21) cis-1,2-Dichloroethylene  | 96   | 10.465 | 10.465 | 0.872  | 83241    | 10.28  | ug/L  | 98       |
| 22) 2,2-Dichloropropane       | 77   | 10.489 | 10.489 | 0.874  | 95197    | 10.26  | ug/L  | 97       |
| 23) Bromochloromethane        | 128  | 10.797 | 10.797 | 0.899  | 40334    | 10.19  | ug/L  | 96       |
| 24) Chloroform                | 83   | 10.868 | 10.869 | 0.905  | 126348   | 10.12  | ug/L  | 98       |
| 25) 1,1,1-Trichloroethane     | 97   | 11.200 | 11.201 | 0.933  | 111020   | 10.33  | ug/L  | 99       |
| 26) Cyclohexane               | 56   | 11.307 | 11.307 | 0.942  | 123127   | 10.27  | ug/L  | 98       |
| 27) 1,1-Dichloropropene       | 75   | 11.402 | 11.402 | 0.950  | 93930    | 10.53  | ug/L  | 99       |
| 28) Carbon tetrachloride      | 117  | 11.438 | 11.438 | 0.953  | 93456    | 10.34  | ug/L  | 98       |
| 30) 1,2-Dichloroethane        | 62   | 11.663 | 11.663 | 0.971  | 90306    | 10.55  | ug/L  | 98       |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 275950   | 10.34  | ug/L  | 99       |
| 32) Cyclohexene               | 67   | 11.829 | 11.829 | 0.985  | 141974   | 10.43  | ug/L  | 99       |
| 33) n-Butyl alcohol           | 56   | 12.185 | 12.185 | 1.015  | 171501   | 915.86 | ug/L  | 95       |
| 34) Trichloroethylene         | 95   | 12.481 | 12.481 | 1.040  | 74694    | 10.49  | ug/L  | 97       |
| 35) 1,2-Dichloropropane       | 63   | 12.766 | 12.766 | 1.063  | 70252    | 10.37  | ug/L  | 98       |
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 122898   | 10.35  | ug/L  | 97       |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 44910    | 10.22  | ug/L  | 99       |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 97832    | 10.09  | ug/L  | 100      |
| 39) 2-Chloroethylvinyl ether  | 63   | 13.347 | 13.347 | 1.112  | 176628   | 50.92  | ug/L  | 98       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A314.D  
Acq On : 24 Aug 2011 14:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-05|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD010L 5ML n/a MIX[A] 0723-05B+0727-05C  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 25 11:41:53 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |     |
|-----|---------------------------|------|--------|--------|--------|----------|-------|--------|-----|
| 40) | cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 120675   | 10.48 | ug/L   | 97  |
| 42) | 4-Methyl-2-pentanone      | 58   | 13.714 | 13.715 | 0.877  | 144562   | 51.44 | ug/L   | 90  |
| 44) | Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 287255   | 10.21 | ug/L   | 98  |
| 45) | trans-1,3-Dichloroprop... | 75   | 14.213 | 14.213 | 0.909  | 109677   | 10.31 | ug/L   | 95  |
| 46) | 1,1,2-Trichloroethane     | 83   | 14.462 | 14.462 | 0.925  | 54692    | 10.38 | ug/L   | 100 |
| 47) | 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 181482   | 49.67 | ug/L   | 93  |
| 48) | 1,3-Dichloropropane       | 76   | 14.663 | 14.663 | 0.938  | 108108   | 10.49 | ug/L   | 94  |
| 49) | Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 58464    | 10.15 | ug/L   | 97  |
| 50) | Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 77997    | 10.00 | ug/L   | 99  |
| 51) | 1,2-Dibromoethane         | 107  | 15.137 | 15.138 | 0.968  | 70514    | 10.25 | ug/L   | 97  |
| 52) | Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 189450   | 10.11 | ug/L   | 96  |
| 53) | 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 73029    | 10.35 | ug/L   | 99  |
| 54) | Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 322726   | 10.38 | ug/L   | 98  |
| 55) | m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 263891   | 20.84 | ug/L   | 92  |
| 56) | o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 133959   | 10.19 | ug/L   | 87  |
| 57) | Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 221557   | 10.24 | ug/L   | 94  |
| 59) | Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 52756    | 10.12 | ug/L   | 100 |
| 60) | Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 345783   | 10.57 | ug/L   | 98  |
| 62) | 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 84902    | 10.13 | ug/L   | 98  |
| 63) | 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 24905    | 10.17 | ug/L # | 88  |
| 64) | Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 89554    | 10.15 | ug/L   | 95  |
| 65) | n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 393808   | 10.44 | ug/L   | 97  |
| 66) | 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 288079   | 10.57 | ug/L   | 97  |
| 67) | 2-Chlorotoluene           | 126  | 17.319 | 17.320 | 0.952  | 85702    | 10.57 | ug/L   | 93  |
| 68) | 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 257720   | 10.39 | ug/L   | 97  |
| 69) | tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 63362    | 10.07 | ug/L # | 87  |
| 70) | 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 291004   | 10.36 | ug/L   | 97  |
| 71) | sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 385861   | 10.43 | ug/L   | 97  |
| 72) | 4-Isopropyltoluene        | 119  | 18.067 | 18.067 | 0.993  | 308295   | 10.39 | ug/L   | 98  |
| 73) | 1,3-Dichlorobenzene       | 146  | 18.126 | 18.126 | 0.996  | 169672   | 10.11 | ug/L   | 98  |
| 74) | 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 163944   | 10.16 | ug/L   | 97  |
| 75) | n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 316861   | 10.62 | ug/L   | 97  |
| 76) | 1,2-Dichlorobenzene       | 146  | 18.659 | 18.660 | 1.025  | 168183   | 10.26 | ug/L   | 98  |
| 77) | 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 17946    | 9.99  | ug/L   | 96  |
| 78) | 1,2,4-Trichlorobenzene    | 180  | 20.675 | 20.676 | 1.136  | 109465   | 10.19 | ug/L   | 99  |
| 79) | Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 65305    | 10.25 | ug/L   | 99  |
| 80) | Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 222014   | 10.29 | ug/L   | 99  |
| 81) | 1,2,3-Trichlorobenzene    | 180  | 21.434 | 21.435 | 1.178  | 91599    | 10.34 | ug/L   | 100 |
| 83) | Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.  |        |     |
| 84) | 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.  |        |     |
| 85) | Acrolein                  |      | 7.607  | 7.524  | 0.634  | 0m       | N.D.  | d      |     |
| 86) | Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.  |        |     |
| 87) | Isopropyl Alcohol         |      | 7.963  | 7.928  | 0.663  | 0m       | N.D.  | d      |     |
| 88) | Allyl chloride            |      | 8.236  | 8.331  | 0.686  | 0m       | N.D.  | d      |     |
| 89) | tert-Butyl Alcohol        |      | 0.000  | 8.580  | 0.000  | 0        | N.D.  |        |     |
| 90) | Acrylonitrile             |      | 8.935  | 8.864  | 0.744  | 0m       | N.D.  | d      |     |
| 91) | Isopropyl ether           |      | 9.611  | 9.647  | 0.800  | 0m       | N.D.  | d      |     |
| 92) | 2-Chloro-1,3-butadiene    |      | 0.000  | 9.766  | 0.000  | 0        | N.D.  |        |     |
| 93) | Ethyl tert-butyl ether    |      | 0.000  | 10.181 | 0.000  | 0        | N.D.  |        |     |
| 94) | Ethyl acetate             |      | 10.418 | 10.454 | 0.868  | 0m       | N.D.  | d      |     |
| 95) | Propionitrile             |      | 0.000  | 10.501 | 0.000  | 0        | N.D.  |        |     |
| 96) | Methacrylonitrile         |      | 10.489 | 10.726 | 0.874  | 0m       | N.D.  | d      |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A314.D  
Acq On : 24 Aug 2011 14:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-05|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD010L 5ML n/a MIX[A] 0723-05B+0727-05C  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 25 11:41:53 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 97) Tetrahydrofuran            |      | 10.868 | 10.869 | 0.905  | 0m       | N.D. | d     |
| 98) Isobutyl alcohol           |      | 11.165 | 11.343 | 0.930  | 0m       | N.D. | d     |
| 99) Methyl tert-amyl ether     |      | 11.687 | 11.746 | 0.973  | 0m       | N.D. | d     |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 0.000  | 12.884 | 0.000  | 0        | N.D. |       |
| 102) 2-Nitropropane            |      | 13.347 | 13.300 | 1.112  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 15.493 | 15.553 | 0.851  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 16.715 | 16.762 | 0.919  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 16.881 | 16.869 | 0.928  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 17.165 | 17.059 | 0.943  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 0.000  | 17.782 | 0.000  | 0        | N.D. |       |
| 111) Benzyl chloride           |      | 18.185 | 18.339 | 0.999  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 18.695 | 18.754 | 1.027  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted





Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A315.D  
Acq On : 24 Aug 2011 14:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-06|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD020L 5ML n/a MIX[A] 0723-06B+0727-06C  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 25 11:41:57 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |          |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|----------|
| Internal Standards            |      |        |        |        |          |         |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1227252  | 50.00   | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.635 | 15.636 | 1.000  | 530698   | 50.00   | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 552931   | 50.00   | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00   | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.635 | 15.636 | 1.000  | 0m       | 50.00   | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00   | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |         |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 71922    | 51.25   | ug/L  | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1177622  | 49.96   | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 522523   | 49.93   | ug/L  | 0.00     |
| Target Compounds              |      |        |        |        |          |         |       |          |
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue   |
| 2) Dichlorodifluoromethane    | 85   | 4.666  | 4.666  | 0.389  | 103901   | 21.01   | ug/L  | 98       |
| 3) Chloromethane              | 50   | 5.067  | 5.068  | 0.422  | 124821   | 21.29   | ug/L  | 98       |
| 4) Vinyl chloride             | 62   | 5.364  | 5.365  | 0.447  | 124975   | 20.96   | ug/L  | 99       |
| 5) Bromomethane               | 94   | 6.113  | 6.125  | 0.509  | 147348   | 20.23   | ug/L  | 100      |
| 6) Chloroethane               | 64   | 6.327  | 6.327  | 0.527  | 94363    | 21.10   | ug/L  | 99       |
| 7) Trichlorofluoromethane     | 101  | 6.836  | 6.849  | 0.569  | 198164   | 20.65   | ug/L  | 100      |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 121194   | 20.91   | ug/L  | 100      |
| 9) Acetone                    | 43   | 7.761  | 7.762  | 0.646  | 476084   | 121.00  | ug/L  | 98       |
| 10) 1,1-Dichloroethylene      | 61   | 7.761  | 7.774  | 0.646  | 210542   | 20.27   | ug/L  | 99       |
| 11) Iodomethane               | 142  | 8.070  | 8.070  | 0.672  | 1272755  | 100.09  | ug/L  | 99       |
| 12) Acetonitrile              | 41   | 8.236  | 8.224  | 0.686  | 449275   | 571.36  | ug/L  | 99       |
| 13) Methyl acetate            | 43   | 8.295  | 8.295  | 0.691  | 551288   | 106.53  | ug/L  | 99       |
| 14) Carbon disulfide          | 76   | 8.212  | 8.212  | 0.684  | 2208675  | 100.07  | ug/L  | 99       |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 165833   | 19.22   | ug/L  | 99       |
| 16) tert-Butyl methyl ether   | 73   | 8.935  | 8.936  | 0.744  | 427692   | 20.47   | ug/L  | 100      |
| 17) trans-1,2-Dichloroethy... | 61   | 8.971  | 8.971  | 0.747  | 194005   | 20.13   | ug/L  | 99       |
| 18) Vinyl acetate             | 43   | 9.611  | 9.612  | 0.800  | 1219074  | 98.05   | ug/L  | 97       |
| 19) 1,1-Dichloroethane        | 63   | 9.623  | 9.623  | 0.801  | 234024   | 19.55   | ug/L  | 100      |
| 20) 2-Butanone                | 43   | 10.418 | 10.406 | 0.868  | 530063   | 98.57   | ug/L  | 99       |
| 21) cis-1,2-Dichloroethylene  | 96   | 10.465 | 10.465 | 0.872  | 160528   | 19.84   | ug/L  | 99       |
| 22) 2,2-Dichloropropane       | 77   | 10.489 | 10.489 | 0.874  | 181000   | 19.53   | ug/L  | 99       |
| 23) Bromochloromethane        | 128  | 10.797 | 10.797 | 0.899  | 79535    | 20.12   | ug/L  | 97       |
| 24) Chloroform                | 83   | 10.868 | 10.869 | 0.905  | 247073   | 19.82   | ug/L  | 98       |
| 25) 1,1,1-Trichloroethane     | 97   | 11.200 | 11.201 | 0.933  | 215803   | 20.11   | ug/L  | 99       |
| 26) Cyclohexane               | 56   | 11.307 | 11.307 | 0.942  | 231466   | 19.32   | ug/L  | 99       |
| 27) 1,1-Dichloropropene       | 75   | 11.402 | 11.402 | 0.950  | 175261   | 19.66   | ug/L  | 99       |
| 28) Carbon tetrachloride      | 117  | 11.438 | 11.438 | 0.953  | 177451   | 19.66   | ug/L  | 99       |
| 30) 1,2-Dichloroethane        | 62   | 11.663 | 11.663 | 0.971  | 173965   | 20.35   | ug/L  | 100      |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 528290   | 19.82   | ug/L  | 100      |
| 32) Cyclohexene               | 67   | 11.829 | 11.829 | 0.985  | 268543   | 19.76   | ug/L  | 99       |
| 33) n-Butyl alcohol           | 56   | 12.185 | 12.185 | 1.015  | 409242   | 2113.09 | ug/L  | 99       |
| 34) Trichloroethylene         | 95   | 12.481 | 12.481 | 1.040  | 143728   | 20.22   | ug/L  | 98       |
| 35) 1,2-Dichloropropane       | 63   | 12.766 | 12.766 | 1.063  | 135417   | 20.01   | ug/L  | 99       |
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 238262   | 20.08   | ug/L  | 98       |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 88651    | 20.21   | ug/L  | 98       |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 197329   | 20.37   | ug/L  | 100      |
| 39) 2-Chloroethylvinyl ether  | 63   | 13.347 | 13.347 | 1.112  | 366191   | 105.70  | ug/L  | 99       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A315.D  
Acq On : 24 Aug 2011 14:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-06|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD020L 5ML n/a MIX[A] 0723-06B+0727-06C  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 25 11:41:57 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|-----|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 40) | cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 233995   | 20.34  | ug/L  | 97  |
| 42) | 4-Methyl-2-pentanone      | 58   | 13.714 | 13.715 | 0.877  | 287524   | 103.25 | ug/L  | 95  |
| 44) | Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 551497   | 19.79  | ug/L  | 99  |
| 45) | trans-1,3-Dichloroprop... | 75   | 14.212 | 14.213 | 0.909  | 216149   | 20.51  | ug/L  | 96  |
| 46) | 1,1,2-Trichloroethane     | 83   | 14.461 | 14.462 | 0.925  | 108628   | 20.81  | ug/L  | 97  |
| 47) | 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 359336   | 113.76 | ug/L  | 95  |
| 48) | 1,3-Dichloropropane       | 76   | 14.663 | 14.663 | 0.938  | 210209   | 20.59  | ug/L  | 97  |
| 49) | Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 111485   | 19.54  | ug/L  | 100 |
| 50) | Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 158358   | 20.49  | ug/L  | 100 |
| 51) | 1,2-Dibromoethane         | 107  | 15.137 | 15.138 | 0.968  | 140409   | 20.61  | ug/L  | 99  |
| 52) | Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 373317   | 20.11  | ug/L  | 98  |
| 53) | 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 144171   | 20.63  | ug/L  | 99  |
| 54) | Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 616695   | 20.02  | ug/L  | 99  |
| 55) | m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 511021   | 40.74  | ug/L  | 95  |
| 56) | o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 266322   | 20.45  | ug/L  | 93  |
| 57) | Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 440719   | 20.56  | ug/L  | 98  |
| 59) | Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 110769   | 20.88  | ug/L  | 100 |
| 60) | Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 667453   | 20.05  | ug/L  | 99  |
| 62) | 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 173553   | 20.35  | ug/L  | 100 |
| 63) | 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 50249    | 20.16  | ug/L  | 93  |
| 64) | Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 180019   | 20.06  | ug/L  | 98  |
| 65) | n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 758796   | 19.78  | ug/L  | 98  |
| 66) | 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 560585   | 20.22  | ug/L  | 97  |
| 67) | 2-Chlorotoluene           | 126  | 17.319 | 17.320 | 0.952  | 164004   | 19.89  | ug/L  | 91  |
| 68) | 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 506534   | 20.07  | ug/L  | 98  |
| 69) | tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 127135   | 19.85  | ug/L  | 92  |
| 70) | 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 570286   | 19.96  | ug/L  | 97  |
| 71) | sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 762163   | 20.24  | ug/L  | 98  |
| 72) | 4-Isopropyltoluene        | 119  | 18.078 | 18.067 | 0.993  | 609322   | 20.19  | ug/L  | 98  |
| 73) | 1,3-Dichlorobenzene       | 146  | 18.126 | 18.126 | 0.996  | 338286   | 19.82  | ug/L  | 99  |
| 74) | 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 329029   | 20.05  | ug/L  | 99  |
| 75) | n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 622133   | 20.49  | ug/L  | 98  |
| 76) | 1,2-Dichlorobenzene       | 146  | 18.659 | 18.660 | 1.025  | 339391   | 20.35  | ug/L  | 99  |
| 77) | 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 39368    | 21.55  | ug/L  | 98  |
| 78) | 1,2,4-Trichlorobenzene    | 180  | 20.675 | 20.676 | 1.136  | 230938   | 21.14  | ug/L  | 100 |
| 79) | Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 133339   | 20.58  | ug/L  | 99  |
| 80) | Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 473894   | 21.59  | ug/L  | 100 |
| 81) | 1,2,3-Trichlorobenzene    | 180  | 21.434 | 21.435 | 1.178  | 191248   | 21.23  | ug/L  | 99  |
| 83) | Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.   |       |     |
| 84) | 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.   |       |     |
| 85) | Acrolein                  |      | 7.382  | 7.524  | 0.615  | 0m       | N.D.   | d     |     |
| 86) | Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.   |       |     |
| 87) | Isopropyl Alcohol         |      | 7.963  | 7.928  | 0.663  | 0m       | N.D.   | d     |     |
| 88) | Allyl chloride            |      | 8.236  | 8.331  | 0.686  | 0m       | N.D.   | d     |     |
| 89) | tert-Butyl Alcohol        |      | 0.000  | 8.580  | 0.000  | 0        | N.D.   |       |     |
| 90) | Acrylonitrile             |      | 8.935  | 8.864  | 0.744  | 0m       | N.D.   | d     |     |
| 91) | Isopropyl ether           |      | 9.611  | 9.647  | 0.800  | 0m       | N.D.   | d     |     |
| 92) | 2-Chloro-1,3-butadiene    |      | 0.000  | 9.766  | 0.000  | 0        | N.D.   |       |     |
| 93) | Ethyl tert-butyl ether    |      | 0.000  | 10.181 | 0.000  | 0        | N.D.   |       |     |
| 94) | Ethyl acetate             |      | 10.418 | 10.454 | 0.868  | 0m       | N.D.   | d     |     |
| 95) | Propionitrile             |      | 10.418 | 10.501 | 0.868  | 0m       | N.D.   | d     |     |
| 96) | Methacrylonitrile         |      | 10.489 | 10.726 | 0.874  | 0m       | N.D.   | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A315.D  
Acq On : 24 Aug 2011 14:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-06|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD020L 5ML n/a MIX[A] 0723-06B+0727-06C  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 25 11:41:57 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

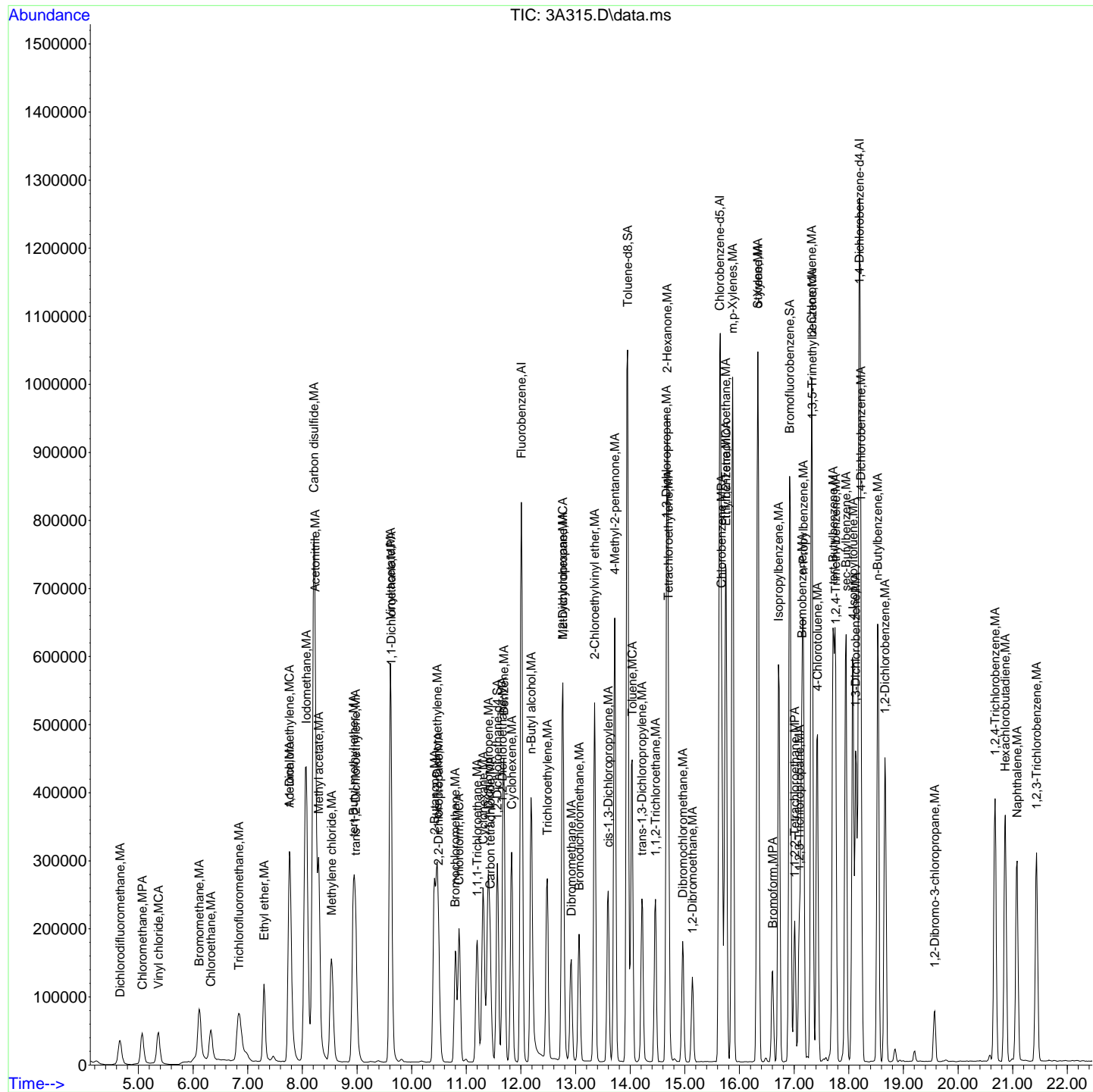
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 97) Tetrahydrofuran            |      | 10.868 | 10.869 | 0.905  | 0m       | N.D. | d     |
| 98) Isobutyl alcohol           |      | 11.307 | 11.343 | 0.942  | 0m       | N.D. | d     |
| 99) Methyl tert-amyl ether     |      | 11.687 | 11.746 | 0.973  | 0m       | N.D. | d     |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 0.000  | 12.884 | 0.000  | 0        | N.D. |       |
| 102) 2-Nitropropane            |      | 13.252 | 13.300 | 1.104  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 15.552 | 15.553 | 0.855  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 16.715 | 16.762 | 0.919  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 16.869 | 16.869 | 0.927  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 17.165 | 17.059 | 0.943  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 17.782 | 17.782 | 0.977  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 18.185 | 18.339 | 0.999  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 18.742 | 18.754 | 1.030  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A315.D  
Acq On : 24 Aug 2011 14:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-06|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD020L 5ML n/a MIX[A] 0723-06B+0727-06C  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 25 11:41:57 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A316.D  
Acq On : 24 Aug 2011 15:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-07|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD050L 5ML n/a MIX[A] 0723-07B+0727-07C  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 25 11:42:00 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |          |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|----------|
| Internal Standards            |      |        |        |        |          |         |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1244269  | 50.00   | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 539948   | 50.00   | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 552836   | 50.00   | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00   | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 0m       | 50.00   | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00   | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |         |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 70823    | 49.78   | ug/L  | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1185846  | 49.45   | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 517918   | 49.50   | ug/L  | 0.00     |
| Target Compounds              |      |        |        |        |          |         |       |          |
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue   |
| 2) Dichlorodifluoromethane    | 85   | 4.666  | 4.666  | 0.389  | 273152   | 54.49   | ug/L  | 100      |
| 3) Chloromethane              | 50   | 5.068  | 5.068  | 0.422  | 296203   | 49.83   | ug/L  | 100      |
| 4) Vinyl chloride             | 62   | 5.365  | 5.365  | 0.447  | 300300   | 49.68   | ug/L  | 100      |
| 5) Bromomethane               | 94   | 6.125  | 6.125  | 0.510  | 347060   | 46.99   | ug/L  | 100      |
| 6) Chloroethane               | 64   | 6.327  | 6.327  | 0.527  | 227624   | 50.20   | ug/L  | 100      |
| 7) Trichlorofluoromethane     | 101  | 6.849  | 6.849  | 0.570  | 473210   | 48.63   | ug/L  | 100      |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 284734   | 48.45   | ug/L  | 100      |
| 9) Acetone                    | 43   | 7.762  | 7.762  | 0.646  | 1016561  | 271.21  | ug/L  | 100      |
| 10) 1,1-Dichloroethylene      | 61   | 7.774  | 7.774  | 0.647  | 492661   | 46.77   | ug/L  | 100      |
| 11) Iodomethane               | 142  | 8.070  | 8.070  | 0.672  | 3017665  | 234.05  | ug/L  | 100      |
| 12) Acetonitrile              | 41   | 8.224  | 8.224  | 0.685  | 990077   | 1308.51 | ug/L  | 100      |
| 13) Methyl acetate            | 43   | 8.295  | 8.295  | 0.691  | 1190372  | 226.87  | ug/L  | 100      |
| 14) Carbon disulfide          | 76   | 8.212  | 8.212  | 0.684  | 5040543  | 225.26  | ug/L  | 100      |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 393843   | 45.01   | ug/L  | 100      |
| 16) tert-Butyl methyl ether   | 73   | 8.936  | 8.936  | 0.744  | 1009730  | 47.67   | ug/L  | 100      |
| 17) trans-1,2-Dichloroethy... | 61   | 8.971  | 8.971  | 0.747  | 456637   | 46.73   | ug/L  | 100      |
| 18) Vinyl acetate             | 43   | 9.612  | 9.612  | 0.800  | 2909394  | 230.80  | ug/L  | 100      |
| 19) 1,1-Dichloroethane        | 63   | 9.623  | 9.623  | 0.801  | 556670   | 45.87   | ug/L  | 100      |
| 20) 2-Butanone                | 43   | 10.406 | 10.406 | 0.867  | 1312272  | 240.70  | ug/L  | 100      |
| 21) cis-1,2-Dichloroethylene  | 96   | 10.465 | 10.465 | 0.872  | 375883   | 45.83   | ug/L  | 100      |
| 22) 2,2-Dichloropropane       | 77   | 10.489 | 10.489 | 0.874  | 415038   | 44.17   | ug/L  | 100      |
| 23) Bromochloromethane        | 128  | 10.797 | 10.797 | 0.899  | 192337   | 48.00   | ug/L  | 100      |
| 24) Chloroform                | 83   | 10.869 | 10.869 | 0.905  | 578013   | 45.74   | ug/L  | 100      |
| 25) 1,1,1-Trichloroethane     | 97   | 11.201 | 11.201 | 0.933  | 517536   | 47.56   | ug/L  | 100      |
| 26) Cyclohexane               | 56   | 11.307 | 11.307 | 0.942  | 551978   | 45.44   | ug/L  | 100      |
| 27) 1,1-Dichloropropene       | 75   | 11.402 | 11.402 | 0.950  | 411065   | 45.49   | ug/L  | 100      |
| 28) Carbon tetrachloride      | 117  | 11.438 | 11.438 | 0.953  | 423848   | 46.31   | ug/L  | 100      |
| 30) 1,2-Dichloroethane        | 62   | 11.663 | 11.663 | 0.971  | 405550   | 46.79   | ug/L  | 100      |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 1249257  | 46.22   | ug/L  | 100      |
| 32) Cyclohexene               | 67   | 11.829 | 11.829 | 0.985  | 631479   | 45.82   | ug/L  | 100      |
| 33) n-Butyl alcohol           | 56   | 12.185 | 12.185 | 1.015  | 1021924  | 5125.50 | ug/L  | 100      |
| 34) Trichloroethylene         | 95   | 12.481 | 12.481 | 1.040  | 338355   | 46.94   | ug/L  | 100      |
| 35) 1,2-Dichloropropane       | 63   | 12.766 | 12.766 | 1.063  | 317643   | 46.31   | ug/L  | 100      |
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 555134   | 46.15   | ug/L  | 100      |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 210070   | 47.23   | ug/L  | 100      |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 470790   | 47.94   | ug/L  | 100      |
| 39) 2-Chloroethylvinyl ether  | 63   | 13.347 | 13.347 | 1.112  | 808322   | 230.13  | ug/L  | 100      |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A316.D  
Acq On : 24 Aug 2011 15:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-07|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD050L 5ML n/a MIX[A] 0723-07B+0727-07C  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 25 11:42:00 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|-----|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 40) | cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 552525   | 47.36  | ug/L  | 100 |
| 42) | 4-Methyl-2-pentanone      | 58   | 13.715 | 13.715 | 0.877  | 660578   | 233.16 | ug/L  | 100 |
| 44) | Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 1305245  | 46.03  | ug/L  | 100 |
| 45) | trans-1,3-Dichloroprop... | 75   | 14.213 | 14.213 | 0.909  | 513788   | 47.92  | ug/L  | 100 |
| 46) | 1,1,2-Trichloroethane     | 83   | 14.462 | 14.462 | 0.925  | 253690   | 47.77  | ug/L  | 100 |
| 47) | 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 840120   | 280.25 | ug/L  | 100 |
| 48) | 1,3-Dichloropropane       | 76   | 14.663 | 14.663 | 0.938  | 475020   | 45.72  | ug/L  | 100 |
| 49) | Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 262719   | 45.26  | ug/L  | 100 |
| 50) | Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 391562   | 49.78  | ug/L  | 100 |
| 51) | 1,2-Dibromoethane         | 107  | 15.138 | 15.138 | 0.968  | 337014   | 48.61  | ug/L  | 100 |
| 52) | Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 892370   | 47.25  | ug/L  | 100 |
| 53) | 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 346970   | 48.80  | ug/L  | 100 |
| 54) | Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 1417211  | 45.22  | ug/L  | 100 |
| 55) | m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 1186598  | 92.97  | ug/L  | 100 |
| 56) | o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 627219   | 47.33  | ug/L  | 100 |
| 57) | Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 1025063  | 47.01  | ug/L  | 100 |
| 59) | Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 275623   | 51.97  | ug/L  | 100 |
| 60) | Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 1536014  | 46.15  | ug/L  | 100 |
| 62) | 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 418328   | 49.05  | ug/L  | 100 |
| 63) | 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 121825   | 48.89  | ug/L  | 100 |
| 64) | Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 428273   | 47.73  | ug/L  | 100 |
| 65) | n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 1736192  | 45.26  | ug/L  | 100 |
| 66) | 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 1265488  | 45.66  | ug/L  | 100 |
| 67) | 2-Chlorotoluene           | 126  | 17.320 | 17.320 | 0.952  | 392968   | 47.66  | ug/L  | 100 |
| 68) | 4-Chlorotoluene           | 91   | 17.415 | 17.415 | 0.957  | 1162399  | 46.07  | ug/L  | 100 |
| 69) | tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 312296   | 48.77  | ug/L  | 100 |
| 70) | 1,2,4-Trimethylbenzene    | 105  | 17.747 | 17.747 | 0.975  | 1330268  | 46.57  | ug/L  | 100 |
| 71) | sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 1777879  | 47.23  | ug/L  | 100 |
| 72) | 4-Isopropyltoluene        | 119  | 18.067 | 18.067 | 0.993  | 1436669  | 47.61  | ug/L  | 100 |
| 73) | 1,3-Dichlorobenzene       | 146  | 18.126 | 18.126 | 0.996  | 811812   | 47.58  | ug/L  | 100 |
| 74) | 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 795619   | 48.48  | ug/L  | 100 |
| 75) | n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 1424711  | 46.93  | ug/L  | 100 |
| 76) | 1,2-Dichlorobenzene       | 146  | 18.660 | 18.660 | 1.025  | 801163   | 48.04  | ug/L  | 100 |
| 77) | 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 96087    | 52.60  | ug/L  | 100 |
| 78) | 1,2,4-Trichlorobenzene    | 180  | 20.676 | 20.676 | 1.136  | 534876   | 48.97  | ug/L  | 100 |
| 79) | Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 315006   | 48.63  | ug/L  | 100 |
| 80) | Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 1084678  | 49.44  | ug/L  | 100 |
| 81) | 1,2,3-Trichlorobenzene    | 180  | 21.435 | 21.435 | 1.178  | 443340   | 49.22  | ug/L  | 100 |
| 83) | Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.   |       |     |
| 84) | 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.   |       |     |
| 85) | Acrolein                  |      | 7.536  | 7.524  | 0.628  | 0m       | N.D.   | d     |     |
| 86) | Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.   |       |     |
| 87) | Isopropyl Alcohol         |      | 7.951  | 7.928  | 0.662  | 0m       | N.D.   | d     |     |
| 88) | Allyl chloride            |      | 8.224  | 8.331  | 0.685  | 0m       | N.D.   | d     |     |
| 89) | tert-Butyl Alcohol        |      | 8.580  | 8.580  | 0.715  | 0m       | N.D.   | d     |     |
| 90) | Acrylonitrile             |      | 8.936  | 8.864  | 0.744  | 0m       | N.D.   | d     |     |
| 91) | Isopropyl ether           |      | 9.612  | 9.647  | 0.800  | 0m       | N.D.   | d     |     |
| 92) | 2-Chloro-1,3-butadiene    |      | 9.813  | 9.766  | 0.817  | 0m       | N.D.   | d     |     |
| 93) | Ethyl tert-butyl ether    |      | 0.000  | 10.181 | 0.000  | 0        | N.D.   |       |     |
| 94) | Ethyl acetate             |      | 10.406 | 10.454 | 0.867  | 0m       | N.D.   | d     |     |
| 95) | Propionitrile             |      | 10.406 | 10.501 | 0.867  | 0m       | N.D.   | d     |     |
| 96) | Methacrylonitrile         |      | 10.880 | 10.726 | 0.906  | 0m       | N.D.   | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A316.D  
Acq On : 24 Aug 2011 15:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-07|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD050L 5ML n/a MIX[A] 0723-07B+0727-07C  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 25 11:42:00 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 97) Tetrahydrofuran            |      | 10.869 | 10.869 | 0.905  | 0m       | N.D. | d     |
| 98) Isobutyl alcohol           |      | 11.556 | 11.343 | 0.962  | 0m       | N.D. | d     |
| 99) Methyl tert-amyl ether     |      | 11.687 | 11.746 | 0.973  | 0m       | N.D. | d     |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 12.920 | 12.884 | 1.076  | 0m       | N.D. | d     |
| 102) 2-Nitropropane            |      | 13.347 | 13.300 | 1.112  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 15.541 | 15.553 | 0.854  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 16.715 | 16.762 | 0.919  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 16.881 | 16.869 | 0.928  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 17.165 | 17.059 | 0.943  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 17.782 | 17.782 | 0.977  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 18.529 | 18.339 | 1.018  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 18.790 | 18.754 | 1.033  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted





Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A317.D  
Acq On : 24 Aug 2011 15:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-08|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD080L 5ML n/a MIX[A] 0723-08B+0727-08C  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 25 11:42:04 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |          |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|----------|
| Internal Standards            |      |        |        |        |          |         |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1254100  | 50.00   | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 540216   | 50.00   | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 538341   | 50.00   | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00   | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 0m       | 50.00   | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00   | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |         |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 69484    | 48.46   | ug/L  | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1201648  | 50.09   | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 525639   | 51.59   | ug/L  | 0.00     |
| Target Compounds              |      |        |        |        |          |         |       |          |
|                               | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue   |
| 2) Dichlorodifluoromethane    | 85   | 4.666  | 4.666  | 0.389  | 421437   | 83.41   | ug/L  | 99       |
| 3) Chloromethane              | 50   | 5.082  | 5.068  | 0.423  | 460671   | 76.89   | ug/L  | 99       |
| 4) Vinyl chloride             | 62   | 5.379  | 5.365  | 0.448  | 473561   | 77.72   | ug/L  | 99       |
| 5) Bromomethane               | 94   | 6.125  | 6.125  | 0.510  | 551762   | 74.12   | ug/L  | 99       |
| 6) Chloroethane               | 64   | 6.327  | 6.327  | 0.527  | 365517   | 79.98   | ug/L  | 99       |
| 7) Trichlorofluoromethane     | 101  | 6.848  | 6.849  | 0.570  | 758475   | 77.34   | ug/L  | 100      |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 451839   | 76.28   | ug/L  | 100      |
| 9) Acetone                    | 43   | 7.762  | 7.762  | 0.646  | 1450597  | 390.13  | ug/L  | 100      |
| 10) 1,1-Dichloroethylene      | 61   | 7.773  | 7.774  | 0.647  | 790075   | 74.42   | ug/L  | 99       |
| 11) Iodomethane               | 142  | 8.070  | 8.070  | 0.672  | 4704182  | 362.00  | ug/L  | 100      |
| 12) Acetonitrile              | 41   | 8.224  | 8.224  | 0.685  | 1474096  | 1960.01 | ug/L  | 100      |
| 13) Methyl acetate            | 43   | 8.295  | 8.295  | 0.691  | 1841574  | 348.23  | ug/L  | 99       |
| 14) Carbon disulfide          | 76   | 8.212  | 8.212  | 0.684  | 7700397  | 341.42  | ug/L  | 99       |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 621158   | 70.44   | ug/L  | 100      |
| 16) tert-Butyl methyl ether   | 73   | 8.935  | 8.936  | 0.744  | 1565938  | 73.35   | ug/L  | 100      |
| 17) trans-1,2-Dichloroethy... | 61   | 8.971  | 8.971  | 0.747  | 722416   | 73.35   | ug/L  | 99       |
| 18) Vinyl acetate             | 43   | 9.611  | 9.612  | 0.800  | 4282734  | 337.09  | ug/L  | 99       |
| 19) 1,1-Dichloroethane        | 63   | 9.623  | 9.623  | 0.801  | 859199   | 70.24   | ug/L  | 99       |
| 20) 2-Butanone                | 43   | 10.406 | 10.406 | 0.867  | 1870920  | 340.48  | ug/L  | 99       |
| 21) cis-1,2-Dichloroethylene  | 96   | 10.465 | 10.465 | 0.872  | 596363   | 72.14   | ug/L  | 98       |
| 22) 2,2-Dichloropropane       | 77   | 10.489 | 10.489 | 0.874  | 658420   | 69.53   | ug/L  | 99       |
| 23) Bromochloromethane        | 128  | 10.809 | 10.797 | 0.900  | 308075   | 76.28   | ug/L  | 98       |
| 24) Chloroform                | 83   | 10.868 | 10.869 | 0.905  | 915341   | 71.87   | ug/L  | 100      |
| 25) 1,1,1-Trichloroethane     | 97   | 11.200 | 11.201 | 0.933  | 820120   | 74.78   | ug/L  | 99       |
| 26) Cyclohexane               | 56   | 11.307 | 11.307 | 0.942  | 875113   | 71.48   | ug/L  | 100      |
| 27) 1,1-Dichloropropene       | 75   | 11.402 | 11.402 | 0.950  | 656958   | 72.13   | ug/L  | 99       |
| 28) Carbon tetrachloride      | 117  | 11.438 | 11.438 | 0.953  | 685590   | 74.33   | ug/L  | 99       |
| 30) 1,2-Dichloroethane        | 62   | 11.663 | 11.663 | 0.971  | 622959   | 71.30   | ug/L  | 99       |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 1965648  | 72.16   | ug/L  | 99       |
| 32) Cyclohexene               | 67   | 11.829 | 11.829 | 0.985  | 1008849  | 72.63   | ug/L  | 99       |
| 33) n-Butyl alcohol           | 56   | 12.185 | 12.185 | 1.015  | 1586582  | 7866.01 | ug/L  | 98       |
| 34) Trichloroethylene         | 95   | 12.481 | 12.481 | 1.040  | 529978   | 72.95   | ug/L  | 100      |
| 35) 1,2-Dichloropropane       | 63   | 12.766 | 12.766 | 1.063  | 489169   | 70.75   | ug/L  | 100      |
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 885597   | 73.04   | ug/L  | 99       |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 336848   | 75.13   | ug/L  | 99       |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 741924   | 74.95   | ug/L  | 99       |
| 39) 2-Chloroethylvinyl ether  | 63   | 13.347 | 13.347 | 1.112  | 1298810  | 366.88  | ug/L  | 99       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A317.D  
Acq On : 24 Aug 2011 15:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-08|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD080L 5ML n/a MIX[A] 0723-08B+0727-08C  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 25 11:42:04 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|-----|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 40) | cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 882374   | 75.04  | ug/L  | 99  |
| 42) | 4-Methyl-2-pentanone      | 58   | 13.714 | 13.715 | 0.877  | 980485   | 345.91 | ug/L  | 97  |
| 44) | Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 2037110  | 71.80  | ug/L  | 98  |
| 45) | trans-1,3-Dichloroprop... | 75   | 14.213 | 14.213 | 0.909  | 816613   | 76.12  | ug/L  | 99  |
| 46) | 1,1,2-Trichloroethane     | 83   | 14.462 | 14.462 | 0.925  | 396155   | 74.55  | ug/L  | 99  |
| 47) | 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 1153887  | 390.15 | ug/L  | 98  |
| 48) | 1,3-Dichloropropane       | 76   | 14.663 | 14.663 | 0.938  | 722802   | 69.53  | ug/L  | 95  |
| 49) | Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 413283   | 71.16  | ug/L  | 98  |
| 50) | Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 622967   | 79.17  | ug/L  | 100 |
| 51) | 1,2-Dibromoethane         | 107  | 15.137 | 15.138 | 0.968  | 531838   | 76.68  | ug/L  | 99  |
| 52) | Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 1409499  | 74.59  | ug/L  | 99  |
| 53) | 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 549296   | 77.21  | ug/L  | 99  |
| 54) | Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 2161177  | 68.92  | ug/L  | 99  |
| 55) | m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 1834083  | 143.63 | ug/L  | 96  |
| 56) | o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 981717   | 74.05  | ug/L  | 95  |
| 57) | Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 1544814  | 70.81  | ug/L  | 100 |
| 59) | Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 447965   | 86.74  | ug/L  | 99  |
| 60) | Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 2380663  | 73.46  | ug/L  | 99  |
| 62) | 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 643439   | 77.48  | ug/L  | 98  |
| 63) | 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 192518   | 79.34  | ug/L  | 97  |
| 64) | Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 676831   | 77.46  | ug/L  | 99  |
| 65) | n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 2701529  | 72.32  | ug/L  | 98  |
| 66) | 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 1933962  | 71.66  | ug/L  | 98  |
| 67) | 2-Chlorotoluene           | 126  | 17.319 | 17.320 | 0.952  | 621126   | 77.37  | ug/L  | 94  |
| 68) | 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 1801610  | 73.32  | ug/L  | 99  |
| 69) | tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 494932   | 79.38  | ug/L  | 98  |
| 70) | 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 2041049  | 73.38  | ug/L  | 98  |
| 71) | sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 2700920  | 73.68  | ug/L  | 99  |
| 72) | 4-Isopropyltoluene        | 119  | 18.078 | 18.067 | 0.993  | 2190164  | 74.53  | ug/L  | 99  |
| 73) | 1,3-Dichlorobenzene       | 146  | 18.138 | 18.126 | 0.997  | 1246737  | 75.04  | ug/L  | 99  |
| 74) | 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 1216471  | 76.13  | ug/L  | 99  |
| 75) | n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 2117262  | 71.62  | ug/L  | 98  |
| 76) | 1,2-Dichlorobenzene       | 146  | 18.659 | 18.660 | 1.025  | 1232114  | 75.87  | ug/L  | 99  |
| 77) | 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 145931   | 82.03  | ug/L  | 99  |
| 78) | 1,2,4-Trichlorobenzene    | 180  | 20.675 | 20.676 | 1.136  | 764942   | 71.92  | ug/L  | 99  |
| 79) | Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 460255   | 72.97  | ug/L  | 100 |
| 80) | Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 1555785  | 72.82  | ug/L  | 100 |
| 81) | 1,2,3-Trichlorobenzene    | 180  | 21.434 | 21.435 | 1.178  | 625433   | 71.31  | ug/L  | 99  |
| 83) | Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.   |       |     |
| 84) | 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.   |       |     |
| 85) | Acrolein                  |      | 7.548  | 7.524  | 0.629  | 0m       | N.D.   | d     |     |
| 86) | Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.   |       |     |
| 87) | Isopropyl Alcohol         |      | 7.762  | 7.928  | 0.646  | 0m       | N.D.   | d     |     |
| 88) | Allyl chloride            |      | 8.224  | 8.331  | 0.685  | 0m       | N.D.   | d     |     |
| 89) | tert-Butyl Alcohol        |      | 8.592  | 8.580  | 0.716  | 0m       | N.D.   | d     |     |
| 90) | Acrylonitrile             |      | 8.935  | 8.864  | 0.744  | 0m       | N.D.   | d     |     |
| 91) | Isopropyl ether           |      | 9.611  | 9.647  | 0.800  | 0m       | N.D.   | d     |     |
| 92) | 2-Chloro-1,3-butadiene    |      | 9.813  | 9.766  | 0.817  | 0m       | N.D.   | d     |     |
| 93) | Ethyl tert-butyl ether    |      | 0.000  | 10.181 | 0.000  | 0        | N.D.   |       |     |
| 94) | Ethyl acetate             |      | 10.406 | 10.454 | 0.867  | 0m       | N.D.   | d     |     |
| 95) | Propionitrile             |      | 10.418 | 10.501 | 0.868  | 0m       | N.D.   | d     |     |
| 96) | Methacrylonitrile         |      | 10.868 | 10.726 | 0.905  | 0m       | N.D.   | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A317.D  
Acq On : 24 Aug 2011 15:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-08|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD080L 5ML n/a MIX[A] 0723-08B+0727-08C  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 25 11:42:04 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 97) Tetrahydrofuran            |      | 10.868 | 10.869 | 0.905  | 0m       | N.D. | d     |
| 98) Isobutyl alcohol           |      | 11.307 | 11.343 | 0.942  | 0m       | N.D. | d     |
| 99) Methyl tert-amyl ether     |      | 11.687 | 11.746 | 0.973  | 0m       | N.D. | d     |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 12.908 | 12.884 | 1.075  | 0m       | N.D. | d     |
| 102) 2-Nitropropane            |      | 13.347 | 13.300 | 1.112  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 15.636 | 15.553 | 0.859  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 16.715 | 16.762 | 0.919  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 16.821 | 16.869 | 0.924  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 17.165 | 17.059 | 0.943  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 17.782 | 17.782 | 0.977  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 18.529 | 18.339 | 1.018  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 18.742 | 18.754 | 1.030  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

```
Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A317.D  
Acq On : 24 Aug 2011 15:37  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-08|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD080L 5ML n/a MIX[A] 0723-08B+0727-08C  
ALS Vial : 10 Sample Multiplier: 1
```

Abundance

TIC: 3A317.D\data.ms

Time-->

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A318.D  
Acq On : 24 Aug 2011 16:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-09|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD100L 5ML n/a MIX[A] 0723-08B+0727-08C  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Aug 25 11:42:09 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc     | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|----------|-------|----------|
| Internal Standards            |      |        |        |        |          |          |       |          |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1244912  | 50.00    | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 537352   | 50.00    | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 580294   | 50.00    | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00    | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 0m       | 50.00    | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00    | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |          |       |          |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 70185    | 49.31    | ug/L  | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1197822  | 50.19    | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 536013   | 48.81    | ug/L  | 0.00     |
| Target Compounds              |      |        |        |        |          |          |       |          |
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc     | Units | QValue   |
| 2) Dichlorodifluoromethane    | 85   | 4.651  | 4.666  | 0.387  | 513762   | 102.43   | ug/L  | 99 A     |
| 3) Chloromethane              | 50   | 5.082  | 5.068  | 0.423  | 548177   | 92.17    | ug/L  | 99       |
| 4) Vinyl chloride             | 62   | 5.365  | 5.365  | 0.447  | 572746   | 94.69    | ug/L  | 99       |
| 5) Bromomethane               | 94   | 6.125  | 6.125  | 0.510  | 677133   | 91.63    | ug/L  | 99       |
| 6) Chloroethane               | 64   | 6.327  | 6.327  | 0.527  | 451081   | 99.43    | ug/L  | 99       |
| 7) Trichlorofluoromethane     | 101  | 6.848  | 6.849  | 0.570  | 925840   | 95.11    | ug/L  | 100      |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 553531   | 94.14    | ug/L  | 99       |
| 9) Acetone                    | 43   | 7.761  | 7.762  | 0.646  | 1808359  | 493.73   | ug/L  | 99       |
| 10) 1,1-Dichloroethylene      | 61   | 7.773  | 7.774  | 0.647  | 951221   | 90.26    | ug/L  | 99       |
| 11) Iodomethane               | 142  | 8.070  | 8.070  | 0.672  | 5640614  | 437.27   | ug/L  | 100      |
| 12) Acetonitrile              | 41   | 8.224  | 8.224  | 0.685  | 1847153  | 2489.06  | ug/L  | 99       |
| 13) Methyl acetate            | 43   | 8.295  | 8.295  | 0.691  | 2273063  | 433.00   | ug/L  | 99       |
| 14) Carbon disulfide          | 76   | 8.212  | 8.212  | 0.684  | 9152644  | 408.81   | ug/L  | 98       |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 776170   | 88.67    | ug/L  | 98       |
| 16) tert-Butyl methyl ether   | 73   | 8.935  | 8.936  | 0.744  | 1956662  | 92.33    | ug/L  | 99       |
| 17) trans-1,2-Dichloroethy... | 61   | 8.971  | 8.971  | 0.747  | 877761   | 89.78    | ug/L  | 98       |
| 18) Vinyl acetate             | 43   | 9.611  | 9.612  | 0.800  | 5186600  | 411.24   | ug/L  | 98       |
| 19) 1,1-Dichloroethane        | 63   | 9.623  | 9.623  | 0.801  | 1047296  | 86.25    | ug/L  | 99       |
| 20) 2-Butanone                | 43   | 10.406 | 10.406 | 0.867  | 2352324  | 431.25   | ug/L  | 98       |
| 21) cis-1,2-Dichloroethylene  | 96   | 10.465 | 10.465 | 0.872  | 737639   | 89.89    | ug/L  | 97       |
| 22) 2,2-Dichloropropane       | 77   | 10.489 | 10.489 | 0.874  | 804228   | 85.55    | ug/L  | 98       |
| 23) Bromochloromethane        | 128  | 10.797 | 10.797 | 0.899  | 384640   | 95.94    | ug/L  | 97       |
| 24) Chloroform                | 83   | 10.868 | 10.869 | 0.905  | 1118818  | 88.49    | ug/L  | 99       |
| 25) 1,1,1-Trichloroethane     | 97   | 11.200 | 11.201 | 0.933  | 990367   | 90.96    | ug/L  | 99       |
| 26) Cyclohexane               | 56   | 11.307 | 11.307 | 0.942  | 1046866  | 86.14    | ug/L  | 99       |
| 27) 1,1-Dichloropropene       | 75   | 11.402 | 11.402 | 0.950  | 779924   | 86.27    | ug/L  | 99       |
| 28) Carbon tetrachloride      | 117  | 11.438 | 11.438 | 0.953  | 826081   | 90.22    | ug/L  | 99       |
| 30) 1,2-Dichloroethane        | 62   | 11.663 | 11.663 | 0.971  | 765004   | 88.21    | ug/L  | 99       |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 2399078  | 88.72    | ug/L  | 99       |
| 32) Cyclohexene               | 67   | 11.829 | 11.829 | 0.985  | 1211307  | 87.85    | ug/L  | 99       |
| 33) n-Butyl alcohol           | 56   | 12.185 | 12.185 | 1.015  | 2011802  | 10032.82 | ug/L  | 97 A     |
| 34) Trichloroethylene         | 95   | 12.481 | 12.481 | 1.040  | 642220   | 89.06    | ug/L  | 100      |
| 35) 1,2-Dichloropropane       | 63   | 12.766 | 12.766 | 1.063  | 595296   | 86.74    | ug/L  | 99       |
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 1064681  | 88.46    | ug/L  | 98       |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 420271   | 94.43    | ug/L  | 99       |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 912604   | 92.87    | ug/L  | 98       |
| 39) 2-Chloroethylvinyl ether  | 63   | 13.347 | 13.347 | 1.112  | 1576400  | 448.57   | ug/L  | 98       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A318.D  
Acq On : 24 Aug 2011 16:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-09|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD100L 5ML n/a MIX[A] 0723-08B+0727-08C  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Aug 25 11:42:09 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |      |
|-----|---------------------------|------|--------|--------|--------|----------|--------|-------|------|
| 40) | cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 1082897  | 92.78  | ug/L  | 99   |
| 42) | 4-Methyl-2-pentanone      | 58   | 13.714 | 13.715 | 0.877  | 1217138  | 431.68 | ug/L  | 95   |
| 44) | Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 2465831  | 87.37  | ug/L  | 97   |
| 45) | trans-1,3-Dichloroprop... | 75   | 14.213 | 14.213 | 0.909  | 1000496  | 93.76  | ug/L  | 99   |
| 46) | 1,1,2-Trichloroethane     | 83   | 14.462 | 14.462 | 0.925  | 486275   | 92.00  | ug/L  | 98   |
| 47) | 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 1432295  | 490.46 | ug/L  | 97   |
| 48) | 1,3-Dichloropropane       | 76   | 14.663 | 14.663 | 0.938  | 878281   | 84.94  | ug/L  | 94   |
| 49) | Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 494089   | 85.53  | ug/L  | 99   |
| 50) | Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 776551   | 99.21  | ug/L  | 100  |
| 51) | 1,2-Dibromoethane         | 107  | 15.137 | 15.138 | 0.968  | 666288   | 96.58  | ug/L  | 99   |
| 52) | Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 1737622  | 92.45  | ug/L  | 99   |
| 53) | 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 675170   | 95.41  | ug/L  | 100  |
| 54) | Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 2565681  | 82.26  | ug/L  | 97   |
| 55) | m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 2194348  | 172.76 | ug/L  | 94   |
| 56) | o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 1190921  | 90.31  | ug/L  | 94   |
| 57) | Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 1874031  | 86.36  | ug/L  | 100  |
| 59) | Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 569833   | 102.36 | ug/L  | 98 A |
| 60) | Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 2890735  | 82.75  | ug/L  | 97   |
| 62) | 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 823499   | 91.99  | ug/L  | 98   |
| 63) | 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 247725   | 94.71  | ug/L  | 93   |
| 64) | Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 850813   | 90.33  | ug/L  | 98   |
| 65) | n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 3261907  | 81.01  | ug/L  | 97   |
| 66) | 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 2355832  | 80.98  | ug/L  | 97   |
| 67) | 2-Chlorotoluene           | 126  | 17.319 | 17.320 | 0.952  | 760014   | 87.82  | ug/L  | 92   |
| 68) | 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 2222106  | 83.90  | ug/L  | 97   |
| 69) | tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 614518   | 91.43  | ug/L  | 95   |
| 70) | 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 2517191  | 83.96  | ug/L  | 97   |
| 71) | sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 3341940  | 84.57  | ug/L  | 98   |
| 72) | 4-Isopropyltoluene        | 119  | 18.067 | 18.067 | 0.993  | 2747779  | 86.75  | ug/L  | 99   |
| 73) | 1,3-Dichlorobenzene       | 146  | 18.126 | 18.126 | 0.996  | 1609332  | 89.86  | ug/L  | 99   |
| 74) | 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 1580567  | 91.76  | ug/L  | 98   |
| 75) | n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 2650733  | 83.19  | ug/L  | 97   |
| 76) | 1,2-Dichlorobenzene       | 146  | 18.659 | 18.660 | 1.025  | 1583569  | 90.46  | ug/L  | 98   |
| 77) | 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 210548   | 109.80 | ug/L  | 97 A |
| 78) | 1,2,4-Trichlorobenzene    | 180  | 20.675 | 20.676 | 1.136  | 1105058  | 96.39  | ug/L  | 98   |
| 79) | Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 656200   | 96.51  | ug/L  | 99   |
| 80) | Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 2288031  | 99.35  | ug/L  | 100  |
| 81) | 1,2,3-Trichlorobenzene    | 180  | 21.434 | 21.435 | 1.178  | 931968   | 98.58  | ug/L  | 98   |
| 83) | Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.   |       |      |
| 84) | 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.   |       |      |
| 85) | Acrolein                  |      | 7.465  | 7.524  | 0.622  | 0m       | N.D.   | d     |      |
| 86) | Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.   |       |      |
| 87) | Isopropyl Alcohol         |      | 7.975  | 7.928  | 0.664  | 0m       | N.D.   | d     |      |
| 88) | Allyl chloride            |      | 8.224  | 8.331  | 0.685  | 0m       | N.D.   | d     |      |
| 89) | tert-Butyl Alcohol        |      | 8.592  | 8.580  | 0.716  | 0m       | N.D.   | d     |      |
| 90) | Acrylonitrile             |      | 8.935  | 8.864  | 0.744  | 0m       | N.D.   | d     |      |
| 91) | Isopropyl ether           |      | 9.611  | 9.647  | 0.800  | 0m       | N.D.   | d     |      |
| 92) | 2-Chloro-1,3-butadiene    |      | 9.813  | 9.766  | 0.817  | 0m       | N.D.   | d     |      |
| 93) | Ethyl tert-butyl ether    |      | 0.000  | 10.181 | 0.000  | 0        | N.D.   |       |      |
| 94) | Ethyl acetate             |      | 10.406 | 10.454 | 0.867  | 0m       | N.D.   | d     |      |
| 95) | Propionitrile             |      | 10.418 | 10.501 | 0.868  | 0m       | N.D.   | d     |      |
| 96) | Methacrylonitrile         |      | 10.880 | 10.726 | 0.906  | 0m       | N.D.   | d     |      |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A318.D  
Acq On : 24 Aug 2011 16:07  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-09|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD100L 5ML n/a MIX[A] 0723-08B+0727-08C  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Aug 25 11:42:09 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 97) Tetrahydrofuran            |      | 10.868 | 10.869 | 0.905  | 0m       | N.D. | d     |
| 98) Isobutyl alcohol           |      | 11.307 | 11.343 | 0.942  | 0m       | N.D. | d     |
| 99) Methyl tert-amyl ether     |      | 11.687 | 11.746 | 0.973  | 0m       | N.D. | d     |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 12.920 | 12.884 | 1.076  | 0m       | N.D. | d     |
| 102) 2-Nitropropane            |      | 13.347 | 13.300 | 1.112  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 15.505 | 15.553 | 0.852  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 16.715 | 16.762 | 0.919  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 16.881 | 16.869 | 0.928  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 17.165 | 17.059 | 0.943  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 17.782 | 17.782 | 0.977  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 18.529 | 18.339 | 1.018  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 18.683 | 18.754 | 1.027  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted





## Continuing Calibration Summary

**Instrument ID:** VOA3.I  
**Data File:** 082411V3\3A321.D  
**Lab Sample ID** W3VM110824-11  
**Quant Type** ISTD

**Client SDG:** 284538  
**Injection Date:** 24-AUG-11 17:38  
**Init. Cal. Date(s)** 24-AUG-11 12:07 - 25-AUG-11 09:5  
**Method:** 082411V3\VOA3-8260-082411.M  
**Method Update:** 25-AUG-11 11:40

| Compound                   | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| S 1,2-Dichloroethane-d4    | 0.0572         | 0.05898 |             | .01    |      | 3.11189     | 30  |         | Averaged   |      |
| S Toluene-d8               | 2.2206         | 2.228   |             | .01    |      | 0.33324     | 30  |         | Averaged   |      |
| S Bromofluorobenzene       | 0.9463         | 0.94752 |             | .01    |      | 0.12892     | 30  |         | Averaged   |      |
| Dichlorodifluoromethane    | 0.2014         | 0.21993 |             | .01    |      | 9.2006      | 30  |         | Averaged   |      |
| Chloromethane              | 0.2389         | 0.24809 |             | .1     |      | 3.8468      | 30  |         | Averaged   | spcc |
| Vinyl chloride             | 0.2429         | 0.23243 |             | .01    |      | -4.31042    | 20  |         | Averaged   | ccc  |
| Bromomethane               | 0.2968         | 0.27213 |             | .01    |      | -8.31199    | 30  |         | Averaged   |      |
| Chloroethane               | 0.1822         | 0.18615 |             | .01    |      | 2.16795     | 30  |         | Averaged   |      |
| Trichlorofluoromethane     | 0.391          | 0.41041 |             | .01    |      | 4.96419     | 30  |         | Averaged   |      |
| Ethyl ether                | 0.2362         | 0.21958 |             | .01    |      | -7.03641    | 30  |         | Averaged   |      |
| Acetone                    | 250            | 185.6   | 250         |        |      | -25.76      | 40  |         | Linear     |      |
| 1,1-Dichloroethylene       | 0.4233         | 0.37749 |             | .01    |      | -10.82211   | 20  |         | Averaged   | ccc  |
| Iodomethane                | 0.5181         | 0.44523 |             | .01    |      | -14.06485   | 30  |         | Averaged   |      |
| Carbon disulfide           | 0.8992         | 0.72549 |             | .01    |      | -19.31828   | 30  |         | Averaged   |      |
| Acetonitrile               | 1250           | 1275.34 | 1250        |        |      | 2.0272      | 30  |         | Linear     |      |
| Methyl acetate             | 0.2108         | 0.1789  |             | .01    |      | -15.13283   | 40  |         | Averaged   |      |
| Methylene chloride         | 0.3516         | 0.31261 |             | .01    |      | -11.08931   | 30  |         | Averaged   |      |
| tert-Butyl methyl ether    | 0.8512         | 0.7855  |             | .01    |      | -7.71852    | 30  |         | Averaged   |      |
| trans-1,2-Dichloroethylene | 0.3927         | 0.2863  |             | .01    |      | -27.09447   | 30  |         | Averaged   |      |
| Vinyl acetate              | 0.5065         | 0.49703 |             | .01    |      | -1.86969    | 40  |         | Averaged   |      |
| 1,1-Dichloroethane         | 0.4877         | 0.42536 |             | .1     |      | -12.78245   | 30  |         | Averaged   | spcc |
| 2-Butanone                 | 0.2191         | 0.14517 |             | .01    |      | -33.74258   | 40  |         | Averaged   |      |
| cis-1,2-Dichloroethylene   | 0.3296         | 0.34907 |             | .01    |      | 5.90716     | 30  |         | Averaged   |      |
| 2,2-Dichloropropane        | 0.3776         | 0.32433 |             | .01    |      | -14.10752   | 30  |         | Averaged   |      |
| Bromochloromethane         | 0.161          | 0.1534  |             | .01    |      | -4.7205     | 30  |         | Averaged   |      |
| Chloroform                 | 0.5078         | 0.46327 |             | .01    |      | -8.7692     | 20  |         | Averaged   | ccc  |
| 1,1,1-Trichloroethane      | 0.4373         | 0.3959  |             | .01    |      | -9.46718    | 30  |         | Averaged   |      |
| Cyclohexane                | 0.4881         | 0.41245 |             | .01    |      | -15.49887   | 30  |         | Averaged   |      |
| 1,1-Dichloropropene        | 0.3631         | 0.31963 |             | .01    |      | -11.97191   | 30  |         | Averaged   |      |
| Carbon tetrachloride       | 0.3677         | 0.33389 |             | .01    |      | -9.195      | 30  |         | Averaged   |      |
| 1,2-Dichloroethane         | 0.3483         | 0.31336 |             | .01    |      | -10.03158   | 30  |         | Averaged   |      |
| Benzene                    | 1.0861         | 0.96669 |             | .01    |      | -10.99438   | 30  |         | Averaged   |      |
| Cyclohexene                | 0.5538         | 0.47893 |             | .01    |      | -13.51932   | 30  |         | Averaged   |      |
| n-Butyl alcohol            | 5000           | 5035.97 | 5000        |        |      | 0.7194      | 40  |         | Linear     |      |
| Trichloroethylene          | 0.2896         | 0.25557 |             | .01    |      | -11.75069   | 30  |         | Averaged   |      |
| 1,2-Dichloropropane        | 0.2756         | 0.24708 |             | .01    |      | -10.34833   | 20  |         | Averaged   | ccc  |
| Methylcyclohexane          | 0.4834         | 0.42241 |             | .01    |      | -12.61688   | 30  |         | Averaged   |      |

## Continuing Calibration Summary

Instrument ID: VOA3.I

Injection Date: 24-AUG-11 17:38

Data File: 082411V3\3A321.D

Init. Cal. Date(s) 24-AUG-11 12:07 25-AUG-11 09:5

Lab Sample ID W3VM110824-11

Method: 082411V3\VOA3-8260-082411.M

Quant Type ISTD

| Compound                    | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|-----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| Dibromomethane              | 0.1787         | 0.1694  |             | .01    |      | -5.20425    | 30  |         | Averaged   |      |
| Bromodichloromethane        | 0.3947         | 0.37159 |             | .01    |      | -5.85508    | 30  |         | Averaged   |      |
| 2-Chloroethylvinyl ether    | 0.1411         | 0.12258 |             | .01    |      | -13.12544   | 30  |         | Averaged   |      |
| cis-1,3-Dichloropropylene   | 0.4688         | 0.43977 |             | .01    |      | -6.19241    | 30  |         | Averaged   |      |
| 4-Methyl-2-pentanone        | 0.2624         | 0.23328 |             | .01    |      | -11.09756   | 40  |         | Averaged   |      |
| Toluene                     | 2.626          | 2.30912 |             | .01    |      | -12.06702   | 20  |         | Averaged   | ccc  |
| trans-1,3-Dichloropropylene | 0.9929         | 0.94248 |             | .01    |      | -5.07805    | 30  |         | Averaged   |      |
| 1,1,2-Trichloroethane       | 0.4918         | 0.4583  |             | .01    |      | -6.81171    | 30  |         | Averaged   |      |
| 1,3-Dichloropropane         | 0.9621         | 0.87165 |             | .01    |      | -9.40131    | 30  |         | Averaged   |      |
| 2-Hexanone                  | 250            | 213.94  | 250         |        |      | -14.424     | 40  |         | Linear     |      |
| Tetrachloroethylene         | 0.5375         | 0.46327 |             | .01    |      | -13.81023   | 30  |         | Averaged   |      |
| Dibromochloromethane        | 0.7283         | 0.68305 |             | .01    |      | -6.2131     | 30  |         | Averaged   |      |
| 1,2-Dibromoethane           | 0.642          | 0.60326 |             | .01    |      | -6.03427    | 30  |         | Averaged   |      |
| Chlorobenzene               | 1.749          | 1.59358 |             | .3     |      | -8.88622    | 30  |         | Averaged   | spcc |
| 1,1,1,2-Tetrachloroethane   | 0.6584         | 0.62996 |             | .01    |      | -4.31956    | 30  |         | Averaged   |      |
| Ethylbenzene                | 2.9023         | 2.47444 |             | .01    |      | -14.7421    | 20  |         | Averaged   | ccc  |
| m,p-Xylenes                 | 1.1819         | 1.05115 |             | .01    |      | -11.0627    | 30  |         | Averaged   |      |
| o-Xylene                    | 1.2271         | 1.11372 |             | .01    |      | -9.23967    | 30  |         | Averaged   |      |
| Styrene                     | 2.0193         | 1.8012  |             | .01    |      | -10.80077   | 30  |         | Averaged   |      |
| Bromoform                   | 0.4797         | 0.4843  |             | .1     |      | 0.95893     | 30  |         | Averaged   | spcc |
| Isopropylbenzene            | 3.0101         | 2.65751 |             | .01    |      | -11.71356   | 30  |         | Averaged   |      |
| 1,1,2,2-Tetrachloroethane   | 0.7713         | 0.70954 |             | .3     |      | -8.00726    | 30  |         | Averaged   | spcc |
| 1,2,3-Trichloropropane      | 0.2254         | 0.21191 |             | .01    |      | -5.98492    | 30  |         | Averaged   |      |
| Bromobenzene                | 0.8116         | 0.74184 |             | .01    |      | -8.59537    | 30  |         | Averaged   |      |
| n-Propylbenzene             | 3.4694         | 2.85686 |             | .01    |      | -17.6555    | 30  |         | Averaged   |      |
| 2-Chlorotoluene             | 0.7457         | 0.68882 |             | .01    |      | -7.62773    | 30  |         | Averaged   |      |
| 1,3,5-Trimethylbenzene      | 2.5066         | 2.19436 |             | .01    |      | -12.45671   | 30  |         | Averaged   |      |
| 4-Chlorotoluene             | 2.2821         | 1.94883 |             | .01    |      | -14.60365   | 30  |         | Averaged   |      |
| tert-Butylbenzene           | 0.5791         | 0.52554 |             | .01    |      | -9.24883    | 30  |         | Averaged   |      |
| 1,2,4-Trimethylbenzene      | 2.5833         | 2.28354 |             | .01    |      | -11.60376   | 30  |         | Averaged   |      |
| sec-Butylbenzene            | 3.4047         | 2.97154 |             | .01    |      | -12.72241   | 30  |         | Averaged   |      |
| 4-Isopropyltoluene          | 2.7292         | 2.51726 |             | .01    |      | -7.76565    | 30  |         | Averaged   |      |
| 1,3-Dichlorobenzene         | 1.5432         | 1.39535 |             | .01    |      | -9.58074    | 30  |         | Averaged   |      |
| 1,4-Dichlorobenzene         | 1.4841         | 1.33125 |             | .01    |      | -10.29917   | 30  |         | Averaged   |      |
| n-Butylbenzene              | 2.7456         | 2.43692 |             | .01    |      | -11.24272   | 30  |         | Averaged   |      |
| 1,2-Dichlorobenzene         | 1.5084         | 1.36921 |             | .01    |      | -9.22766    | 30  |         | Averaged   |      |
| 1,2-Dibromo-3-chloropropane | 0.1652         | 0.16992 |             | .01    |      | 2.85714     | 30  |         | Averaged   |      |

## Continuing Calibration Summary

Instrument ID: VOA3.I

Injection Date: 24-AUG-11 17:38

Data File: 082411V3\3A321.D

Init. Cal. Date(s) 24-AUG-11 12:07 25-AUG-11 09:5

Lab Sample ID W3VM110824-11

Method: 082411V3\VOA3-8260-082411.M

Quant Type ISTD

| Compound               | AVERF /<br>Amount | RF<br>CCV | Nominal<br>CCV | Min RF | RF<br>Q | %D /<br>%Drift | Max | Drift<br>Q | Curve<br>Type |
|------------------------|-------------------|-----------|----------------|--------|---------|----------------|-----|------------|---------------|
| 1,2,4-Trichlorobenzene | 0.9878            | 0.90013   |                | .01    |         | -8.87528       | 30  |            | Averaged      |
| Hexachlorobutadiene    | 0.5859            | 0.51918   |                | .01    |         | -11.38761      | 30  |            | Averaged      |
| Naphthalene            | 1.9844            | 1.92877   |                | .01    |         | -2.80337       | 30  |            | Averaged      |
| 1,2,3-Trichlorobenzene | 0.8146            | 0.78039   |                | .01    |         | -4.19961       | 30  |            | Averaged      |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A321.D  
Acq On : 24 Aug 2011 17:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-11|ICV|1|VOA|1|VOA8260BL|  
Misc : ICV 5ML n/a MIX[A] 0808-01B+0822-01  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 25 11:42:18 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |          |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|----------|
| Internal Standards            |      |        |        |        |          |         |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1251369  | 50.00   | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 550720   | 50.00   | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 570912   | 50.00   | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1251369  | 50.00   | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 550720   | 50.00   | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 570912   | 50.00   | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |         |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 73805    | 51.58   | ug/L  | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1227003  | 50.17   | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 540953   | 50.07   | ug/L  | 0.00     |
| Target Compounds              |      |        |        |        |          |         |       |          |
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue   |
| 2) Dichlorodifluoromethane    | 85   | 4.666  | 4.666  | 0.389  | 275209   | 54.59   | ug/L  | 99       |
| 3) Chloromethane              | 50   | 5.068  | 5.068  | 0.422  | 310456   | 51.93   | ug/L  | 100      |
| 4) Vinyl chloride             | 62   | 5.365  | 5.365  | 0.447  | 290857   | 47.84   | ug/L  | 99       |
| 5) Bromomethane               | 94   | 6.125  | 6.125  | 0.510  | 340537   | 45.84   | ug/L  | 99       |
| 6) Chloroethane               | 64   | 6.327  | 6.327  | 0.527  | 232945   | 51.08   | ug/L  | 100      |
| 7) Trichlorofluoromethane     | 101  | 6.837  | 6.849  | 0.569  | 513576   | 52.48   | ug/L  | 99       |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 274781   | 46.49   | ug/L  | 100      |
| 9) Acetone                    | 43   | 7.762  | 7.762  | 0.646  | 716332   | 185.60  | ug/L  | 99       |
| 10) 1,1-Dichloroethylene      | 61   | 7.774  | 7.774  | 0.647  | 472374   | 44.59   | ug/L  | 99       |
| 11) Iodomethane               | 142  | 8.070  | 8.070  | 0.672  | 2785722  | 214.84  | ug/L  | 100      |
| 12) Acetonitrile              | 41   | 8.236  | 8.224  | 0.686  | 971537   | 1275.34 | ug/L  | 100      |
| 13) Methyl acetate            | 43   | 8.295  | 8.295  | 0.691  | 1119347  | 212.13  | ug/L  | 100      |
| 14) Carbon disulfide          | 76   | 8.212  | 8.212  | 0.684  | 4539293  | 201.71  | ug/L  | 100      |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 391187   | 44.46   | ug/L  | 99       |
| 16) tert-Butyl methyl ether   | 73   | 8.936  | 8.936  | 0.744  | 982949   | 46.14   | ug/L  | 100      |
| 17) trans-1,2-Dichloroethy... | 61   | 8.971  | 8.971  | 0.747  | 358271   | 36.45   | ug/L  | 100      |
| 18) Vinyl acetate             | 43   | 9.612  | 9.612  | 0.800  | 3109821  | 245.30  | ug/L  | 100      |
| 19) 1,1-Dichloroethane        | 63   | 9.623  | 9.623  | 0.801  | 532286   | 43.61   | ug/L  | 100      |
| 20) 2-Butanone                | 43   | 10.406 | 10.406 | 0.867  | 908327   | 165.66  | ug/L  | 99       |
| 21) cis-1,2-Dichloroethylene  | 96   | 10.465 | 10.465 | 0.872  | 436820   | 52.95   | ug/L  | 97       |
| 22) 2,2-Dichloropropane       | 77   | 10.489 | 10.489 | 0.874  | 405856   | 42.95   | ug/L  | 98       |
| 23) Bromochloromethane        | 128  | 10.797 | 10.797 | 0.899  | 191956   | 47.63   | ug/L  | 100      |
| 24) Chloroform                | 83   | 10.869 | 10.869 | 0.905  | 579727   | 45.62   | ug/L  | 99       |
| 25) 1,1,1-Trichloroethane     | 97   | 11.201 | 11.201 | 0.933  | 495413   | 45.27   | ug/L  | 100      |
| 26) Cyclohexane               | 56   | 11.307 | 11.307 | 0.942  | 516126   | 42.25   | ug/L  | 99       |
| 27) 1,1-Dichloropropene       | 75   | 11.402 | 11.402 | 0.950  | 399979   | 44.01   | ug/L  | 99       |
| 28) Carbon tetrachloride      | 117  | 11.438 | 11.438 | 0.953  | 417823   | 45.40   | ug/L  | 100      |
| 30) 1,2-Dichloroethane        | 62   | 11.663 | 11.663 | 0.971  | 392129   | 44.98   | ug/L  | 99       |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 1209685  | 44.50   | ug/L  | 100      |
| 32) Cyclohexene               | 67   | 11.829 | 11.829 | 0.985  | 599321   | 43.24   | ug/L  | 99       |
| 33) n-Butyl alcohol           | 56   | 12.185 | 12.185 | 1.015  | 1009613  | 5035.97 | ug/L  | 99       |
| 34) Trichloroethylene         | 95   | 12.481 | 12.481 | 1.040  | 319809   | 44.12   | ug/L  | 99       |
| 35) 1,2-Dichloropropane       | 63   | 12.766 | 12.766 | 1.063  | 309184   | 44.82   | ug/L  | 99       |
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 528592   | 43.69   | ug/L  | 99       |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 211986   | 47.39   | ug/L  | 100      |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 464999   | 47.08   | ug/L  | 100      |
| 39) 2-Chloroethylvinyl ether  | 63   | 13.347 | 13.347 | 1.112  | 766949   | 217.11  | ug/L  | 100      |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A321.D  
Acq On : 24 Aug 2011 17:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-11|ICV|1|VOA|1|VOA8260BL|  
Misc : ICV 5ML n/a MIX[A] 0808-01B+0822-01  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 25 11:42:18 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|-----|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 40) | cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 550310   | 46.91  | ug/L  | 100 |
| 42) | 4-Methyl-2-pentanone      | 58   | 13.715 | 13.715 | 0.877  | 642369   | 222.30 | ug/L  | 100 |
| 44) | Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 1271680  | 43.97  | ug/L  | 100 |
| 45) | trans-1,3-Dichloroprop... | 75   | 14.213 | 14.213 | 0.909  | 519043   | 47.46  | ug/L  | 98  |
| 46) | 1,1,2-Trichloroethane     | 83   | 14.462 | 14.462 | 0.925  | 252393   | 46.59  | ug/L  | 99  |
| 47) | 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 664113   | 213.94 | ug/L  | 99  |
| 48) | 1,3-Dichloropropane       | 76   | 14.663 | 14.663 | 0.938  | 480036   | 45.30  | ug/L  | 91  |
| 49) | Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 255134   | 43.09  | ug/L  | 100 |
| 50) | Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 376169   | 46.89  | ug/L  | 99  |
| 51) | 1,2-Dibromoethane         | 107  | 15.138 | 15.138 | 0.968  | 332226   | 46.99  | ug/L  | 100 |
| 52) | Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 877619   | 45.56  | ug/L  | 99  |
| 53) | 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 346930   | 47.84  | ug/L  | 98  |
| 54) | Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 1362721  | 42.63  | ug/L  | 100 |
| 55) | m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 1157775  | 88.94  | ug/L  | 100 |
| 56) | o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 613349   | 45.38  | ug/L  | 100 |
| 57) | Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 991955   | 44.60  | ug/L  | 100 |
| 59) | Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 276493   | 50.48  | ug/L  | 98  |
| 60) | Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 1517203  | 44.14  | ug/L  | 100 |
| 62) | 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 405087   | 45.99  | ug/L  | 99  |
| 63) | 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 120980   | 47.01  | ug/L  | 98  |
| 64) | Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 423525   | 45.70  | ug/L  | 99  |
| 65) | n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 1631018  | 41.17  | ug/L  | 100 |
| 66) | 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 1252789  | 43.77  | ug/L  | 100 |
| 67) | 2-Chlorotoluene           | 126  | 17.320 | 17.320 | 0.952  | 393254   | 46.19  | ug/L  | 98  |
| 68) | 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 1112609  | 42.70  | ug/L  | 99  |
| 69) | tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 300036   | 45.37  | ug/L  | 98  |
| 70) | 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 1303699  | 44.20  | ug/L  | 100 |
| 71) | sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 1696489  | 43.64  | ug/L  | 100 |
| 72) | 4-Isopropyltoluene        | 119  | 18.067 | 18.067 | 0.993  | 1437133  | 46.12  | ug/L  | 100 |
| 73) | 1,3-Dichlorobenzene       | 146  | 18.126 | 18.126 | 0.996  | 796620   | 45.21  | ug/L  | 100 |
| 74) | 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 760026   | 44.85  | ug/L  | 99  |
| 75) | n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 1391269  | 44.38  | ug/L  | 100 |
| 76) | 1,2-Dichlorobenzene       | 146  | 18.660 | 18.660 | 1.025  | 781696   | 45.39  | ug/L  | 100 |
| 77) | 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 97008    | 51.42  | ug/L  | 99  |
| 78) | 1,2,4-Trichlorobenzene    | 180  | 20.676 | 20.676 | 1.136  | 513897   | 45.56  | ug/L  | 100 |
| 79) | Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 296405   | 44.31  | ug/L  | 99  |
| 80) | Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 1101156  | 48.60  | ug/L  | 100 |
| 81) | 1,2,3-Trichlorobenzene    | 180  | 21.435 | 21.435 | 1.178  | 445533   | 47.90  | ug/L  | 99  |
| 83) | Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.   |       |     |
| 84) | 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.   |       |     |
| 85) | Acrolein                  |      | 7.536  | 7.524  | 0.628  | 0m       | N.D.   | d     |     |
| 86) | Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.   |       |     |
| 87) | Isopropyl Alcohol         |      | 7.809  | 7.928  | 0.650  | 0m       | N.D.   | d     |     |
| 88) | Allyl chloride            |      | 8.236  | 8.331  | 0.686  | 0m       | N.D.   | d     |     |
| 89) | tert-Butyl Alcohol        |      | 8.580  | 8.580  | 0.715  | 0m       | N.D.   | d     |     |
| 90) | Acrylonitrile             |      | 8.936  | 8.864  | 0.744  | 0m       | N.D.   | d     |     |
| 91) | Isopropyl ether           |      | 9.612  | 9.647  | 0.800  | 0m       | N.D.   | d     |     |
| 92) | 2-Chloro-1,3-butadiene    |      | 0.000  | 9.766  | 0.000  | 0        | N.D.   |       |     |
| 93) | Ethyl tert-butyl ether    |      | 0.000  | 10.181 | 0.000  | 0        | N.D.   |       |     |
| 94) | Ethyl acetate             |      | 10.406 | 10.454 | 0.867  | 0m       | N.D.   | d     |     |
| 95) | Propionitrile             |      | 10.418 | 10.501 | 0.868  | 0m       | N.D.   | d     |     |
| 96) | Methacrylonitrile         |      | 10.869 | 10.726 | 0.905  | 0m       | N.D.   | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A321.D  
Acq On : 24 Aug 2011 17:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-11|ICV|1|VOA|1|VOA8260BL|  
Misc : ICV 5ML n/a MIX[A] 0808-01B+0822-01  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 25 11:42:18 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

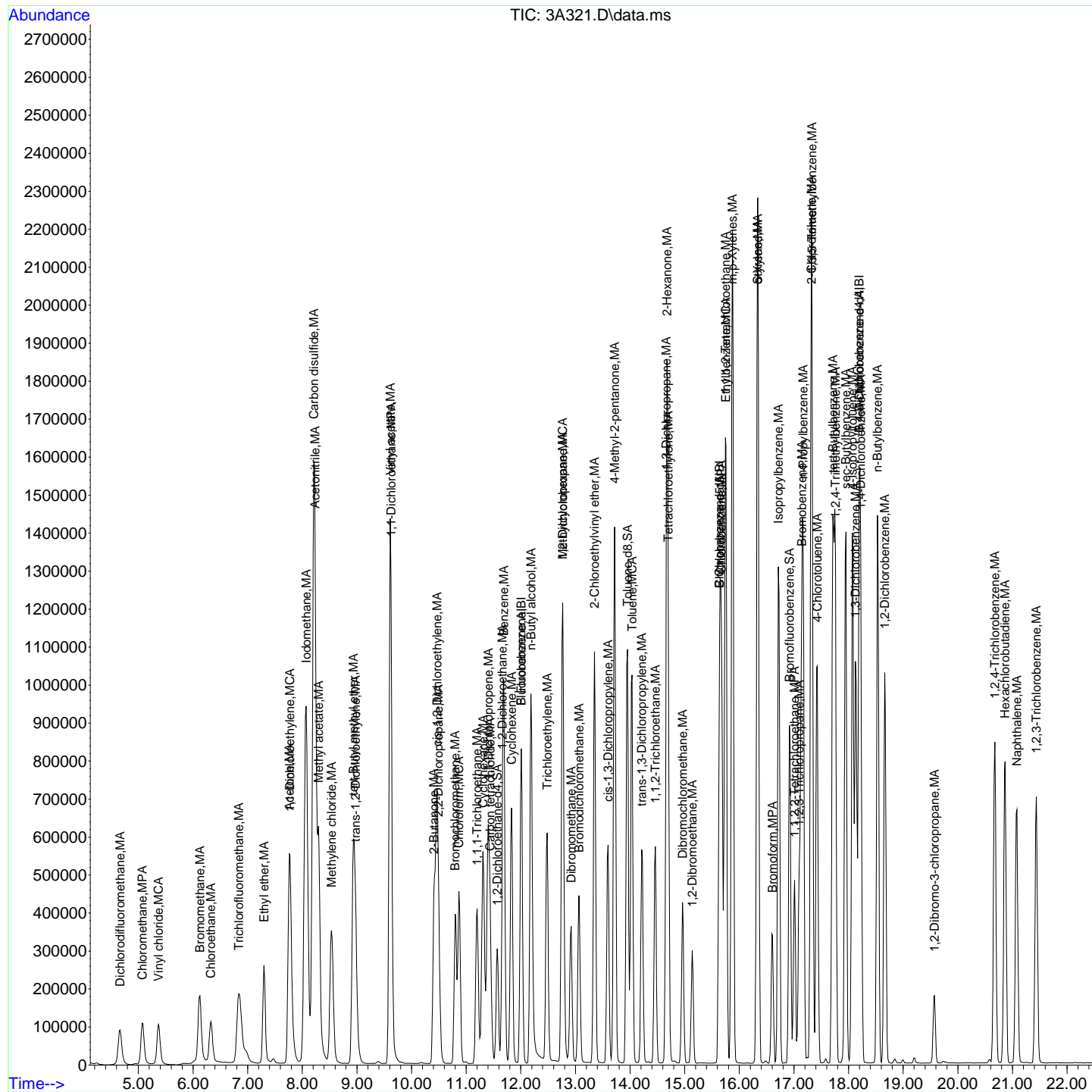
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 97) Tetrahydrofuran            |      | 10.869 | 10.869 | 0.905  | 0m       | N.D. | d     |
| 98) Isobutyl alcohol           |      | 11.307 | 11.343 | 0.942  | 0m       | N.D. | d     |
| 99) Methyl tert-amyl ether     |      | 11.687 | 11.746 | 0.973  | 0m       | N.D. | d     |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 12.908 | 12.884 | 1.075  | 0m       | N.D. | d     |
| 102) 2-Nitropropane            |      | 13.347 | 13.300 | 1.112  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 15.553 | 15.553 | 0.855  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 16.715 | 16.762 | 0.919  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 16.833 | 16.869 | 0.925  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 17.165 | 17.059 | 0.943  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 17.782 | 17.782 | 0.977  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 18.529 | 18.339 | 1.018  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 18.778 | 18.754 | 1.032  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A321.D  
Acq On : 24 Aug 2011 17:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-11|ICV|1|VOA|1|VOA8260BL|  
Misc : ICV 5ML n/a MIX[A] 0808-01B+0822-01  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 25 11:42:18 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A323.D  
Acq On : 24 Aug 2011 18:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-12|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD005S 5ML n/a MIX[B] 0728-01+0728-09+0705-  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Aug 25 11:42:25 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1274521  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 551689   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 588222   | 50.00 | ug/L  | 0.00     |

|                             |     |        |        |       |    |      |      |          |
|-----------------------------|-----|--------|--------|-------|----|------|------|----------|
| System Monitoring Compounds |     |        |        |       |    |      |      | Dev(Min) |
| 29) 1,2-Dichloroethane-d4   | 102 | 11.568 | 11.568 | 0.963 | 0d | 0.00 | ug/L |          |
| 43) Toluene-d8              | 98  | 13.952 | 13.952 | 0.892 | 0d | 0.00 | ug/L |          |
| 61) Bromofluorobenzene      | 95  | 16.916 | 16.916 | 0.930 | 0d | 0.00 | ug/L |          |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 4.562  | 4.666  | 0.380  | 0m       | N.D. | d     |        |
| 3) Chloromethane              |      | 0.000  | 5.068  | 0.000  | 0        | N.D. |       |        |
| 4) Vinyl chloride             |      | 0.000  | 5.365  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 6.125  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.327  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.849  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 7.299  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    |      | 7.773  | 7.762  | 0.647  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 0.000  | 7.774  | 0.000  | 0        | N.D. |       |        |
| 11) Iodomethane               |      | 8.058  | 8.070  | 0.671  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 8.331  | 8.224  | 0.694  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 8.319  | 8.295  | 0.693  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 8.200  | 8.212  | 0.683  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 8.532  | 8.532  | 0.711  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 0.000  | 8.936  | 0.000  | 0        | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 8.971  | 0.000  | 0        | N.D. |       |        |
| 18) Vinyl acetate             |      | 9.647  | 9.612  | 0.803  | 0m       | N.D. | d     |        |
| 19) 1,1-Dichloroethane        |      | 0.000  | 9.623  | 0.000  | 0        | N.D. |       |        |
| 20) 2-Butanone                |      | 10.465 | 10.406 | 0.872  | 0m       | N.D. | d     |        |
| 21) cis-1,2-Dichloroethylene  |      | 0.000  | 10.465 | 0.000  | 0        | N.D. |       |        |
| 22) 2,2-Dichloropropane       |      | 0.000  | 10.489 | 0.000  | 0        | N.D. |       |        |
| 23) Bromochloromethane        |      | 0.000  | 10.797 | 0.000  | 0        | N.D. |       |        |
| 24) Chloroform                |      | 0.000  | 10.869 | 0.000  | 0        | N.D. |       |        |
| 25) 1,1,1-Trichloroethane     |      | 0.000  | 11.201 | 0.000  | 0        | N.D. |       |        |
| 26) Cyclohexane               |      | 11.295 | 11.307 | 0.941  | 0m       | N.D. | d     |        |
| 27) 1,1-Dichloropropene       |      | 0.000  | 11.402 | 0.000  | 0        | N.D. |       |        |
| 28) Carbon tetrachloride      |      | 0.000  | 11.438 | 0.000  | 0        | N.D. |       |        |
| 30) 1,2-Dichloroethane        |      | 0.000  | 11.663 | 0.000  | 0        | N.D. |       |        |
| 31) Benzene                   |      | 11.687 | 11.687 | 0.973  | 0m       | N.D. | d     |        |
| 32) Cyclohexene               |      | 0.000  | 11.829 | 0.000  | 0        | N.D. |       |        |
| 33) n-Butyl alcohol           |      | 12.220 | 12.185 | 1.018  | 0m       | N.D. | d     |        |
| 34) Trichloroethylene         |      | 0.000  | 12.481 | 0.000  | 0        | N.D. |       |        |
| 35) 1,2-Dichloropropane       |      | 0.000  | 12.766 | 0.000  | 0        | N.D. |       |        |
| 36) Methylcyclohexane         |      | 0.000  | 12.766 | 0.000  | 0        | N.D. |       |        |
| 37) Dibromomethane            |      | 0.000  | 12.920 | 0.000  | 0        | N.D. |       |        |
| 38) Bromodichloromethane      |      | 0.000  | 13.062 | 0.000  | 0        | N.D. |       |        |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D. |       |        |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A323.D  
Acq On : 24 Aug 2011 18:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-12|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD005S 5ML n/a MIX[B] 0728-01+0728-09+0705-  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Aug 25 11:42:25 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc       | Units |    |
|-----|---------------------------|------|--------|--------|--------|----------|------------|-------|----|
| 40) | cis-1,3-Dichloropropylene |      | 0.000  | 13.596 | 0.000  | 0        | N.D.       |       |    |
| 42) | 4-Methyl-2-pentanone      |      | 0.000  | 13.715 | 0.000  | 0        | N.D.       |       |    |
| 44) | Toluene                   |      | 14.035 | 14.035 | 0.898  | 0m       | N.D.       | d     |    |
| 45) | trans-1,3-Dichloroprop... |      | 14.213 | 14.213 | 0.909  | 0m       | N.D.       | d     |    |
| 46) | 1,1,2-Trichloroethane     |      | 0.000  | 14.462 | 0.000  | 0        | N.D.       |       |    |
| 47) | 2-Hexanone                |      | 14.687 | 14.675 | 0.939  | 0m       | N.D.       | d     |    |
| 48) | 1,3-Dichloropropane       |      | 0.000  | 14.663 | 0.000  | 0        | N.D.       |       |    |
| 49) | Tetrachloroethylene       |      | 14.699 | 14.699 | 0.940  | 0m       | N.D.       | d     |    |
| 50) | Dibromochloromethane      |      | 0.000  | 14.960 | 0.000  | 0        | N.D.       |       |    |
| 51) | 1,2-Dibromoethane         |      | 0.000  | 15.138 | 0.000  | 0        | N.D.       |       |    |
| 52) | Chlorobenzene             |      | 15.683 | 15.671 | 1.003  | 0m       | N.D.       | d     |    |
| 53) | 1,1,1,2-Tetrachloroethane |      | 0.000  | 15.742 | 0.000  | 0        | N.D.       |       |    |
| 54) | Ethylbenzene              |      | 15.754 | 15.754 | 1.008  | 0m       | N.D.       | d     |    |
| 55) | m,p-Xylenes               |      | 15.873 | 15.873 | 1.015  | 0m       | N.D.       | d     |    |
| 56) | o-Xylene                  |      | 0.000  | 16.335 | 0.000  | 0        | N.D.       |       |    |
| 57) | Styrene                   |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.       | d     |    |
| 59) | Bromoform                 |      | 0.000  | 16.608 | 0.000  | 0        | N.D.       |       |    |
| 60) | Isopropylbenzene          |      | 16.727 | 16.715 | 0.919  | 0m       | N.D.       | d     |    |
| 62) | 1,1,2,2-Tetrachloroethane |      | 0.000  | 17.011 | 0.000  | 0        | N.D.       |       |    |
| 63) | 1,2,3-Trichloropropane    |      | 0.000  | 17.094 | 0.000  | 0        | N.D.       |       |    |
| 64) | Bromobenzene              |      | 17.142 | 17.142 | 0.942  | 0m       | N.D.       | d     |    |
| 65) | n-Propylbenzene           |      | 17.165 | 17.165 | 0.943  | 0m       | N.D.       | d     |    |
| 66) | 1,3,5-Trimethylbenzene    |      | 17.331 | 17.331 | 0.952  | 0m       | N.D.       | d     |    |
| 67) | 2-Chlorotoluene           |      | 0.000  | 17.320 | 0.000  | 0        | N.D.       |       |    |
| 68) | 4-Chlorotoluene           |      | 17.426 | 17.415 | 0.958  | 0m       | N.D.       | d     |    |
| 69) | tert-Butylbenzene         |      | 17.782 | 17.711 | 0.977  | 0m       | N.D.       | d     |    |
| 70) | 1,2,4-Trimethylbenzene    |      | 17.758 | 17.747 | 0.976  | 0m       | N.D.       | d     |    |
| 71) | sec-Butylbenzene          |      | 17.948 | 17.948 | 0.986  | 0m       | N.D.       | d     |    |
| 72) | 4-Isopropyltoluene        |      | 18.078 | 18.067 | 0.993  | 0m       | N.D.       | d     |    |
| 73) | 1,3-Dichlorobenzene       |      | 18.138 | 18.126 | 0.997  | 0m       | N.D.       | d     |    |
| 74) | 1,4-Dichlorobenzene       |      | 18.221 | 18.221 | 1.001  | 0m       | N.D.       | d     |    |
| 75) | n-Butylbenzene            |      | 18.529 | 18.529 | 1.018  | 0m       | N.D.       | d     |    |
| 76) | 1,2-Dichlorobenzene       |      | 18.660 | 18.660 | 1.025  | 0m       | N.D.       | d     |    |
| 77) | 1,2-Dibromo-3-chloropr... |      | 0.000  | 19.573 | 0.000  | 0        | N.D.       |       |    |
| 78) | 1,2,4-Trichlorobenzene    |      | 20.675 | 20.676 | 1.136  | 0m       | N.D.       | d     |    |
| 79) | Hexachlorobutadiene       |      | 0.000  | 20.865 | 0.000  | 0        | N.D.       |       |    |
| 80) | Naphthalene               |      | 21.079 | 21.079 | 1.158  | 0m       | N.D.       | d     |    |
| 81) | 1,2,3-Trichlorobenzene    |      | 21.434 | 21.435 | 1.178  | 0m       | N.D.       | d     |    |
| 83) | Chlorotrifluoroethylene   | 116  | 4.562  | 4.562  | 0.380  | 16039    | 5.98 ug/L  |       | 97 |
| 84) | 2-Chloro-1,1,1-trifluo... | 118  | 5.573  | 5.573  | 0.464  | 38560    | 5.40 ug/L  |       | 99 |
| 85) | Acrolein                  | 56   | 7.536  | 7.524  | 0.628  | 6868     | 5.48 ug/L  | #     | 62 |
| 86) | Trichlorotrifluoroethane  | 85   | 7.738  | 7.750  | 0.644  | 13514    | 5.91 ug/L  |       | 96 |
| 87) | Isopropyl Alcohol         | 45   | 7.939  | 7.928  | 0.661  | 24123    | 51.44 ug/L |       | 94 |
| 88) | Allyl chloride            | 41   | 8.331  | 8.331  | 0.694  | 62132    | Below Cal  |       | 91 |
| 89) | tert-Butyl Alcohol        | 59   | 8.580  | 8.580  | 0.715  | 48494    | 55.79 ug/L |       | 98 |
| 90) | Acrylonitrile             | 53   | 8.864  | 8.864  | 0.738  | 12295    | 5.14 ug/L  |       | 98 |
| 91) | Isopropyl ether           | 45   | 9.647  | 9.647  | 0.803  | 26099    | 1.08 ug/L  |       | 80 |
| 92) | 2-Chloro-1,3-butadiene    | 53   | 9.766  | 9.766  | 0.813  | 9688     | 1.08 ug/L  |       | 91 |
| 93) | Ethyl tert-butyl ether    | 59   | 10.181 | 10.181 | 0.848  | 24727    | 1.05 ug/L  |       | 94 |
| 94) | Ethyl acetate             | 43   | 10.465 | 10.454 | 0.872  | 37712    | 5.89 ug/L  |       | 96 |
| 95) | Propionitrile             | 54   | 10.501 | 10.501 | 0.875  | 4935     | 5.34 ug/L  |       | 54 |
| 96) | Methacrylonitrile         | 41   | 10.726 | 10.726 | 0.893  | 22425    | 5.74 ug/L  |       | 88 |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A323.D  
Acq On : 24 Aug 2011 18:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-12|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD005S 5ML n/a MIX[B] 0728-01+0728-09+0705-  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Aug 25 11:42:25 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

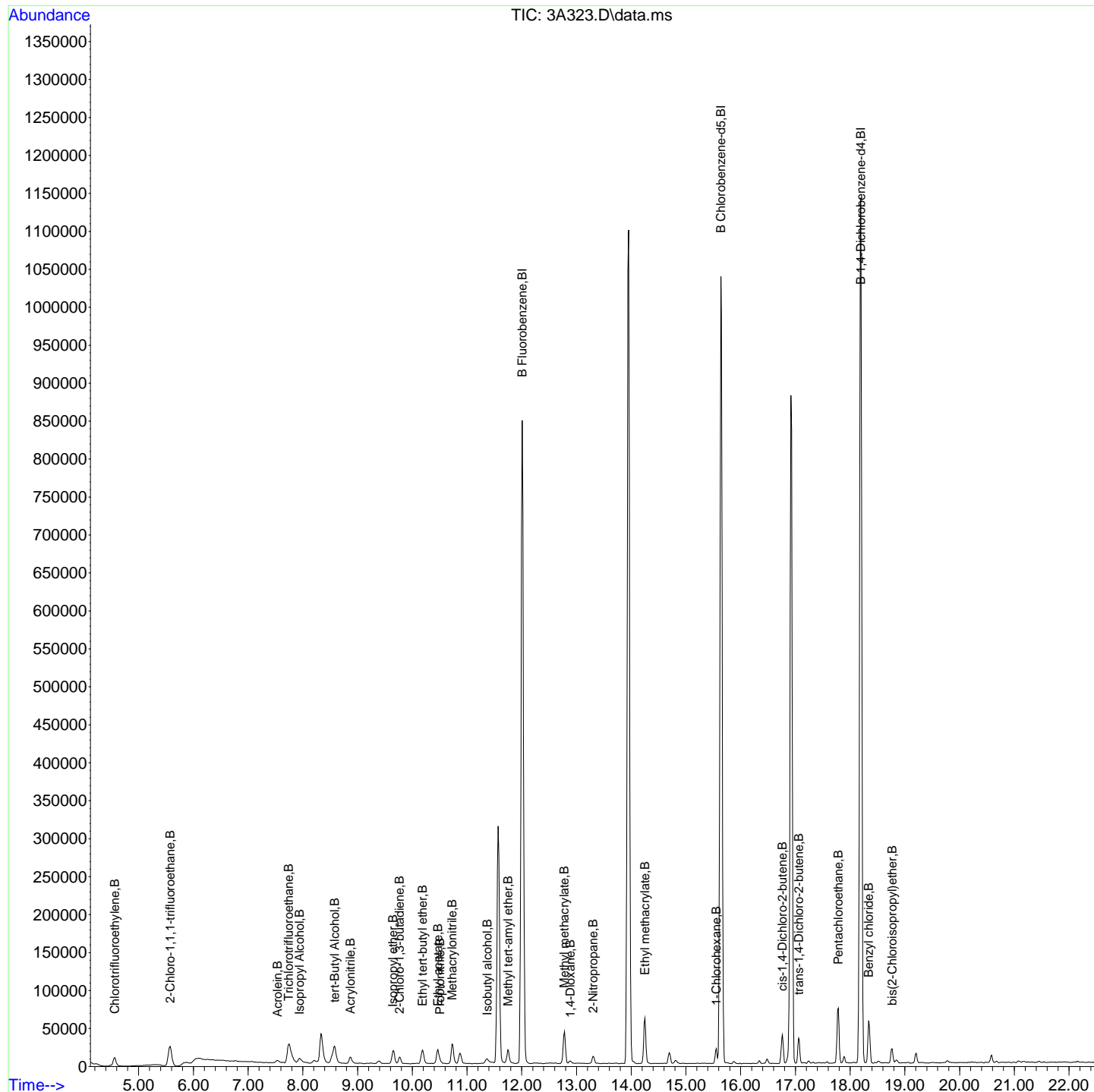
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc       | Units |    |
|--------------------------------|------|--------|--------|--------|----------|------------|-------|----|
| 97) Tetrahydrofuran            | 42   | 10.868 | 10.869 | 0.905  | 15020    | Below Cal  |       | 98 |
| 98) Isobutyl alcohol           | 41   | 11.367 | 11.343 | 0.947  | 9711     | 47.32 ug/L |       | 83 |
| 99) Methyl tert-amyl ether     | 73   | 11.746 | 11.746 | 0.978  | 22555    | 1.05 ug/L  |       | 90 |
| 100) Methyl methacrylate       | 69   | 12.778 | 12.778 | 1.064  | 25931    | 5.72 ug/L  |       | 91 |
| 101) 1,4-Dioxane               | 88   | 12.884 | 12.884 | 1.073  | 3580     | 52.51 ug/L |       | 91 |
| 102) 2-Nitropropane            | 43   | 13.299 | 13.300 | 1.108  | 11633    | 5.46 ug/L  |       | 95 |
| 104) Ethyl methacrylate        | 69   | 14.248 | 14.248 | 0.911  | 49329    | 5.60 ug/L  |       | 90 |
| 106) 1-Chlorohexane            | 55   | 15.553 | 15.553 | 0.855  | 8736     | 1.22 ug/L  |       | 88 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 16.762 | 16.762 | 0.921  | 13864    | 5.31 ug/L  |       | 91 |
| 108) Cyclohexanone             | 42   | 16.869 | 16.869 | 0.927  | 9401     | N.D.       |       |    |
| 109) trans-1,4-Dichloro-2-b... | 53   | 17.059 | 17.059 | 0.937  | 10797    | 4.96 ug/L  |       | 97 |
| 110) Pentachloroethane         | 167  | 17.782 | 17.782 | 0.977  | 24572    | 5.20 ug/L  |       | 94 |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 72893    | 5.22 ug/L  |       | 96 |
| 112) bis(2-Chloroisopropyl)... | 45   | 18.766 | 18.754 | 1.031  | 21904    | 5.39 ug/L  |       | 96 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A323.D  
Acq On : 24 Aug 2011 18:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-12|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD005S 5ML n/a MIX[B] 0728-01+0728-09+0705-  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Aug 25 11:42:25 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A324.D  
Acq On : 24 Aug 2011 19:08  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-13|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD010S 5ML n/a MIX[B] 0728-01+0728-10+0705-  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Aug 25 11:42:29 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1285204  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 554340   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 579725   | 50.00 | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 0d       | 0.00  | ug/L  |          |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 0d       | 0.00  | ug/L  |          |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 0d       | 0.00  | ug/L  |          |
| Target Compounds              |      |        |        |        |          |       |       |          |
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | QValue   |
| 2) Dichlorodifluoromethane    |      | 4.562  | 4.666  | 0.380  | 0m       | N.D.  | d     |          |
| 3) Chloromethane              |      | 5.053  | 5.068  | 0.421  | 0m       | N.D.  | d     |          |
| 4) Vinyl chloride             |      | 5.350  | 5.365  | 0.446  | 0m       | N.D.  | d     |          |
| 5) Bromomethane               |      | 0.000  | 6.125  | 0.000  | 0        | N.D.  |       |          |
| 6) Chloroethane               |      | 0.000  | 6.327  | 0.000  | 0        | N.D.  |       |          |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.849  | 0.000  | 0        | N.D.  |       |          |
| 8) Ethyl ether                |      | 0.000  | 7.299  | 0.000  | 0        | N.D.  |       |          |
| 9) Acetone                    |      | 7.785  | 7.762  | 0.648  | 0m       | N.D.  | d     |          |
| 10) 1,1-Dichloroethylene      |      | 0.000  | 7.774  | 0.000  | 0        | N.D.  |       |          |
| 11) Iodomethane               |      | 8.070  | 8.070  | 0.672  | 0m       | N.D.  | d     |          |
| 12) Acetonitrile              |      | 8.331  | 8.224  | 0.694  | 0m       | N.D.  | d     |          |
| 13) Methyl acetate            |      | 8.307  | 8.295  | 0.692  | 0m       | N.D.  | d     |          |
| 14) Carbon disulfide          |      | 8.212  | 8.212  | 0.684  | 0m       | N.D.  | d     |          |
| 15) Methylene chloride        |      | 8.532  | 8.532  | 0.711  | 0m       | N.D.  | d     |          |
| 16) tert-Butyl methyl ether   |      | 0.000  | 8.936  | 0.000  | 0        | N.D.  |       |          |
| 17) trans-1,2-Dichloroethy... |      | 8.971  | 8.971  | 0.747  | 0m       | N.D.  | d     |          |
| 18) Vinyl acetate             |      | 9.647  | 9.612  | 0.803  | 0m       | N.D.  | d     |          |
| 19) 1,1-Dichloroethane        |      | 0.000  | 9.623  | 0.000  | 0        | N.D.  |       |          |
| 20) 2-Butanone                |      | 10.181 | 10.406 | 0.848  | 0m       | N.D.  | d     |          |
| 21) cis-1,2-Dichloroethylene  |      | 0.000  | 10.465 | 0.000  | 0        | N.D.  |       |          |
| 22) 2,2-Dichloropropane       |      | 0.000  | 10.489 | 0.000  | 0        | N.D.  |       |          |
| 23) Bromochloromethane        |      | 0.000  | 10.797 | 0.000  | 0        | N.D.  |       |          |
| 24) Chloroform                |      | 0.000  | 10.869 | 0.000  | 0        | N.D.  |       |          |
| 25) 1,1,1-Trichloroethane     |      | 0.000  | 11.201 | 0.000  | 0        | N.D.  |       |          |
| 26) Cyclohexane               |      | 11.295 | 11.307 | 0.941  | 0m       | N.D.  | d     |          |
| 27) 1,1-Dichloropropene       |      | 0.000  | 11.402 | 0.000  | 0        | N.D.  |       |          |
| 28) Carbon tetrachloride      |      | 0.000  | 11.438 | 0.000  | 0        | N.D.  |       |          |
| 30) 1,2-Dichloroethane        |      | 0.000  | 11.663 | 0.000  | 0        | N.D.  |       |          |
| 31) Benzene                   |      | 11.687 | 11.687 | 0.973  | 0m       | N.D.  | d     |          |
| 32) Cyclohexene               |      | 0.000  | 11.829 | 0.000  | 0        | N.D.  |       |          |
| 33) n-Butyl alcohol           |      | 12.149 | 12.185 | 1.012  | 0m       | N.D.  | d     |          |
| 34) Trichloroethylene         |      | 12.481 | 12.481 | 1.040  | 0m       | N.D.  | d     |          |
| 35) 1,2-Dichloropropane       |      | 0.000  | 12.766 | 0.000  | 0        | N.D.  |       |          |
| 36) Methylcyclohexane         |      | 0.000  | 12.766 | 0.000  | 0        | N.D.  |       |          |
| 37) Dibromomethane            |      | 0.000  | 12.920 | 0.000  | 0        | N.D.  |       |          |
| 38) Bromodichloromethane      |      | 0.000  | 13.062 | 0.000  | 0        | N.D.  |       |          |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D.  |       |          |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A324.D  
Acq On : 24 Aug 2011 19:08  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-13|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD010S 5ML n/a MIX[B] 0728-01+0728-10+0705-  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Aug 25 11:42:29 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc       | Units |    |
|-----|---------------------------|------|--------|--------|--------|----------|------------|-------|----|
| 40) | cis-1,3-Dichloropropylene |      | 0.000  | 13.596 | 0.000  | 0        | N.D.       |       |    |
| 42) | 4-Methyl-2-pentanone      |      | 0.000  | 13.715 | 0.000  | 0        | N.D.       |       |    |
| 44) | Toluene                   |      | 14.035 | 14.035 | 0.898  | 0m       | N.D.       | d     |    |
| 45) | trans-1,3-Dichloroprop... |      | 0.000  | 14.213 | 0.000  | 0        | N.D.       |       |    |
| 46) | 1,1,2-Trichloroethane     |      | 0.000  | 14.462 | 0.000  | 0        | N.D.       |       |    |
| 47) | 2-Hexanone                |      | 14.687 | 14.675 | 0.939  | 0m       | N.D.       | d     |    |
| 48) | 1,3-Dichloropropane       |      | 0.000  | 14.663 | 0.000  | 0        | N.D.       |       |    |
| 49) | Tetrachloroethylene       |      | 14.699 | 14.699 | 0.940  | 0m       | N.D.       | d     |    |
| 50) | Dibromochloromethane      |      | 0.000  | 14.960 | 0.000  | 0        | N.D.       |       |    |
| 51) | 1,2-Dibromoethane         |      | 0.000  | 15.138 | 0.000  | 0        | N.D.       |       |    |
| 52) | Chlorobenzene             |      | 15.683 | 15.671 | 1.003  | 0m       | N.D.       | d     |    |
| 53) | 1,1,1,2-Tetrachloroethane |      | 0.000  | 15.742 | 0.000  | 0        | N.D.       |       |    |
| 54) | Ethylbenzene              |      | 15.754 | 15.754 | 1.008  | 0m       | N.D.       | d     |    |
| 55) | m,p-Xylenes               |      | 15.873 | 15.873 | 1.015  | 0m       | N.D.       | d     |    |
| 56) | o-Xylene                  |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.       | d     |    |
| 57) | Styrene                   |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.       | d     |    |
| 59) | Bromoform                 |      | 0.000  | 16.608 | 0.000  | 0        | N.D.       |       |    |
| 60) | Isopropylbenzene          |      | 16.715 | 16.715 | 0.919  | 0m       | N.D.       | d     |    |
| 62) | 1,1,2,2-Tetrachloroethane |      | 0.000  | 17.011 | 0.000  | 0        | N.D.       |       |    |
| 63) | 1,2,3-Trichloropropane    |      | 0.000  | 17.094 | 0.000  | 0        | N.D.       |       |    |
| 64) | Bromobenzene              |      | 0.000  | 17.142 | 0.000  | 0        | N.D.       |       |    |
| 65) | n-Propylbenzene           |      | 17.165 | 17.165 | 0.943  | 0m       | N.D.       | d     |    |
| 66) | 1,3,5-Trimethylbenzene    |      | 17.331 | 17.331 | 0.952  | 0m       | N.D.       | d     |    |
| 67) | 2-Chlorotoluene           |      | 0.000  | 17.320 | 0.000  | 0        | N.D.       |       |    |
| 68) | 4-Chlorotoluene           |      | 17.426 | 17.415 | 0.958  | 0m       | N.D.       | d     |    |
| 69) | tert-Butylbenzene         |      | 17.782 | 17.711 | 0.977  | 0m       | N.D.       | d     |    |
| 70) | 1,2,4-Trimethylbenzene    |      | 17.758 | 17.747 | 0.976  | 0m       | N.D.       | d     |    |
| 71) | sec-Butylbenzene          |      | 17.948 | 17.948 | 0.986  | 0m       | N.D.       | d     |    |
| 72) | 4-Isopropyltoluene        |      | 18.067 | 18.067 | 0.993  | 0m       | N.D.       | d     |    |
| 73) | 1,3-Dichlorobenzene       |      | 18.138 | 18.126 | 0.997  | 0m       | N.D.       | d     |    |
| 74) | 1,4-Dichlorobenzene       |      | 18.221 | 18.221 | 1.001  | 0m       | N.D.       | d     |    |
| 75) | n-Butylbenzene            |      | 18.529 | 18.529 | 1.018  | 0m       | N.D.       | d     |    |
| 76) | 1,2-Dichlorobenzene       |      | 18.671 | 18.660 | 1.026  | 0m       | N.D.       | d     |    |
| 77) | 1,2-Dibromo-3-chloropr... |      | 0.000  | 19.573 | 0.000  | 0        | N.D.       |       |    |
| 78) | 1,2,4-Trichlorobenzene    |      | 20.675 | 20.676 | 1.136  | 0m       | N.D.       | d     |    |
| 79) | Hexachlorobutadiene       |      | 0.000  | 20.865 | 0.000  | 0        | N.D.       |       |    |
| 80) | Naphthalene               |      | 21.079 | 21.079 | 1.158  | 0m       | N.D.       | d     |    |
| 81) | 1,2,3-Trichlorobenzene    |      | 21.434 | 21.435 | 1.178  | 0m       | N.D.       | d     |    |
| 83) | Chlorotrifluoroethylene   | 116  | 4.562  | 4.562  | 0.380  | 26895    | 9.94 ug/L  |       | 95 |
| 84) | 2-Chloro-1,1,1-trifluo... | 118  | 5.573  | 5.573  | 0.464  | 76525    | 10.63 ug/L |       | 98 |
| 85) | Acrolein                  | 56   | 7.536  | 7.524  | 0.628  | 10540    | 8.34 ug/L  | #     | 54 |
| 86) | Trichlorotrifluoroethane  | 85   | 7.738  | 7.750  | 0.644  | 24877    | 10.78 ug/L |       | 95 |
| 87) | Isopropyl Alcohol         | 45   | 7.939  | 7.928  | 0.661  | 42704    | 90.31 ug/L |       | 96 |
| 88) | Allyl chloride            | 41   | 8.331  | 8.331  | 0.694  | 114723   | Below Cal  |       | 97 |
| 89) | tert-Butyl Alcohol        | 59   | 8.580  | 8.580  | 0.715  | 85549    | 97.60 ug/L |       | 97 |
| 90) | Acrylonitrile             | 53   | 8.864  | 8.864  | 0.738  | 22497    | 9.32 ug/L  |       | 97 |
| 91) | Isopropyl ether           | 45   | 9.647  | 9.647  | 0.803  | 51552    | 2.11 ug/L  |       | 91 |
| 92) | 2-Chloro-1,3-butadiene    | 53   | 9.766  | 9.766  | 0.813  | 18190    | 2.01 ug/L  |       | 95 |
| 93) | Ethyl tert-butyl ether    | 59   | 10.181 | 10.181 | 0.848  | 50178    | 2.12 ug/L  |       | 98 |
| 94) | Ethyl acetate             | 43   | 10.465 | 10.454 | 0.872  | 63004    | 9.76 ug/L  |       | 97 |
| 95) | Propionitrile             | 54   | 10.501 | 10.501 | 0.875  | 9180     | 9.85 ug/L  |       | 70 |
| 96) | Methacrylonitrile         | 41   | 10.726 | 10.726 | 0.893  | 40360    | 10.25 ug/L |       | 91 |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A324.D  
Acq On : 24 Aug 2011 19:08  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-13|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD010S 5ML n/a MIX[B] 0728-01+0728-10+0705-  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Aug 25 11:42:29 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

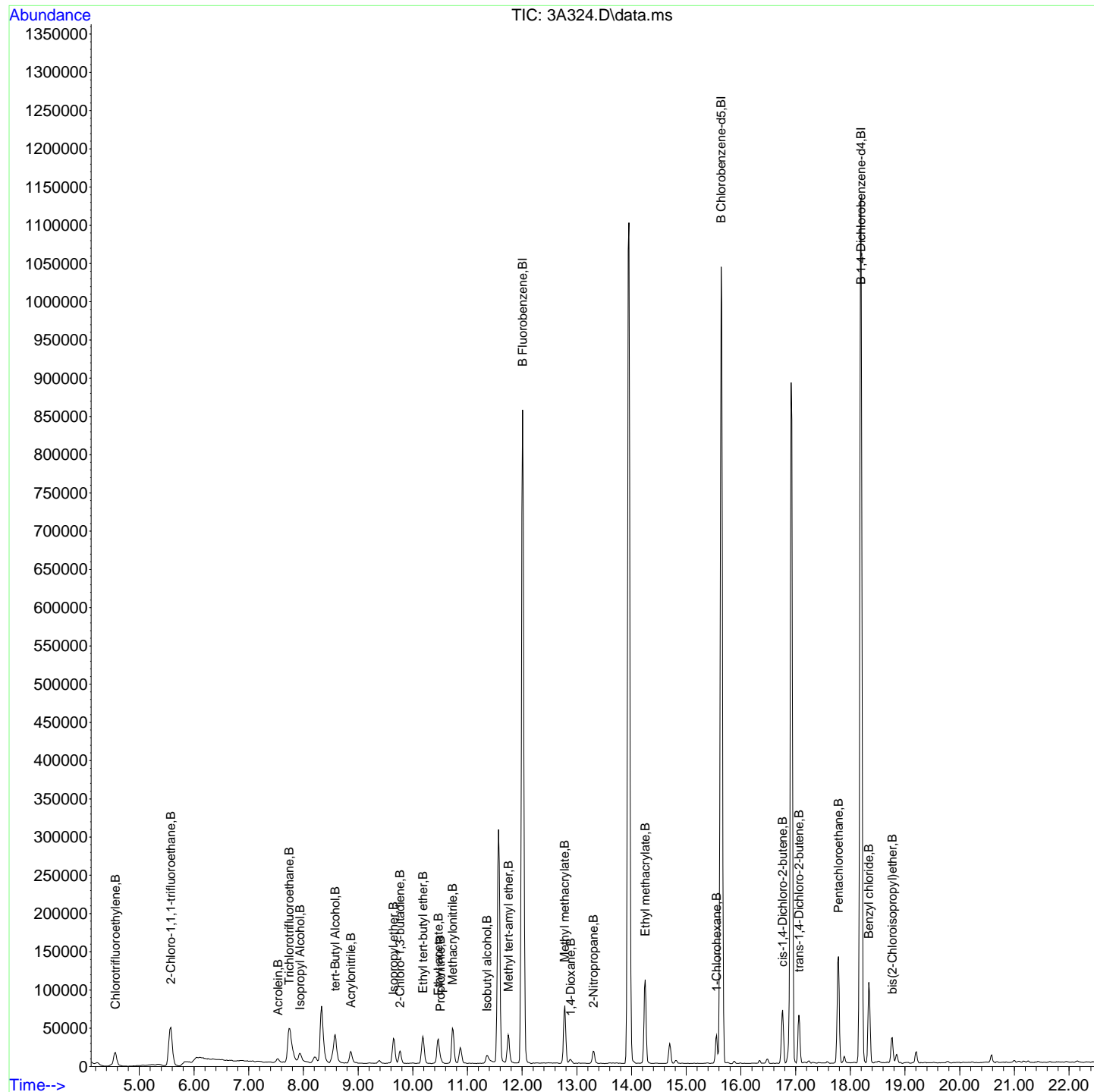
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc       | Units |    |
|--------------------------------|------|--------|--------|--------|----------|------------|-------|----|
| 97) Tetrahydrofuran            | 42   | 10.868 | 10.869 | 0.905  | 22862    | Below Cal  |       | 98 |
| 98) Isobutyl alcohol           | 41   | 11.355 | 11.343 | 0.946  | 15086    | 72.89 ug/L |       | 86 |
| 99) Methyl tert-amyl ether     | 73   | 11.746 | 11.746 | 0.978  | 44782    | 2.06 ug/L  |       | 95 |
| 100) Methyl methacrylate       | 69   | 12.778 | 12.778 | 1.064  | 46572    | 10.18 ug/L |       | 91 |
| 101) 1,4-Dioxane               | 88   | 12.884 | 12.884 | 1.073  | 6214     | 90.39 ug/L |       | 96 |
| 102) 2-Nitropropane            | 43   | 13.299 | 13.300 | 1.108  | 21062    | 9.80 ug/L  |       | 93 |
| 104) Ethyl methacrylate        | 69   | 14.248 | 14.248 | 0.911  | 93096    | 10.52 ug/L |       | 96 |
| 106) 1-Chlorohexane            | 55   | 15.553 | 15.553 | 0.855  | 16121    | 2.28 ug/L  |       | 86 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 16.762 | 16.762 | 0.921  | 25837    | 10.03 ug/L |       | 91 |
| 108) Cyclohexanone             | 42   | 16.869 | 16.869 | 0.927  | 9214     | N.D.       |       |    |
| 109) trans-1,4-Dichloro-2-b... | 53   | 17.059 | 17.059 | 0.937  | 20775    | 9.69 ug/L  |       | 97 |
| 110) Pentachloroethane         | 167  | 17.782 | 17.782 | 0.977  | 46659    | 10.01 ug/L |       | 94 |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 134090   | 9.74 ug/L  |       | 96 |
| 112) bis(2-Chloroisopropyl)... | 45   | 18.766 | 18.754 | 1.031  | 39175    | 9.78 ug/L  |       | 96 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A324.D  
Acq On : 24 Aug 2011 19:08  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-13|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD010S 5ML n/a MIX[B] 0728-01+0728-10+0705-  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Aug 25 11:42:29 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A325.D  
Acq On : 24 Aug 2011 19:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-14|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD025S 5ML n/a MIX[B] 0728-03+0728-11+0705-  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Aug 25 11:42:33 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1295429  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 548170   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 581078   | 50.00 | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 0d       | 0.00  | ug/L  |          |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 0d       | 0.00  | ug/L  |          |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 0d       | 0.00  | ug/L  |          |
| Target Compounds              |      |        |        |        |          |       |       |          |
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | QValue   |
| 2) Dichlorodifluoromethane    |      | 4.562  | 4.666  | 0.380  | 0m       | N.D.  | d     |          |
| 3) Chloromethane              |      | 0.000  | 5.068  | 0.000  | 0        | N.D.  |       |          |
| 4) Vinyl chloride             |      | 0.000  | 5.365  | 0.000  | 0        | N.D.  |       |          |
| 5) Bromomethane               |      | 0.000  | 6.125  | 0.000  | 0        | N.D.  |       |          |
| 6) Chloroethane               |      | 0.000  | 6.327  | 0.000  | 0        | N.D.  |       |          |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.849  | 0.000  | 0        | N.D.  |       |          |
| 8) Ethyl ether                |      | 0.000  | 7.299  | 0.000  | 0        | N.D.  |       |          |
| 9) Acetone                    |      | 7.774  | 7.762  | 0.647  | 0m       | N.D.  | d     |          |
| 10) 1,1-Dichloroethylene      |      | 0.000  | 7.774  | 0.000  | 0        | N.D.  |       |          |
| 11) Iodomethane               |      | 0.000  | 8.070  | 0.000  | 0        | N.D.  |       |          |
| 12) Acetonitrile              |      | 8.331  | 8.224  | 0.694  | 0m       | N.D.  | d     |          |
| 13) Methyl acetate            |      | 8.307  | 8.295  | 0.692  | 0m       | N.D.  | d     |          |
| 14) Carbon disulfide          |      | 8.331  | 8.212  | 0.694  | 0m       | N.D.  | d     |          |
| 15) Methylene chloride        |      | 8.532  | 8.532  | 0.711  | 0m       | N.D.  | d     |          |
| 16) tert-Butyl methyl ether   |      | 0.000  | 8.936  | 0.000  | 0        | N.D.  |       |          |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 8.971  | 0.000  | 0        | N.D.  |       |          |
| 18) Vinyl acetate             |      | 9.647  | 9.612  | 0.803  | 0m       | N.D.  | d     |          |
| 19) 1,1-Dichloroethane        |      | 9.766  | 9.623  | 0.813  | 0m       | N.D.  | d     |          |
| 20) 2-Butanone                |      | 10.181 | 10.406 | 0.848  | 0m       | N.D.  | d     |          |
| 21) cis-1,2-Dichloroethylene  |      | 0.000  | 10.465 | 0.000  | 0        | N.D.  |       |          |
| 22) 2,2-Dichloropropane       |      | 0.000  | 10.489 | 0.000  | 0        | N.D.  |       |          |
| 23) Bromochloromethane        |      | 0.000  | 10.797 | 0.000  | 0        | N.D.  |       |          |
| 24) Chloroform                |      | 0.000  | 10.869 | 0.000  | 0        | N.D.  |       |          |
| 25) 1,1,1-Trichloroethane     |      | 0.000  | 11.201 | 0.000  | 0        | N.D.  |       |          |
| 26) Cyclohexane               |      | 11.355 | 11.307 | 0.946  | 0m       | N.D.  | d     |          |
| 27) 1,1-Dichloropropene       |      | 0.000  | 11.402 | 0.000  | 0        | N.D.  |       |          |
| 28) Carbon tetrachloride      |      | 0.000  | 11.438 | 0.000  | 0        | N.D.  |       |          |
| 30) 1,2-Dichloroethane        |      | 0.000  | 11.663 | 0.000  | 0        | N.D.  |       |          |
| 31) Benzene                   |      | 11.675 | 11.687 | 0.972  | 0m       | N.D.  | d     |          |
| 32) Cyclohexene               |      | 0.000  | 11.829 | 0.000  | 0        | N.D.  |       |          |
| 33) n-Butyl alcohol           |      | 12.209 | 12.185 | 1.017  | 0m       | N.D.  | d     |          |
| 34) Trichloroethylene         |      | 0.000  | 12.481 | 0.000  | 0        | N.D.  |       |          |
| 35) 1,2-Dichloropropane       |      | 0.000  | 12.766 | 0.000  | 0        | N.D.  |       |          |
| 36) Methylcyclohexane         |      | 0.000  | 12.766 | 0.000  | 0        | N.D.  |       |          |
| 37) Dibromomethane            |      | 0.000  | 12.920 | 0.000  | 0        | N.D.  |       |          |
| 38) Bromodichloromethane      |      | 0.000  | 13.062 | 0.000  | 0        | N.D.  |       |          |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D.  |       |          |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A325.D  
Acq On : 24 Aug 2011 19:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-14|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD025S 5ML n/a MIX[B] 0728-03+0728-11+0705-  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Aug 25 11:42:33 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|-----|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 40) | cis-1,3-Dichloropropylene |      | 0.000  | 13.596 | 0.000  | 0        | N.D.   |       |     |
| 42) | 4-Methyl-2-pentanone      |      | 0.000  | 13.715 | 0.000  | 0        | N.D.   |       |     |
| 44) | Toluene                   |      | 14.035 | 14.035 | 0.898  | 0m       | N.D.   | d     |     |
| 45) | trans-1,3-Dichloroprop... |      | 0.000  | 14.213 | 0.000  | 0        | N.D.   |       |     |
| 46) | 1,1,2-Trichloroethane     |      | 0.000  | 14.462 | 0.000  | 0        | N.D.   |       |     |
| 47) | 2-Hexanone                |      | 14.687 | 14.675 | 0.939  | 0m       | N.D.   | d     |     |
| 48) | 1,3-Dichloropropane       |      | 0.000  | 14.663 | 0.000  | 0        | N.D.   |       |     |
| 49) | Tetrachloroethylene       |      | 14.699 | 14.699 | 0.940  | 0m       | N.D.   | d     |     |
| 50) | Dibromochloromethane      |      | 0.000  | 14.960 | 0.000  | 0        | N.D.   |       |     |
| 51) | 1,2-Dibromoethane         |      | 0.000  | 15.138 | 0.000  | 0        | N.D.   |       |     |
| 52) | Chlorobenzene             |      | 15.671 | 15.671 | 1.002  | 0m       | N.D.   | d     |     |
| 53) | 1,1,1,2-Tetrachloroethane |      | 0.000  | 15.742 | 0.000  | 0        | N.D.   |       |     |
| 54) | Ethylbenzene              |      | 15.754 | 15.754 | 1.008  | 0m       | N.D.   | d     |     |
| 55) | m,p-Xylenes               |      | 15.873 | 15.873 | 1.015  | 0m       | N.D.   | d     |     |
| 56) | o-Xylene                  |      | 0.000  | 16.335 | 0.000  | 0        | N.D.   |       |     |
| 57) | Styrene                   |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.   | d     |     |
| 59) | Bromoform                 |      | 0.000  | 16.608 | 0.000  | 0        | N.D.   |       |     |
| 60) | Isopropylbenzene          |      | 16.727 | 16.715 | 0.919  | 0m       | N.D.   | d     |     |
| 62) | 1,1,2,2-Tetrachloroethane |      | 0.000  | 17.011 | 0.000  | 0        | N.D.   |       |     |
| 63) | 1,2,3-Trichloropropane    |      | 0.000  | 17.094 | 0.000  | 0        | N.D.   |       |     |
| 64) | Bromobenzene              |      | 0.000  | 17.142 | 0.000  | 0        | N.D.   |       |     |
| 65) | n-Propylbenzene           |      | 17.165 | 17.165 | 0.943  | 0m       | N.D.   | d     |     |
| 66) | 1,3,5-Trimethylbenzene    |      | 0.000  | 17.331 | 0.000  | 0        | N.D.   |       |     |
| 67) | 2-Chlorotoluene           |      | 0.000  | 17.320 | 0.000  | 0        | N.D.   |       |     |
| 68) | 4-Chlorotoluene           |      | 17.426 | 17.415 | 0.958  | 0m       | N.D.   | d     |     |
| 69) | tert-Butylbenzene         |      | 17.782 | 17.711 | 0.977  | 0m       | N.D.   | d     |     |
| 70) | 1,2,4-Trimethylbenzene    |      | 17.747 | 17.747 | 0.975  | 0m       | N.D.   | d     |     |
| 71) | sec-Butylbenzene          |      | 0.000  | 17.948 | 0.000  | 0        | N.D.   |       |     |
| 72) | 4-Isopropyltoluene        |      | 0.000  | 18.067 | 0.000  | 0        | N.D.   |       |     |
| 73) | 1,3-Dichlorobenzene       |      | 18.138 | 18.126 | 0.997  | 0m       | N.D.   | d     |     |
| 74) | 1,4-Dichlorobenzene       |      | 18.221 | 18.221 | 1.001  | 0m       | N.D.   | d     |     |
| 75) | n-Butylbenzene            |      | 18.529 | 18.529 | 1.018  | 0m       | N.D.   | d     |     |
| 76) | 1,2-Dichlorobenzene       |      | 0.000  | 18.660 | 0.000  | 0        | N.D.   |       |     |
| 77) | 1,2-Dibromo-3-chloropr... |      | 0.000  | 19.573 | 0.000  | 0        | N.D.   |       |     |
| 78) | 1,2,4-Trichlorobenzene    |      | 20.676 | 20.676 | 1.136  | 0m       | N.D.   | d     |     |
| 79) | Hexachlorobutadiene       |      | 0.000  | 20.865 | 0.000  | 0        | N.D.   |       |     |
| 80) | Naphthalene               |      | 21.079 | 21.079 | 1.158  | 0m       | N.D.   | d     |     |
| 81) | 1,2,3-Trichlorobenzene    |      | 21.434 | 21.435 | 1.178  | 0m       | N.D.   | d     |     |
| 83) | Chlorotrifluoroethylene   | 116  | 4.562  | 4.562  | 0.380  | 70289    | 25.78  | ug/L  | 99  |
| 84) | 2-Chloro-1,1,1-trifluo... | 118  | 5.573  | 5.573  | 0.464  | 187550   | 25.84  | ug/L  | 99  |
| 85) | Acrolein                  | 56   | 7.524  | 7.524  | 0.627  | 34244    | 26.89  | ug/L  | 96  |
| 86) | Trichlorotrifluoroethane  | 85   | 7.738  | 7.750  | 0.644  | 64261    | 27.64  | ug/L  | 98  |
| 87) | Isopropyl Alcohol         | 45   | 7.928  | 7.928  | 0.660  | 127681   | 267.89 | ug/L  | 98  |
| 88) | Allyl chloride            | 41   | 8.331  | 8.331  | 0.694  | 295316   | 18.59  | ug/L  | 98  |
| 89) | tert-Butyl Alcohol        | 59   | 8.580  | 8.580  | 0.715  | 249486   | 282.37 | ug/L  | 100 |
| 90) | Acrylonitrile             | 53   | 8.864  | 8.864  | 0.738  | 67093    | 27.57  | ug/L  | 98  |
| 91) | Isopropyl ether           | 45   | 9.647  | 9.647  | 0.803  | 129136   | 5.25   | ug/L  | 96  |
| 92) | 2-Chloro-1,3-butadiene    | 53   | 9.766  | 9.766  | 0.813  | 48283    | 5.30   | ug/L  | 97  |
| 93) | Ethyl tert-butyl ether    | 59   | 10.181 | 10.181 | 0.848  | 127249   | 5.33   | ug/L  | 97  |
| 94) | Ethyl acetate             | 43   | 10.454 | 10.454 | 0.871  | 174297   | 26.79  | ug/L  | 97  |
| 95) | Propionitrile             | 54   | 10.501 | 10.501 | 0.875  | 25210    | 26.84  | ug/L  | 88  |
| 96) | Methacrylonitrile         | 41   | 10.726 | 10.726 | 0.893  | 109336   | 27.54  | ug/L  | 94  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A325.D  
Acq On : 24 Aug 2011 19:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-14|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD025S 5ML n/a MIX[B] 0728-03+0728-11+0705-  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Aug 25 11:42:33 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

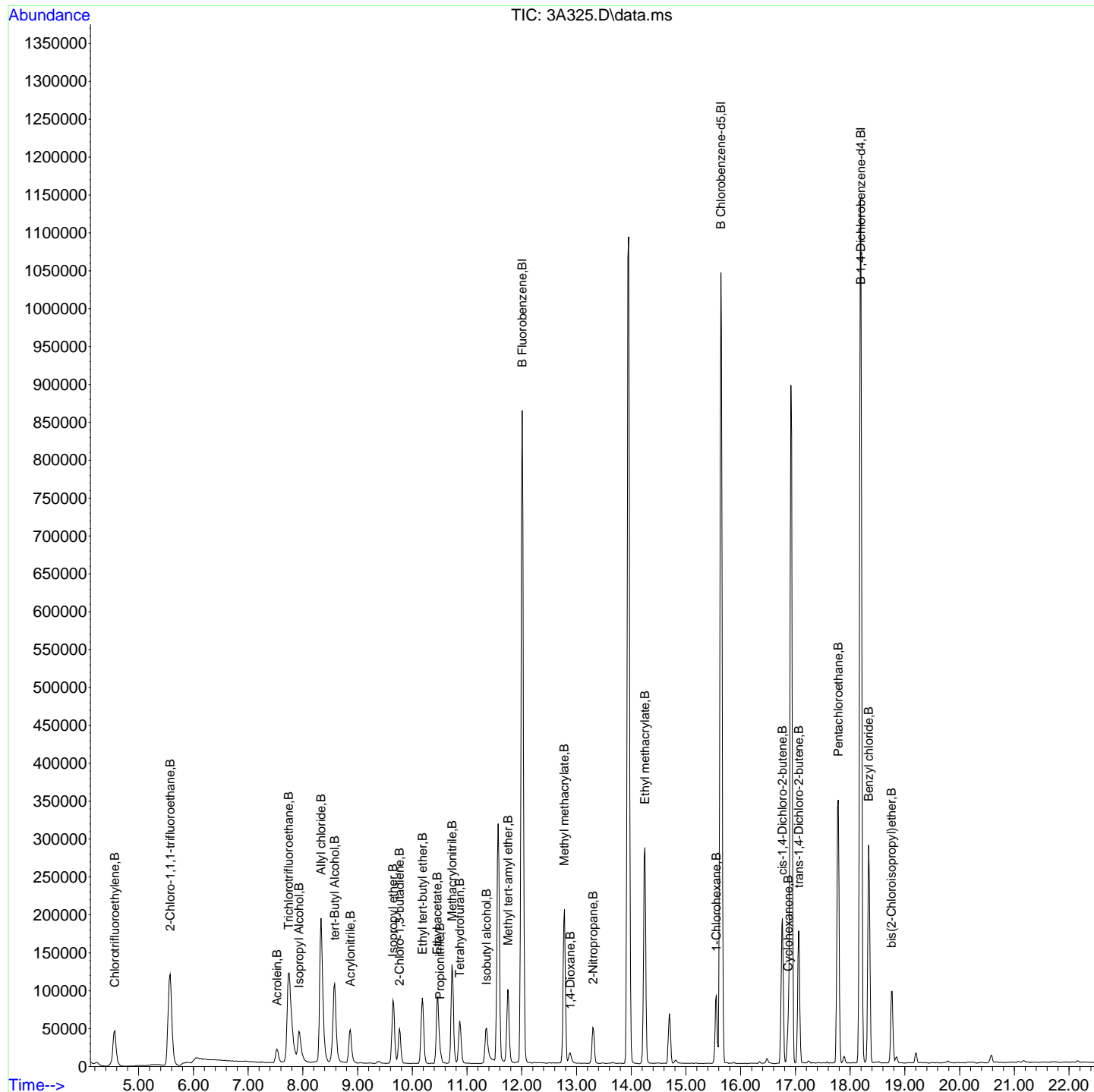
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |    |
|--------------------------------|------|--------|--------|--------|----------|--------|-------|----|
| 97) Tetrahydrofuran            | 42   | 10.869 | 10.869 | 0.905  | 59272    | 18.59  | ug/L  | 98 |
| 98) Isobutyl alcohol           | 41   | 11.355 | 11.343 | 0.946  | 53574    | 256.82 | ug/L  | 91 |
| 99) Methyl tert-amyl ether     | 73   | 11.746 | 11.746 | 0.978  | 117375   | 5.36   | ug/L  | 96 |
| 100) Methyl methacrylate       | 69   | 12.778 | 12.778 | 1.064  | 127073   | 27.56  | ug/L  | 94 |
| 101) 1,4-Dioxane               | 88   | 12.885 | 12.884 | 1.073  | 17996    | 259.72 | ug/L  | 95 |
| 102) 2-Nitropropane            | 43   | 13.300 | 13.300 | 1.108  | 57686    | 26.63  | ug/L  | 97 |
| 104) Ethyl methacrylate        | 69   | 14.248 | 14.248 | 0.911  | 246599   | 28.17  | ug/L  | 95 |
| 106) 1-Chlorohexane            | 55   | 15.553 | 15.553 | 0.855  | 36125    | 5.09   | ug/L  | 94 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 16.762 | 16.762 | 0.921  | 70622    | 27.36  | ug/L  | 91 |
| 108) Cyclohexanone             | 42   | 16.869 | 16.869 | 0.927  | 29045    | 128.24 | ug/L  | 91 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 17.059 | 17.059 | 0.937  | 58854    | 27.39  | ug/L  | 94 |
| 110) Pentachloroethane         | 167  | 17.782 | 17.782 | 0.977  | 117372   | 25.12  | ug/L  | 93 |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 365842   | 26.51  | ug/L  | 97 |
| 112) bis(2-Chloroisopropyl)... | 45   | 18.754 | 18.754 | 1.031  | 108766   | 27.09  | ug/L  | 97 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A325.D  
Acq On : 24 Aug 2011 19:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-14|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD025S 5ML n/a MIX[B] 0728-03+0728-11+0705-  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Aug 25 11:42:33 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A326.D  
Acq On : 24 Aug 2011 20:08  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-15|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD050S 5ML n/a MIX[B] 0728-04+0728-12+0705-  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 25 11:42:37 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1285803  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 543129   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 570073   | 50.00 | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 0d       | 0.00  | ug/L  |          |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 0d       | 0.00  | ug/L  |          |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 0d       | 0.00  | ug/L  |          |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 4.562  | 4.666  | 0.380  | 0m       | N.D. | d     |        |
| 3) Chloromethane              |      | 5.052  | 5.068  | 0.421  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 5.350  | 5.365  | 0.446  | 0m       | N.D. | d     |        |
| 5) Bromomethane               |      | 0.000  | 6.125  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.327  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.849  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 7.299  | 7.299  | 0.608  | 0m       | N.D. | d     |        |
| 9) Acetone                    |      | 7.773  | 7.762  | 0.647  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.761  | 7.774  | 0.646  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 8.058  | 8.070  | 0.671  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 8.331  | 8.224  | 0.694  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 8.307  | 8.295  | 0.692  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 8.212  | 8.212  | 0.684  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 8.532  | 8.532  | 0.711  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 8.935  | 8.936  | 0.744  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 8.971  | 8.971  | 0.747  | 0m       | N.D. | d     |        |
| 18) Vinyl acetate             |      | 9.647  | 9.612  | 0.803  | 0m       | N.D. | d     |        |
| 19) 1,1-Dichloroethane        |      | 9.623  | 9.623  | 0.801  | 0m       | N.D. | d     |        |
| 20) 2-Butanone                |      | 10.453 | 10.406 | 0.871  | 0m       | N.D. | d     |        |
| 21) cis-1,2-Dichloroethylene  |      | 10.453 | 10.465 | 0.871  | 0m       | N.D. | d     |        |
| 22) 2,2-Dichloropropane       |      | 10.489 | 10.489 | 0.874  | 0m       | N.D. | d     |        |
| 23) Bromochloromethane        |      | 10.809 | 10.797 | 0.900  | 0m       | N.D. | d     |        |
| 24) Chloroform                |      | 10.868 | 10.869 | 0.905  | 0m       | N.D. | d     |        |
| 25) 1,1,1-Trichloroethane     |      | 11.200 | 11.201 | 0.933  | 0m       | N.D. | d     |        |
| 26) Cyclohexane               |      | 11.343 | 11.307 | 0.945  | 0m       | N.D. | d     |        |
| 27) 1,1-Dichloropropene       |      | 11.402 | 11.402 | 0.950  | 0m       | N.D. | d     |        |
| 28) Carbon tetrachloride      |      | 11.438 | 11.438 | 0.953  | 0m       | N.D. | d     |        |
| 30) 1,2-Dichloroethane        |      | 11.675 | 11.663 | 0.972  | 0m       | N.D. | d     |        |
| 31) Benzene                   |      | 11.687 | 11.687 | 0.973  | 0m       | N.D. | d     |        |
| 32) Cyclohexene               |      | 11.829 | 11.829 | 0.985  | 0m       | N.D. | d     |        |
| 33) n-Butyl alcohol           |      | 12.232 | 12.185 | 1.019  | 0m       | N.D. | d     |        |
| 34) Trichloroethylene         |      | 12.481 | 12.481 | 1.040  | 0m       | N.D. | d     |        |
| 35) 1,2-Dichloropropane       |      | 12.766 | 12.766 | 1.063  | 0m       | N.D. | d     |        |
| 36) Methylcyclohexane         |      | 12.766 | 12.766 | 1.063  | 0m       | N.D. | d     |        |
| 37) Dibromomethane            |      | 12.920 | 12.920 | 1.076  | 0m       | N.D. | d     |        |
| 38) Bromodichloromethane      |      | 13.062 | 13.062 | 1.088  | 0m       | N.D. | d     |        |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A326.D  
Acq On : 24 Aug 2011 20:08  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-15|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD050S 5ML n/a MIX[B] 0728-04+0728-12+0705-  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 25 11:42:37 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |    |
|-----|---------------------------|------|--------|--------|--------|----------|--------|-------|----|
| 40) | cis-1,3-Dichloropropylene |      | 13.596 | 13.596 | 1.132  | 0m       | N.D.   | d     |    |
| 42) | 4-Methyl-2-pentanone      |      | 13.714 | 13.715 | 0.877  | 0m       | N.D.   | d     |    |
| 44) | Toluene                   |      | 14.035 | 14.035 | 0.898  | 0m       | N.D.   | d     |    |
| 45) | trans-1,3-Dichloroprop... |      | 14.212 | 14.213 | 0.909  | 0m       | N.D.   | d     |    |
| 46) | 1,1,2-Trichloroethane     |      | 14.462 | 14.462 | 0.925  | 0m       | N.D.   | d     |    |
| 47) | 2-Hexanone                |      | 14.675 | 14.675 | 0.939  | 0m       | N.D.   | d     |    |
| 48) | 1,3-Dichloropropane       |      | 14.675 | 14.663 | 0.939  | 0m       | N.D.   | d     |    |
| 49) | Tetrachloroethylene       |      | 14.699 | 14.699 | 0.940  | 0m       | N.D.   | d     |    |
| 50) | Dibromochloromethane      |      | 14.960 | 14.960 | 0.957  | 0m       | N.D.   | d     |    |
| 51) | 1,2-Dibromoethane         |      | 15.137 | 15.138 | 0.968  | 0m       | N.D.   | d     |    |
| 52) | Chlorobenzene             |      | 15.671 | 15.671 | 1.002  | 0m       | N.D.   | d     |    |
| 53) | 1,1,1,2-Tetrachloroethane |      | 15.742 | 15.742 | 1.007  | 0m       | N.D.   | d     |    |
| 54) | Ethylbenzene              |      | 15.754 | 15.754 | 1.008  | 0m       | N.D.   | d     |    |
| 55) | m,p-Xylenes               |      | 15.873 | 15.873 | 1.015  | 0m       | N.D.   | d     |    |
| 56) | o-Xylene                  |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.   | d     |    |
| 57) | Styrene                   |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.   | d     |    |
| 59) | Bromoform                 |      | 16.608 | 16.608 | 0.913  | 0m       | N.D.   | d     |    |
| 60) | Isopropylbenzene          |      | 16.715 | 16.715 | 0.919  | 0m       | N.D.   | d     |    |
| 62) | 1,1,2,2-Tetrachloroethane |      | 17.011 | 17.011 | 0.935  | 0m       | N.D.   | d     |    |
| 63) | 1,2,3-Trichloropropane    |      | 17.094 | 17.094 | 0.939  | 0m       | N.D.   | d     |    |
| 64) | Bromobenzene              |      | 17.142 | 17.142 | 0.942  | 0m       | N.D.   | d     |    |
| 65) | n-Propylbenzene           |      | 17.165 | 17.165 | 0.943  | 0m       | N.D.   | d     |    |
| 66) | 1,3,5-Trimethylbenzene    |      | 17.331 | 17.331 | 0.952  | 0m       | N.D.   | d     |    |
| 67) | 2-Chlorotoluene           |      | 17.319 | 17.320 | 0.952  | 0m       | N.D.   | d     |    |
| 68) | 4-Chlorotoluene           |      | 17.426 | 17.415 | 0.958  | 0m       | N.D.   | d     |    |
| 69) | tert-Butylbenzene         |      | 17.782 | 17.711 | 0.977  | 0m       | N.D.   | d     |    |
| 70) | 1,2,4-Trimethylbenzene    |      | 17.758 | 17.747 | 0.976  | 0m       | N.D.   | d     |    |
| 71) | sec-Butylbenzene          |      | 17.948 | 17.948 | 0.986  | 0m       | N.D.   | d     |    |
| 72) | 4-Isopropyltoluene        |      | 18.078 | 18.067 | 0.993  | 0m       | N.D.   | d     |    |
| 73) | 1,3-Dichlorobenzene       |      | 18.126 | 18.126 | 0.996  | 0m       | N.D.   | d     |    |
| 74) | 1,4-Dichlorobenzene       |      | 18.221 | 18.221 | 1.001  | 0m       | N.D.   | d     |    |
| 75) | n-Butylbenzene            |      | 18.529 | 18.529 | 1.018  | 0m       | N.D.   | d     |    |
| 76) | 1,2-Dichlorobenzene       |      | 18.671 | 18.660 | 1.026  | 0m       | N.D.   | d     |    |
| 77) | 1,2-Dibromo-3-chloropr... |      | 0.000  | 19.573 | 0.000  | 0        | N.D.   |       |    |
| 78) | 1,2,4-Trichlorobenzene    |      | 20.675 | 20.676 | 1.136  | 0m       | N.D.   | d     |    |
| 79) | Hexachlorobutadiene       |      | 20.865 | 20.865 | 1.147  | 0m       | N.D.   | d     |    |
| 80) | Naphthalene               |      | 21.079 | 21.079 | 1.158  | 0m       | N.D.   | d     |    |
| 81) | 1,2,3-Trichlorobenzene    |      | 21.434 | 21.435 | 1.178  | 0m       | N.D.   | d     |    |
| 83) | Chlorotrifluoroethylene   | 116  | 4.562  | 4.562  | 0.380  | 135009   | 49.90  | ug/L  | 99 |
| 84) | 2-Chloro-1,1,1-trifluo... | 118  | 5.573  | 5.573  | 0.464  | 357064   | 49.57  | ug/L  | 99 |
| 85) | Acrolein                  | 56   | 7.524  | 7.524  | 0.627  | 64551    | 51.07  | ug/L  | 95 |
| 86) | Trichlorotrifluoroethane  | 85   | 7.750  | 7.750  | 0.645  | 120738   | 52.32  | ug/L  | 97 |
| 87) | Isopropyl Alcohol         | 45   | 7.927  | 7.928  | 0.660  | 253779   | 536.45 | ug/L  | 98 |
| 88) | Allyl chloride            | 41   | 8.331  | 8.331  | 0.694  | 564331   | 52.28  | ug/L  | 98 |
| 89) | tert-Butyl Alcohol        | 59   | 8.580  | 8.580  | 0.715  | 490171   | 558.94 | ug/L  | 99 |
| 90) | Acrylonitrile             | 53   | 8.864  | 8.864  | 0.738  | 132466   | 54.85  | ug/L  | 99 |
| 91) | Isopropyl ether           | 45   | 9.647  | 9.647  | 0.803  | 256809   | 10.51  | ug/L  | 98 |
| 92) | 2-Chloro-1,3-butadiene    | 53   | 9.766  | 9.766  | 0.813  | 94297    | 10.43  | ug/L  | 98 |
| 93) | Ethyl tert-butyl ether    | 59   | 10.181 | 10.181 | 0.848  | 246603   | 10.41  | ug/L  | 99 |
| 94) | Ethyl acetate             | 43   | 10.453 | 10.454 | 0.871  | 346195   | 53.61  | ug/L  | 99 |
| 95) | Propionitrile             | 54   | 10.501 | 10.501 | 0.875  | 50810    | 54.51  | ug/L  | 95 |
| 96) | Methacrylonitrile         | 41   | 10.726 | 10.726 | 0.893  | 216205   | 54.86  | ug/L  | 97 |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A326.D  
Acq On : 24 Aug 2011 20:08  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-15|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD050S 5ML n/a MIX[B] 0728-04+0728-12+0705-  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 25 11:42:37 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

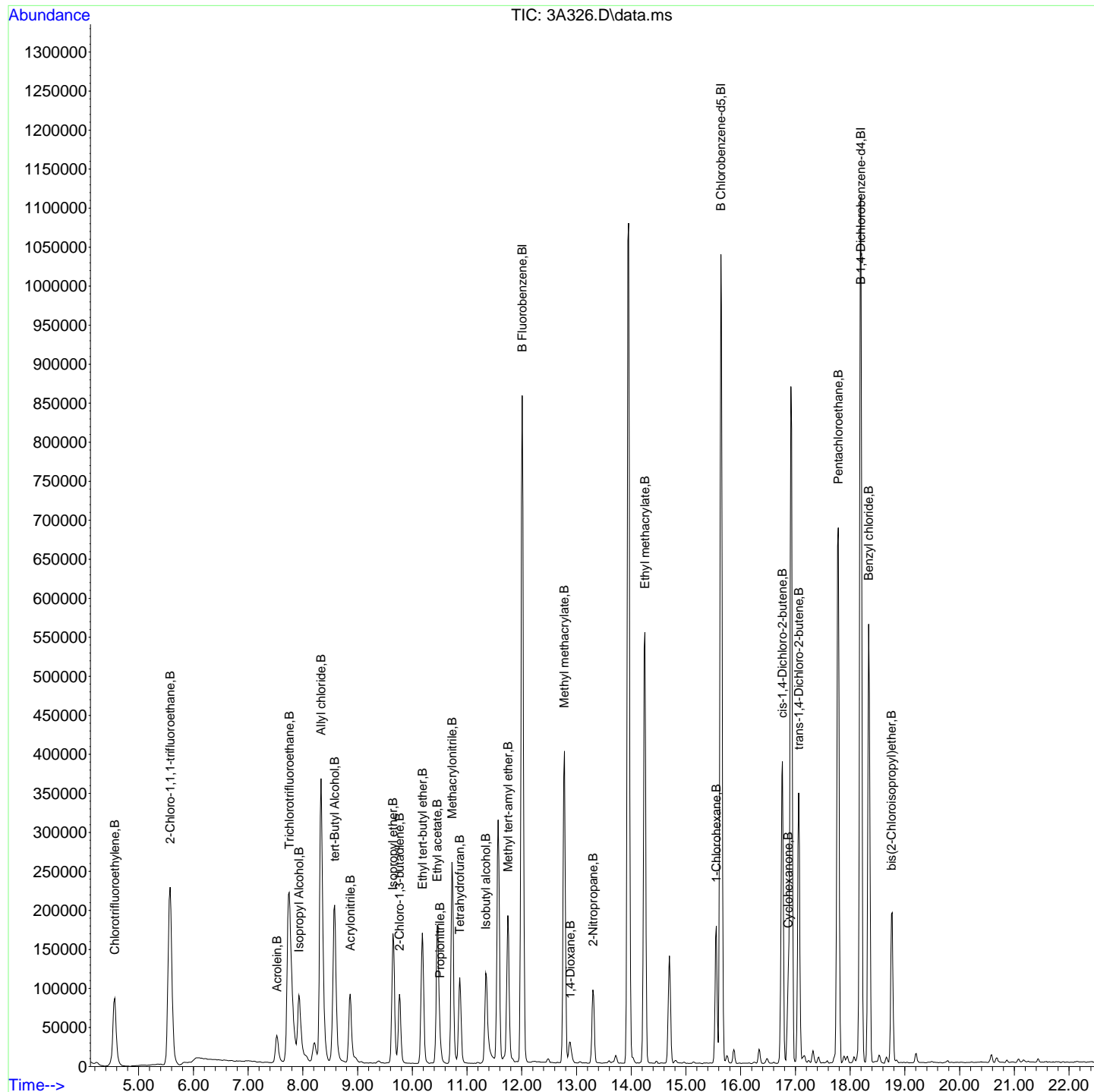
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |    |
|--------------------------------|------|--------|--------|--------|----------|--------|-------|----|
| 97) Tetrahydrofuran            | 42   | 10.868 | 10.869 | 0.905  | 116822   | 53.48  | ug/L  | 97 |
| 98) Isobutyl alcohol           | 41   | 11.343 | 11.343 | 0.945  | 112328   | 542.50 | ug/L  | 97 |
| 99) Methyl tert-amyl ether     | 73   | 11.746 | 11.746 | 0.978  | 226811   | 10.44  | ug/L  | 97 |
| 100) Methyl methacrylate       | 69   | 12.778 | 12.778 | 1.064  | 249445   | 54.50  | ug/L  | 95 |
| 101) 1,4-Dioxane               | 88   | 12.884 | 12.884 | 1.073  | 37713    | 548.35 | ug/L  | 99 |
| 102) 2-Nitropropane            | 43   | 13.299 | 13.300 | 1.108  | 114406   | 53.21  | ug/L  | 98 |
| 104) Ethyl methacrylate        | 69   | 14.248 | 14.248 | 0.911  | 482694   | 55.65  | ug/L  | 96 |
| 106) 1-Chlorohexane            | 55   | 15.552 | 15.553 | 0.855  | 68352    | 9.83   | ug/L  | 97 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 16.762 | 16.762 | 0.921  | 141384   | 55.83  | ug/L  | 94 |
| 108) Cyclohexanone             | 42   | 16.869 | 16.869 | 0.927  | 51990    | 266.41 | ug/L  | 99 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 17.059 | 17.059 | 0.937  | 116579   | 55.31  | ug/L  | 97 |
| 110) Pentachloroethane         | 167  | 17.782 | 17.782 | 0.977  | 235978   | 51.49  | ug/L  | 96 |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 714137   | 52.75  | ug/L  | 97 |
| 112) bis(2-Chloroisopropyl)... | 45   | 18.754 | 18.754 | 1.031  | 216199   | 54.89  | ug/L  | 98 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A326.D  
Acq On : 24 Aug 2011 20:08  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-15|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD050S 5ML n/a MIX[B] 0728-04+0728-12+0705-  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 25 11:42:37 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A327.D  
Acq On : 24 Aug 2011 20:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-16|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD100S 5ML n/a MIX[B] 0728-05+0728-13+0705-  
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Aug 25 11:42:41 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1268631  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 548708   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 576007   | 50.00 | ug/L  | 0.00     |

|                             |     |        |        |       |    |      |      |          |
|-----------------------------|-----|--------|--------|-------|----|------|------|----------|
| System Monitoring Compounds |     |        |        |       |    |      |      | Dev(Min) |
| 29) 1,2-Dichloroethane-d4   | 102 | 11.568 | 11.568 | 0.963 | 0d | 0.00 | ug/L |          |
| 43) Toluene-d8              | 98  | 13.952 | 13.952 | 0.892 | 0d | 0.00 | ug/L |          |
| 61) Bromofluorobenzene      | 95  | 16.916 | 16.916 | 0.930 | 0d | 0.00 | ug/L |          |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 4.562  | 4.666  | 0.380  | 0m       | N.D. | d     |        |
| 3) Chloromethane              |      | 0.000  | 5.068  | 0.000  | 0        | N.D. |       |        |
| 4) Vinyl chloride             |      | 5.350  | 5.365  | 0.446  | 0m       | N.D. | d     |        |
| 5) Bromomethane               |      | 0.000  | 6.125  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.327  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.849  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 7.299  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    |      | 7.773  | 7.762  | 0.647  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.761  | 7.774  | 0.646  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 8.058  | 8.070  | 0.671  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 8.331  | 8.224  | 0.694  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 8.307  | 8.295  | 0.692  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 8.212  | 8.212  | 0.684  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 8.532  | 8.532  | 0.711  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 8.935  | 8.936  | 0.744  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 8.971  | 8.971  | 0.747  | 0m       | N.D. | d     |        |
| 18) Vinyl acetate             |      | 9.647  | 9.612  | 0.803  | 0m       | N.D. | d     |        |
| 19) 1,1-Dichloroethane        |      | 9.766  | 9.623  | 0.813  | 0m       | N.D. | d     |        |
| 20) 2-Butanone                |      | 10.181 | 10.406 | 0.848  | 0m       | N.D. | d     |        |
| 21) cis-1,2-Dichloroethylene  |      | 0.000  | 10.465 | 0.000  | 0        | N.D. |       |        |
| 22) 2,2-Dichloropropane       |      | 0.000  | 10.489 | 0.000  | 0        | N.D. |       |        |
| 23) Bromochloromethane        |      | 0.000  | 10.797 | 0.000  | 0        | N.D. |       |        |
| 24) Chloroform                |      | 10.868 | 10.869 | 0.905  | 0m       | N.D. | d     |        |
| 25) 1,1,1-Trichloroethane     |      | 0.000  | 11.201 | 0.000  | 0        | N.D. |       |        |
| 26) Cyclohexane               |      | 11.343 | 11.307 | 0.945  | 0m       | N.D. | d     |        |
| 27) 1,1-Dichloropropene       |      | 11.343 | 11.402 | 0.945  | 0m       | N.D. | d     |        |
| 28) Carbon tetrachloride      |      | 0.000  | 11.438 | 0.000  | 0        | N.D. |       |        |
| 30) 1,2-Dichloroethane        |      | 11.675 | 11.663 | 0.972  | 0m       | N.D. | d     |        |
| 31) Benzene                   |      | 11.687 | 11.687 | 0.973  | 0m       | N.D. | d     |        |
| 32) Cyclohexene               |      | 11.829 | 11.829 | 0.985  | 0m       | N.D. | d     |        |
| 33) n-Butyl alcohol           |      | 12.256 | 12.185 | 1.021  | 0m       | N.D. | d     |        |
| 34) Trichloroethylene         |      | 12.481 | 12.481 | 1.040  | 0m       | N.D. | d     |        |
| 35) 1,2-Dichloropropane       |      | 0.000  | 12.766 | 0.000  | 0        | N.D. |       |        |
| 36) Methylcyclohexane         |      | 12.778 | 12.766 | 1.064  | 0m       | N.D. | d     |        |
| 37) Dibromomethane            |      | 0.000  | 12.920 | 0.000  | 0        | N.D. |       |        |
| 38) Bromodichloromethane      |      | 0.000  | 13.062 | 0.000  | 0        | N.D. |       |        |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D. |       |        |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A327.D  
Acq On : 24 Aug 2011 20:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-16|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD100S 5ML n/a MIX[B] 0728-05+0728-13+0705-  
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Aug 25 11:42:41 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 40) cis-1,3-Dichloropropylene |      | 13.596 | 13.596 | 1.132  | 0m       | N.D.    | d     |     |
| 42) 4-Methyl-2-pentanone      |      | 13.714 | 13.715 | 0.877  | 0m       | N.D.    | d     |     |
| 44) Toluene                   |      | 14.035 | 14.035 | 0.898  | 0m       | N.D.    | d     |     |
| 45) trans-1,3-Dichloroprop... |      | 14.224 | 14.213 | 0.910  | 0m       | N.D.    | d     |     |
| 46) 1,1,2-Trichloroethane     |      | 0.000  | 14.462 | 0.000  | 0        | N.D.    |       |     |
| 47) 2-Hexanone                |      | 14.675 | 14.675 | 0.939  | 0m       | N.D.    | d     |     |
| 48) 1,3-Dichloropropane       |      | 14.675 | 14.663 | 0.939  | 0m       | N.D.    | d     |     |
| 49) Tetrachloroethylene       |      | 14.699 | 14.699 | 0.940  | 0m       | N.D.    | d     |     |
| 50) Dibromochloromethane      |      | 0.000  | 14.960 | 0.000  | 0        | N.D.    |       |     |
| 51) 1,2-Dibromoethane         |      | 15.137 | 15.138 | 0.968  | 0m       | N.D.    | d     |     |
| 52) Chlorobenzene             |      | 15.671 | 15.671 | 1.002  | 0m       | N.D.    | d     |     |
| 53) 1,1,1,2-Tetrachloroethane |      | 0.000  | 15.742 | 0.000  | 0        | N.D.    |       |     |
| 54) Ethylbenzene              |      | 15.754 | 15.754 | 1.008  | 0m       | N.D.    | d     |     |
| 55) m,p-Xylenes               |      | 15.873 | 15.873 | 1.015  | 0m       | N.D.    | d     |     |
| 56) o-Xylene                  |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.    | d     |     |
| 57) Styrene                   |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.    | d     |     |
| 59) Bromoform                 |      | 0.000  | 16.608 | 0.000  | 0        | N.D.    |       |     |
| 60) Isopropylbenzene          |      | 16.727 | 16.715 | 0.919  | 0m       | N.D.    | d     |     |
| 62) 1,1,2,2-Tetrachloroethane |      | 17.059 | 17.011 | 0.937  | 0m       | N.D.    | d     |     |
| 63) 1,2,3-Trichloropropane    |      | 0.000  | 17.094 | 0.000  | 0        | N.D.    |       |     |
| 64) Bromobenzene              |      | 17.142 | 17.142 | 0.942  | 0m       | N.D.    | d     |     |
| 65) n-Propylbenzene           |      | 17.165 | 17.165 | 0.943  | 0m       | N.D.    | d     |     |
| 66) 1,3,5-Trimethylbenzene    |      | 17.331 | 17.331 | 0.952  | 0m       | N.D.    | d     |     |
| 67) 2-Chlorotoluene           |      | 17.319 | 17.320 | 0.952  | 0m       | N.D.    | d     |     |
| 68) 4-Chlorotoluene           |      | 17.426 | 17.415 | 0.958  | 0m       | N.D.    | d     |     |
| 69) tert-Butylbenzene         |      | 17.782 | 17.711 | 0.977  | 0m       | N.D.    | d     |     |
| 70) 1,2,4-Trimethylbenzene    |      | 17.758 | 17.747 | 0.976  | 0m       | N.D.    | d     |     |
| 71) sec-Butylbenzene          |      | 17.948 | 17.948 | 0.986  | 0m       | N.D.    | d     |     |
| 72) 4-Isopropyltoluene        |      | 18.078 | 18.067 | 0.993  | 0m       | N.D.    | d     |     |
| 73) 1,3-Dichlorobenzene       |      | 18.138 | 18.126 | 0.997  | 0m       | N.D.    | d     |     |
| 74) 1,4-Dichlorobenzene       |      | 18.221 | 18.221 | 1.001  | 0m       | N.D.    | d     |     |
| 75) n-Butylbenzene            |      | 18.529 | 18.529 | 1.018  | 0m       | N.D.    | d     |     |
| 76) 1,2-Dichlorobenzene       |      | 18.659 | 18.660 | 1.025  | 0m       | N.D.    | d     |     |
| 77) 1,2-Dibromo-3-chloropr... |      | 0.000  | 19.573 | 0.000  | 0        | N.D.    |       |     |
| 78) 1,2,4-Trichlorobenzene    |      | 20.675 | 20.676 | 1.136  | 0m       | N.D.    | d     |     |
| 79) Hexachlorobutadiene       |      | 0.000  | 20.865 | 0.000  | 0        | N.D.    |       |     |
| 80) Naphthalene               |      | 21.079 | 21.079 | 1.158  | 0m       | N.D.    | d     |     |
| 81) 1,2,3-Trichlorobenzene    |      | 21.434 | 21.435 | 1.178  | 0m       | N.D.    | d     |     |
| 83) Chlorotrifluoroethylene   | 116  | 4.562  | 4.562  | 0.380  | 271202   | 101.59  | ug/L  | 99  |
| 84) 2-Chloro-1,1,1-trifluo... | 118  | 5.573  | 5.573  | 0.464  | 686514   | 96.59   | ug/L  | 99  |
| 85) Acrolein                  | 56   | 7.524  | 7.524  | 0.627  | 131811   | 105.70  | ug/L  | 99  |
| 86) Trichlorotrifluoroethane  | 85   | 7.738  | 7.750  | 0.644  | 234790   | 103.11  | ug/L  | 99  |
| 87) Isopropyl Alcohol         | 45   | 7.927  | 7.928  | 0.660  | 506748   | 1085.68 | ug/L  | 100 |
| 88) Allyl chloride            | 41   | 8.331  | 8.331  | 0.694  | 1080822  | 118.26  | ug/L  | 98  |
| 89) tert-Butyl Alcohol        | 59   | 8.580  | 8.580  | 0.715  | 940684   | 1087.18 | ug/L  | 100 |
| 90) Acrylonitrile             | 53   | 8.864  | 8.864  | 0.738  | 264728   | 111.10  | ug/L  | 99  |
| 91) Isopropyl ether           | 45   | 9.647  | 9.647  | 0.803  | 500626   | 20.77   | ug/L  | 99  |
| 92) 2-Chloro-1,3-butadiene    | 53   | 9.766  | 9.766  | 0.813  | 183233   | 20.54   | ug/L  | 99  |
| 93) Ethyl tert-butyl ether    | 59   | 10.181 | 10.181 | 0.848  | 485996   | 20.79   | ug/L  | 99  |
| 94) Ethyl acetate             | 43   | 10.453 | 10.454 | 0.871  | 651724   | 102.28  | ug/L  | 99  |
| 95) Propionitrile             | 54   | 10.501 | 10.501 | 0.875  | 100625   | 109.41  | ug/L  | 98  |
| 96) Methacrylonitrile         | 41   | 10.726 | 10.726 | 0.893  | 416847   | 107.21  | ug/L  | 98  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A327.D  
Acq On : 24 Aug 2011 20:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-16|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD100S 5ML n/a MIX[B] 0728-05+0728-13+0705-  
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Aug 25 11:42:41 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

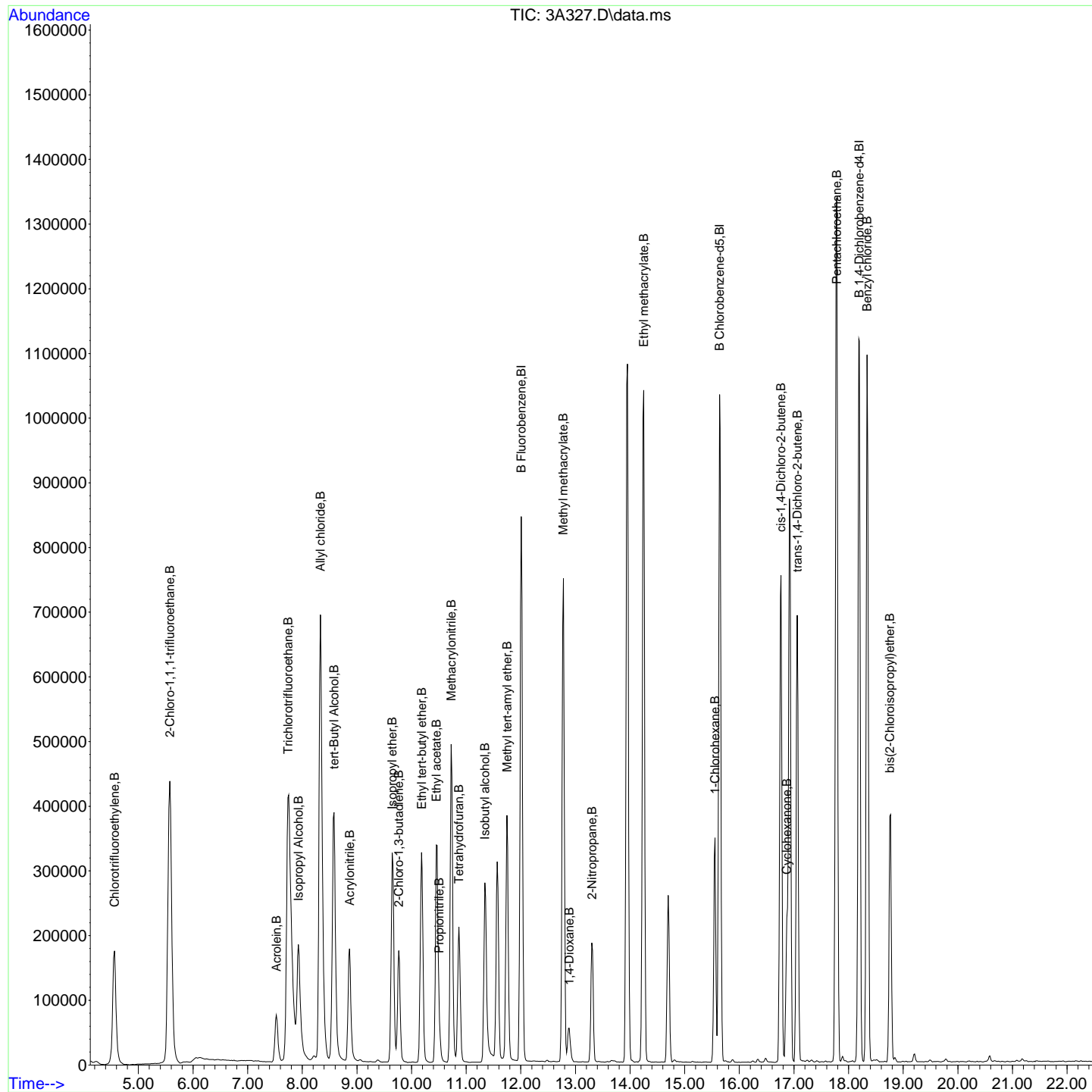
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |    |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|----|
| 97) Tetrahydrofuran            | 42   | 10.868 | 10.869 | 0.905  | 223672   | 119.59  | ug/L  | 99 |
| 98) Isobutyl alcohol           | 41   | 11.343 | 11.343 | 0.945  | 240025   | 1174.92 | ug/L  | 99 |
| 99) Methyl tert-amyl ether     | 73   | 11.746 | 11.746 | 0.978  | 447712   | 20.89   | ug/L  | 98 |
| 100) Methyl methacrylate       | 69   | 12.778 | 12.778 | 1.064  | 482640   | 106.89  | ug/L  | 97 |
| 101) 1,4-Dioxane               | 88   | 12.884 | 12.884 | 1.073  | 72695    | 1071.29 | ug/L  | 99 |
| 102) 2-Nitropropane            | 43   | 13.299 | 13.300 | 1.108  | 227254   | 107.12  | ug/L  | 98 |
| 104) Ethyl methacrylate        | 69   | 14.248 | 14.248 | 0.911  | 917111   | 104.66  | ug/L  | 97 |
| 106) 1-Chlorohexane            | 55   | 15.553 | 15.553 | 0.855  | 136889   | 19.48   | ug/L  | 96 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 16.762 | 16.762 | 0.921  | 271659   | 106.18  | ug/L  | 96 |
| 108) Cyclohexanone             | 42   | 16.869 | 16.869 | 0.927  | 101123   | 549.23  | ug/L  | 99 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 17.059 | 17.059 | 0.937  | 230509   | 108.23  | ug/L  | 97 |
| 110) Pentachloroethane         | 167  | 17.782 | 17.782 | 0.977  | 475451   | 102.67  | ug/L  | 98 |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 1398623  | 102.24  | ug/L  | 98 |
| 112) bis(2-Chloroisopropyl)... | 45   | 18.754 | 18.754 | 1.031  | 429066   | 107.82  | ug/L  | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A327.D  
Acq On : 24 Aug 2011 20:38  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-16|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD100S 5ML n/a MIX[B] 0728-05+0728-13+0705-  
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Aug 25 11:42:41 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A328.D  
Acq On : 24 Aug 2011 21:08  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-17|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD250S 5ML n/a MIX[B] 0728-06+0728-14+0705-  
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Aug 25 11:42:45 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1305692  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 543665   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 574251   | 50.00 | ug/L  | 0.00     |

|                             |     |        |        |       |    |      |      |          |
|-----------------------------|-----|--------|--------|-------|----|------|------|----------|
| System Monitoring Compounds |     |        |        |       |    |      |      | Dev(Min) |
| 29) 1,2-Dichloroethane-d4   | 102 | 11.568 | 11.568 | 0.963 | 0d | 0.00 | ug/L |          |
| 43) Toluene-d8              | 98  | 13.952 | 13.952 | 0.892 | 0d | 0.00 | ug/L |          |
| 61) Bromofluorobenzene      | 95  | 16.916 | 16.916 | 0.930 | 0d | 0.00 | ug/L |          |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 4.562  | 4.666  | 0.380  | 0m       | N.D. | d     |        |
| 3) Chloromethane              |      | 0.000  | 5.068  | 0.000  | 0        | N.D. |       |        |
| 4) Vinyl chloride             |      | 5.350  | 5.365  | 0.446  | 0m       | N.D. | d     |        |
| 5) Bromomethane               |      | 0.000  | 6.125  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.327  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.849  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 7.299  | 7.299  | 0.608  | 0m       | N.D. | d     |        |
| 9) Acetone                    |      | 7.773  | 7.762  | 0.647  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.762  | 7.774  | 0.646  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 8.058  | 8.070  | 0.671  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 8.331  | 8.224  | 0.694  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 8.307  | 8.295  | 0.692  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 8.212  | 8.212  | 0.684  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 8.532  | 8.532  | 0.711  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 8.936  | 8.936  | 0.744  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 8.971  | 8.971  | 0.747  | 0m       | N.D. | d     |        |
| 18) Vinyl acetate             |      | 9.647  | 9.612  | 0.803  | 0m       | N.D. | d     |        |
| 19) 1,1-Dichloroethane        |      | 9.623  | 9.623  | 0.801  | 0m       | N.D. | d     |        |
| 20) 2-Butanone                |      | 10.454 | 10.406 | 0.871  | 0m       | N.D. | d     |        |
| 21) cis-1,2-Dichloroethylene  |      | 10.465 | 10.465 | 0.872  | 0m       | N.D. | d     |        |
| 22) 2,2-Dichloropropane       |      | 0.000  | 10.489 | 0.000  | 0        | N.D. |       |        |
| 23) Bromochloromethane        |      | 0.000  | 10.797 | 0.000  | 0        | N.D. |       |        |
| 24) Chloroform                |      | 10.869 | 10.869 | 0.905  | 0m       | N.D. | d     |        |
| 25) 1,1,1-Trichloroethane     |      | 0.000  | 11.201 | 0.000  | 0        | N.D. |       |        |
| 26) Cyclohexane               |      | 11.343 | 11.307 | 0.945  | 0m       | N.D. | d     |        |
| 27) 1,1-Dichloropropene       |      | 11.343 | 11.402 | 0.945  | 0m       | N.D. | d     |        |
| 28) Carbon tetrachloride      |      | 11.438 | 11.438 | 0.953  | 0m       | N.D. | d     |        |
| 30) 1,2-Dichloroethane        |      | 11.663 | 11.663 | 0.971  | 0m       | N.D. | d     |        |
| 31) Benzene                   |      | 11.687 | 11.687 | 0.973  | 0m       | N.D. | d     |        |
| 32) Cyclohexene               |      | 11.829 | 11.829 | 0.985  | 0m       | N.D. | d     |        |
| 33) n-Butyl alcohol           |      | 12.220 | 12.185 | 1.018  | 0m       | N.D. | d     |        |
| 34) Trichloroethylene         |      | 12.481 | 12.481 | 1.040  | 0m       | N.D. | d     |        |
| 35) 1,2-Dichloropropane       |      | 0.000  | 12.766 | 0.000  | 0        | N.D. |       |        |
| 36) Methylcyclohexane         |      | 12.778 | 12.766 | 1.064  | 0m       | N.D. | d     |        |
| 37) Dibromomethane            |      | 0.000  | 12.920 | 0.000  | 0        | N.D. |       |        |
| 38) Bromodichloromethane      |      | 13.062 | 13.062 | 1.088  | 0m       | N.D. | d     |        |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A328.D  
Acq On : 24 Aug 2011 21:08  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-17|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD250S 5ML n/a MIX[B] 0728-06+0728-14+0705-  
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Aug 25 11:42:45 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|-----|---------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 40) | cis-1,3-Dichloropropylene |      | 13.596 | 13.596 | 1.132  | 0m       | N.D.    | d     |     |
| 42) | 4-Methyl-2-pentanone      |      | 13.715 | 13.715 | 0.877  | 0m       | N.D.    | d     |     |
| 44) | Toluene                   |      | 14.035 | 14.035 | 0.898  | 0m       | N.D.    | d     |     |
| 45) | trans-1,3-Dichloroprop... |      | 14.225 | 14.213 | 0.910  | 0m       | N.D.    | d     |     |
| 46) | 1,1,2-Trichloroethane     |      | 14.462 | 14.462 | 0.925  | 0m       | N.D.    | d     |     |
| 47) | 2-Hexanone                |      | 14.675 | 14.675 | 0.939  | 0m       | N.D.    | d     |     |
| 48) | 1,3-Dichloropropane       |      | 14.711 | 14.663 | 0.941  | 0m       | N.D.    | d     |     |
| 49) | Tetrachloroethylene       |      | 14.699 | 14.699 | 0.940  | 0m       | N.D.    | d     |     |
| 50) | Dibromochloromethane      |      | 0.000  | 14.960 | 0.000  | 0        | N.D.    |       |     |
| 51) | 1,2-Dibromoethane         |      | 15.138 | 15.138 | 0.968  | 0m       | N.D.    | d     |     |
| 52) | Chlorobenzene             |      | 15.671 | 15.671 | 1.002  | 0m       | N.D.    | d     |     |
| 53) | 1,1,1,2-Tetrachloroethane |      | 15.742 | 15.742 | 1.007  | 0m       | N.D.    | d     |     |
| 54) | Ethylbenzene              |      | 15.754 | 15.754 | 1.008  | 0m       | N.D.    | d     |     |
| 55) | m,p-Xylenes               |      | 15.873 | 15.873 | 1.015  | 0m       | N.D.    | d     |     |
| 56) | o-Xylene                  |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.    | d     |     |
| 57) | Styrene                   |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.    | d     |     |
| 59) | Bromoform                 |      | 16.608 | 16.608 | 0.913  | 0m       | N.D.    | d     |     |
| 60) | Isopropylbenzene          |      | 16.715 | 16.715 | 0.919  | 0m       | N.D.    | d     |     |
| 62) | 1,1,2,2-Tetrachloroethane |      | 17.059 | 17.011 | 0.937  | 0m       | N.D.    | d     |     |
| 63) | 1,2,3-Trichloropropane    |      | 0.000  | 17.094 | 0.000  | 0        | N.D.    |       |     |
| 64) | Bromobenzene              |      | 17.142 | 17.142 | 0.942  | 0m       | N.D.    | d     |     |
| 65) | n-Propylbenzene           |      | 17.165 | 17.165 | 0.943  | 0m       | N.D.    | d     |     |
| 66) | 1,3,5-Trimethylbenzene    |      | 17.331 | 17.331 | 0.952  | 0m       | N.D.    | d     |     |
| 67) | 2-Chlorotoluene           |      | 17.320 | 17.320 | 0.952  | 0m       | N.D.    | d     |     |
| 68) | 4-Chlorotoluene           |      | 17.426 | 17.415 | 0.958  | 0m       | N.D.    | d     |     |
| 69) | tert-Butylbenzene         |      | 17.782 | 17.711 | 0.977  | 0m       | N.D.    | d     |     |
| 70) | 1,2,4-Trimethylbenzene    |      | 17.758 | 17.747 | 0.976  | 0m       | N.D.    | d     |     |
| 71) | sec-Butylbenzene          |      | 17.948 | 17.948 | 0.986  | 0m       | N.D.    | d     |     |
| 72) | 4-Isopropyltoluene        |      | 18.079 | 18.067 | 0.993  | 0m       | N.D.    | d     |     |
| 73) | 1,3-Dichlorobenzene       |      | 18.138 | 18.126 | 0.997  | 0m       | N.D.    | d     |     |
| 74) | 1,4-Dichlorobenzene       |      | 18.221 | 18.221 | 1.001  | 0m       | N.D.    | d     |     |
| 75) | n-Butylbenzene            |      | 18.529 | 18.529 | 1.018  | 0m       | N.D.    | d     |     |
| 76) | 1,2-Dichlorobenzene       |      | 18.660 | 18.660 | 1.025  | 0m       | N.D.    | d     |     |
| 77) | 1,2-Dibromo-3-chloropr... |      | 0.000  | 19.573 | 0.000  | 0        | N.D.    |       |     |
| 78) | 1,2,4-Trichlorobenzene    |      | 20.676 | 20.676 | 1.136  | 0m       | N.D.    | d     |     |
| 79) | Hexachlorobutadiene       |      | 20.865 | 20.865 | 1.147  | 0m       | N.D.    | d     |     |
| 80) | Naphthalene               |      | 21.079 | 21.079 | 1.158  | 0m       | N.D.    | d     |     |
| 81) | 1,2,3-Trichlorobenzene    |      | 21.434 | 21.435 | 1.178  | 0m       | N.D.    | d     |     |
| 83) | Chlorotrifluoroethylene   | 116  | 4.562  | 4.562  | 0.380  | 403870   | 146.99  | ug/L  | 100 |
| 84) | 2-Chloro-1,1,1-trifluo... | 118  | 5.573  | 5.573  | 0.464  | 986469   | 134.85  | ug/L  | 100 |
| 85) | Acrolein                  | 56   | 7.524  | 7.524  | 0.627  | 292486   | 227.89  | ug/L  | 100 |
| 86) | Trichlorotrifluoroethane  | 85   | 7.750  | 7.750  | 0.645  | 542370   | 231.43  | ug/L  | 100 |
| 87) | Isopropyl Alcohol         | 45   | 7.928  | 7.928  | 0.660  | 1087617  | 2264.02 | ug/L  | 100 |
| 88) | Allyl chloride            | 41   | 8.331  | 8.331  | 0.694  | 2437766  | 280.42  | ug/L  | 100 |
| 89) | tert-Butyl Alcohol        | 59   | 8.580  | 8.580  | 0.715  | 1865868  | 2095.23 | ug/L  | 100 |
| 90) | Acrylonitrile             | 53   | 8.864  | 8.864  | 0.738  | 560015   | 228.35  | ug/L  | 100 |
| 91) | Isopropyl ether           | 45   | 9.647  | 9.647  | 0.803  | 1156745  | 46.63   | ug/L  | 100 |
| 92) | 2-Chloro-1,3-butadiene    | 53   | 9.766  | 9.766  | 0.813  | 434077   | 47.27   | ug/L  | 100 |
| 93) | Ethyl tert-butyl ether    | 59   | 10.181 | 10.181 | 0.848  | 1130002  | 46.96   | ug/L  | 100 |
| 94) | Ethyl acetate             | 43   | 10.454 | 10.454 | 0.871  | 1336781  | 203.85  | ug/L  | 100 |
| 95) | Propionitrile             | 54   | 10.501 | 10.501 | 0.875  | 208348   | 220.11  | ug/L  | 100 |
| 96) | Methacrylonitrile         | 41   | 10.726 | 10.726 | 0.893  | 867221   | 216.71  | ug/L  | 100 |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A328.D  
Acq On : 24 Aug 2011 21:08  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-17|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD250S 5ML n/a MIX[B] 0728-06+0728-14+0705-  
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Aug 25 11:42:45 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

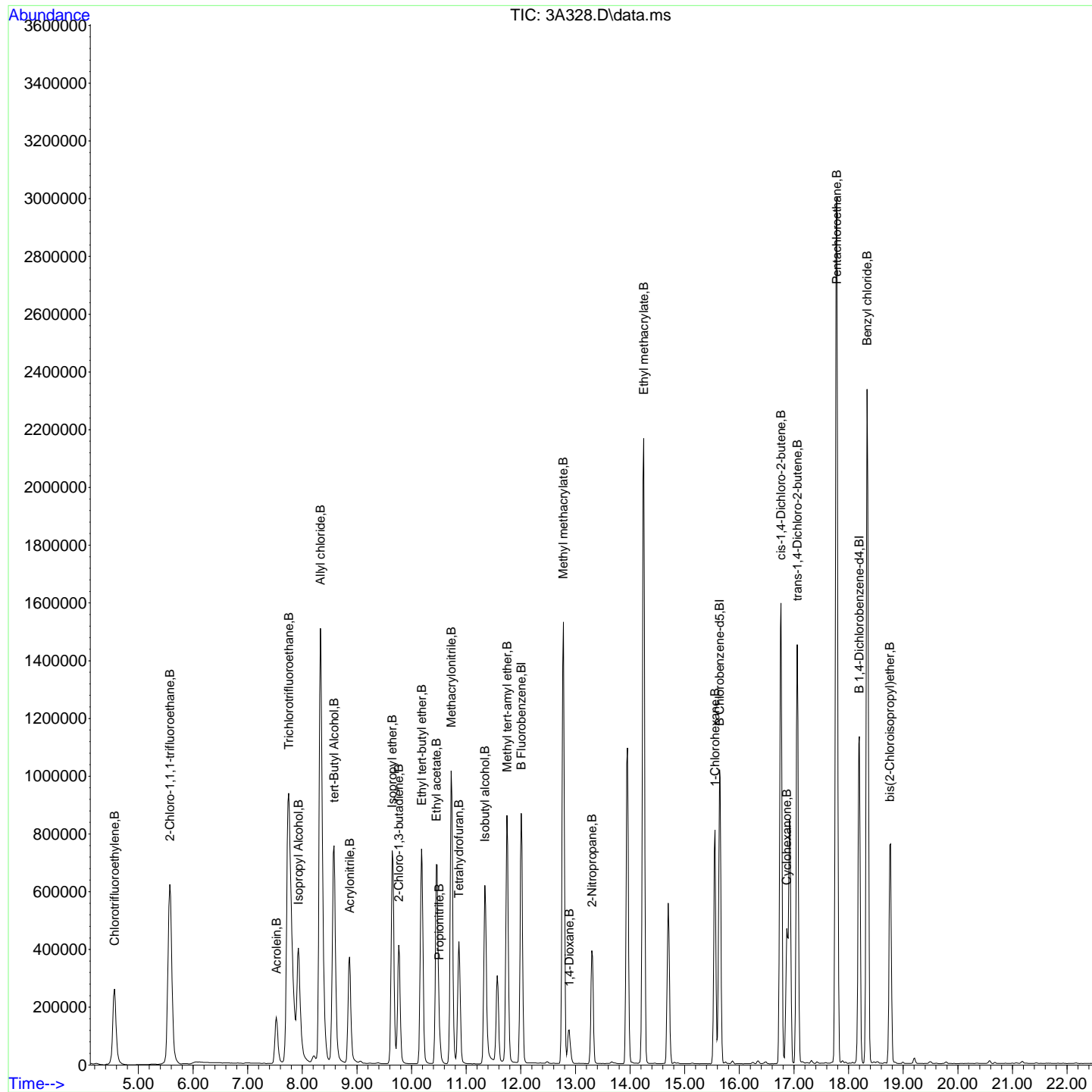
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 97) Tetrahydrofuran            | 42   | 10.869 | 10.869 | 0.905  | 450754   | 250.26  | ug/L  | 100 |
| 98) Isobutyl alcohol           | 41   | 11.343 | 11.343 | 0.945  | 498453   | 2370.67 | ug/L  | 100 |
| 99) Methyl tert-amyl ether     | 73   | 11.746 | 11.746 | 0.978  | 1037758  | 47.06   | ug/L  | 100 |
| 100) Methyl methacrylate       | 69   | 12.778 | 12.778 | 1.064  | 1001133  | 215.42  | ug/L  | 100 |
| 101) 1,4-Dioxane               | 88   | 12.884 | 12.884 | 1.073  | 160855   | 2303.21 | ug/L  | 100 |
| 102) 2-Nitropropane            | 43   | 13.300 | 13.300 | 1.108  | 488393   | 223.68  | ug/L  | 100 |
| 104) Ethyl methacrylate        | 69   | 14.248 | 14.248 | 0.911  | 1928259  | 222.09  | ug/L  | 100 |
| 106) 1-Chlorohexane            | 55   | 15.553 | 15.553 | 0.855  | 310623   | 44.33   | ug/L  | 100 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 16.762 | 16.762 | 0.921  | 563841   | 221.05  | ug/L  | 100 |
| 108) Cyclohexanone             | 42   | 16.869 | 16.869 | 0.927  | 216689   | 1225.71 | ug/L  | 100 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 17.059 | 17.059 | 0.937  | 479590   | 225.88  | ug/L  | 100 |
| 110) Pentachloroethane         | 167  | 17.782 | 17.782 | 0.977  | 1107922  | 239.98  | ug/L  | 100 |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 2969472  | 217.74  | ug/L  | 100 |
| 112) bis(2-Chloroisopropyl)... | 45   | 18.754 | 18.754 | 1.031  | 862866   | 217.49  | ug/L  | 100 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
Data File : 3A328.D  
Acq On : 24 Aug 2011 21:08  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110824-17|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD250S 5ML n/a MIX[B] 0728-06+0728-14+0705-  
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Aug 25 11:42:45 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082511V3\  
Data File : 3A402.D  
Acq On : 25 Aug 2011 09:22  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110825-01|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD300S 5ML n/a MIX[B] 0728-07+0728-15+0705-  
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Aug 25 11:43:04 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.635 | 15.636 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1355140  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.635 | 15.636 | 1.000  | 577749   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 629784   | 50.00 | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 0d       | 0.00  | ug/L  |          |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 0d       | 0.00  | ug/L  |          |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 0d       | 0.00  | ug/L  |          |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 4.562  | 4.666  | 0.380  | 0m       | N.D. | d     |        |
| 3) Chloromethane              |      | 0.000  | 5.068  | 0.000  | 0        | N.D. |       |        |
| 4) Vinyl chloride             |      | 5.350  | 5.365  | 0.446  | 0m       | N.D. | d     |        |
| 5) Bromomethane               |      | 0.000  | 6.125  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.327  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.849  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 7.299  | 7.299  | 0.608  | 0m       | N.D. | d     |        |
| 9) Acetone                    |      | 7.773  | 7.762  | 0.647  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.750  | 7.774  | 0.645  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 0.000  | 8.070  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              |      | 8.331  | 8.224  | 0.694  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 8.295  | 8.295  | 0.691  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 8.331  | 8.212  | 0.694  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 8.532  | 8.532  | 0.711  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 8.935  | 8.936  | 0.744  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 8.971  | 0.000  | 0        | N.D. |       |        |
| 18) Vinyl acetate             |      | 9.647  | 9.612  | 0.803  | 0m       | N.D. | d     |        |
| 19) 1,1-Dichloroethane        |      | 9.765  | 9.623  | 0.813  | 0m       | N.D. | d     |        |
| 20) 2-Butanone                |      | 10.453 | 10.406 | 0.871  | 0m       | N.D. | d     |        |
| 21) cis-1,2-Dichloroethylene  |      | 0.000  | 10.465 | 0.000  | 0        | N.D. |       |        |
| 22) 2,2-Dichloropropane       |      | 0.000  | 10.489 | 0.000  | 0        | N.D. |       |        |
| 23) Bromochloromethane        |      | 0.000  | 10.797 | 0.000  | 0        | N.D. |       |        |
| 24) Chloroform                |      | 10.868 | 10.869 | 0.905  | 0m       | N.D. | d     |        |
| 25) 1,1,1-Trichloroethane     |      | 0.000  | 11.201 | 0.000  | 0        | N.D. |       |        |
| 26) Cyclohexane               |      | 11.343 | 11.307 | 0.945  | 0m       | N.D. | d     |        |
| 27) 1,1-Dichloropropene       |      | 11.343 | 11.402 | 0.945  | 0m       | N.D. | d     |        |
| 28) Carbon tetrachloride      |      | 0.000  | 11.438 | 0.000  | 0        | N.D. |       |        |
| 30) 1,2-Dichloroethane        |      | 11.746 | 11.663 | 0.978  | 0m       | N.D. | d     |        |
| 31) Benzene                   |      | 11.687 | 11.687 | 0.973  | 0m       | N.D. | d     |        |
| 32) Cyclohexene               |      | 11.746 | 11.829 | 0.978  | 0m       | N.D. | d     |        |
| 33) n-Butyl alcohol           |      | 12.232 | 12.185 | 1.019  | 0m       | N.D. | d     |        |
| 34) Trichloroethylene         |      | 12.481 | 12.481 | 1.040  | 0m       | N.D. | d     |        |
| 35) 1,2-Dichloropropane       |      | 0.000  | 12.766 | 0.000  | 0        | N.D. |       |        |
| 36) Methylcyclohexane         |      | 12.778 | 12.766 | 1.064  | 0m       | N.D. | d     |        |
| 37) Dibromomethane            |      | 0.000  | 12.920 | 0.000  | 0        | N.D. |       |        |
| 38) Bromodichloromethane      |      | 0.000  | 13.062 | 0.000  | 0        | N.D. |       |        |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D. |       |        |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082511V3\  
Data File : 3A402.D  
Acq On : 25 Aug 2011 09:22  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110825-01|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD300S 5ML n/a MIX[B] 0728-07+0728-15+0705-  
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Aug 25 11:43:04 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|-----|---------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 40) | cis-1,3-Dichloropropylene |      | 0.000  | 13.596 | 0.000  | 0        | N.D.    |       |     |
| 42) | 4-Methyl-2-pentanone      |      | 0.000  | 13.715 | 0.000  | 0        | N.D.    |       |     |
| 44) | Toluene                   |      | 14.035 | 14.035 | 0.898  | 0m       | N.D.    | d     |     |
| 45) | trans-1,3-Dichloroprop... |      | 0.000  | 14.213 | 0.000  | 0        | N.D.    |       |     |
| 46) | 1,1,2-Trichloroethane     |      | 0.000  | 14.462 | 0.000  | 0        | N.D.    |       |     |
| 47) | 2-Hexanone                |      | 14.675 | 14.675 | 0.939  | 0m       | N.D.    | d     |     |
| 48) | 1,3-Dichloropropane       |      | 14.711 | 14.663 | 0.941  | 0m       | N.D.    | d     |     |
| 49) | Tetrachloroethylene       |      | 14.699 | 14.699 | 0.940  | 0m       | N.D.    | d     |     |
| 50) | Dibromochloromethane      |      | 0.000  | 14.960 | 0.000  | 0        | N.D.    |       |     |
| 51) | 1,2-Dibromoethane         |      | 15.137 | 15.138 | 0.968  | 0m       | N.D.    | d     |     |
| 52) | Chlorobenzene             |      | 0.000  | 15.671 | 0.000  | 0        | N.D.    |       |     |
| 53) | 1,1,1,2-Tetrachloroethane |      | 15.742 | 15.742 | 1.007  | 0m       | N.D.    | d     |     |
| 54) | Ethylbenzene              |      | 15.754 | 15.754 | 1.008  | 0m       | N.D.    | d     |     |
| 55) | m,p-Xylenes               |      | 15.873 | 15.873 | 1.015  | 0m       | N.D.    | d     |     |
| 56) | o-Xylene                  |      | 0.000  | 16.335 | 0.000  | 0        | N.D.    |       |     |
| 57) | Styrene                   |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.    | d     |     |
| 59) | Bromoform                 |      | 0.000  | 16.608 | 0.000  | 0        | N.D.    |       |     |
| 60) | Isopropylbenzene          |      | 16.726 | 16.715 | 0.919  | 0m       | N.D.    | d     |     |
| 62) | 1,1,2,2-Tetrachloroethane |      | 17.058 | 17.011 | 0.937  | 0m       | N.D.    | d     |     |
| 63) | 1,2,3-Trichloropropane    |      | 0.000  | 17.094 | 0.000  | 0        | N.D.    |       |     |
| 64) | Bromobenzene              |      | 0.000  | 17.142 | 0.000  | 0        | N.D.    |       |     |
| 65) | n-Propylbenzene           |      | 17.058 | 17.165 | 0.937  | 0m       | N.D.    | d     |     |
| 66) | 1,3,5-Trimethylbenzene    |      | 0.000  | 17.331 | 0.000  | 0        | N.D.    |       |     |
| 67) | 2-Chlorotoluene           |      | 17.319 | 17.320 | 0.952  | 0m       | N.D.    | d     |     |
| 68) | 4-Chlorotoluene           |      | 17.426 | 17.415 | 0.958  | 0m       | N.D.    | d     |     |
| 69) | tert-Butylbenzene         |      | 17.782 | 17.711 | 0.977  | 0m       | N.D.    | d     |     |
| 70) | 1,2,4-Trimethylbenzene    |      | 17.806 | 17.747 | 0.978  | 0m       | N.D.    | d     |     |
| 71) | sec-Butylbenzene          |      | 0.000  | 17.948 | 0.000  | 0        | N.D.    |       |     |
| 72) | 4-Isopropyltoluene        |      | 0.000  | 18.067 | 0.000  | 0        | N.D.    |       |     |
| 73) | 1,3-Dichlorobenzene       |      | 18.138 | 18.126 | 0.997  | 0m       | N.D.    | d     |     |
| 74) | 1,4-Dichlorobenzene       |      | 18.221 | 18.221 | 1.001  | 0m       | N.D.    | d     |     |
| 75) | n-Butylbenzene            |      | 18.339 | 18.529 | 1.008  | 0m       | N.D.    | d     |     |
| 76) | 1,2-Dichlorobenzene       |      | 0.000  | 18.660 | 0.000  | 0        | N.D.    |       |     |
| 77) | 1,2-Dibromo-3-chloropr... |      | 0.000  | 19.573 | 0.000  | 0        | N.D.    |       |     |
| 78) | 1,2,4-Trichlorobenzene    |      | 0.000  | 20.676 | 0.000  | 0        | N.D.    |       |     |
| 79) | Hexachlorobutadiene       |      | 0.000  | 20.865 | 0.000  | 0        | N.D.    |       |     |
| 80) | Naphthalene               |      | 21.079 | 21.079 | 1.158  | 0m       | N.D.    | d     |     |
| 81) | 1,2,3-Trichlorobenzene    |      | 0.000  | 21.435 | 0.000  | 0        | N.D.    |       |     |
| 83) | Chlorotrifluoroethylene   | 116  | 4.562  | 4.562  | 0.380  | 419738   | 147.19  | ug/L  | 100 |
| 84) | 2-Chloro-1,1,1-trifluo... | 118  | 5.572  | 5.573  | 0.464  | 1232976  | 162.40  | ug/L  | 100 |
| 85) | Acrolein                  | 56   | 7.524  | 7.524  | 0.627  | 412870   | 309.95  | ug/L  | 98  |
| 86) | Trichlorotrifluoroethane  | 85   | 7.750  | 7.750  | 0.645  | 617728   | 253.96  | ug/L  | 100 |
| 87) | Isopropyl Alcohol         | 45   | 7.927  | 7.928  | 0.660  | 2102486  | 4216.91 | ug/L  | 100 |
| 88) | Allyl chloride            | 41   | 8.331  | 8.331  | 0.694  | 2747424  | 306.04  | ug/L  | 99  |
| 89) | tert-Butyl Alcohol        | 59   | 8.568  | 8.580  | 0.714  | 3518982  | 3807.37 | ug/L  | 99  |
| 90) | Acrylonitrile             | 53   | 8.864  | 8.864  | 0.738  | 735303   | 288.89  | ug/L  | 99  |
| 91) | Isopropyl ether           | 45   | 9.647  | 9.647  | 0.803  | 1895222  | 73.62   | ug/L  | 99  |
| 92) | 2-Chloro-1,3-butadiene    | 53   | 9.765  | 9.766  | 0.813  | 539411   | 56.60   | ug/L  | 98  |
| 93) | Ethyl tert-butyl ether    | 59   | 10.181 | 10.181 | 0.848  | 1852592  | 74.17   | ug/L  | 99  |
| 94) | Ethyl acetate             | 43   | 10.453 | 10.454 | 0.871  | 1763604  | 259.12  | ug/L  | 99  |
| 95) | Propionitrile             | 54   | 10.501 | 10.501 | 0.875  | 281646   | 286.68  | ug/L  | 99  |
| 96) | Methacrylonitrile         | 41   | 10.726 | 10.726 | 0.893  | 1130396  | 272.17  | ug/L  | 100 |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082511V3\  
Data File : 3A402.D  
Acq On : 25 Aug 2011 09:22  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110825-01|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD300S 5ML n/a MIX[B] 0728-07+0728-15+0705-  
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Aug 25 11:43:04 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

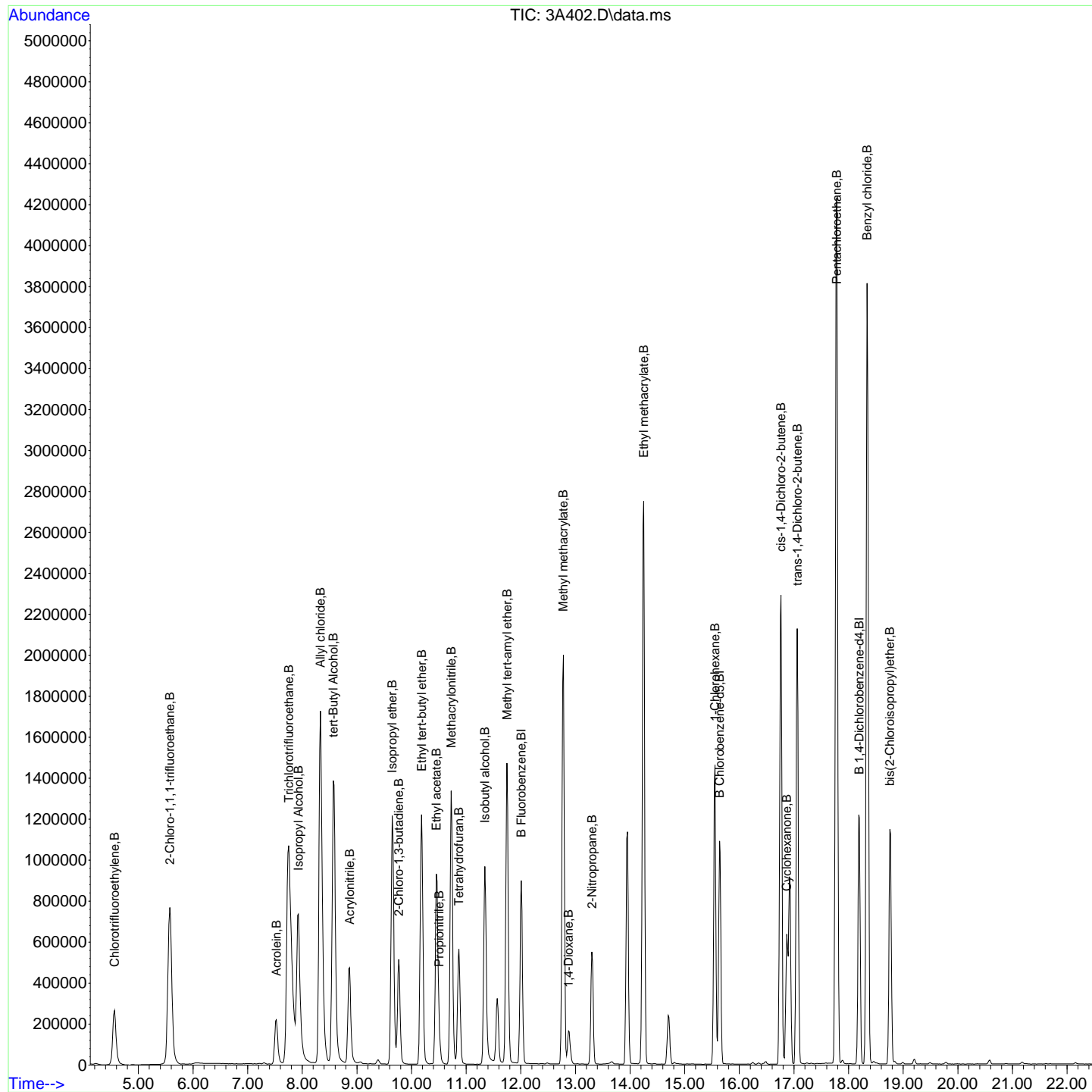
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |      |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|------|
| 97) Tetrahydrofuran            | 42   | 10.868 | 10.869 | 0.905  | 609743   | 331.27  | ug/L  | 100  |
| 98) Isobutyl alcohol           | 41   | 11.343 | 11.343 | 0.945  | 754729   | 3458.55 | ug/L  | 97   |
| 99) Methyl tert-amyl ether     | 73   | 11.746 | 11.746 | 0.978  | 1720602  | 75.17   | ug/L  | 100  |
| 100) Methyl methacrylate       | 69   | 12.778 | 12.778 | 1.064  | 1346915  | 279.25  | ug/L  | 98   |
| 101) 1,4-Dioxane               | 88   | 12.872 | 12.884 | 1.072  | 221475   | 3055.49 | ug/L  | 99   |
| 102) 2-Nitropropane            | 43   | 13.299 | 13.300 | 1.108  | 674329   | 297.56  | ug/L  | 99   |
| 104) Ethyl methacrylate        | 69   | 14.248 | 14.248 | 0.911  | 2476105  | 268.37  | ug/L  | 99   |
| 106) 1-Chlorohexane            | 55   | 15.552 | 15.553 | 0.855  | 563392   | 73.31   | ug/L  | 97   |
| 107) cis-1,4-Dichloro-2-butene | 53   | 16.762 | 16.762 | 0.921  | 801708   | 286.59  | ug/L  | 96   |
| 108) Cyclohexanone             | 42   | 16.869 | 16.869 | 0.927  | 289584   | 1502.20 | ug/L  | 97 A |
| 109) trans-1,4-Dichloro-2-b... | 53   | 17.058 | 17.059 | 0.937  | 696166   | 298.97  | ug/L  | 98   |
| 110) Pentachloroethane         | 167  | 17.782 | 17.782 | 0.977  | 1580004  | 312.05  | ug/L  | 100  |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 4830207  | 322.94  | ug/L  | 97   |
| 112) bis(2-Chloroisopropyl)... | 45   | 18.754 | 18.754 | 1.031  | 1300605  | 298.92  | ug/L  | 99   |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082511V3\  
Data File : 3A402.D  
Acq On : 25 Aug 2011 09:22  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110825-01|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD300S 5ML n/a MIX[B] 0728-07+0728-15+0705-  
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Aug 25 11:43:04 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082511V3\  
Data File : 3A403.D  
Acq On : 25 Aug 2011 09:52  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110825-02|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD500S 5ML n/a MIX[B] 0728-07+0728-15+0705-  
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Aug 25 11:43:09 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1376000  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 572224   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 624659   | 50.00 | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 0d       | 0.00  | ug/L  |          |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 0d       | 0.00  | ug/L  |          |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 0d       | 0.00  | ug/L  |          |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 4.562  | 4.666  | 0.380  | 0m       | N.D. | d     |        |
| 3) Chloromethane              |      | 5.068  | 5.068  | 0.422  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 5.350  | 5.365  | 0.446  | 0m       | N.D. | d     |        |
| 5) Bromomethane               |      | 0.000  | 6.125  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.327  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.849  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 7.299  | 7.299  | 0.608  | 0m       | N.D. | d     |        |
| 9) Acetone                    |      | 7.773  | 7.762  | 0.647  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.750  | 7.774  | 0.645  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 8.082  | 8.070  | 0.673  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 8.331  | 8.224  | 0.694  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 8.307  | 8.295  | 0.692  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 8.331  | 8.212  | 0.694  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 8.532  | 8.532  | 0.711  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 8.936  | 8.936  | 0.744  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 8.971  | 0.000  | 0        | N.D. |       |        |
| 18) Vinyl acetate             |      | 9.647  | 9.612  | 0.803  | 0m       | N.D. | d     |        |
| 19) 1,1-Dichloroethane        |      | 9.766  | 9.623  | 0.813  | 0m       | N.D. | d     |        |
| 20) 2-Butanone                |      | 10.454 | 10.406 | 0.871  | 0m       | N.D. | d     |        |
| 21) cis-1,2-Dichloroethylene  |      | 0.000  | 10.465 | 0.000  | 0        | N.D. |       |        |
| 22) 2,2-Dichloropropane       |      | 0.000  | 10.489 | 0.000  | 0        | N.D. |       |        |
| 23) Bromochloromethane        |      | 0.000  | 10.797 | 0.000  | 0        | N.D. |       |        |
| 24) Chloroform                |      | 10.869 | 10.869 | 0.905  | 0m       | N.D. | d     |        |
| 25) 1,1,1-Trichloroethane     |      | 0.000  | 11.201 | 0.000  | 0        | N.D. |       |        |
| 26) Cyclohexane               |      | 11.343 | 11.307 | 0.945  | 0m       | N.D. | d     |        |
| 27) 1,1-Dichloropropene       |      | 11.343 | 11.402 | 0.945  | 0m       | N.D. | d     |        |
| 28) Carbon tetrachloride      |      | 0.000  | 11.438 | 0.000  | 0        | N.D. |       |        |
| 30) 1,2-Dichloroethane        |      | 11.746 | 11.663 | 0.978  | 0m       | N.D. | d     |        |
| 31) Benzene                   |      | 11.687 | 11.687 | 0.973  | 0m       | N.D. | d     |        |
| 32) Cyclohexene               |      | 11.746 | 11.829 | 0.978  | 0m       | N.D. | d     |        |
| 33) n-Butyl alcohol           |      | 12.220 | 12.185 | 1.018  | 0m       | N.D. | d     |        |
| 34) Trichloroethylene         |      | 12.481 | 12.481 | 1.040  | 0m       | N.D. | d     |        |
| 35) 1,2-Dichloropropane       |      | 0.000  | 12.766 | 0.000  | 0        | N.D. |       |        |
| 36) Methylcyclohexane         |      | 12.778 | 12.766 | 1.064  | 0m       | N.D. | d     |        |
| 37) Dibromomethane            |      | 0.000  | 12.920 | 0.000  | 0        | N.D. |       |        |
| 38) Bromodichloromethane      |      | 0.000  | 13.062 | 0.000  | 0        | N.D. |       |        |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082511V3\  
Data File : 3A403.D  
Acq On : 25 Aug 2011 09:52  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110825-02|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD500S 5ML n/a MIX[B] 0728-07+0728-15+0705-  
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Aug 25 11:43:09 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |      |
|-----|---------------------------|------|--------|--------|--------|----------|---------|-------|------|
| 40) | cis-1,3-Dichloropropylene |      | 0.000  | 13.596 | 0.000  | 0        | N.D.    |       |      |
| 42) | 4-Methyl-2-pentanone      |      | 0.000  | 13.715 | 0.000  | 0        | N.D.    |       |      |
| 44) | Toluene                   |      | 14.035 | 14.035 | 0.898  | 0m       | N.D.    | d     |      |
| 45) | trans-1,3-Dichloroprop... |      | 0.000  | 14.213 | 0.000  | 0        | N.D.    |       |      |
| 46) | 1,1,2-Trichloroethane     |      | 0.000  | 14.462 | 0.000  | 0        | N.D.    |       |      |
| 47) | 2-Hexanone                |      | 14.675 | 14.675 | 0.939  | 0m       | N.D.    | d     |      |
| 48) | 1,3-Dichloropropane       |      | 14.723 | 14.663 | 0.942  | 0m       | N.D.    | d     |      |
| 49) | Tetrachloroethylene       |      | 14.699 | 14.699 | 0.940  | 0m       | N.D.    | d     |      |
| 50) | Dibromochloromethane      |      | 0.000  | 14.960 | 0.000  | 0        | N.D.    |       |      |
| 51) | 1,2-Dibromoethane         |      | 15.138 | 15.138 | 0.968  | 0m       | N.D.    | d     |      |
| 52) | Chlorobenzene             |      | 0.000  | 15.671 | 0.000  | 0        | N.D.    |       |      |
| 53) | 1,1,1,2-Tetrachloroethane |      | 15.742 | 15.742 | 1.007  | 0m       | N.D.    | d     |      |
| 54) | Ethylbenzene              |      | 15.754 | 15.754 | 1.008  | 0m       | N.D.    | d     |      |
| 55) | m,p-Xylenes               |      | 15.873 | 15.873 | 1.015  | 0m       | N.D.    | d     |      |
| 56) | o-Xylene                  |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.    | d     |      |
| 57) | Styrene                   |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.    | d     |      |
| 59) | Bromoform                 |      | 0.000  | 16.608 | 0.000  | 0        | N.D.    |       |      |
| 60) | Isopropylbenzene          |      | 16.727 | 16.715 | 0.919  | 0m       | N.D.    | d     |      |
| 62) | 1,1,2,2-Tetrachloroethane |      | 17.059 | 17.011 | 0.937  | 0m       | N.D.    | d     |      |
| 63) | 1,2,3-Trichloropropane    |      | 0.000  | 17.094 | 0.000  | 0        | N.D.    |       |      |
| 64) | Bromobenzene              |      | 0.000  | 17.142 | 0.000  | 0        | N.D.    |       |      |
| 65) | n-Propylbenzene           |      | 17.059 | 17.165 | 0.937  | 0m       | N.D.    | d     |      |
| 66) | 1,3,5-Trimethylbenzene    |      | 17.331 | 17.331 | 0.952  | 0m       | N.D.    | d     |      |
| 67) | 2-Chlorotoluene           |      | 17.320 | 17.320 | 0.952  | 0m       | N.D.    | d     |      |
| 68) | 4-Chlorotoluene           |      | 17.426 | 17.415 | 0.958  | 0m       | N.D.    | d     |      |
| 69) | tert-Butylbenzene         |      | 17.782 | 17.711 | 0.977  | 0m       | N.D.    | d     |      |
| 70) | 1,2,4-Trimethylbenzene    |      | 17.806 | 17.747 | 0.978  | 0m       | N.D.    | d     |      |
| 71) | sec-Butylbenzene          |      | 17.948 | 17.948 | 0.986  | 0m       | N.D.    | d     |      |
| 72) | 4-Isopropyltoluene        |      | 18.067 | 18.067 | 0.993  | 0m       | N.D.    | d     |      |
| 73) | 1,3-Dichlorobenzene       |      | 18.126 | 18.126 | 0.996  | 0m       | N.D.    | d     |      |
| 74) | 1,4-Dichlorobenzene       |      | 18.221 | 18.221 | 1.001  | 0m       | N.D.    | d     |      |
| 75) | n-Butylbenzene            |      | 18.339 | 18.529 | 1.008  | 0m       | N.D.    | d     |      |
| 76) | 1,2-Dichlorobenzene       |      | 0.000  | 18.660 | 0.000  | 0        | N.D.    |       |      |
| 77) | 1,2-Dibromo-3-chloropr... |      | 0.000  | 19.573 | 0.000  | 0        | N.D.    |       |      |
| 78) | 1,2,4-Trichlorobenzene    |      | 20.676 | 20.676 | 1.136  | 0m       | N.D.    | d     |      |
| 79) | Hexachlorobutadiene       |      | 0.000  | 20.865 | 0.000  | 0        | N.D.    |       |      |
| 80) | Naphthalene               |      | 21.079 | 21.079 | 1.158  | 0m       | N.D.    | d     |      |
| 81) | 1,2,3-Trichlorobenzene    |      | 0.000  | 21.435 | 0.000  | 0        | N.D.    |       |      |
| 83) | Chlorotrifluoroethylene   | 116  | 4.562  | 4.562  | 0.380  | 500549   | 172.87  | ug/L  | 100  |
| 84) | 2-Chloro-1,1,1-trifluo... | 118  | 5.588  | 5.573  | 0.465  | 1468513  | 190.49  | ug/L  | 100  |
| 85) | Acrolein                  | 56   | 7.524  | 7.524  | 0.627  | 656254   | 485.19  | ug/L  | 98   |
| 86) | Trichlorotrifluoroethane  | 85   | 7.750  | 7.750  | 0.645  | 969377   | 392.49  | ug/L  | 99   |
| 87) | Isopropyl Alcohol         | 45   | 7.928  | 7.928  | 0.660  | 2222612  | 4390.26 | ug/L  | 100  |
| 88) | Allyl chloride            | 41   | 8.331  | 8.331  | 0.694  | 4271263  | 478.03  | ug/L  | 98   |
| 89) | tert-Butyl Alcohol        | 59   | 8.580  | 8.580  | 0.715  | 3677920  | 3919.01 | ug/L  | 100  |
| 90) | Acrylonitrile             | 53   | 8.864  | 8.864  | 0.738  | 1102974  | 426.77  | ug/L  | 99   |
| 91) | Isopropyl ether           | 45   | 9.647  | 9.647  | 0.803  | 2285416  | 87.43   | ug/L  | 99   |
| 92) | 2-Chloro-1,3-butadiene    | 53   | 9.766  | 9.766  | 0.813  | 866181   | 89.50   | ug/L  | 96   |
| 93) | Ethyl tert-butyl ether    | 59   | 10.181 | 10.181 | 0.848  | 2221890  | 87.61   | ug/L  | 99   |
| 94) | Ethyl acetate             | 43   | 10.454 | 10.454 | 0.871  | 2507271  | 362.80  | ug/L  | 98 A |
| 95) | Propionitrile             | 54   | 10.501 | 10.501 | 0.875  | 425202   | 426.25  | ug/L  | 100  |
| 96) | Methacrylonitrile         | 41   | 10.726 | 10.726 | 0.893  | 1649482  | 391.13  | ug/L  | 100  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082511V3\  
Data File : 3A403.D  
Acq On : 25 Aug 2011 09:52  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110825-02|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD500S 5ML n/a MIX[B] 0728-07+0728-15+0705-  
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Aug 25 11:43:09 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

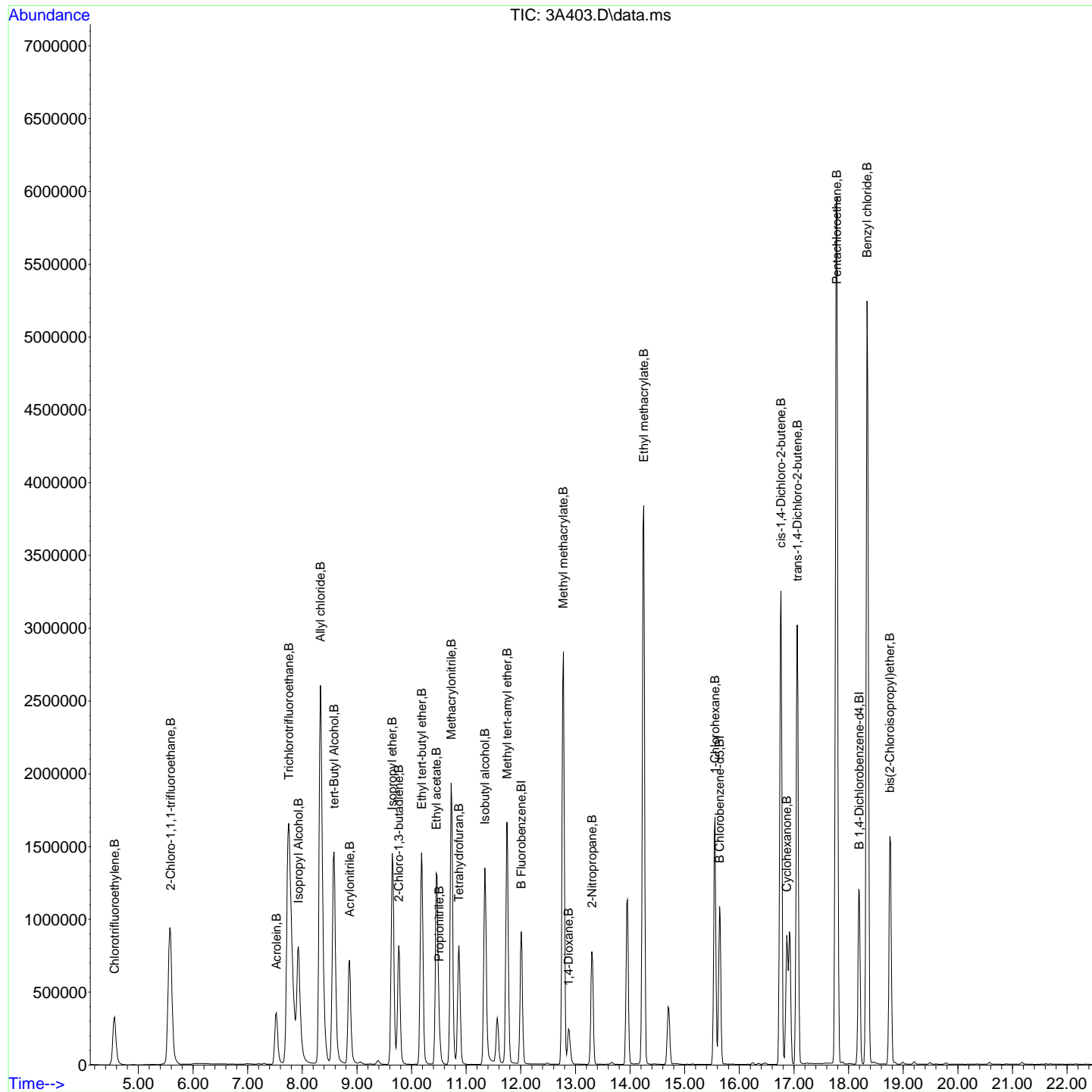
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |      |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|------|
| 97) Tetrahydrofuran            | 42   | 10.869 | 10.869 | 0.905  | 879306   | 477.55  | ug/L  | 99   |
| 98) Isobutyl alcohol           | 41   | 11.343 | 11.343 | 0.945  | 1037484  | 4682.20 | ug/L  | 95   |
| 99) Methyl tert-amyl ether     | 73   | 11.746 | 11.746 | 0.978  | 2040303  | 87.79   | ug/L  | 99   |
| 100) Methyl methacrylate       | 69   | 12.778 | 12.778 | 1.064  | 1921949  | 392.42  | ug/L  | 96   |
| 101) 1,4-Dioxane               | 88   | 12.873 | 12.884 | 1.072  | 330884   | 4495.70 | ug/L  | 99   |
| 102) 2-Nitropropane            | 43   | 13.300 | 13.300 | 1.108  | 967952   | 420.66  | ug/L  | 100  |
| 104) Ethyl methacrylate        | 69   | 14.248 | 14.248 | 0.911  | 3469338  | 379.65  | ug/L  | 99   |
| 106) 1-Chlorohexane            | 55   | 15.553 | 15.553 | 0.855  | 659232   | 86.49   | ug/L  | 97   |
| 107) cis-1,4-Dichloro-2-butene | 53   | 16.762 | 16.762 | 0.921  | 1141853  | 411.53  | ug/L  | 97   |
| 108) Cyclohexanone             | 42   | 16.869 | 16.869 | 0.927  | 404091   | 2129.41 | ug/L  | 97 A |
| 109) trans-1,4-Dichloro-2-b... | 53   | 17.059 | 17.059 | 0.937  | 985807   | 426.82  | ug/L  | 97   |
| 110) Pentachloroethane         | 167  | 17.782 | 17.782 | 0.977  | 2255567  | 449.13  | ug/L  | 99   |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 6655582  | 448.64  | ug/L  | 96   |
| 112) bis(2-Chloroisopropyl)... | 45   | 18.754 | 18.754 | 1.031  | 1764759  | 408.92  | ug/L  | 97   |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082511V3\  
Data File : 3A403.D  
Acq On : 25 Aug 2011 09:52  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110825-02|ICAL|1|VOA|1|VOA8260BL|  
Misc : VSTD500S 5ML n/a MIX[B] 0728-07+0728-15+0705-  
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Aug 25 11:43:09 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



## Continuing Calibration Summary

**Client SDG:** 284538  
**Instrument ID:** VOA3.I  
**Injection Date:** 25-AUG-11 10:53  
**Data File:** 082511V3\3A405.D  
**Init. Cal. Date(s):** 24-AUG-11 12:07 - 25-AUG-11 09:5  
**Lab Sample ID:** W3VM110825-03  
**Method:** 082411V3\VOA3-8260-082411.M  
**Quant Type:** ISTD  
**Method Update:** 25-AUG-11 11:40

| Compound                       | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| S 1,2-Dichloroethane-d4        | 0.0572         | 0.05705 |             | .01    |      | -0.26224    | 30  |         | Averaged   |
| S Toluene-d8                   | 2.2206         | 2.24885 |             | .01    |      | 1.27218     | 30  |         | Averaged   |
| S Bromofluorobenzene           | 0.9463         | 0.89986 |             | .01    |      | -4.90753    | 30  |         | Averaged   |
| Chlorotrifluoroethylene        | 0.1052         | 0.10636 |             | .01    |      | 1.10266     | 30  |         | Averaged   |
| 2-Chloro-1,1,1-trifluoroethane | 0.2801         | 0.27263 |             | .01    |      | -2.6669     | 30  |         | Averaged   |
| Acrolein                       | 0.0491         | 0.04611 |             | .01    |      | -6.08961    | 30  |         | Averaged   |
| Trichlorotrifluoroethane       | 0.0897         | 0.07782 |             | .01    |      | -13.24415   | 30  |         | Averaged   |
| Isopropyl Alcohol              | 0.0184         | 0.01984 |             | .01    |      | 7.82609     | 40  |         | Averaged   |
| Allyl chloride                 | 250            | 229.2   | 250         |        |      | -8.32       | 30  |         | Linear     |
| tert-Butyl Alcohol             | 0.0341         | 0.03481 |             | .01    |      | 2.08211     | 40  |         | Averaged   |
| Acrylonitrile                  | 0.0939         | 0.08894 |             | .01    |      | -5.28222    | 30  |         | Averaged   |
| Isopropyl ether                | 0.9499         | 0.92042 |             | .01    |      | -3.10348    | 30  |         | Averaged   |
| 2-Chloro-1,3-butadiene         | 0.3517         | 0.25626 |             | .01    |      | -27.13676   | 30  |         | Averaged   |
| Ethyl tert-butyl ether         | 0.9215         | 0.89906 |             | .01    |      | -2.43516    | 30  |         | Averaged   |
| Ethyl acetate                  | 0.2511         | 0.22266 |             | .01    |      | -11.32616   | 40  |         | Averaged   |
| Propionitrile                  | 0.0362         | 0.0361  |             | .01    |      | -0.27624    | 30  |         | Averaged   |
| Methacrylonitrile              | 0.1532         | 0.13583 |             | .01    |      | -11.33812   | 30  |         | Averaged   |
| Tetrahydrofuran                | 250            | 283.12  | 250         |        |      | 13.248      | 30  |         | Linear     |
| Isobutyl alcohol               | 0.0081         | 0.00896 |             | .01    |      | 10.61728    | 40  |         | Averaged   |
| Methyl tert-amyl ether         | 0.8445         | 0.83126 |             | .01    |      | -1.56779    | 30  |         | Averaged   |
| Methyl methacrylate            | 0.178          | 0.1629  |             | .01    |      | -8.48315    | 30  |         | Averaged   |
| 1,4-Dioxane                    | 0.0027         | 0.00272 |             | .01    |      | 0.74074     | 40  |         | Averaged   |
| 2-Nitropropane                 | 0.0836         | 0.08166 |             | .01    |      | -2.32057    | 30  |         | Averaged   |
| Ethyl methacrylate             | 0.7985         | 0.69667 |             | .01    |      | -12.75266   | 30  |         | Averaged   |
| 1-Chlorohexane                 | 0.6101         | 0.56456 |             | .01    |      | -7.46435    | 30  |         | Averaged   |
| cis-1,4-Dichloro-2-butene      | 0.2221         | 0.20302 |             | .01    |      | -8.59072    | 30  |         | Averaged   |
| Cyclohexanone                  | 1250           | 1203.47 | 1250        |        |      | -3.7224     | 40  |         | Linear     |
| trans-1,4-Dichloro-2-butene    | 0.1849         | 0.18468 |             | .01    |      | -0.11898    | 30  |         | Averaged   |
| Pentachloroethane              | 0.402          | 0.4057  |             | .01    |      | 0.9204      | 30  |         | Averaged   |
| Benzyl chloride                | 1.1875         | 1.16943 |             | .01    |      | -1.52168    | 30  |         | Averaged   |
| bis(2-Chloroisopropyl)ether    | 0.3454         | 0.33022 |             | .01    |      | -4.3949     | 30  |         | Averaged   |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082511V3\  
Data File : 3A405.D  
Acq On : 25 Aug 2011 10:53  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110825-03|ICV|1|VOA|1|VOA8260BL|  
Misc : ICV 5ML n/a MIX[B] 0728-08C+0729-08C+0728-16B  
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Aug 25 11:43:15 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1313600  | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 562765   | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 608697   | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1313600  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 562765   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 608697   | 50.00 | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 74937    | 49.89 | ug/L  | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1265573  | 50.64 | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 547744   | 47.55 | ug/L  | 0.00     |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 4.562  | 4.666  | 0.380  | 0m       | N.D. | d     |        |
| 3) Chloromethane              |      | 0.000  | 5.068  | 0.000  | 0        | N.D. |       |        |
| 4) Vinyl chloride             |      | 5.573  | 5.365  | 0.464  | 0m       | N.D. | d     |        |
| 5) Bromomethane               |      | 0.000  | 6.125  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.327  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.849  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 7.299  | 7.299  | 0.608  | 0m       | N.D. | d     |        |
| 9) Acetone                    |      | 7.773  | 7.762  | 0.647  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.738  | 7.774  | 0.644  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 8.058  | 8.070  | 0.671  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 8.331  | 8.224  | 0.694  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 8.307  | 8.295  | 0.692  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 8.331  | 8.212  | 0.694  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 8.532  | 8.532  | 0.711  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 8.936  | 8.936  | 0.744  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 8.971  | 0.000  | 0        | N.D. |       |        |
| 18) Vinyl acetate             |      | 9.647  | 9.612  | 0.803  | 0m       | N.D. | d     |        |
| 19) 1,1-Dichloroethane        |      | 9.766  | 9.623  | 0.813  | 0m       | N.D. | d     |        |
| 20) 2-Butanone                |      | 10.454 | 10.406 | 0.871  | 0m       | N.D. | d     |        |
| 21) cis-1,2-Dichloroethylene  |      | 0.000  | 10.465 | 0.000  | 0        | N.D. |       |        |
| 22) 2,2-Dichloropropane       |      | 0.000  | 10.489 | 0.000  | 0        | N.D. |       |        |
| 23) Bromochloromethane        |      | 0.000  | 10.797 | 0.000  | 0        | N.D. |       |        |
| 24) Chloroform                |      | 10.869 | 10.869 | 0.905  | 0m       | N.D. | d     |        |
| 25) 1,1,1-Trichloroethane     |      | 0.000  | 11.201 | 0.000  | 0        | N.D. |       |        |
| 26) Cyclohexane               |      | 11.343 | 11.307 | 0.945  | 0m       | N.D. | d     |        |
| 27) 1,1-Dichloropropene       |      | 11.343 | 11.402 | 0.945  | 0m       | N.D. | d     |        |
| 28) Carbon tetrachloride      |      | 0.000  | 11.438 | 0.000  | 0        | N.D. |       |        |
| 30) 1,2-Dichloroethane        |      | 0.000  | 11.663 | 0.000  | 0        | N.D. |       |        |
| 31) Benzene                   |      | 11.687 | 11.687 | 0.973  | 0m       | N.D. | d     |        |
| 32) Cyclohexene               |      | 11.746 | 11.829 | 0.978  | 0m       | N.D. | d     |        |
| 33) n-Butyl alcohol           |      | 12.197 | 12.185 | 1.016  | 0m       | N.D. | d     |        |
| 34) Trichloroethylene         |      | 12.481 | 12.481 | 1.040  | 0m       | N.D. | d     |        |
| 35) 1,2-Dichloropropane       |      | 0.000  | 12.766 | 0.000  | 0        | N.D. |       |        |
| 36) Methylcyclohexane         |      | 12.778 | 12.766 | 1.064  | 0m       | N.D. | d     |        |
| 37) Dibromomethane            |      | 0.000  | 12.920 | 0.000  | 0        | N.D. |       |        |
| 38) Bromodichloromethane      |      | 0.000  | 13.062 | 0.000  | 0        | N.D. |       |        |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082511V3\  
Data File : 3A405.D  
Acq On : 25 Aug 2011 10:53  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110825-03|ICV|1|VOA|1|VOA8260BL|  
Misc : ICV 5ML n/a MIX[B] 0728-08C+0729-08C+0728-16B  
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Aug 25 11:43:15 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units    |
|-------------------------------|------|--------|--------|--------|----------|---------|----------|
| 40) cis-1,3-Dichloropropylene |      | 0.000  | 13.596 | 0.000  | 0        | N.D.    |          |
| 42) 4-Methyl-2-pentanone      |      | 13.726 | 13.715 | 0.878  | 0m       | N.D.    | d        |
| 44) Toluene                   |      | 14.035 | 14.035 | 0.898  | 0m       | N.D.    | d        |
| 45) trans-1,3-Dichloroprop... |      | 0.000  | 14.213 | 0.000  | 0        | N.D.    |          |
| 46) 1,1,2-Trichloroethane     |      | 0.000  | 14.462 | 0.000  | 0        | N.D.    |          |
| 47) 2-Hexanone                |      | 14.675 | 14.675 | 0.939  | 0m       | N.D.    | d        |
| 48) 1,3-Dichloropropane       |      | 14.723 | 14.663 | 0.942  | 0m       | N.D.    | d        |
| 49) Tetrachloroethylene       |      | 14.699 | 14.699 | 0.940  | 0m       | N.D.    | d        |
| 50) Dibromochloromethane      |      | 0.000  | 14.960 | 0.000  | 0        | N.D.    |          |
| 51) 1,2-Dibromoethane         |      | 15.138 | 15.138 | 0.968  | 0m       | N.D.    | d        |
| 52) Chlorobenzene             |      | 15.671 | 15.671 | 1.002  | 0m       | N.D.    | d        |
| 53) 1,1,1,2-Tetrachloroethane |      | 15.742 | 15.742 | 1.007  | 0m       | N.D.    | d        |
| 54) Ethylbenzene              |      | 15.754 | 15.754 | 1.008  | 0m       | N.D.    | d        |
| 55) m,p-Xylenes               |      | 15.873 | 15.873 | 1.015  | 0m       | N.D.    | d        |
| 56) o-Xylene                  |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.    | d        |
| 57) Styrene                   |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.    | d        |
| 59) Bromoform                 |      | 0.000  | 16.608 | 0.000  | 0        | N.D.    |          |
| 60) Isopropylbenzene          |      | 16.715 | 16.715 | 0.919  | 0m       | N.D.    | d        |
| 62) 1,1,2,2-Tetrachloroethane |      | 17.059 | 17.011 | 0.937  | 0m       | N.D.    | d        |
| 63) 1,2,3-Trichloropropane    |      | 0.000  | 17.094 | 0.000  | 0        | N.D.    |          |
| 64) Bromobenzene              |      | 0.000  | 17.142 | 0.000  | 0        | N.D.    |          |
| 65) n-Propylbenzene           |      | 17.165 | 17.165 | 0.943  | 0m       | N.D.    | d        |
| 66) 1,3,5-Trimethylbenzene    |      | 17.331 | 17.331 | 0.952  | 0m       | N.D.    | d        |
| 67) 2-Chlorotoluene           |      | 17.320 | 17.320 | 0.952  | 0m       | N.D.    | d        |
| 68) 4-Chlorotoluene           |      | 17.426 | 17.415 | 0.958  | 0m       | N.D.    | d        |
| 69) tert-Butylbenzene         |      | 17.782 | 17.711 | 0.977  | 0m       | N.D.    | d        |
| 70) 1,2,4-Trimethylbenzene    |      | 17.758 | 17.747 | 0.976  | 0m       | N.D.    | d        |
| 71) sec-Butylbenzene          |      | 17.948 | 17.948 | 0.986  | 0m       | N.D.    | d        |
| 72) 4-Isopropyltoluene        |      | 18.079 | 18.067 | 0.993  | 0m       | N.D.    | d        |
| 73) 1,3-Dichlorobenzene       |      | 18.138 | 18.126 | 0.997  | 0m       | N.D.    | d        |
| 74) 1,4-Dichlorobenzene       |      | 18.221 | 18.221 | 1.001  | 0m       | N.D.    | d        |
| 75) n-Butylbenzene            |      | 18.339 | 18.529 | 1.008  | 0m       | N.D.    | d        |
| 76) 1,2-Dichlorobenzene       |      | 18.660 | 18.660 | 1.025  | 0m       | N.D.    | d        |
| 77) 1,2-Dibromo-3-chloropr... |      | 0.000  | 19.573 | 0.000  | 0        | N.D.    |          |
| 78) 1,2,4-Trichlorobenzene    |      | 20.676 | 20.676 | 1.136  | 0m       | N.D.    | d        |
| 79) Hexachlorobutadiene       |      | 0.000  | 20.865 | 0.000  | 0        | N.D.    |          |
| 80) Naphthalene               |      | 21.079 | 21.079 | 1.158  | 0m       | N.D.    | d        |
| 81) 1,2,3-Trichlorobenzene    |      | 0.000  | 21.435 | 0.000  | 0        | N.D.    |          |
| 83) Chlorotrifluoroethylene   | 116  | 4.562  | 4.562  | 0.380  | 419136   | 151.63  | ug/L 100 |
| 84) 2-Chloro-1,1,1-trifluo... | 118  | 5.573  | 5.573  | 0.464  | 1074394  | 145.98  | ug/L 100 |
| 85) Acrolein                  | 56   | 7.524  | 7.524  | 0.627  | 302856   | 234.55  | ug/L 99  |
| 86) Trichlorotrifluoroethane  | 85   | 7.750  | 7.750  | 0.645  | 511123   | 216.78  | ug/L 100 |
| 87) Isopropyl Alcohol         | 45   | 7.928  | 7.928  | 0.660  | 1303286  | 2696.63 | ug/L 100 |
| 88) Allyl chloride            | 41   | 8.331  | 8.331  | 0.694  | 2031402  | 229.20  | ug/L 100 |
| 89) tert-Butyl Alcohol        | 59   | 8.580  | 8.580  | 0.715  | 2286028  | 2551.59 | ug/L 100 |
| 90) Acrylonitrile             | 53   | 8.864  | 8.864  | 0.738  | 584134   | 236.75  | ug/L 99  |
| 91) Isopropyl ether           | 45   | 9.647  | 9.647  | 0.803  | 1209058  | 48.45   | ug/L 100 |
| 92) 2-Chloro-1,3-butadiene    | 53   | 9.766  | 9.766  | 0.813  | 336628   | 36.44   | ug/L 99  |
| 93) Ethyl tert-butyl ether    | 59   | 10.181 | 10.181 | 0.848  | 1181011  | 48.78   | ug/L 100 |
| 94) Ethyl acetate             | 43   | 10.454 | 10.454 | 0.871  | 1462457  | 221.67  | ug/L 100 |
| 95) Propionitrile             | 54   | 10.501 | 10.501 | 0.875  | 237127   | 249.00  | ug/L 100 |
| 96) Methacrylonitrile         | 41   | 10.726 | 10.726 | 0.893  | 892099   | 221.58  | ug/L 99  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082511V3\  
Data File : 3A405.D  
Acq On : 25 Aug 2011 10:53  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110825-03|ICV|1|VOA|1|VOA8260BL|  
Misc : ICV 5ML n/a MIX[B] 0728-08C+0729-08C+0728-16B  
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Aug 25 11:43:15 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

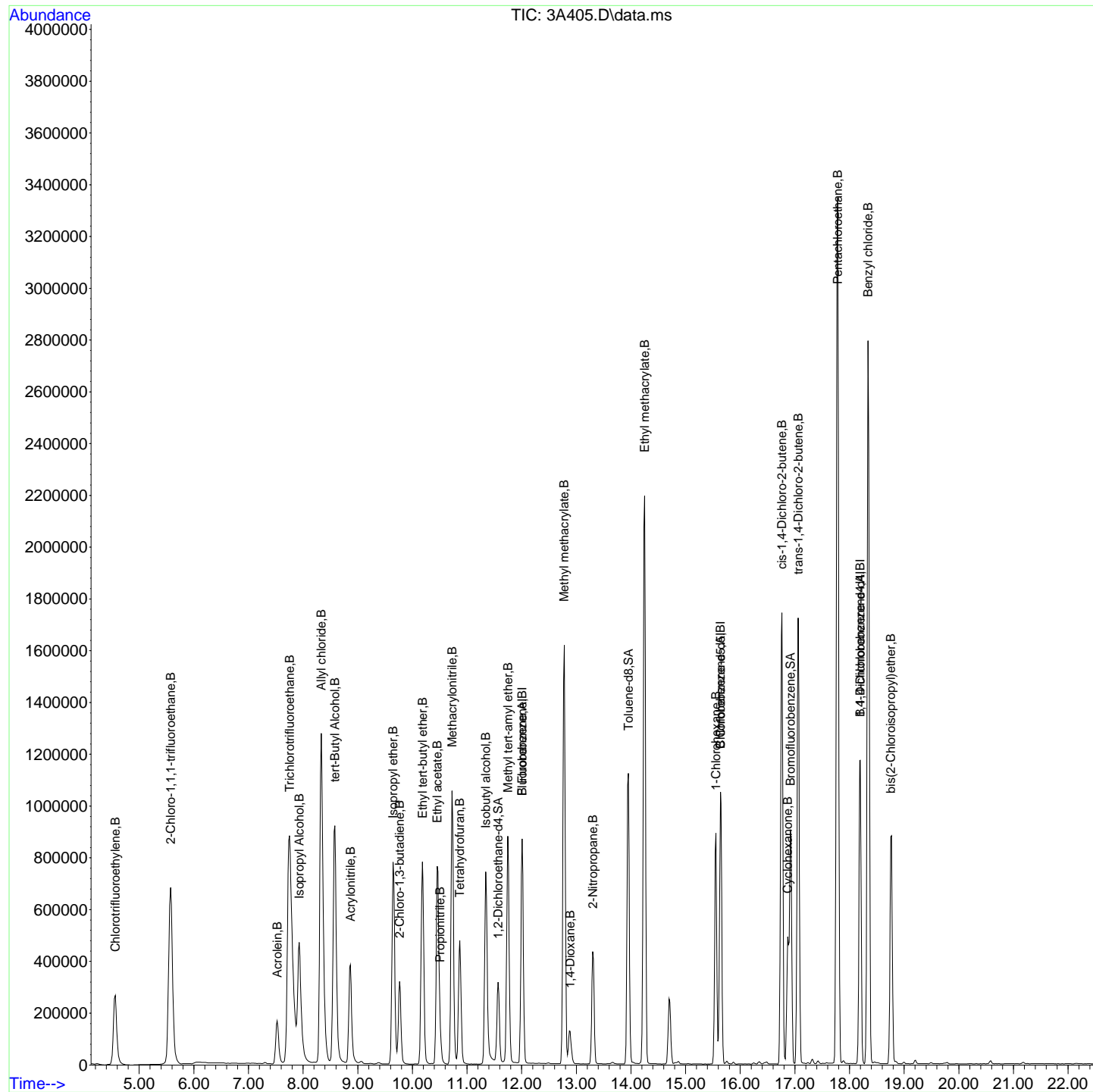
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 97) Tetrahydrofuran            | 42   | 10.869 | 10.869 | 0.905  | 509277   | 283.12  | ug/L  | 99  |
| 98) Isobutyl alcohol           | 41   | 11.343 | 11.343 | 0.945  | 588388   | 2781.55 | ug/L  | 98  |
| 99) Methyl tert-amyl ether     | 73   | 11.746 | 11.746 | 0.978  | 1091942  | 49.22   | ug/L  | 99  |
| 100) Methyl methacrylate       | 69   | 12.778 | 12.778 | 1.064  | 1069960  | 228.84  | ug/L  | 99  |
| 101) 1,4-Dioxane               | 88   | 12.884 | 12.884 | 1.073  | 178927   | 2546.55 | ug/L  | 100 |
| 102) 2-Nitropropane            | 43   | 13.300 | 13.300 | 1.108  | 536373   | 244.17  | ug/L  | 99  |
| 104) Ethyl methacrylate        | 69   | 14.248 | 14.248 | 0.911  | 1960298  | 218.12  | ug/L  | 100 |
| 106) 1-Chlorohexane            | 55   | 15.553 | 15.553 | 0.855  | 343645   | 46.27   | ug/L  | 100 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 16.762 | 16.762 | 0.921  | 617886   | 228.53  | ug/L  | 100 |
| 108) Cyclohexanone             | 42   | 16.869 | 16.869 | 0.927  | 225649   | 1203.47 | ug/L  | 99  |
| 109) trans-1,4-Dichloro-2-b... | 53   | 17.059 | 17.059 | 0.937  | 562083   | 249.75  | ug/L  | 98  |
| 110) Pentachloroethane         | 167  | 17.782 | 17.782 | 0.977  | 1234740  | 252.31  | ug/L  | 100 |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 3559128  | 246.20  | ug/L  | 99  |
| 112) bis(2-Chloroisopropyl)... | 45   | 18.754 | 18.754 | 1.031  | 1005026  | 238.99  | ug/L  | 99  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082511V3\  
Data File : 3A405.D  
Acq On : 25 Aug 2011 10:53  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110825-03|ICV|1|VOA|1|VOA8260BL|  
Misc : ICV 5ML n/a MIX[B] 0728-08C+0729-08C+0728-16B  
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Aug 25 11:43:15 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



## Continuing Calibration Summary

**Client SDG:** 284538  
**Instrument ID:** VOA3.I  
**Injection Date:** 30-AUG-11 20:58  
**Data File:** 083011V3\3B227.D  
**Init. Cal. Date(s):** 24-AUG-11 12:07 - 25-AUG-11 09:5  
**Lab Sample ID:** W3VM110830-06  
**Method:** 082411V3\VOA3-8260-082411.M  
**Quant Type:** ISTD  
**Method Update:** 25-AUG-11 11:40

| Compound                   | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| S 1,2-Dichloroethane-d4    | 0.0572         | 0.0541  |             | .01    |      | -5.41958    | 30  |         | Averaged   |      |
| S Toluene-d8               | 2.2206         | 2.14263 |             | .01    |      | -3.51121    | 30  |         | Averaged   |      |
| S Bromofluorobenzene       | 0.9463         | 0.97173 |             | .01    |      | 2.68731     | 30  |         | Averaged   |      |
| Dichlorodifluoromethane    | 0.2014         | 0.21028 |             | .01    |      | 4.40914     | 30  |         | Averaged   |      |
| Chloromethane              | 0.2389         | 0.24434 |             | .1     |      | 2.2771      | 30  |         | Averaged   | spcc |
| Vinyl chloride             | 0.2429         | 0.24883 |             | .01    |      | 2.44133     | 20  |         | Averaged   | ccc  |
| Bromomethane               | 0.2968         | 0.28252 |             | .01    |      | -4.81132    | 30  |         | Averaged   |      |
| Chloroethane               | 0.1822         | 0.18188 |             | .01    |      | -0.17563    | 30  |         | Averaged   |      |
| Trichlorofluoromethane     | 0.391          | 0.36498 |             | .01    |      | -6.65473    | 30  |         | Averaged   |      |
| Ethyl ether                | 0.2362         | 0.22426 |             | .01    |      | -5.05504    | 30  |         | Averaged   |      |
| Acetone                    | 250            | 276.12  | 250         |        |      | 10.448      | 40  |         | Linear     |      |
| 1,1-Dichloroethylene       | 0.4233         | 0.38746 |             | .01    |      | -8.46681    | 20  |         | Averaged   | ccc  |
| Iodomethane                | 0.5181         | 0.47247 |             | .01    |      | -8.80718    | 30  |         | Averaged   |      |
| Carbon disulfide           | 0.8992         | 0.8058  |             | .01    |      | -10.38701   | 30  |         | Averaged   |      |
| Acetonitrile               | 1250           | 1295.34 | 1250        |        |      | 3.6272      | 30  |         | Linear     |      |
| Methyl acetate             | 0.2108         | 0.18698 |             | .01    |      | -11.29981   | 40  |         | Averaged   |      |
| Methylene chloride         | 0.3516         | 0.31544 |             | .01    |      | -10.28441   | 30  |         | Averaged   |      |
| tert-Butyl methyl ether    | 0.8512         | 0.77535 |             | .01    |      | -8.91095    | 30  |         | Averaged   |      |
| trans-1,2-Dichloroethylene | 0.3927         | 0.35622 |             | .01    |      | -9.28953    | 30  |         | Averaged   |      |
| Vinyl acetate              | 0.5065         | 0.44486 |             | .01    |      | -12.16979   | 40  |         | Averaged   |      |
| 1,1-Dichloroethane         | 0.4877         | 0.43539 |             | .1     |      | -10.72586   | 30  |         | Averaged   | spcc |
| 2-Butanone                 | 0.2191         | 0.2089  |             | .01    |      | -4.65541    | 40  |         | Averaged   |      |
| cis-1,2-Dichloroethylene   | 0.3296         | 0.30124 |             | .01    |      | -8.60437    | 30  |         | Averaged   |      |
| 2,2-Dichloropropane        | 0.3776         | 0.31683 |             | .01    |      | -16.09375   | 30  |         | Averaged   |      |
| Bromochloromethane         | 0.161          | 0.15324 |             | .01    |      | -4.81988    | 30  |         | Averaged   |      |
| Chloroform                 | 0.5078         | 0.45805 |             | .01    |      | -9.79716    | 20  |         | Averaged   | ccc  |
| 1,1,1-Trichloroethane      | 0.4373         | 0.39251 |             | .01    |      | -10.2424    | 30  |         | Averaged   |      |
| Cyclohexane                | 0.4881         | 0.43031 |             | .01    |      | -11.83979   | 30  |         | Averaged   |      |
| 1,1-Dichloropropene        | 0.3631         | 0.32188 |             | .01    |      | -11.35224   | 30  |         | Averaged   |      |
| Carbon tetrachloride       | 0.3677         | 0.31686 |             | .01    |      | -13.82649   | 30  |         | Averaged   |      |
| 1,2-Dichloroethane         | 0.3483         | 0.31329 |             | .01    |      | -10.05168   | 30  |         | Averaged   |      |
| Benzene                    | 1.0861         | 0.99087 |             | .01    |      | -8.76807    | 30  |         | Averaged   |      |
| Cyclohexene                | 0.5538         | 0.49741 |             | .01    |      | -10.18238   | 30  |         | Averaged   |      |
| n-Butyl alcohol            | 5000           | 4824.51 | 5000        |        |      | -3.5098     | 40  |         | Linear     |      |
| Trichloroethylene          | 0.2896         | 0.26507 |             | .01    |      | -8.4703     | 30  |         | Averaged   |      |
| 1,2-Dichloropropane        | 0.2756         | 0.25274 |             | .01    |      | -8.29463    | 20  |         | Averaged   | ccc  |
| Methylcyclohexane          | 0.4834         | 0.42711 |             | .01    |      | -11.6446    | 30  |         | Averaged   |      |

## Continuing Calibration Summary

Instrument ID: VOA3.I

Injection Date: 30-AUG-11 20:58

Data File: 083011V3\3B227.D

Init. Cal. Date(s) 24-AUG-11 12:07 25-AUG-11 09:5

Lab Sample ID W3VM110830-06

Method: 082411V3\VOA3-8260-082411.M

Quant Type ISTD

| Compound                    | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|-----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| Dibromomethane              | 0.1787         | 0.1675  |             | .01    |      | -6.26749    | 30  |         | Averaged   |      |
| Bromodichloromethane        | 0.3947         | 0.36758 |             | .01    |      | -6.87104    | 30  |         | Averaged   |      |
| 2-Chloroethylvinyl ether    | 0.1411         | 0.13046 |             | .01    |      | -7.54075    | 30  |         | Averaged   |      |
| cis-1,3-Dichloropropylene   | 0.4688         | 0.4374  |             | .01    |      | -6.69795    | 30  |         | Averaged   |      |
| 4-Methyl-2-pentanone        | 0.2624         | 0.23384 |             | .01    |      | -10.88415   | 40  |         | Averaged   |      |
| Toluene                     | 2.626          | 2.3684  |             | .01    |      | -9.8096     | 20  |         | Averaged   | ccc  |
| trans-1,3-Dichloropropylene | 0.9929         | 0.90211 |             | .01    |      | -9.14392    | 30  |         | Averaged   |      |
| 1,1,2-Trichloroethane       | 0.4918         | 0.46735 |             | .01    |      | -4.97153    | 30  |         | Averaged   |      |
| 1,3-Dichloropropane         | 0.9621         | 0.87088 |             | .01    |      | -9.48134    | 30  |         | Averaged   |      |
| 2-Hexanone                  | 250            | 274.27  | 250         |        |      | 9.708       | 40  |         | Linear     |      |
| Tetrachloroethylene         | 0.5375         | 0.46373 |             | .01    |      | -13.72465   | 30  |         | Averaged   |      |
| Dibromochloromethane        | 0.7283         | 0.68167 |             | .01    |      | -6.40258    | 30  |         | Averaged   |      |
| 1,2-Dibromoethane           | 0.642          | 0.61046 |             | .01    |      | -4.91277    | 30  |         | Averaged   |      |
| Chlorobenzene               | 1.749          | 1.60951 |             | .3     |      | -7.97541    | 30  |         | Averaged   | spcc |
| 1,1,1,2-Tetrachloroethane   | 0.6584         | 0.62927 |             | .01    |      | -4.42436    | 30  |         | Averaged   |      |
| Ethylbenzene                | 2.9023         | 2.55907 |             | .01    |      | -11.82614   | 20  |         | Averaged   | ccc  |
| m,p-Xylenes                 | 1.1819         | 1.0734  |             | .01    |      | -9.18013    | 30  |         | Averaged   |      |
| o-Xylene                    | 1.2271         | 1.14209 |             | .01    |      | -6.92772    | 30  |         | Averaged   |      |
| Styrene                     | 2.0193         | 1.83839 |             | .01    |      | -8.95905    | 30  |         | Averaged   |      |
| Bromoform                   | 0.4797         | 0.47737 |             | .1     |      | -0.48572    | 30  |         | Averaged   | spcc |
| Isopropylbenzene            | 3.0101         | 2.72823 |             | .01    |      | -9.36414    | 30  |         | Averaged   |      |
| 1,1,2,2-Tetrachloroethane   | 0.7713         | 0.75425 |             | .3     |      | -2.21055    | 30  |         | Averaged   | spcc |
| 1,2,3-Trichloropropane      | 0.2254         | 0.21118 |             | .01    |      | -6.30878    | 30  |         | Averaged   |      |
| Bromobenzene                | 0.8116         | 0.77082 |             | .01    |      | -5.02464    | 30  |         | Averaged   |      |
| n-Propylbenzene             | 3.4694         | 3.1563  |             | .01    |      | -9.02462    | 30  |         | Averaged   |      |
| 2-Chlorotoluene             | 0.7457         | 0.71447 |             | .01    |      | -4.18801    | 30  |         | Averaged   |      |
| 1,3,5-Trimethylbenzene      | 2.5066         | 2.28515 |             | .01    |      | -8.83468    | 30  |         | Averaged   |      |
| 4-Chlorotoluene             | 2.2821         | 2.08319 |             | .01    |      | -8.71609    | 30  |         | Averaged   |      |
| tert-Butylbenzene           | 0.5791         | 0.5536  |             | .01    |      | -4.40338    | 30  |         | Averaged   |      |
| 1,2,4-Trimethylbenzene      | 2.5833         | 2.38105 |             | .01    |      | -7.82913    | 30  |         | Averaged   |      |
| sec-Butylbenzene            | 3.4047         | 3.13779 |             | .01    |      | -7.83946    | 30  |         | Averaged   |      |
| 4-Isopropyltoluene          | 2.7292         | 2.52981 |             | .01    |      | -7.3058     | 30  |         | Averaged   |      |
| 1,3-Dichlorobenzene         | 1.5432         | 1.45699 |             | .01    |      | -5.58644    | 30  |         | Averaged   |      |
| 1,4-Dichlorobenzene         | 1.4841         | 1.40609 |             | .01    |      | -5.25638    | 30  |         | Averaged   |      |
| n-Butylbenzene              | 2.7456         | 2.5434  |             | .01    |      | -7.36451    | 30  |         | Averaged   |      |
| 1,2-Dichlorobenzene         | 1.5084         | 1.44148 |             | .01    |      | -4.43649    | 30  |         | Averaged   |      |
| 1,2-Dibromo-3-chloropropane | 0.1652         | 0.16348 |             | .01    |      | -1.04116    | 30  |         | Averaged   |      |

## Continuing Calibration Summary

Instrument ID: VOA3.I

Injection Date: 30-AUG-11 20:58

Data File: 083011V3\3B227.D

Init. Cal. Date(s) 24-AUG-11 12:07 25-AUG-11 09:5

Lab Sample ID W3VM110830-06

Method: 082411V3\VOA3-8260-082411.M

Quant Type ISTD

| Compound               | AVERF /<br>Amount | RF<br>CCV | Nominal<br>CCV | Min RF | RF<br>Q | %D /<br>%Drift | Max | Drift<br>Q | Curve<br>Type |
|------------------------|-------------------|-----------|----------------|--------|---------|----------------|-----|------------|---------------|
| 1,2,4-Trichlorobenzene | 0.9878            | 0.94756   |                | .01    |         | -4.0737        | 30  |            | Averaged      |
| Hexachlorobutadiene    | 0.5859            | 0.54847   |                | .01    |         | -6.38846       | 30  |            | Averaged      |
| Naphthalene            | 1.9844            | 1.90867   |                | .01    |         | -3.81627       | 30  |            | Averaged      |
| 1,2,3-Trichlorobenzene | 0.8146            | 0.76444   |                | .01    |         | -6.15762       | 30  |            | Averaged      |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B227.D  
Acq On : 30 Aug 2011 20:58  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110830-06|CCV|1|VOA|1|VOA8260BL|  
Misc : CCV 5ML n/a MIX[A] 0723-07B+0727-07D  
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Aug 31 06:58:15 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |          |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|----------|
| Internal Standards            |      |        |        |        |          |         |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1334304  | 50.00   | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 578506   | 50.00   | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 580207   | 50.00   | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1334304  | 50.00   | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 578506   | 50.00   | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 580207   | 50.00   | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |         |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 72182    | 47.31   | ug/L  | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1239526  | 48.24   | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 563807   | 51.35   | ug/L  | 0.00     |
| Target Compounds              |      |        |        |        |          |         |       | QValue   |
| 2) Dichlorodifluoromethane    | 85   | 4.652  | 4.666  | 0.387  | 280575   | 52.19   | ug/L  | 100      |
| 3) Chloromethane              | 50   | 5.068  | 5.068  | 0.422  | 326024   | 51.15   | ug/L  | 100      |
| 4) Vinyl chloride             | 62   | 5.365  | 5.365  | 0.447  | 332010   | 51.22   | ug/L  | 100      |
| 5) Bromomethane               | 94   | 6.125  | 6.125  | 0.510  | 376966   | 47.59   | ug/L  | 99       |
| 6) Chloroethane               | 64   | 6.327  | 6.327  | 0.527  | 242680   | 49.91   | ug/L  | 99       |
| 7) Trichlorofluoromethane     | 101  | 6.837  | 6.849  | 0.569  | 486991   | 46.67   | ug/L  | 100      |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 299230   | 47.48   | ug/L  | 97       |
| 9) Acetone                    | 43   | 7.762  | 7.762  | 0.646  | 1108833  | 276.12  | ug/L  | 100      |
| 10) 1,1-Dichloroethylene      | 61   | 7.774  | 7.774  | 0.647  | 516990   | 45.77   | ug/L  | 99       |
| 11) Iodomethane               | 142  | 8.070  | 8.070  | 0.672  | 3152089  | 227.98  | ug/L  | 99       |
| 12) Acetonitrile              | 41   | 8.224  | 8.224  | 0.685  | 1051476  | 1295.34 | ug/L  | 100      |
| 13) Methyl acetate            | 43   | 8.295  | 8.295  | 0.691  | 1247410  | 221.70  | ug/L  | 100      |
| 14) Carbon disulfide          | 76   | 8.212  | 8.212  | 0.684  | 5375920  | 224.03  | ug/L  | 100      |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 420895   | 44.86   | ug/L  | 100      |
| 16) tert-Butyl methyl ether   | 73   | 8.936  | 8.936  | 0.744  | 1034549  | 45.55   | ug/L  | 100      |
| 17) trans-1,2-Dichloroethy... | 61   | 8.971  | 8.971  | 0.747  | 475307   | 45.36   | ug/L  | 99       |
| 18) Vinyl acetate             | 43   | 9.612  | 9.612  | 0.800  | 2967864  | 219.56  | ug/L  | 99       |
| 19) 1,1-Dichloroethane        | 63   | 9.623  | 9.623  | 0.801  | 580945   | 44.64   | ug/L  | 100      |
| 20) 2-Butanone                | 43   | 10.406 | 10.406 | 0.867  | 1393683  | 238.38  | ug/L  | 100      |
| 21) cis-1,2-Dichloroethylene  | 96   | 10.465 | 10.465 | 0.872  | 401946   | 45.70   | ug/L  | 99       |
| 22) 2,2-Dichloropropane       | 77   | 10.489 | 10.489 | 0.874  | 422741   | 41.96   | ug/L  | 97       |
| 23) Bromochloromethane        | 128  | 10.809 | 10.797 | 0.900  | 204474   | 47.58   | ug/L  | 98       |
| 24) Chloroform                | 83   | 10.869 | 10.869 | 0.905  | 611174   | 45.10   | ug/L  | 100      |
| 25) 1,1,1-Trichloroethane     | 97   | 11.201 | 11.201 | 0.933  | 523734   | 44.88   | ug/L  | 99       |
| 26) Cyclohexane               | 56   | 11.307 | 11.307 | 0.942  | 574158   | 44.08   | ug/L  | 99       |
| 27) 1,1-Dichloropropene       | 75   | 11.402 | 11.402 | 0.950  | 429481   | 44.32   | ug/L  | 100      |
| 28) Carbon tetrachloride      | 117  | 11.438 | 11.438 | 0.953  | 422787   | 43.08   | ug/L  | 100      |
| 30) 1,2-Dichloroethane        | 62   | 11.663 | 11.663 | 0.971  | 418029   | 44.97   | ug/L  | 100      |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 1322123  | 45.62   | ug/L  | 100      |
| 32) Cyclohexene               | 67   | 11.829 | 11.829 | 0.985  | 663697   | 44.91   | ug/L  | 99       |
| 33) n-Butyl alcohol           | 56   | 12.185 | 12.185 | 1.015  | 1030833  | 4824.51 | ug/L  | 99       |
| 34) Trichloroethylene         | 95   | 12.481 | 12.481 | 1.040  | 353684   | 45.76   | ug/L  | 98       |
| 35) 1,2-Dichloropropane       | 63   | 12.766 | 12.766 | 1.063  | 337230   | 45.84   | ug/L  | 99       |
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 569890   | 44.18   | ug/L  | 100      |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 223497   | 46.85   | ug/L  | 98       |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 490463   | 46.57   | ug/L  | 99       |
| 39) 2-Chloroethylvinyl ether  | 63   | 13.347 | 13.347 | 1.112  | 870357   | 231.07  | ug/L  | 100      |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B227.D  
Acq On : 30 Aug 2011 20:58  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110830-06|CCV|1|VOA|1|VOA8260BL|  
Misc : CCV 5ML n/a MIX[A] 0723-07B+0727-07D  
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Aug 31 06:58:15 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|-----|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 40) | cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 583621   | 46.65  | ug/L  | 100 |
| 42) | 4-Methyl-2-pentanone      | 58   | 13.715 | 13.715 | 0.877  | 676397   | 222.83 | ug/L  | 99  |
| 44) | Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 1370133  | 45.10  | ug/L  | 100 |
| 45) | trans-1,3-Dichloroprop... | 75   | 14.213 | 14.213 | 0.909  | 521874   | 45.43  | ug/L  | 99  |
| 46) | 1,1,2-Trichloroethane     | 83   | 14.462 | 14.462 | 0.925  | 270367   | 47.51  | ug/L  | 100 |
| 47) | 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 881847   | 274.27 | ug/L  | 100 |
| 48) | 1,3-Dichloropropane       | 76   | 14.663 | 14.663 | 0.938  | 503812   | 45.26  | ug/L  | 99  |
| 49) | Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 268269   | 43.13  | ug/L  | 100 |
| 50) | Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 394352   | 46.80  | ug/L  | 100 |
| 51) | 1,2-Dibromoethane         | 107  | 15.138 | 15.138 | 0.968  | 353155   | 47.55  | ug/L  | 99  |
| 52) | Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 931114   | 46.01  | ug/L  | 100 |
| 53) | 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 364036   | 47.79  | ug/L  | 99  |
| 54) | Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 1480437  | 44.09  | ug/L  | 100 |
| 55) | m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 1241933  | 90.82  | ug/L  | 99  |
| 56) | o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 660704   | 46.54  | ug/L  | 99  |
| 57) | Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 1063520  | 45.52  | ug/L  | 100 |
| 59) | Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 276971   | 49.76  | ug/L  | 99  |
| 60) | Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 1582941  | 45.32  | ug/L  | 100 |
| 62) | 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 437621   | 48.89  | ug/L  | 99  |
| 63) | 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 122528   | 46.85  | ug/L  | 93  |
| 64) | Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 447234   | 47.49  | ug/L  | 100 |
| 65) | n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 1831307  | 45.49  | ug/L  | 100 |
| 66) | 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 1325860  | 45.58  | ug/L  | 100 |
| 67) | 2-Chlorotoluene           | 126  | 17.320 | 17.320 | 0.952  | 414543   | 47.91  | ug/L  | 100 |
| 68) | 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 1208684  | 45.64  | ug/L  | 100 |
| 69) | tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 321204   | 47.80  | ug/L  | 99  |
| 70) | 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 1381504  | 46.08  | ug/L  | 100 |
| 71) | sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 1820568  | 46.08  | ug/L  | 99  |
| 72) | 4-Isopropyltoluene        | 119  | 18.067 | 18.067 | 0.993  | 1467814  | 46.35  | ug/L  | 100 |
| 73) | 1,3-Dichlorobenzene       | 146  | 18.126 | 18.126 | 0.996  | 845355   | 47.21  | ug/L  | 100 |
| 74) | 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 815821   | 47.37  | ug/L  | 100 |
| 75) | n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 1475698  | 46.32  | ug/L  | 99  |
| 76) | 1,2-Dichlorobenzene       | 146  | 18.660 | 18.660 | 1.025  | 836357   | 47.78  | ug/L  | 100 |
| 77) | 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 94850    | 49.47  | ug/L  | 98  |
| 78) | 1,2,4-Trichlorobenzene    | 180  | 20.676 | 20.676 | 1.136  | 549783   | 47.96  | ug/L  | 100 |
| 79) | Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 318227   | 46.81  | ug/L  | 99  |
| 80) | Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 1107426  | 48.09  | ug/L  | 100 |
| 81) | 1,2,3-Trichlorobenzene    | 180  | 21.434 | 21.435 | 1.178  | 443534   | 46.92  | ug/L  | 99  |
| 83) | Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.   |       |     |
| 84) | 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.   |       |     |
| 85) | Acrolein                  |      | 7.536  | 7.524  | 0.628  | 0m       | N.D.   | d     |     |
| 86) | Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.   |       |     |
| 87) | Isopropyl Alcohol         |      | 7.762  | 7.928  | 0.646  | 0m       | N.D.   | d     |     |
| 88) | Allyl chloride            |      | 8.224  | 8.331  | 0.685  | 0m       | N.D.   | d     |     |
| 89) | tert-Butyl Alcohol        |      | 8.580  | 8.580  | 0.715  | 0m       | N.D.   | d     |     |
| 90) | Acrylonitrile             |      | 8.936  | 8.864  | 0.744  | 0m       | N.D.   | d     |     |
| 91) | Isopropyl ether           |      | 9.612  | 9.647  | 0.800  | 0m       | N.D.   | d     |     |
| 92) | 2-Chloro-1,3-butadiene    |      | 9.813  | 9.766  | 0.817  | 0m       | N.D.   | d     |     |
| 93) | Ethyl tert-butyl ether    |      | 0.000  | 10.181 | 0.000  | 0        | N.D.   |       |     |
| 94) | Ethyl acetate             |      | 10.406 | 10.454 | 0.867  | 0m       | N.D.   | d     |     |
| 95) | Propionitrile             |      | 10.406 | 10.501 | 0.867  | 0m       | N.D.   | d     |     |
| 96) | Methacrylonitrile         |      | 10.880 | 10.726 | 0.906  | 0m       | N.D.   | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B227.D  
Acq On : 30 Aug 2011 20:58  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110830-06|CCV|1|VOA|1|VOA8260BL|  
Misc : CCV 5ML n/a MIX[A] 0723-07B+0727-07D  
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Aug 31 06:58:15 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 97) Tetrahydrofuran            |      | 10.869 | 10.869 | 0.905  | 0m       | N.D. | d     |
| 98) Isobutyl alcohol           |      | 11.307 | 11.343 | 0.942  | 0m       | N.D. | d     |
| 99) Methyl tert-amyl ether     |      | 11.687 | 11.746 | 0.973  | 0m       | N.D. | d     |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 12.908 | 12.884 | 1.075  | 0m       | N.D. | d     |
| 102) 2-Nitropropane            |      | 13.347 | 13.300 | 1.112  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 14.248 | 14.248 | 0.911  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 15.541 | 15.553 | 0.854  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 16.715 | 16.762 | 0.919  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 16.715 | 16.869 | 0.919  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 17.059 | 17.059 | 0.937  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 17.782 | 17.782 | 0.977  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 18.529 | 18.339 | 1.018  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 18.766 | 18.754 | 1.031  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



## Continuing Calibration Summary

**Client SDG:** 284538  
**Instrument ID:** VOA3.I  
**Injection Date:** 30-AUG-11 21:58  
**Data File:** 083011V3\3B229.D  
**Init. Cal. Date(s):** 24-AUG-11 12:07 - 25-AUG-11 09:5  
**Lab Sample ID:** W3VM110830-08  
**Method:** 082411V3\VOA3-8260-082411.M  
**Quant Type:** ISTD  
**Method Update:** 25-AUG-11 11:40

| Compound                       | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| S 1,2-Dichloroethane-d4        | 0.0572         | 0.05427 |             | .01    |      | -5.12238    | 30  |         | Averaged   |
| S Toluene-d8                   | 2.2206         | 2.25178 |             | .01    |      | 1.40413     | 30  |         | Averaged   |
| S Bromofluorobenzene           | 0.9463         | 0.9344  |             | .01    |      | -1.25753    | 30  |         | Averaged   |
| Chlorotrifluoroethylene        | 0.1052         | 0.10094 |             | .01    |      | -4.04943    | 30  |         | Averaged   |
| 2-Chloro-1,1,1-trifluoroethane | 0.2801         | 0.25801 |             | .01    |      | -7.88647    | 30  |         | Averaged   |
| Acrolein                       | 0.0491         | 0.04756 |             | .01    |      | -3.13646    | 30  |         | Averaged   |
| Trichlorotrifluoroethane       | 0.0897         | 0.09264 |             | .01    |      | 3.27759     | 30  |         | Averaged   |
| Isopropyl Alcohol              | 0.0184         | 0.0175  |             | .01    |      | -4.8913     | 40  |         | Averaged   |
| Allyl chloride                 | 250            | 279.37  | 250         |        |      | 11.748      | 30  |         | Linear     |
| tert-Butyl Alcohol             | 0.0341         | 0.02986 |             | .01    |      | -12.43402   | 40  |         | Averaged   |
| Acrylonitrile                  | 0.0939         | 0.09023 |             | .01    |      | -3.90841    | 30  |         | Averaged   |
| Isopropyl ether                | 0.9499         | 0.92198 |             | .01    |      | -2.93926    | 30  |         | Averaged   |
| 2-Chloro-1,3-butadiene         | 0.3517         | 0.29173 |             | .01    |      | -17.05146   | 30  |         | Averaged   |
| Ethyl tert-butyl ether         | 0.9215         | 0.88213 |             | .01    |      | -4.27238    | 30  |         | Averaged   |
| Ethyl acetate                  | 0.2511         | 0.22133 |             | .01    |      | -11.85583   | 40  |         | Averaged   |
| Propionitrile                  | 0.0362         | 0.03472 |             | .01    |      | -4.0884     | 30  |         | Averaged   |
| Methacrylonitrile              | 0.1532         | 0.13889 |             | .01    |      | -9.34073    | 30  |         | Averaged   |
| Tetrahydrofuran                | 250            | 277.02  | 250         |        |      | 10.808      | 30  |         | Linear     |
| Isobutyl alcohol               | 0.0081         | 0.00844 |             | .01    |      | 4.19753     | 40  |         | Averaged   |
| Methyl tert-amyl ether         | 0.8445         | 0.80453 |             | .01    |      | -4.73298    | 30  |         | Averaged   |
| Methyl methacrylate            | 0.178          | 0.1625  |             | .01    |      | -8.70787    | 30  |         | Averaged   |
| 1,4-Dioxane                    | 0.0027         | 0.00259 |             | .01    |      | -4.07407    | 40  |         | Averaged   |
| 2-Nitropropane                 | 0.0836         | 0.07721 |             | .01    |      | -7.64354    | 30  |         | Averaged   |
| Ethyl methacrylate             | 0.7985         | 0.72215 |             | .01    |      | -9.56168    | 30  |         | Averaged   |
| 1-Chlorohexane                 | 0.6101         | 0.55417 |             | .01    |      | -9.16735    | 30  |         | Averaged   |
| cis-1,4-Dichloro-2-butene      | 0.2221         | 0.20068 |             | .01    |      | -9.6443     | 30  |         | Averaged   |
| Cyclohexanone                  | 1250           | 983.13  | 1250        |        |      | -21.3496    | 40  |         | Linear     |
| trans-1,4-Dichloro-2-butene    | 0.1849         | 0.18397 |             | .01    |      | -0.50297    | 30  |         | Averaged   |
| Pentachloroethane              | 0.402          | 0.40105 |             | .01    |      | -0.23632    | 30  |         | Averaged   |
| Benzyl chloride                | 1.1875         | 1.06631 |             | .01    |      | -10.20547   | 30  |         | Averaged   |
| bis(2-Chloroisopropyl)ether    | 0.3454         | 0.31207 |             | .01    |      | -9.64968    | 30  |         | Averaged   |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B229.D  
Acq On : 30 Aug 2011 21:58  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110830-08|CCV|1|VOA|1|VOA8260BL|  
Misc : CCV 5ML n/a MIX[B] 0729-08D+0728-08B+0728-16B  
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Aug 31 06:59:29 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1363474  | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 565108   | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 603735   | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1363474  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 565108   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 603735   | 50.00 | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       |          |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 73992    | 47.46 | ug/L  | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1272499  | 50.70 | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 564129   | 49.37 | ug/L  | 0.00     |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 4.562  | 4.666  | 0.380  | 0m       | N.D. | d     |        |
| 3) Chloromethane              |      | 5.053  | 5.068  | 0.421  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 5.350  | 5.365  | 0.446  | 0m       | N.D. | d     |        |
| 5) Bromomethane               |      | 6.101  | 6.125  | 0.508  | 0m       | N.D. | d     |        |
| 6) Chloroethane               |      | 0.000  | 6.327  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 6.837  | 6.849  | 0.569  | 0m       | N.D. | d     |        |
| 8) Ethyl ether                |      | 7.299  | 7.299  | 0.608  | 0m       | N.D. | d     |        |
| 9) Acetone                    |      | 7.773  | 7.762  | 0.647  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.761  | 7.774  | 0.646  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 8.058  | 8.070  | 0.671  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 8.331  | 8.224  | 0.694  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 8.307  | 8.295  | 0.692  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 8.212  | 8.212  | 0.684  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 8.532  | 8.532  | 0.711  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 8.935  | 8.936  | 0.744  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 8.971  | 8.971  | 0.747  | 0m       | N.D. | d     |        |
| 18) Vinyl acetate             |      | 9.647  | 9.612  | 0.803  | 0m       | N.D. | d     |        |
| 19) 1,1-Dichloroethane        |      | 9.623  | 9.623  | 0.801  | 0m       | N.D. | d     |        |
| 20) 2-Butanone                |      | 10.453 | 10.406 | 0.871  | 0m       | N.D. | d     |        |
| 21) cis-1,2-Dichloroethylene  |      | 10.465 | 10.465 | 0.872  | 0m       | N.D. | d     |        |
| 22) 2,2-Dichloropropane       |      | 10.489 | 10.489 | 0.874  | 0m       | N.D. | d     |        |
| 23) Bromochloromethane        |      | 0.000  | 10.797 | 0.000  | 0        | N.D. |       |        |
| 24) Chloroform                |      | 10.868 | 10.869 | 0.905  | 0m       | N.D. | d     |        |
| 25) 1,1,1-Trichloroethane     |      | 11.200 | 11.201 | 0.933  | 0m       | N.D. | d     |        |
| 26) Cyclohexane               |      | 11.343 | 11.307 | 0.945  | 0m       | N.D. | d     |        |
| 27) 1,1-Dichloropropene       |      | 11.343 | 11.402 | 0.945  | 0m       | N.D. | d     |        |
| 28) Carbon tetrachloride      |      | 11.438 | 11.438 | 0.953  | 0m       | N.D. | d     |        |
| 30) 1,2-Dichloroethane        |      | 11.663 | 11.663 | 0.971  | 0m       | N.D. | d     |        |
| 31) Benzene                   |      | 11.687 | 11.687 | 0.973  | 0m       | N.D. | d     |        |
| 32) Cyclohexene               |      | 11.829 | 11.829 | 0.985  | 0m       | N.D. | d     |        |
| 33) n-Butyl alcohol           |      | 12.208 | 12.185 | 1.017  | 0m       | N.D. | d     |        |
| 34) Trichloroethylene         |      | 12.481 | 12.481 | 1.040  | 0m       | N.D. | d     |        |
| 35) 1,2-Dichloropropane       |      | 12.754 | 12.766 | 1.062  | 0m       | N.D. | d     |        |
| 36) Methylcyclohexane         |      | 12.778 | 12.766 | 1.064  | 0m       | N.D. | d     |        |
| 37) Dibromomethane            |      | 0.000  | 12.920 | 0.000  | 0        | N.D. |       |        |
| 38) Bromodichloromethane      |      | 13.062 | 13.062 | 1.088  | 0m       | N.D. | d     |        |
| 39) 2-Chloroethylvinyl ether  |      | 13.347 | 13.347 | 1.112  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B229.D  
Acq On : 30 Aug 2011 21:58  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110830-08|CCV|1|VOA|1|VOA8260BL|  
Misc : CCV 5ML n/a MIX[B] 0729-08D+0728-08B+0728-16B  
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Aug 31 06:59:29 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units    |
|-------------------------------|------|--------|--------|--------|----------|---------|----------|
| 40) cis-1,3-Dichloropropylene |      | 13.596 | 13.596 | 1.132  | 0m       | N.D.    | d        |
| 42) 4-Methyl-2-pentanone      |      | 13.714 | 13.715 | 0.877  | 0m       | N.D.    | d        |
| 44) Toluene                   |      | 14.035 | 14.035 | 0.898  | 0m       | N.D.    | d        |
| 45) trans-1,3-Dichloroprop... |      | 14.224 | 14.213 | 0.910  | 0m       | N.D.    | d        |
| 46) 1,1,2-Trichloroethane     |      | 14.462 | 14.462 | 0.925  | 0m       | N.D.    | d        |
| 47) 2-Hexanone                |      | 14.675 | 14.675 | 0.939  | 0m       | N.D.    | d        |
| 48) 1,3-Dichloropropane       |      | 14.711 | 14.663 | 0.941  | 0m       | N.D.    | d        |
| 49) Tetrachloroethylene       |      | 14.699 | 14.699 | 0.940  | 0m       | N.D.    | d        |
| 50) Dibromochloromethane      |      | 14.960 | 14.960 | 0.957  | 0m       | N.D.    | d        |
| 51) 1,2-Dibromoethane         |      | 15.137 | 15.138 | 0.968  | 0m       | N.D.    | d        |
| 52) Chlorobenzene             |      | 15.671 | 15.671 | 1.002  | 0m       | N.D.    | d        |
| 53) 1,1,1,2-Tetrachloroethane |      | 15.742 | 15.742 | 1.007  | 0m       | N.D.    | d        |
| 54) Ethylbenzene              |      | 15.754 | 15.754 | 1.008  | 0m       | N.D.    | d        |
| 55) m,p-Xylenes               |      | 15.873 | 15.873 | 1.015  | 0m       | N.D.    | d        |
| 56) o-Xylene                  |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.    | d        |
| 57) Styrene                   |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.    | d        |
| 59) Bromoform                 |      | 0.000  | 16.608 | 0.000  | 0        | N.D.    |          |
| 60) Isopropylbenzene          |      | 16.727 | 16.715 | 0.919  | 0m       | N.D.    | d        |
| 62) 1,1,2,2-Tetrachloroethane |      | 17.059 | 17.011 | 0.937  | 0m       | N.D.    | d        |
| 63) 1,2,3-Trichloropropane    |      | 0.000  | 17.094 | 0.000  | 0        | N.D.    |          |
| 64) Bromobenzene              |      | 17.142 | 17.142 | 0.942  | 0m       | N.D.    | d        |
| 65) n-Propylbenzene           |      | 17.165 | 17.165 | 0.943  | 0m       | N.D.    | d        |
| 66) 1,3,5-Trimethylbenzene    |      | 17.331 | 17.331 | 0.952  | 0m       | N.D.    | d        |
| 67) 2-Chlorotoluene           |      | 17.319 | 17.320 | 0.952  | 0m       | N.D.    | d        |
| 68) 4-Chlorotoluene           |      | 17.426 | 17.415 | 0.958  | 0m       | N.D.    | d        |
| 69) tert-Butylbenzene         |      | 17.782 | 17.711 | 0.977  | 0m       | N.D.    | d        |
| 70) 1,2,4-Trimethylbenzene    |      | 17.758 | 17.747 | 0.976  | 0m       | N.D.    | d        |
| 71) sec-Butylbenzene          |      | 17.948 | 17.948 | 0.986  | 0m       | N.D.    | d        |
| 72) 4-Isopropyltoluene        |      | 18.078 | 18.067 | 0.993  | 0m       | N.D.    | d        |
| 73) 1,3-Dichlorobenzene       |      | 18.138 | 18.126 | 0.997  | 0m       | N.D.    | d        |
| 74) 1,4-Dichlorobenzene       |      | 18.221 | 18.221 | 1.001  | 0m       | N.D.    | d        |
| 75) n-Butylbenzene            |      | 18.529 | 18.529 | 1.018  | 0m       | N.D.    | d        |
| 76) 1,2-Dichlorobenzene       |      | 18.659 | 18.660 | 1.025  | 0m       | N.D.    | d        |
| 77) 1,2-Dibromo-3-chloropr... |      | 19.573 | 19.573 | 1.076  | 0m       | N.D.    | d        |
| 78) 1,2,4-Trichlorobenzene    |      | 20.675 | 20.676 | 1.136  | 0m       | N.D.    | d        |
| 79) Hexachlorobutadiene       |      | 20.865 | 20.865 | 1.147  | 0m       | N.D.    | d        |
| 80) Naphthalene               |      | 21.079 | 21.079 | 1.158  | 0m       | N.D.    | d        |
| 81) 1,2,3-Trichlorobenzene    |      | 21.434 | 21.435 | 1.178  | 0m       | N.D.    | d        |
| 83) Chlorotrifluoroethylene   | 116  | 4.562  | 4.562  | 0.380  | 412899   | 143.91  | ug/L 99  |
| 84) 2-Chloro-1,1,1-trifluo... | 118  | 5.573  | 5.573  | 0.464  | 1055375  | 138.15  | ug/L 99  |
| 85) Acrolein                  | 56   | 7.524  | 7.524  | 0.627  | 324255   | 241.94  | ug/L 98  |
| 86) Trichlorotrifluoroethane  | 85   | 7.750  | 7.750  | 0.645  | 631588   | 258.07  | ug/L 99  |
| 87) Isopropyl Alcohol         | 45   | 7.928  | 7.928  | 0.660  | 1193133  | 2378.41 | ug/L 99  |
| 88) Allyl chloride            | 41   | 8.331  | 8.331  | 0.694  | 2536737  | 279.37  | ug/L 100 |
| 89) tert-Butyl Alcohol        | 59   | 8.580  | 8.580  | 0.715  | 2035389  | 2188.73 | ug/L 99  |
| 90) Acrylonitrile             | 53   | 8.864  | 8.864  | 0.738  | 615102   | 240.18  | ug/L 99  |
| 91) Isopropyl ether           | 45   | 9.647  | 9.647  | 0.803  | 1257102  | 48.53   | ug/L 99  |
| 92) 2-Chloro-1,3-butadiene    | 53   | 9.766  | 9.766  | 0.813  | 397767   | 41.48   | ug/L 100 |
| 93) Ethyl tert-butyl ether    | 59   | 10.181 | 10.181 | 0.848  | 1202765  | 47.86   | ug/L 99  |
| 94) Ethyl acetate             | 43   | 10.453 | 10.454 | 0.871  | 1508868  | 220.34  | ug/L 100 |
| 95) Propionitrile             | 54   | 10.501 | 10.501 | 0.875  | 236711   | 239.47  | ug/L 99  |
| 96) Methacrylonitrile         | 41   | 10.726 | 10.726 | 0.893  | 946834   | 226.58  | ug/L 100 |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B229.D  
Acq On : 30 Aug 2011 21:58  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110830-08|CCV|1|VOA|1|VOA8260BL|  
Misc : CCV 5ML n/a MIX[B] 0729-08D+0728-08B+0728-16B  
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Aug 31 06:59:29 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

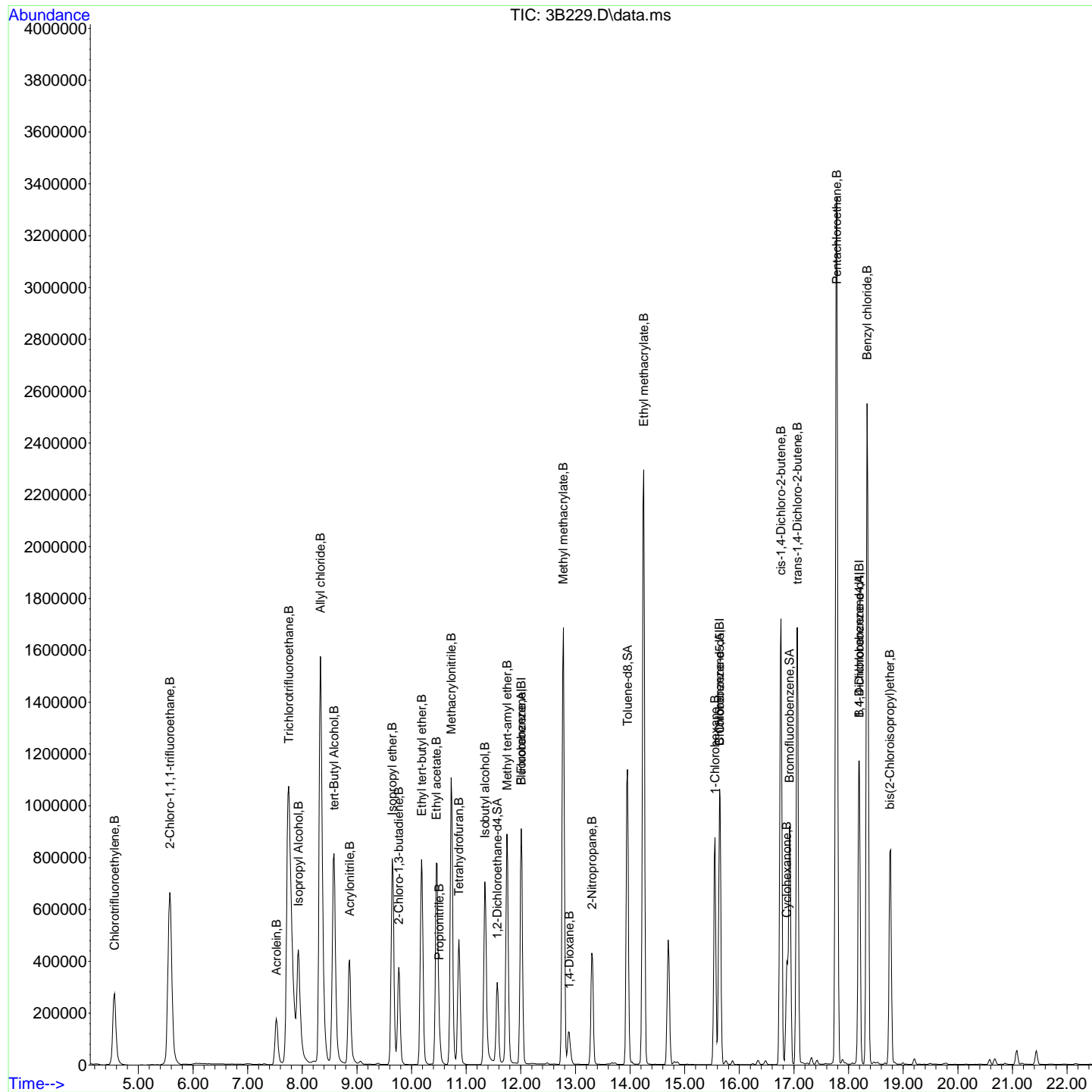
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 97) Tetrahydrofuran            | 42   | 10.868 | 10.869 | 0.905  | 517871   | 277.02  | ug/L  | 100 |
| 98) Isobutyl alcohol           | 41   | 11.343 | 11.343 | 0.945  | 575305   | 2620.22 | ug/L  | 100 |
| 99) Methyl tert-amyl ether     | 73   | 11.746 | 11.746 | 0.978  | 1096958  | 47.63   | ug/L  | 100 |
| 100) Methyl methacrylate       | 69   | 12.778 | 12.778 | 1.064  | 1107854  | 228.28  | ug/L  | 99  |
| 101) 1,4-Dioxane               | 88   | 12.884 | 12.884 | 1.073  | 176729   | 2423.26 | ug/L  | 99  |
| 102) 2-Nitropropane            | 43   | 13.299 | 13.300 | 1.108  | 526360   | 230.85  | ug/L  | 98  |
| 104) Ethyl methacrylate        | 69   | 14.248 | 14.248 | 0.911  | 2040474  | 226.10  | ug/L  | 100 |
| 106) 1-Chlorohexane            | 55   | 15.553 | 15.553 | 0.855  | 334574   | 45.42   | ug/L  | 99  |
| 107) cis-1,4-Dichloro-2-butene | 53   | 16.762 | 16.762 | 0.921  | 605778   | 225.89  | ug/L  | 98  |
| 108) Cyclohexanone             | 42   | 16.869 | 16.869 | 0.927  | 184129   | 983.13  | ug/L  | 99  |
| 109) trans-1,4-Dichloro-2-b... | 53   | 17.059 | 17.059 | 0.937  | 555349   | 248.78  | ug/L  | 99  |
| 110) Pentachloroethane         | 167  | 17.782 | 17.782 | 0.977  | 1210644  | 249.42  | ug/L  | 99  |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 3218831  | 224.49  | ug/L  | 100 |
| 112) bis(2-Chloroisopropyl)... | 45   | 18.754 | 18.754 | 1.031  | 942023   | 225.84  | ug/L  | 99  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B229.D  
Acq On : 30 Aug 2011 21:58  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110830-08|CCV|1|VOA|1|VOA8260BL|  
Misc : CCV 5ML n/a MIX[B] 0729-08D+0728-08B+0728-16B  
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Aug 31 06:59:29 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE





## Continuing Calibration Summary

**Instrument ID:** VOA3.I  
**Data File:** 083111V3\3B302.D  
**Lab Sample ID** W3VM110831-01  
**Quant Type** ISTD

**Client SDG:** 284538  
**Injection Date:** 31-AUG-11 07:23  
**Init. Cal. Date(s)** 24-AUG-11 12:07 - 25-AUG-11 09:5  
**Method:** 082411V3\VOA3-8260-082411.M  
**Method Update:** 25-AUG-11 11:40

| Compound                   | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| S 1,2-Dichloroethane-d4    | 0.0572         | 0.05504 |             | .01    |      | -3.77622    | 30  |         | Averaged   |      |
| S Toluene-d8               | 2.2206         | 2.16475 |             | .01    |      | -2.51509    | 30  |         | Averaged   |      |
| S Bromofluorobenzene       | 0.9463         | 0.95425 |             | .01    |      | 0.84011     | 30  |         | Averaged   |      |
| Dichlorodifluoromethane    | 0.2014         | 0.24315 |             | .01    |      | 20.72989    | 30  |         | Averaged   |      |
| Chloromethane              | 0.2389         | 0.25449 |             | .1     |      | 6.52574     | 30  |         | Averaged   | spcc |
| Vinyl chloride             | 0.2429         | 0.26503 |             | .01    |      | 9.11075     | 20  |         | Averaged   | ccc  |
| Bromomethane               | 0.2968         | 0.2957  |             | .01    |      | -0.37062    | 30  |         | Averaged   |      |
| Chloroethane               | 0.1822         | 0.19617 |             | .01    |      | 7.6674      | 30  |         | Averaged   |      |
| Trichlorofluoromethane     | 0.391          | 0.41335 |             | .01    |      | 5.71611     | 30  |         | Averaged   |      |
| Ethyl ether                | 0.2362         | 0.23087 |             | .01    |      | -2.25656    | 30  |         | Averaged   |      |
| 1,1-Dichloroethylene       | 0.4233         | 0.41158 |             | .01    |      | -2.76872    | 20  |         | Averaged   | ccc  |
| Acetone                    | 250            | 317.66  | 250         |        |      | 27.064      | 40  |         | Linear     |      |
| Iodomethane                | 0.5181         | 0.48798 |             | .01    |      | -5.81355    | 30  |         | Averaged   |      |
| Carbon disulfide           | 0.8992         | 0.85169 |             | .01    |      | -5.28359    | 30  |         | Averaged   |      |
| Acetonitrile               | 1250           | 1282.02 | 1250        |        |      | 2.5616      | 30  |         | Linear     |      |
| Methyl acetate             | 0.2108         | 0.1871  |             | .01    |      | -11.24288   | 40  |         | Averaged   |      |
| Methylene chloride         | 0.3516         | 0.32183 |             | .01    |      | -8.46701    | 30  |         | Averaged   |      |
| tert-Butyl methyl ether    | 0.8512         | 0.77212 |             | .01    |      | -9.29041    | 30  |         | Averaged   |      |
| trans-1,2-Dichloroethylene | 0.3927         | 0.37392 |             | .01    |      | -4.78228    | 30  |         | Averaged   |      |
| Vinyl acetate              | 0.5065         | 0.46551 |             | .01    |      | -8.09279    | 40  |         | Averaged   |      |
| 1,1-Dichloroethane         | 0.4877         | 0.44639 |             | .1     |      | -8.47037    | 30  |         | Averaged   | spcc |
| 2-Butanone                 | 0.2191         | 0.23673 |             | .01    |      | 8.04655     | 40  |         | Averaged   |      |
| cis-1,2-Dichloroethylene   | 0.3296         | 0.30189 |             | .01    |      | -8.40716    | 30  |         | Averaged   |      |
| 2,2-Dichloropropane        | 0.3776         | 0.35652 |             | .01    |      | -5.58263    | 30  |         | Averaged   |      |
| Bromochloromethane         | 0.161          | 0.14991 |             | .01    |      | -6.8882     | 30  |         | Averaged   |      |
| Chloroform                 | 0.5078         | 0.46477 |             | .01    |      | -8.47381    | 20  |         | Averaged   | ccc  |
| 1,1,1-Trichloroethane      | 0.4373         | 0.43032 |             | .01    |      | -1.59616    | 30  |         | Averaged   |      |
| Cyclohexane                | 0.4881         | 0.47488 |             | .01    |      | -2.70846    | 30  |         | Averaged   |      |
| 1,1-Dichloropropene        | 0.3631         | 0.34363 |             | .01    |      | -5.36216    | 30  |         | Averaged   |      |
| Carbon tetrachloride       | 0.3677         | 0.34905 |             | .01    |      | -5.07207    | 30  |         | Averaged   |      |
| 1,2-Dichloroethane         | 0.3483         | 0.31082 |             | .01    |      | -10.76084   | 30  |         | Averaged   |      |
| Benzene                    | 1.0861         | 1.02169 |             | .01    |      | -5.93039    | 30  |         | Averaged   |      |
| Cyclohexene                | 0.5538         | 0.54264 |             | .01    |      | -2.01517    | 30  |         | Averaged   |      |
| n-Butyl alcohol            | 5000           | 5059.15 | 5000        |        |      | 1.183       | 40  |         | Linear     |      |
| Trichloroethylene          | 0.2896         | 0.2793  |             | .01    |      | -3.55663    | 30  |         | Averaged   |      |
| 1,2-Dichloropropane        | 0.2756         | 0.25091 |             | .01    |      | -8.95864    | 20  |         | Averaged   | ccc  |
| Methylcyclohexane          | 0.4834         | 0.47498 |             | .01    |      | -1.74183    | 30  |         | Averaged   |      |

## Continuing Calibration Summary

Instrument ID: VOA3.I

Injection Date: 31-AUG-11 07:23

Data File: 083111V3\3B302.D

Init. Cal. Date(s) 24-AUG-11 12:07 25-AUG-11 09:5

Lab Sample ID W3VM110831-01

Method: 082411V3\VOA3-8260-082411.M

Quant Type ISTD

| Compound                    | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|-----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| Dibromomethane              | 0.1787         | 0.1663  |             | .01    |      | -6.939      | 30  |         | Averaged   |      |
| Bromodichloromethane        | 0.3947         | 0.36383 |             | .01    |      | -7.82113    | 30  |         | Averaged   |      |
| 2-Chloroethylvinyl ether    | 0.1411         | 0.13173 |             | .01    |      | -6.64068    | 30  |         | Averaged   |      |
| cis-1,3-Dichloropropylene   | 0.4688         | 0.44678 |             | .01    |      | -4.6971     | 30  |         | Averaged   |      |
| 4-Methyl-2-pentanone        | 0.2624         | 0.25308 |             | .01    |      | -3.55183    | 40  |         | Averaged   |      |
| Toluene                     | 2.626          | 2.47985 |             | .01    |      | -5.5655     | 20  |         | Averaged   | ccc  |
| trans-1,3-Dichloropropylene | 0.9929         | 0.9266  |             | .01    |      | -6.67741    | 30  |         | Averaged   |      |
| 1,1,2-Trichloroethane       | 0.4918         | 0.47211 |             | .01    |      | -4.00366    | 30  |         | Averaged   |      |
| 1,3-Dichloropropane         | 0.9621         | 0.8586  |             | .01    |      | -10.75772   | 30  |         | Averaged   |      |
| 2-Hexanone                  | 250            | 323.47  | 250         |        |      | 29.388      | 40  |         | Linear     |      |
| Tetrachloroethylene         | 0.5375         | 0.51293 |             | .01    |      | -4.57116    | 30  |         | Averaged   |      |
| Dibromochloromethane        | 0.7283         | 0.70413 |             | .01    |      | -3.31869    | 30  |         | Averaged   |      |
| 1,2-Dibromoethane           | 0.642          | 0.6207  |             | .01    |      | -3.31776    | 30  |         | Averaged   |      |
| Chlorobenzene               | 1.749          | 1.67368 |             | .3     |      | -4.30646    | 30  |         | Averaged   | spcc |
| 1,1,1,2-Tetrachloroethane   | 0.6584         | 0.64234 |             | .01    |      | -2.43925    | 30  |         | Averaged   |      |
| Ethylbenzene                | 2.9023         | 2.6991  |             | .01    |      | -7.00134    | 20  |         | Averaged   | ccc  |
| m,p-Xylenes                 | 1.1819         | 1.12114 |             | .01    |      | -5.14087    | 30  |         | Averaged   |      |
| o-Xylene                    | 1.2271         | 1.1864  |             | .01    |      | -3.31676    | 30  |         | Averaged   |      |
| Styrene                     | 2.0193         | 1.89246 |             | .01    |      | -6.28138    | 30  |         | Averaged   |      |
| Bromoform                   | 0.4797         | 0.47562 |             | .1     |      | -0.85053    | 30  |         | Averaged   | spcc |
| Isopropylbenzene            | 3.0101         | 2.83085 |             | .01    |      | -5.95495    | 30  |         | Averaged   |      |
| 1,1,2,2-Tetrachloroethane   | 0.7713         | 0.74428 |             | .3     |      | -3.50318    | 30  |         | Averaged   | spcc |
| 1,2,3-Trichloropropane      | 0.2254         | 0.21862 |             | .01    |      | -3.00799    | 30  |         | Averaged   |      |
| Bromobenzene                | 0.8116         | 0.76831 |             | .01    |      | -5.33391    | 30  |         | Averaged   |      |
| n-Propylbenzene             | 3.4694         | 3.25511 |             | .01    |      | -6.17657    | 30  |         | Averaged   |      |
| 2-Chlorotoluene             | 0.7457         | 0.72172 |             | .01    |      | -3.21577    | 30  |         | Averaged   |      |
| 1,3,5-Trimethylbenzene      | 2.5066         | 2.27857 |             | .01    |      | -9.09718    | 30  |         | Averaged   |      |
| 4-Chlorotoluene             | 2.2821         | 2.12504 |             | .01    |      | -6.88226    | 30  |         | Averaged   |      |
| tert-Butylbenzene           | 0.5791         | 0.57072 |             | .01    |      | -1.44707    | 30  |         | Averaged   |      |
| 1,2,4-Trimethylbenzene      | 2.5833         | 2.39321 |             | .01    |      | -7.35842    | 30  |         | Averaged   |      |
| sec-Butylbenzene            | 3.4047         | 3.24483 |             | .01    |      | -4.69557    | 30  |         | Averaged   |      |
| 4-Isopropyltoluene          | 2.7292         | 2.63002 |             | .01    |      | -3.63403    | 30  |         | Averaged   |      |
| 1,3-Dichlorobenzene         | 1.5432         | 1.47351 |             | .01    |      | -4.51594    | 30  |         | Averaged   |      |
| 1,4-Dichlorobenzene         | 1.4841         | 1.43036 |             | .01    |      | -3.62105    | 30  |         | Averaged   |      |
| n-Butylbenzene              | 2.7456         | 2.60784 |             | .01    |      | -5.01748    | 30  |         | Averaged   |      |
| 1,2-Dichlorobenzene         | 1.5084         | 1.44448 |             | .01    |      | -4.2376     | 30  |         | Averaged   |      |
| 1,2-Dibromo-3-chloropropane | 0.1652         | 0.16771 |             | .01    |      | 1.51937     | 30  |         | Averaged   |      |

## Continuing Calibration Summary

Instrument ID: VOA3.I

Injection Date: 31-AUG-11 07:23

Data File: 083111V3\3B302.D

Init. Cal. Date(s) 24-AUG-11 12:07 25-AUG-11 09:5

Lab Sample ID W3VM110831-01

Method: 082411V3\VOA3-8260-082411.M

Quant Type ISTD

| Compound               | AVERF /<br>Amount | RF<br>CCV | Nominal<br>CCV | Min RF | RF<br>Q | %D /<br>%Drift | Max | Drift<br>Q | Curve<br>Type |
|------------------------|-------------------|-----------|----------------|--------|---------|----------------|-----|------------|---------------|
| 1,2,4-Trichlorobenzene | 0.9878            | 0.97575   |                | .01    |         | -1.21988       | 30  |            | Averaged      |
| Hexachlorobutadiene    | 0.5859            | 0.54379   |                | .01    |         | -7.18723       | 30  |            | Averaged      |
| Naphthalene            | 1.9844            | 1.85757   |                | .01    |         | -6.39135       | 30  |            | Averaged      |
| 1,2,3-Trichlorobenzene | 0.8146            | 0.75431   |                | .01    |         | -7.40118       | 30  |            | Averaged      |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B302.D  
Acq On : 31 Aug 2011 07:23  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110831-01|CCV|1|VOA|1|VOA8260BL|  
Misc : CCV 5ML n/a MIX[A] 0727-07D+0723-07B  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 31 07:48:25 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |          |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|----------|
| Internal Standards            |      |        |        |        |          |         |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1352307  | 50.00   | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 580645   | 50.00   | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 602656   | 50.00   | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1352307  | 50.00   | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 580645   | 50.00   | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 602656   | 50.00   | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |         |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 74429    | 48.14   | ug/L  | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1256954  | 48.74   | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 575087   | 50.42   | ug/L  | 0.00     |
| Target Compounds              |      |        |        |        |          |         |       |          |
|                               | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue   |
| 2) Dichlorodifluoromethane    | 85   | 4.651  | 4.666  | 0.387  | 328815   | 60.35   | ug/L  | 100      |
| 3) Chloromethane              | 50   | 5.067  | 5.068  | 0.422  | 344145   | 53.27   | ug/L  | 100      |
| 4) Vinyl chloride             | 62   | 5.365  | 5.365  | 0.447  | 358396   | 54.55   | ug/L  | 99       |
| 5) Bromomethane               | 94   | 6.125  | 6.125  | 0.510  | 399881   | 49.82   | ug/L  | 99       |
| 6) Chloroethane               | 64   | 6.327  | 6.327  | 0.527  | 265286   | 53.83   | ug/L  | 100      |
| 7) Trichlorofluoromethane     | 101  | 6.837  | 6.849  | 0.569  | 558981   | 52.86   | ug/L  | 100      |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 312206   | 48.88   | ug/L  | 100      |
| 9) Acetone                    | 43   | 7.762  | 7.762  | 0.646  | 1284248  | 317.66  | ug/L  | 99       |
| 10) 1,1-Dichloroethylene      | 61   | 7.762  | 7.774  | 0.646  | 556581   | 48.62   | ug/L  | 99       |
| 11) Iodomethane               | 142  | 8.070  | 8.070  | 0.672  | 3299517  | 235.47  | ug/L  | 100      |
| 12) Acetonitrile              | 41   | 8.236  | 8.224  | 0.686  | 1055166  | 1282.02 | ug/L  | 99       |
| 13) Methyl acetate            | 43   | 8.295  | 8.295  | 0.691  | 1265093  | 221.85  | ug/L  | 100      |
| 14) Carbon disulfide          | 76   | 8.212  | 8.212  | 0.684  | 5758721  | 236.79  | ug/L  | 100      |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 435208   | 45.77   | ug/L  | 99       |
| 16) tert-Butyl methyl ether   | 73   | 8.936  | 8.936  | 0.744  | 1044146  | 45.36   | ug/L  | 99       |
| 17) trans-1,2-Dichloroethy... | 61   | 8.971  | 8.971  | 0.747  | 505659   | 47.61   | ug/L  | 99       |
| 18) Vinyl acetate             | 43   | 9.612  | 9.612  | 0.800  | 3147558  | 229.75  | ug/L  | 100      |
| 19) 1,1-Dichloroethane        | 63   | 9.623  | 9.623  | 0.801  | 603650   | 45.77   | ug/L  | 99       |
| 20) 2-Butanone                | 43   | 10.406 | 10.406 | 0.867  | 1600643  | 270.14  | ug/L  | 99       |
| 21) cis-1,2-Dichloroethylene  | 96   | 10.465 | 10.465 | 0.872  | 408249   | 45.80   | ug/L  | 98       |
| 22) 2,2-Dichloropropane       | 77   | 10.489 | 10.489 | 0.874  | 482130   | 47.22   | ug/L  | 100      |
| 23) Bromochloromethane        | 128  | 10.809 | 10.797 | 0.900  | 202721   | 46.55   | ug/L  | 99       |
| 24) Chloroform                | 83   | 10.869 | 10.869 | 0.905  | 628514   | 45.76   | ug/L  | 100      |
| 25) 1,1,1-Trichloroethane     | 97   | 11.201 | 11.201 | 0.933  | 581920   | 49.20   | ug/L  | 99       |
| 26) Cyclohexane               | 56   | 11.307 | 11.307 | 0.942  | 642185   | 48.65   | ug/L  | 99       |
| 27) 1,1-Dichloropropene       | 75   | 11.402 | 11.402 | 0.950  | 464687   | 47.32   | ug/L  | 100      |
| 28) Carbon tetrachloride      | 117  | 11.438 | 11.438 | 0.953  | 472023   | 47.46   | ug/L  | 100      |
| 30) 1,2-Dichloroethane        | 62   | 11.663 | 11.663 | 0.971  | 420330   | 44.62   | ug/L  | 99       |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 1381633  | 47.03   | ug/L  | 99       |
| 32) Cyclohexene               | 67   | 11.829 | 11.829 | 0.985  | 733822   | 49.00   | ug/L  | 98       |
| 33) n-Butyl alcohol           | 56   | 12.185 | 12.185 | 1.015  | 1096127  | 5059.15 | ug/L  | 99       |
| 34) Trichloroethylene         | 95   | 12.481 | 12.481 | 1.040  | 377693   | 48.22   | ug/L  | 99       |
| 35) 1,2-Dichloropropane       | 63   | 12.766 | 12.766 | 1.063  | 339312   | 45.51   | ug/L  | 100      |
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 642314   | 49.13   | ug/L  | 99       |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 224894   | 46.52   | ug/L  | 99       |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 492009   | 46.09   | ug/L  | 99       |
| 39) 2-Chloroethylvinyl ether  | 63   | 13.347 | 13.347 | 1.112  | 890698   | 233.32  | ug/L  | 100      |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B302.D  
Acq On : 31 Aug 2011 07:23  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110831-01|CCV|1|VOA|1|VOA8260BL|  
Misc : CCV 5ML n/a MIX[A] 0727-07D+0723-07B  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 31 07:48:25 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|-----|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 40) | cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 604187   | 47.65  | ug/L  | 99  |
| 42) | 4-Methyl-2-pentanone      | 58   | 13.715 | 13.715 | 0.877  | 734756   | 241.17 | ug/L  | 99  |
| 44) | Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 1439914  | 47.22  | ug/L  | 100 |
| 45) | trans-1,3-Dichloroprop... | 75   | 14.213 | 14.213 | 0.909  | 538028   | 46.66  | ug/L  | 99  |
| 46) | 1,1,2-Trichloroethane     | 83   | 14.462 | 14.462 | 0.925  | 274126   | 48.00  | ug/L  | 100 |
| 47) | 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 1035882  | 323.47 | ug/L  | 99  |
| 48) | 1,3-Dichloropropane       | 76   | 14.663 | 14.663 | 0.938  | 498541   | 44.62  | ug/L  | 95  |
| 49) | Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 297830   | 47.71  | ug/L  | 100 |
| 50) | Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 408848   | 48.34  | ug/L  | 100 |
| 51) | 1,2-Dibromoethane         | 107  | 15.138 | 15.138 | 0.968  | 360404   | 48.34  | ug/L  | 100 |
| 52) | Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 971815   | 47.85  | ug/L  | 100 |
| 53) | 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 372969   | 48.78  | ug/L  | 99  |
| 54) | Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 1567221  | 46.50  | ug/L  | 99  |
| 55) | m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 1301968  | 94.86  | ug/L  | 98  |
| 56) | o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 688880   | 48.34  | ug/L  | 99  |
| 57) | Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 1098845  | 46.86  | ug/L  | 100 |
| 59) | Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 286638   | 49.58  | ug/L  | 98  |
| 60) | Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 1706029  | 47.02  | ug/L  | 100 |
| 62) | 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 448545   | 48.25  | ug/L  | 98  |
| 63) | 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 131750   | 48.50  | ug/L  | 99  |
| 64) | Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 463028   | 47.33  | ug/L  | 100 |
| 65) | n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 1961710  | 46.91  | ug/L  | 99  |
| 66) | 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 1373191  | 45.45  | ug/L  | 100 |
| 67) | 2-Chlorotoluene           | 126  | 17.320 | 17.320 | 0.952  | 434949   | 48.39  | ug/L  | 96  |
| 68) | 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 1280670  | 46.56  | ug/L  | 100 |
| 69) | tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 343946   | 49.27  | ug/L  | 100 |
| 70) | 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 1442280  | 46.32  | ug/L  | 99  |
| 71) | sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 1955514  | 47.65  | ug/L  | 100 |
| 72) | 4-Isopropyltoluene        | 119  | 18.067 | 18.067 | 0.993  | 1585000  | 48.18  | ug/L  | 100 |
| 73) | 1,3-Dichlorobenzene       | 146  | 18.126 | 18.126 | 0.996  | 888020   | 47.74  | ug/L  | 100 |
| 74) | 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 862016   | 48.19  | ug/L  | 99  |
| 75) | n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 1571631  | 47.49  | ug/L  | 100 |
| 76) | 1,2-Dichlorobenzene       | 146  | 18.660 | 18.660 | 1.025  | 870523   | 47.88  | ug/L  | 99  |
| 77) | 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 101074   | 50.75  | ug/L  | 99  |
| 78) | 1,2,4-Trichlorobenzene    | 180  | 20.676 | 20.676 | 1.136  | 588042   | 49.39  | ug/L  | 99  |
| 79) | Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 327720   | 46.41  | ug/L  | 100 |
| 80) | Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 1119475  | 46.80  | ug/L  | 100 |
| 81) | 1,2,3-Trichlorobenzene    | 180  | 21.434 | 21.435 | 1.178  | 454588   | 46.30  | ug/L  | 98  |
| 83) | Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.   |       |     |
| 84) | 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.   |       |     |
| 85) | Acrolein                  |      | 7.536  | 7.524  | 0.628  | 0m       | N.D.   | d     |     |
| 86) | Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.   |       |     |
| 87) | Isopropyl Alcohol         |      | 7.762  | 7.928  | 0.646  | 0m       | N.D.   | d     |     |
| 88) | Allyl chloride            |      | 8.236  | 8.331  | 0.686  | 0m       | N.D.   | d     |     |
| 89) | tert-Butyl Alcohol        |      | 8.580  | 8.580  | 0.715  | 0m       | N.D.   | d     |     |
| 90) | Acrylonitrile             |      | 8.936  | 8.864  | 0.744  | 0m       | N.D.   | d     |     |
| 91) | Isopropyl ether           |      | 9.612  | 9.647  | 0.800  | 0m       | N.D.   | d     |     |
| 92) | 2-Chloro-1,3-butadiene    |      | 9.813  | 9.766  | 0.817  | 0m       | N.D.   | d     |     |
| 93) | Ethyl tert-butyl ether    |      | 0.000  | 10.181 | 0.000  | 0        | N.D.   |       |     |
| 94) | Ethyl acetate             |      | 10.406 | 10.454 | 0.867  | 0m       | N.D.   | d     |     |
| 95) | Propionitrile             |      | 10.406 | 10.501 | 0.867  | 0m       | N.D.   | d     |     |
| 96) | Methacrylonitrile         |      | 10.880 | 10.726 | 0.906  | 0m       | N.D.   | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B302.D  
Acq On : 31 Aug 2011 07:23  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110831-01|CCV|1|VOA|1|VOA8260BL|  
Misc : CCV 5ML n/a MIX[A] 0727-07D+0723-07B  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 31 07:48:25 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 97) Tetrahydrofuran            |      | 10.869 | 10.869 | 0.905  | 0m       | N.D. | d     |
| 98) Isobutyl alcohol           |      | 11.307 | 11.343 | 0.942  | 0m       | N.D. | d     |
| 99) Methyl tert-amyl ether     |      | 11.687 | 11.746 | 0.973  | 0m       | N.D. | d     |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 12.920 | 12.884 | 1.076  | 0m       | N.D. | d     |
| 102) 2-Nitropropane            |      | 13.347 | 13.300 | 1.112  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 15.636 | 15.553 | 0.859  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 16.715 | 16.762 | 0.919  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 16.715 | 16.869 | 0.919  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 17.165 | 17.059 | 0.943  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 17.782 | 17.782 | 0.977  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 18.529 | 18.339 | 1.018  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 0.000  | 18.754 | 0.000  | 0        | N.D. |       |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



## Continuing Calibration Summary

**Client SDG:** 284538  
**Instrument ID:** VOA3.I  
**Injection Date:** 31-AUG-11 08:53  
**Data File:** 083111V3\3B305.D  
**Init. Cal. Date(s):** 24-AUG-11 12:07 - 25-AUG-11 09:5  
**Lab Sample ID:** W3VM110831-04  
**Method:** 082411V3\VOA3-8260-082411.M  
**Quant Type:** ISTD  
**Method Update:** 25-AUG-11 11:40

| Compound                       | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| S 1,2-Dichloroethane-d4        | 0.0572         | 0.05632 |             | .01    |      | -1.53846    | 30  |         | Averaged   |
| S Toluene-d8                   | 2.2206         | 2.2354  |             | .01    |      | 0.66649     | 30  |         | Averaged   |
| S Bromofluorobenzene           | 0.9463         | 0.89832 |             | .01    |      | -5.07027    | 30  |         | Averaged   |
| Chlorotrifluoroethylene        | 0.1052         | 0.10685 |             | .01    |      | 1.56844     | 30  |         | Averaged   |
| 2-Chloro-1,1,1-trifluoroethane | 0.2801         | 0.27435 |             | .01    |      | -2.05284    | 30  |         | Averaged   |
| Acrolein                       | 0.0491         | 0.05295 |             | .01    |      | 7.84114     | 30  |         | Averaged   |
| Trichlorotrifluoroethane       | 0.0897         | 0.09831 |             | .01    |      | 9.59866     | 30  |         | Averaged   |
| Isopropyl Alcohol              | 0.0184         | 0.01986 |             | .01    |      | 7.93478     | 40  |         | Averaged   |
| Allyl chloride                 | 250            | 280.81  | 250         |        |      | 12.324      | 30  |         | Linear     |
| tert-Butyl Alcohol             | 0.0341         | 0.03443 |             | .01    |      | 0.96774     | 40  |         | Averaged   |
| Acrylonitrile                  | 0.0939         | 0.09676 |             | .01    |      | 3.04579     | 30  |         | Averaged   |
| Isopropyl ether                | 0.9499         | 0.8988  |             | .01    |      | -5.37951    | 30  |         | Averaged   |
| 2-Chloro-1,3-butadiene         | 0.3517         | 0.29689 |             | .01    |      | -15.5843    | 30  |         | Averaged   |
| Ethyl tert-butyl ether         | 0.9215         | 0.88387 |             | .01    |      | -4.08356    | 30  |         | Averaged   |
| Ethyl acetate                  | 0.2511         | 0.23889 |             | .01    |      | -4.8626     | 40  |         | Averaged   |
| Propionitrile                  | 0.0362         | 0.03742 |             | .01    |      | 3.37017     | 30  |         | Averaged   |
| Methacrylonitrile              | 0.1532         | 0.14411 |             | .01    |      | -5.93342    | 30  |         | Averaged   |
| Tetrahydrofuran                | 250            | 302.99  | 250         |        |      | 21.196      | 30  |         | Linear     |
| Isobutyl alcohol               | 0.0081         | 0.00964 |             | .01    |      | 19.01235    | 40  |         | Averaged   |
| Methyl tert-amyl ether         | 0.8445         | 0.81108 |             | .01    |      | -3.95737    | 30  |         | Averaged   |
| Methyl methacrylate            | 0.178          | 0.1731  |             | .01    |      | -2.75281    | 30  |         | Averaged   |
| 1,4-Dioxane                    | 0.0027         | 0.00284 |             | .01    |      | 5.18519     | 40  |         | Averaged   |
| 2-Nitropropane                 | 0.0836         | 0.08433 |             | .01    |      | 0.87321     | 30  |         | Averaged   |
| Ethyl methacrylate             | 0.7985         | 0.73999 |             | .01    |      | -7.32749    | 30  |         | Averaged   |
| 1-Chlorohexane                 | 0.6101         | 0.55055 |             | .01    |      | -9.76069    | 30  |         | Averaged   |
| cis-1,4-Dichloro-2-butene      | 0.2221         | 0.20697 |             | .01    |      | -6.81225    | 30  |         | Averaged   |
| Cyclohexanone                  | 1250           | 1043.3  | 1250        |        |      | -16.536     | 40  |         | Linear     |
| trans-1,4-Dichloro-2-butene    | 0.1849         | 0.19283 |             | .01    |      | 4.2888      | 30  |         | Averaged   |
| Pentachloroethane              | 0.402          | 0.40494 |             | .01    |      | 0.73134     | 30  |         | Averaged   |
| Benzyl chloride                | 1.1875         | 1.22076 |             | .01    |      | 2.80084     | 30  |         | Averaged   |
| bis(2-Chloroisopropyl)ether    | 0.3454         | 0.34707 |             | .01    |      | 0.4835      | 30  |         | Averaged   |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B305.D  
Acq On : 31 Aug 2011 08:53  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110831-04|CCV|1|VOA|1|VOA8260BL|  
Misc : CCV 5ML n/a MIX[B] 0728-08B+0729-08D+0728-16B  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 31 09:12:42 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1370411  | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 576188   | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 639735   | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1370411  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 576188   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 639735   | 50.00 | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 77183    | 49.26 | ug/L  | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1288013  | 50.33 | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 574689   | 47.47 | ug/L  | 0.00     |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 4.547  | 4.666  | 0.379  | 0m       | N.D. | d     |        |
| 3) Chloromethane              |      | 5.053  | 5.068  | 0.421  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 5.350  | 5.365  | 0.446  | 0m       | N.D. | d     |        |
| 5) Bromomethane               |      | 0.000  | 6.125  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.327  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 6.825  | 6.849  | 0.568  | 0m       | N.D. | d     |        |
| 8) Ethyl ether                |      | 7.299  | 7.299  | 0.608  | 0m       | N.D. | d     |        |
| 9) Acetone                    |      | 7.773  | 7.762  | 0.647  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.750  | 7.774  | 0.645  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 8.058  | 8.070  | 0.671  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 8.331  | 8.224  | 0.694  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 8.307  | 8.295  | 0.692  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 8.200  | 8.212  | 0.683  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 8.532  | 8.532  | 0.711  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 8.936  | 8.936  | 0.744  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 8.971  | 8.971  | 0.747  | 0m       | N.D. | d     |        |
| 18) Vinyl acetate             |      | 9.647  | 9.612  | 0.803  | 0m       | N.D. | d     |        |
| 19) 1,1-Dichloroethane        |      | 9.623  | 9.623  | 0.801  | 0m       | N.D. | d     |        |
| 20) 2-Butanone                |      | 10.453 | 10.406 | 0.871  | 0m       | N.D. | d     |        |
| 21) cis-1,2-Dichloroethylene  |      | 10.453 | 10.465 | 0.871  | 0m       | N.D. | d     |        |
| 22) 2,2-Dichloropropane       |      | 0.000  | 10.489 | 0.000  | 0        | N.D. |       |        |
| 23) Bromochloromethane        |      | 0.000  | 10.797 | 0.000  | 0        | N.D. |       |        |
| 24) Chloroform                |      | 10.868 | 10.869 | 0.905  | 0m       | N.D. | d     |        |
| 25) 1,1,1-Trichloroethane     |      | 11.201 | 11.201 | 0.933  | 0m       | N.D. | d     |        |
| 26) Cyclohexane               |      | 11.343 | 11.307 | 0.945  | 0m       | N.D. | d     |        |
| 27) 1,1-Dichloropropene       |      | 11.343 | 11.402 | 0.945  | 0m       | N.D. | d     |        |
| 28) Carbon tetrachloride      |      | 0.000  | 11.438 | 0.000  | 0        | N.D. |       |        |
| 30) 1,2-Dichloroethane        |      | 11.675 | 11.663 | 0.972  | 0m       | N.D. | d     |        |
| 31) Benzene                   |      | 11.687 | 11.687 | 0.973  | 0m       | N.D. | d     |        |
| 32) Cyclohexene               |      | 11.829 | 11.829 | 0.985  | 0m       | N.D. | d     |        |
| 33) n-Butyl alcohol           |      | 12.208 | 12.185 | 1.017  | 0m       | N.D. | d     |        |
| 34) Trichloroethylene         |      | 12.481 | 12.481 | 1.040  | 0m       | N.D. | d     |        |
| 35) 1,2-Dichloropropane       |      | 0.000  | 12.766 | 0.000  | 0        | N.D. |       |        |
| 36) Methylcyclohexane         |      | 12.778 | 12.766 | 1.064  | 0m       | N.D. | d     |        |
| 37) Dibromomethane            |      | 0.000  | 12.920 | 0.000  | 0        | N.D. |       |        |
| 38) Bromodichloromethane      |      | 13.062 | 13.062 | 1.088  | 0m       | N.D. | d     |        |
| 39) 2-Chloroethylvinyl ether  |      | 13.347 | 13.347 | 1.112  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B305.D  
Acq On : 31 Aug 2011 08:53  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110831-04|CCV|1|VOA|1|VOA8260BL|  
Misc : CCV 5ML n/a MIX[B] 0728-08B+0729-08D+0728-16B  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 31 09:12:42 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

|     | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|-----|---------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 40) | cis-1,3-Dichloropropylene |      | 13.596 | 13.596 | 1.132  | 0m       | N.D.    | d     |     |
| 42) | 4-Methyl-2-pentanone      |      | 13.715 | 13.715 | 0.877  | 0m       | N.D.    | d     |     |
| 44) | Toluene                   |      | 14.035 | 14.035 | 0.898  | 0m       | N.D.    | d     |     |
| 45) | trans-1,3-Dichloroprop... |      | 14.224 | 14.213 | 0.910  | 0m       | N.D.    | d     |     |
| 46) | 1,1,2-Trichloroethane     |      | 14.462 | 14.462 | 0.925  | 0m       | N.D.    | d     |     |
| 47) | 2-Hexanone                |      | 14.675 | 14.675 | 0.939  | 0m       | N.D.    | d     |     |
| 48) | 1,3-Dichloropropane       |      | 14.711 | 14.663 | 0.941  | 0m       | N.D.    | d     |     |
| 49) | Tetrachloroethylene       |      | 14.699 | 14.699 | 0.940  | 0m       | N.D.    | d     |     |
| 50) | Dibromochloromethane      |      | 14.960 | 14.960 | 0.957  | 0m       | N.D.    | d     |     |
| 51) | 1,2-Dibromoethane         |      | 15.138 | 15.138 | 0.968  | 0m       | N.D.    | d     |     |
| 52) | Chlorobenzene             |      | 15.671 | 15.671 | 1.002  | 0m       | N.D.    | d     |     |
| 53) | 1,1,1,2-Tetrachloroethane |      | 15.742 | 15.742 | 1.007  | 0m       | N.D.    | d     |     |
| 54) | Ethylbenzene              |      | 15.754 | 15.754 | 1.008  | 0m       | N.D.    | d     |     |
| 55) | m,p-Xylenes               |      | 15.873 | 15.873 | 1.015  | 0m       | N.D.    | d     |     |
| 56) | o-Xylene                  |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.    | d     |     |
| 57) | Styrene                   |      | 16.335 | 16.335 | 1.045  | 0m       | N.D.    | d     |     |
| 59) | Bromoform                 |      | 16.596 | 16.608 | 0.912  | 0m       | N.D.    | d     |     |
| 60) | Isopropylbenzene          |      | 16.715 | 16.715 | 0.919  | 0m       | N.D.    | d     |     |
| 62) | 1,1,2,2-Tetrachloroethane |      | 17.059 | 17.011 | 0.937  | 0m       | N.D.    | d     |     |
| 63) | 1,2,3-Trichloropropane    |      | 0.000  | 17.094 | 0.000  | 0        | N.D.    |       |     |
| 64) | Bromobenzene              |      | 17.142 | 17.142 | 0.942  | 0m       | N.D.    | d     |     |
| 65) | n-Propylbenzene           |      | 17.165 | 17.165 | 0.943  | 0m       | N.D.    | d     |     |
| 66) | 1,3,5-Trimethylbenzene    |      | 17.331 | 17.331 | 0.952  | 0m       | N.D.    | d     |     |
| 67) | 2-Chlorotoluene           |      | 17.320 | 17.320 | 0.952  | 0m       | N.D.    | d     |     |
| 68) | 4-Chlorotoluene           |      | 17.426 | 17.415 | 0.958  | 0m       | N.D.    | d     |     |
| 69) | tert-Butylbenzene         |      | 17.782 | 17.711 | 0.977  | 0m       | N.D.    | d     |     |
| 70) | 1,2,4-Trimethylbenzene    |      | 17.746 | 17.747 | 0.975  | 0m       | N.D.    | d     |     |
| 71) | sec-Butylbenzene          |      | 17.948 | 17.948 | 0.986  | 0m       | N.D.    | d     |     |
| 72) | 4-Isopropyltoluene        |      | 18.067 | 18.067 | 0.993  | 0m       | N.D.    | d     |     |
| 73) | 1,3-Dichlorobenzene       |      | 18.126 | 18.126 | 0.996  | 0m       | N.D.    | d     |     |
| 74) | 1,4-Dichlorobenzene       |      | 18.221 | 18.221 | 1.001  | 0m       | N.D.    | d     |     |
| 75) | n-Butylbenzene            |      | 18.529 | 18.529 | 1.018  | 0m       | N.D.    | d     |     |
| 76) | 1,2-Dichlorobenzene       |      | 18.660 | 18.660 | 1.025  | 0m       | N.D.    | d     |     |
| 77) | 1,2-Dibromo-3-chloropr... |      | 19.573 | 19.573 | 1.076  | 0m       | N.D.    | d     |     |
| 78) | 1,2,4-Trichlorobenzene    |      | 20.675 | 20.676 | 1.136  | 0m       | N.D.    | d     |     |
| 79) | Hexachlorobutadiene       |      | 20.865 | 20.865 | 1.147  | 0m       | N.D.    | d     |     |
| 80) | Naphthalene               |      | 21.079 | 21.079 | 1.158  | 0m       | N.D.    | d     |     |
| 81) | 1,2,3-Trichlorobenzene    |      | 21.434 | 21.435 | 1.178  | 0m       | N.D.    | d     |     |
| 83) | Chlorotrifluoroethylene   | 116  | 4.562  | 4.562  | 0.380  | 439272   | 152.33  | ug/L  | 100 |
| 84) | 2-Chloro-1,1,1-trifluo... | 118  | 5.573  | 5.573  | 0.464  | 1127898  | 146.90  | ug/L  | 100 |
| 85) | Acrolein                  | 56   | 7.524  | 7.524  | 0.627  | 362798   | 269.32  | ug/L  | 97  |
| 86) | Trichlorotrifluoroethane  | 85   | 7.750  | 7.750  | 0.645  | 673628   | 273.86  | ug/L  | 99  |
| 87) | Isopropyl Alcohol         | 45   | 7.928  | 7.928  | 0.660  | 1360599  | 2698.51 | ug/L  | 99  |
| 88) | Allyl chloride            | 41   | 8.331  | 8.331  | 0.694  | 2561939  | 280.81  | ug/L  | 100 |
| 89) | tert-Butyl Alcohol        | 59   | 8.580  | 8.580  | 0.715  | 2359007  | 2523.89 | ug/L  | 100 |
| 90) | Acrylonitrile             | 53   | 8.864  | 8.864  | 0.738  | 663000   | 257.58  | ug/L  | 99  |
| 91) | Isopropyl ether           | 45   | 9.647  | 9.647  | 0.803  | 1231732  | 47.31   | ug/L  | 100 |
| 92) | 2-Chloro-1,3-butadiene    | 53   | 9.766  | 9.766  | 0.813  | 406860   | 42.21   | ug/L  | 99  |
| 93) | Ethyl tert-butyl ether    | 59   | 10.181 | 10.181 | 0.848  | 1211270  | 47.96   | ug/L  | 99  |
| 94) | Ethyl acetate             | 43   | 10.453 | 10.454 | 0.871  | 1636863  | 237.82  | ug/L  | 99  |
| 95) | Propionitrile             | 54   | 10.501 | 10.501 | 0.875  | 256430   | 258.11  | ug/L  | 99  |
| 96) | Methacrylonitrile         | 41   | 10.726 | 10.726 | 0.893  | 987447   | 235.10  | ug/L  | 100 |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B305.D  
Acq On : 31 Aug 2011 08:53  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110831-04|CCV|1|VOA|1|VOA8260BL|  
Misc : CCV 5ML n/a MIX[B] 0728-08B+0729-08D+0728-16B  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 31 09:12:42 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

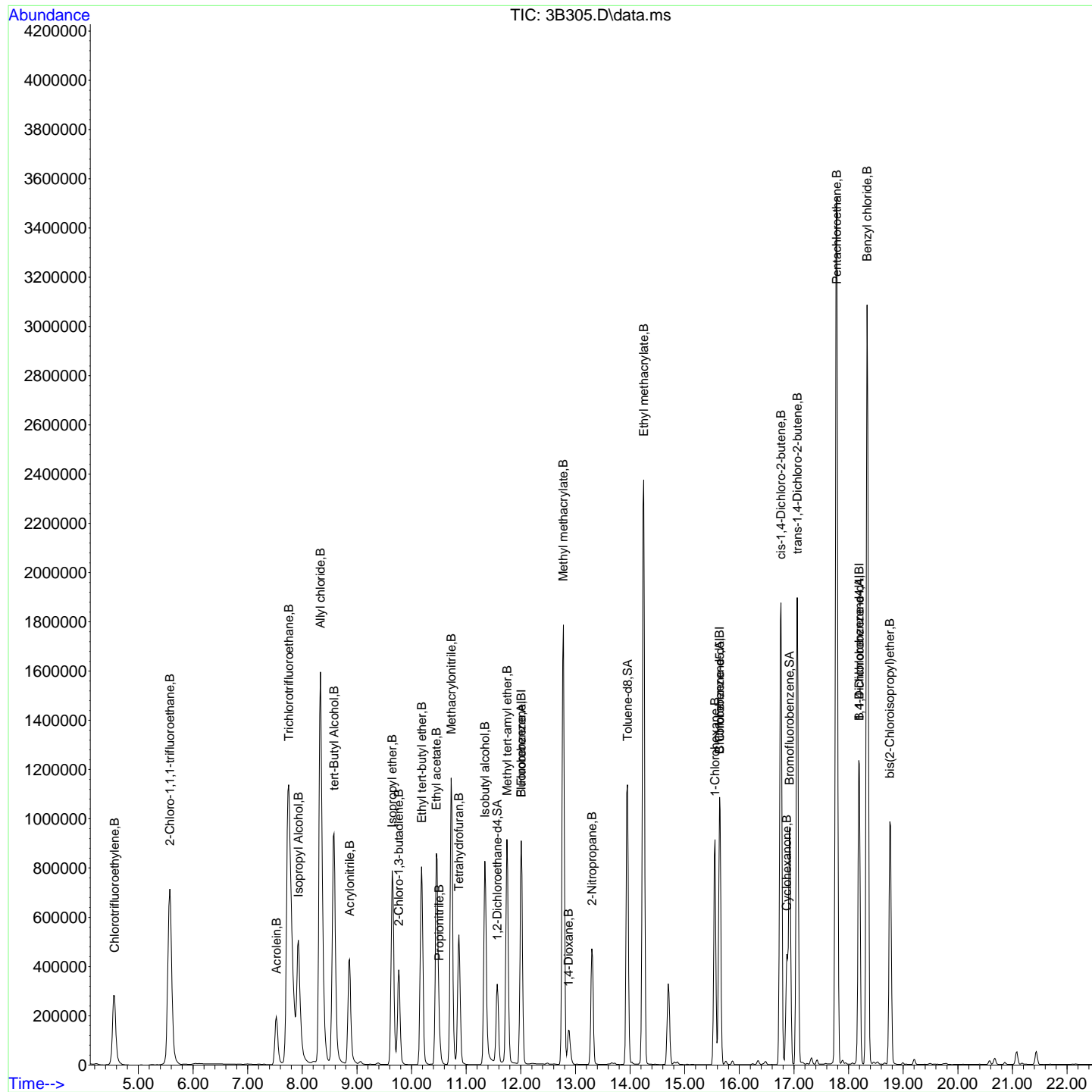
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 97) Tetrahydrofuran            | 42   | 10.868 | 10.869 | 0.905  | 566503   | 302.99  | ug/L  | 99  |
| 98) Isobutyl alcohol           | 41   | 11.343 | 11.343 | 0.945  | 660737   | 2994.09 | ug/L  | 99  |
| 99) Methyl tert-amyl ether     | 73   | 11.746 | 11.746 | 0.978  | 1111513  | 48.02   | ug/L  | 100 |
| 100) Methyl methacrylate       | 69   | 12.778 | 12.778 | 1.064  | 1186088  | 243.16  | ug/L  | 99  |
| 101) 1,4-Dioxane               | 88   | 12.873 | 12.884 | 1.072  | 194739   | 2656.70 | ug/L  | 99  |
| 102) 2-Nitropropane            | 43   | 13.299 | 13.300 | 1.108  | 577817   | 252.14  | ug/L  | 99  |
| 104) Ethyl methacrylate        | 69   | 14.248 | 14.248 | 0.911  | 2131861  | 231.68  | ug/L  | 100 |
| 106) 1-Chlorohexane            | 55   | 15.553 | 15.553 | 0.855  | 352204   | 45.12   | ug/L  | 98  |
| 107) cis-1,4-Dichloro-2-butene | 53   | 16.762 | 16.762 | 0.921  | 662040   | 232.98  | ug/L  | 99  |
| 108) Cyclohexanone             | 42   | 16.869 | 16.869 | 0.927  | 206591   | 1043.30 | ug/L  | 100 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 17.059 | 17.059 | 0.937  | 616801   | 260.76  | ug/L  | 98  |
| 110) Pentachloroethane         | 167  | 17.782 | 17.782 | 0.977  | 1295260  | 251.84  | ug/L  | 99  |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 3904812  | 257.01  | ug/L  | 99  |
| 112) bis(2-Chloroisopropyl)... | 45   | 18.754 | 18.754 | 1.031  | 1110156  | 251.18  | ug/L  | 99  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B305.D  
Acq On : 31 Aug 2011 08:53  
Operator : SYK1  
InstName : VOA3  
Sample : |W3VM110831-04|CCV|1|VOA|1|VOA8260BL|  
Misc : CCV 5ML n/a MIX[B] 0728-08B+0729-08D+0728-16B  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 31 09:12:42 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



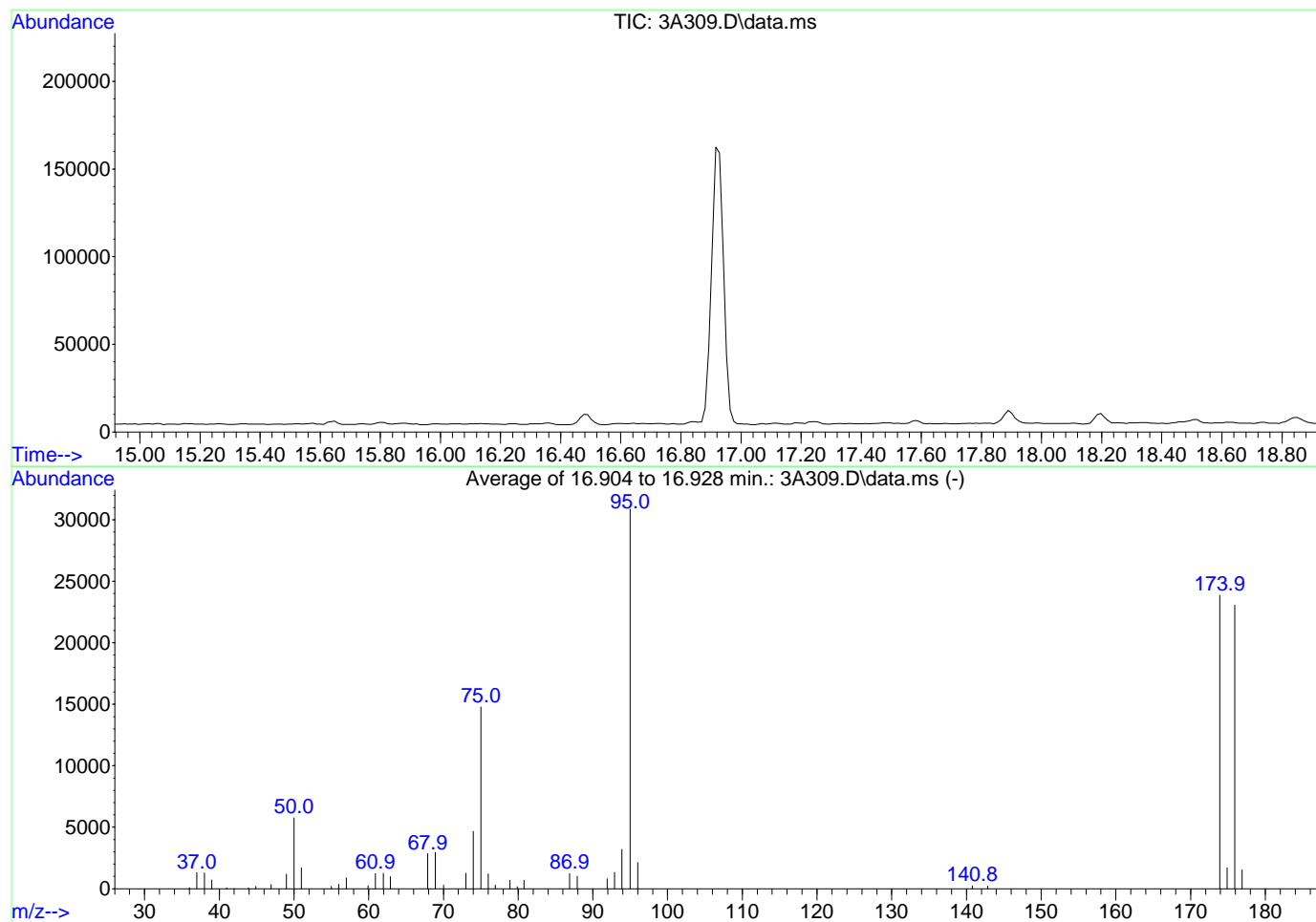
# Quality Control Data

Tune Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082411V3\  
 Data File : 3A309.D  
 Acq On : 24 Aug 2011 11:37  
 Operator : SYK1  
 Sample : |IVM110802-01|BFB|1|VOA|1|VOA8260BL|  
 Misc : BFB 10ML n/a  
 ALS Vial : 2 Sample Multiplier: 1

Integration File: ron.P

Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
 Title : Volatile Organics 8260B SubList :  
 Last Update : Thu Aug 25 11:40:17 2011



AutoFind: Scans 1042, 1043, 1044; Background Corrected with Scan 1036

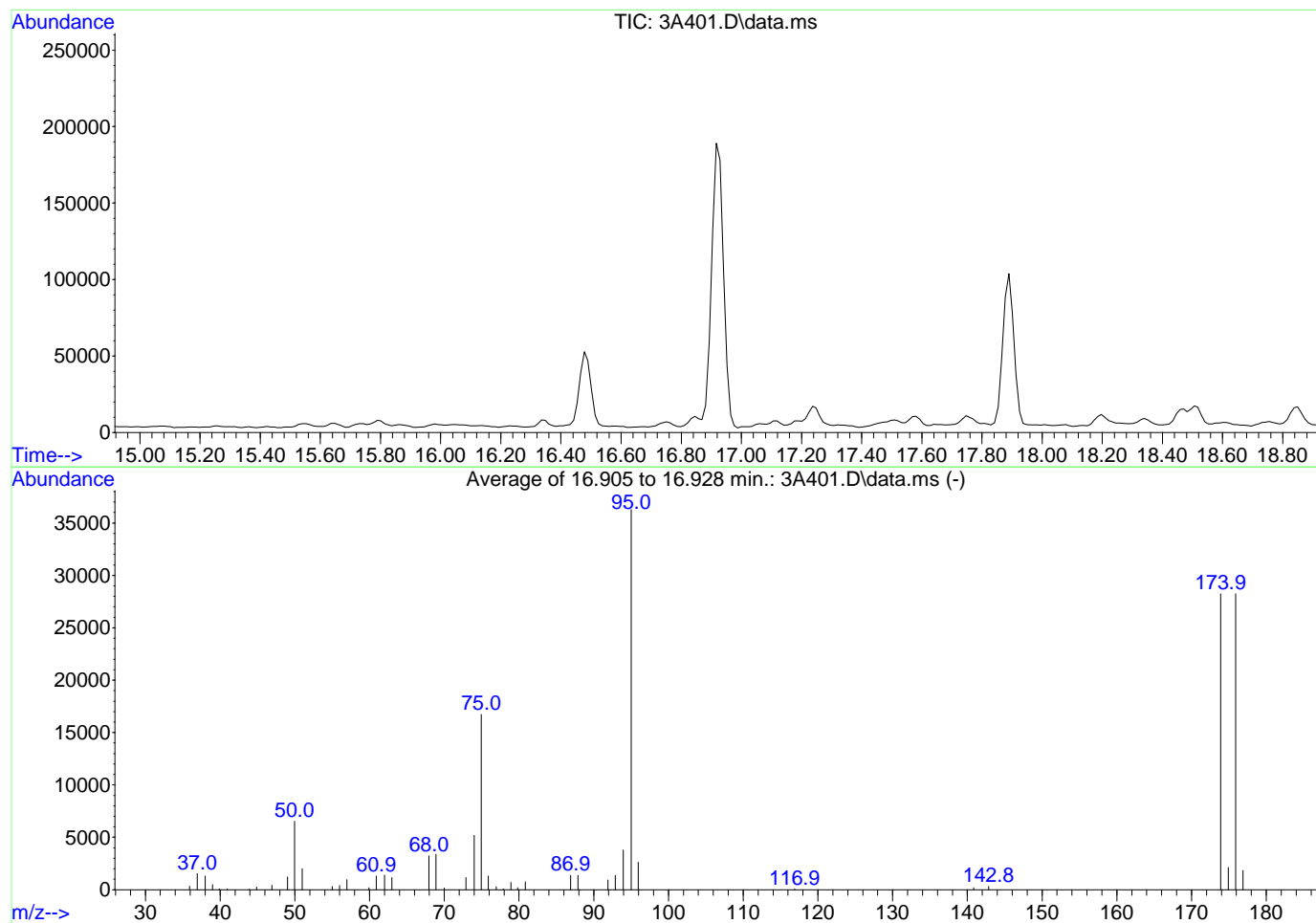
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 15           | 40           | 18.6      | 5756    | PASS             |
| 75          | 95           | 30           | 60           | 47.9      | 14779   | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 30883   | PASS             |
| 96          | 95           | 5            | 9            | 6.9       | 2130    | PASS             |
| 173         | 174          | 0.00         | 2            | 0.0       | 0       | PASS             |
| 174         | 95           | 50           | 100          | 77.3      | 23863   | PASS             |
| 175         | 174          | 5            | 9            | 7.1       | 1695    | PASS             |
| 176         | 174          | 95           | 101          | 96.6      | 23054   | PASS             |
| 177         | 176          | 5            | 9            | 6.6       | 1525    | PASS             |

Tune Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\082511V3\  
 Data File : 3A401.D  
 Acq On : 25 Aug 2011 08:52  
 Operator : SYK1  
 Sample : |IVM110802-01|BFB|1|VOA|1|VOA8260BL|  
 Misc : BFB 10ML n/a  
 ALS Vial : 28 Sample Multiplier: 1

Integration File: ron.P

Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
 Title : Volatile Organics 8260B SubList :  
 Last Update : Thu Aug 25 11:40:17 2011



AutoFind: Scans 1042, 1043, 1044; Background Corrected with Scan 1036

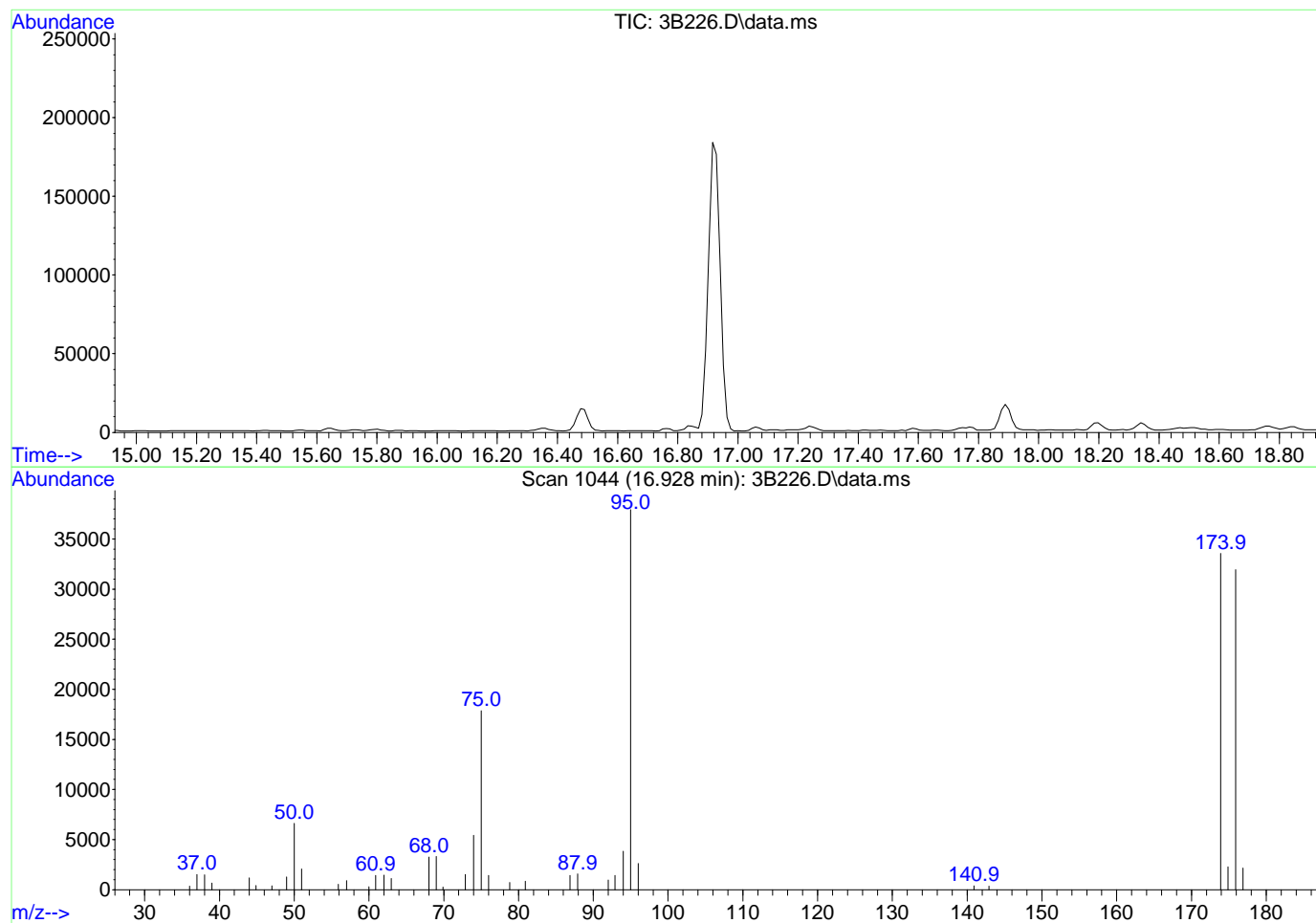
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 15           | 40           | 18.0      | 6528    | PASS             |
| 75          | 95           | 30           | 60           | 46.1      | 16736   | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 36288   | PASS             |
| 96          | 95           | 5            | 9            | 7.2       | 2603    | PASS             |
| 173         | 174          | 0.00         | 2            | 0.0       | 0       | PASS             |
| 174         | 95           | 50           | 100          | 77.8      | 28248   | PASS             |
| 175         | 174          | 5            | 9            | 7.5       | 2106    | PASS             |
| 176         | 174          | 95           | 101          | 100.0     | 28248   | PASS             |
| 177         | 176          | 5            | 9            | 6.5       | 1839    | PASS             |

Tune Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
 Data File : 3B226.D  
 Acq On : 30 Aug 2011 20:28  
 Operator : SYK1  
 Sample : |IVM110802-01|BFB2|1|VOA|1|VOA8260BL|  
 Misc : BFB 10ML n/a  
 ALS Vial : 26 Sample Multiplier: 1

Integration File: ron.P

Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
 Title : Volatile Organics 8260B SubList :  
 Last Update : Thu Aug 25 11:40:17 2011



Spectrum Information: Scan 1044

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 15           | 40           | 17.4      | 6616    | PASS             |
| 75          | 95           | 30           | 60           | 47.1      | 17872   | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 37944   | PASS             |
| 96          | 95           | 5            | 9            | 6.9       | 2615    | PASS             |
| 173         | 174          | 0.00         | 2            | 0.0       | 0       | PASS             |
| 174         | 95           | 50           | 100          | 88.5      | 33576   | PASS             |
| 175         | 174          | 5            | 9            | 6.8       | 2290    | PASS             |
| 176         | 174          | 95           | 101          | 95.1      | 31936   | PASS             |
| 177         | 176          | 5            | 9            | 6.8       | 2171    | PASS             |

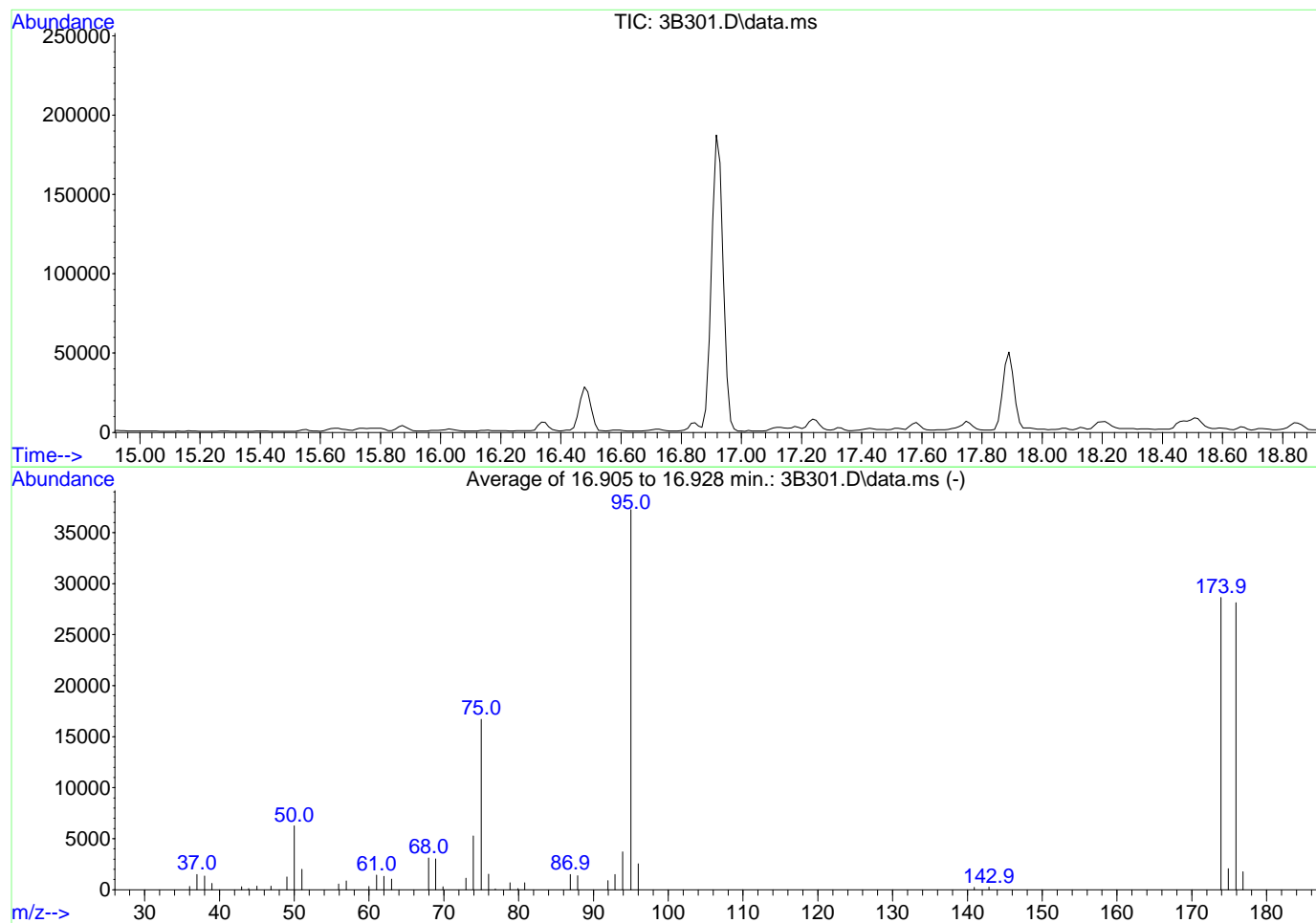


Tune Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
 Data File : 3B301.D  
 Acq On : 31 Aug 2011 06:53  
 Operator : SYK1  
 Sample : |IVM110802-01|BFB|1|VOA|1|VOA8260BL|  
 Misc : BFB 10ML n/a  
 ALS Vial : 1 Sample Multiplier: 1

Integration File: ron.P

Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
 Title : Volatile Organics 8260B SubList :  
 Last Update : Thu Aug 25 11:40:17 2011



AutoFind: Scans 1042, 1043, 1044; Background Corrected with Scan 1036

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 15           | 40           | 16.8      | 6252    | PASS             |
| 75          | 95           | 30           | 60           | 44.8      | 16703   | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 37269   | PASS             |
| 96          | 95           | 5            | 9            | 6.8       | 2523    | PASS             |
| 173         | 174          | 0.00         | 2            | 0.0       | 0       | PASS             |
| 174         | 95           | 50           | 100          | 76.8      | 28637   | PASS             |
| 175         | 174          | 5            | 9            | 7.2       | 2068    | PASS             |
| 176         | 174          | 95           | 101          | 98.3      | 28136   | PASS             |
| 177         | 176          | 5            | 9            | 6.2       | 1747    | PASS             |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

|  |                            |                   |              |
|--|----------------------------|-------------------|--------------|
| <b>SDG Number:</b> 284538                  |                            | <b>Matrix:</b>    | GROUND WATER |
| <b>Lab Sample ID:</b> 1202477757           |                            |                   |              |
| <b>Client Sample:</b> QC for batch 1137563 | <b>Client:</b> ECOL008     | <b>Project:</b>   | QC           |
| <b>Client ID:</b> MB for batch 1137563     | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b>   | GL-OA-E-038  |
| <b>Batch ID:</b> 1137563                   | <b>Inst:</b> VOA3.I        | <b>Dilution:</b>  | 1            |
| <b>Run Date:</b> 08/30/2011 22:28          | <b>Analyst:</b> SYK1       | <b>Purge Vol:</b> | 5 mL         |
| <b>Prep Date:</b> 08/30/2011 22:28         |                            |                   |              |
| <b>Data File:</b> 083011V3\3B230A.D        | <b>Column:</b> DB-624      |                   |              |

| CAS No.    | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------|-----------|--------|-------|---------|---------|
| 75-71-8    | Dichlorodifluoromethane    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 74-87-3    | Chloromethane              | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-01-4    | Vinyl chloride             | U         | 0.500  | ug/L  | 0.500   | 1.00    |
| 74-83-9    | Bromomethane               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-00-3    | Chloroethane               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-69-4    | Trichlorofluoromethane     | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 60-29-7    | Ethyl ether                | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 67-64-1    | Acetone                    | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-05-8    | Acetonitrile               | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 75-35-4    | 1,1-Dichloroethylene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 79-20-9    | Methyl acetate             | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 74-88-4    | Iodomethane                | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 75-09-2    | Methylene chloride         | U         | 2.00   | ug/L  | 2.00    | 5.00    |
| 75-15-0    | Carbon disulfide           | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 1634-04-4  | tert-Butyl methyl ether    | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 156-60-5   | trans-1,2-Dichloroethylene | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 108-05-4   | Vinyl acetate              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-34-3    | 1,1-Dichloroethane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 78-93-3    | 2-Butanone                 | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 156-59-2   | cis-1,2-Dichloroethylene   | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 594-20-7   | 2,2-Dichloropropane        | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 67-66-3    | Chloroform                 | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 74-97-5    | Bromochloromethane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 71-55-6    | 1,1,1-Trichloroethane      | U         | 0.325  | ug/L  | 0.325   | 1.00    |
| 110-82-7   | Cyclohexane                | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 563-58-6   | 1,1-Dichloropropene        | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 71-36-3    | n-Butyl alcohol            | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 56-23-5    | Carbon tetrachloride       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 107-06-2   | 1,2-Dichloroethane         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 71-43-2    | Benzene                    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 79-01-6    | Trichloroethylene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 78-87-5    | 1,2-Dichloropropane        | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-87-2   | Methylcyclohexane          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 75-27-4    | Bromodichloromethane       | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 74-95-3    | Dibromomethane             | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 110-75-8   | 2-Chloroethylvinyl ether   | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 108-10-1   | 4-Methyl-2-pentanone       | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 10061-01-5 | cis-1,3-Dichloropropylene  | U         | 0.250  | ug/L  | 0.250   | 1.00    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

|  |                            |                   |              |
|--|----------------------------|-------------------|--------------|
| <b>SDG Number:</b> 284538                  |                            | <b>Matrix:</b>    | GROUND WATER |
| <b>Lab Sample ID:</b> 1202477757           |                            |                   |              |
| <b>Client Sample:</b> QC for batch 1137563 | <b>Client:</b> ECOL008     | <b>Project:</b>   | QC           |
| <b>Client ID:</b> MB for batch 1137563     | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b>   | GL-OA-E-038  |
| <b>Batch ID:</b> 1137563                   | <b>Inst:</b> VOA3.I        | <b>Dilution:</b>  | 1            |
| <b>Run Date:</b> 08/30/2011 22:28          | <b>Analyst:</b> SYK1       | <b>Purge Vol:</b> | 5 mL         |
| <b>Prep Date:</b> 08/30/2011 22:28         |                            |                   |              |
| <b>Data File:</b> 083011V3\3B230A.D        | <b>Column:</b> DB-624      |                   |              |

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-88-3    | Toluene                     | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 79-00-5     | 1,1,2-Trichloroethane       | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 591-78-6    | 2-Hexanone                  | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 142-28-9    | 1,3-Dichloropropane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 127-18-4    | Tetrachloroethylene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 124-48-1    | Dibromochloromethane        | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 106-93-4    | 1,2-Dibromoethane           | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-90-7    | Chlorobenzene               | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 100-41-4    | Ethylbenzene                | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 | U         | 0.500  | ug/L  | 0.500   | 2.00    |
| 95-47-6     | o-Xylene                    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 100-42-5    | Styrene                     | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 75-25-2     | Bromoform                   | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 79-34-5     | 1,1,2,2-Tetrachloroethane   | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 96-18-4     | 1,2,3-Trichloropropane      | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 108-86-1    | Bromobenzene                | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 103-65-1    | n-Propylbenzene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 95-49-8     | 2-Chlorotoluene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 98-82-8     | Isopropylbenzene            | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-67-8    | 1,3,5-Trimethylbenzene      | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 106-43-4    | 4-Chlorotoluene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 98-06-6     | tert-Butylbenzene           | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 95-63-6     | 1,2,4-Trimethylbenzene      | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 135-98-8    | sec-Butylbenzene            | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 99-87-6     | 4-Isopropyltoluene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 541-73-1    | 1,3-Dichlorobenzene         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 106-46-7    | 1,4-Dichlorobenzene         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 104-51-8    | n-Butylbenzene              | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 96-12-8     | 1,2-Dibromo-3-chloropropane | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 87-68-3     | Hexachlorobutadiene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 91-20-3     | Naphthalene                 | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 87-61-6     | 1,2,3-Trichlorobenzene      | U         | 0.332  | ug/L  | 0.332   | 1.00    |
| 107-02-8    | Acrolein                    | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 107-05-1    | Allyl chloride              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 107-13-1    | Acrylonitrile               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 126-99-8    | 2-Chloro-1,3-butadiene      | U         | 0.300  | ug/L  | 0.300   | 1.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

|  |                            |                             |
|--|----------------------------|-----------------------------|
| <b>SDG Number:</b> 284538                  |                            | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 1202477757           |                            |                             |
| <b>Client Sample:</b> QC for batch 1137563 | <b>Client:</b> ECOL008     | <b>Project:</b> QC          |
| <b>Client ID:</b> MB for batch 1137563     | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b> GL-OA-E-038 |
| <b>Batch ID:</b> 1137563                   | <b>Inst:</b> VOA3.I        | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/30/2011 22:28          | <b>Analyst:</b> SYK1       | <b>Purge Vol:</b> 5 mL      |
| <b>Prep Date:</b> 08/30/2011 22:28         |                            |                             |
| <b>Data File:</b> 083011V3\3B230A.D        | <b>Column:</b> DB-624      |                             |

| CAS No.    | Parmname                     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|------------------------------|-----------|--------|-------|---------|---------|
| 107-12-0   | Propionitrile                | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 126-98-7   | Methacrylonitrile            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 78-83-1    | Isobutyl alcohol             | U         | 12.5   | ug/L  | 12.5    | 50.0    |
| 80-62-6    | Methyl methacrylate          | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 97-63-2    | Ethyl methacrylate           | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 79-46-9    | 2-Nitropropane               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 108-94-1   | Cyclohexanone                | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 1476-11-5  | cis-1,4-Dichloro-2-butene    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 110-57-6   | trans-1,4-Dichloro-2-butene  | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 76-01-7    | Pentachloroethane            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 100-44-7   | Benzyl chloride              | U         | 1.30   | ug/L  | 1.30    | 5.00    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether  | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 540-59-0   | 1,2-Dichloroethylene (total) | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 1330-20-7  | Xylenes (total)              | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 630-20-6   | 1,1,1,2-Tetrachloroethane    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 120-82-1   | 1,2,4-Trichlorobenzene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 95-50-1    | 1,2-Dichlorobenzene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B230A.D  
Acq On : 30 Aug 2011 22:28  
Operator : SYK1  
InstName : VOA3  
Sample : |1202477757|1137563|1|VOA|1|VOA8260BL|  
Misc : BLANK 5ML n/a  
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Aug 31 07:00:59 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1359890  | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.635 | 15.636 | 1.000  | 576500   | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 585807   | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1359890  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.635 | 15.636 | 1.000  | 576500   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 585807   | 50.00 | ug/L  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102  | 11.568 | 11.568 | 0.963  | 77854    | 50.07 | ug/L  | 0.00     |
| 43) Toluene-d8                | 98   | 13.952 | 13.952 | 0.892  | 1296051  | 50.62 | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95   | 16.916 | 16.916 | 0.930  | 569274   | 51.35 | ug/L  | 0.00     |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 29) 1,2-Dichloroethane-d4 | 50.000 | 79 - 124 | 100.14%  |
| 43) Toluene-d8            | 50.000 | 80 - 120 | 101.24%  |
| 61) Bromofluorobenzene    | 50.000 | 80 - 120 | 102.70%  |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.666  | 0.000  | 0        | N.D.      |       |        |
| 3) Chloromethane              |      | 0.000  | 5.068  | 0.000  | 0        | N.D.      |       |        |
| 4) Vinyl chloride             |      | 0.000  | 5.365  | 0.000  | 0        | N.D.      |       |        |
| 5) Bromomethane               |      | 0.000  | 6.125  | 0.000  | 0        | N.D.      |       |        |
| 6) Chloroethane               |      | 0.000  | 6.327  | 0.000  | 0        | N.D.      |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.849  | 0.000  | 0        | N.D.      |       |        |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 1582     | N.D.      |       |        |
| 9) Acetone                    | 43   | 7.773  | 7.762  | 0.647  | 7114     | Below Cal |       | 70     |
| 10) 1,1-Dichloroethylene      |      | 0.000  | 7.774  | 0.000  | 0        | N.D.      |       |        |
| 11) Iodomethane               |      | 0.000  | 8.070  | 0.000  | 0        | N.D.      |       |        |
| 12) Acetonitrile              | 41   | 8.248  | 8.224  | 0.687  | 5796     | Below Cal | #     | 84     |
| 13) Methyl acetate            | 43   | 8.319  | 8.295  | 0.693  | 1783     | N.D.      |       |        |
| 14) Carbon disulfide          | 76   | 8.188  | 8.212  | 0.682  | 2458     | N.D.      |       |        |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 9999     | N.D.      |       |        |
| 16) tert-Butyl methyl ether   |      | 0.000  | 8.936  | 0.000  | 0        | N.D.      |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 8.971  | 0.000  | 0        | N.D.      |       |        |
| 18) Vinyl acetate             | 43   | 9.623  | 9.612  | 0.801  | 2351     | N.D.      |       |        |
| 19) 1,1-Dichloroethane        |      | 0.000  | 9.623  | 0.000  | 0        | N.D.      |       |        |
| 20) 2-Butanone                | 43   | 10.181 | 10.406 | 0.848  | 5760     | N.D.      |       |        |
| 21) cis-1,2-Dichloroethylene  |      | 0.000  | 10.465 | 0.000  | 0        | N.D.      |       |        |
| 22) 2,2-Dichloropropane       |      | 0.000  | 10.489 | 0.000  | 0        | N.D.      |       |        |
| 23) Bromochloromethane        |      | 0.000  | 10.797 | 0.000  | 0        | N.D.      |       |        |
| 24) Chloroform                |      | 0.000  | 10.869 | 0.000  | 0        | N.D.      |       |        |
| 25) 1,1,1-Trichloroethane     |      | 0.000  | 11.201 | 0.000  | 0        | N.D.      |       |        |
| 26) Cyclohexane               |      | 0.000  | 11.307 | 0.000  | 0        | N.D.      |       |        |
| 27) 1,1-Dichloropropene       |      | 0.000  | 11.402 | 0.000  | 0        | N.D.      |       |        |
| 28) Carbon tetrachloride      |      | 0.000  | 11.438 | 0.000  | 0        | N.D.      |       |        |
| 30) 1,2-Dichloroethane        |      | 0.000  | 11.663 | 0.000  | 0        | N.D.      |       |        |
| 31) Benzene                   |      | 0.000  | 11.687 | 0.000  | 0        | N.D.      |       |        |
| 32) Cyclohexene               |      | 0.000  | 11.829 | 0.000  | 0        | N.D.      |       |        |
| 33) n-Butyl alcohol           |      | 0.000  | 12.185 | 0.000  | 0m       | N.D.      | d     |        |
| 34) Trichloroethylene         |      | 0.000  | 12.481 | 0.000  | 0        | N.D.      |       |        |
| 35) 1,2-Dichloropropane       |      | 0.000  | 12.766 | 0.000  | 0        | N.D.      |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B230A.D  
Acq On : 30 Aug 2011 22:28  
Operator : SYK1  
InstName : VOA3  
Sample : |1202477757|1137563|1|VOA|1|VOA8260BL|  
Misc : BLANK 5ML n/a  
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Aug 31 07:00:59 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 36) Methylcyclohexane         |      | 0.000  | 12.766 | 0.000  | 0        | N.D.      |       |
| 37) Dibromomethane            |      | 0.000  | 12.920 | 0.000  | 0        | N.D.      |       |
| 38) Bromodichloromethane      |      | 0.000  | 13.062 | 0.000  | 0        | N.D.      |       |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D.      |       |
| 40) cis-1,3-Dichloropropylene |      | 0.000  | 13.596 | 0.000  | 0        | N.D.      |       |
| 42) 4-Methyl-2-pentanone      |      | 0.000  | 13.715 | 0.000  | 0        | N.D.      |       |
| 44) Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 1101     | N.D.      |       |
| 45) trans-1,3-Dichloroprop... |      | 0.000  | 14.213 | 0.000  | 0        | N.D.      |       |
| 46) 1,1,2-Trichloroethane     |      | 0.000  | 14.462 | 0.000  | 0        | N.D.      |       |
| 47) 2-Hexanone                | 58   | 14.687 | 14.675 | 0.939  | 1379     | Below Cal | # 26  |
| 48) 1,3-Dichloropropane       |      | 0.000  | 14.663 | 0.000  | 0        | N.D.      |       |
| 49) Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 657      | N.D.      |       |
| 50) Dibromochloromethane      |      | 0.000  | 14.960 | 0.000  | 0        | N.D.      |       |
| 51) 1,2-Dibromoethane         |      | 0.000  | 15.138 | 0.000  | 0        | N.D.      |       |
| 52) Chlorobenzene             | 112  | 15.683 | 15.671 | 1.003  | 466      | N.D.      |       |
| 53) 1,1,1,2-Tetrachloroethane |      | 0.000  | 15.742 | 0.000  | 0        | N.D.      |       |
| 54) Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 674      | N.D.      |       |
| 55) m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 670      | N.D.      |       |
| 56) o-Xylene                  |      | 0.000  | 16.335 | 0.000  | 0        | N.D.      |       |
| 57) Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 186      | N.D.      |       |
| 59) Bromoform                 |      | 0.000  | 16.608 | 0.000  | 0        | N.D.      |       |
| 60) Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 369      | N.D.      |       |
| 62) 1,1,2,2-Tetrachloroethane |      | 0.000  | 17.011 | 0.000  | 0        | N.D.      |       |
| 63) 1,2,3-Trichloropropane    |      | 0.000  | 17.094 | 0.000  | 0        | N.D.      |       |
| 64) Bromobenzene              |      | 0.000  | 17.142 | 0.000  | 0        | N.D.      |       |
| 65) n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 384      | N.D.      |       |
| 66) 1,3,5-Trimethylbenzene    |      | 0.000  | 17.331 | 0.000  | 0        | N.D.      |       |
| 67) 2-Chlorotoluene           |      | 0.000  | 17.320 | 0.000  | 0        | N.D.      |       |
| 68) 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 1088     | N.D.      |       |
| 69) tert-Butylbenzene         |      | 0.000  | 17.711 | 0.000  | 0        | N.D.      |       |
| 70) 1,2,4-Trimethylbenzene    |      | 0.000  | 17.747 | 0.000  | 0        | N.D.      |       |
| 71) sec-Butylbenzene          |      | 0.000  | 17.948 | 0.000  | 0        | N.D.      |       |
| 72) 4-Isopropyltoluene        |      | 0.000  | 18.067 | 0.000  | 0        | N.D.      |       |
| 73) 1,3-Dichlorobenzene       | 146  | 18.138 | 18.126 | 0.997  | 438      | N.D.      |       |
| 74) 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 1111     | N.D.      |       |
| 75) n-Butylbenzene            | 91   | 18.541 | 18.529 | 1.019  | 362      | N.D.      |       |
| 76) 1,2-Dichlorobenzene       |      | 0.000  | 18.660 | 0.000  | 0        | N.D.      |       |
| 77) 1,2-Dibromo-3-chloropr... |      | 0.000  | 19.573 | 0.000  | 0        | N.D.      |       |
| 78) 1,2,4-Trichlorobenzene    | 180  | 20.675 | 20.676 | 1.136  | 668      | N.D.      |       |
| 79) Hexachlorobutadiene       |      | 0.000  | 20.865 | 0.000  | 0        | N.D.      |       |
| 80) Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 4281     | N.D.      |       |
| 81) 1,2,3-Trichlorobenzene    | 180  | 21.434 | 21.435 | 1.178  | 641      | N.D.      |       |
| 83) Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.      |       |
| 84) 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.      |       |
| 85) Acrolein                  | 56   | 7.536  | 7.524  | 0.628  | 665      | N.D.      |       |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.      |       |
| 87) Isopropyl Alcohol         | 45   | 7.951  | 7.928  | 0.662  | 594      | N.D.      |       |
| 88) Allyl chloride            | 41   | 8.248  | 8.331  | 0.687  | 5796     | Below Cal | # 27  |
| 89) tert-Butyl Alcohol        | 59   | 8.580  | 8.580  | 0.715  | 413      | N.D.      |       |
| 90) Acrylonitrile             | 53   | 8.876  | 8.864  | 0.739  | 605      | N.D.      |       |
| 91) Isopropyl ether           |      | 0.000  | 9.647  | 0.000  | 0        | N.D.      |       |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 9.766  | 0.000  | 0        | N.D.      |       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B230A.D  
Acq On : 30 Aug 2011 22:28  
Operator : SYK1  
InstName : VOA3  
Sample : |1202477757|1137563|1|VOA|1|VOA8260BL|  
Misc : BLANK 5ML n/a  
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Aug 31 07:00:59 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

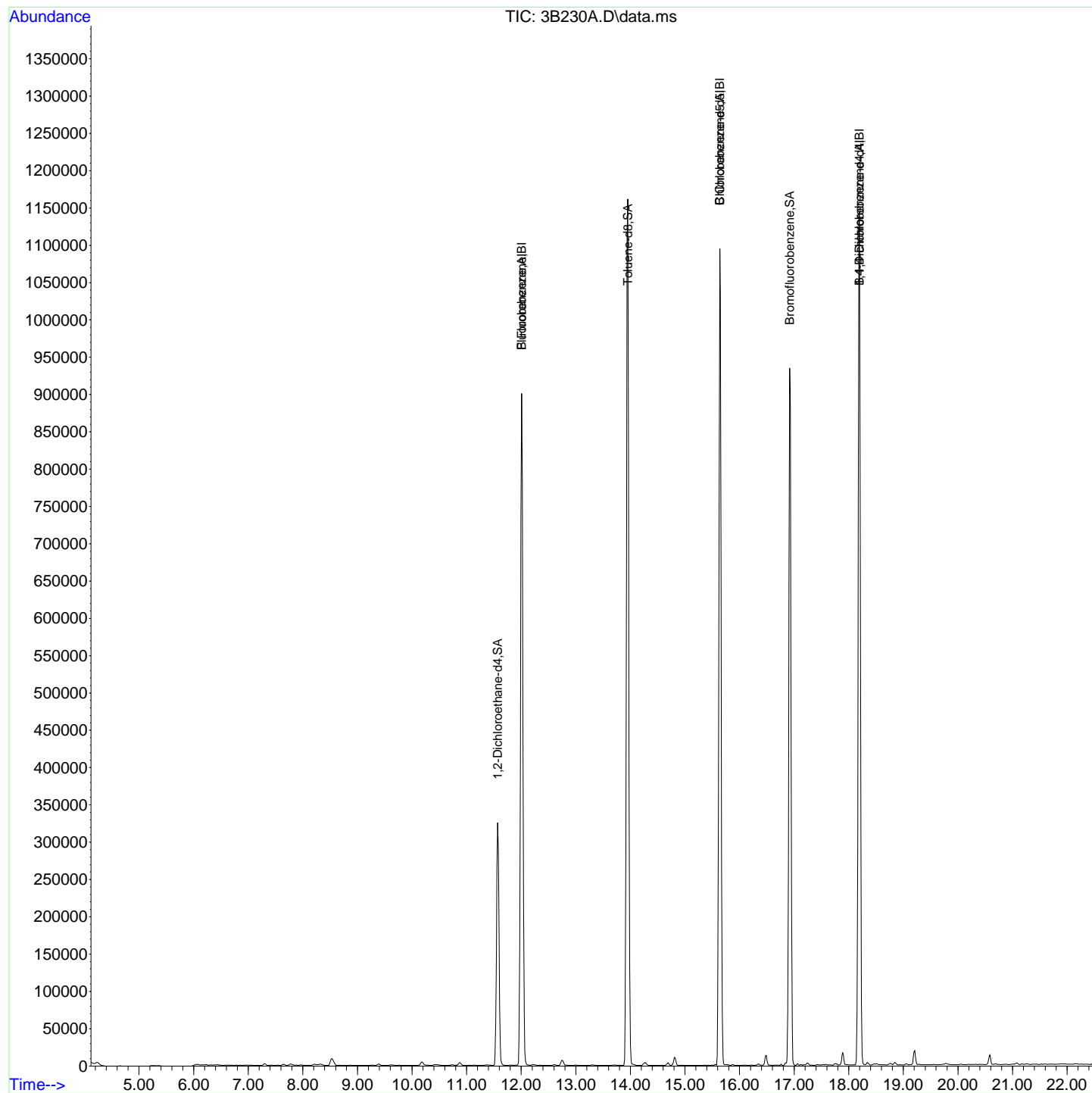
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 93) Ethyl tert-butyl ether     |      | 0.000  | 10.181 | 0.000  | 0        | N.D.      |       |
| 94) Ethyl acetate              | 43   | 10.430 | 10.454 | 0.869  | 5769     | N.D.      |       |
| 95) Propionitrile              |      | 0.000  | 10.501 | 0.000  | 0        | N.D.      |       |
| 96) Methacrylonitrile          | 41   | 10.868 | 10.726 | 0.905  | 2392     | N.D.      |       |
| 97) Tetrahydrofuran            | 42   | 10.868 | 10.869 | 0.905  | 3859     | Below Cal | 67    |
| 98) Isobutyl alcohol           | 41   | 11.366 | 11.343 | 0.947  | 640      | N.D.      |       |
| 99) Methyl tert-amyl ether     |      | 0.000  | 11.746 | 0.000  | 0        | N.D.      |       |
| 100) Methyl methacrylate       | 69   | 12.778 | 12.778 | 1.064  | 661      | N.D.      |       |
| 101) 1,4-Dioxane               |      | 0.000  | 12.884 | 0.000  | 0        | N.D.      |       |
| 102) 2-Nitropropane            | 43   | 13.311 | 13.300 | 1.109  | 1453     | N.D.      |       |
| 104) Ethyl methacrylate        | 69   | 14.248 | 14.248 | 0.911  | 2205     | N.D.      |       |
| 106) 1-Chlorohexane            | 55   | 15.541 | 15.553 | 0.854  | 422      | N.D.      |       |
| 107) cis-1,4-Dichloro-2-butene | 53   | 16.762 | 16.762 | 0.921  | 504      | N.D.      |       |
| 108) Cyclohexanone             | 42   | 16.869 | 16.869 | 0.927  | 888      | Below Cal | # 16  |
| 109) trans-1,4-Dichloro-2-b... | 53   | 17.058 | 17.059 | 0.937  | 852      | N.D.      |       |
| 110) Pentachloroethane         | 167  | 17.782 | 17.782 | 0.977  | 410      | N.D.      |       |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 6448     | N.D.      |       |
| 112) bis(2-Chloroisopropyl)... | 45   | 18.766 | 18.754 | 1.031  | 2915     | N.D.      |       |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

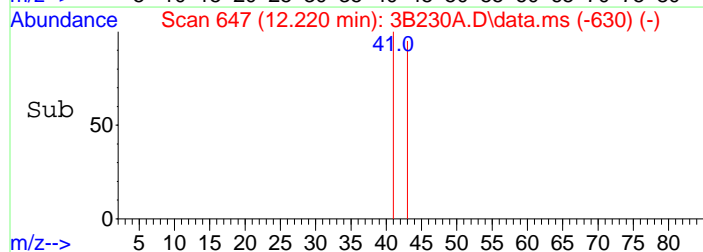
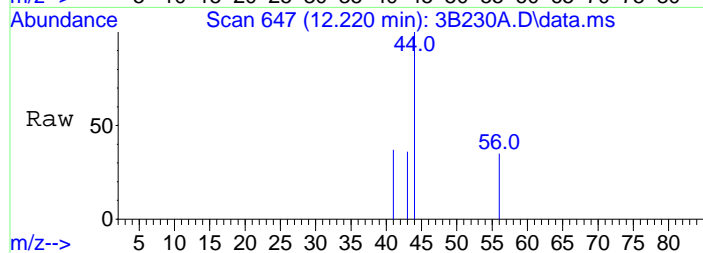
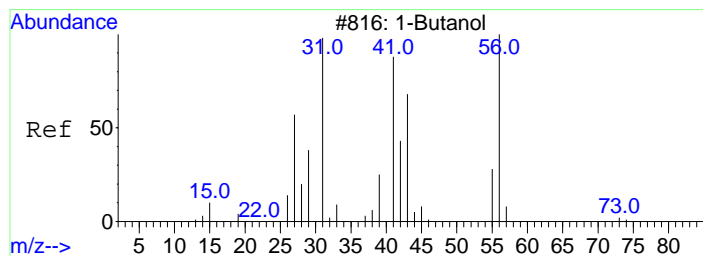
Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B230A.D  
Acq On : 30 Aug 2011 22:28  
Operator : SYK1  
InstName : VOA3  
Sample : |1202477757|1137563|1|VOA|1|VOA8260BL|  
Misc : BLANK 5ML n/a  
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Aug 31 07:00:59 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

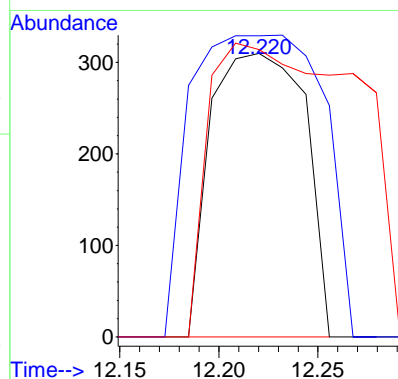






#33 BEFORE analyst DELETION  
 n-Butyl alcohol  
 Concen: 58.62 ug/L  
 RT: 12.220 min Scan# 647  
 Delta R.T. 0.035 min  
 Lab File: 3B230A.D  
 Acq: 30 Aug 2011 22:28

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 56      | 100   |       |       |
| 41      | 149.3 | 37.4  | 97.4# |
| 43      | 163.8 | 25.1  | 85.1# |



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

|  |                            |                   |              |
|--|----------------------------|-------------------|--------------|
| <b>SDG Number:</b> 284538                  |                            | <b>Matrix:</b>    | GROUND WATER |
| <b>Lab Sample ID:</b> 1202478370           |                            |                   |              |
| <b>Client Sample:</b> QC for batch 1137563 | <b>Client:</b> ECOL008     | <b>Project:</b>   | QC           |
| <b>Client ID:</b> MB for batch 1137563     | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b>   | GL-OA-E-038  |
| <b>Batch ID:</b> 1137563                   | <b>Inst:</b> VOA3.I        | <b>Dilution:</b>  | 1            |
| <b>Run Date:</b> 08/31/2011 10:24          | <b>Analyst:</b> SYK1       | <b>Purge Vol:</b> | 5 mL         |
| <b>Prep Date:</b> 08/31/2011 10:24         |                            |                   |              |
| <b>Data File:</b> 083111V3\3B308A.D        | <b>Column:</b> DB-624      |                   |              |

| CAS No.    | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------|-----------|--------|-------|---------|---------|
| 75-71-8    | Dichlorodifluoromethane    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 74-87-3    | Chloromethane              | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-01-4    | Vinyl chloride             | U         | 0.500  | ug/L  | 0.500   | 1.00    |
| 74-83-9    | Bromomethane               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-00-3    | Chloroethane               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 75-69-4    | Trichlorofluoromethane     | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 60-29-7    | Ethyl ether                | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 67-64-1    | Acetone                    | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-05-8    | Acetonitrile               | U         | 6.25   | ug/L  | 6.25    | 25.0    |
| 75-35-4    | 1,1-Dichloroethylene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 79-20-9    | Methyl acetate             | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 74-88-4    | Iodomethane                | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 75-09-2    | Methylene chloride         | U         | 2.00   | ug/L  | 2.00    | 5.00    |
| 75-15-0    | Carbon disulfide           | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 1634-04-4  | tert-Butyl methyl ether    | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 156-60-5   | trans-1,2-Dichloroethylene | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 108-05-4   | Vinyl acetate              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 75-34-3    | 1,1-Dichloroethane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 78-93-3    | 2-Butanone                 | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 156-59-2   | cis-1,2-Dichloroethylene   | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 594-20-7   | 2,2-Dichloropropane        | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 67-66-3    | Chloroform                 | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 74-97-5    | Bromochloromethane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 71-55-6    | 1,1,1-Trichloroethane      | U         | 0.325  | ug/L  | 0.325   | 1.00    |
| 110-82-7   | Cyclohexane                | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 563-58-6   | 1,1-Dichloropropene        | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 71-36-3    | n-Butyl alcohol            | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 56-23-5    | Carbon tetrachloride       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 107-06-2   | 1,2-Dichloroethane         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 71-43-2    | Benzene                    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 79-01-6    | Trichloroethylene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 78-87-5    | 1,2-Dichloropropane        | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-87-2   | Methylcyclohexane          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 75-27-4    | Bromodichloromethane       | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 74-95-3    | Dibromomethane             | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 110-75-8   | 2-Chloroethylvinyl ether   | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 108-10-1   | 4-Methyl-2-pentanone       | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 10061-01-5 | cis-1,3-Dichloropropylene  | U         | 0.250  | ug/L  | 0.250   | 1.00    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

Page 2 of 3

|  |                            |                   |                     |
|--|----------------------------|-------------------|---------------------|
| <b>SDG Number:</b> 284538                  |                            | <b>Matrix:</b>    | <b>GROUND WATER</b> |
| <b>Lab Sample ID:</b> 1202478370           |                            |                   |                     |
| <b>Client Sample:</b> QC for batch 1137563 | <b>Client:</b> ECOL008     | <b>Project:</b>   | <b>QC</b>           |
| <b>Client ID:</b> MB for batch 1137563     | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b>   | <b>GL-OA-E-038</b>  |
| <b>Batch ID:</b> 1137563                   | <b>Inst:</b> VOA3.I        | <b>Dilution:</b>  | <b>1</b>            |
| <b>Run Date:</b> 08/31/2011 10:24          | <b>Analyst:</b> SYK1       | <b>Purge Vol:</b> | <b>5 mL</b>         |
| <b>Prep Date:</b> 08/31/2011 10:24         |                            |                   |                     |
| <b>Data File:</b> 083111V3\3B308A.D        | <b>Column:</b> DB-624      |                   |                     |

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-88-3    | Toluene                     | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 79-00-5     | 1,1,2-Trichloroethane       | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 591-78-6    | 2-Hexanone                  | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 142-28-9    | 1,3-Dichloropropane         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 127-18-4    | Tetrachloroethylene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 124-48-1    | Dibromochloromethane        | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 106-93-4    | 1,2-Dibromoethane           | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-90-7    | Chlorobenzene               | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 100-41-4    | Ethylbenzene                | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 | U         | 0.500  | ug/L  | 0.500   | 2.00    |
| 95-47-6     | o-Xylene                    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 100-42-5    | Styrene                     | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 75-25-2     | Bromoform                   | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 79-34-5     | 1,1,2,2-Tetrachloroethane   | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 96-18-4     | 1,2,3-Trichloropropane      | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 108-86-1    | Bromobenzene                | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 103-65-1    | n-Propylbenzene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 95-49-8     | 2-Chlorotoluene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 98-82-8     | Isopropylbenzene            | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 108-67-8    | 1,3,5-Trimethylbenzene      | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 106-43-4    | 4-Chlorotoluene             | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 98-06-6     | tert-Butylbenzene           | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 95-63-6     | 1,2,4-Trimethylbenzene      | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 135-98-8    | sec-Butylbenzene            | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 99-87-6     | 4-Isopropyltoluene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 541-73-1    | 1,3-Dichlorobenzene         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 106-46-7    | 1,4-Dichlorobenzene         | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 104-51-8    | n-Butylbenzene              | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 96-12-8     | 1,2-Dibromo-3-chloropropane | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 87-68-3     | Hexachlorobutadiene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 91-20-3     | Naphthalene                 | U         | 0.250  | ug/L  | 0.250   | 1.00    |
| 87-61-6     | 1,2,3-Trichlorobenzene      | U         | 0.332  | ug/L  | 0.332   | 1.00    |
| 107-02-8    | Acrolein                    | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 107-05-1    | Allyl chloride              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 107-13-1    | Acrylonitrile               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 126-99-8    | 2-Chloro-1,3-butadiene      | U         | 0.300  | ug/L  | 0.300   | 1.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

|  |                            |                             |
|--|----------------------------|-----------------------------|
| <b>SDG Number:</b> 284538                  |                            | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 1202478370           |                            |                             |
| <b>Client Sample:</b> QC for batch 1137563 | <b>Client:</b> ECOL008     | <b>Project:</b> QC          |
| <b>Client ID:</b> MB for batch 1137563     | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b> GL-OA-E-038 |
| <b>Batch ID:</b> 1137563                   | <b>Inst:</b> VOA3.I        | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/31/2011 10:24          | <b>Analyst:</b> SYK1       | <b>Purge Vol:</b> 5 mL      |
| <b>Prep Date:</b> 08/31/2011 10:24         |                            |                             |
| <b>Data File:</b> 083111V3\3B308A.D        | <b>Column:</b> DB-624      |                             |

| CAS No.    | Parmname                     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|------------------------------|-----------|--------|-------|---------|---------|
| 107-12-0   | Propionitrile                | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 126-98-7   | Methacrylonitrile            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 78-83-1    | Isobutyl alcohol             | U         | 12.5   | ug/L  | 12.5    | 50.0    |
| 80-62-6    | Methyl methacrylate          | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 97-63-2    | Ethyl methacrylate           | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 79-46-9    | 2-Nitropropane               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 108-94-1   | Cyclohexanone                | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 1476-11-5  | cis-1,4-Dichloro-2-butene    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 110-57-6   | trans-1,4-Dichloro-2-butene  | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 76-01-7    | Pentachloroethane            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 100-44-7   | Benzyl chloride              | U         | 1.30   | ug/L  | 1.30    | 5.00    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether  | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 540-59-0   | 1,2-Dichloroethylene (total) | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 1330-20-7  | Xylenes (total)              | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 630-20-6   | 1,1,1,2-Tetrachloroethane    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 120-82-1   | 1,2,4-Trichlorobenzene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 95-50-1    | 1,2-Dichlorobenzene          | U         | 0.250  | ug/L  | 0.250   | 1.00    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B308A.D  
Acq On : 31 Aug 2011 10:24  
Operator : SYK1  
InstName : VOA3  
Sample : |1202478370|1137563|1|VOA|1|VOA8260BL|  
Misc : BLANK 5ML n/a  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 31 10:46:36 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1344594  | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.635 | 15.636 | 1.000  | 572255   | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 588335   | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1344594  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.635 | 15.636 | 1.000  | 572255   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 588335   | 50.00 | ug/L  | 0.00     |

|                             |     |        |        |       |         |       |      |          |
|-----------------------------|-----|--------|--------|-------|---------|-------|------|----------|
| System Monitoring Compounds |     |        |        |       |         |       |      | Dev(Min) |
| 29) 1,2-Dichloroethane-d4   | 102 | 11.568 | 11.568 | 0.963 | 77270   | 50.26 | ug/L | 0.00     |
| 43) Toluene-d8              | 98  | 13.952 | 13.952 | 0.892 | 1268843 | 49.93 | ug/L | 0.00     |
| 61) Bromofluorobenzene      | 95  | 16.916 | 16.916 | 0.930 | 558272  | 50.14 | ug/L | 0.00     |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 29) 1,2-Dichloroethane-d4 | 50.000 | 79 - 124 | 100.52%  |
| 43) Toluene-d8            | 50.000 | 80 - 120 | 99.86%   |
| 61) Bromofluorobenzene    | 50.000 | 80 - 120 | 100.28%  |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.666  | 0.000  | 0        | N.D.      |       |        |
| 3) Chloromethane              |      | 0.000  | 5.068  | 0.000  | 0        | N.D.      |       |        |
| 4) Vinyl chloride             |      | 0.000  | 5.365  | 0.000  | 0        | N.D.      |       |        |
| 5) Bromomethane               |      | 0.000  | 6.125  | 0.000  | 0        | N.D.      |       |        |
| 6) Chloroethane               |      | 0.000  | 6.327  | 0.000  | 0        | N.D.      |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.849  | 0.000  | 0        | N.D.      |       |        |
| 8) Ethyl ether                |      | 0.000  | 7.299  | 0.000  | 0        | N.D.      |       |        |
| 9) Acetone                    | 43   | 7.773  | 7.762  | 0.647  | 5957     | Below Cal |       | 66     |
| 10) 1,1-Dichloroethylene      |      | 0.000  | 7.774  | 0.000  | 0        | N.D.      |       |        |
| 11) Iodomethane               |      | 0.000  | 8.070  | 0.000  | 0        | N.D.      |       |        |
| 12) Acetonitrile              | 41   | 8.248  | 8.224  | 0.687  | 3245     | Below Cal | #     | 81     |
| 13) Methyl acetate            | 43   | 8.307  | 8.295  | 0.692  | 618      | N.D.      |       |        |
| 14) Carbon disulfide          | 76   | 8.188  | 8.212  | 0.682  | 2129     | N.D.      |       |        |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 14438    | N.D.      |       |        |
| 16) tert-Butyl methyl ether   |      | 0.000  | 8.936  | 0.000  | 0        | N.D.      |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 8.971  | 0.000  | 0        | N.D.      |       |        |
| 18) Vinyl acetate             | 43   | 9.623  | 9.612  | 0.801  | 1180     | N.D.      |       |        |
| 19) 1,1-Dichloroethane        |      | 0.000  | 9.623  | 0.000  | 0        | N.D.      |       |        |
| 20) 2-Butanone                | 43   | 10.181 | 10.406 | 0.848  | 3308     | N.D.      |       |        |
| 21) cis-1,2-Dichloroethylene  |      | 0.000  | 10.465 | 0.000  | 0        | N.D.      |       |        |
| 22) 2,2-Dichloropropane       |      | 0.000  | 10.489 | 0.000  | 0        | N.D.      |       |        |
| 23) Bromochloromethane        |      | 0.000  | 10.797 | 0.000  | 0        | N.D.      |       |        |
| 24) Chloroform                |      | 0.000  | 10.869 | 0.000  | 0        | N.D.      |       |        |
| 25) 1,1,1-Trichloroethane     |      | 0.000  | 11.201 | 0.000  | 0        | N.D.      |       |        |
| 26) Cyclohexane               |      | 0.000  | 11.307 | 0.000  | 0        | N.D.      |       |        |
| 27) 1,1-Dichloropropene       |      | 0.000  | 11.402 | 0.000  | 0        | N.D.      |       |        |
| 28) Carbon tetrachloride      |      | 0.000  | 11.438 | 0.000  | 0        | N.D.      |       |        |
| 30) 1,2-Dichloroethane        |      | 0.000  | 11.663 | 0.000  | 0        | N.D.      |       |        |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 193      | N.D.      |       |        |
| 32) Cyclohexene               |      | 0.000  | 11.829 | 0.000  | 0        | N.D.      |       |        |
| 33) n-Butyl alcohol           |      | 0.000  | 12.185 | 0.000  | 0        | N.D.      |       |        |
| 34) Trichloroethylene         |      | 0.000  | 12.481 | 0.000  | 0        | N.D.      |       |        |
| 35) 1,2-Dichloropropane       |      | 0.000  | 12.766 | 0.000  | 0        | N.D.      |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B308A.D  
Acq On : 31 Aug 2011 10:24  
Operator : SYK1  
InstName : VOA3  
Sample : |1202478370|1137563|1|VOA|1|VOA8260BL|  
Misc : BLANK 5ML n/a  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 31 10:46:36 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 36) Methylcyclohexane         |      | 0.000  | 12.766 | 0.000  | 0        | N.D.      |       |
| 37) Dibromomethane            |      | 0.000  | 12.920 | 0.000  | 0        | N.D.      |       |
| 38) Bromodichloromethane      |      | 0.000  | 13.062 | 0.000  | 0        | N.D.      |       |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D.      |       |
| 40) cis-1,3-Dichloropropylene |      | 0.000  | 13.596 | 0.000  | 0        | N.D.      |       |
| 42) 4-Methyl-2-pentanone      |      | 0.000  | 13.715 | 0.000  | 0        | N.D.      |       |
| 44) Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 776      | N.D.      |       |
| 45) trans-1,3-Dichloroprop... |      | 0.000  | 14.213 | 0.000  | 0        | N.D.      |       |
| 46) 1,1,2-Trichloroethane     |      | 0.000  | 14.462 | 0.000  | 0        | N.D.      |       |
| 47) 2-Hexanone                | 58   | 14.687 | 14.675 | 0.939  | 448      | Below Cal | # 1   |
| 48) 1,3-Dichloropropane       |      | 0.000  | 14.663 | 0.000  | 0        | N.D.      |       |
| 49) Tetrachloroethylene       |      | 0.000  | 14.699 | 0.000  | 0        | N.D.      |       |
| 50) Dibromochloromethane      |      | 0.000  | 14.960 | 0.000  | 0        | N.D.      |       |
| 51) 1,2-Dibromoethane         |      | 0.000  | 15.138 | 0.000  | 0        | N.D.      |       |
| 52) Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 186      | N.D.      |       |
| 53) 1,1,1,2-Tetrachloroethane |      | 0.000  | 15.742 | 0.000  | 0        | N.D.      |       |
| 54) Ethylbenzene              |      | 0.000  | 15.754 | 0.000  | 0        | N.D.      |       |
| 55) m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 181      | N.D.      |       |
| 56) o-Xylene                  |      | 0.000  | 16.335 | 0.000  | 0        | N.D.      |       |
| 57) Styrene                   | 104  | 16.347 | 16.335 | 1.046  | 387      | N.D.      |       |
| 59) Bromoform                 |      | 0.000  | 16.608 | 0.000  | 0        | N.D.      |       |
| 60) Isopropylbenzene          |      | 0.000  | 16.715 | 0.000  | 0        | N.D.      |       |
| 62) 1,1,2,2-Tetrachloroethane |      | 0.000  | 17.011 | 0.000  | 0        | N.D.      |       |
| 63) 1,2,3-Trichloropropane    |      | 0.000  | 17.094 | 0.000  | 0        | N.D.      |       |
| 64) Bromobenzene              |      | 0.000  | 17.142 | 0.000  | 0        | N.D.      |       |
| 65) n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 384      | N.D.      |       |
| 66) 1,3,5-Trimethylbenzene    |      | 0.000  | 17.331 | 0.000  | 0        | N.D.      |       |
| 67) 2-Chlorotoluene           |      | 0.000  | 17.320 | 0.000  | 0        | N.D.      |       |
| 68) 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 508      | N.D.      |       |
| 69) tert-Butylbenzene         |      | 0.000  | 17.711 | 0.000  | 0        | N.D.      |       |
| 70) 1,2,4-Trimethylbenzene    |      | 0.000  | 17.747 | 0.000  | 0        | N.D.      |       |
| 71) sec-Butylbenzene          |      | 0.000  | 17.948 | 0.000  | 0        | N.D.      |       |
| 72) 4-Isopropyltoluene        |      | 0.000  | 18.067 | 0.000  | 0        | N.D.      |       |
| 73) 1,3-Dichlorobenzene       | 146  | 18.138 | 18.126 | 0.997  | 417      | N.D.      |       |
| 74) 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 827      | N.D.      |       |
| 75) n-Butylbenzene            | 91   | 18.339 | 18.529 | 1.008  | 1913     | N.D.      |       |
| 76) 1,2-Dichlorobenzene       |      | 0.000  | 18.660 | 0.000  | 0        | N.D.      |       |
| 77) 1,2-Dibromo-3-chloropr... |      | 0.000  | 19.573 | 0.000  | 0        | N.D.      |       |
| 78) 1,2,4-Trichlorobenzene    | 180  | 20.675 | 20.676 | 1.136  | 198      | N.D.      |       |
| 79) Hexachlorobutadiene       |      | 0.000  | 20.865 | 0.000  | 0        | N.D.      |       |
| 80) Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 2019     | N.D.      |       |
| 81) 1,2,3-Trichlorobenzene    |      | 0.000  | 21.435 | 0.000  | 0        | N.D.      |       |
| 83) Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.      |       |
| 84) 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.      |       |
| 85) Acrolein                  |      | 0.000  | 7.524  | 0.000  | 0        | N.D.      |       |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.      |       |
| 87) Isopropyl Alcohol         |      | 0.000  | 7.928  | 0.000  | 0        | N.D.      |       |
| 88) Allyl chloride            | 41   | 8.248  | 8.331  | 0.687  | 3245     | Below Cal | # 27  |
| 89) tert-Butyl Alcohol        |      | 0.000  | 8.580  | 0.000  | 0        | N.D.      |       |
| 90) Acrylonitrile             |      | 0.000  | 8.864  | 0.000  | 0        | N.D.      |       |
| 91) Isopropyl ether           |      | 0.000  | 9.647  | 0.000  | 0        | N.D.      |       |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 9.766  | 0.000  | 0        | N.D.      |       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B308A.D  
Acq On : 31 Aug 2011 10:24  
Operator : SYK1  
InstName : VOA3  
Sample : |1202478370|1137563|1|VOA|1|VOA8260BL|  
Misc : BLANK 5ML n/a  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 31 10:46:36 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

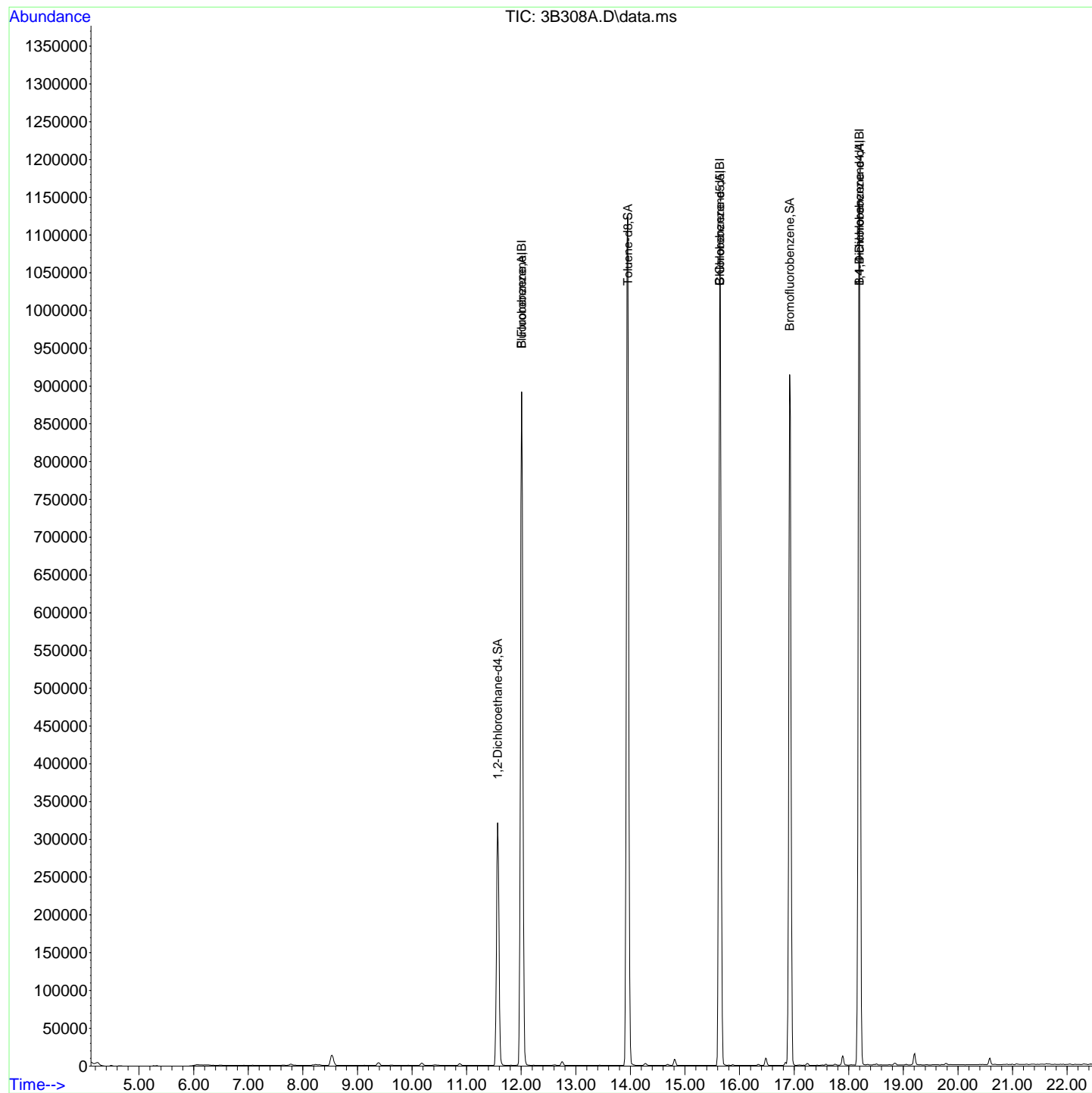
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 93) Ethyl tert-butyl ether     |      | 0.000  | 10.181 | 0.000  | 0        | N.D.      |       |
| 94) Ethyl acetate              | 43   | 10.418 | 10.454 | 0.868  | 3329     | N.D.      |       |
| 95) Propionitrile              |      | 0.000  | 10.501 | 0.000  | 0        | N.D.      |       |
| 96) Methacrylonitrile          | 41   | 10.868 | 10.726 | 0.905  | 1660     | N.D.      |       |
| 97) Tetrahydrofuran            | 42   | 10.868 | 10.869 | 0.905  | 2443     | Below Cal | 69    |
| 98) Isobutyl alcohol           |      | 0.000  | 11.343 | 0.000  | 0        | N.D.      |       |
| 99) Methyl tert-amyl ether     |      | 0.000  | 11.746 | 0.000  | 0        | N.D.      |       |
| 100) Methyl methacrylate       |      | 0.000  | 12.778 | 0.000  | 0        | N.D.      |       |
| 101) 1,4-Dioxane               |      | 0.000  | 12.884 | 0.000  | 0        | N.D.      |       |
| 102) 2-Nitropropane            |      | 0.000  | 13.300 | 0.000  | 0        | N.D.      |       |
| 104) Ethyl methacrylate        | 69   | 14.248 | 14.248 | 0.911  | 206      | N.D.      |       |
| 106) 1-Chlorohexane            |      | 0.000  | 15.553 | 0.000  | 0m       | N.D.      | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 0.000  | 16.762 | 0.000  | 0        | N.D.      |       |
| 108) Cyclohexanone             |      | 0.000  | 16.869 | 0.000  | 0        | N.D.      |       |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 17.059 | 0.000  | 0        | N.D.      |       |
| 110) Pentachloroethane         |      | 0.000  | 17.782 | 0.000  | 0        | N.D.      |       |
| 111) Benzyl chloride           | 91   | 18.339 | 18.339 | 1.008  | 1913     | N.D.      |       |
| 112) bis(2-Chloroisopropyl)... |      | 0.000  | 18.754 | 0.000  | 0        | N.D.      |       |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

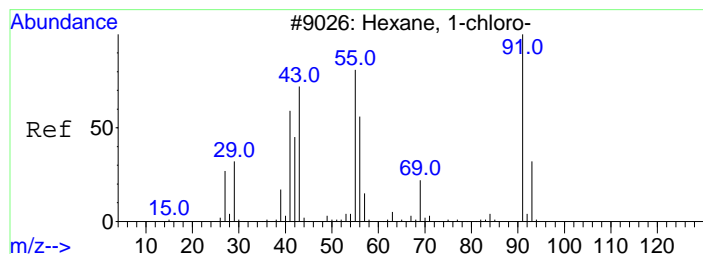
Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B308A.D  
Acq On : 31 Aug 2011 10:24  
Operator : SYK1  
InstName : VOA3  
Sample : |1202478370|1137563|1|VOA|1|VOA8260BL|  
Misc : BLANK 5ML n/a  
ALS Vial : 8 Sample Multiplier: 1

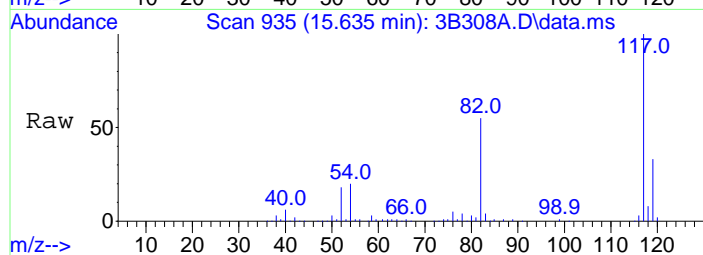
Quant Time: Aug 31 10:46:36 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



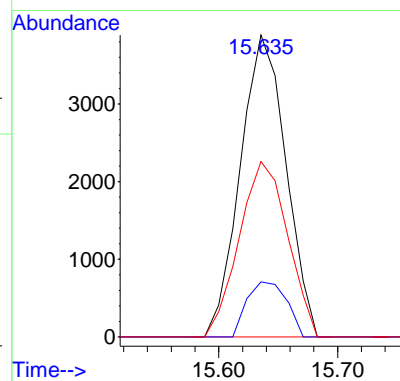
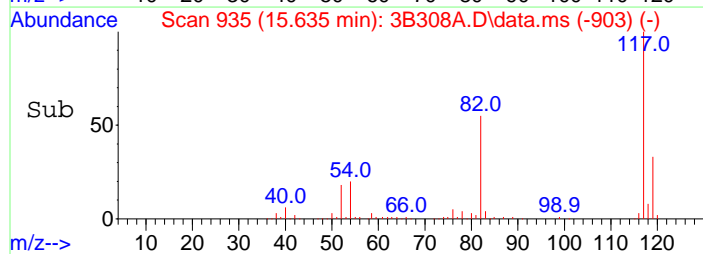




#106 BEFORE analyst DELETION  
 1-Chlorohexane  
 Concen: 1.45 ug/L  
 RT: 15.635 min Scan# 935  
 Delta R.T. 0.082 min  
 Lab File: 3B308A.D  
 Acq: 31 Aug 2011 10:24



Tgt Ion: 55 Resp: 10399  
 Ion Ratio Lower Upper  
 55 100  
 91 15.8 123.6 183.6#  
 56 61.6 31.5 91.5



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

|  |                            |                   |              |
|--|----------------------------|-------------------|--------------|
| <b>SDG Number:</b> 284538                  |                            | <b>Matrix:</b>    | GROUND WATER |
| <b>Lab Sample ID:</b> 1202477760           |                            |                   |              |
| <b>Client Sample:</b> QC for batch 1137563 | <b>Client:</b> ECOL008     | <b>Project:</b>   | QC           |
| <b>Client ID:</b> LCS for batch 1137563    | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b>   | GL-OA-E-038  |
| <b>Batch ID:</b> 1137563                   | <b>Inst:</b> VOA3.I        | <b>Dilution:</b>  | 1            |
| <b>Run Date:</b> 08/30/2011 21:28          | <b>Analyst:</b> SYK1       | <b>Purge Vol:</b> | 5 mL         |
| <b>Prep Date:</b> 08/30/2011 21:28         |                            |                   |              |
| <b>Data File:</b> 083011V3\3B228A.D        | <b>Column:</b> DB-624      |                   |              |

| CAS No.    | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------|-----------|--------|-------|---------|---------|
| 75-71-8    | Dichlorodifluoromethane    |           | 38.8   | ug/L  | 0.300   | 1.00    |
| 74-87-3    | Chloromethane              |           | 47.0   | ug/L  | 0.300   | 1.00    |
| 75-01-4    | Vinyl chloride             |           | 45.8   | ug/L  | 0.500   | 1.00    |
| 74-83-9    | Bromomethane               |           | 46.1   | ug/L  | 0.300   | 1.00    |
| 75-00-3    | Chloroethane               |           | 50.8   | ug/L  | 0.300   | 1.00    |
| 75-69-4    | Trichlorofluoromethane     |           | 45.5   | ug/L  | 0.300   | 1.00    |
| 60-29-7    | Ethyl ether                |           | 48.9   | ug/L  | 0.300   | 1.00    |
| 67-64-1    | Acetone                    |           | 189    | ug/L  | 1.50    | 5.00    |
| 75-05-8    | Acetonitrile               |           | 1370   | ug/L  | 6.25    | 25.0    |
| 75-35-4    | 1,1-Dichloroethylene       |           | 43.3   | ug/L  | 0.300   | 1.00    |
| 79-20-9    | Methyl acetate             |           | 242    | ug/L  | 1.25    | 5.00    |
| 74-88-4    | Iodomethane                |           | 231    | ug/L  | 1.25    | 5.00    |
| 75-09-2    | Methylene chloride         |           | 45.6   | ug/L  | 2.00    | 5.00    |
| 75-15-0    | Carbon disulfide           |           | 230    | ug/L  | 1.25    | 5.00    |
| 1634-04-4  | tert-Butyl methyl ether    |           | 45.6   | ug/L  | 0.250   | 1.00    |
| 156-60-5   | trans-1,2-Dichloroethylene |           | 43.6   | ug/L  | 0.300   | 1.00    |
| 108-05-4   | Vinyl acetate              |           | 233    | ug/L  | 1.50    | 5.00    |
| 75-34-3    | 1,1-Dichloroethane         |           | 44.1   | ug/L  | 0.300   | 1.00    |
| 78-93-3    | 2-Butanone                 |           | 185    | ug/L  | 1.25    | 5.00    |
| 156-59-2   | cis-1,2-Dichloroethylene   |           | 45.4   | ug/L  | 0.300   | 1.00    |
| 594-20-7   | 2,2-Dichloropropane        |           | 41.9   | ug/L  | 0.300   | 1.00    |
| 67-66-3    | Chloroform                 |           | 45.3   | ug/L  | 0.250   | 1.00    |
| 74-97-5    | Bromochloromethane         |           | 47.6   | ug/L  | 0.300   | 1.00    |
| 71-55-6    | 1,1,1-Trichloroethane      |           | 44.2   | ug/L  | 0.325   | 1.00    |
| 110-82-7   | Cyclohexane                |           | 43.3   | ug/L  | 0.300   | 1.00    |
| 563-58-6   | 1,1-Dichloropropene        |           | 42.8   | ug/L  | 0.250   | 1.00    |
| 71-36-3    | n-Butyl alcohol            |           | 5260   | ug/L  | 15.0    | 50.0    |
| 56-23-5    | Carbon tetrachloride       |           | 42.8   | ug/L  | 0.300   | 1.00    |
| 107-06-2   | 1,2-Dichloroethane         |           | 45.0   | ug/L  | 0.250   | 1.00    |
| 71-43-2    | Benzene                    |           | 45.2   | ug/L  | 0.300   | 1.00    |
| 79-01-6    | Trichloroethylene          |           | 44.9   | ug/L  | 0.250   | 1.00    |
| 78-87-5    | 1,2-Dichloropropane        |           | 45.6   | ug/L  | 0.250   | 1.00    |
| 108-87-2   | Methylcyclohexane          |           | 43.5   | ug/L  | 0.250   | 1.00    |
| 75-27-4    | Bromodichloromethane       |           | 46.9   | ug/L  | 0.250   | 1.00    |
| 74-95-3    | Dibromomethane             |           | 47.1   | ug/L  | 0.300   | 1.00    |
| 110-75-8   | 2-Chloroethylvinyl ether   |           | 214    | ug/L  | 1.50    | 5.00    |
| 108-10-1   | 4-Methyl-2-pentanone       |           | 240    | ug/L  | 1.25    | 5.00    |
| 10061-01-5 | cis-1,3-Dichloropropylene  |           | 46.7   | ug/L  | 0.250   | 1.00    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

|  |                            |                   |              |
|--|----------------------------|-------------------|--------------|
| <b>SDG Number:</b> 284538                  |                            | <b>Matrix:</b>    | GROUND WATER |
| <b>Lab Sample ID:</b> 1202477760           |                            |                   |              |
| <b>Client Sample:</b> QC for batch 1137563 | <b>Client:</b> ECOL008     | <b>Project:</b>   | QC           |
| <b>Client ID:</b> LCS for batch 1137563    | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b>   | GL-OA-E-038  |
| <b>Batch ID:</b> 1137563                   | <b>Inst:</b> VOA3.I        | <b>Dilution:</b>  | 1            |
| <b>Run Date:</b> 08/30/2011 21:28          | <b>Analyst:</b> SYK1       | <b>Purge Vol:</b> | 5 mL         |
| <b>Prep Date:</b> 08/30/2011 21:28         |                            |                   |              |
| <b>Data File:</b> 083011V3\3B228A.D        | <b>Column:</b> DB-624      |                   |              |

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-88-3    | Toluene                     |           | 44.2   | ug/L  | 0.250   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene |           | 46.2   | ug/L  | 0.250   | 1.00    |
| 79-00-5     | 1,1,2-Trichloroethane       |           | 47.7   | ug/L  | 0.250   | 1.00    |
| 591-78-6    | 2-Hexanone                  |           | 232    | ug/L  | 1.25    | 5.00    |
| 142-28-9    | 1,3-Dichloropropane         |           | 46.3   | ug/L  | 0.300   | 1.00    |
| 127-18-4    | Tetrachloroethylene         |           | 43.3   | ug/L  | 0.300   | 1.00    |
| 124-48-1    | Dibromochloromethane        |           | 47.6   | ug/L  | 0.300   | 1.00    |
| 106-93-4    | 1,2-Dibromoethane           |           | 48.4   | ug/L  | 0.250   | 1.00    |
| 108-90-7    | Chlorobenzene               |           | 45.9   | ug/L  | 0.250   | 1.00    |
| 100-41-4    | Ethylbenzene                |           | 43.0   | ug/L  | 0.250   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 |           | 88.8   | ug/L  | 0.500   | 2.00    |
| 95-47-6     | o-Xylene                    |           | 45.3   | ug/L  | 0.300   | 1.00    |
| 100-42-5    | Styrene                     |           | 44.7   | ug/L  | 0.250   | 1.00    |
| 75-25-2     | Bromoform                   |           | 49.1   | ug/L  | 0.250   | 1.00    |
| 79-34-5     | 1,1,2,2-Tetrachloroethane   |           | 49.0   | ug/L  | 0.250   | 1.00    |
| 96-18-4     | 1,2,3-Trichloropropane      |           | 48.4   | ug/L  | 0.300   | 1.00    |
| 108-86-1    | Bromobenzene                |           | 46.1   | ug/L  | 0.250   | 1.00    |
| 103-65-1    | n-Propylbenzene             |           | 43.6   | ug/L  | 0.250   | 1.00    |
| 95-49-8     | 2-Chlorotoluene             |           | 46.6   | ug/L  | 0.250   | 1.00    |
| 98-82-8     | Isopropylbenzene            |           | 44.2   | ug/L  | 0.250   | 1.00    |
| 108-67-8    | 1,3,5-Trimethylbenzene      |           | 44.2   | ug/L  | 0.250   | 1.00    |
| 106-43-4    | 4-Chlorotoluene             |           | 44.4   | ug/L  | 0.250   | 1.00    |
| 98-06-6     | tert-Butylbenzene           |           | 46.0   | ug/L  | 0.250   | 1.00    |
| 95-63-6     | 1,2,4-Trimethylbenzene      |           | 44.2   | ug/L  | 0.250   | 1.00    |
| 135-98-8    | sec-Butylbenzene            |           | 44.6   | ug/L  | 0.250   | 1.00    |
| 99-87-6     | 4-Isopropyltoluene          |           | 44.5   | ug/L  | 0.250   | 1.00    |
| 541-73-1    | 1,3-Dichlorobenzene         |           | 45.7   | ug/L  | 0.250   | 1.00    |
| 106-46-7    | 1,4-Dichlorobenzene         |           | 46.2   | ug/L  | 0.250   | 1.00    |
| 104-51-8    | n-Butylbenzene              |           | 45.0   | ug/L  | 0.250   | 1.00    |
| 96-12-8     | 1,2-Dibromo-3-chloropropane |           | 52.0   | ug/L  | 0.300   | 1.00    |
| 87-68-3     | Hexachlorobutadiene         |           | 43.8   | ug/L  | 0.300   | 1.00    |
| 91-20-3     | Naphthalene                 |           | 50.7   | ug/L  | 0.250   | 1.00    |
| 87-61-6     | 1,2,3-Trichlorobenzene      |           | 48.4   | ug/L  | 0.332   | 1.00    |
| 107-02-8    | Acrolein                    | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 107-05-1    | Allyl chloride              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 107-13-1    | Acrylonitrile               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 126-99-8    | 2-Chloro-1,3-butadiene      | U         | 0.300  | ug/L  | 0.300   | 1.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

|  |                            |                             |
|--|----------------------------|-----------------------------|
| <b>SDG Number:</b> 284538                  |                            | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 1202477760           |                            |                             |
| <b>Client Sample:</b> QC for batch 1137563 | <b>Client:</b> ECOL008     | <b>Project:</b> QC          |
| <b>Client ID:</b> LCS for batch 1137563    | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b> GL-OA-E-038 |
| <b>Batch ID:</b> 1137563                   | <b>Inst:</b> VOA3.I        | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/30/2011 21:28          | <b>Analyst:</b> SYK1       | <b>Purge Vol:</b> 5 mL      |
| <b>Prep Date:</b> 08/30/2011 21:28         |                            |                             |
| <b>Data File:</b> 083011V3\3B228A.D        | <b>Column:</b> DB-624      |                             |

| CAS No.    | Parmname                     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|------------------------------|-----------|--------|-------|---------|---------|
| 107-12-0   | Propionitrile                | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 126-98-7   | Methacrylonitrile            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 78-83-1    | Isobutyl alcohol             | U         | 12.5   | ug/L  | 12.5    | 50.0    |
| 80-62-6    | Methyl methacrylate          | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 97-63-2    | Ethyl methacrylate           | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 79-46-9    | 2-Nitropropane               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 108-94-1   | Cyclohexanone                | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 1476-11-5  | cis-1,4-Dichloro-2-butene    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 110-57-6   | trans-1,4-Dichloro-2-butene  | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 76-01-7    | Pentachloroethane            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 100-44-7   | Benzyl chloride              | U         | 1.30   | ug/L  | 1.30    | 5.00    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether  | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 540-59-0   | 1,2-Dichloroethylene (total) |           | 89.0   | ug/L  | 0.300   | 1.00    |
| 1330-20-7  | Xylenes (total)              |           | 134    | ug/L  | 0.300   | 1.00    |
| 630-20-6   | 1,1,1,2-Tetrachloroethane    |           | 46.8   | ug/L  | 0.300   | 1.00    |
| 120-82-1   | 1,2,4-Trichlorobenzene       |           | 46.8   | ug/L  | 0.300   | 1.00    |
| 95-50-1    | 1,2-Dichlorobenzene          |           | 46.6   | ug/L  | 0.250   | 1.00    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B228A.D  
Acq On : 30 Aug 2011 21:28  
Operator : SYK1  
InstName : VOA3  
Sample : |1202477760|1137563|1|VOA|1|VOA8260BL|  
Misc : LCS 5ML n/a MIX[A] 0817-01A+0827-01  
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Aug 31 06:58:43 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1329586  | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 580493   | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 592456   | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1329586  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 580493   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 592456   | 50.00 | ug/L  | 0.00     |

|                             |     |        |        |       |         |       |      |          |
|-----------------------------|-----|--------|--------|-------|---------|-------|------|----------|
| System Monitoring Compounds |     |        |        |       |         |       |      | Dev(Min) |
| 29) 1,2-Dichloroethane-d4   | 102 | 11.568 | 11.568 | 0.963 | 75221   | 49.48 | ug/L | 0.00     |
| 43) Toluene-d8              | 98  | 13.952 | 13.952 | 0.892 | 1229853 | 47.70 | ug/L | 0.00     |
| 61) Bromofluorobenzene      | 95  | 16.916 | 16.916 | 0.930 | 567722  | 50.63 | ug/L | 0.00     |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 29) 1,2-Dichloroethane-d4 | 50.000 | 79 - 124 | 98.96%   |
| 43) Toluene-d8            | 50.000 | 80 - 120 | 95.40%   |
| 61) Bromofluorobenzene    | 50.000 | 80 - 120 | 101.26%  |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 4.651  | 4.666  | 0.387  | 207995   | 38.83   | ug/L  | 98     |
| 3) Chloromethane              | 50   | 5.067  | 5.068  | 0.422  | 298460   | 46.99   | ug/L  | 99     |
| 4) Vinyl chloride             | 62   | 5.365  | 5.365  | 0.447  | 295532   | 45.75   | ug/L  | 100    |
| 5) Bromomethane               | 94   | 6.113  | 6.125  | 0.509  | 363794   | 46.09   | ug/L  | 99     |
| 6) Chloroethane               | 64   | 6.327  | 6.327  | 0.527  | 246295   | 50.83   | ug/L  | 100    |
| 7) Trichlorofluoromethane     | 101  | 6.837  | 6.849  | 0.569  | 472921   | 45.49   | ug/L  | 100    |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 307064   | 48.89   | ug/L  | 98     |
| 9) Acetone                    | 43   | 7.761  | 7.762  | 0.646  | 773770   | 188.93  | ug/L  | 100    |
| 10) 1,1-Dichloroethylene      | 61   | 7.773  | 7.774  | 0.647  | 487258   | 43.29   | ug/L  | 99     |
| 11) Iodomethane               | 142  | 8.070  | 8.070  | 0.672  | 3182865  | 231.03  | ug/L  | 99     |
| 12) Acetonitrile              | 41   | 8.236  | 8.224  | 0.686  | 1102654  | 1366.18 | ug/L  | 99     |
| 13) Methyl acetate            | 43   | 8.295  | 8.295  | 0.691  | 1354388  | 241.57  | ug/L  | 100    |
| 14) Carbon disulfide          | 76   | 8.212  | 8.212  | 0.684  | 5509081  | 230.40  | ug/L  | 100    |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 426178   | 45.58   | ug/L  | 99     |
| 16) tert-Butyl methyl ether   | 73   | 8.935  | 8.936  | 0.744  | 1032904  | 45.64   | ug/L  | 100    |
| 17) trans-1,2-Dichloroethy... | 61   | 8.971  | 8.971  | 0.747  | 455510   | 43.62   | ug/L  | 99     |
| 18) Vinyl acetate             | 43   | 9.611  | 9.612  | 0.800  | 3142692  | 233.31  | ug/L  | 99     |
| 19) 1,1-Dichloroethane        | 63   | 9.623  | 9.623  | 0.801  | 571606   | 44.08   | ug/L  | 99     |
| 20) 2-Butanone                | 43   | 10.418 | 10.406 | 0.868  | 1078113  | 185.06  | ug/L  | 99     |
| 21) cis-1,2-Dichloroethylene  | 96   | 10.465 | 10.465 | 0.872  | 397752   | 45.38   | ug/L  | 99     |
| 22) 2,2-Dichloropropane       | 77   | 10.489 | 10.489 | 0.874  | 420473   | 41.88   | ug/L  | 100    |
| 23) Bromochloromethane        | 128  | 10.809 | 10.797 | 0.900  | 203796   | 47.59   | ug/L  | 98     |
| 24) Chloroform                | 83   | 10.868 | 10.869 | 0.905  | 610991   | 45.25   | ug/L  | 99     |
| 25) 1,1,1-Trichloroethane     | 97   | 11.200 | 11.201 | 0.933  | 513781   | 44.19   | ug/L  | 100    |
| 26) Cyclohexane               | 56   | 11.307 | 11.307 | 0.942  | 561666   | 43.27   | ug/L  | 99     |
| 27) 1,1-Dichloropropene       | 75   | 11.402 | 11.402 | 0.950  | 412924   | 42.76   | ug/L  | 99     |
| 28) Carbon tetrachloride      | 117  | 11.438 | 11.438 | 0.953  | 418487   | 42.79   | ug/L  | 100    |
| 30) 1,2-Dichloroethane        | 62   | 11.663 | 11.663 | 0.971  | 416504   | 44.97   | ug/L  | 99     |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 1305370  | 45.20   | ug/L  | 100    |
| 32) Cyclohexene               | 67   | 11.829 | 11.829 | 0.985  | 629720   | 42.76   | ug/L  | 99     |
| 33) n-Butyl alcohol           | 56   | 12.185 | 12.185 | 1.015  | 1119962  | 5255.38 | ug/L  | 99     |
| 34) Trichloroethylene         | 95   | 12.481 | 12.481 | 1.040  | 346072   | 44.93   | ug/L  | 99     |
| 35) 1,2-Dichloropropane       | 63   | 12.766 | 12.766 | 1.063  | 333948   | 45.56   | ug/L  | 98     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B228A.D  
Acq On : 30 Aug 2011 21:28  
Operator : SYK1  
InstName : VOA3  
Sample : |1202477760|1137563|1|VOA|1|VOA8260BL|  
Misc : LCS 5ML n/a MIX[A] 0817-01A+0827-01  
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Aug 31 06:58:43 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 558457   | 43.45  | ug/L  | 99  |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 223862   | 47.10  | ug/L  | 98  |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 492193   | 46.90  | ug/L  | 100 |
| 39) 2-Chloroethylvinyl ether  | 63   | 13.347 | 13.347 | 1.112  | 803051   | 213.96 | ug/L  | 98  |
| 40) cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 582663   | 46.74  | ug/L  | 99  |
| 42) 4-Methyl-2-pentanone      | 58   | 13.714 | 13.715 | 0.877  | 731133   | 240.04 | ug/L  | 100 |
| 44) Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 1345857  | 44.15  | ug/L  | 100 |
| 45) trans-1,3-Dichloroprop... | 75   | 14.213 | 14.213 | 0.909  | 532864   | 46.23  | ug/L  | 99  |
| 46) 1,1,2-Trichloroethane     | 83   | 14.462 | 14.462 | 0.925  | 272235   | 47.68  | ug/L  | 100 |
| 47) 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 755079   | 231.91 | ug/L  | 99  |
| 48) 1,3-Dichloropropane       | 76   | 14.663 | 14.663 | 0.938  | 516682   | 46.26  | ug/L  | 93  |
| 49) Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 270021   | 43.27  | ug/L  | 99  |
| 50) Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 402034   | 47.55  | ug/L  | 99  |
| 51) 1,2-Dibromoethane         | 107  | 15.137 | 15.138 | 0.968  | 360676   | 48.39  | ug/L  | 100 |
| 52) Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 931677   | 45.88  | ug/L  | 100 |
| 53) 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 357890   | 46.82  | ug/L  | 99  |
| 54) Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 1447345  | 42.95  | ug/L  | 100 |
| 55) m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 1218470  | 88.80  | ug/L  | 99  |
| 56) o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 645074   | 45.28  | ug/L  | 100 |
| 57) Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 1048254  | 44.71  | ug/L  | 100 |
| 59) Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 278875   | 49.07  | ug/L  | 98  |
| 60) Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 1576480  | 44.20  | ug/L  | 100 |
| 62) 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 448190   | 49.04  | ug/L  | 99  |
| 63) 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 129309   | 48.42  | ug/L  | 99  |
| 64) Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 443579   | 46.13  | ug/L  | 98  |
| 65) n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 1791399  | 43.58  | ug/L  | 100 |
| 66) 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 1312069  | 44.18  | ug/L  | 100 |
| 67) 2-Chlorotoluene           | 126  | 17.319 | 17.320 | 0.952  | 411945   | 46.62  | ug/L  | 98  |
| 68) 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 1200790  | 44.41  | ug/L  | 100 |
| 69) tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 315920   | 46.04  | ug/L  | 97  |
| 70) 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 1354248  | 44.24  | ug/L  | 100 |
| 71) sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 1798692  | 44.59  | ug/L  | 99  |
| 72) 4-Isopropyltoluene        | 119  | 18.067 | 18.067 | 0.993  | 1437620  | 44.46  | ug/L  | 99  |
| 73) 1,3-Dichlorobenzene       | 146  | 18.126 | 18.126 | 0.996  | 836168   | 45.73  | ug/L  | 99  |
| 74) 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 812623   | 46.21  | ug/L  | 100 |
| 75) n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 1463128  | 44.97  | ug/L  | 100 |
| 76) 1,2-Dichlorobenzene       | 146  | 18.659 | 18.660 | 1.025  | 832185   | 46.56  | ug/L  | 100 |
| 77) 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 101833   | 52.01  | ug/L  | 96  |
| 78) 1,2,4-Trichlorobenzene    | 180  | 20.675 | 20.676 | 1.136  | 548270   | 46.84  | ug/L  | 99  |
| 79) Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 304241   | 43.83  | ug/L  | 99  |
| 80) Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 1191672  | 50.68  | ug/L  | 100 |
| 81) 1,2,3-Trichlorobenzene    | 180  | 21.434 | 21.435 | 1.178  | 466802   | 48.36  | ug/L  | 99  |
| 83) Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.   |       |     |
| 84) 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.   |       |     |
| 85) Acrolein                  |      | 7.536  | 7.524  | 0.628  | 0m       | N.D.   | d     |     |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.   |       |     |
| 87) Isopropyl Alcohol         |      | 7.773  | 7.928  | 0.647  | 0m       | N.D.   | d     |     |
| 88) Allyl chloride            |      | 8.236  | 8.331  | 0.686  | 0m       | N.D.   | d     |     |
| 89) tert-Butyl Alcohol        |      | 8.580  | 8.580  | 0.715  | 0m       | N.D.   | d     |     |
| 90) Acrylonitrile             |      | 8.935  | 8.864  | 0.744  | 0m       | N.D.   | d     |     |
| 91) Isopropyl ether           |      | 9.611  | 9.647  | 0.800  | 0m       | N.D.   | d     |     |
| 92) 2-Chloro-1,3-butadiene    |      | 9.611  | 9.766  | 0.800  | 0m       | N.D.   | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B228A.D  
Acq On : 30 Aug 2011 21:28  
Operator : SYK1  
InstName : VOA3  
Sample : |1202477760|1137563|1|VOA|1|VOA8260BL|  
Misc : LCS 5ML n/a MIX[A] 0817-01A+0827-01  
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Aug 31 06:58:43 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |
|--------------------------------|------|--------|--------|--------|----------|--------|-------|
| 93) Ethyl tert-butyl ether     |      | 0.000  | 10.181 | 0.000  | 0        | N.D.   |       |
| 94) Ethyl acetate              |      | 10.418 | 10.454 | 0.868  | 0m       | N.D. d |       |
| 95) Propionitrile              |      | 10.406 | 10.501 | 0.867  | 0m       | N.D. d |       |
| 96) Methacrylonitrile          |      | 10.489 | 10.726 | 0.874  | 0m       | N.D. d |       |
| 97) Tetrahydrofuran            |      | 10.868 | 10.869 | 0.905  | 0m       | N.D. d |       |
| 98) Isobutyl alcohol           |      | 11.307 | 11.343 | 0.942  | 0m       | N.D. d |       |
| 99) Methyl tert-amyl ether     |      | 11.687 | 11.746 | 0.973  | 0m       | N.D. d |       |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. d |       |
| 101) 1,4-Dioxane               |      | 12.920 | 12.884 | 1.076  | 0m       | N.D. d |       |
| 102) 2-Nitropropane            |      | 13.347 | 13.300 | 1.112  | 0m       | N.D. d |       |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D.   |       |
| 106) 1-Chlorohexane            |      | 15.541 | 15.553 | 0.854  | 0m       | N.D. d |       |
| 107) cis-1,4-Dichloro-2-butene |      | 16.715 | 16.762 | 0.919  | 0m       | N.D. d |       |
| 108) Cyclohexanone             |      | 16.715 | 16.869 | 0.919  | 0m       | N.D. d |       |
| 109) trans-1,4-Dichloro-2-b... |      | 17.165 | 17.059 | 0.943  | 0m       | N.D. d |       |
| 110) Pentachloroethane         |      | 17.782 | 17.782 | 0.977  | 0m       | N.D. d |       |
| 111) Benzyl chloride           |      | 18.529 | 18.339 | 1.018  | 0m       | N.D. d |       |
| 112) bis(2-Chloroisopropyl)... |      | 18.837 | 18.754 | 1.035  | 0m       | N.D. d |       |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted





**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

|  |                            |                   |              |
|--|----------------------------|-------------------|--------------|
| <b>SDG Number:</b> 284538                  |                            | <b>Matrix:</b>    | GROUND WATER |
| <b>Lab Sample ID:</b> 1202478371           |                            |                   |              |
| <b>Client Sample:</b> QC for batch 1137563 | <b>Client:</b> ECOL008     | <b>Project:</b>   | QC           |
| <b>Client ID:</b> LCS for batch 1137563    | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b>   | GL-OA-E-038  |
| <b>Batch ID:</b> 1137563                   | <b>Inst:</b> VOA3.I        | <b>Dilution:</b>  | 1            |
| <b>Run Date:</b> 08/31/2011 07:53          | <b>Analyst:</b> SYK1       | <b>Purge Vol:</b> | 5 mL         |
| <b>Prep Date:</b> 08/31/2011 07:53         |                            |                   |              |
| <b>Data File:</b> 083111V3\3B303A.D        | <b>Column:</b> DB-624      |                   |              |

| CAS No.    | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------|-----------|--------|-------|---------|---------|
| 75-71-8    | Dichlorodifluoromethane    |           | 42.2   | ug/L  | 0.300   | 1.00    |
| 74-87-3    | Chloromethane              |           | 47.0   | ug/L  | 0.300   | 1.00    |
| 75-01-4    | Vinyl chloride             |           | 46.6   | ug/L  | 0.500   | 1.00    |
| 74-83-9    | Bromomethane               |           | 46.3   | ug/L  | 0.300   | 1.00    |
| 75-00-3    | Chloroethane               |           | 52.1   | ug/L  | 0.300   | 1.00    |
| 75-69-4    | Trichlorofluoromethane     |           | 49.3   | ug/L  | 0.300   | 1.00    |
| 60-29-7    | Ethyl ether                |           | 46.1   | ug/L  | 0.300   | 1.00    |
| 67-64-1    | Acetone                    |           | 192    | ug/L  | 1.50    | 5.00    |
| 75-05-8    | Acetonitrile               |           | 1220   | ug/L  | 6.25    | 25.0    |
| 75-35-4    | 1,1-Dichloroethylene       |           | 45.4   | ug/L  | 0.300   | 1.00    |
| 79-20-9    | Methyl acetate             |           | 219    | ug/L  | 1.25    | 5.00    |
| 74-88-4    | Iodomethane                |           | 233    | ug/L  | 1.25    | 5.00    |
| 75-09-2    | Methylene chloride         |           | 44.8   | ug/L  | 2.00    | 5.00    |
| 75-15-0    | Carbon disulfide           |           | 237    | ug/L  | 1.25    | 5.00    |
| 1634-04-4  | tert-Butyl methyl ether    |           | 43.9   | ug/L  | 0.250   | 1.00    |
| 156-60-5   | trans-1,2-Dichloroethylene |           | 44.7   | ug/L  | 0.300   | 1.00    |
| 108-05-4   | Vinyl acetate              |           | 225    | ug/L  | 1.50    | 5.00    |
| 75-34-3    | 1,1-Dichloroethane         |           | 43.7   | ug/L  | 0.300   | 1.00    |
| 78-93-3    | 2-Butanone                 |           | 177    | ug/L  | 1.25    | 5.00    |
| 156-59-2   | cis-1,2-Dichloroethylene   |           | 44.7   | ug/L  | 0.300   | 1.00    |
| 594-20-7   | 2,2-Dichloropropane        |           | 44.3   | ug/L  | 0.300   | 1.00    |
| 67-66-3    | Chloroform                 |           | 44.8   | ug/L  | 0.250   | 1.00    |
| 74-97-5    | Bromochloromethane         |           | 45.3   | ug/L  | 0.300   | 1.00    |
| 71-55-6    | 1,1,1-Trichloroethane      |           | 46.3   | ug/L  | 0.325   | 1.00    |
| 110-82-7   | Cyclohexane                |           | 45.7   | ug/L  | 0.300   | 1.00    |
| 563-58-6   | 1,1-Dichloropropene        |           | 45.0   | ug/L  | 0.250   | 1.00    |
| 71-36-3    | n-Butyl alcohol            |           | 4700   | ug/L  | 15.0    | 50.0    |
| 56-23-5    | Carbon tetrachloride       |           | 45.9   | ug/L  | 0.300   | 1.00    |
| 107-06-2   | 1,2-Dichloroethane         |           | 43.2   | ug/L  | 0.250   | 1.00    |
| 71-43-2    | Benzene                    |           | 45.2   | ug/L  | 0.300   | 1.00    |
| 79-01-6    | Trichloroethylene          |           | 45.9   | ug/L  | 0.250   | 1.00    |
| 78-87-5    | 1,2-Dichloropropane        |           | 44.1   | ug/L  | 0.250   | 1.00    |
| 108-87-2   | Methylcyclohexane          |           | 46.1   | ug/L  | 0.250   | 1.00    |
| 75-27-4    | Bromodichloromethane       |           | 46.0   | ug/L  | 0.250   | 1.00    |
| 74-95-3    | Dibromomethane             |           | 45.2   | ug/L  | 0.300   | 1.00    |
| 110-75-8   | 2-Chloroethylvinyl ether   |           | 206    | ug/L  | 1.50    | 5.00    |
| 108-10-1   | 4-Methyl-2-pentanone       |           | 223    | ug/L  | 1.25    | 5.00    |
| 10061-01-5 | cis-1,3-Dichloropropylene  |           | 45.8   | ug/L  | 0.250   | 1.00    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

Page 2 of 3

|  |                            |                   |              |
|--|----------------------------|-------------------|--------------|
| <b>SDG Number:</b> 284538                  |                            | <b>Matrix:</b>    | GROUND WATER |
| <b>Lab Sample ID:</b> 1202478371           |                            |                   |              |
| <b>Client Sample:</b> QC for batch 1137563 | <b>Client:</b> ECOL008     | <b>Project:</b>   | QC           |
| <b>Client ID:</b> LCS for batch 1137563    | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b>   | GL-OA-E-038  |
| <b>Batch ID:</b> 1137563                   | <b>Inst:</b> VOA3.I        | <b>Dilution:</b>  | 1            |
| <b>Run Date:</b> 08/31/2011 07:53          | <b>Analyst:</b> SYK1       | <b>Purge Vol:</b> | 5 mL         |
| <b>Prep Date:</b> 08/31/2011 07:53         |                            |                   |              |
| <b>Data File:</b> 083111V3\3B303A.D        | <b>Column:</b> DB-624      |                   |              |

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-88-3    | Toluene                     |           | 45.4   | ug/L  | 0.250   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene |           | 46.1   | ug/L  | 0.250   | 1.00    |
| 79-00-5     | 1,1,2-Trichloroethane       |           | 46.1   | ug/L  | 0.250   | 1.00    |
| 591-78-6    | 2-Hexanone                  |           | 226    | ug/L  | 1.25    | 5.00    |
| 142-28-9    | 1,3-Dichloropropane         |           | 43.9   | ug/L  | 0.300   | 1.00    |
| 127-18-4    | Tetrachloroethylene         |           | 45.5   | ug/L  | 0.300   | 1.00    |
| 124-48-1    | Dibromochloromethane        |           | 46.7   | ug/L  | 0.300   | 1.00    |
| 106-93-4    | 1,2-Dibromoethane           |           | 46.5   | ug/L  | 0.250   | 1.00    |
| 108-90-7    | Chlorobenzene               |           | 46.0   | ug/L  | 0.250   | 1.00    |
| 100-41-4    | Ethylbenzene                |           | 44.8   | ug/L  | 0.250   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 |           | 92.6   | ug/L  | 0.500   | 2.00    |
| 95-47-6     | o-Xylene                    |           | 46.6   | ug/L  | 0.300   | 1.00    |
| 100-42-5    | Styrene                     |           | 45.7   | ug/L  | 0.250   | 1.00    |
| 75-25-2     | Bromoform                   |           | 48.1   | ug/L  | 0.250   | 1.00    |
| 79-34-5     | 1,1,2,2-Tetrachloroethane   |           | 45.9   | ug/L  | 0.250   | 1.00    |
| 96-18-4     | 1,2,3-Trichloropropane      |           | 44.9   | ug/L  | 0.300   | 1.00    |
| 108-86-1    | Bromobenzene                |           | 45.6   | ug/L  | 0.250   | 1.00    |
| 103-65-1    | n-Propylbenzene             |           | 44.4   | ug/L  | 0.250   | 1.00    |
| 95-49-8     | 2-Chlorotoluene             |           | 47.5   | ug/L  | 0.250   | 1.00    |
| 98-82-8     | Isopropylbenzene            |           | 45.3   | ug/L  | 0.250   | 1.00    |
| 108-67-8    | 1,3,5-Trimethylbenzene      |           | 44.9   | ug/L  | 0.250   | 1.00    |
| 106-43-4    | 4-Chlorotoluene             |           | 44.9   | ug/L  | 0.250   | 1.00    |
| 98-06-6     | tert-Butylbenzene           |           | 47.3   | ug/L  | 0.250   | 1.00    |
| 95-63-6     | 1,2,4-Trimethylbenzene      |           | 45.3   | ug/L  | 0.250   | 1.00    |
| 135-98-8    | sec-Butylbenzene            |           | 45.7   | ug/L  | 0.250   | 1.00    |
| 99-87-6     | 4-Isopropyltoluene          |           | 46.5   | ug/L  | 0.250   | 1.00    |
| 541-73-1    | 1,3-Dichlorobenzene         |           | 46.2   | ug/L  | 0.250   | 1.00    |
| 106-46-7    | 1,4-Dichlorobenzene         |           | 46.8   | ug/L  | 0.250   | 1.00    |
| 104-51-8    | n-Butylbenzene              |           | 46.1   | ug/L  | 0.250   | 1.00    |
| 96-12-8     | 1,2-Dibromo-3-chloropropane |           | 47.5   | ug/L  | 0.300   | 1.00    |
| 87-68-3     | Hexachlorobutadiene         |           | 45.1   | ug/L  | 0.300   | 1.00    |
| 91-20-3     | Naphthalene                 |           | 49.5   | ug/L  | 0.250   | 1.00    |
| 87-61-6     | 1,2,3-Trichlorobenzene      |           | 48.6   | ug/L  | 0.332   | 1.00    |
| 107-02-8    | Acrolein                    | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 107-05-1    | Allyl chloride              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 107-13-1    | Acrylonitrile               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 126-99-8    | 2-Chloro-1,3-butadiene      | U         | 0.300  | ug/L  | 0.300   | 1.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

|  |                            |                             |
|--|----------------------------|-----------------------------|
| <b>SDG Number:</b> 284538                  |                            | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 1202478371           |                            |                             |
| <b>Client Sample:</b> QC for batch 1137563 | <b>Client:</b> ECOL008     | <b>Project:</b> QC          |
| <b>Client ID:</b> LCS for batch 1137563    | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b> GL-OA-E-038 |
| <b>Batch ID:</b> 1137563                   | <b>Inst:</b> VOA3.I        | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/31/2011 07:53          | <b>Analyst:</b> SYK1       | <b>Purge Vol:</b> 5 mL      |
| <b>Prep Date:</b> 08/31/2011 07:53         |                            |                             |
| <b>Data File:</b> 083111V3\3B303A.D        | <b>Column:</b> DB-624      |                             |

| CAS No.    | Parmname                     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|------------------------------|-----------|--------|-------|---------|---------|
| 107-12-0   | Propionitrile                | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 126-98-7   | Methacrylonitrile            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 78-83-1    | Isobutyl alcohol             | U         | 12.5   | ug/L  | 12.5    | 50.0    |
| 80-62-6    | Methyl methacrylate          | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 97-63-2    | Ethyl methacrylate           | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 79-46-9    | 2-Nitropropane               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 108-94-1   | Cyclohexanone                | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 1476-11-5  | cis-1,4-Dichloro-2-butene    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 110-57-6   | trans-1,4-Dichloro-2-butene  | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 76-01-7    | Pentachloroethane            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 100-44-7   | Benzyl chloride              | U         | 1.30   | ug/L  | 1.30    | 5.00    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether  | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 540-59-0   | 1,2-Dichloroethylene (total) |           | 89.4   | ug/L  | 0.300   | 1.00    |
| 1330-20-7  | Xylenes (total)              |           | 139    | ug/L  | 0.300   | 1.00    |
| 630-20-6   | 1,1,1,2-Tetrachloroethane    |           | 47.2   | ug/L  | 0.300   | 1.00    |
| 120-82-1   | 1,2,4-Trichlorobenzene       |           | 49.0   | ug/L  | 0.300   | 1.00    |
| 95-50-1    | 1,2-Dichlorobenzene          |           | 46.2   | ug/L  | 0.250   | 1.00    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B303A.D  
Acq On : 31 Aug 2011 07:53  
Operator : SYK1  
InstName : VOA3  
Sample : |1202478371|1137563|1|VOA|1|VOA8260BL|  
Misc : LCS 5ML n/a MIX[A] 0817-01A+0827-01  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 31 08:41:53 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1352348  | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.636 | 15.636 | 1.000  | 584102   | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 602470   | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1352348  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.636 | 15.636 | 1.000  | 584102   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 602470   | 50.00 | ug/L  | 0.00     |

|                             |     |        |        |       |         |       |      |      |
|-----------------------------|-----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |     |        |        |       |         |       |      |      |
| 29) 1,2-Dichloroethane-d4   | 102 | 11.568 | 11.568 | 0.963 | 74656   | 48.28 | ug/L | 0.00 |
| 43) Toluene-d8              | 98  | 13.952 | 13.952 | 0.892 | 1252764 | 48.29 | ug/L | 0.00 |
| 61) Bromofluorobenzene      | 95  | 16.916 | 16.916 | 0.930 | 571575  | 50.13 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 29) 1,2-Dichloroethane-d4 | 50.000 | 79 - 124 | 96.56%   |
| 43) Toluene-d8            | 50.000 | 80 - 120 | 96.58%   |
| 61) Bromofluorobenzene    | 50.000 | 80 - 120 | 100.26%  |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 4.651  | 4.666  | 0.387  | 229965   | 42.21   | ug/L  | 99     |
| 3) Chloromethane              | 50   | 5.067  | 5.068  | 0.422  | 303511   | 46.98   | ug/L  | 100    |
| 4) Vinyl chloride             | 62   | 5.365  | 5.365  | 0.447  | 305855   | 46.55   | ug/L  | 100    |
| 5) Bromomethane               | 94   | 6.125  | 6.125  | 0.510  | 371330   | 46.26   | ug/L  | 100    |
| 6) Chloroethane               | 64   | 6.327  | 6.327  | 0.527  | 256897   | 52.13   | ug/L  | 99     |
| 7) Trichlorofluoromethane     | 101  | 6.837  | 6.849  | 0.569  | 521378   | 49.30   | ug/L  | 100    |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 294251   | 46.07   | ug/L  | 98     |
| 9) Acetone                    | 43   | 7.762  | 7.762  | 0.646  | 800092   | 192.31  | ug/L  | 99     |
| 10) 1,1-Dichloroethylene      | 61   | 7.762  | 7.774  | 0.646  | 519653   | 45.39   | ug/L  | 99     |
| 11) Iodomethane               | 142  | 8.070  | 8.070  | 0.672  | 3270260  | 233.37  | ug/L  | 99     |
| 12) Acetonitrile              | 41   | 8.236  | 8.224  | 0.686  | 1003730  | 1216.72 | ug/L  | 100    |
| 13) Methyl acetate            | 43   | 8.295  | 8.295  | 0.691  | 1247592  | 218.77  | ug/L  | 100    |
| 14) Carbon disulfide          | 76   | 8.212  | 8.212  | 0.684  | 5759313  | 236.81  | ug/L  | 100    |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 425864   | 44.78   | ug/L  | 99     |
| 16) tert-Butyl methyl ether   | 73   | 8.936  | 8.936  | 0.744  | 1011468  | 43.94   | ug/L  | 99     |
| 17) trans-1,2-Dichloroethy... | 61   | 8.971  | 8.971  | 0.747  | 474396   | 44.67   | ug/L  | 99     |
| 18) Vinyl acetate             | 43   | 9.611  | 9.612  | 0.800  | 3078290  | 224.69  | ug/L  | 100    |
| 19) 1,1-Dichloroethane        | 63   | 9.623  | 9.623  | 0.801  | 576558   | 43.71   | ug/L  | 100    |
| 20) 2-Butanone                | 43   | 10.418 | 10.406 | 0.868  | 1050998  | 177.37  | ug/L  | 100    |
| 21) cis-1,2-Dichloroethylene  | 96   | 10.465 | 10.465 | 0.872  | 398631   | 44.72   | ug/L  | 98     |
| 22) 2,2-Dichloropropane       | 77   | 10.489 | 10.489 | 0.874  | 452797   | 44.34   | ug/L  | 98     |
| 23) Bromochloromethane        | 128  | 10.809 | 10.797 | 0.900  | 197243   | 45.29   | ug/L  | 98     |
| 24) Chloroform                | 83   | 10.868 | 10.869 | 0.905  | 614708   | 44.76   | ug/L  | 99     |
| 25) 1,1,1-Trichloroethane     | 97   | 11.201 | 11.201 | 0.933  | 546977   | 46.25   | ug/L  | 99     |
| 26) Cyclohexane               | 56   | 11.307 | 11.307 | 0.942  | 603405   | 45.71   | ug/L  | 99     |
| 27) 1,1-Dichloropropene       | 75   | 11.402 | 11.402 | 0.950  | 442164   | 45.02   | ug/L  | 99     |
| 28) Carbon tetrachloride      | 117  | 11.438 | 11.438 | 0.953  | 456843   | 45.93   | ug/L  | 99     |
| 30) 1,2-Dichloroethane        | 62   | 11.675 | 11.663 | 0.972  | 407015   | 43.20   | ug/L  | 99     |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 1327493  | 45.19   | ug/L  | 100    |
| 32) Cyclohexene               | 67   | 11.829 | 11.829 | 0.985  | 666479   | 44.50   | ug/L  | 99     |
| 33) n-Butyl alcohol           | 56   | 12.185 | 12.185 | 1.015  | 1017879  | 4701.71 | ug/L  | 100    |
| 34) Trichloroethylene         | 95   | 12.481 | 12.481 | 1.040  | 359519   | 45.89   | ug/L  | 100    |
| 35) 1,2-Dichloropropane       | 63   | 12.766 | 12.766 | 1.063  | 328558   | 44.07   | ug/L  | 99     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B303A.D  
Acq On : 31 Aug 2011 07:53  
Operator : SYK1  
InstName : VOA3  
Sample : |1202478371|1137563|1|VOA|1|VOA8260BL|  
Misc : LCS 5ML n/a MIX[A] 0817-01A+0827-01  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 31 08:41:53 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 602648   | 46.09  | ug/L  | 100 |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 218530   | 45.20  | ug/L  | 98  |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 491318   | 46.03  | ug/L  | 100 |
| 39) 2-Chloroethylvinyl ether  | 63   | 13.347 | 13.347 | 1.112  | 786382   | 205.99 | ug/L  | 99  |
| 40) cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 580934   | 45.82  | ug/L  | 99  |
| 42) 4-Methyl-2-pentanone      | 58   | 13.715 | 13.715 | 0.877  | 683952   | 223.16 | ug/L  | 100 |
| 44) Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 1393715  | 45.43  | ug/L  | 100 |
| 45) trans-1,3-Dichloroprop... | 75   | 14.213 | 14.213 | 0.909  | 534082   | 46.05  | ug/L  | 98  |
| 46) 1,1,2-Trichloroethane     | 83   | 14.462 | 14.462 | 0.925  | 264673   | 46.07  | ug/L  | 99  |
| 47) 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 741869   | 226.10 | ug/L  | 99  |
| 48) 1,3-Dichloropropane       | 76   | 14.663 | 14.663 | 0.938  | 493325   | 43.89  | ug/L  | 93  |
| 49) Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 285980   | 45.54  | ug/L  | 100 |
| 50) Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 397276   | 46.69  | ug/L  | 100 |
| 51) 1,2-Dibromoethane         | 107  | 15.138 | 15.138 | 0.968  | 348953   | 46.53  | ug/L  | 100 |
| 52) Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 940540   | 46.03  | ug/L  | 100 |
| 53) 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 362983   | 47.19  | ug/L  | 100 |
| 54) Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 1519418  | 44.81  | ug/L  | 100 |
| 55) m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 1277966  | 92.56  | ug/L  | 98  |
| 56) o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 667995   | 46.60  | ug/L  | 99  |
| 57) Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 1076727  | 45.65  | ug/L  | 100 |
| 59) Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 278200   | 48.13  | ug/L  | 99  |
| 60) Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 1644105  | 45.33  | ug/L  | 100 |
| 62) 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 426921   | 45.93  | ug/L  | 99  |
| 63) 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 122000   | 44.92  | ug/L  | 95  |
| 64) Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 446010   | 45.61  | ug/L  | 100 |
| 65) n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 1857941  | 44.44  | ug/L  | 100 |
| 66) 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 1355104  | 44.87  | ug/L  | 99  |
| 67) 2-Chlorotoluene           | 126  | 17.320 | 17.320 | 0.952  | 426485   | 47.47  | ug/L  | 97  |
| 68) 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 1233206  | 44.85  | ug/L  | 100 |
| 69) tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 329740   | 47.25  | ug/L  | 99  |
| 70) 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 1410331  | 45.31  | ug/L  | 100 |
| 71) sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 1874715  | 45.70  | ug/L  | 99  |
| 72) 4-Isopropyltoluene        | 119  | 18.078 | 18.067 | 0.993  | 1529850  | 46.52  | ug/L  | 100 |
| 73) 1,3-Dichlorobenzene       | 146  | 18.138 | 18.126 | 0.997  | 859519   | 46.22  | ug/L  | 99  |
| 74) 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 836267   | 46.76  | ug/L  | 100 |
| 75) n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 1523799  | 46.06  | ug/L  | 100 |
| 76) 1,2-Dichlorobenzene       | 146  | 18.660 | 18.660 | 1.025  | 839605   | 46.20  | ug/L  | 100 |
| 77) 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 94502    | 47.47  | ug/L  | 99  |
| 78) 1,2,4-Trichlorobenzene    | 180  | 20.675 | 20.676 | 1.136  | 583335   | 49.01  | ug/L  | 99  |
| 79) Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 318046   | 45.05  | ug/L  | 99  |
| 80) Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 1182496  | 49.45  | ug/L  | 100 |
| 81) 1,2,3-Trichlorobenzene    | 180  | 21.434 | 21.435 | 1.178  | 477370   | 48.64  | ug/L  | 100 |
| 83) Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.   |       |     |
| 84) 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.   |       |     |
| 85) Acrolein                  |      | 0.000  | 7.524  | 0.000  | 0        | N.D.   |       |     |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.   |       |     |
| 87) Isopropyl Alcohol         |      | 7.762  | 7.928  | 0.646  | 0m       | N.D.   | d     |     |
| 88) Allyl chloride            |      | 8.236  | 8.331  | 0.686  | 0m       | N.D.   | d     |     |
| 89) tert-Butyl Alcohol        |      | 8.592  | 8.580  | 0.716  | 0m       | N.D.   | d     |     |
| 90) Acrylonitrile             |      | 8.936  | 8.864  | 0.744  | 0m       | N.D.   | d     |     |
| 91) Isopropyl ether           |      | 9.611  | 9.647  | 0.800  | 0m       | N.D.   | d     |     |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 9.766  | 0.000  | 0        | N.D.   |       |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B303A.D  
Acq On : 31 Aug 2011 07:53  
Operator : SYK1  
InstName : VOA3  
Sample : |1202478371|1137563|1|VOA|1|VOA8260BL|  
Misc : LCS 5ML n/a MIX[A] 0817-01A+0827-01  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 31 08:41:53 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

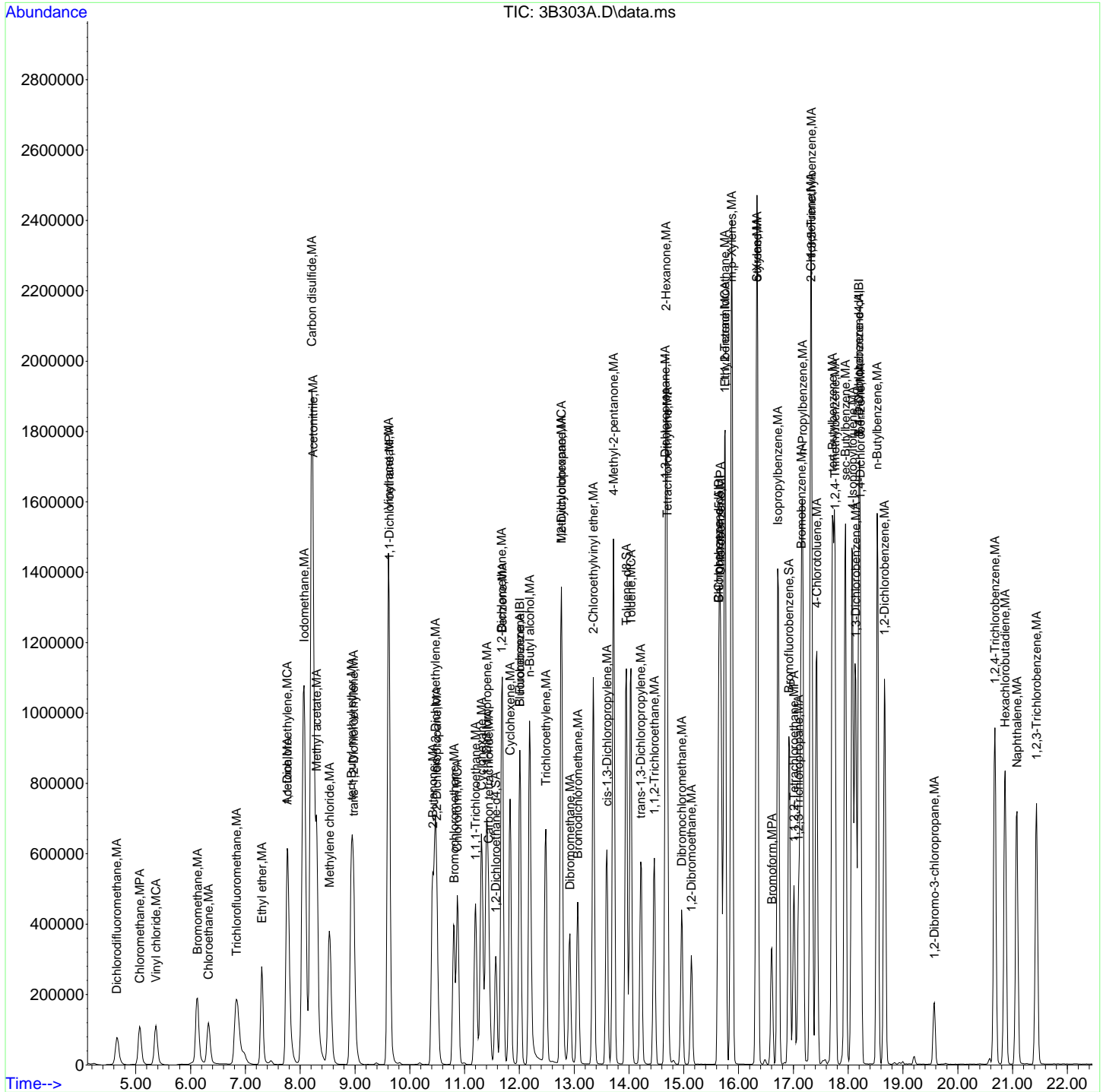
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |
|--------------------------------|------|--------|--------|--------|----------|--------|-------|
| 93) Ethyl tert-butyl ether     |      | 0.000  | 10.181 | 0.000  | 0        | N.D.   |       |
| 94) Ethyl acetate              |      | 10.418 | 10.454 | 0.868  | 0m       | N.D. d |       |
| 95) Propionitrile              |      | 10.406 | 10.501 | 0.867  | 0m       | N.D. d |       |
| 96) Methacrylonitrile          |      | 10.868 | 10.726 | 0.905  | 0m       | N.D. d |       |
| 97) Tetrahydrofuran            |      | 10.868 | 10.869 | 0.905  | 0m       | N.D. d |       |
| 98) Isobutyl alcohol           |      | 11.307 | 11.343 | 0.942  | 0m       | N.D. d |       |
| 99) Methyl tert-amyl ether     |      | 11.687 | 11.746 | 0.973  | 0m       | N.D. d |       |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. d |       |
| 101) 1,4-Dioxane               |      | 12.920 | 12.884 | 1.076  | 0m       | N.D. d |       |
| 102) 2-Nitropropane            |      | 13.347 | 13.300 | 1.112  | 0m       | N.D. d |       |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D.   |       |
| 106) 1-Chlorohexane            |      | 15.636 | 15.553 | 0.859  | 0m       | N.D. d |       |
| 107) cis-1,4-Dichloro-2-butene |      | 16.715 | 16.762 | 0.919  | 0m       | N.D. d |       |
| 108) Cyclohexanone             |      | 16.715 | 16.869 | 0.919  | 0m       | N.D. d |       |
| 109) trans-1,4-Dichloro-2-b... |      | 17.165 | 17.059 | 0.943  | 0m       | N.D. d |       |
| 110) Pentachloroethane         |      | 17.782 | 17.782 | 0.977  | 0m       | N.D. d |       |
| 111) Benzyl chloride           |      | 18.529 | 18.339 | 1.018  | 0m       | N.D. d |       |
| 112) bis(2-Chloroisopropyl)... |      | 0.000  | 18.754 | 0.000  | 0        | N.D.   |       |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083111V3\  
Data File : 3B303A.D  
Acq On : 31 Aug 2011 07:53  
Operator : SYK1  
InstName : VOA3  
Sample : |1202478371|1137563|1|VOA|1|VOA8260BL|  
Misc : LCS 5ML n/a MIX[A] 0817-01A+0827-01  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 31 08:41:53 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



**Volatile  
Certificate of Analysis  
Sample Summary**

|                       |                             |                        |                         |                   |                     |
|-----------------------|-----------------------------|------------------------|-------------------------|-------------------|---------------------|
| <b>SDG Number:</b>    | <b>284538</b>               | <b>Date Collected:</b> | <b>08/18/2011 12:00</b> | <b>Matrix:</b>    | <b>GROUND WATER</b> |
| <b>Lab Sample ID:</b> | <b>1202477758</b>           | <b>Date Received:</b>  | <b>08/23/2011 08:50</b> |                   |                     |
| <b>Client Sample:</b> | <b>QC for batch 1137563</b> | <b>Client:</b>         | <b>ECOL008</b>          | <b>Project:</b>   | <b>QC</b>           |
| <b>Client ID:</b>     | <b>11080101PS</b>           | <b>Method:</b>         | <b>SW846 8260B</b>      | <b>SOP Ref:</b>   | <b>GL-OA-E-038</b>  |
| <b>Batch ID:</b>      | <b>1137563</b>              | <b>Inst:</b>           | <b>VOA3.I</b>           | <b>Dilution:</b>  | <b>1</b>            |
| <b>Run Date:</b>      | <b>08/31/2011 00:28</b>     | <b>Analyst:</b>        | <b>SYK1</b>             | <b>Purge Vol:</b> | <b>5 mL</b>         |
| <b>Prep Date:</b>     | <b>08/31/2011 00:28</b>     |                        |                         |                   |                     |
| <b>Data File:</b>     | <b>083011V3\3B234.D</b>     | <b>Column:</b>         | <b>DB-624</b>           |                   |                     |

| CAS No.    | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------|-----------|--------|-------|---------|---------|
| 75-71-8    | Dichlorodifluoromethane    |           | 37.5   | ug/L  | 0.300   | 1.00    |
| 74-87-3    | Chloromethane              |           | 47.0   | ug/L  | 0.300   | 1.00    |
| 75-01-4    | Vinyl chloride             |           | 45.4   | ug/L  | 0.500   | 1.00    |
| 74-83-9    | Bromomethane               |           | 45.3   | ug/L  | 0.300   | 1.00    |
| 75-00-3    | Chloroethane               |           | 48.7   | ug/L  | 0.300   | 1.00    |
| 75-69-4    | Trichlorofluoromethane     |           | 44.0   | ug/L  | 0.300   | 1.00    |
| 60-29-7    | Ethyl ether                |           | 47.2   | ug/L  | 0.300   | 1.00    |
| 67-64-1    | Acetone                    |           | 126    | ug/L  | 1.50    | 5.00    |
| 75-05-8    | Acetonitrile               |           | 1270   | ug/L  | 6.25    | 25.0    |
| 75-35-4    | 1,1-Dichloroethylene       |           | 42.5   | ug/L  | 0.300   | 1.00    |
| 79-20-9    | Methyl acetate             |           | 202    | ug/L  | 1.25    | 5.00    |
| 74-88-4    | Iodomethane                |           | 227    | ug/L  | 1.25    | 5.00    |
| 75-09-2    | Methylene chloride         |           | 44.9   | ug/L  | 2.00    | 5.00    |
| 75-15-0    | Carbon disulfide           |           | 225    | ug/L  | 1.25    | 5.00    |
| 1634-04-4  | tert-Butyl methyl ether    |           | 44.3   | ug/L  | 0.250   | 1.00    |
| 156-60-5   | trans-1,2-Dichloroethylene |           | 43.0   | ug/L  | 0.300   | 1.00    |
| 108-05-4   | Vinyl acetate              |           | 204    | ug/L  | 1.50    | 5.00    |
| 75-34-3    | 1,1-Dichloroethane         |           | 43.4   | ug/L  | 0.300   | 1.00    |
| 78-93-3    | 2-Butanone                 |           | 148    | ug/L  | 1.25    | 5.00    |
| 156-59-2   | cis-1,2-Dichloroethylene   |           | 44.6   | ug/L  | 0.300   | 1.00    |
| 594-20-7   | 2,2-Dichloropropane        |           | 39.3   | ug/L  | 0.300   | 1.00    |
| 67-66-3    | Chloroform                 |           | 44.5   | ug/L  | 0.250   | 1.00    |
| 74-97-5    | Bromochloromethane         |           | 46.5   | ug/L  | 0.300   | 1.00    |
| 71-55-6    | 1,1,1-Trichloroethane      |           | 42.2   | ug/L  | 0.325   | 1.00    |
| 110-82-7   | Cyclohexane                |           | 41.1   | ug/L  | 0.300   | 1.00    |
| 563-58-6   | 1,1-Dichloropropene        |           | 41.8   | ug/L  | 0.250   | 1.00    |
| 71-36-3    | n-Butyl alcohol            |           | 4750   | ug/L  | 15.0    | 50.0    |
| 56-23-5    | Carbon tetrachloride       |           | 41.3   | ug/L  | 0.300   | 1.00    |
| 107-06-2   | 1,2-Dichloroethane         |           | 44.1   | ug/L  | 0.250   | 1.00    |
| 71-43-2    | Benzene                    |           | 44.3   | ug/L  | 0.300   | 1.00    |
| 79-01-6    | Trichloroethylene          |           | 43.5   | ug/L  | 0.250   | 1.00    |
| 78-87-5    | 1,2-Dichloropropane        |           | 44.6   | ug/L  | 0.250   | 1.00    |
| 108-87-2   | Methylcyclohexane          |           | 41.3   | ug/L  | 0.250   | 1.00    |
| 75-27-4    | Bromodichloromethane       |           | 45.2   | ug/L  | 0.250   | 1.00    |
| 74-95-3    | Dibromomethane             |           | 46.3   | ug/L  | 0.300   | 1.00    |
| 110-75-8   | 2-Chloroethylvinyl ether   | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 108-10-1   | 4-Methyl-2-pentanone       |           | 223    | ug/L  | 1.25    | 5.00    |
| 10061-01-5 | cis-1,3-Dichloropropylene  |           | 45.1   | ug/L  | 0.250   | 1.00    |



**Volatile  
Certificate of Analysis  
Sample Summary**

|                       |                             |                        |                         |                   |                     |
|-----------------------|-----------------------------|------------------------|-------------------------|-------------------|---------------------|
| <b>SDG Number:</b>    | <b>284538</b>               | <b>Date Collected:</b> | <b>08/18/2011 12:00</b> | <b>Matrix:</b>    | <b>GROUND WATER</b> |
| <b>Lab Sample ID:</b> | <b>1202477758</b>           | <b>Date Received:</b>  | <b>08/23/2011 08:50</b> |                   |                     |
| <b>Client Sample:</b> | <b>QC for batch 1137563</b> | <b>Client:</b>         | <b>ECOL008</b>          | <b>Project:</b>   | <b>QC</b>           |
| <b>Client ID:</b>     | <b>11080101PS</b>           | <b>Method:</b>         | <b>SW846 8260B</b>      | <b>SOP Ref:</b>   | <b>GL-OA-E-038</b>  |
| <b>Batch ID:</b>      | <b>1137563</b>              | <b>Inst:</b>           | <b>VOA3.I</b>           | <b>Dilution:</b>  | <b>1</b>            |
| <b>Run Date:</b>      | <b>08/31/2011 00:28</b>     | <b>Analyst:</b>        | <b>SYK1</b>             | <b>Purge Vol:</b> | <b>5 mL</b>         |
| <b>Prep Date:</b>     | <b>08/31/2011 00:28</b>     |                        |                         |                   |                     |
| <b>Data File:</b>     | <b>083011V3\3B234.D</b>     | <b>Column:</b>         | <b>DB-624</b>           |                   |                     |

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-88-3    | Toluene                     |           | 43.5   | ug/L  | 0.250   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene |           | 43.7   | ug/L  | 0.250   | 1.00    |
| 79-00-5     | 1,1,2-Trichloroethane       |           | 46.5   | ug/L  | 0.250   | 1.00    |
| 591-78-6    | 2-Hexanone                  |           | 203    | ug/L  | 1.25    | 5.00    |
| 142-28-9    | 1,3-Dichloropropane         |           | 45.7   | ug/L  | 0.300   | 1.00    |
| 127-18-4    | Tetrachloroethylene         |           | 41.5   | ug/L  | 0.300   | 1.00    |
| 124-48-1    | Dibromochloromethane        |           | 46.1   | ug/L  | 0.300   | 1.00    |
| 106-93-4    | 1,2-Dibromoethane           |           | 46.2   | ug/L  | 0.250   | 1.00    |
| 108-90-7    | Chlorobenzene               |           | 44.1   | ug/L  | 0.250   | 1.00    |
| 100-41-4    | Ethylbenzene                |           | 42.6   | ug/L  | 0.250   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 |           | 87.2   | ug/L  | 0.500   | 2.00    |
| 95-47-6     | o-Xylene                    |           | 45.0   | ug/L  | 0.300   | 1.00    |
| 100-42-5    | Styrene                     |           | 44.2   | ug/L  | 0.250   | 1.00    |
| 75-25-2     | Bromoform                   |           | 48.3   | ug/L  | 0.250   | 1.00    |
| 79-34-5     | 1,1,2,2-Tetrachloroethane   |           | 47.9   | ug/L  | 0.250   | 1.00    |
| 96-18-4     | 1,2,3-Trichloropropane      |           | 47.4   | ug/L  | 0.300   | 1.00    |
| 108-86-1    | Bromobenzene                |           | 46.6   | ug/L  | 0.250   | 1.00    |
| 103-65-1    | n-Propylbenzene             |           | 43.5   | ug/L  | 0.250   | 1.00    |
| 95-49-8     | 2-Chlorotoluene             |           | 47.5   | ug/L  | 0.250   | 1.00    |
| 98-82-8     | Isopropylbenzene            |           | 44.3   | ug/L  | 0.250   | 1.00    |
| 108-67-8    | 1,3,5-Trimethylbenzene      |           | 44.1   | ug/L  | 0.250   | 1.00    |
| 106-43-4    | 4-Chlorotoluene             |           | 44.7   | ug/L  | 0.250   | 1.00    |
| 98-06-6     | tert-Butylbenzene           |           | 45.4   | ug/L  | 0.250   | 1.00    |
| 95-63-6     | 1,2,4-Trimethylbenzene      |           | 44.0   | ug/L  | 0.250   | 1.00    |
| 135-98-8    | sec-Butylbenzene            |           | 44.7   | ug/L  | 0.250   | 1.00    |
| 99-87-6     | 4-Isopropyltoluene          |           | 44.6   | ug/L  | 0.250   | 1.00    |
| 541-73-1    | 1,3-Dichlorobenzene         |           | 45.4   | ug/L  | 0.250   | 1.00    |
| 106-46-7    | 1,4-Dichlorobenzene         |           | 45.4   | ug/L  | 0.250   | 1.00    |
| 104-51-8    | n-Butylbenzene              |           | 43.4   | ug/L  | 0.250   | 1.00    |
| 96-12-8     | 1,2-Dibromo-3-chloropropane |           | 47.6   | ug/L  | 0.300   | 1.00    |
| 87-68-3     | Hexachlorobutadiene         |           | 43.2   | ug/L  | 0.300   | 1.00    |
| 91-20-3     | Naphthalene                 |           | 45.3   | ug/L  | 0.250   | 1.00    |
| 87-61-6     | 1,2,3-Trichlorobenzene      |           | 43.0   | ug/L  | 0.332   | 1.00    |
| 107-02-8    | Acrolein                    | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 107-05-1    | Allyl chloride              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 107-13-1    | Acrylonitrile               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 126-99-8    | 2-Chloro-1,3-butadiene      | U         | 0.300  | ug/L  | 0.300   | 1.00    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

|  |   |                             |
|--|---|-----------------------------|
| <b>SDG Number:</b> 284538                  | <b>Date Collected:</b> 08/18/2011 12:00 | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 1202477758           | <b>Date Received:</b> 08/23/2011 08:50  |                             |
| <b>Client Sample:</b> QC for batch 1137563 | <b>Client:</b> ECOL008                  | <b>Project:</b> QC          |
| <b>Client ID:</b> 11080101PS               | <b>Method:</b> SW846 8260B              | <b>SOP Ref:</b> GL-OA-E-038 |
| <b>Batch ID:</b> 1137563                   | <b>Inst:</b> VOA3.I                     | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/31/2011 00:28          | <b>Analyst:</b> SYK1                    | <b>Purge Vol:</b> 5 mL      |
| <b>Prep Date:</b> 08/31/2011 00:28         |   |                             |
| <b>Data File:</b> 083011V3\3B234.D         | <b>Column:</b> DB-624                   |                             |

| CAS No.    | Parmname                     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|------------------------------|-----------|--------|-------|---------|---------|
| 107-12-0   | Propionitrile                | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 126-98-7   | Methacrylonitrile            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 78-83-1    | Isobutyl alcohol             | U         | 12.5   | ug/L  | 12.5    | 50.0    |
| 80-62-6    | Methyl methacrylate          | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 97-63-2    | Ethyl methacrylate           | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 79-46-9    | 2-Nitropropane               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 108-94-1   | Cyclohexanone                | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 1476-11-5  | cis-1,4-Dichloro-2-butene    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 110-57-6   | trans-1,4-Dichloro-2-butene  | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 76-01-7    | Pentachloroethane            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 100-44-7   | Benzyl chloride              | U         | 1.30   | ug/L  | 1.30    | 5.00    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether  | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 540-59-0   | 1,2-Dichloroethylene (total) |           | 87.6   | ug/L  | 0.300   | 1.00    |
| 1330-20-7  | Xylenes (total)              |           | 132    | ug/L  | 0.300   | 1.00    |
| 630-20-6   | 1,1,1,2-Tetrachloroethane    |           | 46.3   | ug/L  | 0.300   | 1.00    |
| 120-82-1   | 1,2,4-Trichlorobenzene       |           | 43.2   | ug/L  | 0.300   | 1.00    |
| 95-50-1    | 1,2-Dichlorobenzene          |           | 46.1   | ug/L  | 0.250   | 1.00    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B234.D  
Acq On : 31 Aug 2011 00:28  
Operator : SYK1  
InstName : VOA3  
Sample : |1202477758|1137563|1|VOA|1|VOA8260BL|  
Misc : ECOL 5ML pH2 MS 284538001 MIX[A]  
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Aug 31 07:20:32 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon   | R.T.     | Exp RT | Rel RT   | Response | Conc    | Units |          |
|-------------------------------|--------|----------|--------|----------|----------|---------|-------|----------|
| Internal Standards            |        |          |        |          |          |         |       | Dev(Min) |
| 1) Fluorobenzene              | 96     | 12.007   | 12.007 | 1.000    | 1280033  | 50.00   | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82     | 15.636   | 15.636 | 1.000    | 553520   | 50.00   | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152    | 18.197   | 18.197 | 1.000    | 548589   | 50.00   | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96     | 12.007   | 12.007 | 1.000    | 1280033  | 50.00   | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82     | 15.636   | 15.636 | 1.000    | 553520   | 50.00   | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152    | 18.197   | 18.197 | 1.000    | 548589   | 50.00   | ug/L  | 0.00     |
| System Monitoring Compounds   |        |          |        |          |          |         |       | Dev(Min) |
| 29) 1,2-Dichloroethane-d4     | 102    | 11.568   | 11.568 | 0.963    | 70026    | 47.85   | ug/L  | 0.00     |
| 43) Toluene-d8                | 98     | 13.952   | 13.952 | 0.892    | 1197151  | 48.70   | ug/L  | 0.00     |
| 61) Bromofluorobenzene        | 95     | 16.916   | 16.916 | 0.930    | 534651   | 51.50   | ug/L  | 0.00     |
| Compound                      | Amount | Range    |        | Recovery |          |         |       |          |
| 29) 1,2-Dichloroethane-d4     | 50.000 | 79 - 124 |        | 95.70%   |          |         |       |          |
| 43) Toluene-d8                | 50.000 | 80 - 120 |        | 97.40%   |          |         |       |          |
| 61) Bromofluorobenzene        | 50.000 | 80 - 120 |        | 103.00%  |          |         |       |          |
| Target Compounds              | QIon   | R.T.     | Exp RT | Rel RT   | Response | Conc    | Units | QValue   |
| 2) Dichlorodifluoromethane    | 85     | 4.666    | 4.666  | 0.389    | 193396   | 37.50   | ug/L  | 99       |
| 3) Chloromethane              | 50     | 5.067    | 5.068  | 0.422    | 287157   | 46.96   | ug/L  | 99       |
| 4) Vinyl chloride             | 62     | 5.365    | 5.365  | 0.447    | 282588   | 45.44   | ug/L  | 99       |
| 5) Bromomethane               | 94     | 6.125    | 6.125  | 0.510    | 344089   | 45.29   | ug/L  | 100      |
| 6) Chloroethane               | 64     | 6.327    | 6.327  | 0.527    | 227181   | 48.70   | ug/L  | 99       |
| 7) Trichlorofluoromethane     | 101    | 6.837    | 6.849  | 0.569    | 440820   | 44.04   | ug/L  | 100      |
| 8) Ethyl ether                | 59     | 7.299    | 7.299  | 0.608    | 285107   | 47.16   | ug/L  | 97       |
| 9) Acetone                    | 43     | 7.773    | 7.762  | 0.647    | 516553   | 126.47  | ug/L  | 97       |
| 10) 1,1-Dichloroethylene      | 61     | 7.773    | 7.774  | 0.647    | 460434   | 42.49   | ug/L  | 100      |
| 11) Iodomethane               | 142    | 8.070    | 8.070  | 0.672    | 3012142  | 227.10  | ug/L  | 100      |
| 12) Acetonitrile              | 41     | 8.236    | 8.224  | 0.686    | 992331   | 1273.38 | ug/L  | 100      |
| 13) Methyl acetate            | 43     | 8.295    | 8.295  | 0.691    | 1090092  | 201.96  | ug/L  | 99       |
| 14) Carbon disulfide          | 76     | 8.212    | 8.212  | 0.684    | 5171242  | 224.64  | ug/L  | 100      |
| 15) Methylene chloride        | 84     | 8.532    | 8.532  | 0.711    | 404094   | 44.90   | ug/L  | 99       |
| 16) tert-Butyl methyl ether   | 73     | 8.935    | 8.936  | 0.744    | 964615   | 44.27   | ug/L  | 100      |
| 17) trans-1,2-Dichloroethy... | 61     | 8.971    | 8.971  | 0.747    | 432288   | 43.00   | ug/L  | 100      |
| 18) Vinyl acetate             | 43     | 9.611    | 9.612  | 0.800    | 2644047  | 203.89  | ug/L  | 99       |
| 19) 1,1-Dichloroethane        | 63     | 9.623    | 9.623  | 0.801    | 541913   | 43.41   | ug/L  | 99       |
| 20) 2-Butanone                | 43     | 10.418   | 10.406 | 0.868    | 831341   | 148.23  | ug/L  | 99       |
| 21) cis-1,2-Dichloroethylene  | 96     | 10.465   | 10.465 | 0.872    | 376461   | 44.62   | ug/L  | 98       |
| 22) 2,2-Dichloropropane       | 77     | 10.489   | 10.489 | 0.874    | 379970   | 39.31   | ug/L  | 99       |
| 23) Bromochloromethane        | 128    | 10.809   | 10.797 | 0.900    | 191628   | 46.48   | ug/L  | 97       |
| 24) Chloroform                | 83     | 10.868   | 10.869 | 0.905    | 578099   | 44.47   | ug/L  | 100      |
| 25) 1,1,1-Trichloroethane     | 97     | 11.200   | 11.201 | 0.933    | 472062   | 42.17   | ug/L  | 99       |
| 26) Cyclohexane               | 56     | 11.307   | 11.307 | 0.942    | 513997   | 41.13   | ug/L  | 98       |
| 27) 1,1-Dichloropropene       | 75     | 11.402   | 11.402 | 0.950    | 388863   | 41.83   | ug/L  | 99       |
| 28) Carbon tetrachloride      | 117    | 11.438   | 11.438 | 0.953    | 388874   | 41.31   | ug/L  | 100      |
| 30) 1,2-Dichloroethane        | 62     | 11.663   | 11.663 | 0.971    | 393412   | 44.12   | ug/L  | 99       |
| 31) Benzene                   | 78     | 11.687   | 11.687 | 0.973    | 1232552  | 44.33   | ug/L  | 100      |
| 32) Cyclohexene               | 67     | 11.829   | 11.829 | 0.985    | 574301   | 40.51   | ug/L  | 100      |
| 33) n-Butyl alcohol           | 56     | 12.185   | 12.185 | 1.015    | 973018   | 4747.87 | ug/L  | 100      |
| 34) Trichloroethylene         | 95     | 12.481   | 12.481 | 1.040    | 322731   | 43.52   | ug/L  | 99       |
| 35) 1,2-Dichloropropane       | 63     | 12.766   | 12.766 | 1.063    | 314857   | 44.62   | ug/L  | 99       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B234.D  
Acq On : 31 Aug 2011 00:28  
Operator : SYK1  
InstName : VOA3  
Sample : |1202477758|1137563|1|VOA|1|VOA8260BL|  
Misc : ECOL 5ML pH2 MS 284538001 MIX[A]  
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Aug 31 07:20:32 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 510446   | 41.25  | ug/L  | 100 |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 211724   | 46.27  | ug/L  | 97  |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 456368   | 45.17  | ug/L  | 99  |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D.   |       |     |
| 40) cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 540994   | 45.08  | ug/L  | 99  |
| 42) 4-Methyl-2-pentanone      | 58   | 13.714 | 13.715 | 0.877  | 647991   | 223.11 | ug/L  | 99  |
| 44) Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 1264439  | 43.50  | ug/L  | 99  |
| 45) trans-1,3-Dichloroprop... | 75   | 14.213 | 14.213 | 0.909  | 480118   | 43.68  | ug/L  | 99  |
| 46) 1,1,2-Trichloroethane     | 83   | 14.462 | 14.462 | 0.925  | 253167   | 46.50  | ug/L  | 100 |
| 47) 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 634306   | 202.58 | ug/L  | 99  |
| 48) 1,3-Dichloropropane       | 76   | 14.663 | 14.663 | 0.938  | 487009   | 45.72  | ug/L  | 90  |
| 49) Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 246904   | 41.49  | ug/L  | 99  |
| 50) Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 371374   | 46.06  | ug/L  | 100 |
| 51) 1,2-Dibromoethane         | 107  | 15.137 | 15.138 | 0.968  | 328583   | 46.24  | ug/L  | 100 |
| 52) Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 854681   | 44.14  | ug/L  | 99  |
| 53) 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 337575   | 46.31  | ug/L  | 99  |
| 54) Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 1368768  | 42.60  | ug/L  | 100 |
| 55) m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 1140860  | 87.20  | ug/L  | 100 |
| 56) o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 611741   | 45.03  | ug/L  | 99  |
| 57) Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 988033   | 44.20  | ug/L  | 100 |
| 59) Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 254038   | 48.27  | ug/L  | 98  |
| 60) Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 1463142  | 44.30  | ug/L  | 100 |
| 62) 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 405401   | 47.90  | ug/L  | 98  |
| 63) 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 117272   | 47.42  | ug/L  | 98  |
| 64) Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 414716   | 46.57  | ug/L  | 99  |
| 65) n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 1653853  | 43.45  | ug/L  | 99  |
| 66) 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 1212339  | 44.08  | ug/L  | 99  |
| 67) 2-Chlorotoluene           | 126  | 17.319 | 17.320 | 0.952  | 388964   | 47.54  | ug/L  | 98  |
| 68) 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 1119511  | 44.71  | ug/L  | 100 |
| 69) tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 288668   | 45.43  | ug/L  | 96  |
| 70) 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 1246178  | 43.97  | ug/L  | 99  |
| 71) sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 1670376  | 44.72  | ug/L  | 99  |
| 72) 4-Isopropyltoluene        | 119  | 18.067 | 18.067 | 0.993  | 1334116  | 44.55  | ug/L  | 100 |
| 73) 1,3-Dichlorobenzene       | 146  | 18.126 | 18.126 | 0.996  | 768079   | 45.36  | ug/L  | 100 |
| 74) 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 738940   | 45.38  | ug/L  | 100 |
| 75) n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 1307364  | 43.40  | ug/L  | 99  |
| 76) 1,2-Dichlorobenzene       | 146  | 18.659 | 18.660 | 1.025  | 762131   | 46.05  | ug/L  | 100 |
| 77) 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 86274    | 47.59  | ug/L  | 98  |
| 78) 1,2,4-Trichlorobenzene    | 180  | 20.675 | 20.676 | 1.136  | 468546   | 43.23  | ug/L  | 100 |
| 79) Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 277417   | 43.16  | ug/L  | 99  |
| 80) Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 986569   | 45.31  | ug/L  | 100 |
| 81) 1,2,3-Trichlorobenzene    | 180  | 21.434 | 21.435 | 1.178  | 384019   | 42.97  | ug/L  | 99  |
| 83) Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.   |       |     |
| 84) 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.   |       |     |
| 85) Acrolein                  |      | 7.536  | 7.524  | 0.628  | 0m       | N.D.   | d     |     |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.   |       |     |
| 87) Isopropyl Alcohol         |      | 7.773  | 7.928  | 0.647  | 0m       | N.D.   | d     |     |
| 88) Allyl chloride            |      | 8.236  | 8.331  | 0.686  | 0m       | N.D.   | d     |     |
| 89) tert-Butyl Alcohol        |      | 8.592  | 8.580  | 0.716  | 0m       | N.D.   | d     |     |
| 90) Acrylonitrile             |      | 8.935  | 8.864  | 0.744  | 0m       | N.D.   | d     |     |
| 91) Isopropyl ether           |      | 9.611  | 9.647  | 0.800  | 0m       | N.D.   | d     |     |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 9.766  | 0.000  | 0        | N.D.   |       |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B234.D  
Acq On : 31 Aug 2011 00:28  
Operator : SYK1  
InstName : VOA3  
Sample : |1202477758|1137563|1|VOA|1|VOA8260BL|  
Misc : ECOL 5ML pH2 MS 284538001 MIX[A]  
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Aug 31 07:20:32 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

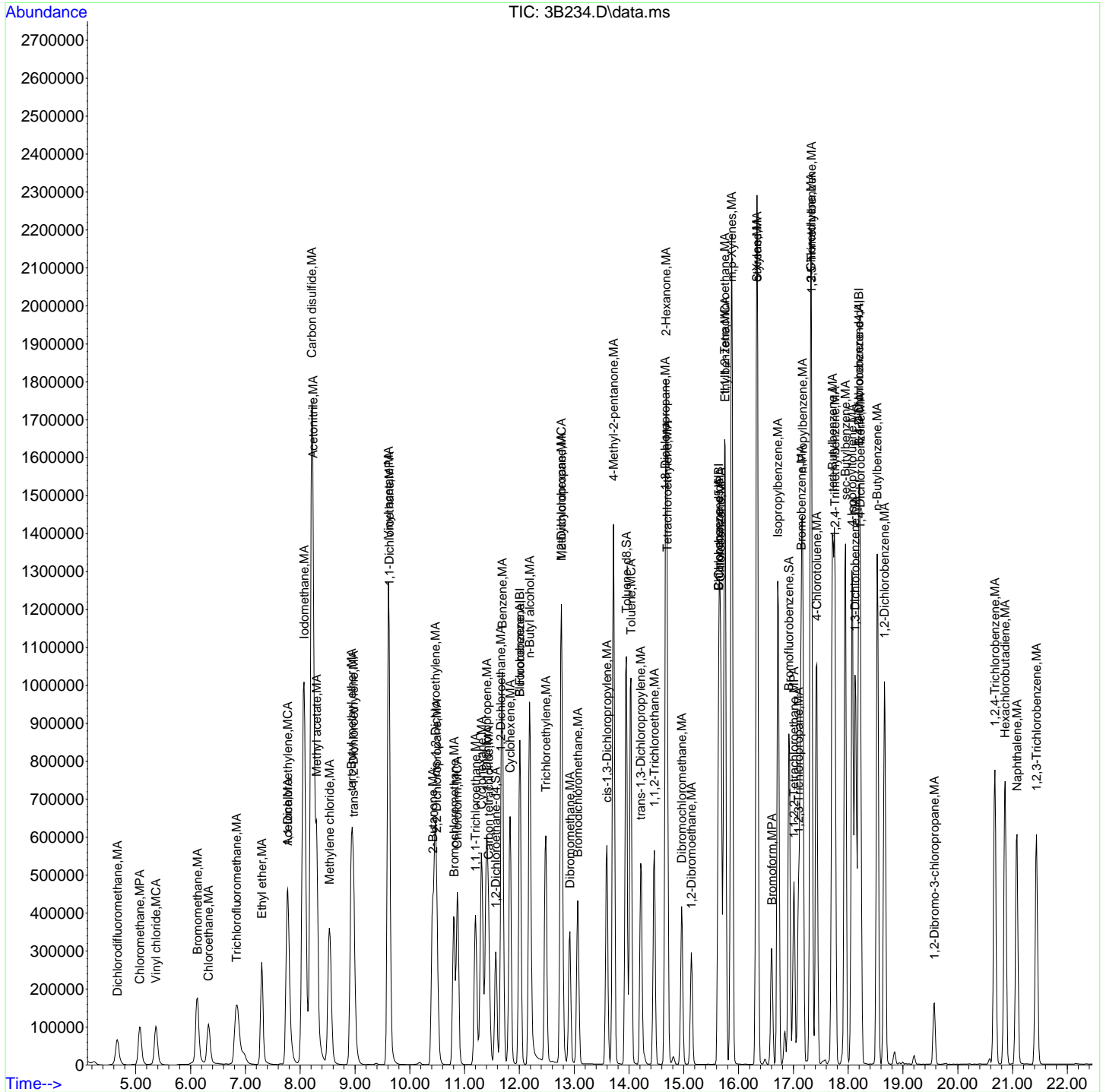
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 93) Ethyl tert-butyl ether     |      | 0.000  | 10.181 | 0.000  | 0        | N.D. |       |
| 94) Ethyl acetate              |      | 10.418 | 10.454 | 0.868  | 0m       | N.D. | d     |
| 95) Propionitrile              |      | 10.418 | 10.501 | 0.868  | 0m       | N.D. | d     |
| 96) Methacrylonitrile          |      | 10.489 | 10.726 | 0.874  | 0m       | N.D. | d     |
| 97) Tetrahydrofuran            |      | 10.880 | 10.869 | 0.906  | 0m       | N.D. | d     |
| 98) Isobutyl alcohol           |      | 11.307 | 11.343 | 0.942  | 0m       | N.D. | d     |
| 99) Methyl tert-amyl ether     |      | 11.687 | 11.746 | 0.973  | 0m       | N.D. | d     |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 12.920 | 12.884 | 1.076  | 0m       | N.D. | d     |
| 102) 2-Nitropropane            |      | 13.240 | 13.300 | 1.103  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 15.636 | 15.553 | 0.859  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 16.715 | 16.762 | 0.919  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 16.715 | 16.869 | 0.919  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 17.165 | 17.059 | 0.943  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 17.782 | 17.782 | 0.977  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 18.339 | 18.339 | 1.008  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 18.837 | 18.754 | 1.035  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B234.D  
Acq On : 31 Aug 2011 00:28  
Operator : SYK1  
InstName : VOA3  
Sample : |1202477758|1137563|1|VOA|1|VOA8260BL|  
Misc : ECOL 5ML pH2 MS 284538001 MIX[A]  
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Aug 31 07:20:32 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE



**Volatile  
Certificate of Analysis  
Sample Summary**

|                       |                             |                        |                         |                   |                     |
|-----------------------|-----------------------------|------------------------|-------------------------|-------------------|---------------------|
| <b>SDG Number:</b>    | <b>284538</b>               | <b>Date Collected:</b> | <b>08/18/2011 12:00</b> | <b>Matrix:</b>    | <b>GROUND WATER</b> |
| <b>Lab Sample ID:</b> | <b>1202477759</b>           | <b>Date Received:</b>  | <b>08/23/2011 08:50</b> |                   |                     |
| <b>Client Sample:</b> | <b>QC for batch 1137563</b> | <b>Client:</b>         | <b>ECOL008</b>          | <b>Project:</b>   | <b>QC</b>           |
| <b>Client ID:</b>     | <b>11080101PSD</b>          | <b>Method:</b>         | <b>SW846 8260B</b>      | <b>SOP Ref:</b>   | <b>GL-OA-E-038</b>  |
| <b>Batch ID:</b>      | <b>1137563</b>              | <b>Inst:</b>           | <b>VOA3.I</b>           | <b>Dilution:</b>  | <b>1</b>            |
| <b>Run Date:</b>      | <b>08/31/2011 00:58</b>     | <b>Analyst:</b>        | <b>SYK1</b>             | <b>Purge Vol:</b> | <b>5 mL</b>         |
| <b>Prep Date:</b>     | <b>08/31/2011 00:58</b>     |                        |                         |                   |                     |
| <b>Data File:</b>     | <b>083011V3\3B235.D</b>     | <b>Column:</b>         | <b>DB-624</b>           |                   |                     |

| CAS No.    | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------|-----------|--------|-------|---------|---------|
| 75-71-8    | Dichlorodifluoromethane    |           | 36.9   | ug/L  | 0.300   | 1.00    |
| 74-87-3    | Chloromethane              |           | 44.8   | ug/L  | 0.300   | 1.00    |
| 75-01-4    | Vinyl chloride             |           | 42.7   | ug/L  | 0.500   | 1.00    |
| 74-83-9    | Bromomethane               |           | 43.9   | ug/L  | 0.300   | 1.00    |
| 75-00-3    | Chloroethane               |           | 48.6   | ug/L  | 0.300   | 1.00    |
| 75-69-4    | Trichlorofluoromethane     |           | 43.5   | ug/L  | 0.300   | 1.00    |
| 60-29-7    | Ethyl ether                |           | 47.0   | ug/L  | 0.300   | 1.00    |
| 67-64-1    | Acetone                    |           | 132    | ug/L  | 1.50    | 5.00    |
| 75-05-8    | Acetonitrile               |           | 1350   | ug/L  | 6.25    | 25.0    |
| 75-35-4    | 1,1-Dichloroethylene       |           | 42.1   | ug/L  | 0.300   | 1.00    |
| 79-20-9    | Methyl acetate             |           | 209    | ug/L  | 1.25    | 5.00    |
| 74-88-4    | Iodomethane                |           | 222    | ug/L  | 1.25    | 5.00    |
| 75-09-2    | Methylene chloride         |           | 43.9   | ug/L  | 2.00    | 5.00    |
| 75-15-0    | Carbon disulfide           |           | 221    | ug/L  | 1.25    | 5.00    |
| 1634-04-4  | tert-Butyl methyl ether    |           | 43.3   | ug/L  | 0.250   | 1.00    |
| 156-60-5   | trans-1,2-Dichloroethylene |           | 41.9   | ug/L  | 0.300   | 1.00    |
| 108-05-4   | Vinyl acetate              |           | 205    | ug/L  | 1.50    | 5.00    |
| 75-34-3    | 1,1-Dichloroethane         |           | 42.9   | ug/L  | 0.300   | 1.00    |
| 78-93-3    | 2-Butanone                 |           | 157    | ug/L  | 1.25    | 5.00    |
| 156-59-2   | cis-1,2-Dichloroethylene   |           | 43.7   | ug/L  | 0.300   | 1.00    |
| 594-20-7   | 2,2-Dichloropropane        |           | 38.4   | ug/L  | 0.300   | 1.00    |
| 67-66-3    | Chloroform                 |           | 43.4   | ug/L  | 0.250   | 1.00    |
| 74-97-5    | Bromochloromethane         |           | 44.7   | ug/L  | 0.300   | 1.00    |
| 71-55-6    | 1,1,1-Trichloroethane      |           | 42.5   | ug/L  | 0.325   | 1.00    |
| 110-82-7   | Cyclohexane                |           | 41.3   | ug/L  | 0.300   | 1.00    |
| 563-58-6   | 1,1-Dichloropropene        |           | 41.6   | ug/L  | 0.250   | 1.00    |
| 71-36-3    | n-Butyl alcohol            |           | 5110   | ug/L  | 15.0    | 50.0    |
| 56-23-5    | Carbon tetrachloride       |           | 41.4   | ug/L  | 0.300   | 1.00    |
| 107-06-2   | 1,2-Dichloroethane         |           | 43.5   | ug/L  | 0.250   | 1.00    |
| 71-43-2    | Benzene                    |           | 43.3   | ug/L  | 0.300   | 1.00    |
| 79-01-6    | Trichloroethylene          |           | 42.3   | ug/L  | 0.250   | 1.00    |
| 78-87-5    | 1,2-Dichloropropane        |           | 43.8   | ug/L  | 0.250   | 1.00    |
| 108-87-2   | Methylcyclohexane          |           | 41.4   | ug/L  | 0.250   | 1.00    |
| 75-27-4    | Bromodichloromethane       |           | 44.7   | ug/L  | 0.250   | 1.00    |
| 74-95-3    | Dibromomethane             |           | 45.8   | ug/L  | 0.300   | 1.00    |
| 110-75-8   | 2-Chloroethylvinyl ether   | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 108-10-1   | 4-Methyl-2-pentanone       |           | 238    | ug/L  | 1.25    | 5.00    |
| 10061-01-5 | cis-1,3-Dichloropropylene  |           | 44.3   | ug/L  | 0.250   | 1.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

|                       |                             |                        |                         |                   |                     |
|-----------------------|-----------------------------|------------------------|-------------------------|-------------------|---------------------|
| <b>SDG Number:</b>    | <b>284538</b>               | <b>Date Collected:</b> | <b>08/18/2011 12:00</b> | <b>Matrix:</b>    | <b>GROUND WATER</b> |
| <b>Lab Sample ID:</b> | <b>1202477759</b>           | <b>Date Received:</b>  | <b>08/23/2011 08:50</b> |                   |                     |
| <b>Client Sample:</b> | <b>QC for batch 1137563</b> | <b>Client:</b>         | <b>ECOL008</b>          | <b>Project:</b>   | <b>QC</b>           |
| <b>Client ID:</b>     | <b>11080101PSD</b>          | <b>Method:</b>         | <b>SW846 8260B</b>      | <b>SOP Ref:</b>   | <b>GL-OA-E-038</b>  |
| <b>Batch ID:</b>      | <b>1137563</b>              | <b>Inst:</b>           | <b>VOA3.I</b>           | <b>Dilution:</b>  | <b>1</b>            |
| <b>Run Date:</b>      | <b>08/31/2011 00:58</b>     | <b>Analyst:</b>        | <b>SYK1</b>             | <b>Purge Vol:</b> | <b>5 mL</b>         |
| <b>Prep Date:</b>     | <b>08/31/2011 00:58</b>     |                        |                         |                   |                     |
| <b>Data File:</b>     | <b>083011V3\3B235.D</b>     | <b>Column:</b>         | <b>DB-624</b>           |                   |                     |

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-88-3    | Toluene                     |           | 43.6   | ug/L  | 0.250   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene |           | 44.1   | ug/L  | 0.250   | 1.00    |
| 79-00-5     | 1,1,2-Trichloroethane       |           | 46.7   | ug/L  | 0.250   | 1.00    |
| 591-78-6    | 2-Hexanone                  |           | 210    | ug/L  | 1.25    | 5.00    |
| 142-28-9    | 1,3-Dichloropropane         |           | 44.4   | ug/L  | 0.300   | 1.00    |
| 127-18-4    | Tetrachloroethylene         |           | 40.6   | ug/L  | 0.300   | 1.00    |
| 124-48-1    | Dibromochloromethane        |           | 46.3   | ug/L  | 0.300   | 1.00    |
| 106-93-4    | 1,2-Dibromoethane           |           | 47.0   | ug/L  | 0.250   | 1.00    |
| 108-90-7    | Chlorobenzene               |           | 44.0   | ug/L  | 0.250   | 1.00    |
| 100-41-4    | Ethylbenzene                |           | 42.6   | ug/L  | 0.250   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 |           | 86.4   | ug/L  | 0.500   | 2.00    |
| 95-47-6     | o-Xylene                    |           | 44.2   | ug/L  | 0.300   | 1.00    |
| 100-42-5    | Styrene                     |           | 43.2   | ug/L  | 0.250   | 1.00    |
| 75-25-2     | Bromoform                   |           | 49.0   | ug/L  | 0.250   | 1.00    |
| 79-34-5     | 1,1,2,2-Tetrachloroethane   |           | 48.7   | ug/L  | 0.250   | 1.00    |
| 96-18-4     | 1,2,3-Trichloropropane      |           | 48.1   | ug/L  | 0.300   | 1.00    |
| 108-86-1    | Bromobenzene                |           | 45.6   | ug/L  | 0.250   | 1.00    |
| 103-65-1    | n-Propylbenzene             |           | 43.2   | ug/L  | 0.250   | 1.00    |
| 95-49-8     | 2-Chlorotoluene             |           | 46.3   | ug/L  | 0.250   | 1.00    |
| 98-82-8     | Isopropylbenzene            |           | 43.9   | ug/L  | 0.250   | 1.00    |
| 108-67-8    | 1,3,5-Trimethylbenzene      |           | 43.5   | ug/L  | 0.250   | 1.00    |
| 106-43-4    | 4-Chlorotoluene             |           | 44.0   | ug/L  | 0.250   | 1.00    |
| 98-06-6     | tert-Butylbenzene           |           | 45.8   | ug/L  | 0.250   | 1.00    |
| 95-63-6     | 1,2,4-Trimethylbenzene      |           | 43.4   | ug/L  | 0.250   | 1.00    |
| 135-98-8    | sec-Butylbenzene            |           | 44.7   | ug/L  | 0.250   | 1.00    |
| 99-87-6     | 4-Isopropyltoluene          |           | 43.9   | ug/L  | 0.250   | 1.00    |
| 541-73-1    | 1,3-Dichlorobenzene         |           | 44.1   | ug/L  | 0.250   | 1.00    |
| 106-46-7    | 1,4-Dichlorobenzene         |           | 44.6   | ug/L  | 0.250   | 1.00    |
| 104-51-8    | n-Butylbenzene              |           | 43.7   | ug/L  | 0.250   | 1.00    |
| 96-12-8     | 1,2-Dibromo-3-chloropropane |           | 51.2   | ug/L  | 0.300   | 1.00    |
| 87-68-3     | Hexachlorobutadiene         |           | 44.0   | ug/L  | 0.300   | 1.00    |
| 91-20-3     | Naphthalene                 |           | 49.8   | ug/L  | 0.250   | 1.00    |
| 87-61-6     | 1,2,3-Trichlorobenzene      |           | 46.0   | ug/L  | 0.332   | 1.00    |
| 107-02-8    | Acrolein                    | U         | 1.25   | ug/L  | 1.25    | 5.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 107-05-1    | Allyl chloride              | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 107-13-1    | Acrylonitrile               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 126-99-8    | 2-Chloro-1,3-butadiene      | U         | 0.300  | ug/L  | 0.300   | 1.00    |



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

|  |   |                             |
|--|---|-----------------------------|
| <b>SDG Number:</b> 284538                  | <b>Date Collected:</b> 08/18/2011 12:00 | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 1202477759           | <b>Date Received:</b> 08/23/2011 08:50  |                             |
| <b>Client Sample:</b> QC for batch 1137563 | <b>Client:</b> ECOL008                  | <b>Project:</b> QC          |
| <b>Client ID:</b> 11080101PSD              | <b>Method:</b> SW846 8260B              | <b>SOP Ref:</b> GL-OA-E-038 |
| <b>Batch ID:</b> 1137563                   | <b>Inst:</b> VOA3.I                     | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/31/2011 00:58          | <b>Analyst:</b> SYK1                    | <b>Purge Vol:</b> 5 mL      |
| <b>Prep Date:</b> 08/31/2011 00:58         |   |                             |
| <b>Data File:</b> 083011V3\3B235.D         | <b>Column:</b> DB-624                   |                             |

| CAS No.    | Parmname                     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|------------------------------|-----------|--------|-------|---------|---------|
| 107-12-0   | Propionitrile                | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 126-98-7   | Methacrylonitrile            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 78-83-1    | Isobutyl alcohol             | U         | 12.5   | ug/L  | 12.5    | 50.0    |
| 80-62-6    | Methyl methacrylate          | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 97-63-2    | Ethyl methacrylate           | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 79-46-9    | 2-Nitropropane               | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 108-94-1   | Cyclohexanone                | U         | 15.0   | ug/L  | 15.0    | 50.0    |
| 1476-11-5  | cis-1,4-Dichloro-2-butene    | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 110-57-6   | trans-1,4-Dichloro-2-butene  | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 76-01-7    | Pentachloroethane            | U         | 1.00   | ug/L  | 1.00    | 5.00    |
| 100-44-7   | Benzyl chloride              | U         | 1.30   | ug/L  | 1.30    | 5.00    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether  | U         | 1.50   | ug/L  | 1.50    | 5.00    |
| 540-59-0   | 1,2-Dichloroethylene (total) |           | 85.6   | ug/L  | 0.300   | 1.00    |
| 1330-20-7  | Xylenes (total)              |           | 131    | ug/L  | 0.300   | 1.00    |
| 630-20-6   | 1,1,1,2-Tetrachloroethane    |           | 46.7   | ug/L  | 0.300   | 1.00    |
| 120-82-1   | 1,2,4-Trichlorobenzene       |           | 43.2   | ug/L  | 0.300   | 1.00    |
| 95-50-1    | 1,2-Dichlorobenzene          |           | 45.5   | ug/L  | 0.250   | 1.00    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B235.D  
Acq On : 31 Aug 2011 00:58  
Operator : SYK1  
InstName : VOA3  
Sample : |1202477759|1137563|1|VOA|1|VOA8260BL|  
Misc : ECOL 5ML pH2 MSD 284538001 MIX[A]  
ALS Vial : 35 Sample Multiplier: 1

Quant Time: Aug 31 07:20:51 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev(Min) |
| 1) Fluorobenzene              | 96   | 12.007 | 12.007 | 1.000  | 1287143  | 50.00 | ug/L  | 0.00     |
| 41) Chlorobenzene-d5          | 82   | 15.635 | 15.636 | 1.000  | 543824   | 50.00 | ug/L  | 0.00     |
| 58) 1,4-Dichlorobenzene-d4    | 152  | 18.197 | 18.197 | 1.000  | 543506   | 50.00 | ug/L  | 0.00     |
| 82) B Fluorobenzene           | 96   | 12.007 | 12.007 | 1.000  | 1287143  | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 82   | 15.635 | 15.636 | 1.000  | 543824   | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 18.197 | 18.197 | 1.000  | 543506   | 50.00 | ug/L  | 0.00     |

|                             |     |        |        |       |         |       |      |          |
|-----------------------------|-----|--------|--------|-------|---------|-------|------|----------|
| System Monitoring Compounds |     |        |        |       |         |       |      | Dev(Min) |
| 29) 1,2-Dichloroethane-d4   | 102 | 11.568 | 11.568 | 0.963 | 71265   | 48.42 | ug/L | 0.00     |
| 43) Toluene-d8              | 98  | 13.952 | 13.952 | 0.892 | 1194712 | 49.47 | ug/L | 0.00     |
| 61) Bromofluorobenzene      | 95  | 16.916 | 16.916 | 0.930 | 525708  | 51.11 | ug/L | 0.00     |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 29) 1,2-Dichloroethane-d4 | 50.000 | 79 - 124 | 96.84%   |
| 43) Toluene-d8            | 50.000 | 80 - 120 | 98.94%   |
| 61) Bromofluorobenzene    | 50.000 | 80 - 120 | 102.22%  |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 4.666  | 4.666  | 0.389  | 191470   | 36.92   | ug/L  | 100    |
| 3) Chloromethane              | 50   | 5.067  | 5.068  | 0.422  | 275430   | 44.79   | ug/L  | 100    |
| 4) Vinyl chloride             | 62   | 5.364  | 5.365  | 0.447  | 267293   | 42.74   | ug/L  | 100    |
| 5) Bromomethane               | 94   | 6.113  | 6.125  | 0.509  | 335237   | 43.88   | ug/L  | 100    |
| 6) Chloroethane               | 64   | 6.327  | 6.327  | 0.527  | 227818   | 48.57   | ug/L  | 99     |
| 7) Trichlorofluoromethane     | 101  | 6.836  | 6.849  | 0.569  | 437981   | 43.51   | ug/L  | 100    |
| 8) Ethyl ether                | 59   | 7.299  | 7.299  | 0.608  | 285468   | 46.95   | ug/L  | 97     |
| 9) Acetone                    | 43   | 7.773  | 7.762  | 0.647  | 540603   | 132.23  | ug/L  | 99     |
| 10) 1,1-Dichloroethylene      | 61   | 7.773  | 7.774  | 0.647  | 458279   | 42.06   | ug/L  | 99     |
| 11) Iodomethane               | 142  | 8.070  | 8.070  | 0.672  | 2962083  | 222.09  | ug/L  | 99     |
| 12) Acetonitrile              | 41   | 8.236  | 8.224  | 0.686  | 1056376  | 1351.41 | ug/L  | 100    |
| 13) Methyl acetate            | 43   | 8.307  | 8.295  | 0.692  | 1135228  | 209.16  | ug/L  | 99     |
| 14) Carbon disulfide          | 76   | 8.212  | 8.212  | 0.684  | 5105119  | 220.54  | ug/L  | 100    |
| 15) Methylene chloride        | 84   | 8.532  | 8.532  | 0.711  | 397018   | 43.87   | ug/L  | 99     |
| 16) tert-Butyl methyl ether   | 73   | 8.935  | 8.936  | 0.744  | 949090   | 43.32   | ug/L  | 100    |
| 17) trans-1,2-Dichloroethy... | 61   | 8.971  | 8.971  | 0.747  | 423447   | 41.89   | ug/L  | 99     |
| 18) Vinyl acetate             | 43   | 9.611  | 9.612  | 0.800  | 2679031  | 205.45  | ug/L  | 99     |
| 19) 1,1-Dichloroethane        | 63   | 9.623  | 9.623  | 0.801  | 538292   | 42.88   | ug/L  | 99     |
| 20) 2-Butanone                | 43   | 10.418 | 10.406 | 0.868  | 887845   | 157.43  | ug/L  | 98     |
| 21) cis-1,2-Dichloroethylene  | 96   | 10.465 | 10.465 | 0.872  | 370473   | 43.66   | ug/L  | 98     |
| 22) 2,2-Dichloropropane       | 77   | 10.489 | 10.489 | 0.874  | 373599   | 38.44   | ug/L  | 100    |
| 23) Bromochloromethane        | 128  | 10.809 | 10.797 | 0.900  | 185191   | 44.67   | ug/L  | 98     |
| 24) Chloroform                | 83   | 10.868 | 10.869 | 0.905  | 567560   | 43.42   | ug/L  | 99     |
| 25) 1,1,1-Trichloroethane     | 97   | 11.200 | 11.201 | 0.933  | 477843   | 42.45   | ug/L  | 99     |
| 26) Cyclohexane               | 56   | 11.307 | 11.307 | 0.942  | 518677   | 41.28   | ug/L  | 99     |
| 27) 1,1-Dichloropropene       | 75   | 11.402 | 11.402 | 0.950  | 389204   | 41.64   | ug/L  | 99     |
| 28) Carbon tetrachloride      | 117  | 11.438 | 11.438 | 0.953  | 392193   | 41.43   | ug/L  | 100    |
| 30) 1,2-Dichloroethane        | 62   | 11.663 | 11.663 | 0.971  | 389720   | 43.46   | ug/L  | 100    |
| 31) Benzene                   | 78   | 11.687 | 11.687 | 0.973  | 1209740  | 43.27   | ug/L  | 100    |
| 32) Cyclohexene               | 67   | 11.829 | 11.829 | 0.985  | 569894   | 39.98   | ug/L  | 99     |
| 33) n-Butyl alcohol           | 56   | 12.185 | 12.185 | 1.015  | 1054281  | 5111.80 | ug/L  | 100    |
| 34) Trichloroethylene         | 95   | 12.481 | 12.481 | 1.040  | 315113   | 42.26   | ug/L  | 100    |
| 35) 1,2-Dichloropropane       | 63   | 12.766 | 12.766 | 1.063  | 310443   | 43.75   | ug/L  | 100    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B235.D  
Acq On : 31 Aug 2011 00:58  
Operator : SYK1  
InstName : VOA3  
Sample : |1202477759|1137563|1|VOA|1|VOA8260BL|  
Misc : ECOL 5ML pH2 MSD 284538001 MIX[A]  
ALS Vial : 35 Sample Multiplier: 1

Quant Time: Aug 31 07:20:51 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 36) Methylcyclohexane         | 83   | 12.766 | 12.766 | 1.063  | 515487   | 41.43  | ug/L  | 99  |
| 37) Dibromomethane            | 93   | 12.920 | 12.920 | 1.076  | 210689   | 45.79  | ug/L  | 98  |
| 38) Bromodichloromethane      | 83   | 13.062 | 13.062 | 1.088  | 454226   | 44.71  | ug/L  | 100 |
| 39) 2-Chloroethylvinyl ether  |      | 0.000  | 13.347 | 0.000  | 0        | N.D.   |       |     |
| 40) cis-1,3-Dichloropropylene | 75   | 13.596 | 13.596 | 1.132  | 534198   | 44.27  | ug/L  | 100 |
| 42) 4-Methyl-2-pentanone      | 58   | 13.714 | 13.715 | 0.877  | 680266   | 238.40 | ug/L  | 99  |
| 44) Toluene                   | 91   | 14.035 | 14.035 | 0.898  | 1244673  | 43.58  | ug/L  | 99  |
| 45) trans-1,3-Dichloroprop... | 75   | 14.212 | 14.213 | 0.909  | 476190   | 44.10  | ug/L  | 99  |
| 46) 1,1,2-Trichloroethane     | 83   | 14.461 | 14.462 | 0.925  | 249897   | 46.72  | ug/L  | 99  |
| 47) 2-Hexanone                | 58   | 14.675 | 14.675 | 0.939  | 645849   | 210.47 | ug/L  | 98  |
| 48) 1,3-Dichloropropane       | 76   | 14.663 | 14.663 | 0.938  | 464230   | 44.36  | ug/L  | 92  |
| 49) Tetrachloroethylene       | 164  | 14.699 | 14.699 | 0.940  | 237506   | 40.62  | ug/L  | 99  |
| 50) Dibromochloromethane      | 129  | 14.960 | 14.960 | 0.957  | 366405   | 46.25  | ug/L  | 100 |
| 51) 1,2-Dibromoethane         | 107  | 15.137 | 15.138 | 0.968  | 328440   | 47.04  | ug/L  | 99  |
| 52) Chlorobenzene             | 112  | 15.671 | 15.671 | 1.002  | 837298   | 44.02  | ug/L  | 100 |
| 53) 1,1,1,2-Tetrachloroethane | 131  | 15.742 | 15.742 | 1.007  | 334660   | 46.73  | ug/L  | 99  |
| 54) Ethylbenzene              | 91   | 15.754 | 15.754 | 1.008  | 1343155  | 42.55  | ug/L  | 100 |
| 55) m,p-Xylenes               | 106  | 15.873 | 15.873 | 1.015  | 1110513  | 86.39  | ug/L  | 100 |
| 56) o-Xylene                  | 106  | 16.335 | 16.335 | 1.045  | 589429   | 44.16  | ug/L  | 99  |
| 57) Styrene                   | 104  | 16.335 | 16.335 | 1.045  | 948966   | 43.21  | ug/L  | 100 |
| 59) Bromoform                 | 173  | 16.608 | 16.608 | 0.913  | 255615   | 49.02  | ug/L  | 99  |
| 60) Isopropylbenzene          | 105  | 16.715 | 16.715 | 0.919  | 1436421  | 43.90  | ug/L  | 100 |
| 62) 1,1,2,2-Tetrachloroethane | 83   | 17.011 | 17.011 | 0.935  | 408516   | 48.72  | ug/L  | 99  |
| 63) 1,2,3-Trichloropropane    | 110  | 17.094 | 17.094 | 0.939  | 117866   | 48.11  | ug/L  | 98  |
| 64) Bromobenzene              | 156  | 17.142 | 17.142 | 0.942  | 402382   | 45.61  | ug/L  | 99  |
| 65) n-Propylbenzene           | 91   | 17.165 | 17.165 | 0.943  | 1627524  | 43.16  | ug/L  | 99  |
| 66) 1,3,5-Trimethylbenzene    | 105  | 17.331 | 17.331 | 0.952  | 1183840  | 43.45  | ug/L  | 100 |
| 67) 2-Chlorotoluene           | 126  | 17.319 | 17.320 | 0.952  | 375157   | 46.28  | ug/L  | 100 |
| 68) 4-Chlorotoluene           | 91   | 17.426 | 17.415 | 0.958  | 1091913  | 44.02  | ug/L  | 100 |
| 69) tert-Butylbenzene         | 134  | 17.711 | 17.711 | 0.973  | 288360   | 45.81  | ug/L  | 97  |
| 70) 1,2,4-Trimethylbenzene    | 105  | 17.758 | 17.747 | 0.976  | 1217657  | 43.36  | ug/L  | 100 |
| 71) sec-Butylbenzene          | 105  | 17.948 | 17.948 | 0.986  | 1654465  | 44.70  | ug/L  | 99  |
| 72) 4-Isopropyltoluene        | 119  | 18.078 | 18.067 | 0.993  | 1302852  | 43.92  | ug/L  | 100 |
| 73) 1,3-Dichlorobenzene       | 146  | 18.138 | 18.126 | 0.997  | 739401   | 44.08  | ug/L  | 100 |
| 74) 1,4-Dichlorobenzene       | 146  | 18.221 | 18.221 | 1.001  | 718762   | 44.55  | ug/L  | 99  |
| 75) n-Butylbenzene            | 91   | 18.529 | 18.529 | 1.018  | 1304422  | 43.71  | ug/L  | 100 |
| 76) 1,2-Dichlorobenzene       | 146  | 18.659 | 18.660 | 1.025  | 745468   | 45.47  | ug/L  | 99  |
| 77) 1,2-Dibromo-3-chloropr... | 157  | 19.573 | 19.573 | 1.076  | 91976    | 51.21  | ug/L  | 99  |
| 78) 1,2,4-Trichlorobenzene    | 180  | 20.675 | 20.676 | 1.136  | 464165   | 43.23  | ug/L  | 99  |
| 79) Hexachlorobutadiene       | 225  | 20.865 | 20.865 | 1.147  | 280264   | 44.01  | ug/L  | 99  |
| 80) Naphthalene               | 128  | 21.079 | 21.079 | 1.158  | 1073330  | 49.76  | ug/L  | 100 |
| 81) 1,2,3-Trichlorobenzene    | 180  | 21.434 | 21.435 | 1.178  | 407328   | 46.00  | ug/L  | 99  |
| 83) Chlorotrifluoroethylene   |      | 0.000  | 4.562  | 0.000  | 0        | N.D.   |       |     |
| 84) 2-Chloro-1,1,1-trifluo... |      | 0.000  | 5.573  | 0.000  | 0        | N.D.   |       |     |
| 85) Acrolein                  |      | 7.536  | 7.524  | 0.628  | 0m       | N.D.   | d     |     |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 7.750  | 0.000  | 0        | N.D.   |       |     |
| 87) Isopropyl Alcohol         |      | 7.761  | 7.928  | 0.646  | 0m       | N.D.   | d     |     |
| 88) Allyl chloride            |      | 8.236  | 8.331  | 0.686  | 0m       | N.D.   | d     |     |
| 89) tert-Butyl Alcohol        |      | 8.580  | 8.580  | 0.715  | 0m       | N.D.   | d     |     |
| 90) Acrylonitrile             |      | 8.935  | 8.864  | 0.744  | 0m       | N.D.   | d     |     |
| 91) Isopropyl ether           |      | 9.611  | 9.647  | 0.800  | 0m       | N.D.   | d     |     |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 9.766  | 0.000  | 0        | N.D.   |       |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\083011V3\  
Data File : 3B235.D  
Acq On : 31 Aug 2011 00:58  
Operator : SYK1  
InstName : VOA3  
Sample : |1202477759|1137563|1|VOA|1|VOA8260BL|  
Misc : ECOL 5ML pH2 MSD 284538001 MIX[A]  
ALS Vial : 35 Sample Multiplier: 1

Quant Time: Aug 31 07:20:51 2011  
Quant Method : C:\msdchem\1\DATA\082411V3\VOA3-8260-082411.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Thu Aug 25 11:40:17 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |
|--------------------------------|------|--------|--------|--------|----------|--------|-------|
| 93) Ethyl tert-butyl ether     |      | 0.000  | 10.181 | 0.000  | 0        | N.D.   |       |
| 94) Ethyl acetate              |      | 10.418 | 10.454 | 0.868  | 0m       | N.D. d |       |
| 95) Propionitrile              |      | 10.406 | 10.501 | 0.867  | 0m       | N.D. d |       |
| 96) Methacrylonitrile          |      | 10.489 | 10.726 | 0.874  | 0m       | N.D. d |       |
| 97) Tetrahydrofuran            |      | 10.868 | 10.869 | 0.905  | 0m       | N.D. d |       |
| 98) Isobutyl alcohol           |      | 11.307 | 11.343 | 0.942  | 0m       | N.D. d |       |
| 99) Methyl tert-amyl ether     |      | 11.687 | 11.746 | 0.973  | 0m       | N.D. d |       |
| 100) Methyl methacrylate       |      | 12.766 | 12.778 | 1.063  | 0m       | N.D. d |       |
| 101) 1,4-Dioxane               |      | 12.908 | 12.884 | 1.075  | 0m       | N.D. d |       |
| 102) 2-Nitropropane            |      | 13.299 | 13.300 | 1.108  | 0m       | N.D. d |       |
| 104) Ethyl methacrylate        |      | 0.000  | 14.248 | 0.000  | 0        | N.D.   |       |
| 106) 1-Chlorohexane            |      | 15.635 | 15.553 | 0.859  | 0m       | N.D. d |       |
| 107) cis-1,4-Dichloro-2-butene |      | 16.715 | 16.762 | 0.919  | 0m       | N.D. d |       |
| 108) Cyclohexanone             |      | 16.715 | 16.869 | 0.919  | 0m       | N.D. d |       |
| 109) trans-1,4-Dichloro-2-b... |      | 17.165 | 17.059 | 0.943  | 0m       | N.D. d |       |
| 110) Pentachloroethane         |      | 17.782 | 17.782 | 0.977  | 0m       | N.D. d |       |
| 111) Benzyl chloride           |      | 18.339 | 18.339 | 1.008  | 0m       | N.D. d |       |
| 112) bis(2-Chloroisopropyl)... |      | 18.837 | 18.754 | 1.035  | 0m       | N.D. d |       |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



# Miscellaneous

Date: 8/24/2011 Method 8260/624 Operator: SYK1

REVIEWED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 1

Daily Instrument Readings:  
Multiplier Voltage: 1506

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 8/24/2011-8/25/2011

Daily Standard

Volume Added for Purge (ul)

Purge Amount

(See pg. 238 and 239 for ICAL Std. Sci. Ids)

CI test lot # N/A

Sequence Number: 082411V3

Solution ID#

Blk/  
Smpl CCV MS/  
LCS BFB

|                |               |   |     |   |   |
|----------------|---------------|---|-----|---|---|
| IS             | UVM110615-01  | 1 | 1   | 1 |   |
| SS             | UVM110725-02  | 1 | 1   | 1 |   |
| Long List ICV  | W3VM110824-11 |   | 5+5 |   |   |
| BFB            | IVM110802-01  |   |     |   | 1 |
| Short List ICV |               |   | 5+5 |   |   |
|                |               |   |     |   |   |

|     |                          |
|-----|--------------------------|
| 5   | Water Purge Vol:         |
| n/a | Soil Purge Wt.           |
| n/a | Mid level ext. MeOH Vol: |
| n/a | ul                       |
| n/a | Methanol Lot #           |
| x   | Heated Purge             |

| Analysis  |       | Data File | Lab Sample ID | Client    | Batch # | Wt.(g) or<br>Vol(ml/ul) | Dil.<br>Factor | pH  | AS<br>Slot # | Matrix<br>w or s | Analyst | CI test<br>(Y/N) | Accepta<br>ble(O/X) | Comments  |
|-----------|-------|-----------|---------------|-----------|---------|-------------------------|----------------|-----|--------------|------------------|---------|------------------|---------------------|---|
| Date      | Time  |           |               |           |         |                         |                |     |              |                  |         |                  |                     |   |
| 8/24/2011 | 7:02  | 3A301.D   | IVM110802-01  | -----     | BFB     | 5ML                     | 1              | N/A | 1            | w                | SYK1    | N/A              | X                   | Passed but see 3A309                                |
| 8/24/2011 | 7:32  | 3A302.D   | IVM110802-01  | -----     | BFB     | 5ML                     | 1              | N/A | 2            | w                | SYK1    | N/A              | X                   | Passed but see 3A309                                |
| 8/24/2011 | 8:02  | 3A303.D   | IVM110802-01  | -----     | BFB     | 5ML                     | 1              | N/A | 3            | w                | SYK1    | N/A              | X                   | Passed but see 3A309                                |
| 8/24/2011 | 8:32  | 3A304.D   | W3VM110824-01 | VSTD001L  | ICAL    | 5ML                     | 1              | N/A | 4            | w                | SYK1    | N/A              | X                   | MIX[A] UVM110723-02B+UVM110727-02C; lowered Emvolts |
| 8/24/2011 | 9:33  | 3A305.D   | 12024-----    | -----     | BLANK   | 5ML                     | 1              | N/A | 5            | w                | SYK1    | N/A              | X                   | RINSE   |
| 8/24/2011 | 10:03 | 3A306.D   | IVM110802-01  | -----     | BFB     | 5ML                     | 1              | N/A | 6            | w                | SYK1    | N/A              | X                   | Passed but see 3A309                                |
| 8/24/2011 | 10:33 | 3A307.D   | W3VM110824-01 | VSTD001L  | ICAL    | 5ML                     | 1              | N/A | 7            | w                | SYK1    | N/A              | X                   | MIX[A] UVM110723-02B+UVM110727-02C; lowered Emvolts |
| 8/24/2011 | 11:07 | 3A308.D   | 12024-----    | -----     | BLANK   | 5ML                     | 1              | N/A | 1            | w                | SYK1    | N/A              | X                   | RINSE   |
| 8/24/2011 | 11:37 | 3A309.D   | IVM110802-01  | -----     | BFB     | 5ML                     | 1              | N/A | 2            | w                | SYK1    | N/A              | O                   |   |
| 8/24/2011 | 12:07 | 3A310.D   | W3VM110824-01 | VSTD0005L | ICAL    | 5ML                     | 1              | N/A | 3            | w                | SYK1    | N/A              | O                   | MIX[A] UVM110723-01B+UVM110727-01C                  |
| 8/24/2011 | 12:37 | 3A311.D   | W3VM110824-02 | VSTD001L  | ICAL    | 5ML                     | 1              | N/A | 4            | w                | SYK1    | N/A              | O                   | MIX[A] UVM110723-02B+UVM110727-02C                  |
| 8/24/2011 | 13:07 | 3A312.D   | W3VM110824-03 | VSTD002L  | ICAL    | 5ML                     | 1              | N/A | 5            | w                | SYK1    | N/A              | O                   | MIX[A] UVM110723-03B+UVM110727-03C                  |
| 8/24/2011 | 13:37 | 3A313.D   | W3VM110824-04 | VSTD005L  | ICAL    | 5ML                     | 1              | N/A | 6            | w                | SYK1    | N/A              | O                   | MIX[A] UVM110723-04B+UVM110727-04C                  |
| 8/24/2011 | 14:07 | 3A314.D   | W3VM110824-05 | VSTD010L  | ICAL    | 5ML                     | 1              | N/A | 7            | w                | SYK1    | N/A              | O                   | MIX[A] UVM110723-05B+UVM110727-05C                  |
| 8/24/2011 | 14:37 | 3A315.D   | W3VM110824-06 | VSTD020L  | ICAL    | 5ML                     | 1              | N/A | 8            | w                | SYK1    | N/A              | O                   | MIX[A] UVM110723-06B+UVM110727-06C                  |
| 8/24/2011 | 15:07 | 3A316.D   | W3VM110824-07 | VSTD050L  | ICAL    | 5ML                     | 1              | N/A | 9            | w                | SYK1    | N/A              | O                   | MIX[A] UVM110723-07B+UVM110727-07C                  |
| 8/24/2011 | 15:37 | 3A317.D   | W3VM110824-08 | VSTD080L  | ICAL    | 5ML                     | 1              | N/A | 10           | w                | SYK1    | N/A              | O                   | MIX[A] UVM110723-08B+UVM110727-08C                  |
| 8/24/2011 | 16:07 | 3A318.D   | W3VM110824-09 | VSTD100L  | ICAL    | 5ML                     | 1              | N/A | 11           | w                | SYK1    | N/A              | O                   | MIX[A] UVM110723-08B+UVM110727-08C                  |
| 8/24/2011 | 16:37 | 3A319.D   | 12024-----    | -----     | BLANK   | 5ML                     | 1              | N/A | 12           | w                | SYK1    | N/A              | X                   | RINSE   |
| 8/24/2011 | 17:07 | 3A320.D   | W3VM110824-10 | ICV       | ICV     | 5ML                     | 1              | N/A | 13           | w                | SYK1    | N/A              | X                   | MIX[A] UVM110718-01E+IVM110822-01; ccc out          |
| 8/24/2011 | 17:38 | 3A321.D   | W3VM110824-11 | ICV       | ICV     | 5ML                     | 1              | N/A | 14           | w                | SYK1    | N/A              | O                   | MIX[A] UVM110808-01B+IVM110822-01                   |
| 8/24/2011 | 18:08 | 3A322.D   | 12024-----    | -----     | BLANK   | 5ML                     | 1              | N/A | 15           | w                | SYK1    | N/A              | X                   | RINSE   |
| 8/24/2011 | 18:38 | 3A323.D   | W3VM110824-12 | VSTD005S  | ICAL    | 5ML                     | 1              | N/A | 16           | w                | SYK1    | N/A              | O                   | MIX[B] UVM110728-01+UVM110728-09+UVM110705-01E      |
| 8/24/2011 | 19:08 | 3A324.D   | W3VM110824-13 | VSTD010S  | ICAL    | 5ML                     | 1              | N/A | 17           | w                | SYK1    | N/A              | O                   | MIX[B] UVM110728-01+UVM110728-10+UVM110705-02E      |
| 8/24/2011 | 19:38 | 3A325.D   | W3VM110824-14 | VSTD025S  | ICAL    | 5ML                     | 1              | N/A | 18           | w                | SYK1    | N/A              | O                   | MIX[B] UVM110728-03+UVM110728-11+UVM110705-03E      |
| 8/24/2011 | 20:08 | 3A326.D   | W3VM110824-15 | VSTD050S  | ICAL    | 5ML                     | 1              | N/A | 19           | w                | SYK1    | N/A              | O                   | MIX[B] UVM110728-04+UVM110728-12+UVM110705-04E      |
| 8/24/2011 | 20:38 | 3A327.D   | W3VM110824-16 | VSTD100S  | ICAL    | 5ML                     | 1              | N/A | 20           | w                | SYK1    | N/A              | O                   | MIX[B] UVM110728-05+UVM110728-13+UVM110705-05E      |
| 8/24/2011 | 21:08 | 3A328.D   | W3VM110824-17 | VSTD250S  | ICAL    | 5ML                     | 1              | N/A | 21           | w                | SYK1    | N/A              | O                   | MIX[B] UVM110728-06+UVM110728-14+UVM110705-06E      |

Date: 8/24/2011 Method 8260/624 Operator: SYK1

REVIEWED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 1

Daily Instrument Readings:  
Multiplier Voltage: 1506

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 8/24/2011-8/25/2011  
  
(See pg. 238 and 239 for ICAL Std. Sci. Ids)  
  
CI test lot # N/A  
  
Sequence Number: 082411V3

| Solution ID#                | Volume Added for Purge (ul) |     |            |     |
|-----------------------------|-----------------------------|-----|------------|-----|
|                             | Blk/<br>Smpl                | CCV | MS/<br>LCS | BFB |
| IS UVM110615-01             | 1                           | 1   | 1          |     |
| SS UVM110725-02             | 1                           | 1   | 1          |     |
| Long List ICV W3VM110824-11 |                             | 5+5 |            |     |
| BFB IVM110802-01            |                             |     |            | 1   |
| Short List ICV              |                             | 5+5 |            |     |
|                             |                             |     |            |     |

Purge Amount  
  
5 Water Purge Vol:  
n/a Soil Purge Wt.  
n/a Mid level ext. MeOH Vol:  
n/a ul  
n/a Methanol Lot #  
x Heated Purge

| Analysis  |       |           |               |          | Wt.(g) or | Dil.       | AS     | Matrix | Analyst | CI test | Accepta |          |          |  |
|-----------|-------|-----------|---------------|----------|-----------|------------|--------|--------|---------|---------|---------|----------|----------|--|
| Date      | Time  | Data File | Lab Sample ID | Client   | Batch #   | Vol(ml/ul) | Factor | pH     | Slot #  | w or s  | (Y/N)   | ble(O/X) | Comments |  |
| 8/24/2011 | 21:38 | 3A329.D   | W3VM110824-18 | VSTD300S | ICAL      | 5ML        | 1      | N/A    | 22      | w       | SYK1    | N/A      | X        | MIX[B] UVM110728-07+UVM110728-15+UVM110705-07E; compounds low, see 3A402 |
| 8/24/2011 | 22:08 | 3A330.D   | W3VM110824-19 | VSTD500S | ICAL      | 5ML        | 1      | N/A    | 23      | w       | SYK1    | N/A      | X        | MIX[B] UVM110728-07+UVM110728-15+UVM110705-07E; compounds low, see 3A403 |
| 8/24/2011 | 22:38 | 3A331.D   | 12024-----    | -----    | BLANK     | 5ML        | 1      | N/A    | 24      | w       | SYK1    | N/A      | X        | RINSE  |
| 8/24/2011 | 23:08 | 3A332.D   | W3VM110824-20 | ICV      | ICV       | 5ML        | 1      | N/A    | 25      | w       | SYK1    | N/A      | X        | MIX[B] 0728-08C+0729-08C+07; see 3A405                                   |



Date: 8/25/2011 Method 8260/624 Operator: SYK1

REVIEWED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 1

Daily Instrument Readings:  
Multiplier Voltage: 1506

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 08/24/2011-08/25/2011

Daily Standard Volume Added for Purge (ul)

Purge Amount

(See pg. 238-239 for ICAL Std. Sci. Ids)

Cl test lot # 1177

Sequence Number: 082511V3

| Solution ID#            | Blk/<br>Smpl | CCV   | MS/ LCS | BFB |
|-------------------------|--------------|-------|---------|-----|
| CCV W3VM110825-04       |              | 5+5   |         |     |
| IS UVM110615-01         | 1            | 1     | 1       |     |
| SS UVM110725-02         | 1            | 1     | 1       |     |
| LCS/MS W3VM110825-05/06 |              |       | 5+5     |     |
| BFB IVM110802-01        |              |       |         | 1   |
| SHORT W3VM110825-07     |              | 5+5+5 | 5+5+5   |     |

5 Water Purge Vol:  
varied Soil Purge Wt.  
x Mid level ext. MeOH Vol:  
100 ul  
DD946 Methanol Lot #  
x Heated Purge

| Analysis<br>Date | Time  | Data File | Lab Sample ID | Client   | Batch # | Wt.(g) or<br>Vol(ml/ul) | Dil.<br>Factor | pH  | AS<br>Slot # | Matrix<br>w or s | Analyst | Cl test<br>(Y/N) | Accepta<br>ble(O/X) | Comments  |
|------------------|-------|-----------|---------------|----------|---------|-------------------------|----------------|-----|--------------|------------------|---------|------------------|---------------------|---|
| 8/25/2011        | 8:52  | 3A401.D   | IVM110802-01  | -----    | BFB     | 5ML                     | 1              | N/A | 28           | w                | SYK1    | N/A              | O                   |   |
| 8/25/2011        | 9:22  | 3A402.D   | W3VM110825-01 | VSTD300S | ICAL    | 5ML                     | 1              | N/A | 29           | w                | SYK1    | N/A              | O                   | MIX[B] UVM110728-07+0728-15+UVM110705-07E               |
| 8/25/2011        | 9:52  | 3A403.D   | W3VM110825-02 | VSTD500S | ICAL    | 5ML                     | 1              | N/A | 30           | w                | SYK1    | N/A              | O                   | MIX[B] UVM110728-07+0728-15+UVM110705-07E               |
| 8/25/2011        | 10:22 | 3A404.D   | 12024-----    | -----    | BLANK   | 5ML                     | 1              | N/A | 31           | w                | SYK1    | N/A              | X                   | RINSE   |
| 8/25/2011        | 10:53 | 3A405.D   | W3VM110825-03 | ICV      | ICV     | 5ML                     | 1              | N/A | 32           | w                | SYK1    | N/A              | O                   | MIX[B] UVM110728-08C+UVM110729-08C+UVM110728-16B        |
| 8/25/2011        | 11:23 | 3A406.D   | W3VM110825-04 | -----    | CCV     | 5ML                     | 1              | N/A | 1            | w                | SYK1    | N/A              | O                   | MIX[A] UVM110727-07C+UVM110723-07B                      |
| 8/25/2011        | 11:53 | 3A407.D   | W3VM110825-05 | -----    | LCS     | 5ML                     | 1              | N/A | 2            | w                | SYK1    | N/A              | O                   | MIX[A] UVM110718-01E+IVM110822-01                       |
| 8/25/2011        | 12:23 | 3A408.D   | W3VM110825-06 | -----    | LCS     | 5G                      | 1              | N/A | 3            | s                | SYK1    | N/A              | O                   | MIX[A] UVM110718-01E+IVM110822-01 SOIL                  |
| 8/25/2011        | 12:53 | 3A409.D   | W3VM110825-07 | -----    | CCV/LCS | 5G                      | 1              | N/A | 4            | s                | SYK1    | N/A              | O                   | MIX[B] UVM110729-08C+UVM110728-08C+0728-16B SOIL        |
| 8/25/2011        | 13:23 | 3A410.D   | 12024-----    | -----    | BLANK   | 5ML                     | 1              | N/A | 5            | w                | SYK1    | N/A              | O                   |   |
| 8/25/2011        | 13:53 | 3A411.D   | 12024-----    | -----    | BLANK   | 5G                      | 1              | N/A | 6            | s                | SYK1    | N/A              | O                   | SOIL  |
| 8/25/2011        | 14:24 | 3A412.D   | 284525008     | UCOR     | 1136142 | 5ML                     | 1              | pH5 | 7            | w                | SYK1    | N                | O                   | 624   |
| 8/25/2011        | 14:53 | 3A413.D   | 284525001     | UCOR     | 1136142 | 5ML                     | 1              | pH7 | 8            | w                | SYK1    | N                | O                   | 624   |
| 8/25/2011        | 15:23 | 3A414.D   | 1202474200    | UCOR     | 1136142 | 5ML                     | 1              | pH7 | 9            | w                | SYK1    | N                | O                   | DUP   |
| 8/25/2011        | 15:53 | 3A415.D   | 12024-----    | -----    | BLANK   | 100uL                   | 50             | N/A | 10           | s                | SYK1    | N/A              | O                   | MeOH BLNK   |
| 8/25/2011        | 16:24 | 3A416.D   | 284175001     | CARE     | 1136192 | 100uL                   | 50             | N/A | 11           | s                | SYK1    | N/A              | O                   | SOIL; O/R for Trichloroethylene, rerun AT 100x on 08/26 |
| 8/25/2011        | 16:54 | 3A417.D   | 284175002     | CARE     | 1136192 | 100uL                   | 50             | N/A | 12           | s                | SYK1    | N/A              | X                   | SOIL: C/O, rerun on 08/26                               |
| 8/25/2011        | 17:24 | 3A418.D   | 284598001     | SRNS     | 1136296 | 5ML                     | 1              | pH2 | 13           | w                | SYK1    | N                | X                   | C/O   |
| 8/25/2011        | 17:54 | 3A419.D   | 284598002     | SRNS     | 1136296 | 5ML                     | 1              | pH2 | 14           | w                | SYK1    | N                | X                   | C/O   |
| 8/25/2011        | 18:25 | 3A420.D   | 1202474201    | UCOR     | 1136142 | 5ML                     | 1              | pH7 | 15           | w                | SYK1    | N                | O                   | MS 284525001 MIX[A]                                     |
| 8/25/2011        | 18:55 | 3A421.D   | 1202474334    | CARE     | 1136192 | 100uL                   | 50             | N/A | 16           | s                | SYK1    | N/A              | O                   | MS 284175001 MIX[A] SOIL                                |
| 8/25/2011        | 19:25 | 3A422.D   | 1202474335    | CARE     | 1136192 | 100uL                   | 50             | N/A | 17           | s                | SYK1    | N/A              | O                   | MSD 284175001 MIX[A] SOIL                               |
| 8/25/2011        | 19:55 | 3A423.D   | 1202474584    | SRNS     | 1136296 | 5ML                     | 1              | pH2 | 18           | w                | SYK1    | N                | O                   | MS 284598001 MIX[A]                                     |
| 8/25/2011        | 20:25 | 3A424.D   | 1202474585    | SRNS     | 1136296 | 5ML                     | 1              | pH2 | 19           | w                | SYK1    | N                | O                   | MSD 284598001 MIX[A]                                    |

Date: 8/30/2011 Method 8260/624 Operator: SYK1

REVIEWED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 1

Daily Instrument Readings: \_\_\_\_\_  
Multiplier Voltage: 1506

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 08/24/2011-08/25/2011

Daily Standard Volume Added for Purge (ul)

Purge Amount

(See pg. 238-239 for ICAL Std. Sci. Ids)

CI test lot # 1177

Sequence Number: 083011V3PM

| Solution ID# |               | Blk/<br>Smpl | CCV   | MS/ LCS | BFB |
|--------------|---------------|--------------|-------|---------|-----|
| CCV          | W3VM110830-06 |              | 5+5   |         |     |
| IS           | UVM110615-01  | 1            | 1     | 1       |     |
| SS           | UVM110725-02  | 1            | 1     | 1       |     |
| LCS/MS       | W3VM110830-07 |              |       | 5+5     |     |
| BFB          | IVM110802-01  |              |       |         | 1   |
| SHORT        | W3VM110830-08 |              | 5+5+5 | 5+5+5   |     |

|     |                          |
|-----|--------------------------|
| 5   | Water Purge Vol:         |
| n/a | Soil Purge Wt.           |
| n/a | Mid level ext. MeOH Vol: |
| n/a | ul                       |
| n/a | Methanol Lot #           |
| x   | Heated Purge             |

| Analysis  |       | Data File | Lab Sample ID | Client | Batch # | Wt.(g) or<br>Vol(ml/ul) | Dil.<br>Factor | pH  | AS<br>Slot # | Matrix<br>w or s | Analyst | CI test<br>(Y/N) | Accepta<br>ble(O/X) | Comments   |
|-----------|-------|-----------|---------------|--------|---------|-------------------------|----------------|-----|--------------|------------------|---------|------------------|---------------------|--|
| Date      | Time  |           |               |        |         |                         |                |     |              |                  |         |                  |                     |  |
| 8/30/2011 | 20:28 | 3B226.D   | IVM110802-01  | -----  | BFB2    | 5ML                     | 1              | N/A | 26           | w                | SYK1    | N/A              | O                   |  |
| 8/30/2011 | 20:58 | 3B227.D   | W3VM110830-06 | -----  | CCV     | 5ML                     | 1              | N/A | 27           | w                | SYK1    | N/A              | O                   | MIX[A] UVM110723-07B+UVM110727-07D               |
| 8/30/2011 | 21:28 | 3B228.D   | W3VM110830-07 | -----  | LCS     | 5ML                     | 1              | N/A | 28           | w                | SYK1    | N/A              | O                   | MIX[A] UVM110817-01A+IVM110827-01                |
| 8/30/2011 | 21:58 | 3B229.D   | W3VM110830-08 | -----  | CCV/LCS | 5ML                     | 1              | N/A | 29           | w                | SYK1    | N/A              | O                   | MIX[B] UVM110729-08D+UVM110728-08B+UVM110728-16B |
| 8/30/2011 | 22:28 | 3B230.D   | 12024-----    | -----  | BLANK   | 5ML                     | 1              | N/A | 30           | w                | SYK1    | N/A              | O                   |  |
| 8/30/2011 | 22:58 | 3B231.D   | 284538002     | ECOL   | 1137563 | 5ML                     | 1              | pH2 | 31           | w                | SYK1    | N                | O                   | O/R for Acetone; rerunning at 5X on 08/31        |
| 8/30/2011 | 23:28 | 3B232.D   | 284538001     | ECOL   | 1137563 | 5ML                     | 1              | pH2 | 32           | w                | SYK1    | N                | O                   |  |
| 8/30/2011 | 23:58 | 3B233.D   | 284774001     | WSRS   | 1137566 | 5ML                     | 1              | pH8 | 33           | w                | SYK1    | N                | O                   |  |
| 8/31/2011 | 0:28  | 3B234.D   | 1202477758    | ECOL   | 1137563 | 5ML                     | 1              | pH2 | 34           | w                | SYK1    | N                | O                   | MS 284538001 MIX[A]                              |
| 8/31/2011 | 0:58  | 3B235.D   | 1202477759    | ECOL   | 1137563 | 5ML                     | 1              | pH2 | 35           | w                | SYK1    | N                | O                   | MSD 284538001 MIX[A]                             |
| 8/31/2011 | 1:28  | 3B236.D   | 1202477766    | WSRS   | 1137566 | 5ML                     | 1              | pH8 | 36           | w                | SYK1    | N                | O                   | MS 284774001 MIX[A]                              |
| 8/31/2011 | 1:58  | 3B237.D   | 1202477767    | WSRS   | 1137566 | 5ML                     | 1              | pH8 | 37           | w                | SYK1    | N                | O                   | MSD 284774001 MIX[A]                             |

Date: 8/31/2011 Method 8260/624 Operator: SYK1

REVIEWED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 1

Daily Instrument Readings:  
Multiplier Voltage: 1506

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 08/24/2011-08/25/2011

Daily Standard Volume Added for Purge (ul)

Purge Amount

(See pg. 238-239 for ICAL Std. Sci. Ids)

CI test lot # 1177

Sequence Number: 083111V3

| Solution ID#            | Blk/<br>Smpl | CCV   | MS/ LCS | BFB |
|-------------------------|--------------|-------|---------|-----|
| CCV W3VM110831-01       |              | 5+5   |         |     |
| IS UVM110615-01         | 1            | 1     | 1       |     |
| SS UVM110725-02         | 1            | 1     | 1       |     |
| LCS/MS W3VM110831-02/03 |              |       | 5+5     |     |
| BFB IVM110802-01        |              |       |         | 1   |
| SHORT W3VM110831-04/05  |              | 5+5+5 | 5+5+5   |     |

|     |                          |
|-----|--------------------------|
| 5   | Water Purge Vol:         |
| 5g  | Soil Purge Wt.           |
| n/a | Mid level ext. MeOH Vol: |
| n/a | ul                       |
| n/a | Methanol Lot #           |
| x   | Heated Purge             |

| Analysis  |       | Data File | Lab Sample ID | Client | Batch # | Wt.(g) or<br>Vol(ml/ul) | Dil.<br>Factor | pH   | AS<br>Slot # | Matrix<br>w or s | Analyst | CI test<br>(Y/N) | Accepta<br>ble(O/X) | Comments   |
|-----------|-------|-----------|---------------|--------|---------|-------------------------|----------------|------|--------------|------------------|---------|------------------|---------------------|--|
| Date      | Time  |           |               |        |         |                         |                |      |              |                  |         |                  |                     |  |
| 8/31/2011 | 6:53  | 3B301.D   | IVM110802-01  | -----  | BFB     | 5ML                     | 1              | N/A  | 1            | w                | SYK1    | N/A              | O                   |  |
| 8/31/2011 | 7:23  | 3B302.D   | W3VM110831-01 | -----  | CCV     | 5ML                     | 1              | N/A  | 2            | w                | SYK1    | N/A              | O                   | MIX[A] UVM110727-07D+UVM110723-07B                       |
| 8/31/2011 | 7:53  | 3B303.D   | W3VM110831-02 | -----  | LCS     | 5ML                     | 1              | N/A  | 3            | w                | SYK1    | N/A              | O                   | MIX[A] UVM110817-01A+IVM110827-01                        |
| 8/31/2011 | 8:23  | 3B304.D   | W3VM110831-03 | -----  | LCS     | 5G                      | 1              | N/A  | 4            | s                | SYK1    | N/A              | O                   | MIX[A] UVM110817-01A+IVM110827-01 SOIL                   |
| 8/31/2011 | 8:53  | 3B305.D   | W3VM110831-04 | -----  | CCV/LCS | 5ML                     | 1              | N/A  | 5            | w                | SYK1    | N/A              | O                   | MIX[B] UVM110728-08B+UVM110729-08D+0728-16B              |
| 8/31/2011 | 9:24  | 3B306.D   | W3VM110831-05 | -----  | LCS     | 5G                      | 1              | N/A  | 6            | s                | SYK1    | N/A              | O                   | MIX[B] UVM110728-08B+UVM110729-08D+0728-16B SOIL         |
| 8/31/2011 | 9:54  | 3B307.D   | 12024-----    | -----  | BLANK   | 5G                      | 1              | N/A  | 7            | s                | SYK1    | N/A              | O                   | SOIL   |
| 8/31/2011 | 10:24 | 3B308.D   | 12024-----    | -----  | BLANK   | 5ML                     | 1              | N/A  | 8            | w                | SYK1    | N/A              | O                   |  |
| 8/31/2011 | 10:54 | 3B309.D   | 284538002     | ECOL   | 1137563 | 1ML                     | 5              | pH2  | 9            | w                | SYK1    | N                | O                   |  |
| 8/31/2011 | 11:24 | 3B310.D   | 284534001     | COAN   | 1137567 | 1ML                     | 5              | pH2  | 10           | w                | SYK1    | N                | O                   |  |
| 8/31/2011 | 11:54 | 3B311.D   | 1202477770    | COAN   | 1137567 | 1ML                     | 5              | pH2  | 11           | w                | SYK1    | N                | O                   | MS 284534001 MIX[B]                                      |
| 8/31/2011 | 12:24 | 3B312.D   | 1202477771    | COAN   | 1137567 | 1ML                     | 5              | pH2  | 12           | w                | SYK1    | N                | O                   | MSD 284534001 MIX[B]                                     |
| 8/31/2011 | 12:54 | 3B313.D   | 12024-----    | -----  | BLANK   | 5ML                     | 1              | N/A  | 13           | w                | SYK1    | N/A              | X                   | RINSE  |
| 8/31/2011 | 13:23 | 3B314.D   | 284928007     | UCOR   | 1137760 | 5ML                     | 1              | pH5  | 14           | w                | SYK1    | N                | O                   |  |
| 8/31/2011 | 13:53 | 3B315.D   | 284928001     | UCOR   | 1137760 | 5ML                     | 1              | pH7  | 15           | w                | SYK1    | N                | O                   |  |
| 8/31/2011 | 14:23 | 3B316.D   | 284392001     | ARSL   | 1137756 | 5G                      | 1              | n/a  | 16           | s                | SYK1    | N/A              | O                   | SOIL   |
| 8/31/2011 | 14:53 | 3B317.D   | 284671002     | LLNL   | 1137764 | 5ML                     | 1              | pH2  | 17           | w                | SYK1    | N                | O                   |  |
| 8/31/2011 | 15:23 | 3B318.D   | 284671001     | LLNL   | 1137764 | 200ul                   | 25             | pH13 | 18           | w                | SYK1    | N                | X                   | rerunning at 20X on 09/01                                |
| 8/31/2011 | 15:53 | 3B319.D   | 1202478191    | UCOR   | 1137760 | 5ML                     | 1              | pH7  | 19           | w                | SYK1    | N                | O                   | MS 284928001 MIX[A]                                      |
| 8/31/2011 | 16:23 | 3B320.D   | 1202478192    | UCOR   | 1137760 | 5ML                     | 1              | pH7  | 20           | w                | SYK1    | N                | O                   | MSD 284928001 MIX[A]                                     |
| 8/31/2011 | 16:53 | 3B321.D   | 1202478182    | ARSL   | 1137756 | 5G                      | 1              | N/A  | 21           | s                | SYK1    | N/A              | X                   | SOIL MS 284392001 MIX[A]                                 |
| 8/31/2011 | 17:22 | 3B322.D   | 1202478183    | ARSL   | 1137756 | 5G                      | 1              | N/A  | 22           | s                | SYK1    | N/A              | X                   | SOIL MSD 284392001 MIX[A]; bad purge, rerunning on 09/01 |
| 8/31/2011 | 17:53 | 3B323.D   | 1202478205    | LLNL   | 1137764 | 200ul                   | 25             | pH13 | 23           | w                | SYK1    | N                | X                   | MS 284671001 MIX[A]; rerunning at 20X on 09/01           |
| 8/31/2011 | 18:22 | 3B324.D   | 1202478206    | LLNL   | 1137764 | 200ul                   | 25             | pH13 | 24           | w                | SYK1    | N                | X                   | MSD 284671001 MIX[A]; rerunning at 20X on 09/01          |

Date: 8/31/2011 Method 8260/624 Operator: SYK1

REVIEWED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 1

Daily Instrument Readings:

Multiplier Voltage: 1506

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 08/24/2011-08/25/2011

Daily Standard Volume Added for Purge (ul)

Purge Amount

(See pg. 238-239 for ICAL Std. Sci. Ids)

CI test lot # 1177

Sequence Number: 083111V3

| Solution ID#            | Blk/<br>Smpl | CCV   | MS/ LCS | BFB |
|-------------------------|--------------|-------|---------|-----|
|                         |              |       |         |     |
| CCV W3VM110831-01       |              | 5+5   |         |     |
| IS UVM110615-01         | 1            | 1     | 1       |     |
| SS UVM110725-02         | 1            | 1     | 1       |     |
| LCS/MS W3VM110831-02/03 |              |       | 5+5     |     |
| BFB IVM110802-01        |              |       |         | 1   |
| SHORT W3VM110831-04/05  |              | 5+5+5 | 5+5+5   |     |

|     |                          |
|-----|--------------------------|
| 5   | Water Purge Vol:         |
| 5g  | Soil Purge Wt.           |
| n/a | Mid level ext. MeOH Vol: |
| n/a | ul                       |
| n/a | Methanol Lot #           |
| x   | Heated Purge             |

| Analysis   |       | Data File | Lab Sample ID | Client | Batch # | Wt.(g) or<br>Vol(ml/ul) | Dil.<br>Factor | pH  | AS<br>Slot # | Matrix<br>w or s | Analyst | CI test<br>(Y/N) | Accepta<br>ble(O/X) | Comments          |
|------------|-------|-----------|---------------|--------|---------|-------------------------|----------------|-----|--------------|------------------|---------|------------------|---------------------|-------------------|
| Date       | Time  |           |               |        |         |                         |                |     |              |                  |         |                  |                     |                   |
| 8/31/2011  | 18:52 | 3B325.D   | 12024-----    | -----  | BLANK   | 5ML                     | 1              | N/A | 25           | w                | JEB     | N/A              | X                   | RINSE             |
| 8/31/2011  | 19:22 | 3B326.D   | 12024-----    | -----  | BLANK   | 5ML                     | 1              | N/A | 26           | w                | JEB     | N/A              | X                   | RINSE             |
| 8/31/2011  | 19:52 | 3B327.D   | 284751001     | WSRB   | 1136536 | 250UL                   | 20             | N/A | 27           | w                | JEB     | N/A              | X                   | 284751001; screen |
| 8/31/2011  | 20:22 | 3B328.D   | 284751001     | WSRB   | 1136536 | 250UL                   | 20             | N/A | 28           | w                | JEB     | N/A              | X                   | 284751001; screen |
| 8/31/2011  | 20:52 | 3B329.D   | 284751001     | WSRB   | 1136536 | 250UL                   | 20             | N/A | 29           | w                | JEB     | N/A              | X                   | 284751001; screen |
| 8/31/2011  | 21:22 | 3B330.D   | 284751002     | WSRB   | 1136536 | 250UL                   | 20             | N/A | 30           | w                | JEB     | N/A              | X                   | 284751002; screen |
| 8/31/2011  | 21:52 | 3B331.D   | 284751002     | WSRB   | 1136536 | 250UL                   | 20             | N/A | 31           | w                | JEB     | N/A              | X                   | 284751002; screen |
| 8/31/2011  | 22:22 | 3B332.D   | 284751003     | WSRB   | 1136536 | 25UL                    | 200            | N/A | 32           | w                | JEB     | N/A              | X                   | 284751003; screen |
| 8/31/2011  | 22:52 | 3B333.D   | 284751003     | WSRB   | 1136536 | 25UL                    | 200            | N/A | 33           | w                | JEB     | N/A              | X                   | 284751003;screen  |
| 8/31/2011  | 23:21 | 3B334.D   | 284751001     | WSRB   | 1136536 | 5ML                     | 1              | N/A | 34           | w                | JEB     | N/A              | X                   | 284751001; screen |
| 8/31/2011  | 23:51 | 3B335.D   | 12024-----    | -----  | BLANK   | 5ML                     | 1              | N/A | 35           | w                | JEB     | N/A              | X                   | RINSE             |
| 1 Sep 2011 | 00:21 | 3B336.D   | 284751001     | WSRB   | 1136536 | 5ML                     | 1              | N/A | 36           | w                | JEB     | N/A              | X                   | 284751001; screen |
| 1 Sep 2011 | 00:51 | 3B337.D   | 12024-----    | -----  | BLANK   | 5ML                     | 1              | N/A | 37           | w                | JEB     | N/A              | X                   | RINSE             |
| 1 Sep 2011 | 01:21 | 3B338.D   | 284751001     | WSRB   | 1136536 | 5ML                     | 1              | N/A | 38           | w                | JEB     | N/A              | X                   | 284751001; screen |
| 1 Sep 2011 | 01:50 | 3B339.D   | 12024-----    | -----  | BLANK   | 5ML                     | 1              | N/A | 39           | w                | JEB     | N/A              | X                   | RINSE             |
| 1 Sep 2011 | 02:20 | 3B340.D   | 284751002     | WSRB   | 1136536 | 5ML                     | 1              | N/A | 40           | w                | JEB     | N/A              | X                   | 284751002; screen |
| 1 Sep 2011 | 02:50 | 3B341.D   | 12024-----    | -----  | BLANK   | 5ML                     | 1              | N/A | 41           | w                | JEB     | N/A              | X                   | RINSE             |
| 1 Sep 2011 | 03:20 | 3B342.D   | 284751002     | WSRB   | 1136536 | 5ML                     | 1              | N/A | 42           | w                | JEB     | N/A              | X                   | 284751002; screen |
| 1 Sep 2011 | 03:50 | 3B343.D   | 12024-----    | -----  | BLANK   | 5ML                     | 1              | N/A | 43           | w                | JEB     | N/A              | X                   | RINSE             |
| 1 Sep 2011 | 04:19 | 3B344.D   | 12024-----    | -----  | BLANK   | 5ML                     | 1              | N/A | 44           | w                | JEB     | N/A              | X                   | RINSE             |
| 1 Sep 2011 | 04:49 | 3B345.D   | 12024-----    | -----  | BLANK   | 5ML                     | 1              | N/A | 45           | w                | JEB     | N/A              | X                   | RINSE             |
| 1 Sep 2011 | 05:19 | 3B346.D   | 12024-----    | -----  | BLANK   | 5ML                     | 1              | N/A | 46           | w                | JEB     | N/A              | X                   | RINSE             |
| 1 Sep 2011 | 05:49 | 3B347.D   | 12024-----    | -----  | BLANK   | 5ML                     | 1              | N/A | 47           | w                | JEB     | N/A              | X                   | RINSE             |

# **Semi-Volatile Analysis**

# Case Narrative

**Semi-Volatile Case Narrative**  
**Ecology and Environment, Inc. Start-3 002233.2008 (ECOL)**  
**SDG 284538**

**Method/Analysis Information**

|                          |   |
|--------------------------|---|
| <b>Procedure:</b>        | <b>Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry</b> |
| Analytical Method:       | SW846 3510C/8270D   |
| Prep Method:             | SW846 3510C   |
| Analytical Batch Number: | 1135988   |
| Prep Batch Number:       | 1135986   |

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in SW846 3510C/8270D:

|                  |  |
|------------------|--|
| <b>Sample ID</b> | <b>Client ID</b>                                 |
| 284538001        | 11080101   |
| 1202473715       | Method Blank (MB)                                |
| 1202473716       | Laboratory Control Sample (LCS)                  |
| 1202473717       | 284538001(11080101) Matrix Spike (MS)            |
| 1202473718       | 284538001(11080101) Matrix Spike Duplicate (MSD) |

The samples in this SDG were analyzed on an "as received" basis.

**Preparation/Analytical Method Verification**

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-009 REV# 26.

Raw data reports are processed and reviewed by the analyst using the data analysis software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP) section 18.2.

**Calibration Information**

Due to software limitations, the Form 6 may not indicate all the calibration files comprising the initial calibration. A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package. The various calibration mixes may not be calibrated using all of the calibration levels. In addition, not all of the mixes are calibrated using the same levels.

Diphenylamine has now superseded N-Nitroso-diphenylamine on Quantitation Reports, Initial Calibration Reports, Calibration Check Standard Reports, etc. Previous versions of EPA Methodologies referenced N-Nitroso-diphenylamine. However, as stated in EPA Methodology, "N-Nitroso-diphenylamine decomposes in the gas chromatographic inlet and cannot be separated from Diphenylamine." Studies of these two compounds at GEL, both independent of each other and together, showed that they not only co-elute, but also have similar mass spectra. N-Nitroso-diphenylamine and Diphenylamine will be reported as Diphenylamine on all reports and forms.

#### **Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG) in this batch. A second source initial calibration verification (ICV) was included in the standard section directly behind the initial calibration.

#### **CCV Requirements**

Not all calibration verification standards (CCV) met the acceptance criteria as outlined in Method 8270 D. However, the method allows for a designated number of outliers dependent on the requested analyte list. This SDG satisfied the 8270 D outlier acceptance criteria. Detected concentrations of these analytes should be considered as estimated.

#### **Quality Control (QC) Information**

##### **Method Blank (MB) Statement**

The MB analyzed with this SDG in this batch met the acceptance criteria.

##### **Surrogate Recoveries**

The MS(1202473717(11080101)) failed surrogate recovery for 2,4,6-Tribromophenol at 14%. The limits are 33%-126%. The MB, LCS and MSD satisfied surrogate recovery acceptance criteria. Also, all associated client samples displayed acceptable surrogate recoveries. Therefore, it was determined that the failure was limited to the MS sample only and re-extraction was considered un-necessary.

##### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

##### **QC Sample Designation**

Sample 284538001 (11080101) was selected for analysis as the matrix spike and matrix spike duplicate.

##### **Matrix Spike (MS) Recovery Statement**

The MS(1202473717(11080101)) failed multiple spike recoveries. Please see the QC Summary for specific values. The MB, LCS and MSD satisfied batch QC acceptance criteria (with the exception of 4-Nitrophenol in the MSD - see MSD recovery statement). Therefore, it was determined that the failures were limited to the MS sample only and re-extraction was considered un-necessary.

##### **Matrix Spike Duplicate (MSD) Recovery Statement**

The MSD(1202473718(11080101)) failed spike recovery for 4-Nitrophenol at 34%. The limits are 39%-96%. 4-Nitrophenol was identified as poor responding analyte in the analytical method (EPA 8270 D). This may account for the low recovery it displayed in the MSD (as well as in the MS). The data were reported.

##### **MS/MSD Relative Percent Difference (RPD) Statement**

Multiple MS(1202473717(11080101))/MSD(1202473718(11080101)) RPD values were outside of the established acceptance limits. Please see the QC Summary for specific failures. The failures were attributed to the poor recoveries in the MS (see the MS recovery statement).

##### **Internal Standard (ISTD) Acceptance**

The internal standard responses were within the required acceptance criteria for all samples and QC.



## **Technical Information:**

### **Holding Time Specifications**

All samples in this SDG in this batch met the specified holding time.

### **Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP. All reported compound mass spectra met the detection specifications in the method.

### **Sample Dilutions**

The samples in this SDG in this batch did not require dilutions.

### **Sample Re-extraction/Re-analysis**

The MS(1202473717(11080101)) was re-analyzed due to multiple spike and surrogate failures.

## **Miscellaneous Information:**

### **Data Exception (DER) Documentation**

The following DER was generated for this SDG: 990643.

### **Manual Integrations**

Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations. Manual integrations, if any, are included with the raw data.

### **TIC Comment**

Tentatively identified compounds (TIC) were not required for the SDG associated samples in this batch.

### **Additional Comments**

Additional comments were not required for the SDG associated samples in this batch.

### **Electronic Package Comment**

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative of each electronic package will indicate the analyst, reviewer, and report specialist names associated with the generation of the data and package. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

## **System Configuration**

The Semi-Volatile-GC/MS analysis was performed on the following instrument configuration:

| <b>Instrument ID</b> | <b>Instrument</b>                                      | <b>System Configuration</b> | <b>Column ID</b> | <b>Column Description</b>                            |
|----------------------|--|-----------------------------|------------------|--|
| MSD3.I               | Agilent<br>7890A/5975C<br>GC/MS w/ 7683<br>Autosampler | HP7890A/HP5975C             | DB-5MS           | 25m x 0.2mm, 0.33um (5%<br>Phenylmethylpolysiloxane) |

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Qualifier Definition Report for

ECOL008 Ecology and Environment, Inc. Start-3 002233.2008

Client SDG: 284538 GEL Work Order: 284538

#### The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

#### Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Daniel Beacham

Date: 13 SEP 2011

Title: Data Validator

# **Sample Data Summary**

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

**SDG Number:** 284538  
**Lab Sample ID:** 284538001

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50  
**Client:** ECOL008  
**Method:** SW846 3510C/8270D  
**Inst:** MSD3.I  
**Analyst:** JLD1  
**Aliquot:** 1000 mL  
**Column:** DB-5ms

**Matrix:** GROUND WATER  
**Project:** ECOL00111  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

**Client ID:** 11080101  
**Batch ID:** 1135988  
**Run Date:** 08/26/2011 13:07  
**Prep Date:** 08/25/2011 18:55  
**Data File:** s082611.B\s3h2612.D

| CAS No.    | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-95-2   | Phenol                      | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 111-44-4   | bis(2-Chloroethyl) ether    | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 95-57-8    | 2-Chlorophenol              | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 95-48-7    | o-Cresol                    | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 65794-96-9 | m,p-Cresols                 | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 621-64-7   | N-Nitrosodipropylamine      | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 67-72-1    | Hexachloroethane            | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 98-95-3    | Nitrobenzene                | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 78-59-1    | Isophorone                  | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 88-75-5    | 2-Nitrophenol               | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 105-67-9   | 2,4-Dimethylphenol          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 111-91-1   | bis(2-Chloroethoxy)methane  | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 120-83-2   | 2,4-Dichlorophenol          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 106-47-8   | 4-Chloroaniline             | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 87-68-3    | Hexachlorobutadiene         | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 59-50-7    | 4-Chloro-3-methylphenol     | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 91-57-6    | 2-Methylnaphthalene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 91-20-3    | Naphthalene                 | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 77-47-4    | Hexachlorocyclopentadiene   | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 88-06-2    | 2,4,6-Trichlorophenol       | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 95-95-4    | 2,4,5-Trichlorophenol       | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 91-58-7    | 2-Chloronaphthalene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 88-74-4    | o-Nitroaniline              | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 99-09-2    | m-Nitroaniline              | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 131-11-3   | Dimethylphthalate           | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 606-20-2   | 2,6-Dinitrotoluene          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 121-14-2   | 2,4-Dinitrotoluene          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 208-96-8   | Acenaphthylene              | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 83-32-9    | Acenaphthene                | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 51-28-5    | 2,4-Dinitrophenol           | U         | 5.00   | ug/L  | 5.00    | 20.0    |
| 132-64-9   | Dibenzofuran                | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 58-90-2    | 2,3,4,6-Tetrachlorophenol   | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 84-66-2    | Diethylphthalate            | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 100-02-7   | 4-Nitrophenol               | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 86-73-7    | Fluorene                    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 7005-72-3  | 4-Chlorophenylphenylether   | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 100-01-6   | p-Nitroaniline              | U         | 3.00   | ug/L  | 3.00    | 10.0    |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 2 of 2

**SDG Number:** 284538  
**Lab Sample ID:** 284538001

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50  
**Client:** ECOL008  
**Method:** SW846 3510C/8270D  
**Inst:** MSD3.I  
**Analyst:** JLD1  
**Aliquot:** 1000 mL  
**Column:** DB-5ms

**Matrix:** GROUND WATER  
**Project:** ECOL00111  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 122-39-4  | Diphenylamine              | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 101-55-3  | 4-Bromophenylphenylether   | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 118-74-1  | Hexachlorobenzene          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 87-86-5   | Pentachlorophenol          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 85-01-8   | Phenanthrene               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 120-12-7  | Anthracene                 | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 86-74-8   | Carbazole                  | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 84-74-2   | Di-n-butylphthalate        | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 206-44-0  | Fluoranthene               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 129-00-0  | Pyrene                     | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 85-68-7   | Butylbenzylphthalate       | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 117-81-7  | bis(2-Ethylhexyl)phthalate | J         | 4.56   | ug/L  | 3.00    | 10.0    |
| 56-55-3   | Benzo(a)anthracene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 218-01-9  | Chrysene                   | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 117-84-0  | Di-n-octylphthalate        | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 205-99-2  | Benzo(b)fluoranthene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 207-08-9  | Benzo(k)fluoranthene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 50-32-8   | Benzo(a)pyrene             | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 193-39-5  | Indeno(1,2,3-cd)pyrene     | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 53-70-3   | Dibenzo(a,h)anthracene     | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 191-24-2  | Benzo(ghi)perylene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 100-52-7  | Benzaldehyde               | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 98-86-2   | Acetophenone               | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 105-60-2  | Caprolactam                | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 92-52-4   | 1,1'-Biphenyl              | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 1912-24-9 | Atrazine                   | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 91-94-1   | 3,3'-Dichlorobenzidine     | U         | 3.00   | ug/L  | 3.00    | 10.0    |

# **Quality Control Summary**

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**Semi-Volatile**  
**Surrogate Recovery Report**

Page 1 of 1

**SDG Number: 284538****Matrix Type: LIQUID**

| Sample ID  | Client ID             | 2FP<br>%REC | PHL<br>%REC | NBZ<br>%REC | FBP<br>%REC | TBP<br>%REC | TPH<br>%REC |
|------------|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1202473715 | MB for batch 1135986  | 49          | 28          | 88          | 88          | 102         | 112         |
| 1202473716 | LCS for batch 1135986 | 50          | 29          | 78          | 85          | 107         | 88          |
| 284538001  | 11080101              | 41          | 24          | 75          | 72          | 90          | 60          |
| 1202473718 | 11080101MSD           | 45          | 34          | 66          | 69          | 59          | 62          |
| 1202473717 | 11080101MS            | 31          | 26          | 68          | 74          | 14 *        | 63          |

**Surrogate****Acceptance Limits**

|     |                        |            |
|-----|------------------------|------------|
| 2FP | = 2-Fluorophenol       | (14%-78%)  |
| PHL | = Phenol-d5            | (14%-80%)  |
| NBZ | = Nitrobenzene-d5      | (40%-117%) |
| FBP | = 2-Fluorobiphenyl     | (37%-102%) |
| TBP | = 2,4,6-Tribromophenol | (33%-126%) |
| TPH | = p-Terphenyl-d14      | (44%-134%) |

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted



Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

Page 1 of 1

SDG Number: 284538

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1135986

Matrix: GROUND WATER

Lab Sample ID: 1202473716

Instrument: MSD3.I

Analysis Date: 08/26/2011 11:49

Dilution: 1

Analyst: JLD1

Prep Batch ID: 1135986

Inj. Vol: 1 uL

Batch ID: 1135988

| CAS No   | Parmname                    | Amount<br>Added<br>ug/L | Sample<br>Conc.<br>ug/L | Spike<br>Conc.<br>ug/L | Recovery<br>% | Acceptance<br>Limits |
|----------|-----------------------------|-------------------------|-------------------------|------------------------|---------------|----------------------|
| 108-95-2 | LCS Phenol                  | 50.0                    | 0.0                     | 15.0                   | 30            | 15-103               |
| 95-57-8  | LCS 2-Chlorophenol          | 50.0                    | 0.0                     | 40.3                   | 81            | 49-98                |
| 621-64-7 | LCS N-Nitrosodipropylamine  | 50.0                    | 0.0                     | 37.0                   | 74            | 50-114               |
| 59-50-7  | LCS 4-Chloro-3-methylphenol | 50.0                    | 0.0                     | 43.2                   | 86            | 55-107               |
| 121-14-2 | LCS 2,4-Dinitrotoluene      | 50.0                    | 0.0                     | 57.8                   | 116           | 58-118               |
| 83-32-9  | LCS Acenaphthene            | 50.0                    | 0.0                     | 39.0                   | 78            | 50-96                |
| 100-02-7 | LCS 4-Nitrophenol           | 50.0                    | 0.0                     | 17.3                   | 35            | 15-103               |
| 87-86-5  | LCS Pentachlorophenol       | 50.0                    | 0.0                     | 44.6                   | 89            | 40-107               |
| 129-00-0 | LCS Pyrene                  | 50.0                    | 0.0                     | 41.2                   | 82            | 53-113               |

Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

Page 1 of 2

SDG Number: 284538

Sample Type: Matrix Spike

Client ID: 11080101MS

Matrix: GROUND WATER

Lab Sample ID: 1202473717

Instrument: MSD3.I

Analysis Date: 08/26/2011 17:18

Dilution: 1

Analyst: JLD1

Prep Batch ID: 1135986

Inj. Vol: 1 uL

Batch ID: 1135988

| CAS No   | Parmname                   | Amount<br>Added<br>ug/L | Sample<br>Conc.<br>ug/L | Spike<br>Conc.<br>ug/L | Recovery<br>% | Acceptance<br>Limits |
|----------|----------------------------|-------------------------|-------------------------|------------------------|---------------|----------------------|
| 108-95-2 | MS Phenol                  | 100                     | 0.00                    | U 26.7                 | 27 *          | 31-137               |
| 95-57-8  | MS 2-Chlorophenol          | 100                     | 0.00                    | U 24.4                 | 24 *          | 43-106               |
| 621-64-7 | MS N-Nitrosodipropylamine  | 100                     | 0.00                    | U 60.9                 | 61            | 45-120               |
| 59-50-7  | MS 4-Chloro-3-methylphenol | 100                     | 0.00                    | U 40.2                 | 40 *          | 47-117               |
| 121-14-2 | MS 2,4-Dinitrotoluene      | 100                     | 0.00                    | U 85.5                 | 85            | 52-117               |
| 83-32-9  | MS Acenaphthene            | 100                     | 0.00                    | U 67.4                 | 67            | 45-103               |
| 100-02-7 | MS 4-Nitrophenol           | 100                     | 0.00                    | U 29.0                 | 29 *          | 39-96                |
| 87-86-5  | MS Pentachlorophenol       | 100                     | 0.00                    | U 9.42                 | 9 *           | 35-116               |
| 129-00-0 | MS Pyrene                  | 100                     | 0.00                    | U 68.2                 | 68            | 42-125               |

Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

Page 2 of 2

SDG Number: 284538

Client ID: 11080101MSD

Lab Sample ID: 1202473718

Instrument: MSD3.I

Analyst: JLD1

Inj. Vol: 1 uL

Sample Type: Matrix Spike Duplicate

Matrix: GROUND WATER

Analysis Date: 08/26/2011 13:57

Dilution: 1

Prep Batch ID: 1135986

Batch ID: 1135988

| CAS No   | Parmname                    | Amount<br>Added<br>ug/L | Sample<br>Conc.<br>ug/L |   | Spike<br>Conc.<br>ug/L | Recovery<br>% | Acceptance<br>Limits | RPD<br>% | Acceptance<br>Limits |
|----------|-----------------------------|-------------------------|-------------------------|---|------------------------|---------------|----------------------|----------|----------------------|
| 108-95-2 | MSD Phenol                  | 100                     | 0.00                    | U | 35.8                   | 36            | 31-137               | 29 *     | 0-25                 |
| 95-57-8  | MSD 2-Chlorophenol          | 100                     | 0.00                    | U | 57.3                   | 57            | 43-106               | 81 *     | 0-25                 |
| 621-64-7 | MSD N-Nitrosodipropylamine  | 100                     | 0.00                    | U | 61.6                   | 62            | 45-120               | 1        | 0-28                 |
| 59-50-7  | MSD 4-Chloro-3-methylphenol | 100                     | 0.00                    | U | 71.3                   | 71            | 47-117               | 56 *     | 0-25                 |
| 121-14-2 | MSD 2,4-Dinitrotoluene      | 100                     | 0.00                    | U | 96.5                   | 96            | 52-117               | 12       | 0-23                 |
| 83-32-9  | MSD Acenaphthene            | 100                     | 0.00                    | U | 67.4                   | 67            | 45-103               | 0        | 0-29                 |
| 100-02-7 | MSD 4-Nitrophenol           | 100                     | 0.00                    | U | 33.9                   | 34 *          | 39-96                | 16       | 0-25                 |
| 87-86-5  | MSD Pentachlorophenol       | 100                     | 0.00                    | U | 36.4                   | 36            | 35-116               | 118 *    | 0-25                 |
| 129-00-0 | MSD Pyrene                  | 100                     | 0.00                    | U | 67.9                   | 68            | 42-125               | 0        | 0-25                 |

## Method Blank Summary

Page 1 of 1

|                |                      |                |                  |            |                     |
|----------------|----------------------|----------------|------------------|------------|---------------------|
| SDG Number:    | 284538               | Client:        | ECOL008          | Matrix:    | GROUND WATER        |
| Client ID:     | MB for batch 1135986 | Instrument ID: | MSD3.I           | Data File: | s082611.B\s3h2608.D |
| Lab Sample ID: | 1202473715           | Prep Date:     | 08/25/2011 18:55 | Analyzed:  | 08/26/11 11:24      |
| Column:        | DB-5ms               |                |                  |            |                     |

This method blank applies to the following samples and quality control samples:

| Client Sample ID         | Lab Sample ID | File ID             | Date Analyzed | Time Analyzed |
|--------------------------|---------------|---------------------|---------------|---------------|
| 01 LCS for batch 1135986 | 1202473716    | s082611.B\s3h2609.D | 08/26/11      | 1149          |
| 02 11080101              | 284538001     | s082611.B\s3h2612.D | 08/26/11      | 1307          |
| 03 11080101MSD           | 1202473718    | s082611.B\s3h2614.D | 08/26/11      | 1357          |
| 04 11080101MS            | 1202473717    | s082611.B\s3h2622.D | 08/26/11      | 1718          |

## Instrument Performance Check

## DFTPP

Lab Name GEL Laboratories LLC

Client SDG: 284538

Instrument ID: MSD3.I

Injection Date/Time: 12-AUG-11 08:54

Column Description: DB-5ms

Lab File ID s081211.B\s3h1202.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 51  | 10 - 80% of mass 198               | 58.6                 |
| 68  | Less than 2% of mass 69            | 1.4                  |
| 69  | Mass 69 Relative Abundance         | 43.6                 |
| 70  | Less than 2% of mass 69            | 0.5                  |
| 127 | 10 - 80% of mass 198               | 50.1                 |
| 197 | Less than 2% of mass 198           | 0                    |
| 198 | Base Peak, 100% Relative Abundance | 100                  |
| 199 | 5 - 9% of mass 198                 | 6.7                  |
| 275 | 10 - 60% of mass 198               | 24                   |
| 365 | Greater than 1% of mass 198        | 3.4                  |
| 441 | Less than 24% of mass 442          | 16.1                 |
| 442 | Greater than 50% of mass 198       | 93.5                 |
| 443 | 15 - 24% of mass 442               | 21.2                 |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID  | Lab File ID         | Time Analyzed   |
|------------------|----------------|---------------------|-----------------|
| ICALMIX[B]       | WBN110719-17   | s081211.B\s3h1215.D | 12-AUG-11 15:29 |
| ICALMIX[B]       | WBN110719-16   | s081211.B\s3h1216.D | 12-AUG-11 15:53 |
| ICALMIX[B]       | WBN110719-15.1 | s081211.B\s3h1217.D | 12-AUG-11 16:18 |
| ICALMIX[B]       | WBN110719-14   | s081211.B\s3h1218.D | 12-AUG-11 16:42 |
| ICALMIX[B]       | WBN110719-13   | s081211.B\s3h1219.D | 12-AUG-11 17:07 |
| ICALMIX[B]       | WBN110719-12   | s081211.B\s3h1220.D | 12-AUG-11 17:32 |
| ICALMIX[B]       | WBN110719-11   | s081211.B\s3h1221.D | 12-AUG-11 17:57 |
| ICVMIX[B]01      | WBN110809-18.1 | s081211.B\s3h1222.D | 12-AUG-11 18:22 |

## Instrument Performance Check

## DFTPP

Lab Name GEL Laboratories LLC

Client SDG: 284538

Instrument ID: MSD3.I

Injection Date/Time: 13-AUG-11 05:04

Column Description: DB-5ms

Lab File ID s081211.B\s3h1248.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 51  | 10 - 80% of mass 198               | 59.9                 |
| 68  | Less than 2% of mass 69            | 1.4                  |
| 69  | Mass 69 Relative Abundance         | 44.6                 |
| 70  | Less than 2% of mass 69            | 0.5                  |
| 127 | 10 - 80% of mass 198               | 51.3                 |
| 197 | Less than 2% of mass 198           | 0.2                  |
| 198 | Base Peak, 100% Relative Abundance | 100                  |
| 199 | 5 - 9% of mass 198                 | 6.7                  |
| 275 | 10 - 60% of mass 198               | 23.4                 |
| 365 | Greater than 1% of mass 198        | 3.3                  |
| 441 | Less than 24% of mass 442          | 15.7                 |
| 442 | Greater than 50% of mass 198       | 92.6                 |
| 443 | 15 - 24% of mass 442               | 21.2                 |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID  | Lab File ID         | Time Analyzed   |
|------------------|----------------|---------------------|-----------------|
| ICALMIX[A]       | WBN110812-08   | s081211.B\s3h1258.D | 13-AUG-11 09:50 |
| ICALMIX[A]       | WBN110812-07   | s081211.B\s3h1259.D | 13-AUG-11 10:21 |
| ICALMIX[A]       | WBN110812-06   | s081211.B\s3h1260.D | 13-AUG-11 10:52 |
| ICALMIX[A]       | WBN110812-05.1 | s081211.B\s3h1261.D | 13-AUG-11 11:24 |
| ICALMIX[A]       | WBN110812-04   | s081211.B\s3h1262.D | 13-AUG-11 11:55 |
| ICALMIX[A]       | WBN110812-03   | s081211.B\s3h1263.D | 13-AUG-11 12:26 |
| ICALMIX[A]       | WBN110812-02   | s081211.B\s3h1264.D | 13-AUG-11 12:57 |
| ICALMIX[A]       | WBN110812-01   | s081211.B\s3h1265.D | 13-AUG-11 13:28 |
| ICVMIX[A]02      | WBN110812-09.1 | s081211.B\s3h1266.D | 13-AUG-11 13:59 |

## Instrument Performance Check

## DFTPP

Lab Name GEL Laboratories LLC

Client SDG: 284538

Instrument ID: MSD3.I

Injection Date/Time: 26-AUG-11 09:22

Column Description: DB-5ms

Lab File ID s082611.B\s3h2604.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 51  | 10 - 80% of mass 198               | 38.8                 |
| 68  | Less than 2% of mass 69            | 1.3                  |
| 69  | Mass 69 Relative Abundance         | 35.9                 |
| 70  | Less than 2% of mass 69            | 0.5                  |
| 127 | 10 - 80% of mass 198               | 47.9                 |
| 197 | Less than 2% of mass 198           | 0                    |
| 198 | Base Peak, 100% Relative Abundance | 100                  |
| 199 | 5 - 9% of mass 198                 | 6.7                  |
| 275 | 10 - 60% of mass 198               | 24.4                 |
| 365 | Greater than 1% of mass 198        | 3                    |
| 441 | Less than 24% of mass 442          | 15.2                 |
| 442 | Greater than 50% of mass 198       | 96.8                 |
| 443 | 15 - 24% of mass 442               | 19.1                 |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID  | Lab File ID         | Time Analyzed   |
|------------------|----------------|---------------------|-----------------|
| CCVMIX[A]01      | WBN110812-05.3 | s082611.B\s3h2605.D | 26-AUG-11 09:34 |
| CCVMIX[B]02      | WBN110809-18.3 | s082611.B\s3h2606.D | 26-AUG-11 10:06 |
| BLK01            | 1202473715     | s082611.B\s3h2608.D | 26-AUG-11 11:24 |
| BLK01LCS         | 1202473716     | s082611.B\s3h2609.D | 26-AUG-11 11:49 |
| 11080101         | 284538001      | s082611.B\s3h2612.D | 26-AUG-11 13:07 |
| 11080101MSD      | 1202473718     | s082611.B\s3h2614.D | 26-AUG-11 13:57 |
| 11080101MS       | 1202473717     | s082611.B\s3h2622.D | 26-AUG-11 17:18 |

Internal Standard

Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 284538

Instrument: MSD3.I

STD Analysis Time: 26-AUG-11 09:34

GC Column: DB-5ms

Data File: s082611.B\s3h2605.D

|             | 1,4-Dichlorobenzene-d4 |        | Naphthalene-d8 |        | Acenaphthene-d10 |        | Phenanthrene-d10 |        | Chrysene-d12 |        | Perylene-d12 |        |
|-------------|------------------------|--------|----------------|--------|------------------|--------|------------------|--------|--------------|--------|--------------|--------|
|             | Area                   | # RT # | Area           | # RT # | Area             | # RT # | Area             | # RT # | Area         | # RT # | Area         | # RT # |
| 12 Hour STD | 520022                 | 4.9    | 2079837        | 6.18   | 1019046          | 8.06   | 1833310          | 9.67   | 1340846      | 12.7   | 926118       | 15.1   |
| Upper Limit | 1040044                | 5.4    | 4159674        | 6.68   | 2038092          | 8.56   | 3666620          | 10.2   | 2681692      | 13.2   | 1852236      | 15.6   |
| Lower Limit | 260011                 | 4.4    | 1039919        | 5.68   | 509523           | 7.56   | 916655           | 9.17   | 670423       | 12.2   | 463059       | 14.6   |
| Sample ID   |                        |        |                |        |                  |        |                  |        |              |        |              |        |
| BLK01       | 441882                 | 4.89   | 1599052        | 6.18   | 827843           | 8.05   | 1396617          | 9.66   | 788805       | 12.7   | 556659       | 15.1   |
| BLK01LCS    | 464442                 | 4.9    | 1841128        | 6.18   | 892778           | 8.05   | 1581375          | 9.67   | 1098909      | 12.7   | 709470       | 15.1   |
| I1080101    | 491404                 | 4.89   | 1752130        | 6.17   | 912985           | 8.05   | 1517756          | 9.66   | 952221       | 12.7   | 601876       | 15.1   |
| I1080101MSD | 514946                 | 4.89   | 2002021        | 6.18   | 965901           | 8.05   | 1665873          | 9.67   | 1118891      | 12.7   | 744995       | 15.1   |
| I1080101MS  | 479448                 | 4.89   | 1831235        | 6.18   | 825095           | 8.05   | 1298083          | 9.67   | 1073331      | 12.7   | 579836       | 15.1   |

Area Upper Limit = +100% of internal standard area  
Area Lower Limit = - 50% of internal standard area  
RT Upper Limit = + 0.50 minutes of internal standard RT  
RT Lower Limit = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk  
\* Value outside of QC Limits



# Sample Data

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

**SDG Number:** 284538  
**Lab Sample ID:** 284538001

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50  
**Client:** ECOL008  
**Method:** SW846 3510C/8270D  
**Inst:** MSD3.I  
**Analyst:** JLD1  
**Aliquot:** 1000 mL  
**Column:** DB-5ms

**Matrix:** GROUND WATER  
**Project:** ECOL00111  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

**Client ID:** 11080101  
**Batch ID:** 1135988  
**Run Date:** 08/26/2011 13:07  
**Prep Date:** 08/25/2011 18:55  
**Data File:** s082611.B\s3h2612.D

| CAS No.    | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-95-2   | Phenol                      | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 111-44-4   | bis(2-Chloroethyl) ether    | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 95-57-8    | 2-Chlorophenol              | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 95-48-7    | o-Cresol                    | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 65794-96-9 | m,p-Cresols                 | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 621-64-7   | N-Nitrosodipropylamine      | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 67-72-1    | Hexachloroethane            | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 98-95-3    | Nitrobenzene                | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 78-59-1    | Isophorone                  | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 88-75-5    | 2-Nitrophenol               | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 105-67-9   | 2,4-Dimethylphenol          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 111-91-1   | bis(2-Chloroethoxy)methane  | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 120-83-2   | 2,4-Dichlorophenol          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 106-47-8   | 4-Chloroaniline             | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 87-68-3    | Hexachlorobutadiene         | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 59-50-7    | 4-Chloro-3-methylphenol     | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 91-57-6    | 2-Methylnaphthalene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 91-20-3    | Naphthalene                 | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 77-47-4    | Hexachlorocyclopentadiene   | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 88-06-2    | 2,4,6-Trichlorophenol       | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 95-95-4    | 2,4,5-Trichlorophenol       | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 91-58-7    | 2-Chloronaphthalene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 88-74-4    | o-Nitroaniline              | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 99-09-2    | m-Nitroaniline              | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 131-11-3   | Dimethylphthalate           | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 606-20-2   | 2,6-Dinitrotoluene          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 121-14-2   | 2,4-Dinitrotoluene          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 208-96-8   | Acenaphthylene              | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 83-32-9    | Acenaphthene                | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 51-28-5    | 2,4-Dinitrophenol           | U         | 5.00   | ug/L  | 5.00    | 20.0    |
| 132-64-9   | Dibenzofuran                | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 58-90-2    | 2,3,4,6-Tetrachlorophenol   | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 84-66-2    | Diethylphthalate            | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 100-02-7   | 4-Nitrophenol               | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 86-73-7    | Fluorene                    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 7005-72-3  | 4-Chlorophenylphenylether   | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 100-01-6   | p-Nitroaniline              | U         | 3.00   | ug/L  | 3.00    | 10.0    |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 2 of 2

**SDG Number:** 284538  
**Lab Sample ID:** 284538001

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50  
**Client:** ECOL008  
**Method:** SW846 3510C/8270D  
**Inst:** MSD3.I  
**Analyst:** JLD1  
**Aliquot:** 1000 mL  
**Column:** DB-5ms

**Matrix:** GROUND WATER  
**Project:** ECOL00111  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 122-39-4  | Diphenylamine              | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 101-55-3  | 4-Bromophenylphenylether   | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 118-74-1  | Hexachlorobenzene          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 87-86-5   | Pentachlorophenol          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 85-01-8   | Phenanthrene               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 120-12-7  | Anthracene                 | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 86-74-8   | Carbazole                  | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 84-74-2   | Di-n-butylphthalate        | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 206-44-0  | Fluoranthene               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 129-00-0  | Pyrene                     | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 85-68-7   | Butylbenzylphthalate       | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 117-81-7  | bis(2-Ethylhexyl)phthalate | J         | 4.56   | ug/L  | 3.00    | 10.0    |
| 56-55-3   | Benzo(a)anthracene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 218-01-9  | Chrysene                   | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 117-84-0  | Di-n-octylphthalate        | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 205-99-2  | Benzo(b)fluoranthene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 207-08-9  | Benzo(k)fluoranthene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 50-32-8   | Benzo(a)pyrene             | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 193-39-5  | Indeno(1,2,3-cd)pyrene     | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 53-70-3   | Dibenzo(a,h)anthracene     | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 191-24-2  | Benzo(ghi)perylene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 100-52-7  | Benzaldehyde               | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 98-86-2   | Acetophenone               | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 105-60-2  | Caprolactam                | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 92-52-4   | 1,1'-Biphenyl              | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 1912-24-9 | Atrazine                   | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 91-94-1   | 3,3'-Dichlorobenzidine     | U         | 3.00   | ug/L  | 3.00    | 10.0    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2612.D  
Acq On : 26 Aug 2011 13:07  
Operator : JLD1  
InstName : MSD 3  
Sample : |284538001|1135988|1|SVM|1|ECOL  
Misc : |MSD1C70D\_L|UBN110329-01.4|MIX[A,B]  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 26 13:58:31 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.893  | 4.896  | 1.000  | 491404   | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.174  | 6.180  | 1.000  | 1752130  | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 8.050  | 8.056  | 1.000  | 912985   | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.664  | 9.670  | 1.000  | 1517756  | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.693 | 12.704 | 1.000  | 952221   | 40.00 | ng/uL | -0.01    |
| 91) A Perylene-d12            | 264  | 15.054 | 15.066 | 1.000  | 601876   | 40.00 | ng/uL | -0.01    |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.893  | 4.896  | 1.000  | 491404   | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.174  | 6.180  | 1.000  | 1752130  | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 8.050  | 8.056  | 1.000  | 912985   | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.664  | 9.670  | 1.000  | 1517756  | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.693 | 12.704 | 1.000  | 952221   | 40.00 | ng/uL | -0.01    |
| 153) B Perylene-d12           | 264  | 15.054 | 15.066 | 1.000  | 601876   | 40.00 | ng/uL | -0.01    |
| 156) D Naphthalene-d8         | 136  | 6.174  | 6.180  | 1.000  | 1752130  | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 8.050  | 8.056  | 1.000  | 912985   | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.664  | 9.670  | 1.000  | 1517756  | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.693 | 12.704 | 1.000  | 952221   | 40.00 | ng/uL | -0.01    |
| 170) E Naphthalene-d8         | 136  | 6.174  | 6.180  | 1.000  | 1754444  | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 15.054 | 15.066 | 1.000  | 601876   | 40.00 | ng/uL | -0.01    |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.893  | 4.896  | 1.000  | 491404   | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.174  | 6.180  | 1.000  | 1752130  | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 8.050  | 8.056  | 1.000  | 912985   | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.664  | 9.670  | 1.000  | 1517756  | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.693 | 12.704 | 1.000  | 952221   | 40.00 | ng/uL | -0.01    |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.893  | 4.896  | 1.000  | 491404   | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.174  | 6.180  | 1.000  | 1752130  | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.693 | 12.704 | 1.000  | 952221   | 40.00 | ng/uL | -0.01    |
| 199) J Perylene-d12           | 264  | 15.054 | 15.066 | 1.000  | 601876   | 40.00 | ng/uL | -0.01    |

|                             |     |        |        |       |         |       |       |          |
|-----------------------------|-----|--------|--------|-------|---------|-------|-------|----------|
| System Monitoring Compounds |     |        |        |       |         |       |       | Dev(Min) |
| 5) 2-Fluorophenol           | 112 | 3.714  | 3.676  | 0.759 | 657862  | 41.05 | ng/uL | 0.04     |
| 8) Phenol-d5                | 99  | 4.484  | 4.484  | 0.916 | 494935  | 24.35 | ng/uL | 0.00     |
| 25) Nitrobenzene-d5         | 82  | 5.430  | 5.423  | 0.879 | 581231  | 37.47 | ng/uL | 0.00     |
| 47) 2-Fluorobiphenyl        | 172 | 7.303  | 7.299  | 0.907 | 1200795 | 35.97 | ng/uL | 0.00     |
| 66) 2,4,6-Tribromophenol    | 330 | 8.899  | 8.920  | 1.106 | 344672  | 89.81 | ng/uL | -0.02    |
| 83) p-Terphenyl-d14         | 244 | 11.371 | 11.400 | 0.896 | 722124  | 29.86 | ng/uL | -0.03    |

| Compound                 | Amount  | Range    | Recovery |
|--------------------------|---------|----------|----------|
| 5) 2-Fluorophenol        | 100.000 | 14 - 78  | 41.05%   |
| 8) Phenol-d5             | 100.000 | 14 - 80  | 24.35%   |
| 25) Nitrobenzene-d5      | 50.000  | 40 - 117 | 74.94%   |
| 47) 2-Fluorobiphenyl     | 50.000  | 37 - 102 | 71.94%   |
| 66) 2,4,6-Tribromophenol | 100.000 | 33 - 126 | 89.81%   |
| 83) p-Terphenyl-d14      | 50.000  | 44 - 134 | 59.72%   |

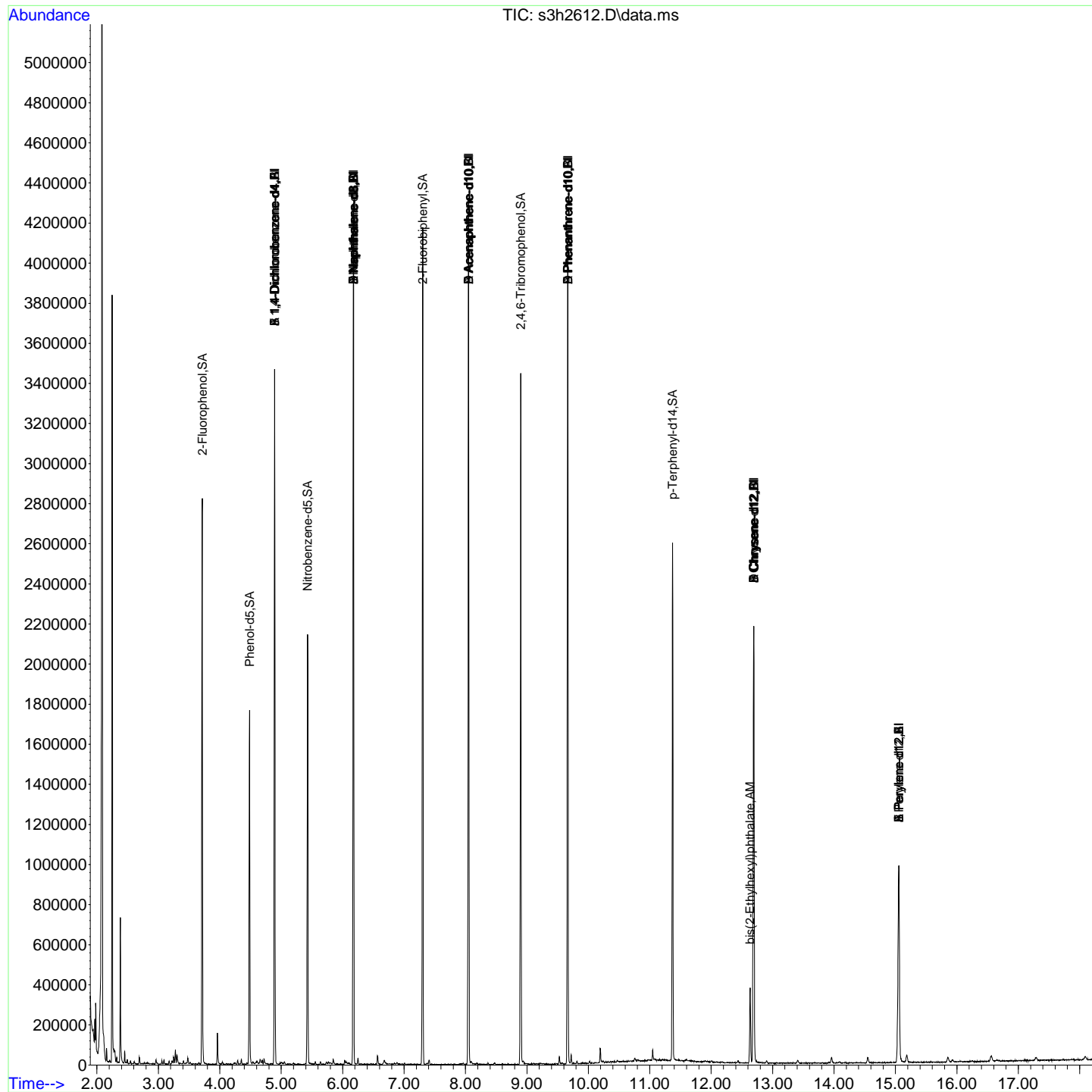
| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 85) bis(2-Ethylhexyl)phtha... | 149  | 12.633 | 12.658 | 0.995  | 121830   | 4.56 | ng/uL | 97     |

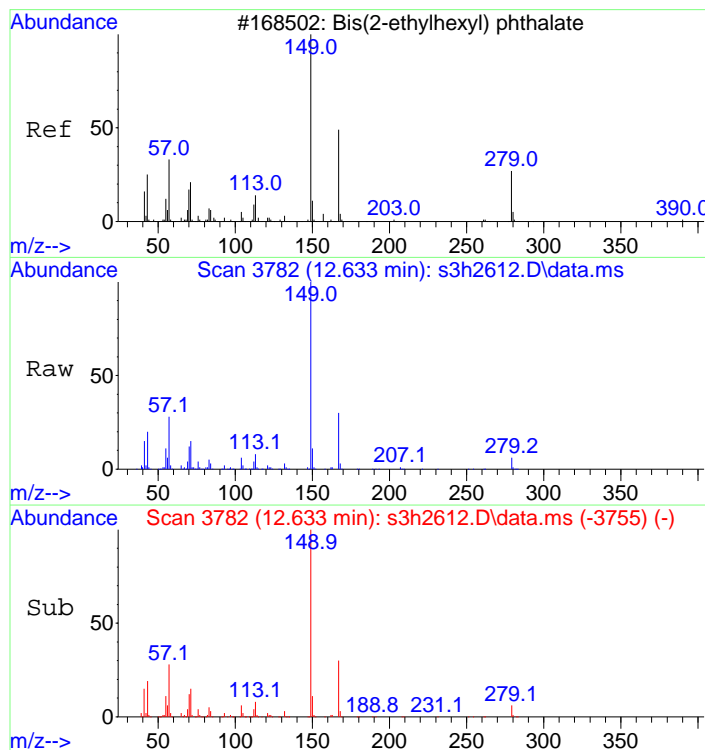
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2612.D  
Acq On : 26 Aug 2011 13:07  
Operator : JLD1  
InstName : MSD 3  
Sample : |284538001|1135988|1|SVM|1|ECOL  
Misc : |MSD1C70D\_L|UBN110329-01.4|MIX[A,B]  
ALS Vial : 9 Sample Multiplier: 1

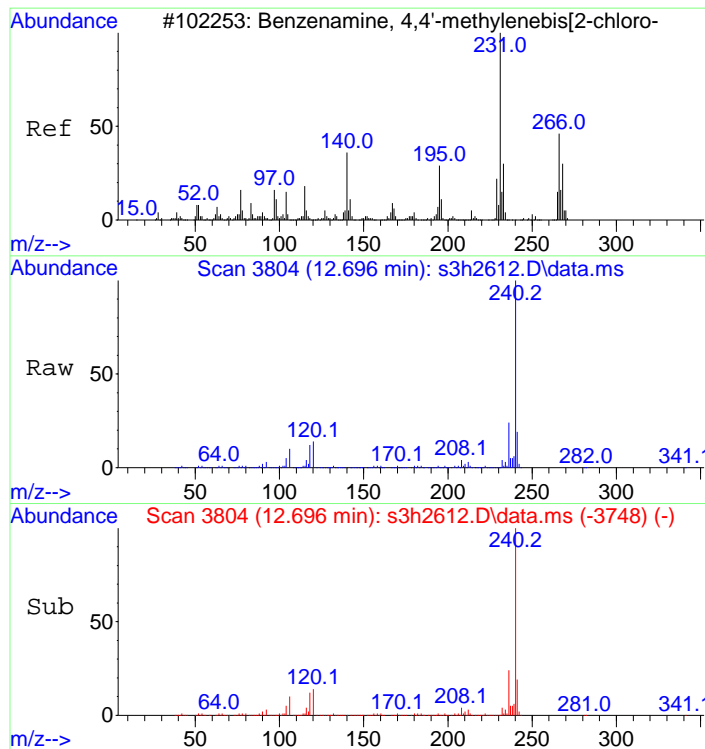
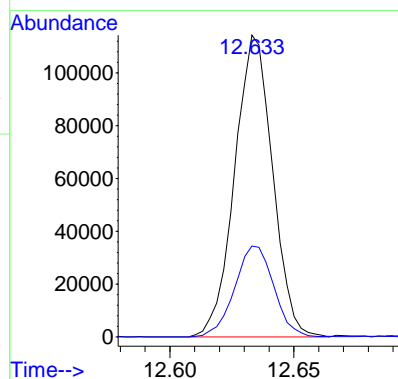
Quant Time: Aug 26 13:58:31 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE





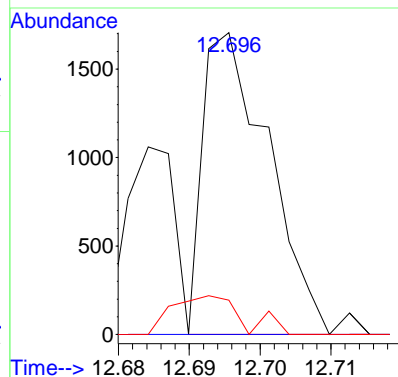
#85  
bis(2-Ethylhexyl)phthalate  
Concen: 4.56 ng/uL  
RT: 12.633 min Scan# 3782  
Delta R.T. -0.025 min  
Lab File: s3h2612.D  
Acq: 26 Aug 2011 13:07

| Tgt Ion | Ratio | Resp   | Lower | Upper |
|---------|-------|--------|-------|-------|
| 149     | 100   | 121830 |       |       |
| 167     | 31.2  | 2.6    | 62.6  |       |



#89 BEFORE analyst DELETION  
Methylenebis(2-chloroaniline)  
Concen: 5.79 ng/uL  
RT: 12.696 min Scan# 3804  
Delta R.T. 0.060 min  
Lab File: s3h2612.D  
Acq: 26 Aug 2011 13:07

| Tgt Ion | Ratio | Resp | Lower | Upper |
|---------|-------|------|-------|-------|
| 231     | 100   | 1101 |       |       |
| 266     | 0.0   | 29.2 | 89.2# |       |
| 140     | 0.0   | 13.0 | 73.0# |       |



# Standards

|   |         |         |         |          |         |         |         |         |  |
|---|---------|---------|---------|----------|---------|---------|---------|---------|--|
| SW846 8270/EPA 625                            |         |         |         |          |         |         |         |         |  |
| Calibration Standard Concentration Levels*    |         |         |         |          |         |         |         |         |  |
| MEGA MIX                                      | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 |  |
| 1,4-Dichlorobenzene-d4 (INTERNAL STANDARD)    |         |         |         |          |         |         |         |         |  |
| Naphthalene-d8 (INTERNAL STANDARD)            |         |         |         |          |         |         |         |         |  |
| Acenaphthene-d10 (INTERNAL STANDARD)          |         |         |         |          |         |         |         |         |  |
| Phenanthrene-d10 (INTERNAL STANDARD)          |         |         |         |          |         |         |         |         |  |
| Chrysene-d12 (INTERNAL STANDARD)              |         |         |         |          |         |         |         |         |  |
| Perylene-d12 (INTERNAL STANDARD)              |         |         |         |          |         |         |         |         |  |
| 2-Fluorophenol (SURROGATE)                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| Phenol-d5 (SURROGATE)                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| 2-Chlorophenol-d4 (CLP SURROGATE)             |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| 1,2-Dichlorobenzene-d4 (CLP SURROGATE)        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| Nitrobenzene-d5 (SURROGATE)                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| 2-Fluorobiphenyl (SURROGATE)                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| 2,4,6-Tribromophenol (SURROGATE)              |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| p-Terphenyl-d14 (SURROGATE)                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| N-Nitrosodimethylamine                        | 1**     | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| Pyridine                                      |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| Aniline                                       |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| Phenol  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| bis(2-Chloroethyl)ether                       |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| 2-Chlorophenol                                |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| n-Decane                                      |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| 1,3-Dichlorobenzene                           |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| 1,4-Dichlorobenzene                           |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| Benzyl Alcohol                                |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| 1,2-Dichlorobenzene                           |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| bis(2-Chloroisopropyl)ether                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| o-Cresol (2-Methylphenol)                     |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| N-Nitrosodipropylamine                        | 1**     | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| m,p-Cresols (3-Methylphenol & 4-Methylphenol) |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| Hexachloroethane                              |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| Nitrobenzene                                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| Isophorone                                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| 2-Nitrophenol                                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| 2,4-Dimethylphenol                            |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| bis(2-Chloroethoxy)methane                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| 2,4-Dichlorophenol                            |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| Benzoic Acid                                  |         |         | 20      | 40       | 50      | 80      | 100     | 120     |  |
| 1,2,4-Trichlorobenzene                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| Naphthalene                                   | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| alpha-Terpineol                               |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| 4-Chloroaniline                               |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |

|  |         |         |         |          |         |         |         |         |  |
|--|---------|---------|---------|----------|---------|---------|---------|---------|--|
| SW846 8270/EPA 625                         |         |         |         |          |         |         |         |         |  |
| Calibration Standard Concentration Levels* |         |         |         |          |         |         |         |         |  |
| MEGA MIX                                   | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 |  |
| Hexachlorobutadiene                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| 4-Chloro-3-methylphenol                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |
| 2-Methylnaphthalene                        | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     |  |



|                              |     |    |    |    |    |    |     |     |
|------------------------------|-----|----|----|----|----|----|-----|-----|
| 1-Methylnaphthalene          | 1   | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Hexachlorocyclopentadiene    |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 2,3-Dichloroaniline          |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 2,4,6-Trichlorophenol        |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 2,4,5-Trichlorophenol        |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 2-Chloronaphthalene          | 1   | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| o-Nitroaniline               |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| m-Nitroaniline               |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Dimethylphthalate            | 1** | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 2,6-Dinitrotoluene           |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Acenaphthylene               | 1   | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Acenaphthene                 | 1   | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 2,4-Dinitrophenol            |     |    | 20 | 40 | 50 | 80 | 100 | 120 |
| Dibenzofuran                 |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 2,4-Dinitrotoluene           |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Diethylphthalate             | 1** | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 4-Nitrophenol                |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Fluorene                     | 1   | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 4-Chlorophenyl phenyl ether  |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 2-Methyl-4,6-dinitrophenol   |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| p-Nitroaniline               |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Diphenylamine                |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 1,2-Diphenylhydrazine        |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 4-Bromophenyl phenylether    |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Hexachlorobenzene            |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Pentachlorophenol            |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| n-Octadecane                 |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Phenanthrene                 | 1   | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Anthracene                   | 1   | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Di-n-butylphthalate          | 1** | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Fluoranthene                 | 1   | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Pyrene                       | 1   | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Butylbenzylphthalate         | 1** | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Benzo(a)anthracene           | 1   | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Chrysene                     | 1   | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| bis (2-Ethylhexyl) phthalate | 1   | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Di-n-octylphthalate          | 1** | 10 | 20 | 40 | 50 | 80 | 100 | 120 |

| SW846 8270/EPA 625                         |         |         |         |          |         |         |         |         |
|--|---------|---------|---------|----------|---------|---------|---------|---------|
| Calibration Standard Concentration Levels* |         |         |         |          |         |         |         |         |
| MEGA MIX                                   | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 |
| Benzo(b)fluoranthene                       | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Benzo(k)fluoranthene                       | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Benzo(a)pyrene                             | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Indeno-(1,2,3-cd)pyrene                    | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Dibenzo(a,h)anthracene                     | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Benzo(ghi)perylene                         | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| m-Dinitrobenzene                           |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 2,3,4,6-Tetrachlorophenol                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Dinoseb                                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Carbazole                                  | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     |

|                               |     |    |    |    |    |    |     |     |
|-------------------------------|-----|----|----|----|----|----|-----|-----|
| p-Benzoquinone                |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Methoxychlor                  | 1** | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| p-Toluidine                   |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| m-Toluidine                   |     | 10 | 20 | 40 | 50 | 80 | 10  | 120 |
| 1,4-Dinitrobenzene            |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 2-Ethoxyethanol               |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Phthalic anhydride            |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Methylenebis(2-chloroaniline) |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Dibenzo(a,e)pyrene            |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |

|  |         |         |         |          |         |         |         |         |
|--|---------|---------|---------|----------|---------|---------|---------|---------|
| SW846 8270/EPA 625                         |         |         |         |          |         |         |         |         |
| Calibration Standard Concentration Levels* |         |         |         |          |         |         |         |         |
| AP MIX                                     | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 |
| Benzaldehyde                               |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Acetophenone                               |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Caprolactam                                |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 1,1'-Biphenyl                              |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Atrazine                                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Benzidine                                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 3,3'-Dichlorobenzidine                     |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 1,4-Dioxane                                |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Methyl methacrylate                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Ethyl methacrylate                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 2-Picoline                                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| N-Nitrosomethylethylamine                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Methyl methanesulfonate                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| N-Nitrosodiethylamine                      |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Ethyl methanesulfonate                     |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Pentachloroethane                          |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| N-Nitrosopyrrolidine                       |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| N-Nitrosomorpholine                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| o-Toluidine                                |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| N-Nitrosopiperidine                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| a,a-Dimethylphenethylamine                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 2,6-Dichlorophenol                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |

|  |         |         |         |          |         |         |         |         |
|--|---------|---------|---------|----------|---------|---------|---------|---------|
| SW846 8270/EPA 625                         |         |         |         |          |         |         |         |         |
| Calibration Standard Concentration Levels* |         |         |         |          |         |         |         |         |
| AP MIX                                     | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 |
| Hexachloropropene                          |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| p-Phenylenediamine                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| N-Nitrosodi-n-butylamine                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Safrole                                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 1,2,4,5-Tetrachlorobenzene                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Isosafrole                                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 1,4-Naphthoquinone                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Pentachlorobenzene                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 1-Naphthylamine                            |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 2-Naphthylamine                            |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 5-Nitro-o-toluidine                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 1,3,5-Trinitrobenzene                      |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Phenacetin                                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Diallate                                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| cis-Diallate                               |         | 1.5     | 3       | 6        | 7.5     | 12      | 15      | 18      |
| trans-Diallate                             |         | 8.5     | 17      | 34       | 42      | 68      | 85      | 102     |
| 4-Aminobiphenyl                            |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |

|                                |     |    |    |    |    |    |     |     |
|--------------------------------|-----|----|----|----|----|----|-----|-----|
| Pentachloronitrobenzene        |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Pronamide                      |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 4-Nitroquinoline oxide         |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Methapyrilene                  | 1** | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Isodrin                        | 1** | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Aramite                        |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Kepone                         | 1** | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| p-(Dimethylamino)azobenzene    |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| Chlorobenzilate                |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 3,3'-Dimethylbenzidine         |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 2-Acetylaminofluorene          |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 7,12-Dimethylbenz(a)anthracene |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
| 3-Methylcholanthrene           |     | 10 | 20 | 40 | 50 | 80 | 100 | 120 |

|  |         |         |         |          |         |         |         |         |
|--|---------|---------|---------|----------|---------|---------|---------|---------|
| SW846 8270/EPA 625                         |         |         |         |          |         |         |         |         |
| Calibration Standard Concentration Levels* |         |         |         |          |         |         |         |         |
|  | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 |
| Hexachlorophene                            |         | 500     | 1000    | 1250     | 1500    | 1750    | 2000    |         |

|  |         |         |         |          |         |         |         |         |
|--|---------|---------|---------|----------|---------|---------|---------|---------|
| SW846 8270/EPA 625                         |         |         |         |          |         |         |         |         |
| Calibration Standard Concentration Levels* |         |         |         |          |         |         |         |         |
| PEST MIX                                   | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 |
| Tributylphosphate                          |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Triethylphosphorothioate                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Thionazin                                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Sulfotepp                                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Phorate                                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Dimethoate                                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Disulfoton                                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Methyl parathion                           |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Famphur                                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Parathion                                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |

|  |         |         |         |          |         |         |         |         |
|--|---------|---------|---------|----------|---------|---------|---------|---------|
| SW846 8270/EPA 625                         |         |         |         |          |         |         |         |         |
| Calibration Standard Concentration Levels* |         |         |         |          |         |         |         |         |
| NEVADA MIX                                 | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 |
| bis(Chloromethyl)ether                     |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 4-Chlorothiophenol                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 4-Chlorothioanisole                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Phthalic acid                              |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Hydroxymethyl phthalimide                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Diphenyl sulfide                           |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Diphenyl disulfide                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Phenyl sulfone                             |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Octachlorostyrene                          |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Thiophenol                                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 2,2'-Dichlorobenzil                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| bis(p-Chlorophenyl)disulfide               |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |

|                            |  |    |    |    |    |    |     |     |
|----------------------------|--|----|----|----|----|----|-----|-----|
| bis(p-Chlorophenyl)sulfone |  | 10 | 20 | 40 | 50 | 80 | 100 | 120 |
|----------------------------|--|----|----|----|----|----|-----|-----|

|  |         |         |         |          |         |         |         |         |
|--|---------|---------|---------|----------|---------|---------|---------|---------|
| SW846 8270C/8270D/EPA 625                  |         |         |         |          |         |         |         |         |
| Calibration Standard Concentration Levels* |         |         |         |          |         |         |         |         |
| BJCO MIX                                   | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 |
| 1-Hexanol                                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Quinoline                                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 2,4-Toluene diisocyanate                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 1-Nitropyrene                              |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 5-Methylchrysene                           |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Benzo(j)fluoranthene                       |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Dibenzo(a,h)pyrene                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Dibenzo(a,h)acridine                       |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Dibenzo(a,i)acridine                       |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Dibenzo(a,i)pyrene                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| Dibenzo(a,l)pyrene                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     |
| 7H-Dibenzo(c,g)carbazole                   |         | 10      | 20      | 40       | 50      | 80      | 10      | 120     |

All values are mg/L without the prep factor.

# Indicates the calibration verification concentration level used

\* Usual calibration levels using SCAN methodology

\*\* This analyte included in this level at special client request.

(0210/Full list)

## Calibration History Report MSD 3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m

Last Update : Mon Aug 15 15:17:29 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

Cal Lvl:1 Amt:0.00 Last Updated with: C:\msdchem\1\DATA\s081211.B\s3h1258.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Aug 2011 09:50 | A   | C:\msdchem\1\DATA\s081211.B\s3h1258.D |

Cal Lvl:2 Amt:10.00 Last Updated with: C:\msdchem\1\DATA\s081211.B\s3h1287.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Aug 2011 10:21 | A   | C:\msdchem\1\DATA\s081211.B\s3h1259.D |
| 12 Aug 2011 15:29 | B   | C:\msdchem\1\DATA\s081211.B\s3h1215.D |
| 14 Aug 2011 17:22 | D   | C:\msdchem\1\DATA\s081211.B\s3h1272.D |
| 14 Aug 2011 20:40 | E   | C:\msdchem\1\DATA\s081211.B\s3h1280.D |
| 14 Aug 2011 23:34 | F   | C:\msdchem\1\DATA\s081211.B\s3h1287.D |
| 13 Aug 2011 05:42 | J   | C:\msdchem\1\DATA\s081211.B\s3h1250.D |

Cal Lvl:3 Amt:20.00 Last Updated with: C:\msdchem\1\DATA\s081211.B\s3h1288.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Aug 2011 10:52 | A   | C:\msdchem\1\DATA\s081211.B\s3h1260.D |
| 12 Aug 2011 15:53 | B   | C:\msdchem\1\DATA\s081211.B\s3h1216.D |
| 14 Aug 2011 17:47 | D   | C:\msdchem\1\DATA\s081211.B\s3h1273.D |
| 14 Aug 2011 21:05 | E   | C:\msdchem\1\DATA\s081211.B\s3h1281.D |
| 14 Aug 2011 23:59 | F   | C:\msdchem\1\DATA\s081211.B\s3h1288.D |
| 13 Aug 2011 06:12 | J   | C:\msdchem\1\DATA\s081211.B\s3h1251.D |

Cal Lvl:4 Amt:40.00 Last Updated with: C:\msdchem\1\DATA\s081211.B\s3h1289.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Aug 2011 11:24 | A   | C:\msdchem\1\DATA\s081211.B\s3h1261.D |
| 12 Aug 2011 16:18 | B   | C:\msdchem\1\DATA\s081211.B\s3h1217.D |
| 14 Aug 2011 18:12 | D   | C:\msdchem\1\DATA\s081211.B\s3h1274.D |
| 14 Aug 2011 21:30 | E   | C:\msdchem\1\DATA\s081211.B\s3h1282.D |
| 15 Aug 2011 00:24 | F   | C:\msdchem\1\DATA\s081211.B\s3h1289.D |
| 13 Aug 2011 06:43 | J   | C:\msdchem\1\DATA\s081211.B\s3h1252.D |

Cal Lvl:5 Amt:50.00 Last Updated with: C:\msdchem\1\DATA\s081211.B\s3h1290.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Aug 2011 11:55 | A   | C:\msdchem\1\DATA\s081211.B\s3h1262.D |
| 12 Aug 2011 16:42 | B   | C:\msdchem\1\DATA\s081211.B\s3h1218.D |
| 14 Aug 2011 18:36 | D   | C:\msdchem\1\DATA\s081211.B\s3h1275.D |
| 14 Aug 2011 21:55 | E   | C:\msdchem\1\DATA\s081211.B\s3h1283.D |
| 15 Aug 2011 00:49 | F   | C:\msdchem\1\DATA\s081211.B\s3h1290.D |
| 13 Aug 2011 07:15 | J   | C:\msdchem\1\DATA\s081211.B\s3h1253.D |

Cal Lvl:6 Amt:80.00 Last Updated with: C:\msdchem\1\DATA\s081211.B\s3h1291.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Aug 2011 12:26 | A   | C:\msdchem\1\DATA\s081211.B\s3h1263.D |
| 12 Aug 2011 17:07 | B   | C:\msdchem\1\DATA\s081211.B\s3h1219.D |
| 14 Aug 2011 19:01 | D   | C:\msdchem\1\DATA\s081211.B\s3h1276.D |
| 14 Aug 2011 22:20 | E   | C:\msdchem\1\DATA\s081211.B\s3h1284.D |
| 15 Aug 2011 01:13 | F   | C:\msdchem\1\DATA\s081211.B\s3h1291.D |
| 13 Aug 2011 07:46 | J   | C:\msdchem\1\DATA\s081211.B\s3h1254.D |

## Calibration History Report MSD 3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m

Last Update : Mon Aug 15 15:17:29 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

Cal Lvl:7 Amt:100.00 Last Updated with: C:\msdchem\1\DATA\s081211.B\s3h1292.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Aug 2011 12:57 | A   | C:\msdchem\1\DATA\s081211.B\s3h1264.D |
| 12 Aug 2011 17:32 | B   | C:\msdchem\1\DATA\s081211.B\s3h1220.D |
| 14 Aug 2011 19:26 | D   | C:\msdchem\1\DATA\s081211.B\s3h1277.D |
| 14 Aug 2011 22:44 | E   | C:\msdchem\1\DATA\s081211.B\s3h1285.D |
| 15 Aug 2011 01:38 | F   | C:\msdchem\1\DATA\s081211.B\s3h1292.D |
| 13 Aug 2011 08:17 | J   | C:\msdchem\1\DATA\s081211.B\s3h1255.D |

Cal Lvl:8 Amt:120.00 Last Updated with: C:\msdchem\1\DATA\s081211.B\s3h1293.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Aug 2011 13:28 | A   | C:\msdchem\1\DATA\s081211.B\s3h1265.D |
| 12 Aug 2011 17:57 | B   | C:\msdchem\1\DATA\s081211.B\s3h1221.D |
| 14 Aug 2011 19:51 | D   | C:\msdchem\1\DATA\s081211.B\s3h1278.D |
| 15 Aug 2011 02:03 | F   | C:\msdchem\1\DATA\s081211.B\s3h1293.D |
| 13 Aug 2011 08:48 | J   | C:\msdchem\1\DATA\s081211.B\s3h1256.D |

MSD3\_8270d\_081211.m Mon Aug 15 15:22:02 2011

## Response Factor Report MSD 3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m

Last Update : Mon Aug 15 15:17:29 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b     | Compound<br>m1           | m2 | 1<br>7    | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r <sup>2</sup> |
|-------|--------------------------|----|-----------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|---------------------|
| 2)A   | 2-Ethoxyethanol          |    | 1.2185351 | 1.2340145<br>1.2308278 | 1.2181249 | 1.2348480 | 1.2471251 | 1.2308013 | 1.2306 | AVRG  |     | 0.8154              |
| 3)AM  | N-Methyl-N-nitrosomethyl |    | 0.9248948 | 0.9397979<br>0.9193873 | 0.9237424 | 0.9263692 | 0.9356428 | 0.9204513 | 0.9272 | AVRG  |     | 0.8291              |
| 4)AM  | Pyridine                 |    | 1.3063024 | 1.2514929<br>1.2971082 | 1.2608555 | 1.2802964 | 1.3043075 | 1.2898786 | 1.2843 | AVRG  |     | 1.6583              |
| 5)SA  | 2-Fluorophenol           |    | 1.3135329 | 1.3045354<br>1.2978635 | 1.2880741 | 1.3011337 | 1.3179987 | 1.3086597 | 1.3045 | AVRG  |     | 0.7706              |
| 6)A   | p-Benzoquinone           |    | 0.3011836 | 0.1737111<br>0.2756648 | 0.2035249 | 0.2566364 | 0.2771401 | 0.2928395 | 0.2544 | AVRG  |     | 18.8113             |
| 7)AM  | Aniline                  |    | 0.8190849 | 0.8034789<br>0.8152829 | 0.8044218 | 0.8124923 | 0.8177751 | 0.8024846 | 0.8107 | AVRG  |     | 0.8775              |
| 8)SA  | Phenol-d5                |    | 1.6750398 | 1.6370335<br>1.6663835 | 1.6313587 | 1.6405326 | 1.6805269 | 1.6506674 | 1.6545 | AVRG  |     | 1.1810              |
| 9)AM  | Phenol                   |    | 1.7144286 | 1.7406881<br>1.7097324 | 1.7184266 | 1.7216259 | 1.7461898 | 1.7026914 | 1.7220 | AVRG  |     | 0.9267              |
| 10)AM | bis(2-Chloroethyl) ether |    | 1.3879889 | 1.4079233<br>1.3806242 | 1.3967876 | 1.3967046 | 1.4070752 | 1.3731332 | 1.3929 | AVRG  |     | 0.9369              |
| 11)AM | 2-Chlorophenol           |    | 1.2520895 | 1.3251409<br>1.2371367 | 1.3210041 | 1.3223636 | 1.3309848 | 1.2551342 | 1.2920 | AVRG  |     | 3.2136              |
| 12)AM | n-Decane                 |    | 2.2609385 | 2.7695621<br>2.2056382 | 2.7102941 | 2.6849855 | 2.6590415 | 2.3743575 | 2.5235 | AVRG  |     | 9.3229              |
| 13)AM | 1,3-Dichlorobenzene      |    | 1.4280563 | 1.4581549<br>1.4276832 | 1.4365727 | 1.4409410 | 1.4633700 | 1.4261529 | 1.4401 | AVRG  |     | 1.0509              |
| 14)AM | 1,4-Dichlorobenzene      |    | 1.4457495 | 1.4814231<br>1.4336816 | 1.4617310 | 1.4744835 | 1.4832974 | 1.4377739 | 1.4597 | AVRG  |     | 1.4271              |
| 15)AM | 1,2-Dichlorobenzene      |    | 1.3713911 | 1.3855838<br>1.3559335 | 1.3686587 | 1.3701046 | 1.3930206 | 1.3592740 | 1.3720 | AVRG  |     | 0.9695              |
| 16)AM | bis(2-Chloroisopropyl) e |    | 3.6270420 | 3.8006494<br>3.5949022 | 3.7617683 | 3.7597980 | 3.7622288 | 3.6055230 | 3.7017 | AVRG  |     | 2.3825              |

## Response Factor Report MSD 3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m

Last Update : Mon Aug 15 15:17:29 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b     | Compound<br>ml           | m2 | 1<br>7    | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r^2 |
|-------|--------------------------|----|-----------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|----------|
| 17)AM | Benzyl alcohol           |    | 0.8687814 | 0.8644998<br>0.8706352 | 0.8647657 | 0.8716919 | 0.8765932 | 0.8563810 | 0.8676 | AVRG  |     | 0.7466   |
| 18)AM | o-Cresol                 |    | 1.0966248 | 1.1041770<br>1.0902704 | 1.0981018 | 1.0994741 | 1.1119514 | 1.0785479 | 1.0970 | AVRG  |     | 0.9620   |
| 19)AM | m,p-Cresols              |    | 1.4145003 | 1.3962546<br>1.4149124 | 1.3981706 | 1.4017147 | 1.4231165 | 1.3873682 | 1.4051 | AVRG  |     | 0.9008   |
| 20)AM | N-Nitrosodipropylamine   |    | 1.0260306 | 1.0484075<br>1.0143470 | 1.0533550 | 1.0596671 | 1.0642583 | 0.9930990 | 1.0370 | AVRG  |     | 2.5559   |
| 21)A  | p-Toluidine              |    | 1.2551263 | 1.5530753<br>1.1805248 | 1.5544253 | 1.5463842 | 1.5623051 | 1.3880718 | 1.4343 | AVRG  |     | 11.2469  |
| 22)A  | m-Toluidine              |    | 1.7195188 | 1.5741550<br>1.7388191 | 1.5670139 | 1.5853090 | 1.6042786 | 1.6069318 | 1.6280 | AVRG  |     | 4.3509   |
| 23)AM | Hexachloroethane         |    | 0.6095686 | 0.6127488<br>0.6036470 | 0.6056286 | 0.6067716 | 0.6135475 | 0.6001665 | 0.6074 | AVRG  |     | 0.7981   |
| 25)SA | Nitrobenzene-d5          |    | 0.3575545 | 0.3847496<br>0.3568489 | 0.3720308 | 0.3481338 | 0.3388726 | 0.3207613 | 0.3541 | AVRG  |     | 5.9449   |
| 26)AM | Nitrobenzene             |    | 0.3592166 | 0.3955608<br>0.3582758 | 0.3781873 | 0.3539102 | 0.3458167 | 0.3227168 | 0.3591 | AVRG  |     | 6.4527   |
| 27)AM | Isophorone               |    | 0.6624775 | 0.7394561<br>0.6525730 | 0.7111853 | 0.6764076 | 0.6529307 | 0.5979806 | 0.6704 | AVRG  |     | 6.7804   |
| 28)AM | 2-Nitrophenol            |    | 0.1821913 | 0.1890266<br>0.1812481 | 0.1834409 | 0.1748789 | 0.1730542 | 0.1626883 | 0.1781 | AVRG  |     | 4.8520   |
| 29)AM | 2,4-Dimethylphenol       |    | 0.2814751 | 0.3333155<br>0.2818442 | 0.3150542 | 0.2906808 | 0.2801705 | 0.2580222 | 0.2915 | AVRG  |     | 8.5725   |
| 30)AM | bis(2-Chloroethoxy)metha |    | 0.4129914 | 0.4581611<br>0.4121044 | 0.4394210 | 0.4147480 | 0.4029785 | 0.3715247 | 0.4160 | AVRG  |     | 6.5830   |
| 31)AM | 2,4-Dichlorophenol       |    | 0.2553385 | 0.2566695<br>0.2541126 | 0.2518249 | 0.2431991 | 0.2383093 | 0.2254503 | 0.2464 | AVRG  |     | 4.6533   |
| 32)AM | Benzoic acid             |    | 0.2425314 |                        | 0.1708694 | 0.1872013 | 0.1950925 | 0.2056327 | 0.2079 | AVRG  |     | 14.6282  |



## Response Factor Report MSD 3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m

Last Update : Mon Aug 15 15:17:29 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b     | Compound<br>ml           | m2 | 1<br>7                 | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r^2 |
|-------|--------------------------|----|------------------------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|----------|
| 33)AM | 1,2,4-Trichlorobenzene   |    | 0.2887139              | 0.3209954<br>0.2871298 | 0.3058984 | 0.2862685 | 0.2804806 | 0.2614994 | 0.2901 | AVRG  |     | 6.5092   |
| 34)AM | alpha-Terpineol          |    | 0.4075786              | 0.4753656<br>0.4046225 | 0.4592113 | 0.4388881 | 0.4184347 | 0.3734345 | 0.4254 | AVRG  |     | 8.2114   |
| 35)AM | Naphthalene              |    | 1.0536353<br>0.8383846 | 1.0140813<br>0.8304498 | 0.9656164 | 0.9067097 | 0.8748064 | 0.7787454 | 0.9078 | AVRG  |     | 10.5701  |
| 36)AM | 4-Chloroaniline          |    | 0.3594661              | 0.3805379<br>0.3567017 | 0.3700351 | 0.3500252 | 0.3439459 | 0.3191124 | 0.3543 | AVRG  |     | 5.5651   |
| 37)AM | Hexachlorobutadiene      |    | 0.1552110              | 0.1667874<br>0.1553544 | 0.1590846 | 0.1507928 | 0.1488281 | 0.1394586 | 0.1536 | AVRG  |     | 5.5753   |
| 38)AM | 4-Chloro-3-methylphenol  |    | 0.2743432              | 0.2830978<br>0.2715364 | 0.2798073 | 0.2682314 | 0.2613692 | 0.2412951 | 0.2685 | AVRG  |     | 5.2122   |
| 39)AM | 2-Methylnaphthalene      |    | 0.6664630<br>0.6147992 | 0.6796850<br>0.6080285 | 0.6517329 | 0.6189316 | 0.5967804 | 0.5454736 | 0.6227 | AVRG  |     | 6.9023   |
| 40)A  | Phthalic anhydride       |    | 0.0544745              | 0.0210547<br>0.0589918 | 0.0265786 | 0.0354530 | 0.0385176 | 0.0455607 | 0.0401 | AVRG  | #   | 34.7277  |
| 41)AM | 1-Methylnaphthalene      |    | 0.6494408<br>0.5849820 | 0.6464591<br>0.5810295 | 0.6256483 | 0.5928635 | 0.5728658 | 0.5192106 | 0.5966 | AVRG  |     | 7.2420   |
| 43)AM | Hexachlorocyclopentadien |    | 0.2779914              | 0.2826726<br>0.2682205 | 0.2942699 | 0.2753431 | 0.2803945 | 0.2971398 | 0.2823 | AVRG  |     | 3.6370   |
| 44)AM | 2,3-Dichloroaniline      |    | 0.6688189              | 0.6938742<br>0.6715452 | 0.6914236 | 0.6859524 | 0.6925602 | 0.6923290 | 0.6852 | AVRG  |     | 1.5472   |
| 45)AM | 2,4,6-Trichlorophenol    |    | 0.3563160              | 0.3695687<br>0.3598530 | 0.3682602 | 0.3715931 | 0.3740127 | 0.3695398 | 0.3670 | AVRG  |     | 1.7592   |
| 46)AM | 2,4,5-Trichlorophenol    |    | 0.3905112              | 0.3735105<br>0.3897157 | 0.3831921 | 0.3923466 | 0.3983383 | 0.3990314 | 0.3895 | AVRG  |     | 2.2808   |
| 47)SA | 2-Fluorobiphenyl         |    | 1.4319106              | 1.4862240<br>1.4349288 | 1.4654002 | 1.4546405 | 1.4839271 | 1.4798887 | 1.4624 | AVRG  |     | 1.5519   |
| 48)AM | 2-Chloronaphthalene      |    | 1.2117024<br>1.1756393 | 1.2195233<br>1.1754749 | 1.2073443 | 1.1965152 | 1.2139506 | 1.2047631 | 1.2006 | AVRG  |     | 1.4055   |

## Response Factor Report MSD 3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m

Last Update : Mon Aug 15 15:17:29 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b     | Compound<br>m1           | m2 | 1<br>7                 | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r^2 |
|-------|--------------------------|----|------------------------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|----------|
| 49)AM | o-Nitroaniline           |    | 0.4567365              | 0.4484038<br>0.4537891 | 0.4503951 | 0.4497502 | 0.4514850 | 0.4534366 | 0.4520 | AVRG  |     | 0.6292   |
| 50)A  | 1,4-Dinitrobenzene       |    | 0.2203966              | 0.2033650<br>0.2195826 | 0.2037924 | 0.2136706 | 0.2141357 | 0.2139762 | 0.2127 | AVRG  |     | 3.1986   |
| 51)AM | m-Nitroaniline           |    | 0.3127700              | 0.3138187<br>0.3079626 | 0.3117533 | 0.3114793 | 0.3055341 | 0.3061891 | 0.3099 | AVRG  |     | 1.0709   |
| 52)AM | Dimethylphthalate        |    | 1.3250552              | 1.3852354<br>1.3192880 | 1.3453410 | 1.3691302 | 1.3448377 | 1.3233218 | 1.3446 | AVRG  |     | 1.8541   |
| 53)A  | m-Dinitrobenzene         |    | 0.2476290              | 0.2433971<br>0.2465984 | 0.2394439 | 0.2492488 | 0.2425111 | 0.2453956 | 0.2449 | AVRG  |     | 1.3668   |
| 54)AM | 2,6-Dinitrotoluene       |    | 0.3061856              | 0.3116580<br>0.3069491 | 0.3054856 | 0.3109493 | 0.3091113 | 0.3071169 | 0.3082 | AVRG  |     | 0.7781   |
| 55)AM | 2,4-Dinitrotoluene       |    | 0.3794660              | 0.3792879<br>0.3782610 | 0.3633328 | 0.3822628 | 0.3704037 | 0.3802784 | 0.3762 | AVRG  |     | 1.8062   |
| 56)AM | Acenaphthylene           |    | 1.9854889<br>1.9371125 | 2.0457071<br>1.9298115 | 1.9996955 | 2.0076747 | 2.0030568 | 1.9797479 | 1.9860 | AVRG  |     | 1.9126   |
| 57)AM | Acenaphthene             |    | 1.2291521<br>1.2554613 | 1.2675373<br>1.2540661 | 1.2548721 | 1.2625051 | 1.2709268 | 1.2735595 | 1.2585 | AVRG  |     | 1.1166   |
| 58)AM | 2,4-Dinitrophenol        |    | 0.1663797              | 0.1652520              | 0.1152866 | 0.1292610 | 0.1334810 | 0.1572140 | 0.1445 | AVRG  |     | 14.7739  |
| 59)AM | Dibenzofuran             |    | 1.6160442              | 1.7132067<br>1.6119641 | 1.6705070 | 1.6679757 | 1.6651860 | 1.6401212 | 1.6550 | AVRG  |     | 2.1351   |
| 60)A  | 2,3,4,6-Tetrachloropheno |    | 0.3000327              | 0.2526601<br>0.2974060 | 0.2534037 | 0.2756033 | 0.2728425 | 0.3004628 | 0.2789 | AVRG  |     | 7.5208   |
| 61)AM | Diethylphthalate         |    | 1.3910244              | 1.4713257<br>1.3876238 | 1.4131531 | 1.4662638 | 1.4265819 | 1.4037471 | 1.4228 | AVRG  |     | 2.3940   |
| 62)AM | 4-Nitrophenol            |    | 0.2122573              | 0.1843336<br>0.2088423 | 0.1955583 | 0.2041296 | 0.2029580 | 0.2130078 | 0.2030 | AVRG  |     | 5.0277   |
| 63)AM | Fluorene                 |    | 1.4460161<br>1.3928689 | 1.4585279<br>1.3901494 | 1.4188186 | 1.4513198 | 1.4261386 | 1.4136222 | 1.4247 | AVRG  |     | 1.8137   |

## Response Factor Report MSD 3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m

Last Update : Mon Aug 15 15:17:29 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b     | Compound<br>ml           | m2 | 1<br>7                 | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r^2 |
|-------|--------------------------|----|------------------------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|----------|
| 64)AM | 4-Chlorophenylphenylethe |    | 0.6214660              | 0.6668283<br>0.6179163 | 0.6507019 | 0.6599946 | 0.6465864 | 0.6333674 | 0.6424 | AVRG  |     | 2.9205   |
| 65)AM | p-Nitroaniline           |    | 0.2742173              | 0.2543537<br>0.2696710 | 0.2531474 | 0.2559549 | 0.2521460 | 0.2707466 | 0.2615 | AVRG  |     | 3.6720   |
| 66)SA | 2,4,6-Tribromophenol     |    | 0.1736463              | 0.1610656<br>0.1766724 | 0.1607498 | 0.1680278 | 0.1640528 | 0.1727882 | 0.1681 | AVRG  |     | 3.8090   |
| 68)AM | 2-Methyl-4,6-dinitrophen |    | 0.1307791              | 0.0936103<br>0.1299813 | 0.1083619 | 0.1152277 | 0.1197509 | 0.1268146 | 0.1178 | AVRG  |     | 11.4046  |
| 69)AM | Diphenylamine            |    | 0.6833116              | 0.7009439<br>0.6792333 | 0.7130662 | 0.7064357 | 0.7017898 | 0.6787357 | 0.6948 | AVRG  |     | 2.0253   |
| 70)AM | 1,2-Diphenylhydrazine    |    | 0.9388096              | 1.0058797<br>0.9342337 | 1.0207063 | 1.0028684 | 0.9932106 | 0.9414947 | 0.9767 | AVRG  |     | 3.7904   |
| 71)AM | 4-Bromophenylphenylether |    | 0.2020533              | 0.2014780<br>0.2019762 | 0.2068005 | 0.2070178 | 0.2054963 | 0.1994325 | 0.2035 | AVRG  |     | 1.4510   |
| 72)AM | Hexachlorobenzene        |    | 0.2373396              | 0.2375483<br>0.2383359 | 0.2383274 | 0.2425946 | 0.2441934 | 0.2387646 | 0.2396 | AVRG  |     | 1.1213   |
| 73)AM | Pentachlorophenol        |    | 0.1399355              | 0.1126156<br>0.1406935 | 0.1220044 | 0.1293770 | 0.1329834 | 0.1408001 | 0.1312 | AVRG  |     | 8.2033   |
| 74)AM | n-Octadecane             |    | 0.9716585              | 1.0501987<br>0.9652860 | 1.0851312 | 1.0788158 | 1.0656063 | 0.9865446 | 1.0290 | AVRG  |     | 5.1071   |
| 75)A  | Dinoseb                  |    | 0.1969950              | 0.1390025<br>0.1974306 | 0.1592590 | 0.1710924 | 0.1789236 | 0.1928701 | 0.1765 | AVRG  |     | 12.3789  |
| 76)AM | Phenanthrene             |    | 1.0329471<br>1.0176073 | 1.0600011<br>1.0153413 | 1.0463786 | 1.0469990 | 1.0432203 | 1.0317274 | 1.0368 | AVRG  |     | 1.4785   |
| 77)AM | Anthracene               |    | 1.0166921<br>1.0341722 | 1.0648462<br>1.0325231 | 1.0558774 | 1.0574476 | 1.0470381 | 1.0454461 | 1.0443 | AVRG  |     | 1.5104   |
| 78)AM | Carbazole                |    | 0.8359421<br>0.8929085 | 0.9061888<br>0.8920385 | 0.8597563 | 0.8613841 | 0.8627430 | 0.9042434 | 0.8769 | AVRG  |     | 2.8925   |
| 79)AM | Di-n-butylphthalate      |    | 1.3721392              | 1.4065621<br>1.3784545 | 1.3994041 | 1.4279410 | 1.4410198 | 1.4237995 | 1.4070 | AVRG  |     | 1.8272   |

## Response Factor Report MSD 3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m

Last Update : Mon Aug 15 15:17:29 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b     | Compound<br>m1                                      | m2 | 1<br>7                 | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve         | Exp | %RSD/r^2 |
|-------|---|----|------------------------|------------------------|-----------|-----------|-----------|-----------|--------|---------------|-----|----------|
| 80)AM | Fluoranthene  |    | 0.9552389<br>1.0104656 | 1.0508433<br>1.0005930 | 1.0493604 | 1.0202246 | 1.0472383 | 1.0260961 | 1.0200 | AVRG          |     | 3.1560   |
| 82)AM | Pyrene  |    | 1.4527635<br>1.8108437 | 1.5131805<br>1.8948312 | 1.5753499 | 1.6484773 | 1.7143117 | 1.8506005 | 1.6825 | AVRG          |     | 9.6598   |
| 83)SA | p-Terphenyl-d14                                     |    | 1.0722079              | 0.8953401<br>1.1282265 | 0.9278495 | 0.9777162 | 1.0137265 | 1.0956182 | 1.0158 | AVRG          |     | 8.6096   |
| 84)AM | Butylbenzylphthalate                                |    | 0.8567864              | 0.7227566<br>0.8820108 | 0.7672266 | 0.8162797 | 0.8468672 | 0.8647923 | 0.8224 | AVRG          |     | 7.0453   |
| 85)AM | bis(2-Ethylhexyl)phthala                            |    | 1.1515113              | 1.0412361<br>1.1899950 | 1.0694746 | 1.1138986 | 1.1482956 | 1.1443981 | 1.1227 | AVRG          |     | 4.6042   |
| 86)AM | Benzo(a)anthracene                                  |    | 1.1528866<br>1.0882950 | 1.1013661<br>1.0953250 | 1.0860401 | 1.0975748 | 1.0823237 | 1.0910594 | 1.0994 | AVRG          |     | 2.0478   |
| 87)AM | Chrysene  |    | 1.0359204<br>1.0102696 | 1.0176740<br>1.0212910 | 1.0009908 | 1.0219435 | 1.0058952 | 1.0102553 | 1.0155 | AVRG          |     | 1.0879   |
| 88)A  | Methoxychlor  |    | 0.7659386              | 0.7017069<br>0.7732703 | 0.7353051 | 0.7710891 | 0.7812632 | 0.7651653 | 0.7562 | AVRG          |     | 3.7098   |
| 89)A  | Methylenebis(2-chloroani<br>-0.0214   0.1562   0.00 |    | 362329                 | 32596<br>353445        | 59405     | 114530    | 156137    | 282593    |        | 1/x^2<br>LINR | #   | 0.9935   |
| 90)AM | Di-n-octylphthalate                                 |    | 1.5415827              | 1.3647793<br>1.5633439 | 1.3511674 | 1.4518507 | 1.4634701 | 1.4829731 | 1.4599 | AVRG          |     | 5.5121   |
| 92)AM | Benzo(b)fluoranthene                                |    | 1.1085966<br>1.2651488 | 1.2007951<br>1.3206321 | 1.2317326 | 1.2702653 | 1.2624491 | 1.2943221 | 1.2442 | AVRG          |     | 5.2819   |
| 93)AM | Benzo(k)fluoranthene                                |    | 1.1557984<br>1.2419775 | 1.2515474<br>1.2861046 | 1.2458289 | 1.2673182 | 1.2780030 | 1.3027951 | 1.2537 | AVRG          |     | 3.5704   |
| 94)AM | Benzo(a)pyrene                                      |    | 0.8615413<br>1.0981595 | 1.0388803<br>1.1200820 | 1.0391397 | 1.0871348 | 1.0848932 | 1.0971686 | 1.0534 | AVRG          |     | 7.8382   |
| 95)AM | Indeno(1,2,3-cd)pyrene                              |    | 0.6518272<br>0.8737445 | 0.7659877<br>0.8026367 | 0.7777163 | 0.7785020 | 0.8190644 | 0.7833698 | 0.7816 | AVRG          |     | 8.0118   |
| 96)AM | Dibenzo(a,h)anthracene                              |    | 0.5254707<br>0.7363792 | 0.6257949<br>0.6709464 | 0.6382678 | 0.6367991 | 0.6712651 | 0.6557704 | 0.6451 | AVRG          |     | 9.1893   |

## Response Factor Report MSD 3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m

Last Update : Mon Aug 15 15:17:29 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>ml           | m2 | 1<br>7                 | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r^2 |
|--------|--------------------------|----|------------------------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|----------|
| 97)AM  | Benzo(ghi)perylene       |    | 0.5529512<br>0.6885568 | 0.6170715<br>0.6066471 | 0.6220469 | 0.6014391 | 0.6374830 | 0.6043495 | 0.6163 | AVRG  |     | 6.1855   |
| 98)A   | Dibenzo(a,e)pyrene       |    | 0.4159018              | 0.2880979<br>0.3329114 | 0.3229936 | 0.3017782 | 0.3564862 | 0.3365801 | 0.3364 | AVRG  |     | 12.4047  |
| 100)BM | 1,4-Dioxane              |    | 0.5261045              | 0.6115028<br>0.5170784 | 0.5810773 | 0.5694676 | 0.5505934 | 0.5302150 | 0.5551 | AVRG  |     | 6.1476   |
| 101)B  | Methyl methacrylate      |    | 0.2864664              | 0.3437529<br>0.2809116 | 0.3180373 | 0.3131443 | 0.3011771 | 0.2883165 | 0.3045 | AVRG  |     | 7.2850   |
| 102)B  | Ethyl methacrylate       |    | 1.2053052              | 1.3605589<br>1.1830246 | 1.2877645 | 1.2791191 | 1.2378656 | 1.2041511 | 1.2511 | AVRG  |     | 4.9725   |
| 103)B  | 2-Picoline               |    | 1.5269697              | 1.7053354<br>1.5027670 | 1.6215135 | 1.6158415 | 1.5723865 | 1.5236540 | 1.5812 | AVRG  |     | 4.5250   |
| 104)B  | N-Nitrosomethylethylamin |    | 0.6441070              | 0.7005446<br>0.6427430 | 0.6708662 | 0.6672186 | 0.6542599 | 0.6464114 | 0.6609 | AVRG  |     | 3.1357   |
| 105)B  | Methyl methanesulfonate  |    | 0.6539832              | 0.7991030<br>0.6381356 | 0.7482029 | 0.7113305 | 0.7281019 | 0.6690400 | 0.7068 | AVRG  |     | 8.0939   |
| 106)B  | N-Nitrosodiethylamine    |    | 0.6497070              | 0.7078317<br>0.6502468 | 0.6840381 | 0.6775300 | 0.6641467 | 0.6539772 | 0.6696 | AVRG  |     | 3.2128   |
| 107)B  | Ethyl methanesulfonate   |    | 0.9632532              | 1.0502140<br>0.9617517 | 1.0155401 | 1.0024189 | 1.0071592 | 0.9781405 | 0.9969 | AVRG  |     | 3.1839   |
| 108)BM | Benzaldehyde             |    | 0.9240379              | 1.2345349<br>0.9146306 | 1.1666736 | 1.1003712 | 1.0798587 | 0.9702624 | 1.0558 | AVRG  |     | 11.6911  |
| 109)B  | Pentachloroethane        |    | 0.5248453              | 0.5725427<br>0.5226952 | 0.5560349 | 0.5494701 | 0.5433006 | 0.5309644 | 0.5428 | AVRG  |     | 3.3390   |
| 110)BM | N-Nitrosopyrrolidine     |    | 0.5708887              | 0.6815460<br>0.6028417 | 0.6724311 | 0.6624423 | 0.6742266 | 0.5955882 | 0.6371 | AVRG  |     | 7.1710   |
| 111)BM | Acetophenone             |    | 1.6865405              | 1.8711349<br>1.7169814 | 1.8139493 | 1.7743015 | 1.7653673 | 1.7199329 | 1.7640 | AVRG  |     | 3.6027   |
| 112)B  | N-Nitrosomorpholine      |    | 1.1163781              | 1.2482937<br>1.1310716 | 1.2063190 | 1.1863161 | 1.1917272 | 1.1520943 | 1.1760 | AVRG  |     | 3.9035   |

## Response Factor Report MSD 3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m

Last Update : Mon Aug 15 15:17:29 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1           | m2 | 1<br>7    | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r <sup>2</sup> |
|--------|--------------------------|----|-----------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|---------------------|
| 113)B  | o-Toluidine              |    | 1.8956802 | 2.0986495<br>1.9102052 | 2.0386537 | 2.0142524 | 2.0023591 | 1.9348595 | 1.9850 | AVRG  |     | 3.7384              |
| 115)B  | N-Nitrosopiperidine      |    | 0.1781537 | 0.1907316<br>0.1796008 | 0.1845839 | 0.1813435 | 0.1839915 | 0.1797829 | 0.1826 | AVRG  |     | 2.3478              |
| 116)B  | a,a-Dimethylphenethylami |    | 1.4657715 | 1.2799436<br>1.5098692 | 1.2971317 | 1.3393709 | 1.3942882 | 1.4259988 | 1.3875 | AVRG  |     | 6.2195              |
| 117)BM | 2,6-Dichlorophenol       |    | 0.2585768 | 0.2688204<br>0.2626895 | 0.2593350 | 0.2597708 | 0.2637486 | 0.2607892 | 0.2620 | AVRG  |     | 1.3523              |
| 118)B  | Hexachloropropene        |    | 0.1622830 | 0.1787076<br>0.1761435 | 0.1711401 | 0.1764204 | 0.1807171 | 0.1604705 | 0.1723 | AVRG  |     | 4.6516              |
| 119)BM | Caprolactam              |    | 0.1061776 | 0.1098572<br>0.1107780 | 0.1054623 | 0.1060604 | 0.1104002 | 0.1053556 | 0.1077 | AVRG  |     | 2.3028              |
| 120)B  | N-Nitrosodi-n-butylamine |    | 0.2611480 | 0.3338354<br>0.2612235 | 0.3188046 | 0.3114790 | 0.2898521 | 0.3093224 | 0.2980 | AVRG  |     | 9.4967              |
| 121)B  | Safrole                  |    | 0.2668166 | 0.2938711<br>0.2687075 | 0.2824689 | 0.2768844 | 0.2787276 | 0.2700356 | 0.2768 | AVRG  |     | 3.4217              |
| 123)B  | 1,2,4,5-Tetrachlorobenze |    | 0.5862129 | 0.6287216<br>0.5730920 | 0.6049206 | 0.6177365 | 0.5905812 | 0.5872660 | 0.5984 | AVRG  |     | 3.2791              |
| 124)BM | 1,1-Biphenyl             |    | 1.6333790 | 1.7953559<br>1.5969973 | 1.7294755 | 1.7371115 | 1.6755984 | 1.6479257 | 1.6880 | AVRG  |     | 4.0960              |
| 125)B  | Isosafrole               |    | 0.5556751 | 0.5827506<br>0.5414404 | 0.5677701 | 0.5657852 | 0.5604764 | 0.5555003 | 0.5613 | AVRG  |     | 2.2796              |
| 126)B  | 1,4-Naphthoquinone       |    | 0.3312701 | 0.5064997<br>0.3081318 | 0.4878614 | 0.4163983 | 0.3902205 | 0.3421062 | 0.3975 | AVRG  |     | 19.4591             |
| 127)B  | Pentachlorobenzene       |    | 0.4941669 | 0.5274705<br>0.4960632 | 0.5017582 | 0.5007704 | 0.4986623 | 0.4912654 | 0.5015 | AVRG  |     | 2.4030              |
| 128)B  | 1-Naphthylamine          |    | 1.0835667 | 1.2167924<br>1.1098598 | 1.1596754 | 1.1211537 | 1.1626714 | 1.0840179 | 1.1340 | AVRG  |     | 4.2788              |
| 129)B  | 2-Naphthylamine          |    | 1.1662269 | 1.2478141<br>1.1548173 | 1.1980307 | 1.1603391 | 1.2230546 | 1.1509788 | 1.1859 | AVRG  |     | 3.1901              |

## Response Factor Report MSD 3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m

Last Update : Mon Aug 15 15:17:29 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1           | m2 | 1<br>7    | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r^2 |
|--------|--------------------------|----|-----------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|----------|
| 130)B  | 5-Nitro-o-toluidine      |    | 0.3550817 | 0.2999272<br>0.3365365 | 0.3010682 | 0.3118955 | 0.3294241 | 0.3288770 | 0.3233 | AVRG  |     | 6.2185   |
| 132)B  | 1,3,5-Trinitrobenzene    |    | 0.1540059 | 0.1398568<br>0.1397701 | 0.1565952 | 0.1651613 | 0.1462352 | 0.1457280 | 0.1496 | AVRG  |     | 6.2719   |
| 133)B  | Phenacetin               |    | 0.3672782 | 0.3185867<br>0.3493107 | 0.3335826 | 0.3560877 | 0.3550732 | 0.3596961 | 0.3485 | AVRG  |     | 4.8251   |
| 134)B  | Diallate                 |    | 0.3426359 | 0.4027942<br>0.3599606 | 0.3896167 | 0.3809573 | 0.3670376 | 0.3557829 | 0.3713 | AVRG  |     | 5.6391   |
| 135)B  | Cis Diallate             |    | 0.4706651 | 0.5502175<br>0.4914154 | 0.5129534 | 0.5065352 | 0.4879007 | 0.4825740 | 0.5003 | AVRG  |     | 5.2348   |
| 136)B  | Trans Diallate           |    | 0.4031011 | 0.4738755<br>0.4234831 | 0.4583726 | 0.4481850 | 0.4318089 | 0.4185681 | 0.4368 | AVRG  |     | 5.6391   |
| 137)BM | 50Atrazine               |    | 0.0367325 | 0.0638603              | 0.0599240 | 0.0517746 | 0.0531892 | 0.0429148 | 0.0514 | AVRG  |     | 19.8102  |
| 138)B  | 4-Aminobiphenyl          |    | 0.7300232 | 0.6965265<br>0.7150581 | 0.6731886 | 0.7691197 | 0.7691612 | 0.7436596 | 0.7281 | AVRG  |     | 4.9509   |
| 139)B  | Pentachloronitrobenzene  |    | 0.0927490 | 0.0927522<br>0.0949474 | 0.0947951 | 0.0972713 | 0.0955113 | 0.0946181 | 0.0947 | AVRG  |     | 1.6668   |
| 140)B  | Pronamide                |    | 0.3510046 | 0.3678326<br>0.3674947 | 0.3664038 | 0.3812215 | 0.3435345 | 0.3581199 | 0.3622 | AVRG  |     | 3.4363   |
| 141)B  | 4-Nitroquinoline-1-oxide |    | 0.0123805 | 0.0277480<br>0.0140042 | 0.0255515 | 0.0215707 | 0.0196976 | 0.0127609 | 0.0191 | AVRG  | #   | 32.7052  |
| 142)B  | Methapyrilene            |    | 0.4824758 | 0.9282231<br>0.4981883 | 0.8807702 | 0.7828059 | 0.7223596 | 0.5345827 | 0.6899 | AVRG  | #   | 26.9104  |
| 143)B  | Isodrin                  |    | 0.1443241 | 0.1491980<br>0.1428789 | 0.1486678 | 0.1546041 | 0.1451178 | 0.1466576 | 0.1473 | AVRG  |     | 2.6630   |
| 144)BM | Benzidine                |    | 0.2478562 | 0.3266854<br>0.2396376 | 0.3686833 | 0.3281903 | 0.3445587 | 0.2684307 | 0.3034 | AVRG  |     | 16.7430  |
| 146)B  | Aramite                  |    | 0.1022476 | 0.0858450<br>0.1048174 | 0.0891703 | 0.0980078 | 0.0971183 | 0.1042121 | 0.0973 | AVRG  |     | 7.5790   |

## Response Factor Report MSD 3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m

Last Update : Mon Aug 15 15:17:29 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1           | m2 | 1<br>7    | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r^2 |
|--------|--------------------------|----|-----------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|----------|
| 147)B  | Kepone                   |    | 0.1174585 | 0.1135771<br>0.1241716 | 0.1140741 | 0.1217917 | 0.1056720 | 0.1164615 | 0.1162 | AVRG  |     | 5.1969   |
| 148)B  | p-(Dimethylamino)azobenz |    | 0.5432143 | 0.4408974<br>0.5550414 | 0.4490422 | 0.4981289 | 0.4876984 | 0.5314249 | 0.5008 | AVRG  |     | 8.9767   |
| 149)B  | Chlorobenzilate          |    | 0.5188039 | 0.4148657<br>0.5464299 | 0.4271440 | 0.4800955 | 0.4632722 | 0.5111021 | 0.4802 | AVRG  |     | 10.1305  |
| 150)B  | 3,3'-Dimethylbenzidine   |    | 0.5203613 | 0.6544922<br>0.5580504 | 0.6326063 | 0.5605062 | 0.6026023 | 0.5363635 | 0.5807 | AVRG  |     | 8.6521   |
| 151)B  | 2-Acetylaminofluorene    |    | 0.2681929 | 0.2467822<br>0.2943585 | 0.2633561 | 0.2395374 | 0.3036658 | 0.2563043 | 0.2675 | AVRG  |     | 8.8787   |
| 152)BM | 3,3'-Dichlorobenzidine   |    | 0.2866892 | 0.2922073<br>0.3023787 | 0.2926177 | 0.2787692 | 0.3142338 | 0.2826374 | 0.2928 | AVRG  |     | 4.1574   |
| 154)B  | 7,12-Dimethylbenz(a)anth |    | 0.6993762 | 0.7259846<br>0.6812204 | 0.7277687 | 0.7668868 | 0.6736280 | 0.7275850 | 0.7146 | AVRG  |     | 4.5091   |
| 155)B  | 3-Methylcholanthrene     |    | 0.1105437 | 0.1051323<br>0.1135348 | 0.1071936 | 0.1058539 | 0.1117660 | 0.1093591 | 0.1091 | AVRG  |     | 2.8712   |
| 157)D  | Triethylphosphorothioate |    | 0.1640643 | 0.1716467<br>0.1584963 | 0.1668714 | 0.1635396 | 0.1650917 | 0.1641491 | 0.1648 | AVRG  |     | 2.3953   |
| 159)D  | Thionazine               |    | 0.2174825 | 0.2104992<br>0.2132211 | 0.2103125 | 0.2132654 | 0.2135837 | 0.2182464 | 0.2138 | AVRG  |     | 1.4423   |
| 160)DM | Tributylphosphate        |    | 1.6617202 | 1.6150304<br>1.5907588 | 1.6607327 | 1.6888663 | 1.6769230 | 1.6825665 | 1.6538 | AVRG  |     | 2.2326   |
| 162)D  | Sulfotepp                |    | 0.1286685 | 0.1361412<br>0.1293748 | 0.1320779 | 0.1324468 | 0.1305826 | 0.1251256 | 0.1306 | AVRG  |     | 2.6425   |
| 163)D  | Phorate                  |    | 0.5112885 | 0.5437339<br>0.5058855 | 0.5368437 | 0.5313380 | 0.5319922 | 0.5043640 | 0.5236 | AVRG  |     | 3.0660   |
| 164)D  | Dimethoate               |    | 0.3093549 | 0.2730810<br>0.3081169 | 0.2853086 | 0.2965257 | 0.3017814 | 0.3041522 | 0.2969 | AVRG  |     | 4.4751   |
| 165)D  | Disulfoton               |    | 0.4383345 | 0.4558737<br>0.4352684 | 0.4512856 | 0.4484512 | 0.4486222 | 0.4355013 | 0.4448 | AVRG  |     | 1.8625   |



## Response Factor Report MSD 3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m

Last Update : Mon Aug 15 15:17:29 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b     | Compound<br>m1           | m2 | 1<br>7    | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r^2 |
|-------|--------------------------|----|-----------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|----------|
| 166)D | Methyl parathion         |    | 0.2726460 | 0.2215669<br>0.2712505 | 0.2425153 | 0.2583014 | 0.2652198 | 0.2697932 | 0.2573 | AVRG  |     | 7.3483   |
| 167)D | Parathion                |    | 0.0918825 | 0.0791457<br>0.0896748 | 0.0870420 | 0.0892264 | 0.0901307 | 0.0906022 | 0.0882 | AVRG  |     | 4.8433   |
| 169)D | Famphur                  |    | 0.4630855 | 0.4303921<br>0.4445022 | 0.4465300 | 0.4663461 | 0.4574291 | 0.4829436 | 0.4559 | AVRG  |     | 3.7598   |
| 171)E | p-Phenylenediamine       |    | 0.3940926 | 0.4114053              | 0.3876672 | 0.4057720 | 0.3833670 | 0.3992074 | 0.3969 | AVRG  |     | 2.6917   |
| 173)E | Hexachlorophene          |    | 0.1441406 | 0.0990701              | 0.1072945 | 0.1301036 | 0.1367407 | 0.1405513 | 0.1263 | AVRG  |     | 14.8002  |
| 175)F | bis(Chloromethyl)ether   |    | 0.9642218 | 1.0309680<br>0.9667863 | 1.0242257 | 1.0052152 | 1.0247227 | 0.9993850 | 1.0022 | AVRG  |     | 2.7427   |
| 176)F | Thiophenol               |    |           | 58709                  | 305905    | 800567    | 879139    | 1621805   |        | LINR  | #   | 0.9986   |
|       | -0.1656   1.2903   0.00  |    | 2172596   | 2565267                |           |           |           |           |        |       |     |          |
| 178)F | 4-Chlorothiophenol       |    |           | 24582                  | 153414    | 460592    | 505911    | 1010476   |        | LINR  | #   | 0.9988   |
|       | -0.0525   0.2396   0.00  |    | 1397335   | 1681100                |           |           |           |           |        |       |     |          |
| 179)F | 4-Chlorothioanisole      |    | 0.2787612 | 0.2109742<br>0.2762253 | 0.2613131 | 0.2679082 | 0.2764484 | 0.2784287 | 0.2643 | AVRG  |     | 9.2217   |
| 180)F | Phthalic acid            |    |           | 8679                   | 26667     | 92652     | 106779    | 226389    |        | LINR  | #   | 0.9964   |
|       | -0.0152   0.0556   0.00  |    | 317502    | 386094                 |           |           |           |           |        |       |     |          |
| 182)F | Hydroxymethyl phthalimid |    | 0.0866219 | 0.1379649              | 0.1336061 | 0.1094466 | 0.1369201 | 0.0925769 | 0.1162 | AVRG  |     | 19.9426  |
| 183)F | Diphenyl sulfide         |    | 0.8468971 | 0.8471886<br>0.8333658 | 0.8413022 | 0.8394305 | 0.8766565 | 0.8627481 | 0.8497 | AVRG  |     | 1.7679   |
| 185)F | Diphenyl disulfide       |    | 0.2587783 | 0.2906454<br>0.2569457 | 0.2578598 | 0.2578501 | 0.2659494 | 0.2627204 | 0.2644 | AVRG  |     | 4.5463   |
| 186)F | Phenyl sulfone           |    | 0.4638590 | 0.4621204<br>0.4576581 | 0.4559569 | 0.4580178 | 0.4745696 | 0.4656773 | 0.4626 | AVRG  |     | 1.3789   |
| 187)F | Octachlorostyrene        |    | 0.0799522 | 0.0776341<br>0.0800310 | 0.0766223 | 0.0759365 | 0.0798394 | 0.0802791 | 0.0786 | AVRG  |     | 2.3322   |

## Response Factor Report MSD 3

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m

Last Update : Mon Aug 15 15:17:29 2011

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b     | Compound<br>m1           | m2 | 1<br>7    | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r^2 |
|-------|--------------------------|----|-----------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|----------|
| 189)F | 2,2'-Dichlorobenzil      |    | 0.9319363 | 0.9041338<br>0.9329639 | 0.9096889 | 0.9187005 | 1.0320688 | 0.9237939 | 0.9362 | AVRG  |     | 4.6582   |
| 190)F | bis(p-Chlorophenyl)disul |    | 0.2088478 | 0.2347826<br>0.2213168 | 0.2219133 | 0.2136192 | 0.2350770 | 0.2143606 | 0.2214 | AVRG  |     | 4.6428   |
| 191)F | bis(p-Chlorophenyl)sulfo |    | 0.4718099 | 0.4688278<br>0.4738718 | 0.4664919 | 0.4584262 | 0.5142402 | 0.4670518 | 0.4744 | AVRG  |     | 3.8457   |
| 193)J | 1-Hexanol                |    | 1.1456909 | 1.2046119<br>1.1744229 | 1.1811266 | 1.1155518 | 1.1564532 | 1.1402588 | 1.1597 | AVRG  |     | 2.5450   |
| 195)J | Quinoline                |    | 0.6095832 | 0.6204234<br>0.6185456 | 0.6059015 | 0.5838192 | 0.5971225 | 0.6003339 | 0.6051 | AVRG  |     | 2.1073   |
| 197)J | 5-Methylchrysene         |    | 0.5570120 | 0.5984914<br>0.5598956 | 0.5739119 | 0.5608350 | 0.5654432 | 0.5507656 | 0.5666 | AVRG  |     | 2.7837   |
| 198)J | 1-Nitropyrene            |    | 0.1741999 | 0.1515139<br>0.1730024 | 0.1510041 | 0.1801080 | 0.1687605 | 0.1695938 | 0.1669 | AVRG  |     | 6.7666   |
| 200)J | Benzo(j)fluoranthene     |    | 1.1507718 | 1.0413941<br>1.1953196 | 1.0936472 | 0.9958036 | 1.0686334 | 1.1105909 | 1.0937 | AVRG  |     | 6.1125   |
| 201)J | Dibenzo(a,j)acridine     |    | 0.6248149 | 0.6230375<br>0.6565931 | 0.5811909 | 0.5841871 | 0.5844945 | 0.5979581 | 0.6075 | AVRG  |     | 4.6596   |
| 202)J | Dibenzo(a,h)acridine     |    | 0.5881977 | 0.5823946<br>0.6185732 | 0.5388924 | 0.5546289 | 0.5503043 | 0.5641593 | 0.5710 | AVRG  |     | 4.7761   |
| 203)J | 7H-Dibenzo(c,g)carbazole |    | 0.4196246 | 0.3670501<br>0.4281366 | 0.3538817 | 0.3516413 | 0.3599175 | 0.3764543 | 0.3795 | AVRG  |     | 8.3012   |
| 204)J | Dibenzo(a,l)pyrene       |    | 0.2968859 | 0.2936980<br>0.3009402 | 0.2743351 | 0.2410144 | 0.2605637 | 0.2601672 | 0.2754 | AVRG  |     | 8.2336   |
| 205)J | Dibenzo(a,h)pyrene       |    | 0.3292717 | 0.3053502<br>0.3272543 | 0.2705375 | 0.2403431 | 0.2645794 | 0.2765676 | 0.2877 | AVRG  |     | 11.7014  |
| 206)J | Dibenzo(a,i)pyrene       |    | 0.2077527 | 0.1887411<br>0.2090345 | 0.1562712 | 0.1408166 | 0.1668361 | 0.1731519 | 0.1775 | AVRG  |     | 14.4814  |

(# ) = Out of Range (\$ ) = Individual RF Out of Range

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1215.D  
Acq On : 12 Aug 2011 15:29  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-17|ICAL|1|SVM|1|A2  
Misc : |MIX[B]  
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Aug 15 12:06:01 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.765  | 4.768  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.047  | 6.049  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.919  | 7.922  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.533  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.531 | 12.531 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 14.830 | 14.824 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.765  | 4.765  | 1.000  | 461087   | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.047  | 6.047  | 1.000  | 1615443  | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.919  | 7.919  | 1.000  | 787191   | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.533  | 9.536  | 1.000  | 1175002  | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 835133   | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 14.830 | 14.824 | 1.000  | 508997   | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.533  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.830 | 14.852 | 1.000  | 0m       | 40.00 | ng/uL | -0.02    |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.760  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.533  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 14.830 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |

|                             |     |        |        |       |    |      |       |          |
|-----------------------------|-----|--------|--------|-------|----|------|-------|----------|
| System Monitoring Compounds |     |        |        |       |    |      |       | Dev(Min) |
| 5) 2-Fluorophenol           | 112 | 0.000  | 3.580  | 0.000 | 0  | 0.00 | ng/uL |          |
| 8) Phenol-d5                | 99  | 4.353  | 4.367  | 0.914 | 0d | 0.00 | ng/uL |          |
| 25) Nitrobenzene-d5         | 82  | 5.299  | 5.308  | 0.876 | 0d | 0.00 | ng/uL |          |
| 47) 2-Fluorobiphenyl        | 172 | 7.172  | 7.178  | 0.906 | 0d | 0.00 | ng/uL |          |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000  | 8.772  | 0.000 | 0  | 0.00 | ng/uL |          |
| 83) p-Terphenyl-d14         | 244 | 11.241 | 11.244 | 0.897 | 0d | 0.00 | ng/uL |          |

| Target Compounds               | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units | QValue |
|--------------------------------|------|-------|--------|--------|----------|-------|-------|--------|
| 100) 1,4-Dioxane               | 88   | 2.395 | 2.398  | 0.503  | 70489    | 11.02 | ng/uL | 99     |
| 101) Methyl methacrylate       | 100  | 2.393 | 2.396  | 0.502  | 39625    | 11.29 | ng/uL | 99     |
| 102) Ethyl methacrylate        | 69   | 2.907 | 2.907  | 0.610  | 156834   | 10.87 | ng/uL | 98     |
| 103) 2-Picoline                | 93   | 3.160 | 3.163  | 0.663  | 196577   | 10.79 | ng/uL | 100    |
| 104) N-Nitrosomethylethylamine | 88   | 3.231 | 3.234  | 0.678  | 80753    | 10.60 | ng/uL | 99     |
| 105) Methyl methanesulfonate   | 80   | 3.455 | 3.464  | 0.725  | 92114    | 11.31 | ng/uL | 100    |
| 106) N-Nitrosodiethylamine     | 102  | 3.788 | 3.796  | 0.795  | 81593    | 10.57 | ng/uL | 100    |
| 107) Ethyl methanesulfonate    | 79   | 4.026 | 4.035  | 0.845  | 121060   | 10.53 | ng/uL | 99     |
| 108) Benzaldehyde              | 77   | 4.359 | 4.365  | 0.915  | 142307   | 11.69 | ng/uL | 99     |
| 109) Pentachloroethane         | 167  | 4.504 | 4.507  | 0.945  | 65998    | 10.55 | ng/uL | 100    |
| 110) N-Nitrosopyrrolidine      | 100  | 5.118 | 5.135  | 1.074  | 78563    | 10.70 | ng/uL | 99     |
| 111) Acetophenone              | 105  | 5.140 | 5.149  | 1.079  | 215689   | 10.61 | ng/uL | 100    |
| 112) N-Nitrosomorpholine       | 56   | 5.155 | 5.166  | 1.082  | 143893   | 10.61 | ng/uL | 98     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1215.D  
Acq On : 12 Aug 2011 15:29  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-17|ICAL|1|SVM|1|A2  
Misc : |MIX[B]  
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Aug 15 12:06:01 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|--------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 113) o-Toluidine               | 106  | 5.177  | 5.186  | 1.086  | 241915   | 10.57 | ng/uL | 100 |
| 115) N-Nitrosopiperidine       | 114  | 5.470  | 5.479  | 0.905  | 77029    | 10.45 | ng/uL | 98  |
| 116) a,a-Dimethylphenethyla... | 58   | 5.845  | 5.862  | 0.967  | 516919   | 9.22  | ng/uL | 100 |
| 117) 2,6-Dichlorophenol        | 162  | 6.112  | 6.118  | 1.011  | 108566   | 10.26 | ng/uL | 100 |
| 118) Hexachloropropene         | 213  | 6.152  | 6.155  | 1.017  | 72173    | 10.37 | ng/uL | 99  |
| 119) Caprolactam               | 113  | 6.445  | 6.473  | 1.066  | 44367    | 10.20 | ng/uL | 95  |
| 120) N-Nitrosodi-n-butylamine  | 84   | 6.445  | 6.450  | 1.066  | 134823   | 11.20 | ng/uL | 98  |
| 121) Safrole                   | 162  | 6.683  | 6.686  | 1.105  | 118683   | 10.62 | ng/uL | 100 |
| 123) 1,2,4,5-Tetrachloroben... | 216  | 6.967  | 6.970  | 0.880  | 123731   | 10.51 | ng/uL | 100 |
| 124) 1,1-Biphenyl              | 154  | 7.286  | 7.291  | 0.920  | 353322   | 10.64 | ng/uL | 100 |
| 125) Isosafrole                | 162  | 7.237  | 7.243  | 0.914  | 114684   | 10.38 | ng/uL | 100 |
| 126) 1,4-Naphthoquinone        | 158  | 7.502  | 7.505  | 0.947  | 99678    | 12.74 | ng/uL | 99  |
| 127) Pentachlorobenzene        | 250  | 8.090  | 8.090  | 1.022  | 103805   | 10.52 | ng/uL | 98  |
| 128) 1-Naphthylamine           | 143  | 8.218  | 8.223  | 1.038  | 239462   | 10.73 | ng/uL | 99  |
| 129) 2-Naphthylamine           | 143  | 8.303  | 8.309  | 1.048  | 245567   | 10.52 | ng/uL | 100 |
| 130) 5-Nitro-o-toluidine       | 152  | 8.507  | 8.510  | 1.074  | 59025    | 9.28  | ng/uL | 98  |
| 132) 1,3,5-Trinitrobenzene     | 75   | 8.882  | 8.885  | 0.932  | 41083    | 9.35  | ng/uL | 97  |
| 133) Phenacetin                | 108  | 8.936  | 8.951  | 0.937  | 93585    | 9.14  | ng/uL | 99  |
| 134) Diallate                  | 86   | 8.928  | 8.928  | 0.937  | 118321   | 10.85 | ng/uL | 99  |
| 135) Cis Diallate              | 86   | 9.027  | 9.028  | 0.947  | 24244    | 1.65  | ng/uL | 97  |
| 136) Trans Diallate            | 86   | 8.928  | 8.928  | 0.937  | 118321   | 9.22  | ng/uL | 99  |
| 137) Atrazine                  | 173  | 9.187  | 9.192  | 0.964  | 18759    | 12.42 | ng/uL | 99  |
| 138) 4-Aminobiphenyl           | 169  | 9.312  | 9.315  | 0.977  | 204605   | 9.57  | ng/uL | 99  |
| 139) Pentachloronitrobenzene   | 237  | 9.323  | 9.326  | 0.978  | 27246    | 9.80  | ng/uL | 96  |
| 140) Pronamide                 | 173  | 9.354  | 9.360  | 0.981  | 108051   | 10.15 | ng/uL | 99  |
| 141) 4-Nitroquinoline-1-oxide  | 101  | 10.386 | 10.389 | 1.089  | 8151     | 14.53 | ng/uL | 96  |
| 142) Methapyrilene             | 58   | 10.454 | 10.454 | 1.097  | 272666   | 13.45 | ng/uL | 100 |
| 143) Isodrin                   | 193  | 10.690 | 10.690 | 1.121  | 43827    | 10.13 | ng/uL | 98  |
| 144) Benzidine                 | 184  | 10.977 | 10.980 | 1.151  | 95964    | 10.77 | ng/uL | 99  |
| 146) Aramite                   | 185  | 11.207 | 11.207 | 0.894  | 17923    | 7.10  | ng/uL | 98  |
| 147) Kepone                    | 272  | 11.857 | 11.858 | 0.946  | 23713    | 9.78  | ng/uL | 99  |
| 148) p-(Dimethylamino)azobe... | 120  | 11.394 | 11.397 | 0.909  | 92052    | 8.80  | ng/uL | 100 |
| 149) Chlorobenzilate           | 251  | 11.437 | 11.440 | 0.913  | 86617    | 8.64  | ng/uL | 100 |
| 150) 3,3'-Dimethylbenzidine    | 212  | 11.772 | 11.772 | 0.939  | 136647   | 11.27 | ng/uL | 99  |
| 151) 2-Acetylaminofluorene     | 181  | 12.073 | 12.079 | 0.963  | 51524    | 9.23  | ng/uL | 97  |
| 152) 3,3'-Dichlorobenzidine    | 252  | 12.457 | 12.457 | 0.994  | 61008    | 9.98  | ng/uL | 99  |
| 154) 7,12-Dimethylbenz(a)an... | 256  | 14.139 | 14.142 | 0.953  | 92381    | 10.16 | ng/uL | 99  |
| 155) 3-Methylcholanthrene      | 269  | 15.338 | 15.344 | 1.034  | 13378    | 9.64  | ng/uL | 95  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

```
Data Path : C:\msdchem\1\DATA\s081211.B\
Data File : s3h1215.D
Acq On    : 12 Aug 2011   15:29
Operator  : JLD1
InstName  : MSD 3
Sample    : |WBN110719-17|ICAL|1|SVM|1|A2
Misc      : |MIX[B]
ALS Vial  : 12   Sample Multiplier: 1
```

Abundance

TIC: s3h1215.D\data.ms

Time-->

5200000

5000000

4800000

4600000

4400000

4200000

4000000

3800000

3600000

3400000

3200000

3000000

2800000

2600000

2400000

2200000

2000000

1800000

1600000

1400000

1200000

1000000

800000

600000

400000

200000

0

2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00

1,4-Dioxane-2,5-dithiolane, B

1,4-Dioxane-2,5-dithiolane, B

Ethyl methacrylate, B

N-Nitrosodimethylamine, B

Methyl methanesulfonate, B

N-Nitrosodimethylamine, B

Ethyl methanesulfonate, B

Benzaldehyde, BM

Pentachloroethane, B

N-Nitrosodimethylamine, B

N-Nitrosodimethylamine, B

N-Nitrosodimethylamine, B

a, a-Dimethylphenethylamine, B

Hexachlorocyclopentadiene, BM

1,4-Dioxane-2,5-dithiolane, B

Safrrole, B

1,2,4,5-Tetrachlorobenzene, B

Isosafrole, B

1,1-Biphenyl, BM

1,4-Naphthoquinone, B

Pentachlorobenzene, B

2-Naphthylamine, B

5-Nitro-o-toluidine, B

1,3,5-Trinitrobenzene, B

Acetaminophen, B

Cis-Diallylamine, B

1,3,5-Trinitrobenzene, B

1,3,5-Trinitrobenzene, B

4-Nitroquinoline-1-oxide, B

Methapyrilene, B

Isodrin, B

Benzidine, BM

Aramite, B

Chlorobenzene, B

Kepon, B

3-Dimethylbenzidine, B

2-Acetylaminofluorene, B

3,3'-Dichlorobenzidine, BM

7,12-Dimethylbenz(a)anthracene, B

B Perylene-d12, BI

3-Methylcholanthrene, B

B 1,4-Dichlorobenzene-d4, BI

B Naphthalene-d8, BI

B Acenaphthene-d10, BI

B Phenanthrene-d10, BI

B Chrysene-d12, BI

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1216.D  
Acq On : 12 Aug 2011 15:53  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-16|ICAL|1|SVM|1|A3  
Misc : |MIX[B]  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Aug 15 12:06:04 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.765  | 4.768  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.047  | 6.049  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.919  | 7.922  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.533  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.528 | 12.531 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 14.827 | 14.824 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.765  | 4.765  | 1.000  | 477988   | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.047  | 6.047  | 1.000  | 1685835  | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.919  | 7.919  | 1.000  | 816732   | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.533  | 9.536  | 1.000  | 1219578  | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 896330   | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 14.827 | 14.824 | 1.000  | 508799   | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.533  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.827 | 14.852 | 1.000  | 0m       | 40.00 | ng/uL | -0.03    |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.760  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.533  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 14.827 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |

|                             |     |        |        |       |    |      |       |          |
|-----------------------------|-----|--------|--------|-------|----|------|-------|----------|
| System Monitoring Compounds |     |        |        |       |    |      |       | Dev(Min) |
| 5) 2-Fluorophenol           | 112 | 0.000  | 3.580  | 0.000 | 0  | 0.00 | ng/uL |          |
| 8) Phenol-d5                | 99  | 0.000  | 4.367  | 0.000 | 0  | 0.00 | ng/uL |          |
| 25) Nitrobenzene-d5         | 82  | 0.000  | 5.308  | 0.000 | 0  | 0.00 | ng/uL |          |
| 47) 2-Fluorobiphenyl        | 172 | 0.000  | 7.178  | 0.000 | 0  | 0.00 | ng/uL |          |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000  | 8.772  | 0.000 | 0  | 0.00 | ng/uL |          |
| 83) p-Terphenyl-d14         | 244 | 11.241 | 11.244 | 0.897 | 0d | 0.00 | ng/uL |          |

|                                |      |       |        |        |          |       |       |        |
|--------------------------------|------|-------|--------|--------|----------|-------|-------|--------|
| Target Compounds               | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units | QValue |
| 100) 1,4-Dioxane               | 88   | 2.398 | 2.398  | 0.503  | 138874   | 20.93 | ng/uL | 98     |
| 101) Methyl methacrylate       | 100  | 2.393 | 2.396  | 0.502  | 76009    | 20.89 | ng/uL | 98     |
| 102) Ethyl methacrylate        | 69   | 2.907 | 2.907  | 0.610  | 307768   | 20.59 | ng/uL | 99     |
| 103) 2-Picoline                | 93   | 3.163 | 3.163  | 0.664  | 387532   | 20.51 | ng/uL | 100    |
| 104) N-Nitrosomethylethylamine | 88   | 3.234 | 3.234  | 0.679  | 160333   | 20.30 | ng/uL | 99     |
| 105) Methyl methanesulfonate   | 80   | 3.461 | 3.464  | 0.726  | 178816   | 21.17 | ng/uL | 99     |
| 106) N-Nitrosodiethylamine     | 102  | 3.791 | 3.796  | 0.795  | 163481   | 20.43 | ng/uL | 99     |
| 107) Ethyl methanesulfonate    | 79   | 4.029 | 4.035  | 0.846  | 242708   | 20.37 | ng/uL | 99     |
| 108) Benzaldehyde              | 77   | 4.362 | 4.365  | 0.915  | 278828   | 22.10 | ng/uL | 99     |
| 109) Pentachloroethane         | 167  | 4.504 | 4.507  | 0.945  | 132889   | 20.49 | ng/uL | 99     |
| 110) N-Nitrosopyrrolidine      | 100  | 5.123 | 5.135  | 1.075  | 160707   | 21.11 | ng/uL | 99     |
| 111) Acetophenone              | 105  | 5.143 | 5.149  | 1.079  | 433523   | 20.57 | ng/uL | 99     |
| 112) N-Nitrosomorpholine       | 56   | 5.157 | 5.166  | 1.082  | 288303   | 20.52 | ng/uL | 100    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1216.D  
Acq On : 12 Aug 2011 15:53  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-16|ICAL|1|SVM|1|A3  
Misc : |MIX[B]  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Aug 15 12:06:04 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE

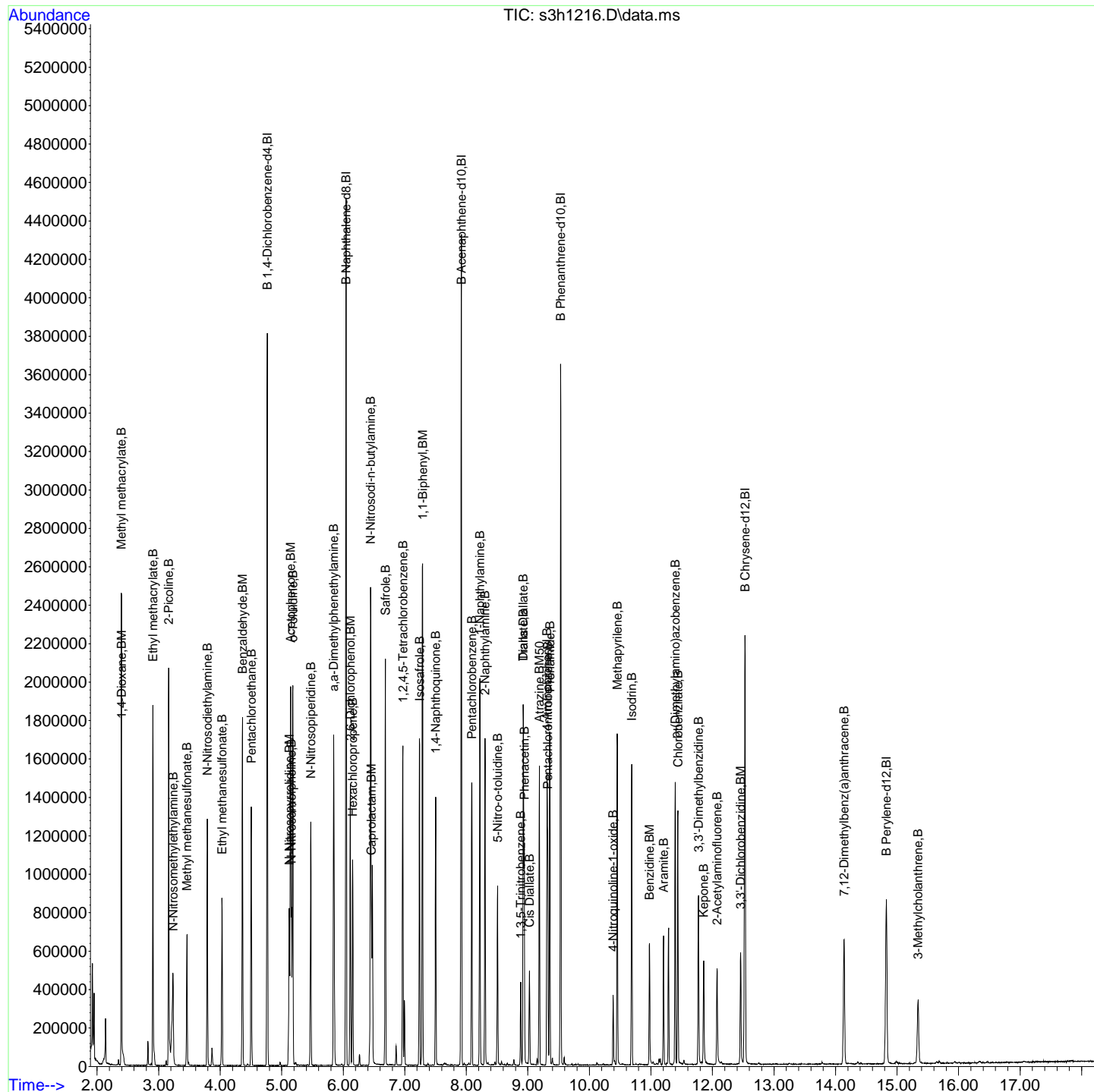
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|--------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 113) o-Toluidine               | 106  | 5.180  | 5.186  | 1.087  | 487226   | 20.54 | ng/uL | 100 |
| 115) N-Nitrosopiperidine       | 114  | 5.473  | 5.479  | 0.905  | 155589   | 20.22 | ng/uL | 100 |
| 116) a,a-Dimethylphenethyla... | 58   | 5.845  | 5.862  | 0.967  | 1093375  | 18.70 | ng/uL | 99  |
| 117) 2,6-Dichlorophenol        | 162  | 6.115  | 6.118  | 1.011  | 218598   | 19.80 | ng/uL | 99  |
| 118) Hexachloropropene         | 213  | 6.152  | 6.155  | 1.017  | 144257   | 19.87 | ng/uL | 100 |
| 119) Caprolactam               | 113  | 6.456  | 6.473  | 1.068  | 88896    | 19.58 | ng/uL | 96  |
| 120) N-Nitrosodi-n-butylamine  | 84   | 6.445  | 6.450  | 1.066  | 268726   | 21.40 | ng/uL | 99  |
| 121) Safrole                   | 162  | 6.683  | 6.686  | 1.105  | 238098   | 20.41 | ng/uL | 99  |
| 123) 1,2,4,5-Tetrachloroben... | 216  | 6.967  | 6.970  | 0.880  | 247029   | 20.22 | ng/uL | 99  |
| 124) 1,1-Biphenyl              | 154  | 7.289  | 7.291  | 0.920  | 706259   | 20.49 | ng/uL | 100 |
| 125) Isosafrole                | 162  | 7.240  | 7.243  | 0.914  | 231858   | 20.23 | ng/uL | 99  |
| 126) 1,4-Naphthoquinone        | 158  | 7.502  | 7.505  | 0.947  | 199226   | 24.55 | ng/uL | 99  |
| 127) Pentachlorobenzene        | 250  | 8.090  | 8.090  | 1.022  | 204901   | 20.01 | ng/uL | 99  |
| 128) 1-Naphthylamine           | 143  | 8.221  | 8.223  | 1.038  | 473572   | 20.45 | ng/uL | 100 |
| 129) 2-Naphthylamine           | 143  | 8.303  | 8.309  | 1.048  | 489235   | 20.20 | ng/uL | 100 |
| 130) 5-Nitro-o-toluidine       | 152  | 8.508  | 8.510  | 1.074  | 122946   | 18.63 | ng/uL | 99  |
| 132) 1,3,5-Trinitrobenzene     | 75   | 8.883  | 8.885  | 0.932  | 95490    | 20.93 | ng/uL | 99  |
| 133) Phenacetin                | 108  | 8.942  | 8.951  | 0.938  | 203415   | 19.14 | ng/uL | 99  |
| 134) Diallate                  | 86   | 8.925  | 8.928  | 0.936  | 237584   | 20.99 | ng/uL | 99  |
| 135) Cis Diallate              | 86   | 9.025  | 9.028  | 0.947  | 46919    | 3.08  | ng/uL | 98  |
| 136) Trans Diallate            | 86   | 8.925  | 8.928  | 0.936  | 237584   | 17.84 | ng/uL | 99  |
| 137) Atrazine                  | 173  | 9.187  | 9.192  | 0.964  | 36541    | 23.32 | ng/uL | 100 |
| 138) 4-Aminobiphenyl           | 169  | 9.312  | 9.315  | 0.977  | 410503   | 18.49 | ng/uL | 99  |
| 139) Pentachloronitrobenzene   | 237  | 9.323  | 9.326  | 0.978  | 57805    | 20.03 | ng/uL | 96  |
| 140) Pronamide                 | 173  | 9.357  | 9.360  | 0.982  | 223429   | 20.23 | ng/uL | 100 |
| 141) 4-Nitroquinoline-1-oxide  | 101  | 10.386 | 10.389 | 1.089  | 15581    | 26.75 | ng/uL | 96  |
| 142) Methapyrilene             | 58   | 10.451 | 10.454 | 1.096  | 537084   | 25.53 | ng/uL | 100 |
| 143) Isodrin                   | 193  | 10.687 | 10.690 | 1.121  | 90656    | 20.18 | ng/uL | 98  |
| 144) Benzidine                 | 184  | 10.977 | 10.980 | 1.151  | 224819   | 24.30 | ng/uL | 99  |
| 146) Aramite                   | 185  | 11.204 | 11.207 | 0.894  | 39963    | 14.75 | ng/uL | 100 |
| 147) Kepone                    | 272  | 11.858 | 11.858 | 0.946  | 51124    | 19.64 | ng/uL | 99  |
| 148) p-(Dimethylamino)azobe... | 120  | 11.394 | 11.397 | 0.910  | 201245   | 17.93 | ng/uL | 98  |
| 149) Chlorobenzilate           | 251  | 11.437 | 11.440 | 0.913  | 191431   | 17.79 | ng/uL | 99  |
| 150) 3,3'-Dimethylbenzidine    | 212  | 11.772 | 11.772 | 0.940  | 283512   | 21.79 | ng/uL | 99  |
| 151) 2-Acetylaminofluorene     | 181  | 12.074 | 12.079 | 0.964  | 118027   | 19.69 | ng/uL | 100 |
| 152) 3,3'-Dichlorobenzidine    | 252  | 12.457 | 12.457 | 0.994  | 131141   | 19.99 | ng/uL | 100 |
| 154) 7,12-Dimethylbenz(a)an... | 256  | 14.139 | 14.142 | 0.954  | 185144   | 20.37 | ng/uL | 99  |
| 155) 3-Methylcholanthrene      | 269  | 15.338 | 15.344 | 1.034  | 27270    | 19.66 | ng/uL | 93  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1216.D  
Acq On : 12 Aug 2011 15:53  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-16|ICAL|1|SVM|1|A3  
Misc : |MIX[B]  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Aug 15 12:06:04 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE





Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1217.D  
Acq On : 12 Aug 2011 16:18  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-15.1|ICAL|1|SVM|1|A4  
Misc : |MIX[B]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 15 12:06:07 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.765  | 4.768  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.047  | 6.049  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.919  | 7.922  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.536  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.528 | 12.531 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 14.824 | 14.824 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.765  | 4.765  | 1.000  | 471709   | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.047  | 6.047  | 1.000  | 1657688  | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.919  | 7.919  | 1.000  | 772993   | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.536  | 9.536  | 1.000  | 1165842  | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 816098   | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 14.824 | 14.824 | 1.000  | 389669   | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.536  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.824 | 14.852 | 1.000  | 0m       | 40.00 | ng/uL | -0.03    |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.760  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.536  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 14.824 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |

|                             |     |       |        |       |   |      |       |          |
|-----------------------------|-----|-------|--------|-------|---|------|-------|----------|
| System Monitoring Compounds |     |       |        |       |   |      |       | Dev(Min) |
| 5) 2-Fluorophenol           | 112 | 0.000 | 3.580  | 0.000 | 0 | 0.00 | ng/uL |          |
| 8) Phenol-d5                | 99  | 0.000 | 4.367  | 0.000 | 0 | 0.00 | ng/uL |          |
| 25) Nitrobenzene-d5         | 82  | 0.000 | 5.308  | 0.000 | 0 | 0.00 | ng/uL |          |
| 47) 2-Fluorobiphenyl        | 172 | 0.000 | 7.178  | 0.000 | 0 | 0.00 | ng/uL |          |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000 | 8.772  | 0.000 | 0 | 0.00 | ng/uL |          |
| 83) p-Terphenyl-d14         | 244 | 0.000 | 11.244 | 0.000 | 0 | 0.00 | ng/uL |          |

| Target Compounds               | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units | QValue |
|--------------------------------|------|-------|--------|--------|----------|-------|-------|--------|
| 100) 1,4-Dioxane               | 88   | 2.398 | 2.398  | 0.503  | 268623   | 41.03 | ng/uL | 100    |
| 101) Methyl methacrylate       | 100  | 2.396 | 2.396  | 0.503  | 147713   | 41.13 | ng/uL | 100    |
| 102) Ethyl methacrylate        | 69   | 2.907 | 2.907  | 0.610  | 603372   | 40.90 | ng/uL | 100    |
| 103) 2-Picoline                | 93   | 3.163 | 3.163  | 0.664  | 762207   | 40.88 | ng/uL | 100    |
| 104) N-Nitrosomethylethylamine | 88   | 3.234 | 3.234  | 0.679  | 314733   | 40.38 | ng/uL | 100    |
| 105) Methyl methanesulfonate   | 80   | 3.464 | 3.464  | 0.727  | 335541   | 40.25 | ng/uL | 100    |
| 106) N-Nitrosodiethylamine     | 102  | 3.796 | 3.796  | 0.797  | 319597   | 40.47 | ng/uL | 100    |
| 107) Ethyl methanesulfonate    | 79   | 4.035 | 4.035  | 0.847  | 472850   | 40.22 | ng/uL | 100    |
| 108) Benzaldehyde              | 77   | 4.365 | 4.365  | 0.916  | 519055   | 41.69 | ng/uL | 100    |
| 109) Pentachloroethane         | 167  | 4.507 | 4.507  | 0.946  | 259190   | 40.49 | ng/uL | 100    |
| 110) N-Nitrosopyrrolidine      | 100  | 5.135 | 5.135  | 1.078  | 312480   | 41.59 | ng/uL | 100    |
| 111) Acetophenone              | 105  | 5.149 | 5.149  | 1.080  | 836954   | 40.23 | ng/uL | 100    |
| 112) N-Nitrosomorpholine       | 56   | 5.166 | 5.166  | 1.084  | 559596   | 40.35 | ng/uL | 100    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1217.D  
Acq On : 12 Aug 2011 16:18  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-15.1|ICAL|1|SVM|1|A4  
Misc : |MIX[B]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 15 12:06:07 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE

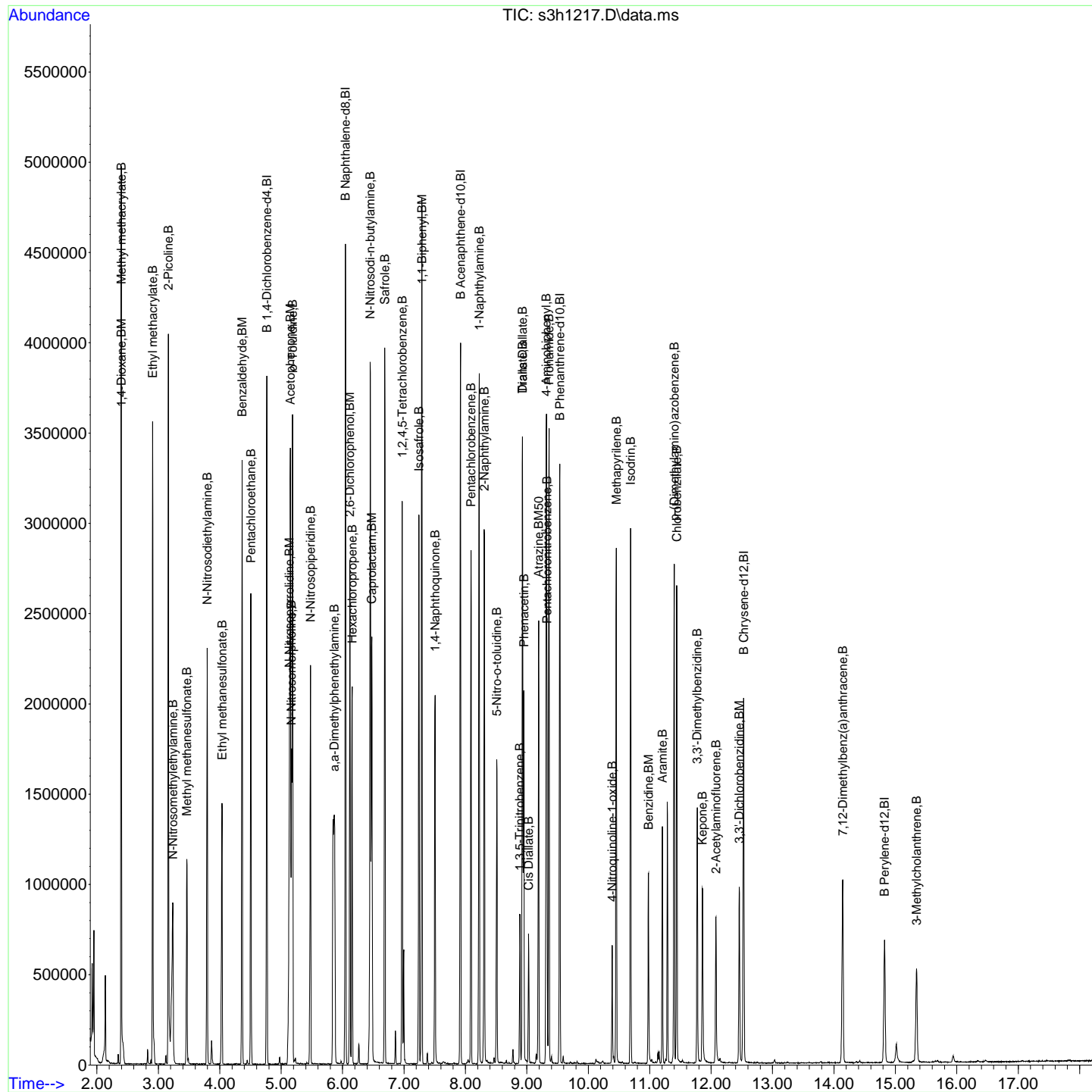
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|--------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 113) o-Toluidine               | 106  | 5.186  | 5.186  | 1.088  | 950141   | 40.59 | ng/uL | 100 |
| 115) N-Nitrosopiperidine       | 114  | 5.479  | 5.479  | 0.906  | 300611   | 39.73 | ng/uL | 100 |
| 116) a,a-Dimethylphenethyla... | 58   | 5.862  | 5.862  | 0.969  | 2220259  | 38.61 | ng/uL | 100 |
| 117) 2,6-Dichlorophenol        | 162  | 6.118  | 6.118  | 1.012  | 430619   | 39.67 | ng/uL | 100 |
| 118) Hexachloropropene         | 213  | 6.155  | 6.155  | 1.018  | 292450   | 40.96 | ng/uL | 100 |
| 119) Caprolactam               | 113  | 6.473  | 6.473  | 1.070  | 175815   | 39.38 | ng/uL | 100 |
| 120) N-Nitrosodi-n-butylamine  | 84   | 6.450  | 6.450  | 1.067  | 516335   | 41.82 | ng/uL | 100 |
| 121) Safrole                   | 162  | 6.686  | 6.686  | 1.106  | 458988   | 40.01 | ng/uL | 100 |
| 123) 1,2,4,5-Tetrachloroben... | 216  | 6.970  | 6.970  | 0.880  | 477506   | 41.30 | ng/uL | 100 |
| 124) 1,1-Biphenyl              | 154  | 7.291  | 7.291  | 0.921  | 1342775  | 41.16 | ng/uL | 100 |
| 125) Isosafrole                | 162  | 7.243  | 7.243  | 0.915  | 437348   | 40.32 | ng/uL | 100 |
| 126) 1,4-Naphthoquinone        | 158  | 7.505  | 7.505  | 0.948  | 321873   | 41.90 | ng/uL | 100 |
| 127) Pentachlorobenzene        | 250  | 8.090  | 8.090  | 1.022  | 387092   | 39.95 | ng/uL | 100 |
| 128) 1-Naphthylamine           | 143  | 8.223  | 8.223  | 1.038  | 866644   | 39.55 | ng/uL | 100 |
| 129) 2-Naphthylamine           | 143  | 8.309  | 8.309  | 1.049  | 896934   | 39.14 | ng/uL | 100 |
| 130) 5-Nitro-o-toluidine       | 152  | 8.510  | 8.510  | 1.075  | 241093   | 38.59 | ng/uL | 100 |
| 132) 1,3,5-Trinitrobenzene     | 75   | 8.885  | 8.885  | 0.932  | 192552   | 44.15 | ng/uL | 100 |
| 133) Phenacetin                | 108  | 8.951  | 8.951  | 0.939  | 415142   | 40.87 | ng/uL | 100 |
| 134) Diallate                  | 86   | 8.928  | 8.928  | 0.936  | 444136   | 41.05 | ng/uL | 100 |
| 135) Cis Diallate              | 86   | 9.028  | 9.028  | 0.947  | 88581    | 6.07  | ng/uL | 100 |
| 136) Trans Diallate            | 86   | 8.928  | 8.928  | 0.936  | 444136   | 34.89 | ng/uL | 100 |
| 137) Atrazine                  | 173  | 9.192  | 9.192  | 0.964  | 60361    | 40.29 | ng/uL | 100 |
| 138) 4-Aminobiphenyl           | 169  | 9.315  | 9.315  | 0.977  | 896672   | 42.25 | ng/uL | 100 |
| 139) Pentachloronitrobenzene   | 237  | 9.326  | 9.326  | 0.978  | 113403   | 41.10 | ng/uL | 100 |
| 140) Pronamide                 | 173  | 9.360  | 9.360  | 0.982  | 444444   | 42.10 | ng/uL | 100 |
| 141) 4-Nitroquinoline-1-oxide  | 101  | 10.389 | 10.389 | 1.089  | 25148    | 45.17 | ng/uL | 100 |
| 142) Methapyrilene             | 58   | 10.454 | 10.454 | 1.096  | 912628   | 45.39 | ng/uL | 100 |
| 143) Isodrin                   | 193  | 10.690 | 10.690 | 1.121  | 180244   | 41.97 | ng/uL | 100 |
| 144) Benzidine                 | 184  | 10.980 | 10.980 | 1.151  | 382618   | 43.26 | ng/uL | 100 |
| 146) Aramite                   | 185  | 11.207 | 11.207 | 0.895  | 79984    | 32.41 | ng/uL | 100 |
| 147) Kepone                    | 272  | 11.858 | 11.858 | 0.946  | 99394    | 41.93 | ng/uL | 100 |
| 148) p-(Dimethylamino)azobe... | 120  | 11.397 | 11.397 | 0.910  | 406522   | 39.79 | ng/uL | 100 |
| 149) Chlorobenzilate           | 251  | 11.440 | 11.440 | 0.913  | 391805   | 39.99 | ng/uL | 100 |
| 150) 3,3'-Dimethylbenzidine    | 212  | 11.772 | 11.772 | 0.940  | 457428   | 38.61 | ng/uL | 100 |
| 151) 2-Acetylaminofluorene     | 181  | 12.079 | 12.079 | 0.964  | 195486   | 35.82 | ng/uL | 100 |
| 152) 3,3'-Dichlorobenzidine    | 252  | 12.457 | 12.457 | 0.994  | 227503   | 38.08 | ng/uL | 100 |
| 154) 7,12-Dimethylbenz(a)an... | 256  | 14.142 | 14.142 | 0.954  | 298832   | 42.92 | ng/uL | 100 |
| 155) 3-Methylcholanthrene      | 269  | 15.344 | 15.344 | 1.035  | 41248    | 38.83 | ng/uL | 100 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1217.D  
Acq On : 12 Aug 2011 16:18  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-15.1|ICAL|1|SVM|1|A4  
Misc : |MIX[B]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 15 12:06:07 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1218.D  
Acq On : 12 Aug 2011 16:42  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-14|ICAL|1|SVM|1|A5  
Misc : |MIX[B]  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Aug 15 12:06:11 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.765  | 4.768  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.047  | 6.049  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.919  | 7.922  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.536  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.528 | 12.531 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 14.827 | 14.824 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.765  | 4.765  | 1.000  | 497148   | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.047  | 6.047  | 1.000  | 1759794  | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.919  | 7.919  | 1.000  | 857669   | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.536  | 9.536  | 1.000  | 1356757  | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 916655   | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 14.827 | 14.824 | 1.000  | 517925   | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.536  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.827 | 14.852 | 1.000  | 0m       | 40.00 | ng/uL | -0.03    |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.760  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.536  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 14.827 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |

|                             |     |       |        |       |   |      |       |          |
|-----------------------------|-----|-------|--------|-------|---|------|-------|----------|
| System Monitoring Compounds |     |       |        |       |   |      |       | Dev(Min) |
| 5) 2-Fluorophenol           | 112 | 0.000 | 3.580  | 0.000 | 0 | 0.00 | ng/uL |          |
| 8) Phenol-d5                | 99  | 0.000 | 4.367  | 0.000 | 0 | 0.00 | ng/uL |          |
| 25) Nitrobenzene-d5         | 82  | 0.000 | 5.308  | 0.000 | 0 | 0.00 | ng/uL |          |
| 47) 2-Fluorobiphenyl        | 172 | 0.000 | 7.178  | 0.000 | 0 | 0.00 | ng/uL |          |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000 | 8.772  | 0.000 | 0 | 0.00 | ng/uL |          |
| 83) p-Terphenyl-d14         | 244 | 0.000 | 11.244 | 0.000 | 0 | 0.00 | ng/uL |          |

|                                |      |       |        |        |          |       |       |        |
|--------------------------------|------|-------|--------|--------|----------|-------|-------|--------|
| Target Compounds               | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units | QValue |
| 100) 1,4-Dioxane               | 88   | 2.398 | 2.398  | 0.503  | 342158   | 49.59 | ng/uL | 99     |
| 101) Methyl methacrylate       | 100  | 2.395 | 2.396  | 0.503  | 187162   | 49.45 | ng/uL | 100    |
| 102) Ethyl methacrylate        | 69   | 2.907 | 2.907  | 0.610  | 769253   | 49.47 | ng/uL | 100    |
| 103) 2-Picoline                | 93   | 3.163 | 3.163  | 0.664  | 977136   | 49.72 | ng/uL | 100    |
| 104) N-Nitrosomethylethylamine | 88   | 3.237 | 3.234  | 0.679  | 406580   | 49.50 | ng/uL | 100    |
| 105) Methyl methanesulfonate   | 80   | 3.470 | 3.464  | 0.728  | 452468   | 51.50 | ng/uL | 99     |
| 106) N-Nitrosodiethylamine     | 102  | 3.799 | 3.796  | 0.797  | 412724   | 49.59 | ng/uL | 100    |
| 107) Ethyl methanesulfonate    | 79   | 4.041 | 4.035  | 0.848  | 625884   | 50.51 | ng/uL | 99     |
| 108) Benzaldehyde              | 77   | 4.365 | 4.365  | 0.916  | 671062   | 51.14 | ng/uL | 100    |
| 109) Pentachloroethane         | 167  | 4.507 | 4.507  | 0.946  | 337626   | 50.04 | ng/uL | 100    |
| 110) N-Nitrosopyrrolidine      | 100  | 5.140 | 5.135  | 1.079  | 418988   | 52.91 | ng/uL | 99     |
| 111) Acetophenone              | 105  | 5.152 | 5.149  | 1.081  | 1097061  | 50.04 | ng/uL | 100    |
| 112) N-Nitrosomorpholine       | 56   | 5.172 | 5.166  | 1.085  | 740581   | 50.67 | ng/uL | 100    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1218.D  
Acq On : 12 Aug 2011 16:42  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-14|ICAL|1|SVM|1|A5  
Misc : |MIX[B]  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Aug 15 12:06:11 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE

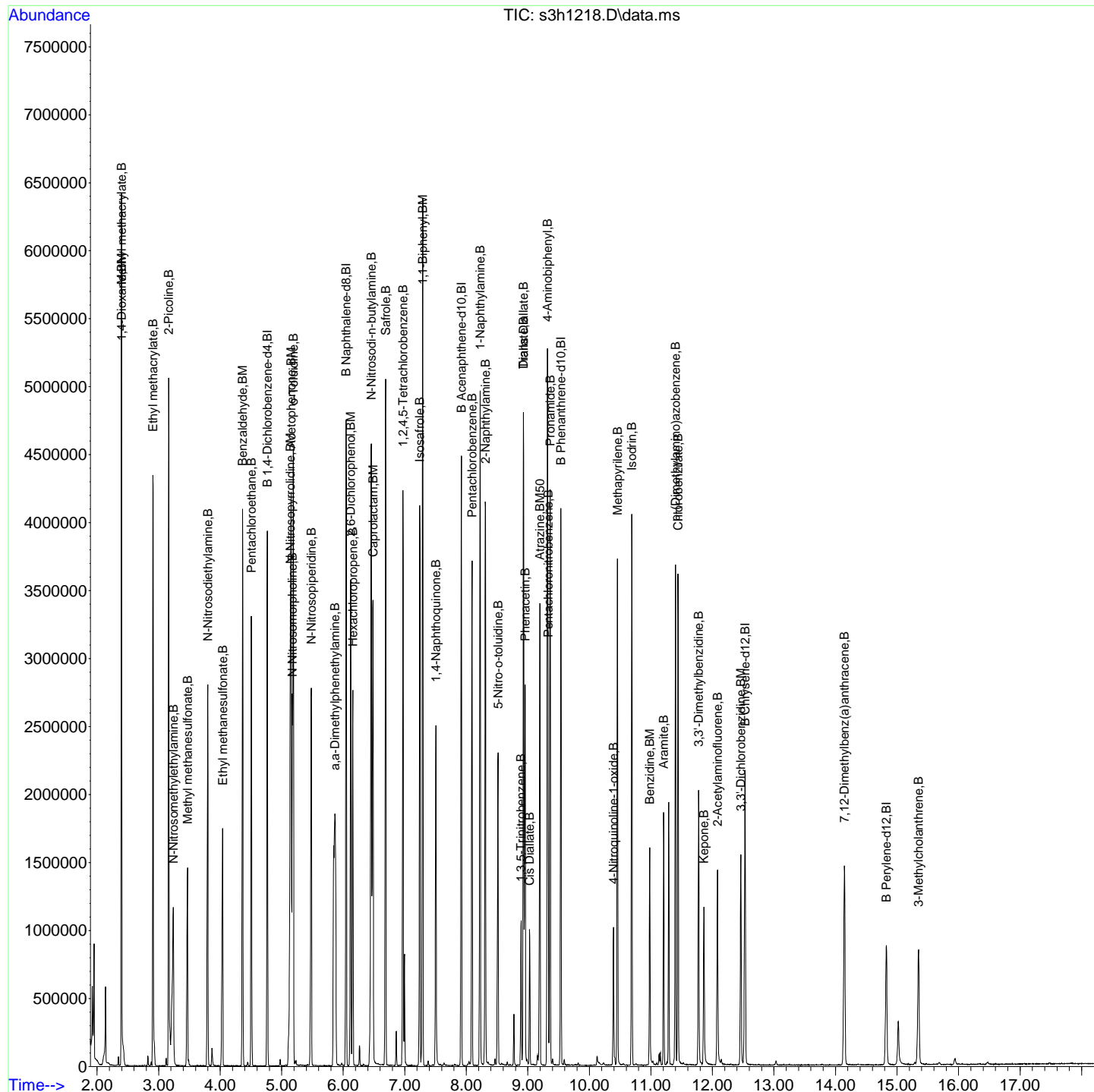
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|--------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 113) o-Toluidine               | 106  | 5.189  | 5.186  | 1.089  | 1244336  | 50.44 | ng/uL | 100 |
| 115) N-Nitrosopiperidine       | 114  | 5.481  | 5.479  | 0.906  | 404734   | 50.38 | ng/uL | 98  |
| 116) a,a-Dimethylphenethyla... | 58   | 5.865  | 5.862  | 0.970  | 3067075  | 50.25 | ng/uL | 100 |
| 117) 2,6-Dichlorophenol        | 162  | 6.121  | 6.118  | 1.012  | 580179   | 50.34 | ng/uL | 100 |
| 118) Hexachloropropene         | 213  | 6.155  | 6.155  | 1.018  | 397531   | 52.45 | ng/uL | 100 |
| 119) Caprolactam               | 113  | 6.484  | 6.473  | 1.072  | 242852   | 51.24 | ng/uL | 99  |
| 120) N-Nitrosodi-n-butylamine  | 84   | 6.456  | 6.450  | 1.068  | 637600   | 48.64 | ng/uL | 90  |
| 121) Safrole                   | 162  | 6.689  | 6.686  | 1.106  | 613129   | 50.35 | ng/uL | 99  |
| 123) 1,2,4,5-Tetrachloroben... | 216  | 6.970  | 6.970  | 0.880  | 633154   | 49.35 | ng/uL | 100 |
| 124) 1,1-Biphenyl              | 154  | 7.291  | 7.291  | 0.921  | 1796386  | 49.63 | ng/uL | 100 |
| 125) Isosafrole                | 162  | 7.243  | 7.243  | 0.915  | 600879   | 49.92 | ng/uL | 99  |
| 126) 1,4-Naphthoquinone        | 158  | 7.504  | 7.505  | 0.948  | 418350   | 49.08 | ng/uL | 100 |
| 127) Pentachlorobenzene        | 250  | 8.093  | 8.090  | 1.022  | 534609   | 49.72 | ng/uL | 100 |
| 128) 1-Naphthylamine           | 143  | 8.226  | 8.223  | 1.039  | 1246484  | 51.27 | ng/uL | 100 |
| 129) 2-Naphthylamine           | 143  | 8.311  | 8.309  | 1.050  | 1311220  | 51.57 | ng/uL | 100 |
| 130) 5-Nitro-o-toluidine       | 152  | 8.516  | 8.510  | 1.075  | 353171   | 50.95 | ng/uL | 100 |
| 132) 1,3,5-Trinitrobenzene     | 75   | 8.888  | 8.885  | 0.932  | 248007   | 48.87 | ng/uL | 99  |
| 133) Phenacetin                | 108  | 8.956  | 8.951  | 0.939  | 602185   | 50.94 | ng/uL | 100 |
| 134) Diallate                  | 86   | 8.928  | 8.928  | 0.936  | 622476   | 49.43 | ng/uL | 100 |
| 135) Cis Diallate              | 86   | 9.027  | 9.028  | 0.947  | 124118   | 7.31  | ng/uL | 99  |
| 136) Trans Diallate            | 86   | 8.928  | 8.928  | 0.936  | 622476   | 42.02 | ng/uL | 100 |
| 137) Atrazine                  | 173  | 9.198  | 9.192  | 0.965  | 90206    | 51.74 | ng/uL | 99  |
| 138) 4-Aminobiphenyl           | 169  | 9.317  | 9.315  | 0.977  | 1304456  | 52.82 | ng/uL | 100 |
| 139) Pentachloronitrobenzene   | 237  | 9.329  | 9.326  | 0.978  | 161982   | 50.45 | ng/uL | 98  |
| 140) Pronamide                 | 173  | 9.363  | 9.360  | 0.982  | 582616   | 47.42 | ng/uL | 100 |
| 141) 4-Nitroquinoline-1-oxide  | 101  | 10.391 | 10.389 | 1.090  | 33406    | 51.56 | ng/uL | 89  |
| 142) Methapyrilene             | 58   | 10.454 | 10.454 | 1.096  | 1225083  | 52.35 | ng/uL | 100 |
| 143) Isodrin                   | 193  | 10.690 | 10.690 | 1.121  | 246112   | 49.24 | ng/uL | 99  |
| 144) Benzidine                 | 184  | 10.979 | 10.980 | 1.151  | 584353   | 56.78 | ng/uL | 100 |
| 146) Aramite                   | 185  | 11.207 | 11.207 | 0.895  | 111280   | 40.15 | ng/uL | 99  |
| 147) Kepone                    | 272  | 11.860 | 11.858 | 0.947  | 121081   | 45.48 | ng/uL | 99  |
| 148) p-(Dimethylamino)azobe... | 120  | 11.400 | 11.397 | 0.910  | 558814   | 48.69 | ng/uL | 99  |
| 149) Chlorobenzilate           | 251  | 11.440 | 11.440 | 0.913  | 530826   | 48.23 | ng/uL | 99  |
| 150) 3,3'-Dimethylbenzidine    | 212  | 11.775 | 11.772 | 0.940  | 690473   | 51.88 | ng/uL | 100 |
| 151) 2-Acetylaminofluorene     | 181  | 12.082 | 12.079 | 0.964  | 347946   | 56.77 | ng/uL | 100 |
| 152) 3,3'-Dichlorobenzidine    | 252  | 12.460 | 12.457 | 0.995  | 360055   | 53.66 | ng/uL | 99  |
| 154) 7,12-Dimethylbenz(a)an... | 256  | 14.145 | 14.142 | 0.954  | 436111   | 47.13 | ng/uL | 99  |
| 155) 3-Methylcholanthrene      | 269  | 15.347 | 15.344 | 1.035  | 72358    | 51.24 | ng/uL | 95  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1218.D  
Acq On : 12 Aug 2011 16:42  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-14|ICAL|1|SVM|1|A5  
Misc : |MIX[B]  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Aug 15 12:06:11 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1219.D  
Acq On : 12 Aug 2011 17:07  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-13|ICAL|1|SVM|1|A6  
Misc : |MIX[B]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Aug 15 12:06:15 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.765  | 4.768  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.047  | 6.049  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.919  | 7.922  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.539  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.528 | 12.531 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 14.824 | 14.824 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.765  | 4.765  | 1.000  | 509069   | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.047  | 6.047  | 1.000  | 1794267  | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.919  | 7.919  | 1.000  | 851265   | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.539  | 9.536  | 1.000  | 1353858  | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 805794   | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 14.824 | 14.824 | 1.000  | 378999   | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.539  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.824 | 14.852 | 1.000  | 0m       | 40.00 | ng/uL | -0.03    |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.760  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.539  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 14.824 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |

|                             |     |       |        |       |   |      |       |          |
|-----------------------------|-----|-------|--------|-------|---|------|-------|----------|
| System Monitoring Compounds |     |       |        |       |   |      |       | Dev(Min) |
| 5) 2-Fluorophenol           | 112 | 0.000 | 3.580  | 0.000 | 0 | 0.00 | ng/uL |          |
| 8) Phenol-d5                | 99  | 0.000 | 4.367  | 0.000 | 0 | 0.00 | ng/uL |          |
| 25) Nitrobenzene-d5         | 82  | 0.000 | 5.308  | 0.000 | 0 | 0.00 | ng/uL |          |
| 47) 2-Fluorobiphenyl        | 172 | 0.000 | 7.178  | 0.000 | 0 | 0.00 | ng/uL |          |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000 | 8.772  | 0.000 | 0 | 0.00 | ng/uL |          |
| 83) p-Terphenyl-d14         | 244 | 0.000 | 11.244 | 0.000 | 0 | 0.00 | ng/uL |          |

|                                |      |       |        |        |          |       |       |        |
|--------------------------------|------|-------|--------|--------|----------|-------|-------|--------|
| Target Compounds               | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units | QValue |
| 100) 1,4-Dioxane               | 88   | 2.401 | 2.398  | 0.504  | 539832   | 76.41 | ng/uL | 99     |
| 101) Methyl methacrylate       | 100  | 2.398 | 2.396  | 0.503  | 293546   | 75.74 | ng/uL | 98     |
| 102) Ethyl methacrylate        | 69   | 2.910 | 2.907  | 0.611  | 1225992  | 77.00 | ng/uL | 99     |
| 103) 2-Picoline                | 93   | 3.166 | 3.163  | 0.664  | 1551290  | 77.09 | ng/uL | 99     |
| 104) N-Nitrosomethylethylamine | 88   | 3.242 | 3.234  | 0.680  | 658136   | 78.25 | ng/uL | 100    |
| 105) Methyl methanesulfonate   | 80   | 3.475 | 3.464  | 0.729  | 681175   | 75.72 | ng/uL | 100    |
| 106) N-Nitrosodiethylamine     | 102  | 3.805 | 3.796  | 0.798  | 665839   | 78.13 | ng/uL | 100    |
| 107) Ethyl methanesulfonate    | 79   | 4.046 | 4.035  | 0.849  | 995882   | 78.49 | ng/uL | 100    |
| 108) Benzaldehyde              | 77   | 4.367 | 4.365  | 0.917  | 987861   | 73.52 | ng/uL | 100    |
| 109) Pentachloroethane         | 167  | 4.507 | 4.507  | 0.946  | 540595   | 78.25 | ng/uL | 99     |
| 110) N-Nitrosopyrrolidine      | 100  | 5.152 | 5.135  | 1.081  | 606391   | 74.78 | ng/uL | 97     |
| 111) Acetophenone              | 105  | 5.157 | 5.149  | 1.082  | 1751129  | 78.00 | ng/uL | 99     |
| 112) N-Nitrosomorpholine       | 56   | 5.183 | 5.166  | 1.088  | 1172991  | 78.37 | ng/uL | 100    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1219.D  
Acq On : 12 Aug 2011 17:07  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-13|ICAL|1|SVM|1|A6  
Misc : |MIX[B]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Aug 15 12:06:15 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|--------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 113) o-Toluidine               | 106  | 5.194  | 5.186  | 1.090  | 1969954  | 77.98 | ng/uL | 100 |
| 115) N-Nitrosopiperidine       | 114  | 5.487  | 5.479  | 0.907  | 645157   | 78.77 | ng/uL | 98  |
| 116) a,a-Dimethylphenethyla... | 58   | 5.865  | 5.862  | 0.970  | 5117245  | 82.22 | ng/uL | 100 |
| 117) 2,6-Dichlorophenol        | 162  | 6.126  | 6.118  | 1.013  | 935851   | 79.64 | ng/uL | 100 |
| 118) Hexachloropropene         | 213  | 6.158  | 6.155  | 1.018  | 575854   | 74.52 | ng/uL | 99  |
| 119) Caprolactam               | 113  | 6.496  | 6.473  | 1.074  | 378072   | 78.24 | ng/uL | 99  |
| 120) N-Nitrosodi-n-butylamine  | 84   | 6.459  | 6.450  | 1.068  | 1110014  | 83.05 | ng/uL | 83  |
| 121) Safrole                   | 162  | 6.692  | 6.686  | 1.107  | 969032   | 78.05 | ng/uL | 99  |
| 123) 1,2,4,5-Tetrachloroben... | 216  | 6.973  | 6.970  | 0.881  | 999838   | 78.52 | ng/uL | 100 |
| 124) 1,1-Biphenyl              | 154  | 7.294  | 7.291  | 0.921  | 2805643  | 78.10 | ng/uL | 100 |
| 125) Isosafrole                | 162  | 7.249  | 7.243  | 0.915  | 945756   | 79.17 | ng/uL | 99  |
| 126) 1,4-Naphthoquinone        | 158  | 7.507  | 7.505  | 0.948  | 582446   | 68.85 | ng/uL | 100 |
| 127) Pentachlorobenzene        | 250  | 8.095  | 8.090  | 1.022  | 836394   | 78.38 | ng/uL | 100 |
| 128) 1-Naphthylamine           | 143  | 8.229  | 8.223  | 1.039  | 1845573  | 76.48 | ng/uL | 99  |
| 129) 2-Naphthylamine           | 143  | 8.314  | 8.309  | 1.050  | 1959576  | 77.64 | ng/uL | 99  |
| 130) 5-Nitro-o-toluidine       | 152  | 8.522  | 8.510  | 1.076  | 559923   | 81.39 | ng/uL | 99  |
| 132) 1,3,5-Trinitrobenzene     | 75   | 8.897  | 8.885  | 0.933  | 394590   | 77.92 | ng/uL | 99  |
| 133) Phenacetin                | 108  | 8.965  | 8.951  | 0.940  | 973955   | 82.57 | ng/uL | 100 |
| 134) Diallate                  | 86   | 8.931  | 8.928  | 0.936  | 963359   | 76.67 | ng/uL | 100 |
| 135) Cis Diallate              | 86   | 9.030  | 9.028  | 0.947  | 196001   | 11.57 | ng/uL | 99  |
| 136) Trans Diallate            | 86   | 8.931  | 8.928  | 0.936  | 963359   | 65.17 | ng/uL | 100 |
| 137) Atrazine                  | 173  | 9.201  | 9.192  | 0.965  | 116201   | 66.79 | ng/uL | 99  |
| 138) 4-Aminobiphenyl           | 169  | 9.323  | 9.315  | 0.977  | 2013619  | 81.71 | ng/uL | 99  |
| 139) Pentachloronitrobenzene   | 237  | 9.331  | 9.326  | 0.978  | 256199   | 79.96 | ng/uL | 99  |
| 140) Pronamide                 | 173  | 9.368  | 9.360  | 0.982  | 969687   | 79.09 | ng/uL | 100 |
| 141) 4-Nitroquinoline-1-oxide  | 101  | 10.391 | 10.389 | 1.089  | 34553    | 53.44 | ng/uL | 86  |
| 142) Methapyrilene             | 58   | 10.457 | 10.454 | 1.096  | 1447498  | 61.99 | ng/uL | 100 |
| 143) Isodrin                   | 193  | 10.692 | 10.690 | 1.121  | 397107   | 79.62 | ng/uL | 98  |
| 144) Benzidine                 | 184  | 10.982 | 10.980 | 1.151  | 726834   | 70.77 | ng/uL | 100 |
| 146) Aramite                   | 185  | 11.210 | 11.207 | 0.895  | 167947   | 68.93 | ng/uL | 100 |
| 147) Kepone                    | 272  | 11.863 | 11.858 | 0.947  | 187688   | 80.20 | ng/uL | 99  |
| 148) p-(Dimethylamino)azobe... | 120  | 11.403 | 11.397 | 0.910  | 856438   | 84.90 | ng/uL | 100 |
| 149) Chlorobenzilate           | 251  | 11.443 | 11.440 | 0.913  | 823686   | 85.14 | ng/uL | 99  |
| 150) 3,3'-Dimethylbenzidine    | 212  | 11.778 | 11.772 | 0.940  | 864397   | 73.89 | ng/uL | 100 |
| 151) 2-Acetylaminofluorene     | 181  | 12.085 | 12.079 | 0.965  | 413057   | 76.66 | ng/uL | 99  |
| 152) 3,3'-Dichlorobenzidine    | 252  | 12.463 | 12.457 | 0.995  | 455495   | 77.23 | ng/uL | 100 |
| 154) 7,12-Dimethylbenz(a)an... | 256  | 14.148 | 14.142 | 0.954  | 551508   | 81.45 | ng/uL | 99  |
| 155) 3-Methylcholanthrene      | 269  | 15.352 | 15.344 | 1.036  | 82894    | 80.22 | ng/uL | 95  |

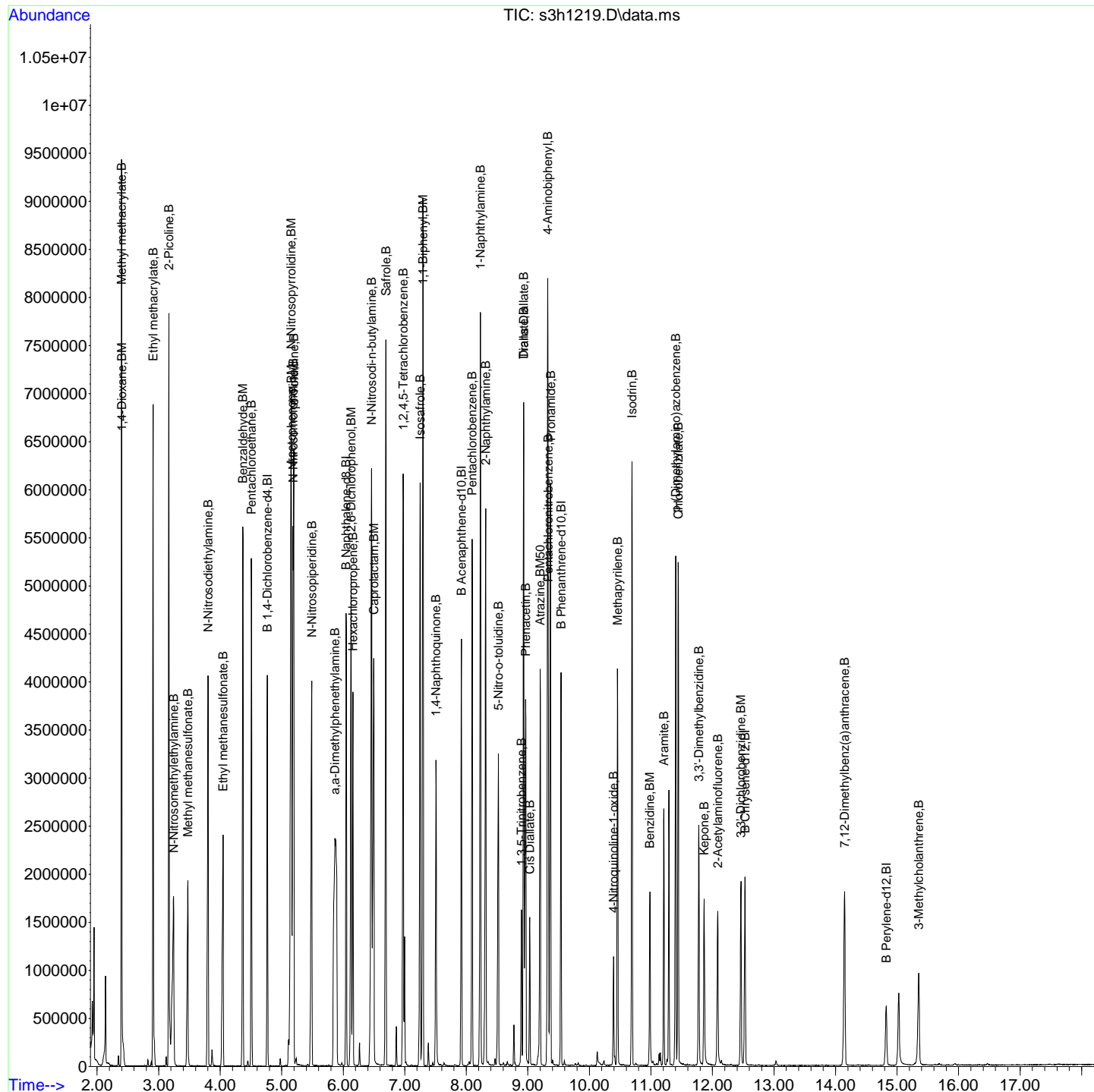
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1219.D  
Acq On : 12 Aug 2011 17:07  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-13|ICAL|1|SVM|1|A6  
Misc : |MIX[B]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Aug 15 12:06:15 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1220.D  
Acq On : 12 Aug 2011 17:32  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-12|ICAL|1|SVM|1|A7  
Misc : |MIX[B]  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Aug 15 12:06:19 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.765  | 4.768  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.049  | 6.049  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.919  | 7.922  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.539  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.531 | 12.531 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 14.824 | 14.824 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.765  | 4.765  | 1.000  | 512708   | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.049  | 6.047  | 1.000  | 1784697  | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.919  | 7.919  | 1.000  | 835304   | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.539  | 9.536  | 1.000  | 1404237  | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 796482   | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 14.824 | 14.824 | 1.000  | 403956   | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.049  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.539  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.049  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.824 | 14.852 | 1.000  | 0m       | 40.00 | ng/uL | -0.03    |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.760  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.049  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.539  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.049  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 14.824 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |

|                             |     |       |        |       |    |      |       |          |
|-----------------------------|-----|-------|--------|-------|----|------|-------|----------|
| System Monitoring Compounds |     |       |        |       |    |      |       | Dev(Min) |
| 5) 2-Fluorophenol           | 112 | 0.000 | 3.580  | 0.000 | 0  | 0.00 | ng/uL |          |
| 8) Phenol-d5                | 99  | 0.000 | 4.367  | 0.000 | 0  | 0.00 | ng/uL |          |
| 25) Nitrobenzene-d5         | 82  | 5.240 | 5.308  | 0.866 | 0d | 0.00 | ng/uL |          |
| 47) 2-Fluorobiphenyl        | 172 | 0.000 | 7.178  | 0.000 | 0  | 0.00 | ng/uL |          |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000 | 8.772  | 0.000 | 0  | 0.00 | ng/uL |          |
| 83) p-Terphenyl-d14         | 244 | 0.000 | 11.244 | 0.000 | 0  | 0.00 | ng/uL |          |

|                                |      |       |        |        |          |       |       |        |
|--------------------------------|------|-------|--------|--------|----------|-------|-------|--------|
| Target Compounds               | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units | QValue |
| 100) 1,4-Dioxane               | 88   | 2.404 | 2.398  | 0.504  | 674345   | 94.77 | ng/uL | 100    |
| 101) Methyl methacrylate       | 100  | 2.401 | 2.396  | 0.504  | 367184   | 94.06 | ng/uL | 94     |
| 102) Ethyl methacrylate        | 69   | 2.913 | 2.907  | 0.611  | 1544924  | 96.34 | ng/uL | 98     |
| 103) 2-Picoline                | 93   | 3.168 | 3.163  | 0.665  | 1957224  | 96.57 | ng/uL | 99     |
| 104) N-Nitrosomethylethylamine | 88   | 3.245 | 3.234  | 0.681  | 825597   | 97.46 | ng/uL | 100    |
| 105) Methyl methanesulfonate   | 80   | 3.478 | 3.464  | 0.730  | 838256   | 92.52 | ng/uL | 100    |
| 106) N-Nitrosodiethylamine     | 102  | 3.808 | 3.796  | 0.799  | 832775   | 97.02 | ng/uL | 99     |
| 107) Ethyl methanesulfonate    | 79   | 4.049 | 4.035  | 0.850  | 1234669  | 96.62 | ng/uL | 100    |
| 108) Benzaldehyde              | 77   | 4.370 | 4.365  | 0.917  | 1184404  | 87.52 | ng/uL | 99     |
| 109) Pentachloroethane         | 167  | 4.509 | 4.507  | 0.946  | 672731   | 96.69 | ng/uL | 99     |
| 110) N-Nitrosopyrrolidine      | 100  | 5.157 | 5.135  | 1.082  | 731748   | 89.60 | ng/uL | 97     |
| 111) Acetophenone              | 105  | 5.160 | 5.149  | 1.083  | 2161757  | 95.61 | ng/uL | 98     |
| 112) N-Nitrosomorpholine       | 56   | 5.186 | 5.166  | 1.088  | 1430940  | 94.93 | ng/uL | 100    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1220.D  
Acq On : 12 Aug 2011 17:32  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-12|ICAL|1|SVM|1|A7  
Misc : |MIX[B]  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Aug 15 12:06:19 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|--------------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 113) o-Toluidine               | 106  | 5.197  | 5.186  | 1.091  | 2429826  | 95.50  | ng/uL | 100 |
| 115) N-Nitrosopiperidine       | 114  | 5.490  | 5.479  | 0.907  | 794876   | 97.57  | ng/uL | 98  |
| 116) a,a-Dimethylphenethyla... | 58   | 5.890  | 5.862  | 0.974  | 6539895  | 105.64 | ng/uL | 100 |
| 117) 2,6-Dichlorophenol        | 162  | 6.129  | 6.118  | 1.013  | 1153703  | 98.71  | ng/uL | 99  |
| 118) Hexachloropropene         | 213  | 6.157  | 6.155  | 1.018  | 724065   | 94.20  | ng/uL | 99  |
| 119) Caprolactam               | 113  | 6.504  | 6.473  | 1.075  | 473737   | 98.56  | ng/uL | 99  |
| 120) N-Nitrosodi-n-butylamine  | 84   | 6.461  | 6.450  | 1.068  | 1165175  | 87.65  | ng/uL | 85  |
| 121) Safrole                   | 162  | 6.694  | 6.686  | 1.107  | 1190467  | 96.40  | ng/uL | 99  |
| 123) 1,2,4,5-Tetrachloroben... | 216  | 6.976  | 6.970  | 0.881  | 1224165  | 97.97  | ng/uL | 99  |
| 124) 1,1-Biphenyl              | 154  | 7.297  | 7.291  | 0.921  | 3410920  | 96.77  | ng/uL | 99  |
| 125) Isosafrole                | 162  | 7.251  | 7.243  | 0.916  | 1160394  | 98.99  | ng/uL | 99  |
| 126) 1,4-Naphthoquinone        | 158  | 7.510  | 7.505  | 0.948  | 691778   | 83.34  | ng/uL | 99  |
| 127) Pentachlorobenzene        | 250  | 8.098  | 8.090  | 1.023  | 1031949  | 98.55  | ng/uL | 100 |
| 128) 1-Naphthylamine           | 143  | 8.232  | 8.223  | 1.039  | 2262769  | 95.56  | ng/uL | 99  |
| 129) 2-Naphthylamine           | 143  | 8.317  | 8.309  | 1.050  | 2435385  | 98.34  | ng/uL | 99  |
| 130) 5-Nitro-o-toluidine       | 152  | 8.524  | 8.510  | 1.076  | 741503   | 109.84 | ng/uL | 99  |
| 132) 1,3,5-Trinitrobenzene     | 75   | 8.899  | 8.885  | 0.933  | 540652   | 102.93 | ng/uL | 99  |
| 133) Phenacetin                | 108  | 8.973  | 8.951  | 0.941  | 1289364  | 105.38 | ng/uL | 99  |
| 134) Diallate                  | 86   | 8.934  | 8.928  | 0.937  | 1202855  | 92.29  | ng/uL | 99  |
| 135) Cis Diallate              | 86   | 9.030  | 9.028  | 0.947  | 247847   | 14.11  | ng/uL | 99  |
| 136) Trans Diallate            | 86   | 8.934  | 8.928  | 0.937  | 1202855  | 78.45  | ng/uL | 99  |
| 137) Atrazine                  | 173  | 9.206  | 9.192  | 0.965  | 128953   | 71.47  | ng/uL | 100 |
| 138) 4-Aminobiphenyl           | 169  | 9.326  | 9.315  | 0.978  | 2562814  | 100.26 | ng/uL | 100 |
| 139) Pentachloronitrobenzene   | 237  | 9.334  | 9.326  | 0.979  | 325604   | 97.98  | ng/uL | 99  |
| 140) Pronamide                 | 173  | 9.371  | 9.360  | 0.982  | 1232234  | 96.90  | ng/uL | 100 |
| 141) 4-Nitroquinoline-1-oxide  | 101  | 10.394 | 10.389 | 1.090  | 43463    | 64.81  | ng/uL | 83  |
| 142) Methapyrilene             | 58   | 10.459 | 10.454 | 1.097  | 1693776  | 69.93  | ng/uL | 100 |
| 143) Isodrin                   | 193  | 10.692 | 10.690 | 1.121  | 506663   | 97.95  | ng/uL | 99  |
| 144) Benzidine                 | 184  | 10.988 | 10.980 | 1.152  | 870122   | 81.68  | ng/uL | 99  |
| 146) Aramite                   | 185  | 11.210 | 11.207 | 0.895  | 203596   | 84.54  | ng/uL | 99  |
| 147) Kepone                    | 272  | 11.866 | 11.858 | 0.947  | 233884   | 101.11 | ng/uL | 99  |
| 148) p-(Dimethylamino)azobe... | 120  | 11.406 | 11.397 | 0.910  | 1081651  | 108.47 | ng/uL | 100 |
| 149) Chlorobenzilate           | 251  | 11.445 | 11.440 | 0.913  | 1033045  | 108.03 | ng/uL | 99  |
| 150) 3,3'-Dimethylbenzidine    | 212  | 11.781 | 11.772 | 0.940  | 1036146  | 89.61  | ng/uL | 99  |
| 151) 2-Acetylaminofluorene     | 181  | 12.088 | 12.079 | 0.965  | 534027   | 100.28 | ng/uL | 100 |
| 152) 3,3'-Dichlorobenzidine    | 252  | 12.465 | 12.457 | 0.995  | 570857   | 97.92  | ng/uL | 99  |
| 154) 7,12-Dimethylbenz(a)an... | 256  | 14.150 | 14.142 | 0.955  | 706293   | 97.86  | ng/uL | 99  |
| 155) 3-Methylcholanthrene      | 269  | 15.358 | 15.344 | 1.036  | 111637   | 101.37 | ng/uL | 99  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1221.D  
Acq On : 12 Aug 2011 17:57  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-11|ICAL|1|SVM|1|A8  
Misc : |MIX[B]  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Aug 15 12:06:23 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.765  | 4.768  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.047  | 6.049  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.919  | 7.922  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.539  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.528 | 12.531 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 14.824 | 14.824 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.765  | 4.765  | 1.000  | 454347   | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.047  | 6.047  | 1.000  | 1609171  | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.919  | 7.919  | 1.000  | 787649   | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.539  | 9.536  | 1.000  | 1264479  | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 631870   | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 14.824 | 14.824 | 1.000  | 347905   | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.539  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.824 | 14.852 | 1.000  | 0m       | 40.00 | ng/uL | -0.03    |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.760  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.539  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 14.824 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |

|                             |     |       |        |       |   |      |       |          |
|-----------------------------|-----|-------|--------|-------|---|------|-------|----------|
| System Monitoring Compounds |     |       |        |       |   |      |       | Dev(Min) |
| 5) 2-Fluorophenol           | 112 | 0.000 | 3.580  | 0.000 | 0 | 0.00 | ng/uL |          |
| 8) Phenol-d5                | 99  | 0.000 | 4.367  | 0.000 | 0 | 0.00 | ng/uL |          |
| 25) Nitrobenzene-d5         | 82  | 0.000 | 5.308  | 0.000 | 0 | 0.00 | ng/uL |          |
| 47) 2-Fluorobiphenyl        | 172 | 0.000 | 7.178  | 0.000 | 0 | 0.00 | ng/uL |          |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000 | 8.772  | 0.000 | 0 | 0.00 | ng/uL |          |
| 83) p-Terphenyl-d14         | 244 | 0.000 | 11.244 | 0.000 | 0 | 0.00 | ng/uL |          |

| Target Compounds               | QIon | R.T.  | Exp RT | Rel RT | Response | Conc   | Units | QValue |
|--------------------------------|------|-------|--------|--------|----------|--------|-------|--------|
| 100) 1,4-Dioxane               | 88   | 2.396 | 2.398  | 0.503  | 704799   | 111.77 | ng/uL | 100    |
| 101) Methyl methacrylate       | 100  | 2.393 | 2.396  | 0.502  | 382894   | 110.69 | ng/uL | 95     |
| 102) Ethyl methacrylate        | 69   | 2.910 | 2.907  | 0.611  | 1612511  | 113.47 | ng/uL | 99     |
| 103) 2-Picoline                | 93   | 3.166 | 3.163  | 0.664  | 2048333  | 114.05 | ng/uL | 99     |
| 104) N-Nitrosomethylethylamine | 88   | 3.245 | 3.234  | 0.681  | 876085   | 116.71 | ng/uL | 99     |
| 105) Methyl methanesulfonate   | 80   | 3.478 | 3.464  | 0.730  | 869805   | 108.34 | ng/uL | 100    |
| 106) N-Nitrosodiethylamine     | 102  | 3.808 | 3.796  | 0.799  | 886313   | 116.52 | ng/uL | 100    |
| 107) Ethyl methanesulfonate    | 79   | 4.052 | 4.035  | 0.850  | 1310907  | 115.77 | ng/uL | 100    |
| 108) Benzaldehyde              | 77   | 4.370 | 4.365  | 0.917  | 1246679  | 103.96 | ng/uL | 100    |
| 109) Pentachloroethane         | 167  | 4.510 | 4.507  | 0.946  | 712455   | 115.55 | ng/uL | 100    |
| 110) N-Nitrosopyrrolidine      | 100  | 5.160 | 5.135  | 1.083  | 821698   | 113.54 | ng/uL | 87     |
| 111) Acetophenone              | 105  | 5.157 | 5.149  | 1.082  | 2340316  | 116.80 | ng/uL | 99     |
| 112) N-Nitrosomorpholine       | 56   | 5.189 | 5.166  | 1.089  | 1541697  | 115.41 | ng/uL | 100    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1221.D  
Acq On : 12 Aug 2011 17:57  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-11|ICAL|1|SVM|1|A8  
Misc : |MIX[B]  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Aug 15 12:06:23 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE

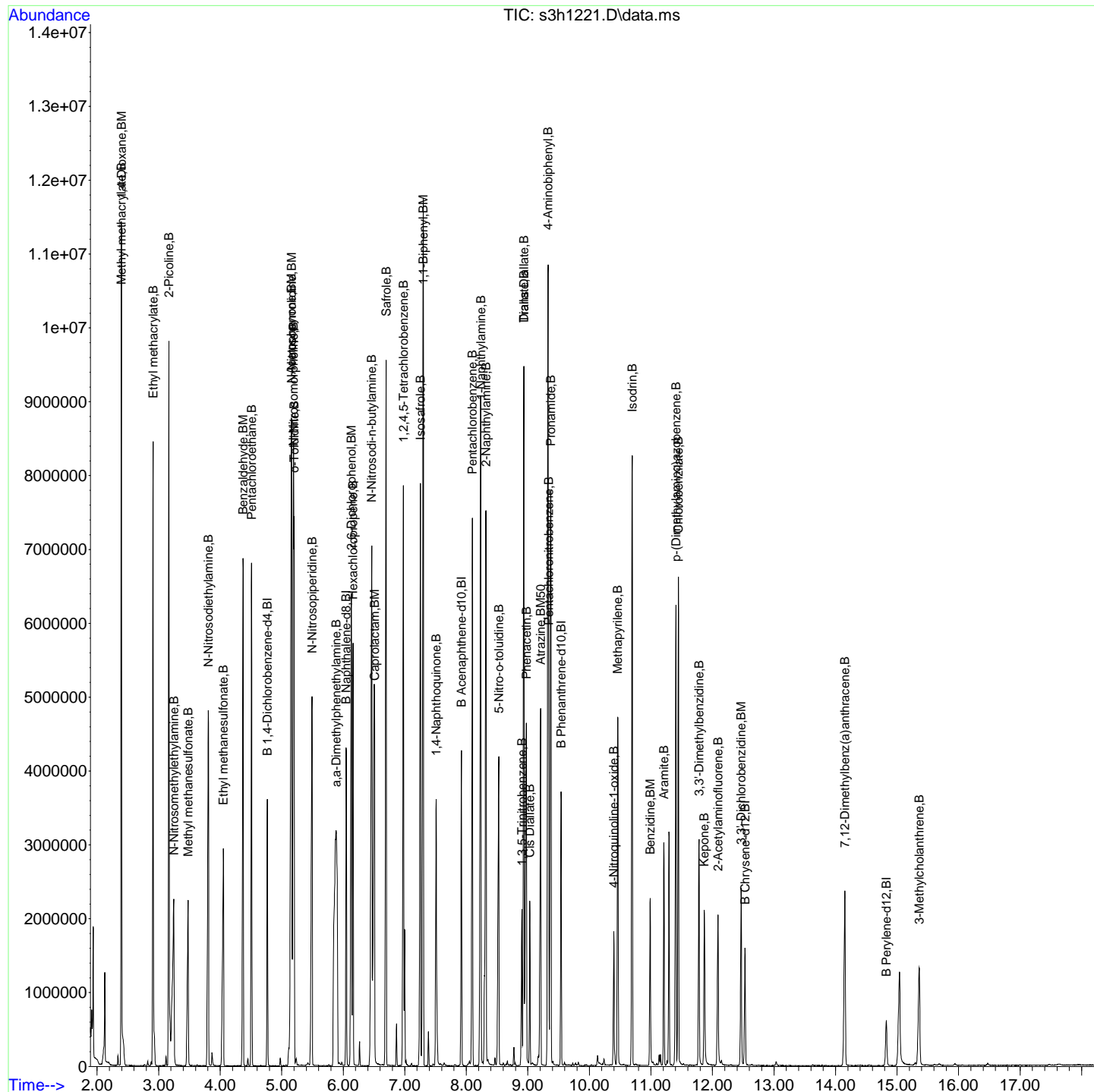
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |       |
|--------------------------------|------|--------|--------|--------|----------|--------|-------|-------|
| 113) o-Toluidine               | 106  | 5.200  | 5.186  | 1.091  | 2603688  | 115.48 | ng/uL | 100   |
| 115) N-Nitrosopiperidine       | 114  | 5.493  | 5.479  | 0.908  | 867025   | 118.03 | ng/uL | 98    |
| 116) a,a-Dimethylphenethyla... | 58   | 5.885  | 5.862  | 0.973  | 7288913  | 130.58 | ng/uL | 100 A |
| 117) 2,6-Dichlorophenol        | 162  | 6.132  | 6.118  | 1.014  | 1268137  | 120.33 | ng/uL | 99 A  |
| 118) Hexachloropropene         | 213  | 6.158  | 6.155  | 1.018  | 850335   | 122.70 | ng/uL | 99 A  |
| 119) Caprolactam               | 113  | 6.510  | 6.473  | 1.077  | 534782   | 123.40 | ng/uL | 98 A  |
| 120) N-Nitrosodi-n-butylamine  | 84   | 6.462  | 6.450  | 1.069  | 1261060  | 105.21 | ng/uL | 83    |
| 121) Safrole                   | 162  | 6.695  | 6.686  | 1.107  | 1297189  | 116.50 | ng/uL | 99    |
| 123) 1,2,4,5-Tetrachloroben... | 216  | 6.976  | 6.970  | 0.881  | 1354186  | 114.93 | ng/uL | 100   |
| 124) 1,1-Biphenyl              | 154  | 7.300  | 7.291  | 0.922  | 3773620  | 113.53 | ng/uL | 99    |
| 125) Isosafrole                | 162  | 7.254  | 7.243  | 0.916  | 1279395  | 115.75 | ng/uL | 100   |
| 126) 1,4-Naphthoquinone        | 158  | 7.510  | 7.505  | 0.948  | 728099   | 93.02  | ng/uL | 99    |
| 127) Pentachlorobenzene        | 250  | 8.098  | 8.090  | 1.023  | 1172171  | 118.71 | ng/uL | 100   |
| 128) 1-Naphthylamine           | 143  | 8.235  | 8.223  | 1.040  | 2622540  | 117.45 | ng/uL | 100   |
| 129) 2-Naphthylamine           | 143  | 8.320  | 8.309  | 1.051  | 2728772  | 116.86 | ng/uL | 98    |
| 130) 5-Nitro-o-toluidine       | 152  | 8.527  | 8.510  | 1.077  | 795218   | 124.93 | ng/uL | 99 A  |
| 132) 1,3,5-Trinitrobenzene     | 75   | 8.902  | 8.885  | 0.933  | 530209   | 112.10 | ng/uL | 100   |
| 133) Phenacetin                | 108  | 8.976  | 8.951  | 0.941  | 1325088  | 120.27 | ng/uL | 99 A  |
| 134) Diallate                  | 86   | 8.934  | 8.928  | 0.937  | 1365488  | 116.35 | ng/uL | 100   |
| 135) Cis Diallate              | 86   | 9.030  | 9.028  | 0.947  | 279623   | 17.68  | ng/uL | 99    |
| 136) Trans Diallate            | 86   | 8.934  | 8.928  | 0.937  | 1365488  | 98.90  | ng/uL | 100   |
| 137) Atrazine                  | 173  | 9.206  | 9.192  | 0.965  | 144690   | 89.05  | ng/uL | 100   |
| 138) 4-Aminobiphenyl           | 169  | 9.326  | 9.315  | 0.978  | 2712528  | 117.85 | ng/uL | 100   |
| 139) Pentachloronitrobenzene   | 237  | 9.337  | 9.326  | 0.979  | 360177   | 120.36 | ng/uL | 99 A  |
| 140) Pronamide                 | 173  | 9.374  | 9.360  | 0.983  | 1394068  | 121.74 | ng/uL | 99 A  |
| 141) 4-Nitroquinoline-1-oxide  | 101  | 10.397 | 10.389 | 1.090  | 53124    | 87.98  | ng/uL | 79    |
| 142) Methapyrilene             | 58   | 10.460 | 10.454 | 1.097  | 1889846  | 86.65  | ng/uL | 100   |
| 143) Isodrin                   | 193  | 10.695 | 10.690 | 1.121  | 542002   | 116.36 | ng/uL | 100   |
| 144) Benzidine                 | 184  | 10.988 | 10.980 | 1.152  | 909050   | 94.77  | ng/uL | 99    |
| 146) Aramite                   | 185  | 11.210 | 11.207 | 0.895  | 198693   | 104.00 | ng/uL | 99    |
| 147) Kepone                    | 272  | 11.866 | 11.858 | 0.947  | 235381   | 128.26 | ng/uL | 99 A  |
| 148) p-(Dimethylamino)azobe... | 120  | 11.406 | 11.397 | 0.910  | 1052142  | 133.00 | ng/uL | 100 A |
| 149) Chlorobenzilate           | 251  | 11.445 | 11.440 | 0.914  | 1035818  | 136.54 | ng/uL | 99 A  |
| 150) 3,3'-Dimethylbenzidine    | 212  | 11.781 | 11.772 | 0.940  | 1057846  | 115.32 | ng/uL | 99    |
| 151) 2-Acetylaminofluorene     | 181  | 12.088 | 12.079 | 0.965  | 557989   | 132.07 | ng/uL | 98 A  |
| 152) 3,3'-Dichlorobenzidine    | 252  | 12.466 | 12.457 | 0.995  | 573192   | 123.93 | ng/uL | 99 A  |
| 154) 7,12-Dimethylbenz(a)an... | 256  | 14.151 | 14.142 | 0.955  | 711000   | 114.39 | ng/uL | 99    |
| 155) 3-Methylcholanthrene      | 269  | 15.358 | 15.344 | 1.036  | 118498   | 124.93 | ng/uL | 97 A  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1221.D  
Acq On : 12 Aug 2011 17:57  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110719-11|ICAL|1|SVM|1|A8  
Misc : |MIX[B]  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Aug 15 12:06:23 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:05:20 2011  
Response via : Initial Calibration  
Integrator: RTE



## Continuing Calibration Summary

**Instrument ID:** MSD3.I  
**Data File:** s081211.B\s3h1222.D  
**Lab Sample ID** WBN110809-18.1  
**Quant Type** ISTD

**Client SDG:** 284538  
**Injection Date:** 12-AUG-11 18:22  
**Init. Cal. Date(s)** 12-AUG-11 15:29 - 13-AUG-11 13:2  
**Method:** s081211.B\MSD3\_8270d\_081211.m  
**Method Update:** 15-AUG-11 15:17

| Compound                   | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| Methyl methacrylate        | 0.3045         | 0.3091  |             | .01    |      | 1.51067     | 30  |         | Averaged   |
| 1,4-Dioxane                | 0.5551         | 0.54995 |             | .01    |      | -0.92776    | 30  |         | Averaged   |
| Ethyl methacrylate         | 1.2511         | 1.24994 |             | .01    |      | -0.09272    | 30  |         | Averaged   |
| 2-Picoline                 | 1.5812         | 1.51542 |             | .01    |      | -4.16013    | 30  |         | Averaged   |
| N-Nitrosomethylethylamine  | 0.6609         | 0.67853 |             | .01    |      | 2.66757     | 30  |         | Averaged   |
| Methyl methanesulfonate    | 0.7068         | 0.76306 |             | .01    |      | 7.95982     | 30  |         | Averaged   |
| N-Nitrosodiethylamine      | 0.6696         | 0.6759  |             | .01    |      | 0.94086     | 30  |         | Averaged   |
| Ethyl Methanesulfonate     | 0.9969         | 0.93984 |             | .01    |      | -5.72374    | 30  |         | Averaged   |
| Benzaldehyde               | 1.0558         | 1.06889 |             | .01    |      | 1.23982     | 30  |         | Averaged   |
| Pentachloroethane          | 0.5428         | 0.55041 |             | .01    |      | 1.40199     | 30  |         | Averaged   |
| N-Nitrosopyrrolidine       | 0.6371         | 0.71659 |             | .01    |      | 12.47685    | 30  |         | Averaged   |
| Acetophenone               | 1.764          | 1.79762 |             | .01    |      | 1.9059      | 30  |         | Averaged   |
| N-Nitrosomorpholine        | 1.176          | 1.23319 |             | .01    |      | 4.8631      | 30  |         | Averaged   |
| o-Toluidine                | 1.985          | 2.07945 |             | .01    |      | 4.75819     | 30  |         | Averaged   |
| N-Nitrosopiperidine        | 0.1826         | 0.18493 |             | .01    |      | 1.27601     | 30  |         | Averaged   |
| a,a-Dimethylphenethylamine | 1.3875         | 1.47584 |             | .01    |      | 6.36685     | 30  |         | Averaged   |
| 2,6-Dichlorophenol         | 0.262          | 0.27171 |             | .01    |      | 3.70611     | 30  |         | Averaged   |
| Hexachloropropene          | 0.1723         | 0.17192 |             | .01    |      | -0.22055    | 30  |         | Averaged   |
| N-Nitrosodi-n-butylamine   | 0.298          | 0.29542 |             | .01    |      | -0.86577    | 30  |         | Averaged   |
| Caprolactam                | 0.1077         | 0.11488 |             | .01    |      | 6.66667     | 30  |         | Averaged   |
| Safrole                    | 0.2768         | 0.26186 |             | .01    |      | -5.3974     | 30  |         | Averaged   |
| 1,2,4,5-Tetrachlorobenzene | 0.5984         | 0.58805 |             | .01    |      | -1.72961    | 30  |         | Averaged   |
| Isosafrole                 | 0.5613         | 0.57729 |             | .01    |      | 2.84874     | 30  |         | Averaged   |
| 1,1'-Biphenyl              | 1.688          | 1.64023 |             | .01    |      | -2.82998    | 30  |         | Averaged   |
| 1,4-Naphthoquinone         | 0.3975         | 0.43051 |             | .01    |      | 8.3044      | 30  |         | Averaged   |
| Pentachlorobenzene         | 0.5015         | 0.52237 |             | .01    |      | 4.16152     | 30  |         | Averaged   |
| 1-Naphthylamine            | 1.134          | 1.19694 |             | .01    |      | 5.55026     | 30  |         | Averaged   |
| 2-Naphthylamine            | 1.1859         | 1.32755 |             | .01    |      | 11.94451    | 30  |         | Averaged   |
| 5-Nitro-o-toluidine        | 0.3233         | 0.34541 |             | .01    |      | 6.83885     | 30  |         | Averaged   |
| 1,3,5-Trinitrobenzene      | 0.1496         | 0.13448 |             | .01    |      | -10.10695   | 30  |         | Averaged   |
| Trans Diallylate           | 0.4368         | 0.38901 |             | .01    |      | -10.94093   | 30  |         | Averaged   |
| Diallylate                 | 0.3713         | 0.33066 |             | .01    |      | -10.94533   | 30  |         | Averaged   |
| Phenacetin                 | 0.3485         | 0.35057 |             | .01    |      | 0.59397     | 30  |         | Averaged   |
| Cis Diallylate             | 0.5003         | 0.80879 |             | .01    |      | 61.661      | 30  | *       | Averaged   |
| Atrazine                   | 0.0514         | 0.05385 |             | .01    |      | 4.76654     | 30  |         | Averaged   |
| 4-Aminobiphenyl            | 0.7281         | 0.82221 |             | .01    |      | 12.92542    | 30  |         | Averaged   |
| Pentachloronitrobenzene    | 0.0947         | 0.09499 |             | .01    |      | 0.30623     | 30  |         | Averaged   |



## Continuing Calibration Summary

Instrument ID: MSD3.I

Injection Date: 12-AUG-11 18:22

Data File: s081211.B\s3h1222.D

Init. Cal. Date(s) 12-AUG-11 15:29 13-AUG-11 13:2

Lab Sample ID WBN110809-18.1

Method: s081211.B\MSD3\_8270d\_081211.m

Quant Type ISTD

| Compound                      | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|-------------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| Pronamide                     | 0.3622         | 0.35448 |             | .01    |      | -2.13142    | 30  |         | Averaged   |
| 4-Nitroquinoline-1-oxide      | 0.0191         | 0.0168  |             | .01    |      | -12.04188   | 30  |         | Averaged   |
| Methapyrilene                 | 0.6899         | 0.61136 |             | .01    |      | -11.38426   | 30  |         | Averaged   |
| Isodrin                       | 0.1473         | 0.12803 |             | .01    |      | -13.08215   | 30  |         | Averaged   |
| Benzidine                     | 0.3034         | 0.39363 |             | .01    |      | 29.73962    | 30  |         | Averaged   |
| Aramite                       | 0.0973         | 0.08442 |             | .01    |      | -13.23741   | 30  |         | Averaged   |
| p-(Dimethylamino)azobenzene   | 0.5008         | 0.45891 |             | .01    |      | -8.36462    | 30  |         | Averaged   |
| Chlorobenzilate               | 0.4802         | 0.45417 |             | .01    |      | -5.42066    | 30  |         | Averaged   |
| 3,3'-Dimethylbenzidine        | 0.5807         | 0.60326 |             | .01    |      | 3.88497     | 30  |         | Averaged   |
| Kepone                        | 0.1162         | 0.12082 |             | .01    |      | 3.9759      | 30  |         | Averaged   |
| 2-Acetylaminofluorene         | 0.2675         | 0.29524 |             | .01    |      | 10.37009    | 30  |         | Averaged   |
| 3,3'-Dichlorobenzidine        | 0.2928         | 0.3133  |             | .01    |      | 7.00137     | 30  |         | Averaged   |
| 7,12Dimethylbenz(a)anthracene | 0.7146         | 0.62341 |             | .01    |      | -12.76099   | 30  |         | Averaged   |
| 3-Methylcholanthrene          | 0.1091         | 0.11297 |             | .01    |      | 3.5472      | 30  |         | Averaged   |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1222.D  
Acq On : 12 Aug 2011 18:22  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110809-18.1|ICV|1|SVM|1|AICV  
Misc : |MIX[B]  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 15 15:22:59 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.765  | 4.768  | 1.000  | 503669   | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.047  | 6.049  | 1.000  | 1815686  | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.919  | 7.922  | 1.000  | 906126   | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.536  | 9.533  | 1.000  | 1429269  | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.528 | 12.531 | 1.000  | 943187   | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 14.827 | 14.824 | 1.000  | 540551   | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.765  | 4.765  | 1.000  | 503669   | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.047  | 6.047  | 1.000  | 1815686  | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.919  | 7.919  | 1.000  | 906126   | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.536  | 9.536  | 1.000  | 1429269  | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 943187   | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 14.827 | 14.824 | 1.000  | 540551   | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 1815686  | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 906126   | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.536  | 9.533  | 1.000  | 1429269  | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 943187   | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 1816087  | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.827 | 14.852 | 1.000  | 540551   | 40.00 | ng/uL | -0.03    |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.760  | 1.000  | 503669   | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 1815686  | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.919  | 7.916  | 1.000  | 906126   | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.536  | 9.533  | 1.000  | 1429269  | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 943187   | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.765  | 1.000  | 503669   | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 1815686  | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 943187   | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 14.827 | 14.827 | 1.000  | 540551   | 40.00 | ng/uL | 0.00     |

|                             |     |       |        |       |   |      |       |          |
|-----------------------------|-----|-------|--------|-------|---|------|-------|----------|
| System Monitoring Compounds |     |       |        |       |   |      |       | Dev(Min) |
| 5) 2-Fluorophenol           | 112 | 0.000 | 3.580  | 0.000 | 0 | 0.00 | ng/uL |          |
| 8) Phenol-d5                | 99  | 0.000 | 4.367  | 0.000 | 0 | 0.00 | ng/uL |          |
| 25) Nitrobenzene-d5         | 82  | 0.000 | 5.308  | 0.000 | 0 | 0.00 | ng/uL |          |
| 47) 2-Fluorobiphenyl        | 172 | 0.000 | 7.178  | 0.000 | 0 | 0.00 | ng/uL |          |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000 | 8.772  | 0.000 | 0 | 0.00 | ng/uL |          |
| 83) p-Terphenyl-d14         | 244 | 0.000 | 11.244 | 0.000 | 0 | 0.00 | ng/uL |          |

| Target Compounds               | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units | QValue |
|--------------------------------|------|-------|--------|--------|----------|-------|-------|--------|
| 100) 1,4-Dioxane               | 88   | 2.395 | 2.398  | 0.503  | 276993   | 39.63 | ng/uL | 99     |
| 101) Methyl methacrylate       | 100  | 2.393 | 2.396  | 0.502  | 155683   | 40.60 | ng/uL | 98     |
| 102) Ethyl methacrylate        | 69   | 2.907 | 2.907  | 0.610  | 629554   | 39.96 | ng/uL | 100    |
| 103) 2-Picoline                | 93   | 3.163 | 3.163  | 0.664  | 763271   | 38.34 | ng/uL | 99     |
| 104) N-Nitrosomethylethylamine | 88   | 3.237 | 3.234  | 0.679  | 341754   | 41.07 | ng/uL | 100    |
| 105) Methyl methanesulfonate   | 80   | 3.467 | 3.464  | 0.727  | 384328   | 43.18 | ng/uL | 99     |
| 106) N-Nitrosodiethylamine     | 102  | 3.796 | 3.796  | 0.797  | 340430   | 40.37 | ng/uL | 100    |
| 107) Ethyl methanesulfonate    | 79   | 4.038 | 4.035  | 0.847  | 473369   | 37.71 | ng/uL | 100    |
| 108) Benzaldehyde              | 77   | 4.365 | 4.365  | 0.916  | 538366   | 40.50 | ng/uL | 99     |
| 109) Pentachloroethane         | 167  | 4.507 | 4.507  | 0.946  | 277223   | 40.56 | ng/uL | 100    |
| 110) N-Nitrosopyrrolidine      | 100  | 5.135 | 5.135  | 1.078  | 360925   | 44.99 | ng/uL | 98     |
| 111) Acetophenone              | 105  | 5.149 | 5.149  | 1.080  | 905406   | 40.76 | ng/uL | 99     |
| 112) N-Nitrosomorpholine       | 56   | 5.169 | 5.166  | 1.085  | 621120   | 41.94 | ng/uL | 100    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1222.D  
Acq On : 12 Aug 2011 18:22  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110809-18.1|ICV|1|SVM|1|AICV  
Misc : |MIX[B]  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 15 15:22:59 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

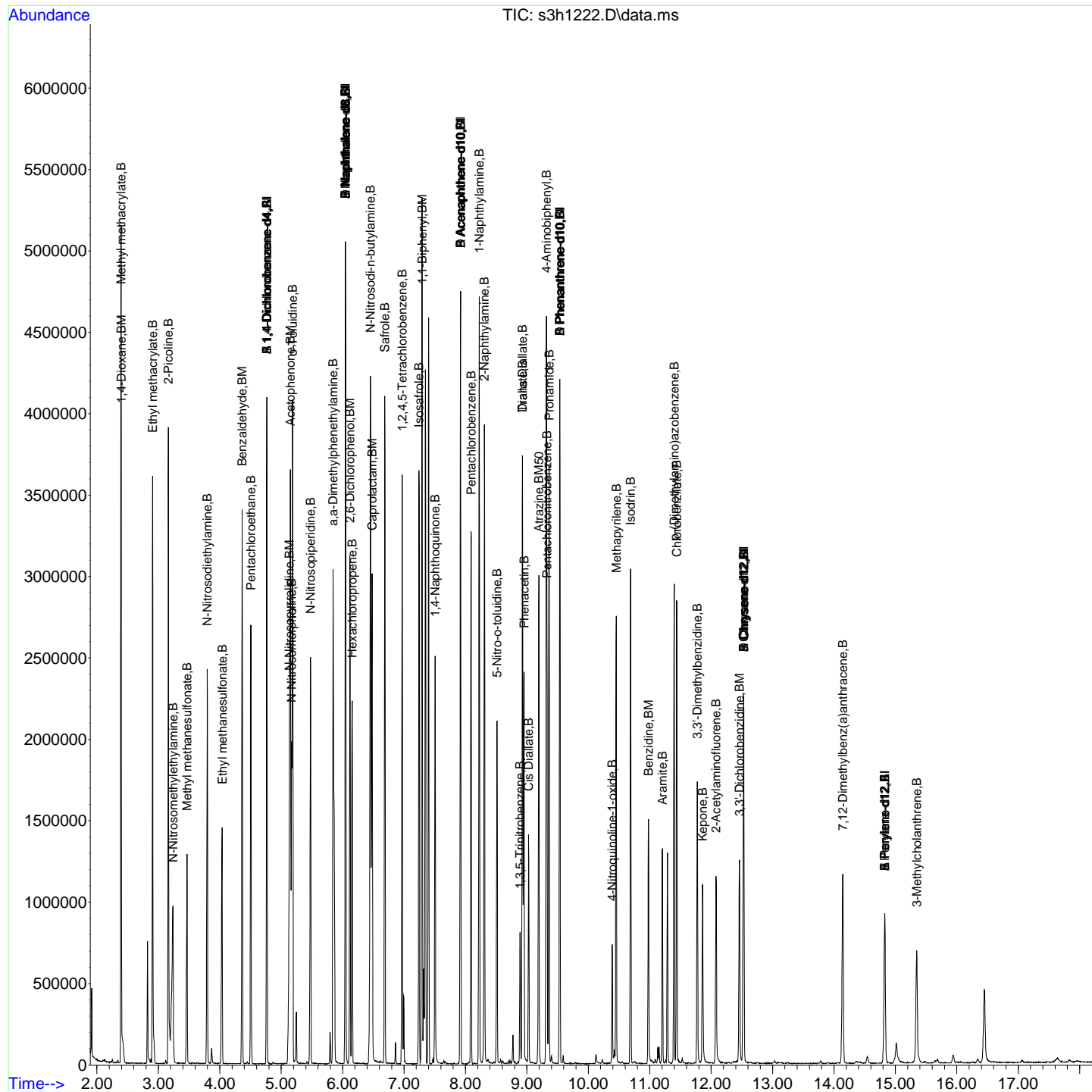
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|--------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 113) o-Toluidine               | 106  | 5.186  | 5.186  | 1.088  | 1047354  | 41.90 | ng/uL | 100 |
| 115) N-Nitrosopiperidine       | 114  | 5.478  | 5.479  | 0.906  | 335775   | 40.51 | ng/uL | 100 |
| 116) a,a-Dimethylphenethyla... | 58   | 5.845  | 5.862  | 0.967  | 2679658  | 42.55 | ng/uL | 100 |
| 117) 2,6-Dichlorophenol        | 162  | 6.121  | 6.118  | 1.012  | 493331   | 41.49 | ng/uL | 100 |
| 118) Hexachloropropene         | 213  | 6.155  | 6.155  | 1.018  | 312151   | 39.92 | ng/uL | 99  |
| 119) Caprolactam               | 113  | 6.479  | 6.473  | 1.071  | 208579   | 42.65 | ng/uL | 98  |
| 120) N-Nitrosodi-n-butylamine  | 84   | 6.453  | 6.450  | 1.067  | 536389   | 39.66 | ng/uL | 90  |
| 121) Safrole                   | 162  | 6.686  | 6.686  | 1.106  | 475459   | 37.84 | ng/uL | 100 |
| 123) 1,2,4,5-Tetrachloroben... | 216  | 6.970  | 6.970  | 0.880  | 532851   | 39.31 | ng/uL | 100 |
| 124) 1,1-Biphenyl              | 154  | 7.294  | 7.291  | 0.921  | 1486256  | 38.87 | ng/uL | 99  |
| 125) Isosafrole                | 162  | 7.243  | 7.243  | 0.915  | 523102   | 41.14 | ng/uL | 99  |
| 126) 1,4-Naphthoquinone        | 158  | 7.507  | 7.505  | 0.948  | 390093   | 43.32 | ng/uL | 99  |
| 127) Pentachlorobenzene        | 250  | 8.093  | 8.090  | 1.022  | 473330   | 41.67 | ng/uL | 99  |
| 128) 1-Naphthylamine           | 143  | 8.223  | 8.223  | 1.038  | 1084576  | 42.22 | ng/uL | 100 |
| 129) 2-Naphthylamine           | 143  | 8.309  | 8.309  | 1.049  | 1202932  | 44.78 | ng/uL | 100 |
| 130) 5-Nitro-o-toluidine       | 152  | 8.513  | 8.510  | 1.075  | 312986   | 42.74 | ng/uL | 100 |
| 132) 1,3,5-Trinitrobenzene     | 75   | 8.888  | 8.885  | 0.932  | 192204   | 35.95 | ng/uL | 99  |
| 133) Phenacetin                | 108  | 8.954  | 8.951  | 0.939  | 501064   | 40.24 | ng/uL | 99  |
| 134) Diallate                  | 86   | 8.928  | 8.928  | 0.936  | 472595   | 35.63 | ng/uL | 99  |
| 135) Cis Diallate              | 86   | 9.027  | 9.028  | 0.947  | 173397   | 9.70  | ng/uL | 99  |
| 136) Trans Diallate            | 86   | 8.928  | 8.928  | 0.936  | 472595   | 30.28 | ng/uL | 99  |
| 137) Atrazine                  | 173  | 9.195  | 9.192  | 0.964  | 76964    | 41.91 | ng/uL | 97  |
| 138) 4-Aminobiphenyl           | 169  | 9.317  | 9.315  | 0.977  | 1175166  | 45.17 | ng/uL | 99  |
| 139) Pentachloronitrobenzene   | 237  | 9.326  | 9.326  | 0.978  | 135768   | 40.14 | ng/uL | 99  |
| 140) Pronamide                 | 173  | 9.360  | 9.360  | 0.982  | 506648   | 39.14 | ng/uL | 100 |
| 141) 4-Nitroquinoline-1-oxide  | 101  | 10.388 | 10.389 | 1.089  | 24006    | 35.17 | ng/uL | 91  |
| 142) Methapyrilene             | 58   | 10.454 | 10.454 | 1.096  | 873797   | 35.45 | ng/uL | 99  |
| 143) Isodrin                   | 193  | 10.687 | 10.690 | 1.121  | 182984   | 34.75 | ng/uL | 99  |
| 144) Benzidine                 | 184  | 10.979 | 10.980 | 1.151  | 562608   | 51.89 | ng/uL | 99  |
| 146) Aramite                   | 185  | 11.204 | 11.207 | 0.894  | 79628    | 34.69 | ng/uL | 99  |
| 147) Kepone                    | 272  | 11.860 | 11.858 | 0.947  | 113958   | 41.60 | ng/uL | 98  |
| 148) p-(Dimethylamino)azobe... | 120  | 11.397 | 11.397 | 0.910  | 432836   | 36.66 | ng/uL | 100 |
| 149) Chlorobenzilate           | 251  | 11.440 | 11.440 | 0.913  | 428365   | 37.83 | ng/uL | 99  |
| 150) 3,3'-Dimethylbenzidine    | 212  | 11.775 | 11.772 | 0.940  | 568990   | 41.55 | ng/uL | 99  |
| 151) 2-Acetylaminofluorene     | 181  | 12.079 | 12.079 | 0.964  | 278463   | 44.15 | ng/uL | 98  |
| 152) 3,3'-Dichlorobenzidine    | 252  | 12.460 | 12.457 | 0.995  | 295499   | 42.80 | ng/uL | 99  |
| 154) 7,12-Dimethylbenz(a)an... | 256  | 14.142 | 14.142 | 0.954  | 336986   | 34.89 | ng/uL | 99  |
| 155) 3-Methylcholanthrene      | 269  | 15.347 | 15.344 | 1.035  | 61065    | 41.44 | ng/uL | 93  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1222.D  
Acq On : 12 Aug 2011 18:22  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110809-18.1|ICV|1|SVM|1|AICV  
Misc : |MIX[B]  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 15 15:22:59 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1258.D  
Acq On : 13 Aug 2011 09:50  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-08|ICAL|1|SVM|1|M1  
Misc : |MIX[A]  
ALS Vial : 51 Sample Multiplier: 1

Quant Time: Aug 14 16:12:25 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.765  | 4.768  | 1.000  | 638749   | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.047  | 6.049  | 1.000  | 2324030  | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.919  | 7.922  | 1.000  | 1146156  | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.533  | 9.533  | 1.000  | 1850511  | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.528 | 12.531 | 1.000  | 1208896  | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 14.824 | 14.824 | 1.000  | 742344   | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.765  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.047  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.919  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.533  | 9.536  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 14.824 | 14.824 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.047  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.919  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.533  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.047  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.824 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.047  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.919  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.533  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.047  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.528 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 14.824 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       |          |
| 5) 2-Fluorophenol             | 112  | 3.578  | 3.580  | 0.751  | 19880    | 0.95  | ng/uL | 0.00     |
| 8) Phenol-d5                  | 99   | 4.353  | 4.367  | 0.914  | 24310    | 0.92  | ng/uL | -0.01    |
| 25) Nitrobenzene-d5           | 82   | 5.297  | 5.308  | 0.876  | 22407    | 1.09  | ng/uL | -0.01    |
| 47) 2-Fluorobiphenyl          | 172  | 7.172  | 7.178  | 0.906  | 41807    | 1.00  | ng/uL | 0.00     |
| 66) 2,4,6-Tribromophenol      | 330  | 8.760  | 8.772  | 1.106  | 3494     | 0.73  | ng/uL | -0.01    |
| 83) p-Terphenyl-d14           | 244  | 11.241 | 11.244 | 0.897  | 25660    | 0.84  | ng/uL | 0.00     |
| Target Compounds              |      |        |        |        |          |       |       |          |
| 35) Naphthalene               | 128  | 6.064  | 6.072  | 1.003  | 61217    | 1.16  | ng/uL | 97       |
| 39) 2-Methylnaphthalene       | 142  | 6.788  | 6.797  | 1.123  | 38722    | 1.07  | ng/uL | 99       |
| 41) 1-Methylnaphthalene       | 142  | 6.896  | 6.905  | 1.141  | 37733    | 1.09  | ng/uL | 98       |
| 48) 2-Chloronaphthalene       | 162  | 7.314  | 7.320  | 0.924  | 34720    | 1.01  | ng/uL | 98       |
| 56) Acenaphthylene            | 152  | 7.763  | 7.771  | 0.980  | 56892    | 1.00  | ng/uL | 99       |
| 57) Acenaphthene              | 154  | 7.951  | 7.959  | 1.004  | 35220    | 0.98  | ng/uL | 97       |
| 63) Fluorene                  | 166  | 8.505  | 8.516  | 1.074  | 41434    | 1.01  | ng/uL | 98       |
| 76) Phenanthrene              | 178  | 9.553  | 9.562  | 1.002  | 47787    | 1.00  | ng/uL | 99       |
| 77) Anthracene                | 178  | 9.607  | 9.618  | 1.008  | 47035    | 0.97  | ng/uL | 100      |
| 78) Carbazole                 | 167  | 9.769  | 9.780  | 1.025  | 38673    | 0.95  | ng/uL | 100      |
| 80) Fluoranthene              | 202  | 10.843 | 10.852 | 1.137  | 44192    | 0.94  | ng/uL | 100      |
| 82) Pyrene                    | 202  | 11.093 | 11.102 | 0.885  | 43906    | 0.86  | ng/uL | 98       |
| 86) Benzo(a)anthracene        | 228  | 12.508 | 12.514 | 0.998  | 34843    | 1.05  | ng/uL | 97       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1258.D  
Acq On : 13 Aug 2011 09:50  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-08|ICAL|1|SVM|1|M1  
Misc : |MIX[A]  
ALS Vial : 51 Sample Multiplier: 1

Quant Time: Aug 14 16:12:25 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

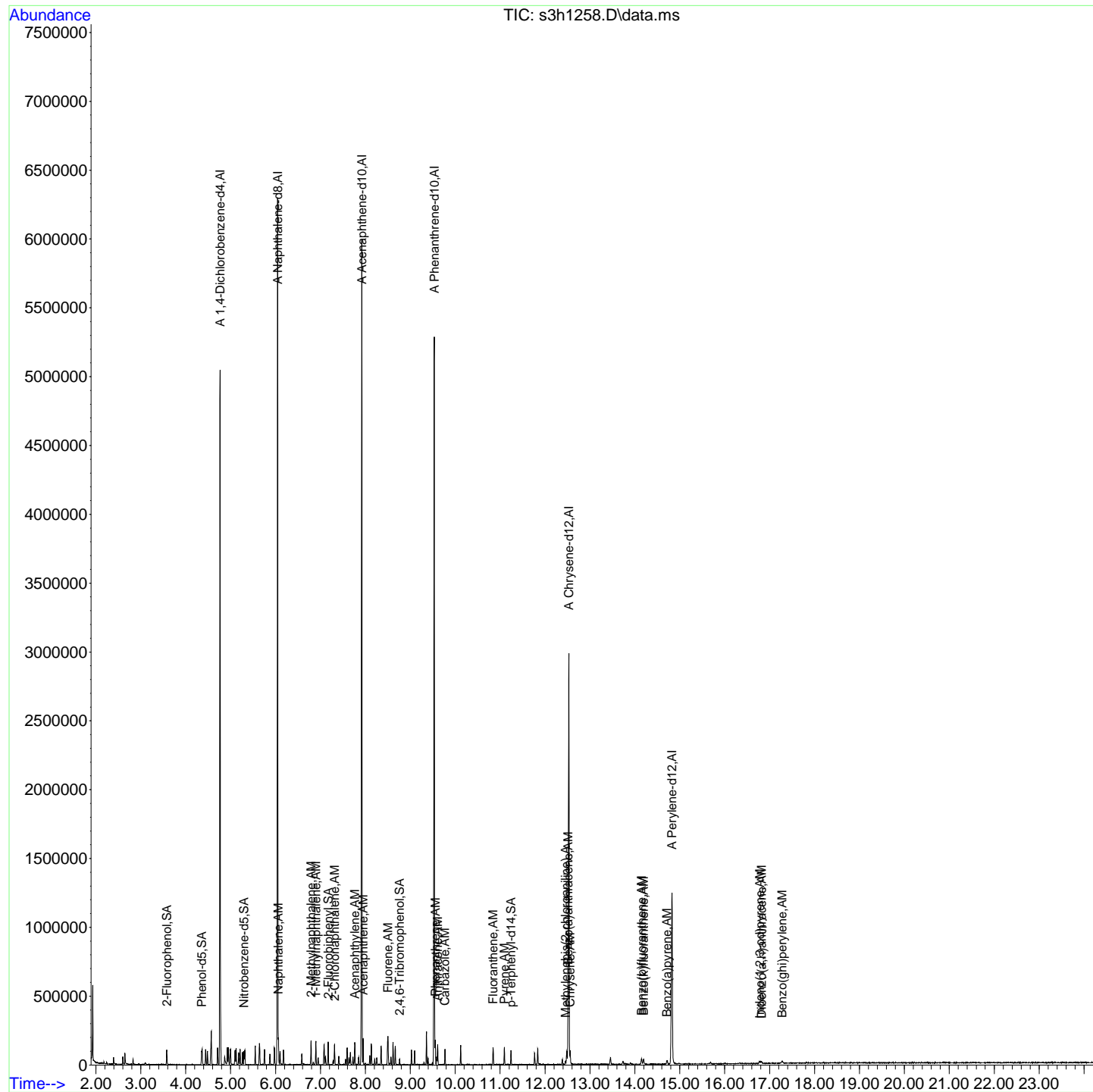
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |     |
|-------------------------------|------|--------|--------|--------|----------|------|-------|-----|
| 87) Chrysene                  | 228  | 12.557 | 12.568 | 1.002  | 31308    | 1.02 | ng/uL | 97  |
| 89) Methylenebis(2-chloroa... | 231  | 12.454 | 12.463 | 0.994  | 2838     | 6.09 | ng/uL | 92  |
| 92) Benzo(b)fluoranthene      | 252  | 14.145 | 14.159 | 0.954  | 20574    | 0.89 | ng/uL | 93  |
| 93) Benzo(k)fluoranthene      | 252  | 14.193 | 14.207 | 0.957  | 21450    | 0.92 | ng/uL | 99  |
| 94) Benzo(a)pyrene            | 252  | 14.710 | 14.727 | 0.992  | 15989    | 0.82 | ng/uL | 97  |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 16.779 | 16.787 | 1.132  | 12097    | 0.83 | ng/uL | 71  |
| 96) Dibenzo(a,h)anthracene    | 278  | 16.819 | 16.821 | 1.135  | 9752     | 0.81 | ng/uL | 66  |
| 97) Benzo(ghi)perylene        | 276  | 17.279 | 17.290 | 1.166  | 10262    | 0.90 | ng/uL | 100 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1258.D  
Acq On : 13 Aug 2011 09:50  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-08|ICAL|1|SVM|1|M1  
Misc : |MIX[A]  
ALS Vial : 51 Sample Multiplier: 1

Quant Time: Aug 14 16:12:25 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1259.D  
Acq On : 13 Aug 2011 10:21  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-07|ICAL|1|SVM|1|M2  
Misc : |MIX[A]  
ALS Vial : 52 Sample Multiplier: 1

Quant Time: Aug 15 15:08:15 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:32:54 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.765  | 4.768  | 1.000  | 809689   | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.050  | 6.049  | 1.000  | 3008741  | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.922  | 7.922  | 1.000  | 1464323  | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.536  | 9.533  | 1.000  | 2389224  | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.534 | 12.531 | 1.000  | 1650957  | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 14.832 | 14.824 | 1.000  | 1040424  | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.765  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.050  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.922  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.536  | 9.536  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.534 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 14.832 | 14.824 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.050  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.922  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.536  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.534 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.050  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.832 | 14.852 | 1.000  | 0m       | 40.00 | ng/uL | -0.02    |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.760  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.050  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.922  | 7.916  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.536  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.534 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.050  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.534 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 14.832 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       |          |
| 5) 2-Fluorophenol             | 112  | 3.580  | 3.580  | 0.751  | 264067   | 10.00 | ng/uL | 0.00     |
| 8) Phenol-d5                  | 99   | 4.359  | 4.367  | 0.915  | 331372   | 9.89  | ng/uL | 0.00     |
| 25) Nitrobenzene-d5           | 82   | 5.302  | 5.308  | 0.876  | 289403   | 10.86 | ng/uL | 0.00     |
| 47) 2-Fluorobiphenyl          | 172  | 7.172  | 7.178  | 0.905  | 544078   | 10.16 | ng/uL | 0.00     |
| 66) 2,4,6-Tribromophenol      | 330  | 8.766  | 8.772  | 1.107  | 58963    | 9.58  | ng/uL | 0.00     |
| 83) p-Terphenyl-d14           | 244  | 11.241 | 11.244 | 0.897  | 369542   | 8.81  | ng/uL | 0.00     |
| Target Compounds              |      |        |        |        |          |       |       |          |
| 2) 2-Ethoxyethanol            | 59   | 2.390  | 2.384  | 0.502  | 249792   | 10.03 | ng/uL | 100      |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.600  | 2.603  | 0.546  | 190236   | 10.14 | ng/uL | 99       |
| 4) Pyridine                   | 79   | 2.637  | 2.631  | 0.553  | 253330   | 9.74  | ng/uL | 97       |
| 6) p-Benzquinone              | 54   | 4.018  | 4.021  | 0.843  | 35163    | 6.83  | ng/uL | 97       |
| 7) Aniline                    | 66   | 4.447  | 4.455  | 0.933  | 162642   | 9.91  | ng/uL | 97       |
| 9) Phenol                     | 94   | 4.370  | 4.382  | 0.917  | 352354   | 10.11 | ng/uL | 99       |
| 10) bis(2-Chloroethyl) ether  | 63   | 4.487  | 4.492  | 0.942  | 284995   | 10.11 | ng/uL | 100      |
| 11) 2-Chlorophenol            | 128  | 4.558  | 4.563  | 0.956  | 268238   | 10.26 | ng/uL | 99       |
| 12) n-Decane                  | 43   | 4.569  | 4.572  | 0.959  | 560621   | 10.97 | ng/uL | 100      |
| 13) 1,3-Dichlorobenzene       | 146  | 4.711  | 4.717  | 0.989  | 295163   | 10.13 | ng/uL | 99       |
| 14) 1,4-Dichlorobenzene       | 146  | 4.782  | 4.785  | 1.004  | 299873   | 10.15 | ng/uL | 97       |
| 15) 1,2-Dichlorobenzene       | 146  | 4.930  | 4.933  | 1.035  | 280473   | 10.10 | ng/uL | 100      |
| 16) bis(2-Chloroisopropyl)... | 45   | 4.998  | 5.004  | 1.049  | 769336   | 10.27 | ng/uL | 99       |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1259.D  
Acq On : 13 Aug 2011 10:21  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-07|ICAL|1|SVM|1|M2  
Misc : |MIX[A]  
ALS Vial : 52 Sample Multiplier: 1

Quant Time: Aug 15 15:08:15 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:32:54 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  |     |
|-------------------------------|------|-------|--------|--------|----------|-------|--------|-----|
| 17) Benzyl alcohol            | 108  | 4.870 | 4.879  | 1.022  | 174994   | 9.96  | ng/uL  | 99  |
| 18) o-Cresol                  | 107  | 4.956 | 4.961  | 1.040  | 223510   | 10.07 | ng/uL  | 98  |
| 19) m,p-Cresols               | 107  | 5.106 | 5.117  | 1.072  | 282633   | 9.94  | ng/uL  | 100 |
| 20) N-Nitrosodipropylamine    | 70   | 5.132 | 5.149  | 1.077  | 212221   | 10.11 | ng/uL  | 100 |
| 21) p-Toluidine               | 106  | 5.183 | 5.189  | 1.088  | 314377   | 10.83 | ng/uL  | 100 |
| 22) m-Toluidine               | 106  | 5.214 | 5.223  | 1.094  | 318644   | 9.67  | ng/uL  | 99  |
| 23) Hexachloroethane          | 117  | 5.265 | 5.268  | 1.105  | 124034   | 10.09 | ng/uL  | 98  |
| 26) Nitrobenzene              | 77   | 5.322 | 5.331  | 0.880  | 297535   | 11.02 | ng/uL  | 99  |
| 27) Isophorone                | 82   | 5.552 | 5.564  | 0.918  | 556208   | 11.03 | ng/uL  | 98  |
| 28) 2-Nitrophenol             | 139  | 5.640 | 5.643  | 0.932  | 142183   | 10.61 | ng/uL  | 95  |
| 29) 2,4-Dimethylphenol        | 122  | 5.649 | 5.655  | 0.934  | 250715   | 11.43 | ng/uL  | 98  |
| 30) bis(2-Chloroethoxy)met... | 93   | 5.757 | 5.762  | 0.952  | 344622   | 11.01 | ng/uL  | 98  |
| 31) 2,4-Dichlorophenol        | 162  | 5.879 | 5.885  | 0.972  | 193063   | 10.42 | ng/uL  | 99  |
| 32) Benzoic acid              | 105  | 5.711 | 5.765  | 0.944  | 97843    | 6.26  | ng/uL  | 94  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 5.976 | 5.978  | 0.988  | 241448   | 11.06 | ng/uL  | 100 |
| 34) alpha-Terpineol           | 59   | 6.055 | 6.061  | 1.001  | 357563   | 11.18 | ng/uL  | 99  |
| 35) Naphthalene               | 128  | 6.069 | 6.072  | 1.003  | 762777   | 11.17 | ng/uL  | 97  |
| 36) 4-Chloroaniline           | 127  | 6.104 | 6.109  | 1.009  | 286235   | 10.74 | ng/uL  | 99  |
| 37) Hexachlorobutadiene       | 225  | 6.177 | 6.180  | 1.021  | 125455   | 10.86 | ng/uL  | 99  |
| 38) 4-Chloro-3-methylphenol   | 107  | 6.587 | 6.592  | 1.089  | 212942   | 10.54 | ng/uL  | 99  |
| 39) 2-Methylnaphthalene       | 142  | 6.791 | 6.797  | 1.123  | 511249   | 10.91 | ng/uL  | 100 |
| 40) Phthalic anhydride        | 104  | 6.840 | 6.845  | 1.131  | 15837    | 5.25  | ng/uL# | 1   |
| 41) 1-Methylnaphthalene       | 142  | 6.899 | 6.905  | 1.140  | 486257   | 10.84 | ng/uL  | 99  |
| 43) Hexachlorocyclopentadiene | 237  | 6.950 | 6.953  | 0.877  | 103481   | 10.01 | ng/uL  | 99  |
| 44) 2,3-Dichloroaniline       | 161  | 7.087 | 7.092  | 0.895  | 254014   | 10.13 | ng/uL  | 99  |
| 45) 2,4,6-Trichlorophenol     | 196  | 7.078 | 7.084  | 0.893  | 135292   | 10.07 | ng/uL  | 99  |
| 46) 2,4,5-Trichlorophenol     | 196  | 7.112 | 7.118  | 0.898  | 136735   | 9.59  | ng/uL  | 99  |
| 48) 2-Chloronaphthalene       | 162  | 7.317 | 7.320  | 0.924  | 446444   | 10.16 | ng/uL  | 100 |
| 49) o-Nitroaniline            | 65   | 7.413 | 7.419  | 0.936  | 164152   | 9.92  | ng/uL  | 97  |
| 50) 1,4-Dinitrobenzene        | 168  | 7.561 | 7.570  | 0.954  | 74448    | 9.56  | ng/uL  | 92  |
| 51) m-Nitroaniline            | 138  | 7.857 | 7.865  | 0.992  | 114883   | 10.13 | ng/uL  | 95  |
| 52) Dimethylphthalate         | 163  | 7.601 | 7.612  | 0.959  | 507108   | 10.30 | ng/uL  | 100 |
| 53) m-Dinitrobenzene          | 168  | 7.641 | 7.649  | 0.964  | 89103    | 9.94  | ng/uL  | 96  |
| 54) 2,6-Dinitrotoluene        | 165  | 7.672 | 7.680  | 0.968  | 114092   | 10.11 | ng/uL  | 95  |
| 55) 2,4-Dinitrotoluene        | 165  | 8.104 | 8.112  | 1.023  | 138850   | 10.08 | ng/uL  | 98  |
| 56) Acenaphthylene            | 152  | 7.766 | 7.771  | 0.980  | 748894   | 10.30 | ng/uL  | 100 |
| 57) Acenaphthene              | 154  | 7.953 | 7.959  | 1.004  | 464021   | 10.07 | ng/uL  | 99  |
| 59) Dibenzofuran              | 168  | 8.138 | 8.144  | 1.027  | 627172   | 10.35 | ng/uL  | 99  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 8.257 | 8.260  | 1.042  | 92494    | 9.06  | ng/uL  | 97  |
| 61) Diethylphthalate          | 149  | 8.354 | 8.362  | 1.055  | 538624   | 10.34 | ng/uL  | 100 |
| 62) 4-Nitrophenol             | 139  | 7.999 | 8.010  | 1.010  | 67481    | 9.08  | ng/uL  | 96  |
| 63) Fluorene                  | 166  | 8.507 | 8.516  | 1.074  | 533939   | 10.24 | ng/uL  | 100 |
| 64) 4-Chlorophenylphenylether | 204  | 8.496 | 8.499  | 1.072  | 244113   | 10.38 | ng/uL  | 100 |
| 65) p-Nitroaniline            | 138  | 8.513 | 8.527  | 1.075  | 93114    | 9.73  | ng/uL  | 100 |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 8.542 | 8.553  | 0.896  | 55914    | 7.95  | ng/uL  | 90  |
| 69) Diphenylamine             | 169  | 8.621 | 8.630  | 0.904  | 418678   | 10.09 | ng/uL  | 99  |
| 70) 1,2-Diphenylhydrazine     | 77   | 8.669 | 8.675  | 0.909  | 600818   | 10.30 | ng/uL  | 99  |
| 71) 4-Bromophenylphenylether  | 248  | 9.027 | 9.033  | 0.947  | 120344   | 9.90  | ng/uL  | 97  |
| 72) Hexachlorobenzene         | 284  | 9.098 | 9.104  | 0.954  | 141889   | 9.91  | ng/uL  | 100 |
| 73) Pentachlorophenol         | 266  | 9.306 | 9.309  | 0.976  | 67266    | 8.58  | ng/uL  | 99  |
| 74) n-Octadecane              | 57   | 9.363 | 9.365  | 0.982  | 627290   | 10.21 | ng/uL  | 99  |
| 75) Dinoseb                   | 211  | 9.491 | 9.496  | 0.995  | 83027    | 7.88  | ng/uL  | 100 |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1259.D  
Acq On : 13 Aug 2011 10:21  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-07|ICAL|1|SVM|1|M2  
Misc : |MIX[A]  
ALS Vial : 52 Sample Multiplier: 1

Quant Time: Aug 15 15:08:15 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:32:54 2011  
Response via : Initial Calibration  
Integrator: RTE

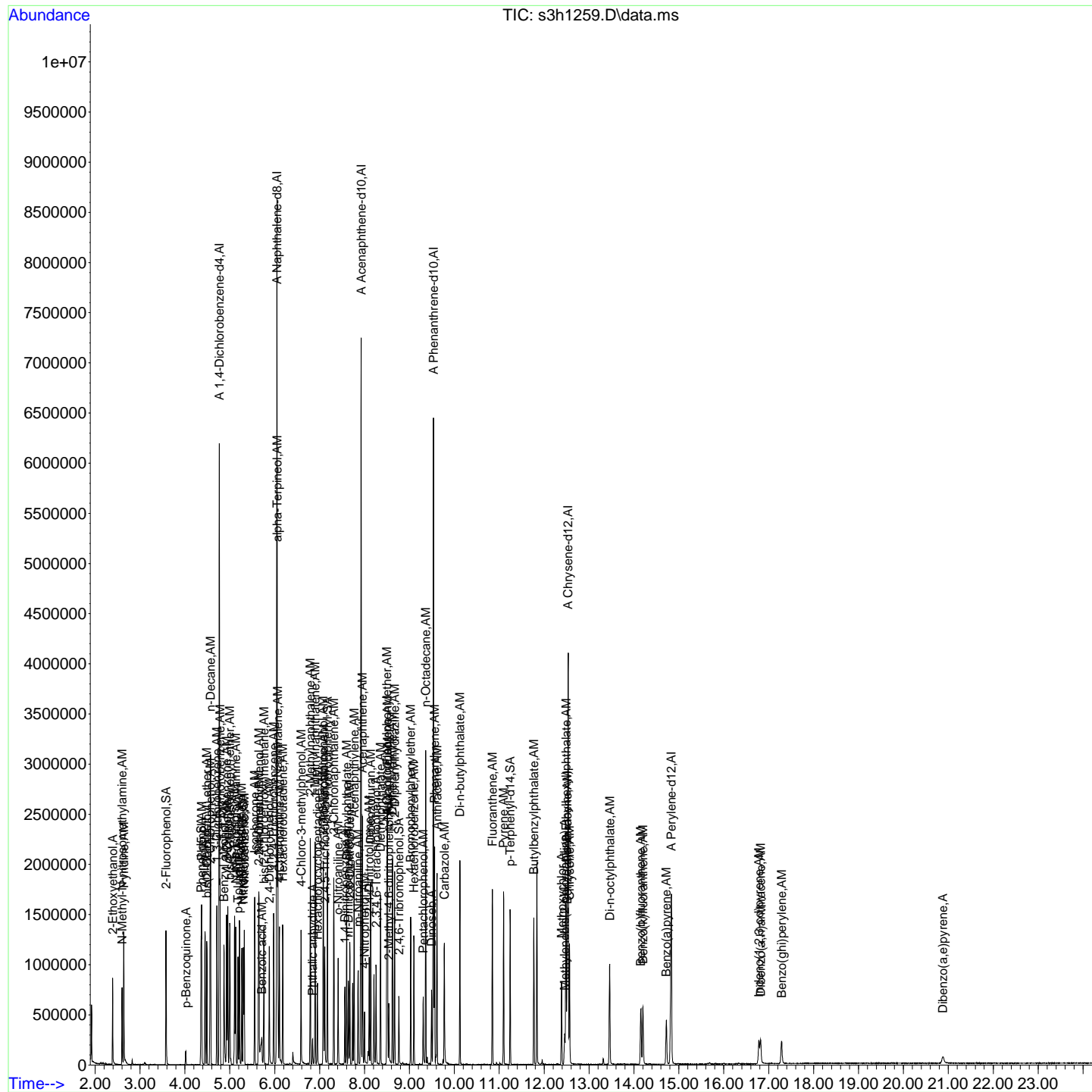
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 76) Phenanthrene              | 178  | 9.559  | 9.562  | 1.002  | 633145   | 10.22 | ng/uL | 99  |
| 77) Anthracene                | 178  | 9.613  | 9.618  | 1.008  | 636039   | 10.20 | ng/uL | 100 |
| 78) Carbazole                 | 167  | 9.775  | 9.780  | 1.025  | 541272   | 10.33 | ng/uL | 99  |
| 79) Di-n-butylphthalate       | 149  | 10.124 | 10.127 | 1.062  | 840148   | 10.00 | ng/uL | 99  |
| 80) Fluoranthene              | 202  | 10.846 | 10.852 | 1.137  | 627675   | 10.30 | ng/uL | 99  |
| 82) Pyrene                    | 202  | 11.096 | 11.102 | 0.885  | 624549   | 8.99  | ng/uL | 100 |
| 84) Butylbenzylphthalate      | 149  | 11.769 | 11.772 | 0.939  | 298310   | 8.79  | ng/uL | 96  |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 12.485 | 12.485 | 0.996  | 429759   | 9.27  | ng/uL | 99  |
| 86) Benzo(a)anthracene        | 228  | 12.511 | 12.514 | 0.998  | 454577   | 10.02 | ng/uL | 99  |
| 87) Chrysene                  | 228  | 12.565 | 12.568 | 1.002  | 420034   | 10.02 | ng/uL | 99  |
| 88) Methoxychlor              | 227  | 12.386 | 12.392 | 0.988  | 289622   | 9.28  | ng/uL | 99  |
| 89) Methylenebis(2-chloroa... | 231  | 12.457 | 12.463 | 0.994  | 32596    | 10.54 | ng/uL | 89  |
| 90) Di-n-octylphthalate       | 149  | 13.457 | 13.460 | 1.074  | 563298   | 9.35  | ng/uL | 98  |
| 92) Benzo(b)fluoranthene      | 252  | 14.151 | 14.159 | 0.954  | 312334   | 9.65  | ng/uL | 100 |
| 93) Benzo(k)fluoranthene      | 252  | 14.199 | 14.207 | 0.957  | 325535   | 9.98  | ng/uL | 98  |
| 94) Benzo(a)pyrene            | 252  | 14.719 | 14.727 | 0.992  | 270219   | 9.86  | ng/uL | 99  |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 16.779 | 16.787 | 1.131  | 199238   | 9.80  | ng/uL | 100 |
| 96) Dibenzo(a,h)anthracene    | 278  | 16.819 | 16.821 | 1.134  | 162773   | 9.70  | ng/uL | 98  |
| 97) Benzo(ghi)perylene        | 276  | 17.287 | 17.290 | 1.166  | 160504   | 10.01 | ng/uL | 100 |
| 98) Dibenzo(a,e)pyrene        | 302  | 20.873 | 20.887 | 1.407  | 74936    | 8.56  | ng/uL | 98  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1259.D  
Acq On : 13 Aug 2011 10:21  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-07|ICAL|1|SVM|1|M2  
Misc : |MIX[A]  
ALS Vial : 52 Sample Multiplier: 1

Quant Time: Aug 15 15:08:15 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 12:32:54 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1260.D  
Acq On : 13 Aug 2011 10:52  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-06|ICAL|1|SVM|1|M3  
Misc : |MIX[A]  
ALS Vial : 53 Sample Multiplier: 1

Quant Time: Aug 14 16:12:35 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.765  | 4.768  | 1.000  | 634861   | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.050  | 6.049  | 1.000  | 2453324  | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.922  | 7.922  | 1.000  | 1162477  | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.533  | 9.533  | 1.000  | 1814328  | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.531 | 12.531 | 1.000  | 1207088  | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 14.827 | 14.824 | 1.000  | 688125   | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.765  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.050  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.922  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.533  | 9.536  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 14.827 | 14.824 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.050  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.922  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.533  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.050  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.827 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.050  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.922  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.533  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.765  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.050  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 14.827 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       |          |
| 5) 2-Fluorophenol             | 112  | 3.580  | 3.580  | 0.751  | 408874   | 19.75 | ng/uL | 0.00     |
| 8) Phenol-d5                  | 99   | 4.362  | 4.367  | 0.915  | 517843   | 19.72 | ng/uL | 0.00     |
| 25) Nitrobenzene-d5           | 82   | 5.305  | 5.308  | 0.877  | 456356   | 21.01 | ng/uL | 0.00     |
| 47) 2-Fluorobiphenyl          | 172  | 7.175  | 7.178  | 0.906  | 851747   | 20.04 | ng/uL | 0.00     |
| 66) 2,4,6-Tribromophenol      | 330  | 8.766  | 8.772  | 1.107  | 93434    | 19.12 | ng/uL | 0.00     |
| 83) p-Terphenyl-d14           | 244  | 11.244 | 11.244 | 0.897  | 559998   | 18.27 | ng/uL | 0.00     |
| Target Compounds              |      |        |        |        |          |       |       |          |
| 2) 2-Ethoxyethanol            | 59   | 2.390  | 2.384  | 0.502  | 386670   | 19.80 | ng/uL | 100      |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.603  | 2.603  | 0.546  | 293224   | 19.93 | ng/uL | 99       |
| 4) Pyridine                   | 79   | 2.637  | 2.631  | 0.553  | 400234   | 19.63 | ng/uL | 98       |
| 6) p-Benzquinone              | 54   | 4.018  | 4.021  | 0.843  | 64605    | 16.00 | ng/uL | 99       |
| 7) Aniline                    | 66   | 4.450  | 4.455  | 0.934  | 255348   | 19.84 | ng/uL | 98       |
| 9) Phenol                     | 94   | 4.376  | 4.382  | 0.918  | 545481   | 19.97 | ng/uL | 100      |
| 10) bis(2-Chloroethyl) ether  | 63   | 4.490  | 4.492  | 0.942  | 443383   | 20.06 | ng/uL | 99       |
| 11) 2-Chlorophenol            | 128  | 4.561  | 4.563  | 0.957  | 419327   | 20.45 | ng/uL | 99       |
| 12) n-Decane                  | 43   | 4.572  | 4.572  | 0.959  | 860330   | 21.48 | ng/uL | 100      |
| 13) 1,3-Dichlorobenzene       | 146  | 4.714  | 4.717  | 0.989  | 456012   | 19.95 | ng/uL | 99       |
| 14) 1,4-Dichlorobenzene       | 146  | 4.782  | 4.785  | 1.004  | 463998   | 20.03 | ng/uL | 99       |
| 15) 1,2-Dichlorobenzene       | 146  | 4.930  | 4.933  | 1.035  | 434454   | 19.95 | ng/uL | 99       |
| 16) bis(2-Chloroisopropyl)... | 45   | 5.001  | 5.004  | 1.049  | 1194100  | 20.32 | ng/uL | 99       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1260.D  
Acq On : 13 Aug 2011 10:52  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-06|ICAL|1|SVM|1|M3  
Misc : |MIX[A]  
ALS Vial : 53 Sample Multiplier: 1

Quant Time: Aug 14 16:12:35 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  |     |
|-------------------------------|------|-------|--------|--------|----------|-------|--------|-----|
| 17) Benzyl alcohol            | 108  | 4.873 | 4.879  | 1.023  | 274503   | 19.93 | ng/uL  | 99  |
| 18) o-Cresol                  | 107  | 4.958 | 4.961  | 1.041  | 348571   | 20.02 | ng/uL  | 99  |
| 19) m,p-Cresols               | 107  | 5.112 | 5.117  | 1.073  | 443822   | 19.90 | ng/uL  | 99  |
| 20) N-Nitrosodipropylamine    | 70   | 5.140 | 5.149  | 1.079  | 334367   | 20.31 | ng/uL  | 100 |
| 21) p-Toluidine               | 106  | 5.186 | 5.189  | 1.088  | 493422   | 21.68 | ng/uL  | 99  |
| 22) m-Toluidine               | 106  | 5.220 | 5.223  | 1.095  | 497418   | 19.25 | ng/uL  | 99  |
| 23) Hexachloroethane          | 117  | 5.268 | 5.268  | 1.106  | 192245   | 19.94 | ng/uL  | 98  |
| 26) Nitrobenzene              | 77   | 5.325 | 5.331  | 0.880  | 463908   | 21.06 | ng/uL  | 98  |
| 27) Isophorone                | 82   | 5.558 | 5.564  | 0.919  | 872384   | 21.22 | ng/uL  | 98  |
| 28) 2-Nitrophenol             | 139  | 5.640 | 5.643  | 0.932  | 225020   | 20.60 | ng/uL  | 95  |
| 29) 2,4-Dimethylphenol        | 122  | 5.652 | 5.655  | 0.934  | 386465   | 21.62 | ng/uL  | 99  |
| 30) bis(2-Chloroethoxy)met... | 93   | 5.760 | 5.762  | 0.952  | 539021   | 21.13 | ng/uL  | 98  |
| 31) 2,4-Dichlorophenol        | 162  | 5.882 | 5.885  | 0.972  | 308904   | 20.44 | ng/uL  | 99  |
| 32) Benzoic acid              | 105  | 5.737 | 5.765  | 0.948  | 209599   | 16.42 | ng/uL# | 53  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 5.979 | 5.978  | 0.988  | 375234   | 21.09 | ng/uL  | 100 |
| 34) alpha-Terpineol           | 59   | 6.058 | 6.061  | 1.001  | 563297   | 21.59 | ng/uL  | 99  |
| 35) Naphthalene               | 128  | 6.069 | 6.072  | 1.003  | 1184485  | 21.27 | ng/uL  | 97  |
| 36) 4-Chloroaniline           | 127  | 6.106 | 6.109  | 1.009  | 453908   | 20.89 | ng/uL  | 98  |
| 37) Hexachlorobutadiene       | 225  | 6.180 | 6.180  | 1.022  | 195143   | 20.71 | ng/uL  | 99  |
| 38) 4-Chloro-3-methylphenol   | 107  | 6.589 | 6.592  | 1.089  | 343229   | 20.84 | ng/uL  | 99  |
| 39) 2-Methylnaphthalene       | 142  | 6.794 | 6.797  | 1.123  | 799456   | 20.93 | ng/uL  | 100 |
| 40) Phthalic anhydride        | 104  | 6.842 | 6.845  | 1.131  | 32603    | 13.26 | ng/uL# | 1   |
| 41) 1-Methylnaphthalene       | 142  | 6.902 | 6.905  | 1.141  | 767459   | 20.98 | ng/uL  | 99  |
| 43) Hexachlorocyclopentadiene | 237  | 6.950 | 6.953  | 0.877  | 171041   | 20.85 | ng/uL  | 100 |
| 44) 2,3-Dichloroaniline       | 161  | 7.090 | 7.092  | 0.895  | 401882   | 20.18 | ng/uL  | 99  |
| 45) 2,4,6-Trichlorophenol     | 196  | 7.081 | 7.084  | 0.894  | 214047   | 20.07 | ng/uL  | 99  |
| 46) 2,4,5-Trichlorophenol     | 196  | 7.115 | 7.118  | 0.898  | 222726   | 19.68 | ng/uL  | 99  |
| 48) 2-Chloronaphthalene       | 162  | 7.317 | 7.320  | 0.924  | 701755   | 20.11 | ng/uL  | 100 |
| 49) o-Nitroaniline            | 65   | 7.413 | 7.419  | 0.936  | 261787   | 19.93 | ng/uL  | 97  |
| 50) 1,4-Dinitrobenzene        | 168  | 7.564 | 7.570  | 0.955  | 118452   | 19.16 | ng/uL  | 93  |
| 51) m-Nitroaniline            | 138  | 7.860 | 7.865  | 0.992  | 181203   | 20.12 | ng/uL  | 98  |
| 52) Dimethylphthalate         | 163  | 7.604 | 7.612  | 0.960  | 781964   | 20.01 | ng/uL  | 99  |
| 53) m-Dinitrobenzene          | 168  | 7.644 | 7.649  | 0.965  | 139174   | 19.56 | ng/uL  | 96  |
| 54) 2,6-Dinitrotoluene        | 165  | 7.675 | 7.680  | 0.969  | 177560   | 19.82 | ng/uL  | 94  |
| 55) 2,4-Dinitrotoluene        | 165  | 8.107 | 8.112  | 1.023  | 211183   | 19.32 | ng/uL  | 97  |
| 56) Acenaphthylene            | 152  | 7.769 | 7.771  | 0.981  | 1162300  | 20.14 | ng/uL  | 100 |
| 57) Acenaphthene              | 154  | 7.956 | 7.959  | 1.004  | 729380   | 19.94 | ng/uL  | 100 |
| 58) 2,4-Dinitrophenol         | 184  | 7.965 | 7.970  | 1.005  | 67009    | 15.96 | ng/uL  | 98  |
| 59) Dibenzofuran              | 168  | 8.138 | 8.144  | 1.027  | 970963   | 20.19 | ng/uL  | 99  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 8.257 | 8.260  | 1.042  | 147288   | 18.17 | ng/uL  | 95  |
| 61) Diethylphthalate          | 149  | 8.360 | 8.362  | 1.055  | 821379   | 19.86 | ng/uL  | 100 |
| 62) 4-Nitrophenol             | 139  | 8.004 | 8.010  | 1.010  | 113666   | 19.27 | ng/uL  | 95  |
| 63) Fluorene                  | 166  | 8.510 | 8.516  | 1.074  | 824672   | 19.92 | ng/uL  | 100 |
| 64) 4-Chlorophenylphenylether | 204  | 8.496 | 8.499  | 1.072  | 378213   | 20.26 | ng/uL  | 100 |
| 65) p-Nitroaniline            | 138  | 8.516 | 8.527  | 1.075  | 147139   | 19.36 | ng/uL  | 98  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 8.547 | 8.553  | 0.897  | 98302    | 18.40 | ng/uL  | 92  |
| 69) Diphenylamine             | 169  | 8.624 | 8.630  | 0.905  | 646868   | 20.53 | ng/uL  | 100 |
| 70) 1,2-Diphenylhydrazine     | 77   | 8.672 | 8.675  | 0.910  | 925948   | 20.90 | ng/uL  | 98  |
| 71) 4-Bromophenylphenylether  | 248  | 9.030 | 9.033  | 0.947  | 187602   | 20.33 | ng/uL  | 99  |
| 72) Hexachlorobenzene         | 284  | 9.101 | 9.104  | 0.955  | 216202   | 19.89 | ng/uL  | 100 |
| 73) Pentachlorophenol         | 266  | 9.306 | 9.309  | 0.976  | 110678   | 18.60 | ng/uL  | 99  |
| 74) n-Octadecane              | 57   | 9.363 | 9.365  | 0.982  | 984392   | 21.09 | ng/uL  | 100 |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1260.D  
Acq On : 13 Aug 2011 10:52  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-06|ICAL|1|SVM|1|M3  
Misc : |MIX[A]  
ALS Vial : 53 Sample Multiplier: 1

Quant Time: Aug 14 16:12:35 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

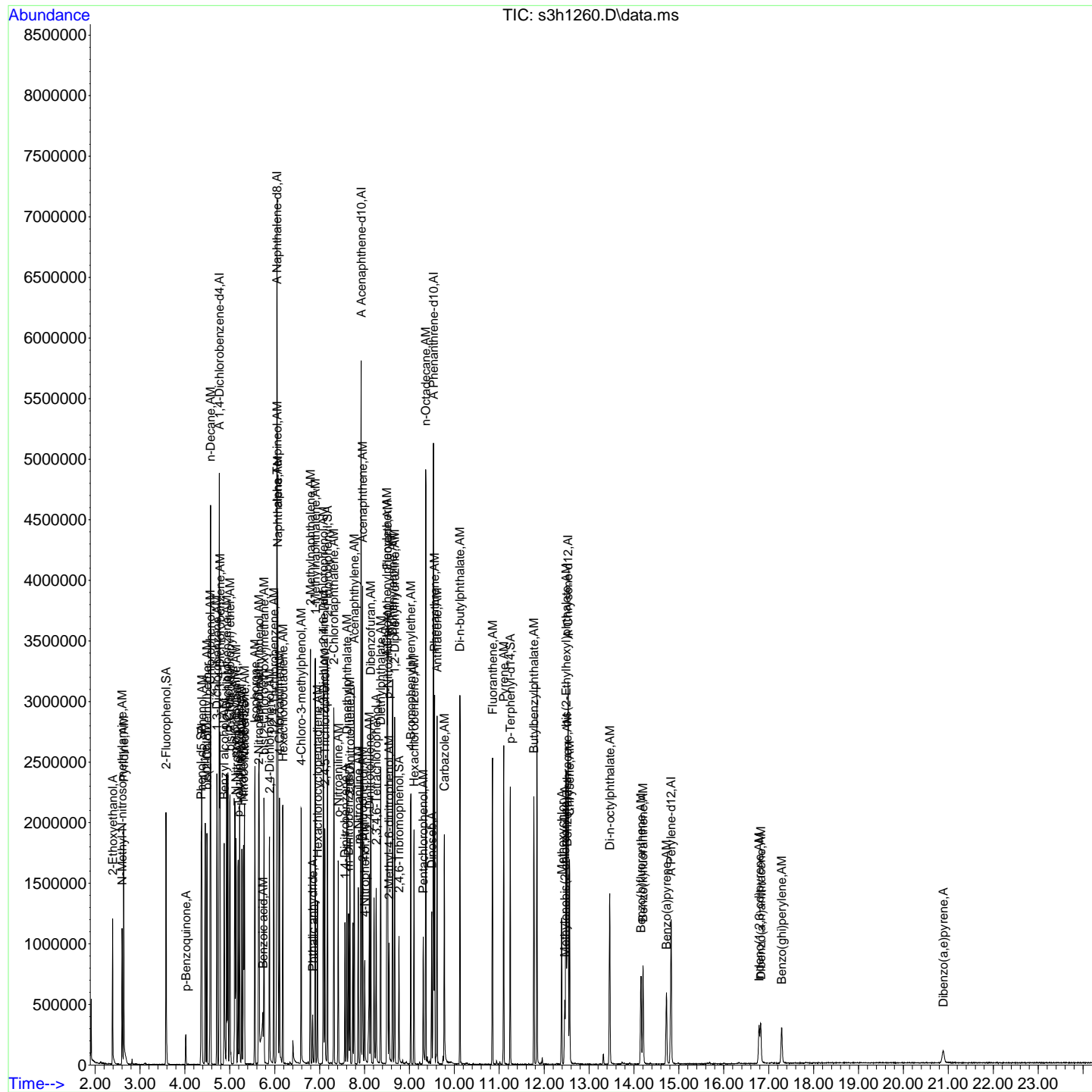
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 75) Dinoseb                   | 211  | 9.493  | 9.496  | 0.996  | 144474   | 18.05 | ng/uL | 100 |
| 76) Phenanthrene              | 178  | 9.559  | 9.562  | 1.003  | 949237   | 20.19 | ng/uL | 99  |
| 77) Anthracene                | 178  | 9.613  | 9.618  | 1.008  | 957854   | 20.22 | ng/uL | 100 |
| 78) Carbazole                 | 167  | 9.775  | 9.780  | 1.025  | 779940   | 19.61 | ng/uL | 99  |
| 79) Di-n-butylphthalate       | 149  | 10.124 | 10.127 | 1.062  | 1269489  | 19.89 | ng/uL | 100 |
| 80) Fluoranthene              | 202  | 10.849 | 10.852 | 1.138  | 951942   | 20.58 | ng/uL | 99  |
| 82) Pyrene                    | 202  | 11.099 | 11.102 | 0.886  | 950793   | 18.73 | ng/uL | 99  |
| 84) Butylbenzylphthalate      | 149  | 11.772 | 11.772 | 0.939  | 463055   | 18.66 | ng/uL | 97  |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 12.485 | 12.485 | 0.996  | 645475   | 19.05 | ng/uL | 99  |
| 86) Benzo(a)anthracene        | 228  | 12.511 | 12.514 | 0.998  | 655473   | 19.76 | ng/uL | 99  |
| 87) Chrysene                  | 228  | 12.565 | 12.568 | 1.003  | 604142   | 19.71 | ng/uL | 100 |
| 88) Methoxychlor              | 227  | 12.389 | 12.392 | 0.989  | 443789   | 19.45 | ng/uL | 100 |
| 89) Methylenebis(2-chloroa... | 231  | 12.460 | 12.463 | 0.994  | 59405    | 18.09 | ng/uL | 90  |
| 90) Di-n-octylphthalate       | 149  | 13.457 | 13.460 | 1.074  | 815489   | 18.51 | ng/uL | 98  |
| 92) Benzo(b)fluoranthene      | 252  | 14.156 | 14.159 | 0.955  | 423793   | 19.80 | ng/uL | 100 |
| 93) Benzo(k)fluoranthene      | 252  | 14.202 | 14.207 | 0.958  | 428643   | 19.87 | ng/uL | 99  |
| 94) Benzo(a)pyrene            | 252  | 14.722 | 14.727 | 0.993  | 357529   | 19.73 | ng/uL | 99  |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 16.784 | 16.787 | 1.132  | 267583   | 19.90 | ng/uL | 100 |
| 96) Dibenzo(a,h)anthracene    | 278  | 16.821 | 16.821 | 1.135  | 219604   | 19.79 | ng/uL | 97  |
| 97) Benzo(ghi)perylene        | 276  | 17.287 | 17.290 | 1.166  | 214023   | 20.19 | ng/uL | 99  |
| 98) Dibenzo(a,e)pyrene        | 302  | 20.885 | 20.887 | 1.409  | 111130   | 19.20 | ng/uL | 99  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1260.D  
Acq On : 13 Aug 2011 10:52  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-06|ICAL|1|SVM|1|M3  
Misc : |MIX[A]  
ALS Vial : 53 Sample Multiplier: 1

Quant Time: Aug 14 16:12:35 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1261.D  
Acq On : 13 Aug 2011 11:24  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-05.1|ICAL|1|SVM|1|M4  
Misc : |MIX[A]  
ALS Vial : 54 Sample Multiplier: 1

Quant Time: Aug 14 16:12:40 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.768  | 4.768  | 1.000  | 494209   | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.049  | 6.049  | 1.000  | 2042956  | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.922  | 7.922  | 1.000  | 930203   | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.533  | 9.533  | 1.000  | 1500499  | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.531 | 12.531 | 1.000  | 916763   | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 14.824 | 14.824 | 1.000  | 513377   | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.768  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.049  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.922  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.533  | 9.536  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 14.824 | 14.824 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.049  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.922  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.533  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.049  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.824 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.768  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.049  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.922  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.533  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.768  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.049  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.531 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 14.824 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       |          |
| 5) 2-Fluorophenol             | 112  | 3.580  | 3.580  | 0.751  | 643032   | 39.90 | ng/uL | 0.00     |
| 8) Phenol-d5                  | 99   | 4.367  | 4.367  | 0.916  | 810766   | 39.66 | ng/uL | 0.00     |
| 25) Nitrobenzene-d5           | 82   | 5.308  | 5.308  | 0.877  | 711222   | 39.32 | ng/uL | 0.00     |
| 47) 2-Fluorobiphenyl          | 172  | 7.178  | 7.178  | 0.906  | 1353111  | 39.79 | ng/uL | 0.00     |
| 66) 2,4,6-Tribromophenol      | 330  | 8.772  | 8.772  | 1.107  | 156300   | 39.97 | ng/uL | 0.00     |
| 83) p-Terphenyl-d14           | 244  | 11.244 | 11.244 | 0.897  | 896334   | 38.50 | ng/uL | 0.00     |
| Target Compounds              |      |        |        |        |          |       |       |          |
| 2) 2-Ethoxyethanol            | 59   | 2.384  | 2.384  | 0.500  | 610273   | 40.14 | ng/uL | 100      |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.603  | 2.603  | 0.546  | 457820   | 39.96 | ng/uL | 99       |
| 4) Pyridine                   | 79   | 2.631  | 2.631  | 0.552  | 632734   | 39.87 | ng/uL | 98       |
| 6) p-Benzoquinone             | 54   | 4.021  | 4.021  | 0.843  | 126832   | 40.35 | ng/uL | 97       |
| 7) Aniline                    | 66   | 4.455  | 4.455  | 0.934  | 401541   | 40.09 | ng/uL | 99       |
| 9) Phenol                     | 94   | 4.382  | 4.382  | 0.919  | 850843   | 40.02 | ng/uL | 99       |
| 10) bis(2-Chloroethyl) ether  | 63   | 4.492  | 4.492  | 0.942  | 690264   | 40.11 | ng/uL | 100      |
| 11) 2-Chlorophenol            | 128  | 4.563  | 4.563  | 0.957  | 653524   | 40.94 | ng/uL | 99       |
| 12) n-Decane                  | 43   | 4.572  | 4.572  | 0.959  | 1326944  | 42.56 | ng/uL | 99       |
| 13) 1,3-Dichlorobenzene       | 146  | 4.717  | 4.717  | 0.989  | 712126   | 40.02 | ng/uL | 100      |
| 14) 1,4-Dichlorobenzene       | 146  | 4.785  | 4.785  | 1.004  | 728703   | 40.40 | ng/uL | 99       |
| 15) 1,2-Dichlorobenzene       | 146  | 4.933  | 4.933  | 1.035  | 677118   | 39.94 | ng/uL | 100      |
| 16) bis(2-Chloroisopropyl)... | 45   | 5.004  | 5.004  | 1.049  | 1858126  | 40.63 | ng/uL | 99       |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1261.D  
Acq On : 13 Aug 2011 11:24  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-05.1|ICAL|1|SVM|1|M4  
Misc : |MIX[A]  
ALS Vial : 54 Sample Multiplier: 1

Quant Time: Aug 14 16:12:40 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  |     |
|-------------------------------|------|-------|--------|--------|----------|-------|--------|-----|
| 17) Benzyl alcohol            | 108  | 4.879 | 4.879  | 1.023  | 430798   | 40.19 | ng/uL  | 99  |
| 18) o-Cresol                  | 107  | 4.961 | 4.961  | 1.041  | 543370   | 40.09 | ng/uL  | 99  |
| 19) m,p-Cresols               | 107  | 5.117 | 5.117  | 1.073  | 692740   | 39.90 | ng/uL  | 100 |
| 20) N-Nitrosodipropylamine    | 70   | 5.149 | 5.149  | 1.080  | 523697   | 40.87 | ng/uL  | 100 |
| 21) p-Toluidine               | 106  | 5.189 | 5.189  | 1.088  | 764237   | 43.13 | ng/uL  | 99  |
| 22) m-Toluidine               | 106  | 5.223 | 5.223  | 1.095  | 783474   | 38.96 | ng/uL  | 100 |
| 23) Hexachloroethane          | 117  | 5.268 | 5.268  | 1.105  | 299872   | 39.96 | ng/uL  | 99  |
| 26) Nitrobenzene              | 77   | 5.331 | 5.331  | 0.881  | 723023   | 39.42 | ng/uL  | 99  |
| 27) Isophorone                | 82   | 5.564 | 5.564  | 0.920  | 1381871  | 40.36 | ng/uL  | 98  |
| 28) 2-Nitrophenol             | 139  | 5.643 | 5.643  | 0.933  | 357270   | 39.28 | ng/uL  | 97  |
| 29) 2,4-Dimethylphenol        | 122  | 5.655 | 5.655  | 0.935  | 593848   | 39.89 | ng/uL  | 98  |
| 30) bis(2-Chloroethoxy)met... | 93   | 5.762 | 5.762  | 0.953  | 847312   | 39.88 | ng/uL  | 99  |
| 31) 2,4-Dichlorophenol        | 162  | 5.885 | 5.885  | 0.973  | 496845   | 39.48 | ng/uL  | 99  |
| 32) Benzoic acid              | 105  | 5.765 | 5.765  | 0.953  | 382444   | 35.99 | ng/uL# | 53  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 5.978 | 5.978  | 0.988  | 584834   | 39.47 | ng/uL  | 99  |
| 34) alpha-Terpineol           | 59   | 6.061 | 6.061  | 1.002  | 896629   | 41.27 | ng/uL  | 99  |
| 35) Naphthalene               | 128  | 6.072 | 6.072  | 1.004  | 1852368  | 39.95 | ng/uL  | 96  |
| 36) 4-Chloroaniline           | 127  | 6.109 | 6.109  | 1.010  | 715086   | 39.52 | ng/uL  | 98  |
| 37) Hexachlorobutadiene       | 225  | 6.180 | 6.180  | 1.022  | 308063   | 39.26 | ng/uL  | 99  |
| 38) 4-Chloro-3-methylphenol   | 107  | 6.592 | 6.592  | 1.090  | 547985   | 39.96 | ng/uL  | 99  |
| 39) 2-Methylnaphthalene       | 142  | 6.797 | 6.797  | 1.124  | 1264450  | 39.76 | ng/uL  | 99  |
| 40) Phthalic anhydride        | 104  | 6.845 | 6.845  | 1.132  | 72429    | 35.37 | ng/uL# | 1   |
| 41) 1-Methylnaphthalene       | 142  | 6.905 | 6.905  | 1.141  | 1211194  | 39.75 | ng/uL  | 100 |
| 43) Hexachlorocyclopentadiene | 237  | 6.953 | 6.953  | 0.878  | 256125   | 39.02 | ng/uL  | 100 |
| 44) 2,3-Dichloroaniline       | 161  | 7.092 | 7.092  | 0.895  | 638075   | 40.04 | ng/uL  | 99  |
| 45) 2,4,6-Trichlorophenol     | 196  | 7.084 | 7.084  | 0.894  | 345657   | 40.50 | ng/uL  | 100 |
| 46) 2,4,5-Trichlorophenol     | 196  | 7.118 | 7.118  | 0.898  | 364962   | 40.29 | ng/uL  | 100 |
| 48) 2-Chloronaphthalene       | 162  | 7.320 | 7.320  | 0.924  | 1113002  | 39.86 | ng/uL  | 100 |
| 49) o-Nitroaniline            | 65   | 7.419 | 7.419  | 0.937  | 418359   | 39.80 | ng/uL  | 98  |
| 50) 1,4-Dinitrobenzene        | 168  | 7.570 | 7.570  | 0.956  | 198757   | 40.18 | ng/uL  | 95  |
| 51) m-Nitroaniline            | 138  | 7.865 | 7.865  | 0.993  | 289739   | 40.20 | ng/uL  | 98  |
| 52) Dimethylphthalate         | 163  | 7.612 | 7.612  | 0.961  | 1273569  | 40.73 | ng/uL  | 100 |
| 53) m-Dinitrobenzene          | 168  | 7.649 | 7.649  | 0.966  | 231852   | 40.71 | ng/uL  | 97  |
| 54) 2,6-Dinitrotoluene        | 165  | 7.680 | 7.680  | 0.970  | 289246   | 40.36 | ng/uL  | 95  |
| 55) 2,4-Dinitrotoluene        | 165  | 8.112 | 8.112  | 1.024  | 355582   | 40.65 | ng/uL  | 97  |
| 56) Acenaphthylene            | 152  | 7.771 | 7.771  | 0.981  | 1867545  | 40.44 | ng/uL  | 100 |
| 57) Acenaphthene              | 154  | 7.959 | 7.959  | 1.005  | 1174386  | 40.13 | ng/uL  | 100 |
| 58) 2,4-Dinitrophenol         | 184  | 7.970 | 7.970  | 1.006  | 120239   | 35.79 | ng/uL# | 78  |
| 59) Dibenzofuran              | 168  | 8.144 | 8.144  | 1.028  | 1551556  | 40.31 | ng/uL  | 99  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 8.260 | 8.260  | 1.043  | 256367   | 39.52 | ng/uL  | 98  |
| 61) Diethylphthalate          | 149  | 8.362 | 8.362  | 1.056  | 1363923  | 41.22 | ng/uL  | 100 |
| 62) 4-Nitrophenol             | 139  | 8.010 | 8.010  | 1.011  | 189882   | 40.22 | ng/uL  | 98  |
| 63) Fluorene                  | 166  | 8.516 | 8.516  | 1.075  | 1350022  | 40.75 | ng/uL  | 99  |
| 64) 4-Chlorophenylphenylether | 204  | 8.499 | 8.499  | 1.073  | 613929   | 41.09 | ng/uL  | 100 |
| 65) p-Nitroaniline            | 138  | 8.527 | 8.527  | 1.076  | 238090   | 39.16 | ng/uL  | 98  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 8.553 | 8.553  | 0.897  | 172899   | 39.13 | ng/uL  | 95  |
| 69) Diphenylamine             | 169  | 8.630 | 8.630  | 0.905  | 1060006  | 40.67 | ng/uL  | 100 |
| 70) 1,2-Diphenylhydrazine     | 77   | 8.675 | 8.675  | 0.910  | 1504803  | 41.07 | ng/uL  | 99  |
| 71) 4-Bromophenylphenylether  | 248  | 9.033 | 9.033  | 0.948  | 310630   | 40.70 | ng/uL  | 99  |
| 72) Hexachlorobenzene         | 284  | 9.104 | 9.104  | 0.955  | 364013   | 40.50 | ng/uL  | 100 |
| 73) Pentachlorophenol         | 266  | 9.309 | 9.309  | 0.976  | 194130   | 39.44 | ng/uL  | 99  |
| 74) n-Octadecane              | 57   | 9.365 | 9.365  | 0.982  | 1618762  | 41.94 | ng/uL  | 99  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1261.D  
Acq On : 13 Aug 2011 11:24  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-05.1|ICAL|1|SVM|1|M4  
Misc : |MIX[A]  
ALS Vial : 54 Sample Multiplier: 1

Quant Time: Aug 14 16:12:40 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 75) Dinoseb                   | 211  | 9.496  | 9.496  | 0.996  | 256724   | 38.77 | ng/uL | 100 |
| 76) Phenanthrene              | 178  | 9.562  | 9.562  | 1.003  | 1571021  | 40.39 | ng/uL | 100 |
| 77) Anthracene                | 178  | 9.618  | 9.618  | 1.009  | 1586699  | 40.51 | ng/uL | 100 |
| 78) Carbazole                 | 167  | 9.780  | 9.780  | 1.026  | 1292506  | 39.29 | ng/uL | 99  |
| 79) Di-n-butylphthalate       | 149  | 10.127 | 10.127 | 1.062  | 2142624  | 40.59 | ng/uL | 100 |
| 80) Fluoranthene              | 202  | 10.852 | 10.852 | 1.138  | 1530846  | 40.01 | ng/uL | 99  |
| 82) Pyrene                    | 202  | 11.102 | 11.102 | 0.886  | 1511263  | 39.19 | ng/uL | 99  |
| 84) Butylbenzylphthalate      | 149  | 11.772 | 11.772 | 0.939  | 748335   | 39.70 | ng/uL | 97  |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 12.485 | 12.485 | 0.996  | 1021181  | 39.69 | ng/uL | 100 |
| 86) Benzo(a)anthracene        | 228  | 12.514 | 12.514 | 0.999  | 1006216  | 39.94 | ng/uL | 99  |
| 87) Chrysene                  | 228  | 12.568 | 12.568 | 1.003  | 936880   | 40.25 | ng/uL | 100 |
| 88) Methoxychlor              | 227  | 12.392 | 12.392 | 0.989  | 706906   | 40.78 | ng/uL | 100 |
| 89) Methylenebis(2-chloroa... | 231  | 12.463 | 12.463 | 0.995  | 114530   | 37.48 | ng/uL | 97  |
| 90) Di-n-octylphthalate       | 149  | 13.460 | 13.460 | 1.074  | 1331003  | 39.78 | ng/uL | 99  |
| 92) Benzo(b)fluoranthene      | 252  | 14.159 | 14.159 | 0.955  | 652125   | 40.84 | ng/uL | 100 |
| 93) Benzo(k)fluoranthene      | 252  | 14.207 | 14.207 | 0.958  | 650612   | 40.44 | ng/uL | 99  |
| 94) Benzo(a)pyrene            | 252  | 14.727 | 14.727 | 0.993  | 558110   | 41.28 | ng/uL | 99  |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 16.787 | 16.787 | 1.132  | 399665   | 39.84 | ng/uL | 100 |
| 96) Dibenzo(a,h)anthracene    | 278  | 16.821 | 16.821 | 1.135  | 326918   | 39.49 | ng/uL | 97  |
| 97) Benzo(ghi)perylene        | 276  | 17.290 | 17.290 | 1.166  | 308765   | 39.03 | ng/uL | 99  |
| 98) Dibenzo(a,e)pyrene        | 302  | 20.887 | 20.887 | 1.409  | 154926   | 35.88 | ng/uL | 99  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1262.D  
Acq On : 13 Aug 2011 11:55  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-04|ICAL|1|SVM|1|M5  
Misc : |MIX[A]  
ALS Vial : 55 Sample Multiplier: 1

Quant Time: Aug 14 16:12:45 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.768  | 4.768  | 1.000  | 521853   | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.049  | 6.049  | 1.000  | 2221510  | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.925  | 7.922  | 1.000  | 958267   | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.536  | 9.533  | 1.000  | 1522554  | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.534 | 12.531 | 1.000  | 917554   | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 14.824 | 14.824 | 1.000  | 483120   | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.768  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.049  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.925  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.536  | 9.536  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.534 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 14.824 | 14.824 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.049  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.925  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.536  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.534 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.049  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.824 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.768  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.049  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.925  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.536  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.534 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.768  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.049  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.534 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 14.824 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       |          |
| 5) 2-Fluorophenol             | 112  | 3.583  | 3.580  | 0.751  | 859752   | 50.52 | ng/uL | 0.00     |
| 8) Phenol-d5                  | 99   | 4.370  | 4.367  | 0.917  | 1096235  | 50.79 | ng/uL | 0.00     |
| 25) Nitrobenzene-d5           | 82   | 5.311  | 5.308  | 0.878  | 941011   | 47.84 | ng/uL | 0.00     |
| 47) 2-Fluorobiphenyl          | 172  | 7.180  | 7.178  | 0.906  | 1777498  | 50.74 | ng/uL | 0.00     |
| 66) 2,4,6-Tribromophenol      | 330  | 8.772  | 8.772  | 1.107  | 196508   | 48.78 | ng/uL | 0.00     |
| 83) p-Terphenyl-d14           | 244  | 11.246 | 11.244 | 0.897  | 1162686  | 49.90 | ng/uL | 0.00     |
| Target Compounds              |      |        |        |        |          |       |       |          |
| 2) 2-Ethoxyethanol            | 59   | 2.393  | 2.384  | 0.502  | 813520   | 50.67 | ng/uL | 100      |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.608  | 2.603  | 0.547  | 610335   | 50.46 | ng/uL | 99       |
| 4) Pyridine                   | 79   | 2.637  | 2.631  | 0.553  | 850821   | 50.78 | ng/uL | 98       |
| 6) p-Benzoquinone             | 54   | 4.021  | 4.021  | 0.843  | 180783   | 54.47 | ng/uL | 99       |
| 7) Aniline                    | 66   | 4.458  | 4.455  | 0.935  | 533448   | 50.44 | ng/uL | 100      |
| 9) Phenol                     | 94   | 4.384  | 4.382  | 0.920  | 1139068  | 50.74 | ng/uL | 100      |
| 10) bis(2-Chloroethyl) ether  | 63   | 4.495  | 4.492  | 0.943  | 917858   | 50.51 | ng/uL | 99       |
| 11) 2-Chlorophenol            | 128  | 4.566  | 4.563  | 0.958  | 868223   | 51.51 | ng/uL | 99       |
| 12) n-Decane                  | 43   | 4.575  | 4.572  | 0.959  | 1734536  | 52.68 | ng/uL | 98       |
| 13) 1,3-Dichlorobenzene       | 146  | 4.717  | 4.717  | 0.989  | 954580   | 50.81 | ng/uL | 99       |
| 14) 1,4-Dichlorobenzene       | 146  | 4.785  | 4.785  | 1.004  | 967579   | 50.81 | ng/uL | 99       |
| 15) 1,2-Dichlorobenzene       | 146  | 4.933  | 4.933  | 1.035  | 908690   | 50.77 | ng/uL | 100      |
| 16) bis(2-Chloroisopropyl)... | 45   | 5.004  | 5.004  | 1.049  | 2454163  | 50.82 | ng/uL | 98       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1262.D  
Acq On : 13 Aug 2011 11:55  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-04|ICAL|1|SVM|1|M5  
Misc : |MIX[A]  
ALS Vial : 55 Sample Multiplier: 1

Quant Time: Aug 14 16:12:45 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  |     |
|-------------------------------|------|-------|--------|--------|----------|-------|--------|-----|
| 17) Benzyl alcohol            | 108  | 4.882 | 4.879  | 1.024  | 571816   | 50.52 | ng/uL  | 99  |
| 18) o-Cresol                  | 107  | 4.964 | 4.961  | 1.041  | 725344   | 50.68 | ng/uL  | 99  |
| 19) m,p-Cresols               | 107  | 5.123 | 5.117  | 1.074  | 928322   | 50.64 | ng/uL  | 99  |
| 20) N-Nitrosodipropylamine    | 70   | 5.154 | 5.149  | 1.081  | 694233   | 51.31 | ng/uL  | 99  |
| 21) p-Toluidine               | 106  | 5.191 | 5.189  | 1.089  | 1019117  | 54.46 | ng/uL  | 100 |
| 22) m-Toluidine               | 106  | 5.225 | 5.223  | 1.096  | 1046497  | 49.28 | ng/uL  | 99  |
| 23) Hexachloroethane          | 117  | 5.268 | 5.268  | 1.105  | 400227   | 50.50 | ng/uL  | 98  |
| 26) Nitrobenzene              | 77   | 5.333 | 5.331  | 0.882  | 960294   | 48.15 | ng/uL  | 99  |
| 27) Isophorone                | 82   | 5.566 | 5.564  | 0.920  | 1813115  | 48.69 | ng/uL  | 98  |
| 28) 2-Nitrophenol             | 139  | 5.646 | 5.643  | 0.933  | 480552   | 48.59 | ng/uL  | 98  |
| 29) 2,4-Dimethylphenol        | 122  | 5.660 | 5.655  | 0.936  | 778002   | 48.06 | ng/uL  | 98  |
| 30) bis(2-Chloroethoxy)met... | 93   | 5.765 | 5.762  | 0.953  | 1119026  | 48.44 | ng/uL  | 100 |
| 31) 2,4-Dichlorophenol        | 162  | 5.887 | 5.885  | 0.973  | 661758   | 48.36 | ng/uL  | 99  |
| 32) Benzoic acid              | 105  | 5.785 | 5.765  | 0.956  | 541750   | 46.88 | ng/uL# | 49  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 5.981 | 5.978  | 0.989  | 778863   | 48.34 | ng/uL  | 100 |
| 34) alpha-Terpineol           | 59   | 6.064 | 6.061  | 1.002  | 1161946  | 49.19 | ng/uL  | 99  |
| 35) Naphthalene               | 128  | 6.075 | 6.072  | 1.004  | 2429239  | 48.18 | ng/uL  | 73  |
| 36) 4-Chloroaniline           | 127  | 6.112 | 6.109  | 1.010  | 955099   | 48.54 | ng/uL  | 98  |
| 37) Hexachlorobutadiene       | 225  | 6.183 | 6.180  | 1.022  | 413279   | 48.43 | ng/uL  | 100 |
| 38) 4-Chloro-3-methylphenol   | 107  | 6.595 | 6.592  | 1.090  | 725793   | 48.67 | ng/uL  | 99  |
| 39) 2-Methylnaphthalene       | 142  | 6.797 | 6.797  | 1.124  | 1657192  | 47.92 | ng/uL  | 99  |
| 40) Phthalic anhydride        | 104  | 6.848 | 6.845  | 1.132  | 106959   | 48.04 | ng/uL# | 1   |
| 41) 1-Methylnaphthalene       | 142  | 6.905 | 6.905  | 1.141  | 1590784  | 48.01 | ng/uL  | 99  |
| 43) Hexachlorocyclopentadiene | 237  | 6.953 | 6.953  | 0.877  | 335866   | 49.66 | ng/uL  | 100 |
| 44) 2,3-Dichloroaniline       | 161  | 7.092 | 7.092  | 0.895  | 829572   | 50.54 | ng/uL  | 99  |
| 45) 2,4,6-Trichlorophenol     | 196  | 7.087 | 7.084  | 0.894  | 448005   | 50.95 | ng/uL  | 98  |
| 46) 2,4,5-Trichlorophenol     | 196  | 7.121 | 7.118  | 0.899  | 477143   | 51.13 | ng/uL  | 100 |
| 48) 2-Chloronaphthalene       | 162  | 7.322 | 7.320  | 0.924  | 1454111  | 50.56 | ng/uL  | 100 |
| 49) o-Nitroaniline            | 65   | 7.422 | 7.419  | 0.937  | 540804   | 49.94 | ng/uL  | 98  |
| 50) 1,4-Dinitrobenzene        | 168  | 7.572 | 7.570  | 0.956  | 256499   | 50.34 | ng/uL  | 96  |
| 51) m-Nitroaniline            | 138  | 7.868 | 7.865  | 0.993  | 365979   | 49.29 | ng/uL  | 99  |
| 52) Dimethylphthalate         | 163  | 7.618 | 7.612  | 0.961  | 1610892  | 50.01 | ng/uL  | 100 |
| 53) m-Dinitrobenzene          | 168  | 7.655 | 7.649  | 0.966  | 290488   | 49.51 | ng/uL  | 98  |
| 54) 2,6-Dinitrotoluene        | 165  | 7.683 | 7.680  | 0.970  | 370264   | 50.15 | ng/uL  | 98  |
| 55) 2,4-Dinitrotoluene        | 165  | 8.118 | 8.112  | 1.024  | 443682   | 49.23 | ng/uL  | 96  |
| 56) Acenaphthylene            | 152  | 7.774 | 7.771  | 0.981  | 2399329  | 50.43 | ng/uL  | 100 |
| 57) Acenaphthene              | 154  | 7.962 | 7.959  | 1.005  | 1522359  | 50.49 | ng/uL  | 99  |
| 58) 2,4-Dinitrophenol         | 184  | 7.973 | 7.970  | 1.006  | 159888   | 46.19 | ng/uL# | 72  |
| 59) Dibenzofuran              | 168  | 8.144 | 8.144  | 1.028  | 1994616  | 50.31 | ng/uL  | 99  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 8.263 | 8.260  | 1.043  | 326820   | 48.91 | ng/uL  | 96  |
| 61) Diethylphthalate          | 149  | 8.365 | 8.362  | 1.056  | 1708808  | 50.13 | ng/uL  | 100 |
| 62) 4-Nitrophenol             | 139  | 8.016 | 8.010  | 1.011  | 243110   | 49.99 | ng/uL  | 98  |
| 63) Fluorene                  | 166  | 8.516 | 8.516  | 1.075  | 1708277  | 50.05 | ng/uL  | 100 |
| 64) 4-Chlorophenylphenylether | 204  | 8.502 | 8.499  | 1.073  | 774503   | 50.33 | ng/uL  | 99  |
| 65) p-Nitroaniline            | 138  | 8.533 | 8.527  | 1.077  | 302029   | 48.22 | ng/uL  | 99  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 8.558 | 8.553  | 0.897  | 227909   | 50.83 | ng/uL  | 95  |
| 69) Diphenylamine             | 169  | 8.632 | 8.630  | 0.905  | 1335641  | 50.50 | ng/uL  | 99  |
| 70) 1,2-Diphenylhydrazine     | 77   | 8.678 | 8.675  | 0.910  | 1890271  | 50.84 | ng/uL  | 99  |
| 71) 4-Bromophenylphenylether  | 248  | 9.036 | 9.033  | 0.948  | 391099   | 50.50 | ng/uL  | 99  |
| 72) Hexachlorobenzene         | 284  | 9.107 | 9.104  | 0.955  | 464747   | 50.96 | ng/uL  | 99  |
| 73) Pentachlorophenol         | 266  | 9.311 | 9.309  | 0.976  | 253093   | 50.68 | ng/uL  | 98  |
| 74) n-Octadecane              | 57   | 9.368 | 9.365  | 0.982  | 2028054  | 51.78 | ng/uL  | 98  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1262.D  
Acq On : 13 Aug 2011 11:55  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-04|ICAL|1|SVM|1|M5  
Misc : |MIX[A]  
ALS Vial : 55 Sample Multiplier: 1

Quant Time: Aug 14 16:12:45 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

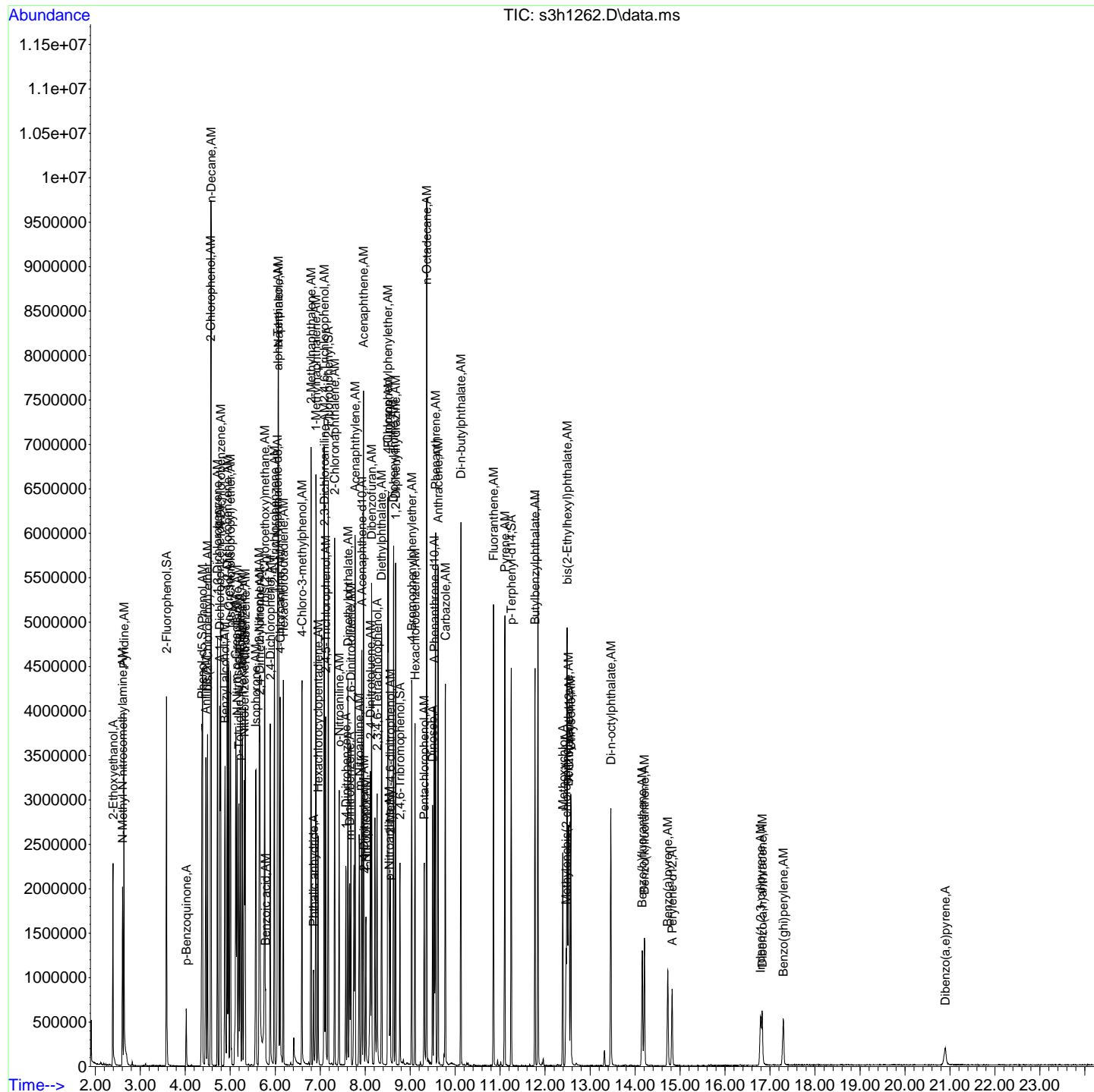
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 75) Dinoseb                   | 211  | 9.499  | 9.496  | 0.996  | 340526   | 50.68 | ng/uL | 100 |
| 76) Phenanthrene              | 178  | 9.564  | 9.562  | 1.003  | 1985449  | 50.31 | ng/uL | 100 |
| 77) Anthracene                | 178  | 9.621  | 9.618  | 1.009  | 1992715  | 50.13 | ng/uL | 100 |
| 78) Carbazole                 | 167  | 9.783  | 9.780  | 1.026  | 1641966  | 49.19 | ng/uL | 100 |
| 79) Di-n-butylphthalate       | 149  | 10.127 | 10.127 | 1.062  | 2742538  | 51.21 | ng/uL | 100 |
| 80) Fluoranthene              | 202  | 10.854 | 10.852 | 1.138  | 1993096  | 51.33 | ng/uL | 99  |
| 82) Pyrene                    | 202  | 11.104 | 11.102 | 0.886  | 1966217  | 50.94 | ng/uL | 99  |
| 84) Butylbenzylphthalate      | 149  | 11.775 | 11.772 | 0.939  | 971308   | 51.49 | ng/uL | 98  |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 12.488 | 12.485 | 0.996  | 1317029  | 51.14 | ng/uL | 100 |
| 86) Benzo(a)anthracene        | 228  | 12.517 | 12.514 | 0.999  | 1241363  | 49.23 | ng/uL | 100 |
| 87) Chrysene                  | 228  | 12.571 | 12.568 | 1.003  | 1153704  | 49.53 | ng/uL | 99  |
| 88) Methoxychlor              | 227  | 12.392 | 12.392 | 0.989  | 896064   | 51.65 | ng/uL | 100 |
| 89) Methylenebis(2-chloroa... | 231  | 12.465 | 12.463 | 0.995  | 156137   | 49.06 | ng/uL | 98  |
| 90) Di-n-octylphthalate       | 149  | 13.460 | 13.460 | 1.074  | 1678516  | 50.12 | ng/uL | 99  |
| 92) Benzo(b)fluoranthene      | 252  | 14.159 | 14.159 | 0.955  | 762393   | 50.73 | ng/uL | 100 |
| 93) Benzo(k)fluoranthene      | 252  | 14.207 | 14.207 | 0.958  | 771786   | 50.97 | ng/uL | 100 |
| 94) Benzo(a)pyrene            | 252  | 14.727 | 14.727 | 0.993  | 655167   | 51.50 | ng/uL | 100 |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 16.790 | 16.787 | 1.133  | 494633   | 52.40 | ng/uL | 99  |
| 96) Dibenzo(a,h)anthracene    | 278  | 16.824 | 16.821 | 1.135  | 405377   | 52.03 | ng/uL | 99  |
| 97) Benzo(ghi)perylene        | 276  | 17.296 | 17.290 | 1.167  | 384976   | 51.72 | ng/uL | 100 |
| 98) Dibenzo(a,e)pyrene        | 302  | 20.893 | 20.887 | 1.409  | 215282   | 52.99 | ng/uL | 99  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1262.D  
Acq On : 13 Aug 2011 11:55  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-04|ICAL|1|SVM|1|M5  
Misc : |MIX[A]  
ALS Vial : 55 Sample Multiplier: 1

Quant Time: Aug 14 16:12:45 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1263.D  
Acq On : 13 Aug 2011 12:26  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-03|ICAL|1|SVM|1|M6  
Misc : |MIX[A]  
ALS Vial : 56 Sample Multiplier: 1

Quant Time: Aug 14 16:12:50 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.771  | 4.768  | 1.000  | 604039   | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.055  | 6.049  | 1.000  | 2680347  | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.928  | 7.922  | 1.000  | 1043943  | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.539  | 9.533  | 1.000  | 1722613  | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.539 | 12.531 | 1.000  | 927329   | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 14.827 | 14.824 | 1.000  | 505786   | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.771  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.055  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.928  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.539  | 9.536  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.539 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.01     |
| 153) B Perylene-d12           | 264  | 14.827 | 14.824 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.055  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.928  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.539  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.539 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.01     |
| 170) E Naphthalene-d8         | 136  | 6.055  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.827 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.771  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.055  | 6.047  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.928  | 7.919  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.539  | 9.533  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.539 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.01     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.771  | 4.765  | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.055  | 6.044  | 1.000  | 0m       | 40.00 | ng/uL | 0.01     |
| 196) J Chrysene-d12           | 240  | 12.539 | 12.528 | 1.000  | 0m       | 40.00 | ng/uL | 0.01     |
| 199) J Perylene-d12           | 264  | 14.827 | 14.827 | 1.000  | 0m       | 40.00 | ng/uL | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       |          |
| 5) 2-Fluorophenol             | 112  | 3.586  | 3.580  | 0.752  | 1580963  | 80.25 | ng/uL | 0.00     |
| 8) Phenol-d5                  | 99   | 4.382  | 4.367  | 0.918  | 1994135  | 79.81 | ng/uL | 0.01     |
| 25) Nitrobenzene-d5           | 82   | 5.322  | 5.308  | 0.879  | 1719503  | 72.46 | ng/uL | 0.01     |
| 47) 2-Fluorobiphenyl          | 172  | 7.186  | 7.178  | 0.906  | 3089839  | 80.96 | ng/uL | 0.00     |
| 66) 2,4,6-Tribromophenol      | 330  | 8.780  | 8.772  | 1.108  | 360762   | 82.21 | ng/uL | 0.00     |
| 83) p-Terphenyl-d14           | 244  | 11.252 | 11.244 | 0.897  | 2031997  | 86.29 | ng/uL | 0.00     |
| Target Compounds              |      |        |        |        |          |       |       |          |
| 2) 2-Ethoxyethanol            | 59   | 2.398  | 2.384  | 0.503  | 1486904  | 80.01 | ng/uL | 100      |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.617  | 2.603  | 0.549  | 1111977  | 79.42 | ng/uL | 99       |
| 4) Pyridine                   | 79   | 2.640  | 2.631  | 0.553  | 1558274  | 80.35 | ng/uL | 99       |
| 6) p-Benzquinone              | 54   | 4.024  | 4.021  | 0.843  | 353773   | 92.09 | ng/uL | 99       |
| 7) Aniline                    | 66   | 4.464  | 4.455  | 0.936  | 969464   | 79.19 | ng/uL | 99       |
| 9) Phenol                     | 94   | 4.399  | 4.382  | 0.922  | 2056984  | 79.16 | ng/uL | 100      |
| 10) bis(2-Chloroethyl) ether  | 63   | 4.504  | 4.492  | 0.944  | 1658852  | 78.87 | ng/uL | 98       |
| 11) 2-Chlorophenol            | 128  | 4.572  | 4.563  | 0.958  | 1516300  | 77.72 | ng/uL | 98       |
| 12) n-Decane                  | 43   | 4.578  | 4.572  | 0.960  | 2868409  | 75.27 | ng/uL | 93       |
| 13) 1,3-Dichlorobenzene       | 146  | 4.720  | 4.717  | 0.989  | 1722904  | 79.22 | ng/uL | 99       |
| 14) 1,4-Dichlorobenzene       | 146  | 4.788  | 4.785  | 1.004  | 1736943  | 78.80 | ng/uL | 100      |
| 15) 1,2-Dichlorobenzene       | 146  | 4.939  | 4.933  | 1.035  | 1642109  | 79.26 | ng/uL | 100      |
| 16) bis(2-Chloroisopropyl)... | 45   | 5.010  | 5.004  | 1.050  | 4355753  | 77.92 | ng/uL | 96       |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1263.D  
Acq On : 13 Aug 2011 12:26  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-03|ICAL|1|SVM|1|M6  
Misc : |MIX[A]  
ALS Vial : 56 Sample Multiplier: 1

Quant Time: Aug 14 16:12:50 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  |     |
|-------------------------------|------|-------|--------|--------|----------|-------|--------|-----|
| 17) Benzyl alcohol            | 108  | 4.896 | 4.879  | 1.026  | 1034575  | 78.96 | ng/uL  | 99  |
| 18) o-Cresol                  | 107  | 4.973 | 4.961  | 1.042  | 1302970  | 78.65 | ng/uL  | 98  |
| 19) m,p-Cresols               | 107  | 5.140 | 5.117  | 1.077  | 1676049  | 78.99 | ng/uL  | 99  |
| 20) N-Nitrosodipropylamine    | 70   | 5.174 | 5.149  | 1.085  | 1199741  | 76.61 | ng/uL  | 97  |
| 21) p-Toluidine               | 106  | 5.200 | 5.189  | 1.090  | 1676899  | 77.42 | ng/uL  | 100 |
| 22) m-Toluidine               | 106  | 5.237 | 5.223  | 1.098  | 1941299  | 78.98 | ng/uL  | 99  |
| 23) Hexachloroethane          | 117  | 5.271 | 5.268  | 1.105  | 725048   | 79.04 | ng/uL  | 98  |
| 26) Nitrobenzene              | 77   | 5.342 | 5.331  | 0.882  | 1729986  | 71.90 | ng/uL  | 99  |
| 27) Isophorone                | 82   | 5.586 | 5.564  | 0.923  | 3205591  | 71.35 | ng/uL  | 99  |
| 28) 2-Nitrophenol             | 139  | 5.652 | 5.643  | 0.933  | 872122   | 73.09 | ng/uL  | 98  |
| 29) 2,4-Dimethylphenol        | 122  | 5.672 | 5.655  | 0.937  | 1383178  | 70.81 | ng/uL  | 98  |
| 30) bis(2-Chloroethoxy)met... | 93   | 5.774 | 5.762  | 0.954  | 1991630  | 71.45 | ng/uL  | 99  |
| 31) 2,4-Dichlorophenol        | 162  | 5.896 | 5.885  | 0.974  | 1208570  | 73.19 | ng/uL  | 99  |
| 32) Benzoic acid              | 105  | 5.834 | 5.765  | 0.963  | 1102334  | 79.06 | ng/uL# | 11  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 5.987 | 5.978  | 0.989  | 1401818  | 72.10 | ng/uL  | 99  |
| 34) alpha-Terpineol           | 59   | 6.072 | 6.061  | 1.003  | 2001868  | 70.23 | ng/uL  | 97  |
| 35) Naphthalene               | 128  | 6.081 | 6.072  | 1.004  | 4174616  | 68.63 | ng/uL  | 73  |
| 36) 4-Chloroaniline           | 127  | 6.121 | 6.109  | 1.011  | 1710664  | 72.06 | ng/uL  | 97  |
| 37) Hexachlorobutadiene       | 225  | 6.186 | 6.180  | 1.022  | 747595   | 72.61 | ng/uL  | 100 |
| 38) 4-Chloro-3-methylphenol   | 107  | 6.601 | 6.592  | 1.090  | 1293509  | 71.89 | ng/uL  | 99  |
| 39) 2-Methylnaphthalene       | 142  | 6.803 | 6.797  | 1.123  | 2924117  | 70.07 | ng/uL  | 100 |
| 40) Phthalic anhydride        | 104  | 6.856 | 6.845  | 1.132  | 244237   | 90.92 | ng/uL# | 1   |
| 41) 1-Methylnaphthalene       | 142  | 6.910 | 6.905  | 1.141  | 2783329  | 69.63 | ng/uL  | 100 |
| 43) Hexachlorocyclopentadiene | 237  | 6.956 | 6.953  | 0.877  | 620394   | 84.21 | ng/uL  | 100 |
| 44) 2,3-Dichloroaniline       | 161  | 7.101 | 7.092  | 0.896  | 1445504  | 80.83 | ng/uL  | 100 |
| 45) 2,4,6-Trichlorophenol     | 196  | 7.092 | 7.084  | 0.895  | 771557   | 80.55 | ng/uL  | 99  |
| 46) 2,4,5-Trichlorophenol     | 196  | 7.126 | 7.118  | 0.899  | 833132   | 81.95 | ng/uL  | 100 |
| 48) 2-Chloronaphthalene       | 162  | 7.328 | 7.320  | 0.924  | 2515408  | 80.28 | ng/uL  | 99  |
| 49) o-Nitroaniline            | 65   | 7.430 | 7.419  | 0.937  | 946724   | 80.25 | ng/uL  | 98  |
| 50) 1,4-Dinitrobenzene        | 168  | 7.581 | 7.570  | 0.956  | 446758   | 80.48 | ng/uL  | 95  |
| 51) m-Nitroaniline            | 138  | 7.882 | 7.865  | 0.994  | 639288   | 79.03 | ng/uL  | 99  |
| 52) Dimethylphthalate         | 163  | 7.629 | 7.612  | 0.962  | 2762945  | 78.73 | ng/uL  | 99  |
| 53) m-Dinitrobenzene          | 168  | 7.666 | 7.649  | 0.967  | 512358   | 80.17 | ng/uL  | 83  |
| 54) 2,6-Dinitrotoluene        | 165  | 7.695 | 7.680  | 0.971  | 641225   | 79.72 | ng/uL# | 64  |
| 55) 2,4-Dinitrotoluene        | 165  | 8.129 | 8.112  | 1.025  | 793978   | 80.87 | ng/uL  | 93  |
| 56) Acenaphthylene            | 152  | 7.783 | 7.771  | 0.982  | 4133488  | 79.75 | ng/uL  | 100 |
| 57) Acenaphthene              | 154  | 7.970 | 7.959  | 1.005  | 2659047  | 80.96 | ng/uL  | 99  |
| 58) 2,4-Dinitrophenol         | 184  | 7.985 | 7.970  | 1.007  | 328245   | 87.05 | ng/uL# | 42  |
| 59) Dibenzofuran              | 168  | 8.152 | 8.144  | 1.028  | 3424386  | 79.28 | ng/uL  | 99  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 8.269 | 8.260  | 1.043  | 627332   | 86.18 | ng/uL  | 99  |
| 61) Diethylphthalate          | 149  | 8.377 | 8.362  | 1.057  | 2930864  | 78.93 | ng/uL  | 100 |
| 62) 4-Nitrophenol             | 139  | 8.030 | 8.010  | 1.013  | 444736   | 83.94 | ng/uL  | 97  |
| 63) Fluorene                  | 166  | 8.524 | 8.516  | 1.075  | 2951482  | 79.38 | ng/uL  | 100 |
| 64) 4-Chlorophenylphenylether | 204  | 8.507 | 8.499  | 1.073  | 1322399  | 78.87 | ng/uL  | 98  |
| 65) p-Nitroaniline            | 138  | 8.553 | 8.527  | 1.079  | 565288   | 82.84 | ng/uL# | 54  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 8.573 | 8.553  | 0.899  | 436905   | 86.13 | ng/uL  | 89  |
| 69) Diphenylamine             | 169  | 8.641 | 8.630  | 0.906  | 2338398  | 78.15 | ng/uL  | 99  |
| 70) 1,2-Diphenylhydrazine     | 77   | 8.684 | 8.675  | 0.910  | 3243662  | 77.11 | ng/uL  | 99  |
| 71) 4-Bromophenylphenylether  | 248  | 9.042 | 9.033  | 0.948  | 687090   | 78.41 | ng/uL  | 98  |
| 72) Hexachlorobenzene         | 284  | 9.113 | 9.104  | 0.955  | 822598   | 79.73 | ng/uL  | 99  |
| 73) Pentachlorophenol         | 266  | 9.317 | 9.309  | 0.977  | 485088   | 85.85 | ng/uL  | 99  |
| 74) n-Octadecane              | 57   | 9.374 | 9.365  | 0.983  | 3398869  | 76.70 | ng/uL  | 96  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1263.D  
Acq On : 13 Aug 2011 12:26  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-03|ICAL|1|SVM|1|M6  
Misc : |MIX[A]  
ALS Vial : 56 Sample Multiplier: 1

Quant Time: Aug 14 16:12:50 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 75) Dinoseb                   | 211  | 9.508  | 9.496  | 0.997  | 664481   | 87.41 | ng/uL | 99  |
| 76) Phenanthrene              | 178  | 9.570  | 9.562  | 1.003  | 3554534  | 79.61 | ng/uL | 99  |
| 77) Anthracene                | 178  | 9.630  | 9.618  | 1.010  | 3601798  | 80.09 | ng/uL | 99  |
| 78) Carbazole                 | 167  | 9.792  | 9.780  | 1.027  | 3115323  | 82.49 | ng/uL | 100 |
| 79) Di-n-butylphthalate       | 149  | 10.133 | 10.127 | 1.062  | 4905311  | 80.95 | ng/uL | 99  |
| 80) Fluoranthene              | 202  | 10.860 | 10.852 | 1.139  | 3535133  | 80.48 | ng/uL | 99  |
| 82) Pyrene                    | 202  | 11.110 | 11.102 | 0.886  | 3432231  | 87.99 | ng/uL | 99  |
| 84) Butylbenzylphthalate      | 149  | 11.778 | 11.772 | 0.939  | 1603894  | 84.12 | ng/uL | 98  |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 12.491 | 12.485 | 0.996  | 2122467  | 81.55 | ng/uL | 100 |
| 86) Benzo(a)anthracene        | 228  | 12.522 | 12.514 | 0.999  | 2023542  | 79.40 | ng/uL | 99  |
| 87) Chrysene                  | 228  | 12.579 | 12.568 | 1.003  | 1873678  | 79.58 | ng/uL | 99  |
| 88) Methoxychlor              | 227  | 12.397 | 12.392 | 0.989  | 1419120  | 80.94 | ng/uL | 100 |
| 89) Methylenebis(2-chloroa... | 231  | 12.468 | 12.463 | 0.994  | 282593   | 83.51 | ng/uL | 100 |
| 90) Di-n-octylphthalate       | 149  | 13.466 | 13.460 | 1.074  | 2750408  | 81.27 | ng/uL | 100 |
| 92) Benzo(b)fluoranthene      | 252  | 14.170 | 14.159 | 0.956  | 1309300  | 83.22 | ng/uL | 99  |
| 93) Benzo(k)fluoranthene      | 252  | 14.219 | 14.207 | 0.959  | 1317871  | 83.13 | ng/uL | 99  |
| 94) Benzo(a)pyrene            | 252  | 14.736 | 14.727 | 0.994  | 1109865  | 83.33 | ng/uL | 99  |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 16.796 | 16.787 | 1.133  | 792435   | 80.18 | ng/uL | 99  |
| 96) Dibenzo(a,h)anthracene    | 278  | 16.833 | 16.821 | 1.135  | 663359   | 81.32 | ng/uL | 97  |
| 97) Benzo(ghi)perylene        | 276  | 17.304 | 17.290 | 1.167  | 611343   | 78.45 | ng/uL | 99  |
| 98) Dibenzo(a,e)pyrene        | 302  | 20.907 | 20.887 | 1.410  | 340475   | 80.04 | ng/uL | 99  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1264.D  
Acq On : 13 Aug 2011 12:57  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-02|ICAL|1|SVM|1|M7  
Misc : |MIX[A]  
ALS Vial : 57 Sample Multiplier: 1

Quant Time: Aug 14 16:12:55 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|----------|
| Internal Standards            |      |        |        |        |          |        |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.771  | 4.768  | 1.000  | 565327   | 40.00  | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.055  | 6.049  | 1.000  | 2307195  | 40.00  | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.930  | 7.922  | 1.000  | 1049575  | 40.00  | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.542  | 9.533  | 1.000  | 1720192  | 40.00  | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.542 | 12.531 | 1.000  | 936449   | 40.00  | ng/uL | 0.01     |
| 91) A Perylene-d12            | 264  | 14.832 | 14.824 | 1.000  | 557346   | 40.00  | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.771  | 4.765  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.055  | 6.047  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.930  | 7.919  | 1.000  | 0m       | 40.00  | ng/uL | 0.01     |
| 131) B Phenanthrene-d10       | 188  | 9.542  | 9.536  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.542 | 12.528 | 1.000  | 0m       | 40.00  | ng/uL | 0.01     |
| 153) B Perylene-d12           | 264  | 14.832 | 14.824 | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.055  | 6.047  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.930  | 7.919  | 1.000  | 0m       | 40.00  | ng/uL | 0.01     |
| 161) D Phenanthrene-d10       | 188  | 9.542  | 9.533  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.542 | 12.528 | 1.000  | 0m       | 40.00  | ng/uL | 0.01     |
| 170) E Naphthalene-d8         | 136  | 6.055  | 6.047  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.832 | 14.827 | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.771  | 4.765  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.055  | 6.047  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.930  | 7.919  | 1.000  | 0m       | 40.00  | ng/uL | 0.01     |
| 184) F Phenanthrene-d10       | 188  | 9.542  | 9.533  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.542 | 12.528 | 1.000  | 0m       | 40.00  | ng/uL | 0.01     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.771  | 4.765  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.055  | 6.044  | 1.000  | 0m       | 40.00  | ng/uL | 0.01     |
| 196) J Chrysene-d12           | 240  | 12.542 | 12.528 | 1.000  | 0m       | 40.00  | ng/uL | 0.01     |
| 199) J Perylene-d12           | 264  | 14.832 | 14.827 | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |        |       |          |
| 5) 2-Fluorophenol             | 112  | 3.589  | 3.580  | 0.752  | 1856439  | 100.69 | ng/uL | 0.00     |
| 8) Phenol-d5                  | 99   | 4.387  | 4.367  | 0.920  | 2367363  | 101.24 | ng/uL | 0.02     |
| 25) Nitrobenzene-d5           | 82   | 5.325  | 5.308  | 0.879  | 2062370  | 100.97 | ng/uL | 0.02     |
| 47) 2-Fluorobiphenyl          | 172  | 7.189  | 7.178  | 0.906  | 3757244  | 97.91  | ng/uL | 0.01     |
| 66) 2,4,6-Tribromophenol      | 330  | 8.786  | 8.772  | 1.108  | 455637   | 103.27 | ng/uL | 0.01     |
| 83) p-Terphenyl-d14           | 244  | 11.255 | 11.244 | 0.897  | 2510170  | 105.55 | ng/uL | 0.01     |
| Target Compounds              |      |        |        |        |          |        |       |          |
| 2) 2-Ethoxyethanol            | 59   | 2.395  | 2.384  | 0.502  | 1722177  | 99.02  | ng/uL | 100      |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.617  | 2.603  | 0.549  | 1307170  | 99.75  | ng/uL | 99       |
| 4) Pyridine                   | 79   | 2.637  | 2.631  | 0.553  | 1846220  | 101.71 | ng/uL | 99       |
| 6) p-Benzquinone              | 54   | 4.026  | 4.021  | 0.844  | 425668   | 118.40 | ng/uL | 99       |
| 7) Aniline                    | 66   | 4.467  | 4.455  | 0.936  | 1157627  | 101.03 | ng/uL | 96       |
| 9) Phenol                     | 94   | 4.404  | 4.382  | 0.923  | 2423032  | 99.63  | ng/uL | 99       |
| 10) bis(2-Chloroethyl) ether  | 63   | 4.509  | 4.492  | 0.945  | 1961669  | 99.65  | ng/uL | 96       |
| 11) 2-Chlorophenol            | 128  | 4.572  | 4.563  | 0.958  | 1769600  | 96.91  | ng/uL | 98       |
| 12) n-Decane                  | 43   | 4.580  | 4.572  | 0.960  | 3195424  | 89.59  | ng/uL | 90       |
| 13) 1,3-Dichlorobenzene       | 146  | 4.723  | 4.717  | 0.990  | 2018297  | 99.16  | ng/uL | 99       |
| 14) 1,4-Dichlorobenzene       | 146  | 4.791  | 4.785  | 1.004  | 2043303  | 99.04  | ng/uL | 99       |
| 15) 1,2-Dichlorobenzene       | 146  | 4.938  | 4.933  | 1.035  | 1938211  | 99.96  | ng/uL | 99       |
| 16) bis(2-Chloroisopropyl)... | 45   | 5.012  | 5.004  | 1.051  | 5126162  | 97.98  | ng/uL | 94       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1264.D  
Acq On : 13 Aug 2011 12:57  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-02|ICAL|1|SVM|1|M7  
Misc : |MIX[A]  
ALS Vial : 57 Sample Multiplier: 1

Quant Time: Aug 14 16:12:55 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.  | Exp RT | Rel RT | Response | Conc   | Units  |     |
|-------------------------------|------|-------|--------|--------|----------|--------|--------|-----|
| 17) Benzyl alcohol            | 108  | 4.902 | 4.879  | 1.027  | 1227864  | 100.13 | ng/uL  | 98  |
| 18) o-Cresol                  | 107  | 4.975 | 4.961  | 1.043  | 1549879  | 99.96  | ng/uL  | 99  |
| 19) m,p-Cresols               | 107  | 5.143 | 5.117  | 1.078  | 1999138  | 100.67 | ng/uL  | 99  |
| 20) N-Nitrosodipropylamine    | 70   | 5.183 | 5.149  | 1.086  | 1450107  | 98.94  | ng/uL  | 96  |
| 21) p-Toluidine               | 106  | 5.203 | 5.189  | 1.091  | 1773892  | 87.51  | ng/uL  | 99  |
| 22) m-Toluidine               | 106  | 5.240 | 5.223  | 1.098  | 2430226  | 105.64 | ng/uL  | 98  |
| 23) Hexachloroethane          | 117  | 5.274 | 5.268  | 1.105  | 861514   | 100.35 | ng/uL  | 99  |
| 26) Nitrobenzene              | 77   | 5.348 | 5.331  | 0.883  | 2071957  | 100.03 | ng/uL  | 99  |
| 27) Isophorone                | 82   | 5.595 | 5.564  | 0.924  | 3821162  | 98.81  | ng/uL  | 99  |
| 28) 2-Nitrophenol             | 139  | 5.657 | 5.643  | 0.934  | 1050877  | 102.31 | ng/uL  | 100 |
| 29) 2,4-Dimethylphenol        | 122  | 5.677 | 5.655  | 0.938  | 1623545  | 96.56  | ng/uL  | 98  |
| 30) bis(2-Chloroethoxy)met... | 93   | 5.777 | 5.762  | 0.954  | 2382129  | 99.28  | ng/uL  | 99  |
| 31) 2,4-Dichlorophenol        | 162  | 5.902 | 5.885  | 0.975  | 1472789  | 103.62 | ng/uL  | 100 |
| 32) Benzoic acid              | 105  | 5.853 | 5.765  | 0.967  | 1398918  | 116.56 | ng/uL# | 11  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 5.987 | 5.978  | 0.989  | 1665298  | 99.51  | ng/uL  | 99  |
| 34) alpha-Terpineol           | 59   | 6.078 | 6.061  | 1.004  | 2350908  | 95.82  | ng/uL  | 96  |
| 35) Naphthalene               | 128  | 6.084 | 6.072  | 1.005  | 4835792  | 92.35  | ng/uL  | 73  |
| 36) 4-Chloroaniline           | 127  | 6.126 | 6.109  | 1.012  | 2073396  | 101.47 | ng/uL  | 97  |
| 37) Hexachlorobutadiene       | 225  | 6.189 | 6.180  | 1.022  | 895255   | 101.02 | ng/uL  | 100 |
| 38) 4-Chloro-3-methylphenol   | 107  | 6.606 | 6.592  | 1.091  | 1582408  | 102.17 | ng/uL  | 99  |
| 39) 2-Methylnaphthalene       | 142  | 6.805 | 6.797  | 1.124  | 3546154  | 98.73  | ng/uL  | 100 |
| 40) Phthalic anhydride        | 104  | 6.862 | 6.845  | 1.133  | 314208   | 135.88 | ng/uL# | 1 A |
| 41) 1-Methylnaphthalene       | 142  | 6.913 | 6.905  | 1.142  | 3374169  | 98.06  | ng/uL  | 100 |
| 43) Hexachlorocyclopentadiene | 237  | 6.956 | 6.953  | 0.877  | 729432   | 98.48  | ng/uL  | 99  |
| 44) 2,3-Dichloroaniline       | 161  | 7.104 | 7.092  | 0.896  | 1754939  | 97.61  | ng/uL  | 99  |
| 45) 2,4,6-Trichlorophenol     | 196  | 7.095 | 7.084  | 0.895  | 934951   | 97.08  | ng/uL  | 99  |
| 46) 2,4,5-Trichlorophenol     | 196  | 7.132 | 7.118  | 0.899  | 1024677  | 100.25 | ng/uL  | 100 |
| 48) 2-Chloronaphthalene       | 162  | 7.331 | 7.320  | 0.924  | 3084804  | 97.92  | ng/uL  | 99  |
| 49) o-Nitroaniline            | 65   | 7.436 | 7.419  | 0.938  | 1198448  | 101.05 | ng/uL  | 98  |
| 50) 1,4-Dinitrobenzene        | 168  | 7.587 | 7.570  | 0.957  | 578307   | 103.62 | ng/uL  | 97  |
| 51) m-Nitroaniline            | 138  | 7.891 | 7.865  | 0.995  | 820689   | 100.92 | ng/uL  | 99  |
| 52) Dimethylphthalate         | 163  | 7.638 | 7.612  | 0.963  | 3476862  | 98.55  | ng/uL  | 99  |
| 53) m-Dinitrobenzene          | 168  | 7.683 | 7.649  | 0.969  | 649763   | 101.12 | ng/uL  | 86  |
| 54) 2,6-Dinitrotoluene        | 165  | 7.700 | 7.680  | 0.971  | 803412   | 99.34  | ng/uL  | 64  |
| 55) 2,4-Dinitrotoluene        | 165  | 8.138 | 8.112  | 1.026  | 995695   | 100.87 | ng/uL# | 73  |
| 56) Acenaphthylene            | 152  | 7.786 | 7.771  | 0.982  | 5082862  | 97.54  | ng/uL  | 99  |
| 57) Acenaphthene              | 154  | 7.973 | 7.959  | 1.005  | 3294252  | 99.76  | ng/uL  | 98  |
| 58) 2,4-Dinitrophenol         | 184  | 7.990 | 7.970  | 1.008  | 436570   | 115.16 | ng/uL# | 30  |
| 59) Dibenzofuran              | 168  | 8.155 | 8.144  | 1.028  | 4240399  | 97.65  | ng/uL  | 98  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 8.274 | 8.260  | 1.043  | 787267   | 107.57 | ng/uL  | 99  |
| 61) Diethylphthalate          | 149  | 8.382 | 8.362  | 1.057  | 3649961  | 97.77  | ng/uL  | 99  |
| 62) 4-Nitrophenol             | 139  | 8.038 | 8.010  | 1.014  | 556950   | 104.55 | ng/uL  | 96  |
| 63) Fluorene                  | 166  | 8.530 | 8.516  | 1.076  | 3654801  | 97.77  | ng/uL  | 100 |
| 64) 4-Chlorophenylphenylether | 204  | 8.513 | 8.499  | 1.073  | 1630688  | 96.74  | ng/uL  | 97  |
| 65) p-Nitroaniline            | 138  | 8.567 | 8.527  | 1.080  | 719529   | 104.88 | ng/uL# | 52  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 8.581 | 8.553  | 0.899  | 562413   | 111.03 | ng/uL  | 83  |
| 69) Diphenylamine             | 169  | 8.649 | 8.630  | 0.906  | 2938568  | 98.35  | ng/uL  | 99  |
| 70) 1,2-Diphenylhydrazine     | 77   | 8.689 | 8.675  | 0.911  | 4037332  | 96.12  | ng/uL  | 100 |
| 71) 4-Bromophenylphenylether  | 248  | 9.044 | 9.033  | 0.948  | 868926   | 99.31  | ng/uL  | 99  |
| 72) Hexachlorobenzene         | 284  | 9.118 | 9.104  | 0.956  | 1020674  | 99.06  | ng/uL  | 99  |
| 73) Pentachlorophenol         | 266  | 9.320 | 9.309  | 0.977  | 601790   | 106.66 | ng/uL  | 100 |
| 74) n-Octadecane              | 57   | 9.377 | 9.365  | 0.983  | 4178598  | 94.42  | ng/uL  | 95  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1264.D  
Acq On : 13 Aug 2011 12:57  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-02|ICAL|1|SVM|1|M7  
Misc : |MIX[A]  
ALS Vial : 57 Sample Multiplier: 1

Quant Time: Aug 14 16:12:55 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |      |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|------|
| 75) Dinoseb                   | 211  | 9.513  | 9.496  | 0.997  | 847173   | 111.61 | ng/uL | 100  |
| 76) Phenanthrene              | 178  | 9.576  | 9.562  | 1.004  | 4376200  | 98.15  | ng/uL | 99   |
| 77) Anthracene                | 178  | 9.633  | 9.618  | 1.010  | 4447437  | 99.03  | ng/uL | 99   |
| 78) Carbazole                 | 167  | 9.794  | 9.780  | 1.027  | 3839935  | 101.83 | ng/uL | 99   |
| 79) Di-n-butylphthalate       | 149  | 10.135 | 10.127 | 1.062  | 5900857  | 97.52  | ng/uL | 99   |
| 80) Fluoranthene              | 202  | 10.863 | 10.852 | 1.138  | 4345487  | 99.06  | ng/uL | 99   |
| 82) Pyrene                    | 202  | 11.113 | 11.102 | 0.886  | 4239407  | 107.63 | ng/uL | 99   |
| 84) Butylbenzylphthalate      | 149  | 11.781 | 11.772 | 0.939  | 2005842  | 104.18 | ng/uL | 98   |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 12.494 | 12.485 | 0.996  | 2695829  | 102.57 | ng/uL | 100  |
| 86) Benzo(a)anthracene        | 228  | 12.525 | 12.514 | 0.999  | 2547832  | 98.99  | ng/uL | 99   |
| 87) Chrysene                  | 228  | 12.585 | 12.568 | 1.003  | 2365165  | 99.48  | ng/uL | 99   |
| 88) Methoxychlor              | 227  | 12.400 | 12.392 | 0.989  | 1793156  | 101.28 | ng/uL | 100  |
| 89) Methylenebis(2-chloroa... | 231  | 12.474 | 12.463 | 0.995  | 362329   | 104.55 | ng/uL | 100  |
| 90) Di-n-octylphthalate       | 149  | 13.468 | 13.460 | 1.074  | 3609034  | 105.60 | ng/uL | 100  |
| 92) Benzo(b)fluoranthene      | 252  | 14.176 | 14.159 | 0.956  | 1762814  | 101.68 | ng/uL | 99   |
| 93) Benzo(k)fluoranthene      | 252  | 14.227 | 14.207 | 0.959  | 1730528  | 99.07  | ng/uL | 99   |
| 94) Benzo(a)pyrene            | 252  | 14.744 | 14.727 | 0.994  | 1530137  | 104.25 | ng/uL | 99   |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 16.810 | 16.787 | 1.133  | 1217445  | 111.79 | ng/uL | 98   |
| 96) Dibenzo(a,h)anthracene    | 278  | 16.841 | 16.821 | 1.135  | 1026045  | 114.15 | ng/uL | 98   |
| 97) Benzo(ghi)perylene        | 276  | 17.316 | 17.290 | 1.167  | 959411   | 111.72 | ng/uL | 100  |
| 98) Dibenzo(a,e)pyrene        | 302  | 20.922 | 20.887 | 1.411  | 579503   | 123.64 | ng/uL | 99 A |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1265.D  
Acq On : 13 Aug 2011 13:28  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-01|ICAL|1|SVM|1|M8  
Misc : |MIX[A]  
ALS Vial : 58 Sample Multiplier: 1

Quant Time: Aug 14 16:13:00 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|----------|
| Internal Standards            |      |        |        |        |          |        |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.771  | 4.768  | 1.000  | 499082   | 40.00  | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.055  | 6.049  | 1.000  | 2029594  | 40.00  | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.928  | 7.922  | 1.000  | 913046   | 40.00  | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.542  | 9.533  | 1.000  | 1491945  | 40.00  | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.542 | 12.531 | 1.000  | 763420   | 40.00  | ng/uL | 0.01     |
| 91) A Perylene-d12            | 264  | 14.827 | 14.824 | 1.000  | 420274   | 40.00  | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.771  | 4.765  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.055  | 6.047  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.928  | 7.919  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.542  | 9.536  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.542 | 12.528 | 1.000  | 0m       | 40.00  | ng/uL | 0.01     |
| 153) B Perylene-d12           | 264  | 14.827 | 14.824 | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.055  | 6.047  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.928  | 7.919  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.542  | 9.533  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.542 | 12.528 | 1.000  | 0m       | 40.00  | ng/uL | 0.01     |
| 170) E Naphthalene-d8         | 136  | 6.055  | 6.047  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.827 | 14.827 | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.771  | 4.765  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.055  | 6.047  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.928  | 7.919  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.542  | 9.533  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.542 | 12.528 | 1.000  | 0m       | 40.00  | ng/uL | 0.01     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.771  | 4.765  | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.055  | 6.044  | 1.000  | 0m       | 40.00  | ng/uL | 0.01     |
| 196) J Chrysene-d12           | 240  | 12.542 | 12.528 | 1.000  | 0m       | 40.00  | ng/uL | 0.01     |
| 199) J Perylene-d12           | 264  | 14.827 | 14.827 | 1.000  | 0m       | 40.00  | ng/uL | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |        |       |          |
| 5) 2-Fluorophenol             | 112  | 3.589  | 3.580  | 0.752  | 1943221  | 119.39 | ng/uL | 0.00     |
| 8) Phenol-d5                  | 99   | 4.390  | 4.367  | 0.920  | 2494986  | 120.86 | ng/uL | 0.02 A   |
| 25) Nitrobenzene-d5           | 82   | 5.328  | 5.308  | 0.880  | 2172775  | 120.92 | ng/uL | 0.02 A   |
| 47) 2-Fluorobiphenyl          | 172  | 7.189  | 7.178  | 0.907  | 3930468  | 117.74 | ng/uL | 0.01     |
| 66) 2,4,6-Tribromophenol      | 330  | 8.786  | 8.772  | 1.108  | 483930   | 126.09 | ng/uL | 0.01 A   |
| 83) p-Terphenyl-d14           | 244  | 11.255 | 11.244 | 0.897  | 2583932  | 133.28 | ng/uL | 0.01 A   |
| Target Compounds              |      |        |        |        |          |        |       |          |
| 2) 2-Ethoxyethanol            | 59   | 2.398  | 2.384  | 0.503  | 1842852  | 120.02 | ng/uL | 100 A    |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.620  | 2.603  | 0.549  | 1376549  | 118.99 | ng/uL | 99       |
| 4) Pyridine                   | 79   | 2.637  | 2.631  | 0.553  | 1942090  | 121.19 | ng/uL | 98 A     |
| 6) p-Benzquinone              | 54   | 4.026  | 4.021  | 0.844  | 412738   | 130.04 | ng/uL | 99 A     |
| 7) Aniline                    | 66   | 4.467  | 4.455  | 0.936  | 1220679  | 120.68 | ng/uL | 97 A     |
| 9) Phenol                     | 94   | 4.404  | 4.382  | 0.923  | 2559890  | 119.23 | ng/uL | 99       |
| 10) bis(2-Chloroethyl) ether  | 63   | 4.510  | 4.492  | 0.945  | 2067134  | 118.94 | ng/uL | 96       |
| 11) 2-Chlorophenol            | 128  | 4.575  | 4.563  | 0.959  | 1852298  | 114.91 | ng/uL | 98       |
| 12) n-Decane                  | 43   | 4.581  | 4.572  | 0.960  | 3302383  | 104.88 | ng/uL | 90       |
| 13) 1,3-Dichlorobenzene       | 146  | 4.723  | 4.717  | 0.990  | 2137593  | 118.96 | ng/uL | 99       |
| 14) 1,4-Dichlorobenzene       | 146  | 4.791  | 4.785  | 1.004  | 2146574  | 117.86 | ng/uL | 99       |
| 15) 1,2-Dichlorobenzene       | 146  | 4.939  | 4.933  | 1.035  | 2030166  | 118.60 | ng/uL | 99       |
| 16) bis(2-Chloroisopropyl)... | 45   | 5.012  | 5.004  | 1.051  | 5382453  | 116.54 | ng/uL | 94       |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1265.D  
Acq On : 13 Aug 2011 13:28  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-01|ICAL|1|SVM|1|M8  
Misc : |MIX[A]  
ALS Vial : 58 Sample Multiplier: 1

Quant Time: Aug 14 16:13:00 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.  | Exp RT | Rel RT | Response | Conc   | Units  |       |
|-------------------------------|------|-------|--------|--------|----------|--------|--------|-------|
| 17) Benzyl alcohol            | 108  | 4.904 | 4.879  | 1.028  | 1303555  | 120.42 | ng/uL  | 100 A |
| 18) o-Cresol                  | 107  | 4.978 | 4.961  | 1.043  | 1632403  | 119.26 | ng/uL  | 99    |
| 19) m,p-Cresols               | 107  | 5.146 | 5.117  | 1.079  | 2118472  | 120.83 | ng/uL  | 99 A  |
| 20) N-Nitrosodipropylamine    | 70   | 5.186 | 5.149  | 1.087  | 1518727  | 117.38 | ng/uL  | 96    |
| 21) p-Toluidine               | 106  | 5.203 | 5.189  | 1.091  | 1767536  | 98.77  | ng/uL  | 98    |
| 22) m-Toluidine               | 106  | 5.240 | 5.223  | 1.098  | 2603440  | 128.19 | ng/uL  | 98 A  |
| 23) Hexachloroethane          | 117  | 5.274 | 5.268  | 1.105  | 903808   | 119.25 | ng/uL  | 99    |
| 26) Nitrobenzene              | 77   | 5.348 | 5.331  | 0.883  | 2181463  | 119.73 | ng/uL  | 99    |
| 27) Isophorone                | 82   | 5.601 | 5.564  | 0.925  | 3973375  | 116.80 | ng/uL  | 99    |
| 28) 2-Nitrophenol             | 139  | 5.657 | 5.643  | 0.934  | 1103580  | 122.14 | ng/uL  | 100 A |
| 29) 2,4-Dimethylphenol        | 122  | 5.677 | 5.655  | 0.938  | 1716088  | 116.02 | ng/uL  | 98    |
| 30) bis(2-Chloroethoxy)met... | 93   | 5.780 | 5.762  | 0.954  | 2509214  | 118.88 | ng/uL  | 100   |
| 31) 2,4-Dichlorophenol        | 162  | 5.902 | 5.885  | 0.975  | 1547236  | 123.75 | ng/uL  | 99 A  |
| 32) Benzoic acid              | 105  | 5.859 | 5.765  | 0.968  | 1498204  | 141.91 | ng/uL# | 11 A  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 5.990 | 5.978  | 0.989  | 1748271  | 118.75 | ng/uL  | 99    |
| 34) alpha-Terpineol           | 59   | 6.078 | 6.061  | 1.004  | 2463658  | 114.15 | ng/uL  | 96    |
| 35) Naphthalene               | 128  | 6.084 | 6.072  | 1.005  | 5056428  | 109.77 | ng/uL  | 73    |
| 36) 4-Chloroaniline           | 127  | 6.126 | 6.109  | 1.012  | 2171879  | 120.83 | ng/uL  | 97 A  |
| 37) Hexachlorobutadiene       | 225  | 6.189 | 6.180  | 1.022  | 945919   | 121.33 | ng/uL  | 100 A |
| 38) 4-Chloro-3-methylphenol   | 107  | 6.606 | 6.592  | 1.091  | 1653326  | 121.35 | ng/uL  | 99 A  |
| 39) 2-Methylnaphthalene       | 142  | 6.805 | 6.797  | 1.124  | 3702153  | 117.17 | ng/uL  | 99    |
| 40) Phthalic anhydride        | 104  | 6.865 | 6.845  | 1.134  | 359188   | 176.58 | ng/uL# | 1 A   |
| 41) 1-Methylnaphthalene       | 142  | 6.916 | 6.905  | 1.142  | 3537762  | 116.88 | ng/uL  | 100   |
| 43) Hexachlorocyclopentadiene | 237  | 6.956 | 6.953  | 0.877  | 734693   | 114.02 | ng/uL  | 100   |
| 44) 2,3-Dichloroaniline       | 161  | 7.104 | 7.092  | 0.896  | 1839455  | 117.61 | ng/uL  | 99    |
| 45) 2,4,6-Trichlorophenol     | 196  | 7.098 | 7.084  | 0.895  | 985687   | 117.66 | ng/uL  | 99    |
| 46) 2,4,5-Trichlorophenol     | 196  | 7.132 | 7.118  | 0.900  | 1067485  | 120.06 | ng/uL  | 99 A  |
| 48) 2-Chloronaphthalene       | 162  | 7.334 | 7.320  | 0.925  | 3219788  | 117.49 | ng/uL  | 99    |
| 49) o-Nitroaniline            | 65   | 7.436 | 7.419  | 0.938  | 1242991  | 120.48 | ng/uL  | 98 A  |
| 50) 1,4-Dinitrobenzene        | 168  | 7.587 | 7.570  | 0.957  | 601467   | 123.88 | ng/uL  | 97 A  |
| 51) m-Nitroaniline            | 138  | 7.891 | 7.865  | 0.995  | 843552   | 119.24 | ng/uL  | 99    |
| 52) Dimethylphthalate         | 163  | 7.638 | 7.612  | 0.963  | 3613712  | 117.74 | ng/uL  | 99    |
| 53) m-Dinitrobenzene          | 168  | 7.683 | 7.649  | 0.969  | 675467   | 120.84 | ng/uL  | 85 A  |
| 54) 2,6-Dinitrotoluene        | 165  | 7.703 | 7.680  | 0.972  | 840776   | 119.51 | ng/uL  | 66    |
| 55) 2,4-Dinitrotoluene        | 165  | 8.141 | 8.112  | 1.027  | 1036109  | 120.66 | ng/uL# | 73 A  |
| 56) Acenaphthylene            | 152  | 7.789 | 7.771  | 0.982  | 5286020  | 116.60 | ng/uL  | 99    |
| 57) Acenaphthene              | 154  | 7.973 | 7.959  | 1.006  | 3435060  | 119.58 | ng/uL  | 98    |
| 58) 2,4-Dinitrophenol         | 184  | 7.990 | 7.970  | 1.008  | 452648   | 137.25 | ng/uL# | 32 A  |
| 59) Dibenzofuran              | 168  | 8.158 | 8.144  | 1.029  | 4415392  | 116.88 | ng/uL  | 98    |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 8.274 | 8.260  | 1.044  | 814636   | 127.96 | ng/uL  | 99 A  |
| 61) Diethylphthalate          | 149  | 8.385 | 8.362  | 1.058  | 3800893  | 117.03 | ng/uL  | 99    |
| 62) 4-Nitrophenol             | 139  | 8.041 | 8.010  | 1.014  | 572048   | 123.45 | ng/uL  | 96 A  |
| 63) Fluorene                  | 166  | 8.530 | 8.516  | 1.076  | 3807811  | 117.09 | ng/uL  | 100   |
| 64) 4-Chlorophenylphenylether | 204  | 8.513 | 8.499  | 1.074  | 1692558  | 115.42 | ng/uL  | 97    |
| 65) p-Nitroaniline            | 138  | 8.567 | 8.527  | 1.081  | 738666   | 123.77 | ng/uL# | 53 A  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 8.584 | 8.553  | 0.900  | 581775   | 132.42 | ng/uL  | 84 A  |
| 69) Diphenylamine             | 169  | 8.649 | 8.630  | 0.906  | 3040136  | 117.31 | ng/uL  | 99    |
| 70) 1,2-Diphenylhydrazine     | 77   | 8.689 | 8.675  | 0.911  | 4181476  | 114.78 | ng/uL  | 100   |
| 71) 4-Bromophenylphenylether  | 248  | 9.044 | 9.033  | 0.948  | 904012   | 119.12 | ng/uL  | 99    |
| 72) Hexachlorobenzene         | 284  | 9.118 | 9.104  | 0.956  | 1066752  | 119.37 | ng/uL  | 100   |
| 73) Pentachlorophenol         | 266  | 9.320 | 9.309  | 0.977  | 629721   | 128.68 | ng/uL  | 99 A  |
| 74) n-Octadecane              | 57   | 9.377 | 9.365  | 0.983  | 4320461  | 112.57 | ng/uL  | 95    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1265.D  
Acq On : 13 Aug 2011 13:28  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-01|ICAL|1|SVM|1|M8  
Misc : |MIX[A]  
ALS Vial : 58 Sample Multiplier: 1

Quant Time: Aug 14 16:13:00 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Sun Aug 14 16:04:01 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |       |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|-------|
| 75) Dinoseb                   | 211  | 9.513  | 9.496  | 0.997  | 883667   | 134.22 | ng/uL | 99 A  |
| 76) Phenanthrene              | 178  | 9.576  | 9.562  | 1.004  | 4544500  | 117.52 | ng/uL | 99    |
| 77) Anthracene                | 178  | 9.635  | 9.618  | 1.010  | 4621403  | 118.65 | ng/uL | 99    |
| 78) Carbazole                 | 167  | 9.795  | 9.780  | 1.027  | 3992617  | 122.07 | ng/uL | 99 A  |
| 79) Di-n-butylphthalate       | 149  | 10.136 | 10.127 | 1.062  | 6169735  | 117.56 | ng/uL | 99    |
| 80) Fluoranthene              | 202  | 10.863 | 10.852 | 1.138  | 4478489  | 117.72 | ng/uL | 99    |
| 82) Pyrene                    | 202  | 11.116 | 11.102 | 0.886  | 4339656  | 135.14 | ng/uL | 99 A  |
| 84) Butylbenzylphthalate      | 149  | 11.781 | 11.772 | 0.939  | 2020034  | 128.70 | ng/uL | 98 A  |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 12.494 | 12.485 | 0.996  | 2725398  | 127.19 | ng/uL | 100 A |
| 86) Benzo(a)anthracene        | 228  | 12.528 | 12.514 | 0.999  | 2508579  | 119.56 | ng/uL | 99    |
| 87) Chrysene                  | 228  | 12.585 | 12.568 | 1.003  | 2339022  | 120.68 | ng/uL | 99 A  |
| 88) Methoxychlor              | 227  | 12.403 | 12.392 | 0.989  | 1770990  | 122.70 | ng/uL | 100 A |
| 89) Methylenebis(2-chloroa... | 231  | 12.474 | 12.463 | 0.995  | 353445   | 124.03 | ng/uL | 99 A  |
| 90) Di-n-octylphthalate       | 149  | 13.469 | 13.460 | 1.074  | 3580464  | 128.50 | ng/uL | 100 A |
| 92) Benzo(b)fluoranthene      | 252  | 14.173 | 14.159 | 0.956  | 1665082  | 127.37 | ng/uL | 100 A |
| 93) Benzo(k)fluoranthene      | 252  | 14.224 | 14.207 | 0.959  | 1621549  | 123.10 | ng/uL | 99 A  |
| 94) Benzo(a)pyrene            | 252  | 14.744 | 14.727 | 0.994  | 1412224  | 127.60 | ng/uL | 100 A |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 16.804 | 16.787 | 1.133  | 1011982  | 123.23 | ng/uL | 99 A  |
| 96) Dibenzo(a,h)anthracene    | 278  | 16.839 | 16.821 | 1.136  | 845944   | 124.81 | ng/uL | 98 A  |
| 97) Benzo(ghi)perylene        | 276  | 17.310 | 17.290 | 1.167  | 764874   | 118.12 | ng/uL | 99    |
| 98) Dibenzo(a,e)pyrene        | 302  | 20.916 | 20.887 | 1.411  | 419742   | 118.76 | ng/uL | 99    |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



## Continuing Calibration Summary

**Instrument ID:** MSD3.I  
**Data File:** s081211.B\s3h1266.D  
**Lab Sample ID** WBN110812-09.1  
**Quant Type** ISTD

**Client SDG:** 284538  
**Injection Date:** 13-AUG-11 13:59  
**Init. Cal. Date(s)** 12-AUG-11 15:29 - 13-AUG-11 13:2  
**Method:** s081211.B\MSD3\_8270d\_081211.m  
**Method Update:** 15-AUG-11 15:17

| Compound                    | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|-----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| S2-Fluorophenol             | 1.3045         | 1.43995 |             | .01    |      | 10.38329    | 30  |         | Averaged   |      |
| SPhenol-d5                  | 1.6545         | 1.76511 |             | .01    |      | 6.6854      | 30  |         | Averaged   |      |
| SNitrobenzene-d5            | 0.3541         | 0.36729 |             | .01    |      | 3.72494     | 30  |         | Averaged   |      |
| S2-Fluorobiphenyl           | 1.4624         | 1.49388 |             | .01    |      | 2.15263     | 30  |         | Averaged   |      |
| S2,4,6-Tribromophenol       | 0.1681         | 0.19141 |             | .01    |      | 13.86675    | 30  |         | Averaged   |      |
| Sp-Terphenyl-d14            | 1.0158         | 1.31214 |             | .01    |      | 29.17307    | 30  |         | Averaged   |      |
| 2-Ethoxyethanol             | 1.2306         | 1.25146 |             | .01    |      | 1.69511     | 30  |         | Averaged   |      |
| N-Methyl-N-nitrosomethylami | 0.9272         | 0.90927 |             | .01    |      | -1.93378    | 30  |         | Averaged   |      |
| Pyridine                    | 1.2843         | 1.10404 |             | .01    |      | -14.03566   | 30  |         | Averaged   |      |
| p-Benzoquinone              | 0.2544         | 0.2751  |             | .01    |      | 8.13679     | 30  |         | Averaged   |      |
| Phenol                      | 1.722          | 1.67995 |             | .01    |      | -2.44193    | 30  |         | Averaged   | ccc  |
| Aniline                     | 0.8107         | 0.7286  |             | .01    |      | -10.12705   | 30  |         | Averaged   |      |
| bis(2-Chloroethyl) ether    | 1.3929         | 1.37204 |             | .01    |      | -1.49759    | 30  |         | Averaged   |      |
| 2-Chlorophenol              | 1.292          | 1.27827 |             | .01    |      | -1.06269    | 30  |         | Averaged   |      |
| n-Decane                    | 2.5235         | 2.76079 |             | .01    |      | 9.40321     | 30  |         | Averaged   |      |
| 1,3-Dichlorobenzene         | 1.4401         | 1.48447 |             | .01    |      | 3.08104     | 30  |         | Averaged   |      |
| 1,4-Dichlorobenzene         | 1.4597         | 1.49138 |             | .01    |      | 2.17031     | 30  |         | Averaged   | ccc  |
| Benzyl alcohol              | 0.8676         | 0.85992 |             | .01    |      | -0.8852     | 30  |         | Averaged   |      |
| 1,2-Dichlorobenzene         | 1.372          | 1.39234 |             | .01    |      | 1.48251     | 30  |         | Averaged   |      |
| o-Cresol                    | 1.097          | 1.12111 |             | .01    |      | 2.19781     | 30  |         | Averaged   |      |
| bis(2-Chloroisopropyl)ether | 3.7017         | 3.68449 |             | .01    |      | -0.46492    | 30  |         | Averaged   |      |
| m,p-Cresols                 | 1.4051         | 1.44407 |             | .01    |      | 2.77347     | 30  |         | Averaged   |      |
| N-Nitrosodipropylamine      | 1.037          | 1.05586 |             | .01    |      | 1.81871     | 30  |         | Averaged   | spcc |
| p-Toluidine                 | 1.4343         | 1.16703 |             | .01    |      | -18.63418   | 30  |         | Averaged   |      |
| m-Toluidine                 | 1.628          | 1.47786 |             | .01    |      | -9.22236    | 30  |         | Averaged   |      |
| Hexachloroethane            | 0.6074         | 0.61469 |             | .01    |      | 1.2002      | 30  |         | Averaged   |      |
| Nitrobenzene                | 0.3591         | 0.36691 |             | .01    |      | 2.17488     | 30  |         | Averaged   |      |
| Isophorone                  | 0.6704         | 0.65379 |             | .01    |      | -2.47763    | 30  |         | Averaged   |      |
| 2-Nitrophenol               | 0.1781         | 0.17934 |             | .01    |      | 0.69624     | 30  |         | Averaged   | ccc  |
| 2,4-Dimethylphenol          | 0.2915         | 0.27144 |             | .01    |      | -6.88165    | 30  |         | Averaged   |      |
| bis(2-Chloroethoxy)methane  | 0.416          | 0.3927  |             | .01    |      | -5.60096    | 30  |         | Averaged   |      |
| Benzoic acid                | 0.2079         | 0.21922 |             | .01    |      | 5.44493     | 30  |         | Averaged   |      |
| 2,4-Dichlorophenol          | 0.2464         | 0.24104 |             | .01    |      | -2.17532    | 30  |         | Averaged   | ccc  |
| 1,2,4-Trichlorobenzene      | 0.2901         | 0.2788  |             | .01    |      | -3.89521    | 30  |         | Averaged   |      |
| alpha-Terpineol             | 0.4254         | 0.41113 |             | .01    |      | -3.35449    | 30  |         | Averaged   |      |
| Naphthalene                 | 0.9078         | 0.90154 |             | .01    |      | -0.68958    | 30  |         | Averaged   |      |
| 4-Chloroaniline             | 0.3543         | 0.32549 |             | .01    |      | -8.13153    | 30  |         | Averaged   |      |

## Continuing Calibration Summary

Instrument ID: MSD3.I

Injection Date: 13-AUG-11 13:59

Data File: s081211.B\s3h1266.D

Init. Cal. Date(s) 12-AUG-11 15:29 13-AUG-11 13:2

Lab Sample ID WBN110812-09.1

Method: s081211.B\MSD3\_8270d\_081211.m

Quant Type ISTD

| Compound                   | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| Hexachlorobutadiene        | 0.1536         | 0.15763 |             | .01    |      | 2.6237      | 30  |         | Averaged   | ccc  |
| 4-Chloro-3-methylphenol    | 0.2685         | 0.2583  |             | .01    |      | -3.79888    | 30  |         | Averaged   | ccc  |
| 2-Methylnaphthalene        | 0.6227         | 0.62169 |             | .01    |      | -0.1622     | 30  |         | Averaged   |      |
| Phthalic Anhydride         | 0.0401         | 0.1419  |             | .01    |      | 253.86534   | 30  | *       | Averaged   |      |
| 1-Methylnaphthalene        | 0.5966         | 0.58042 |             | .01    |      | -2.71203    | 30  |         | Averaged   |      |
| Hexachlorocyclopentadiene  | 0.2823         | 0.23686 |             | .01    |      | -16.09635   | 30  |         | Averaged   | spcc |
| 2,4,6-Trichlorophenol      | 0.367          | 0.37138 |             | .01    |      | 1.19346     | 30  |         | Averaged   | ccc  |
| 2,3-Dichloroaniline        | 0.6852         | 0.6892  |             | .01    |      | 0.58377     | 30  |         | Averaged   |      |
| 2,4,5-Trichlorophenol      | 0.3895         | 0.39843 |             | .01    |      | 2.29268     | 30  |         | Averaged   |      |
| 2-Chloronaphthalene        | 1.2006         | 1.25445 |             | .01    |      | 4.48526     | 30  |         | Averaged   |      |
| o-Nitroaniline             | 0.452          | 0.44763 |             | .01    |      | -0.96681    | 30  |         | Averaged   |      |
| 1,4-Dinitrobenzene         | 0.2127         | 0.21549 |             | .01    |      | 1.31171     | 30  |         | Averaged   |      |
| Dimethylphthalate          | 1.3446         | 1.37564 |             | .01    |      | 2.30849     | 30  |         | Averaged   |      |
| m-Dinitrobenzene           | 0.2449         | 0.23728 |             | .01    |      | -3.11147    | 30  |         | Averaged   |      |
| 2,6-Dinitrotoluene         | 0.3082         | 0.31194 |             | .01    |      | 1.2135      | 30  |         | Averaged   |      |
| Acenaphthylene             | 1.986          | 2.05708 |             | .01    |      | 3.57905     | 30  |         | Averaged   |      |
| m-Nitroaniline             | 0.3099         | 0.27247 |             | .01    |      | -12.07809   | 30  |         | Averaged   |      |
| Acenaphthene               | 1.2585         | 1.2594  |             | .01    |      | 0.07151     | 30  |         | Averaged   | ccc  |
| 2,4-Dinitrophenol          | 0.1445         | 0.13844 |             | .01    |      | -4.19377    | 30  |         | Averaged   | spcc |
| 4-Nitrophenol              | 0.203          | 0.17755 |             | .01    |      | -12.53695   | 30  |         | Averaged   | spcc |
| 2,4-Dinitrotoluene         | 0.3762         | 0.37728 |             | .01    |      | 0.28708     | 30  |         | Averaged   |      |
| Dibenzofuran               | 1.655          | 1.70221 |             | .01    |      | 2.85257     | 30  |         | Averaged   |      |
| 2,3,4,6-Tetrachlorophenol  | 0.2789         | 0.29389 |             | .01    |      | 5.37469     | 30  |         | Averaged   |      |
| Diethylphthalate           | 1.4228         | 1.45211 |             | .01    |      | 2.06002     | 30  |         | Averaged   |      |
| 4-Chlorophenylphenylether  | 0.6424         | 0.62819 |             | .01    |      | -2.21202    | 30  |         | Averaged   |      |
| Fluorene                   | 1.4247         | 1.38848 |             | .01    |      | -2.54229    | 30  |         | Averaged   |      |
| p-Nitroaniline             | 0.2615         | 0.25993 |             | .01    |      | -0.60038    | 30  |         | Averaged   |      |
| 2-Methyl-4,6-dinitrophenol | 0.1178         | 0.11707 |             | .01    |      | -0.61969    | 30  |         | Averaged   |      |
| Diphenylamine              | 0.6948         | 0.7036  |             | .01    |      | 1.26655     | 30  |         | Averaged   | ccc  |
| 1,2-Diphenylhydrazine      | 0.9767         | 0.96817 |             | .01    |      | -0.87335    | 30  |         | Averaged   |      |
| 4-Bromophenylphenylether   | 0.2035         | 0.20433 |             | .01    |      | 0.40786     | 30  |         | Averaged   |      |
| Hexachlorobenzene          | 0.2396         | 0.2473  |             | .01    |      | 3.21369     | 30  |         | Averaged   |      |
| Pentachlorophenol          | 0.1312         | 0.12735 |             | .01    |      | -2.93445    | 30  |         | Averaged   | ccc  |
| n-Octadecane               | 1.029          | 1.09857 |             | .01    |      | 6.76093     | 30  |         | Averaged   |      |
| Dinoseb                    | 0.1765         | 0.18435 |             | .01    |      | 4.44759     | 30  |         | Averaged   |      |
| Phenanthrene               | 1.0368         | 1.05631 |             | .01    |      | 1.88175     | 30  |         | Averaged   |      |
| Anthracene                 | 1.0443         | 1.06114 |             | .01    |      | 1.61256     | 30  |         | Averaged   |      |

## Continuing Calibration Summary

Instrument ID: MSD3.I

Injection Date: 13-AUG-11 13:59

Data File: s081211.B\s3h1266.D

Init. Cal. Date(s) 12-AUG-11 15:29 13-AUG-11 13:2

Lab Sample ID WBN110812-09.1

Method: s081211.B\MSD3\_8270d\_081211.m

Quant Type ISTD

| Compound                        | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |     |
|---------------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|-----|
| Carbazole                       | 0.8769         | 0.99025 |             | .01    |      | 12.92622    | 30  |         | Averaged   |     |
| Di-n-butylphthalate             | 1.407          | 1.52156 |             | .01    |      | 8.14215     | 30  |         | Averaged   |     |
| Fluoranthene                    | 1.02           | 1.0303  |             | .01    |      | 1.0098      | 30  |         | Averaged   | ccc |
| Pyrene                          | 1.6825         | 1.9735  |             | .01    |      | 17.29569    | 30  |         | Averaged   |     |
| Butylbenzylphthalate            | 0.8224         | 0.97172 |             | .01    |      | 18.15661    | 30  |         | Averaged   |     |
| Methoxychlor                    | 0.7562         | 0.71015 |             | .01    |      | -6.08966    | 30  |         | Averaged   |     |
| 4,4'-Methylenebis(2-chloroanili | 40             | 41.71   | 40          |        |      | 4.275       | 30  |         | Linear     |     |
| bis(2-Ethylhexyl)phthalate      | 1.1227         | 1.3158  |             | .01    |      | 17.19961    | 30  |         | Averaged   |     |
| Benzo(a)anthracene              | 1.0994         | 1.10176 |             | .01    |      | 0.21466     | 30  |         | Averaged   |     |
| Chrysene                        | 1.0155         | 1.01635 |             | .01    |      | 0.0837      | 30  |         | Averaged   |     |
| Di-n-octylphthalate             | 1.4599         | 1.54745 |             | .01    |      | 5.99699     | 30  |         | Averaged   | ccc |
| Benzo(b)fluoranthene            | 1.2442         | 1.28765 |             | .01    |      | 3.4922      | 30  |         | Averaged   |     |
| Benzo(k)fluoranthene            | 1.2537         | 1.29511 |             | .01    |      | 3.30302     | 30  |         | Averaged   |     |
| Benzo(a)pyrene                  | 1.0534         | 1.07225 |             | .01    |      | 1.78944     | 30  |         | Averaged   | ccc |
| Indeno(1,2,3-cd)pyrene          | 0.7816         | 0.8016  |             | .01    |      | 2.55885     | 30  |         | Averaged   |     |
| Dibenzo(a,h)anthracene          | 0.6451         | 0.66897 |             | .01    |      | 3.7002      | 30  |         | Averaged   |     |
| Benzo(ghi)perylene              | 0.6163         | 0.6112  |             | .01    |      | -0.82752    | 30  |         | Averaged   |     |
| Dibenzo(a,e)pyrene              | 0.3364         | 0.3234  |             | .01    |      | -3.86445    | 30  |         | Averaged   |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1266.D  
Acq On : 13 Aug 2011 13:59  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-09.1|ICV|1|SVM|1|MICV  
Misc : |MIX[A]  
ALS Vial : 59 Sample Multiplier: 1

Quant Time: Aug 15 15:25:04 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.771  | 4.768  | 1.000  | 816694   | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.052  | 6.049  | 1.000  | 3277968  | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 7.928  | 7.922  | 1.000  | 1404416  | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.539  | 9.533  | 1.000  | 2256466  | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.536 | 12.531 | 1.000  | 1169343  | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 14.827 | 14.824 | 1.000  | 596860   | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.771  | 4.765  | 1.000  | 816694   | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.052  | 6.047  | 1.000  | 3277968  | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 7.928  | 7.919  | 1.000  | 1404416  | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.539  | 9.536  | 1.000  | 2256466  | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.536 | 12.528 | 1.000  | 1169343  | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 14.827 | 14.824 | 1.000  | 596860   | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.052  | 6.044  | 1.000  | 3277968  | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 7.928  | 7.916  | 1.000  | 1404416  | 40.00 | ng/uL | 0.01     |
| 161) D Phenanthrene-d10       | 188  | 9.539  | 9.533  | 1.000  | 2256466  | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.536 | 12.528 | 1.000  | 1169343  | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.052  | 6.044  | 1.000  | 3297902  | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 14.827 | 14.852 | 1.000  | 596860   | 40.00 | ng/uL | -0.03    |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.771  | 4.760  | 1.000  | 816694   | 40.00 | ng/uL | 0.01     |
| 177) F Naphthalene-d8         | 136  | 6.052  | 6.044  | 1.000  | 3277968  | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 7.928  | 7.916  | 1.000  | 1404416  | 40.00 | ng/uL | 0.01     |
| 184) F Phenanthrene-d10       | 188  | 9.539  | 9.533  | 1.000  | 2256466  | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.536 | 12.528 | 1.000  | 1169343  | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.771  | 4.765  | 1.000  | 816694   | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.052  | 6.044  | 1.000  | 3277968  | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.536 | 12.528 | 1.000  | 1169343  | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 14.827 | 14.827 | 1.000  | 596860   | 40.00 | ng/uL | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |       |          |
| 5) 2-Fluorophenol             | 112  | 3.583  | 3.580  | 0.751  | 1175999  | 44.15 | ng/uL | 0.00     |
| 8) Phenol-d5                  | 99   | 4.376  | 4.367  | 0.917  | 1441555  | 42.67 | ng/uL | 0.00     |
| 25) Nitrobenzene-d5           | 82   | 5.314  | 5.308  | 0.878  | 1203950  | 41.49 | ng/uL | 0.00     |
| 47) 2-Fluorobiphenyl          | 172  | 7.180  | 7.178  | 0.906  | 2098026  | 40.86 | ng/uL | 0.00     |
| 66) 2,4,6-Tribromophenol      | 330  | 8.774  | 8.772  | 1.107  | 268823   | 45.54 | ng/uL | 0.00     |
| 83) p-Terphenyl-d14           | 244  | 11.249 | 11.244 | 0.897  | 1534347  | 51.67 | ng/uL | 0.00     |
| Target Compounds              |      |        |        |        |          |       |       |          |
| 2) 2-Ethoxyethanol            | 59   | 2.395  | 2.384  | 0.502  | 1022062  | 40.68 | ng/uL | 99       |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.611  | 2.603  | 0.547  | 742598   | 39.23 | ng/uL | 98       |
| 4) Pyridine                   | 79   | 2.640  | 2.631  | 0.553  | 901663   | 34.39 | ng/uL | 98       |
| 6) p-Benzoquinone             | 54   | 4.024  | 4.021  | 0.843  | 224674   | 43.26 | ng/uL | 98       |
| 7) Aniline                    | 66   | 4.461  | 4.455  | 0.935  | 595046   | 35.95 | ng/uL | 98       |
| 9) Phenol                     | 94   | 4.390  | 4.382  | 0.920  | 1372003  | 39.02 | ng/uL | 98       |
| 10) bis(2-Chloroethyl) ether  | 63   | 4.501  | 4.492  | 0.943  | 1120540  | 39.40 | ng/uL | 98       |
| 11) 2-Chlorophenol            | 128  | 4.569  | 4.563  | 0.958  | 1043953  | 39.58 | ng/uL | 93       |
| 12) n-Decane                  | 43   | 4.575  | 4.572  | 0.959  | 2254721  | 43.76 | ng/uL | 95       |
| 13) 1,3-Dichlorobenzene       | 146  | 4.720  | 4.717  | 0.989  | 1212361  | 41.23 | ng/uL | 99       |
| 14) 1,4-Dichlorobenzene       | 146  | 4.788  | 4.785  | 1.004  | 1218002  | 40.87 | ng/uL | 99       |
| 15) 1,2-Dichlorobenzene       | 146  | 4.938  | 4.933  | 1.035  | 1137115  | 40.59 | ng/uL | 99       |
| 16) bis(2-Chloroisopropyl)... | 45   | 5.007  | 5.004  | 1.049  | 3009101  | 39.81 | ng/uL | 98       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1266.D  
Acq On : 13 Aug 2011 13:59  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-09.1|ICV|1|SVM|1|MICV  
Misc : |MIX[A]  
ALS Vial : 59 Sample Multiplier: 1

Quant Time: Aug 15 15:25:04 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.  | Exp RT | Rel RT | Response | Conc   | Units  |     |
|-------------------------------|------|-------|--------|--------|----------|--------|--------|-----|
| 17) Benzyl alcohol            | 108  | 4.887 | 4.879  | 1.024  | 702295   | 39.65  | ng/uL  | 98  |
| 18) o-Cresol                  | 107  | 4.967 | 4.961  | 1.041  | 915603   | 40.88  | ng/uL  | 99  |
| 19) m,p-Cresols               | 107  | 5.129 | 5.117  | 1.075  | 1179362  | 41.11  | ng/uL  | 99  |
| 20) N-Nitrosodipropylamine    | 70   | 5.163 | 5.149  | 1.082  | 862317   | 40.73  | ng/uL  | 100 |
| 21) p-Toluidine               | 106  | 5.191 | 5.189  | 1.088  | 953105   | 32.55  | ng/uL  | 99  |
| 22) m-Toluidine               | 106  | 5.228 | 5.223  | 1.096  | 1206963  | 36.31  | ng/uL  | 99  |
| 23) Hexachloroethane          | 117  | 5.271 | 5.268  | 1.105  | 502014   | 40.48  | ng/uL  | 98  |
| 26) Nitrobenzene              | 77   | 5.336 | 5.331  | 0.882  | 1202708  | 40.87  | ng/uL  | 98  |
| 27) Isophorone                | 82   | 5.572 | 5.564  | 0.921  | 2143101  | 39.01  | ng/uL  | 98  |
| 28) 2-Nitrophenol             | 139  | 5.649 | 5.643  | 0.933  | 587863   | 40.28  | ng/uL  | 99  |
| 29) 2,4-Dimethylphenol        | 122  | 5.663 | 5.655  | 0.936  | 889782   | 37.25  | ng/uL  | 98  |
| 30) bis(2-Chloroethoxy)met... | 93   | 5.768 | 5.762  | 0.953  | 1287269  | 37.76  | ng/uL  | 99  |
| 31) 2,4-Dichlorophenol        | 162  | 5.893 | 5.885  | 0.974  | 790123   | 39.13  | ng/uL  | 100 |
| 32) Benzoic acid              | 105  | 5.802 | 5.765  | 0.959  | 718591   | 42.18  | ng/uL# | 12  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 5.981 | 5.978  | 0.988  | 913908   | 38.44  | ng/uL  | 99  |
| 34) alpha-Terpineol           | 59   | 6.066 | 6.061  | 1.002  | 1347685  | 38.66  | ng/uL  | 93  |
| 35) Naphthalene               | 128  | 6.078 | 6.072  | 1.004  | 2955212  | 39.72  | ng/uL  | 73  |
| 36) 4-Chloroaniline           | 127  | 6.115 | 6.109  | 1.010  | 1066955  | 36.75  | ng/uL  | 97  |
| 37) Hexachlorobutadiene       | 225  | 6.183 | 6.180  | 1.022  | 516690   | 41.04  | ng/uL  | 100 |
| 38) 4-Chloro-3-methylphenol   | 107  | 6.595 | 6.592  | 1.090  | 846712   | 38.48  | ng/uL  | 100 |
| 39) 2-Methylnaphthalene       | 142  | 6.800 | 6.797  | 1.123  | 2037892  | 39.93  | ng/uL  | 99  |
| 40) Phthalic anhydride        | 104  | 6.856 | 6.845  | 1.133  | 465141   | 141.58 | ng/uL# | 1 A |
| 41) 1-Methylnaphthalene       | 142  | 6.908 | 6.905  | 1.141  | 1902594  | 38.92  | ng/uL  | 100 |
| 43) Hexachlorocyclopentadiene | 237  | 6.953 | 6.953  | 0.877  | 332644   | 33.56  | ng/uL  | 100 |
| 44) 2,3-Dichloroaniline       | 161  | 7.095 | 7.092  | 0.895  | 967926   | 40.23  | ng/uL  | 99  |
| 45) 2,4,6-Trichlorophenol     | 196  | 7.089 | 7.084  | 0.894  | 521568   | 40.47  | ng/uL  | 99  |
| 46) 2,4,5-Trichlorophenol     | 196  | 7.124 | 7.118  | 0.899  | 559557   | 40.91  | ng/uL  | 100 |
| 48) 2-Chloronaphthalene       | 162  | 7.325 | 7.320  | 0.924  | 1761768  | 41.79  | ng/uL  | 99  |
| 49) o-Nitroaniline            | 65   | 7.425 | 7.419  | 0.937  | 628660   | 39.61  | ng/uL  | 98  |
| 50) 1,4-Dinitrobenzene        | 168  | 7.575 | 7.570  | 0.956  | 302644   | 40.53  | ng/uL  | 96  |
| 51) m-Nitroaniline            | 138  | 7.871 | 7.865  | 0.993  | 382660   | 35.17  | ng/uL  | 97  |
| 52) Dimethylphthalate         | 163  | 7.621 | 7.612  | 0.961  | 1931969  | 40.92  | ng/uL  | 100 |
| 53) m-Dinitrobenzene          | 168  | 7.661 | 7.649  | 0.966  | 333234   | 38.76  | ng/uL  | 97  |
| 54) 2,6-Dinitrotoluene        | 165  | 7.686 | 7.680  | 0.970  | 438098   | 40.48  | ng/uL  | 97  |
| 55) 2,4-Dinitrotoluene        | 165  | 8.121 | 8.112  | 1.024  | 529864   | 40.12  | ng/uL  | 98  |
| 56) Acenaphthylene            | 152  | 7.777 | 7.771  | 0.981  | 2888991  | 41.43  | ng/uL  | 100 |
| 57) Acenaphthene              | 154  | 7.965 | 7.959  | 1.005  | 1768721  | 40.03  | ng/uL  | 99  |
| 58) 2,4-Dinitrophenol         | 184  | 7.976 | 7.970  | 1.006  | 194426   | 38.33  | ng/uL# | 63  |
| 59) Dibenzofuran              | 168  | 8.146 | 8.144  | 1.028  | 2390613  | 41.14  | ng/uL  | 99  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 8.263 | 8.260  | 1.042  | 412740   | 42.15  | ng/uL  | 97  |
| 61) Diethylphthalate          | 149  | 8.368 | 8.362  | 1.056  | 2039370  | 40.82  | ng/uL  | 99  |
| 62) 4-Nitrophenol             | 139  | 8.019 | 8.010  | 1.011  | 249356   | 34.98  | ng/uL  | 97  |
| 63) Fluorene                  | 166  | 8.519 | 8.516  | 1.075  | 1950003  | 38.98  | ng/uL  | 100 |
| 64) 4-Chlorophenylphenylether | 204  | 8.502 | 8.499  | 1.072  | 882243   | 39.11  | ng/uL  | 99  |
| 65) p-Nitroaniline            | 138  | 8.536 | 8.527  | 1.077  | 365043   | 39.76  | ng/uL  | 99  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 8.561 | 8.553  | 0.898  | 264173   | 39.76  | ng/uL  | 95  |
| 69) Diphenylamine             | 169  | 8.635 | 8.630  | 0.905  | 1587642  | 40.51  | ng/uL  | 100 |
| 70) 1,2-Diphenylhydrazine     | 77   | 8.678 | 8.675  | 0.910  | 2184641  | 39.65  | ng/uL  | 99  |
| 71) 4-Bromophenylphenylether  | 248  | 9.036 | 9.033  | 0.947  | 461061   | 40.17  | ng/uL  | 99  |
| 72) Hexachlorobenzene         | 284  | 9.110 | 9.104  | 0.955  | 558028   | 41.29  | ng/uL  | 99  |
| 73) Pentachlorophenol         | 266  | 9.311 | 9.309  | 0.976  | 287366   | 38.83  | ng/uL  | 99  |
| 74) n-Octadecane              | 57   | 9.368 | 9.365  | 0.982  | 2478892  | 42.70  | ng/uL  | 97  |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1266.D  
Acq On : 13 Aug 2011 13:59  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-09.1|ICV|1|SVM|1|MICV  
Misc : |MIX[A]  
ALS Vial : 59 Sample Multiplier: 1

Quant Time: Aug 15 15:25:04 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 75) Dinoseb                   | 211  | 9.502  | 9.496  | 0.996  | 415973   | 41.78 | ng/uL | 100 |
| 76) Phenanthrene              | 178  | 9.567  | 9.562  | 1.003  | 2383528  | 40.75 | ng/uL | 99  |
| 77) Anthracene                | 178  | 9.624  | 9.618  | 1.009  | 2394433  | 40.65 | ng/uL | 100 |
| 78) Carbazole                 | 167  | 9.786  | 9.780  | 1.026  | 2234474  | 45.17 | ng/uL | 99  |
| 79) Di-n-butylphthalate       | 149  | 10.130 | 10.127 | 1.062  | 3433344  | 43.26 | ng/uL | 100 |
| 80) Fluoranthene              | 202  | 10.854 | 10.852 | 1.138  | 2324841  | 40.40 | ng/uL | 99  |
| 82) Pyrene                    | 202  | 11.107 | 11.102 | 0.886  | 2307701  | 46.92 | ng/uL | 99  |
| 84) Butylbenzylphthalate      | 149  | 11.775 | 11.772 | 0.939  | 1136275  | 47.26 | ng/uL | 98  |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 12.488 | 12.485 | 0.996  | 1538616  | 46.88 | ng/uL | 99  |
| 86) Benzo(a)anthracene        | 228  | 12.519 | 12.514 | 0.999  | 1288338  | 40.09 | ng/uL | 100 |
| 87) Chrysene                  | 228  | 12.573 | 12.568 | 1.003  | 1188464  | 40.03 | ng/uL | 99  |
| 88) Methoxychlor              | 227  | 12.392 | 12.392 | 0.988  | 830413   | 37.56 | ng/uL | 100 |
| 89) Methylenebis(2-chloroa... | 231  | 12.465 | 12.463 | 0.994  | 165438   | 41.71 | ng/uL | 98  |
| 90) Di-n-octylphthalate       | 149  | 13.463 | 13.460 | 1.074  | 1809500  | 42.40 | ng/uL | 99  |
| 92) Benzo(b)fluoranthene      | 252  | 14.162 | 14.159 | 0.955  | 768549   | 41.40 | ng/uL | 100 |
| 93) Benzo(k)fluoranthene      | 252  | 14.210 | 14.207 | 0.958  | 773001   | 41.32 | ng/uL | 99  |
| 94) Benzo(a)pyrene            | 252  | 14.727 | 14.727 | 0.993  | 639986   | 40.72 | ng/uL | 99  |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 16.790 | 16.787 | 1.132  | 478441   | 41.02 | ng/uL | 100 |
| 96) Dibenzo(a,h)anthracene    | 278  | 16.827 | 16.821 | 1.135  | 399283   | 41.48 | ng/uL | 97  |
| 97) Benzo(ghi)perylene        | 276  | 17.296 | 17.290 | 1.167  | 364801   | 39.67 | ng/uL | 99  |
| 98) Dibenzo(a,e)pyrene        | 302  | 20.899 | 20.887 | 1.410  | 193022   | 38.45 | ng/uL | 98  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



## Continuing Calibration Summary

**Client SDG:** 284538  
**Instrument ID:** MSD3.I  
**Injection Date:** 26-AUG-11 09:34  
**Data File:** s082611.B\s3h2605.D  
**Init. Cal. Date(s):** 12-AUG-11 15:29 - 13-AUG-11 13:2  
**Lab Sample ID:** WBN110812-05.3  
**Method:** s082611.B\MSD3\_8270d\_081211.m  
**Quant Type:** ISTD  
**Method Update:** 15-AUG-11 15:17

| Compound                    | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|-----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| S2-Fluorophenol             | 1.3045         | 1.21698 |             | .01    |      | -6.70908    | 20  |         | Averaged   |      |
| SPhenol-d5                  | 1.6545         | 1.44343 |             | .01    |      | -12.75733   | 20  |         | Averaged   |      |
| SNitrobenzene-d5            | 0.3541         | 0.31306 |             | .01    |      | -11.58995   | 20  |         | Averaged   |      |
| S2-Fluorobiphenyl           | 1.4624         | 1.48191 |             | .01    |      | 1.33411     | 20  |         | Averaged   |      |
| S2,4,6-Tribromophenol       | 0.1681         | 0.19241 |             | .01    |      | 14.46163    | 20  |         | Averaged   |      |
| Sp-Terphenyl-d14            | 1.0158         | 0.84115 |             | .01    |      | -17.19335   | 20  |         | Averaged   |      |
| 2-Ethoxyethanol             | 1.2306         | 0.78892 |             | .01    |      | -35.89144   | 20  | *       | Averaged   |      |
| N-Methyl-N-nitrosomethylami | 0.9272         | 0.73856 |             | .01    |      | -20.34513   | 20  | *       | Averaged   |      |
| Pyridine                    | 1.2843         | 1.05253 |             | .01    |      | -18.04641   | 20  |         | Averaged   |      |
| p-Benzoquinone              | 0.2544         | 0.09592 |             | .01    |      | -62.2956    | 20  | *       | Averaged   |      |
| Phenol                      | 1.722          | 1.49413 |             | .01    |      | -13.23287   | 20  |         | Averaged   | ccc  |
| Aniline                     | 0.8107         | 0.61586 |             | .01    |      | -24.03355   | 20  | *       | Averaged   |      |
| bis(2-Chloroethyl) ether    | 1.3929         | 0.98119 |             | .01    |      | -29.55776   | 20  | *       | Averaged   |      |
| 2-Chlorophenol              | 1.292          | 1.27532 |             | .01    |      | -1.29102    | 20  |         | Averaged   |      |
| n-Decane                    | 2.5235         | 1.63064 |             | .01    |      | -35.38181   | 20  | *       | Averaged   |      |
| 1,3-Dichlorobenzene         | 1.4401         | 1.45961 |             | .01    |      | 1.35477     | 20  |         | Averaged   |      |
| 1,4-Dichlorobenzene         | 1.4597         | 1.47311 |             | .01    |      | 0.91868     | 20  |         | Averaged   | ccc  |
| Benzyl alcohol              | 0.8676         | 0.82388 |             | .01    |      | -5.03919    | 20  |         | Averaged   |      |
| 1,2-Dichlorobenzene         | 1.372          | 1.38713 |             | .01    |      | 1.10277     | 20  |         | Averaged   |      |
| o-Cresol                    | 1.097          | 1.03113 |             | .01    |      | -6.00456    | 20  |         | Averaged   |      |
| bis(2-Chloroisopropyl)ether | 3.7017         | 2.28369 |             | .01    |      | -38.30699   | 20  | *       | Averaged   |      |
| m,p-Cresols                 | 1.4051         | 1.33291 |             | .01    |      | -5.13771    | 20  |         | Averaged   |      |
| N-Nitrosodipropylamine      | 1.037          | 0.88707 |             | .01    |      | -14.45805   | 20  |         | Averaged   | spcc |
| p-Toluidine                 | 1.4343         | 1.4828  |             | .01    |      | 3.38144     | 20  |         | Averaged   |      |
| m-Toluidine                 | 1.628          | 1.48582 |             | .01    |      | -8.73342    | 20  |         | Averaged   |      |
| Hexachloroethane            | 0.6074         | 0.58434 |             | .01    |      | -3.79651    | 20  |         | Averaged   |      |
| Nitrobenzene                | 0.3591         | 0.31171 |             | .01    |      | -13.19688   | 20  |         | Averaged   |      |
| Isophorone                  | 0.6704         | 0.58931 |             | .01    |      | -12.09576   | 20  |         | Averaged   |      |
| 2-Nitrophenol               | 0.1781         | 0.18302 |             | .01    |      | 2.76249     | 20  |         | Averaged   | ccc  |
| 2,4-Dimethylphenol          | 0.2915         | 0.30127 |             | .01    |      | 3.35163     | 20  |         | Averaged   |      |
| Benzoic acid                | 0.2079         | 0.19347 |             | .01    |      | -6.94084    | 20  |         | Averaged   |      |
| bis(2-Chloroethoxy)methane  | 0.416          | 0.36745 |             | .01    |      | -11.67067   | 20  |         | Averaged   |      |
| 2,4-Dichlorophenol          | 0.2464         | 0.26844 |             | .01    |      | 8.94481     | 20  |         | Averaged   | ccc  |
| 1,2,4-Trichlorobenzene      | 0.2901         | 0.31328 |             | .01    |      | 7.99035     | 20  |         | Averaged   |      |
| alpha-Terpineol             | 0.4254         | 0.30049 |             | .01    |      | -29.36295   | 20  | *       | Averaged   |      |
| Naphthalene                 | 0.9078         | 0.91452 |             | .01    |      | 0.74025     | 20  |         | Averaged   |      |
| 4-Chloroaniline             | 0.3543         | 0.36133 |             | .01    |      | 1.98419     | 20  |         | Averaged   |      |

## Continuing Calibration Summary

Instrument ID: MSD3.I

Injection Date: 26-AUG-11 09:34

Data File: s082611.B\s3h2605.D

Init. Cal. Date(s) 12-AUG-11 15:29 13-AUG-11 13:2

Lab Sample ID WBN110812-05.3

Method: s082611.B\MSD3\_8270d\_081211.m

Quant Type ISTD

| Compound                   | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| Hexachlorobutadiene        | 0.1536         | 0.1772  |             | .01    |      | 15.36458    | 20  |         | Averaged   | ccc  |
| 4-Chloro-3-methylphenol    | 0.2685         | 0.27279 |             | .01    |      | 1.59777     | 20  |         | Averaged   | ccc  |
| 2-Methylnaphthalene        | 0.6227         | 0.64405 |             | .01    |      | 3.42862     | 20  |         | Averaged   |      |
| Phthalic Anhydride         | 0.0401         | 0.02316 |             | .01    |      | -42.24439   | 20  | *       | Averaged   |      |
| 1-Methylnaphthalene        | 0.5966         | 0.61473 |             | .01    |      | 3.03889     | 20  |         | Averaged   |      |
| Hexachlorocyclopentadiene  | 0.2823         | 0.3244  |             | .01    |      | 14.91321    | 20  |         | Averaged   | spcc |
| 2,4,6-Trichlorophenol      | 0.367          | 0.39896 |             | .01    |      | 8.70845     | 20  |         | Averaged   | ccc  |
| 2,3-Dichloroaniline        | 0.6852         | 0.6865  |             | .01    |      | 0.18973     | 20  |         | Averaged   |      |
| 2,4,5-Trichlorophenol      | 0.3895         | 0.42788 |             | .01    |      | 9.85366     | 20  |         | Averaged   |      |
| 2-Chloronaphthalene        | 1.2006         | 1.20406 |             | .01    |      | 0.28819     | 20  |         | Averaged   |      |
| o-Nitroaniline             | 0.452          | 0.34372 |             | .01    |      | -23.95575   | 20  | *       | Averaged   |      |
| 1,4-Dinitrobenzene         | 0.2127         | 0.22829 |             | .01    |      | 7.32957     | 20  |         | Averaged   |      |
| Dimethylphthalate          | 1.3446         | 1.39281 |             | .01    |      | 3.58545     | 20  |         | Averaged   |      |
| m-Dinitrobenzene           | 0.2449         | 0.26065 |             | .01    |      | 6.4312      | 20  |         | Averaged   |      |
| 2,6-Dinitrotoluene         | 0.3082         | 0.32781 |             | .01    |      | 6.36275     | 20  |         | Averaged   |      |
| Acenaphthylene             | 1.986          | 2.01884 |             | .01    |      | 1.65358     | 20  |         | Averaged   |      |
| m-Nitroaniline             | 0.3099         | 0.31914 |             | .01    |      | 2.98161     | 20  |         | Averaged   |      |
| Acenaphthene               | 1.2585         | 1.29146 |             | .01    |      | 2.61899     | 20  |         | Averaged   | ccc  |
| 2,4-Dinitrophenol          | 0.1445         | 0.17801 |             | .01    |      | 23.19031    | 20  | *       | Averaged   | spcc |
| 4-Nitrophenol              | 0.203          | 0.23218 |             | .01    |      | 14.37438    | 20  |         | Averaged   | spcc |
| 2,4-Dinitrotoluene         | 0.3762         | 0.41022 |             | .01    |      | 9.04306     | 20  |         | Averaged   |      |
| Dibenzofuran               | 1.655          | 1.73124 |             | .01    |      | 4.60665     | 20  |         | Averaged   |      |
| 2,3,4,6-Tetrachlorophenol  | 0.2789         | 0.34455 |             | .01    |      | 23.5389     | 20  | *       | Averaged   |      |
| Diethylphthalate           | 1.4228         | 1.49082 |             | .01    |      | 4.78071     | 20  |         | Averaged   |      |
| 4-Chlorophenylphenylether  | 0.6424         | 0.708   |             | .01    |      | 10.21171    | 20  |         | Averaged   |      |
| Fluorene                   | 1.4247         | 1.49216 |             | .01    |      | 4.73503     | 20  |         | Averaged   |      |
| p-Nitroaniline             | 0.2615         | 0.2703  |             | .01    |      | 3.3652      | 20  |         | Averaged   |      |
| 2-Methyl-4,6-dinitrophenol | 0.1178         | 0.13267 |             | .01    |      | 12.62309    | 20  |         | Averaged   |      |
| Diphenylamine              | 0.6948         | 0.66642 |             | .01    |      | -4.08463    | 20  |         | Averaged   | ccc  |
| 1,2-Diphenylhydrazine      | 0.9767         | 0.76116 |             | .01    |      | -22.06819   | 20  | *       | Averaged   |      |
| 4-Bromophenylphenylether   | 0.2035         | 0.22186 |             | .01    |      | 9.02211     | 20  |         | Averaged   |      |
| Hexachlorobenzene          | 0.2396         | 0.229   |             | .01    |      | -4.42404    | 20  |         | Averaged   |      |
| Pentachlorophenol          | 0.1312         | 0.14099 |             | .01    |      | 7.46189     | 20  |         | Averaged   | ccc  |
| n-Octadecane               | 1.029          | 0.63063 |             | .01    |      | -38.71429   | 20  | *       | Averaged   |      |
| Dinoseb                    | 0.1765         | 0.19955 |             | .01    |      | 13.05949    | 20  |         | Averaged   |      |
| Phenanthrene               | 1.0368         | 1.03936 |             | .01    |      | 0.24691     | 20  |         | Averaged   |      |
| Anthracene                 | 1.0443         | 1.05855 |             | .01    |      | 1.36455     | 20  |         | Averaged   |      |

## Continuing Calibration Summary

Instrument ID: MSD3.I

Injection Date: 26-AUG-11 09:34

Data File: s082611.B\s3h2605.D

Init. Cal. Date(s) 12-AUG-11 15:29 13-AUG-11 13:2

Lab Sample ID WBN110812-05.3

Method: s082611.B\MSD3\_8270d\_081211.m

Quant Type ISTD

| Compound                        | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |     |
|---------------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|-----|
| Carbazole                       | 0.8769         | 0.83401 |             | .01    |      | -4.89109    | 20  |         | Averaged   |     |
| Di-n-butylphthalate             | 1.407          | 1.35738 |             | .01    |      | -3.52665    | 20  |         | Averaged   |     |
| Fluoranthene                    | 1.02           | 1.07188 |             | .01    |      | 5.08627     | 20  |         | Averaged   | ccc |
| Pyrene                          | 1.6825         | 1.45747 |             | .01    |      | -13.37474   | 20  |         | Averaged   |     |
| Butylbenzylphthalate            | 0.8224         | 0.70378 |             | .01    |      | -14.42364   | 20  |         | Averaged   |     |
| Methoxychlor                    | 0.7562         | 0.83427 |             | .01    |      | 10.32399    | 20  |         | Averaged   |     |
| 4,4'-Methylenebis(2-chloroanili | 40             | 49.54   | 40          |        |      | 23.85       | 20  | *       | Linear     |     |
| bis(2-Ethylhexyl)phthalate      | 1.1227         | 1.01268 |             | .01    |      | -9.79959    | 20  |         | Averaged   |     |
| Benzo(a)anthracene              | 1.0994         | 1.13846 |             | .01    |      | 3.55285     | 20  |         | Averaged   |     |
| Chrysene                        | 1.0155         | 1.07761 |             | .01    |      | 6.1162      | 20  |         | Averaged   |     |
| Di-n-octylphthalate             | 1.4599         | 1.55096 |             | .01    |      | 6.23741     | 20  |         | Averaged   | ccc |
| Benzo(b)fluoranthene            | 1.2442         | 1.26974 |             | .01    |      | 2.05272     | 20  |         | Averaged   |     |
| Benzo(k)fluoranthene            | 1.2537         | 1.28681 |             | .01    |      | 2.64098     | 20  |         | Averaged   |     |
| Benzo(a)pyrene                  | 1.0534         | 1.13585 |             | .01    |      | 7.82704     | 20  |         | Averaged   | ccc |
| Indeno(1,2,3-cd)pyrene          | 0.7816         | 0.95399 |             | .01    |      | 22.05604    | 20  | *       | Averaged   |     |
| Dibenzo(a,h)anthracene          | 0.6451         | 0.7871  |             | .01    |      | 22.01209    | 20  | *       | Averaged   |     |
| Benzo(ghi)perylene              | 0.6163         | 0.75502 |             | .01    |      | 22.50852    | 20  | *       | Averaged   |     |
| Dibenzo(a,e)pyrene              | 0.3364         | 0.41448 |             | .01    |      | 23.21046    | 20  | *       | Averaged   |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2605.D  
Acq On : 26 Aug 2011 09:34  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-05.3|CCV|1|SVM|1|MCCV  
Misc : |MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 26 10:09:48 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|--------|----------|
| Internal Standards            |      |        |        |        |          |       |        |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.896  | 4.896  | 1.000  | 520022   | 40.00 | ng/uL  | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.180  | 6.180  | 1.000  | 2079837  | 40.00 | ng/uL  | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 8.056  | 8.056  | 1.000  | 1019046  | 40.00 | ng/uL  | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.670  | 9.670  | 1.000  | 1833310  | 40.00 | ng/uL  | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.704 | 12.704 | 1.000  | 1340846  | 40.00 | ng/uL  | 0.00     |
| 91) A Perylene-d12            | 264  | 15.066 | 15.066 | 1.000  | 926118   | 40.00 | ng/uL  | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.896  | 4.896  | 1.000  | 520022   | 40.00 | ng/uL  | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 2079837  | 40.00 | ng/uL  | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 8.056  | 8.056  | 1.000  | 1019046  | 40.00 | ng/uL  | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.670  | 9.670  | 1.000  | 1833310  | 40.00 | ng/uL  | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.704 | 12.704 | 1.000  | 1340846  | 40.00 | ng/uL  | 0.00     |
| 153) B Perylene-d12           | 264  | 15.066 | 15.066 | 1.000  | 926118   | 40.00 | ng/uL  | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 2079837  | 40.00 | ng/uL  | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 8.056  | 8.056  | 1.000  | 1019046  | 40.00 | ng/uL  | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.670  | 9.670  | 1.000  | 1833310  | 40.00 | ng/uL  | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.704 | 12.704 | 1.000  | 1340846  | 40.00 | ng/uL  | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 2080736  | 40.00 | ng/uL  | 0.00     |
| 172) E Perylene-d12           | 264  | 15.066 | 15.066 | 1.000  | 926118   | 40.00 | ng/uL  | 0.00     |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.896  | 4.896  | 1.000  | 520022   | 40.00 | ng/uL  | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 2079837  | 40.00 | ng/uL  | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 8.056  | 8.056  | 1.000  | 1019046  | 40.00 | ng/uL  | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.670  | 9.670  | 1.000  | 1833310  | 40.00 | ng/uL  | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.704 | 12.704 | 1.000  | 1340846  | 40.00 | ng/uL  | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.896  | 4.896  | 1.000  | 520022   | 40.00 | ng/uL  | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 2079837  | 40.00 | ng/uL  | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.704 | 12.704 | 1.000  | 1340846  | 40.00 | ng/uL  | 0.00     |
| 199) J Perylene-d12           | 264  | 15.066 | 15.066 | 1.000  | 926118   | 40.00 | ng/uL  | 0.00     |
| System Monitoring Compounds   |      |        |        |        |          |       |        |          |
| 5) 2-Fluorophenol             | 112  | 3.711  | 3.676  | 0.758  | 632857   | 37.32 | ng/uL  | 0.04     |
| 8) Phenol-d5                  | 99   | 4.493  | 4.484  | 0.918  | 750614   | 34.90 | ng/uL  | 0.00     |
| 25) Nitrobenzene-d5           | 82   | 5.439  | 5.423  | 0.880  | 651121   | 35.36 | ng/uL  | 0.02     |
| 47) 2-Fluorobiphenyl          | 172  | 7.306  | 7.299  | 0.907  | 1510134  | 40.53 | ng/uL  | 0.00     |
| 66) 2,4,6-Tribromophenol      | 330  | 8.905  | 8.920  | 1.105  | 196078   | 45.77 | ng/uL  | -0.01    |
| 83) p-Terphenyl-d14           | 244  | 11.375 | 11.400 | 0.895  | 1127859  | 33.12 | ng/uL  | -0.02    |
| Target Compounds              |      |        |        |        |          |       |        |          |
| 2) 2-Ethoxyethanol            | 59   | 2.526  | 2.448  | 0.516  | 410255   | 25.64 | ng/uL  | 96       |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.739  | 2.673  | 0.560  | 384066   | 31.86 | ng/uL  | 83       |
| 4) Pyridine                   | 79   | 2.776  | 2.702  | 0.567  | 547337   | 32.78 | ng/uL# | 73       |
| 6) p-Benzoquinone             | 54   | 4.149  | 4.129  | 0.847  | 49878    | 15.08 | ng/uL  | 73       |
| 7) Aniline                    | 66   | 4.583  | 4.575  | 0.936  | 320263   | 30.39 | ng/uL  | 84       |
| 9) Phenol                     | 94   | 4.507  | 4.500  | 0.920  | 776978   | 34.71 | ng/uL  | 96       |
| 10) bis(2-Chloroethyl) ether  | 63   | 4.618  | 4.613  | 0.943  | 510238   | 28.18 | ng/uL  | 80       |
| 11) 2-Chlorophenol            | 128  | 4.694  | 4.686  | 0.959  | 663192   | 39.48 | ng/uL  | 87       |
| 12) n-Decane                  | 43   | 4.694  | 4.695  | 0.959  | 847970   | 25.85 | ng/uL  | 95       |
| 13) 1,3-Dichlorobenzene       | 146  | 4.845  | 4.844  | 0.990  | 759031   | 40.54 | ng/uL  | 99       |
| 14) 1,4-Dichlorobenzene       | 146  | 4.913  | 4.914  | 1.003  | 766049   | 40.37 | ng/uL  | 99       |
| 15) 1,2-Dichlorobenzene       | 146  | 5.061  | 5.065  | 1.034  | 721339   | 40.44 | ng/uL  | 99       |
| 16) bis(2-Chloroisopropyl)... | 45   | 5.129  | 5.138  | 1.048  | 1187569  | 24.68 | ng/uL  | 84       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2605.D  
Acq On : 26 Aug 2011 09:34  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-05.3|CCV|1|SVM|1|MCCV  
Misc : |MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 26 10:09:48 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  |     |
|-------------------------------|------|-------|--------|--------|----------|-------|--------|-----|
| 17) Benzyl alcohol            | 108  | 5.007 | 5.010  | 1.023  | 428436   | 37.98 | ng/uL  | 93  |
| 18) o-Cresol                  | 107  | 5.086 | 5.094  | 1.039  | 536209   | 37.60 | ng/uL  | 98  |
| 19) m,p-Cresols               | 107  | 5.246 | 5.254  | 1.071  | 693145   | 37.94 | ng/uL  | 99  |
| 20) N-Nitrosodipropylamine    | 70   | 5.274 | 5.287  | 1.077  | 461295   | 34.22 | ng/uL  | 77  |
| 21) p-Toluidine               | 106  | 5.317 | 5.328  | 1.086  | 771089   | 41.35 | ng/uL  | 99  |
| 22) m-Toluidine               | 106  | 5.351 | 5.363  | 1.093  | 772661   | 36.51 | ng/uL  | 99  |
| 23) Hexachloroethane          | 117  | 5.396 | 5.410  | 1.102  | 303871   | 38.48 | ng/uL  | 89  |
| 26) Nitrobenzene              | 77   | 5.459 | 5.446  | 0.883  | 648312   | 34.72 | ng/uL  | 94  |
| 27) Isophorone                | 82   | 5.694 | 5.684  | 0.921  | 1225665  | 35.16 | ng/uL  | 95  |
| 28) 2-Nitrophenol             | 139  | 5.774 | 5.765  | 0.934  | 380642   | 41.11 | ng/uL  | 88  |
| 29) 2,4-Dimethylphenol        | 122  | 5.783 | 5.777  | 0.936  | 626587   | 41.34 | ng/uL  | 99  |
| 30) bis(2-Chloroethoxy)met... | 93   | 5.888 | 5.887  | 0.953  | 764244   | 35.33 | ng/uL  | 99  |
| 31) 2,4-Dichlorophenol        | 162  | 6.016 | 6.012  | 0.973  | 558312   | 43.58 | ng/uL  | 97  |
| 32) Benzoic acid              | 105  | 5.891 | 5.890  | 0.953  | 402378   | 37.22 | ng/uL  | 95  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 6.109 | 6.107  | 0.989  | 651578   | 43.19 | ng/uL  | 100 |
| 34) alpha-Terpineol           | 59   | 6.186 | 6.192  | 1.001  | 624965   | 28.26 | ng/uL  | 76  |
| 35) Naphthalene               | 128  | 6.203 | 6.203  | 1.004  | 1902049  | 40.30 | ng/uL  | 98  |
| 36) 4-Chloroaniline           | 127  | 6.240 | 6.241  | 1.010  | 751498   | 40.80 | ng/uL  | 89  |
| 37) Hexachlorobutadiene       | 225  | 6.308 | 6.314  | 1.021  | 368542   | 46.13 | ng/uL  | 100 |
| 38) 4-Chloro-3-methylphenol   | 107  | 6.720 | 6.735  | 1.087  | 567358   | 40.64 | ng/uL  | 97  |
| 39) 2-Methylnaphthalene       | 142  | 6.928 | 6.944  | 1.121  | 1339527  | 41.37 | ng/uL  | 100 |
| 40) Phthalic anhydride        | 104  | 6.979 | 6.993  | 1.129  | 48163    | 23.11 | ng/uL# | 1   |
| 41) 1-Methylnaphthalene       | 142  | 7.036 | 7.054  | 1.138  | 1278546  | 41.22 | ng/uL  | 100 |
| 43) Hexachlorocyclopentadiene | 237  | 7.081 | 7.070  | 0.879  | 330577   | 45.97 | ng/uL  | 99  |
| 44) 2,3-Dichloroaniline       | 161  | 7.223 | 7.212  | 0.897  | 699575   | 40.08 | ng/uL  | 98  |
| 45) 2,4,6-Trichlorophenol     | 196  | 7.215 | 7.204  | 0.896  | 406556   | 43.48 | ng/uL  | 99  |
| 46) 2,4,5-Trichlorophenol     | 196  | 7.252 | 7.238  | 0.900  | 436034   | 43.94 | ng/uL  | 100 |
| 48) 2-Chloronaphthalene       | 162  | 7.453 | 7.444  | 0.925  | 1226994  | 40.11 | ng/uL  | 99  |
| 49) o-Nitroaniline            | 65   | 7.550 | 7.544  | 0.937  | 350262   | 30.42 | ng/uL  | 81  |
| 50) 1,4-Dinitrobenzene        | 168  | 7.698 | 7.698  | 0.956  | 232639   | 42.93 | ng/uL# | 70  |
| 51) m-Nitroaniline            | 138  | 7.996 | 7.998  | 0.993  | 325221   | 41.19 | ng/uL  | 89  |
| 52) Dimethylphthalate         | 163  | 7.740 | 7.741  | 0.961  | 1419335  | 41.43 | ng/uL  | 100 |
| 53) m-Dinitrobenzene          | 168  | 7.783 | 7.778  | 0.966  | 265610   | 42.57 | ng/uL  | 85  |
| 54) 2,6-Dinitrotoluene        | 165  | 7.811 | 7.810  | 0.970  | 334056   | 42.54 | ng/uL  | 77  |
| 55) 2,4-Dinitrotoluene        | 165  | 8.246 | 8.249  | 1.024  | 418028   | 43.62 | ng/uL  | 83  |
| 56) Acenaphthylene            | 152  | 7.908 | 7.902  | 0.982  | 2057292  | 40.66 | ng/uL  | 100 |
| 57) Acenaphthene              | 154  | 8.093 | 8.093  | 1.005  | 1316062  | 41.05 | ng/uL  | 98  |
| 58) 2,4-Dinitrophenol         | 184  | 8.101 | 8.105  | 1.006  | 181401   | 49.28 | ng/uL# | 25  |
| 59) Dibenzofuran              | 168  | 8.275 | 8.281  | 1.027  | 1764213  | 41.84 | ng/uL  | 100 |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 8.394 | 8.399  | 1.042  | 351108   | 49.41 | ng/uL  | 98  |
| 61) Diethylphthalate          | 149  | 8.490 | 8.503  | 1.054  | 1519215  | 41.91 | ng/uL  | 99  |
| 62) 4-Nitrophenol             | 139  | 8.144 | 8.145  | 1.011  | 236603   | 45.75 | ng/uL  | 88  |
| 63) Fluorene                  | 166  | 8.650 | 8.660  | 1.074  | 1520576  | 41.89 | ng/uL  | 99  |
| 64) 4-Chlorophenylphenylether | 204  | 8.630 | 8.643  | 1.071  | 721483   | 44.08 | ng/uL  | 98  |
| 65) p-Nitroaniline            | 138  | 8.661 | 8.671  | 1.075  | 275447   | 41.35 | ng/uL# | 51  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 8.687 | 8.676  | 0.898  | 243234   | 45.05 | ng/uL  | 77  |
| 69) Diphenylamine             | 169  | 8.760 | 8.754  | 0.906  | 1221750  | 38.37 | ng/uL  | 99  |
| 70) 1,2-Diphenylhydrazine     | 77   | 8.806 | 8.799  | 0.911  | 1395450  | 31.17 | ng/uL  | 93  |
| 71) 4-Bromophenylphenylether  | 248  | 9.164 | 9.163  | 0.948  | 406733   | 43.62 | ng/uL  | 91  |
| 72) Hexachlorobenzene         | 284  | 9.241 | 9.235  | 0.956  | 419831   | 38.23 | ng/uL  | 99  |
| 73) Pentachlorophenol         | 266  | 9.442 | 9.442  | 0.976  | 258479   | 42.98 | ng/uL  | 99  |
| 74) n-Octadecane              | 57   | 9.488 | 9.499  | 0.981  | 1156144  | 24.51 | ng/uL  | 92  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2605.D  
Acq On : 26 Aug 2011 09:34  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110812-05.3|CCV|1|SVM|1|MCCV  
Misc : |MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 26 10:09:48 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 75) Dinoseb                   | 211  | 9.627  | 9.632  | 0.996  | 365838   | 45.22 | ng/uL | 97  |
| 76) Phenanthrene              | 178  | 9.698  | 9.699  | 1.003  | 1905477  | 40.10 | ng/uL | 100 |
| 77) Anthracene                | 178  | 9.752  | 9.756  | 1.009  | 1940651  | 40.55 | ng/uL | 100 |
| 78) Carbazole                 | 167  | 9.914  | 9.920  | 1.025  | 1529007  | 38.04 | ng/uL | 100 |
| 79) Di-n-butylphthalate       | 149  | 10.252 | 10.272 | 1.060  | 2488491  | 38.59 | ng/uL | 100 |
| 80) Fluoranthene              | 202  | 10.985 | 11.008 | 1.136  | 1965096  | 42.03 | ng/uL | 97  |
| 82) Pyrene                    | 202  | 11.238 | 11.256 | 0.885  | 1954246  | 34.65 | ng/uL | 96  |
| 84) Butylbenzylphthalate      | 149  | 11.909 | 11.935 | 0.937  | 943659   | 34.23 | ng/uL | 92  |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 12.639 | 12.658 | 0.995  | 1357849  | 36.08 | ng/uL | 98  |
| 86) Benzo(a)anthracene        | 228  | 12.684 | 12.687 | 0.998  | 1526495  | 41.42 | ng/uL | 100 |
| 87) Chrysene                  | 228  | 12.741 | 12.742 | 1.003  | 1444909  | 42.45 | ng/uL | 100 |
| 88) Methoxychlor              | 227  | 12.548 | 12.563 | 0.988  | 1118628  | 44.13 | ng/uL | 99  |
| 89) Methylenebis(2-chloroa... | 231  | 12.625 | 12.635 | 0.994  | 230672   | 49.54 | ng/uL | 93  |
| 90) Di-n-octylphthalate       | 149  | 13.639 | 13.646 | 1.074  | 2079603  | 42.50 | ng/uL | 86  |
| 92) Benzo(b)fluoranthene      | 252  | 14.378 | 14.390 | 0.954  | 1175931  | 40.82 | ng/uL | 98  |
| 93) Benzo(k)fluoranthene      | 252  | 14.429 | 14.439 | 0.958  | 1191742  | 41.06 | ng/uL | 97  |
| 94) Benzo(a)pyrene            | 252  | 14.966 | 14.967 | 0.993  | 1051928  | 43.13 | ng/uL | 98  |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 17.069 | 17.061 | 1.133  | 883503   | 48.82 | ng/uL | 94  |
| 96) Dibenzo(a,h)anthracene    | 278  | 17.103 | 17.095 | 1.135  | 728947   | 48.81 | ng/uL | 92  |
| 97) Benzo(ghi)perylene        | 276  | 17.592 | 17.572 | 1.168  | 699242   | 49.00 | ng/uL | 94  |
| 98) Dibenzo(a,e)pyrene        | 302  | 21.382 | 21.228 | 1.419  | 383853   | 49.28 | ng/uL | 98  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted





## Continuing Calibration Summary

**Instrument ID:** MSD3.I  
**Data File:** s082611.B\s3h2606.D  
**Lab Sample ID**  
**Quant Type** ISTD

**Client SDG:** 284538  
**Injection Date:** 26-AUG-11 10:06  
**Init. Cal. Date(s)** 12-AUG-11 15:29 - 13-AUG-11 13:2  
**Method:** s082611.B\MSD3\_8270d\_081211.m  
**Method Update:** 15-AUG-11 15:17

| Compound                   | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| S2-Fluorophenol            | 1.3045         | 0.00194 |             | .01    |      | -99.85128   | 20  | *       | Averaged   |
| S Nitrobenzene-d5          | 0.3541         | 0.00048 |             | .01    |      | -99.86445   | 20  | *       | Averaged   |
| Methyl methacrylate        | 0.3045         | 0.28935 |             | .01    |      | -4.97537    | 20  |         | Averaged   |
| 1,4-Dioxane                | 0.5551         | 0.47148 |             | .01    |      | -15.06395   | 20  |         | Averaged   |
| Ethyl methacrylate         | 1.2511         | 1.03635 |             | .01    |      | -17.16489   | 20  |         | Averaged   |
| 2-Picoline                 | 1.5812         | 1.30134 |             | .01    |      | -17.69922   | 20  |         | Averaged   |
| N-Nitrosomethylethylamine  | 0.6609         | 0.57571 |             | .01    |      | -12.89      | 20  |         | Averaged   |
| Methyl methanesulfonate    | 0.7068         | 0.69718 |             | .01    |      | -1.36106    | 20  |         | Averaged   |
| N-Nitrosodiethylamine      | 0.6696         | 0.63123 |             | .01    |      | -5.73029    | 20  |         | Averaged   |
| Ethyl Methanesulfonate     | 0.9969         | 0.81943 |             | .01    |      | -17.80219   | 20  |         | Averaged   |
| Benzaldehyde               | 1.0558         | 0.95547 |             | .01    |      | -9.50275    | 20  |         | Averaged   |
| Pentachloroethane          | 0.5428         | 0.58134 |             | .01    |      | 7.10022     | 20  |         | Averaged   |
| N-Nitrosopyrrolidine       | 0.6371         | 0.67468 |             | .01    |      | 5.8986      | 20  |         | Averaged   |
| Acetophenone               | 1.764          | 1.73368 |             | .01    |      | -1.71882    | 20  |         | Averaged   |
| N-Nitrosomorpholine        | 1.176          | 0.83217 |             | .01    |      | -29.23724   | 20  | *       | Averaged   |
| o-Toluidine                | 1.985          | 1.90826 |             | .01    |      | -3.86599    | 20  |         | Averaged   |
| N-Nitrosopiperidine        | 0.1826         | 0.18014 |             | .01    |      | -1.34721    | 20  |         | Averaged   |
| a,a-Dimethylphenethylamine | 1.3875         | 1.00619 |             | .01    |      | -27.4818    | 20  | *       | Averaged   |
| 2,6-Dichlorophenol         | 0.262          | 0.29627 |             | .01    |      | 13.08015    | 20  |         | Averaged   |
| Hexachloropropene          | 0.1723         | 0.21873 |             | .01    |      | 26.94719    | 20  | *       | Averaged   |
| N-Nitrosodi-n-butylamine   | 0.298          | 0.25922 |             | .01    |      | -13.01342   | 20  |         | Averaged   |
| Caprolactam                | 0.1077         | 0.11148 |             | .01    |      | 3.50975     | 20  |         | Averaged   |
| Safrole                    | 0.2768         | 0.27879 |             | .01    |      | 0.71893     | 20  |         | Averaged   |
| 1,2,4,5-Tetrachlorobenzene | 0.5984         | 0.63324 |             | .01    |      | 5.82219     | 20  |         | Averaged   |
| Isosafrole                 | 0.5613         | 0.58785 |             | .01    |      | 4.73009     | 20  |         | Averaged   |
| 1,1'-Biphenyl              | 1.688          | 1.65436 |             | .01    |      | -1.99289    | 20  |         | Averaged   |
| 1,4-Naphthoquinone         | 0.3975         | 0.39531 |             | .01    |      | -0.55094    | 20  |         | Averaged   |
| Pentachlorobenzene         | 0.5015         | 0.56232 |             | .01    |      | 12.12762    | 20  |         | Averaged   |
| 1-Naphthylamine            | 1.134          | 1.25919 |             | .01    |      | 11.03968    | 20  |         | Averaged   |
| 2-Naphthylamine            | 1.1859         | 1.38625 |             | .01    |      | 16.89434    | 20  |         | Averaged   |
| 5-Nitro-o-toluidine        | 0.3233         | 0.36605 |             | .01    |      | 13.22301    | 20  |         | Averaged   |
| 1,3,5-Trinitrobenzene      | 0.1496         | 0.12604 |             | .01    |      | -15.74866   | 20  |         | Averaged   |
| Diallate                   | 0.3713         | 0.27383 |             | .01    |      | -26.25101   | 20  | *       | Averaged   |
| Trans Diallate             | 0.4368         | 0.32215 |             | .01    |      | -26.24771   | 20  | *       | Averaged   |
| Phenacetin                 | 0.3485         | 0.31839 |             | .01    |      | -8.63989    | 20  |         | Averaged   |
| Cis Diallate               | 0.5003         | 0.65884 |             | .01    |      | 31.68899    | 20  | *       | Averaged   |
| Atrazine                   | 0.0514         | 0.05515 |             | .01    |      | 7.29572     | 20  |         | Averaged   |

## Continuing Calibration Summary

Instrument ID: MSD3.I

Injection Date: 26-AUG-11 10:06

Data File: s082611.B\s3h2606.D

Init. Cal. Date(s) 12-AUG-11 15:29 13-AUG-11 13:2

Lab Sample ID

Method: s082611.B\MSD3\_8270d\_081211.m

Quant Type ISTD

| Compound                      | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|-------------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| 4-Aminobiphenyl               | 0.7281         | 0.82019 |             | .01    |      | 12.64799    | 20  |         | Averaged   |
| Pentachloronitrobenzene       | 0.0947         | 0.09593 |             | .01    |      | 1.29884     | 20  |         | Averaged   |
| Pronamide                     | 0.3622         | 0.36342 |             | .01    |      | 0.33683     | 20  |         | Averaged   |
| 4-Nitroquinoline-1-oxide      | 0.0191         | 0.01946 |             | .01    |      | 1.88482     | 20  |         | Averaged   |
| Methapyrilene                 | 0.6899         | 0.42045 |             | .01    |      | -39.05638   | 20  | *       | Averaged   |
| Isodrin                       | 0.1473         | 0.13097 |             | .01    |      | -11.08622   | 20  |         | Averaged   |
| Benzidine                     | 0.3034         | 0.51507 |             | .01    |      | 69.76599    | 20  | *       | Averaged   |
| Aramite                       | 0.0973         | 0.07894 |             | .01    |      | -18.86948   | 20  |         | Averaged   |
| p-(Dimethylamino)azobenzene   | 0.5008         | 0.40447 |             | .01    |      | -19.23522   | 20  |         | Averaged   |
| Chlorobenzilate               | 0.4802         | 0.42887 |             | .01    |      | -10.6893    | 20  |         | Averaged   |
| 3,3'-Dimethylbenzidine        | 0.5807         | 0.75095 |             | .01    |      | 29.31806    | 20  | *       | Averaged   |
| Kepone                        | 0.1162         | 0.14131 |             | .01    |      | 21.60929    | 20  | *       | Averaged   |
| 2-Acetylaminofluorene         | 0.2675         | 0.35407 |             | .01    |      | 32.36262    | 20  | *       | Averaged   |
| 3,3'-Dichlorobenzidine        | 0.2928         | 0.35723 |             | .01    |      | 22.00478    | 20  | *       | Averaged   |
| 7,12Dimethylbenz(a)anthracene | 0.7146         | 0.66864 |             | .01    |      | -6.43157    | 20  |         | Averaged   |
| 3-Methylcholanthrene          | 0.1091         | 0.11754 |             | .01    |      | 7.73602     | 20  |         | Averaged   |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2606.D  
Acq On : 26 Aug 2011 10:06  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110809-18.3|CCV|1|SVM|1|ACCV  
Misc : |MIX[B]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 26 11:04:38 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  | Dev(Min) |
|--------------------------------|------|--------|--------|--------|----------|-------|--------|----------|
| Internal Standards             |      |        |        |        |          |       |        |          |
| 1) A 1,4-Dichlorobenzene-d4    | 152  | 4.893  | 4.896  | 1.000  | 514926   | 40.00 | ng/uL  | 0.00     |
| 24) A Naphthalene-d8           | 136  | 6.178  | 6.180  | 1.000  | 1837104  | 40.00 | ng/uL  | 0.00     |
| 42) A Acenaphthene-d10         | 164  | 8.050  | 8.056  | 1.000  | 974125   | 40.00 | ng/uL  | 0.00     |
| 67) A Phenanthrene-d10         | 188  | 9.670  | 9.670  | 1.000  | 1667258  | 40.00 | ng/uL  | 0.00     |
| 81) A Chrysene-d12             | 240  | 12.696 | 12.704 | 1.000  | 1176906  | 40.00 | ng/uL  | 0.00     |
| 91) A Perylene-d12             | 264  | 15.057 | 15.066 | 1.000  | 739520   | 40.00 | ng/uL  | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4   | 152  | 4.893  | 4.896  | 1.000  | 514926   | 40.00 | ng/uL  | 0.00     |
| 114) B Naphthalene-d8          | 136  | 6.178  | 6.180  | 1.000  | 1837104  | 40.00 | ng/uL  | 0.00     |
| 122) B Acenaphthene-d10        | 164  | 8.050  | 8.056  | 1.000  | 974125   | 40.00 | ng/uL  | 0.00     |
| 131) B Phenanthrene-d10        | 188  | 9.670  | 9.670  | 1.000  | 1667258  | 40.00 | ng/uL  | 0.00     |
| 145) B Chrysene-d12            | 240  | 12.696 | 12.704 | 1.000  | 1176906  | 40.00 | ng/uL  | 0.00     |
| 153) B Perylene-d12            | 264  | 15.057 | 15.066 | 1.000  | 739520   | 40.00 | ng/uL  | 0.00     |
| 156) D Naphthalene-d8          | 136  | 6.178  | 6.180  | 1.000  | 1837104  | 40.00 | ng/uL  | 0.00     |
| 158) D Acenaphthene-d10        | 164  | 8.050  | 8.056  | 1.000  | 974125   | 40.00 | ng/uL  | 0.00     |
| 161) D Phenanthrene-d10        | 188  | 9.670  | 9.670  | 1.000  | 1667258  | 40.00 | ng/uL  | 0.00     |
| 168) D Chrysene-d12            | 240  | 12.696 | 12.704 | 1.000  | 1176906  | 40.00 | ng/uL  | 0.00     |
| 170) E Naphthalene-d8          | 136  | 6.178  | 6.180  | 1.000  | 1837505  | 40.00 | ng/uL  | 0.00     |
| 172) E Perylene-d12            | 264  | 15.057 | 15.066 | 1.000  | 739520   | 40.00 | ng/uL  | 0.00     |
| 174) F 1,4-Dichlorobenzene-d4  | 152  | 4.893  | 4.896  | 1.000  | 514926   | 40.00 | ng/uL  | 0.00     |
| 177) F Naphthalene-d8          | 136  | 6.178  | 6.180  | 1.000  | 1837104  | 40.00 | ng/uL  | 0.00     |
| 181) F Acenaphthene-d10        | 164  | 8.050  | 8.056  | 1.000  | 974125   | 40.00 | ng/uL  | 0.00     |
| 184) F Phenanthrene-d10        | 188  | 9.670  | 9.670  | 1.000  | 1667258  | 40.00 | ng/uL  | 0.00     |
| 188) F Chrysene-d12            | 240  | 12.696 | 12.704 | 1.000  | 1176906  | 40.00 | ng/uL  | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4  | 152  | 4.893  | 4.896  | 1.000  | 514926   | 40.00 | ng/uL  | 0.00     |
| 194) J Naphthalene-d8          | 136  | 6.178  | 6.180  | 1.000  | 1837104  | 40.00 | ng/uL  | 0.00     |
| 196) J Chrysene-d12            | 240  | 12.696 | 12.704 | 1.000  | 1176906  | 40.00 | ng/uL  | 0.00     |
| 199) J Perylene-d12            | 264  | 15.057 | 15.066 | 1.000  | 739520   | 40.00 | ng/uL  | 0.00     |
| System Monitoring Compounds    |      |        |        |        |          |       |        |          |
| 5) 2-Fluorophenol              | 112  | 3.597  | 3.676  | 0.735  | 1001     | 0.06  | ng/uL  | -0.08    |
| 8) Phenol-d5                   | 99   | 0.000  | 4.484  | 0.000  | 0        | 0.00  | ng/uL  |          |
| 25) Nitrobenzene-d5            | 82   | 5.359  | 5.423  | 0.868  | 873      | 0.05  | ng/uL  | -0.06    |
| 47) 2-Fluorobiphenyl           | 172  | 0.000  | 7.299  | 0.000  | 0        | 0.00  | ng/uL  |          |
| 66) 2,4,6-Tribromophenol       | 330  | 0.000  | 8.920  | 0.000  | 0        | 0.00  | ng/uL  |          |
| 83) p-Terphenyl-d14            | 244  | 0.000  | 11.400 | 0.000  | 0        | 0.00  | ng/uL  |          |
| Target Compounds               |      |        |        |        |          |       |        |          |
| 100) 1,4-Dioxane               | 88   | 2.535  | 2.464  | 0.518  | 242779   | 33.97 | ng/uL# | 73       |
| 101) Methyl methacrylate       | 100  | 2.526  | 2.462  | 0.516  | 148996   | 38.00 | ng/uL# | 55       |
| 102) Ethyl methacrylate        | 69   | 3.035  | 2.987  | 0.620  | 533642   | 33.13 | ng/uL  | 80       |
| 103) 2-Picoline                | 93   | 3.296  | 3.250  | 0.674  | 670092   | 32.92 | ng/uL  | 92       |
| 104) N-Nitrosomethylethylamine | 88   | 3.364  | 3.323  | 0.688  | 296448   | 34.85 | ng/uL# | 73       |
| 105) Methyl methanesulfonate   | 80   | 3.595  | 3.559  | 0.735  | 358998   | 39.45 | ng/uL  | 95       |
| 106) N-Nitrosodiethylamine     | 102  | 3.924  | 3.900  | 0.802  | 325038   | 37.71 | ng/uL  | 72       |
| 107) Ethyl methanesulfonate    | 79   | 4.163  | 4.146  | 0.851  | 421948   | 32.88 | ng/uL  | 91       |
| 108) Benzaldehyde              | 77   | 4.493  | 4.485  | 0.918  | 491997   | 36.20 | ng/uL  | 90       |
| 109) Pentachloroethane         | 167  | 4.635  | 4.631  | 0.947  | 299348   | 42.84 | ng/uL  | 99       |
| 110) N-Nitrosopyrrolidine      | 100  | 5.263  | 5.276  | 1.075  | 347412   | 42.36 | ng/uL# | 68       |
| 111) Acetophenone              | 105  | 5.277  | 5.290  | 1.078  | 892717   | 39.31 | ng/uL  | 93       |
| 112) N-Nitrosomorpholine       | 56   | 5.297  | 5.308  | 1.082  | 428505   | 28.30 | ng/uL  | 79       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2606.D  
Acq On : 26 Aug 2011 10:06  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110809-18.3|CCV|1|SVM|1|ACCV  
Misc : |MIX[B]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 26 11:04:38 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

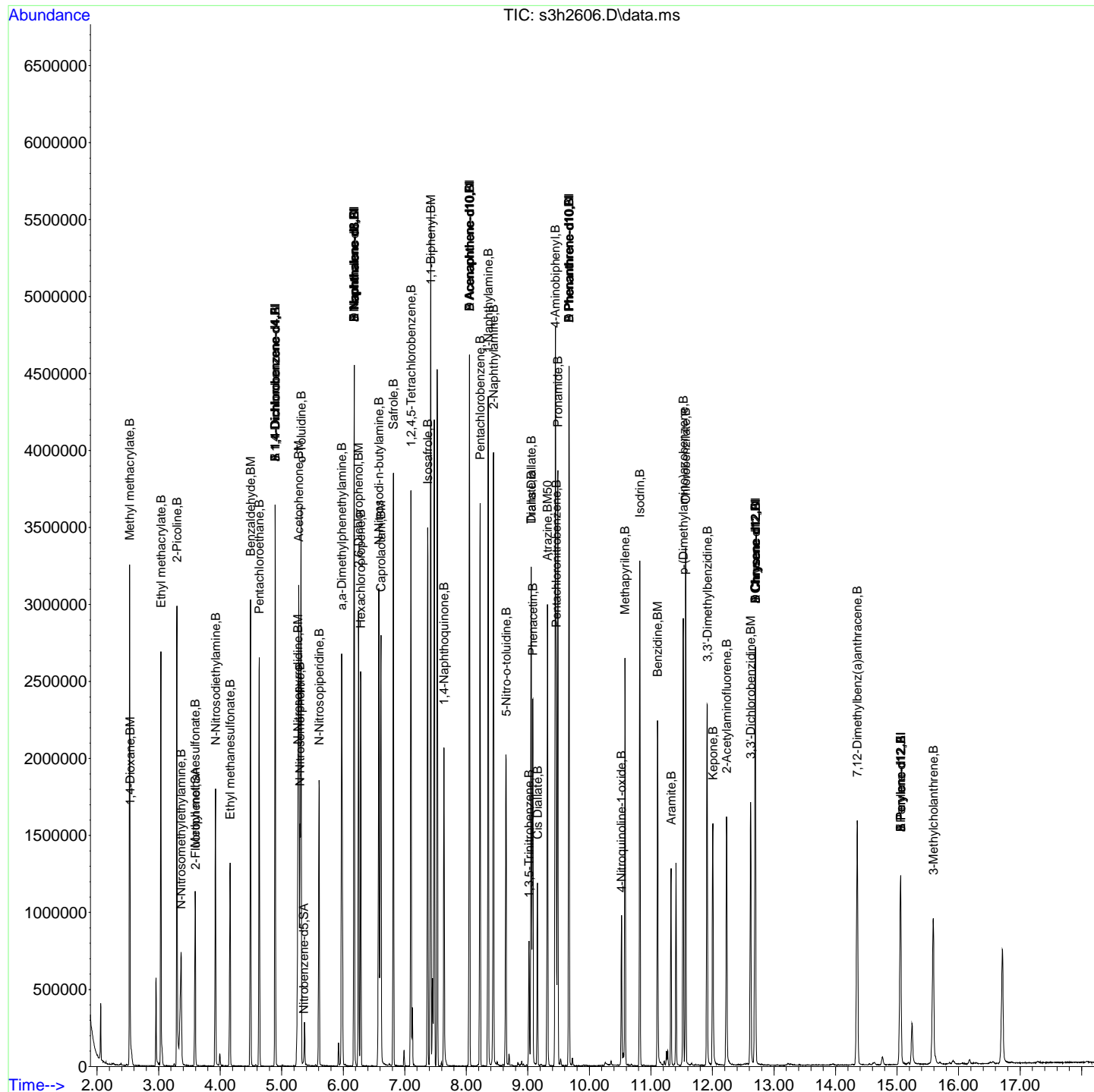
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |     |
|--------------------------------|------|--------|--------|--------|----------|-------|--------|-----|
| 113) o-Toluidine               | 106  | 5.314  | 5.328  | 1.086  | 982614   | 38.45 | ng/uL  | 99  |
| 115) N-Nitrosopiperidine       | 114  | 5.609  | 5.600  | 0.908  | 330939   | 39.46 | ng/uL# | 61  |
| 116) a,a-Dimethylphenethyla... | 58   | 5.976  | 5.991  | 0.967  | 1848482  | 29.01 | ng/uL  | 92  |
| 117) 2,6-Dichlorophenol        | 162  | 6.249  | 6.253  | 1.011  | 544271   | 45.24 | ng/uL  | 100 |
| 118) Hexachloropropene         | 213  | 6.283  | 6.291  | 1.017  | 401836   | 50.79 | ng/uL  | 99  |
| 119) Caprolactam               | 113  | 6.612  | 6.616  | 1.070  | 204802   | 41.39 | ng/uL# | 54  |
| 120) N-Nitrosodi-n-butylamine  | 84   | 6.578  | 6.592  | 1.065  | 476211   | 34.80 | ng/uL# | 77  |
| 121) Safrole                   | 162  | 6.814  | 6.833  | 1.103  | 512166   | 40.29 | ng/uL  | 99  |
| 123) 1,2,4,5-Tetrachloroben... | 216  | 7.101  | 7.090  | 0.882  | 616855   | 42.33 | ng/uL  | 100 |
| 124) 1,1-Biphenyl              | 154  | 7.422  | 7.417  | 0.922  | 1611558  | 39.20 | ng/uL  | 98  |
| 125) Isosafrole                | 162  | 7.371  | 7.368  | 0.916  | 572639   | 41.89 | ng/uL  | 97  |
| 126) 1,4-Naphthoquinone        | 158  | 7.638  | 7.635  | 0.949  | 385079   | 39.78 | ng/uL  | 99  |
| 127) Pentachlorobenzene        | 250  | 8.223  | 8.230  | 1.022  | 547766   | 44.86 | ng/uL  | 97  |
| 128) 1-Naphthylamine           | 143  | 8.357  | 8.365  | 1.038  | 1226613  | 44.42 | ng/uL  | 99  |
| 129) 2-Naphthylamine           | 143  | 8.442  | 8.452  | 1.049  | 1350380  | 46.76 | ng/uL  | 99  |
| 130) 5-Nitro-o-toluidine       | 152  | 8.647  | 8.657  | 1.074  | 356583   | 45.30 | ng/uL  | 94  |
| 132) 1,3,5-Trinitrobenzene     | 75   | 9.019  | 9.010  | 0.933  | 210147   | 33.70 | ng/uL  | 93  |
| 133) Phenacetin                | 108  | 9.081  | 9.076  | 0.939  | 530837   | 36.54 | ng/uL  | 94  |
| 134) Diallate                  | 86   | 9.053  | 9.053  | 0.936  | 456545   | 29.50 | ng/uL  | 88  |
| 135) Cis Diallate              | 86   | 9.155  | 9.155  | 0.947  | 164768   | 7.90  | ng/uL  | 87  |
| 136) Trans Diallate            | 86   | 9.053  | 9.053  | 0.936  | 456545   | 25.08 | ng/uL  | 88  |
| 137) Atrazine                  | 173  | 9.320  | 9.321  | 0.964  | 91957    | 42.92 | ng/uL  | 95  |
| 138) 4-Aminobiphenyl           | 169  | 9.445  | 9.446  | 0.977  | 1367468  | 45.06 | ng/uL  | 100 |
| 139) Pentachloronitrobenzene   | 237  | 9.459  | 9.457  | 0.978  | 159943   | 40.54 | ng/uL  | 95  |
| 140) Pronamide                 | 173  | 9.488  | 9.491  | 0.981  | 605923   | 40.13 | ng/uL  | 100 |
| 141) 4-Nitroquinoline-1-oxide  | 101  | 10.519 | 10.535 | 1.088  | 32449    | 40.76 | ng/uL  | 89  |
| 142) Methapyrilene             | 58   | 10.579 | 10.601 | 1.094  | 701001   | 24.38 | ng/uL  | 77  |
| 143) Isodrin                   | 193  | 10.820 | 10.840 | 1.119  | 218363   | 35.55 | ng/uL  | 98  |
| 144) Benzidine                 | 184  | 11.107 | 11.134 | 1.149  | 858760   | 67.90 | ng/uL  | 98  |
| 146) Aramite                   | 185  | 11.326 | 11.326 | 0.892  | 92904    | 32.44 | ng/uL  | 99  |
| 147) Kepone                    | 272  | 12.005 | 12.025 | 0.946  | 166308   | 48.66 | ng/uL  | 98  |
| 148) p-(Dimethylamino)azobe... | 120  | 11.525 | 11.557 | 0.908  | 476024   | 32.31 | ng/uL  | 90  |
| 149) Chlorobenzilate           | 251  | 11.565 | 11.601 | 0.911  | 504738   | 35.72 | ng/uL  | 97  |
| 150) 3,3'-Dimethylbenzidine    | 212  | 11.914 | 11.938 | 0.938  | 883792   | 51.73 | ng/uL  | 100 |
| 151) 2-Acetylaminofluorene     | 181  | 12.230 | 12.249 | 0.963  | 416708   | 52.95 | ng/uL  | 99  |
| 152) 3,3'-Dichlorobenzidine    | 252  | 12.619 | 12.632 | 0.994  | 420426   | 48.80 | ng/uL  | 99  |
| 154) 7,12-Dimethylbenz(a)an... | 256  | 14.352 | 14.372 | 0.953  | 494472   | 37.43 | ng/uL  | 100 |
| 155) 3-Methylcholanthrene      | 269  | 15.588 | 15.594 | 1.035  | 86926    | 43.11 | ng/uL  | 98  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2606.D  
Acq On : 26 Aug 2011 10:06  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110809-18.3|CCV|1|SVM|1|ACC  
Misc : |MIX[B]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 26 11:04:38 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE



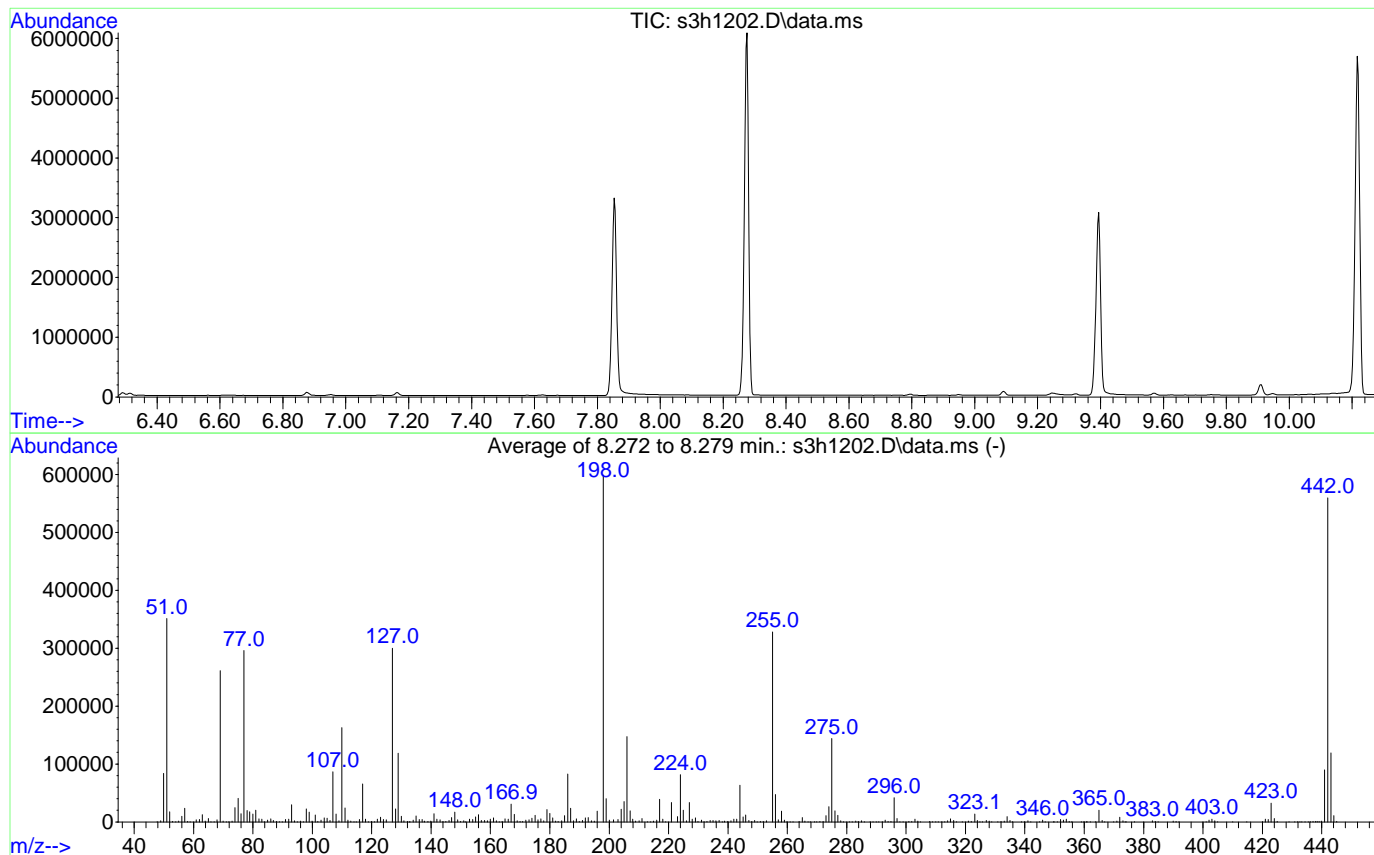
# Quality Control Data

DFTPP Tune Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1202.D  
Acq On : 12 Aug 2011 08:54  
Operator : JLD1  
Sample : |WBN110724-01|DFTPP|1|SVM|1|DFTPP|  
Misc : |WBN11724-01|  
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\DATA\s081211.B\BNABrk\_Down8270D.m  
Title : dftpp / endrin / ddt SubList :  
Last Update : Tue Jun 08 08:47:00 2010



AutoFind: Scans 789, 790, 791; Background Corrected with Scan 778

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 51          | 198          | 10           | 80           | 58.6      | 351128  | PASS             |
| 68          | 69           | 0.00         | 2            | 1.4       | 3653    | PASS             |
| 69          | 198          | 0.00         | 100          | 43.6      | 261124  | PASS             |
| 70          | 69           | 0.00         | 2            | 0.5       | 1377    | PASS             |
| 127         | 198          | 10           | 80           | 50.1      | 300032  | PASS             |
| 197         | 198          | 0.00         | 2            | 0.0       | 0       | PASS             |
| 198         | 198          | 50           | 100          | 100.0     | 599104  | PASS             |
| 199         | 198          | 5            | 9            | 6.7       | 39915   | PASS             |
| 275         | 198          | 10           | 60           | 24.0      | 143896  | PASS             |
| 365         | 198          | 1            | 100          | 3.4       | 20347   | PASS             |
| 441         | 442          | 0.01         | 24           | 16.1      | 89944   | PASS             |
| 442         | 198          | 50           | 100          | 93.5      | 559915  | PASS             |
| 443         | 442          | 15           | 24           | 21.2      | 118925  | PASS             |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1202.D  
Acq On : 12 Aug 2011 08:54  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110724-01|DFTPP|1|SVM|1|DFTPP|  
Misc : |WBN11724-01|  
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Aug 12 15:50:45 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\BNABrk\_Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Jun 08 08:47:00 2010  
Response via : Initial Calibration  
Integrator: RTE

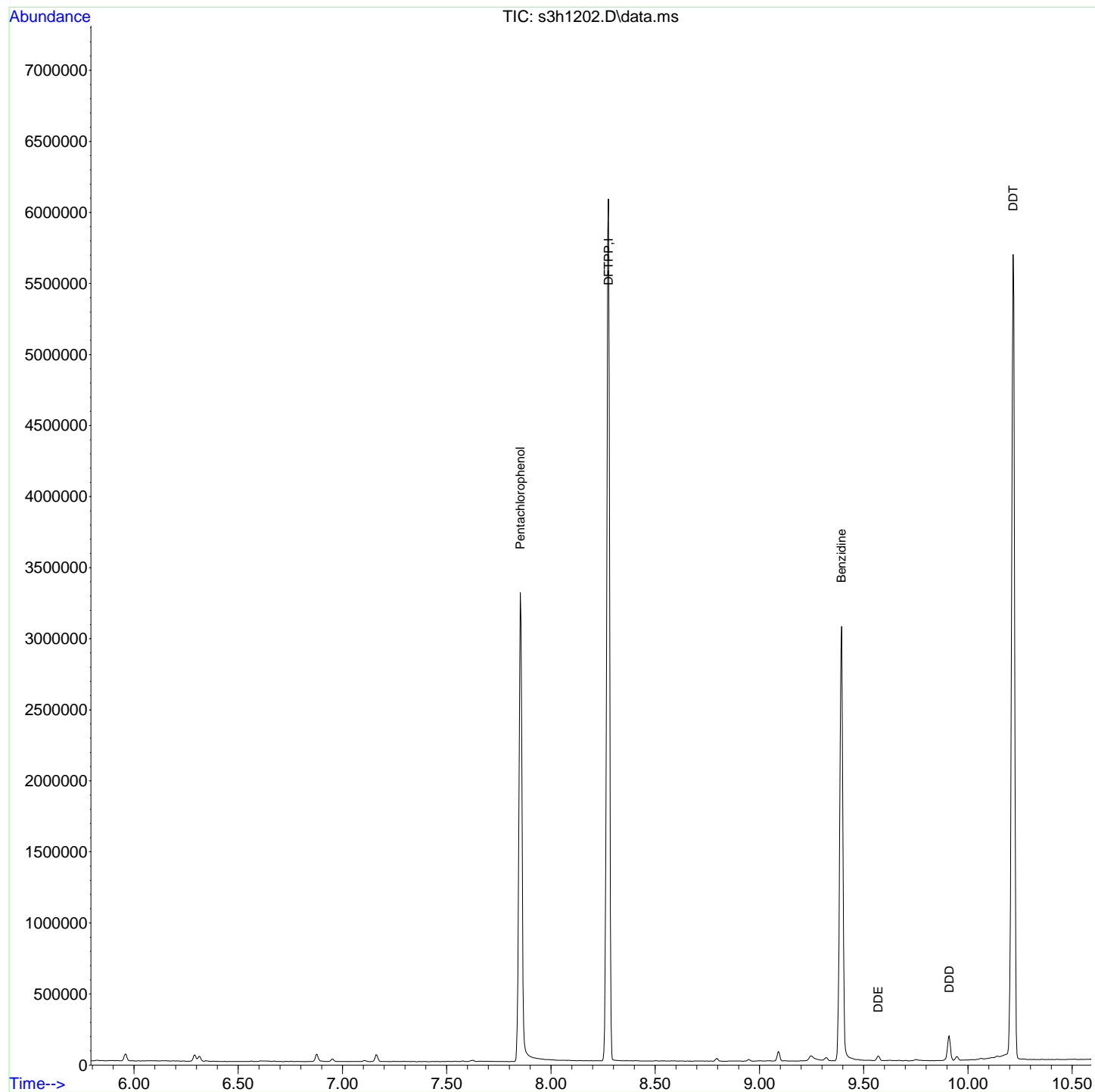
| Compound             | QIon | R.T.   | Exp RT | Rel RT | Response | Conc     | Units |          |
|----------------------|------|--------|--------|--------|----------|----------|-------|----------|
| -----                |      |        |        |        |          |          |       |          |
| Internal Standards   |      |        |        |        |          |          |       | Dev(Min) |
| 1) DFTPP             | TIC  | 8.276  | 8.276  | 1.000  | 5759585  | 5.00     | ug/l  | # 0.00   |
| Target Compounds     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc     | Units | QValue   |
| 2) DFTPP             | TIC  | 8.276  | 8.276  | 1.000  | 5759585  | No Calib |       | #        |
| 3) Pentachlorophenol | 266  | 7.853  | 7.853  | 0.949  | 371323   | 3.20     | ug/l  | 100      |
| 4) Benzidine         | 184  | 9.394  | 9.394  | 1.135  | 1301278  | 6.61     | ug/l  | 100      |
| 5) DDE               | 246  | 9.570  | 9.570  | 1.156  | 3245     | 1.13     | ug/l  | 97       |
| 6) DDD               | 235  | 9.910  | 9.910  | 1.198  | 31956    | 2.98     | ug/l  | 98       |
| 7) DDT               | 235  | 10.216 | 10.216 | 1.234  | 1079434  | 3.73     | ug/l  | 99       |
| -----                |      |        |        |        |          |          |       |          |

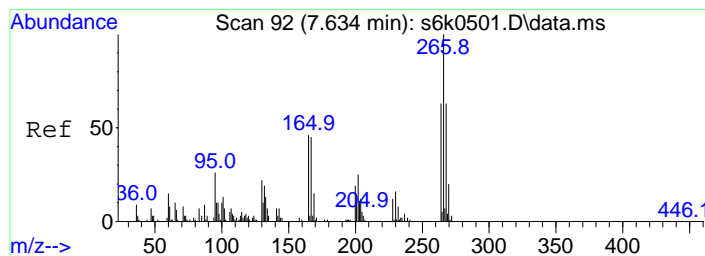
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1202.D  
Acq On : 12 Aug 2011 08:54  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110724-01|DFTPP|1|SVM|1|DFTPP|  
Misc : |WBN11724-01|  
ALS Vial : 1 Sample Multiplier: 1

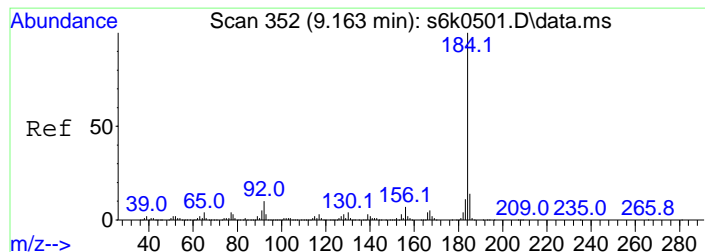
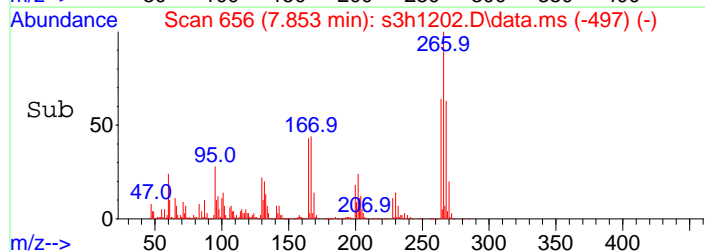
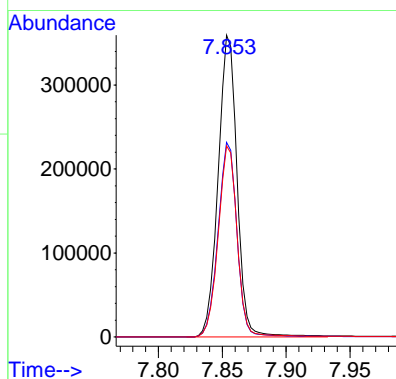
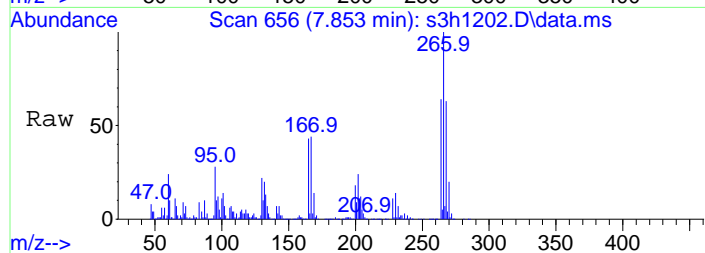
Quant Time: Aug 12 15:50:45 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\BNABrk\_Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Jun 08 08:47:00 2010  
Response via : Initial Calibration  
Integrator: RTE





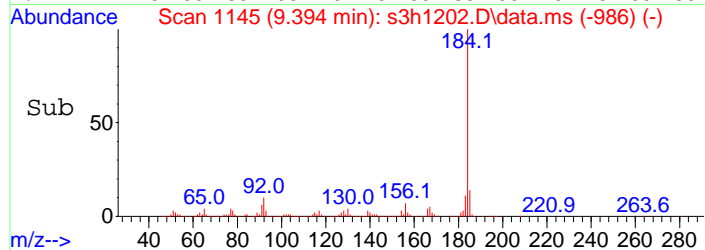
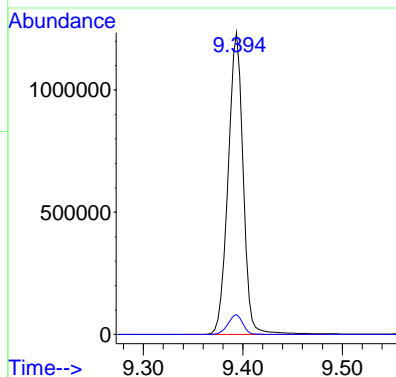
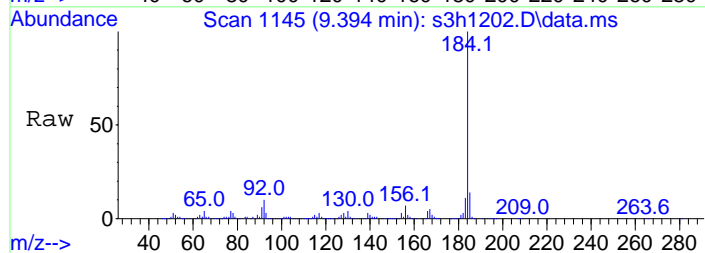
#3  
 Pentachlorophenol  
 Concen: 3.20 ug/l  
 RT: 7.853 min Scan# 656  
 Delta R.T. 0.000 min  
 Lab File: s3h1202.D  
 Acq: 12 Aug 2011 08:54

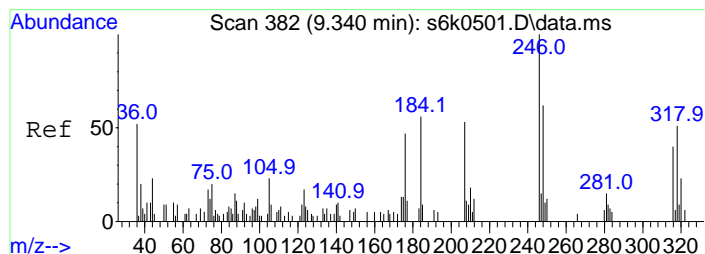
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 266     | 100   |       |       |
| 264     | 64.2  | 0.0   | 164.5 |
| 268     | 63.3  | 0.0   | 163.3 |



#4  
 Benzidine  
 Concen: 6.61 ug/l  
 RT: 9.394 min Scan# 1145  
 Delta R.T. 0.000 min  
 Lab File: s3h1202.D  
 Acq: 12 Aug 2011 08:54

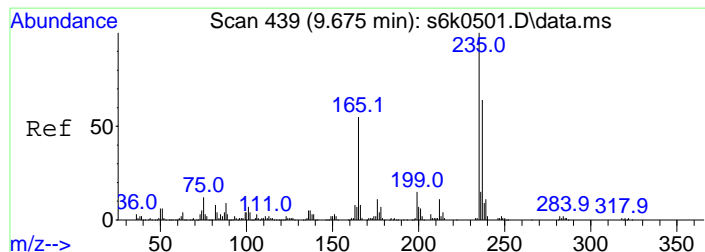
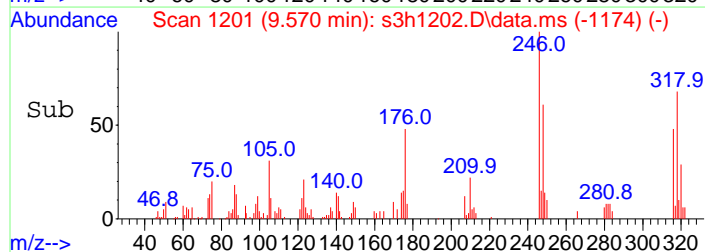
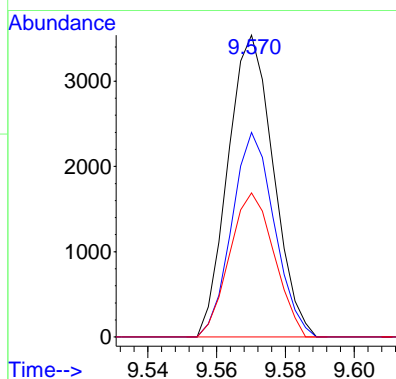
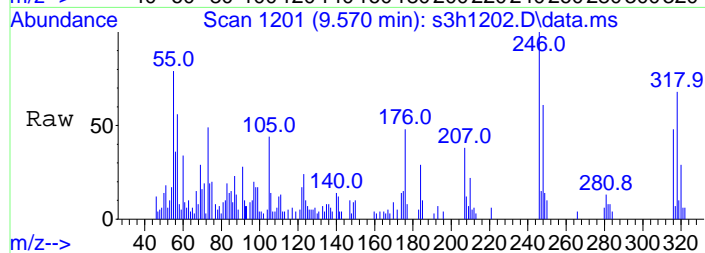
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 184     | 100   |       |       |
| 156     | 6.5   | 0.0   | 106.6 |





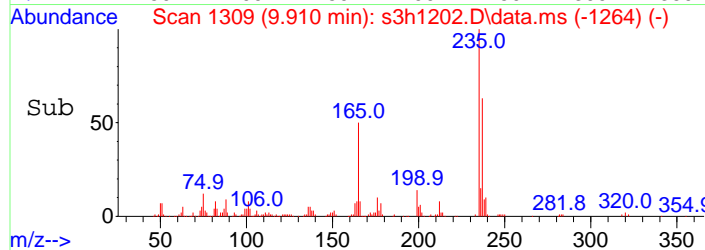
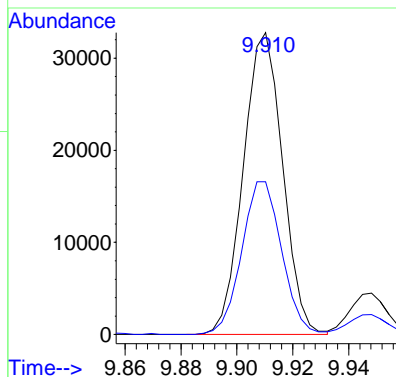
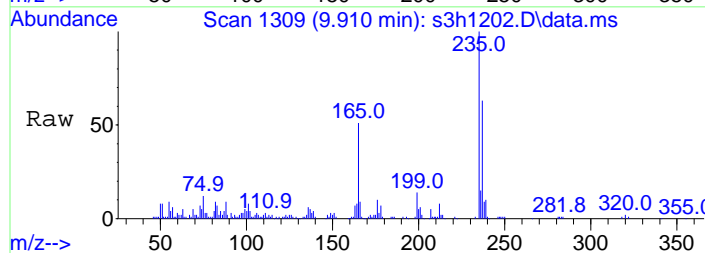
#5  
DDE  
Concen: 1.13 ug/l  
RT: 9.570 min Scan# 1201  
Delta R.T. 0.000 min  
Lab File: s3h1202.D  
Acq: 12 Aug 2011 08:54

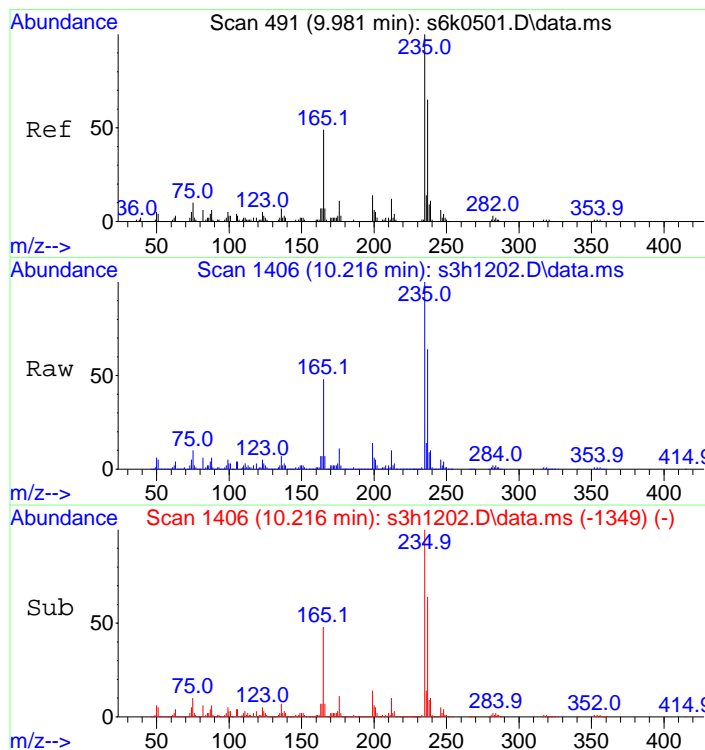
| Tgt Ion | Ratio | Resp | Lower | Upper |
|---------|-------|------|-------|-------|
| 246     | 100   | 3245 |       |       |
| 318     | 63.6  | 0.0  | 167.7 |       |
| 316     | 46.9  | 0.0  | 147.7 |       |



#6  
DDD  
Concen: 2.98 ug/l  
RT: 9.910 min Scan# 1309  
Delta R.T. 0.000 min  
Lab File: s3h1202.D  
Acq: 12 Aug 2011 08:54

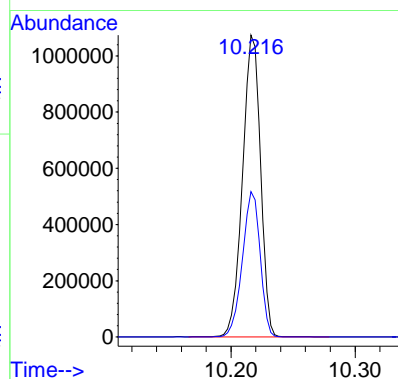
| Tgt Ion | Ratio | Resp  | Lower | Upper |
|---------|-------|-------|-------|-------|
| 235     | 100   | 31956 |       |       |
| 165     | 51.7  | 0.0   | 150.6 |       |





#7  
DDT  
Concen: 3.73 ug/l  
RT: 10.216 min Scan# 1406  
Delta R.T. 0.000 min  
Lab File: s3h1202.D  
Acq: 12 Aug 2011 08:54

Tgt Ion: 235 Resp: 1079434  
Ion Ratio Lower Upper  
235 100  
165 47.5 0.0 148.1



## 8270 Breakdown Report

|           |   |          |         |
|-----------|---|----------|---------|
| Data File | : C:\msdchem\1\DATA\s081211.B\s3h1202.D | Vial     | : 1     |
| Acq On    | : 12 Aug 2011 08:54                     | Operator | : JLD1  |
| Sample    | :  WBN110724-01 DFTPP 1 SVM 1 DFTPP     | Inst     | : MSD 3 |
| Misc      | :  WBN11724-01                          | Multiplr | : 1.00  |
| IntFile   | : rteint.p                              |          |         |

| Compounds | Area/%Breakdown | 8270C     | 8270D     |
|-----------|-----------------|-----------|-----------|
| DDE       | 3245            |           |           |
| DDD       | 31956           |           |           |
| DDT       | 1079434         |           |           |
| Breakdown | 3.16%           | Pass(<20) | Pass(<20) |

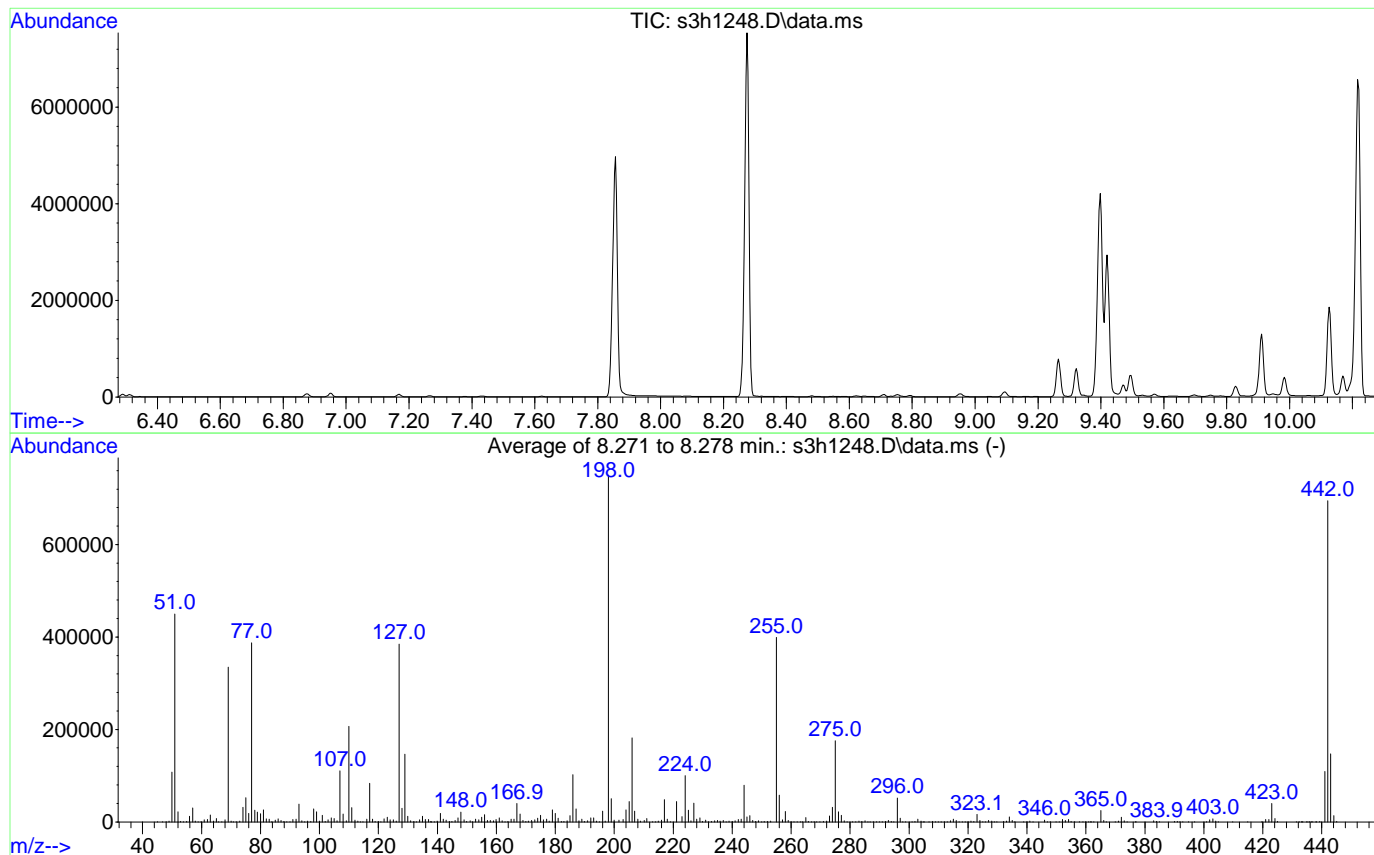
| Compounds         | Tailing Factor | 8270C    | 8270D    |
|-------------------|----------------|----------|----------|
| Benzidine         | 0.80           | Pass(<3) | Pass(<2) |
| Pentachlorophenol | 1.02           | Pass(<5) | Pass(<2) |

DFTPP Tune Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
File : s3h1248.D  
Acq On : 13 Aug 2011 05:04  
Operator : JLD1  
Sample : |WBN110724-01|DFTPP|1|SVM|1|DFTPP|  
Misc : |WBN11724-01|  
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\DATA\s081211.B\BNABrk\_Down8270D.m  
Title : dftpp / endrin / ddt SubList :  
Last Update : Tue Jun 08 08:47:00 2010



AutoFind: Scans 790, 791, 792; Background Corrected with Scan 779

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 51          | 198          | 10           | 80           | 59.9      | 449814  | PASS             |
| 68          | 69           | 0.00         | 2            | 1.4       | 4556    | PASS             |
| 69          | 198          | 0.00         | 100          | 44.6      | 334528  | PASS             |
| 70          | 69           | 0.00         | 2            | 0.5       | 1615    | PASS             |
| 127         | 198          | 10           | 80           | 51.3      | 384789  | PASS             |
| 197         | 198          | 0.00         | 2            | 0.2       | 1611    | PASS             |
| 198         | 198          | 50           | 100          | 100.0     | 750336  | PASS             |
| 199         | 198          | 5            | 9            | 6.7       | 50192   | PASS             |
| 275         | 198          | 10           | 60           | 23.4      | 175296  | PASS             |
| 365         | 198          | 1            | 100          | 3.3       | 24549   | PASS             |
| 441         | 442          | 0.01         | 24           | 15.7      | 108779  | PASS             |
| 442         | 198          | 50           | 100          | 92.6      | 694699  | PASS             |
| 443         | 442          | 15           | 24           | 21.2      | 147136  | PASS             |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1248.D  
Acq On : 13 Aug 2011 05:04  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110724-01|DFTPP|1|SVM|1|DFTPP|  
Misc : |WBN11724-01|  
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Aug 14 15:48:15 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\BNABrk\_Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Jun 08 08:47:00 2010  
Response via : Initial Calibration  
Integrator: RTE

| Compound             | QIon | R.T.   | Exp RT | Rel RT | Response | Conc     | Units |          |
|----------------------|------|--------|--------|--------|----------|----------|-------|----------|
| -----                |      |        |        |        |          |          |       |          |
| Internal Standards   |      |        |        |        |          |          |       | Dev(Min) |
| 1) DFTPP             | TIC  | 8.275  | 8.276  | 1.000  | 7293486  | 5.00     | ug/l  | # 0.00   |
| Target Compounds     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc     | Units | QValue   |
| 2) DFTPP             | TIC  | 8.275  | 8.276  | 1.000  | 7293486  | No Calib |       | #        |
| 3) Pentachlorophenol | 266  | 7.856  | 7.853  | 0.949  | 596225   | 4.06     | ug/l  | 99       |
| 4) Benzidine         | 184  | 9.397  | 9.394  | 1.136  | 1940222  | 7.78     | ug/l  | 100      |
| 5) DDE               | 246  | 9.571  | 9.570  | 1.157  | 4514     | 1.24     | ug/l  | 93       |
| 6) DDD               | 235  | 9.911  | 9.910  | 1.198  | 219850   | 16.21    | ug/l  | 96       |
| 7) DDT               | 235  | 10.216 | 10.216 | 1.235  | 1272992  | 3.47     | ug/l  | 99       |
| -----                |      |        |        |        |          |          |       |          |

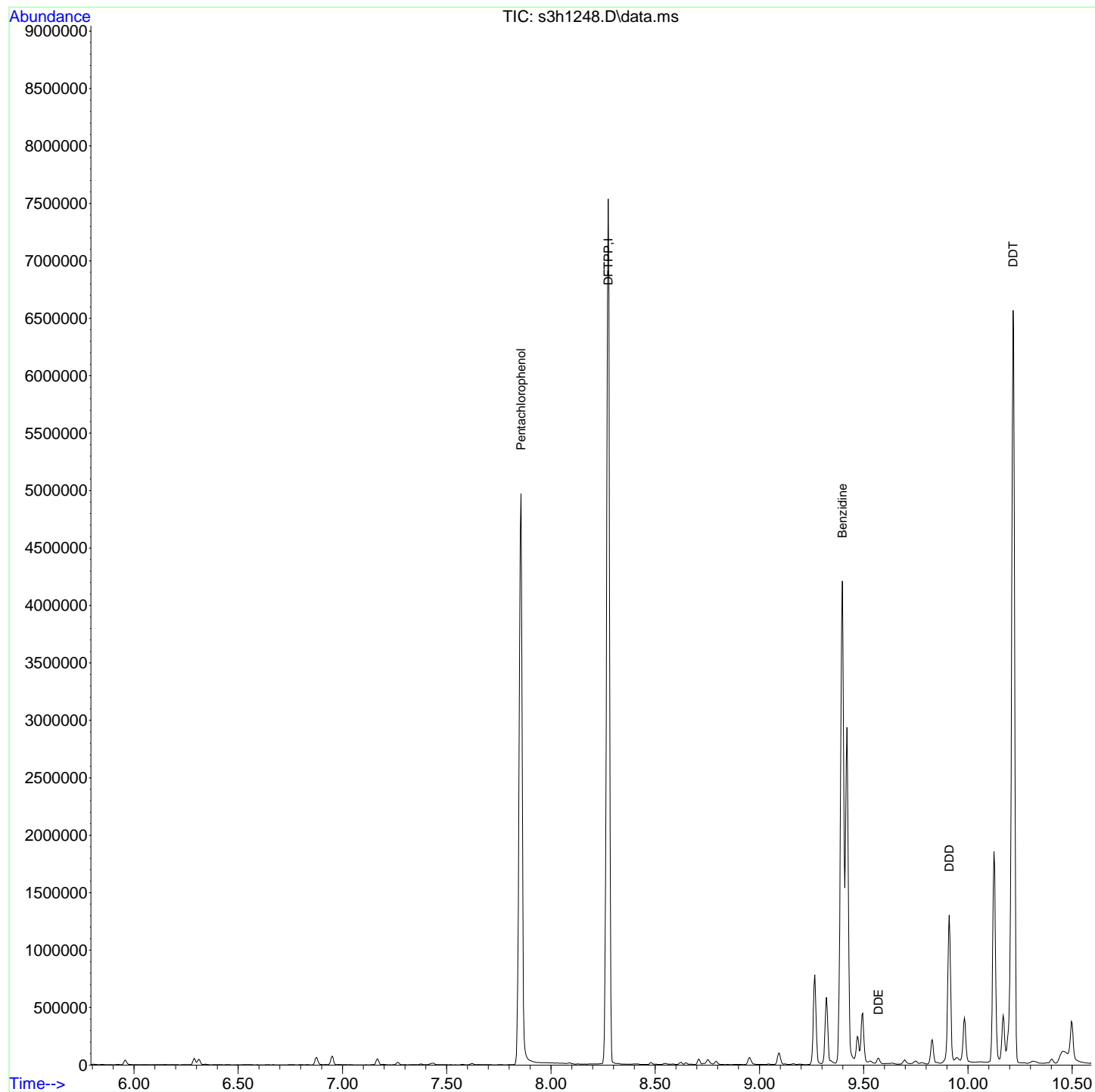
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

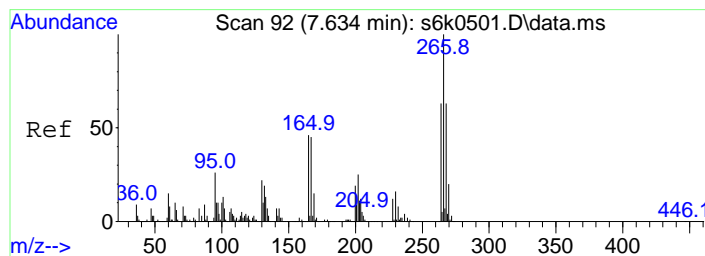


Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s081211.B\  
Data File : s3h1248.D  
Acq On : 13 Aug 2011 05:04  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110724-01|DFTPP|1|SVM|1|DFTPP|  
Misc : |WBN11724-01|  
ALS Vial : 1 Sample Multiplier: 1

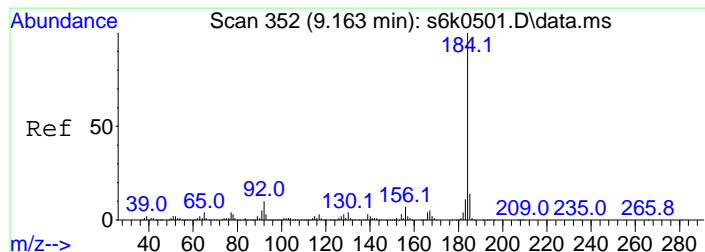
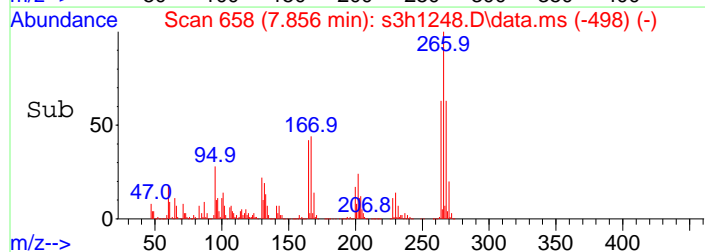
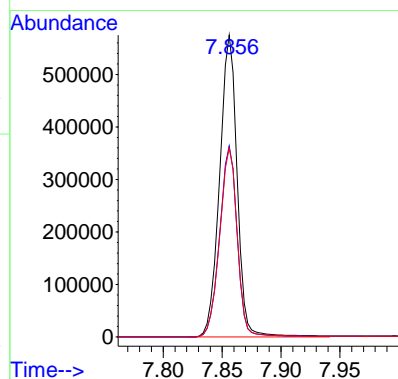
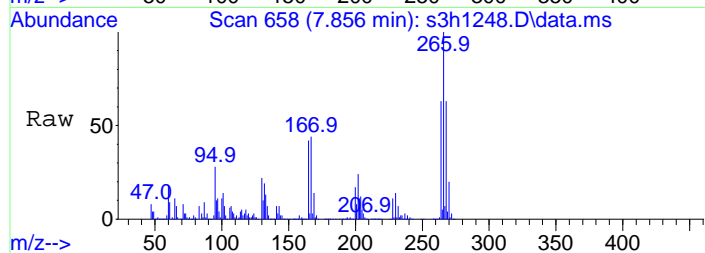
Quant Time: Aug 14 15:48:15 2011  
Quant Method : C:\msdchem\1\DATA\s081211.B\BNABrk\_Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Jun 08 08:47:00 2010  
Response via : Initial Calibration  
Integrator: RTE





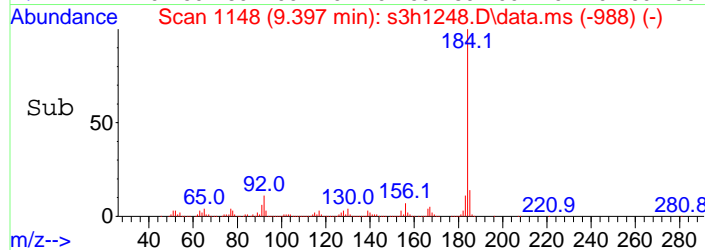
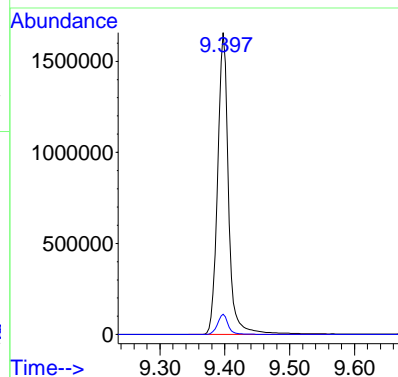
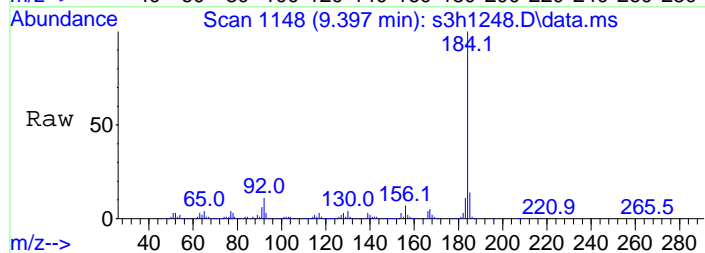
#3  
 Pentachlorophenol  
 Concen: 4.06 ug/l  
 RT: 7.856 min Scan# 658  
 Delta R.T. 0.003 min  
 Lab File: s3h1248.D  
 Acq: 13 Aug 2011 05:04

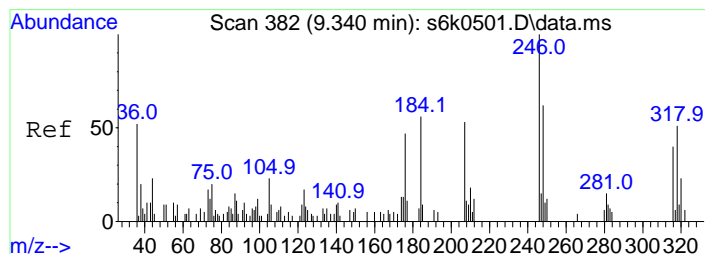
| Tgt Ion | Ratio | Resp   | Lower | Upper |
|---------|-------|--------|-------|-------|
| 266     | 100   | 596225 |       |       |
| 264     | 63.5  |        | 0.0   | 164.5 |
| 268     | 62.9  |        | 0.0   | 163.3 |



#4  
 Benzidine  
 Concen: 7.78 ug/l  
 RT: 9.397 min Scan# 1148  
 Delta R.T. 0.004 min  
 Lab File: s3h1248.D  
 Acq: 13 Aug 2011 05:04

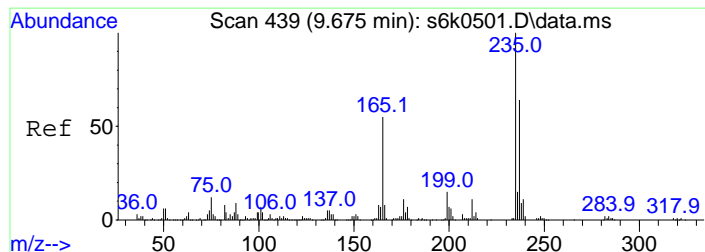
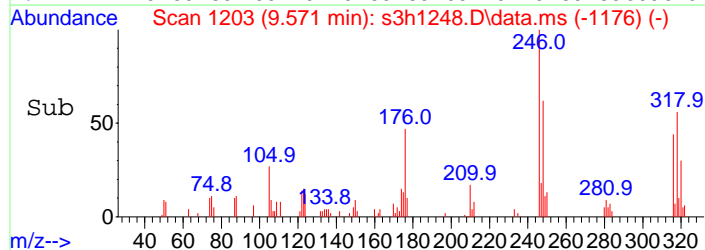
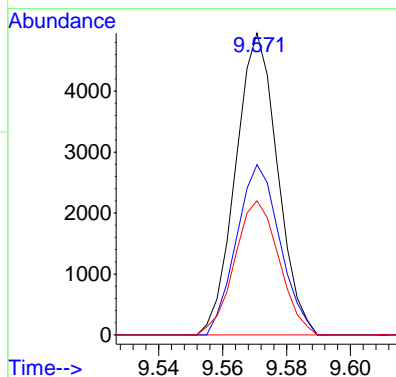
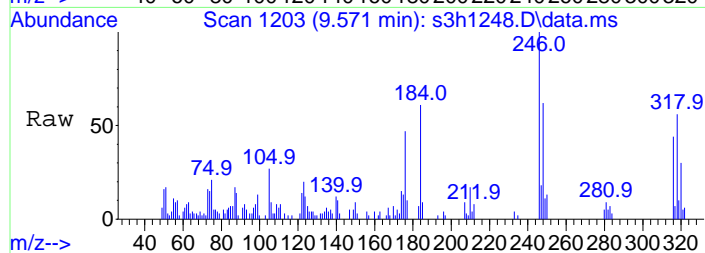
| Tgt Ion | Ratio | Resp    | Lower | Upper |
|---------|-------|---------|-------|-------|
| 184     | 100   | 1940222 |       |       |
| 156     | 6.6   |         | 0.0   | 106.6 |





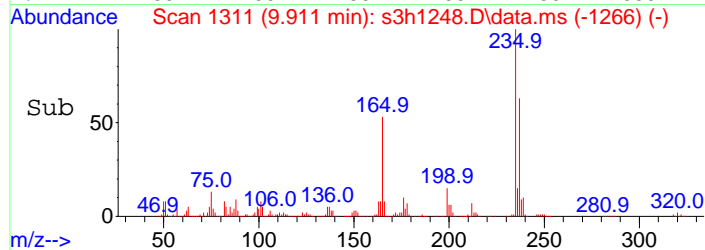
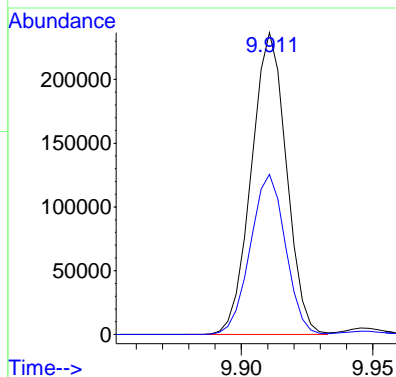
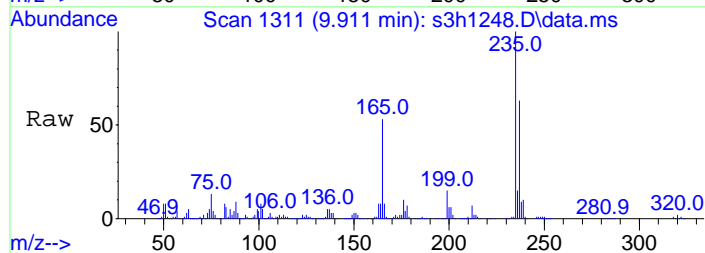
#5  
DDE  
Concen: 1.24 ug/l  
RT: 9.571 min Scan# 1203  
Delta R.T. 0.001 min  
Lab File: s3h1248.D  
Acq: 13 Aug 2011 05:04

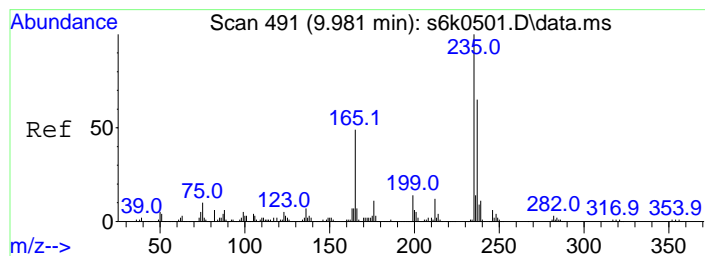
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 246     | 100   |       |       |
| 318     | 58.5  | 0.0   | 167.7 |
| 316     | 47.0  | 0.0   | 147.7 |



#6  
DDD  
Concen: 16.21 ug/l  
RT: 9.911 min Scan# 1311  
Delta R.T. 0.000 min  
Lab File: s3h1248.D  
Acq: 13 Aug 2011 05:04

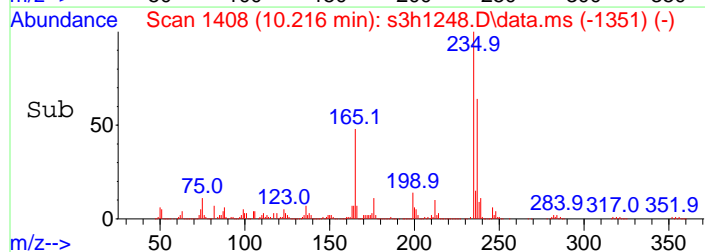
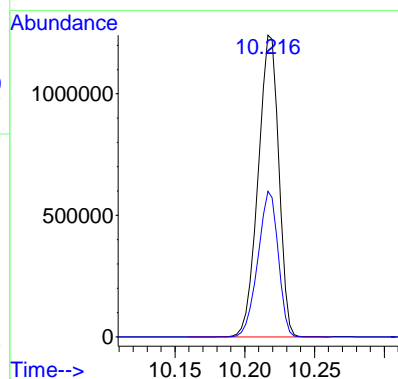
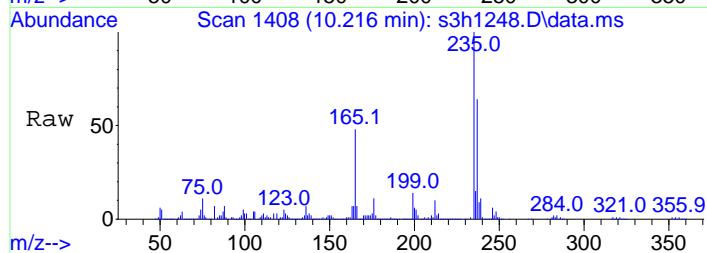
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 235     | 100   |       |       |
| 165     | 53.2  | 0.0   | 150.6 |





#7  
DDT  
Concen: 3.47 ug/l  
RT: 10.216 min Scan# 1408  
Delta R.T. 0.000 min  
Lab File: s3h1248.D  
Acq: 13 Aug 2011 05:04

Tgt Ion: 235 Resp: 1272992  
Ion Ratio Lower Upper  
235 100  
165 47.5 0.0 148.1



## 8270 Breakdown Report

|           |   |          |         |
|-----------|---|----------|---------|
| Data File | : C:\msdchem\1\DATA\s081211.B\s3h1248.D | Vial     | : 1     |
| Acq On    | : 13 Aug 2011 05:04                     | Operator | : JLD1  |
| Sample    | :  WBN110724-01 DFTPP 1 SVM 1 DFTPP     | Inst     | : MSD 3 |
| Misc      | :  WBN11724-01                          | Multiplr | : 1.00  |
| IntFile   | : rteint.p                              |          |         |

| Compounds | Area/%Breakdown | 8270C     | 8270D     |
|-----------|-----------------|-----------|-----------|
| DDE       | 4514            |           |           |
| DDD       | 219850          |           |           |
| DDT       | 1272992         |           |           |
| Breakdown | 14.98%          | Pass(<20) | Pass(<20) |

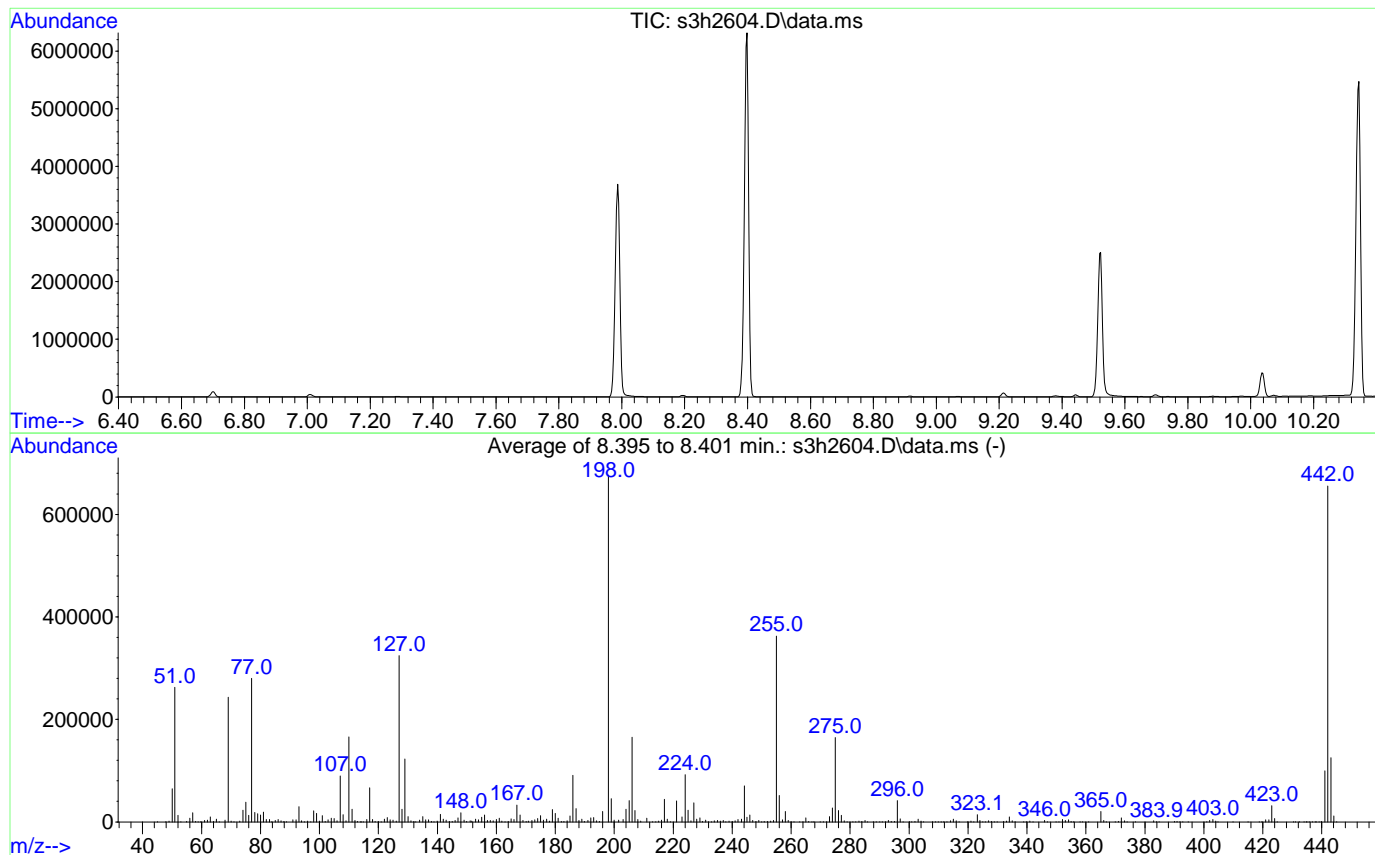
| Compounds         | Tailing Factor | 8270C    | 8270D    |
|-------------------|----------------|----------|----------|
| Benzidine         | 0.94           | Pass(<3) | Pass(<2) |
| Pentachlorophenol | 0.80           | Pass(<5) | Pass(<2) |

DFTPP Tune Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2604.D  
Acq On : 26 Aug 2011 09:22  
Operator : JLD1  
Sample : |WBN110724-01|DFTPP|1|SVM|1|DFTPP|  
Misc : |WBN11724-01|  
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\DATA\s082611.B\BNABrk\_Down8270D.m  
Title : dftpp / endrin / ddt SubList :  
Last Update : Tue Jun 08 08:47:00 2010



AutoFind: Scans 830, 831, 832; Background Corrected with Scan 819

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 51          | 198          | 10           | 80           | 38.8      | 262422  | PASS             |
| 68          | 69           | 0.00         | 2            | 1.3       | 3251    | PASS             |
| 69          | 198          | 0.00         | 100          | 35.9      | 243179  | PASS             |
| 70          | 69           | 0.00         | 2            | 0.5       | 1319    | PASS             |
| 127         | 198          | 10           | 80           | 47.9      | 324160  | PASS             |
| 197         | 198          | 0.00         | 2            | 0.0       | 0       | PASS             |
| 198         | 198          | 50           | 100          | 100.0     | 676736  | PASS             |
| 199         | 198          | 5            | 9            | 6.7       | 45024   | PASS             |
| 275         | 198          | 10           | 60           | 24.4      | 164843  | PASS             |
| 365         | 198          | 1            | 100          | 3.0       | 20379   | PASS             |
| 441         | 442          | 0.01         | 24           | 15.2      | 99824   | PASS             |
| 442         | 198          | 50           | 100          | 96.8      | 655296  | PASS             |
| 443         | 442          | 15           | 24           | 19.1      | 125333  | PASS             |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2604.D  
Acq On : 26 Aug 2011 09:22  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110724-01|DFTPP|1|SVM|1|DFTPP|  
Misc : |WBN11724-01|  
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Aug 29 12:03:29 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\BNABrk\_Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Jun 08 08:47:00 2010  
Response via : Initial Calibration  
Integrator: RTE

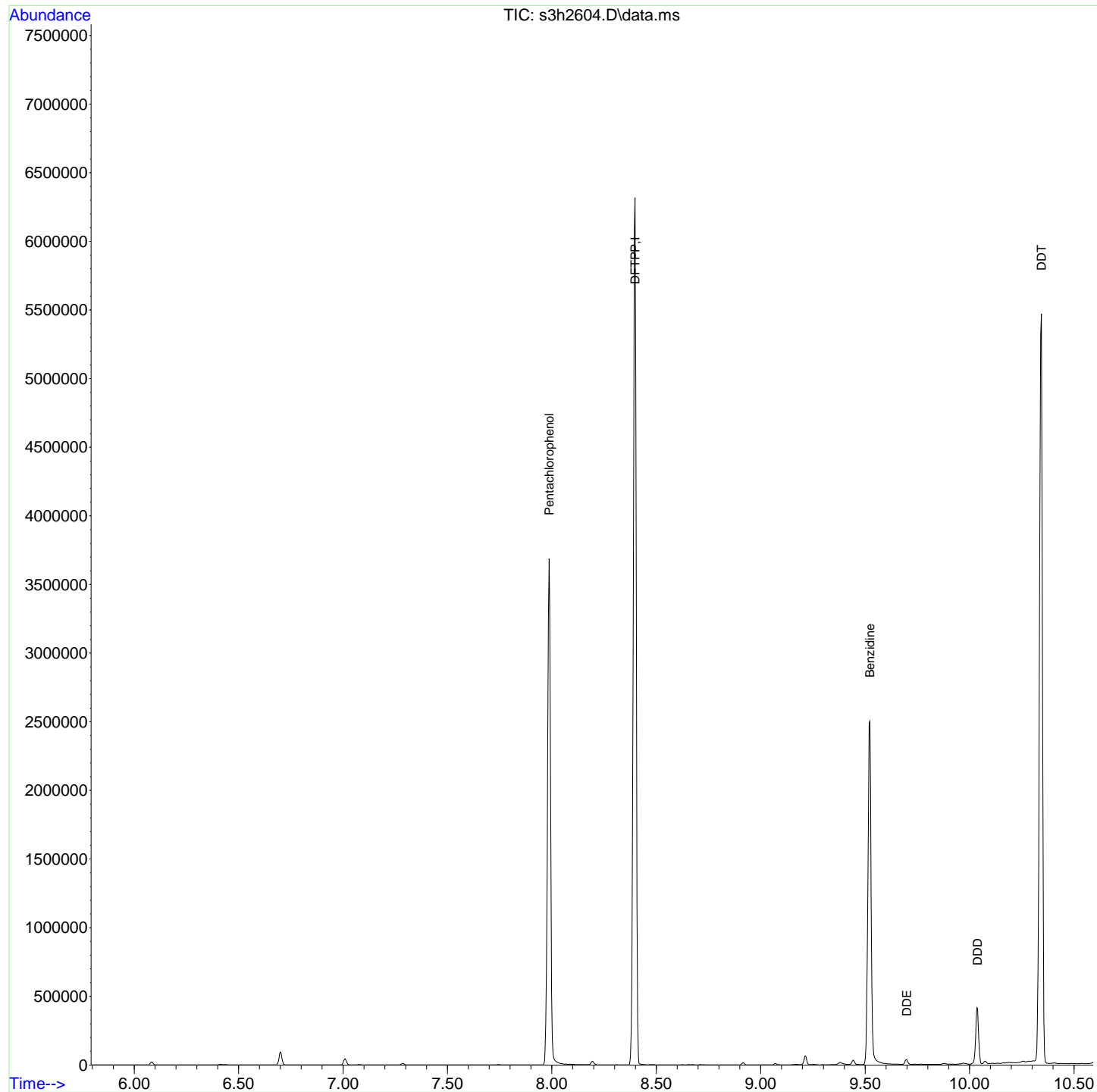
| Compound             | QIon | R.T.   | Exp RT | Rel RT | Response | Conc     | Units |          |
|----------------------|------|--------|--------|--------|----------|----------|-------|----------|
| -----                |      |        |        |        |          |          |       |          |
| Internal Standards   |      |        |        |        |          |          |       | Dev(Min) |
| 1) DFTPP             | TIC  | 8.398  | 8.398  | 1.000  | 6017375  | 5.00     | ug/l  | # 0.00   |
| Target Compounds     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc     | Units | QValue   |
| 2) DFTPP             | TIC  | 8.398  | 8.398  | 1.000  | 6017375  | No Calib |       | #        |
| 3) Pentachlorophenol | 266  | 7.986  | 7.986  | 0.951  | 445919   | 3.68     | ug/l  | 100      |
| 4) Benzidine         | 184  | 9.523  | 9.523  | 1.134  | 1152959  | 5.61     | ug/l  | 100      |
| 5) DDE               | 246  | 9.699  | 9.699  | 1.155  | 3751     | 1.25     | ug/l  | 98       |
| 6) DDD               | 235  | 10.038 | 10.038 | 1.195  | 77704    | 6.94     | ug/l  | 98       |
| 7) DDT               | 235  | 10.343 | 10.343 | 1.232  | 1067694  | 3.53     | ug/l  | 100      |
| -----                |      |        |        |        |          |          |       |          |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

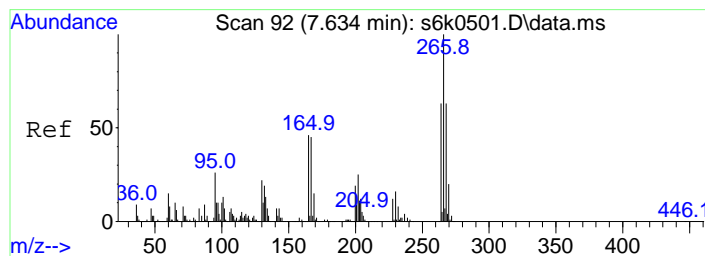
Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2604.D  
Acq On : 26 Aug 2011 09:22  
Operator : JLD1  
InstName : MSD 3  
Sample : |WBN110724-01|DFTPP|1|SVM|1|DFTPP|  
Misc : |WBN11724-01|  
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Aug 29 12:03:29 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\BNABrk\_Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Jun 08 08:47:00 2010  
Response via : Initial Calibration  
Integrator: RTE

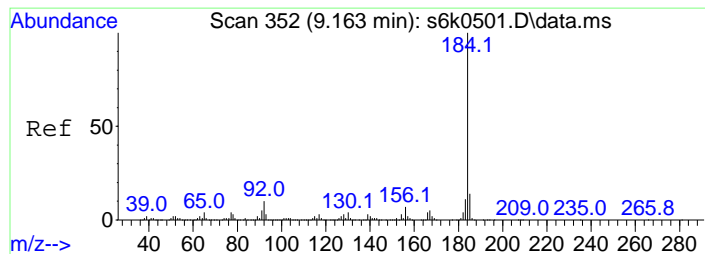
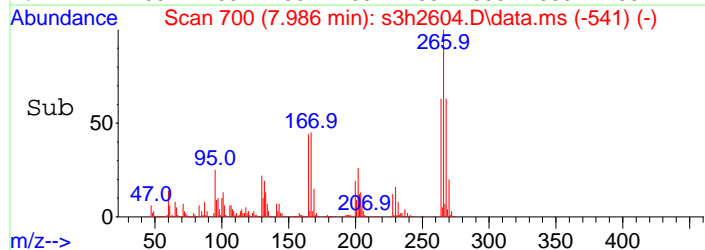
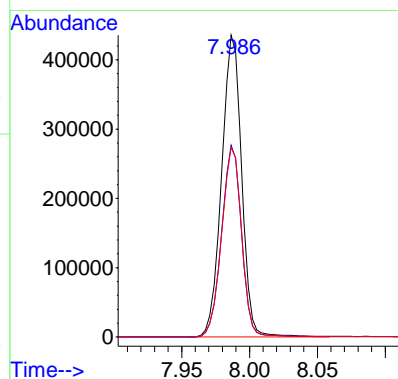
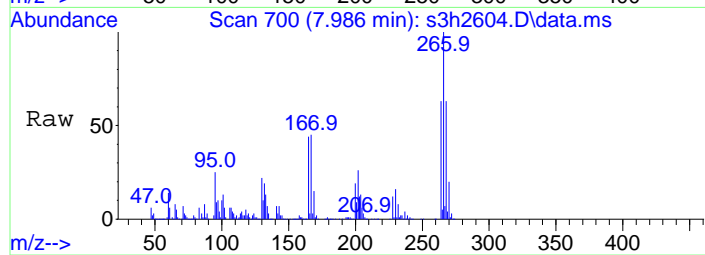






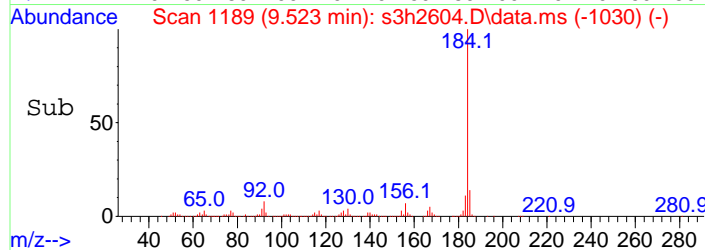
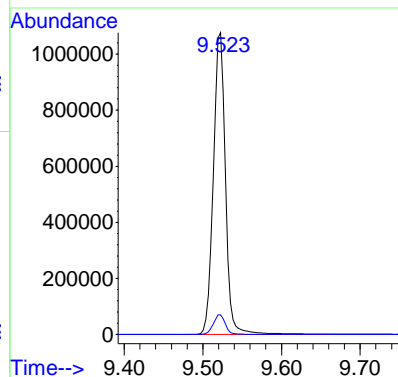
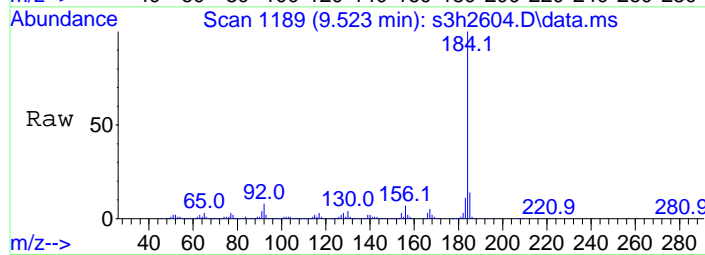
#3  
 Pentachlorophenol  
 Concen: 3.68 ug/l  
 RT: 7.986 min Scan# 700  
 Delta R.T. 0.000 min  
 Lab File: s3h2604.D  
 Acq: 26 Aug 2011 09:22

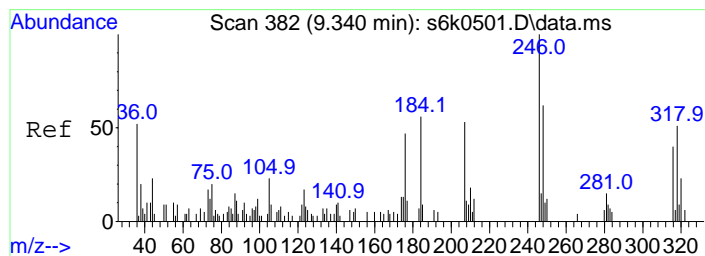
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 266     | 100   |       |       |
| 264     | 63.1  | 0.0   | 163.5 |
| 268     | 63.1  | 0.0   | 162.7 |



#4  
 Benzidine  
 Concen: 5.61 ug/l  
 RT: 9.523 min Scan# 1189  
 Delta R.T. 0.000 min  
 Lab File: s3h2604.D  
 Acq: 26 Aug 2011 09:22

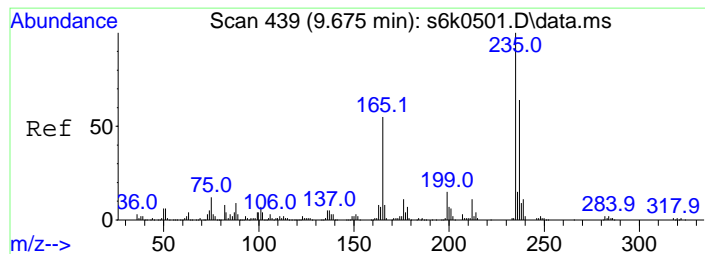
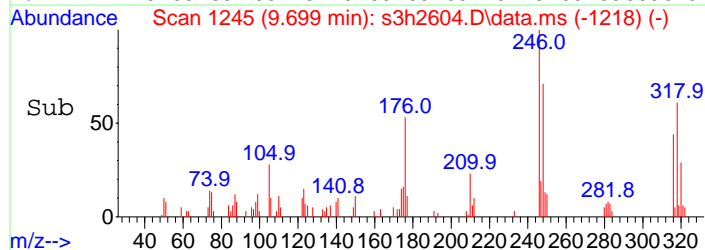
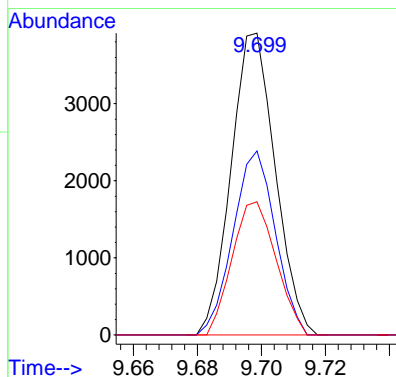
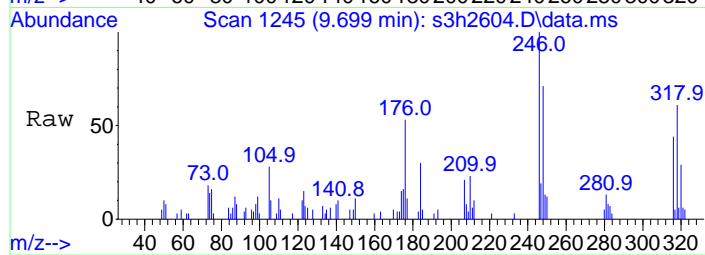
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 184     | 100   |       |       |
| 156     | 6.5   | 0.0   | 106.5 |





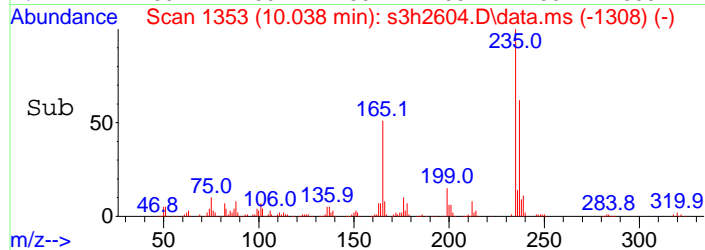
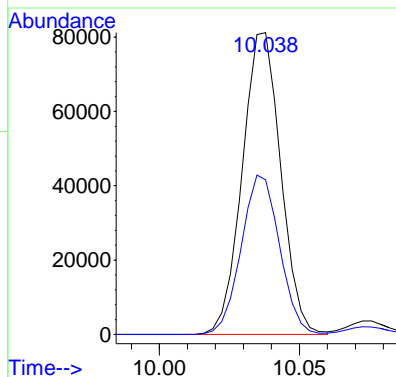
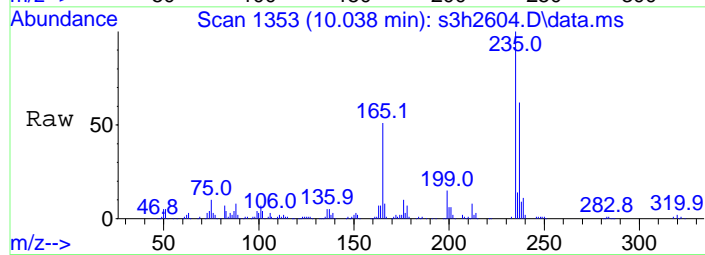
#5  
DDE  
Concen: 1.25 ug/l  
RT: 9.699 min Scan# 1245  
Delta R.T. 0.000 min  
Lab File: s3h2604.D  
Acq: 26 Aug 2011 09:22

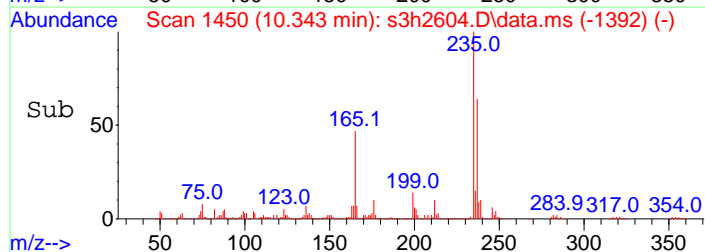
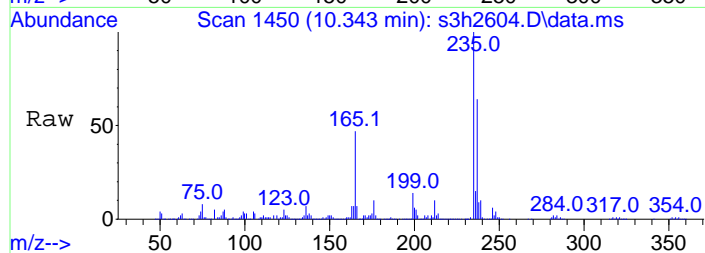
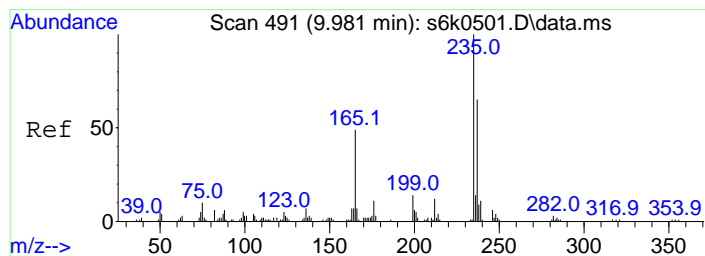
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 246     | 100   |       |       |
| 318     | 58.3  | 0.0   | 161.0 |
| 316     | 43.9  | 0.0   | 144.1 |



#6  
DDD  
Concen: 6.94 ug/l  
RT: 10.038 min Scan# 1353  
Delta R.T. 0.000 min  
Lab File: s3h2604.D  
Acq: 26 Aug 2011 09:22

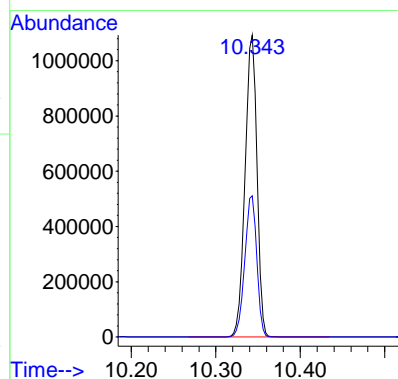
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 235     | 100   |       |       |
| 165     | 52.7  | 0.0   | 151.2 |





#7  
DDT  
Concen: 3.53 ug/l  
RT: 10.343 min Scan# 1450  
Delta R.T. 0.000 min  
Lab File: s3h2604.D  
Acq: 26 Aug 2011 09:22

Tgt Ion: 235 Resp: 1067694  
Ion Ratio Lower Upper  
235 100  
165 47.0 0.0 146.7



## 8270 Breakdown Report

|           |   |          |         |
|-----------|---|----------|---------|
| Data File | : C:\msdchem\1\DATA\s082611.B\s3h2604.D | Vial     | : 1     |
| Acq On    | : 26 Aug 2011 09:22                     | Operator | : JLD1  |
| Sample    | :  WBN110724-01 DFTPP 1 SVM 1 DFTPP     | Inst     | : MSD 3 |
| Misc      | :  WBN11724-01                          | Multiplr | : 1.00  |
| IntFile   | : rteint.p                              |          |         |

| Compounds | Area/%Breakdown | 8270C     | 8270D     |
|-----------|-----------------|-----------|-----------|
| DDE       | 3751            |           |           |
| DDD       | 77704           |           |           |
| DDT       | 1067694         |           |           |
| Breakdown | 7.09%           | Pass(<20) | Pass(<20) |

| Compounds         | Tailing Factor | 8270C    | 8270D    |
|-------------------|----------------|----------|----------|
| Benzidine         | 0.76           | Pass(<3) | Pass(<2) |
| Pentachlorophenol | 0.98           | Pass(<5) | Pass(<2) |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

|  |                                  |                      |              |
|--|----------------------------------|----------------------|--------------|
| <b>SDG Number:</b> 284538                  |                                  | <b>Matrix:</b>       | GROUND WATER |
| <b>Lab Sample ID:</b> 1202473715           |                                  |                      |              |
| <b>Client Sample:</b> QC for batch 1135986 | <b>Client:</b> ECOL008           | <b>Project:</b>      | QC           |
| <b>Client ID:</b> MB for batch 1135986     | <b>Method:</b> SW846 3510C/8270D | <b>SOP Ref:</b>      | GL-OA-E-009  |
| <b>Batch ID:</b> 1135988                   | <b>Inst:</b> MSD3.I              | <b>Dilution:</b>     | 1            |
| <b>Run Date:</b> 08/26/2011 11:24          | <b>Analyst:</b> JLD1             | <b>Inj. Vol:</b>     | 1 uL         |
| <b>Prep Date:</b> 08/25/2011 18:55         | <b>Aliquot:</b> 1000 mL          | <b>Final Volume:</b> | 1 mL         |
| <b>Data File:</b> s082611.B\s3h2608.D      | <b>Column:</b> DB-5ms            |                      |              |

| CAS No.    | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-95-2   | Phenol                      | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 111-44-4   | bis(2-Chloroethyl) ether    | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 95-57-8    | 2-Chlorophenol              | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 95-48-7    | o-Cresol                    | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 65794-96-9 | m,p-Cresols                 | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 621-64-7   | N-Nitrosodipropylamine      | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 67-72-1    | Hexachloroethane            | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 98-95-3    | Nitrobenzene                | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 78-59-1    | Isophorone                  | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 88-75-5    | 2-Nitrophenol               | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 105-67-9   | 2,4-Dimethylphenol          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 111-91-1   | bis(2-Chloroethoxy)methane  | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 120-83-2   | 2,4-Dichlorophenol          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 106-47-8   | 4-Chloroaniline             | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 87-68-3    | Hexachlorobutadiene         | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 59-50-7    | 4-Chloro-3-methylphenol     | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 91-57-6    | 2-Methylnaphthalene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 91-20-3    | Naphthalene                 | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 77-47-4    | Hexachlorocyclopentadiene   | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 88-06-2    | 2,4,6-Trichlorophenol       | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 95-95-4    | 2,4,5-Trichlorophenol       | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 91-58-7    | 2-Chloronaphthalene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 88-74-4    | o-Nitroaniline              | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 99-09-2    | m-Nitroaniline              | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 131-11-3   | Dimethylphthalate           | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 606-20-2   | 2,6-Dinitrotoluene          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 121-14-2   | 2,4-Dinitrotoluene          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 208-96-8   | Acenaphthylene              | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 83-32-9    | Acenaphthene                | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 51-28-5    | 2,4-Dinitrophenol           | U         | 5.00   | ug/L  | 5.00    | 20.0    |
| 132-64-9   | Dibenzofuran                | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 58-90-2    | 2,3,4,6-Tetrachlorophenol   | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 84-66-2    | Diethylphthalate            | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 100-02-7   | 4-Nitrophenol               | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 86-73-7    | Fluorene                    | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 7005-72-3  | 4-Chlorophenylphenylether   | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 100-01-6   | p-Nitroaniline              | U         | 3.00   | ug/L  | 3.00    | 10.0    |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 2 of 2

|  |                                  |                             |
|--|----------------------------------|-----------------------------|
| <b>SDG Number:</b> 284538                  |                                  | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 1202473715           |                                  |                             |
| <b>Client Sample:</b> QC for batch 1135986 | <b>Client:</b> ECOL008           | <b>Project:</b> QC          |
| <b>Client ID:</b> MB for batch 1135986     | <b>Method:</b> SW846 3510C/8270D | <b>SOP Ref:</b> GL-OA-E-009 |
| <b>Batch ID:</b> 1135988                   | <b>Inst:</b> MSD3.I              | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/26/2011 11:24          | <b>Analyst:</b> JLD1             | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 08/25/2011 18:55         | <b>Aliquot:</b> 1000 mL          | <b>Final Volume:</b> 1 mL   |
| <b>Data File:</b> s082611.B\s3h2608.D      | <b>Column:</b> DB-5ms            |                             |

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 122-39-4  | Diphenylamine              | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 101-55-3  | 4-Bromophenylphenylether   | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 118-74-1  | Hexachlorobenzene          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 87-86-5   | Pentachlorophenol          | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 85-01-8   | Phenanthrene               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 120-12-7  | Anthracene                 | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 86-74-8   | Carbazole                  | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 84-74-2   | Di-n-butylphthalate        | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 206-44-0  | Fluoranthene               | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 129-00-0  | Pyrene                     | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 85-68-7   | Butylbenzylphthalate       | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 117-81-7  | bis(2-Ethylhexyl)phthalate | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 56-55-3   | Benzo(a)anthracene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 218-01-9  | Chrysene                   | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 117-84-0  | Di-n-octylphthalate        | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 205-99-2  | Benzo(b)fluoranthene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 207-08-9  | Benzo(k)fluoranthene       | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 50-32-8   | Benzo(a)pyrene             | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 193-39-5  | Indeno(1,2,3-cd)pyrene     | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 53-70-3   | Dibenzo(a,h)anthracene     | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 191-24-2  | Benzo(ghi)perylene         | U         | 0.300  | ug/L  | 0.300   | 1.00    |
| 100-52-7  | Benzaldehyde               | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 98-86-2   | Acetophenone               | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 105-60-2  | Caprolactam                | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 92-52-4   | 1,1'-Biphenyl              | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 1912-24-9 | Atrazine                   | U         | 3.00   | ug/L  | 3.00    | 10.0    |
| 91-94-1   | 3,3'-Dichlorobenzidine     | U         | 3.00   | ug/L  | 3.00    | 10.0    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2608.D  
Acq On : 26 Aug 2011 11:24  
Operator : JLD1  
InstName : MSD 3  
Sample : |1202473715|1135988|1|SVM|1|MB  
Misc : |MSD1C70D\_L|UBN110329-01.4|MIX[A,B]  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 26 11:47:57 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.893  | 4.896  | 1.000  | 441882   | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.175  | 6.180  | 1.000  | 1599052  | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 8.050  | 8.056  | 1.000  | 827843   | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.664  | 9.670  | 1.000  | 1396617  | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.693 | 12.704 | 1.000  | 788805   | 40.00 | ng/uL | -0.01    |
| 91) A Perylene-d12            | 264  | 15.057 | 15.066 | 1.000  | 556659   | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.893  | 4.896  | 1.000  | 441882   | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.175  | 6.180  | 1.000  | 1599052  | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 8.050  | 8.056  | 1.000  | 827843   | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.664  | 9.670  | 1.000  | 1396617  | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.693 | 12.704 | 1.000  | 788805   | 40.00 | ng/uL | -0.01    |
| 153) B Perylene-d12           | 264  | 15.057 | 15.066 | 1.000  | 556659   | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.175  | 6.180  | 1.000  | 1599052  | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 8.050  | 8.056  | 1.000  | 827843   | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.664  | 9.670  | 1.000  | 1396617  | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.693 | 12.704 | 1.000  | 788805   | 40.00 | ng/uL | -0.01    |
| 170) E Naphthalene-d8         | 136  | 6.175  | 6.180  | 1.000  | 1600852  | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 15.057 | 15.066 | 1.000  | 556659   | 40.00 | ng/uL | 0.00     |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.893  | 4.896  | 1.000  | 441882   | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.175  | 6.180  | 1.000  | 1599052  | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 8.050  | 8.056  | 1.000  | 827843   | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.664  | 9.670  | 1.000  | 1396617  | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.693 | 12.704 | 1.000  | 788805   | 40.00 | ng/uL | -0.01    |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.893  | 4.896  | 1.000  | 441882   | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.175  | 6.180  | 1.000  | 1599052  | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.693 | 12.704 | 1.000  | 788805   | 40.00 | ng/uL | -0.01    |
| 199) J Perylene-d12           | 264  | 15.057 | 15.066 | 1.000  | 556659   | 40.00 | ng/uL | 0.00     |

|                             |     |        |        |       |         |        |       |          |
|-----------------------------|-----|--------|--------|-------|---------|--------|-------|----------|
| System Monitoring Compounds |     |        |        |       |         |        |       | Dev(Min) |
| 5) 2-Fluorophenol           | 112 | 3.708  | 3.676  | 0.758 | 703627  | 48.82  | ng/uL | 0.03     |
| 8) Phenol-d5                | 99  | 4.481  | 4.484  | 0.916 | 502631  | 27.50  | ng/uL | 0.00     |
| 25) Nitrobenzene-d5         | 82  | 5.430  | 5.423  | 0.879 | 621823  | 43.92  | ng/uL | 0.00     |
| 47) 2-Fluorobiphenyl        | 172 | 7.306  | 7.299  | 0.908 | 1330435 | 43.96  | ng/uL | 0.00     |
| 66) 2,4,6-Tribromophenol    | 330 | 8.902  | 8.920  | 1.106 | 355802  | 102.24 | ng/uL | -0.02    |
| 83) p-Terphenyl-d14         | 244 | 11.375 | 11.400 | 0.896 | 1124295 | 56.13  | ng/uL | -0.02    |

| Compound                 | Amount  | Range    | Recovery |
|--------------------------|---------|----------|----------|
| 5) 2-Fluorophenol        | 100.000 | 14 - 78  | 48.82%   |
| 8) Phenol-d5             | 100.000 | 14 - 80  | 27.50%   |
| 25) Nitrobenzene-d5      | 50.000  | 40 - 117 | 87.84%   |
| 47) 2-Fluorobiphenyl     | 50.000  | 37 - 102 | 87.92%   |
| 66) 2,4,6-Tribromophenol | 100.000 | 33 - 126 | 102.24%  |
| 83) p-Terphenyl-d14      | 50.000  | 44 - 134 | 112.26%  |

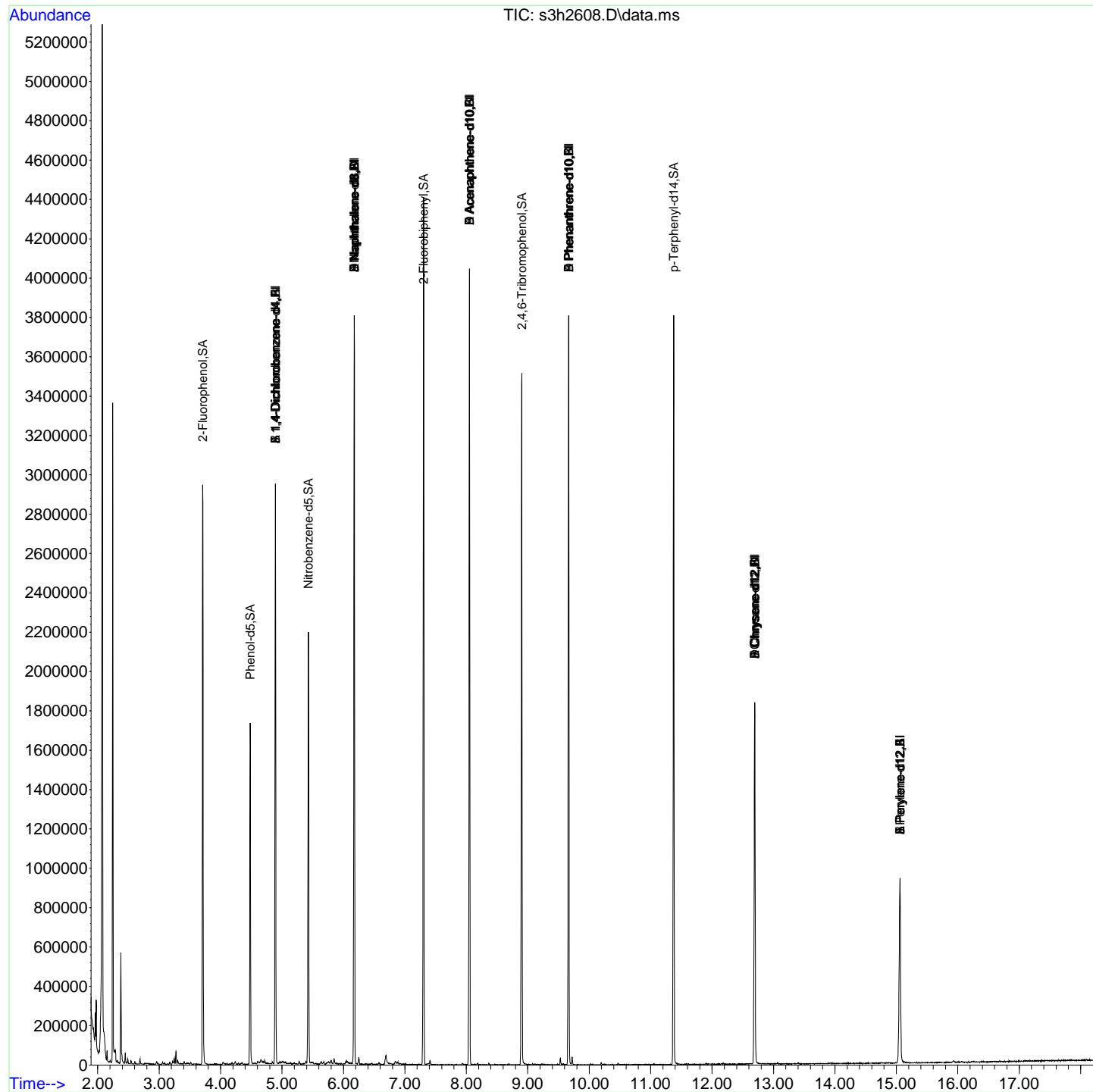
| Target Compounds | QIon | R.T. | Exp RT | Rel RT | Response | Conc | Units | QValue |
|------------------|------|------|--------|--------|----------|------|-------|--------|
|------------------|------|------|--------|--------|----------|------|-------|--------|

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2608.D  
Acq On : 26 Aug 2011 11:24  
Operator : JLD1  
InstName : MSD 3  
Sample : |1202473715|1135988|1|SVM|1|MB  
Misc : |MSD1C70D\_L|UBN110329-01.4|MIX[A,B]  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 26 11:47:57 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE





**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

|  |                                  |                      |              |
|--|----------------------------------|----------------------|--------------|
| <b>SDG Number:</b> 284538                  |                                  | <b>Matrix:</b>       | GROUND WATER |
| <b>Lab Sample ID:</b> 1202473716           |                                  |                      |              |
| <b>Client Sample:</b> QC for batch 1135986 | <b>Client:</b> ECOL008           | <b>Project:</b>      | QC           |
| <b>Client ID:</b> LCS for batch 1135986    | <b>Method:</b> SW846 3510C/8270D | <b>SOP Ref:</b>      | GL-OA-E-009  |
| <b>Batch ID:</b> 1135988                   | <b>Inst:</b> MSD3.I              | <b>Dilution:</b>     | 1            |
| <b>Run Date:</b> 08/26/2011 11:49          | <b>Analyst:</b> JLD1             | <b>Inj. Vol:</b>     | 1 uL         |
| <b>Prep Date:</b> 08/25/2011 18:55         | <b>Aliquot:</b> 1000 mL          | <b>Final Volume:</b> | 1 mL         |
| <b>Data File:</b> s082611.B\s3h2609.D      | <b>Column:</b> DB-5ms            |                      |              |

| CAS No.    | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-95-2   | Phenol                      |           | 15.0   | ug/L  | 3.00    | 10.0    |
| 111-44-4   | bis(2-Chloroethyl) ether    |           | 32.5   | ug/L  | 3.00    | 10.0    |
| 95-57-8    | 2-Chlorophenol              |           | 40.3   | ug/L  | 3.00    | 10.0    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether |           | 27.8   | ug/L  | 3.00    | 10.0    |
| 95-48-7    | o-Cresol                    |           | 32.7   | ug/L  | 3.00    | 10.0    |
| 65794-96-9 | m,p-Cresols                 |           | 34.1   | ug/L  | 3.00    | 10.0    |
| 621-64-7   | N-Nitrosodipropylamine      |           | 37.0   | ug/L  | 3.00    | 10.0    |
| 67-72-1    | Hexachloroethane            |           | 26.8   | ug/L  | 3.00    | 10.0    |
| 98-95-3    | Nitrobenzene                |           | 43.9   | ug/L  | 3.00    | 10.0    |
| 78-59-1    | Isophorone                  |           | 44.2   | ug/L  | 3.00    | 10.0    |
| 88-75-5    | 2-Nitrophenol               |           | 43.2   | ug/L  | 3.00    | 10.0    |
| 105-67-9   | 2,4-Dimethylphenol          |           | 42.9   | ug/L  | 3.00    | 10.0    |
| 111-91-1   | bis(2-Chloroethoxy)methane  |           | 40.0   | ug/L  | 3.00    | 10.0    |
| 120-83-2   | 2,4-Dichlorophenol          |           | 46.2   | ug/L  | 3.00    | 10.0    |
| 106-47-8   | 4-Chloroaniline             |           | 46.6   | ug/L  | 3.00    | 10.0    |
| 87-68-3    | Hexachlorobutadiene         |           | 33.3   | ug/L  | 3.00    | 10.0    |
| 59-50-7    | 4-Chloro-3-methylphenol     |           | 43.2   | ug/L  | 3.00    | 10.0    |
| 91-57-6    | 2-Methylnaphthalene         |           | 36.6   | ug/L  | 0.300   | 1.00    |
| 91-20-3    | Naphthalene                 |           | 36.9   | ug/L  | 0.300   | 1.00    |
| 77-47-4    | Hexachlorocyclopentadiene   |           | 29.7   | ug/L  | 3.00    | 10.0    |
| 88-06-2    | 2,4,6-Trichlorophenol       |           | 48.3   | ug/L  | 3.00    | 10.0    |
| 95-95-4    | 2,4,5-Trichlorophenol       |           | 47.4   | ug/L  | 3.00    | 10.0    |
| 91-58-7    | 2-Chloronaphthalene         |           | 37.3   | ug/L  | 0.300   | 1.00    |
| 88-74-4    | o-Nitroaniline              |           | 34.0   | ug/L  | 3.00    | 10.0    |
| 99-09-2    | m-Nitroaniline              |           | 45.8   | ug/L  | 3.00    | 10.0    |
| 131-11-3   | Dimethylphthalate           |           | 60.9   | ug/L  | 3.00    | 10.0    |
| 606-20-2   | 2,6-Dinitrotoluene          |           | 55.4   | ug/L  | 3.00    | 10.0    |
| 121-14-2   | 2,4-Dinitrotoluene          |           | 57.8   | ug/L  | 3.00    | 10.0    |
| 208-96-8   | Acenaphthylene              |           | 40.3   | ug/L  | 0.300   | 1.00    |
| 83-32-9    | Acenaphthene                |           | 39.0   | ug/L  | 0.300   | 1.00    |
| 51-28-5    | 2,4-Dinitrophenol           |           | 48.5   | ug/L  | 5.00    | 20.0    |
| 132-64-9   | Dibenzofuran                |           | 42.6   | ug/L  | 3.00    | 10.0    |
| 58-90-2    | 2,3,4,6-Tetrachlorophenol   |           | 58.1   | ug/L  | 3.00    | 10.0    |
| 84-66-2    | Diethylphthalate            |           | 61.8   | ug/L  | 3.00    | 10.0    |
| 100-02-7   | 4-Nitrophenol               |           | 17.3   | ug/L  | 3.00    | 10.0    |
| 86-73-7    | Fluorene                    |           | 40.7   | ug/L  | 0.300   | 1.00    |
| 7005-72-3  | 4-Chlorophenylphenylether   |           | 45.9   | ug/L  | 3.00    | 10.0    |
| 100-01-6   | p-Nitroaniline              |           | 48.5   | ug/L  | 3.00    | 10.0    |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 2 of 2

|  |                                  |                      |              |
|--|----------------------------------|----------------------|--------------|
| <b>SDG Number:</b> 284538                  |                                  | <b>Matrix:</b>       | GROUND WATER |
| <b>Lab Sample ID:</b> 1202473716           |                                  |                      |              |
| <b>Client Sample:</b> QC for batch 1135986 | <b>Client:</b> ECOL008           | <b>Project:</b>      | QC           |
| <b>Client ID:</b> LCS for batch 1135986    | <b>Method:</b> SW846 3510C/8270D | <b>SOP Ref:</b>      | GL-OA-E-009  |
| <b>Batch ID:</b> 1135988                   | <b>Inst:</b> MSD3.I              | <b>Dilution:</b>     | 1            |
| <b>Run Date:</b> 08/26/2011 11:49          | <b>Analyst:</b> JLD1             | <b>Inj. Vol:</b>     | 1 uL         |
| <b>Prep Date:</b> 08/25/2011 18:55         | <b>Aliquot:</b> 1000 mL          | <b>Final Volume:</b> | 1 mL         |
| <b>Data File:</b> s082611.B\s3h2609.D      | <b>Column:</b> DB-5ms            |                      |              |

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 534-52-1  | 2-Methyl-4,6-dinitrophenol |           | 47.7   | ug/L  | 3.00    | 10.0    |
| 122-39-4  | Diphenylamine              |           | 43.5   | ug/L  | 3.00    | 10.0    |
| 101-55-3  | 4-Bromophenylphenylether   |           | 49.3   | ug/L  | 3.00    | 10.0    |
| 118-74-1  | Hexachlorobenzene          |           | 43.0   | ug/L  | 3.00    | 10.0    |
| 87-86-5   | Pentachlorophenol          |           | 44.6   | ug/L  | 3.00    | 10.0    |
| 85-01-8   | Phenanthrene               |           | 44.1   | ug/L  | 0.300   | 1.00    |
| 120-12-7  | Anthracene                 |           | 44.0   | ug/L  | 0.300   | 1.00    |
| 86-74-8   | Carbazole                  |           | 45.4   | ug/L  | 0.300   | 1.00    |
| 84-74-2   | Di-n-butylphthalate        |           | 56.7   | ug/L  | 3.00    | 10.0    |
| 206-44-0  | Fluoranthene               |           | 47.0   | ug/L  | 0.300   | 1.00    |
| 129-00-0  | Pyrene                     |           | 41.2   | ug/L  | 0.300   | 1.00    |
| 85-68-7   | Butylbenzylphthalate       |           | 53.8   | ug/L  | 3.00    | 10.0    |
| 117-81-7  | bis(2-Ethylhexyl)phthalate |           | 56.5   | ug/L  | 3.00    | 10.0    |
| 56-55-3   | Benzo(a)anthracene         |           | 48.0   | ug/L  | 0.300   | 1.00    |
| 218-01-9  | Chrysene                   |           | 48.0   | ug/L  | 0.300   | 1.00    |
| 117-84-0  | Di-n-octylphthalate        |           | 61.8   | ug/L  | 3.00    | 10.0    |
| 205-99-2  | Benzo(b)fluoranthene       |           | 47.2   | ug/L  | 0.300   | 1.00    |
| 207-08-9  | Benzo(k)fluoranthene       |           | 47.8   | ug/L  | 0.300   | 1.00    |
| 50-32-8   | Benzo(a)pyrene             |           | 47.6   | ug/L  | 0.300   | 1.00    |
| 193-39-5  | Indeno(1,2,3-cd)pyrene     |           | 56.2   | ug/L  | 0.300   | 1.00    |
| 53-70-3   | Dibenzo(a,h)anthracene     |           | 56.4   | ug/L  | 0.300   | 1.00    |
| 191-24-2  | Benzo(ghi)perylene         |           | 57.5   | ug/L  | 0.300   | 1.00    |
| 100-52-7  | Benzaldehyde               |           | 31.9   | ug/L  | 3.00    | 10.0    |
| 98-86-2   | Acetophenone               |           | 42.2   | ug/L  | 3.00    | 10.0    |
| 105-60-2  | Caprolactam                |           | 12.0   | ug/L  | 3.00    | 10.0    |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene |           | 34.9   | ug/L  | 3.00    | 10.0    |
| 92-52-4   | 1,1'-Biphenyl              |           | 35.3   | ug/L  | 3.00    | 10.0    |
| 1912-24-9 | Atrazine                   |           | 46.8   | ug/L  | 3.00    | 10.0    |
| 91-94-1   | 3,3'-Dichlorobenzidine     |           | 51.1   | ug/L  | 3.00    | 10.0    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2609.D  
Acq On : 26 Aug 2011 11:49  
Operator : JLD1  
InstName : MSD 3  
Sample : |1202473716|1135988|1|SVM|1|LCS  
Misc : |MSD1C70D\_L|UBN110329-01.4|MIX[A,B]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 26 12:06:28 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.896  | 4.896  | 1.000  | 464442   | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.180  | 6.180  | 1.000  | 1841128  | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 8.053  | 8.056  | 1.000  | 892778   | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.670  | 9.670  | 1.000  | 1581375  | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.704 | 12.704 | 1.000  | 1098909  | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 15.063 | 15.066 | 1.000  | 709470   | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.896  | 4.896  | 1.000  | 464442   | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 1841128  | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 8.053  | 8.056  | 1.000  | 892778   | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.670  | 9.670  | 1.000  | 1581375  | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.704 | 12.704 | 1.000  | 1098909  | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 15.063 | 15.066 | 1.000  | 709470   | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 1841128  | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 8.053  | 8.056  | 1.000  | 892778   | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.670  | 9.670  | 1.000  | 1581375  | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.704 | 12.704 | 1.000  | 1098909  | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 1861883  | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 15.063 | 15.066 | 1.000  | 709470   | 40.00 | ng/uL | 0.00     |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.896  | 4.896  | 1.000  | 464442   | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 1841128  | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 8.053  | 8.056  | 1.000  | 892778   | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.670  | 9.670  | 1.000  | 1581375  | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.704 | 12.704 | 1.000  | 1098909  | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.896  | 4.896  | 1.000  | 464442   | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 1841128  | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.704 | 12.704 | 1.000  | 1098909  | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 15.063 | 15.066 | 1.000  | 709470   | 40.00 | ng/uL | 0.00     |

|                             |     |        |        |       |         |        |       |          |
|-----------------------------|-----|--------|--------|-------|---------|--------|-------|----------|
| System Monitoring Compounds |     |        |        |       |         |        |       | Dev(Min) |
| 5) 2-Fluorophenol           | 112 | 3.714  | 3.676  | 0.759 | 756625  | 49.95  | ng/uL | 0.04     |
| 8) Phenol-d5                | 99  | 4.492  | 4.484  | 0.918 | 553783  | 28.83  | ng/uL | 0.00     |
| 25) Nitrobenzene-d5         | 82  | 5.439  | 5.423  | 0.880 | 633374  | 38.86  | ng/uL | 0.02     |
| 47) 2-Fluorobiphenyl        | 172 | 7.305  | 7.299  | 0.907 | 1380956 | 42.31  | ng/uL | 0.00     |
| 66) 2,4,6-Tribromophenol    | 330 | 8.908  | 8.920  | 1.106 | 401807  | 107.07 | ng/uL | -0.01    |
| 83) p-Terphenyl-d14         | 244 | 11.374 | 11.400 | 0.895 | 1234575 | 44.24  | ng/uL | -0.03    |

| Compound                 | Amount  | Range    | Recovery |
|--------------------------|---------|----------|----------|
| 5) 2-Fluorophenol        | 100.000 | 14 - 78  | 49.95%   |
| 8) Phenol-d5             | 100.000 | 14 - 80  | 28.83%   |
| 25) Nitrobenzene-d5      | 50.000  | 40 - 117 | 77.72%   |
| 47) 2-Fluorobiphenyl     | 50.000  | 37 - 102 | 84.62%   |
| 66) 2,4,6-Tribromophenol | 100.000 | 33 - 126 | 107.07%  |
| 83) p-Terphenyl-d14      | 50.000  | 44 - 134 | 88.48%   |

| Target Compounds             | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  | QValue |
|------------------------------|------|-------|--------|--------|----------|-------|--------|--------|
| 3) N-Methyl-N-nitrosometh... | 74   | 2.739 | 2.673  | 0.559  | 242083   | 22.49 | ng/uL  | 82     |
| 4) Pyridine                  | 79   | 2.779 | 2.702  | 0.568  | 416405   | 27.92 | ng/uL# | 74     |
| 7) Aniline                   | 66   | 4.580 | 4.575  | 0.936  | 314849   | 33.45 | ng/uL  | 83     |
| 9) Phenol                    | 94   | 4.504 | 4.500  | 0.920  | 298830   | 14.95 | ng/uL  | 97     |
| 10) bis(2-Chloroethyl) ether | 63   | 4.617 | 4.613  | 0.943  | 524963   | 32.46 | ng/uL  | 81     |
| 11) 2-Chlorophenol           | 128  | 4.694 | 4.686  | 0.959  | 604479   | 40.30 | ng/uL  | 86     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2609.D  
Acq On : 26 Aug 2011 11:49  
Operator : JLD1  
InstName : MSD 3  
Sample : |1202473716|1135988|1|SVM|1|LCS  
Misc : |MSD1C70D\_L|UBN110329-01.4|MIX[A,B]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 26 12:06:28 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  |     |
|-------------------------------|------|-------|--------|--------|----------|-------|--------|-----|
| 12) n-Decane                  | 43   | 4.694 | 4.695  | 0.959  | 438129   | 14.95 | ng/uL  | 97  |
| 13) 1,3-Dichlorobenzene       | 146  | 4.842 | 4.844  | 0.989  | 508601   | 30.42 | ng/uL  | 99  |
| 14) 1,4-Dichlorobenzene       | 146  | 4.910 | 4.914  | 1.003  | 524675   | 30.96 | ng/uL  | 99  |
| 15) 1,2-Dichlorobenzene       | 146  | 5.061 | 5.065  | 1.034  | 504405   | 31.66 | ng/uL  | 99  |
| 16) bis(2-Chloroisopropyl)... | 45   | 5.126 | 5.138  | 1.047  | 1195395  | 27.81 | ng/uL  | 85  |
| 17) Benzyl alcohol            | 108  | 5.004 | 5.010  | 1.022  | 370957   | 36.82 | ng/uL  | 92  |
| 18) o-Cresol                  | 107  | 5.086 | 5.094  | 1.039  | 417001   | 32.74 | ng/uL  | 98  |
| 19) m,p-Cresols               | 107  | 5.243 | 5.254  | 1.071  | 557039   | 34.14 | ng/uL# | 55  |
| 20) N-Nitrosodipropylamine    | 70   | 5.268 | 5.287  | 1.076  | 445983   | 37.04 | ng/uL  | 78  |
| 23) Hexachloroethane          | 117  | 5.396 | 5.410  | 1.102  | 189152   | 26.82 | ng/uL  | 89  |
| 26) Nitrobenzene              | 77   | 5.459 | 5.446  | 0.883  | 725390   | 43.89 | ng/uL  | 94  |
| 27) Isophorone                | 82   | 5.691 | 5.684  | 0.921  | 1364435  | 44.22 | ng/uL  | 95  |
| 28) 2-Nitrophenol             | 139  | 5.774 | 5.765  | 0.934  | 353779   | 43.16 | ng/uL  | 88  |
| 29) 2,4-Dimethylphenol        | 122  | 5.782 | 5.777  | 0.936  | 575453   | 42.89 | ng/uL  | 98  |
| 30) bis(2-Chloroethoxy)met... | 93   | 5.888 | 5.887  | 0.953  | 764868   | 39.95 | ng/uL  | 100 |
| 31) 2,4-Dichlorophenol        | 162  | 6.015 | 6.012  | 0.973  | 523421   | 46.15 | ng/uL  | 97  |
| 32) Benzoic acid              | 105  | 5.868 | 5.890  | 0.949  | 185017   | 19.33 | ng/uL  | 95  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 6.109 | 6.107  | 0.989  | 447612   | 33.52 | ng/uL  | 99  |
| 34) alpha-Terpineol           | 59   | 6.189 | 6.192  | 1.001  | 530075   | 27.07 | ng/uL  | 77  |
| 35) Naphthalene               | 128  | 6.203 | 6.203  | 1.004  | 1541817  | 36.90 | ng/uL  | 73  |
| 36) 4-Chloroaniline           | 127  | 6.243 | 6.241  | 1.010  | 759437   | 46.57 | ng/uL  | 90  |
| 37) Hexachlorobutadiene       | 225  | 6.308 | 6.314  | 1.021  | 235739   | 33.33 | ng/uL  | 99  |
| 38) 4-Chloro-3-methylphenol   | 107  | 6.723 | 6.735  | 1.088  | 533345   | 43.15 | ng/uL  | 97  |
| 39) 2-Methylnaphthalene       | 142  | 6.925 | 6.944  | 1.120  | 1047836  | 36.56 | ng/uL  | 99  |
| 41) 1-Methylnaphthalene       | 142  | 7.035 | 7.054  | 1.138  | 1016133  | 37.01 | ng/uL  | 100 |
| 43) Hexachlorocyclopentadiene | 237  | 7.084 | 7.070  | 0.880  | 186786   | 29.65 | ng/uL  | 99  |
| 44) 2,3-Dichloroaniline       | 161  | 7.223 | 7.212  | 0.897  | 631084   | 41.26 | ng/uL  | 98  |
| 45) 2,4,6-Trichlorophenol     | 196  | 7.215 | 7.204  | 0.896  | 395441   | 48.27 | ng/uL  | 99  |
| 46) 2,4,5-Trichlorophenol     | 196  | 7.251 | 7.238  | 0.900  | 412351   | 47.43 | ng/uL  | 99  |
| 48) 2-Chloronaphthalene       | 162  | 7.453 | 7.444  | 0.926  | 999266   | 37.29 | ng/uL  | 98  |
| 49) o-Nitroaniline            | 65   | 7.550 | 7.544  | 0.938  | 342517   | 33.95 | ng/uL  | 81  |
| 51) m-Nitroaniline            | 138  | 7.996 | 7.998  | 0.993  | 317083   | 45.84 | ng/uL  | 90  |
| 52) Dimethylphthalate         | 163  | 7.734 | 7.741  | 0.960  | 1827678  | 60.90 | ng/uL  | 99  |
| 54) 2,6-Dinitrotoluene        | 165  | 7.811 | 7.810  | 0.970  | 381139   | 55.41 | ng/uL  | 78  |
| 55) 2,4-Dinitrotoluene        | 165  | 8.243 | 8.249  | 1.024  | 485069   | 57.77 | ng/uL  | 83  |
| 56) Acenaphthylene            | 152  | 7.905 | 7.902  | 0.982  | 1787260  | 40.32 | ng/uL  | 100 |
| 57) Acenaphthene              | 154  | 8.090 | 8.093  | 1.005  | 1094844  | 38.98 | ng/uL  | 98  |
| 58) 2,4-Dinitrophenol         | 184  | 8.101 | 8.105  | 1.006  | 156434   | 48.51 | ng/uL# | 19  |
| 59) Dibenzofuran              | 168  | 8.274 | 8.281  | 1.028  | 1575154  | 42.64 | ng/uL  | 100 |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 8.394 | 8.399  | 1.042  | 361877   | 58.13 | ng/uL  | 97  |
| 61) Diethylphthalate          | 149  | 8.490 | 8.503  | 1.054  | 1962782  | 61.81 | ng/uL  | 99  |
| 62) 4-Nitrophenol             | 139  | 8.147 | 8.145  | 1.012  | 78241    | 17.27 | ng/uL  | 87  |
| 63) Fluorene                  | 166  | 8.647 | 8.660  | 1.074  | 1294498  | 40.71 | ng/uL  | 99  |
| 64) 4-Chlorophenylphenylether | 204  | 8.630 | 8.643  | 1.072  | 658343   | 45.92 | ng/uL  | 99  |
| 65) p-Nitroaniline            | 138  | 8.661 | 8.671  | 1.076  | 283037   | 48.50 | ng/uL  | 95  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 8.686 | 8.676  | 0.898  | 222137   | 47.70 | ng/uL  | 79  |
| 69) Diphenylamine             | 169  | 8.760 | 8.754  | 0.906  | 1194432  | 43.48 | ng/uL  | 99  |
| 70) 1,2-Diphenylhydrazine     | 77   | 8.806 | 8.799  | 0.911  | 1264513  | 32.75 | ng/uL  | 92  |
| 71) 4-Bromophenylphenylether  | 248  | 9.164 | 9.163  | 0.948  | 396215   | 49.26 | ng/uL  | 92  |
| 72) Hexachlorobenzene         | 284  | 9.240 | 9.235  | 0.956  | 407037   | 42.97 | ng/uL  | 100 |
| 73) Pentachlorophenol         | 266  | 9.448 | 9.442  | 0.977  | 231321   | 44.60 | ng/uL  | 99  |
| 74) n-Octadecane              | 57   | 9.488 | 9.499  | 0.981  | 1043052  | 25.64 | ng/uL  | 92  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2609.D  
Acq On : 26 Aug 2011 11:49  
Operator : JLD1  
InstName : MSD 3  
Sample : |1202473716|1135988|1|SVM|1|LCS  
Misc : |MSD1C70D\_L|UBN110329-01.4|MIX[A,B]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 26 12:06:28 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units  |      |
|--------------------------------|------|--------|--------|--------|----------|--------|--------|------|
| 76) Phenanthrene               | 178  | 9.695  | 9.699  | 1.003  | 1808927  | 44.13  | ng/uL  | 100  |
| 77) Anthracene                 | 178  | 9.752  | 9.756  | 1.009  | 1816260  | 43.99  | ng/uL  | 100  |
| 78) Carbazole                  | 167  | 9.914  | 9.920  | 1.025  | 1573637  | 45.39  | ng/uL  | 100  |
| 79) Di-n-butylphthalate        | 149  | 10.252 | 10.272 | 1.060  | 3155980  | 56.74  | ng/uL  | 100  |
| 80) Fluoranthene               | 202  | 10.985 | 11.008 | 1.136  | 1896032  | 47.02  | ng/uL  | 97   |
| 82) Pyrene                     | 202  | 11.238 | 11.256 | 0.885  | 1904004  | 41.19  | ng/uL  | 96   |
| 84) Butylbenzylphthalate       | 149  | 11.911 | 11.935 | 0.938  | 1215955  | 53.82  | ng/uL  | 92   |
| 85) bis(2-Ethylhexyl)phtha...  | 149  | 12.639 | 12.658 | 0.995  | 1741779  | 56.47  | ng/uL  | 97   |
| 86) Benzo(a)anthracene         | 228  | 12.684 | 12.687 | 0.998  | 1448746  | 47.97  | ng/uL  | 100  |
| 87) Chrysene                   | 228  | 12.741 | 12.742 | 1.003  | 1339101  | 48.00  | ng/uL  | 99   |
| 90) Di-n-octylphthalate        | 149  | 13.642 | 13.646 | 1.074  | 2478137  | 61.79  | ng/uL  | 86   |
| 92) Benzo(b)fluoranthene       | 252  | 14.378 | 14.390 | 0.955  | 1041541  | 47.20  | ng/uL  | 98   |
| 93) Benzo(k)fluoranthene       | 252  | 14.429 | 14.439 | 0.958  | 1063546  | 47.83  | ng/uL  | 97   |
| 94) Benzo(a)pyrene             | 252  | 14.963 | 14.967 | 0.993  | 889870   | 47.63  | ng/uL  | 98   |
| 95) Indeno(1,2,3-cd)pyrene     | 276  | 17.066 | 17.061 | 1.133  | 779595   | 56.24  | ng/uL  | 94   |
| 96) Dibenzo(a,h)anthracene     | 278  | 17.097 | 17.095 | 1.135  | 645345   | 56.40  | ng/uL  | 92   |
| 97) Benzo(ghi)perylene         | 276  | 17.589 | 17.572 | 1.168  | 627991   | 57.45  | ng/uL  | 93   |
| 100) 1,4-Dioxane               | 88   | 2.535  | 2.464  | 0.518  | 154845   | 24.02  | ng/uL# | 69   |
| 108) Benzaldehyde              | 77   | 4.492  | 4.485  | 0.918  | 391151   | 31.91  | ng/uL  | 91   |
| 110) N-Nitrosopyrrolidine      | 100  | 5.271  | 5.276  | 1.077  | 320662   | 43.35  | ng/uL# | 68   |
| 111) Acetophenone              | 105  | 5.279  | 5.290  | 1.078  | 864130   | 42.19  | ng/uL# | 9    |
| 117) 2,6-Dichlorophenol        | 162  | 6.251  | 6.253  | 1.011  | 538309   | 44.64  | ng/uL  | 99   |
| 119) Caprolactam               | 113  | 6.618  | 6.616  | 1.071  | 59307    | 11.96  | ng/uL# | 32   |
| 123) 1,2,4,5-Tetrachloroben... | 216  | 7.101  | 7.090  | 0.882  | 465808   | 34.88  | ng/uL  | 99   |
| 124) 1,1-Biphenyl              | 154  | 7.422  | 7.417  | 0.922  | 1331088  | 35.33  | ng/uL  | 98   |
| 137) Atrazine                  | 173  | 9.323  | 9.321  | 0.964  | 95114    | 46.81  | ng/uL  | 93   |
| 144) Benzidine                 | 184  | 11.113 | 11.134 | 1.149  | 1578065  | 131.55 | ng/uL  | 97 A |
| 152) 3,3'-Dichlorobenzidine    | 252  | 12.625 | 12.632 | 0.994  | 410770   | 51.07  | ng/uL  | 99   |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

|                       |                             |                        |                          |                      |                     |
|-----------------------|-----------------------------|------------------------|--------------------------|----------------------|---------------------|
| <b>SDG Number:</b>    | <b>284538</b>               | <b>Date Collected:</b> | <b>08/18/2011 12:00</b>  | <b>Matrix:</b>       | <b>GROUND WATER</b> |
| <b>Lab Sample ID:</b> | <b>1202473717</b>           | <b>Date Received:</b>  | <b>08/23/2011 08:50</b>  |                      |                     |
| <b>Client Sample:</b> | <b>QC for batch 1135986</b> | <b>Client:</b>         | <b>ECOL008</b>           | <b>Project:</b>      | <b>QC</b>           |
| <b>Client ID:</b>     | <b>11080101MS</b>           | <b>Method:</b>         | <b>SW846 3510C/8270D</b> | <b>SOP Ref:</b>      | <b>GL-OA-E-009</b>  |
| <b>Batch ID:</b>      | <b>1135988</b>              | <b>Inst:</b>           | <b>MSD3.I</b>            | <b>Dilution:</b>     | <b>1</b>            |
| <b>Run Date:</b>      | <b>08/26/2011 17:18</b>     | <b>Analyst:</b>        | <b>JLD1</b>              | <b>Inj. Vol:</b>     | <b>1 uL</b>         |
| <b>Prep Date:</b>     | <b>08/25/2011 18:55</b>     | <b>Aliquot:</b>        | <b>500 mL</b>            | <b>Final Volume:</b> | <b>1 mL</b>         |
| <b>Data File:</b>     | <b>s082611.B\s3h2622.D</b>  | <b>Column:</b>         | <b>DB-5ms</b>            |                      |                     |

| CAS No.    | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-95-2   | Phenol                      |           | 26.7   | ug/L  | 6.00    | 20.0    |
| 111-44-4   | bis(2-Chloroethyl) ether    |           | 54.9   | ug/L  | 6.00    | 20.0    |
| 95-57-8    | 2-Chlorophenol              |           | 24.4   | ug/L  | 6.00    | 20.0    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether |           | 47.0   | ug/L  | 6.00    | 20.0    |
| 95-48-7    | o-Cresol                    |           | 44.2   | ug/L  | 6.00    | 20.0    |
| 65794-96-9 | m,p-Cresols                 |           | 47.1   | ug/L  | 6.00    | 20.0    |
| 621-64-7   | N-Nitrosodipropylamine      |           | 60.9   | ug/L  | 6.00    | 20.0    |
| 67-72-1    | Hexachloroethane            |           | 46.0   | ug/L  | 6.00    | 20.0    |
| 98-95-3    | Nitrobenzene                |           | 77.6   | ug/L  | 6.00    | 20.0    |
| 78-59-1    | Isophorone                  |           | 73.5   | ug/L  | 6.00    | 20.0    |
| 88-75-5    | 2-Nitrophenol               | J         | 14.4   | ug/L  | 6.00    | 20.0    |
| 105-67-9   | 2,4-Dimethylphenol          |           | 65.9   | ug/L  | 6.00    | 20.0    |
| 111-91-1   | bis(2-Chloroethoxy)methane  |           | 67.3   | ug/L  | 6.00    | 20.0    |
| 120-83-2   | 2,4-Dichlorophenol          | J         | 19.6   | ug/L  | 6.00    | 20.0    |
| 106-47-8   | 4-Chloroaniline             |           | 78.4   | ug/L  | 6.00    | 20.0    |
| 87-68-3    | Hexachlorobutadiene         |           | 58.0   | ug/L  | 6.00    | 20.0    |
| 59-50-7    | 4-Chloro-3-methylphenol     |           | 40.2   | ug/L  | 6.00    | 20.0    |
| 91-57-6    | 2-Methylnaphthalene         |           | 65.5   | ug/L  | 0.600   | 2.00    |
| 91-20-3    | Naphthalene                 |           | 66.5   | ug/L  | 0.600   | 2.00    |
| 77-47-4    | Hexachlorocyclopentadiene   |           | 61.6   | ug/L  | 6.00    | 20.0    |
| 88-06-2    | 2,4,6-Trichlorophenol       | J         | 13.3   | ug/L  | 6.00    | 20.0    |
| 95-95-4    | 2,4,5-Trichlorophenol       | J         | 15.1   | ug/L  | 6.00    | 20.0    |
| 91-58-7    | 2-Chloronaphthalene         |           | 71.3   | ug/L  | 0.600   | 2.00    |
| 88-74-4    | o-Nitroaniline              |           | 55.3   | ug/L  | 6.00    | 20.0    |
| 99-09-2    | m-Nitroaniline              |           | 73.6   | ug/L  | 6.00    | 20.0    |
| 131-11-3   | Dimethylphthalate           |           | 96.5   | ug/L  | 6.00    | 20.0    |
| 606-20-2   | 2,6-Dinitrotoluene          |           | 88.0   | ug/L  | 6.00    | 20.0    |
| 121-14-2   | 2,4-Dinitrotoluene          |           | 85.5   | ug/L  | 6.00    | 20.0    |
| 208-96-8   | Acenaphthylene              |           | 73.0   | ug/L  | 0.600   | 2.00    |
| 83-32-9    | Acenaphthene                |           | 67.4   | ug/L  | 0.600   | 2.00    |
| 51-28-5    | 2,4-Dinitrophenol           | U         | 10.0   | ug/L  | 10.0    | 40.0    |
| 132-64-9   | Dibenzofuran                |           | 75.7   | ug/L  | 6.00    | 20.0    |
| 58-90-2    | 2,3,4,6-Tetrachlorophenol   | J         | 12.3   | ug/L  | 6.00    | 20.0    |
| 84-66-2    | Diethylphthalate            |           | 92.2   | ug/L  | 6.00    | 20.0    |
| 100-02-7   | 4-Nitrophenol               |           | 29.0   | ug/L  | 6.00    | 20.0    |
| 86-73-7    | Fluorene                    |           | 68.9   | ug/L  | 0.600   | 2.00    |
| 7005-72-3  | 4-Chlorophenylphenylether   |           | 80.7   | ug/L  | 6.00    | 20.0    |
| 100-01-6   | p-Nitroaniline              |           | 76.7   | ug/L  | 6.00    | 20.0    |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 2 of 2

|  |   |                             |
|--|---|-----------------------------|
| <b>SDG Number:</b> 284538                  | <b>Date Collected:</b> 08/18/2011 12:00 | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 1202473717           | <b>Date Received:</b> 08/23/2011 08:50  |                             |
| <b>Client Sample:</b> QC for batch 1135986 | <b>Client:</b> ECOL008                  | <b>Project:</b> QC          |
| <b>Client ID:</b> 11080101MS               | <b>Method:</b> SW846 3510C/8270D        | <b>SOP Ref:</b> GL-OA-E-009 |
| <b>Batch ID:</b> 1135988                   | <b>Inst:</b> MSD3.I                     | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/26/2011 17:18          | <b>Analyst:</b> JLD1                    | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 08/25/2011 18:55         | <b>Aliquot:</b> 500 mL                  | <b>Final Volume:</b> 1 mL   |
| <b>Data File:</b> s082611.B\s3h2622.D      | <b>Column:</b> DB-5ms                   |                             |

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | J         | 9.50   | ug/L  | 6.00    | 20.0    |
| 122-39-4  | Diphenylamine              |           | 57.7   | ug/L  | 6.00    | 20.0    |
| 101-55-3  | 4-Bromophenylphenylether   |           | 88.9   | ug/L  | 6.00    | 20.0    |
| 118-74-1  | Hexachlorobenzene          |           | 74.6   | ug/L  | 6.00    | 20.0    |
| 87-86-5   | Pentachlorophenol          | J         | 9.42   | ug/L  | 6.00    | 20.0    |
| 85-01-8   | Phenanthrene               |           | 76.1   | ug/L  | 0.600   | 2.00    |
| 120-12-7  | Anthracene                 |           | 74.7   | ug/L  | 0.600   | 2.00    |
| 86-74-8   | Carbazole                  |           | 81.8   | ug/L  | 0.600   | 2.00    |
| 84-74-2   | Di-n-butylphthalate        |           | 99.8   | ug/L  | 6.00    | 20.0    |
| 206-44-0  | Fluoranthene               |           | 90.4   | ug/L  | 0.600   | 2.00    |
| 129-00-0  | Pyrene                     |           | 68.2   | ug/L  | 0.600   | 2.00    |
| 85-68-7   | Butylbenzylphthalate       |           | 88.5   | ug/L  | 6.00    | 20.0    |
| 117-81-7  | bis(2-Ethylhexyl)phthalate |           | 92.4   | ug/L  | 6.00    | 20.0    |
| 56-55-3   | Benzo(a)anthracene         |           | 76.9   | ug/L  | 0.600   | 2.00    |
| 218-01-9  | Chrysene                   |           | 77.2   | ug/L  | 0.600   | 2.00    |
| 117-84-0  | Di-n-octylphthalate        |           | 80.3   | ug/L  | 6.00    | 20.0    |
| 205-99-2  | Benzo(b)fluoranthene       |           | 76.5   | ug/L  | 0.600   | 2.00    |
| 207-08-9  | Benzo(k)fluoranthene       |           | 78.1   | ug/L  | 0.600   | 2.00    |
| 50-32-8   | Benzo(a)pyrene             |           | 76.5   | ug/L  | 0.600   | 2.00    |
| 193-39-5  | Indeno(1,2,3-cd)pyrene     |           | 90.0   | ug/L  | 0.600   | 2.00    |
| 53-70-3   | Dibenzo(a,h)anthracene     |           | 89.8   | ug/L  | 0.600   | 2.00    |
| 191-24-2  | Benzo(ghi)perylene         |           | 91.7   | ug/L  | 0.600   | 2.00    |
| 100-52-7  | Benzaldehyde               |           | 59.6   | ug/L  | 6.00    | 20.0    |
| 98-86-2   | Acetophenone               |           | 70.9   | ug/L  | 6.00    | 20.0    |
| 105-60-2  | Caprolactam                |           | 36.9   | ug/L  | 6.00    | 20.0    |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene |           | 69.1   | ug/L  | 6.00    | 20.0    |
| 92-52-4   | 1,1'-Biphenyl              |           | 67.9   | ug/L  | 6.00    | 20.0    |
| 1912-24-9 | Atrazine                   |           | 80.3   | ug/L  | 6.00    | 20.0    |
| 91-94-1   | 3,3'-Dichlorobenzidine     |           | 79.3   | ug/L  | 6.00    | 20.0    |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2622.D  
Acq On : 26 Aug 2011 17:18  
Operator : JLD1  
InstName : MSD 3  
Sample : |1202473717|1135988|1|SVM|1|MS  
Misc : |MSD1C70D\_L|UBN110329-01.4|MIX[A,B]  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 27 15:45:08 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.893  | 4.896  | 1.000  | 479448   | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.180  | 6.180  | 1.000  | 1831235  | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 8.053  | 8.056  | 1.000  | 825095   | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.667  | 9.670  | 1.000  | 1298083  | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.701 | 12.704 | 1.000  | 1073331  | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 15.057 | 15.066 | 1.000  | 579836   | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.893  | 4.896  | 1.000  | 479448   | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 1831235  | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 8.053  | 8.056  | 1.000  | 825095   | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.667  | 9.670  | 1.000  | 1298083  | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.701 | 12.704 | 1.000  | 1073331  | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 15.057 | 15.066 | 1.000  | 579836   | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 1831235  | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 8.053  | 8.056  | 1.000  | 825095   | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.667  | 9.670  | 1.000  | 1298083  | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.701 | 12.704 | 1.000  | 1073331  | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 1846329  | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 15.057 | 15.066 | 1.000  | 579836   | 40.00 | ng/uL | 0.00     |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.893  | 4.896  | 1.000  | 479448   | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 1831235  | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 8.053  | 8.056  | 1.000  | 825095   | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.667  | 9.670  | 1.000  | 1298083  | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.701 | 12.704 | 1.000  | 1073331  | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.893  | 4.896  | 1.000  | 479448   | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 1831235  | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.701 | 12.704 | 1.000  | 1073331  | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 15.057 | 15.066 | 1.000  | 579836   | 40.00 | ng/uL | 0.00     |

|                             |     |        |        |       |         |       |       |          |
|-----------------------------|-----|--------|--------|-------|---------|-------|-------|----------|
| System Monitoring Compounds |     |        |        |       |         |       |       | Dev(Min) |
| 5) 2-Fluorophenol           | 112 | 3.711  | 3.676  | 0.758 | 489082  | 31.28 | ng/uL | 0.03     |
| 8) Phenol-d5                | 99  | 4.489  | 4.484  | 0.918 | 522099  | 26.33 | ng/uL | 0.00     |
| 25) Nitrobenzene-d5         | 82  | 5.436  | 5.423  | 0.880 | 550370  | 33.95 | ng/uL | 0.01     |
| 47) 2-Fluorobiphenyl        | 172 | 7.305  | 7.299  | 0.907 | 1118438 | 37.08 | ng/uL | 0.00     |
| 66) 2,4,6-Tribromophenol    | 330 | 8.902  | 8.920  | 1.106 | 49436   | 14.25 | ng/uL | -0.02    |
| 83) p-Terphenyl-d14         | 244 | 11.374 | 11.400 | 0.896 | 863493  | 31.68 | ng/uL | -0.03    |

| Compound                 | Amount  | Range    | Recovery |
|--------------------------|---------|----------|----------|
| 5) 2-Fluorophenol        | 100.000 | 14 - 78  | 31.28%   |
| 8) Phenol-d5             | 100.000 | 14 - 80  | 26.33%   |
| 25) Nitrobenzene-d5      | 50.000  | 40 - 117 | 67.90%   |
| 47) 2-Fluorobiphenyl     | 50.000  | 37 - 102 | 74.16%   |
| 66) 2,4,6-Tribromophenol | 100.000 | 33 - 126 | 14.25%#  |
| 83) p-Terphenyl-d14      | 50.000  | 44 - 134 | 63.36%   |

| Target Compounds             | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  | QValue |
|------------------------------|------|-------|--------|--------|----------|-------|--------|--------|
| 3) N-Methyl-N-nitrosometh... | 74   | 2.742 | 2.673  | 0.560  | 285511   | 25.69 | ng/uL  | 82     |
| 4) Pyridine                  | 79   | 2.779 | 2.702  | 0.568  | 461972   | 30.01 | ng/uL# | 73     |
| 7) Aniline                   | 66   | 4.580 | 4.575  | 0.936  | 289190   | 29.76 | ng/uL  | 83     |
| 9) Phenol                    | 94   | 4.504 | 4.500  | 0.920  | 275722   | 13.36 | ng/uL  | 96     |
| 10) bis(2-Chloroethyl) ether | 63   | 4.617 | 4.613  | 0.944  | 457953   | 27.43 | ng/uL  | 79     |
| 11) 2-Chlorophenol           | 128  | 4.691 | 4.686  | 0.959  | 188925   | 12.20 | ng/uL  | 86     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2622.D  
Acq On : 26 Aug 2011 17:18  
Operator : JLD1  
InstName : MSD 3  
Sample : |1202473717|1135988|1|SVM|1|MS  
Misc : |MSD1C70D\_L|UBN110329-01.4|MIX[A,B]  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 27 15:45:08 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  |     |
|-------------------------------|------|-------|--------|--------|----------|-------|--------|-----|
| 12) n-Decane                  | 43   | 4.694 | 4.695  | 0.959  | 404668   | 13.38 | ng/uL  | 96  |
| 13) 1,3-Dichlorobenzene       | 146  | 4.842 | 4.844  | 0.990  | 460331   | 26.67 | ng/uL  | 98  |
| 14) 1,4-Dichlorobenzene       | 146  | 4.910 | 4.914  | 1.003  | 473156   | 27.04 | ng/uL  | 99  |
| 15) 1,2-Dichlorobenzene       | 146  | 5.061 | 5.065  | 1.034  | 463684   | 28.20 | ng/uL  | 98  |
| 16) bis(2-Chloroisopropyl)... | 45   | 5.126 | 5.138  | 1.048  | 1041809  | 23.48 | ng/uL  | 84  |
| 17) Benzyl alcohol            | 108  | 5.004 | 5.010  | 1.023  | 359312   | 34.55 | ng/uL  | 93  |
| 18) o-Cresol                  | 107  | 5.086 | 5.094  | 1.039  | 290431   | 22.09 | ng/uL  | 99  |
| 19) m,p-Cresols               | 107  | 5.240 | 5.254  | 1.071  | 396915   | 23.57 | ng/uL# | 43  |
| 20) N-Nitrosodipropylamine    | 70   | 5.265 | 5.287  | 1.076  | 378565   | 30.46 | ng/uL  | 75  |
| 23) Hexachloroethane          | 117  | 5.396 | 5.410  | 1.103  | 167376   | 22.99 | ng/uL  | 90  |
| 26) Nitrobenzene              | 77   | 5.458 | 5.446  | 0.883  | 637826   | 38.80 | ng/uL  | 93  |
| 27) Isophorone                | 82   | 5.686 | 5.684  | 0.920  | 1128046  | 36.75 | ng/uL  | 95  |
| 28) 2-Nitrophenol             | 139  | 5.771 | 5.765  | 0.934  | 58645    | 7.19  | ng/uL# | 61  |
| 29) 2,4-Dimethylphenol        | 122  | 5.779 | 5.777  | 0.935  | 439908   | 32.96 | ng/uL  | 97  |
| 30) bis(2-Chloroethoxy)met... | 93   | 5.887 | 5.887  | 0.953  | 640861   | 33.65 | ng/uL  | 99  |
| 31) 2,4-Dichlorophenol        | 162  | 6.010 | 6.012  | 0.972  | 110421   | 9.79  | ng/uL  | 96  |
| 32) Benzoic acid              | 105  | 5.876 | 5.890  | 0.951  | 287311   | 30.19 | ng/uL  | 94  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 6.109 | 6.107  | 0.989  | 394195   | 29.68 | ng/uL  | 99  |
| 34) alpha-Terpineol           | 59   | 6.186 | 6.192  | 1.001  | 435094   | 22.34 | ng/uL  | 75  |
| 35) Naphthalene               | 128  | 6.203 | 6.203  | 1.004  | 1382666  | 33.27 | ng/uL  | 91  |
| 36) 4-Chloroaniline           | 127  | 6.240 | 6.241  | 1.010  | 636158   | 39.22 | ng/uL  | 88  |
| 37) Hexachlorobutadiene       | 225  | 6.308 | 6.314  | 1.021  | 203817   | 28.98 | ng/uL  | 100 |
| 38) 4-Chloro-3-methylphenol   | 107  | 6.723 | 6.735  | 1.088  | 247046   | 20.10 | ng/uL  | 96  |
| 39) 2-Methylnaphthalene       | 142  | 6.925 | 6.944  | 1.120  | 933483   | 32.74 | ng/uL  | 100 |
| 41) 1-Methylnaphthalene       | 142  | 7.033 | 7.054  | 1.138  | 902833   | 33.06 | ng/uL  | 100 |
| 43) Hexachlorocyclopentadiene | 237  | 7.084 | 7.070  | 0.880  | 179252   | 30.78 | ng/uL  | 100 |
| 44) 2,3-Dichloroaniline       | 161  | 7.220 | 7.212  | 0.897  | 505263   | 35.75 | ng/uL  | 97  |
| 45) 2,4,6-Trichlorophenol     | 196  | 7.212 | 7.204  | 0.896  | 50322    | 6.65  | ng/uL  | 100 |
| 46) 2,4,5-Trichlorophenol     | 196  | 7.251 | 7.238  | 0.900  | 60604    | 7.54  | ng/uL  | 98  |
| 48) 2-Chloronaphthalene       | 162  | 7.453 | 7.444  | 0.926  | 883071   | 35.66 | ng/uL  | 99  |
| 49) o-Nitroaniline            | 65   | 7.550 | 7.544  | 0.938  | 257808   | 27.65 | ng/uL  | 80  |
| 51) m-Nitroaniline            | 138  | 7.993 | 7.998  | 0.993  | 235327   | 36.81 | ng/uL  | 89  |
| 52) Dimethylphthalate         | 163  | 7.732 | 7.741  | 0.960  | 1337719  | 48.23 | ng/uL  | 100 |
| 54) 2,6-Dinitrotoluene        | 165  | 7.805 | 7.810  | 0.969  | 279735   | 44.00 | ng/uL  | 78  |
| 55) 2,4-Dinitrotoluene        | 165  | 8.237 | 8.249  | 1.023  | 331540   | 42.73 | ng/uL  | 83  |
| 56) Acenaphthylene            | 152  | 7.902 | 7.902  | 0.981  | 1496140  | 36.52 | ng/uL  | 100 |
| 57) Acenaphthene              | 154  | 8.090 | 8.093  | 1.005  | 875088   | 33.71 | ng/uL  | 96  |
| 59) Dibenzofuran              | 168  | 8.271 | 8.281  | 1.027  | 1292888  | 37.87 | ng/uL  | 100 |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 8.388 | 8.399  | 1.042  | 35433    | 6.16  | ng/uL  | 99  |
| 61) Diethylphthalate          | 149  | 8.485 | 8.503  | 1.054  | 1353354  | 46.11 | ng/uL  | 99  |
| 62) 4-Nitrophenol             | 139  | 8.141 | 8.145  | 1.011  | 60628    | 14.48 | ng/uL  | 90  |
| 63) Fluorene                  | 166  | 8.644 | 8.660  | 1.073  | 1012590  | 34.46 | ng/uL  | 99  |
| 64) 4-Chlorophenylphenylether | 204  | 8.629 | 8.643  | 1.072  | 534481   | 40.33 | ng/uL  | 98  |
| 65) p-Nitroaniline            | 138  | 8.652 | 8.671  | 1.074  | 206763   | 38.34 | ng/uL  | 95  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 8.678 | 8.676  | 0.898  | 18151    | 4.75  | ng/uL  | 87  |
| 69) Diphenylamine             | 169  | 8.754 | 8.754  | 0.906  | 650787   | 28.86 | ng/uL  | 100 |
| 70) 1,2-Diphenylhydrazine     | 77   | 8.803 | 8.799  | 0.911  | 939700   | 29.65 | ng/uL  | 92  |
| 71) 4-Bromophenylphenylether  | 248  | 9.161 | 9.163  | 0.948  | 293564   | 44.46 | ng/uL  | 91  |
| 72) Hexachlorobenzene         | 284  | 9.238 | 9.235  | 0.956  | 290173   | 37.32 | ng/uL  | 100 |
| 73) Pentachlorophenol         | 266  | 9.442 | 9.442  | 0.977  | 20073    | 4.71  | ng/uL  | 97  |
| 74) n-Octadecane              | 57   | 9.485 | 9.499  | 0.981  | 723673   | 21.67 | ng/uL  | 92  |
| 76) Phenanthrene              | 178  | 9.695 | 9.699  | 1.003  | 1279894  | 38.04 | ng/uL  | 100 |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2622.D  
Acq On : 26 Aug 2011 17:18  
Operator : JLD1  
InstName : MSD 3  
Sample : |1202473717|1135988|1|SVM|1|MS  
Misc : |MSD1C70D\_L|UBN110329-01.4|MIX[A,B]  
ALS Vial : 19 Sample Multiplier: 1

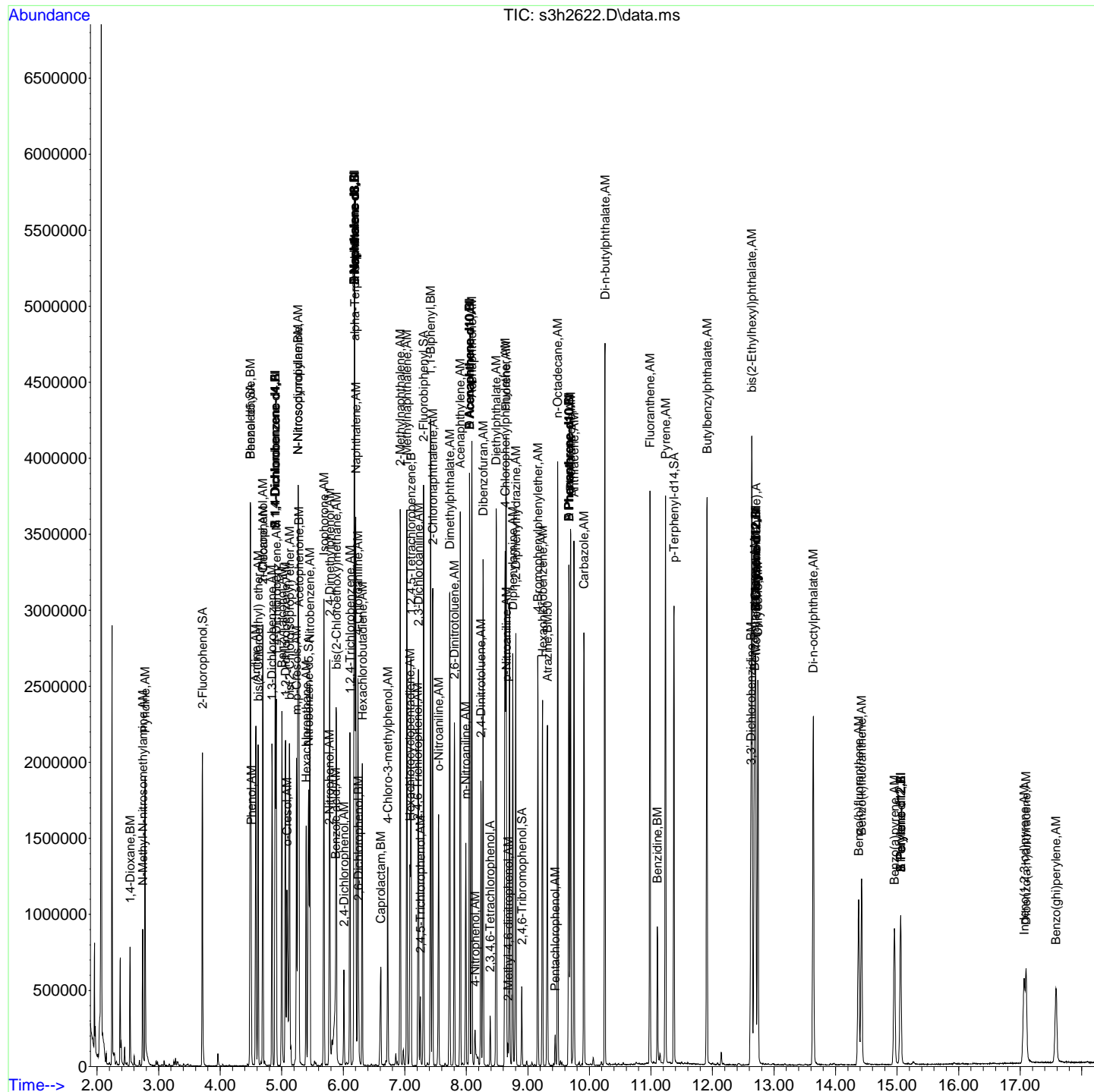
Quant Time: Aug 27 15:45:08 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |     |
|--------------------------------|------|--------|--------|--------|----------|-------|--------|-----|
| 77) Anthracene                 | 178  | 9.749  | 9.756  | 1.009  | 1266448  | 37.37 | ng/uL  | 100 |
| 78) Carbazole                  | 167  | 9.911  | 9.920  | 1.025  | 1163829  | 40.90 | ng/uL  | 100 |
| 79) Di-n-butylphthalate        | 149  | 10.252 | 10.272 | 1.061  | 2277414  | 49.88 | ng/uL  | 100 |
| 80) Fluoranthene               | 202  | 10.985 | 11.008 | 1.136  | 1495727  | 45.19 | ng/uL  | 97  |
| 82) Pyrene                     | 202  | 11.238 | 11.256 | 0.885  | 1540414  | 34.12 | ng/uL  | 96  |
| 84) Butylbenzylphthalate       | 149  | 11.911 | 11.935 | 0.938  | 976389   | 44.25 | ng/uL  | 91  |
| 85) bis(2-Ethylhexyl)phtha...  | 149  | 12.639 | 12.658 | 0.995  | 1392417  | 46.22 | ng/uL  | 98  |
| 86) Benzo(a)anthracene         | 228  | 12.684 | 12.687 | 0.999  | 1134860  | 38.47 | ng/uL  | 100 |
| 87) Chrysene                   | 228  | 12.738 | 12.742 | 1.003  | 1052186  | 38.61 | ng/uL  | 99  |
| 89) Methylenebis(2-chloroa...  | 231  | 12.704 | 12.635 | 1.000  | 1933     | 5.95  | ng/uL# | 1   |
| 90) Di-n-octylphthalate        | 149  | 13.639 | 13.646 | 1.074  | 1572396  | 40.14 | ng/uL  | 86  |
| 92) Benzo(b)fluoranthene       | 252  | 14.375 | 14.390 | 0.955  | 690172   | 38.27 | ng/uL  | 98  |
| 93) Benzo(k)fluoranthene       | 252  | 14.423 | 14.439 | 0.958  | 710047   | 39.07 | ng/uL  | 97  |
| 94) Benzo(a)pyrene             | 252  | 14.957 | 14.967 | 0.993  | 584138   | 38.25 | ng/uL  | 98  |
| 95) Indeno(1,2,3-cd)pyrene     | 276  | 17.063 | 17.061 | 1.133  | 509780   | 44.99 | ng/uL  | 94  |
| 96) Dibenzo(a,h)anthracene     | 278  | 17.094 | 17.095 | 1.135  | 420044   | 44.92 | ng/uL  | 91  |
| 97) Benzo(ghi)perylene         | 276  | 17.583 | 17.572 | 1.168  | 409557   | 45.84 | ng/uL  | 93  |
| 100) 1,4-Dioxane               | 88   | 2.535  | 2.464  | 0.518  | 182380   | 27.41 | ng/uL# | 69  |
| 108) Benzaldehyde              | 77   | 4.489  | 4.485  | 0.918  | 376838   | 29.78 | ng/uL  | 91  |
| 110) N-Nitrosopyrrolidine      | 100  | 5.265  | 5.276  | 1.076  | 289612   | 37.92 | ng/uL# | 71  |
| 111) Acetophenone              | 105  | 5.279  | 5.290  | 1.079  | 749666   | 35.46 | ng/uL# | 9   |
| 117) 2,6-Dichlorophenol        | 162  | 6.248  | 6.253  | 1.011  | 80218    | 6.69  | ng/uL  | 99  |
| 119) Caprolactam               | 113  | 6.609  | 6.616  | 1.069  | 90961    | 18.44 | ng/uL# | 32  |
| 123) 1,2,4,5-Tetrachloroben... | 216  | 7.101  | 7.090  | 0.882  | 426336   | 34.54 | ng/uL  | 99  |
| 124) 1,1-Biphenyl              | 154  | 7.419  | 7.417  | 0.921  | 1182414  | 33.96 | ng/uL  | 97  |
| 137) Atrazine                  | 173  | 9.317  | 9.321  | 0.964  | 66979    | 40.15 | ng/uL  | 95  |
| 144) Benzidine                 | 184  | 11.104 | 11.134 | 1.149  | 338918   | 34.42 | ng/uL  | 97  |
| 152) 3,3'-Dichlorobenzidine    | 252  | 12.622 | 12.632 | 0.994  | 311326   | 39.63 | ng/uL  | 99  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

```
Data Path   : C:\msdchem\1\DATA\s082611.B\  
Data File   : s3h2622.D  
Acq On      : 26 Aug 2011   17:18  
Operator    : JLD1  
InstName    : MSD 3  
Sample      : |1202473717|1135988|1|SVM|1|MS  
Misc        : |MSD1C70D_L|UBN110329-01.4|MIX[A,B]  
ALS Vial    : 19      Sample Multiplier: 1
```

Quant Time: Aug 27 15:45:08 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

|  |   |                             |
|--|---|-----------------------------|
| <b>SDG Number:</b> 284538                  | <b>Date Collected:</b> 08/18/2011 12:00 | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 1202473718           | <b>Date Received:</b> 08/23/2011 08:50  |                             |
| <b>Client Sample:</b> QC for batch 1135986 | <b>Client:</b> ECOL008                  | <b>Project:</b> QC          |
| <b>Client ID:</b> 11080101MSD              | <b>Method:</b> SW846 3510C/8270D        | <b>SOP Ref:</b> GL-OA-E-009 |
| <b>Batch ID:</b> 1135988                   | <b>Inst:</b> MSD3.I                     | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/26/2011 13:57          | <b>Analyst:</b> JLD1                    | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 08/25/2011 18:55         | <b>Aliquot:</b> 500 mL                  | <b>Final Volume:</b> 1 mL   |
| <b>Data File:</b> s082611.B\s3h2614.D      | <b>Column:</b> DB-5ms                   |                             |

| CAS No.    | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|-----------------------------|-----------|--------|-------|---------|---------|
| 108-95-2   | Phenol                      |           | 35.8   | ug/L  | 6.00    | 20.0    |
| 111-44-4   | bis(2-Chloroethyl) ether    |           | 55.7   | ug/L  | 6.00    | 20.0    |
| 95-57-8    | 2-Chlorophenol              |           | 57.3   | ug/L  | 6.00    | 20.0    |
| 39638-32-9 | bis(2-Chloroisopropyl)ether |           | 47.4   | ug/L  | 6.00    | 20.0    |
| 95-48-7    | o-Cresol                    |           | 59.9   | ug/L  | 6.00    | 20.0    |
| 65794-96-9 | m,p-Cresols                 |           | 65.2   | ug/L  | 6.00    | 20.0    |
| 621-64-7   | N-Nitrosodipropylamine      |           | 61.6   | ug/L  | 6.00    | 20.0    |
| 67-72-1    | Hexachloroethane            |           | 43.0   | ug/L  | 6.00    | 20.0    |
| 98-95-3    | Nitrobenzene                |           | 77.4   | ug/L  | 6.00    | 20.0    |
| 78-59-1    | Isophorone                  |           | 75.1   | ug/L  | 6.00    | 20.0    |
| 88-75-5    | 2-Nitrophenol               |           | 53.4   | ug/L  | 6.00    | 20.0    |
| 105-67-9   | 2,4-Dimethylphenol          |           | 74.8   | ug/L  | 6.00    | 20.0    |
| 111-91-1   | bis(2-Chloroethoxy)methane  |           | 68.5   | ug/L  | 6.00    | 20.0    |
| 120-83-2   | 2,4-Dichlorophenol          |           | 59.0   | ug/L  | 6.00    | 20.0    |
| 106-47-8   | 4-Chloroaniline             |           | 80.7   | ug/L  | 6.00    | 20.0    |
| 87-68-3    | Hexachlorobutadiene         |           | 54.8   | ug/L  | 6.00    | 20.0    |
| 59-50-7    | 4-Chloro-3-methylphenol     |           | 71.3   | ug/L  | 6.00    | 20.0    |
| 91-57-6    | 2-Methylnaphthalene         |           | 64.1   | ug/L  | 0.600   | 2.00    |
| 91-20-3    | Naphthalene                 |           | 64.1   | ug/L  | 0.600   | 2.00    |
| 77-47-4    | Hexachlorocyclopentadiene   |           | 54.1   | ug/L  | 6.00    | 20.0    |
| 88-06-2    | 2,4,6-Trichlorophenol       |           | 47.6   | ug/L  | 6.00    | 20.0    |
| 95-95-4    | 2,4,5-Trichlorophenol       |           | 55.1   | ug/L  | 6.00    | 20.0    |
| 91-58-7    | 2-Chloronaphthalene         |           | 68.0   | ug/L  | 0.600   | 2.00    |
| 88-74-4    | o-Nitroaniline              |           | 58.0   | ug/L  | 6.00    | 20.0    |
| 99-09-2    | m-Nitroaniline              |           | 79.7   | ug/L  | 6.00    | 20.0    |
| 131-11-3   | Dimethylphthalate           |           | 104    | ug/L  | 6.00    | 20.0    |
| 606-20-2   | 2,6-Dinitrotoluene          |           | 95.3   | ug/L  | 6.00    | 20.0    |
| 121-14-2   | 2,4-Dinitrotoluene          |           | 96.5   | ug/L  | 6.00    | 20.0    |
| 208-96-8   | Acenaphthylene              |           | 72.5   | ug/L  | 0.600   | 2.00    |
| 83-32-9    | Acenaphthene                |           | 67.4   | ug/L  | 0.600   | 2.00    |
| 51-28-5    | 2,4-Dinitrophenol           | J         | 22.7   | ug/L  | 10.0    | 40.0    |
| 132-64-9   | Dibenzofuran                |           | 76.7   | ug/L  | 6.00    | 20.0    |
| 58-90-2    | 2,3,4,6-Tetrachlorophenol   |           | 52.4   | ug/L  | 6.00    | 20.0    |
| 84-66-2    | Diethylphthalate            |           | 105    | ug/L  | 6.00    | 20.0    |
| 100-02-7   | 4-Nitrophenol               |           | 33.9   | ug/L  | 6.00    | 20.0    |
| 86-73-7    | Fluorene                    |           | 73.2   | ug/L  | 0.600   | 2.00    |
| 7005-72-3  | 4-Chlorophenylphenylether   |           | 84.7   | ug/L  | 6.00    | 20.0    |
| 100-01-6   | p-Nitroaniline              |           | 80.6   | ug/L  | 6.00    | 20.0    |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 2 of 2

|  |   |                             |
|--|---|-----------------------------|
| <b>SDG Number:</b> 284538                  | <b>Date Collected:</b> 08/18/2011 12:00 | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 1202473718           | <b>Date Received:</b> 08/23/2011 08:50  |                             |
| <b>Client Sample:</b> QC for batch 1135986 | <b>Client:</b> ECOL008                  | <b>Project:</b> QC          |
| <b>Client ID:</b> 11080101MSD              | <b>Method:</b> SW846 3510C/8270D        | <b>SOP Ref:</b> GL-OA-E-009 |
| <b>Batch ID:</b> 1135988                   | <b>Inst:</b> MSD3.I                     | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/26/2011 13:57          | <b>Analyst:</b> JLD1                    | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 08/25/2011 18:55         | <b>Aliquot:</b> 500 mL                  | <b>Final Volume:</b> 1 mL   |
| <b>Data File:</b> s082611.B\s3h2614.D      | <b>Column:</b> DB-5ms                   |                             |

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 534-52-1  | 2-Methyl-4,6-dinitrophenol |           | 30.2   | ug/L  | 6.00    | 20.0    |
| 122-39-4  | Diphenylamine              |           | 59.0   | ug/L  | 6.00    | 20.0    |
| 101-55-3  | 4-Bromophenylphenylether   |           | 88.6   | ug/L  | 6.00    | 20.0    |
| 118-74-1  | Hexachlorobenzene          |           | 74.0   | ug/L  | 6.00    | 20.0    |
| 87-86-5   | Pentachlorophenol          |           | 36.4   | ug/L  | 6.00    | 20.0    |
| 85-01-8   | Phenanthrene               |           | 74.7   | ug/L  | 0.600   | 2.00    |
| 120-12-7  | Anthracene                 |           | 72.7   | ug/L  | 0.600   | 2.00    |
| 86-74-8   | Carbazole                  |           | 74.1   | ug/L  | 0.600   | 2.00    |
| 84-74-2   | Di-n-butylphthalate        |           | 93.8   | ug/L  | 6.00    | 20.0    |
| 206-44-0  | Fluoranthene               |           | 75.2   | ug/L  | 0.600   | 2.00    |
| 129-00-0  | Pyrene                     |           | 67.9   | ug/L  | 0.600   | 2.00    |
| 85-68-7   | Butylbenzylphthalate       |           | 87.8   | ug/L  | 6.00    | 20.0    |
| 117-81-7  | bis(2-Ethylhexyl)phthalate |           | 94.4   | ug/L  | 6.00    | 20.0    |
| 56-55-3   | Benzo(a)anthracene         |           | 75.6   | ug/L  | 0.600   | 2.00    |
| 218-01-9  | Chrysene                   |           | 76.5   | ug/L  | 0.600   | 2.00    |
| 117-84-0  | Di-n-octylphthalate        |           | 91.8   | ug/L  | 6.00    | 20.0    |
| 205-99-2  | Benzo(b)fluoranthene       |           | 73.1   | ug/L  | 0.600   | 2.00    |
| 207-08-9  | Benzo(k)fluoranthene       |           | 75.3   | ug/L  | 0.600   | 2.00    |
| 50-32-8   | Benzo(a)pyrene             |           | 74.9   | ug/L  | 0.600   | 2.00    |
| 193-39-5  | Indeno(1,2,3-cd)pyrene     |           | 85.8   | ug/L  | 0.600   | 2.00    |
| 53-70-3   | Dibenzo(a,h)anthracene     |           | 86.3   | ug/L  | 0.600   | 2.00    |
| 191-24-2  | Benzo(ghi)perylene         |           | 86.2   | ug/L  | 0.600   | 2.00    |
| 100-52-7  | Benzaldehyde               |           | 58.2   | ug/L  | 6.00    | 20.0    |
| 98-86-2   | Acetophenone               |           | 72.1   | ug/L  | 6.00    | 20.0    |
| 105-60-2  | Caprolactam                |           | 40.1   | ug/L  | 6.00    | 20.0    |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene |           | 63.2   | ug/L  | 6.00    | 20.0    |
| 92-52-4   | 1,1'-Biphenyl              |           | 64.3   | ug/L  | 6.00    | 20.0    |
| 1912-24-9 | Atrazine                   |           | 81.7   | ug/L  | 6.00    | 20.0    |
| 91-94-1   | 3,3'-Dichlorobenzidine     |           | 79.3   | ug/L  | 6.00    | 20.0    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2614.D  
Acq On : 26 Aug 2011 13:57  
Operator : JLD1  
InstName : MSD 3  
Sample : |1202473718|1135988|1|SVM|1|MSD  
Misc : |MSD1C70D\_L|UBN110329-01.4|MIX[A,B]  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Aug 26 14:50:09 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 4.893  | 4.896  | 1.000  | 514946   | 40.00 | ng/uL | 0.00     |
| 24) A Naphthalene-d8          | 136  | 6.180  | 6.180  | 1.000  | 2002021  | 40.00 | ng/uL | 0.00     |
| 42) A Acenaphthene-d10        | 164  | 8.053  | 8.056  | 1.000  | 965901   | 40.00 | ng/uL | 0.00     |
| 67) A Phenanthrene-d10        | 188  | 9.667  | 9.670  | 1.000  | 1665873  | 40.00 | ng/uL | 0.00     |
| 81) A Chrysene-d12            | 240  | 12.701 | 12.704 | 1.000  | 1118891  | 40.00 | ng/uL | 0.00     |
| 91) A Perylene-d12            | 264  | 15.060 | 15.066 | 1.000  | 744995   | 40.00 | ng/uL | 0.00     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 4.893  | 4.896  | 1.000  | 514946   | 40.00 | ng/uL | 0.00     |
| 114) B Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 2002021  | 40.00 | ng/uL | 0.00     |
| 122) B Acenaphthene-d10       | 164  | 8.053  | 8.056  | 1.000  | 965901   | 40.00 | ng/uL | 0.00     |
| 131) B Phenanthrene-d10       | 188  | 9.667  | 9.670  | 1.000  | 1665873  | 40.00 | ng/uL | 0.00     |
| 145) B Chrysene-d12           | 240  | 12.701 | 12.704 | 1.000  | 1118891  | 40.00 | ng/uL | 0.00     |
| 153) B Perylene-d12           | 264  | 15.060 | 15.066 | 1.000  | 744995   | 40.00 | ng/uL | 0.00     |
| 156) D Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 2002021  | 40.00 | ng/uL | 0.00     |
| 158) D Acenaphthene-d10       | 164  | 8.053  | 8.056  | 1.000  | 965901   | 40.00 | ng/uL | 0.00     |
| 161) D Phenanthrene-d10       | 188  | 9.667  | 9.670  | 1.000  | 1665873  | 40.00 | ng/uL | 0.00     |
| 168) D Chrysene-d12           | 240  | 12.701 | 12.704 | 1.000  | 1118891  | 40.00 | ng/uL | 0.00     |
| 170) E Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 2020221  | 40.00 | ng/uL | 0.00     |
| 172) E Perylene-d12           | 264  | 15.060 | 15.066 | 1.000  | 744995   | 40.00 | ng/uL | 0.00     |
| 174) F 1,4-Dichlorobenzene-d4 | 152  | 4.893  | 4.896  | 1.000  | 514946   | 40.00 | ng/uL | 0.00     |
| 177) F Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 2002021  | 40.00 | ng/uL | 0.00     |
| 181) F Acenaphthene-d10       | 164  | 8.053  | 8.056  | 1.000  | 965901   | 40.00 | ng/uL | 0.00     |
| 184) F Phenanthrene-d10       | 188  | 9.667  | 9.670  | 1.000  | 1665873  | 40.00 | ng/uL | 0.00     |
| 188) F Chrysene-d12           | 240  | 12.701 | 12.704 | 1.000  | 1118891  | 40.00 | ng/uL | 0.00     |
| 192) J 1,4-Dichlorobenzene-d4 | 152  | 4.893  | 4.896  | 1.000  | 514946   | 40.00 | ng/uL | 0.00     |
| 194) J Naphthalene-d8         | 136  | 6.180  | 6.180  | 1.000  | 2002021  | 40.00 | ng/uL | 0.00     |
| 196) J Chrysene-d12           | 240  | 12.701 | 12.704 | 1.000  | 1118891  | 40.00 | ng/uL | 0.00     |
| 199) J Perylene-d12           | 264  | 15.060 | 15.066 | 1.000  | 744995   | 40.00 | ng/uL | 0.00     |

|                             |     |        |        |       |         |       |       |          |
|-----------------------------|-----|--------|--------|-------|---------|-------|-------|----------|
| System Monitoring Compounds |     |        |        |       |         |       |       | Dev(Min) |
| 5) 2-Fluorophenol           | 112 | 3.714  | 3.676  | 0.759 | 756622  | 45.05 | ng/uL | 0.04     |
| 8) Phenol-d5                | 99  | 4.492  | 4.484  | 0.918 | 734512  | 34.48 | ng/uL | 0.00     |
| 25) Nitrobenzene-d5         | 82  | 5.439  | 5.423  | 0.880 | 588507  | 33.20 | ng/uL | 0.02     |
| 47) 2-Fluorobiphenyl        | 172 | 7.305  | 7.299  | 0.907 | 1216406 | 34.45 | ng/uL | 0.00     |
| 66) 2,4,6-Tribromophenol    | 330 | 8.905  | 8.920  | 1.106 | 238544  | 58.75 | ng/uL | -0.01    |
| 83) p-Terphenyl-d14         | 244 | 11.372 | 11.400 | 0.895 | 884406  | 31.13 | ng/uL | -0.03    |

| Compound                 | Amount  | Range    | Recovery |
|--------------------------|---------|----------|----------|
| 5) 2-Fluorophenol        | 100.000 | 14 - 78  | 45.05%   |
| 8) Phenol-d5             | 100.000 | 14 - 80  | 34.48%   |
| 25) Nitrobenzene-d5      | 50.000  | 40 - 117 | 66.40%   |
| 47) 2-Fluorobiphenyl     | 50.000  | 37 - 102 | 68.90%   |
| 66) 2,4,6-Tribromophenol | 100.000 | 33 - 126 | 58.75%   |
| 83) p-Terphenyl-d14      | 50.000  | 44 - 134 | 62.26%   |

| Target Compounds             | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  | QValue |
|------------------------------|------|-------|--------|--------|----------|-------|--------|--------|
| 3) N-Methyl-N-nitrosometh... | 74   | 2.742 | 2.673  | 0.560  | 304214   | 25.49 | ng/uL  | 81     |
| 4) Pyridine                  | 79   | 2.779 | 2.702  | 0.568  | 501252   | 30.32 | ng/uL# | 73     |
| 7) Aniline                   | 66   | 4.581 | 4.575  | 0.936  | 321365   | 30.79 | ng/uL  | 85     |
| 9) Phenol                    | 94   | 4.504 | 4.500  | 0.920  | 396626   | 17.89 | ng/uL  | 97     |
| 10) bis(2-Chloroethyl) ether | 63   | 4.617 | 4.613  | 0.944  | 499021   | 27.83 | ng/uL  | 78     |
| 11) 2-Chlorophenol           | 128  | 4.691 | 4.686  | 0.959  | 476349   | 28.64 | ng/uL  | 86     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2614.D  
Acq On : 26 Aug 2011 13:57  
Operator : JLD1  
InstName : MSD 3  
Sample : |1202473718|1135988|1|SVM|1|MSD  
Misc : |MSD1C70D\_L|UBN110329-01.4|MIX[A,B]  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Aug 26 14:50:09 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  |     |
|-------------------------------|------|-------|--------|--------|----------|-------|--------|-----|
| 12) n-Decane                  | 43   | 4.694 | 4.695  | 0.959  | 397460   | 12.23 | ng/uL  | 96  |
| 13) 1,3-Dichlorobenzene       | 146  | 4.842 | 4.844  | 0.990  | 465551   | 25.11 | ng/uL  | 99  |
| 14) 1,4-Dichlorobenzene       | 146  | 4.910 | 4.914  | 1.003  | 479106   | 25.50 | ng/uL  | 99  |
| 15) 1,2-Dichlorobenzene       | 146  | 5.061 | 5.065  | 1.034  | 472761   | 26.77 | ng/uL  | 98  |
| 16) bis(2-Chloroisopropyl)... | 45   | 5.126 | 5.138  | 1.048  | 1130367  | 23.72 | ng/uL  | 82  |
| 17) Benzyl alcohol            | 108  | 5.004 | 5.010  | 1.023  | 394612   | 35.33 | ng/uL  | 92  |
| 18) o-Cresol                  | 107  | 5.086 | 5.094  | 1.039  | 423160   | 29.96 | ng/uL  | 98  |
| 19) m,p-Cresols               | 107  | 5.243 | 5.254  | 1.071  | 589597   | 32.59 | ng/uL# | 60  |
| 20) N-Nitrosodipropylamine    | 70   | 5.268 | 5.287  | 1.077  | 411477   | 30.82 | ng/uL  | 74  |
| 23) Hexachloroethane          | 117  | 5.396 | 5.410  | 1.103  | 168209   | 21.51 | ng/uL  | 90  |
| 26) Nitrobenzene              | 77   | 5.459 | 5.446  | 0.883  | 695180   | 38.68 | ng/uL  | 94  |
| 27) Isophorone                | 82   | 5.689 | 5.684  | 0.920  | 1260769  | 37.57 | ng/uL  | 94  |
| 28) 2-Nitrophenol             | 139  | 5.771 | 5.765  | 0.934  | 238075   | 26.71 | ng/uL  | 92  |
| 29) 2,4-Dimethylphenol        | 122  | 5.782 | 5.777  | 0.936  | 545401   | 37.38 | ng/uL  | 99  |
| 30) bis(2-Chloroethoxy)met... | 93   | 5.888 | 5.887  | 0.953  | 713469   | 34.27 | ng/uL  | 99  |
| 31) 2,4-Dichlorophenol        | 162  | 6.013 | 6.012  | 0.973  | 363716   | 29.49 | ng/uL  | 96  |
| 32) Benzoic acid              | 105  | 5.882 | 5.890  | 0.952  | 325000   | 31.23 | ng/uL  | 92  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 6.106 | 6.107  | 0.988  | 408953   | 28.16 | ng/uL  | 100 |
| 34) alpha-Terpineol           | 59   | 6.186 | 6.192  | 1.001  | 487732   | 22.91 | ng/uL  | 76  |
| 35) Naphthalene               | 128  | 6.203 | 6.203  | 1.004  | 1455334  | 32.03 | ng/uL  | 93  |
| 36) 4-Chloroaniline           | 127  | 6.240 | 6.241  | 1.010  | 715874   | 40.37 | ng/uL  | 89  |
| 37) Hexachlorobutadiene       | 225  | 6.308 | 6.314  | 1.021  | 210540   | 27.38 | ng/uL  | 100 |
| 38) 4-Chloro-3-methylphenol   | 107  | 6.726 | 6.735  | 1.088  | 479035   | 35.64 | ng/uL  | 98  |
| 39) 2-Methylnaphthalene       | 142  | 6.925 | 6.944  | 1.120  | 999566   | 32.07 | ng/uL  | 99  |
| 41) 1-Methylnaphthalene       | 142  | 7.033 | 7.054  | 1.138  | 985090   | 32.99 | ng/uL  | 100 |
| 43) Hexachlorocyclopentadiene | 237  | 7.084 | 7.070  | 0.880  | 184448   | 27.06 | ng/uL  | 99  |
| 44) 2,3-Dichloroaniline       | 161  | 7.223 | 7.212  | 0.897  | 579314   | 35.01 | ng/uL  | 98  |
| 45) 2,4,6-Trichlorophenol     | 196  | 7.215 | 7.204  | 0.896  | 210921   | 23.80 | ng/uL  | 100 |
| 46) 2,4,5-Trichlorophenol     | 196  | 7.251 | 7.238  | 0.900  | 259072   | 27.54 | ng/uL  | 99  |
| 48) 2-Chloronaphthalene       | 162  | 7.453 | 7.444  | 0.926  | 985313   | 33.99 | ng/uL  | 98  |
| 49) o-Nitroaniline            | 65   | 7.550 | 7.544  | 0.938  | 316588   | 29.01 | ng/uL  | 81  |
| 51) m-Nitroaniline            | 138  | 7.993 | 7.998  | 0.993  | 298223   | 39.85 | ng/uL  | 89  |
| 52) Dimethylphthalate         | 163  | 7.732 | 7.741  | 0.960  | 1684015  | 51.87 | ng/uL  | 99  |
| 54) 2,6-Dinitrotoluene        | 165  | 7.808 | 7.810  | 0.970  | 354765   | 47.67 | ng/uL  | 78  |
| 55) 2,4-Dinitrotoluene        | 165  | 8.240 | 8.249  | 1.023  | 438112   | 48.23 | ng/uL  | 83  |
| 56) Acenaphthylene            | 152  | 7.902 | 7.902  | 0.981  | 1737546  | 36.23 | ng/uL  | 100 |
| 57) Acenaphthene              | 154  | 8.090 | 8.093  | 1.005  | 1023786  | 33.69 | ng/uL  | 97  |
| 58) 2,4-Dinitrophenol         | 184  | 8.098 | 8.105  | 1.006  | 39586    | 11.35 | ng/uL# | 1   |
| 59) Dibenzofuran              | 168  | 8.274 | 8.281  | 1.028  | 1531910  | 38.33 | ng/uL  | 100 |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 8.391 | 8.399  | 1.042  | 176418   | 26.19 | ng/uL  | 98  |
| 61) Diethylphthalate          | 149  | 8.487 | 8.503  | 1.054  | 1795992  | 52.27 | ng/uL  | 99  |
| 62) 4-Nitrophenol             | 139  | 8.147 | 8.145  | 1.012  | 83128    | 16.96 | ng/uL  | 87  |
| 63) Fluorene                  | 166  | 8.647 | 8.660  | 1.074  | 1259523  | 36.61 | ng/uL  | 100 |
| 64) 4-Chlorophenylphenylether | 204  | 8.630 | 8.643  | 1.072  | 657282   | 42.37 | ng/uL  | 98  |
| 65) p-Nitroaniline            | 138  | 8.658 | 8.671  | 1.075  | 254390   | 40.29 | ng/uL  | 95  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 8.681 | 8.676  | 0.898  | 74112    | 15.11 | ng/uL  | 80  |
| 69) Diphenylamine             | 169  | 8.757 | 8.754  | 0.906  | 853670   | 29.50 | ng/uL  | 100 |
| 70) 1,2-Diphenylhydrazine     | 77   | 8.803 | 8.799  | 0.911  | 1188047  | 29.21 | ng/uL  | 92  |
| 71) 4-Bromophenylphenylether  | 248  | 9.164 | 9.163  | 0.948  | 375245   | 44.28 | ng/uL  | 93  |
| 72) Hexachlorobenzene         | 284  | 9.238 | 9.235  | 0.956  | 368945   | 36.98 | ng/uL  | 99  |
| 73) Pentachlorophenol         | 266  | 9.445 | 9.442  | 0.977  | 99428    | 18.20 | ng/uL  | 100 |
| 74) n-Octadecane              | 57   | 9.485 | 9.499  | 0.981  | 897578   | 20.94 | ng/uL  | 92  |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s082611.B\  
Data File : s3h2614.D  
Acq On : 26 Aug 2011 13:57  
Operator : JLD1  
InstName : MSD 3  
Sample : |1202473718|1135988|1|SVM|1|MSD  
Misc : |MSD1C70D\_L|UBN110329-01.4|MIX[A,B]  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Aug 26 14:50:09 2011  
Quant Method : C:\msdchem\1\DATA\s082611.B\MSD3\_8270d\_081211.m  
Quant Title : BNA01 SubList :  
QLast Update : Mon Aug 15 15:17:29 2011  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |     |
|--------------------------------|------|--------|--------|--------|----------|-------|--------|-----|
| 76) Phenanthrene               | 178  | 9.695  | 9.699  | 1.003  | 1613254  | 37.36 | ng/uL  | 100 |
| 77) Anthracene                 | 178  | 9.749  | 9.756  | 1.009  | 1580599  | 36.34 | ng/uL  | 100 |
| 78) Carbazole                  | 167  | 9.911  | 9.920  | 1.025  | 1352691  | 37.04 | ng/uL  | 100 |
| 79) Di-n-butylphthalate        | 149  | 10.252 | 10.272 | 1.061  | 2748216  | 46.90 | ng/uL  | 100 |
| 80) Fluoranthene               | 202  | 10.985 | 11.008 | 1.136  | 1596467  | 37.58 | ng/uL  | 97  |
| 82) Pyrene                     | 202  | 11.235 | 11.256 | 0.885  | 1598099  | 33.96 | ng/uL  | 96  |
| 84) Butylbenzylphthalate       | 149  | 11.909 | 11.935 | 0.938  | 1009697  | 43.89 | ng/uL  | 91  |
| 85) bis(2-Ethylhexyl)phtha...  | 149  | 12.639 | 12.658 | 0.995  | 1481670  | 47.18 | ng/uL  | 98  |
| 86) Benzo(a)anthracene         | 228  | 12.684 | 12.687 | 0.999  | 1161679  | 37.78 | ng/uL  | 100 |
| 87) Chrysene                   | 228  | 12.738 | 12.742 | 1.003  | 1086288  | 38.24 | ng/uL  | 100 |
| 90) Di-n-octylphthalate        | 149  | 13.639 | 13.646 | 1.074  | 1874461  | 45.90 | ng/uL  | 86  |
| 92) Benzo(b)fluoranthene       | 252  | 14.375 | 14.390 | 0.955  | 847061   | 36.55 | ng/uL  | 98  |
| 93) Benzo(k)fluoranthene       | 252  | 14.423 | 14.439 | 0.958  | 878592   | 37.63 | ng/uL  | 96  |
| 94) Benzo(a)pyrene             | 252  | 14.960 | 14.967 | 0.993  | 734617   | 37.44 | ng/uL  | 98  |
| 95) Indeno(1,2,3-cd)pyrene     | 276  | 17.063 | 17.061 | 1.133  | 624528   | 42.90 | ng/uL  | 93  |
| 96) Dibenzo(a,h)anthracene     | 278  | 17.097 | 17.095 | 1.135  | 518484   | 43.15 | ng/uL  | 91  |
| 97) Benzo(ghi)perylene         | 276  | 17.586 | 17.572 | 1.168  | 494678   | 43.09 | ng/uL  | 93  |
| 100) 1,4-Dioxane               | 88   | 2.538  | 2.464  | 0.519  | 197270   | 27.60 | ng/uL# | 69  |
| 108) Benzaldehyde              | 77   | 4.492  | 4.485  | 0.918  | 395487   | 29.10 | ng/uL  | 91  |
| 110) N-Nitrosopyrrolidine      | 100  | 5.268  | 5.276  | 1.077  | 319354   | 38.93 | ng/uL# | 72  |
| 111) Acetophenone              | 105  | 5.279  | 5.290  | 1.079  | 818581   | 36.05 | ng/uL# | 9   |
| 117) 2,6-Dichlorophenol        | 162  | 6.251  | 6.253  | 1.011  | 308798   | 23.55 | ng/uL  | 99  |
| 119) Caprolactam               | 113  | 6.621  | 6.616  | 1.071  | 108225   | 20.07 | ng/uL# | 32  |
| 123) 1,2,4,5-Tetrachloroben... | 216  | 7.101  | 7.090  | 0.882  | 456833   | 31.62 | ng/uL  | 100 |
| 124) 1,1-Biphenyl              | 154  | 7.419  | 7.417  | 0.921  | 1311420  | 32.17 | ng/uL  | 98  |
| 137) Atrazine                  | 173  | 9.320  | 9.321  | 0.964  | 87433    | 40.84 | ng/uL  | 96  |
| 144) Benzidine                 | 184  | 11.104 | 11.134 | 1.149  | 233375   | 18.47 | ng/uL  | 97  |
| 152) 3,3'-Dichlorobenzidine    | 252  | 12.622 | 12.632 | 0.994  | 324724   | 39.65 | ng/uL  | 99  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



# Miscellaneous

# Prep Logbook

## Extraction of Semivolatile and Nonvolatile Organic Compounds from Groundwater, Wastewater, and Other Aqueous Samples

Batch ID: 1135986  
 Analyst: Alton Willis  
 Method: SW846 3510C

Verified by: \_\_\_\_\_

Lab SOP: GL-OA-E-013 REV# 24  
 Instrument: Semi-Volatiles Manual

| Sample ID                  | Run Date             | Initial Volume (mL) | Ph 1 | Ph 2 | Ph 3 | Final Volume (mL) | Prepped Factor (mL/mL) |
|----------------------------|----------------------|---------------------|------|------|------|-------------------|------------------------|
| 1202473715 MB              | 25-AUG-2011 18:55:00 | 1000                | 5    | 1    | 13   | 1                 | 0.001                  |
| 1202473716 LCS             | 25-AUG-2011 18:55:00 | 1000                | 5    | 1    | 13   | 1                 | 0.001                  |
| 284538001                  | 25-AUG-2011 18:55:00 | 1000                | 6    | 1    | 13   | 1                 | 0.001                  |
| 1202473717 MS (284538001)  | 25-AUG-2011 18:55:00 | 500                 | 6    | 1    | 13   | 1                 | 0.002                  |
| 1202473718 MSD (284538001) | 25-AUG-2011 18:55:00 | 500                 | 6    | 1    | 13   | 1                 | 0.002                  |

| Type  | Sample Id  | Description                    | Serial Number | Spike Amt | Units | Comments:  |
|-------|------------|--------------------------------|---------------|-----------|-------|--|
| LCS   | 1202473716 | BNA LCS w/o Benzidine 50ppm    | UE110714-19   | 1         | mL    | Final Solvent: CH2Cl2<br>Verified By: SSS                        |
| LCS   | 1202473716 | BENZIDINE LCS                  | UE110728-02   | 1         | mL    |  |
| MS    | 1202473717 | BNA LCS w/o Benzidine 50ppm    | UE110714-19   | 1         | mL    | Int Ext pH: 1<br>Sec Ext pH: 13                                  |
| MS    | 1202473717 | BENZIDINE LCS                  | UE110728-02   | 1         | mL    |  |
| MSD   | 1202473718 | BNA LCS w/o Benzidine 50ppm    | UE110714-19   | 1         | mL    | Samples 284538001 (MS/MSD) were emulsive during acid extraction. |
| MSD   | 1202473718 | BENZIDINE LCS                  | UE110728-02   | 1         | mL    |  |
| SURR  | All        | BNA for all Surrogate          | UE110728-28   | 1         | mL    |  |
| REGNT | All        | Methylene Chloride             | 1605750-D     | 360       | mL    |  |
| REGNT | All        | 10 N Sodium Hydroxide Solution | 1606966       | 10        | mL    |  |
| REGNT | All        | Sulfuric Acid Sol., 1:1        | 1607507       | 2         | mL    |  |
| SOURC | All        | SODIUM SULFATE                 | 1594298       | 30        | g     |  |

## ORGANIC RUN LOG - INSTRUMENT ID#MSD3

## GEL ORGANIC RUN LOG

DATE: 12-Aug-11METHOD: See DataOPERATOR: JLD1

REVIEWED BY: \_\_\_\_\_

REVIEWED DATE: \_\_\_\_\_

Multiplier Voltage: 1400Internal Std ID: UBN110329-01.2Calibration & QC Information:Solvent Lot: 1574759-D

Initial Calibration Dates: See Calibration History and Standards Log

Initial Calibration Std ID's: See Calibration History and Standards Log

Sequence Number: S081211.B

GEL SOP: GL-OA-E-009

| Analysis   |       | Data File | Lab Sample ID   | Client | Batch # | Dil.   | AS     | Analyst |                       | Comments |
|------------|-------|-----------|-----------------|--------|---------|--------|--------|---------|-----------------------|----------|
| Date       | Time  |           |                 |        |         | Factor | Slot # |         |                       |          |
| 08/12/2011 | 08:37 | s3h1201.D | WBN110724-01    | DFTPP  | DFTPP   | 1      | 1      | JLD1    | DUSE                  |          |
| 08/12/2011 | 08:54 | s3h1202.D | WBN110724-01    | DFTPP  | DFTPP   | 1      | 1      | JLD1    | USE; AP ONLY          |          |
| 08/12/2011 | 09:08 | s3h1203.D | INSTRUMENTBLANK |        |         | 1      | 2      | JLD1    | IB                    |          |
| 08/12/2011 | 09:36 | s3h1204.D | WBN110721-08    | M1     | ICAL    | 1      | 3      | JLD1    | DUSE                  |          |
| 08/12/2011 | 10:05 | s3h1205.D | WBN110721-07    | M2     | ICAL    | 1      | 4      | JLD1    | DUSE                  |          |
| 08/12/2011 | 10:35 | s3h1206.D | WBN110721-07    | M2     | ICAL    | 1      | 4      | JLD1    | DUSE                  |          |
| 08/12/2011 | 11:06 | s3h1207.D | WBN110721-06    | M3     | ICAL    | 1      | 5      | JLD1    | DUSE                  |          |
| 08/12/2011 | 11:37 | s3h1208.D | WBN110721-05.1  | M4     | ICAL    | 1      | 6      | JLD1    | DUSE                  |          |
| 08/12/2011 | 12:08 | s3h1209.D | WBN110721-04    | M5     | ICAL    | 1      | 7      | JLD1    | DUSE                  |          |
| 08/12/2011 | 12:39 | s3h1210.D | WBN110721-03    | M6     | ICAL    | 1      | 8      | JLD1    | DUSE                  |          |
| 08/12/2011 | 13:10 | s3h1211.D | WBN110721-02    | M7     | ICAL    | 1      | 9      | JLD1    | DUSE                  |          |
| 08/12/2011 | 13:41 | s3h1212.D | WBN110721-01    | M8     | ICAL    | 1      | 10     | JLD1    | DUSE                  |          |
| 08/12/2011 | 14:12 | s3h1213.D | WBN110721-08    | M1     | ICAL    | 1      | 3      | JLD1    | DUSE                  |          |
| 08/12/2011 | 14:43 | s3h1214.D | WBN110721-09.1  | MICV   | ICV     | 1      | 11     | JLD1    | DUSE; FAILS AQA       |          |
| 08/12/2011 | 15:29 | s3h1215.D | WBN110719-17    | A2     | ICAL    | 1      | 12     | JLD1    | USE                   |          |
| 08/12/2011 | 15:53 | s3h1216.D | WBN110719-16    | A3     | ICAL    | 1      | 13     | JLD1    | USE                   |          |
| 08/12/2011 | 16:18 | s3h1217.D | WBN110719-15.1  | A4     | ICAL    | 1      | 14     | JLD1    | USE                   |          |
| 08/12/2011 | 16:42 | s3h1218.D | WBN110719-14    | A5     | ICAL    | 1      | 15     | JLD1    | USE                   |          |
| 08/12/2011 | 17:07 | s3h1219.D | WBN110719-13    | A6     | ICAL    | 1      | 16     | JLD1    | USE                   |          |
| 08/12/2011 | 17:32 | s3h1220.D | WBN110719-12    | A7     | ICAL    | 1      | 17     | JLD1    | USE                   |          |
| 08/12/2011 | 17:57 | s3h1221.D | WBN110719-11    | A8     | ICAL    | 1      | 18     | JLD1    | USE                   |          |
| 08/12/2011 | 18:22 | s3h1222.D | WBN110809-18.1  | AICV   | ICV     | 1      | 19     | JLD1    | USE                   |          |
| 08/12/2011 | 18:48 | s3h1223.D | WBN110724-01    | DFTPP  | DFTPP   | 1      | 1      | JLD1    | DUSE; FAILS BREAKDOWN |          |
| 08/12/2011 | 19:01 | s3h1224.D | INSTRUMENTBLANK |        |         | 1      | 2      | JLD1    | IB                    |          |
| 08/12/2011 | 19:32 | s3h1225.D | WBN110726-25    | P2     | ICAL    | 1      | 20     | JLD1    | DUSE; NOT PROCESSED   |          |
| 08/12/2011 | 19:57 | s3h1226.D | WBN110726-24    | P3     | ICAL    | 1      | 21     | JLD1    | DUSE; NOT PROCESSED   |          |
| 08/12/2011 | 20:22 | s3h1227.D | WBN110726-23.1  | P4     | ICAL    | 1      | 22     | JLD1    | DUSE; NOT PROCESSED   |          |
| 08/12/2011 | 20:47 | s3h1228.D | WBN110726-22    | P5     | ICAL    | 1      | 23     | JLD1    | DUSE; NOT PROCESSED   |          |

## ORGANIC RUN LOG - INSTRUMENT ID#MSD3

## GEL ORGANIC RUN LOG

|                  |           |                 |       |       |   |    |      |                       |
|------------------|-----------|-----------------|-------|-------|---|----|------|-----------------------|
| 08/12/2011 21:12 | s3h1229.D | WBN110726-21    | P6    | ICAL  | 1 | 24 | JLD1 | DUSE; NOT PROCESSED   |
| 08/12/2011 21:36 | s3h1230.D | WBN110726-20    | P7    | ICAL  | 1 | 25 | JLD1 | DUSE; NOT PROCESSED   |
| 08/12/2011 22:01 | s3h1231.D | WBN110726-19    | P8    | ICAL  | 1 | 26 | JLD1 | DUSE; NOT PROCESSED   |
| 08/12/2011 22:26 | s3h1232.D | WBN110726-26.1  | PICV  | ICV   | 1 | 27 | JLD1 | DUSE; NOT PROCESSED   |
| 08/12/2011 22:51 | s3h1233.D | WBN110802-31    | H2    | ICAL  | 1 | 28 | JLD1 | DUSE; NOT PROCESSED   |
| 08/12/2011 23:16 | s3h1234.D | WBN110802-32    | H3    | ICAL  | 1 | 29 | JLD1 | DUSE; NOT PROCESSED   |
| 08/12/2011 23:40 | s3h1235.D | WBN110802-33.1  | H4    | ICAL  | 1 | 30 | JLD1 | DUSE; NOT PROCESSED   |
| 08/13/2011 00:05 | s3h1236.D | WBN110802-34    | H5    | ICAL  | 1 | 31 | JLD1 | DUSE; NOT PROCESSED   |
| 08/13/2011 00:30 | s3h1237.D | WBN110802-35    | H6    | ICAL  | 1 | 32 | JLD1 | DUSE; NOT PROCESSED   |
| 08/13/2011 00:55 | s3h1238.D | WBN110802-36    | H7    | ICAL  | 1 | 33 | JLD1 | DUSE; NOT PROCESSED   |
| 08/13/2011 01:19 | s3h1239.D | WBN110802-33.2  | HCCV  | CCV   | 1 | 34 | JLD1 | DUSE; NOT PROCESSED   |
| 08/13/2011 01:44 | s3h1240.D | WBN110615-51    | N2    | ICAL  | 1 | 35 | JLD1 | DUSE; NOT PROCESSED   |
| 08/13/2011 02:09 | s3h1241.D | WBN110615-52    | N3    | ICAL  | 1 | 36 | JLD1 | DUSE; NOT PROCESSED   |
| 08/13/2011 02:34 | s3h1242.D | WBN110615-53    | N4    | ICAL  | 1 | 37 | JLD1 | DUSE; NOT PROCESSED   |
| 08/13/2011 02:58 | s3h1243.D | WBN110615-54    | N5    | ICAL  | 1 | 38 | JLD1 | DUSE; NOT PROCESSED   |
| 08/13/2011 03:23 | s3h1244.D | WBN110615-55    | N6    | ICAL  | 1 | 39 | JLD1 | DUSE; NOT PROCESSED   |
| 08/13/2011 03:48 | s3h1245.D | WBN110615-56    | N7    | ICAL  | 1 | 40 | JLD1 | DUSE; NOT PROCESSED   |
| 08/13/2011 04:13 | s3h1246.D | WBN110615-57    | N8    | ICAL  | 1 | 41 | JLD1 | DUSE; NOT PROCESSED   |
| 08/13/2011 04:37 | s3h1247.D | WBN110615-58    | NCCV  | CCV   | 1 | 42 | JLD1 | DUSE; NOT PROCESSED   |
| 08/13/2011 05:04 | s3h1248.D | WBN110724-01    | DFTPP | DFTPP | 1 | 1  | JLD1 | USE; BJCO/MEGA        |
| 08/13/2011 05:17 | s3h1249.D | INSTRUMENTBLANK |       |       | 1 | 2  | JLD1 | IB                    |
| 08/13/2011 05:42 | s3h1250.D | WBN110802-47    | B2    | ICAL  | 1 | 43 | JLD1 | USE                   |
| 08/13/2011 06:12 | s3h1251.D | WBN110802-46    | B3    | ICAL  | 1 | 44 | JLD1 | USE                   |
| 08/13/2011 06:43 | s3h1252.D | WBN110802-45.1  | B4    | ICAL  | 1 | 45 | JLD1 | USE                   |
| 08/13/2011 07:15 | s3h1253.D | WBN110802-44    | B5    | ICAL  | 1 | 46 | JLD1 | USE                   |
| 08/13/2011 07:46 | s3h1254.D | WBN110802-43    | B6    | ICAL  | 1 | 47 | JLD1 | USE                   |
| 08/13/2011 08:17 | s3h1255.D | WBN110802-42    | B7    | ICAL  | 1 | 48 | JLD1 | USE                   |
| 08/13/2011 08:48 | s3h1256.D | WBN110802-41    | B8    | ICAL  | 1 | 49 | JLD1 | USE                   |
| 08/13/2011 09:19 | s3h1257.D | WBN110802-45.2  | BCCV  | CCV   | 1 | 50 | JLD1 | USE                   |
| 08/13/2011 09:50 | s3h1258.D | WBN110812-08    | M1    | ICAL  | 1 | 51 | JLD1 | USE                   |
| 08/13/2011 10:21 | s3h1259.D | WBN110812-07    | M2    | ICAL  | 1 | 52 | JLD1 | USE                   |
| 08/13/2011 10:52 | s3h1260.D | WBN110812-06    | M3    | ICAL  | 1 | 53 | JLD1 | USE                   |
| 08/13/2011 11:24 | s3h1261.D | WBN110812-05.1  | M4    | ICAL  | 1 | 54 | JLD1 | USE                   |
| 08/13/2011 11:55 | s3h1262.D | WBN110812-04    | M5    | ICAL  | 1 | 55 | JLD1 | USE                   |
| 08/13/2011 12:26 | s3h1263.D | WBN110812-03    | M6    | ICAL  | 1 | 56 | JLD1 | USE                   |
| 08/13/2011 12:57 | s3h1264.D | WBN110812-02    | M7    | ICAL  | 1 | 57 | JLD1 | USE                   |
| 08/13/2011 13:28 | s3h1265.D | WBN110812-01    | M8    | ICAL  | 1 | 58 | JLD1 | USE                   |
| 08/13/2011 13:59 | s3h1266.D | WBN110812-09.1  | MICV  | ICV   | 1 | 59 | JLD1 | USE                   |
| 08/14/2011 15:46 | s3h1267.D | WBN110724-01    | DFTPP | DFTPP | 1 | 60 | JLD1 | DUSE; FAILS BREAKDOWN |
| 08/14/2011 16:01 | s3h1268.D | WBN110724-01    | DFTPP | DFTPP | 1 | 60 | JLD1 | DUSE; FAILS BREAKDOWN |
| 08/14/2011 16:23 | s3h1269.D | WBN110724-01    | DFTPP | DFTPP | 1 | 60 | JLD1 | DUSE; FAILS BREAKDOWN |

## ORGANIC RUN LOG - INSTRUMENT ID#MSD3

## GEL ORGANIC RUN LOG

|                  |           |                 |       |       |   |    |      |                   |
|------------------|-----------|-----------------|-------|-------|---|----|------|-------------------|
| 08/14/2011 16:38 | s3h1270.D | WBN110724-01    | DFTPP | DFTPP | 1 | 60 | JLD1 | USE; PEST/HEX/NEV |
| 08/14/2011 16:51 | s3h1271.D | INSTRUMENTBLANK |       |       | 1 | 61 | JLD1 | IB                |
| 08/14/2011 17:22 | s3h1272.D | WBN110726-25    | P2    | ICAL  | 1 | 62 | JLD1 | USE               |
| 08/14/2011 17:47 | s3h1273.D | WBN110726-24    | P3    | ICAL  | 1 | 63 | JLD1 | USE               |
| 08/14/2011 18:12 | s3h1274.D | WBN110726-23.1  | P4    | ICAL  | 1 | 64 | JLD1 | USE               |
| 08/14/2011 18:36 | s3h1275.D | WBN110726-22    | P5    | ICAL  | 1 | 65 | JLD1 | USE               |
| 08/14/2011 19:01 | s3h1276.D | WBN110726-21    | P6    | ICAL  | 1 | 66 | JLD1 | USE               |
| 08/14/2011 19:26 | s3h1277.D | WBN110726-20    | P7    | ICAL  | 1 | 67 | JLD1 | USE               |
| 08/14/2011 19:51 | s3h1278.D | WBN110726-19    | P8    | ICAL  | 1 | 68 | JLD1 | USE               |
| 08/14/2011 20:15 | s3h1279.D | WBN110726-26.1  | PICV  | ICV   | 1 | 69 | JLD1 | USE               |
| 08/14/2011 20:40 | s3h1280.D | WBN110802-31    | H2    | ICAL  | 1 | 70 | JLD1 | USE               |
| 08/14/2011 21:05 | s3h1281.D | WBN110802-32    | H3    | ICAL  | 1 | 71 | JLD1 | USE               |
| 08/14/2011 21:30 | s3h1282.D | WBN110802-33.1  | H4    | ICAL  | 1 | 72 | JLD1 | USE               |
| 08/14/2011 21:55 | s3h1283.D | WBN110802-34    | H5    | ICAL  | 1 | 73 | JLD1 | USE               |
| 08/14/2011 22:20 | s3h1284.D | WBN110802-35    | H6    | ICAL  | 1 | 74 | JLD1 | USE               |
| 08/14/2011 22:44 | s3h1285.D | WBN110802-36    | H7    | ICAL  | 1 | 75 | JLD1 | USE               |
| 08/14/2011 23:09 | s3h1286.D | WBN110802-33.2  | HCCV  | CCV   | 1 | 76 | JLD1 | USE               |
| 08/14/2011 23:34 | s3h1287.D | WBN110615-51    | N2    | ICAL  | 1 | 77 | JLD1 | USE               |
| 08/14/2011 23:59 | s3h1288.D | WBN110615-52    | N3    | ICAL  | 1 | 78 | JLD1 | USE               |
| 08/15/2011 00:24 | s3h1289.D | WBN110615-53    | N4    | ICAL  | 1 | 79 | JLD1 | USE               |
| 08/15/2011 00:49 | s3h1290.D | WBN110615-54    | N5    | ICAL  | 1 | 80 | JLD1 | USE               |
| 08/15/2011 01:13 | s3h1291.D | WBN110615-55    | N6    | ICAL  | 1 | 81 | JLD1 | USE               |
| 08/15/2011 01:38 | s3h1292.D | WBN110615-56    | N7    | ICAL  | 1 | 82 | JLD1 | USE               |
| 08/15/2011 02:03 | s3h1293.D | WBN110615-57    | N8    | ICAL  | 1 | 83 | JLD1 | USE               |
| 08/15/2011 02:28 | s3h1294.D | WBN110615-58    | NCCV  | CCV   | 1 | 84 | JLD1 | USE               |

## ORGANIC RUN LOG - INSTRUMENT ID#MSD3

## GEL ORGANIC RUN LOG

DATE: 26-Aug-11METHOD: See DataOPERATOR: JLD1

REVIEWED BY: \_\_\_\_\_

REVIEWED DATE: \_\_\_\_\_

Multiplier Voltage: 1424Internal Std ID: UBN110329-01.4Calibration & QC Information:Solvent Lot: 1598647-D

Initial Calibration Dates: See Calibration History and Standards Log

Initial Calibration Std ID's: See Calibration History and Standards Log

Sequence Number: S082611.B

GEL SOP: GL-OA-E-009

| Analysis   |       | Data File | Lab Sample ID  | Client | Batch # | Dil.   | AS     | Analyst |   | Comments |
|------------|-------|-----------|----------------|--------|---------|--------|--------|---------|---|----------|
| Date       | Time  |           |                |        |         | Factor | Slot # |         |   |          |
| 08/26/2011 | 08:17 | s3h2601.D | WBN110724-01   | DFTPP  | DFTPP   | 1      | 1      | JLD1    | DUSE                                      |          |
| 08/26/2011 | 08:30 | s3h2602.D | WBN110812-05.3 | MCCV   | CCV     | 1      | 2      | JLD1    | DUSE; MAINTENANCE                         |          |
| 08/26/2011 | 09:04 | s3h2603.D | WBN110724-01   | DFTPP  | DFTPP   | 1      | 1      | JLD1    | DUSE                                      |          |
| 08/26/2011 | 09:22 | s3h2604.D | WBN110724-01   | DFTPP  | DFTPP   | 1      | 1      | JLD1    | USE                                       |          |
| 08/26/2011 | 09:34 | s3h2605.D | WBN110812-05.3 | MCCV   | CCV     | 1      | 2      | JLD1    | USE; 520022                               |          |
| 08/26/2011 | 10:06 | s3h2606.D | WBN110809-18.3 | ACCV   | CCV     | 1      | 3      | JLD1    | USE                                       |          |
| 08/26/2011 | 10:31 | s3h2607.D | WBN110615-23.5 | PCCV   | CCV     | 1      | 4      | JLD1    | USE                                       |          |
| 08/26/2011 | 11:24 | s3h2608.D | 1202473715     | MB     | 1135988 | 1      | 5      | JLD1    | USE                                       |          |
| 08/26/2011 | 11:49 | s3h2609.D | 1202473716     | LCS    | 1135988 | 1      | 6      | JLD1    | USE                                       |          |
| 08/26/2011 | 12:17 | s3h2610.D | 1202474717     | MB     | 1136357 | 1      | 7      | JLD1    | USE                                       |          |
| 08/26/2011 | 12:42 | s3h2611.D | 1202474718     | LCS    | 1136357 | 1      | 8      | JLD1    | USE                                       |          |
| 08/26/2011 | 13:07 | s3h2612.D | 284538001      | ECOL   | 1135988 | 1      | 9      | JLD1    | USE                                       |          |
| 08/26/2011 | 13:32 | s3h2613.D | 1202473717     | MS     | 1135988 | 1      | 10     | JLD1    | DUSE; FAIL SPIKE AND SURR S3H2622 CONFIRM |          |
| 08/26/2011 | 13:57 | s3h2614.D | 1202473718     | MSD    | 1135988 | 1      | 11     | JLD1    | USE                                       |          |
| 08/26/2011 | 14:22 | s3h2615.D | 284583001      | WSRB   | 1136357 | 1      | 12     | JLD1    | USE                                       |          |
| 08/26/2011 | 14:47 | s3h2616.D | 1202474719     | MS     | 1136357 | 1      | 13     | JLD1    | USE                                       |          |
| 08/26/2011 | 15:12 | s3h2617.D | 1202474720     | MSD    | 1136357 | 1      | 14     | JLD1    | USE                                       |          |
| 08/26/2011 | 15:38 | s3h2618.D | 284583002      | WSRB   | 1136357 | 1      | 15     | JLD1    | USE                                       |          |
| 08/26/2011 | 16:03 | s3h2619.D | 284583003      | WSRB   | 1136357 | 1      | 16     | JLD1    | USE                                       |          |
| 08/26/2011 | 16:28 | s3h2620.D | 284583004      | WSRB   | 1136357 | 1      | 17     | JLD1    | USE                                       |          |
| 08/26/2011 | 16:53 | s3h2621.D | 284583005      | WSRB   | 1136357 | 1      | 18     | JLD1    | USE                                       |          |
| 08/26/2011 | 17:18 | s3h2622.D | 1202473717     | MS     | 1135988 | 1      | 19     | JLD1    | USE-STILL FAIL SPIKE/SURR                 |          |
| 08/26/2011 | 17:43 | s3h2623.D | 284583004      | WSRB   | 1136357 | 1      | 17     | JLD1    | DUSE-NOT NEEDED                           |          |
| 08/26/2011 | 18:08 | s3h2624.D | 284583005      | WSRB   | 1136357 | 1      | 18     | JLD1    | DUSE-NOT NEEDED                           |          |



### DATA EXCEPTION REPORT

|  |  |  |                             |
|--|--|--|-----------------------------|
| <b>Mo.Day Yr.</b><br>29-AUG-11   | <b>Division:</b><br>Industrial             | <b>Quality Criteria:</b><br>Specifications   | <b>Type:</b><br>Process     |
| <b>Instrument Type:</b><br>SEMIVOA GC/MS   | <b>Test / Method:</b><br>SW846 3510C/8270D | <b>Matrix Type:</b><br>Liquid  | <b>Client Code:</b><br>ECOL |
| <b>Batch ID:</b><br>1135988  | <b>Sample Numbers:</b><br>See Below        |  |                             |
| <b>Potentially affected work order(s)(SDG): 284538</b><br><b>Application Issues:</b><br>Failed Recovery for MS/PS<br>Failed RPD for MS/MSD, or PS/PSD<br>Failed Yield for Surrogates<br>Failed Recovery for MSD/PSD  |  |  |                             |
| <b>Specification and Requirements</b><br><b>Exception Description:</b>   |  | <b>DER Disposition:</b>  |                             |
| 1. The MS(1202473717) recovered 2,4,6-Tribromophenol at 14%. The limits are 33%-126%.<br><br>2. The MS(1202473717) recovered multiple spike analytes outside of the established acceptance limits. Please see the QC Summary for specific failures.<br><br>3. The MSD(1202473718) recovered 4-Nitrophenol at 34%. The limits are 39%-96%.<br><br>4. Multiple MS(1202473717)/MSD(1202473718) RPD values were outside of the established acceptance limits. Please see the QC Summary for specific failures. |  | 1. The MB(1202473715), LCS(1202473716) and MSD(1202473718) satisfied surrogate recovery acceptance criteria. Also, all associated client samples displayed acceptable surrogate recoveries. Therefore, it was determined that the failure was limited to the MS sample only and re-extraction was considered un-necessary.<br><br>2. The LCS(1202473716) and MSD(1202473718) satisfied batch QC acceptance criteria (with the exception of 4-Nitrophenol in the MSD - see item #3 of this NCR). Therefore, it was determined that the failures were limited to the MS(1202473717) sample only and re-extraction was considered un-necessary.<br><br>3. 4-Nitrophenol was identified as poor responding analyte in the analytical method (EPA 8270 D). This may account for the low recovery it displayed in the MSD (as well as in the MS).<br><br>4. The failures were attributed to the poor recoveries in the MS (see item #2 of this NCR). |                             |

**Originator's Name:**

Jennifer Dunagan Jones 29-AUG-11

**Data Validator/Group Leader:**

Daniel Beacham 13-SEP-11

# **GC Semivolatile Pesticide Analysis**

# Case Narrative

**Pesticide Case Narrative**  
**Ecology and Environment, Inc. Start-3 002233.2008 (ECOL)**  
**SDG 284538**

**Method/Analysis Information**

**Procedure:**                    **Organochlorine Pesticides and Chlorinated Hydrocarbons**  
Analytical Method:        SW846 3535A/8081B  
Prep Method:                SW846 3535A  
Analytical Batch Number: 1136049  
Prep Batch Number:        1136047

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in SW846 3535A/8081B:

| <b>Sample ID</b> | <b>Client ID</b>                                 |
|------------------|--|
| 284538001        | 11080101   |
| 1202473924       | Method Blank (MB)                                |
| 1202473925       | Laboratory Control Sample (LCS)                  |
| 1202473926       | 284538001(11080101) Matrix Spike (MS)            |
| 1202473927       | 284538001(11080101) Matrix Spike Duplicate (MSD) |

The samples in this SDG were analyzed on an "as received" basis.

**Preparation/Analytical Method Verification**

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-041 REV# 11.

Raw data reports are processed and reviewed by the analyst using the Target software package. False positives have been removed from the Target quantitation reports per standard operating procedures (SOP) section 23.0.

**Calibration Information**

Please note that the 'Cal Date' indicated on each quantitation report reflects the date and time of the most recent calibrated analyte(s) in the Target processing method. Since the laboratory may calibrate with multiple solutions on different days using the same processing method, the Target software will update the 'Cal Date' to the last calibration file, date and time. The correct dates and times for all calibration files are located on the Calibration History report in the Standard Data section in the data package.

Due to software limitations, the Calibration Summary Form 6 may not indicate all the calibration files comprising the initial calibration. A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package.

**Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).

The linear equation used in Target and indicated on the initial calibration summary form is not a conventional linear equation (slope intercept formula) and does not match the equation found in SW-846 method 8000B. The x and y

SDG 284538-PEST

axes are inversed in Target, so that the instrument response is treated as the independent variable (x) and the concentration ratio is treated as the dependent variable (y). The equation used in Target to calculate sample results is adjusted to account for the linear equation inversion and reciprocal slope. The adjusted calculation has been independently verified to produce valid results.

#### **Continuing Calibration Verification (CCV) Requirements**

All calibration verification standards (CVS, ICV, or CCV) requirements were met for this SDG. All analytes were within the established retention time windows for this method.

#### **Quality Control (QC) Information**

##### **Method Blank (MB) Statement**

The MB analyzed with this SDG met the acceptance criteria.

##### **Surrogate Recoveries**

QC samples 1202473926 (11080101MS) and 1202473927 (11080101MSD) did not meet the acceptance criteria for surrogate yields. As the MS and MSD exhibited similar surrogate yields, the non-compliances were attributed to sample matrix interference and the data were reported. See DER #992483 located in the Miscellaneous Data section of this package.

##### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

##### **QC Sample Designation**

Sample 284538001 (11080101) was selected for analysis as the matrix spike and matrix spike duplicate.

##### **Matrix Spike (MS) Recovery Statement**

The matrix spike (MS) recoveries for this SDG were not within the acceptance limits. The non-compliant spike recoveries were confirmed in the matrix spike duplicate (MSD) and were therefore attributed to sample matrix interference. See DER #992483 located in the Miscellaneous Data section of this package.

##### **Matrix Spike Duplicate (MSD) Recovery Statement**

The matrix spike duplicate (MSD) recoveries for this SDG were not within the acceptance limits. The non-compliant spike recoveries were confirmed in the matrix spike (MS) and were therefore attributed to sample matrix interference. See DER #992483 located in the Miscellaneous Data section of this package.

##### **MS/MSD Relative Percent Difference (RPD) Statement**

The RPD values between the MS and MSD met the acceptance limits.

#### **Technical Information:**

##### **Holding Time Specifications**

GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

##### **Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP. All reported analyte detections in client and quality control samples were within the established retention time windows. Reported target analyte concentrations were confirmed on a dissimilar column.

##### **Sample Dilutions**

The samples in this SDG did not require dilutions.

**Sample Re-extraction/Re-analysis**

Re-extractions were not required in this SDG.

**Florisil**

Florisil clean-up was not performed on client and quality control samples in this batch.

**Miscellaneous Information:****Electronic Package Comment**

This package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative.

**Data Exception (DER) Documentation**

Data Exception Reports (DERs) are for documentation of any procedural anomalies that may deviate from referenced SOP or contractual document. DER #992483 was generated for this SDG. A copy was included in the Miscellaneous Data section of this package.

**Manual Integrations**

Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this pesticide fraction.

**Additional Comments**

The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments were required:

Prep 1136047 comment: Samples 284538001(11080101), 1202473926 (11080101MS), and 1202473927 (11080101MSD) were brown in color with suspended solids.

The higher of the results from either column have been chosen and reported in the data package for the client sample, MB, and LCS. The matrix QC results were reported from the same analytical column as the parent sample.

The data reported on the forms I and III may differ slightly from the data reported on the form X. This is due to software limitations in rounding differences between the forms.

Due to software limitation, the Form VIIs will display the results either in the % difference or % drift depending on the type of the calibration curve. If the curve of all analytes is generated using an average response factor (RF), the Form VII will display results using the %difference calculation (RF). If the curve of one or more analytes is generated using a linear curve, the Form VII will display results using the % drift calculation (by concentration) for all analyte.

### **System Configuration**

The Semi-Volatiles-Pesticide analysis was performed on the following instrument configuration:

| <b>Instrument ID</b> | <b>Instrument</b>   | <b>System Configuration</b> | <b>Column ID</b> | <b>Column Description</b>                 |
|----------------------|---|-----------------------------|------------------|---|
| ECD3A.I_1            | Agilent 6890 Gas Chromatograph/Dual ECD w/ 7683 Autosampler | HP6890 Series ECD           | Rtx-CLP I        | 30m x 0.25mm, 0.25um (Rtx-CLPesticide)    |
| ECD3A.I_2            | Agilent 6890 Gas Chromatograph/Dual ECD w/ 7683 Autosampler | HP6890 Series ECD           | Rtx-CLP II       | 30m x 0.25mm, 0.20um (Rtx-CLPesticide II) |

### **Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

**Review Validation**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer: Heather Ann Log

Date: 09/15/2011



## Roadmap for ECOL 284538 PEST

This roadmap was analyzed by REB01393 on 09-01-2011, 15:21.

This roadmap was reviewed by jcb on 09-02-2011, 08:59.

This roadmap was packaged by hea01125 on 09-15-2011, 11:59.

Front Sample Column

| exclude                  | manual | datafile                           | smpid     | sampletype | injdate     | injtime | sublist    | clientid | dilution | prebatchid | comment              |
|--------------------------|--------|------------------------------------|-----------|------------|-------------|---------|------------|----------|----------|------------|----------------------|
| <input type="checkbox"/> | N      | /chem/ecd3a.i/083011P.B/016F1601.D | 284538001 | sample     | 30-AUG-2011 | 18:59   | 284538.sub | 11080101 | 1.00000  | 1136049    | <input type="text"/> |

Back Sample Column

| exclude                  | manual | datafile                           | smpid     | sampletype | injdate     | injtime | sublist    | clientid | dilution | prebatchid | comment                           |
|--------------------------|--------|------------------------------------|-----------|------------|-------------|---------|------------|----------|----------|------------|-----------------------------------|
| <input type="checkbox"/> | N      | /chem/ecd3a.i/083011P.B/016B1601.D | 284538001 | sample     | 30-AUG-2011 | 18:59   | 284538.sub | 11080101 | 1.00000  | 1136049    | USE. PASSING BOTH, UPLOAD HIGHER. |

Front QC Sample Column

| exclude                  | manual | datafile                           | smpid      | sampletype | injdate     | injtime | sublist    | clientid    | dilution | prebatchid | comment              |
|--------------------------|--------|------------------------------------|------------|------------|-------------|---------|------------|-------------|----------|------------|----------------------|
| <input type="checkbox"/> | N      | /chem/ecd3a.i/083011P.B/014F1401.D | 1202473924 | mb         | 30-AUG-2011 | 18:28   | 284538.sub | PBLK01      | 1.00000  | 1136049    | <input type="text"/> |
| <input type="checkbox"/> | N      | /chem/ecd3a.i/083011P.B/015F1501.D | 1202473925 | lcs        | 30-AUG-2011 | 18:43   | 284538.sub | PBLK01LCS   | 1.00000  | 1136049    | <input type="text"/> |
| <input type="checkbox"/> | N      | /chem/ecd3a.i/083011P.B/017F1701.D | 1202473926 | ms         | 30-AUG-2011 | 19:15   | 284538.sub | 11080101MS  | 1.00000  | 1136049    | <input type="text"/> |
| <input type="checkbox"/> | N      | /chem/ecd3a.i/083011P.B/018F1801.D | 1202473927 | msd        | 30-AUG-2011 | 19:30   | 284538.sub | 11080101MSD | 1.00000  | 1136049    | <input type="text"/> |

Back QC Sample Column

| exclude                  | manual | datafile                           | smpid      | sampletype | injdate     | injtime | sublist    | clientid    | dilution | prebatchid | comment                           |
|--------------------------|--------|------------------------------------|------------|------------|-------------|---------|------------|-------------|----------|------------|-----------------------------------|
| <input type="checkbox"/> | N      | /chem/ecd3a.i/083011P.B/014B1401.D | 1202473924 | mb         | 30-AUG-2011 | 18:28   | 284538.sub | PBLK01      | 1.00000  | 1136049    | USE. PASSING BOTH, UPLOAD HIGHER. |
| <input type="checkbox"/> | N      | /chem/ecd3a.i/083011P.B/015B1501.D | 1202473925 | lcs        | 30-AUG-2011 | 18:43   | 284538.sub | PBLK01LCS   | 1.00000  | 1136049    | USE. PASSING BOTH, UPLOAD HIGHER. |
| <input type="checkbox"/> | N      | /chem/ecd3a.i/083011P.B/017B1701.D | 1202473926 | ms         | 30-AUG-2011 | 19:15   | 284538.sub | 11080101MS  | 1.00000  | 1136049    | USE. FAILURES CONFIRMED BY MSD.   |
| <input type="checkbox"/> | N      | /chem/ecd3a.i/083011P.B/018B1801.D | 1202473927 | msd        | 30-AUG-2011 | 19:30   | 284538.sub | 11080101MSD | 1.00000  | 1136049    | USE. FAILURES CONFIRMED BY MS.    |

# **Sample Data Summary**

## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Qualifier Definition Report for

ECOL008 Ecology and Environment, Inc. Start-3 002233.2008

Client SDG: 284538 GEL Work Order: 284538

#### The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

#### Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Heather Joy

Date: 15 SEP 2011

Title: Data Validator

**Pesticide  
Certificate of Analysis  
Sample Summary**

|                       |                         |                        |                          |                      |                     |
|-----------------------|-------------------------|------------------------|--------------------------|----------------------|---------------------|
| <b>SDG Number:</b>    | <b>284538</b>           | <b>Date Collected:</b> | <b>08/18/2011 12:00</b>  | <b>Matrix:</b>       | <b>GROUND WATER</b> |
| <b>Lab Sample ID:</b> | <b>284538001</b>        | <b>Date Received:</b>  | <b>08/23/2011 08:50</b>  |                      |                     |
|                       |                         | <b>Client:</b>         | <b>ECOL008</b>           | <b>Project:</b>      | <b>ECOL00111</b>    |
| <b>Client ID:</b>     | <b>11080101</b>         | <b>Method:</b>         | <b>SW846 3535A/8081B</b> | <b>SOP Ref:</b>      | <b>GL-OA-E-041</b>  |
| <b>Batch ID:</b>      | <b>1136049</b>          | <b>Inst:</b>           | <b>ECD3A.I</b>           | <b>Dilution:</b>     | <b>1</b>            |
| <b>Run Date:</b>      | <b>08/30/2011 18:59</b> | <b>Analyst:</b>        | <b>RXE1</b>              | <b>Inj. Vol:</b>     | <b>1 uL</b>         |
| <b>Prep Date:</b>     | <b>08/25/2011 18:20</b> | <b>Aliquot:</b>        | <b>980 mL</b>            | <b>Final Volume:</b> | <b>5 mL</b>         |
| <b>Data File:</b>     | <b>016F1601.D</b>       | <b>Column:</b>         | <b>1 CLP-1</b>           | <b>Level:</b>        | <b>LOW</b>          |
|                       | <b>016B1601.D</b>       |                        | <b>2 CLP-2</b>           |                      |                     |

| CAS No.    | Parmname            | Qualifier | Result  | Units | MDL/LOD | PQL/LOQ | Column |
|------------|---------------------|-----------|---------|-------|---------|---------|--------|
| 319-84-6   | alpha-BHC           | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 58-89-9    | gamma-BHC (Lindane) | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 319-85-7   | beta-BHC            | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 72-43-5    | Methoxychlor        | U         | 0.051   | ug/L  | 0.051   | 0.204   | 1      |
| 319-86-8   | delta-BHC           | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 76-44-8    | Heptachlor          | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 309-00-2   | Aldrin              | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 1024-57-3  | Heptachlor epoxide  | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 959-98-8   | Endosulfan I        | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 72-55-9    | 4,4'-DDE            | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 60-57-1    | Dieldrin            | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 72-20-8    | Endrin              | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 72-54-8    | 4,4'-DDD            | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 33213-65-9 | Endosulfan II       | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 7421-93-4  | Endrin aldehyde     | U         | 0.00679 | ug/L  | 0.00679 | 0.0408  | 1      |
| 50-29-3    | 4,4'-DDT            | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 1031-07-8  | Endosulfan sulfate  | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 53494-70-5 | Endrin ketone       | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 57-74-9    | Chlordane (tech.)   | U         | 0.0781  | ug/L  | 0.0781  | 0.255   | 1      |
| 8001-35-2  | Toxaphene           | U         | 0.153   | ug/L  | 0.153   | 0.510   | 1      |

# QC Summary

**Pesticide**  
**Surrogate Recovery Report**

Page 1 of 1

**SDG Number: 284538****Matrix Type: LIQUID****CAP Column (1) : CLP-1****CAP Column (2) : CLP-2**

| Sample ID  | Client ID             | 4CMX 1 | 4CMX 2 | DCB 1  | DCB 2  |
|------------|-----------------------|--------|--------|--------|--------|
|            |                       | %REC # | %REC # | %REC # | %REC # |
| 1202473924 | MB for batch 1136047  | 82     | 76     | 90     | 88     |
| 1202473925 | LCS for batch 1136047 | 78     | 71     | 86     | 84     |
| 284538001  | 11080101              | 62     | 58     | 70     | 75     |
| 1202473926 | 11080101MS            | 41 *   | 40 *   | 30 *   | 35 *   |
| 1202473927 | 11080101MSD           | 43 *   | 41 *   | 30 *   | 35 *   |

**Surrogate****Acceptance Limits**

4CMX = 4cmx

(50%-150%)

DCB = Decachlorobiphenyl

(50%-150%)

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted

**Pesticide**  
**Quality Control Summary**  
**Spike Recovery Report**

Page 1 of 1

SDG Number: 284538

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1136047

Matrix: GROUND WATER

Lab Sample ID: 1202473925

Instrument: ECD3A.I

Analysis Date: 08/30/2011 18:43

Dilution: 1

Analyst: RXE1

Prep Batch ID: 1136047

Inj. Vol: 1 uL

Batch ID: 1136049

| CAS No     | Parmname                | Amount Added<br>ug/L | Sample Conc.<br>ug/L | Spike Conc.<br>ug/L | Recovery<br>% | Acceptance<br>Limits |
|------------|-------------------------|----------------------|----------------------|---------------------|---------------|----------------------|
| 319-84-6   | LCS alpha-BHC           | 0.500                | 0.0                  | 0.511               | 102           | 70-130               |
| 58-89-9    | LCS gamma-BHC (Lindane) | 0.500                | 0.0                  | 0.516               | 103           | 70-130               |
| 319-85-7   | LCS beta-BHC            | 0.500                | 0.0                  | 0.477               | 95            | 70-130               |
| 72-43-5    | LCS Methoxychlor        | 5.00                 | 0.0                  | 4.63                | 93            | 70-130               |
| 319-86-8   | LCS delta-BHC           | 0.500                | 0.0                  | 0.512               | 102           | 70-130               |
| 76-44-8    | LCS Heptachlor          | 0.500                | 0.0                  | 0.473               | 95            | 70-130               |
| 309-00-2   | LCS Aldrin              | 0.500                | 0.0                  | 0.456               | 91            | 70-130               |
| 1024-57-3  | LCS Heptachlor epoxide  | 0.500                | 0.0                  | 0.500               | 100           | 70-130               |
| 959-98-8   | LCS Endosulfan I        | 0.500                | 0.0                  | 0.461               | 92            | 70-130               |
| 72-55-9    | LCS 4,4'-DDE            | 1.25                 | 0.0                  | 1.09                | 87            | 70-130               |
| 60-57-1    | LCS Dieldrin            | 1.25                 | 0.0                  | 1.24                | 99            | 70-130               |
| 72-20-8    | LCS Endrin              | 1.25                 | 0.0                  | 1.23                | 98            | 70-130               |
| 72-54-8    | LCS 4,4'-DDD            | 1.25                 | 0.0                  | 1.19                | 95            | 70-130               |
| 33213-65-9 | LCS Endosulfan II       | 1.25                 | 0.0                  | 1.20                | 96            | 70-130               |
| 7421-93-4  | LCS Endrin aldehyde     | 1.25                 | 0.0                  | 1.22                | 97            | 70-130               |
| 50-29-3    | LCS 4,4'-DDT            | 1.25                 | 0.0                  | 1.21                | 97            | 70-130               |
| 1031-07-8  | LCS Endosulfan sulfate  | 1.25                 | 0.0                  | 1.32                | 106           | 70-130               |
| 53494-70-5 | LCS Endrin ketone       | 1.25                 | 0.0                  | 1.37                | 110           | 70-130               |

## Pesticide

Page 1 of 2

Quality Control Summary  
Spike Recovery Report

SDG Number: 284538

Sample Type: Matrix Spike

Client ID: 11080101MS

Matrix: GROUND WATER

Lab Sample ID: 1202473926

Instrument: ECD3A.I

Analysis Date: 08/30/2011 19:15

Dilution: 1

Analyst: RXE1

Prep Batch ID: 1136047

Inj. Vol: 1 uL

Batch ID: 1136049

| CAS No     | Parmname               | Amount Added<br>ug/L | Sample Conc.<br>ug/L | Spike Conc.<br>ug/L | Recovery<br>% | Acceptance<br>Limits |
|------------|------------------------|----------------------|----------------------|---------------------|---------------|----------------------|
| 319-84-6   | MS alpha-BHC           | 0.510                | 0.00                 | U 0.433             | 85            | 50-150               |
| 58-89-9    | MS gamma-BHC (Lindane) | 0.510                | 0.00                 | U 0.452             | 89            | 50-150               |
| 319-85-7   | MS beta-BHC            | 0.510                | 0.00                 | U 0.438             | 86            | 50-150               |
| 72-43-5    | MS Methoxychlor        | 5.10                 | 0.00                 | U 2.54              | 50            | 50-150               |
| 319-86-8   | MS delta-BHC           | 0.510                | 0.00                 | U 0.437             | 86            | 50-150               |
| 76-44-8    | MS Heptachlor          | 0.510                | 0.00                 | U 0.277             | 54            | 50-150               |
| 309-00-2   | MS Aldrin              | 0.510                | 0.00                 | U 0.220             | 43 *          | 50-150               |
| 1024-57-3  | MS Heptachlor epoxide  | 0.510                | 0.00                 | U 0.357             | 70            | 50-150               |
| 959-98-8   | MS Endosulfan I        | 0.510                | 0.00                 | U 0.323             | 63            | 50-150               |
| 72-55-9    | MS 4,4'-DDE            | 1.28                 | 0.00                 | U 0.512             | 40 *          | 50-150               |
| 60-57-1    | MS Dieldrin            | 1.28                 | 0.00                 | U 0.826             | 65            | 50-150               |
| 72-20-8    | MS Endrin              | 1.28                 | 0.00                 | U 0.906             | 71            | 50-150               |
| 72-54-8    | MS 4,4'-DDD            | 1.28                 | 0.00                 | U 0.630             | 49 *          | 50-150               |
| 33213-65-9 | MS Endosulfan II       | 1.28                 | 0.00                 | U 0.845             | 66            | 50-150               |
| 7421-93-4  | MS Endrin aldehyde     | 1.28                 | 0.00                 | U 0.914             | 72            | 50-150               |
| 50-29-3    | MS 4,4'-DDT            | 1.28                 | 0.00                 | U 0.543             | 43 *          | 50-150               |
| 1031-07-8  | MS Endosulfan sulfate  | 1.28                 | 0.00                 | U 1.00              | 78            | 50-150               |
| 53494-70-5 | MS Endrin ketone       | 1.28                 | 0.00                 | U 1.16              | 91            | 50-150               |



**Pesticide**  
**Quality Control Summary**  
**Spike Recovery Report**

Page 2 of 2

SDG Number: 284538

Sample Type: Matrix Spike Duplicate

Client ID: 11080101MSD

Matrix: GROUND WATER

Lab Sample ID: 1202473927

Instrument: ECD3A.I

Analysis Date: 08/30/2011 19:30

Dilution: 1

Analyst: RXE1

Prep Batch ID: 1136047

Inj. Vol: 1 uL

Batch ID: 1136049

| CAS No     | Parmname                | Amount<br>Added<br>ug/L | Sample<br>Conc.<br>ug/L |   | Spike<br>Conc.<br>ug/L | Recovery<br>% | Acceptance<br>Limits | RPD<br>% | Acceptance<br>Limits |
|------------|-------------------------|-------------------------|-------------------------|---|------------------------|---------------|----------------------|----------|----------------------|
| 319-84-6   | MSD alpha-BHC           | 0.510                   | 0.00                    | U | 0.447                  | 88            | 50-150               | 3        | 0-30                 |
| 58-89-9    | MSD gamma-BHC (Lindane) | 0.510                   | 0.00                    | U | 0.466                  | 91            | 50-150               | 3        | 0-30                 |
| 319-85-7   | MSD beta-BHC            | 0.510                   | 0.00                    | U | 0.448                  | 88            | 50-150               | 2        | 0-30                 |
| 72-43-5    | MSD Methoxychlor        | 5.10                    | 0.00                    | U | 2.53                   | 50            | 50-150               | 0        | 0-30                 |
| 319-86-8   | MSD delta-BHC           | 0.510                   | 0.00                    | U | 0.446                  | 87            | 50-150               | 2        | 0-30                 |
| 76-44-8    | MSD Heptachlor          | 0.510                   | 0.00                    | U | 0.283                  | 55            | 50-150               | 2        | 0-30                 |
| 309-00-2   | MSD Aldrin              | 0.510                   | 0.00                    | U | 0.225                  | 44 *          | 50-150               | 3        | 0-30                 |
| 1024-57-3  | MSD Heptachlor epoxide  | 0.510                   | 0.00                    | U | 0.363                  | 71            | 50-150               | 2        | 0-30                 |
| 959-98-8   | MSD Endosulfan I        | 0.510                   | 0.00                    | U | 0.327                  | 64            | 50-150               | 1        | 0-30                 |
| 72-55-9    | MSD 4,4'-DDE            | 1.28                    | 0.00                    | U | 0.516                  | 40 *          | 50-150               | 1        | 0-30                 |
| 60-57-1    | MSD Dieldrin            | 1.28                    | 0.00                    | U | 0.834                  | 65            | 50-150               | 1        | 0-30                 |
| 72-20-8    | MSD Endrin              | 1.28                    | 0.00                    | U | 0.913                  | 72            | 50-150               | 1        | 0-30                 |
| 72-54-8    | MSD 4,4'-DDD            | 1.28                    | 0.00                    | U | 0.629                  | 49 *          | 50-150               | 0        | 0-30                 |
| 33213-65-9 | MSD Endosulfan II       | 1.28                    | 0.00                    | U | 0.849                  | 67            | 50-150               | 0        | 0-30                 |
| 7421-93-4  | MSD Endrin aldehyde     | 1.28                    | 0.00                    | U | 0.915                  | 72            | 50-150               | 0        | 0-30                 |
| 50-29-3    | MSD 4,4'-DDT            | 1.28                    | 0.00                    | U | 0.540                  | 42 *          | 50-150               | 1        | 0-30                 |
| 1031-07-8  | MSD Endosulfan sulfate  | 1.28                    | 0.00                    | U | 1.00                   | 78            | 50-150               | 0        | 0-30                 |
| 53494-70-5 | MSD Endrin ketone       | 1.28                    | 0.00                    | U | 1.16                   | 91            | 50-150               | 0        | 0-30                 |

## Method Blank Summary

Page 1 of 1

|                |                      |                |                  |            |                |
|----------------|----------------------|----------------|------------------|------------|----------------|
| SDG Number:    | 284538               | Client:        | ECOL008          | Matrix:    | GROUND WATER   |
| Client ID:     | MB for batch 1136047 | Instrument ID: | ECD3A.I_2        | Data File: | 014B1401.D     |
| Lab Sample ID: | 1202473924           |                | ECD3A.I_1        |            | 014F1401.D     |
| Column:        | CLP-2                | Prep Date:     | 08/25/2011 18:20 | Analyzed:  | 08/30/11 18:28 |
|                | CLP-1                | Level:         | LOW              |            |                |

This method blank applies to the following samples and quality control samples:

| Client Sample ID         | Lab Sample ID | File ID                  | Date Analyzed | Time Analyzed |
|--------------------------|---------------|--------------------------|---------------|---------------|
| 01 LCS for batch 1136047 | 1202473925    | 015F1501.D<br>015B1501.D | 08/30/11      | 1843          |
| 02 11080101              | 284538001     | 016F1601.D<br>016B1601.D | 08/30/11      | 1859          |
| 03 11080101MS            | 1202473926    | 017F1701.D<br>017B1701.D | 08/30/11      | 1915          |
| 04 11080101MSD           | 1202473927    | 018F1801.D<br>018B1801.D | 08/30/11      | 1930          |

# Sample Data

**Pesticide  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

**SDG Number:** 284538  
**Lab Sample ID:** 284538001

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50

**Matrix:** GROUND WATER

**Client ID:** 11080101  
**Batch ID:** 1136049  
**Run Date:** 08/30/2011 18:59  
**Prep Date:** 08/25/2011 18:20  
**Data File:** 016F1601.D  
016B1601.D

**Client:** ECOL008  
**Method:** SW846 3535A/8081B  
**Inst:** ECD3A.I  
**Analyst:** RXE1  
**Aliquot:** 980 mL  
**Column:** 1 CLP-1  
2 CLP-2

**Project:** ECOL00111  
**SOP Ref:** GL-OA-E-041  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 5 mL  
**Level:** LOW

| CAS No.    | Parmname            | Qualifier | Result  | Units | MDL/LOD | PQL/LOQ | Column |
|------------|---------------------|-----------|---------|-------|---------|---------|--------|
| 319-84-6   | alpha-BHC           | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 58-89-9    | gamma-BHC (Lindane) | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 319-85-7   | beta-BHC            | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 72-43-5    | Methoxychlor        | U         | 0.051   | ug/L  | 0.051   | 0.204   | 1      |
| 319-86-8   | delta-BHC           | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 76-44-8    | Heptachlor          | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 309-00-2   | Aldrin              | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 1024-57-3  | Heptachlor epoxide  | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 959-98-8   | Endosulfan I        | U         | 0.00679 | ug/L  | 0.00679 | 0.0204  | 1      |
| 72-55-9    | 4,4'-DDE            | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 60-57-1    | Dieldrin            | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 72-20-8    | Endrin              | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 72-54-8    | 4,4'-DDD            | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 33213-65-9 | Endosulfan II       | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 7421-93-4  | Endrin aldehyde     | U         | 0.00679 | ug/L  | 0.00679 | 0.0408  | 1      |
| 50-29-3    | 4,4'-DDT            | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 1031-07-8  | Endosulfan sulfate  | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 53494-70-5 | Endrin ketone       | U         | 0.0102  | ug/L  | 0.0102  | 0.0408  | 1      |
| 57-74-9    | Chlordane (tech.)   | U         | 0.0781  | ug/L  | 0.0781  | 0.255   | 1      |
| 8001-35-2  | Toxaphene           | U         | 0.153   | ug/L  | 0.153   | 0.510   | 1      |

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CLP-1

Data file : /chem/ecd3a.i/083011P.B/016F1601.D  
Lab Smp Id: 284538001 Client Smp ID: 11080101  
Inj Date : 30-AUG-2011 18:59  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |284538001|1|  
Misc Info : |ECD5A1B\_1L|1136049|SVP|ECOL|GROUND WATER|11080101|||  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
Meth Date : 31-Aug-2011 11:26 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036f3601.d  
Als bottle: 16  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vo \* Vi) \* CpndVariable

| Name | Value     | Description                     |
|------|-----------|---------------------------------|
| DF   | 1.00000   | Dilution Factor                 |
| Uf   | 1.00000   | Correction factor               |
| Vt   | 5.00000   | Volume of final extract (mL)    |
| Vo   | 980.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000   | Volume injected (uL)            |

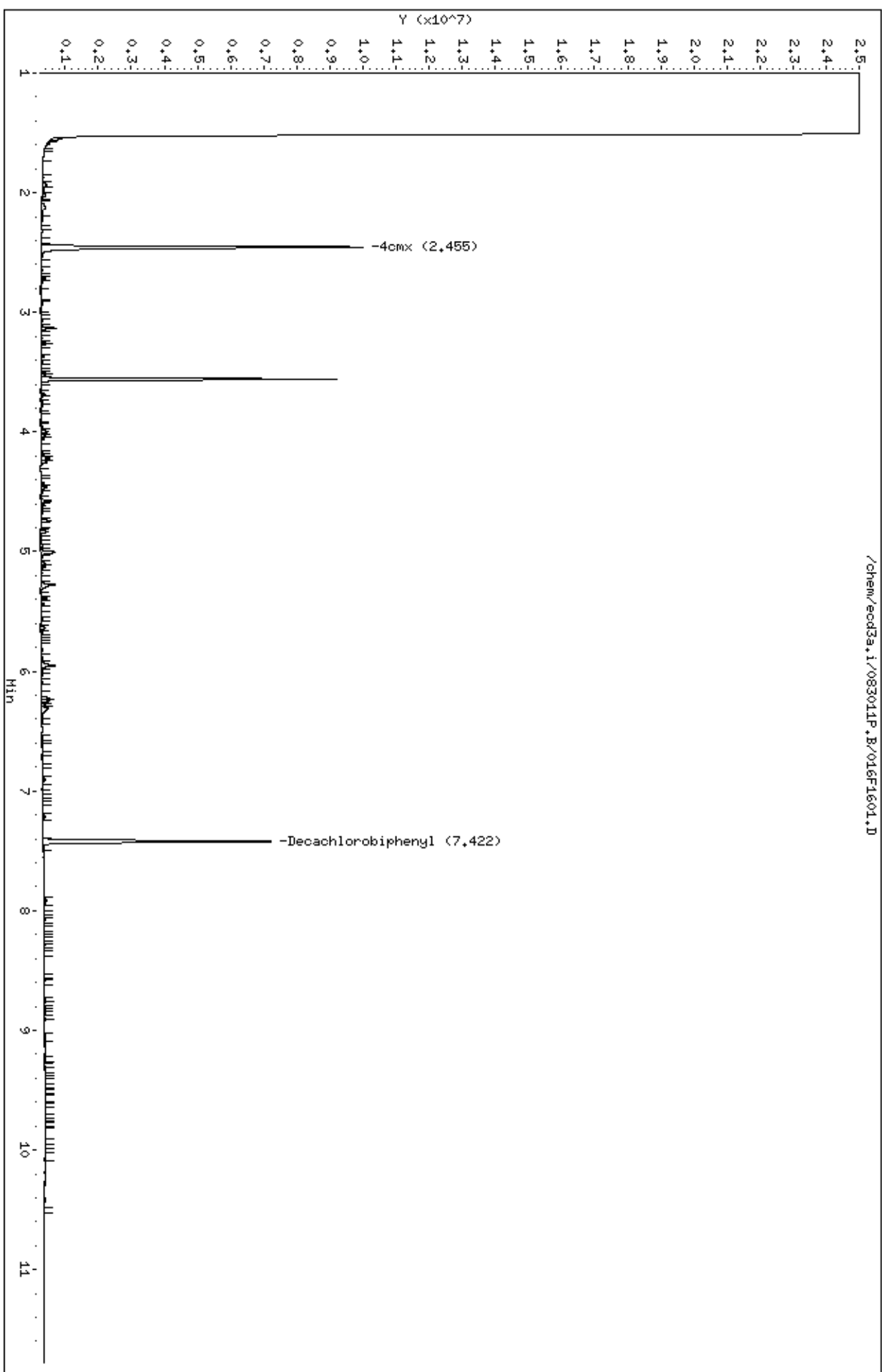
Cpnd Variable Local Compound Variable

| CONCENTRATIONS           |        |        |                  |         |                     |        |  |
|--------------------------|--------|--------|------------------|---------|---------------------|--------|--|
|                          |        | ON-COL |                  | FINAL   |                     |        |  |
| RT                       | EXP RT | DLT RT | RESPONSE ( ug/L) | ( ug/L) | TARGET RANGE        | RATIO  |  |
| ==                       | =====  | =====  | =====            | =====   | =====               | =====  |  |
| \$ 1 4cmx                |        |        |                  |         | CAS #: 877-09-8     |        |  |
| 2.455                    | 2.452  | 0.003  | 12406293         | 123.912 | 0.632 80.00- 120.00 | 100.00 |  |
| -----                    |        |        |                  |         |                     |        |  |
| \$ 32 Decachlorobiphenyl |        |        |                  |         | CAS #: 2051-24-3    |        |  |
| 7.422                    | 7.423  | -0.001 | 8596622          | 140.248 | 0.716 80.00- 120.00 | 100.00 |  |
| -----                    |        |        |                  |         |                     |        |  |

Data File: /chem/ecd3a.i/083011P.B/016F1601.D  
Date : 30-06-2011 18:59  
Client ID: 11080101  
Sample Info: 128453800111  
Volume Injected (ul): 1.0  
Column phase: CLP-1

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25

Page 1



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CLP-2

Data file : /chem/ecd3a.i/083011P.B/016B1601.D  
Lab Smp Id: 284538001 Client Smp ID: 11080101  
Inj Date : 30-AUG-2011 18:59  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |284538001|1|  
Misc Info : |ECD5A1B\_1L|1136049|SVP|ECOL|GROUND WATER|11080101|||  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
Meth Date : 31-Aug-2011 11:22 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036b3601.d  
Als bottle: 16  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vo \* Vi) \* CpndVariable

| Name | Value     | Description                     |
|------|-----------|---------------------------------|
| DF   | 1.00000   | Dilution Factor                 |
| Uf   | 1.00000   | Correction factor               |
| Vt   | 5.00000   | Volume of final extract (mL)    |
| Vo   | 980.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000   | Volume injected (uL)            |

Cpnd Variable Local Compound Variable

| CONCENTRATIONS           |        |        |                  |         |                  |        |
|--------------------------|--------|--------|------------------|---------|------------------|--------|
|                          |        | ON-COL | FINAL            |         |                  |        |
| RT                       | EXP RT | DLT RT | RESPONSE ( ug/L) | ( ug/L) | TARGET RANGE     | RATIO  |
| ==                       | =====  | =====  | =====            | =====   | =====            | =====  |
| \$ 1 4cmx                |        |        |                  |         | CAS #: 877-09-8  |        |
| 3.087                    | 3.086  | 0.001  | 9381774 116.278  | 0.593   | 80.00- 120.00    | 100.00 |
| -----                    |        |        |                  |         |                  |        |
| \$ 32 Decachlorobiphenyl |        |        |                  |         | CAS #: 2051-24-3 |        |
| 9.147                    | 9.147  | 0.000  | 7204847 150.185  | 0.766   | 80.00- 120.00    | 100.00 |
| -----                    |        |        |                  |         |                  |        |

Data File: /chem/ecd3a.i/083011P.B/016B1601.D

Date : 30-0UC-2011 18:59

Client ID: 11080101

Sample Info: 128453800111

Volume Injected (uL): 1.0

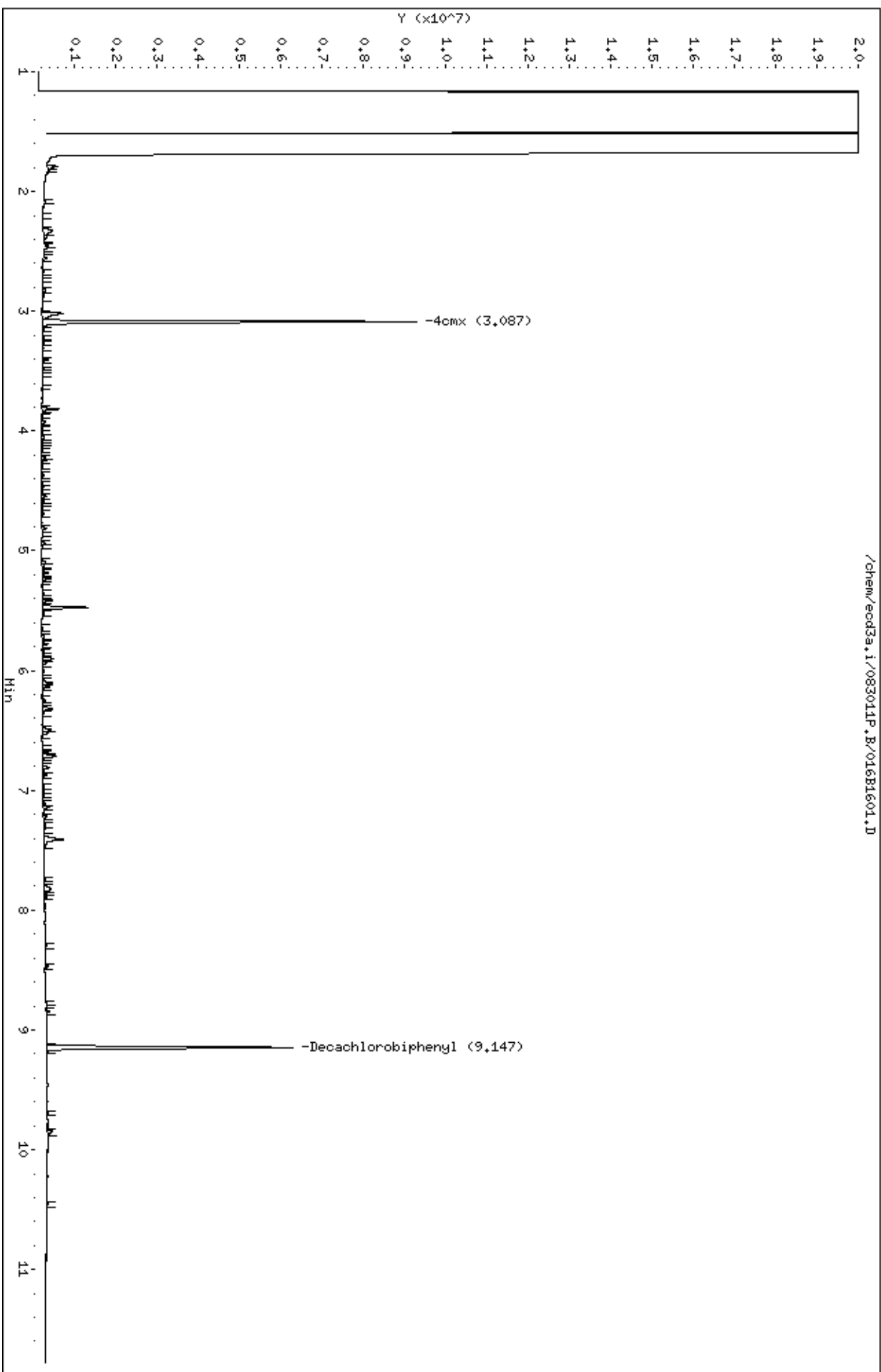
Column phase: CLP-2

Instrument: ecd3a.i

Operator: RXE1

Column diameter: 0.25

Page 1





# Standard Data

|   |                |                |                |                |                |            |  |  |  |
|---|----------------|----------------|----------------|----------------|----------------|------------|--|--|--|
| <b>SW846 8081</b>                                       |                |                |                |                |                |            |  |  |  |
| <b>Calibration Standard Concentration Levels (ug/L)</b> |                |                |                |                |                |            |  |  |  |
|   | <b>Level 1</b> | <b>Level 2</b> | <b>Level 3</b> | <b>Level 4</b> | <b>Level 5</b> | <b>CCV</b> |  |  |  |
| Hexachlorobenzene                                       | 4              | 20             | 100            | 200            | 400            | 200        |  |  |  |
| alpha-BHC   | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| gamma-BHC (Lindane)                                     | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| Heptachlor  | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| Aldrin  | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| beta-BHC  | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| delta-BHC   | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| Heptachlor epoxide                                      | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| Endosulfan I  | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| gamma-Chlordane   | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| alpha-Chlordane   | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| Mirex   | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| c-Nonachlor   | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| o-Chlordane   | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| t-Nonachlor   | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| 2,4-DDD   | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| 2,4-DDE   | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| 2,4-DDT   | 4              | 10             | 50             | 100            | 200            | 100        |  |  |  |
| 4,4'-DDD  | 8              | 20             | 100            | 200            | 400            | 200        |  |  |  |
| 4,4'-DDE  | 8              | 20             | 100            | 200            | 400            | 200        |  |  |  |
| 4,4'-DDT  | 8              | 20             | 100            | 200            | 400            | 200        |  |  |  |
| Dieldrin  | 8              | 20             | 100            | 200            | 400            | 200        |  |  |  |
| Endrin  | 8              | 20             | 100            | 200            | 400            | 200        |  |  |  |
| Endosulfan II   | 8              | 20             | 100            | 200            | 400            | 200        |  |  |  |
| Endrin aldehyde   | 8              | 20             | 100            | 200            | 400            | 200        |  |  |  |
| Endosulfan sulfate                                      | 8              | 20             | 100            | 200            | 400            | 200        |  |  |  |
| Endrin ketone   | 8              | 20             | 100            | 200            | 400            | 200        |  |  |  |
| 4-CMX (surr)  | 8              | 20             | 100            | 200            | 400            | 200        |  |  |  |
| DCB (surr)  | 8              | 20             | 100            | 200            | 400            | 200        |  |  |  |
| 1,2-Dichlorobenzene                                     | 20             | 50             | 100            | 150            | 200            | 150        |  |  |  |
| Methoxychlor  | 40             | 100            | 500            | 1000           | 2000           | 1000       |  |  |  |
| Chlordane (Technical)                                   | 50             | 100            | 500            | 1000           | 3000           | 1000       |  |  |  |
| Aroclor 1016  | 100            | 250            | 500            | 1000           | 4000           | 1000       |  |  |  |
| Aroclor 1221  | 100            | 250            | 500            | 1000           | 4000           | 1000       |  |  |  |
| Aroclor 1232  | 100            | 250            | 500            | 1000           | 4000           | 1000       |  |  |  |
| Aroclor 1242  | 100            | 250            | 500            | 1000           | 4000           | 1000       |  |  |  |
| Aroclor 1248  | 100            | 250            | 500            | 1000           | 4000           | 1000       |  |  |  |
| Aroclor 1254  | 100            | 250            | 500            | 1000           | 4000           | 1000       |  |  |  |
| Aroclor 1260  | 100            | 250            | 500            | 1000           | 4000           | 1000       |  |  |  |

|              |     |     |      |      |      |      |  |  |
|--------------|-----|-----|------|------|------|------|--|--|
| Aroclor 1262 | 100 | 250 | 500  | 1000 | 4000 | 1000 |  |  |
| Aroclor 1268 | 100 | 250 | 500  | 1000 | 4000 | 1000 |  |  |
| Toxaphene    | 100 | 500 | 1000 | 2000 | 3000 | 2000 |  |  |
|              |     |     |      |      |      |      |  |  |
|              |     |     |      |      |      |      |  |  |

Report Date: 01-Sep-2011 15:13

### Calibration History

Method : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
Start Cal Date: 29-DEC-2009 17:34  
End Cal Date : 30-AUG-2011 17:41

#### Initial Calibration

| Injection Date                     | Sublist | Calibration File                         |
|------------------------------------|---------|--|
| Cal Level: 1 , Cal Amount: 2.00000 |         |  |
| 30-NOV-2010 05:44                  | ar1254  | /chem/ecd3a.i/112910pa-608.b/032f3201.d  |
| 24-JUL-2011 13:29                  | ar1660  | /chem/ecd3a.i/072411p.b-608.b/013f1301.d |
| 13-JUL-2011 10:26                  | gapa    | /chem/ecd3a.i/071311p.b/010f1001.d       |
| 16-AUG-2011 15:45                  | chlor   | /chem/ecd3a.i/081611P.B/019F1901.D       |
| 23-AUG-2011 14:29                  | tox     | /chem/ecd3a.i/082311P.B/013F1301.D       |
| 30-AUG-2011 16:39                  | indab   | /chem/ecd3a.i/083011P.B/007F0701.D       |

|                                     |        |  |
|-------------------------------------|--------|--|
| Cal Level: 2 , Cal Amount: 10.00000 |        |  |
| 30-NOV-2010 06:00                   | ar1254 | /chem/ecd3a.i/112910pa-608.b/033f3301.d  |
| 24-JUL-2011 13:44                   | ar1660 | /chem/ecd3a.i/072411p.b-608.b/014f1401.d |
| 13-JUL-2011 10:42                   | gapa   | /chem/ecd3a.i/071311p.b/011f1101.d       |
| 16-AUG-2011 16:01                   | chlor  | /chem/ecd3a.i/081611P.B/020F2001.D       |
| 23-AUG-2011 14:45                   | tox    | /chem/ecd3a.i/082311P.B/014F1401.D       |
| 30-AUG-2011 16:55                   | indab  | /chem/ecd3a.i/083011P.B/008F0801.D       |

|                                     |        |  |
|-------------------------------------|--------|--|
| Cal Level: 3 , Cal Amount: 50.00000 |        |  |
| 30-NOV-2010 06:15                   | ar1254 | /chem/ecd3a.i/112910pa-608.b/034f3401.d  |
| 24-JUL-2011 14:00                   | ar1660 | /chem/ecd3a.i/072411p.b-608.b/015f1501.d |
| 13-JUL-2011 10:57                   | gapa   | /chem/ecd3a.i/071311p.b/012f1201.d       |
| 16-AUG-2011 16:27                   | chlor  | /chem/ecd3a.i/081611P.B/021F2101.D       |
| 23-AUG-2011 15:00                   | tox    | /chem/ecd3a.i/082311P.B/015F1501.D       |
| 30-AUG-2011 17:10                   | indab  | /chem/ecd3a.i/083011P.B/009F0901.D       |

|                                      |           |  |
|--------------------------------------|-----------|--|
| Cal Level: 4 , Cal Amount: 100.00000 |           |  |
| 15-JAN-2011 12:53                    | ar1268    | /chem/ecd3a.i/011511p.b/018f1801.d       |
| 15-JAN-2011 12:37                    | ar1262    | /chem/ecd3a.i/011511p.b/017f1701.d       |
| 30-SEP-2010 18:18                    | 2,4,5-TCP | /chem/ecd3a.i/093010pa.b/011f1101.d      |
| 24-JUL-2011 15:02                    | ar1221    | /chem/ecd3a.i/072411p.b-608.b/019f1901.d |
| 24-JUL-2011 15:17                    | ar1232    | /chem/ecd3a.i/072411p.b-608.b/020f2001.d |
| 24-JUL-2011 15:48                    | ar1248    | /chem/ecd3a.i/072411p.b-608.b/022f2201.d |
| 24-JUL-2011 15:33                    | ar1242    | /chem/ecd3a.i/072411p.b-608.b/021f2101.d |
| 24-JUL-2011 16:04                    | ar1254    | /chem/ecd3a.i/072411p.b-608.b/023f2301.d |
| 24-JUL-2011 14:15                    | ar1660    | /chem/ecd3a.i/072411p.b-608.b/016f1601.d |
| 12-AUG-2011 09:28                    | gapa      | /chem/ecd3a.i/081211P.B/007F0701.D       |
| 16-AUG-2011 16:42                    | chlor     | /chem/ecd3a.i/081611P.B/022F2201.D       |
| 23-AUG-2011 15:16                    | tox       | /chem/ecd3a.i/082311P.B/016F1601.D       |
| 30-AUG-2011 17:26                    | indab     | /chem/ecd3a.i/083011P.B/010F1001.D       |

|                                      |        |  |
|--------------------------------------|--------|--|
| Cal Level: 5 , Cal Amount: 200.00000 |        |  |
| 30-NOV-2010 06:46                    | ar1254 | /chem/ecd3a.i/112910pa-608.b/036f3601.d  |
| 24-JUL-2011 14:31                    | ar1660 | /chem/ecd3a.i/072411p.b-608.b/017f1701.d |
| 13-JUL-2011 11:28                    | gapa   | /chem/ecd3a.i/071311p.b/014f1401.d       |
| 16-AUG-2011 16:58                    | chlor  | /chem/ecd3a.i/081611P.B/023F2301.D       |
| 23-AUG-2011 15:31                    | tox    | /chem/ecd3a.i/082311P.B/017F1701.D       |

|                                  |       |                                    |
|----------------------------------|-------|------------------------------------|
| 30-AUG-2011 17:41                | indab | /chem/ecd3a.i/083011P.B/011F1101.D |
| Continuing Calibration           |       |                                    |
| Ccal Level Mode: GLOBAL LEVEL 4  |       |                                    |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 31-AUG-2011 04:49                | indab | /chem/ecd3a.i/083011P.B/054F5401.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 31-AUG-2011 02:29                | indab | /chem/ecd3a.i/083011P.B/045F4501.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 23:54                | indab | /chem/ecd3a.i/083011P.B/035F3501.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 22:05                | indab | /chem/ecd3a.i/083011P.B/028F2801.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 19:46                | indab | /chem/ecd3a.i/083011P.B/019F1901.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 17:57                | indab | /chem/ecd3a.i/083011P.B/012F1201.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 17:26                | indab | /chem/ecd3a.i/083011P.B/010F1001.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 16:24                | gapa  | /chem/ecd3a.i/083011P.B/006F0601.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 16:08                | chlor | /chem/ecd3a.i/083011P.B/005F0501.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 15:53                | tox   | /chem/ecd3a.i/083011P.B/004F0401.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 15:37                | indab | /chem/ecd3a.i/083011P.B/003F0301.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 15:22                | pem   | /chem/ecd3a.i/083011P.B/002F0201.D |

Report Date: 01-Sep-2011 15:12

### Calibration History

Method : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
Start Cal Date: 29-DEC-2009 17:34  
End Cal Date : 30-AUG-2011 17:41

#### Initial Calibration

| Injection Date                     | Sublist | Calibration File                         |
|------------------------------------|---------|--|
| Cal Level: 1 , Cal Amount: 2.00000 |         |  |
| 30-NOV-2010 05:44                  | ar1254  | /chem/ecd3a.i/112910pa-608.b/032b3201.d  |
| 24-JUL-2011 13:29                  | ar1660  | /chem/ecd3a.i/072411p.b-608.b/013b1301.d |
| 13-JUL-2011 10:26                  | gapa    | /chem/ecd3a.i/071311p.b/010b1001.d       |
| 16-AUG-2011 15:45                  | chlor   | /chem/ecd3a.i/081611P.B/019B1901.D       |
| 23-AUG-2011 14:29                  | tox     | /chem/ecd3a.i/082311P.B/013B1301.D       |
| 30-AUG-2011 16:39                  | indab   | /chem/ecd3a.i/083011P.B/007B0701.D       |

|                                     |        |  |
|-------------------------------------|--------|--|
| Cal Level: 2 , Cal Amount: 10.00000 |        |  |
| 21-DEC-2010 12:13                   | 8081   | /chem/ecd3a.i/122110p.b/013b1301.d       |
| 30-NOV-2010 06:00                   | ar1254 | /chem/ecd3a.i/112910pa-608.b/033b3301.d  |
| 24-JUL-2011 13:44                   | ar1660 | /chem/ecd3a.i/072411p.b-608.b/014b1401.d |
| 13-JUL-2011 10:42                   | gapa   | /chem/ecd3a.i/071311p.b/011b1101.d       |
| 16-AUG-2011 16:01                   | chlor  | /chem/ecd3a.i/081611P.B/020B2001.D       |
| 23-AUG-2011 14:45                   | tox    | /chem/ecd3a.i/082311P.B/014B1401.D       |
| 30-AUG-2011 16:55                   | indab  | /chem/ecd3a.i/083011P.B/008B0801.D       |

|                                     |        |  |
|-------------------------------------|--------|--|
| Cal Level: 3 , Cal Amount: 50.00000 |        |  |
| 30-NOV-2010 06:15                   | ar1254 | /chem/ecd3a.i/112910pa-608.b/034b3401.d  |
| 24-JUL-2011 14:00                   | ar1660 | /chem/ecd3a.i/072411p.b-608.b/015b1501.d |
| 13-JUL-2011 10:57                   | gapa   | /chem/ecd3a.i/071311p.b/012b1201.d       |
| 16-AUG-2011 16:27                   | chlor  | /chem/ecd3a.i/081611P.B/021B2101.D       |
| 23-AUG-2011 15:00                   | tox    | /chem/ecd3a.i/082311P.B/015B1501.D       |
| 30-AUG-2011 17:10                   | indab  | /chem/ecd3a.i/083011P.B/009B0901.D       |

|                                      |           |  |
|--------------------------------------|-----------|--|
| Cal Level: 4 , Cal Amount: 100.00000 |           |  |
| 15-JAN-2011 12:53                    | ar1268    | /chem/ecd3a.i/011511p.b/018b1801.d       |
| 15-JAN-2011 12:37                    | ar1262    | /chem/ecd3a.i/011511p.b/017b1701.d       |
| 30-SEP-2010 18:18                    | 2,4,5-TCP | /chem/ecd3a.i/093010pa.b/011b1101.d      |
| 24-JUL-2011 15:02                    | ar1221    | /chem/ecd3a.i/072411p.b-608.b/019b1901.d |
| 24-JUL-2011 15:17                    | ar1232    | /chem/ecd3a.i/072411p.b-608.b/020b2001.d |
| 24-JUL-2011 15:48                    | ar1248    | /chem/ecd3a.i/072411p.b-608.b/022b2201.d |
| 24-JUL-2011 15:33                    | ar1242    | /chem/ecd3a.i/072411p.b-608.b/021b2101.d |
| 24-JUL-2011 16:04                    | ar1254    | /chem/ecd3a.i/072411p.b-608.b/023b2301.d |
| 24-JUL-2011 14:15                    | ar1660    | /chem/ecd3a.i/072411p.b-608.b/016b1601.d |
| 12-AUG-2011 09:28                    | gapa      | /chem/ecd3a.i/081211P.B/007B0701.D       |
| 16-AUG-2011 16:42                    | chlor     | /chem/ecd3a.i/081611P.B/022B2201.D       |
| 23-AUG-2011 15:16                    | tox       | /chem/ecd3a.i/082311P.B/016B1601.D       |
| 30-AUG-2011 17:26                    | indab     | /chem/ecd3a.i/083011P.B/010B1001.D       |

|                                      |        |  |
|--------------------------------------|--------|--|
| Cal Level: 5 , Cal Amount: 200.00000 |        |  |
| 30-NOV-2010 06:46                    | ar1254 | /chem/ecd3a.i/112910pa-608.b/036b3601.d  |
| 24-JUL-2011 14:31                    | ar1660 | /chem/ecd3a.i/072411p.b-608.b/017b1701.d |
| 13-JUL-2011 11:28                    | gapa   | /chem/ecd3a.i/071311p.b/014b1401.d       |
| 16-AUG-2011 16:58                    | chlor  | /chem/ecd3a.i/081611P.B/023B2301.D       |

|                   |       |                                    |
|-------------------|-------|------------------------------------|
| 23-AUG-2011 15:31 | tox   | /chem/ecd3a.i/082311P.B/017B1701.D |
| 30-AUG-2011 17:41 | indab | /chem/ecd3a.i/083011P.B/011B1101.D |

Continuing Calibration  
Ccal Level Mode: GLOBAL LEVEL 4

|                                  |       |                                    |
|----------------------------------|-------|------------------------------------|
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 31-AUG-2011 04:49                | indab | /chem/ecd3a.i/083011P.B/054B5401.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 31-AUG-2011 02:29                | indab | /chem/ecd3a.i/083011P.B/045B4501.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 23:54                | indab | /chem/ecd3a.i/083011P.B/035B3501.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 22:05                | indab | /chem/ecd3a.i/083011P.B/028B2801.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 19:46                | indab | /chem/ecd3a.i/083011P.B/019B1901.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 17:57                | indab | /chem/ecd3a.i/083011P.B/012B1201.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 17:26                | indab | /chem/ecd3a.i/083011P.B/010B1001.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 16:24                | gapa  | /chem/ecd3a.i/083011P.B/006B0601.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 16:08                | chlor | /chem/ecd3a.i/083011P.B/005B0501.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 15:53                | tox   | /chem/ecd3a.i/083011P.B/004B0401.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 15:37                | indab | /chem/ecd3a.i/083011P.B/003B0301.D |
| Ccal Level: 4 , Ccal Amount: 100 |       |                                    |
| 30-AUG-2011 15:22                | pem   | /chem/ecd3a.i/083011P.B/002B0201.D |

## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
 Quant Method : ESTD Target Version : 3.50  
 Last Update : 31-Aug-2011 11:26 Number of Cpnds : 43  
 Data Type : GC MULTI COMP

Global Integrator : Falcon

| Chromat Events          | Values      |
|-------------------------|-------------|
| Initial:Start Threshold | 769.000000  |
| Initial:End Threshold   | 384.500000  |
| Initial:Area Threshold  | 7690.000000 |
| Initial:P-P Resolution  | 1.000000    |
| Initial:Bunch Factor    | 9.000000    |
| Initial:Negative Peaks  | OFF         |
| Initial:Tension         | 1.000000    |

| Compound                 | RT    | RT Window   | RF        |
|--------------------------|-------|-------------|-----------|
| \$ 1 4cmx                | 2.452 | 2.422-2.482 | 1.001e+05 |
| 63 2,4,5-Trichlorophenol | 1.990 | 1.890-2.090 | 3.194e+04 |
| 59 Hexachlorobenzene     | 2.715 | 2.615-2.815 | 1.080e+05 |
| 2 Aroclor-1221           | 2.747 | 2.717-2.777 | 1.168e+03 |
|                          | 2.849 | 2.819-2.879 | 6.916e+02 |
|                          | 2.879 | 2.849-2.909 | 2.486e+03 |
| 3 Aroclor-1016           | 2.879 | 2.849-2.909 | 1.370e+03 |
|                          | 3.130 | 3.100-3.160 | 2.740e+03 |
|                          | 3.485 | 3.455-3.515 | 3.587e+03 |
|                          | 3.590 | 3.559-3.619 | 1.953e+03 |
|                          | 3.921 | 3.890-3.950 | 1.713e+03 |
| 4 Aroclor-1232           | 3.130 | 3.100-3.160 | 1.709e+03 |
|                          | 3.468 | 3.438-3.498 | 1.228e+03 |
|                          | 3.485 | 3.455-3.515 | 2.039e+03 |
|                          | 3.590 | 3.560-3.620 | 1.328e+03 |
|                          | 3.920 | 3.890-3.950 | 8.547e+02 |
| 5 alpha-BHC              | 2.828 | 2.798-2.858 | 1.187e+05 |
| 6 Aroclor-1242           | 2.879 | 2.779-2.979 | 1.570e+03 |
|                          | 3.468 | 3.368-3.568 | 2.289e+03 |
|                          | 3.485 | 3.385-3.585 | 3.702e+03 |
|                          | 3.590 | 3.490-3.690 | 2.502e+03 |
|                          | 3.921 | 3.821-4.021 | 1.773e+03 |
| 7 gamma-BHC (Lindane)    | 3.056 | 3.026-3.086 | 1.079e+05 |



## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m

| Compound              | RT    | RT Window   | RF        |
|-----------------------|-------|-------------|-----------|
| 8 Chlordane (tech.)   | 3.356 | 3.256-3.456 | 4.527e+03 |
|                       | 4.116 | 4.016-4.216 | 2.513e+03 |
|                       | 4.212 | 4.112-4.312 | 2.289e+03 |
|                       | 4.283 | 4.183-4.383 | 1.499e+04 |
|                       | 5.116 | 5.016-5.216 | 3.352e+03 |
| 9 Aroclor-1248        | 3.468 | 3.368-3.568 | 1.572e+03 |
|                       | 3.733 | 3.633-3.833 | 1.971e+03 |
|                       | 3.920 | 3.820-4.020 | 2.647e+03 |
|                       | 4.282 | 4.182-4.382 | 2.810e+03 |
|                       | 4.843 | 4.743-4.943 | 1.639e+03 |
| 10 Heptachlor         | 3.419 | 3.389-3.449 | 9.635e+04 |
| 11 Aldrin             | 3.662 | 3.632-3.692 | 1.160e+05 |
| 12 beta-BHC           | 3.117 | 3.087-3.147 | 4.965e+04 |
| 13 delta-BHC          | 3.255 | 3.225-3.285 | 9.836e+04 |
| 14 Heptachlor epoxide | 4.171 | 4.141-4.201 | 9.998e+04 |
| 15 Aroclor-1254       | 4.244 | 4.214-4.274 | 2.714e+03 |
|                       | 4.471 | 4.441-4.501 | 4.670e+03 |
|                       | 4.842 | 4.812-4.872 | 4.883e+03 |
|                       | 5.105 | 5.075-5.135 | 3.590e+03 |
|                       | 5.559 | 5.529-5.589 | 4.837e+03 |
| 16 Endosulfan I       | 4.523 | 4.493-4.553 | 8.807e+04 |
| 17 gamma-Chlordane    | 4.282 | 4.252-4.312 | 1.001e+05 |
| 18 alpha-Chlordane    | 4.400 | 4.370-4.430 | 9.765e+04 |
| 19 4,4'-DDE           | 4.473 | 4.443-4.503 | 9.512e+04 |
| 20 Dieldrin           | 4.745 | 4.715-4.775 | 9.915e+04 |
| 21 Aroclor-1260       | 5.012 | 4.912-5.112 | 3.575e+03 |
|                       | 5.279 | 5.178-5.378 | 4.751e+03 |
|                       | 5.558 | 5.458-5.658 | 3.751e+03 |
|                       | 5.923 | 5.823-6.023 | 3.089e+03 |
|                       | 6.242 | 6.141-6.341 | 6.064e+03 |
| 22 Endrin             | 4.964 | 4.934-4.994 | 8.179e+04 |
| 23 Toxaphene          | 5.169 | 5.139-5.199 | 3.565e+03 |
|                       | 5.289 | 5.259-5.319 | 2.130e+03 |
|                       | 5.506 | 5.476-5.536 | 2.670e+03 |
|                       | 5.834 | 5.804-5.864 | 1.824e+03 |
|                       | 5.932 | 5.902-5.962 | 2.846e+03 |
| 24 Endosulfan II      | 5.179 | 5.149-5.209 | 7.192e+04 |
| 25 4,4'-DDD           | 5.035 | 5.005-5.065 | 7.042e+04 |
| 26 4,4'-DDT           | 5.308 | 5.278-5.338 | 6.542e+04 |
| 27 Endrin aldehyde    | 5.592 | 5.562-5.622 | 6.333e+04 |

## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m

| Compound                 | RT    | RT Window   | RF        |
|--------------------------|-------|-------------|-----------|
| 28 Methoxychlor          | 5.807 | 5.777-5.837 | 2.944e+04 |
| 29 Endosulfan sulfate    | 6.033 | 6.003-6.063 | 6.822e+04 |
| 30 Aroclor-1268          | 6.571 | 6.471-6.671 | 1.194e+04 |
|                          | 6.614 | 6.514-6.714 | 1.199e+04 |
|                          | 6.821 | 6.721-6.921 | 9.127e+03 |
|                          | 7.200 | 7.100-7.300 | 4.364e+03 |
|                          | 7.511 | 7.411-7.611 | 3.019e+04 |
| 61 Aroclor-1262          | 5.012 | 4.912-5.112 | 4.307e+03 |
|                          | 5.276 | 5.176-5.376 | 5.868e+03 |
|                          | 5.669 | 5.569-5.769 | 7.406e+03 |
|                          | 6.237 | 6.137-6.337 | 1.491e+04 |
|                          | 6.572 | 6.472-6.672 | 5.745e+03 |
| 31 Endrin ketone         | 6.323 | 6.293-6.353 | 7.007e+04 |
| 51 Mirex                 | 5.927 | 5.897-5.957 | 5.828e+04 |
| 52 C-Nonachlor           | 4.998 | 4.968-5.028 | 9.340e+04 |
| 53 O-Chlordane           | 4.083 | 4.053-4.113 | 7.544e+04 |
| 54 T-Nonachlor           | 4.385 | 4.355-4.415 | 9.269e+04 |
| 55 1,2-Dichlorobenzene   | 6.525 | 6.495-6.555 |           |
| 56 2,4-DDE               | 4.164 | 4.134-4.194 | 5.903e+04 |
| 58 2,4-DDD               | 4.633 | 4.603-4.663 | 5.007e+04 |
| 57 2,4-DDT               | 4.871 | 4.841-4.901 | 5.016e+04 |
| \$ 32 Decachlorobiphenyl | 7.423 | 7.393-7.453 | 6.130e+04 |

## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
 Quant Method : ESTD Target Version : 3.50  
 Last Update : 31-Aug-2011 11:22 Number of Cpnds : 43  
 Data Type : GC MULTI COMP

Global Integrator : Falcon

Chromat Events Values

```

-----
Initial:Start Threshold 1000.000000
Initial:End Threshold 500.000000
Initial:Area Threshold 10000.000000
Initial:P-P Resolution 1.000000
Initial:Bunch Factor 4.000000
Initial:Negative Peaks OFF
Initial:Tension 0.000000
  
```

| Compound                 | RT    | RT Window   | RF        |
|--------------------------|-------|-------------|-----------|
| \$ 1 4cmx                | 3.086 | 3.056-3.116 | 8.068e+04 |
| 61 2,4,5-Trichlorophenol | 2.358 | 2.258-2.458 | 4.980e+05 |
| 59 Hexachlorobenzene     | 3.493 | 3.463-3.523 | 7.039e+04 |
| 2 Aroclor-1221           | 3.410 | 3.380-3.440 | 7.162e+02 |
|                          | 3.529 | 3.499-3.559 | 4.777e+02 |
|                          | 3.583 | 3.553-3.613 | 1.802e+03 |
| 3 Aroclor-1016           | 3.583 | 3.554-3.614 | 8.155e+02 |
|                          | 3.934 | 3.904-3.964 | 1.049e+03 |
|                          | 4.336 | 4.306-4.366 | 1.464e+03 |
|                          | 4.484 | 4.455-4.514 | 1.339e+03 |
|                          | 4.935 | 4.905-4.965 | 1.052e+03 |
| 4 Aroclor-1232           | 3.583 | 3.553-3.613 | 1.289e+03 |
|                          | 3.934 | 3.904-3.964 | 7.993e+02 |
|                          | 4.336 | 4.306-4.366 | 9.841e+02 |
|                          | 4.358 | 4.328-4.388 | 1.323e+03 |
|                          | 4.485 | 4.455-4.515 | 9.101e+02 |
| 5 alpha-BHC              | 3.607 | 3.577-3.637 | 1.179e+05 |
| 6 Aroclor-1242           | 3.584 | 3.554-3.614 | 1.010e+03 |
|                          | 3.935 | 3.905-3.965 | 1.270e+03 |
|                          | 4.337 | 4.307-4.367 | 1.685e+03 |
|                          | 4.359 | 4.329-4.389 | 2.266e+03 |
|                          | 4.485 | 4.455-4.515 | 1.536e+03 |
| 7 gamma-BHC (Lindane)    | 3.931 | 3.901-3.961 | 1.046e+05 |

## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m

| Compound              | RT    | RT Window   | RF        |
|-----------------------|-------|-------------|-----------|
| 8 Chlordane (tech.)   | 4.218 | 4.188-4.248 | 3.486e+03 |
|                       | 5.207 | 5.177-5.237 | 2.083e+03 |
|                       | 5.444 | 5.414-5.474 | 9.660e+03 |
|                       | 5.594 | 5.564-5.624 | 8.168e+03 |
|                       | 6.555 | 6.525-6.585 | 2.563e+03 |
| 9 Aroclor-1248        | 4.337 | 4.307-4.367 | 1.182e+03 |
|                       | 4.664 | 4.634-4.694 | 1.413e+03 |
|                       | 4.935 | 4.905-4.965 | 1.826e+03 |
|                       | 5.311 | 5.281-5.341 | 1.943e+03 |
|                       | 5.361 | 5.331-5.391 | 2.235e+03 |
| 10 Heptachlor         | 4.359 | 4.329-4.389 | 8.080e+04 |
| 11 Aldrin             | 4.684 | 4.654-4.714 | 9.930e+04 |
| 12 beta-BHC           | 3.992 | 3.962-4.022 | 4.527e+04 |
| 13 delta-BHC          | 4.279 | 4.249-4.309 | 1.032e+05 |
| 14 Heptachlor epoxide | 5.249 | 5.219-5.279 | 8.627e+04 |
| 15 Aroclor-1254       | 5.356 | 5.326-5.386 | 2.066e+03 |
|                       | 5.542 | 5.512-5.572 | 2.169e+03 |
|                       | 6.034 | 6.004-6.064 | 3.004e+03 |
|                       | 6.270 | 6.240-6.300 | 2.218e+03 |
|                       | 6.855 | 6.825-6.885 | 2.314e+03 |
| 16 Endosulfan I       | 5.661 | 5.631-5.691 | 7.799e+04 |
| 17 gamma-Chlordane    | 5.443 | 5.413-5.473 | 8.608e+04 |
| 18 alpha-Chlordane    | 5.593 | 5.563-5.623 | 8.419e+04 |
| 19 4,4'-DDE           | 5.747 | 5.717-5.777 | 7.884e+04 |
| 20 Dieldrin           | 5.948 | 5.918-5.978 | 8.043e+04 |
| 21 Aroclor-1260       | 6.239 | 6.209-6.269 | 1.684e+03 |
|                       | 6.454 | 6.424-6.484 | 2.034e+03 |
|                       | 6.949 | 6.919-6.979 | 1.539e+03 |
|                       | 7.282 | 7.252-7.312 | 1.620e+03 |
|                       | 7.551 | 7.521-7.581 | 3.407e+03 |
| 22 Endrin             | 6.276 | 6.246-6.306 | 6.476e+04 |
| 23 Toxaphene          | 6.440 | 6.410-6.470 | 1.422e+03 |
|                       | 6.488 | 6.458-6.518 | 2.318e+03 |
|                       | 6.591 | 6.561-6.621 | 3.977e+03 |
|                       | 6.869 | 6.839-6.899 | 2.103e+03 |
|                       | 7.443 | 7.413-7.473 | 2.401e+03 |
| 24 Endosulfan II      | 6.499 | 6.469-6.529 | 6.864e+04 |
| 25 4,4'-DDD           | 6.363 | 6.333-6.393 | 6.073e+04 |
| 26 4,4'-DDT           | 6.707 | 6.677-6.737 | 5.684e+04 |
| 27 Endrin aldehyde    | 6.862 | 6.832-6.892 | 5.661e+04 |

## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m

| Compound                 | RT    | RT Window   | RF        |
|--------------------------|-------|-------------|-----------|
| 28 Methoxychlor          | 7.455 | 7.425-7.485 | 2.451e+04 |
| 29 Endosulfan sulfate    | 7.165 | 7.135-7.195 | 5.861e+04 |
| 30 Aroclor-1268          | 7.713 | 7.683-7.743 | 7.805e+04 |
|                          | 7.766 | 7.736-7.796 | 7.537e+04 |
|                          | 8.055 | 8.025-8.085 | 5.572e+04 |
|                          | 8.368 | 8.338-8.398 | 2.753e+04 |
|                          | 8.743 | 8.713-8.773 | 1.813e+05 |
| 60 Aroclor-1262          | 6.013 | 5.913-6.113 | 3.007e+04 |
|                          | 6.228 | 6.128-6.328 | 3.673e+04 |
|                          | 7.042 | 6.942-7.142 | 4.881e+04 |
|                          | 7.311 | 7.211-7.411 | 1.025e+05 |
|                          | 7.716 | 7.616-7.816 | 6.886e+04 |
| 31 Endrin ketone         | 7.772 | 7.742-7.802 | 7.056e+04 |
| 51 Mirex                 | 7.743 | 7.713-7.773 | 4.109e+04 |
| 52 C-Nonachlor           | 6.353 | 6.323-6.383 | 6.415e+04 |
| 53 O-Chlordane           | 5.156 | 5.126-5.186 | 5.372e+04 |
| 54 T-Nonachlor           | 5.536 | 5.506-5.566 | 6.391e+04 |
| 55 1,2-Dichlorobenzene   | 6.619 | 6.589-6.649 |           |
| 56 2,4-DDE               | 5.425 | 5.395-5.455 | 4.249e+04 |
| 58 2,4-DDD               | 5.962 | 5.932-5.992 | 3.660e+04 |
| 57 2,4-DDT               | 6.293 | 6.263-6.323 | 3.920e+04 |
| \$ 32 Decachlorobiphenyl | 9.147 | 9.117-9.177 | 4.797e+04 |

## GEL Laboratories LLC

## INITIAL CALIBRATION DATA

Start Cal Date : 29-DEC-2009 17:34  
 End Cal Date : 30-AUG-2011 17:41  
 Quant Method : ESTD  
 Target Version : 3.50  
 Integrator : Falcon  
 Method file : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
 Cal Date : 31-Aug-2011 11:26 reb01393

## Calibration File Names:

Level 1: /chem/ecd3a.i/112910pa-608.b/032f3201.d  
 Level 2: /chem/ecd3a.i/112910pa-608.b/033f3301.d  
 Level 3: /chem/ecd3a.i/112910pa-608.b/034f3401.d  
 Level 4: /chem/ecd3a.i/011511p.b/018f1801.d  
 Level 5: /chem/ecd3a.i/112910pa-608.b/036f3601.d

| Compound                 | 2       | 10      | 50      | 100     | 200      | Curve | Coefficients |        |    | %RSD      |
|--------------------------|---------|---------|---------|---------|----------|-------|--------------|--------|----|-----------|
|                          | Level 1 | Level 2 | Level 3 | Level 4 | Level 5  |       | b            | m1     | m2 | or R^2    |
| 63 2,4,5-Trichlorophenol | ++++    | ++++    | ++++    | 31937   | ++++     | AVRG  |              | 31937  |    | 0.000e+00 |
| 59 Hexachlorobenzene     | ++++    | ++++    | ++++    | 107956  | ++++     | AVRG  |              | 107956 |    | 0.000e+00 |
| 2 Aroclor-1221(1)        | ++++    | ++++    | ++++    | 1168    | ++++     | AVRG  |              | 1168   |    | 0.000e+00 |
| (2)                      | ++++    | ++++    | ++++    | 692     | ++++     | AVRG  |              | 692    |    | 0.000e+00 |
| (3)                      | ++++    | ++++    | ++++    | 2486    | ++++     | AVRG  |              | 2486   |    | 0.000e+00 |
| 3 Aroclor-1016(1)        | 202760  | 450076  | 869109  | 1564921 | 5590357  | LINR  | -97.15977    | 1370   |    | 0.99938   |
| (2)                      | 399301  | 889246  | 1717576 | 3095826 | 11173823 | LINR  | -90.81843    | 2740   |    | 0.99950   |
| (3)                      | 454475  | 1028325 | 2057658 | 3868681 | 14503670 | LINR  | -51.79833    | 3587   |    | 0.99980   |
| (4)                      | 249873  | 572927  | 1113810 | 2080304 | 7900567  | LINR  | -50.24679    | 1953   |    | 0.99989   |
| (5)                      | 207864  | 487498  | 937607  | 1724344 | 6903830  | LINR  | -28.14136    | 1713   |    | 0.99991   |
| 4 Aroclor-1232(1)        | ++++    | ++++    | ++++    | 1709    | ++++     | AVRG  |              | 1709   |    | 0.000e+00 |
| (2)                      | ++++    | ++++    | ++++    | 1228    | ++++     | AVRG  |              | 1228   |    | 0.000e+00 |
| (3)                      | ++++    | ++++    | ++++    | 2039    | ++++     | AVRG  |              | 2039   |    | 0.000e+00 |
| (4)                      | ++++    | ++++    | ++++    | 1328    | ++++     | AVRG  |              | 1328   |    | 0.000e+00 |
| (5)                      | ++++    | ++++    | ++++    | 855     | ++++     | AVRG  |              | 855    |    | 0.000e+00 |
| 5 alpha-BHC              | 103775  | 111125  | 120515  | 126778  | 131157   | AVRG  |              | 118670 |    | 9.45774   |
| 6 Aroclor-1242(1)        | ++++    | ++++    | ++++    | 1570    | ++++     | AVRG  |              | 1570   |    | 0.000e+00 |
| (2)                      | ++++    | ++++    | ++++    | 2289    | ++++     | AVRG  |              | 2289   |    | 0.000e+00 |
| (3)                      | ++++    | ++++    | ++++    | 3702    | ++++     | AVRG  |              | 3702   |    | 0.000e+00 |
| (4)                      | ++++    | ++++    | ++++    | 2502    | ++++     | AVRG  |              | 2502   |    | 0.000e+00 |
| (5)                      | ++++    | ++++    | ++++    | 1773    | ++++     | AVRG  |              | 1773   |    | 0.000e+00 |

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 Integrator : Falcon  
 Method file : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
 Cal Date : 31-Aug-2011 11:26 reb01393

| Compound               | 2       | 10      | 50      | 100     | 200     | Curve | Coefficients |        |       | %RSD      |
|------------------------|---------|---------|---------|---------|---------|-------|--------------|--------|-------|-----------|
|                        | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |       | b            | m1     | m2    | or R^2    |
| =====                  | =====   | =====   | =====   | =====   | =====   | ===== | =====        | =====  | ===== | =====     |
| 7 gamma-BHC (Lindane)  | 96248   | 102784  | 108954  | 113839  | 117551  | AVRG  |              | 107875 |       | 7.91319   |
| 8 Chlordane (tech.)(1) | 4208    | 4327    | 4533    | 4763    | 4807    | AVRG  |              | 4527   |       | 5.79796   |
| (2)                    | 2346    | 2392    | 2542    | 2647    | 2640    | AVRG  |              | 2513   |       | 5.54080   |
| (3)                    | 1925    | 2060    | 2378    | 2506    | 2578    | AVRG  |              | 2289   |       | 12.41724  |
| (4)                    | 13637   | 14340   | 15356   | 16055   | 15574   | AVRG  |              | 14992  |       | 6.55401   |
| (5)                    | 3251    | 3369    | 3302    | 3460    | 3378    | AVRG  |              | 3352   |       | 2.37629   |
| 9 Aroclor-1248(1)      | +++++   | +++++   | +++++   | 1572    | +++++   | AVRG  |              | 1572   |       | 0.000e+00 |
| (2)                    | +++++   | +++++   | +++++   | 1971    | +++++   | AVRG  |              | 1971   |       | 0.000e+00 |
| (3)                    | +++++   | +++++   | +++++   | 2647    | +++++   | AVRG  |              | 2647   |       | 0.000e+00 |
| (4)                    | +++++   | +++++   | +++++   | 2810    | +++++   | AVRG  |              | 2810   |       | 0.000e+00 |
| (5)                    | +++++   | +++++   | +++++   | 1639    | +++++   | AVRG  |              | 1639   |       | 0.000e+00 |
| 10 Heptachlor          | 87891   | 93036   | 97081   | 100506  | 103218  | AVRG  |              | 96346  |       | 6.30305   |
| 11 Aldrin              | 101598  | 110417  | 119024  | 123337  | 125457  | AVRG  |              | 115967 |       | 8.52535   |
| 12 beta-BHC            | 51313   | 49608   | 47768   | 49112   | 50464   | AVRG  |              | 49653  |       | 2.71346   |
| 13 delta-BHC           | 89315   | 91317   | 98705   | 103939  | 108542  | AVRG  |              | 98364  |       | 8.29551   |
| 14 Heptachlor epoxide  | 92186   | 97213   | 101453  | 104157  | 104915  | AVRG  |              | 99985  |       | 5.30112   |
| 15 Aroclor-1254(1)     | +++++   | +++++   | +++++   | 2714    | +++++   | AVRG  |              | 2714   |       | 0.000e+00 |
| (2)                    | +++++   | +++++   | +++++   | 4670    | +++++   | AVRG  |              | 4670   |       | 0.000e+00 |
| (3)                    | +++++   | +++++   | +++++   | 4883    | +++++   | AVRG  |              | 4883   |       | 0.000e+00 |
| (4)                    | +++++   | +++++   | +++++   | 3590    | +++++   | AVRG  |              | 3590   |       | 0.000e+00 |
| (5)                    | +++++   | +++++   | +++++   | 4837    | +++++   | AVRG  |              | 4837   |       | 0.000e+00 |
| 16 Endosulfan I        | 82014   | 85993   | 89084   | 91351   | 91900   | AVRG  |              | 88068  |       | 4.66248   |
| 17 gamma-Chlordane     | 89388   | 94339   | 100778  | 106172  | 109715  | AVRG  |              | 100078 |       | 8.32606   |
| 18 alpha-Chlordane     | 88380   | 93494   | 98512   | 102297  | 105578  | AVRG  |              | 97652  |       | 7.02774   |

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 Integrator : Falcon  
 Method file : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
 Cal Date : 31-Aug-2011 11:26 reb01393

| Compound              | 2       | 10      | 50      | 100     | 200     | Curve | Coefficients |       |    | %RSD      |
|-----------------------|---------|---------|---------|---------|---------|-------|--------------|-------|----|-----------|
|                       | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |       | b            | m1    | m2 | or R^2    |
| 19 4,4'-DDE           | 81708   | 91195   | 98299   | 101398  | 103015  | AVRG  |              | 95123 |    | 9.21183   |
| 20 Dieldrin           | 87852   | 97198   | 102106  | 104000  | 104576  | AVRG  |              | 99146 |    | 7.00891   |
| 21 Aroclor-1260(1)    | 3932    | 3597    | 3592    | 3316    | 3438    | AVRG  |              | 3575  |    | 6.47016   |
| (2)                   | 5135    | 4840    | 4788    | 4468    | 4525    | AVRG  |              | 4751  |    | 5.64375   |
| (3)                   | 3870    | 3730    | 3660    | 3624    | 3871    | AVRG  |              | 3751  |    | 3.07473   |
| (4)                   | 3307    | 3084    | 3085    | 2926    | 3040    | AVRG  |              | 3089  |    | 4.48455   |
| (5)                   | 6270    | 6059    | 6069    | 5800    | 6124    | AVRG  |              | 6064  |    | 2.80650   |
| 22 Endrin             | 73875   | 79806   | 83759   | 85023   | 86494   | AVRG  |              | 81791 |    | 6.20520   |
| 23 Toxaphene(1)       | 3822    | 3387    | 3428    | 3569    | 3619    | AVRG  |              | 3565  |    | 4.84097   |
| (2)                   | 2051    | 2214    | 2107    | 2006    | 2272    | AVRG  |              | 2130  |    | 5.20045   |
| (3)                   | 2728    | 2560    | 2581    | 2625    | 2853    | AVRG  |              | 2670  |    | 4.54520   |
| (4)                   | 1964    | 1675    | 1724    | 1779    | 1976    | AVRG  |              | 1824  |    | 7.60847   |
| (5)                   | 2946    | 2748    | 2708    | 2855    | 2970    | AVRG  |              | 2846  |    | 4.08427   |
| 24 Endosulfan II      | 68691   | 71620   | 72252   | 73337   | 73703   | AVRG  |              | 71921 |    | 2.76433   |
| 25 4,4'-DDD           | 63630   | 68045   | 71480   | 73854   | 75110   | AVRG  |              | 70424 |    | 6.60924   |
| 26 4,4'-DDT           | 60876   | 64035   | 65831   | 67561   | 68791   | AVRG  |              | 65419 |    | 4.75383   |
| 27 Endrin aldehyde    | 62487   | 64088   | 62909   | 63666   | 63517   | AVRG  |              | 63333 |    | 1.00147   |
| 28 Methoxychlor       | 31565   | 31149   | 28020   | 27953   | 28496   | AVRG  |              | 29437 |    | 6.01819   |
| 29 Endosulfan sulfate | 64067   | 66135   | 68468   | 70364   | 72079   | AVRG  |              | 68223 |    | 4.70154   |
| 30 Aroclor-1268(1)    | +++++   | +++++   | +++++   | 11935   | +++++   | AVRG  |              | 11935 |    | 0.000e+00 |
| (2)                   | +++++   | +++++   | +++++   | 11988   | +++++   | AVRG  |              | 11988 |    | 0.000e+00 |
| (3)                   | +++++   | +++++   | +++++   | 9127    | +++++   | AVRG  |              | 9127  |    | 0.000e+00 |
| (4)                   | +++++   | +++++   | +++++   | 4364    | +++++   | AVRG  |              | 4364  |    | 0.000e+00 |
| (5)                   | +++++   | +++++   | +++++   | 30188   | +++++   | AVRG  |              | 30188 |    | 0.000e+00 |



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| Compound                 | 2       | 10      | 50      | 100      | 200     | Curve | Coefficients |           |       | %RSD      |
|--------------------------|---------|---------|---------|----------|---------|-------|--------------|-----------|-------|-----------|
|                          | Level 1 | Level 2 | Level 3 | Level 4  | Level 5 |       | b            | m1        | m2    | or R^2    |
| =====                    | =====   | =====   | =====   | =====    | =====   | ===== | =====        | =====     | ===== | =====     |
| 61 Aroclor-1262(1)       | +++++   | +++++   | +++++   | 4307     | +++++   | AVRG  |              | 4307      |       | 0.000e+00 |
| (2)                      | +++++   | +++++   | +++++   | 5868     | +++++   | AVRG  |              | 5868      |       | 0.000e+00 |
| (3)                      | +++++   | +++++   | +++++   | 7406     | +++++   | AVRG  |              | 7406      |       | 0.000e+00 |
| (4)                      | +++++   | +++++   | +++++   | 14908    | +++++   | AVRG  |              | 14908     |       | 0.000e+00 |
| (5)                      | +++++   | +++++   | +++++   | 5745     | +++++   | AVRG  |              | 5745      |       | 0.000e+00 |
| 31 Endrin ketone         | 70381   | 71679   | 69098   | 69571    | 69642   | AVRG  |              | 70074     |       | 1.43773   |
| 51 Mirex                 | +++++   | +++++   | +++++   | 11656034 | +++++   | LINR  | 0.000e+00    | 58280     |       | 1.00000   |
| 52 C-Nonachlor           | +++++   | +++++   | +++++   | 93396    | +++++   | AVRG  |              | 93396     |       | 0.000e+00 |
| 53 O-Chlordane           | +++++   | +++++   | +++++   | 75439    | +++++   | AVRG  |              | 75439     |       | 0.000e+00 |
| 54 T-Nonachlor           | +++++   | +++++   | +++++   | 92695    | +++++   | AVRG  |              | 92695     |       | 0.000e+00 |
| 55 1,2-Dichlorobenzene   | +++++   | +++++   | +++++   | +++++    | +++++   | AVRG  |              | 0.000e+00 |       | 0.000e+00 |
| 56 2,4-DDE               | +++++   | +++++   | +++++   | 59032    | +++++   | AVRG  |              | 59032     |       | 0.000e+00 |
| 58 2,4-DDD               | +++++   | +++++   | +++++   | 50069    | +++++   | AVRG  |              | 50069     |       | 0.000e+00 |
| 57 2,4-DDT               | +++++   | +++++   | +++++   | 10032320 | +++++   | LINR  | 0.000e+00    | 50162     |       | 1.00000   |
| =====                    | =====   | =====   | =====   | =====    | =====   | ===== | =====        | =====     | ===== | =====     |
| \$ 1 4cmx                | 98012   | 99198   | 99780   | 101424   | 102194  | AVRG  |              | 100122    |       | 1.68697   |
| \$ 32 Decachlorobiphenyl | 63366   | 61972   | 58967   | 60332    | 61842   | AVRG  |              | 61296     |       | 2.75306   |
| =====                    | =====   | =====   | =====   | =====    | =====   | ===== | =====        | =====     | ===== | =====     |

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Cal Date : 31-Aug-2011 11:26 reb01393

| Curve    | Formula          | Units    |
|----------|------------------|----------|
| =====    | =====            | =====    |
| Averaged | Amt = Rsp/ml     | Response |
| Linear   | Amt = b + Rsp/ml | Response |
| _____    | _____            | _____    |

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 Method file : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
 Cal Date : 31-Aug-2011 11:22 reb01393

## Calibration File Names:

Level 1: /chem/ecd3a.i/112910pa-608.b/032b3201.d  
 Level 2: /chem/ecd3a.i/122110p.b/013b1301.d  
 Level 3: /chem/ecd3a.i/112910pa-608.b/034b3401.d  
 Level 4: /chem/ecd3a.i/011511p.b/018b1801.d  
 Level 5: /chem/ecd3a.i/112910pa-608.b/036b3601.d

| Compound                 | 2       | 10      | 50      | 100      | 200     | Curve | Coefficients |        |    | %RSD      |
|--------------------------|---------|---------|---------|----------|---------|-------|--------------|--------|----|-----------|
|                          | Level 1 | Level 2 | Level 3 | Level 4  | Level 5 |       | b            | m1     | m2 | or R^2    |
| 61 2,4,5-Trichlorophenol | ++++    | ++++    | ++++    | 498020   | ++++    | AVRG  |              | 498020 |    | 0.000e+00 |
| 59 Hexachlorobenzene     | ++++    | ++++    | ++++    | 14077175 | ++++    | LINR  | 0.000e+00    | 70386  |    | 1.00000   |
| 2 Aroclor-1221(1)        | ++++    | ++++    | ++++    | 716      | ++++    | AVRG  |              | 716    |    | 0.000e+00 |
| (2)                      | ++++    | ++++    | ++++    | 478      | ++++    | AVRG  |              | 478    |    | 0.000e+00 |
| (3)                      | ++++    | ++++    | ++++    | 1802     | ++++    | AVRG  |              | 1802   |    | 0.000e+00 |
| 3 Aroclor-1016(1)        | 152631  | 327485  | 591236  | 1022928  | 3379779 | LINR  | -173         | 815    |    | 0.99829   |
| (2)                      | 195086  | 415902  | 758489  | 1327378  | 4346183 | LINR  | -172         | 1049   |    | 0.99807   |
| (3)                      | 258840  | 552221  | 1010061 | 1784986  | 6036091 | LINR  | -148         | 1464   |    | 0.99876   |
| (4)                      | 233486  | 508216  | 924897  | 1644230  | 5520636 | LINR  | -149         | 1339   |    | 0.99861   |
| (5)                      | 181142  | 396739  | 717109  | 1284249  | 4336196 | LINR  | -144         | 1052   |    | 0.99874   |
| 4 Aroclor-1232(1)        | ++++    | ++++    | ++++    | 1289     | ++++    | AVRG  |              | 1289   |    | 0.000e+00 |
| (2)                      | ++++    | ++++    | ++++    | 799      | ++++    | AVRG  |              | 799    |    | 0.000e+00 |
| (3)                      | ++++    | ++++    | ++++    | 984      | ++++    | AVRG  |              | 984    |    | 0.000e+00 |
| (4)                      | ++++    | ++++    | ++++    | 1323     | ++++    | AVRG  |              | 1323   |    | 0.000e+00 |
| (5)                      | ++++    | ++++    | ++++    | 910      | ++++    | AVRG  |              | 910    |    | 0.000e+00 |
| 5 alpha-BHC              | 126682  | 124531  | 115205  | 112772   | 110278  | AVRG  |              | 117894 |    | 6.18588   |
| 6 Aroclor-1242(1)        | ++++    | ++++    | ++++    | 1010     | ++++    | AVRG  |              | 1010   |    | 0.000e+00 |
| (2)                      | ++++    | ++++    | ++++    | 1270     | ++++    | AVRG  |              | 1270   |    | 0.000e+00 |
| (3)                      | ++++    | ++++    | ++++    | 1685     | ++++    | AVRG  |              | 1685   |    | 0.000e+00 |
| (4)                      | ++++    | ++++    | ++++    | 2266     | ++++    | AVRG  |              | 2266   |    | 0.000e+00 |
| (5)                      | ++++    | ++++    | ++++    | 1536     | ++++    | AVRG  |              | 1536   |    | 0.000e+00 |

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| Compound               | 2       | 10      | 50      | 100     | 200     | Curve | Coefficients |        |    | %RSD      |
|------------------------|---------|---------|---------|---------|---------|-------|--------------|--------|----|-----------|
|                        | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |       | b            | m1     | m2 | or R^2    |
| 7 gamma-BHC (Lindane)  | 115398  | 111024  | 101203  | 98838   | 96763   | AVRG  |              | 104645 |    | 7.76388   |
| 8 Chlordane (tech.)(1) | 4049    | 3811    | 3317    | 3255    | 2996    | AVRG  |              | 3486   |    | 12.37604  |
| (2)                    | 2412    | 2323    | 1916    | 2052    | 1712    | AVRG  |              | 2083   |    | 13.84415  |
| (3)                    | 10784   | 10467   | 9308    | 9401    | 8342    | AVRG  |              | 9660   |    | 10.14438  |
| (4)                    | 9362    | 9043    | 7713    | 7820    | 6901    | AVRG  |              | 8168   |    | 12.43188  |
| (5)                    | 2964    | 2984    | 2377    | 2371    | 2119    | AVRG  |              | 2563   |    | 15.19391  |
| 9 Aroclor-1248(1)      | +++++   | +++++   | +++++   | 1182    | +++++   | AVRG  |              | 1182   |    | 0.000e+00 |
| (2)                    | +++++   | +++++   | +++++   | 1413    | +++++   | AVRG  |              | 1413   |    | 0.000e+00 |
| (3)                    | +++++   | +++++   | +++++   | 1826    | +++++   | AVRG  |              | 1826   |    | 0.000e+00 |
| (4)                    | +++++   | +++++   | +++++   | 1943    | +++++   | AVRG  |              | 1943   |    | 0.000e+00 |
| (5)                    | +++++   | +++++   | +++++   | 2235    | +++++   | AVRG  |              | 2235   |    | 0.000e+00 |
| 10 Heptachlor          | 90418   | 87588   | 77765   | 75042   | 73211   | AVRG  |              | 80805  |    | 9.55657   |
| 11 Aldrin              | 111133  | 107117  | 96196   | 92804   | 89260   | AVRG  |              | 99302  |    | 9.47044   |
| 12 beta-BHC            | 53636   | 49206   | 42479   | 41048   | 39957   | AVRG  |              | 45265  |    | 13.03750  |
| 13 delta-BHC           | 111388  | 108739  | 100558  | 98365   | 96816   | AVRG  |              | 103173 |    | 6.29683   |
| 14 Heptachlor epoxide  | 98417   | 93842   | 82799   | 79609   | 76696   | AVRG  |              | 86273  |    | 10.88848  |
| 15 Aroclor-1254(1)     | +++++   | +++++   | +++++   | 2066    | +++++   | AVRG  |              | 2066   |    | 0.000e+00 |
| (2)                    | +++++   | +++++   | +++++   | 2169    | +++++   | AVRG  |              | 2169   |    | 0.000e+00 |
| (3)                    | +++++   | +++++   | +++++   | 3004    | +++++   | AVRG  |              | 3004   |    | 0.000e+00 |
| (4)                    | +++++   | +++++   | +++++   | 2218    | +++++   | AVRG  |              | 2218   |    | 0.000e+00 |
| (5)                    | +++++   | +++++   | +++++   | 2314    | +++++   | AVRG  |              | 2314   |    | 0.000e+00 |
| 16 Endosulfan I        | 89303   | 85126   | 74768   | 71763   | 69006   | AVRG  |              | 77993  |    | 11.26500  |
| 17 gamma-Chlordane     | 95434   | 92554   | 82622   | 81288   | 78513   | AVRG  |              | 86082  |    | 8.64598   |
| 18 alpha-Chlordane     | 95701   | 91220   | 80345   | 77938   | 75730   | AVRG  |              | 84187  |    | 10.41262  |

GEL Laboratories LLC  
INITIAL CALIBRATION DATA

Start Cal Date : 29-DEC-2009 17:34  
 End Cal Date : 30-AUG-2011 17:41  
 Quant Method : ESTD  
 Target Version : 3.50  
 Integrator : Falcon  
 Method file : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
 Cal Date : 31-Aug-2011 11:22 reb01393

| Compound              | 2       | 10      | 50      | 100     | 200      | Curve | Coefficients |        |    | %RSD      |
|-----------------------|---------|---------|---------|---------|----------|-------|--------------|--------|----|-----------|
|                       | Level 1 | Level 2 | Level 3 | Level 4 | Level 5  |       | b            | m1     | m2 | or R^2    |
| 19 4,4'-DDE           | 86893   | 85552   | 76678   | 73904   | 71165    | AVRG  |              | 78838  |    | 8.92053   |
| 20 Dieldrin           | 90070   | 87648   | 77612   | 74677   | 72147    | AVRG  |              | 80431  |    | 9.92073   |
| 21 Aroclor-1260(1)    | 303716  | 646083  | 1194992 | 2053433 | 6959151  | LINR  | -155         | 1684   |    | 0.99870   |
| (2)                   | 358159  | 776346  | 1431931 | 2466484 | 8397847  | LINR  | -150         | 2034   |    | 0.99875   |
| (3)                   | 272135  | 589465  | 1079031 | 1857678 | 6353598  | LINR  | -149         | 1539   |    | 0.99886   |
| (4)                   | 283143  | 620697  | 1132180 | 1953989 | 6685419  | LINR  | -148         | 1620   |    | 0.99885   |
| (5)                   | 576628  | 1257052 | 2297602 | 4000074 | 14014819 | LINR  | -130         | 3407   |    | 0.99924   |
| 22 Endrin             | 74043   | 70503   | 62087   | 59389   | 57797    | AVRG  |              | 64764  |    | 11.01693  |
| 23 Toxaphene(1)       | 1723    | 1427    | 1341    | 1304    | 1314     | AVRG  |              | 1422   |    | 12.32498  |
| (2)                   | 2789    | 2349    | 2168    | 2130    | 2155     | AVRG  |              | 2318   |    | 11.94529  |
| (3)                   | 4658    | 4040    | 3777    | 3623    | 3787     | AVRG  |              | 3977   |    | 10.29124  |
| (4)                   | 2532    | 2080    | 1931    | 1976    | 1995     | AVRG  |              | 2103   |    | 11.69966  |
| (5)                   | 2891    | 2377    | 2272    | 2230    | 2234     | AVRG  |              | 2401   |    | 11.68320  |
| 24 Endosulfan II      | 78343   | 75006   | 65396   | 63448   | 60985    | AVRG  |              | 68636  |    | 11.06621  |
| 25 4,4'-DDD           | 67982   | 65513   | 58467   | 56638   | 55029    | AVRG  |              | 60726  |    | 9.38190   |
| 26 4,4'-DDT           | 64382   | 61289   | 54088   | 52742   | 51686    | AVRG  |              | 56837  |    | 9.93743   |
| 27 Endrin aldehyde    | 65616   | 62237   | 54050   | 51742   | 49403    | AVRG  |              | 56609  |    | 12.33233  |
| 28 Methoxychlor       | 28920   | 26795   | 22831   | 22115   | 21889    | AVRG  |              | 24510  |    | 12.91817  |
| 29 Endosulfan sulfate | 66584   | 63374   | 55947   | 54273   | 52885    | AVRG  |              | 58613  |    | 10.27078  |
| 30 Aroclor-1268(1)    | +++++   | +++++   | +++++   | 78045   | +++++    | AVRG  |              | 78045  |    | 0.000e+00 |
| (2)                   | +++++   | +++++   | +++++   | 75367   | +++++    | AVRG  |              | 75367  |    | 0.000e+00 |
| (3)                   | +++++   | +++++   | +++++   | 55722   | +++++    | AVRG  |              | 55722  |    | 0.000e+00 |
| (4)                   | +++++   | +++++   | +++++   | 27533   | +++++    | AVRG  |              | 27533  |    | 0.000e+00 |
| (5)                   | +++++   | +++++   | +++++   | 181259  | +++++    | AVRG  |              | 181259 |    | 0.000e+00 |

## GEL Laboratories LLC

## INITIAL CALIBRATION DATA

Start Cal Date : 29-DEC-2009 17:34  
 End Cal Date : 30-AUG-2011 17:41  
 Quant Method : ESTD  
 Target Version : 3.50  
 Integrator : Falcon  
 Method file : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
 Cal Date : 31-Aug-2011 11:22 reb01393

| Compound                 | 2       | 10      | 50      | 100      | 200     | Curve | Coefficients |           |       | %RSD      |
|--------------------------|---------|---------|---------|----------|---------|-------|--------------|-----------|-------|-----------|
|                          | Level 1 | Level 2 | Level 3 | Level 4  | Level 5 |       | b            | m1        | m2    | or R^2    |
| =====                    | =====   | =====   | =====   | =====    | =====   | ===== | =====        | =====     | ===== | =====     |
| 60 Aroclor-1262(1)       | +++++   | +++++   | +++++   | 30071    | +++++   | AVRG  |              | 30071     |       | 0.000e+00 |
| (2)                      | +++++   | +++++   | +++++   | 36725    | +++++   | AVRG  |              | 36725     |       | 0.000e+00 |
| (3)                      | +++++   | +++++   | +++++   | 48807    | +++++   | AVRG  |              | 48807     |       | 0.000e+00 |
| (4)                      | +++++   | +++++   | +++++   | 102538   | +++++   | AVRG  |              | 102538    |       | 0.000e+00 |
| (5)                      | +++++   | +++++   | +++++   | 68862    | +++++   | AVRG  |              | 68862     |       | 0.000e+00 |
| 31 Endrin ketone         | 82387   | 77386   | 66376   | 64037    | 62623   | AVRG  |              | 70562     |       | 12.46644  |
| 51 Mirex                 | +++++   | +++++   | +++++   | 8218644  | +++++   | LINR  | 0.000e+00    | 41093     |       | 1.00000   |
| 52 C-Nonachlor           | +++++   | +++++   | +++++   | 12829030 | +++++   | LINR  | 0.000e+00    | 64145     |       | 1.00000   |
| 53 O-Chlordane           | +++++   | +++++   | +++++   | 10744300 | +++++   | LINR  | 0.000e+00    | 53722     |       | 1.00000   |
| 54 T-Nonachlor           | +++++   | +++++   | +++++   | 12782198 | +++++   | LINR  | 0.000e+00    | 63911     |       | 1.00000   |
| 55 1,2-Dichlorobenzene   | +++++   | +++++   | +++++   | +++++    | +++++   | AVRG  |              | 0.000e+00 |       | 0.000e+00 |
| 56 2,4-DDE               | +++++   | +++++   | +++++   | 8497890  | +++++   | LINR  | 0.000e+00    | 42489     |       | 1.00000   |
| 58 2,4-DDD               | +++++   | +++++   | +++++   | 7319986  | +++++   | LINR  | 0.000e+00    | 36600     |       | 1.00000   |
| 57 2,4-DDT               | +++++   | +++++   | +++++   | 7840912  | +++++   | LINR  | 0.000e+00    | 39205     |       | 1.00000   |
| =====                    | =====   | =====   | =====   | =====    | =====   | ===== | =====        | =====     | ===== | =====     |
| \$ 1 4cmx                | 92866   | 88106   | 77442   | 74044    | 70960   | AVRG  |              | 80684     |       | 11.63711  |
| \$ 32 Decachlorobiphenyl | 58526   | 52653   | 44085   | 42582    | 42020   | AVRG  |              | 47973     |       | 15.20708  |
| =====                    | =====   | =====   | =====   | =====    | =====   | ===== | =====        | =====     | ===== | =====     |

## GEL Laboratories LLC

## INITIAL CALIBRATION DATA

Start Cal Date : 29-DEC-2009 17:34  
End Cal Date : 30-AUG-2011 17:41  
Quant Method : ESTD  
Target Version : 3.50  
Integrator : Falcon  
Method file : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
Cal Date : 31-Aug-2011 11:22 reb01393

| Curve    | Formula          | Units    |
|----------|------------------|----------|
| =====    | =====            | =====    |
| Averaged | Amt = Rsp/ml     | Response |
| Linear   | Amt = b + Rsp/ml | Response |
| _____    | _____            | _____    |

Data File: /chem/ecd3a.i/081611P.B/019F1901.D  
Report Date: 17-Aug-2011 16:55

Page 1

GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/081611P.B/019F1901.D  
Lab Smp Id: WPE110816-21CL Client Smp ID: CHLOR01  
Inj Date : 16-AUG-2011 15:45  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-21CL  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/081611P.B/ECD3-F-8081-081211p.m  
Meth Date : 17-Aug-2011 11:52 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 05:44 Cal File: 032f3201.d  
Als bottle: 19 Calibration Sample, Level: 1  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: chlor.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |                 |                   |                |        |       |
|---------------------------|--------|--------|----------|-----------------|-------------------|----------------|--------|-------|
| RT                        | EXP RT | DLT RT | RESPONSE | CAL-AMT ( ug/L) | ON-COL ( ug/L)    | TARGET RANGE   | RATIO  |       |
| ==                        | =====  | =====  | =====    | =====           | =====             | =====          | =====  | ===== |
| 8 Chlordane (tech.)       |        |        |          |                 | CAS #: 12789-03-6 |                |        |       |
| 3.374                     | 3.374  | 0.000  | 210389   | 50.0000         | 53.4              | 80.00- 120.00  | 100.00 |       |
| 4.134                     | 4.134  | 0.000  | 117297   | 50.0000         | 52.6              | 36.66- 76.66   | 55.75  |       |
| 4.232                     | 4.231  | 0.001  | 96258    | 50.0000         | 45.0              | 31.00- 71.00   | 45.75  |       |
| 4.302                     | 4.302  | 0.000  | 681855   | 50.0000         | 52.2              | 312.07- 352.07 | 324.09 |       |
| 5.139                     | 5.137  | 0.002  | 162553   | 50.0000         | 54.7              | 63.72- 103.72  | 77.26  |       |
| Average of Peak Amounts = |        |        |          |                 | 51.6              |                |        |       |
| -----                     |        |        |          |                 |                   |                |        |       |
| \$ 1 4cmx                 |        |        |          |                 | CAS #: 877-09-8   |                |        |       |
| 2.468                     | 2.468  | 0.000  | 1197184  | 8.00000         | 9.80              | 80.00- 120.00  | 100.00 |       |
| -----                     |        |        |          |                 |                   |                |        |       |
| \$ 32 Decachlorobiphenyl  |        |        |          |                 | CAS #: 2051-24-3  |                |        |       |
| 7.446                     | 7.445  | 0.001  | 754566   | 8.00000         | 10.5              | 80.00- 120.00  | 100.00 |       |
| -----                     |        |        |          |                 |                   |                |        |       |



Data File: /chem/ecod3a.i/081611P.B/019F1901.D

Date : 16-AUG-2011 15:45

Client ID: CHLOR01

Sample Info: IMPE110816-21CL

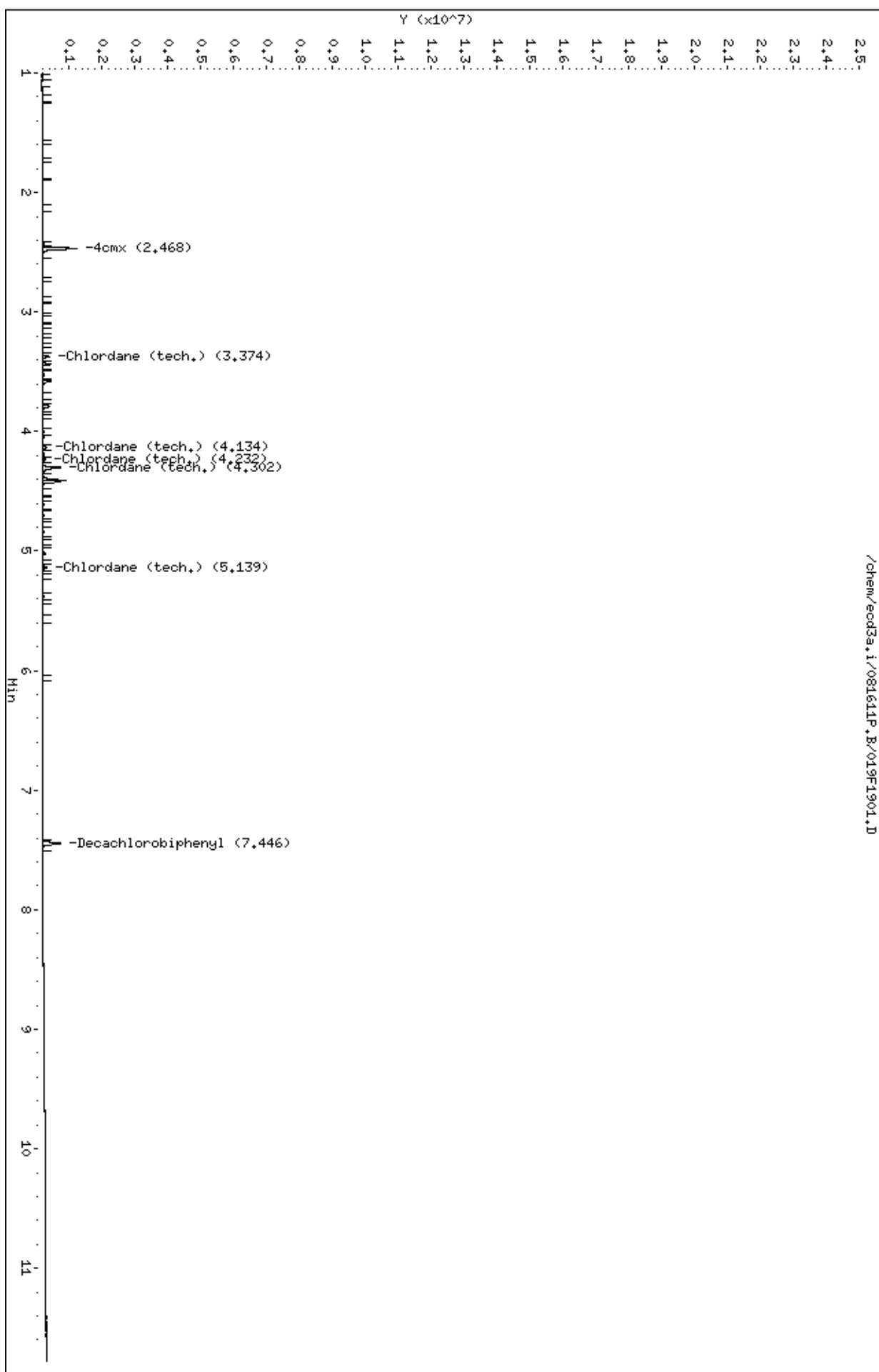
Column phase: CLP-1

Instrument: ecod3a.i

Operator: RXE1

Column diameter: 0.25

Page 1



Data File: /chem/ecd3a.i/081611P.B/019B1901.D  
Report Date: 17-Aug-2011 16:55

Page 1

GEL Laboratories LLC

CLP-2

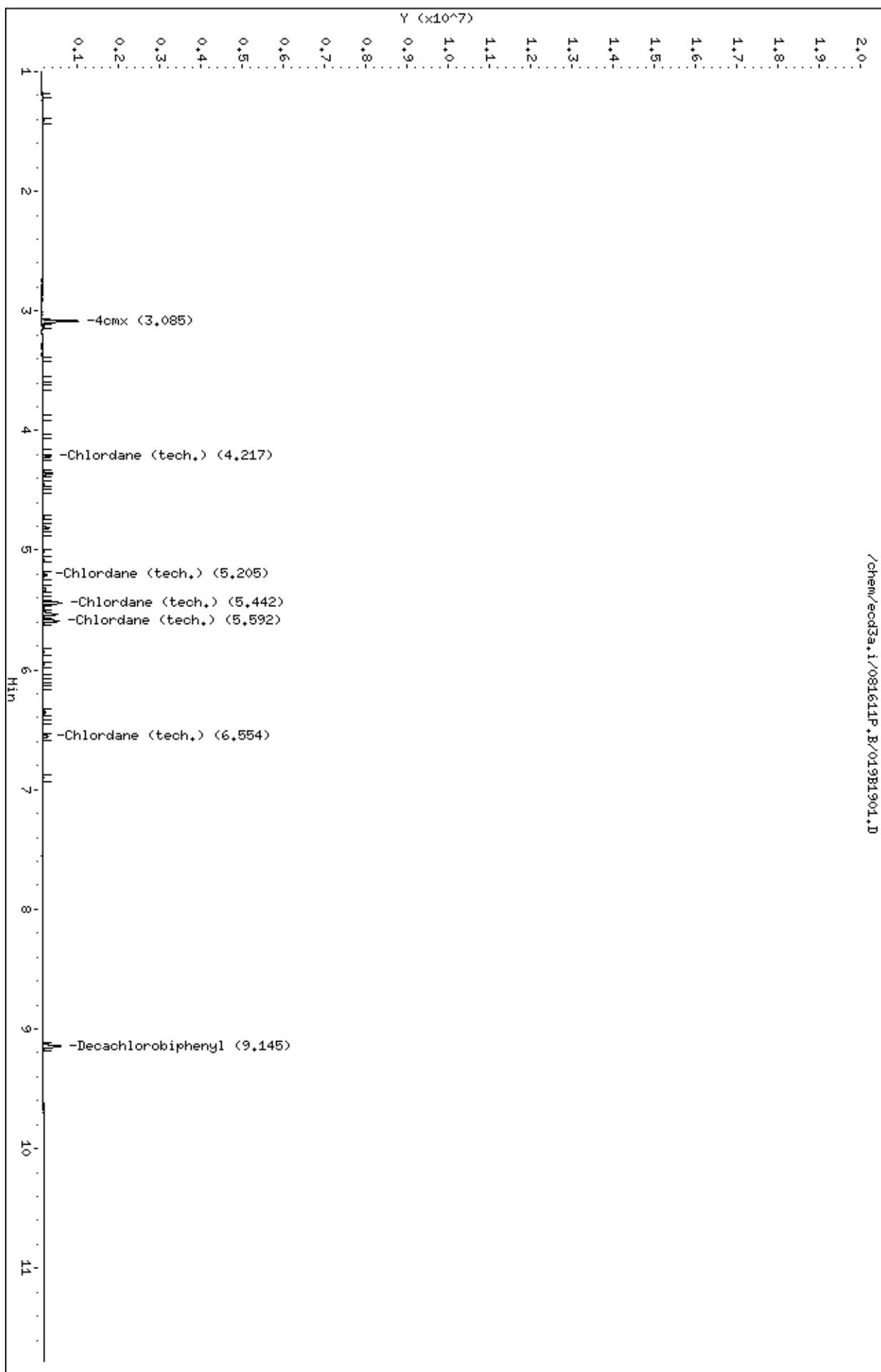
Data file : /chem/ecd3a.i/081611P.B/019B1901.D  
Lab Smp Id: WPE110816-21CL Client Smp ID: CHLOR01  
Inj Date : 16-AUG-2011 15:45  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-21CL  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/081611P.B/ECD3-B-8081-081211p.m  
Meth Date : 17-Aug-2011 11:50 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 05:44 Cal File: 032b3201.d  
Als bottle: 19 Calibration Sample, Level: 1  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: chlor.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| 8 Chlordane (tech.)       |        |        |          |         | CAS #: 12789-03-6 |         |        |        |
| 4.217                     | 4.217  | 0.000  | 202450   | 50.0000 | 61.2              | 80.00-  | 120.00 | 100.00 |
| 5.205                     | 5.206  | -0.001 | 120610   | 50.0000 | 57.3              | 39.89-  | 79.89  | 59.58  |
| 5.442                     | 5.442  | 0.000  | 539175   | 50.0000 | 58.8              | 260.35- | 300.35 | 266.32 |
| 5.592                     | 5.593  | -0.001 | 468095   | 50.0000 | 60.3              | 216.12- | 256.12 | 231.21 |
| 6.554                     | 6.555  | -0.001 | 148188   | 50.0000 | 59.3              | 62.69-  | 102.69 | 73.20  |
| Average of Peak Amounts = |        |        |          |         | 59.4              |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 3.085                     | 3.085  | 0.000  | 885717   | 8.00000 | 10.9              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 9.145                     | 9.145  | 0.000  | 557623   | 8.00000 | 11.6              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecod3a.i/081611P.B/019B1901.D  
Date : 16-06-2011 15:45  
Client ID: CHLOR01  
Sample Info: IMPE110816-21CL  
Column phase: CLP-2

Instrument: ecod3a.i  
Operator: RXE1  
Column diameter: 0.25

Page 1



Data File: /chem/ecd3a.i/081611P.B/020F2001.D  
Report Date: 17-Aug-2011 16:55

Page 1

GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/081611P.B/020F2001.D  
Lab Smp Id: WPE110816-22CL Client Smp ID: CHLOR02  
Inj Date : 16-AUG-2011 16:01  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-22CL  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/081611P.B/ECD3-F-8081-081211p.m  
Meth Date : 17-Aug-2011 11:52 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:00 Cal File: 033f3301.d  
Als bottle: 20 Calibration Sample, Level: 2  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: chlor.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |                 |                   |         |        |        |
|---------------------------|--------|--------|----------|-----------------|-------------------|---------|--------|--------|
| RT                        | EXP RT | DLT RT | RESPONSE | CAL-AMT ( ug/L) | ON-COL ( ug/L)    | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====           | =====             | =====   | =====  | =====  |
| 8 Chlordane (tech.)       |        |        |          |                 | CAS #: 12789-03-6 |         |        |        |
| 3.373                     | 3.374  | -0.001 | 432698   | 100.000         | 106               | 80.00-  | 120.00 | 100.00 |
| 4.134                     | 4.134  | 0.000  | 239179   | 100.000         | 105               | 36.66-  | 76.66  | 55.28  |
| 4.231                     | 4.231  | 0.000  | 205997   | 100.000         | 96.6              | 31.00-  | 71.00  | 47.61  |
| 4.302                     | 4.302  | 0.000  | 1433951  | 100.000         | 106               | 312.07- | 352.07 | 331.40 |
| 5.138                     | 5.137  | 0.001  | 336926   | 100.000         | 110               | 63.72-  | 103.72 | 77.87  |
| Average of Peak Amounts = |        |        |          |                 | 105               |         |        |        |
| -----                     |        |        |          |                 |                   |         |        |        |
| \$ 1 4cmx                 |        |        |          |                 | CAS #: 877-09-8   |         |        |        |
| 2.469                     | 2.468  | 0.001  | 2445624  | 20.0000         | 20.0              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |                 |                   |         |        |        |
| \$ 32 Decachlorobiphenyl  |        |        |          |                 | CAS #: 2051-24-3  |         |        |        |
| 7.447                     | 7.445  | 0.002  | 1462931  | 20.0000         | 20.4              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |                 |                   |         |        |        |

Data File: /chem/ecd3a.i/081611P.B/020F2001.D

Date : 16-DEC-2011 16:01

Client ID: CHLDR02

Sample Info: IMPE110816-22CL

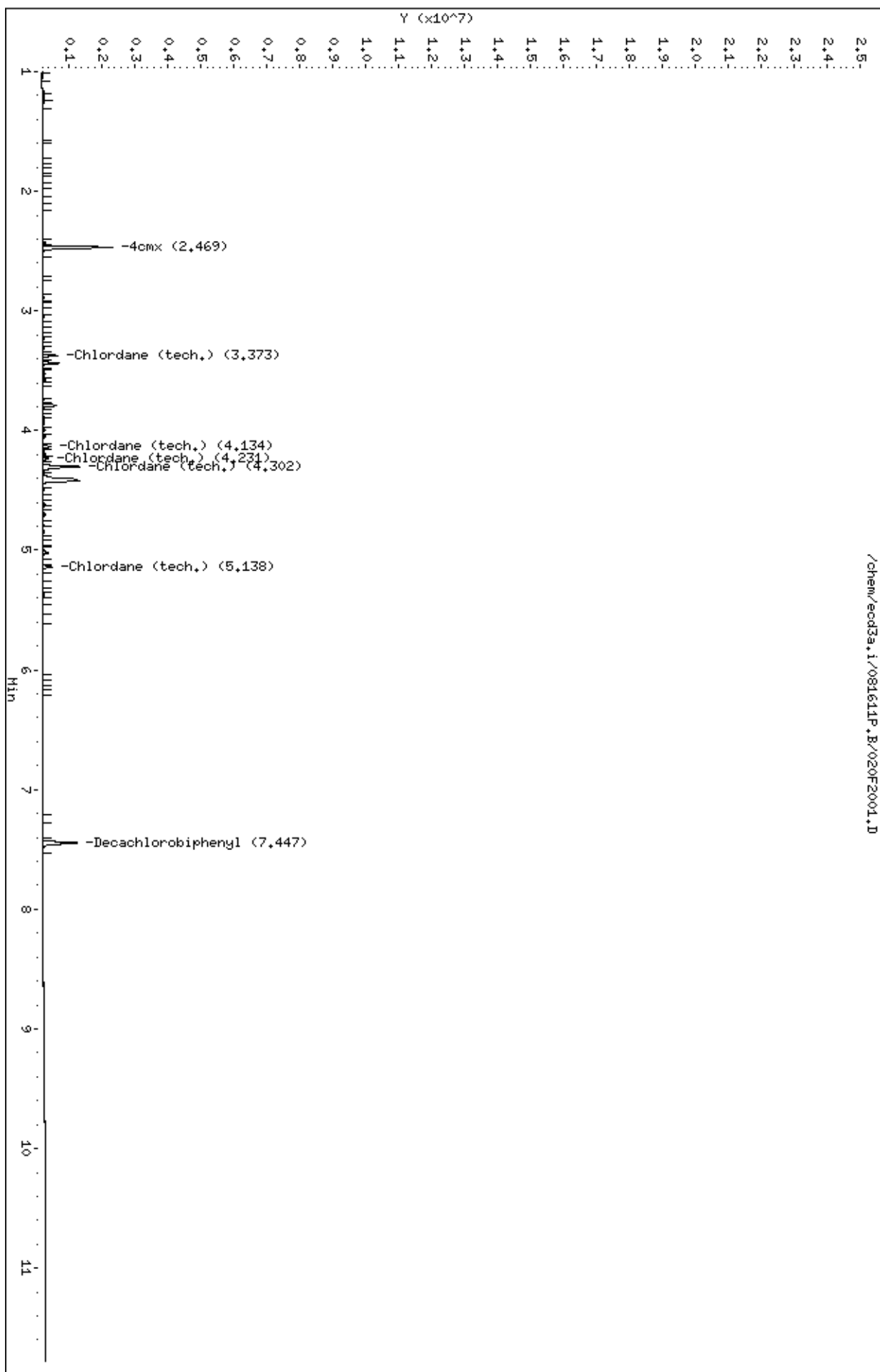
Column phase: CLP-1

Instrument: ecd3a.i

Operator: RXE1

Column diameter: 0.25

Page 1



Data File: /chem/ecd3a.i/081611P.B/020B2001.D  
Report Date: 17-Aug-2011 16:55

Page 1

GEL Laboratories LLC

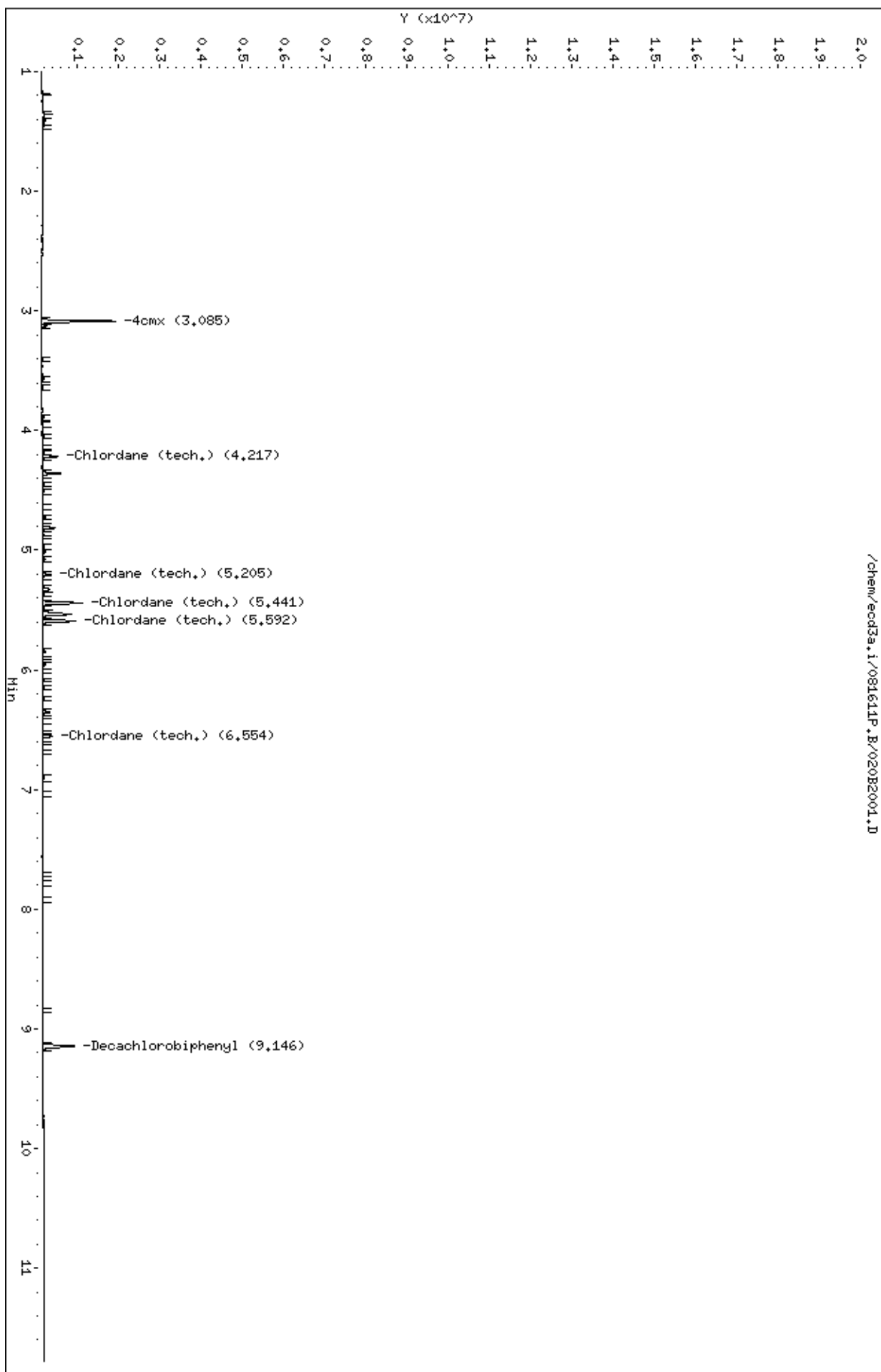
CLP-2

Data file : /chem/ecd3a.i/081611P.B/020B2001.D  
Lab Smp Id: WPE110816-22CL Client Smp ID: CHLOR02  
Inj Date : 16-AUG-2011 16:01  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-22CL  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/081611P.B/ECD3-B-8081-081211p.m  
Meth Date : 17-Aug-2011 11:50 reb01393 Quant Type: ESTD  
Cal Date : 21-DEC-2010 12:13 Cal File: 013b1301.d  
Als bottle: 20 Calibration Sample, Level: 2  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: chlor.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| 8 Chlordane (tech.)       |        |        |          |         | CAS #: 12789-03-6 |         |        |        |
| 4.217                     | 4.217  | 0.000  | 381132   | 100.000 | 113               | 80.00-  | 120.00 | 100.00 |
| 5.205                     | 5.206  | -0.001 | 232277   | 100.000 | 111               | 39.89-  | 79.89  | 60.94  |
| 5.441                     | 5.442  | -0.001 | 1046736  | 100.000 | 112               | 260.35- | 300.35 | 274.64 |
| 5.592                     | 5.593  | -0.001 | 904279   | 100.000 | 114               | 216.12- | 256.12 | 237.26 |
| 6.554                     | 6.555  | -0.001 | 298430   | 100.000 | 118               | 62.69-  | 102.69 | 78.30  |
| Average of Peak Amounts = |        |        |          |         | 114               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 3.085                     | 3.085  | 0.000  | 1718318  | 20.0000 | 21.2              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 9.146                     | 9.145  | 0.001  | 1016400  | 20.0000 | 21.1              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecd3a.i/081611P.B/020B2001.D  
Date : 16-JUN-2011 16:01  
Client ID: CHLDR02  
Sample Info: IMPE110816-22CL  
Column phase: CLP-2

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



GEL Laboratories LLC

CLP-1

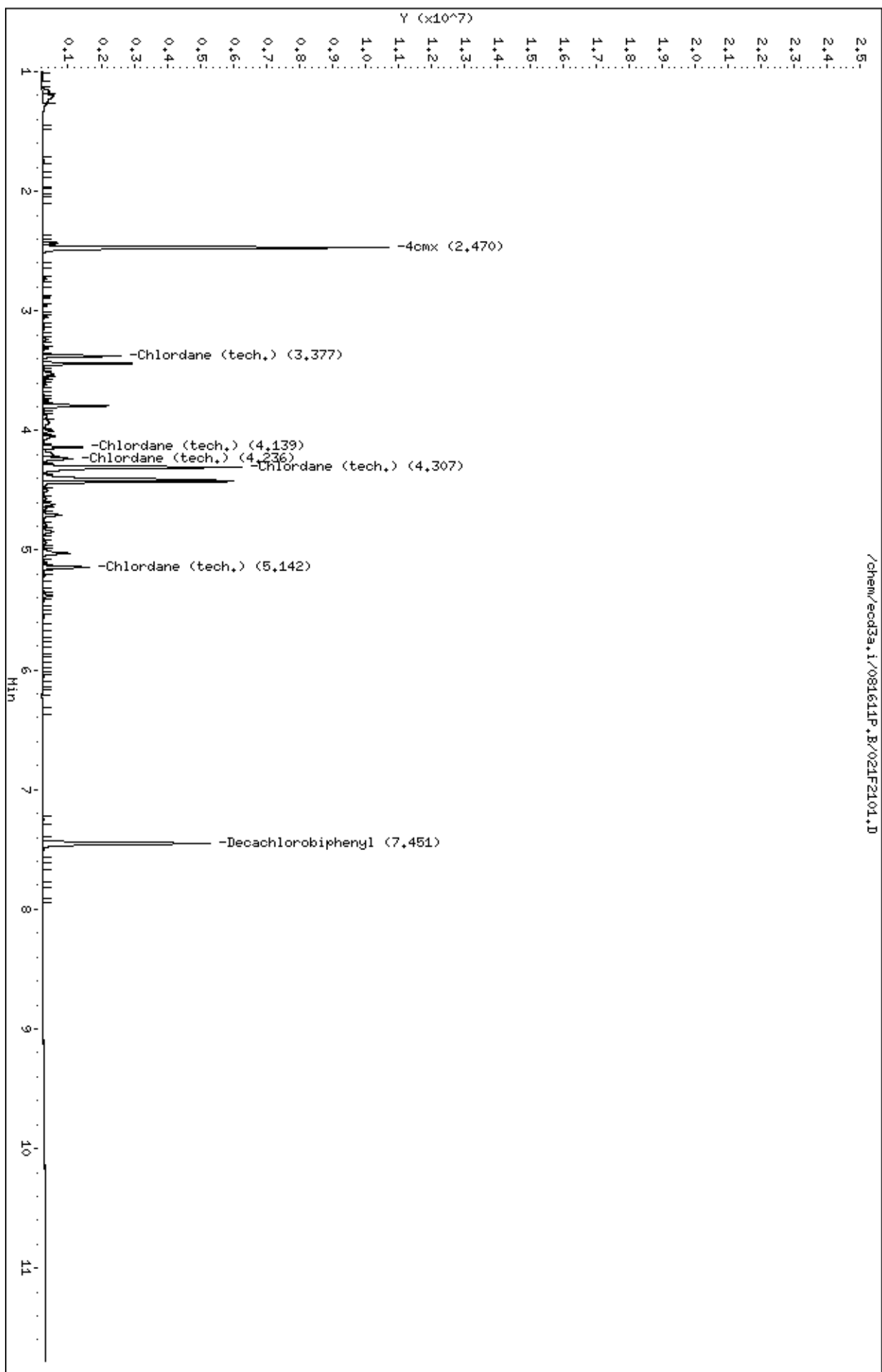
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Inj Date : 16-AUG-2011 16:27  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-23CL  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/081611P.B/ECD3-F-8081-081211p.m  
Meth Date : 17-Aug-2011 11:52 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:15 Cal File: 034f3401.d  
Als bottle: 21 Calibration Sample, Level: 3  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: chlor.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| 8 Chlordane (tech.)       |        |        |          |         | CAS #: 12789-03-6 |         |        |        |
| 3.377                     | 3.374  | 0.003  | 2266714  | 500.000 | 534               | 80.00-  | 120.00 | 100.00 |
| 4.139                     | 4.134  | 0.005  | 1271230  | 500.000 | 539               | 36.66-  | 76.66  | 56.08  |
| 4.236                     | 4.231  | 0.005  | 1189163  | 500.000 | 545               | 31.00-  | 71.00  | 52.46  |
| 4.307                     | 4.302  | 0.005  | 7678070  | 500.000 | 548               | 312.07- | 352.07 | 338.73 |
| 5.142                     | 5.137  | 0.005  | 1651096  | 500.000 | 522               | 63.72-  | 103.72 | 72.84  |
| Average of Peak Amounts = |        |        |          |         | 538               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.470                     | 2.468  | 0.002  | 12003353 | 100.000 | 98.3              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 7.451                     | 7.445  | 0.006  | 6831667  | 100.000 | 95.5              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |



Data File: /chem/ecd3a.i/081611P.B/021F2101.D  
Date : 16-AUG-2011 16:27  
Client ID: CHLOR03  
Sample Info: IMPE110816-23CL  
Column phase: CLP-1

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



Data File: /chem/ecd3a.i/081611P.B/021B2101.D  
Report Date: 17-Aug-2011 16:55

Page 1

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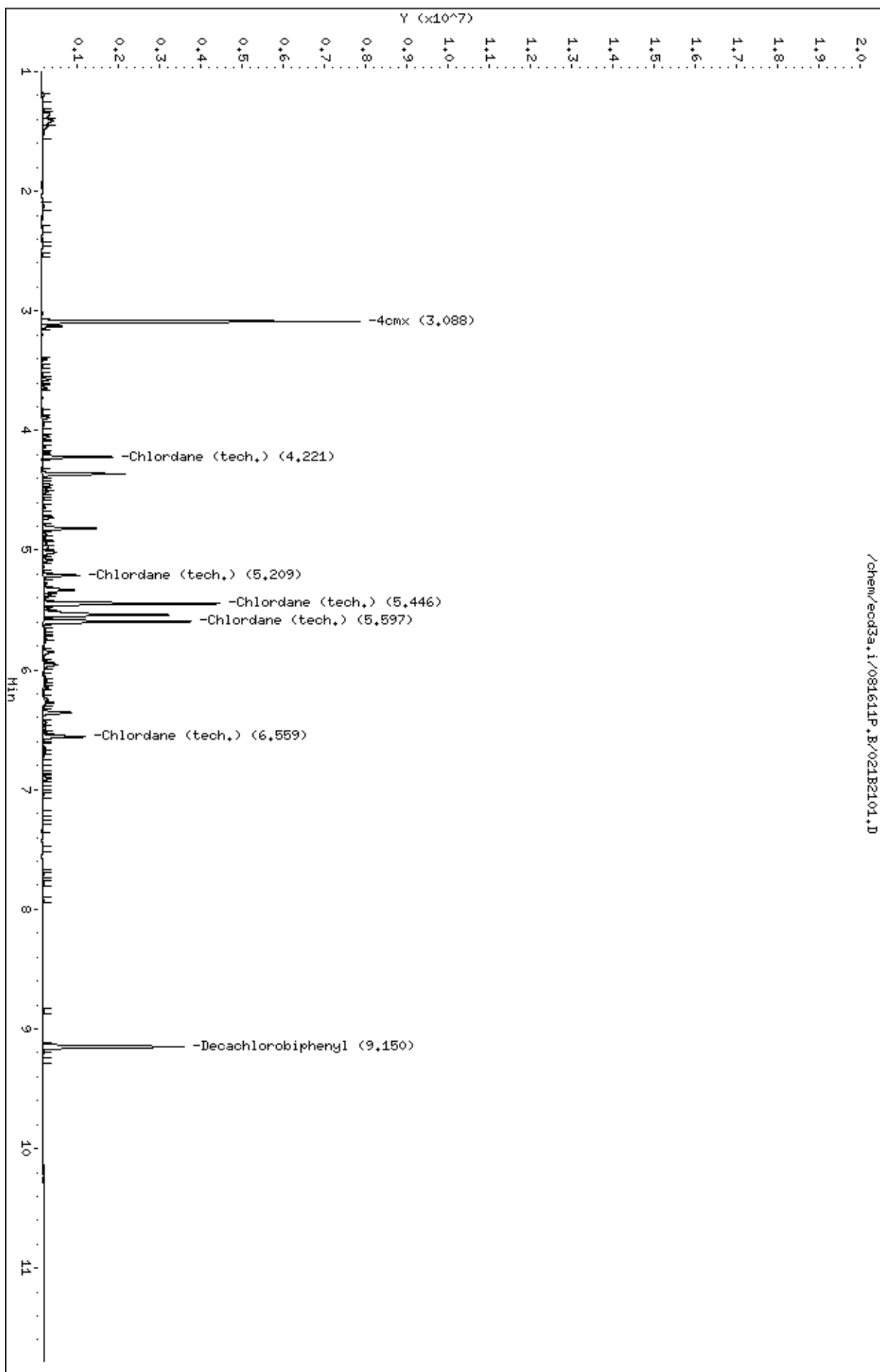
CLP-2

Data file : /chem/ecd3a.i/081611P.B/021B2101.D  
Lab Smp Id: WPE110816-23CL Client Smp ID: CHLOR03  
Inj Date : 16-AUG-2011 16:27  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-23CL  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/081611P.B/ECD3-B-8081-081211p.m  
Meth Date : 17-Aug-2011 11:50 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:15 Cal File: 034b3401.d  
Als bottle: 21 Calibration Sample, Level: 3  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: chlor.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| 8 Chlordane (tech.)       |        |        |          |         | CAS #: 12789-03-6 |         |        |        |
| 4.221                     | 4.217  | 0.004  | 1658508  | 500.000 | 487               | 80.00-  | 120.00 | 100.00 |
| 5.209                     | 5.206  | 0.003  | 958046   | 500.000 | 461               | 39.89-  | 79.89  | 57.77  |
| 5.446                     | 5.442  | 0.004  | 4653961  | 500.000 | 494               | 260.35- | 300.35 | 280.61 |
| 5.597                     | 5.593  | 0.004  | 3856591  | 500.000 | 484               | 216.12- | 256.12 | 232.53 |
| 6.559                     | 6.555  | 0.004  | 1188694  | 500.000 | 467               | 62.69-  | 102.69 | 71.67  |
| Average of Peak Amounts = |        |        |          |         | 479               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 3.088                     | 3.085  | 0.003  | 7405801  | 100.000 | 91.4              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 9.150                     | 9.145  | 0.005  | 4235382  | 100.000 | 88.0              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecd3a.i/081611P.B/021B2101.D  
Date : 16-DEC-2011 16:27  
Client ID: CHLOR03  
Sample Info: IMPE110816-23CL  
Column phase: CLP-2

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



Data File: /chem/ecd3a.i/081611P.B/022F2201.D  
Report Date: 17-Aug-2011 16:55

Page 1

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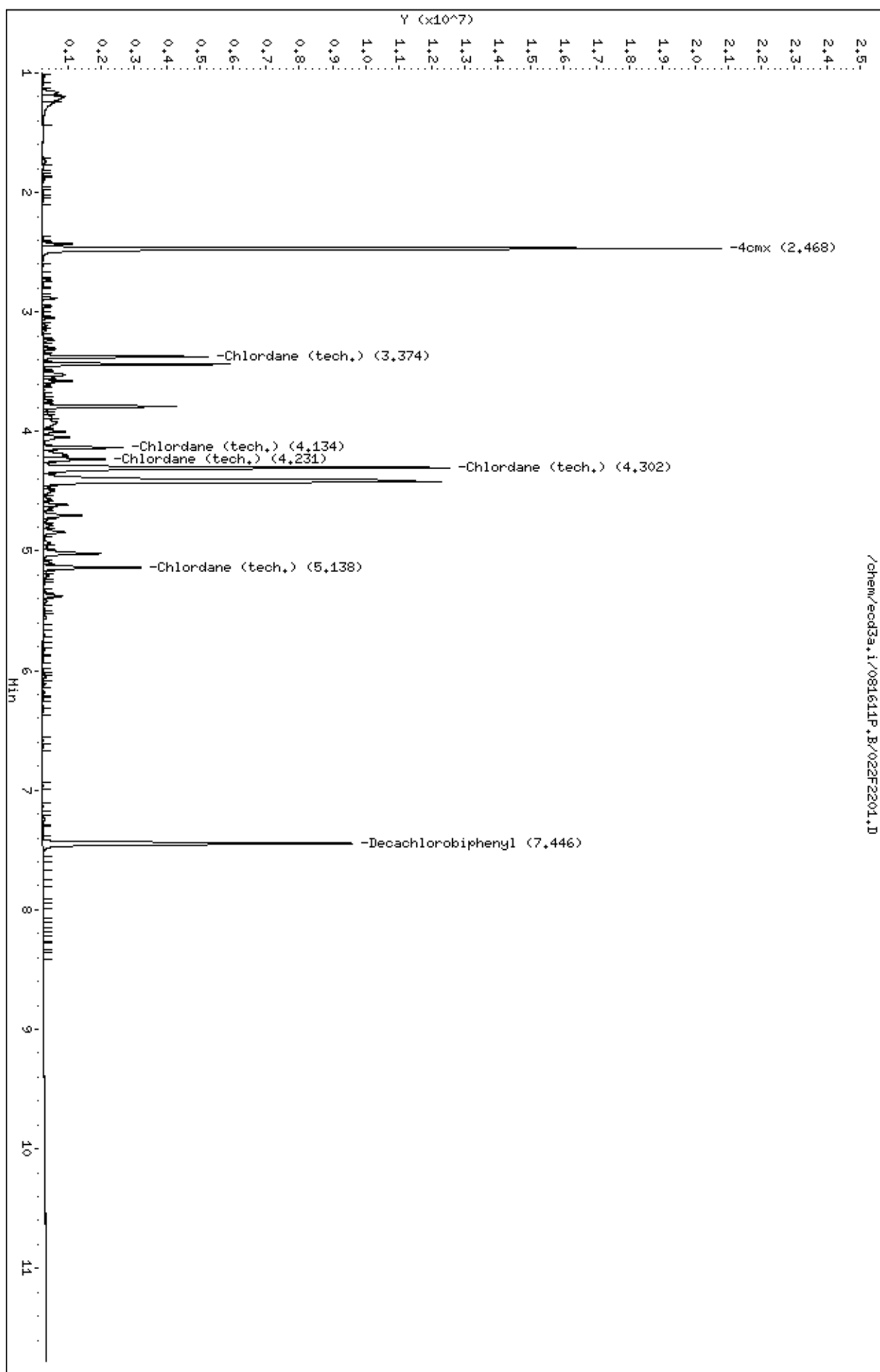
CLP-1

Data file : /chem/ecd3a.i/081611P.B/022F2201.D  
Lab Smp Id: WPE110816-24CL Client Smp ID: CHLOR04  
Inj Date : 16-AUG-2011 16:42  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-24CL  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/081611P.B/ECD3-F-8081-081211p.m  
Meth Date : 17-Aug-2011 11:52 reb01393 Quant Type: ESTD  
Cal Date : 15-JAN-2011 12:53 Cal File: 018f1801.d  
Als bottle: 22 Calibration Sample, Level: 4  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: chlor.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| 8 Chlordane (tech.)       |        |        |          |         | CAS #: 12789-03-6 |         |        |        |
| 3.374                     | 3.374  | 0.000  | 4762686  | 1000.00 | 1080              | 80.00-  | 120.00 | 100.00 |
| 4.134                     | 4.134  | 0.000  | 2646802  | 1000.00 | 1080              | 36.66-  | 76.66  | 55.57  |
| 4.231                     | 4.231  | 0.000  | 2506296  | 1000.00 | 1120              | 31.00-  | 71.00  | 52.62  |
| 4.302                     | 4.302  | 0.000  | 16054863 | 1000.00 | 1100              | 312.07- | 352.07 | 337.10 |
| 5.138                     | 5.137  | 0.001  | 3460417  | 1000.00 | 1050              | 63.72-  | 103.72 | 72.66  |
| Average of Peak Amounts = |        |        |          |         | 1.08e+03          |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.468                     | 2.468  | 0.000  | 23916263 | 200.000 | 196               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 7.446                     | 7.445  | 0.001  | 13261903 | 200.000 | 185               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecd3a.i/081611P.B/022F2201.D  
Date : 16-DEC-2011 16:42  
Client ID: CHLOR04  
Sample Info: IMPE110816-24CL  
Column phase: CLP-1

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



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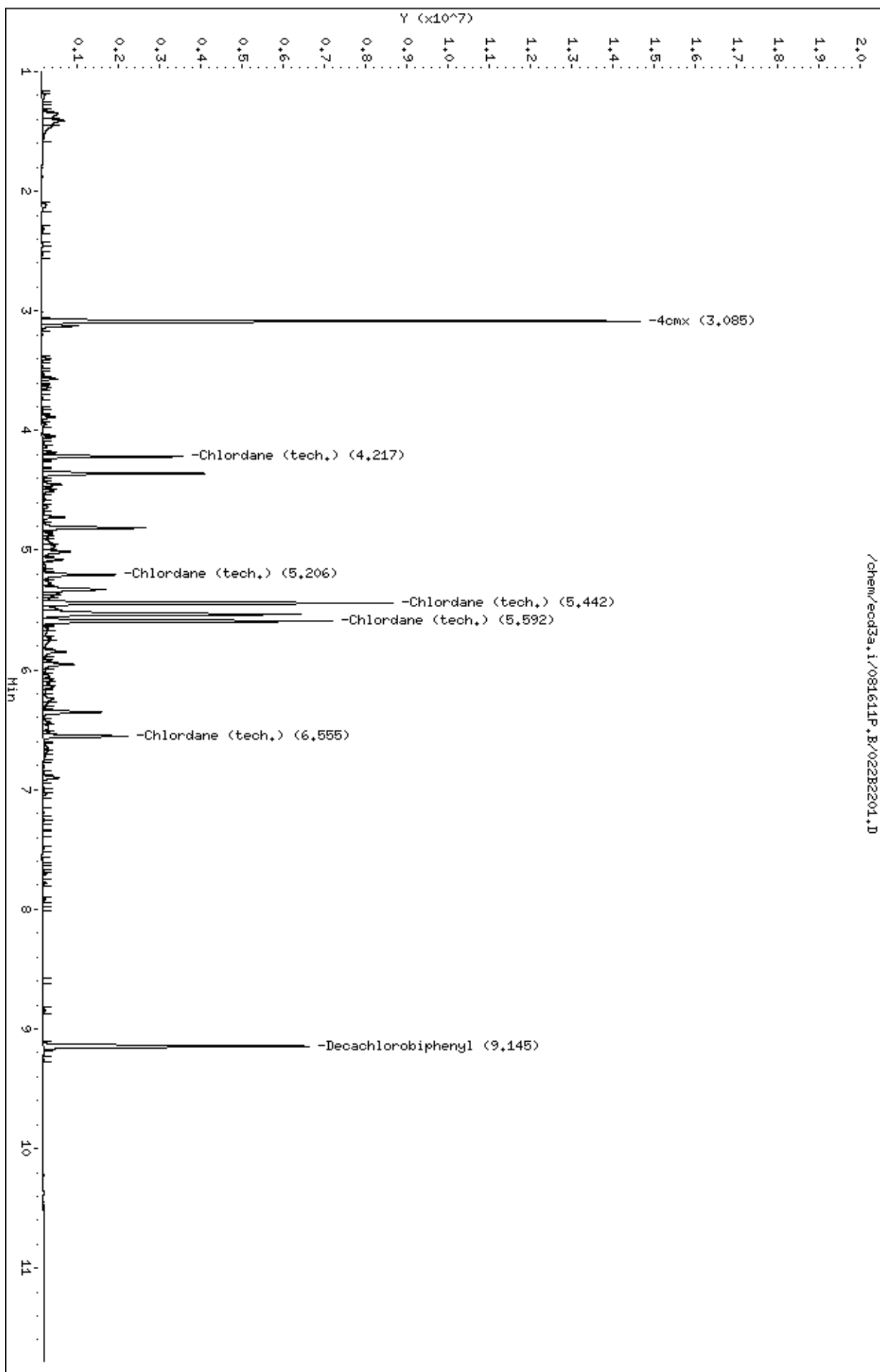
CLP-2

Data file : /chem/ecd3a.i/081611P.B/022B2201.D  
Lab Smp Id: WPE110816-24CL Client Smp ID: CHLOR04  
Inj Date : 16-AUG-2011 16:42  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-24CL  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/081611P.B/ECD3-B-8081-081211p.m  
Meth Date : 17-Aug-2011 11:50 reb01393 Quant Type: ESTD  
Cal Date : 15-JAN-2011 12:53 Cal File: 018b1801.d  
Als bottle: 22 Calibration Sample, Level: 4  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: chlor.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| 8 Chlordane (tech.)       |        |        |          |         | CAS #: 12789-03-6 |         |        |        |
| 4.217                     | 4.217  | 0.000  | 3255378  | 1000.00 | 938               | 80.00-  | 120.00 | 100.00 |
| 5.206                     | 5.206  | 0.000  | 2052246  | 1000.00 | 971               | 39.89-  | 79.89  | 63.04  |
| 5.442                     | 5.442  | 0.000  | 9400940  | 1000.00 | 975               | 260.35- | 300.35 | 288.78 |
| 5.592                     | 5.593  | -0.001 | 7819850  | 1000.00 | 958               | 216.12- | 256.12 | 240.21 |
| 6.555                     | 6.555  | 0.000  | 2371383  | 1000.00 | 918               | 62.69-  | 102.69 | 72.85  |
| Average of Peak Amounts = |        |        |          |         | 952               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 3.085                     | 3.085  | 0.000  | 14155499 | 200.000 | 175               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 9.145                     | 9.145  | 0.000  | 7937743  | 200.000 | 165               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecod3a.i/081611P.B/022B2201.D  
Date : 16-DEC-2011 16:42  
Client ID: CHLOR04  
Sample Info: IMPE110816-24CL  
Column phase: CLP-2

Instrument: ecod3a.i  
Operator: RXE1  
Column diameter: 0.25



Data File: /chem/ecd3a.i/081611P.B/023F2301.D  
Report Date: 17-Aug-2011 16:55

Page 1

GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/081611P.B/023F2301.D  
Lab Smp Id: IPE110616-06CL Client Smp ID: CHLOR05  
Inj Date : 16-AUG-2011 16:58  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |IPE110616-06CL  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/081611P.B/ECD3-F-8081-081211p.m  
Meth Date : 17-Aug-2011 11:52 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036f3601.d  
Als bottle: 23 Calibration Sample, Level: 5  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: chlor.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |                 |                   |         |        |           |
|---------------------------|--------|--------|----------|-----------------|-------------------|---------|--------|-----------|
| RT                        | EXP RT | DLT RT | RESPONSE | CAL-AMT ( ug/L) | ON-COL ( ug/L)    | TARGET  | RANGE  | RATIO     |
| ==                        | =====  | =====  | =====    | =====           | =====             | =====   | =====  | =====     |
| 8 Chlordane (tech.)       |        |        |          |                 | CAS #: 12789-03-6 |         |        |           |
| 3.375                     | 3.374  | 0.001  | 14419554 | 3000.00         | 3180              | 80.00-  | 120.00 | 100.00(A) |
| 4.135                     | 4.134  | 0.001  | 7920946  | 3000.00         | 3150              | 36.66-  | 76.66  | 54.93     |
| 4.231                     | 4.231  | 0.000  | 7732576  | 3000.00         | 3380              | 31.00-  | 71.00  | 53.63     |
| 4.303                     | 4.302  | 0.001  | 46720605 | 3000.00         | 3120              | 312.07- | 352.07 | 324.01    |
| 5.138                     | 5.137  | 0.001  | 10132980 | 3000.00         | 3020              | 63.72-  | 103.72 | 70.27     |
| Average of Peak Amounts = |        |        |          |                 | 3.17e+03          |         |        |           |
| -----                     |        |        |          |                 |                   |         |        |           |
| \$ 1 4cmx                 |        |        |          |                 | CAS #: 877-09-8   |         |        |           |
| 2.470                     | 2.468  | 0.002  | 68135592 | 400.000         | 558               | 80.00-  | 120.00 | 100.00(A) |
| -----                     |        |        |          |                 |                   |         |        |           |
| \$ 32 Decachlorobiphenyl  |        |        |          |                 | CAS #: 2051-24-3  |         |        |           |
| 7.446                     | 7.445  | 0.001  | 38302399 | 400.000         | 535               | 80.00-  | 120.00 | 100.00    |

QC Flag Legend

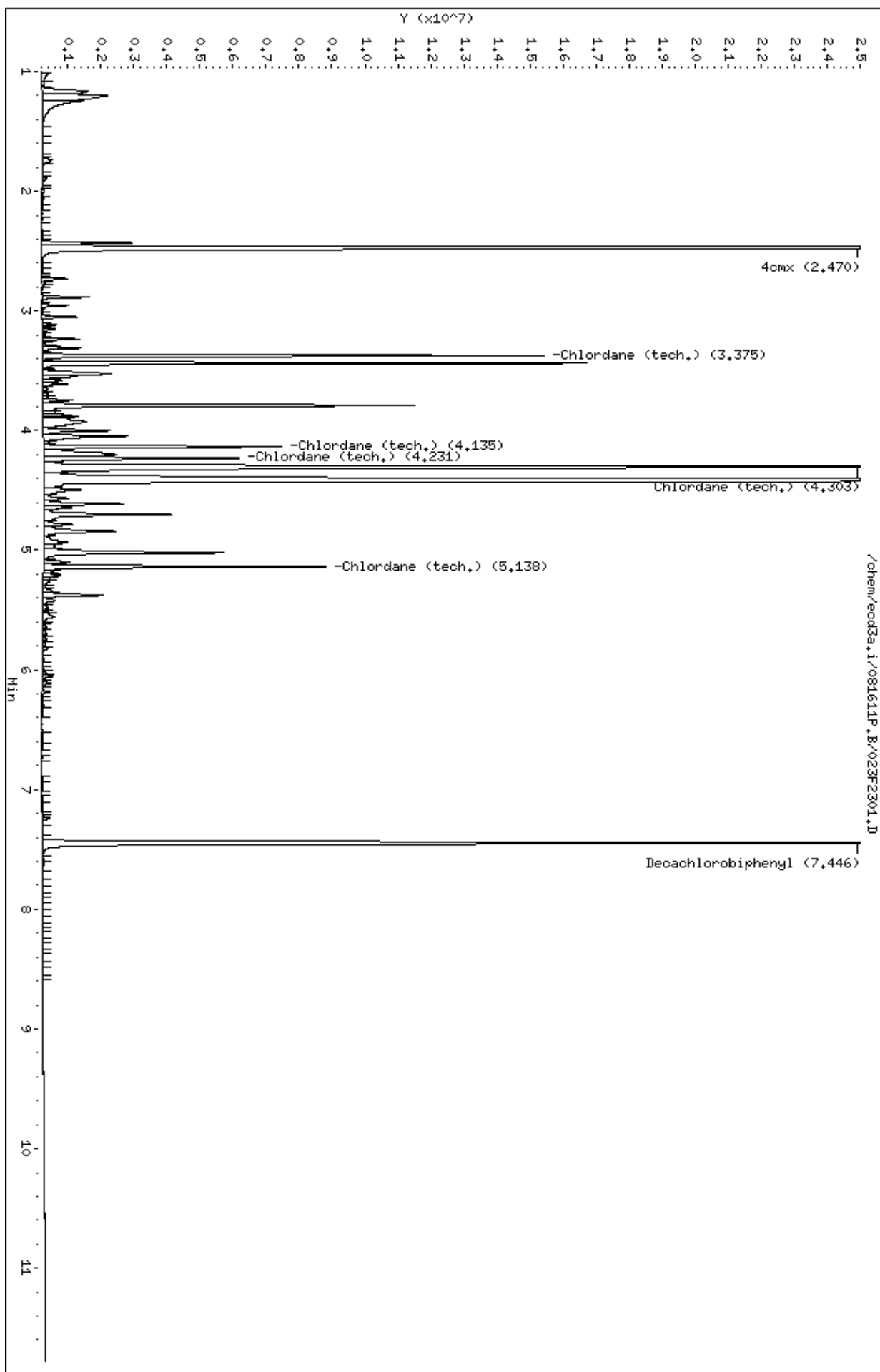
A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: /chem/ecd3a.i/081611P.B/023F2301.D  
Date : 16-06-2011 16:58  
Client ID: CHLOR05  
Sample Info: IPE110616-06CL

Column phase: CLP-1

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



GEL Laboratories LLC

CLP-2

Data file : /chem/ecd3a.i/081611P.B/023B2301.D  
Lab Smp Id: IPE110616-06CL Client Smp ID: CHLOR05  
Inj Date : 16-AUG-2011 16:58  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |IPE110616-06CL  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/081611P.B/ECD3-B-8081-081211p.m  
Meth Date : 17-Aug-2011 11:50 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036b3601.d  
Als bottle: 23 Calibration Sample, Level: 5  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: chlor.sub  
Target Version: 3.50 Sample Matrix: None

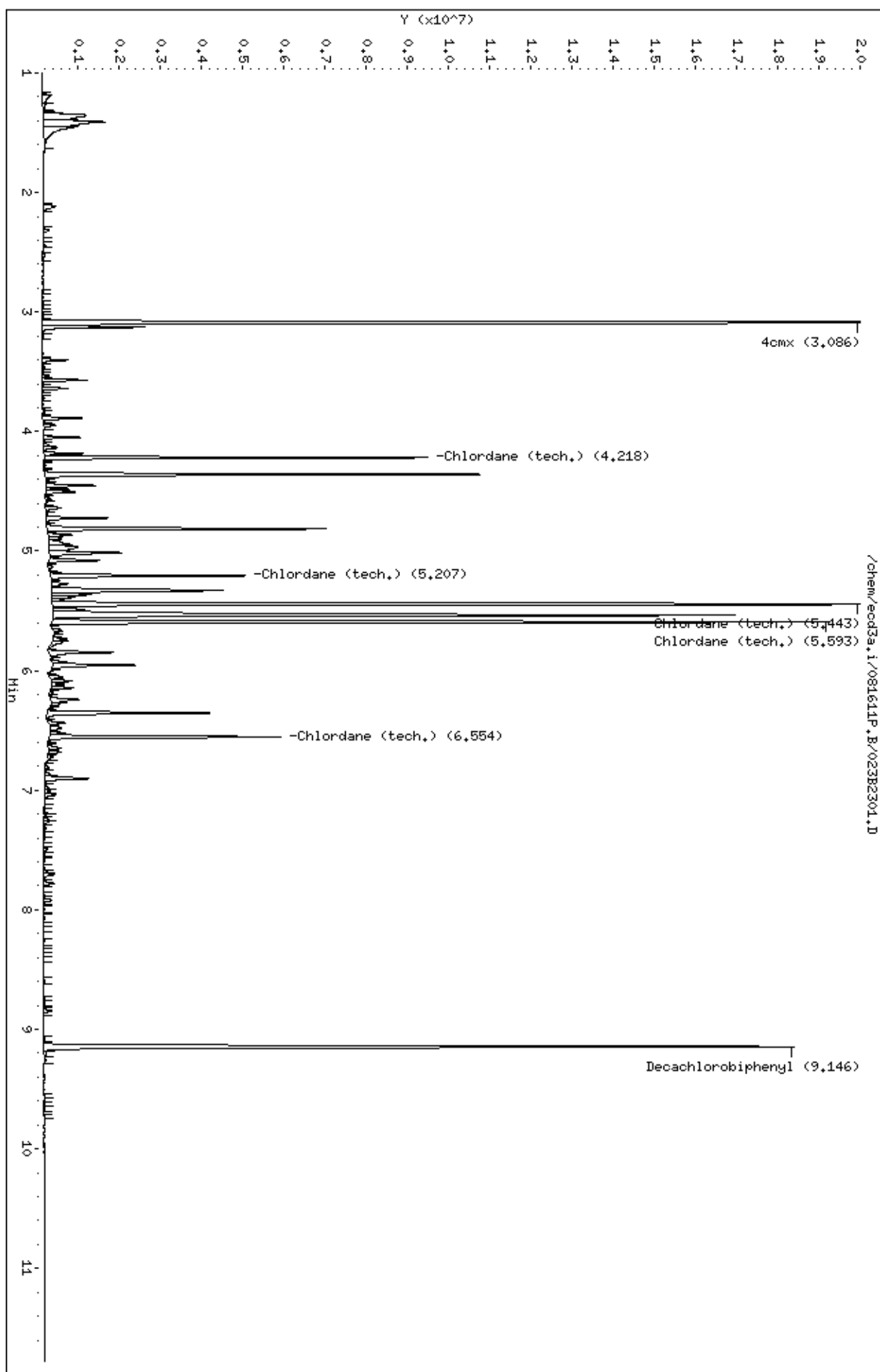
| AMOUNTS                   |        |        |          |         |                   |         |        |           |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|-----------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |           |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO     |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====     |
| 8 Chlordane (tech.)       |        |        |          |         | CAS #: 12789-03-6 |         |        |           |
| 4.218                     | 4.217  | 0.001  | 8988651  | 3000.00 | 2580              | 80.00-  | 120.00 | 100.00    |
| 5.207                     | 5.206  | 0.001  | 5134698  | 3000.00 | 2460              | 39.89-  | 79.89  | 57.12     |
| 5.443                     | 5.442  | 0.001  | 25026879 | 3000.00 | 2590              | 260.35- | 300.35 | 278.43    |
| 5.593                     | 5.593  | 0.000  | 20702809 | 3000.00 | 2530              | 216.12- | 256.12 | 230.32    |
| 6.554                     | 6.555  | -0.001 | 6356197  | 3000.00 | 2480              | 62.69-  | 102.69 | 70.71     |
| Average of Peak Amounts = |        |        |          |         | 2.53e+03          |         |        |           |
| -----                     |        |        |          |         |                   |         |        |           |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8   |         |        |           |
| 3.086                     | 3.085  | 0.001  | 38315403 | 400.000 | 473               | 80.00-  | 120.00 | 100.00(A) |
| -----                     |        |        |          |         |                   |         |        |           |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |           |
| 9.146                     | 9.145  | 0.001  | 22447438 | 400.000 | 466               | 80.00-  | 120.00 | 100.00    |
| -----                     |        |        |          |         |                   |         |        |           |

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: /chem/ecd3a.i/081611P.B/023B2301.D  
Date : 16-AUG-2011 16:58  
Client ID: CHLOR05  
Sample Info: IPE110616-06CL  
Column phase: CLP-2

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



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CLP-1

Data file : /chem/ecd3a.i/082311P.B/013F1301.D  
Lab Smp Id: WPE110816-11TX Client Smp ID: TOXAPH01  
Inj Date : 23-AUG-2011 14:29  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-11TX  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/082311P.B/ECD3-F-8081-081211p.m  
Meth Date : 24-Aug-2011 11:24 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 05:44 Cal File: 032f3201.d  
Als bottle: 13 Calibration Sample, Level: 1  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: tox.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                  |        |        |           |
|---------------------------|--------|--------|----------|---------|------------------|--------|--------|-----------|
|                           |        |        | CAL-AMT  |         | ON-COL           |        |        |           |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)          | TARGET | RANGE  | RATIO     |
| ==                        | =====  | =====  | =====    | =====   | =====            | =====  | =====  | =====     |
| 23 Toxaphene              |        |        |          |         | CAS #: 8001-35-2 |        |        |           |
| 5.174                     | 5.172  | 0.002  | 382151   | 100.000 | 107              | 80.00- | 120.00 | 100.00(M) |
| 5.291                     | 5.290  | 0.001  | 205124   | 100.000 | 96.3             | 36.25- | 76.25  | 53.68     |
| 5.513                     | 5.509  | 0.004  | 272777   | 100.000 | 102              | 55.59- | 95.59  | 71.38     |
| 5.837                     | 5.837  | 0.000  | 196395   | 100.000 | 108              | 30.01- | 70.01  | 51.39     |
| 5.938                     | 5.935  | 0.003  | 294631   | 100.000 | 104              | 59.02- | 99.02  | 77.10     |
| Average of Peak Amounts = |        |        |          |         | 103              |        |        |           |
| -----                     |        |        |          |         |                  |        |        |           |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8  |        |        |           |
| 2.454                     | 2.455  | -0.001 | 1607578  | 8.00000 | 14.1             | 80.00- | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |        |        |           |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3 |        |        |           |
| 7.426                     | 7.425  | 0.001  | 1126027  | 8.00000 | 16.2             | 80.00- | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |        |        |           |

QC Flag Legend

M - Compound response manually integrated.

Data File: /chem/ecod3a.i/082311P.B/013F1301.D

Date : 23-AUG-2011 14:29

Client ID: TOXAPH01

Sample Info: IMPE110816-11TX

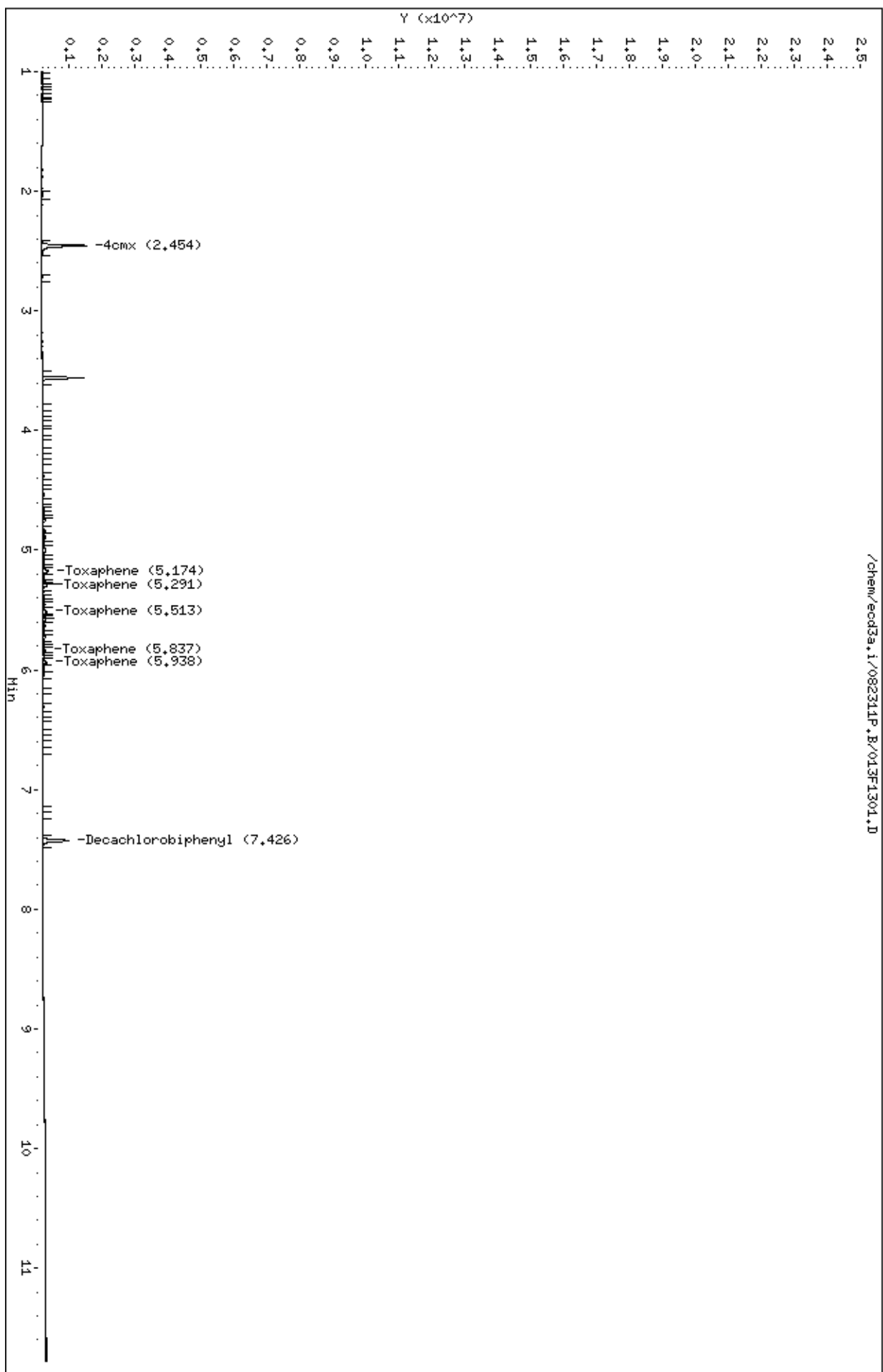
Column phase: CLP-1

Instrument: ecod3a.i

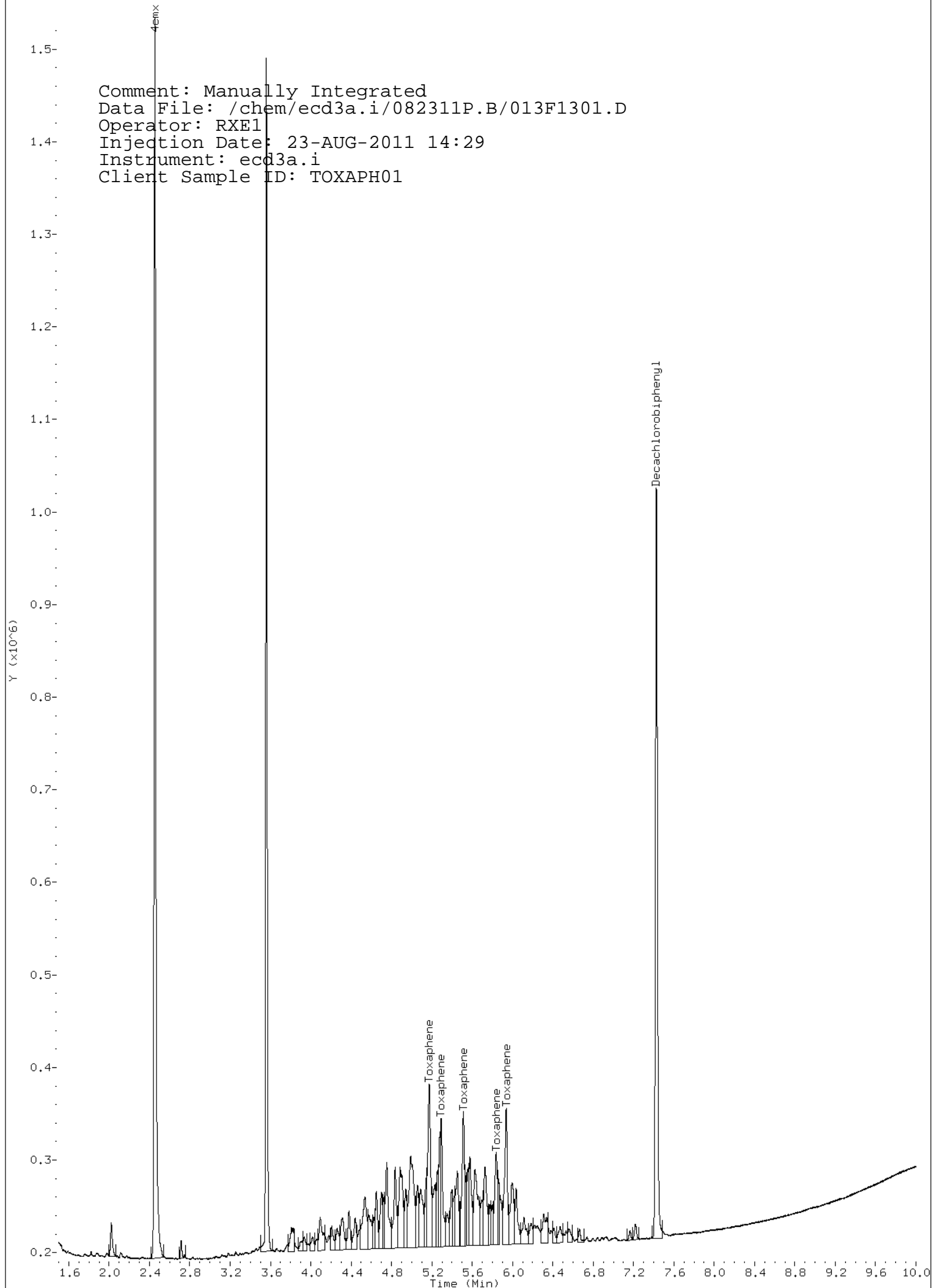
Operator: RXE1

Column diameter: 0.25

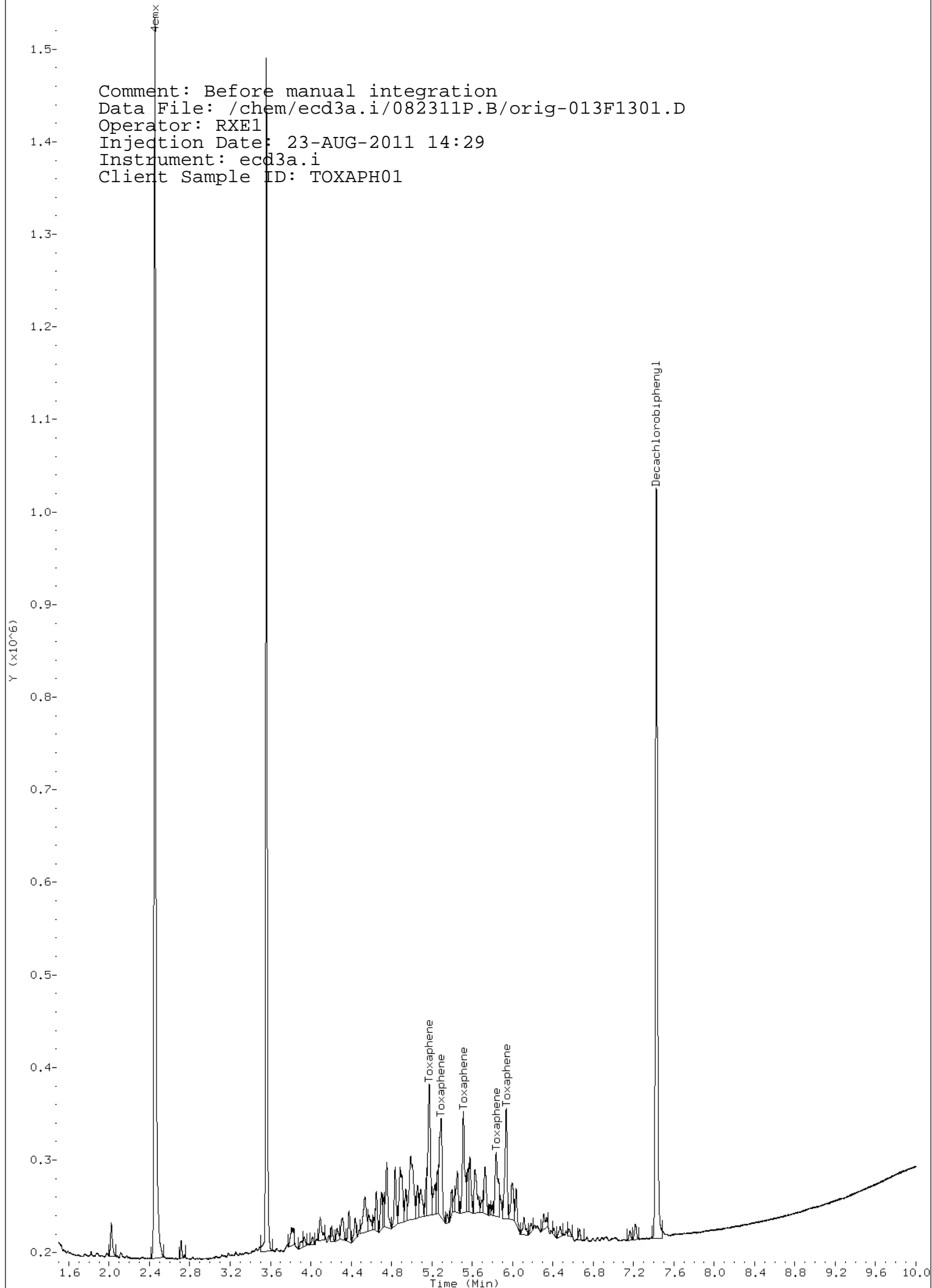
Page 1



Comment: Manually Integrated  
Data File: /chem/ecd3a.i/082311P.B/013F1301.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 14:29  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH01



Comment: Before manual integration  
Data File: /chem/ecd3a.i/082311P.B/orig-013F1301.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 14:29  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH01



Data File: /chem/ecd3a.i/082311P.B/013B1301.D  
Report Date: 30-Aug-2011 15:43

Page 1

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CLP-2

Data file : /chem/ecd3a.i/082311P.B/013B1301.D  
Lab Smp Id: WPE110816-11TX Client Smp ID: TOXAPH01  
Inj Date : 23-AUG-2011 14:29  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-11TX  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/082311P.B/ECD3-B-8081-081211p.m  
Meth Date : 24-Aug-2011 11:24 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 05:44 Cal File: 032b3201.d  
Als bottle: 13 Calibration Sample, Level: 1  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: tox.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                  |         |        |           |
|---------------------------|--------|--------|----------|---------|------------------|---------|--------|-----------|
|                           |        |        | CAL-AMT  |         | ON-COL           |         |        |           |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)          | TARGET  | RANGE  | RATIO     |
| ==                        | =====  | =====  | =====    | =====   | =====            | =====   | =====  | =====     |
| 23 Toxaphene              |        |        |          |         | CAS #: 8001-35-2 |         |        |           |
| 6.442                     | 6.443  | -0.001 | 172315   | 100.000 | 121              | 80.00-  | 120.00 | 100.00(M) |
| 6.489                     | 6.489  | 0.000  | 278874   | 100.000 | 120              | 144.48- | 184.48 | 161.84    |
| 6.593                     | 6.591  | 0.002  | 465838   | 100.000 | 117              | 268.66- | 308.66 | 270.34    |
| 6.871                     | 6.870  | 0.001  | 253240   | 100.000 | 120              | 133.17- | 173.17 | 146.96    |
| 7.447                     | 7.445  | 0.002  | 289126   | 100.000 | 120              | 151.31- | 191.31 | 167.79    |
| Average of Peak Amounts = |        |        |          |         | 120              |         |        |           |
| -----                     |        |        |          |         |                  |         |        |           |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8  |         |        |           |
| 3.086                     | 3.086  | 0.000  | 1274558  | 8.00000 | 15.9             | 80.00-  | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |         |        |           |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3 |         |        |           |
| 9.149                     | 9.148  | 0.001  | 856271   | 8.00000 | 17.7             | 80.00-  | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |         |        |           |

QC Flag Legend

M - Compound response manually integrated.



Data File: /chem/ecd3a.i/082311P.B/013B1301.D

Date : 23-AUG-2011 14:29

Client ID: TOXAPH01

Sample Info: IMPE110816-11TX

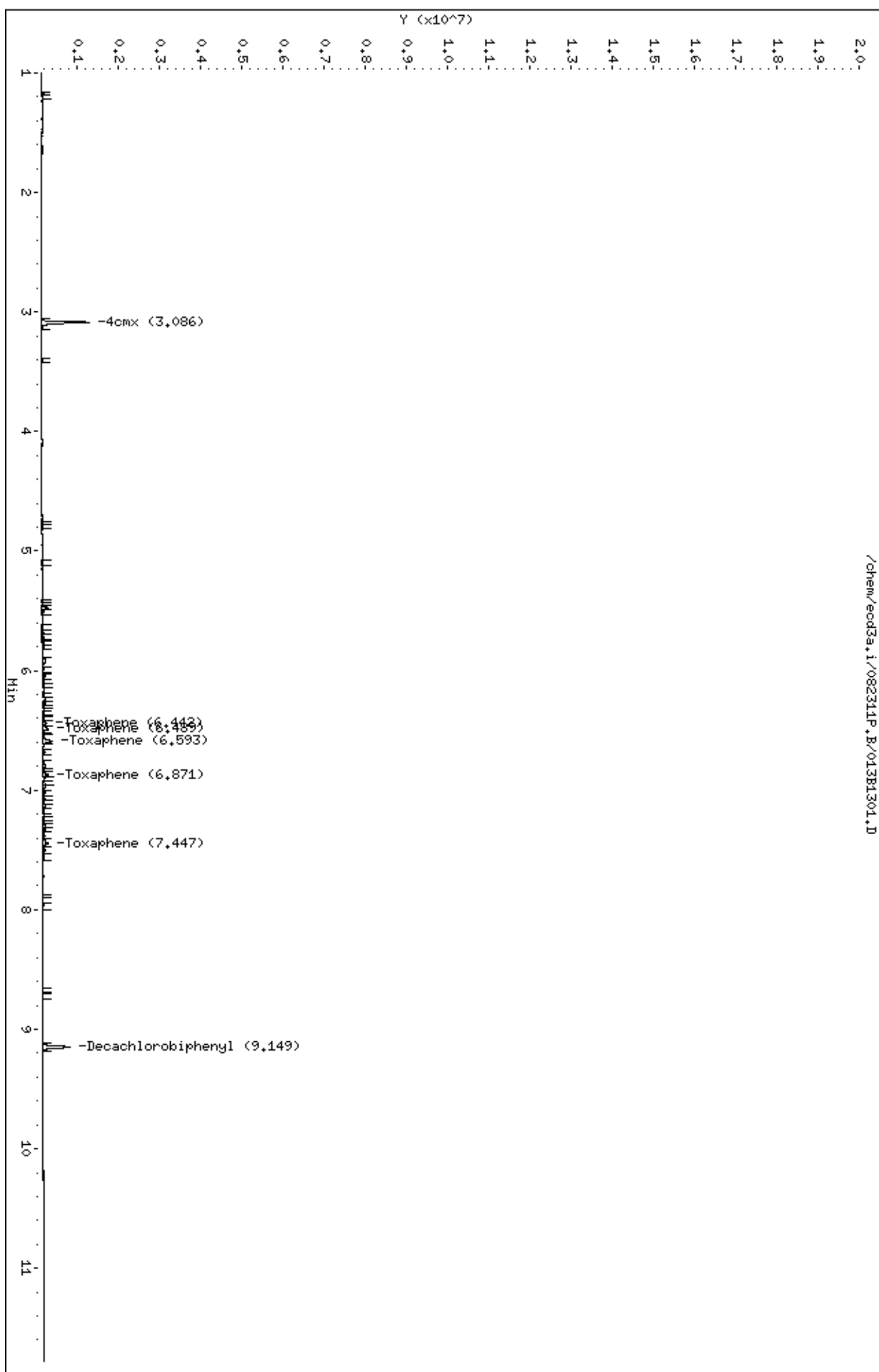
Column phase: CLP-2

Instrument: ecd3a.i

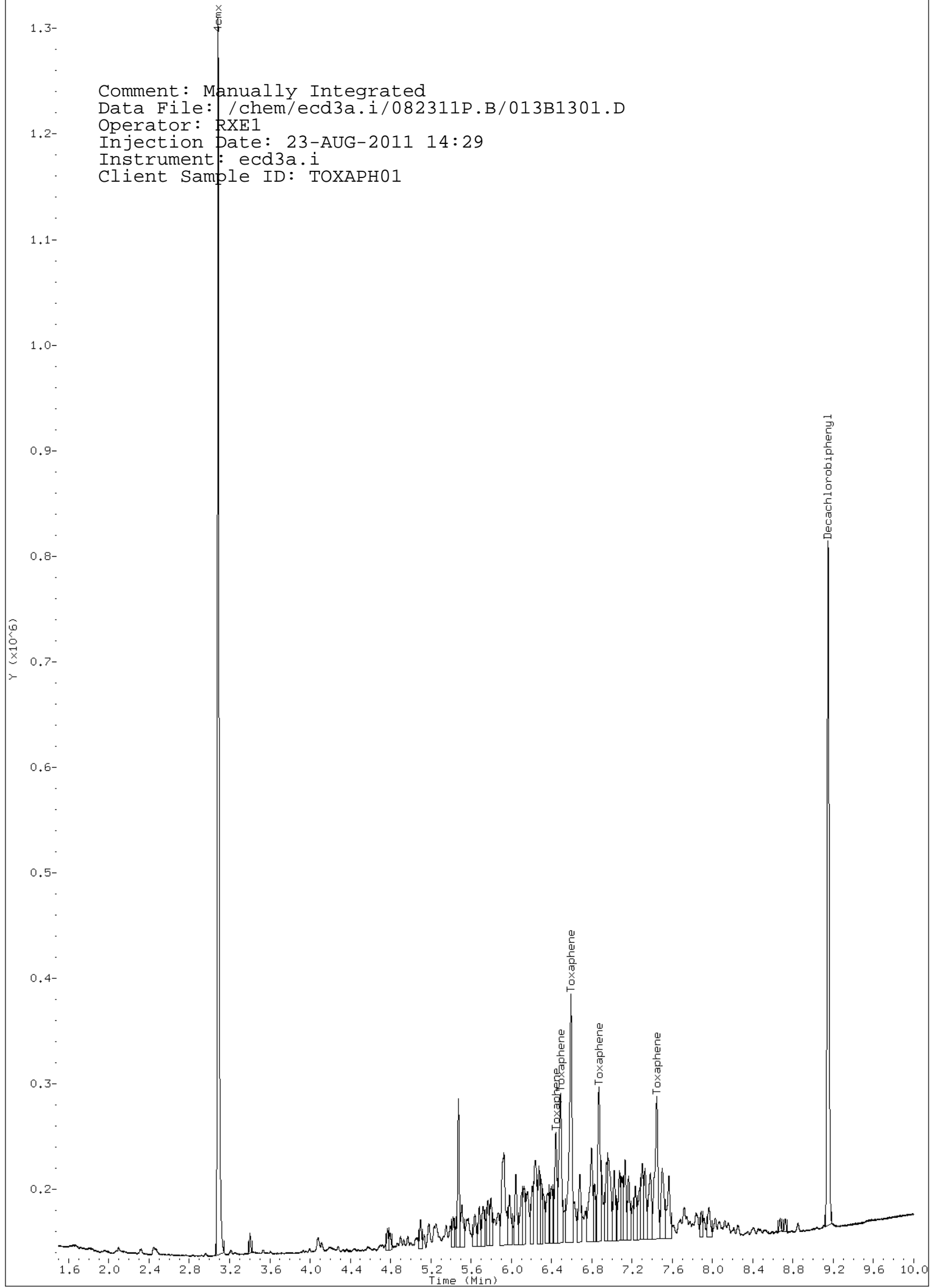
Operator: RXE1

Column diameter: 0.25

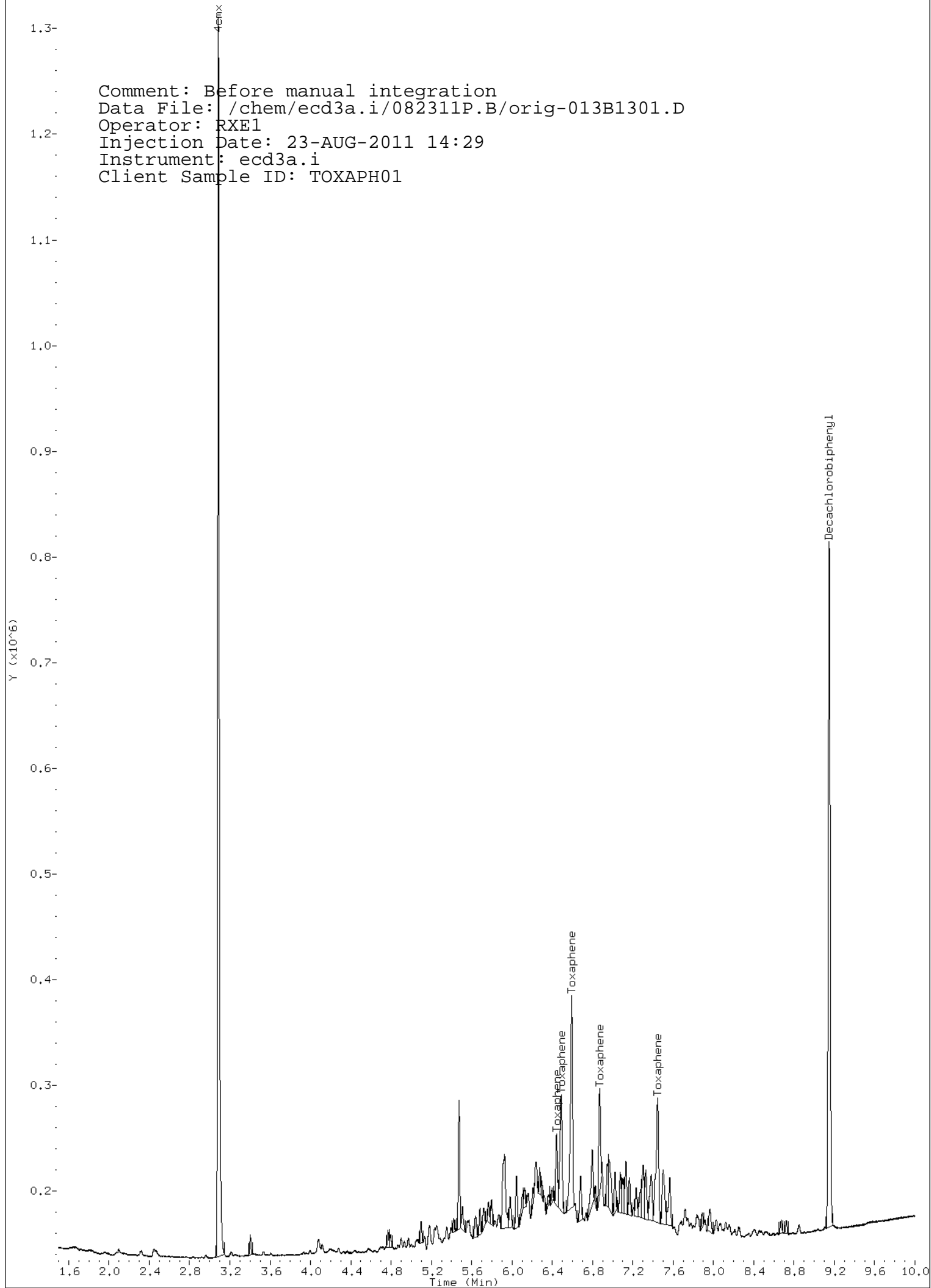
Page 1



Comment: Manually Integrated  
Data File: /chem/ecd3a.i/082311P.B/013B1301.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 14:29  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH01



Comment: Before manual integration  
Data File: /chem/ecd3a.i/082311P.B/orig-013B1301.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 14:29  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH01



GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/082311P.B/014F1401.D  
Lab Smp Id: WPE110816-12TX Client Smp ID: TOXAPH02  
Inj Date : 23-AUG-2011 14:45  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-12TX  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/082311P.B/ECD3-F-8081-081211p.m  
Meth Date : 24-Aug-2011 11:24 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:00 Cal File: 033f3301.d  
Als bottle: 14 Calibration Sample, Level: 2  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: tox.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                  |        |        |           |
|---------------------------|--------|--------|----------|---------|------------------|--------|--------|-----------|
|                           |        |        | CAL-AMT  |         | ON-COL           |        |        |           |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)          | TARGET | RANGE  | RATIO     |
| ==                        | =====  | =====  | =====    | =====   | =====            | =====  | =====  | =====     |
| 23 Toxaphene              |        |        |          |         | CAS #: 8001-35-2 |        |        |           |
| 5.173                     | 5.172  | 0.001  | 1693384  | 500.000 | 475              | 80.00- | 120.00 | 100.00(M) |
| 5.292                     | 5.290  | 0.002  | 1106773  | 500.000 | 520              | 36.25- | 76.25  | 65.36     |
| 5.511                     | 5.509  | 0.002  | 1280032  | 500.000 | 479              | 55.59- | 95.59  | 75.59     |
| 5.839                     | 5.837  | 0.002  | 837344   | 500.000 | 459              | 30.01- | 70.01  | 49.45     |
| 5.937                     | 5.935  | 0.002  | 1374002  | 500.000 | 483              | 59.02- | 99.02  | 81.14     |
| Average of Peak Amounts = |        |        |          |         | 483              |        |        |           |
| -----                     |        |        |          |         |                  |        |        |           |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8  |        |        |           |
| 2.454                     | 2.455  | -0.001 | 7872021  | 20.0000 | 69.1             | 80.00- | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |        |        |           |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3 |        |        |           |
| 7.426                     | 7.425  | 0.001  | 5012785  | 20.0000 | 72.3             | 80.00- | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |        |        |           |

QC Flag Legend

M - Compound response manually integrated.

Data File: /chem/ecod3a.i/082311P.B/014F1401.D

Page 1

Date : 23-AUG-2011 14:45

Client ID: TOXAPH02

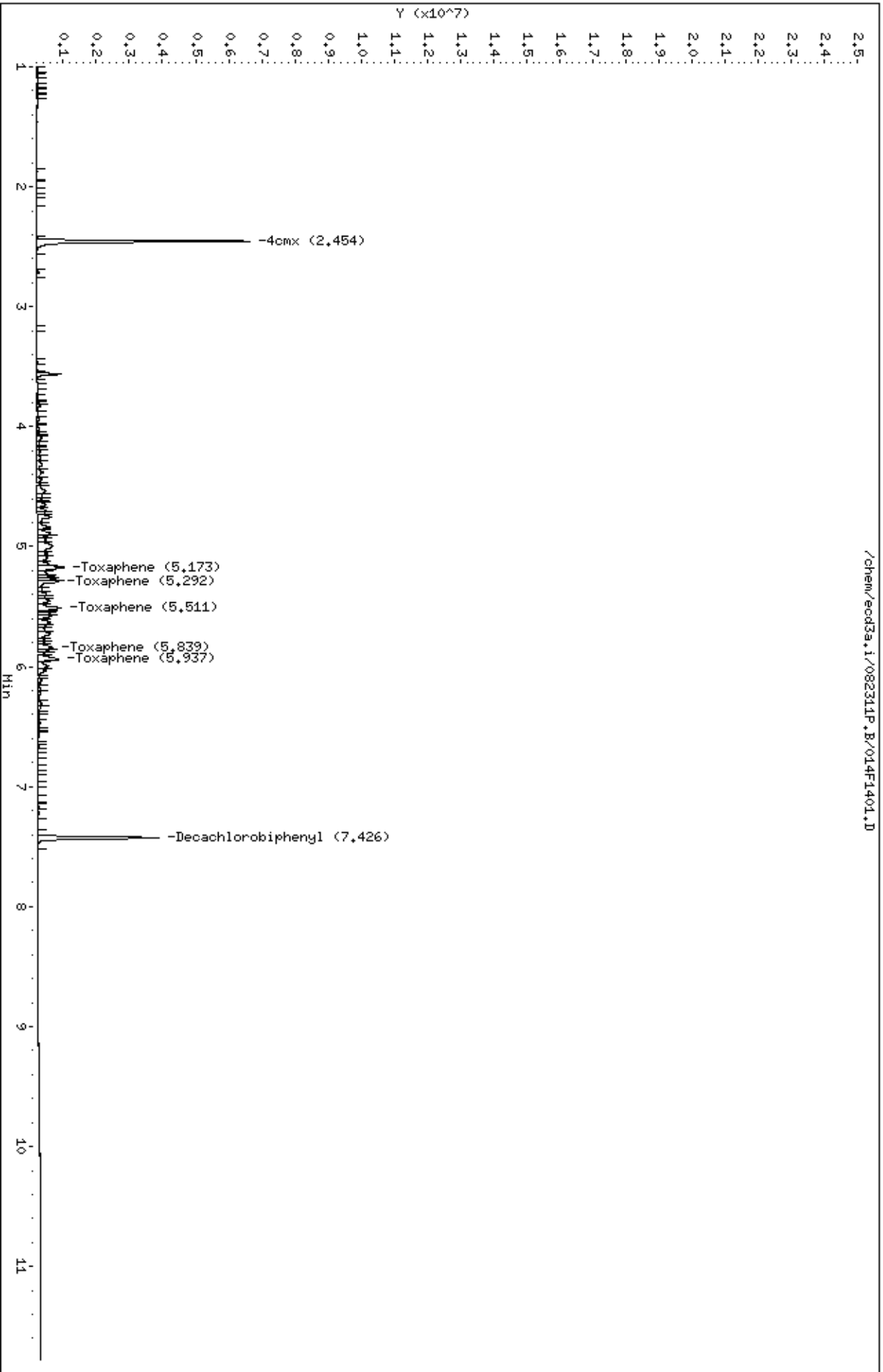
Sample Info: IMPE110816-12TX

Instrument: ecod3a.i

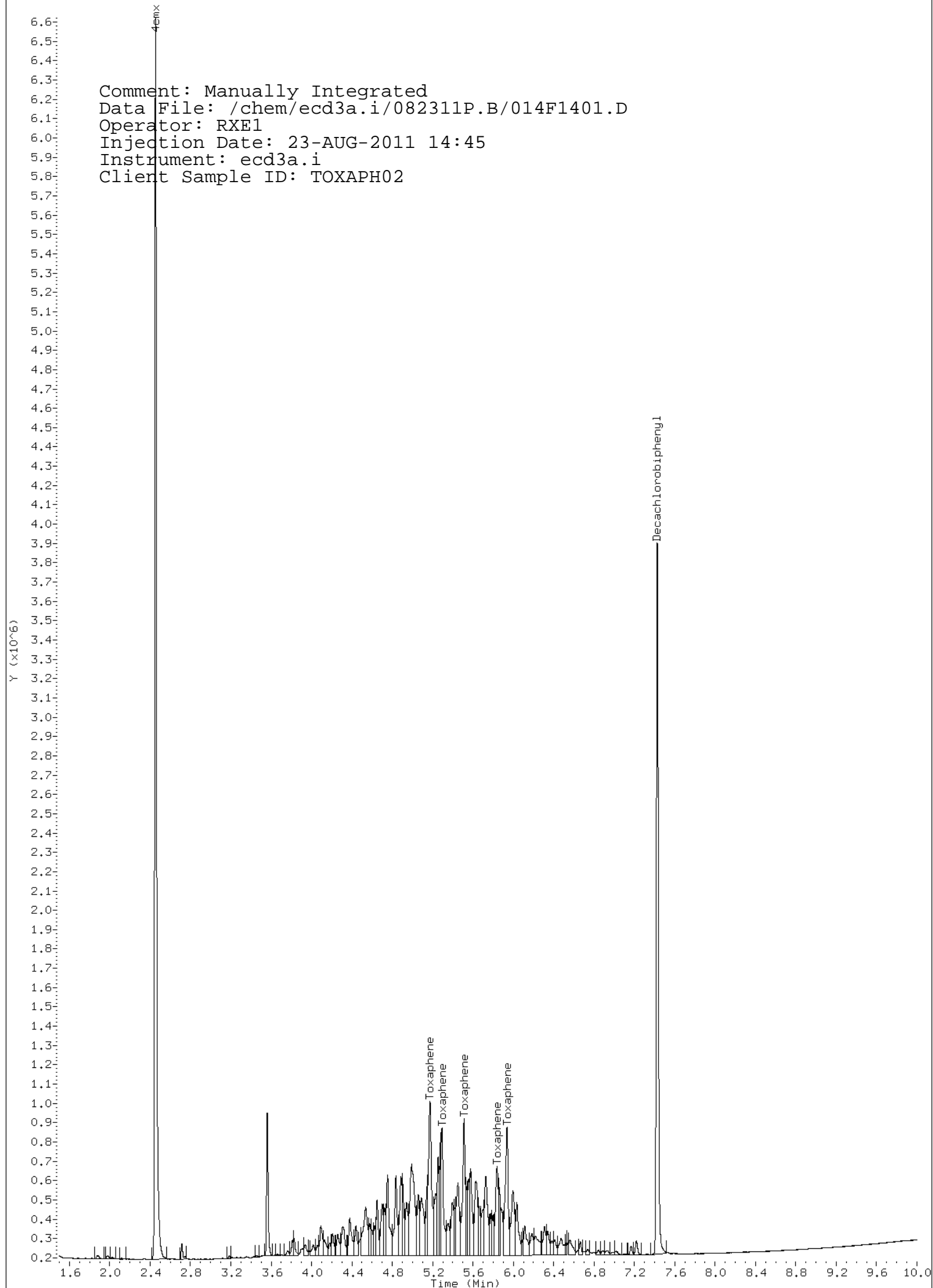
Operator: RXE1

Column diameter: 0.25

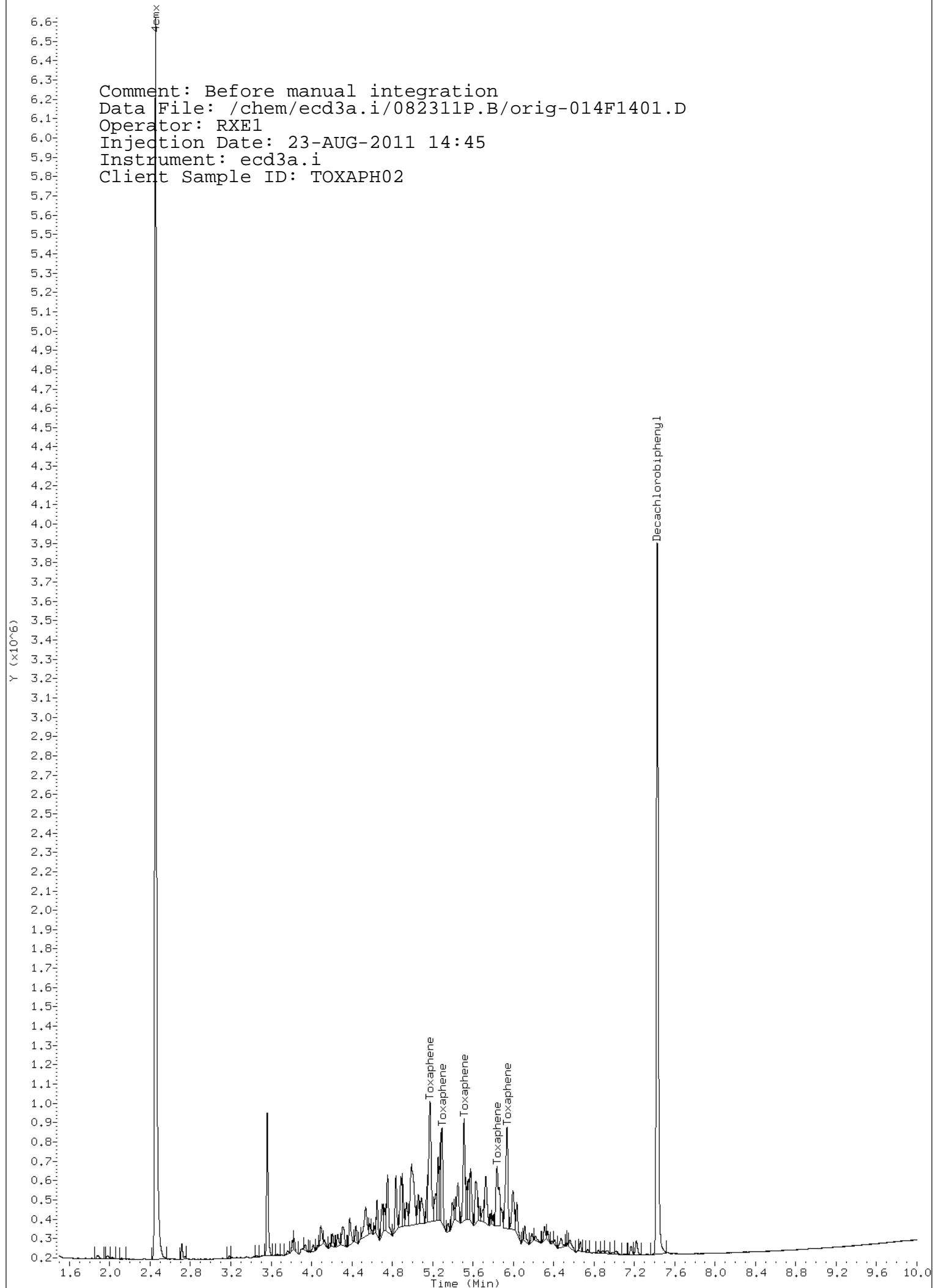
Column phase: CLP-1



Comment: Manually Integrated  
Data File: /chem/ecd3a.i/082311P.B/014F1401.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 14:45  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH02



Comment: Before manual integration  
Data File: /chem/ecd3a.i/082311P.B/orig-014F1401.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 14:45  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH02



Data File: /chem/ecd3a.i/082311P.B/014B1401.D  
Report Date: 30-Aug-2011 15:44

Page 1

GEL Laboratories LLC

CLP-2

Data file : /chem/ecd3a.i/082311P.B/014B1401.D  
Lab Smp Id: WPE110816-12TX Client Smp ID: TOXAPH02  
Inj Date : 23-AUG-2011 14:45  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-12TX  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/082311P.B/ECD3-B-8081-081211p.m  
Meth Date : 24-Aug-2011 11:24 reb01393 Quant Type: ESTD  
Cal Date : 21-DEC-2010 12:13 Cal File: 013b1301.d  
Als bottle: 14 Calibration Sample, Level: 2  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: tox.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                  |         |        |           |
|---------------------------|--------|--------|----------|---------|------------------|---------|--------|-----------|
|                           |        |        | CAL-AMT  |         | ON-COL           |         |        |           |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)          | TARGET  | RANGE  | RATIO     |
| ==                        | =====  | =====  | =====    | =====   | =====            | =====   | =====  | =====     |
| 23 Toxaphene              |        |        |          |         | CAS #: 8001-35-2 |         |        |           |
| 6.442                     | 6.443  | -0.001 | 713726   | 500.000 | 502              | 80.00-  | 120.00 | 100.00(M) |
| 6.489                     | 6.489  | 0.000  | 1174363  | 500.000 | 506              | 144.48- | 184.48 | 164.54    |
| 6.592                     | 6.591  | 0.001  | 2019901  | 500.000 | 508              | 268.66- | 308.66 | 283.01    |
| 6.871                     | 6.870  | 0.001  | 1040135  | 500.000 | 494              | 133.17- | 173.17 | 145.73    |
| 7.445                     | 7.445  | 0.000  | 1188741  | 500.000 | 495              | 151.31- | 191.31 | 166.55    |
| Average of Peak Amounts = |        |        |          |         | 501              |         |        |           |
| -----                     |        |        |          |         |                  |         |        |           |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8  |         |        |           |
| 3.086                     | 3.086  | 0.000  | 5456368  | 20.0000 | 68.3             | 80.00-  | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |         |        |           |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3 |         |        |           |
| 9.150                     | 9.148  | 0.002  | 3351999  | 20.0000 | 69.4             | 80.00-  | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |         |        |           |

QC Flag Legend

M - Compound response manually integrated.



Data File: /chem/ecd3a.i/082311P.B/014B1401.D

Date : 23-AUG-2011 14:45

Client ID: TOXAPH02

Sample Info: IMPE110816-12TX

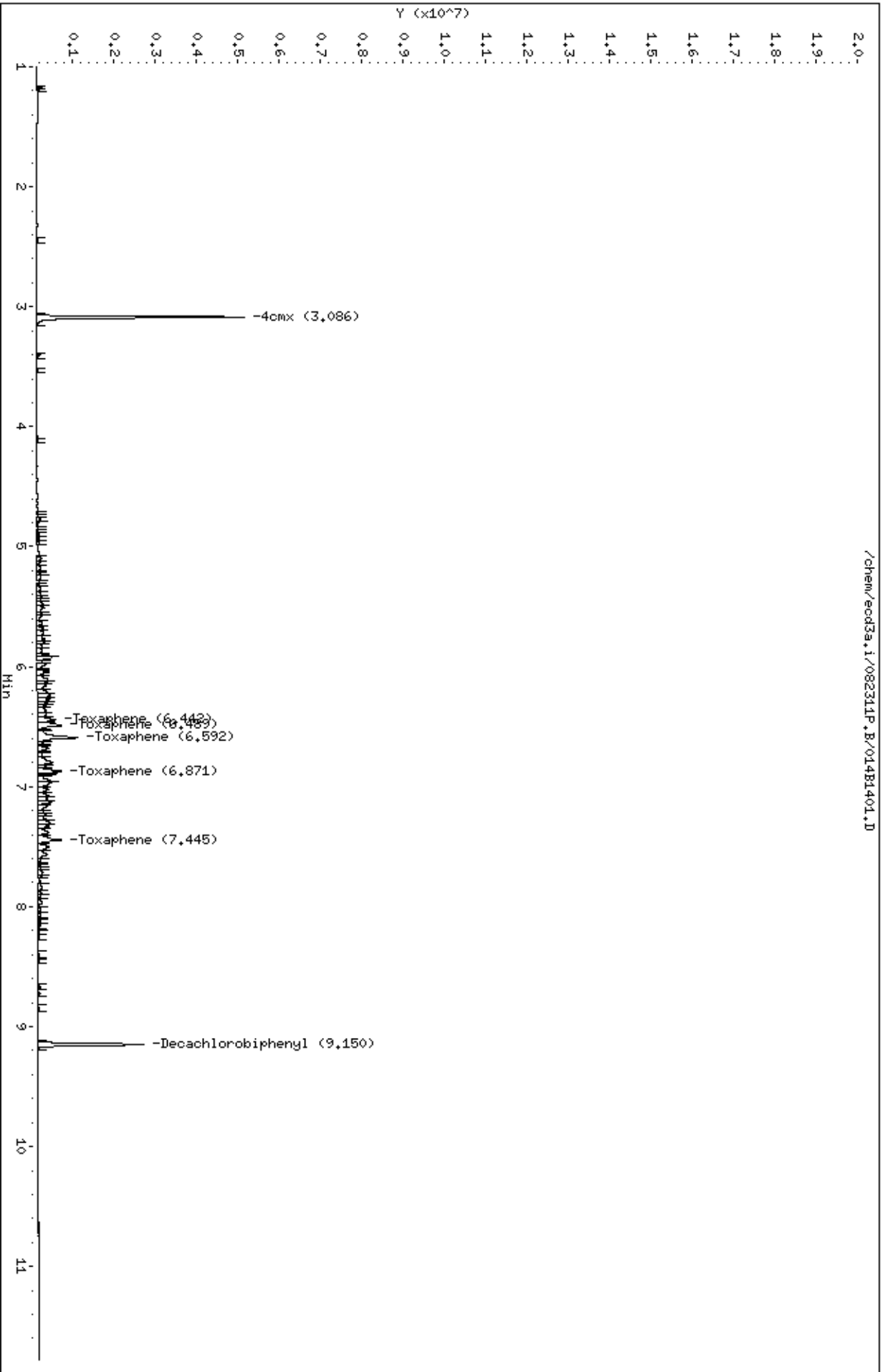
Column phase: CLP-2

Instrument: ecd3a.i

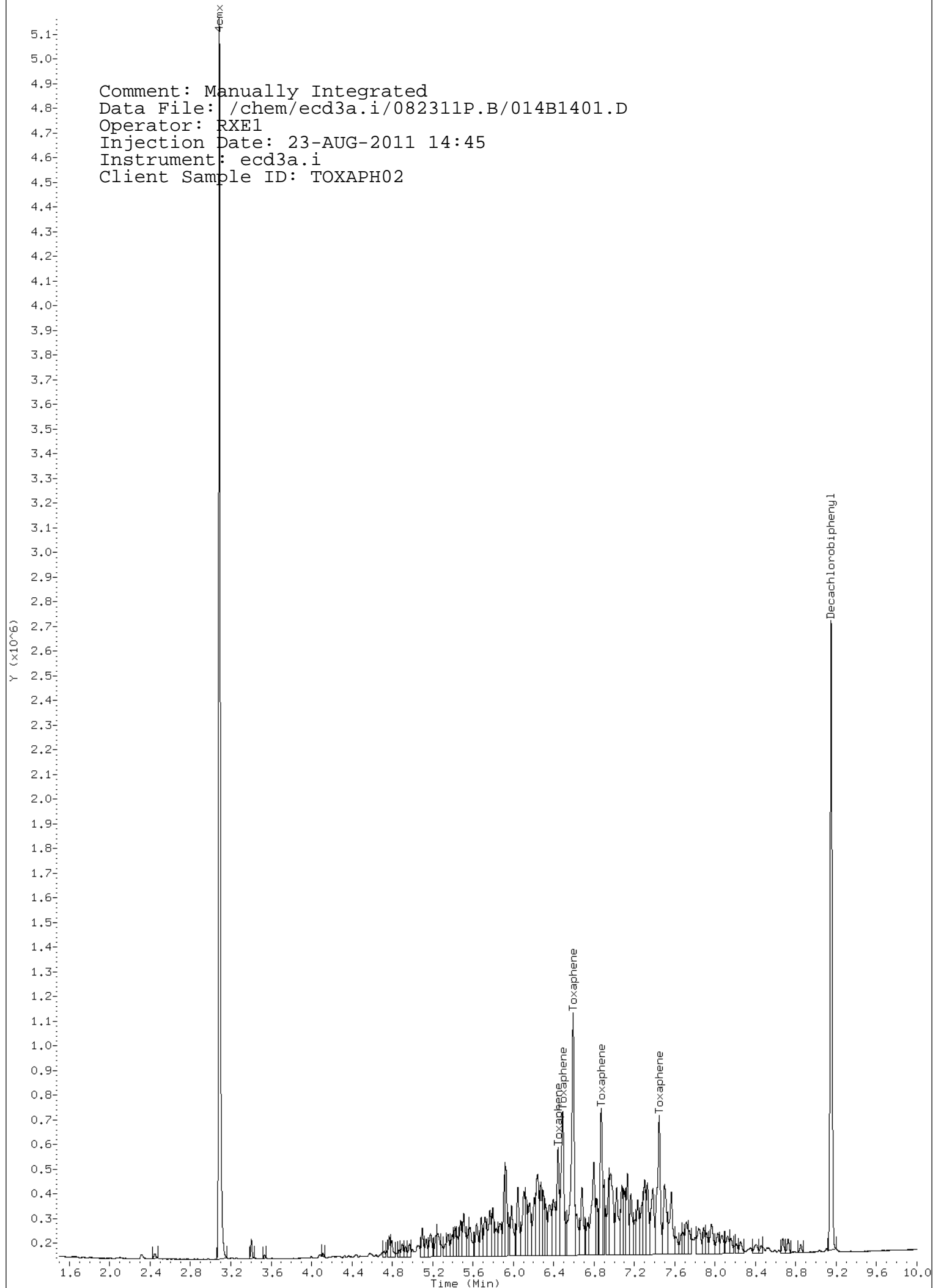
Operator: RXE1

Column diameter: 0.25

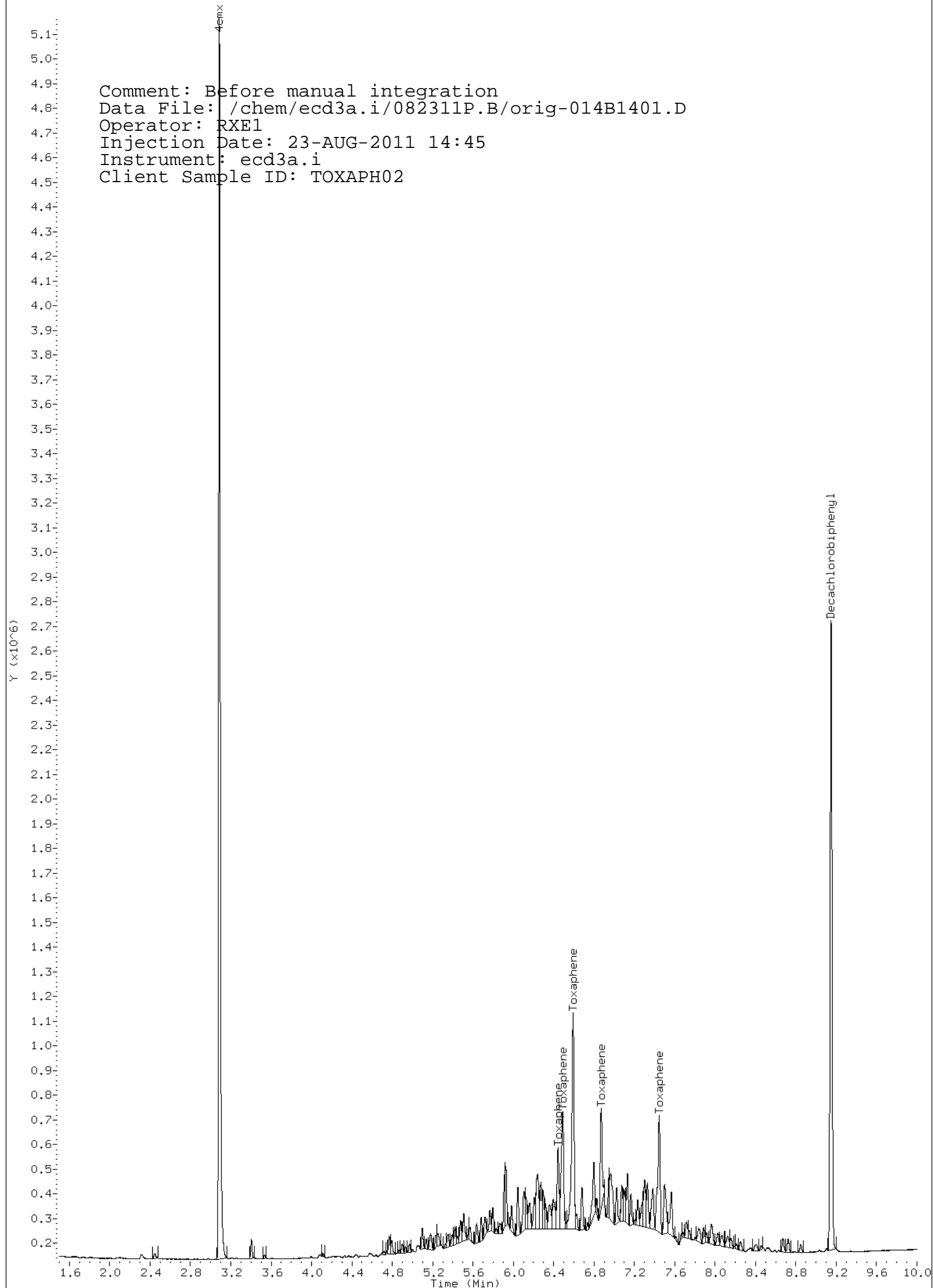
Page 1



Comment: Manually Integrated  
Data File: /chem/ecd3a.i/082311P.B/014B1401.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 14:45  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH02



Comment: Before manual integration  
Data File: /chem/ecd3a.i/082311P.B/orig-014B1401.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 14:45  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH02



GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/082311P.B/015F1501.D  
Lab Smp Id: WPE110816-13TX Client Smp ID: TOXAPH03  
Inj Date : 23-AUG-2011 15:00  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-13TX  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/082311P.B/ECD3-F-8081-081211p.m  
Meth Date : 24-Aug-2011 11:24 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:15 Cal File: 034f3401.d  
Als bottle: 15 Calibration Sample, Level: 3  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: tox.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                  |              |        |           |
|---------------------------|--------|--------|----------|---------|------------------|--------------|--------|-----------|
| RT                        | EXP RT | DLT RT | CAL-AMT  |         | ON-COL           | TARGET RANGE |        | RATIO     |
| ==                        | =====  | =====  | RESPONSE | ( ug/L) | ( ug/L)          | =====        |        | =====     |
| 23 Toxaphene              |        |        |          |         | CAS #: 8001-35-2 |              |        |           |
| 5.172                     | 5.172  | 0.000  | 3428404  | 1000.00 | 962              | 80.00-       | 120.00 | 100.00(M) |
| 5.290                     | 5.290  | 0.000  | 2107327  | 1000.00 | 989              | 36.25-       | 76.25  | 61.47     |
| 5.510                     | 5.509  | 0.001  | 2581277  | 1000.00 | 967              | 55.59-       | 95.59  | 75.29     |
| 5.836                     | 5.837  | -0.001 | 1724102  | 1000.00 | 945              | 30.01-       | 70.01  | 50.29     |
| 5.936                     | 5.935  | 0.001  | 2708361  | 1000.00 | 952              | 59.02-       | 99.02  | 79.00     |
| Average of Peak Amounts = |        |        |          |         | 963              |              |        |           |
| -----                     |        |        |          |         |                  |              |        |           |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8  |              |        |           |
| 2.454                     | 2.455  | -0.001 | 15647776 | 100.000 | 137              | 80.00-       | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |              |        |           |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3 |              |        |           |
| 7.426                     | 7.425  | 0.001  | 9943567  | 100.000 | 144              | 80.00-       | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |              |        |           |

QC Flag Legend

M - Compound response manually integrated.

Data File: /chem/ecod3a.i/082311P.B/01SF1501.D

Date : 23-AUG-2011 15:00

Client ID: TOXAPH03

Sample Info: IMPE110816-13TX

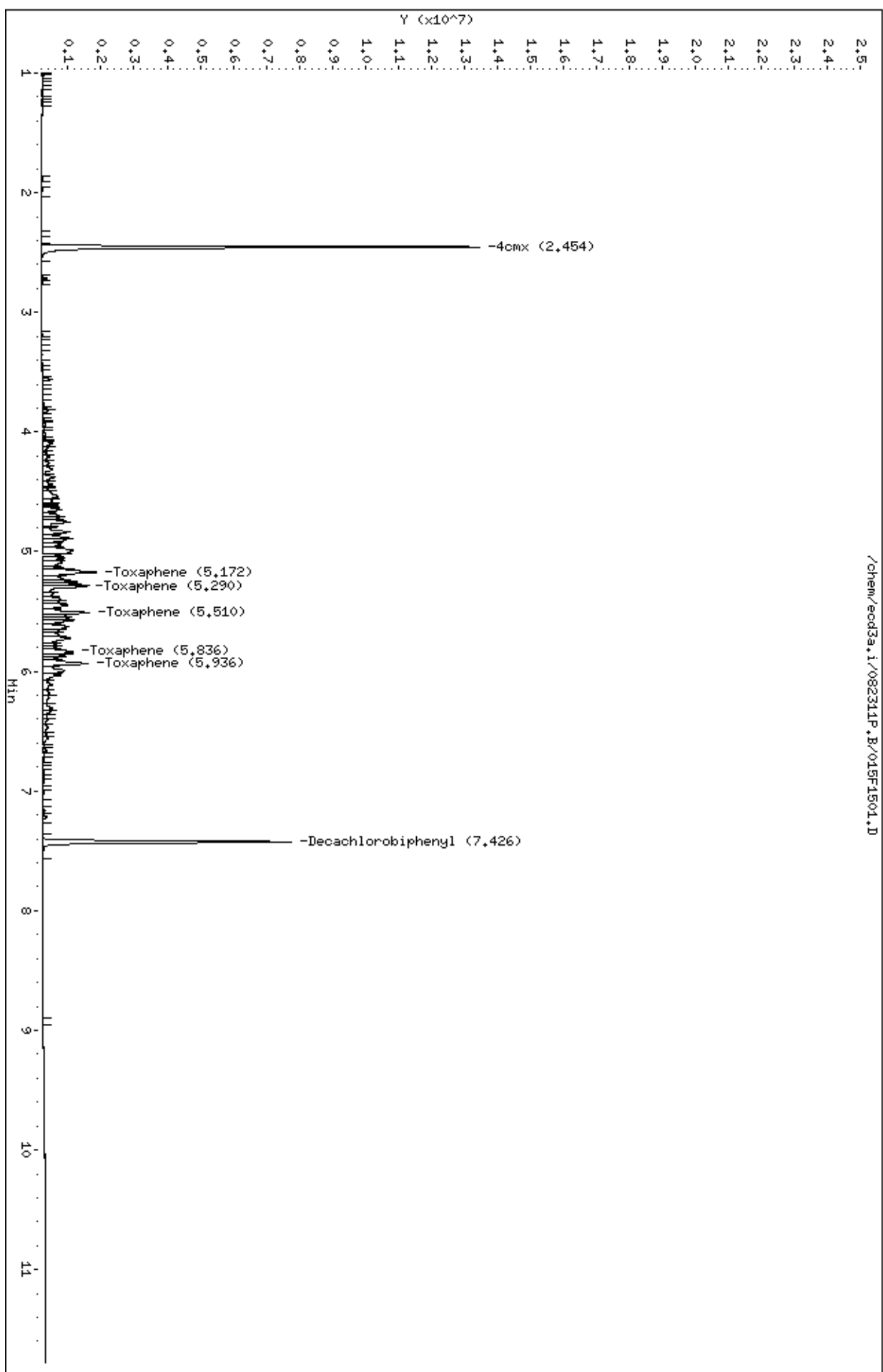
Column phase: CLP-1

Instrument: ecod3a.i

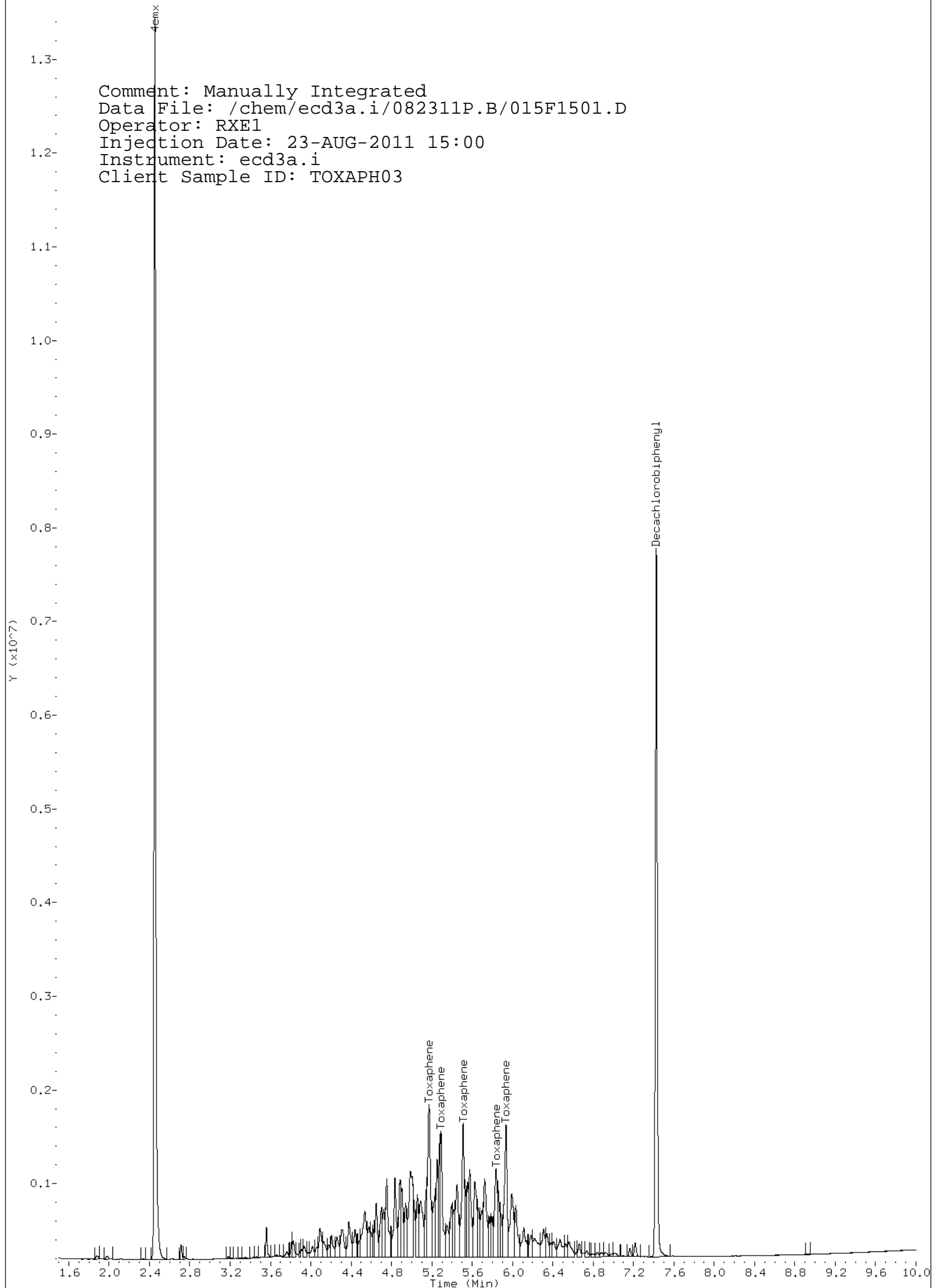
Operator: RXE1

Column diameter: 0.25

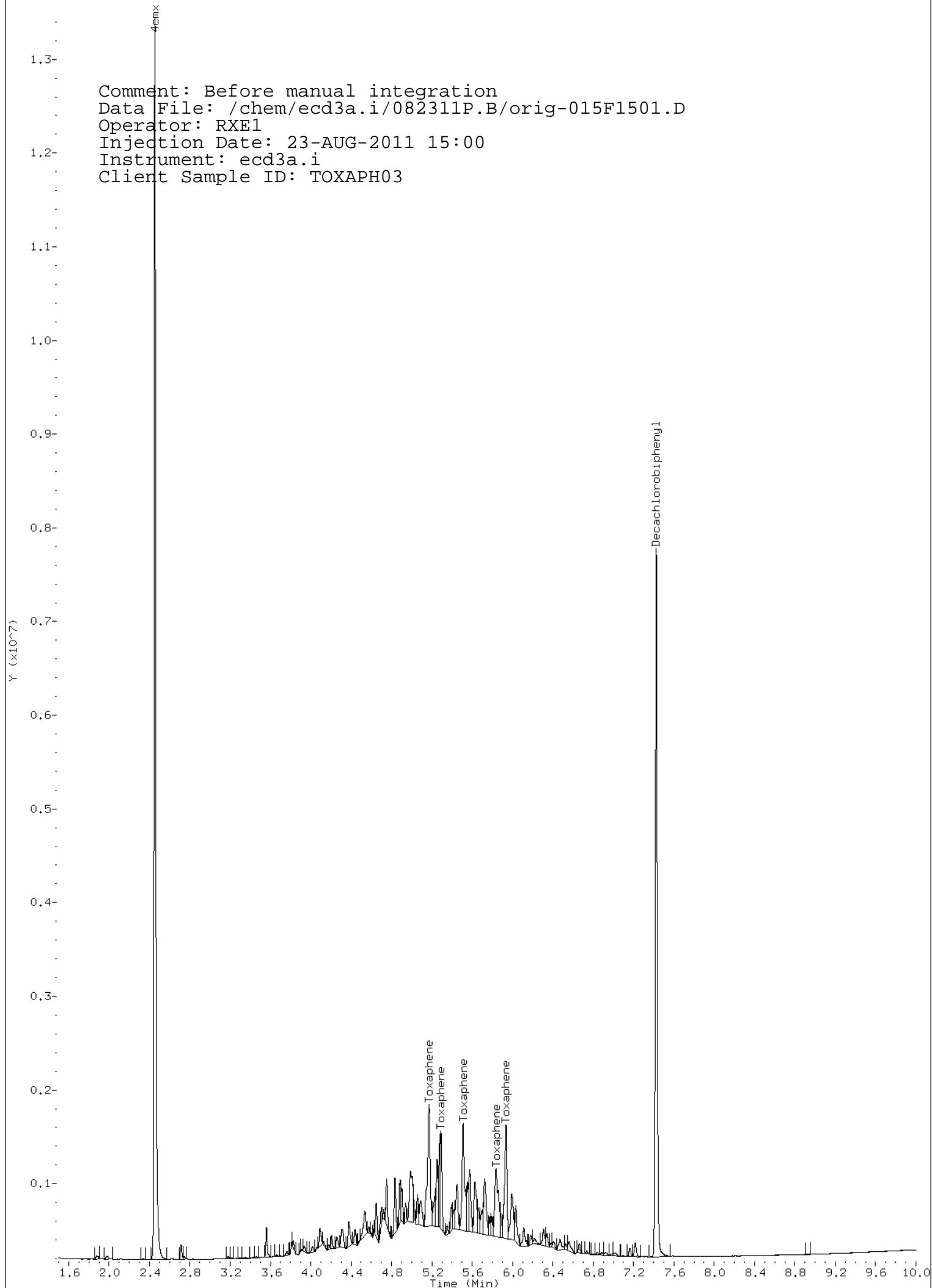
Page 1



Comment: Manually Integrated  
Data File: /chem/ecd3a.i/082311P.B/015F1501.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 15:00  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH03



Comment: Before manual integration  
Data File: /chem/ecd3a.i/082311P.B/orig-015F1501.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 15:00  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH03



Data File: /chem/ecd3a.i/082311P.B/015B1501.D  
Report Date: 30-Aug-2011 15:44

Page 1

GEL Laboratories LLC

CLP-2

Data file : /chem/ecd3a.i/082311P.B/015B1501.D  
Lab Smp Id: WPE110816-13TX Client Smp ID: TOXAPH03  
Inj Date : 23-AUG-2011 15:00  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-13TX  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/082311P.B/ECD3-B-8081-081211p.m  
Meth Date : 24-Aug-2011 11:24 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:15 Cal File: 034b3401.d  
Als bottle: 15 Calibration Sample, Level: 3  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: tox.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                  |         |        |           |
|---------------------------|--------|--------|----------|---------|------------------|---------|--------|-----------|
|                           |        |        | CAL-AMT  |         | ON-COL           |         |        |           |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)          | TARGET  | RANGE  | RATIO     |
| ==                        | =====  | =====  | =====    | =====   | =====            | =====   | =====  | =====     |
| 23 Toxaphene              |        |        |          |         | CAS #: 8001-35-2 |         |        |           |
| 6.441                     | 6.443  | -0.002 | 1340568  | 1000.00 | 943              | 80.00-  | 120.00 | 100.00(M) |
| 6.489                     | 6.489  | 0.000  | 2168081  | 1000.00 | 935              | 144.48- | 184.48 | 161.73    |
| 6.592                     | 6.591  | 0.001  | 3776630  | 1000.00 | 950              | 268.66- | 308.66 | 281.72    |
| 6.869                     | 6.870  | -0.001 | 1931391  | 1000.00 | 918              | 133.17- | 173.17 | 144.07    |
| 7.444                     | 7.445  | -0.001 | 2271747  | 1000.00 | 946              | 151.31- | 191.31 | 169.46    |
| Average of Peak Amounts = |        |        |          |         | 938              |         |        |           |
| -----                     |        |        |          |         |                  |         |        |           |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8  |         |        |           |
| 3.086                     | 3.086  | 0.000  | 10272222 | 100.000 | 128              | 80.00-  | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |         |        |           |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3 |         |        |           |
| 9.149                     | 9.148  | 0.001  | 6383055  | 100.000 | 132              | 80.00-  | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |         |        |           |

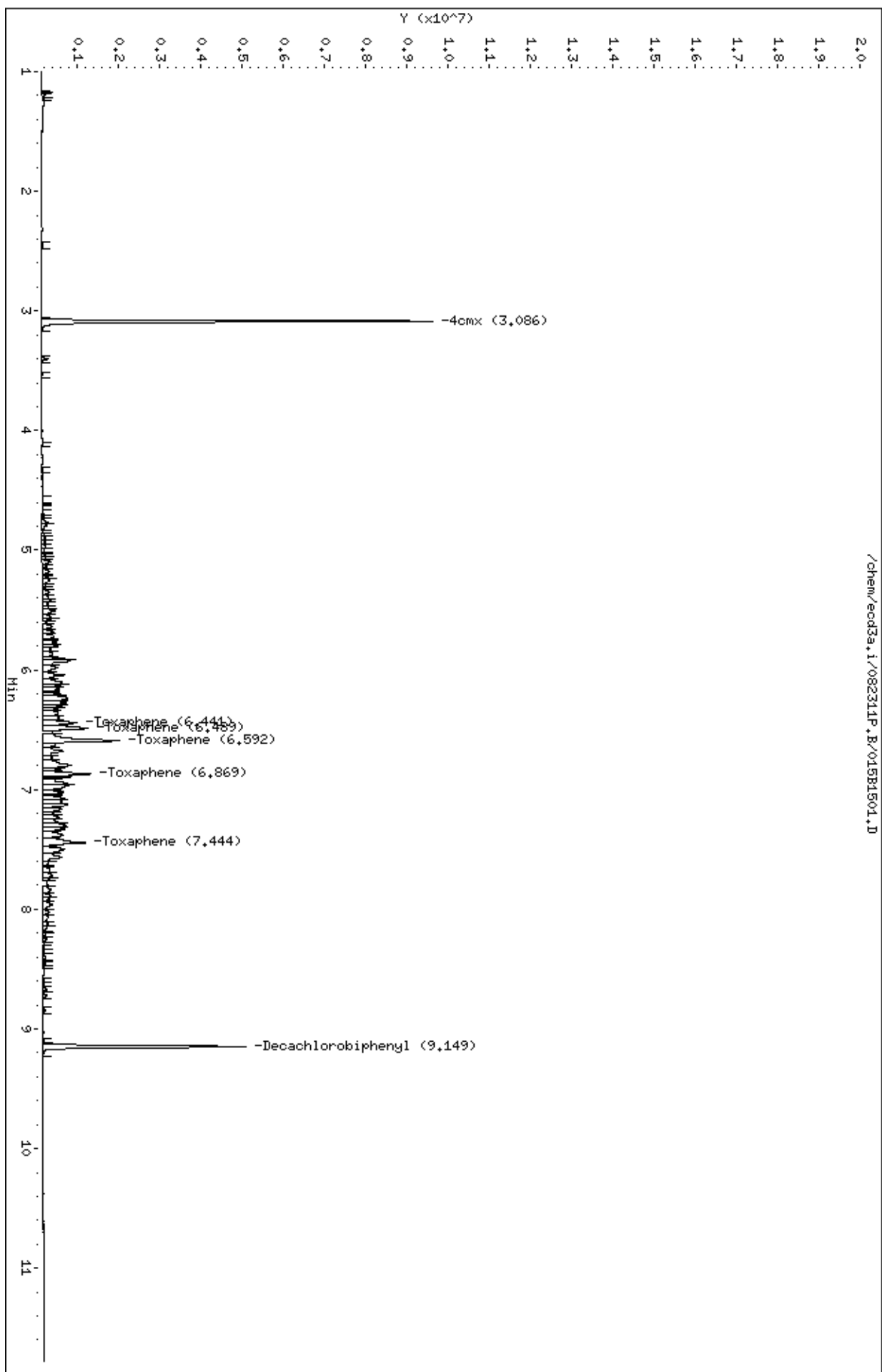
QC Flag Legend

M - Compound response manually integrated.

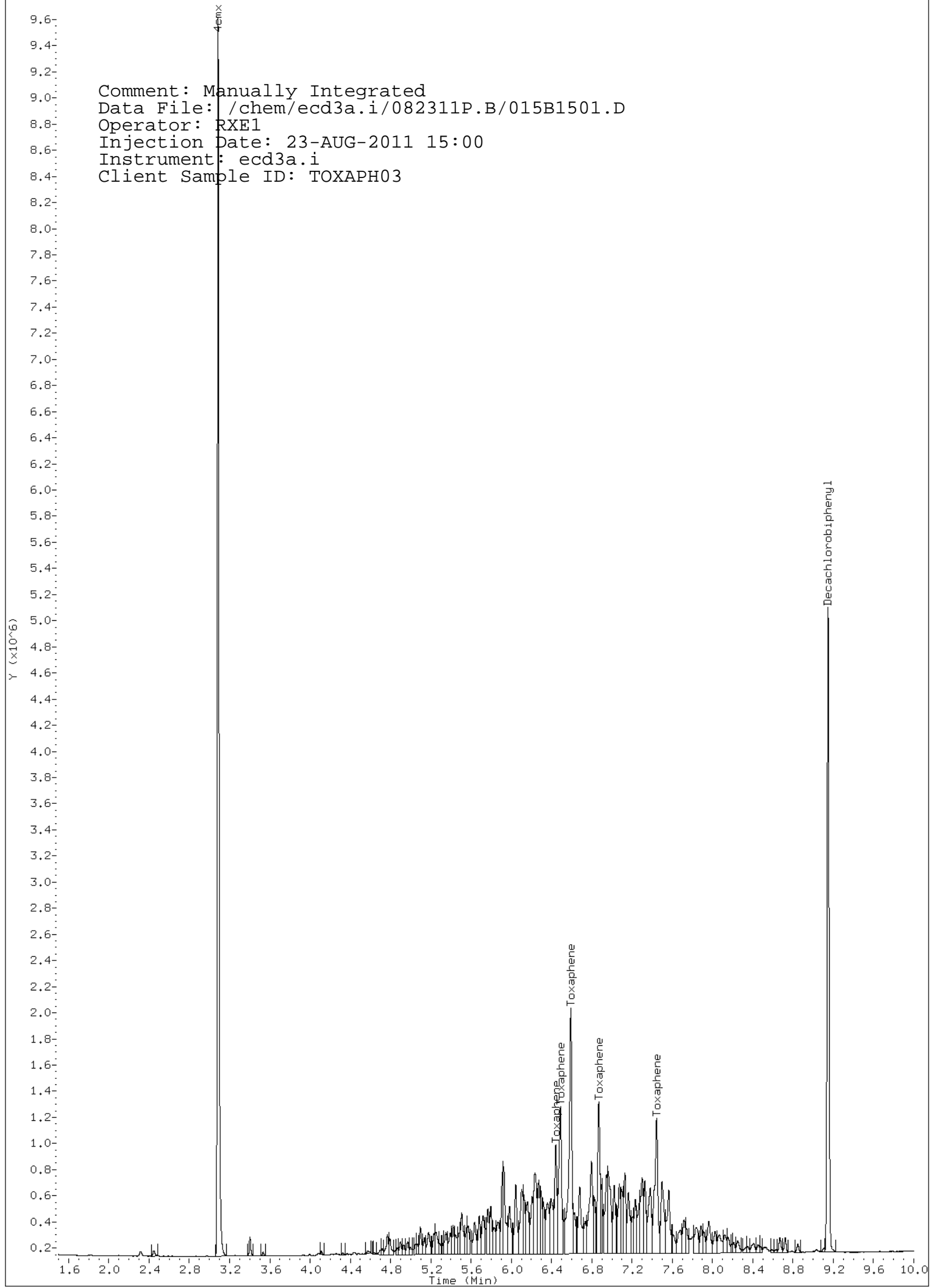


Data File: /chem/ecd3a.i/082311P.B/015B1501.D  
Date : 23-AUG-2011 15:00  
Client ID: TOXAPH03  
Sample Info: IMPE110816-13TX  
Column phase: CLP-2

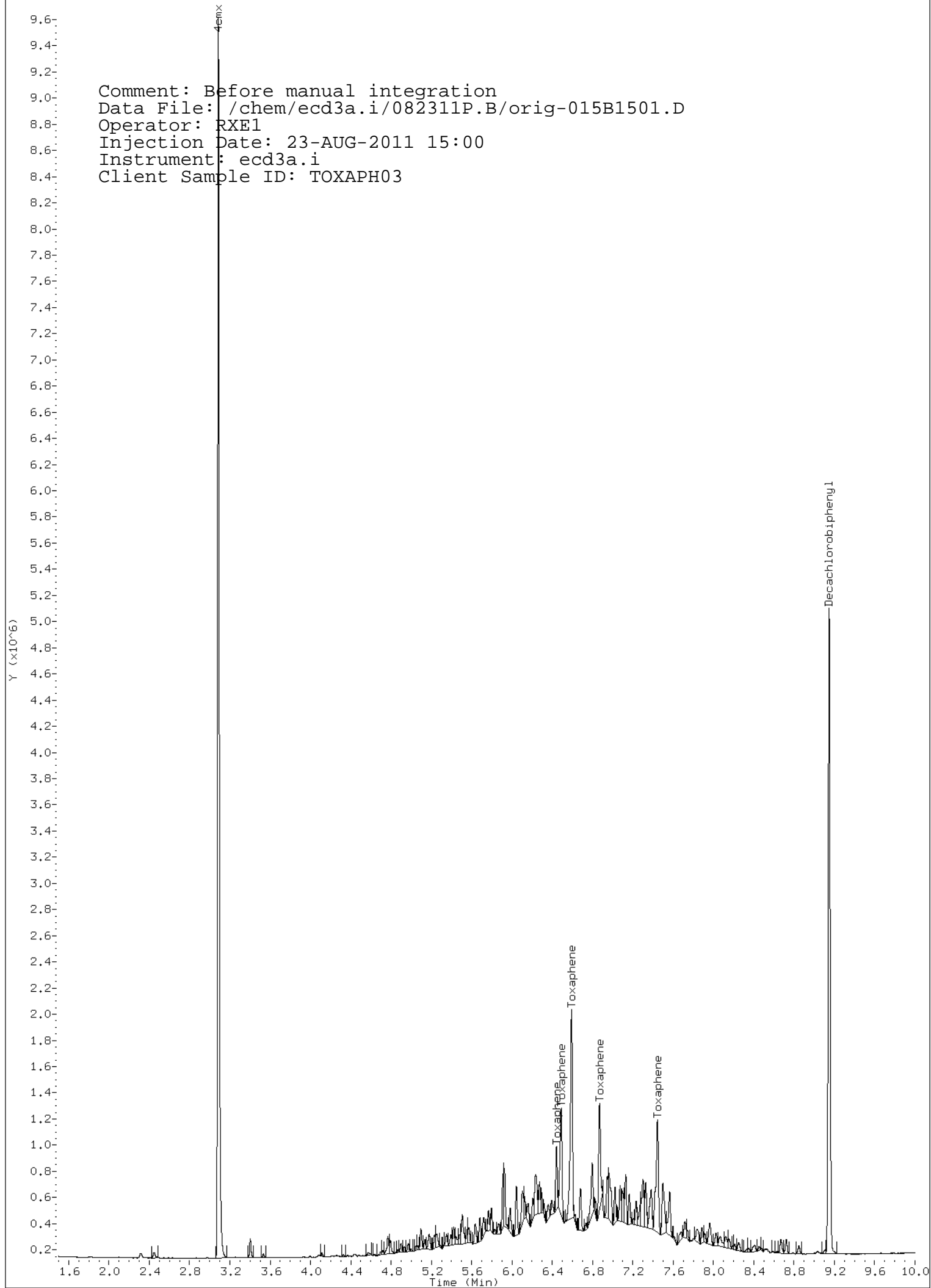
Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



Comment: Manually Integrated  
Data File: /chem/ecd3a.i/082311P.B/015B1501.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 15:00  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH03



Comment: Before manual integration  
Data File: /chem/ecd3a.i/082311P.B/orig-015B1501.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 15:00  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH03



GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/082311P.B/016F1601.D  
Lab Smp Id: WPE110816-14TX Client Smp ID: TOXAPH04  
Inj Date : 23-AUG-2011 15:16  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-14TX  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/082311P.B/ECD3-F-8081-081211p.m  
Meth Date : 24-Aug-2011 11:24 reb01393 Quant Type: ESTD  
Cal Date : 15-JAN-2011 12:53 Cal File: 018f1801.d  
Als bottle: 16 Calibration Sample, Level: 4  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: tox.sub  
Target Version: 3.50 Sample Matrix: None

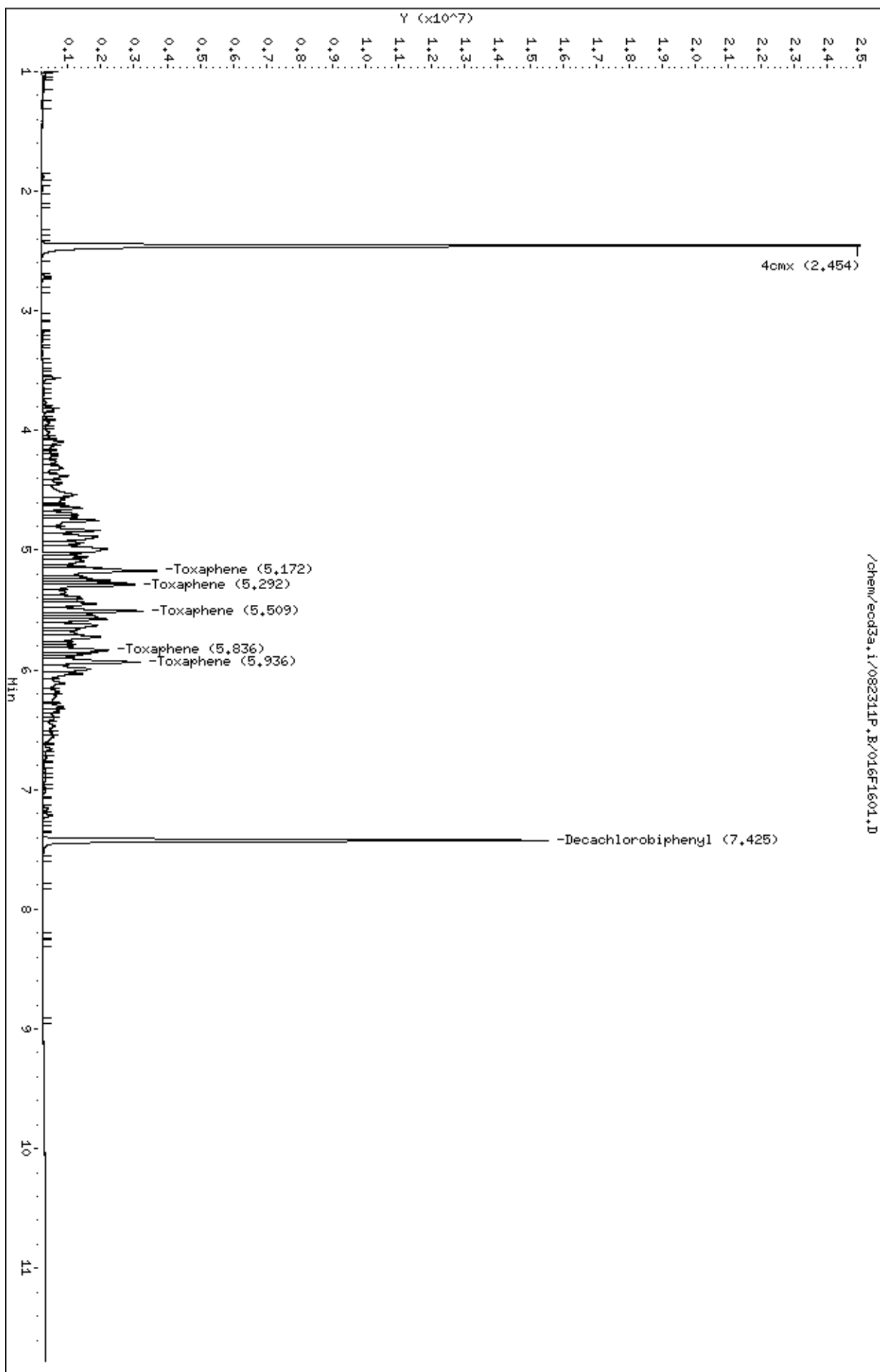
| AMOUNTS                   |        |        |          |         |          |           |        |           |
|---------------------------|--------|--------|----------|---------|----------|-----------|--------|-----------|
|                           |        |        | CAL-AMT  |         | ON-COL   |           |        |           |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)  | TARGET    | RANGE  | RATIO     |
| ==                        | =====  | =====  | =====    | =====   | =====    | =====     | =====  | =====     |
| 23 Toxaphene              |        |        |          |         | CAS #:   | 8001-35-2 |        |           |
| 5.172                     | 5.172  | 0.000  | 7138198  | 2000.00 | 2000     | 80.00-    | 120.00 | 100.00(M) |
| 5.292                     | 5.290  | 0.002  | 4012918  | 2000.00 | 1880     | 36.25-    | 76.25  | 56.22     |
| 5.509                     | 5.509  | 0.000  | 5250973  | 2000.00 | 1970     | 55.59-    | 95.59  | 73.56     |
| 5.836                     | 5.837  | -0.001 | 3557914  | 2000.00 | 1950     | 30.01-    | 70.01  | 49.84     |
| 5.936                     | 5.935  | 0.001  | 5710640  | 2000.00 | 2010     | 59.02-    | 99.02  | 80.00     |
| Average of Peak Amounts = |        |        |          |         | 1.96e+03 |           |        |           |
| -----                     |        |        |          |         |          |           |        |           |
| \$ 1 4cmx                 |        |        |          |         | CAS #:   | 877-09-8  |        |           |
| 2.454                     | 2.455  | -0.001 | 31391962 | 200.000 | 276      | 80.00-    | 120.00 | 100.00    |
| -----                     |        |        |          |         |          |           |        |           |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #:   | 2051-24-3 |        |           |
| 7.425                     | 7.425  | 0.000  | 20252186 | 200.000 | 292      | 80.00-    | 120.00 | 100.00    |
| -----                     |        |        |          |         |          |           |        |           |

QC Flag Legend

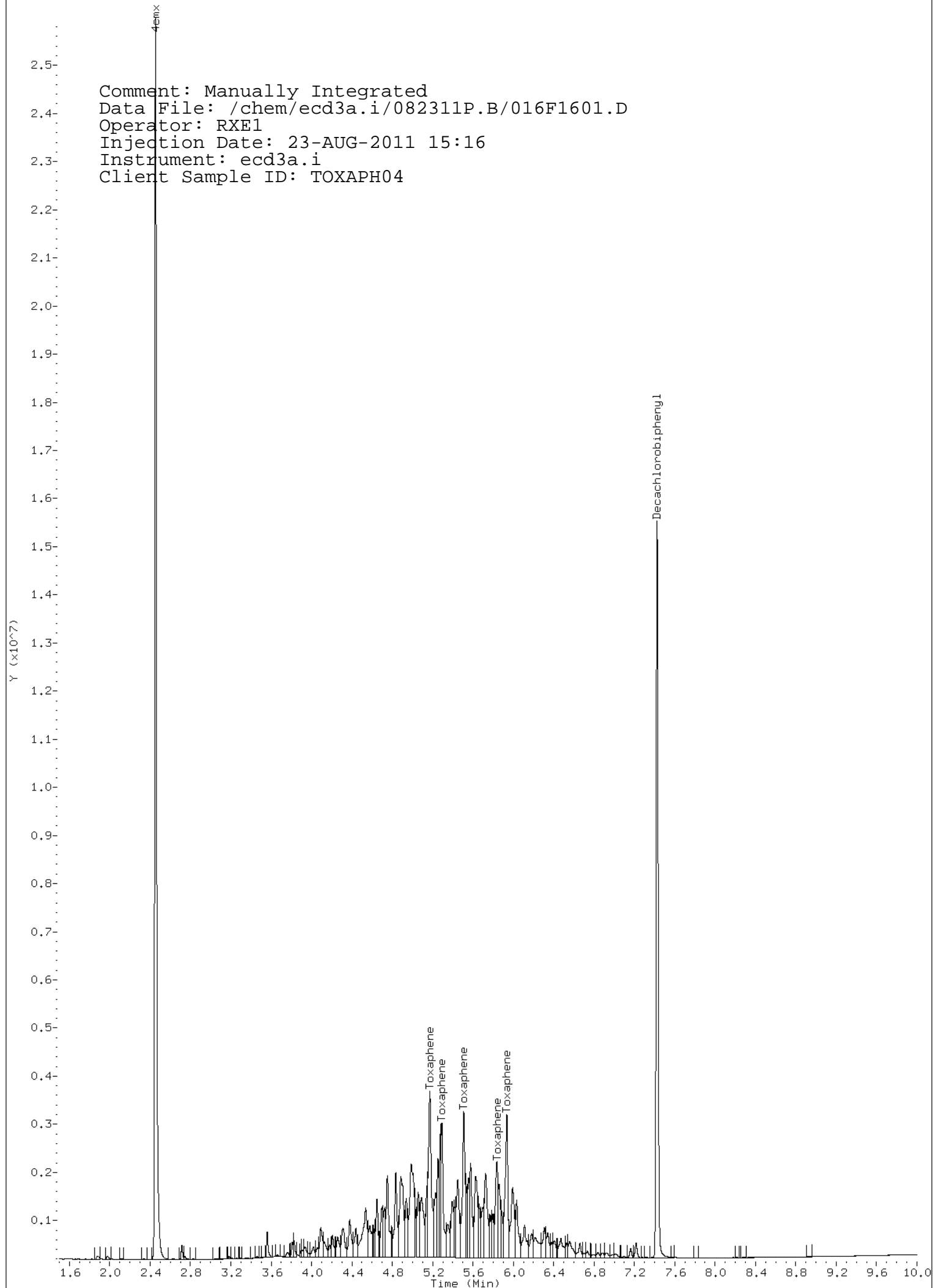
M - Compound response manually integrated.

Data File: /chem/ecod3a.i/082311P.B/016F1601.D  
Date : 23-AUG-2011 15:16  
Client ID: TOXAPH04  
Sample Info: IMPE110816-14TX  
Column phase: CLP-1

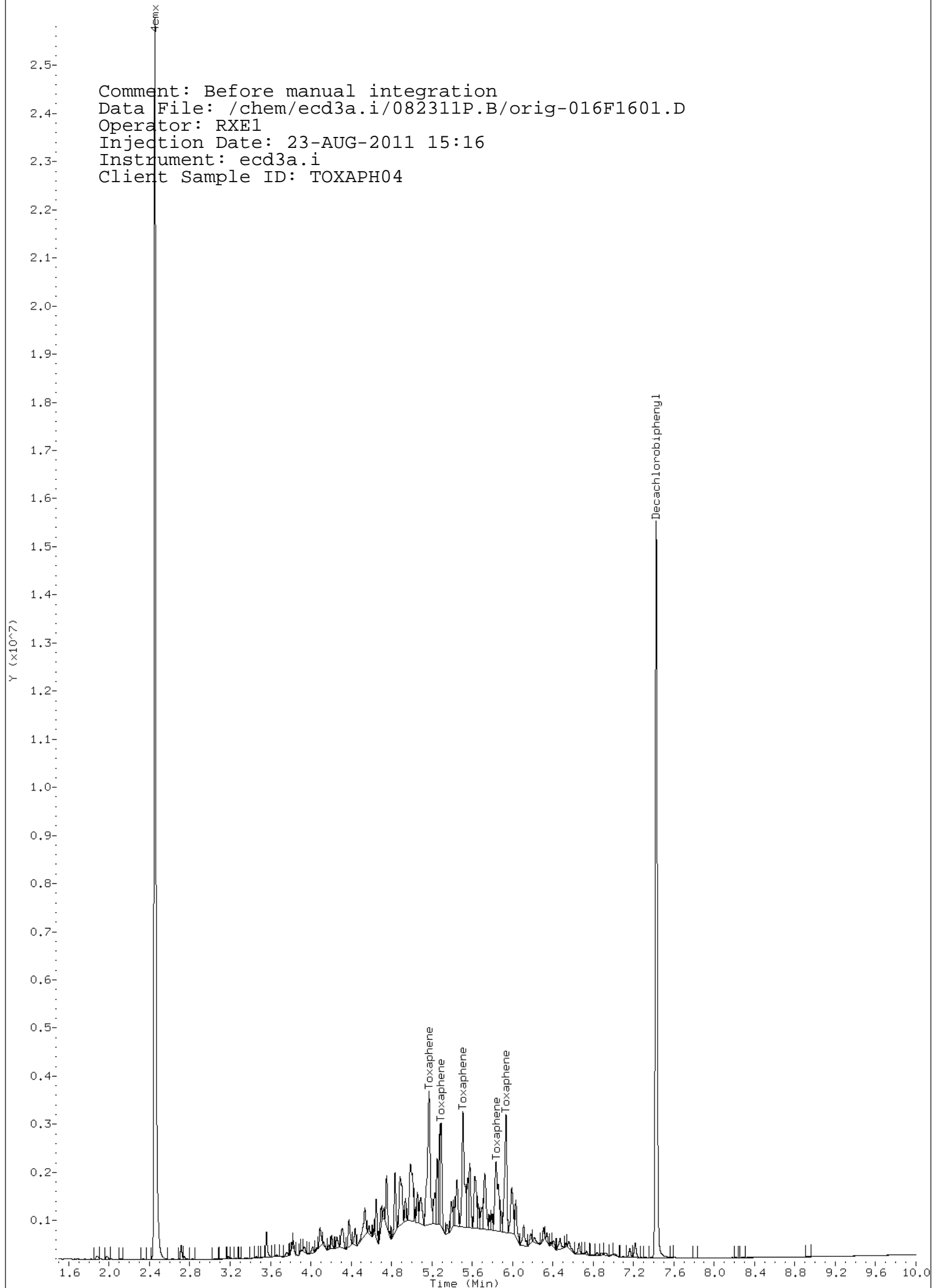
Instrument: ecod3a.i  
Operator: RXE1  
Column diameter: 0.25



Comment: Manually Integrated  
Data File: /chem/ecd3a.i/082311P.B/016F1601.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 15:16  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH04



Comment: Before manual integration  
Data File: /chem/ecd3a.i/082311P.B/orig-016F1601.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 15:16  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH04



Data File: /chem/ecd3a.i/082311P.B/016B1601.D  
Report Date: 30-Aug-2011 15:44

Page 1

GEL Laboratories LLC

CLP-2

Data file : /chem/ecd3a.i/082311P.B/016B1601.D  
Lab Smp Id: WPE110816-14TX Client Smp ID: TOXAPH04  
Inj Date : 23-AUG-2011 15:16  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110816-14TX  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/082311P.B/ECD3-B-8081-081211p.m  
Meth Date : 24-Aug-2011 11:24 reb01393 Quant Type: ESTD  
Cal Date : 15-JAN-2011 12:53 Cal File: 018b1801.d  
Als bottle: 16 Calibration Sample, Level: 4  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: tox.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                  |         |        |           |
|---------------------------|--------|--------|----------|---------|------------------|---------|--------|-----------|
|                           |        |        | CAL-AMT  |         | ON-COL           |         |        |           |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)          | TARGET  | RANGE  | RATIO     |
| ==                        | =====  | =====  | =====    | =====   | =====            | =====   | =====  | =====     |
| 23 Toxaphene              |        |        |          |         | CAS #: 8001-35-2 |         |        |           |
| 6.443                     | 6.443  | 0.000  | 2608719  | 2000.00 | 1830             | 80.00-  | 120.00 | 100.00(M) |
| 6.488                     | 6.489  | -0.001 | 4260591  | 2000.00 | 1840             | 144.48- | 184.48 | 163.32    |
| 6.591                     | 6.591  | 0.000  | 7245155  | 2000.00 | 1820             | 268.66- | 308.66 | 277.73    |
| 6.869                     | 6.870  | -0.001 | 3952527  | 2000.00 | 1880             | 133.17- | 173.17 | 151.51    |
| 7.444                     | 7.445  | -0.001 | 4459457  | 2000.00 | 1860             | 151.31- | 191.31 | 170.94    |
| Average of Peak Amounts = |        |        |          |         | 1.85e+03         |         |        |           |
| -----                     |        |        |          |         |                  |         |        |           |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8  |         |        |           |
| 3.086                     | 3.086  | 0.000  | 19537887 | 200.000 | 244              | 80.00-  | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |         |        |           |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3 |         |        |           |
| 9.148                     | 9.148  | 0.000  | 12449655 | 200.000 | 258              | 80.00-  | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |         |        |           |

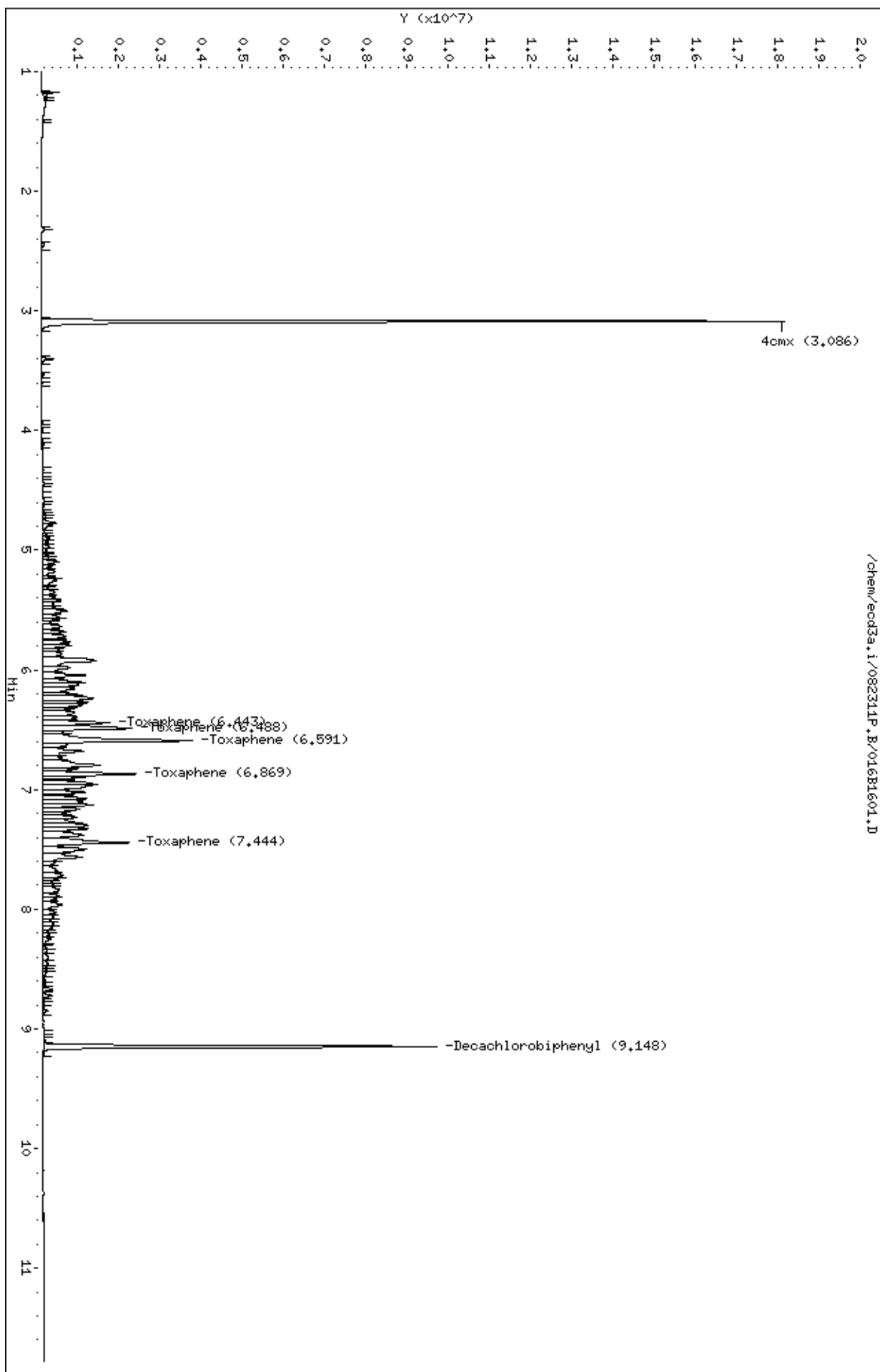
QC Flag Legend

M - Compound response manually integrated.

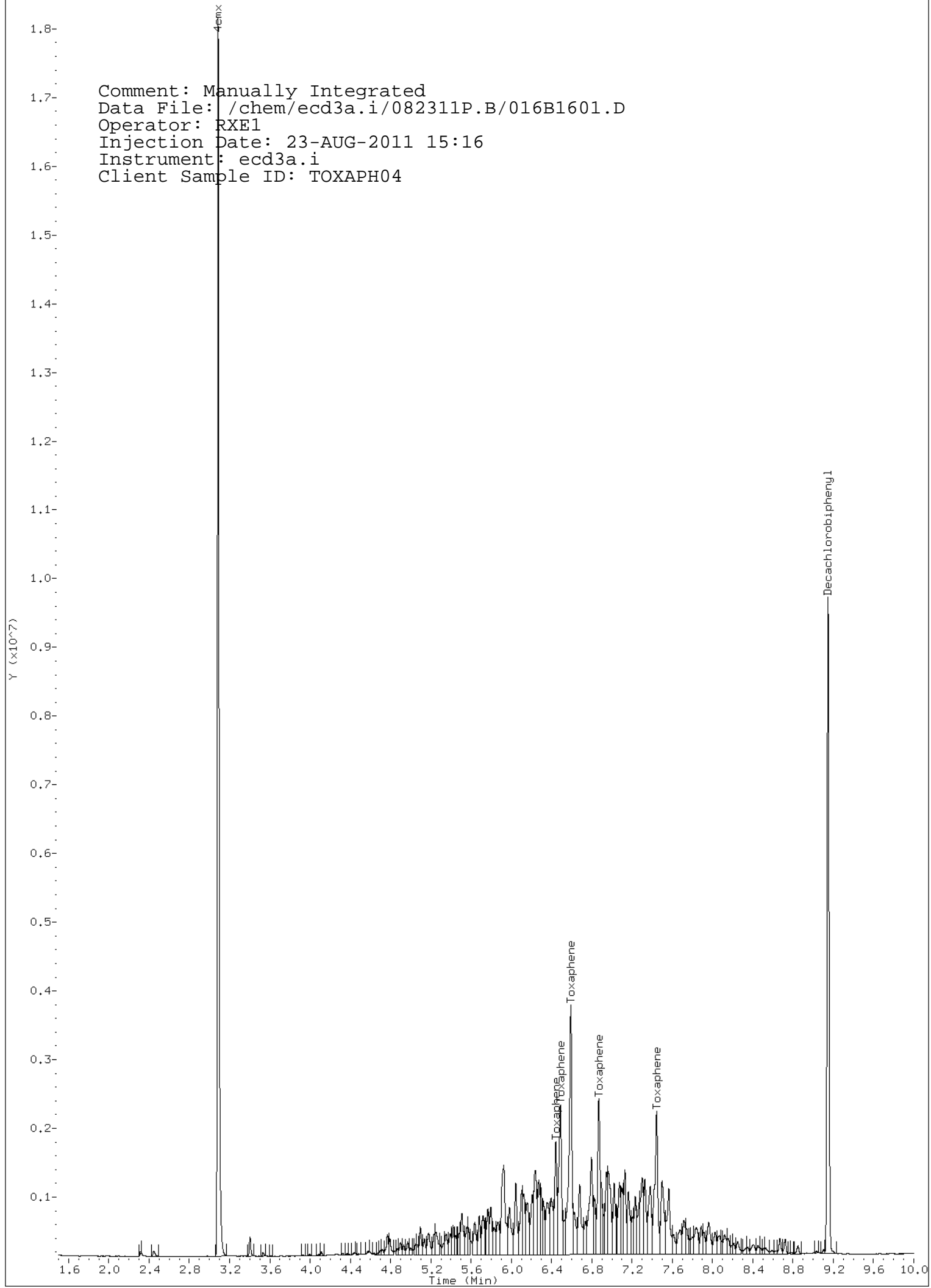


Data File: /chem/ecd3a.i/082311P.B/016B1601.D  
Date : 23-AUG-2011 15:16  
Client ID: TOXAPH04  
Sample Info: IMPE110816-14TX  
Column phase: CLP-2

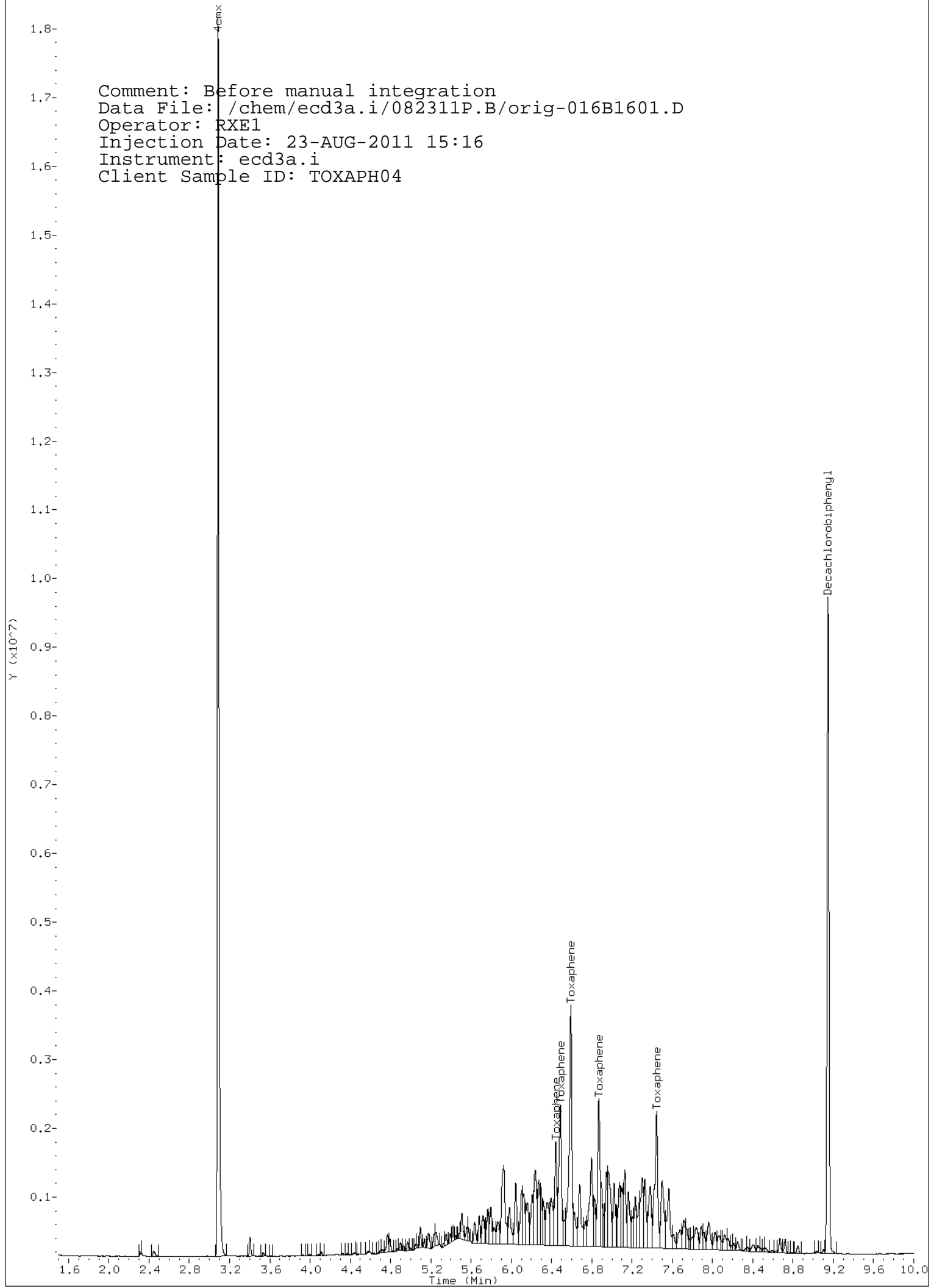
Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



Comment: Manually Integrated  
Data File: /chem/ecd3a.i/082311P.B/016B1601.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 15:16  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH04



Comment: Before manual integration  
Data File: /chem/ecd3a.i/082311P.B/orig-016B1601.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 15:16  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH04



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CLP-1

Data file : /chem/ecd3a.i/082311P.B/017F1701.D  
Lab Smp Id: IPE110418-40TX Client Smp ID: TOXAPH05  
Inj Date : 23-AUG-2011 15:31  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |IPE110418-40TX  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/082311P.B/ECD3-F-8081-081211p.m  
Meth Date : 24-Aug-2011 11:24 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036f3601.d  
Als bottle: 17 Calibration Sample, Level: 5  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: tox.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                  |        |        |             |
|---------------------------|--------|--------|----------|---------|------------------|--------|--------|-------------|
|                           |        |        | CAL-AMT  | ON-COL  |                  |        |        |             |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)          | TARGET | RANGE  | RATIO       |
| ==                        | =====  | =====  | =====    | =====   | =====            | =====  | =====  | =====       |
| 23 Toxaphene              |        |        |          |         | CAS #: 8001-35-2 |        |        |             |
| 5.172                     | 5.172  | 0.000  | 10856309 | 3000.00 | 3040             | 80.00- | 120.00 | 100.00 (AM) |
| 5.291                     | 5.290  | 0.001  | 6815578  | 3000.00 | 3200             | 36.25- | 76.25  | 62.78       |
| 5.509                     | 5.509  | 0.000  | 8560040  | 3000.00 | 3210             | 55.59- | 95.59  | 78.85       |
| 5.835                     | 5.837  | -0.002 | 5928077  | 3000.00 | 3250             | 30.01- | 70.01  | 54.60       |
| 5.936                     | 5.935  | 0.001  | 8909481  | 3000.00 | 3130             | 59.02- | 99.02  | 82.07       |
| Average of Peak Amounts = |        |        |          |         | 3.17e+03         |        |        |             |
| -----                     |        |        |          |         |                  |        |        |             |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8  |        |        |             |
| 2.453                     | 2.455  | -0.002 | 48869734 | 400.000 | 429              | 80.00- | 120.00 | 100.00 (A)  |
| -----                     |        |        |          |         |                  |        |        |             |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3 |        |        |             |
| 7.426                     | 7.425  | 0.001  | 31221031 | 400.000 | 451              | 80.00- | 120.00 | 100.00      |

QC Flag Legend

- A - Target compound detected but, quantitated amount exceeded maximum amount.  
M - Compound response manually integrated.

Data File: /chem/ecd3a.i/082311P.B/017F1701.D

Date : 23-AUG-2011 15:31

Client ID: TOXAPH05

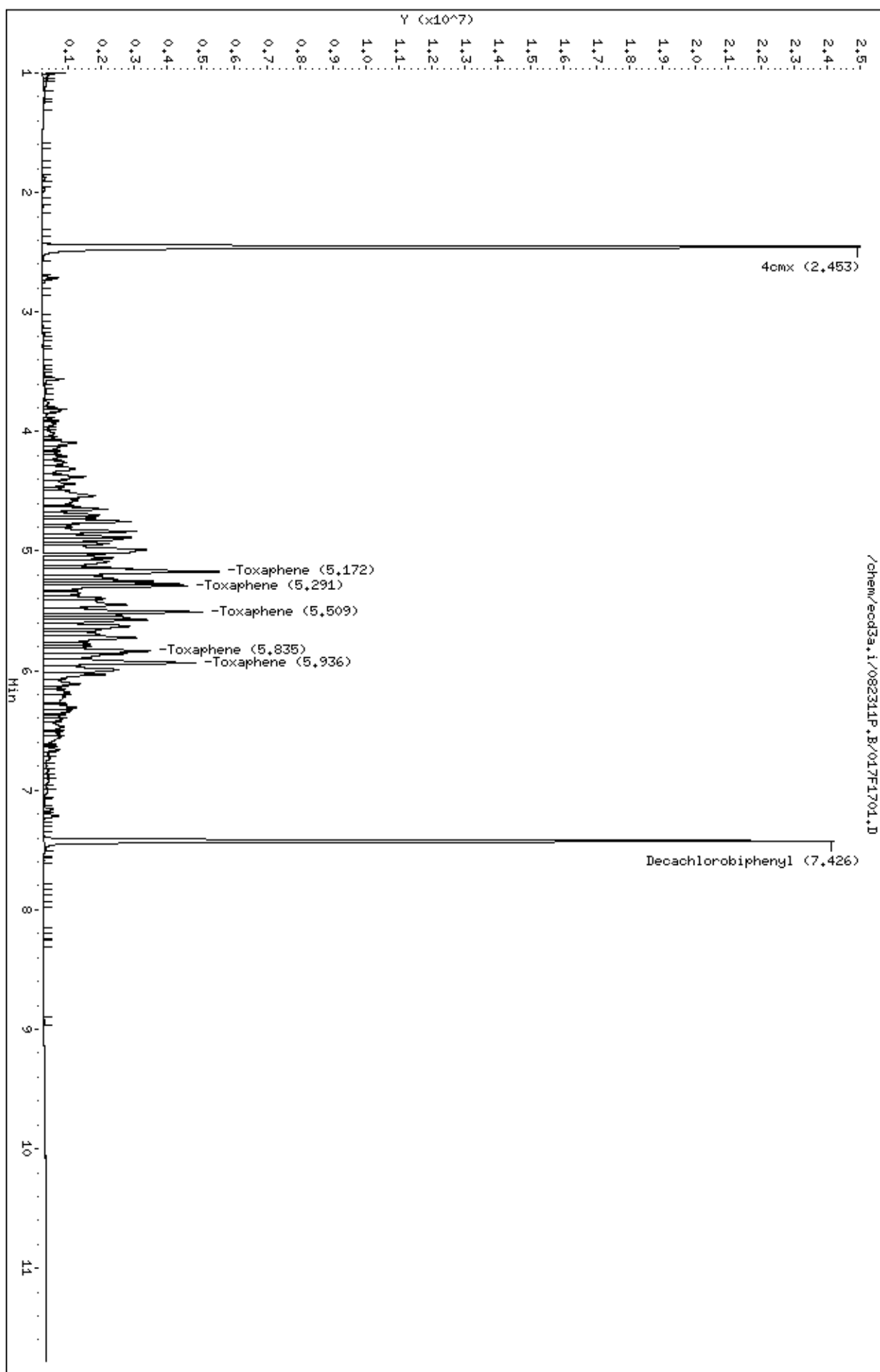
Sample Info: IIP110418-40TX

Column phase: CLP-1

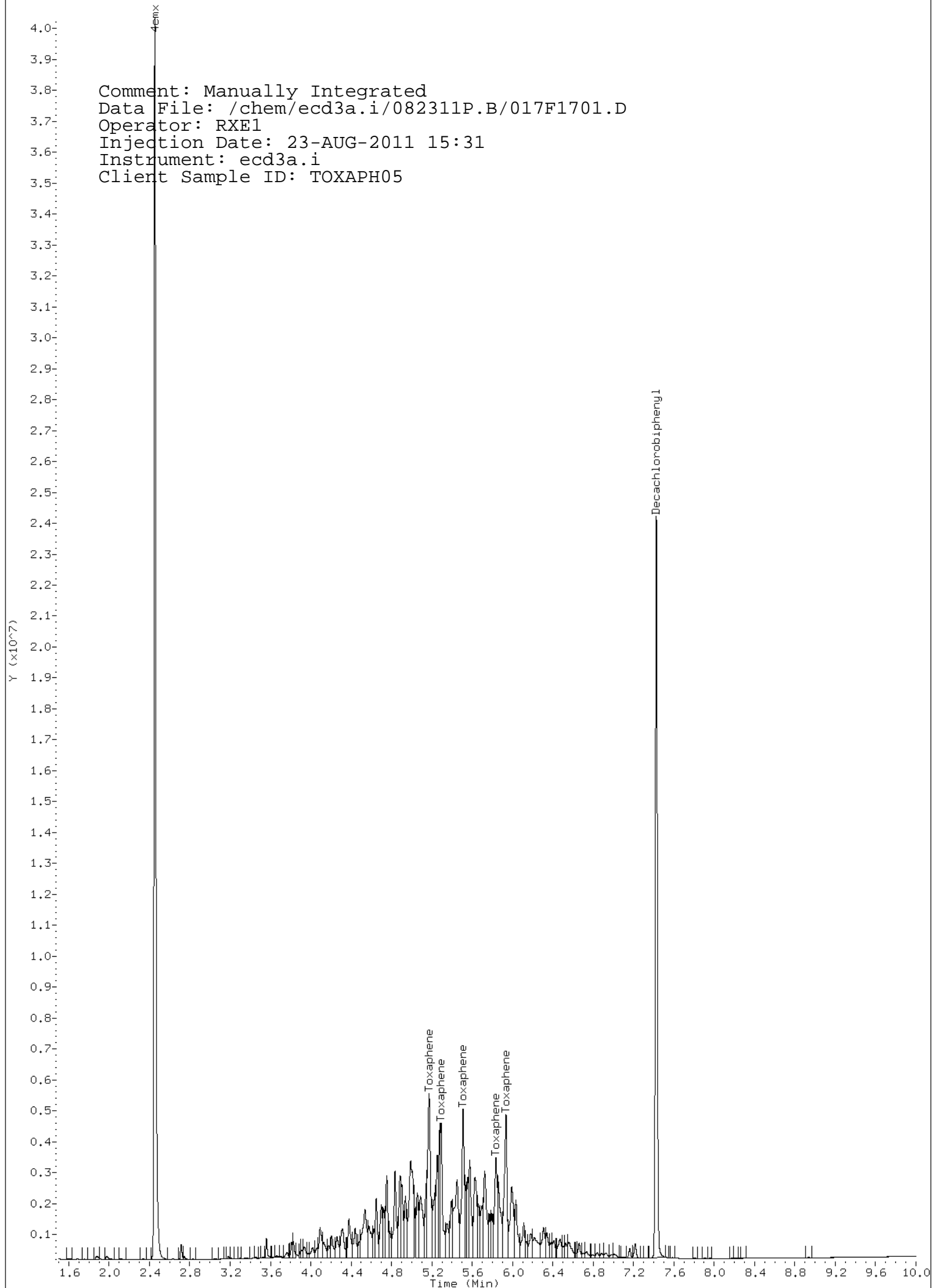
Instrument: ecd3a.i

Operator: RXE1

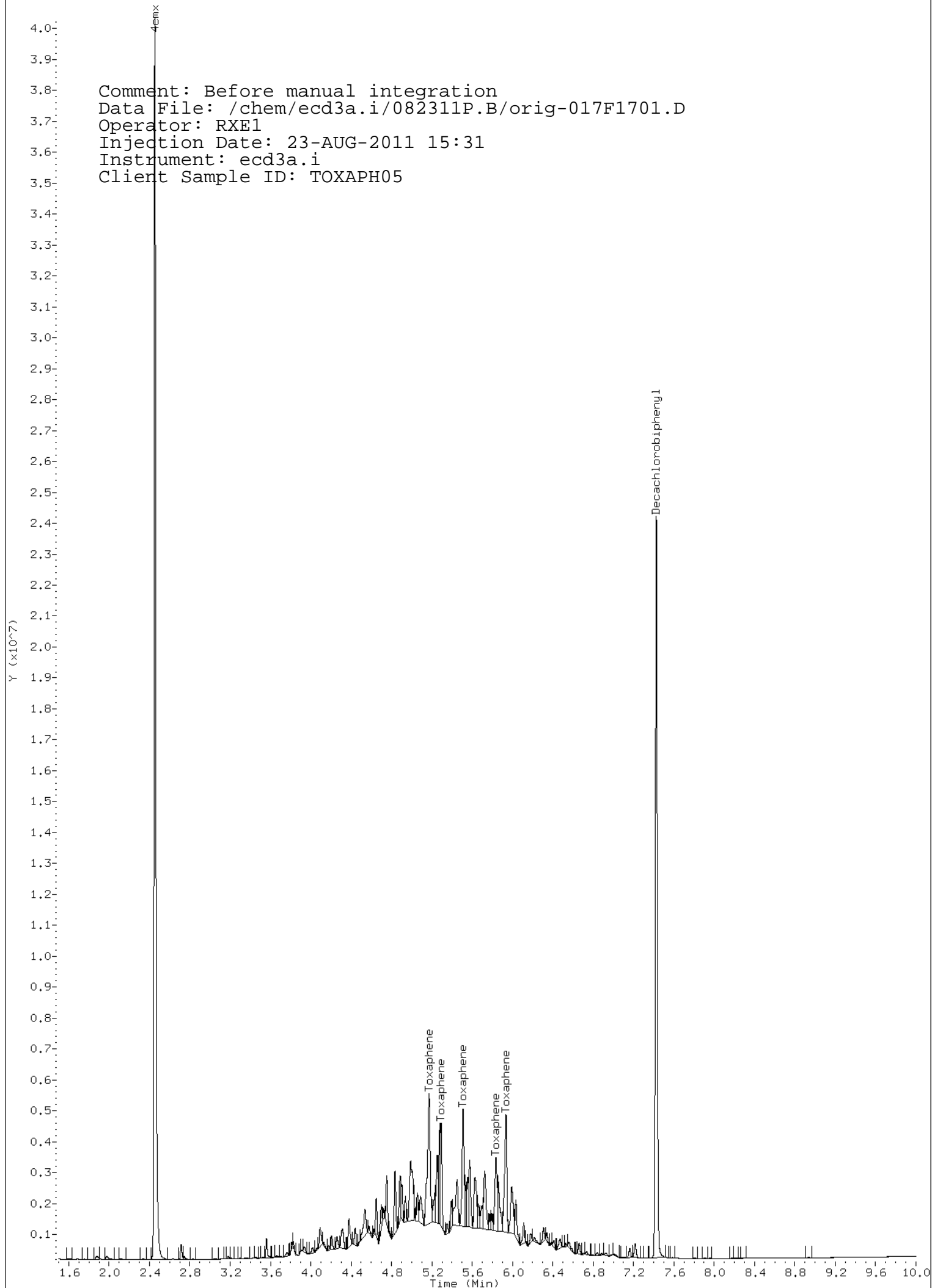
Column diameter: 0.25



Comment: Manually Integrated  
Data File: /chem/ecd3a.i/082311P.B/017F1701.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 15:31  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH05



Comment: Before manual integration  
Data File: /chem/ecd3a.i/082311P.B/orig-017F1701.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 15:31  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH05



Data File: /chem/ecd3a.i/082311P.B/017B1701.D  
Report Date: 30-Aug-2011 15:44

Page 1

GEL Laboratories LLC

CLP-2

Data file : /chem/ecd3a.i/082311P.B/017B1701.D  
Lab Smp Id: IPE110418-40TX Client Smp ID: TOXAPH05  
Inj Date : 23-AUG-2011 15:31  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |IPE110418-40TX  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/082311P.B/ECD3-B-8081-081211p.m  
Meth Date : 24-Aug-2011 11:24 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036b3601.d  
Als bottle: 17 Calibration Sample, Level: 5  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: tox.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                  |         |        |           |
|---------------------------|--------|--------|----------|---------|------------------|---------|--------|-----------|
|                           |        |        | CAL-AMT  |         | ON-COL           |         |        |           |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)          | TARGET  | RANGE  | RATIO     |
| ==                        | =====  | =====  | =====    | =====   | =====            | =====   | =====  | =====     |
| 23 Toxaphene              |        |        |          |         | CAS #: 8001-35-2 |         |        |           |
| 6.443                     | 6.443  | 0.000  | 3942068  | 3000.00 | 2770             | 80.00-  | 120.00 | 100.00(M) |
| 6.488                     | 6.489  | -0.001 | 6465768  | 3000.00 | 2790             | 144.48- | 184.48 | 164.02    |
| 6.592                     | 6.591  | 0.001  | 11361524 | 3000.00 | 2860             | 268.66- | 308.66 | 288.21    |
| 6.870                     | 6.870  | 0.000  | 5983988  | 3000.00 | 2840             | 133.17- | 173.17 | 151.80    |
| 7.446                     | 7.445  | 0.001  | 6702982  | 3000.00 | 2790             | 151.31- | 191.31 | 170.04    |
| Average of Peak Amounts = |        |        |          |         | 2.81e+03         |         |        |           |
| -----                     |        |        |          |         |                  |         |        |           |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8  |         |        |           |
| 3.086                     | 3.086  | 0.000  | 29475840 | 400.000 | 369              | 80.00-  | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |         |        |           |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3 |         |        |           |
| 9.149                     | 9.148  | 0.001  | 18756044 | 400.000 | 388              | 80.00-  | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |         |        |           |

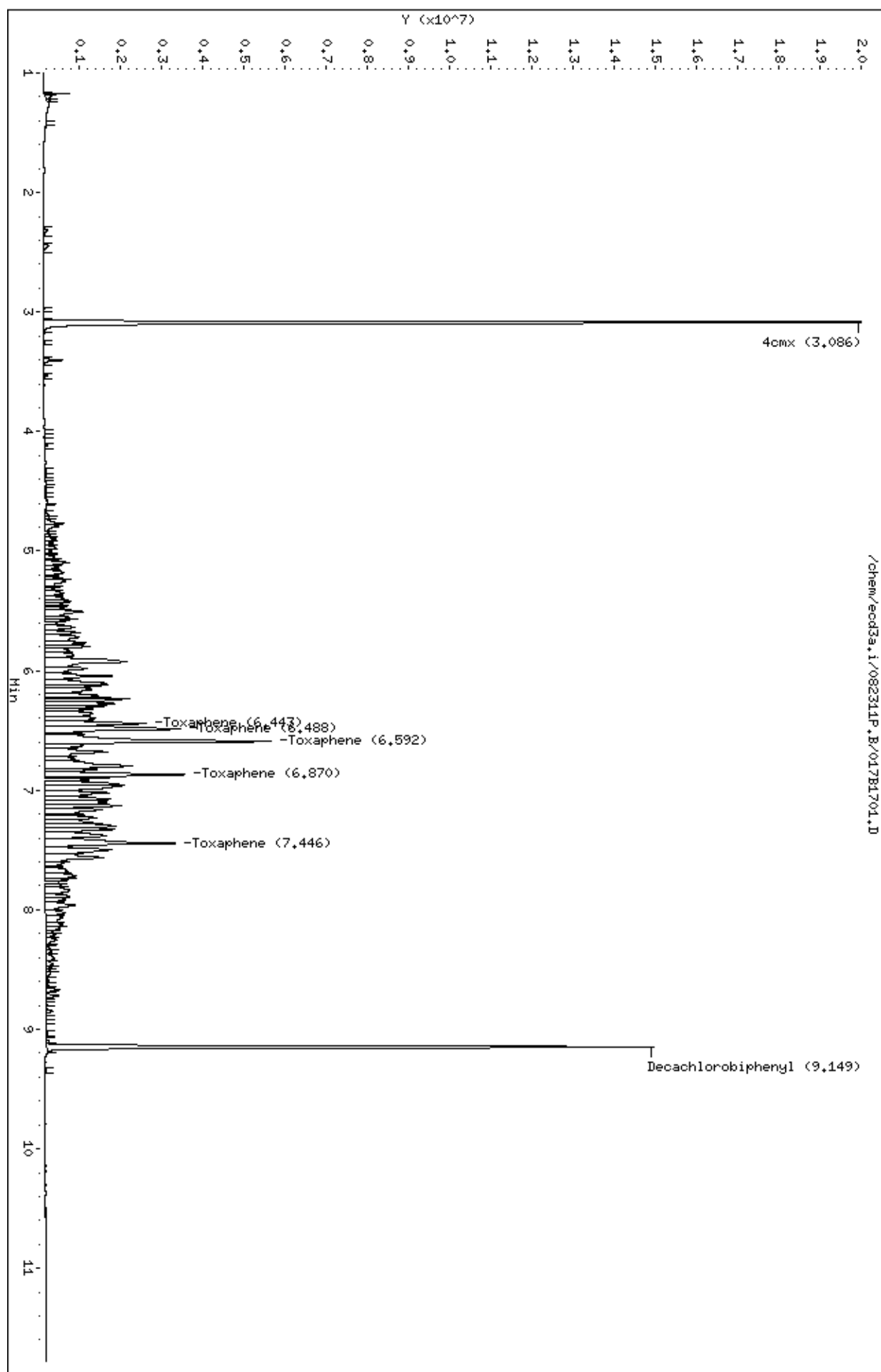
QC Flag Legend

M - Compound response manually integrated.

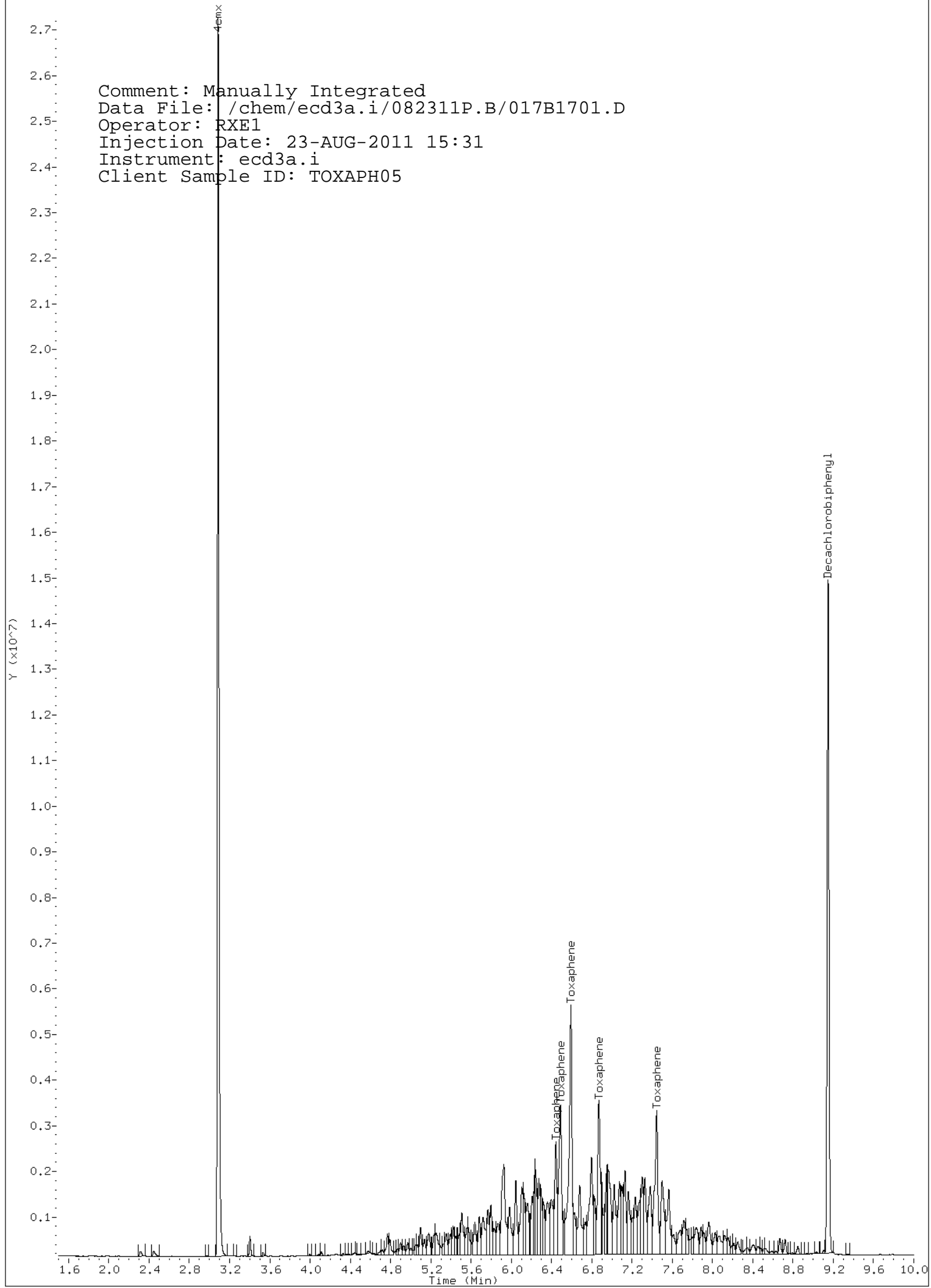


Data File: /chem/ecod3a.i/082311P.B/017B1701.D  
Date : 23-AUG-2011 15:31  
Client ID: TOXAPH05  
Sample Info: IPE110418-40TX  
Column phase: CLP-2

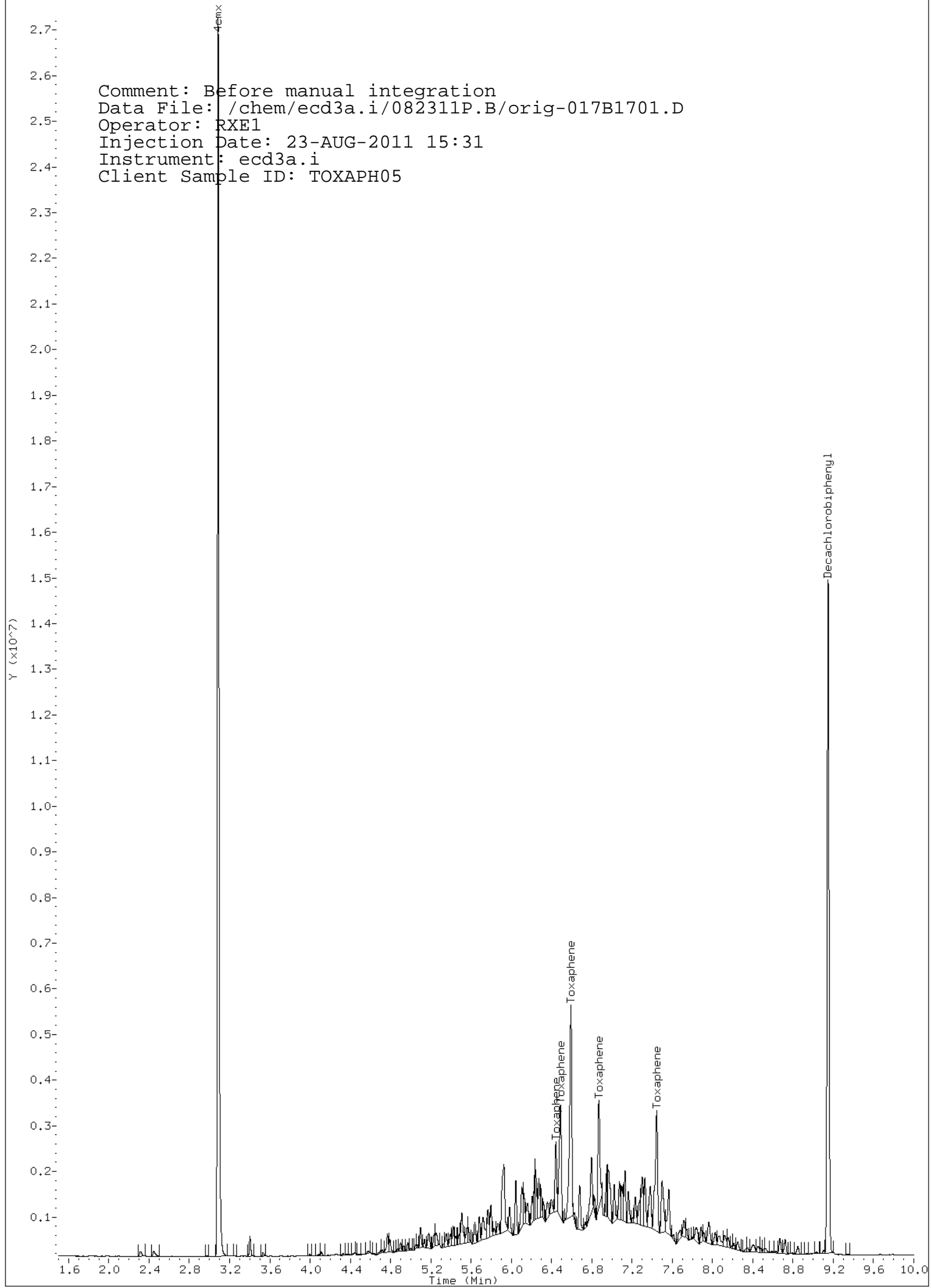
Instrument: ecod3a.i  
Operator: RXE1  
Column diameter: 0.25



Comment: Manually Integrated  
Data File: /chem/ecd3a.i/082311P.B/017B1701.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 15:31  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH05



Comment: Before manual integration  
Data File: /chem/ecd3a.i/082311P.B/orig-017B1701.D  
Operator: RXE1  
Injection Date: 23-AUG-2011 15:31  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH05



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CLP-1

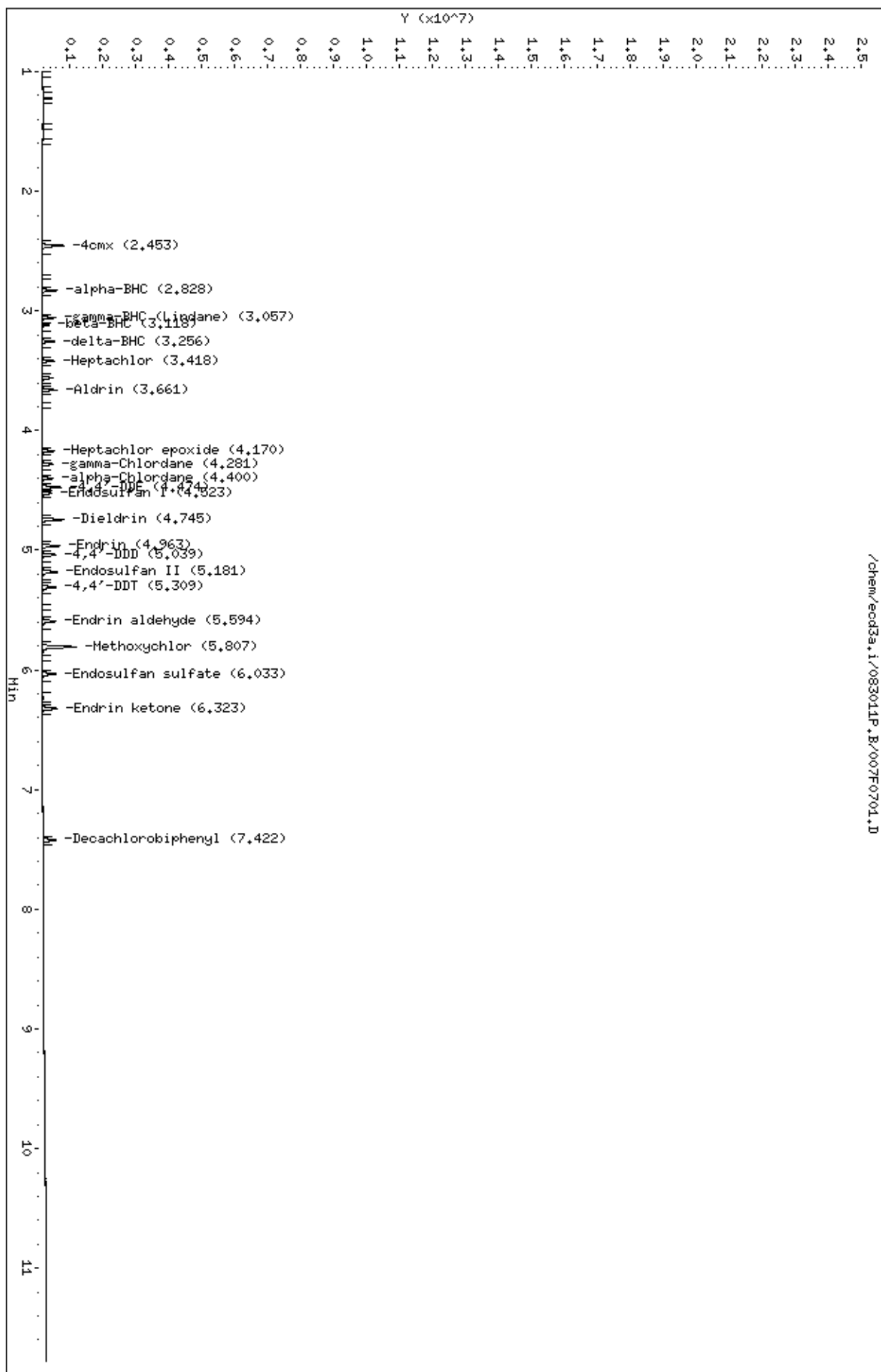
Data file : /chem/ecd3a.i/083011P.B/007F0701.D  
Lab Smp Id: WPE110830-01AB Client Smp ID: INDAB01  
Inj Date : 30-AUG-2011 16:39  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110830-01AB  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
Meth Date : 31-Aug-2011 11:26 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 05:44 Cal File: 032f3201.d  
Als bottle: 7 Calibration Sample, Level: 1  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: indab.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS |                     |        |          |         |         |               |        |
|---------|---------------------|--------|----------|---------|---------|---------------|--------|
| RT      | EXP RT              | DLT RT | CAL-AMT  |         | ON-COL  | TARGET RANGE  | RATIO  |
| ==      | =====               | =====  | RESPONSE | ( ug/L) | ( ug/L) | =====         | =====  |
| 5       | alpha-BHC           |        |          |         | CAS #:  | 319-84-6      |        |
| 2.828   | 2.828               | 0.000  | 415100   | 4.00000 | 2.72    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 7       | gamma-BHC (Lindane) |        |          |         | CAS #:  | 58-89-9       |        |
| 3.057   | 3.056               | 0.001  | 384990   | 4.00000 | 2.80    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 12      | beta-BHC            |        |          |         | CAS #:  | 319-85-7      |        |
| 3.118   | 3.117               | 0.001  | 205251   | 4.00000 | 3.30    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 10      | Heptachlor          |        |          |         | CAS #:  | 76-44-8       |        |
| 3.418   | 3.419               | -0.001 | 351564   | 4.00000 | 3.04    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 13      | delta-BHC           |        |          |         | CAS #:  | 319-86-8      |        |
| 3.256   | 3.255               | 0.001  | 357260   | 4.00000 | 2.81    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 11      | Aldrin              |        |          |         | CAS #:  | 309-00-2      |        |
| 3.661   | 3.662               | -0.001 | 406393   | 4.00000 | 2.80    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 14      | Heptachlor epoxide  |        |          |         | CAS #:  | 1024-57-3     |        |
| 4.170   | 4.171               | -0.001 | 368745   | 4.00000 | 2.94    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 17      | gamma-Chlordane     |        |          |         | CAS #:  | 5103-74-2     |        |
| 4.281   | 4.282               | -0.001 | 357550   | 4.00000 | 2.83    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 18      | alpha-Chlordane     |        |          |         | CAS #:  | 5103-71-9     |        |
| 4.400   | 4.400               | 0.000  | 353522   | 4.00000 | 3.06    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |

| AMOUNTS                  |        |         |    |                  |         |               |        |
|--------------------------|--------|---------|----|------------------|---------|---------------|--------|
|                          |        | CAL-AMT |    | ON-COL           |         |               |        |
| RT                       | EXP RT | DLT RT  | RT | RESPONSE ( ug/L) | ( ug/L) | TARGET RANGE  | RATIO  |
| ==                       | =====  | =====   |    | =====            | =====   | =====         | =====  |
| 16 Endosulfan I          |        |         |    |                  |         |               |        |
| 4.523                    | 4.523  | 0.000   |    | 328058 4.00000   | 2.92    | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 19 4,4'-DDE              |        |         |    |                  |         |               |        |
| 4.474                    | 4.473  | 0.001   |    | 653667 8.00000   | 5.44    | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 20 Dieldrin              |        |         |    |                  |         |               |        |
| 4.745                    | 4.745  | 0.000   |    | 702814 8.00000   | 5.64    | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 22 Endrin                |        |         |    |                  |         |               |        |
| 4.963                    | 4.964  | -0.001  |    | 591001 8.00000   | 5.85    | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 25 4,4'-DDD              |        |         |    |                  |         |               |        |
| 5.039                    | 5.035  | 0.004   |    | 509041 8.00000   | 5.75    | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 24 Endosulfan II         |        |         |    |                  |         |               |        |
| 5.181                    | 5.179  | 0.002   |    | 549531 8.00000   | 5.96    | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 27 Endrin aldehyde       |        |         |    |                  |         |               |        |
| 5.594                    | 5.592  | 0.002   |    | 499898 8.00000   | 6.38    | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 26 4,4'-DDT              |        |         |    |                  |         |               |        |
| 5.309                    | 5.308  | 0.001   |    | 487005 8.00000   | 5.92    | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 29 Endosulfan sulfate    |        |         |    |                  |         |               |        |
| 6.033                    | 6.033  | 0.000   |    | 512533 8.00000   | 6.28    | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 28 Methoxychlor          |        |         |    |                  |         |               |        |
| 5.807                    | 5.807  | 0.000   |    | 1262607 40.0000  | 35.1    | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 31 Endrin ketone         |        |         |    |                  |         |               |        |
| 6.323                    | 6.323  | 0.000   |    | 563045 8.00000   | 6.18    | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| \$ 1 4cmx                |        |         |    |                  |         |               |        |
| 2.453                    | 2.452  | 0.001   |    | 784099 8.00000   | 6.40    | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| \$ 32 Decachlorobiphenyl |        |         |    |                  |         |               |        |
| 7.422                    | 7.423  | -0.001  |    | 506927 8.00000   | 6.77    | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |

Data File: /chem/ecod3a.i/083011P.B/007F0701.D  
 Date : 30-JUC-2011 16:39  
 Client ID: INDA801  
 Sample Info: IMPE110830-01aB  
 Column phase: CLP-1

Instrument: ecod3a.i  
 Operator: RXE1  
 Column diameter: 0.25



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CLP-2

Data file : /chem/ecd3a.i/083011P.B/007B0701.D  
Lab Smp Id: WPE110830-01AB Client Smp ID: INDAB01  
Inj Date : 30-AUG-2011 16:39  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110830-01AB  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
Meth Date : 31-Aug-2011 11:22 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 05:44 Cal File: 032b3201.d  
Als bottle: 7 Calibration Sample, Level: 1  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: indab.sub  
Target Version: 3.50 Sample Matrix: None

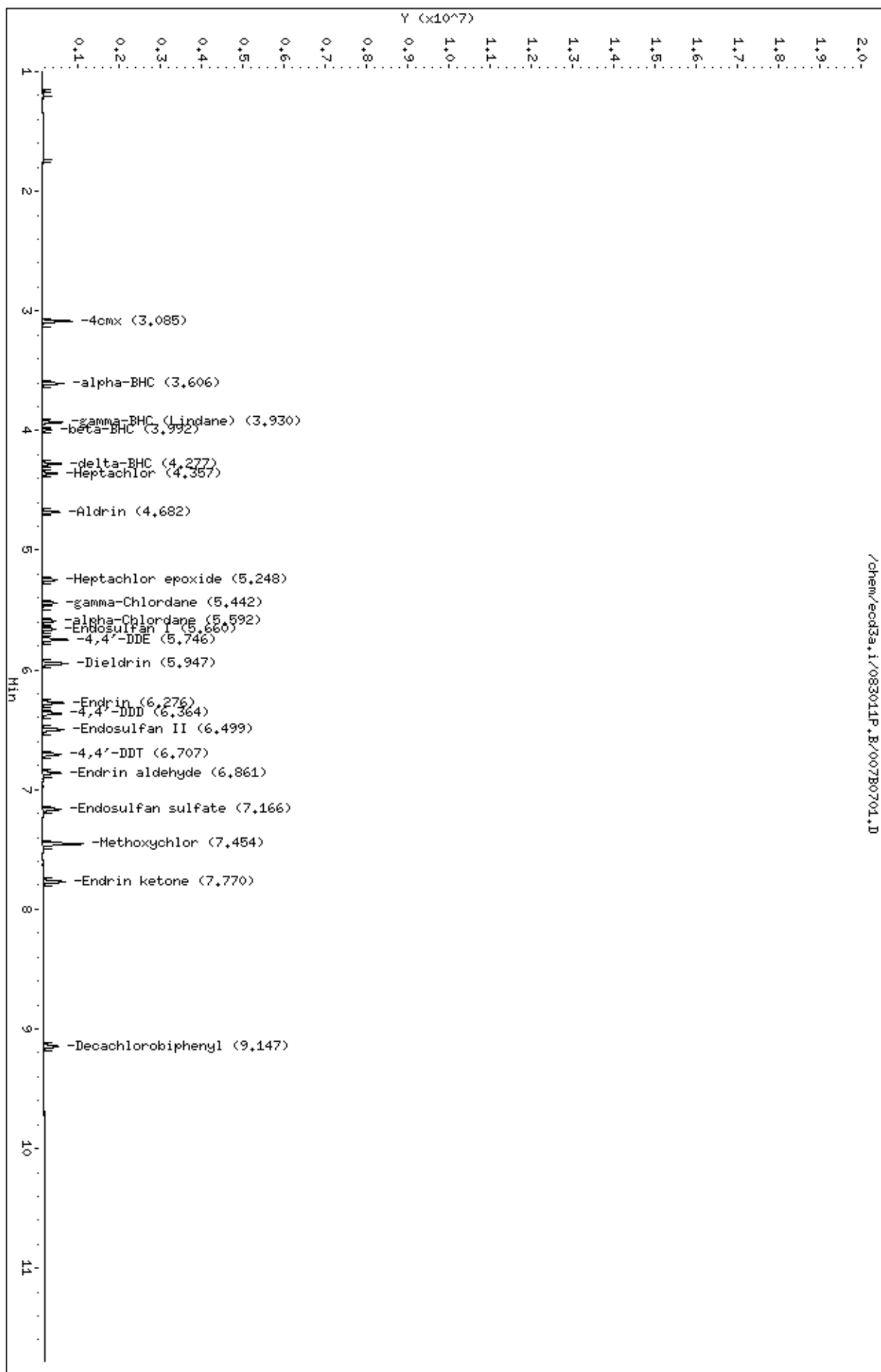
| AMOUNTS |                     |        |          |         |         |               |        |
|---------|---------------------|--------|----------|---------|---------|---------------|--------|
| RT      | EXP RT              | DLT RT | CAL-AMT  |         | ON-COL  | TARGET RANGE  | RATIO  |
| ==      | =====               | =====  | RESPONSE | ( ug/L) | ( ug/L) | =====         | =====  |
| 5       | alpha-BHC           |        |          |         | CAS #:  | 319-84-6      |        |
| 3.606   | 3.607               | -0.001 | 506726   | 4.00000 | 4.01    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 7       | gamma-BHC (Lindane) |        |          |         | CAS #:  | 58-89-9       |        |
| 3.930   | 3.931               | -0.001 | 461594   | 4.00000 | 4.08    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 12      | beta-BHC            |        |          |         | CAS #:  | 319-85-7      |        |
| 3.992   | 3.992               | 0.000  | 214543   | 4.00000 | 4.40    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 10      | Heptachlor          |        |          |         | CAS #:  | 76-44-8       |        |
| 4.357   | 4.359               | -0.002 | 361670   | 4.00000 | 3.98    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 13      | delta-BHC           |        |          |         | CAS #:  | 319-86-8      |        |
| 4.277   | 4.279               | -0.002 | 445552   | 4.00000 | 3.99    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 11      | Aldrin              |        |          |         | CAS #:  | 309-00-2      |        |
| 4.682   | 4.684               | -0.002 | 444533   | 4.00000 | 4.15    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 14      | Heptachlor epoxide  |        |          |         | CAS #:  | 1024-57-3     |        |
| 5.248   | 5.249               | -0.001 | 393668   | 4.00000 | 4.16    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 17      | gamma-Chlordane     |        |          |         | CAS #:  | 5103-74-2     |        |
| 5.442   | 5.443               | -0.001 | 381735   | 4.00000 | 4.09    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 18      | alpha-Chlordane     |        |          |         | CAS #:  | 5103-71-9     |        |
| 5.592   | 5.593               | -0.001 | 382805   | 4.00000 | 4.18    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |

| AMOUNTS                  |        |        |          |         |             |            |               |        |
|--------------------------|--------|--------|----------|---------|-------------|------------|---------------|--------|
|                          |        |        | CAL-AMT  |         | ON-COL      |            |               |        |
| RT                       | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)     | TARGET     | RANGE         | RATIO  |
| ==                       | =====  | =====  | =====    | =====   | =====       | =====      | =====         | =====  |
| 16 Endosulfan I          |        |        |          |         |             |            |               |        |
| 5.660                    | 5.661  | -0.001 | 357212   | 4.00000 | CAS #: 4.20 | 959-98-8   | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 19 4,4'-DDE              |        |        |          |         |             |            |               |        |
| 5.746                    | 5.747  | -0.001 | 695144   | 8.00000 | CAS #: 8.07 | 72-55-9    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 20 Dieldrin              |        |        |          |         |             |            |               |        |
| 5.947                    | 5.948  | -0.001 | 720558   | 8.00000 | CAS #: 8.11 | 60-57-1    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 22 Endrin                |        |        |          |         |             |            |               |        |
| 6.276                    | 6.276  | 0.000  | 592341   | 8.00000 | CAS #: 8.19 | 72-20-8    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 25 4,4'-DDD              |        |        |          |         |             |            |               |        |
| 6.364                    | 6.363  | 0.001  | 543854   | 8.00000 | CAS #: 7.93 | 72-54-8    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 24 Endosulfan II         |        |        |          |         |             |            |               |        |
| 6.499                    | 6.499  | 0.000  | 626745   | 8.00000 | CAS #: 8.44 | 33213-65-9 | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 27 Endrin aldehyde       |        |        |          |         |             |            |               |        |
| 6.861                    | 6.862  | -0.001 | 524925   | 8.00000 | CAS #: 8.45 | 7421-93-4  | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 26 4,4'-DDT              |        |        |          |         |             |            |               |        |
| 6.707                    | 6.707  | 0.000  | 515058   | 8.00000 | CAS #: 7.96 | 50-29-3    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 29 Endosulfan sulfate    |        |        |          |         |             |            |               |        |
| 7.166                    | 7.165  | 0.001  | 532674   | 8.00000 | CAS #: 8.16 | 1031-07-8  | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 28 Methoxychlor          |        |        |          |         |             |            |               |        |
| 7.454                    | 7.455  | -0.001 | 1156813  | 40.0000 | CAS #: 41.4 | 72-43-5    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 31 Endrin ketone         |        |        |          |         |             |            |               |        |
| 7.770                    | 7.772  | -0.002 | 659095   | 8.00000 | CAS #: 8.42 | 53494-70-5 | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| \$ 1 4cmx                |        |        |          |         |             |            |               |        |
| 3.085                    | 3.086  | -0.001 | 742930   | 8.00000 | CAS #: 8.69 | 877-09-8   | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| \$ 32 Decachlorobiphenyl |        |        |          |         |             |            |               |        |
| 9.147                    | 9.147  | 0.000  | 468210   | 8.00000 | CAS #: 9.13 | 2051-24-3  | 80.00- 120.00 | 100.00 |



Data File: /chem/ecd3a.i/083011P.B/007B0701.D  
Date : 30-JUL-2011 16:39  
Client ID: INDA001  
Sample Info: IMPE110830-01aB  
Column phase: CLP-2

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



GEL Laboratories LLC

CLP-1

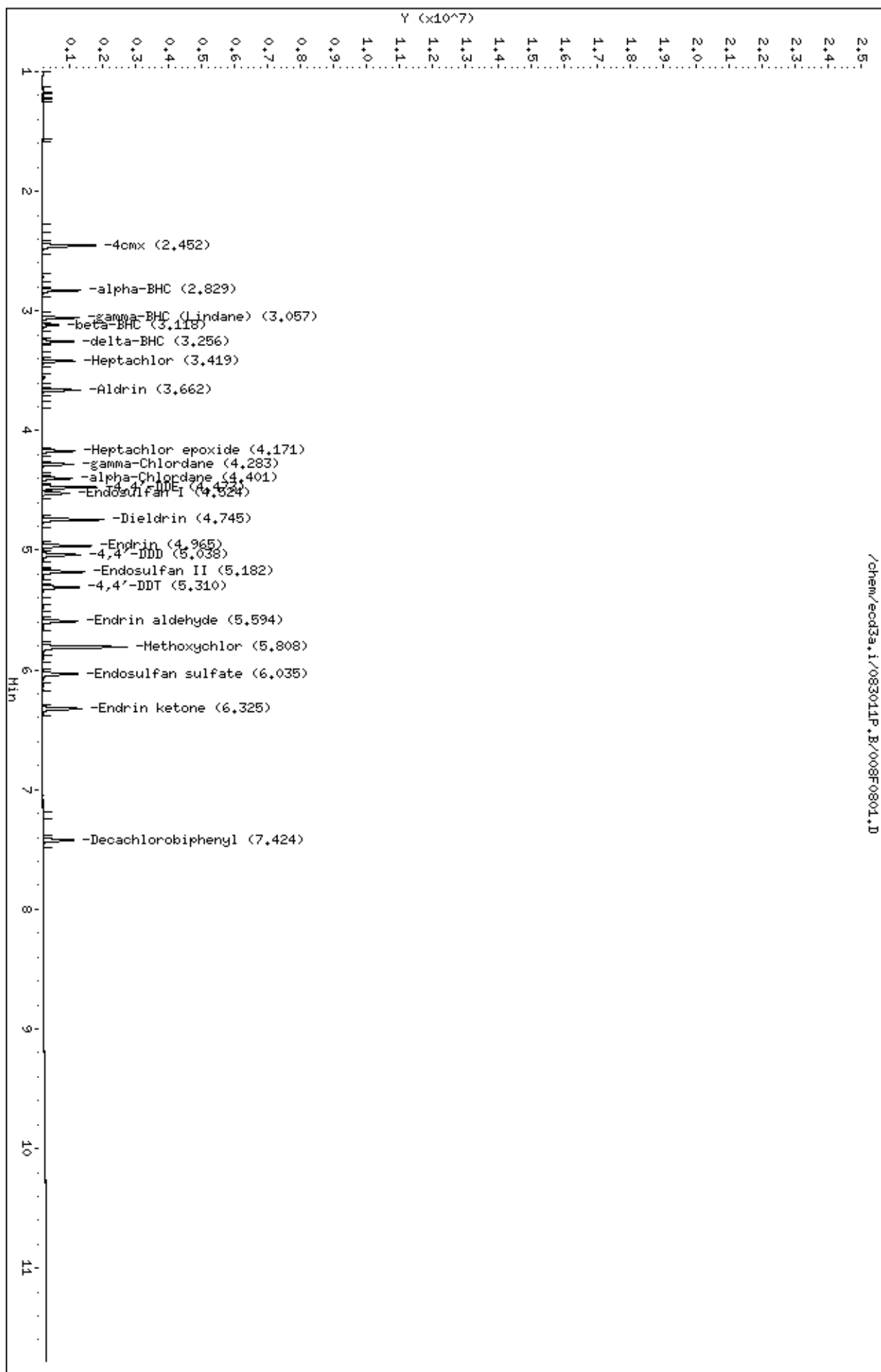
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Operator : RXE1 Inst ID: ecd3a.i  
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Misc Info :  
Comment :  
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Cal Date : 30-NOV-2010 06:00 Cal File: 033f3301.d  
Als bottle: 8 Calibration Sample, Level: 2  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: indab.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS |                     |        |                  |         |                  |               |        |
|---------|---------------------|--------|------------------|---------|------------------|---------------|--------|
| RT      | EXP RT              | DLT RT | CAL-AMT          |         | ON-COL           | TARGET RANGE  | RATIO  |
| ==      | =====               | =====  | RESPONSE ( ug/L) |         | ( ug/L)          |               | =====  |
| 5       | alpha-BHC           |        |                  |         | CAS #: 319-84-6  |               |        |
| 2.829   | 2.828               | 0.001  | 1111250          | 10.0000 | 7.63             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 7       | gamma-BHC (Lindane) |        |                  |         | CAS #: 58-89-9   |               |        |
| 3.057   | 3.056               | 0.001  | 1027842          | 10.0000 | 7.86             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 12      | beta-BHC            |        |                  |         | CAS #: 319-85-7  |               |        |
| 3.118   | 3.117               | 0.001  | 496080           | 10.0000 | 8.39             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 10      | Heptachlor          |        |                  |         | CAS #: 76-44-8   |               |        |
| 3.419   | 3.419               | 0.000  | 930357           | 10.0000 | 8.40             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 13      | delta-BHC           |        |                  |         | CAS #: 319-86-8  |               |        |
| 3.256   | 3.255               | 0.001  | 913171           | 10.0000 | 7.56             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 11      | Aldrin              |        |                  |         | CAS #: 309-00-2  |               |        |
| 3.662   | 3.662               | 0.000  | 1104174          | 10.0000 | 7.97             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 14      | Heptachlor epoxide  |        |                  |         | CAS #: 1024-57-3 |               |        |
| 4.171   | 4.171               | 0.000  | 972126           | 10.0000 | 8.14             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 17      | gamma-Chlordane     |        |                  |         | CAS #: 5103-74-2 |               |        |
| 4.283   | 4.282               | 0.001  | 943386           | 10.0000 | 7.80             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 18      | alpha-Chlordane     |        |                  |         | CAS #: 5103-71-9 |               |        |
| 4.401   | 4.400               | 0.001  | 934942           | 10.0000 | 8.37             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |

| AMOUNTS                  |        |        |    |          |         |                   |               |        |
|--------------------------|--------|--------|----|----------|---------|-------------------|---------------|--------|
| RT                       | EXP RT | DLT RT | RT | CAL-AMT  |         | ON-COL            |               | RATIO  |
|                          |        |        |    | RESPONSE | ( ug/L) | ( ug/L)           | TARGET RANGE  |        |
| ==                       | =====  | =====  |    | =====    | =====   | =====             | =====         | =====  |
| 16 Endosulfan I          |        |        |    |          |         | CAS #: 959-98-8   |               |        |
| 4.524                    | 4.523  | 0.001  |    | 859929   | 10.0000 | 8.06              | 80.00- 120.00 | 100.00 |
| -----                    |        |        |    |          |         |                   |               |        |
| 19 4,4'-DDE              |        |        |    |          |         | CAS #: 72-55-9    |               |        |
| 4.473                    | 4.473  | 0.000  |    | 1823909  | 20.0000 | 15.9              | 80.00- 120.00 | 100.00 |
| -----                    |        |        |    |          |         |                   |               |        |
| 20 Dieldrin              |        |        |    |          |         | CAS #: 60-57-1    |               |        |
| 4.745                    | 4.745  | 0.000  |    | 1943970  | 20.0000 | 16.4              | 80.00- 120.00 | 100.00 |
| -----                    |        |        |    |          |         |                   |               |        |
| 22 Endrin                |        |        |    |          |         | CAS #: 72-20-8    |               |        |
| 4.965                    | 4.964  | 0.001  |    | 1596125  | 20.0000 | 16.5              | 80.00- 120.00 | 100.00 |
| -----                    |        |        |    |          |         |                   |               |        |
| 25 4,4'-DDD              |        |        |    |          |         | CAS #: 72-54-8    |               |        |
| 5.038                    | 5.035  | 0.003  |    | 1360896  | 20.0000 | 16.0              | 80.00- 120.00 | 100.00 |
| -----                    |        |        |    |          |         |                   |               |        |
| 24 Endosulfan II         |        |        |    |          |         | CAS #: 33213-65-9 |               |        |
| 5.182                    | 5.179  | 0.003  |    | 1432401  | 20.0000 | 16.4              | 80.00- 120.00 | 100.00 |
| -----                    |        |        |    |          |         |                   |               |        |
| 27 Endrin aldehyde       |        |        |    |          |         | CAS #: 7421-93-4  |               |        |
| 5.594                    | 5.592  | 0.002  |    | 1281753  | 20.0000 | 17.1              | 80.00- 120.00 | 100.00 |
| -----                    |        |        |    |          |         |                   |               |        |
| 26 4,4'-DDT              |        |        |    |          |         | CAS #: 50-29-3    |               |        |
| 5.310                    | 5.308  | 0.002  |    | 1280697  | 20.0000 | 16.4              | 80.00- 120.00 | 100.00 |
| -----                    |        |        |    |          |         |                   |               |        |
| 29 Endosulfan sulfate    |        |        |    |          |         | CAS #: 1031-07-8  |               |        |
| 6.035                    | 6.033  | 0.002  |    | 1322699  | 20.0000 | 16.9              | 80.00- 120.00 | 100.00 |
| -----                    |        |        |    |          |         |                   |               |        |
| 28 Methoxychlor          |        |        |    |          |         | CAS #: 72-43-5    |               |        |
| 5.808                    | 5.807  | 0.001  |    | 3114869  | 100.000 | 91.1              | 80.00- 120.00 | 100.00 |
| -----                    |        |        |    |          |         |                   |               |        |
| 31 Endrin ketone         |        |        |    |          |         | CAS #: 53494-70-5 |               |        |
| 6.325                    | 6.323  | 0.002  |    | 1433572  | 20.0000 | 16.7              | 80.00- 120.00 | 100.00 |
| -----                    |        |        |    |          |         |                   |               |        |
| \$ 1 4cmx                |        |        |    |          |         | CAS #: 877-09-8   |               |        |
| 2.452                    | 2.452  | 0.000  |    | 1983954  | 20.0000 | 17.0              | 80.00- 120.00 | 100.00 |
| -----                    |        |        |    |          |         |                   |               |        |
| \$ 32 Decachlorobiphenyl |        |        |    |          |         | CAS #: 2051-24-3  |               |        |
| 7.424                    | 7.423  | 0.001  |    | 1239446  | 20.0000 | 17.4              | 80.00- 120.00 | 100.00 |
| -----                    |        |        |    |          |         |                   |               |        |

Data File: /chem/ecd3a.i/083011P.B/008F0801.D  
Date : 30-JUC-2011 16:55  
Client ID: INDA802  
Sample Info: IMPE110830-029B  
Column phase: CLP-1

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



Data File: /chem/ecd3a.i/083011P.B/008B0801.D  
Report Date: 31-Aug-2011 14:55

Page 1

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CLP-2

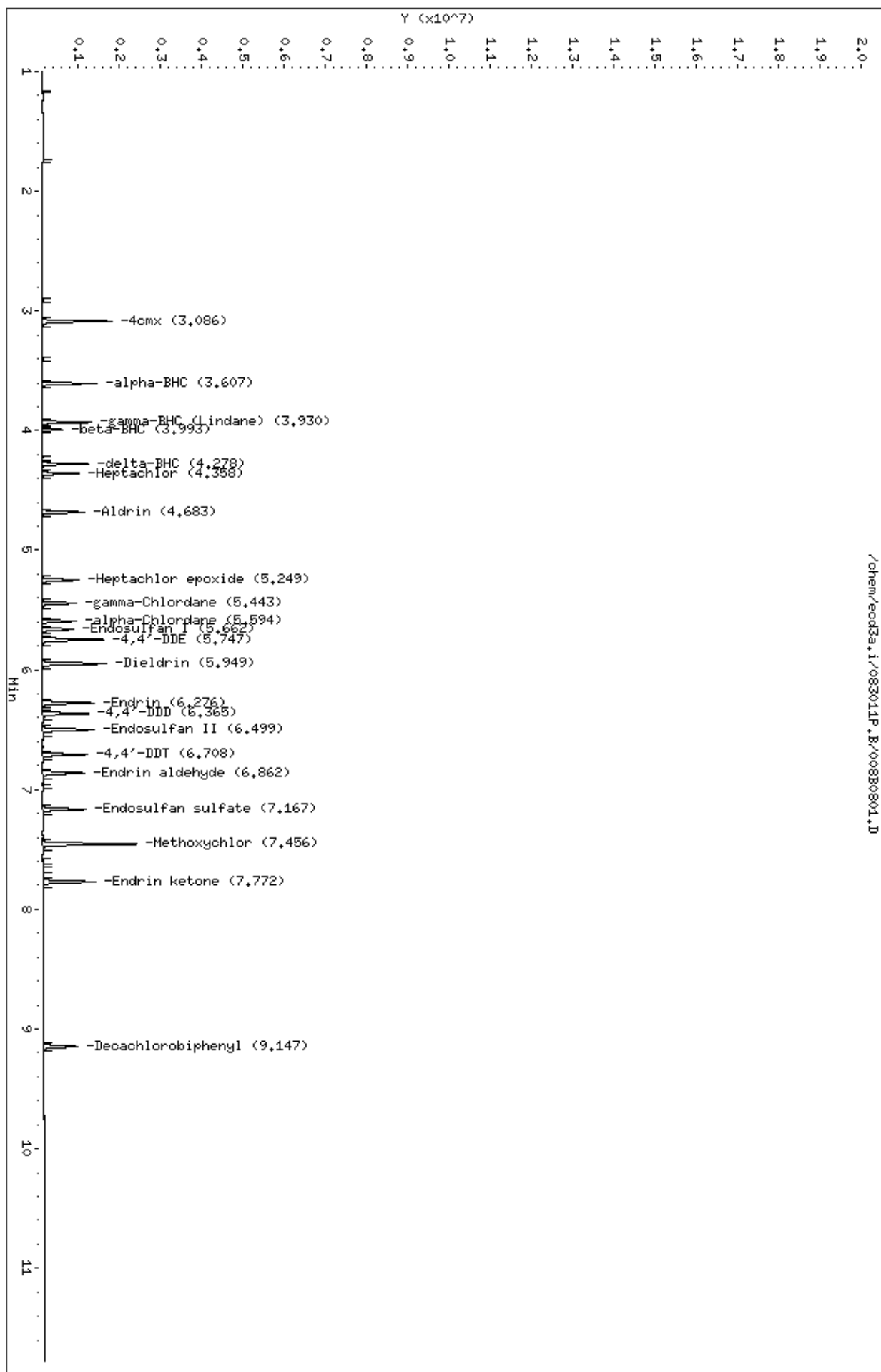
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Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110830-02AB  
Misc Info :  
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Meth Date : 31-Aug-2011 11:22 reb01393 Quant Type: ESTD  
Cal Date : 21-DEC-2010 12:13 Cal File: 013b1301.d  
Als bottle: 8 Calibration Sample, Level: 2  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: indab.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS |                     |        |          |         |         |               |        |
|---------|---------------------|--------|----------|---------|---------|---------------|--------|
| RT      | EXP RT              | DLT RT | CAL-AMT  |         | ON-COL  | TARGET RANGE  | RATIO  |
| ==      | =====               | =====  | RESPONSE | ( ug/L) | ( ug/L) | =====         | =====  |
| 5       | alpha-BHC           |        |          |         | CAS #:  | 319-84-6      |        |
| 3.607   | 3.607               | 0.000  | 1245309  | 10.0000 | 10.0    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 7       | gamma-BHC (Lindane) |        |          |         | CAS #:  | 58-89-9       |        |
| 3.930   | 3.931               | -0.001 | 1110243  | 10.0000 | 10.0    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 12      | beta-BHC            |        |          |         | CAS #:  | 319-85-7      |        |
| 3.993   | 3.992               | 0.001  | 492056   | 10.0000 | 10.3    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 10      | Heptachlor          |        |          |         | CAS #:  | 76-44-8       |        |
| 4.358   | 4.359               | -0.001 | 875884   | 10.0000 | 9.92    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 13      | delta-BHC           |        |          |         | CAS #:  | 319-86-8      |        |
| 4.278   | 4.279               | -0.001 | 1087388  | 10.0000 | 9.92    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 11      | Aldrin              |        |          |         | CAS #:  | 309-00-2      |        |
| 4.683   | 4.684               | -0.001 | 1071171  | 10.0000 | 10.2    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 14      | Heptachlor epoxide  |        |          |         | CAS #:  | 1024-57-3     |        |
| 5.249   | 5.249               | 0.000  | 938423   | 10.0000 | 10.2    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 17      | gamma-Chlordane     |        |          |         | CAS #:  | 5103-74-2     |        |
| 5.443   | 5.443               | 0.000  | 925542   | 10.0000 | 10.1    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 18      | alpha-Chlordane     |        |          |         | CAS #:  | 5103-71-9     |        |
| 5.594   | 5.593               | 0.001  | 912203   | 10.0000 | 10.1    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |

| AMOUNTS                  |        |        |          |         |                           |               |        |
|--------------------------|--------|--------|----------|---------|---------------------------|---------------|--------|
| RT                       | EXP RT | DLT RT | CAL-AMT  |         | ON-COL                    | TARGET RANGE  | RATIO  |
|                          |        |        | RESPONSE | ( ug/L) | ( ug/L)                   |               |        |
| ==                       | =====  | =====  | =====    | =====   | =====                     | =====         | =====  |
| 16 Endosulfan I          |        |        |          |         |                           |               |        |
| 5.662                    | 5.661  | 0.001  | 851265   | 10.0000 | CAS #: 959-98-8<br>10.2   | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                           |               |        |
| 19 4,4'-DDE              |        |        |          |         |                           |               |        |
| 5.747                    | 5.747  | 0.000  | 1711035  | 20.0000 | CAS #: 72-55-9<br>20.3    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                           |               |        |
| 20 Dieldrin              |        |        |          |         |                           |               |        |
| 5.949                    | 5.948  | 0.001  | 1752966  | 20.0000 | CAS #: 60-57-1<br>20.2    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                           |               |        |
| 22 Endrin                |        |        |          |         |                           |               |        |
| 6.276                    | 6.276  | 0.000  | 1410066  | 20.0000 | CAS #: 72-20-8<br>20.0    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                           |               |        |
| 25 4,4'-DDD              |        |        |          |         |                           |               |        |
| 6.365                    | 6.363  | 0.002  | 1310269  | 20.0000 | CAS #: 72-54-8<br>19.6    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                           |               |        |
| 24 Endosulfan II         |        |        |          |         |                           |               |        |
| 6.499                    | 6.499  | 0.000  | 1500122  | 20.0000 | CAS #: 33213-65-9<br>20.5 | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                           |               |        |
| 27 Endrin aldehyde       |        |        |          |         |                           |               |        |
| 6.862                    | 6.862  | 0.000  | 1244735  | 20.0000 | CAS #: 7421-93-4<br>20.5  | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                           |               |        |
| 26 4,4'-DDT              |        |        |          |         |                           |               |        |
| 6.708                    | 6.707  | 0.001  | 1225779  | 20.0000 | CAS #: 50-29-3<br>19.5    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                           |               |        |
| 29 Endosulfan sulfate    |        |        |          |         |                           |               |        |
| 7.167                    | 7.165  | 0.002  | 1267482  | 20.0000 | CAS #: 1031-07-8<br>19.9  | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                           |               |        |
| 28 Methoxychlor          |        |        |          |         |                           |               |        |
| 7.456                    | 7.455  | 0.001  | 2679535  | 100.000 | CAS #: 72-43-5<br>99.0    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                           |               |        |
| 31 Endrin ketone         |        |        |          |         |                           |               |        |
| 7.772                    | 7.772  | 0.000  | 1547713  | 20.0000 | CAS #: 53494-70-5<br>20.2 | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                           |               |        |
| \$ 1 4cmx                |        |        |          |         |                           |               |        |
| 3.086                    | 3.086  | 0.000  | 1762113  | 20.0000 | CAS #: 877-09-8<br>20.9   | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                           |               |        |
| \$ 32 Decachlorobiphenyl |        |        |          |         |                           |               |        |
| 9.147                    | 9.147  | 0.000  | 1053054  | 20.0000 | CAS #: 2051-24-3<br>20.9  | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                           |               |        |

Data File: /chem/ecd3a.i/083011P.B/008B0801.D  
Date : 30-JUL-2011 16:55  
Client ID: INDA802  
Sample Info: IAP0110830-02AB  
Column phase: CLP-2

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/083011P.B/009F0901.D  
Lab Smp Id: WPE110830-03AB Client Smp ID: INDAB03  
Inj Date : 30-AUG-2011 17:10  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110830-03AB  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
Meth Date : 31-Aug-2011 11:26 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:15 Cal File: 034f3401.d  
Als bottle: 9 Calibration Sample, Level: 3  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: indab.sub  
Target Version: 3.50 Sample Matrix: None

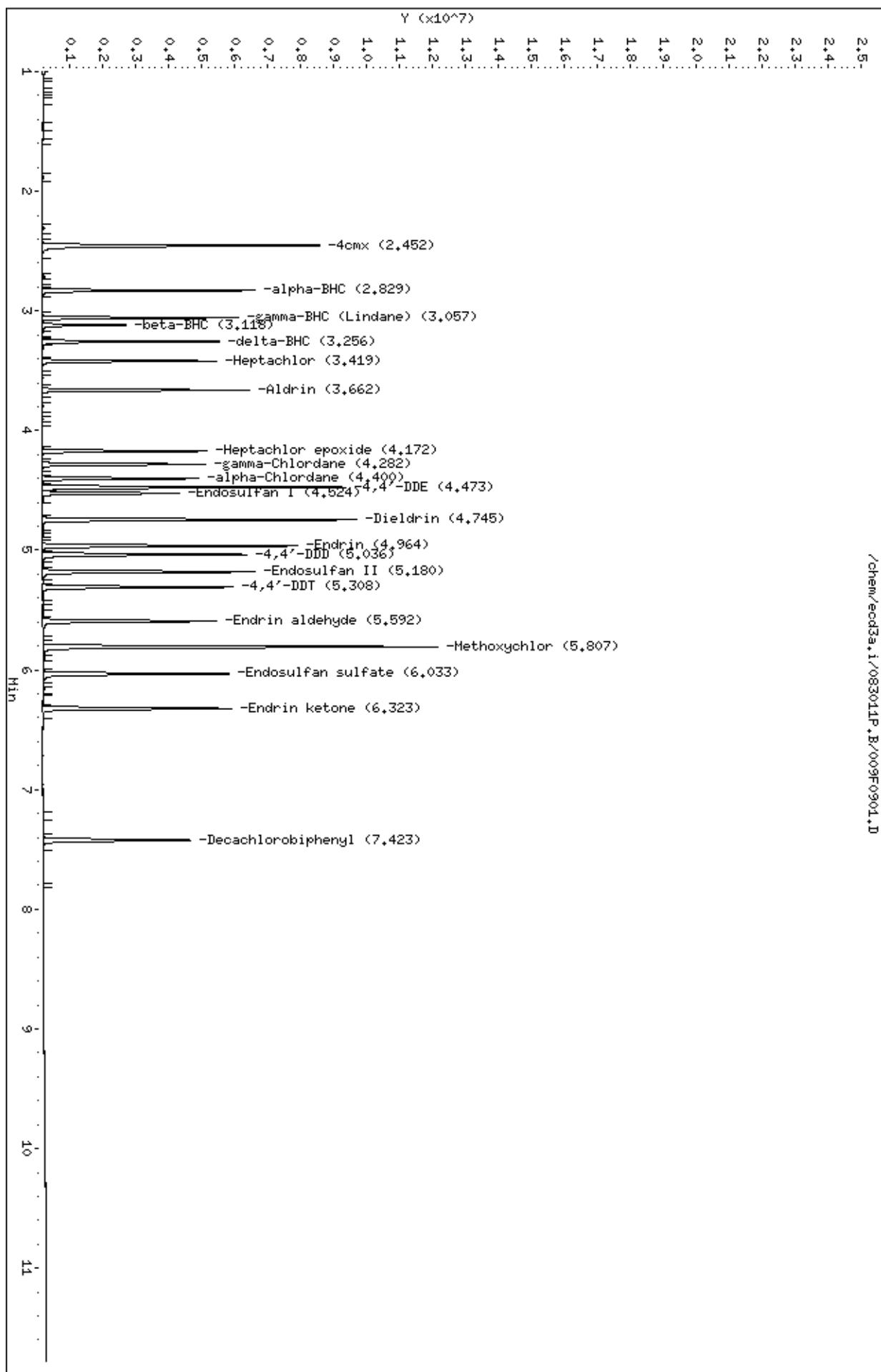
| AMOUNTS |                     |        |                  |         |         |               |        |
|---------|---------------------|--------|------------------|---------|---------|---------------|--------|
|         |                     |        | CAL-AMT          |         | ON-COL  |               |        |
| RT      | EXP RT              | DLT RT | RESPONSE ( ug/L) |         | ( ug/L) | TARGET RANGE  | RATIO  |
| ==      | =====               | =====  | =====            | =====   | =====   | =====         | =====  |
| 5       | alpha-BHC           |        |                  |         | CAS #:  | 319-84-6      |        |
| 2.829   | 2.828               | 0.001  | 6025770          | 50.0000 | 44.0    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 7       | gamma-BHC (Lindane) |        |                  |         | CAS #:  | 58-89-9       |        |
| 3.057   | 3.056               | 0.001  | 5447707          | 50.0000 | 44.1    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 12      | beta-BHC            |        |                  |         | CAS #:  | 319-85-7      |        |
| 3.118   | 3.117               | 0.001  | 2388404          | 50.0000 | 42.7    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 10      | Heptachlor          |        |                  |         | CAS #:  | 76-44-8       |        |
| 3.419   | 3.419               | 0.000  | 4854031          | 50.0000 | 45.8    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 13      | delta-BHC           |        |                  |         | CAS #:  | 319-86-8      |        |
| 3.256   | 3.255               | 0.001  | 4935256          | 50.0000 | 43.4    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 11      | Aldrin              |        |                  |         | CAS #:  | 309-00-2      |        |
| 3.662   | 3.662               | 0.000  | 5951220          | 50.0000 | 45.4    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 14      | Heptachlor epoxide  |        |                  |         | CAS #:  | 1024-57-3     |        |
| 4.172   | 4.171               | 0.001  | 5072641          | 50.0000 | 45.0    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 17      | gamma-Chlordane     |        |                  |         | CAS #:  | 5103-74-2     |        |
| 4.282   | 4.282               | 0.000  | 5038914          | 50.0000 | 44.2    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 18      | alpha-Chlordane     |        |                  |         | CAS #:  | 5103-71-9     |        |
| 4.400   | 4.400               | 0.000  | 4925592          | 50.0000 | 45.9    | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |



| AMOUNTS                  |        |        |          |         |             |            |               |        |
|--------------------------|--------|--------|----------|---------|-------------|------------|---------------|--------|
|                          |        |        | CAL-AMT  |         | ON-COL      |            |               |        |
| RT                       | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)     | TARGET     | RANGE         | RATIO  |
| ==                       | =====  | =====  | =====    | =====   | =====       | =====      | =====         | =====  |
| 16 Endosulfan I          |        |        |          |         |             |            |               |        |
| 4.524                    | 4.523  | 0.001  | 4454207  | 50.0000 | CAS #: 44.3 | 959-98-8   | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 19 4,4'-DDE              |        |        |          |         |             |            |               |        |
| 4.473                    | 4.473  | 0.000  | 9829946  | 100.000 | CAS #: 91.0 | 72-55-9    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 20 Dieldrin              |        |        |          |         |             |            |               |        |
| 4.745                    | 4.745  | 0.000  | 10210639 | 100.000 | CAS #: 91.0 | 60-57-1    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 22 Endrin                |        |        |          |         |             |            |               |        |
| 4.964                    | 4.964  | 0.000  | 8375947  | 100.000 | CAS #: 91.4 | 72-20-8    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 25 4,4'-DDD              |        |        |          |         |             |            |               |        |
| 5.036                    | 5.035  | 0.001  | 7147979  | 100.000 | CAS #: 89.1 | 72-54-8    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 24 Endosulfan II         |        |        |          |         |             |            |               |        |
| 5.180                    | 5.179  | 0.001  | 7225249  | 100.000 | CAS #: 87.7 | 33213-65-9 | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 27 Endrin aldehyde       |        |        |          |         |             |            |               |        |
| 5.592                    | 5.592  | 0.000  | 6290927  | 100.000 | CAS #: 88.6 | 7421-93-4  | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 26 4,4'-DDT              |        |        |          |         |             |            |               |        |
| 5.308                    | 5.308  | 0.000  | 6583106  | 100.000 | CAS #: 89.1 | 50-29-3    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 29 Endosulfan sulfate    |        |        |          |         |             |            |               |        |
| 6.033                    | 6.033  | 0.000  | 6846830  | 100.000 | CAS #: 91.1 | 1031-07-8  | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 28 Methoxychlor          |        |        |          |         |             |            |               |        |
| 5.807                    | 5.807  | 0.000  | 14010098 | 500.000 | CAS #: 430  | 72-43-5    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 31 Endrin ketone         |        |        |          |         |             |            |               |        |
| 6.323                    | 6.323  | 0.000  | 6909847  | 100.000 | CAS #: 85.7 | 53494-70-5 | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| \$ 1 4cmx                |        |        |          |         |             |            |               |        |
| 2.452                    | 2.452  | 0.000  | 9977957  | 100.000 | CAS #: 89.7 | 877-09-8   | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| \$ 32 Decachlorobiphenyl |        |        |          |         |             |            |               |        |
| 7.423                    | 7.423  | 0.000  | 5896742  | 100.000 | CAS #: 86.6 | 2051-24-3  | 80.00- 120.00 | 100.00 |

Data File: /chem/ecd3a.i/083011P.B/009F0901.D  
Date : 30-JUL-2011 17:10  
Client ID: INDA803  
Sample Info: IMPE110830-03AB  
Column phase: CLP-1

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



Data File: /chem/ecd3a.i/083011P.B/009B0901.D  
Report Date: 31-Aug-2011 14:55

Page 1

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CLP-2

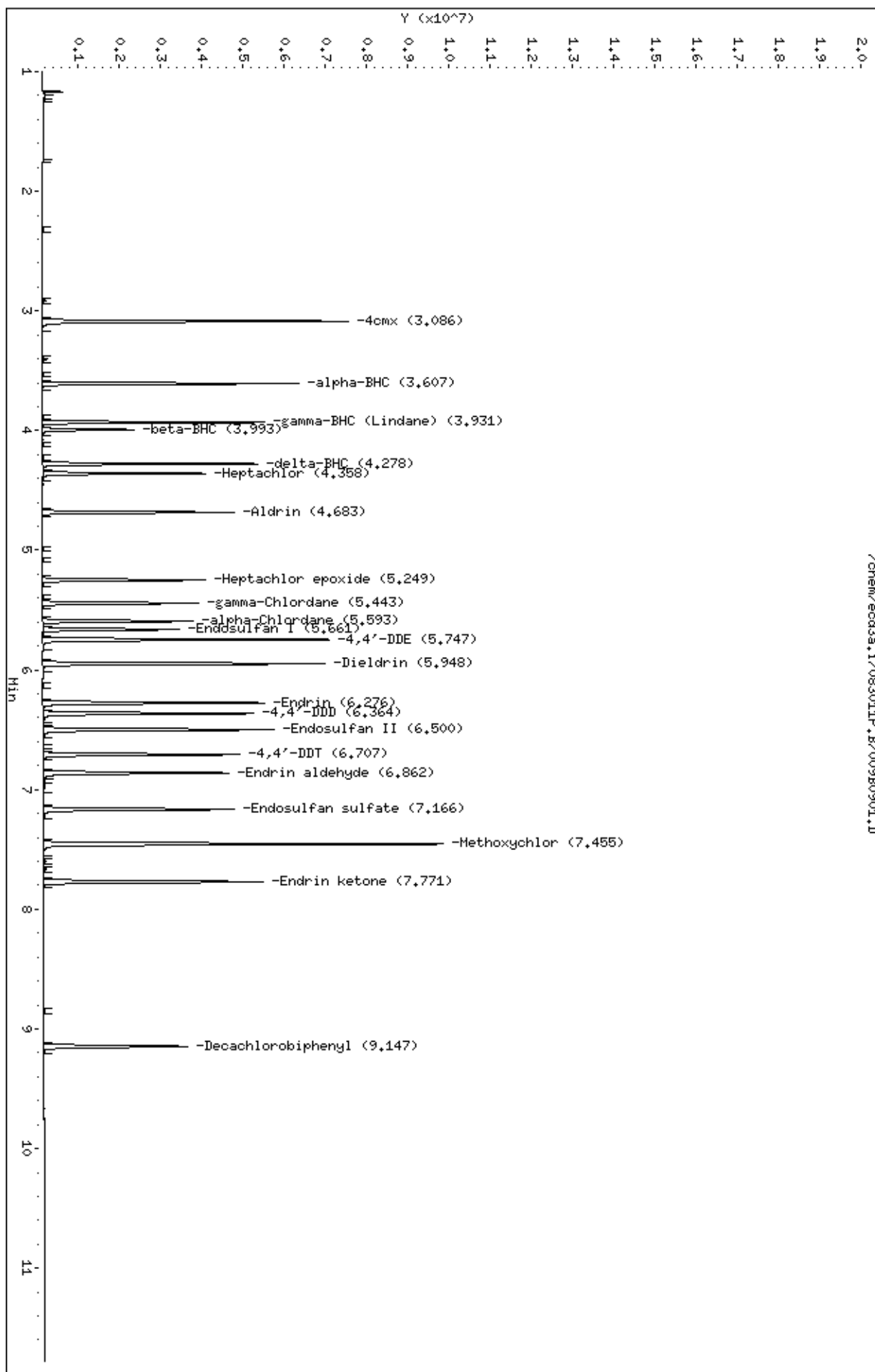
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Inj Date : 30-AUG-2011 17:10  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110830-03AB  
Misc Info :  
Comment :  
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Meth Date : 31-Aug-2011 11:22 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:15 Cal File: 034b3401.d  
Als bottle: 9 Calibration Sample, Level: 3  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: indab.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS |                     |        |          |                    |                   |               |        |
|---------|---------------------|--------|----------|--------------------|-------------------|---------------|--------|
| RT      | EXP RT              | DLT RT | RESPONSE | CAL-AMT<br>( ug/L) | ON-COL<br>( ug/L) | TARGET RANGE  | RATIO  |
| ==      | =====               | =====  | =====    | =====              | =====             | =====         | =====  |
| 5       | alpha-BHC           |        |          |                    | CAS #:            | 319-84-6      |        |
| 3.607   | 3.607               | 0.000  | 5760261  | 50.0000            | 47.2              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |                    |                   |               |        |
| 7       | gamma-BHC (Lindane) |        |          |                    | CAS #:            | 58-89-9       |        |
| 3.931   | 3.931               | 0.000  | 5060138  | 50.0000            | 46.5              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |                    |                   |               |        |
| 12      | beta-BHC            |        |          |                    | CAS #:            | 319-85-7      |        |
| 3.993   | 3.992               | 0.001  | 2123965  | 50.0000            | 45.2              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |                    |                   |               |        |
| 10      | Heptachlor          |        |          |                    | CAS #:            | 76-44-8       |        |
| 4.358   | 4.359               | -0.001 | 3888251  | 50.0000            | 45.4              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |                    |                   |               |        |
| 13      | delta-BHC           |        |          |                    | CAS #:            | 319-86-8      |        |
| 4.278   | 4.279               | -0.001 | 5027919  | 50.0000            | 46.8              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |                    |                   |               |        |
| 11      | Aldrin              |        |          |                    | CAS #:            | 309-00-2      |        |
| 4.683   | 4.684               | -0.001 | 4809785  | 50.0000            | 46.7              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |                    |                   |               |        |
| 14      | Heptachlor epoxide  |        |          |                    | CAS #:            | 1024-57-3     |        |
| 5.249   | 5.249               | 0.000  | 4139934  | 50.0000            | 45.8              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |                    |                   |               |        |
| 17      | gamma-Chlordane     |        |          |                    | CAS #:            | 5103-74-2     |        |
| 5.443   | 5.443               | 0.000  | 4131125  | 50.0000            | 46.0              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |                    |                   |               |        |
| 18      | alpha-Chlordane     |        |          |                    | CAS #:            | 5103-71-9     |        |
| 5.593   | 5.593               | 0.000  | 4017272  | 50.0000            | 45.7              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |                    |                   |               |        |

| AMOUNTS                  |        |        |          |         |             |            |               |        |
|--------------------------|--------|--------|----------|---------|-------------|------------|---------------|--------|
|                          |        |        | CAL-AMT  |         | ON-COL      |            |               |        |
| RT                       | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)     | TARGET     | RANGE         | RATIO  |
| ==                       | =====  | =====  | =====    | =====   | =====       | =====      | =====         | =====  |
| 16 Endosulfan I          |        |        |          |         |             |            |               |        |
| 5.661                    | 5.661  | 0.000  | 3738400  | 50.0000 | CAS #: 45.9 | 959-98-8   | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 19 4,4'-DDE              |        |        |          |         |             |            |               |        |
| 5.747                    | 5.747  | 0.000  | 7667835  | 100.000 | CAS #: 93.0 | 72-55-9    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 20 Dieldrin              |        |        |          |         |             |            |               |        |
| 5.948                    | 5.948  | 0.000  | 7761171  | 100.000 | CAS #: 91.7 | 60-57-1    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 22 Endrin                |        |        |          |         |             |            |               |        |
| 6.276                    | 6.276  | 0.000  | 6208741  | 100.000 | CAS #: 90.5 | 72-20-8    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 25 4,4'-DDD              |        |        |          |         |             |            |               |        |
| 6.364                    | 6.363  | 0.001  | 5846668  | 100.000 | CAS #: 90.3 | 72-54-8    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 24 Endosulfan II         |        |        |          |         |             |            |               |        |
| 6.500                    | 6.499  | 0.001  | 6539565  | 100.000 | CAS #: 91.4 | 33213-65-9 | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 27 Endrin aldehyde       |        |        |          |         |             |            |               |        |
| 6.862                    | 6.862  | 0.000  | 5404964  | 100.000 | CAS #: 91.0 | 7421-93-4  | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 26 4,4'-DDT              |        |        |          |         |             |            |               |        |
| 6.707                    | 6.707  | 0.000  | 5408783  | 100.000 | CAS #: 89.0 | 50-29-3    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 29 Endosulfan sulfate    |        |        |          |         |             |            |               |        |
| 7.166                    | 7.165  | 0.001  | 5594709  | 100.000 | CAS #: 90.3 | 1031-07-8  | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 28 Methoxychlor          |        |        |          |         |             |            |               |        |
| 7.455                    | 7.455  | 0.000  | 11415256 | 500.000 | CAS #: 435  | 72-43-5    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| 31 Endrin ketone         |        |        |          |         |             |            |               |        |
| 7.771                    | 7.772  | -0.001 | 6637638  | 100.000 | CAS #: 89.2 | 53494-70-5 | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| \$ 1 4cmx                |        |        |          |         |             |            |               |        |
| 3.086                    | 3.086  | 0.000  | 7744179  | 100.000 | CAS #: 93.4 | 877-09-8   | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |             |            |               |        |
| \$ 32 Decachlorobiphenyl |        |        |          |         |             |            |               |        |
| 9.147                    | 9.147  | 0.000  | 4408543  | 100.000 | CAS #: 88.8 | 2051-24-3  | 80.00- 120.00 | 100.00 |

Data File: /chem/ecd3a.i/083011P.B/009B0901.D  
Date : 30-JUL-2011 17:10  
Client ID: INDAB03  
Sample Info: IUPET10830-03AB  
Column phase: CLP-2

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



Data File: /chem/ecd3a.i/083011P.B/010F1001.D  
Report Date: 31-Aug-2011 14:55

Page 1

GEL Laboratories LLC

CLP-1

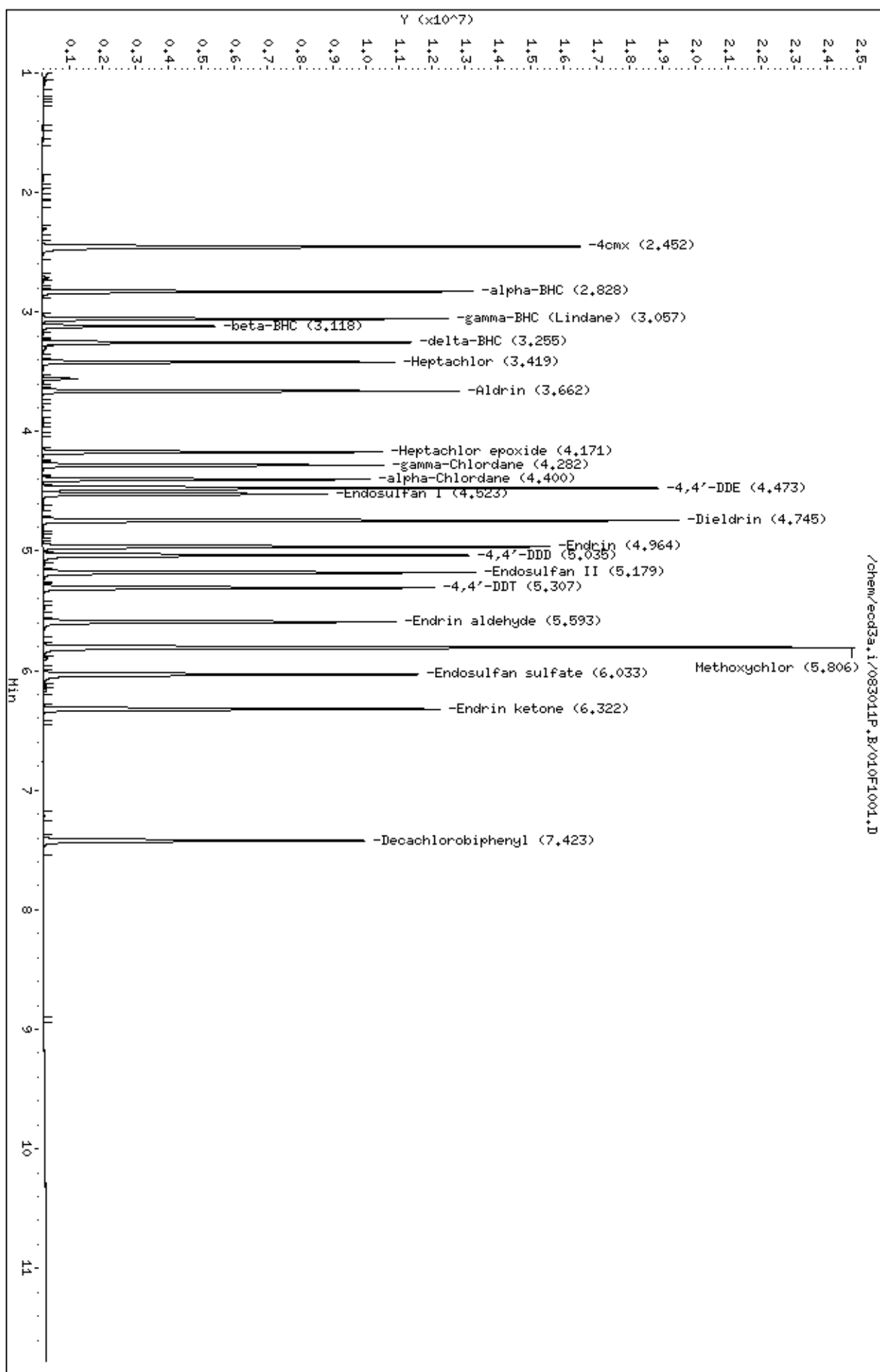
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Inj Date : 30-AUG-2011 17:26  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110830-04AB  
Misc Info :  
Comment :  
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Meth Date : 31-Aug-2011 11:26 reb01393 Quant Type: ESTD  
Cal Date : 15-JAN-2011 12:53 Cal File: 018f1801.d  
Als bottle: 10 Calibration Sample, Level: 4  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: indab.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS |                     |        |                  |         |                  |               |        |
|---------|---------------------|--------|------------------|---------|------------------|---------------|--------|
| RT      | EXP RT              | DLT RT | CAL-AMT          |         | ON-COL           | TARGET RANGE  | RATIO  |
| ==      | =====               | =====  | RESPONSE ( ug/L) |         | ( ug/L)          | =====         | =====  |
| 5       | alpha-BHC           |        |                  |         | CAS #: 319-84-6  |               |        |
| 2.828   | 2.828               | 0.000  | 12677787         | 100.000 | 98.5             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 7       | gamma-BHC (Lindane) |        |                  |         | CAS #: 58-89-9   |               |        |
| 3.057   | 3.056               | 0.001  | 11383910         | 100.000 | 97.7             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 12      | beta-BHC            |        |                  |         | CAS #: 319-85-7  |               |        |
| 3.118   | 3.117               | 0.001  | 4911162          | 100.000 | 92.5             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 10      | Heptachlor          |        |                  |         | CAS #: 76-44-8   |               |        |
| 3.419   | 3.419               | 0.000  | 10050612         | 100.000 | 98.8             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 13      | delta-BHC           |        |                  |         | CAS #: 319-86-8  |               |        |
| 3.255   | 3.255               | 0.000  | 10393926         | 100.000 | 97.2             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 11      | Aldrin              |        |                  |         | CAS #: 309-00-2  |               |        |
| 3.662   | 3.662               | 0.000  | 12333678         | 100.000 | 99.2             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 14      | Heptachlor epoxide  |        |                  |         | CAS #: 1024-57-3 |               |        |
| 4.171   | 4.171               | 0.000  | 10415662         | 100.000 | 97.3             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 17      | gamma-Chlordane     |        |                  |         | CAS #: 5103-74-2 |               |        |
| 4.282   | 4.282               | 0.000  | 10617220         | 100.000 | 98.4             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 18      | alpha-Chlordane     |        |                  |         | CAS #: 5103-71-9 |               |        |
| 4.400   | 4.400               | 0.000  | 10229732         | 100.000 | 99.8             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |

| AMOUNTS |                    |        |          |                 |                   |               |        |
|---------|--------------------|--------|----------|-----------------|-------------------|---------------|--------|
| RT      | EXP RT             | DLT RT | RESPONSE | CAL-AMT ( ug/L) | ON-COL ( ug/L)    | TARGET RANGE  | RATIO  |
| ==      | =====              | =====  | =====    | =====           | =====             | =====         | =====  |
| 16      | Endosulfan I       |        |          |                 | CAS #: 959-98-8   |               |        |
| 4.523   | 4.523              | 0.000  | 9135090  | 100.000         | 96.2              | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 19      | 4,4'-DDE           |        |          |                 | CAS #: 72-55-9    |               |        |
| 4.473   | 4.473              | 0.000  | 20279674 | 200.000         | 198               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 20      | Dieldrin           |        |          |                 | CAS #: 60-57-1    |               |        |
| 4.745   | 4.745              | 0.000  | 20799918 | 200.000         | 196               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 22      | Endrin             |        |          |                 | CAS #: 72-20-8    |               |        |
| 4.964   | 4.964              | 0.000  | 17004571 | 200.000         | 195               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 25      | 4,4'-DDD           |        |          |                 | CAS #: 72-54-8    |               |        |
| 5.035   | 5.035              | 0.000  | 14770896 | 200.000         | 195               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 24      | Endosulfan II      |        |          |                 | CAS #: 33213-65-9 |               |        |
| 5.179   | 5.179              | 0.000  | 14667429 | 200.000         | 189               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 27      | Endrin aldehyde    |        |          |                 | CAS #: 7421-93-4  |               |        |
| 5.593   | 5.592              | 0.001  | 12733230 | 200.000         | 188               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 26      | 4,4'-DDT           |        |          |                 | CAS #: 50-29-3    |               |        |
| 5.307   | 5.308              | -0.001 | 13512122 | 200.000         | 193               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 29      | Endosulfan sulfate |        |          |                 | CAS #: 1031-07-8  |               |        |
| 6.033   | 6.033              | 0.000  | 14072845 | 200.000         | 195               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 28      | Methoxychlor       |        |          |                 | CAS #: 72-43-5    |               |        |
| 5.806   | 5.807              | -0.001 | 27953312 | 1000.00         | 896               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 31      | Endrin ketone      |        |          |                 | CAS #: 53494-70-5 |               |        |
| 6.322   | 6.323              | -0.001 | 13914233 | 200.000         | 184               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| \$ 1    | 4cmx               |        |          |                 | CAS #: 877-09-8   |               |        |
| 2.452   | 2.452              | 0.000  | 20284711 | 200.000         | 191               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| \$ 32   | Decachlorobiphenyl |        |          |                 | CAS #: 2051-24-3  |               |        |
| 7.423   | 7.423              | 0.000  | 12066445 | 200.000         | 186               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |

Data File: /chem/ecd3a.i/083011P.B/010F1001.D  
 Date : 30-JUL-2011 17:26  
 Client ID: INDA04  
 Sample Info: IUP110830-044B  
 Column phase: CLP-1

Instrument: ecd3a.i  
 Operator: RXE1  
 Column diameter: 0.25





Data File: /chem/ecd3a.i/083011P.B/010B1001.D  
Report Date: 31-Aug-2011 14:55

Page 1

GEL Laboratories LLC

CLP-2

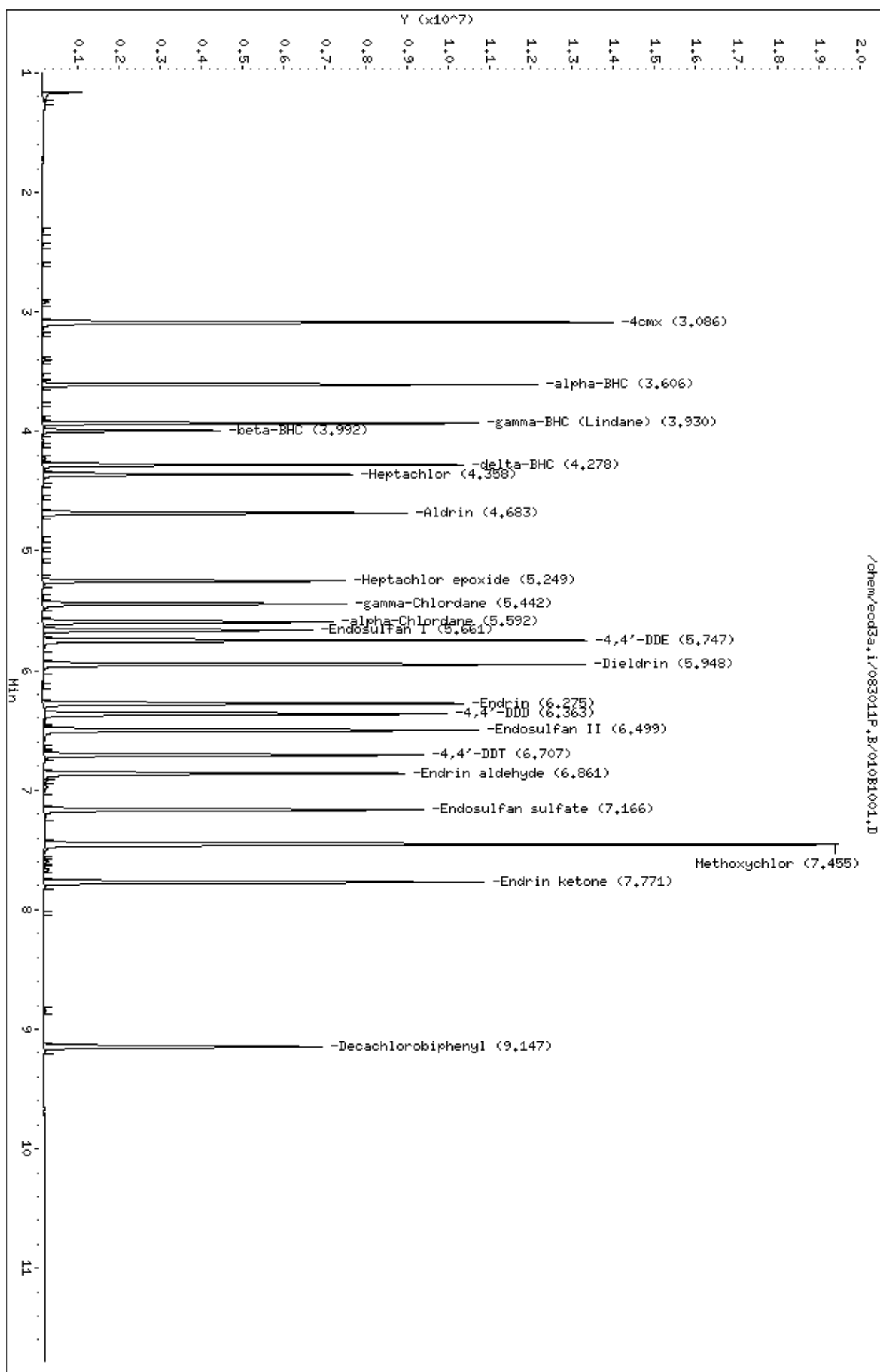
Data file : /chem/ecd3a.i/083011P.B/010B1001.D  
Lab Smp Id: WPE110830-04AB Client Smp ID: INDAB04  
Inj Date : 30-AUG-2011 17:26  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110830-04AB  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
Meth Date : 31-Aug-2011 11:22 reb01393 Quant Type: ESTD  
Cal Date : 15-JAN-2011 12:53 Cal File: 018b1801.d  
Als bottle: 10 Calibration Sample, Level: 4  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: indab.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS |                     |        |          |         |                  |               |        |
|---------|---------------------|--------|----------|---------|------------------|---------------|--------|
| RT      | EXP RT              | DLT RT | CAL-AMT  |         | ON-COL           | TARGET RANGE  | RATIO  |
| ==      | =====               | =====  | RESPONSE | ( ug/L) | ( ug/L)          | =====         | =====  |
| 5       | alpha-BHC           |        |          |         | CAS #: 319-84-6  |               |        |
| 3.606   | 3.607               | -0.001 | 11277189 | 100.000 | 93.7             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 7       | gamma-BHC (Lindane) |        |          |         | CAS #: 58-89-9   |               |        |
| 3.930   | 3.931               | -0.001 | 9883812  | 100.000 | 92.3             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 12      | beta-BHC            |        |          |         | CAS #: 319-85-7  |               |        |
| 3.992   | 3.992               | 0.000  | 4104826  | 100.000 | 88.7             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 10      | Heptachlor          |        |          |         | CAS #: 76-44-8   |               |        |
| 4.358   | 4.359               | -0.001 | 7504240  | 100.000 | 89.8             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 13      | delta-BHC           |        |          |         | CAS #: 319-86-8  |               |        |
| 4.278   | 4.279               | -0.001 | 9836543  | 100.000 | 93.0             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 11      | Aldrin              |        |          |         | CAS #: 309-00-2  |               |        |
| 4.683   | 4.684               | -0.001 | 9280375  | 100.000 | 91.4             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 14      | Heptachlor epoxide  |        |          |         | CAS #: 1024-57-3 |               |        |
| 5.249   | 5.249               | 0.000  | 7960948  | 100.000 | 89.8             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 17      | gamma-Chlordane     |        |          |         | CAS #: 5103-74-2 |               |        |
| 5.442   | 5.443               | -0.001 | 8128850  | 100.000 | 92.0             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 18      | alpha-Chlordane     |        |          |         | CAS #: 5103-71-9 |               |        |
| 5.592   | 5.593               | -0.001 | 7793828  | 100.000 | 90.2             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |

| AMOUNTS |                    |        |          |                 |                   |               |        |
|---------|--------------------|--------|----------|-----------------|-------------------|---------------|--------|
| RT      | EXP RT             | DLT RT | RESPONSE | CAL-AMT ( ug/L) | ON-COL ( ug/L)    | TARGET RANGE  | RATIO  |
| ==      | =====              | =====  | =====    | =====           | =====             | =====         | =====  |
| 16      | Endosulfan I       |        |          |                 | CAS #: 959-98-8   |               |        |
| 5.661   | 5.661              | 0.000  | 7176337  | 100.000         | 89.6              | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 19      | 4,4'-DDE           |        |          |                 | CAS #: 72-55-9    |               |        |
| 5.747   | 5.747              | 0.000  | 14780900 | 200.000         | 182               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 20      | Dieldrin           |        |          |                 | CAS #: 60-57-1    |               |        |
| 5.948   | 5.948              | 0.000  | 14935415 | 200.000         | 180               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 22      | Endrin             |        |          |                 | CAS #: 72-20-8    |               |        |
| 6.275   | 6.276              | -0.001 | 11877706 | 200.000         | 177               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 25      | 4,4'-DDD           |        |          |                 | CAS #: 72-54-8    |               |        |
| 6.363   | 6.363              | 0.000  | 11327607 | 200.000         | 180               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 24      | Endosulfan II      |        |          |                 | CAS #: 33213-65-9 |               |        |
| 6.499   | 6.499              | 0.000  | 12689569 | 200.000         | 180               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 27      | Endrin aldehyde    |        |          |                 | CAS #: 7421-93-4  |               |        |
| 6.861   | 6.862              | -0.001 | 10348387 | 200.000         | 178               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 26      | 4,4'-DDT           |        |          |                 | CAS #: 50-29-3    |               |        |
| 6.707   | 6.707              | 0.000  | 10548482 | 200.000         | 178               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 29      | Endosulfan sulfate |        |          |                 | CAS #: 1031-07-8  |               |        |
| 7.166   | 7.165              | 0.001  | 10854588 | 200.000         | 179               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 28      | Methoxychlor       |        |          |                 | CAS #: 72-43-5    |               |        |
| 7.455   | 7.455              | 0.000  | 22114854 | 1000.00         | 866               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 31      | Endrin ketone      |        |          |                 | CAS #: 53494-70-5 |               |        |
| 7.771   | 7.772              | -0.001 | 12807420 | 200.000         | 176               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| \$ 1    | 4cmx               |        |          |                 | CAS #: 877-09-8   |               |        |
| 3.086   | 3.086              | 0.000  | 14808900 | 200.000         | 180               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| \$ 32   | Decachlorobiphenyl |        |          |                 | CAS #: 2051-24-3  |               |        |
| 9.147   | 9.147              | 0.000  | 8516397  | 200.000         | 174               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |

Data File: /chem/ecd3a.i/083011P.B/010B1001.D  
Date : 30-JUL-2011 17:26  
Client ID: INDAB04  
Sample Info: IUP0110830-044B  
Column phase: CLP-2

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/083011P.B/011F1101.D  
Lab Smp Id: IPE110801-02AB Client Smp ID: INDAB05  
Inj Date : 30-AUG-2011 17:41  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |IPE110801-02AB  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
Meth Date : 31-Aug-2011 11:26 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036f3601.d  
Als bottle: 11 Calibration Sample, Level: 5  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: indab.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS |                     |        |                  |         |         |               |           |
|---------|---------------------|--------|------------------|---------|---------|---------------|-----------|
|         |                     |        | CAL-AMT          |         | ON-COL  |               |           |
| RT      | EXP RT              | DLT RT | RESPONSE ( ug/L) |         | ( ug/L) | TARGET RANGE  | RATIO     |
| ==      | =====               | =====  | =====            | =====   | =====   | =====         | =====     |
| 5       | alpha-BHC           |        |                  |         | CAS #:  | 319-84-6      |           |
| 2.829   | 2.828               | 0.001  | 26231498         | 200.000 | 221     | 80.00- 120.00 | 100.00(A) |
| -----   |                     |        |                  |         |         |               |           |
| 7       | gamma-BHC (Lindane) |        |                  |         | CAS #:  | 58-89-9       |           |
| 3.057   | 3.056               | 0.001  | 23510240         | 200.000 | 218     | 80.00- 120.00 | 100.00(A) |
| -----   |                     |        |                  |         |         |               |           |
| 12      | beta-BHC            |        |                  |         | CAS #:  | 319-85-7      |           |
| 3.118   | 3.117               | 0.001  | 10092858         | 200.000 | 203     | 80.00- 120.00 | 100.00(A) |
| -----   |                     |        |                  |         |         |               |           |
| 10      | Heptachlor          |        |                  |         | CAS #:  | 76-44-8       |           |
| 3.419   | 3.419               | 0.000  | 20643565         | 200.000 | 214     | 80.00- 120.00 | 100.00(A) |
| -----   |                     |        |                  |         |         |               |           |
| 13      | delta-BHC           |        |                  |         | CAS #:  | 319-86-8      |           |
| 3.255   | 3.255               | 0.000  | 21708322         | 200.000 | 221     | 80.00- 120.00 | 100.00(A) |
| -----   |                     |        |                  |         |         |               |           |
| 11      | Aldrin              |        |                  |         | CAS #:  | 309-00-2      |           |
| 3.662   | 3.662               | 0.000  | 25091360         | 200.000 | 216     | 80.00- 120.00 | 100.00(A) |
| -----   |                     |        |                  |         |         |               |           |
| 14      | Heptachlor epoxide  |        |                  |         | CAS #:  | 1024-57-3     |           |
| 4.171   | 4.171               | 0.000  | 20983099         | 200.000 | 210     | 80.00- 120.00 | 100.00(A) |
| -----   |                     |        |                  |         |         |               |           |
| 17      | gamma-Chlordane     |        |                  |         | CAS #:  | 5103-74-2     |           |
| 4.282   | 4.282               | 0.000  | 21942985         | 200.000 | 219     | 80.00- 120.00 | 100.00(A) |
| -----   |                     |        |                  |         |         |               |           |
| 18      | alpha-Chlordane     |        |                  |         | CAS #:  | 5103-71-9     |           |
| 4.401   | 4.400               | 0.001  | 21115622         | 200.000 | 216     | 80.00- 120.00 | 100.00(A) |
| -----   |                     |        |                  |         |         |               |           |

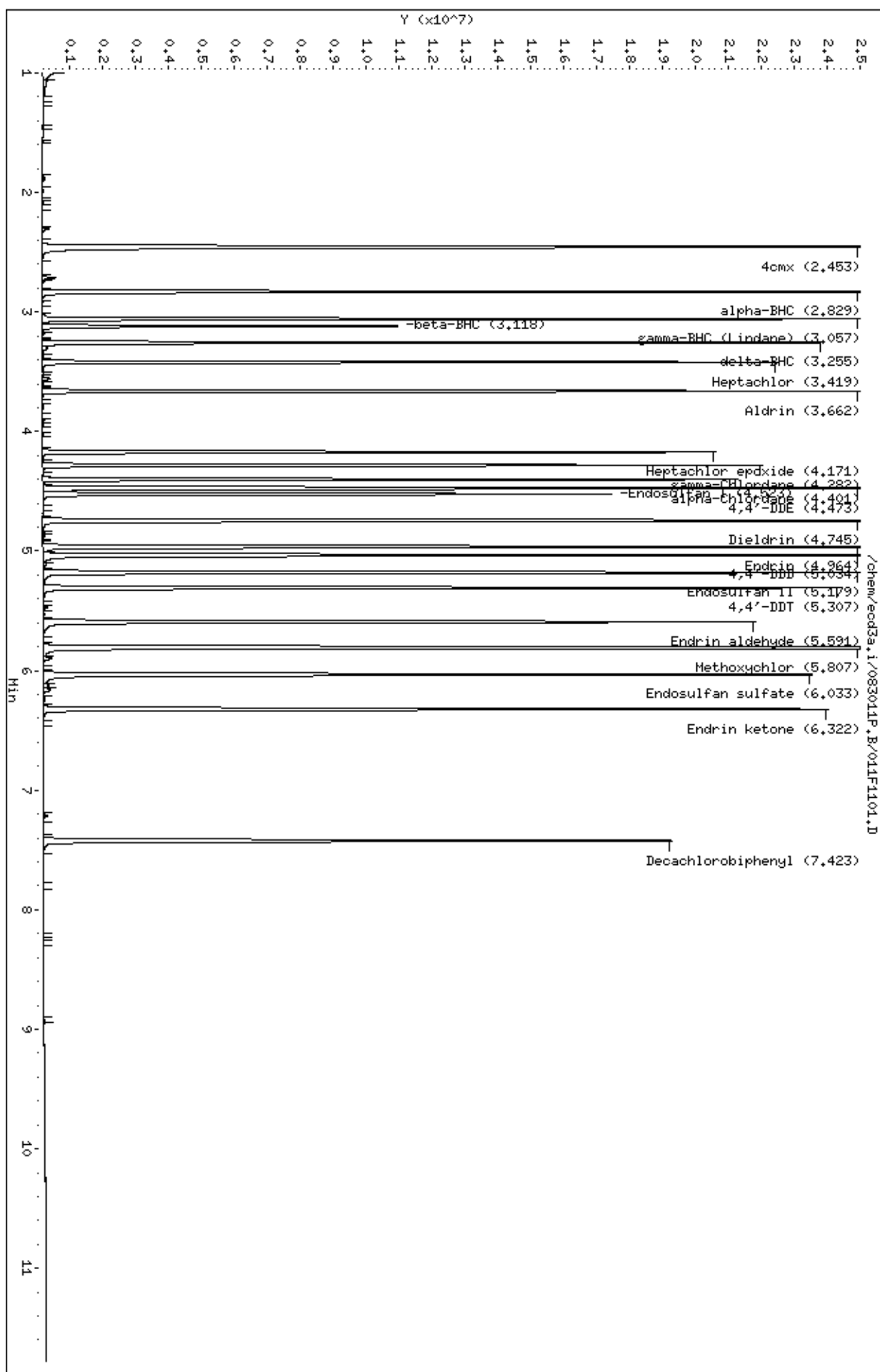
| AMOUNTS                  |        |        |          |         |                   |        |        |           |
|--------------------------|--------|--------|----------|---------|-------------------|--------|--------|-----------|
|                          |        |        | CAL-AMT  |         | ON-COL            |        |        |           |
| RT                       | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET | RANGE  | RATIO     |
| ==                       | =====  | =====  | =====    | =====   | =====             | =====  | =====  | =====     |
| 16 Endosulfan I          |        |        |          |         | CAS #: 959-98-8   |        |        |           |
| 4.523                    | 4.523  | 0.000  | 18379934 | 200.000 | 209               | 80.00- | 120.00 | 100.00(A) |
| -----                    |        |        |          |         |                   |        |        |           |
| 19 4,4'-DDE              |        |        |          |         | CAS #: 72-55-9    |        |        |           |
| 4.473                    | 4.473  | 0.000  | 41206035 | 400.000 | 433               | 80.00- | 120.00 | 100.00(A) |
| -----                    |        |        |          |         |                   |        |        |           |
| 20 Dieldrin              |        |        |          |         | CAS #: 60-57-1    |        |        |           |
| 4.745                    | 4.745  | 0.000  | 41830398 | 400.000 | 422               | 80.00- | 120.00 | 100.00(A) |
| -----                    |        |        |          |         |                   |        |        |           |
| 22 Endrin                |        |        |          |         | CAS #: 72-20-8    |        |        |           |
| 4.964                    | 4.964  | 0.000  | 34597493 | 400.000 | 423               | 80.00- | 120.00 | 100.00(A) |
| -----                    |        |        |          |         |                   |        |        |           |
| 25 4,4'-DDD              |        |        |          |         | CAS #: 72-54-8    |        |        |           |
| 5.034                    | 5.035  | -0.001 | 30043911 | 400.000 | 427               | 80.00- | 120.00 | 100.00(A) |
| -----                    |        |        |          |         |                   |        |        |           |
| 24 Endosulfan II         |        |        |          |         | CAS #: 33213-65-9 |        |        |           |
| 5.179                    | 5.179  | 0.000  | 29481046 | 400.000 | 410               | 80.00- | 120.00 | 100.00(A) |
| -----                    |        |        |          |         |                   |        |        |           |
| 27 Endrin aldehyde       |        |        |          |         | CAS #: 7421-93-4  |        |        |           |
| 5.591                    | 5.592  | -0.001 | 25406790 | 400.000 | 401               | 80.00- | 120.00 | 100.00(A) |
| -----                    |        |        |          |         |                   |        |        |           |
| 26 4,4'-DDT              |        |        |          |         | CAS #: 50-29-3    |        |        |           |
| 5.307                    | 5.308  | -0.001 | 27516449 | 400.000 | 421               | 80.00- | 120.00 | 100.00(A) |
| -----                    |        |        |          |         |                   |        |        |           |
| 29 Endosulfan sulfate    |        |        |          |         | CAS #: 1031-07-8  |        |        |           |
| 6.033                    | 6.033  | 0.000  | 28831786 | 400.000 | 423               | 80.00- | 120.00 | 100.00(A) |
| -----                    |        |        |          |         |                   |        |        |           |
| 28 Methoxychlor          |        |        |          |         | CAS #: 72-43-5    |        |        |           |
| 5.807                    | 5.807  | 0.000  | 56991529 | 2000.00 | 1940              | 80.00- | 120.00 | 100.00    |
| -----                    |        |        |          |         |                   |        |        |           |
| 31 Endrin ketone         |        |        |          |         | CAS #: 53494-70-5 |        |        |           |
| 6.322                    | 6.323  | -0.001 | 27856739 | 400.000 | 398               | 80.00- | 120.00 | 100.00    |
| -----                    |        |        |          |         |                   |        |        |           |
| \$ 1 4cmx                |        |        |          |         | CAS #: 877-09-8   |        |        |           |
| 2.453                    | 2.452  | 0.001  | 40877778 | 400.000 | 408               | 80.00- | 120.00 | 100.00(A) |
| -----                    |        |        |          |         |                   |        |        |           |
| \$ 32 Decachlorobiphenyl |        |        |          |         | CAS #: 2051-24-3  |        |        |           |
| 7.423                    | 7.423  | 0.000  | 24736732 | 400.000 | 404               | 80.00- | 120.00 | 100.00(A) |

## QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: /chem/ecod3a.i/083011P.B/011F1101.D  
 Date : 30-JUN-2011 17:41  
 Client ID: INDAB05  
 Sample Info: IPE110801-02AB  
 Column phase: CLP-1

Instrument: ecod3a.i  
 Operator: RXE1  
 Column diameter: 0.25



Data File: /chem/ecd3a.i/083011P.B/011B1101.D  
Report Date: 31-Aug-2011 14:55

Page 1

GEL Laboratories LLC

CLP-2

Data file : /chem/ecd3a.i/083011P.B/011B1101.D  
Lab Smp Id: IPE110801-02AB Client Smp ID: INDAB05  
Inj Date : 30-AUG-2011 17:41  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |IPE110801-02AB  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
Meth Date : 31-Aug-2011 11:22 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036b3601.d  
Als bottle: 11 Calibration Sample, Level: 5  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: indab.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS |                     |        |          |         |         |               |        |
|---------|---------------------|--------|----------|---------|---------|---------------|--------|
| RT      | EXP RT              | DLT RT | CAL-AMT  |         | ON-COL  | TARGET RANGE  | RATIO  |
| ==      | =====               | =====  | RESPONSE | ( ug/L) | ( ug/L) | =====         | =====  |
| 5       | alpha-BHC           |        |          |         | CAS #:  | 319-84-6      |        |
| 3.607   | 3.607               | 0.000  | 22055611 | 200.000 | 187     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 7       | gamma-BHC (Lindane) |        |          |         | CAS #:  | 58-89-9       |        |
| 3.931   | 3.931               | 0.000  | 19352544 | 200.000 | 185     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 12      | beta-BHC            |        |          |         | CAS #:  | 319-85-7      |        |
| 3.992   | 3.992               | 0.000  | 7991488  | 200.000 | 176     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 10      | Heptachlor          |        |          |         | CAS #:  | 76-44-8       |        |
| 4.359   | 4.359               | 0.000  | 14642258 | 200.000 | 181     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 13      | delta-BHC           |        |          |         | CAS #:  | 319-86-8      |        |
| 4.279   | 4.279               | 0.000  | 19363185 | 200.000 | 188     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 11      | Aldrin              |        |          |         | CAS #:  | 309-00-2      |        |
| 4.684   | 4.684               | 0.000  | 17852060 | 200.000 | 180     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 14      | Heptachlor epoxide  |        |          |         | CAS #:  | 1024-57-3     |        |
| 5.249   | 5.249               | 0.000  | 15339111 | 200.000 | 178     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 17      | gamma-Chlordane     |        |          |         | CAS #:  | 5103-74-2     |        |
| 5.443   | 5.443               | 0.000  | 15702685 | 200.000 | 182     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |
| 18      | alpha-Chlordane     |        |          |         | CAS #:  | 5103-71-9     |        |
| 5.594   | 5.593               | 0.001  | 15145930 | 200.000 | 180     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |         |               |        |

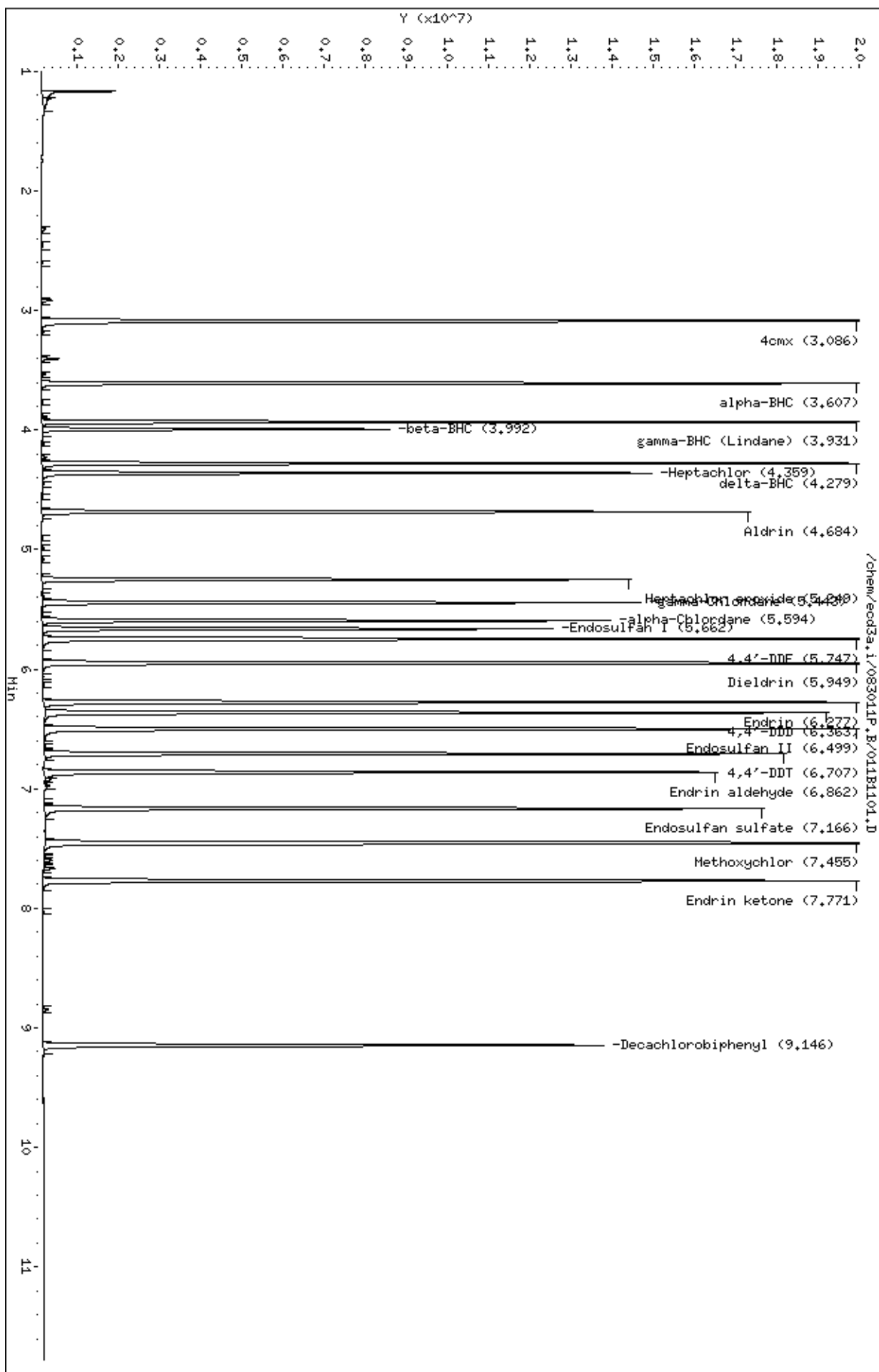
| AMOUNTS |                    |        |          |                 |                   |               |        |
|---------|--------------------|--------|----------|-----------------|-------------------|---------------|--------|
| RT      | EXP RT             | DLT RT | RESPONSE | CAL-AMT ( ug/L) | ON-COL ( ug/L)    | TARGET RANGE  | RATIO  |
| ==      | =====              | =====  | =====    | =====           | =====             | =====         | =====  |
| 16      | Endosulfan I       |        |          |                 | CAS #: 959-98-8   |               |        |
| 5.662   | 5.661              | 0.001  | 13801264 | 200.000         | 177               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 19      | 4,4'-DDE           |        |          |                 | CAS #: 72-55-9    |               |        |
| 5.747   | 5.747              | 0.000  | 28465854 | 400.000         | 361               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 20      | Dieldrin           |        |          |                 | CAS #: 60-57-1    |               |        |
| 5.949   | 5.948              | 0.001  | 28858744 | 400.000         | 359               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 22      | Endrin             |        |          |                 | CAS #: 72-20-8    |               |        |
| 6.277   | 6.276              | 0.001  | 23118791 | 400.000         | 357               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 25      | 4,4'-DDD           |        |          |                 | CAS #: 72-54-8    |               |        |
| 6.363   | 6.363              | 0.000  | 22011719 | 400.000         | 362               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 24      | Endosulfan II      |        |          |                 | CAS #: 33213-65-9 |               |        |
| 6.499   | 6.499              | 0.000  | 24394080 | 400.000         | 355               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 27      | Endrin aldehyde    |        |          |                 | CAS #: 7421-93-4  |               |        |
| 6.862   | 6.862              | 0.000  | 19761305 | 400.000         | 349               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 26      | 4,4'-DDT           |        |          |                 | CAS #: 50-29-3    |               |        |
| 6.707   | 6.707              | 0.000  | 20674369 | 400.000         | 364               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 29      | Endosulfan sulfate |        |          |                 | CAS #: 1031-07-8  |               |        |
| 7.166   | 7.165              | 0.001  | 21154044 | 400.000         | 361               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 28      | Methoxychlor       |        |          |                 | CAS #: 72-43-5    |               |        |
| 7.455   | 7.455              | 0.000  | 43778150 | 2000.00         | 1790              | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| 31      | Endrin ketone      |        |          |                 | CAS #: 53494-70-5 |               |        |
| 7.771   | 7.772              | -0.001 | 25049073 | 400.000         | 355               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| \$ 1    | 4cmx               |        |          |                 | CAS #: 877-09-8   |               |        |
| 3.086   | 3.086              | 0.000  | 28384143 | 400.000         | 352               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |
| \$ 32   | Decachlorobiphenyl |        |          |                 | CAS #: 2051-24-3  |               |        |
| 9.146   | 9.147              | -0.001 | 16807926 | 400.000         | 350               | 80.00- 120.00 | 100.00 |
| -----   |                    |        |          |                 |                   |               |        |



Data File: /chem/ecod3a.i/083011P.B/011B1101.D  
Date : 30-JUL-2011 17:41  
Client ID: INDAB05  
Sample Info: IPE110801-029B

Column phase: CLP-2

Instrument: ecod3a.i  
Operator: RXE1  
Column diameter: 0.25



Pesticide Breakdown Summary

Client SDG: 284538

Instrument ID: ECD3A.I\_1

Data File: /chem/ecd3a.i/083011P.B/002F0201.D

Lab Sample ID WPE110628-99DG

Client Sample ID:PEM01

Injection Date: 30-AUG-11 15:22

Init. Cal. Date(s): 16-AUG-11 15:45 - 30-AUG-11 17:41

Method: /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m

Quant Type ESTD

| Compound        | RT   | RT Window |      | AMT<br>CCV | Nominal | %D   |
|-----------------|------|-----------|------|------------|---------|------|
|                 |      | From      | To   |            |         |      |
| Aldrin          | 0    | 3.63      | 3.69 | 0          | 100     | -100 |
| 4,4'-DDE        | 4.47 | 4.44      | 4.5  | 0.45       | 0       |      |
| Endrin          | 4.96 | 4.93      | 4.99 | 105        | 100     | 5    |
| 4,4'-DDD        | 5.04 | 5.01      | 5.07 | 0.932      | 0       |      |
| 4,4'-DDT        | 5.31 | 5.28      | 5.34 | 190        | 100     | 90   |
| Endrin aldehyde | 5.59 | 5.56      | 5.62 | 1.76       | 0       |      |
| Endrin ketone   | 6.32 | 6.29      | 6.35 | 1.57       | 0       |      |

4,4'-DDT % Breakdown .86

Endin % Breakdown : 2.53

Combined % Breakdown 3.39

%D Calculation

%D =( AmtCCV - Nominal)/Nominal) X 100

Pesticide Breakdown Summary

Client SDG: 284538

Instrument ID: ECD3A.I\_2

Data File: /chem/ecd3a.i/083011P.B/002B0201.D

Lab Sample ID WPE110628-99DG

Client Sample ID:PEM01

Injection Date: 30-AUG-11 15:22

Init. Cal. Date(s): 16-AUG-11 15:45 - 30-AUG-11 17:41

Method: /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m

Quant Type ESTD

| Compound        | RT   | RT Window |      | AMT<br>CCV | Nominal | %D   |
|-----------------|------|-----------|------|------------|---------|------|
|                 |      | From      | To   |            |         |      |
| Aldrin          | 0    | 4.65      | 4.71 | 0          | 100     | -100 |
| 4,4'-DDE        | 5.75 | 5.72      | 5.78 | 0.906      | 0       |      |
| Endrin          | 6.28 | 6.25      | 6.31 | 107        | 100     | 7    |
| 4,4'-DDD        | 6.36 | 6.33      | 6.39 | 1.16       | 0       |      |
| 4,4'-DDT        | 6.71 | 6.68      | 6.74 | 192        | 100     | 92   |
| Endrin aldehyde | 6.86 | 6.83      | 6.89 | 2.12       | 0       |      |
| Endrin ketone   | 7.77 | 7.74      | 7.8  | 1.87       | 0       |      |

4,4'-DDT % Breakdown 1.29

Endin % Breakdown : 3.5

Combined % Breakdown 4.79

%D Calculation

%D =( AmtCCV - Nominal)/Nominal) X 100

## Continuing Calibration Summary

**Instrument ID:** ECD3A.I\_1      **Client SDG:** 284538  
**Injection Date:** 30-AUG-11 15:53  
**Data File:** /chem/ecd3a.i/083011P.B/004F0401.D      **Init. Cal. Date(s):** 23-AUG-11 14:29 - 23-AUG-11 15:31  
**Lab Sample ID:** WPE110630-52TX      **Method:** /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
**Column ID:** CLP-1      **Quant Type:** ESTD

| Compound                 | AVECF /<br>Amount | CF<br>CCV | Nominal<br>CCV | %D /<br>%Drift | Max | Drift<br>Q | Curve Type |
|--------------------------|-------------------|-----------|----------------|----------------|-----|------------|------------|
| Toxaphene                | 3564.91           | 3786.21   | 2000           | 6.21           | 20  |            | Averaged   |
| Toxaphene(2)             | 2130.09           | 1956.06   | 2000           | -8.17          | 20  |            | Averaged   |
| Toxaphene(3)             | 2669.59           | 2322.85   | 2000           | -12.99         | 20  |            | Averaged   |
| Toxaphene(4)             | 1823.54           | 1618.89   | 2000           | -11.22         | 20  |            | Averaged   |
| Toxaphene(5)             | 2845.56           | 2421.06   | 2000           | -14.92         | 20  |            | Averaged   |
| 4cmx(Surr)               | 100121.53         | 101304.85 | 200            | 1.18           | 20  |            | Averaged   |
| Decachlorobiphenyl(Surr) | 61295.93          | 61122.48  | 200            | -0.28          | 20  |            | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD3A.I\_2      **Client SDG:** 284538  
**Injection Date:** 30-AUG-11 15:53  
**Data File:** /chem/ecd3a.i/083011P.B/004B0401.D      **Init. Cal. Date(s):** 23-AUG-11 14:29 - 23-AUG-11 15:31  
**Lab Sample ID:** WPE110630-52TX      **Method:** /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
**Column ID:** CLP-2      **Quant Type:** ESTD

| Compound                 | AVECF / Amount | CF CCV   | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|----------|-------------|-------------|-----|---------|------------|
| Toxaphene                | 1421.91        | 1224.59  | 2000        | -13.88      | 20  |         | Averaged   |
| Toxaphene(2)             | 2318.22        | 2001.96  | 2000        | -13.64      | 20  |         | Averaged   |
| Toxaphene(3)             | 3976.91        | 3474.89  | 2000        | -12.62      | 20  |         | Averaged   |
| Toxaphene(4)             | 2103           | 1871.54  | 2000        | -11.01      | 20  |         | Averaged   |
| Toxaphene(5)             | 2400.91        | 2050.24  | 2000        | -14.61      | 20  |         | Averaged   |
| 4cmx(Surr)               | 80683.71       | 79682.44 | 200         | -1.24       | 20  |         | Averaged   |
| Decachlorobiphenyl(Surr) | 47973.24       | 46278.36 | 200         | -3.53       | 20  |         | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD3A.I\_1      **Client SDG:** 284538  
**Injection Date:** 30-AUG-11 16:08  
**Data File:** /chem/ecd3a.i/083011P.B/005F0501.D      **Init. Cal. Date(s):** 16-AUG-11 15:45 - 16-AUG-11 16:58  
**Lab Sample ID** WPE110724-00CL      **Method:** /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
**Column ID:** CLP-1      **Quant Type:** ESTD

| Compound                 | AVECF /<br>Amount | CF<br>CCV | Nominal<br>CCV | %D /<br>%Drift | Max | Drift<br>Q | Curve Type |
|--------------------------|-------------------|-----------|----------------|----------------|-----|------------|------------|
| Chlordane (tech.)        | 4527.48           | 3833.16   | 1000           | -15.34         | 20  |            | Averaged   |
| Chlordane (tech.)(2)     | 2513.46           | 2141.64   | 1000           | -14.79         | 20  |            | Averaged   |
| Chlordane (tech.)(3)     | 2289.46           | 1985.6    | 1000           | -13.27         | 20  |            | Averaged   |
| Chlordane (tech.)(4)     | 14992.23          | 12596.86  | 1000           | -15.98         | 20  |            | Averaged   |
| Chlordane (tech.)(5)     | 3352.12           | 3081.08   | 1000           | -8.09          | 20  |            | Averaged   |
| 4cmx(Surr)               | 100121.53         | 98267.87  | 200            | -1.85          | 20  |            | Averaged   |
| Decachlorobiphenyl(Surr) | 61295.93          | 59623.37  | 200            | -2.73          | 20  |            | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD3A.I\_2      **Client SDG:** 284538  
**Injection Date:** 30-AUG-11 16:08  
**Data File:** /chem/ecd3a.i/083011P.B/005B0501.D      **Init. Cal. Date(s):** 16-AUG-11 15:45 - 16-AUG-11 16:58  
**Lab Sample ID:** WPE110724-00CL      **Method:** /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
**Column ID:** CLP-2      **Quant Type:** ESTD

| Compound                 | AVECF /<br>Amount | CF<br>CCV | Nominal<br>CCV | %D /<br>%Drift | Max | Drift<br>Q | Curve Type |
|--------------------------|-------------------|-----------|----------------|----------------|-----|------------|------------|
| Chlordane (tech.)        | 3485.79           | 3257.74   | 1000           | -6.54          | 20  |            | Averaged   |
| Chlordane (tech.)(2)     | 2082.97           | 1892      | 1000           | -9.17          | 20  |            | Averaged   |
| Chlordane (tech.)(3)     | 9660.4            | 9131.19   | 1000           | -5.48          | 20  |            | Averaged   |
| Chlordane (tech.)(4)     | 8167.73           | 7705.72   | 1000           | -5.66          | 20  |            | Averaged   |
| Chlordane (tech.)(5)     | 2563.11           | 2562.61   | 1000           | -0.02          | 20  |            | Averaged   |
| 4cmx(Surr)               | 80683.71          | 75566.71  | 200            | -6.34          | 20  |            | Averaged   |
| Decachlorobiphenyl(Surr) | 47973.24          | 44101.4   | 200            | -8.07          | 20  |            | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD3A.I\_1  
**Data File:** /chem/ecd3a.i/083011P.B/012F1201.D  
**Lab Sample ID** WPE110711-10AB  
**Column ID:** CLP-1

**Client SDG:** 284538  
**Injection Date:** 30-AUG-11 17:57  
**Init. Cal. Date(s)** 30-AUG-11 16:39 - 30-AUG-11 17:41  
**Method:** /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
**Quant Type:** ESTD

| Compound                 | AVECF / Amount | CF CCV    | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|-----------|-------------|-------------|-----|---------|------------|
| alpha-BHC                | 118670.15      | 134905.99 | 100         | 13.68       | 20  |         | Averaged   |
| gamma-BHC (Lindane)      | 107875.23      | 123849.32 | 100         | 14.81       | 20  |         | Averaged   |
| beta-BHC                 | 49652.95       | 49977.32  | 100         | 0.65        | 20  |         | Averaged   |
| Methoxychlor             | 29436.63       | 28736.56  | 1000        | -2.38       | 20  |         | Averaged   |
| delta-BHC                | 98363.62       | 109966.08 | 100         | 11.8        | 20  |         | Averaged   |
| Heptachlor               | 96346.25       | 105120.52 | 100         | 9.11        | 20  |         | Averaged   |
| Aldrin                   | 115966.73      | 124473.63 | 100         | 7.34        | 20  |         | Averaged   |
| Heptachlor epoxide       | 99984.76       | 104646.23 | 100         | 4.66        | 20  |         | Averaged   |
| Endosulfan I             | 88068.42       | 94752.24  | 100         | 7.59        | 20  |         | Averaged   |
| 4,4'-DDE                 | 95123.35       | 104071.9  | 200         | 9.41        | 20  |         | Averaged   |
| Dieldrin                 | 99146.45       | 107576.48 | 200         | 8.5         | 20  |         | Averaged   |
| Endrin                   | 81791.49       | 92886.46  | 200         | 13.56       | 20  |         | Averaged   |
| 4,4'-DDD                 | 70423.79       | 75835.59  | 200         | 7.68        | 20  |         | Averaged   |
| Endosulfan II            | 71920.74       | 76606.61  | 200         | 6.52        | 20  |         | Averaged   |
| Endrin aldehyde          | 63333.46       | 65895.67  | 200         | 4.05        | 20  |         | Averaged   |
| 4,4'-DDT                 | 65418.65       | 71258.39  | 200         | 8.93        | 20  |         | Averaged   |
| Endosulfan sulfate       | 68222.71       | 72750.33  | 200         | 6.64        | 20  |         | Averaged   |
| Endrin ketone            | 70074.14       | 71547.06  | 200         | 2.1         | 20  |         | Averaged   |
| 4cmx(Surr)               | 100121.53      | 106108.33 | 200         | 5.98        | 20  |         | Averaged   |
| Decachlorobiphenyl(Surr) | 61295.93       | 63065.02  | 200         | 2.89        | 20  |         | Averaged   |



## Continuing Calibration Summary

**Instrument ID:** ECD3A.I\_2  
**Data File:** /chem/ecd3a.i/083011P.B/012B1201.D  
**Lab Sample ID** WPE110711-10AB  
**Column ID:** CLP-2

**Client SDG:** 284538  
**Injection Date:** 30-AUG-11 17:57  
**Init. Cal. Date(s)** 30-AUG-11 16:39 - 30-AUG-11 17:41  
**Method:** /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
**Quant Type:** ESTD

| Compound                 | AVECF / Amount | CF CCV    | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|-----------|-------------|-------------|-----|---------|------------|
| alpha-BHC                | 117893.51      | 117398.64 | 100         | -0.42       | 20  |         | Averaged   |
| gamma-BHC (Lindane)      | 104645.28      | 105301.12 | 100         | 0.63        | 20  |         | Averaged   |
| beta-BHC                 | 45265.27       | 40857.16  | 100         | -9.74       | 20  |         | Averaged   |
| Methoxychlor             | 24510.02       | 22376.43  | 1000        | -8.7        | 20  |         | Averaged   |
| delta-BHC                | 103173.31      | 101229.87 | 100         | -1.88       | 20  |         | Averaged   |
| Heptachlor               | 80804.92       | 76578.18  | 100         | -5.23       | 20  |         | Averaged   |
| Aldrin                   | 99302.02       | 91710.76  | 100         | -7.64       | 20  |         | Averaged   |
| Heptachlor epoxide       | 86272.6        | 79019.64  | 100         | -8.41       | 20  |         | Averaged   |
| Endosulfan I             | 77993.44       | 73073.79  | 100         | -6.31       | 20  |         | Averaged   |
| 4,4'-DDE                 | 78838.45       | 74169.04  | 200         | -5.92       | 20  |         | Averaged   |
| Dieldrin                 | 80430.74       | 76743.6   | 200         | -4.58       | 20  |         | Averaged   |
| Endrin                   | 64763.77       | 63879.71  | 200         | -1.37       | 20  |         | Averaged   |
| 4,4'-DDD                 | 60725.84       | 56956.83  | 200         | -6.21       | 20  |         | Averaged   |
| Endosulfan II            | 68635.58       | 64929.7   | 200         | -5.4        | 20  |         | Averaged   |
| Endrin aldehyde          | 56609.44       | 52652.93  | 200         | -6.99       | 20  |         | Averaged   |
| 4,4'-DDT                 | 56837.47       | 54829.66  | 200         | -3.53       | 20  |         | Averaged   |
| Endosulfan sulfate       | 58612.7        | 55049.57  | 200         | -6.08       | 20  |         | Averaged   |
| Endrin ketone            | 70561.74       | 64775.68  | 200         | -8.2        | 20  |         | Averaged   |
| 4cmx(Surr)               | 80683.71       | 75686.16  | 200         | -6.19       | 20  |         | Averaged   |
| Decachlorobiphenyl(Surr) | 47973.24       | 43792.88  | 200         | -8.71       | 20  |         | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD3A.I\_1  
**Data File:** /chem/ecd3a.i/083011P.B/019F1901.D  
**Lab Sample ID** WPE110812-10AB  
**Column ID:** CLP-1

**Client SDG:** 284538  
**Injection Date:** 30-AUG-11 19:46  
**Init. Cal. Date(s)** 30-AUG-11 16:39 - 30-AUG-11 17:41  
**Method:** /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
**Quant Type:** ESTD

| Compound                 | AVECF / Amount | CF CCV    | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|-----------|-------------|-------------|-----|---------|------------|
| alpha-BHC                | 118670.15      | 134992.28 | 100         | 13.75       | 20  |         | Averaged   |
| gamma-BHC (Lindane)      | 107875.23      | 122454.94 | 100         | 13.52       | 20  |         | Averaged   |
| beta-BHC                 | 49652.95       | 49087.92  | 100         | -1.14       | 20  |         | Averaged   |
| Methoxychlor             | 29436.63       | 29267.47  | 1000        | -0.57       | 20  |         | Averaged   |
| delta-BHC                | 98363.62       | 109799.79 | 100         | 11.63       | 20  |         | Averaged   |
| Heptachlor               | 96346.25       | 108264.71 | 100         | 12.37       | 20  |         | Averaged   |
| Aldrin                   | 115966.73      | 122427.2  | 100         | 5.57        | 20  |         | Averaged   |
| Heptachlor epoxide       | 99984.76       | 103901.12 | 100         | 3.92        | 20  |         | Averaged   |
| Endosulfan I             | 88068.42       | 94662.69  | 100         | 7.49        | 20  |         | Averaged   |
| 4,4'-DDE                 | 95123.35       | 104577.47 | 200         | 9.94        | 20  |         | Averaged   |
| Dieldrin                 | 99146.45       | 107352.64 | 200         | 8.28        | 20  |         | Averaged   |
| Endrin                   | 81791.49       | 95101.1   | 200         | 16.27       | 20  |         | Averaged   |
| 4,4'-DDD                 | 70423.79       | 77230.87  | 200         | 9.67        | 20  |         | Averaged   |
| Endosulfan II            | 71920.74       | 78009.65  | 200         | 8.47        | 20  |         | Averaged   |
| Endrin aldehyde          | 63333.46       | 65991.98  | 200         | 4.2         | 20  |         | Averaged   |
| 4,4'-DDT                 | 65418.65       | 72200.83  | 200         | 10.37       | 20  |         | Averaged   |
| Endosulfan sulfate       | 68222.71       | 73778.48  | 200         | 8.14        | 20  |         | Averaged   |
| Endrin ketone            | 70074.14       | 74026.22  | 200         | 5.64        | 20  |         | Averaged   |
| 4cmx(Surr)               | 100121.53      | 104170.2  | 200         | 4.04        | 20  |         | Averaged   |
| Decachlorobiphenyl(Surr) | 61295.93       | 62689.12  | 200         | 2.27        | 20  |         | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD3A.I\_2  
**Data File:** /chem/ecd3a.i/083011P.B/019B1901.D  
**Lab Sample ID** WPE110812-10AB  
**Column ID:** CLP-2

**Client SDG:** 284538  
**Injection Date:** 30-AUG-11 19:46  
**Init. Cal. Date(s)** 30-AUG-11 16:39 - 30-AUG-11 17:41  
**Method:** /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
**Quant Type:** ESTD

| Compound                 | AVECF / Amount | CF CCV    | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|-----------|-------------|-------------|-----|---------|------------|
| alpha-BHC                | 117893.51      | 111275.88 | 100         | -5.61       | 20  |         | Averaged   |
| gamma-BHC (Lindane)      | 104645.28      | 100008.18 | 100         | -4.43       | 20  |         | Averaged   |
| beta-BHC                 | 45265.27       | 38433.45  | 100         | -15.09      | 20  |         | Averaged   |
| Methoxychlor             | 24510.02       | 22103.67  | 1000        | -9.82       | 20  |         | Averaged   |
| delta-BHC                | 103173.31      | 96692.43  | 100         | -6.28       | 20  |         | Averaged   |
| Heptachlor               | 80804.92       | 77540.37  | 100         | -4.04       | 20  |         | Averaged   |
| Aldrin                   | 99302.02       | 87198.22  | 100         | -12.19      | 20  |         | Averaged   |
| Heptachlor epoxide       | 86272.6        | 75961.9   | 100         | -11.95      | 20  |         | Averaged   |
| Endosulfan I             | 77993.44       | 70092.46  | 100         | -10.13      | 20  |         | Averaged   |
| 4,4'-DDE                 | 78838.45       | 71845.94  | 200         | -8.87       | 20  |         | Averaged   |
| Dieldrin                 | 80430.74       | 74192.83  | 200         | -7.76       | 20  |         | Averaged   |
| Endrin                   | 64763.77       | 63392.94  | 200         | -2.12       | 20  |         | Averaged   |
| 4,4'-DDD                 | 60725.84       | 55582.48  | 200         | -8.47       | 20  |         | Averaged   |
| Endosulfan II            | 68635.58       | 62353.54  | 200         | -9.15       | 20  |         | Averaged   |
| Endrin aldehyde          | 56609.44       | 50512.38  | 200         | -10.77      | 20  |         | Averaged   |
| 4,4'-DDT                 | 56837.47       | 53941.79  | 200         | -5.09       | 20  |         | Averaged   |
| Endosulfan sulfate       | 58612.7        | 54101.81  | 200         | -7.7        | 20  |         | Averaged   |
| Endrin ketone            | 70561.74       | 63271.67  | 200         | -10.33      | 20  |         | Averaged   |
| 4cmx(Surr)               | 80683.71       | 72119.15  | 200         | -10.61      | 20  |         | Averaged   |
| Decachlorobiphenyl(Surr) | 47973.24       | 41785.06  | 200         | -12.9       | 20  |         | Averaged   |

Data File: /chem/ecd3a.i/083011P.B/002F0201.D  
Report Date: 01-Sep-2011 15:16

Page 1

GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/083011P.B/002F0201.D  
Lab Smp Id: WPE110628-99DG Client Smp ID: PEM01  
Inj Date : 30-AUG-2011 15:22  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110628-99DG  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
Meth Date : 31-Aug-2011 11:26 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036f3601.d  
Als bottle: 2 QC Sample: PEM  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: pem.sub  
Target Version: 3.50 Sample Matrix: None

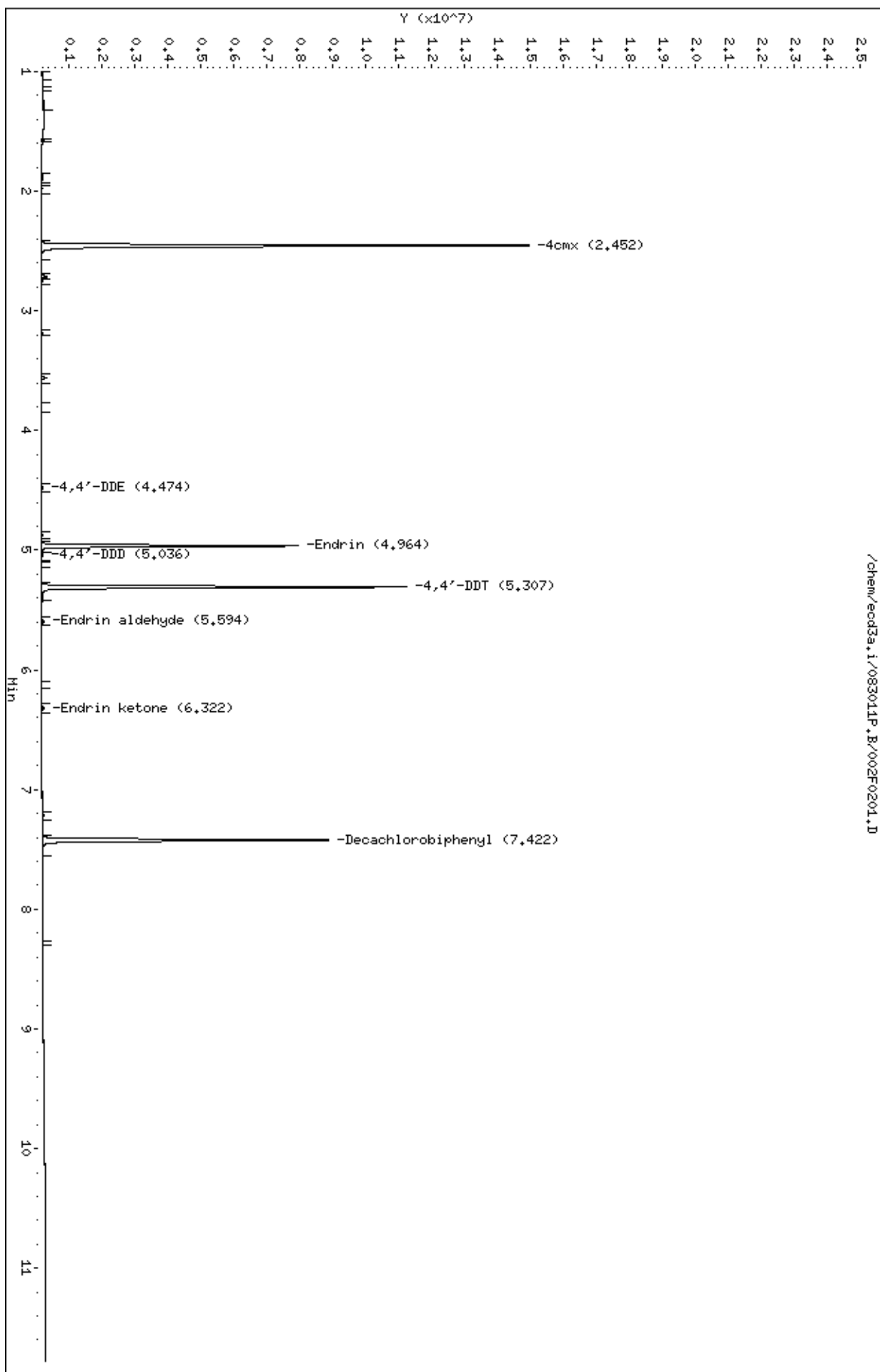
| CONCENTRATIONS           |        |        |          |         |                   |               |           |
|--------------------------|--------|--------|----------|---------|-------------------|---------------|-----------|
|                          |        | ON-COL |          | FINAL   |                   |               |           |
| RT                       | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET RANGE  | RATIO     |
| ==                       | =====  | =====  | =====    | =====   | =====             | =====         | =====     |
| 19 4,4'-DDE              |        |        |          |         | CAS #: 72-55-9    |               |           |
| 4.474                    | 4.473  | 0.001  | 42806    | 0.45001 | 0.450             | 80.00- 120.00 | 100.00    |
| -----                    |        |        |          |         |                   |               |           |
| 22 Endrin                |        |        |          |         | CAS #: 72-20-8    |               |           |
| 4.964                    | 4.964  | 0.000  | 8550763  | 104.543 | 104               | 80.00- 120.00 | 100.00    |
| -----                    |        |        |          |         |                   |               |           |
| 25 4,4'-DDD              |        |        |          |         | CAS #: 72-54-8    |               |           |
| 5.036                    | 5.035  | 0.001  | 65642    | 0.93210 | 0.932             | 80.00- 120.00 | 100.00    |
| -----                    |        |        |          |         |                   |               |           |
| 27 Endrin aldehyde       |        |        |          |         | CAS #: 7421-93-4  |               |           |
| 5.594                    | 5.592  | 0.002  | 111448   | 1.75970 | 1.76              | 80.00- 120.00 | 100.00    |
| -----                    |        |        |          |         |                   |               |           |
| 26 4,4'-DDT              |        |        |          |         | CAS #: 50-29-3    |               |           |
| 5.307                    | 5.308  | -0.001 | 12453004 | 190.359 | 190               | 80.00- 120.00 | 100.00    |
| -----                    |        |        |          |         |                   |               |           |
| 31 Endrin ketone         |        |        |          |         | CAS #: 53494-70-5 |               |           |
| 6.322                    | 6.323  | -0.001 | 110363   | 1.57495 | 1.57              | 80.00- 120.00 | 100.00    |
| -----                    |        |        |          |         |                   |               |           |
| \$ 1 4cmx                |        |        |          |         | CAS #: 877-09-8   |               |           |
| 2.452                    | 2.452  | 0.000  | 18313663 | 182.914 | 183               | 80.00- 120.00 | 100.00(R) |
| -----                    |        |        |          |         |                   |               |           |
| \$ 32 Decachlorobiphenyl |        |        |          |         | CAS #: 2051-24-3  |               |           |
| 7.422                    | 7.423  | -0.001 | 11067075 | 180.552 | 180               | 80.00- 120.00 | 100.00(R) |
| -----                    |        |        |          |         |                   |               |           |

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /chem/ecd3a.i/083011P.B/002F0201.D  
Date : 30-JUN-2011 15:22  
Client ID: PEM01  
Sample Info: IMPE110628-99DC  
Column phase: CLP-1

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



GEL Laboratories LLC

CLP-2

Data file : /chem/ecd3a.i/083011P.B/002B0201.D  
Lab Smp Id: WPE110628-99DG Client Smp ID: PEM01  
Inj Date : 30-AUG-2011 15:22  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110628-99DG  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
Meth Date : 31-Aug-2011 11:22 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036b3601.d  
Als bottle: 2 QC Sample: PEM  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: pem.sub  
Target Version: 3.50 Sample Matrix: None

| CONCENTRATIONS |                    |        |          |         |                   |               |           |
|----------------|--------------------|--------|----------|---------|-------------------|---------------|-----------|
| RT             | EXP RT             | DLT RT | ON-COL   |         | FINAL             | TARGET RANGE  | RATIO     |
|                |                    |        | RESPONSE | ( ug/L) | ( ug/L)           |               |           |
| ==             | =====              | =====  | =====    | =====   | =====             | =====         | =====     |
| 19             | 4,4'-DDE           |        |          |         | CAS #: 72-55-9    |               |           |
| 5.750          | 5.747              | 0.003  | 71430    | 0.90603 | 0.906             | 80.00- 120.00 | 100.00    |
| -----          |                    |        |          |         |                   |               |           |
| 22             | Endrin             |        |          |         | CAS #: 72-20-8    |               |           |
| 6.277          | 6.276              | 0.001  | 6959363  | 107.458 | 107               | 80.00- 120.00 | 100.00    |
| -----          |                    |        |          |         |                   |               |           |
| 25             | 4,4'-DDD           |        |          |         | CAS #: 72-54-8    |               |           |
| 6.365          | 6.363              | 0.002  | 70731    | 1.16476 | 1.16              | 80.00- 120.00 | 100.00    |
| -----          |                    |        |          |         |                   |               |           |
| 27             | Endrin aldehyde    |        |          |         | CAS #: 7421-93-4  |               |           |
| 6.862          | 6.862              | 0.000  | 120046   | 2.12060 | 2.12              | 80.00- 120.00 | 100.00    |
| -----          |                    |        |          |         |                   |               |           |
| 26             | 4,4'-DDT           |        |          |         | CAS #: 50-29-3    |               |           |
| 6.707          | 6.707              | 0.000  | 10887200 | 191.550 | 192               | 80.00- 120.00 | 100.00    |
| -----          |                    |        |          |         |                   |               |           |
| 31             | Endrin ketone      |        |          |         | CAS #: 53494-70-5 |               |           |
| 7.772          | 7.772              | 0.000  | 132014   | 1.87090 | 1.87              | 80.00- 120.00 | 100.00    |
| -----          |                    |        |          |         |                   |               |           |
| \$ 1           | 4cmx               |        |          |         | CAS #: 877-09-8   |               |           |
| 3.086          | 3.086              | 0.000  | 14934814 | 185.103 | 185               | 80.00- 120.00 | 100.00(R) |
| -----          |                    |        |          |         |                   |               |           |
| \$ 32          | Decachlorobiphenyl |        |          |         | CAS #: 2051-24-3  |               |           |
| 9.147          | 9.147              | 0.000  | 8573380  | 178.712 | 179               | 80.00- 120.00 | 100.00(R) |
| -----          |                    |        |          |         |                   |               |           |

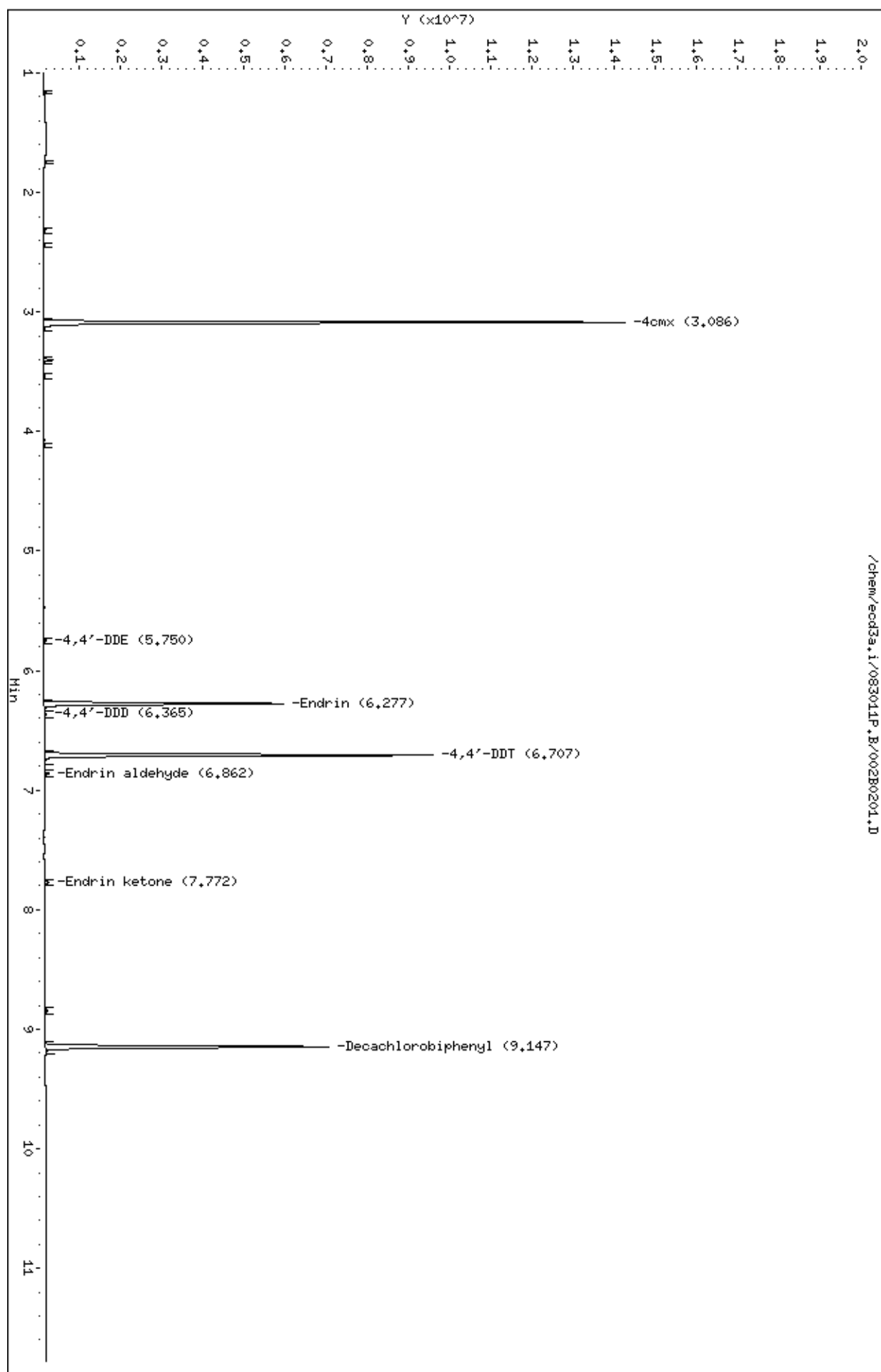
QC Flag Legend

R - Spike/Surrogate failed recovery limits.



Data File: /chem/ecd3a.i/083011P.B/002B0201.D  
Date : 30-JUL-2011 15:22  
Client ID: PEM01  
Sample Info: IMPE110628-99DC  
Column phase: CLP-2

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



Data File: /chem/ecd3a.i/083011P.B/004F0401.D  
Report Date: 31-Aug-2011 14:54

Page 1

GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/083011P.B/004F0401.D  
Lab Smp Id: WPE110630-52TX Client Smp ID: TOXAPH01  
Inj Date : 30-AUG-2011 15:53  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110630-52TX  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
Meth Date : 31-Aug-2011 11:26 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036f3601.d  
Als bottle: 4 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: tox.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                  |        |        |           |
|---------------------------|--------|--------|----------|---------|------------------|--------|--------|-----------|
|                           |        |        | CAL-AMT  |         | ON-COL           |        |        |           |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)          | TARGET | RANGE  | RATIO     |
| ==                        | =====  | =====  | =====    | =====   | =====            | =====  | =====  | =====     |
| 23 Toxaphene              |        |        |          |         | CAS #: 8001-35-2 |        |        |           |
| 5.169                     | 5.169  | 0.000  | 7572421  | 2000.00 | 2120             | 80.00- | 120.00 | 100.00(M) |
| 5.289                     | 5.289  | 0.000  | 3912110  | 2000.00 | 1840             | 31.66- | 71.66  | 51.66     |
| 5.506                     | 5.506  | 0.000  | 4645696  | 2000.00 | 1740             | 41.35- | 81.35  | 61.35     |
| 5.834                     | 5.834  | 0.000  | 3237775  | 2000.00 | 1780             | 22.76- | 62.76  | 42.76     |
| 5.932                     | 5.932  | 0.000  | 4842116  | 2000.00 | 1700             | 43.94- | 83.94  | 63.94     |
| Average of Peak Amounts = |        |        |          |         | 1.84e+03         |        |        |           |
| -----                     |        |        |          |         |                  |        |        |           |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8  |        |        |           |
| 2.452                     | 2.452  | 0.000  | 20260969 | 200.000 | 159              | 80.00- | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |        |        |           |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3 |        |        |           |
| 7.423                     | 7.423  | 0.000  | 12224496 | 200.000 | 154              | 80.00- | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |        |        |           |

QC Flag Legend

M - Compound response manually integrated.

Data File: /chem/ecd3a.i/083011P.B/004F0401.D

Date : 30-AUG-2011 15:53

Client ID: TOXAPH01

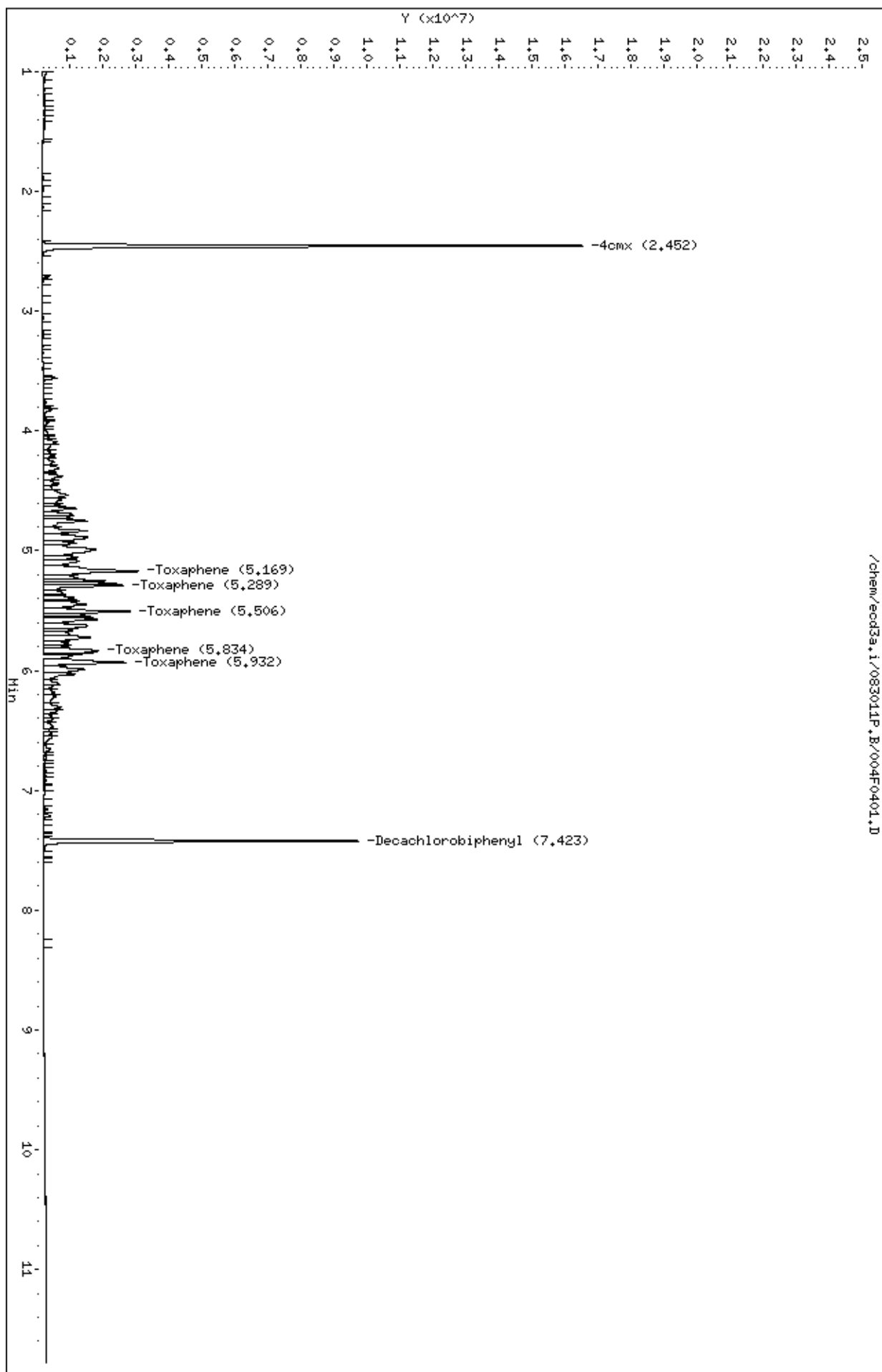
Sample Info: IMPE110630-52TX

Column phase: CLP-1

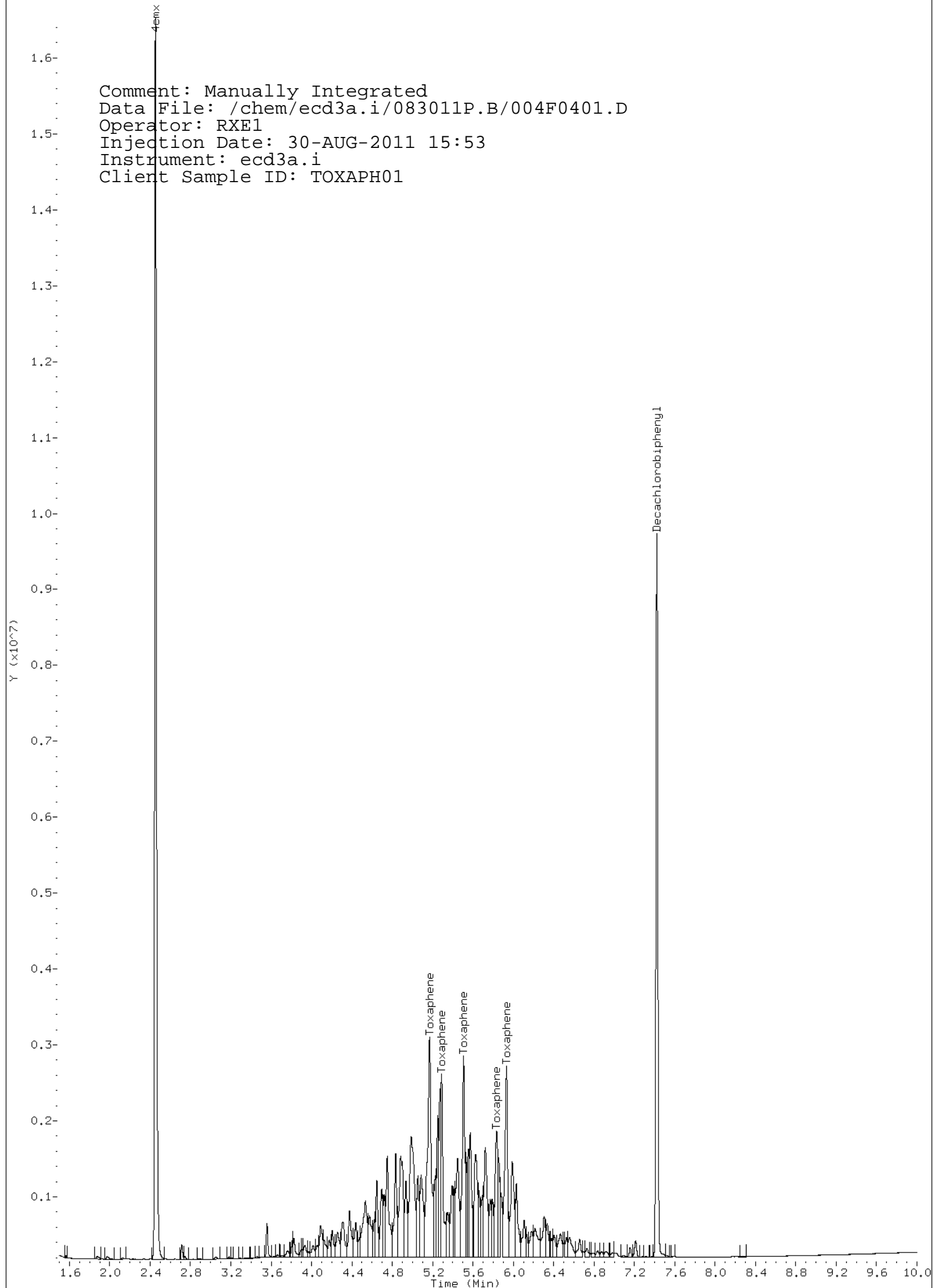
Instrument: ecd3a.i

Operator: RXE1

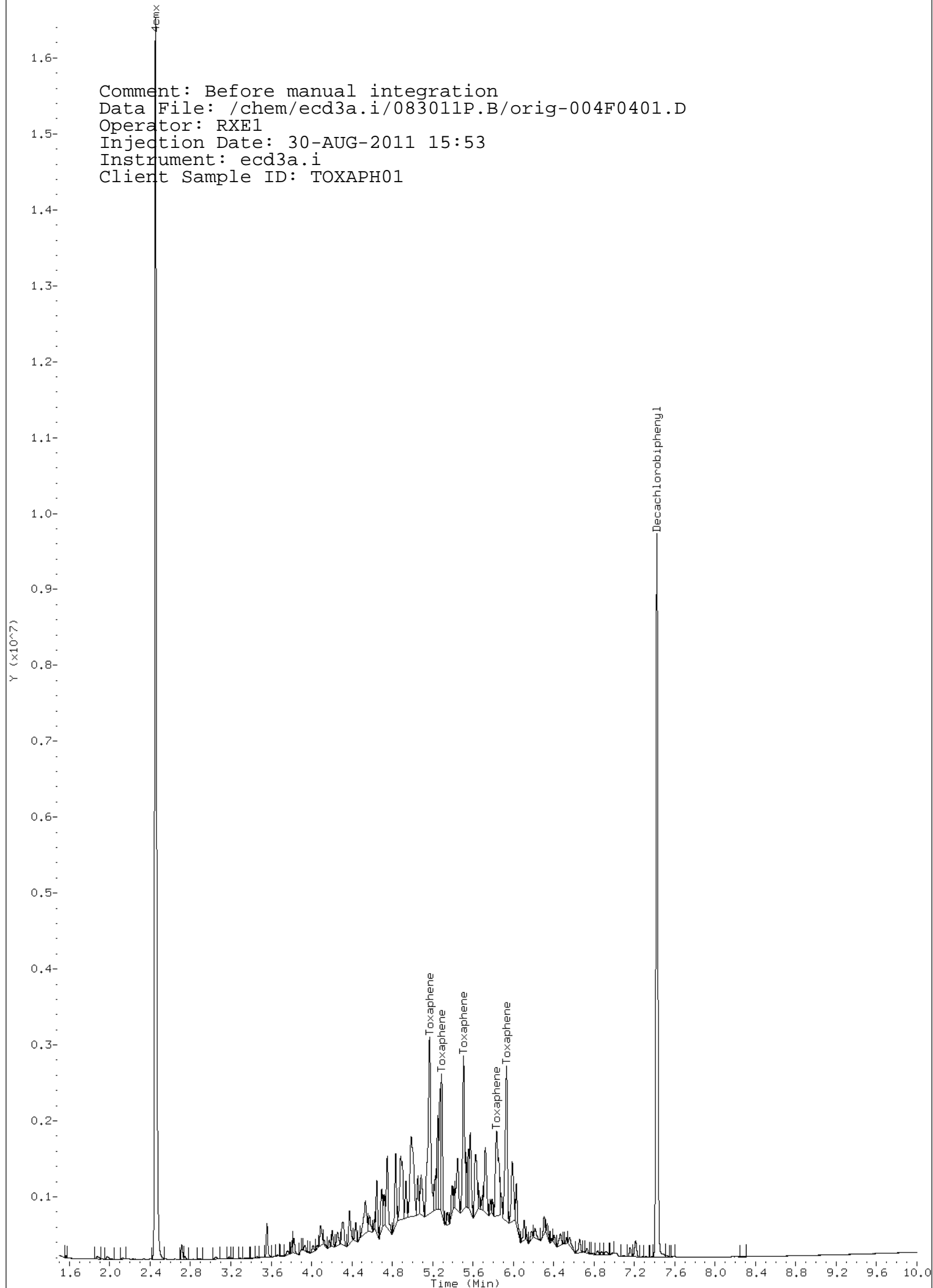
Column diameter: 0.25



Comment: Manually Integrated  
Data File: /chem/ecd3a.i/083011P.B/004F0401.D  
Operator: RXE1  
Injection Date: 30-AUG-2011 15:53  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH01



Comment: Before manual integration  
Data File: /chem/ecd3a.i/083011P.B/orig-004F0401.D  
Operator: RXE1  
Injection Date: 30-AUG-2011 15:53  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH01



Data File: /chem/ecd3a.i/083011P.B/004B0401.D  
Report Date: 31-Aug-2011 14:54

Page 1

GEL Laboratories LLC

CLP-2

Data file : /chem/ecd3a.i/083011P.B/004B0401.D  
Lab Smp Id: WPE110630-52TX Client Smp ID: TOXAPH01  
Inj Date : 30-AUG-2011 15:53  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110630-52TX  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
Meth Date : 31-Aug-2011 11:22 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036b3601.d  
Als bottle: 4 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: tox.sub  
Target Version: 3.50 Sample Matrix: None

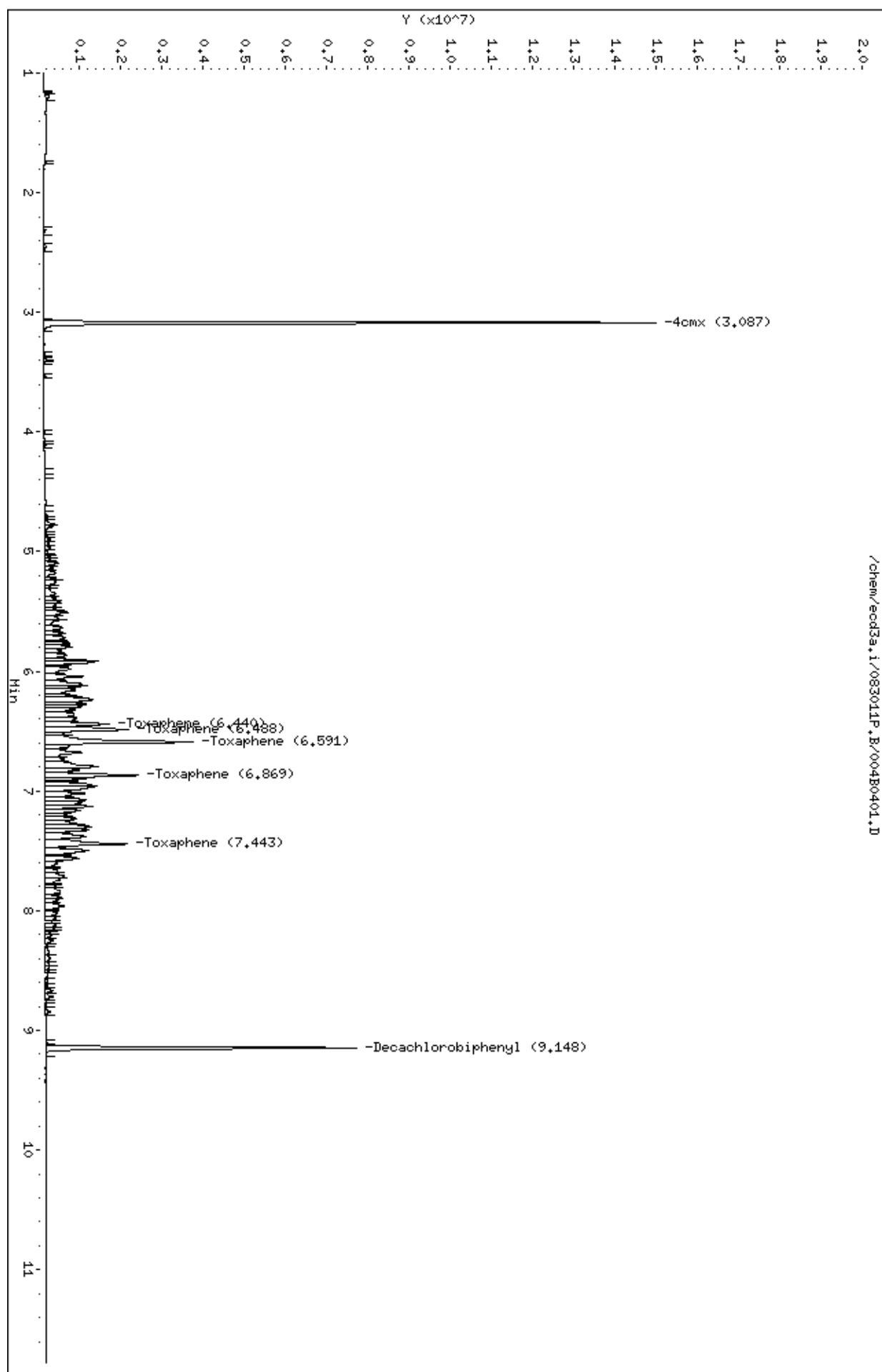
| AMOUNTS                   |        |        |          |         |                  |         |        |           |
|---------------------------|--------|--------|----------|---------|------------------|---------|--------|-----------|
|                           |        |        | CAL-AMT  |         | ON-COL           |         |        |           |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)          | TARGET  | RANGE  | RATIO     |
| ==                        | =====  | =====  | =====    | =====   | =====            | =====   | =====  | =====     |
| 23 Toxaphene              |        |        |          |         | CAS #: 8001-35-2 |         |        |           |
| 6.440                     | 6.440  | 0.000  | 2449181  | 2000.00 | 1720             | 80.00-  | 120.00 | 100.00(M) |
| 6.488                     | 6.488  | 0.000  | 4003922  | 2000.00 | 1730             | 143.48- | 183.48 | 163.48    |
| 6.591                     | 6.591  | 0.000  | 6949775  | 2000.00 | 1750             | 263.76- | 303.76 | 283.76    |
| 6.869                     | 6.869  | 0.000  | 3743089  | 2000.00 | 1780             | 132.83- | 172.83 | 152.83    |
| 7.443                     | 7.443  | 0.000  | 4100476  | 2000.00 | 1710             | 147.42- | 187.42 | 167.42    |
| Average of Peak Amounts = |        |        |          |         | 1.74e+03         |         |        |           |
| -----                     |        |        |          |         |                  |         |        |           |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8  |         |        |           |
| 3.087                     | 3.086  | 0.001  | 15936488 | 200.000 | 184              | 80.00-  | 120.00 | 100.00    |
| -----                     |        |        |          |         |                  |         |        |           |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3 |         |        |           |
| 9.148                     | 9.147  | 0.001  | 9255671  | 200.000 | 176              | 80.00-  | 120.00 | 100.00    |

QC Flag Legend

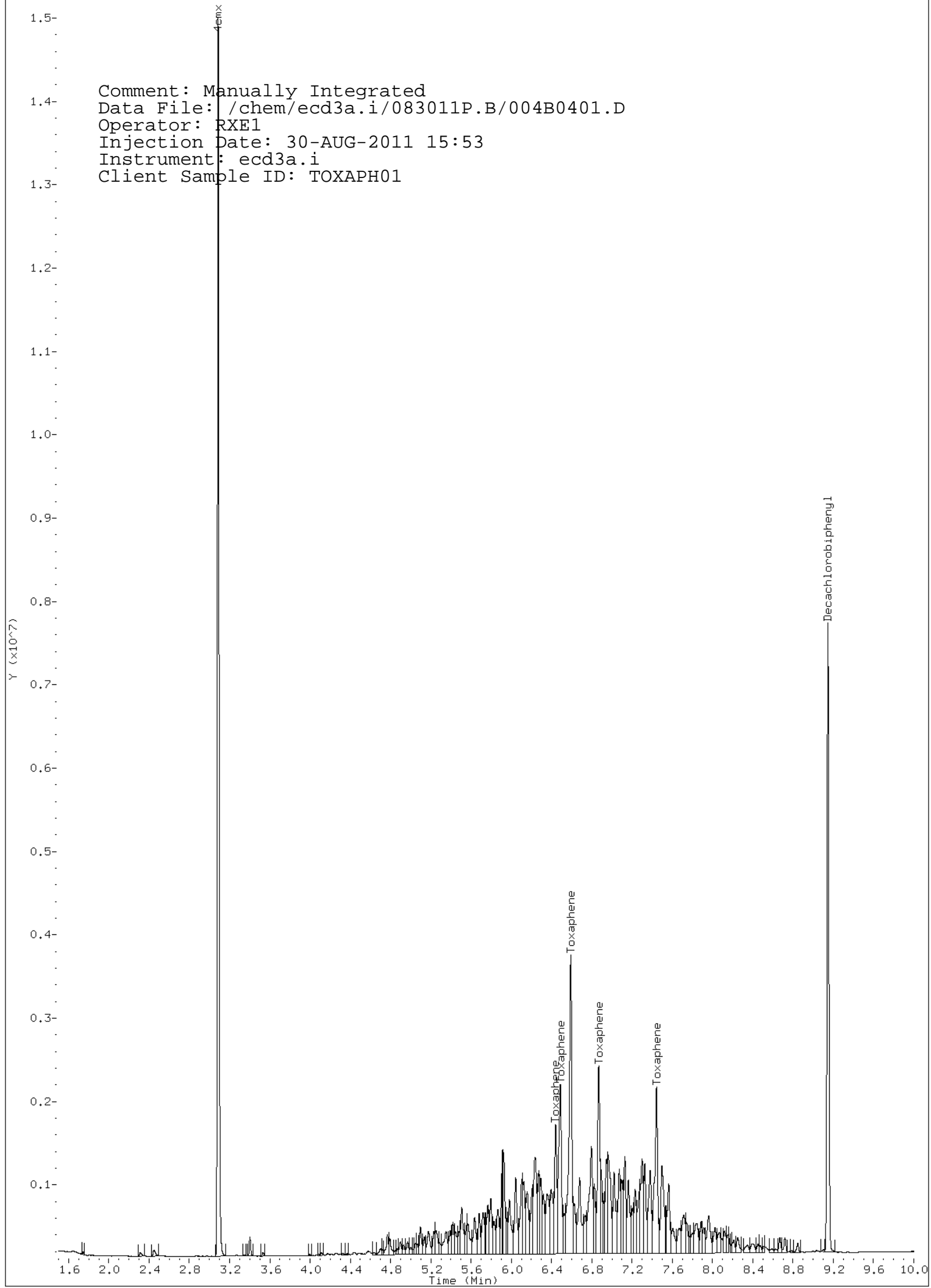
M - Compound response manually integrated.

Data File: /chem/ecd3a.i/083011P.B/004B0401.D  
Date : 30-JUL-2011 15:53  
Client ID: TOXAPH01  
Sample Info: IMPE110630-52TX  
Column phase: CLP-2

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25

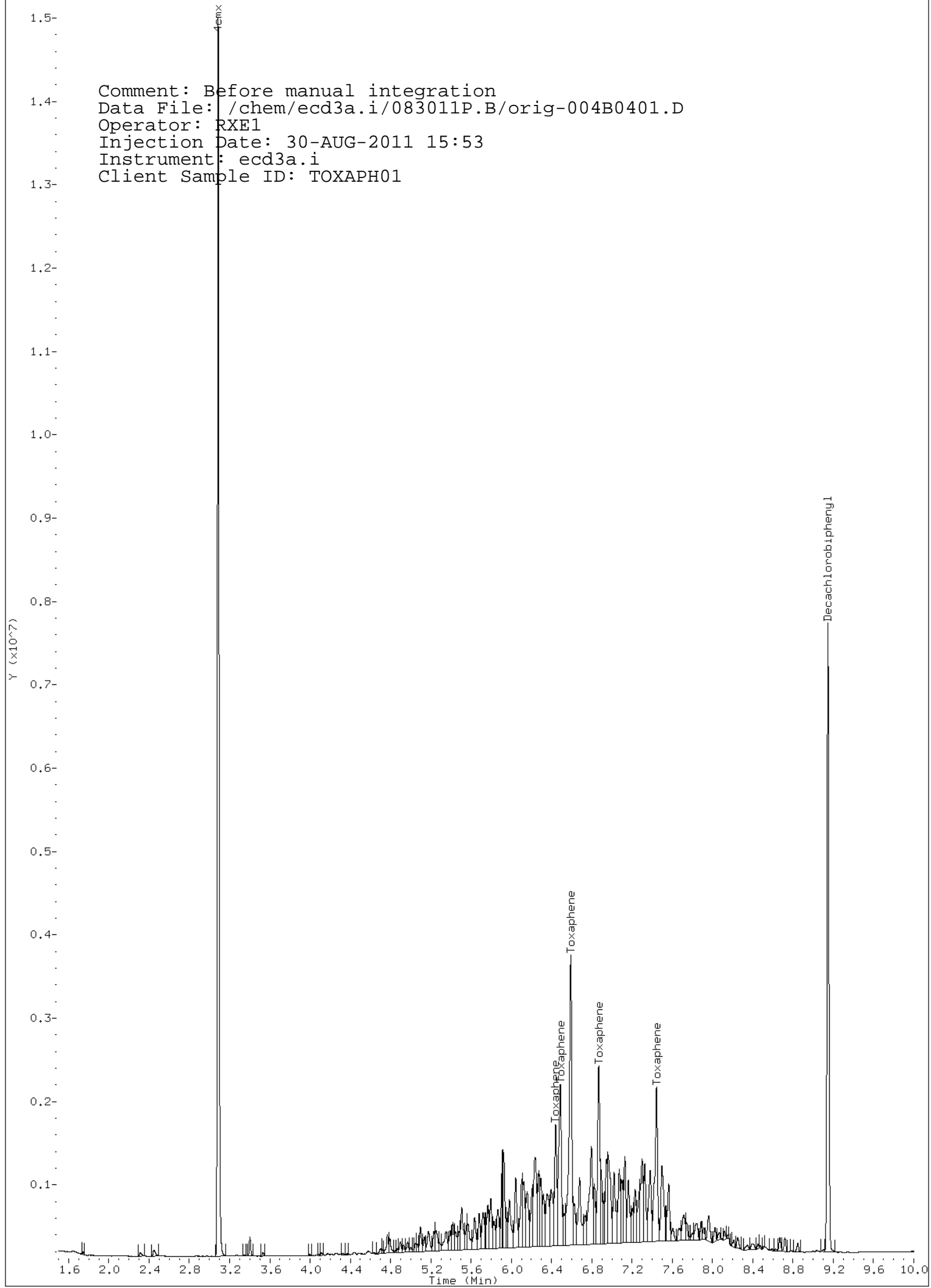


Comment: Manually Integrated  
Data File: /chem/ecd3a.i/083011P.B/004B0401.D  
Operator: RXE1  
Injection Date: 30-AUG-2011 15:53  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH01





Comment: Before manual integration  
Data File: /chem/ecd3a.i/083011P.B/orig-004B0401.D  
Operator: RXE1  
Injection Date: 30-AUG-2011 15:53  
Instrument: ecd3a.i  
Client Sample ID: TOXAPH01



GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/083011P.B/005F0501.D  
Lab Smp Id: WPE110724-00CL Client Smp ID: CHLOR01  
Inj Date : 30-AUG-2011 16:08  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110724-00CL  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
Meth Date : 31-Aug-2011 11:26 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036f3601.d  
Als bottle: 5 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: chlor.sub  
Target Version: 3.50 Sample Matrix: None

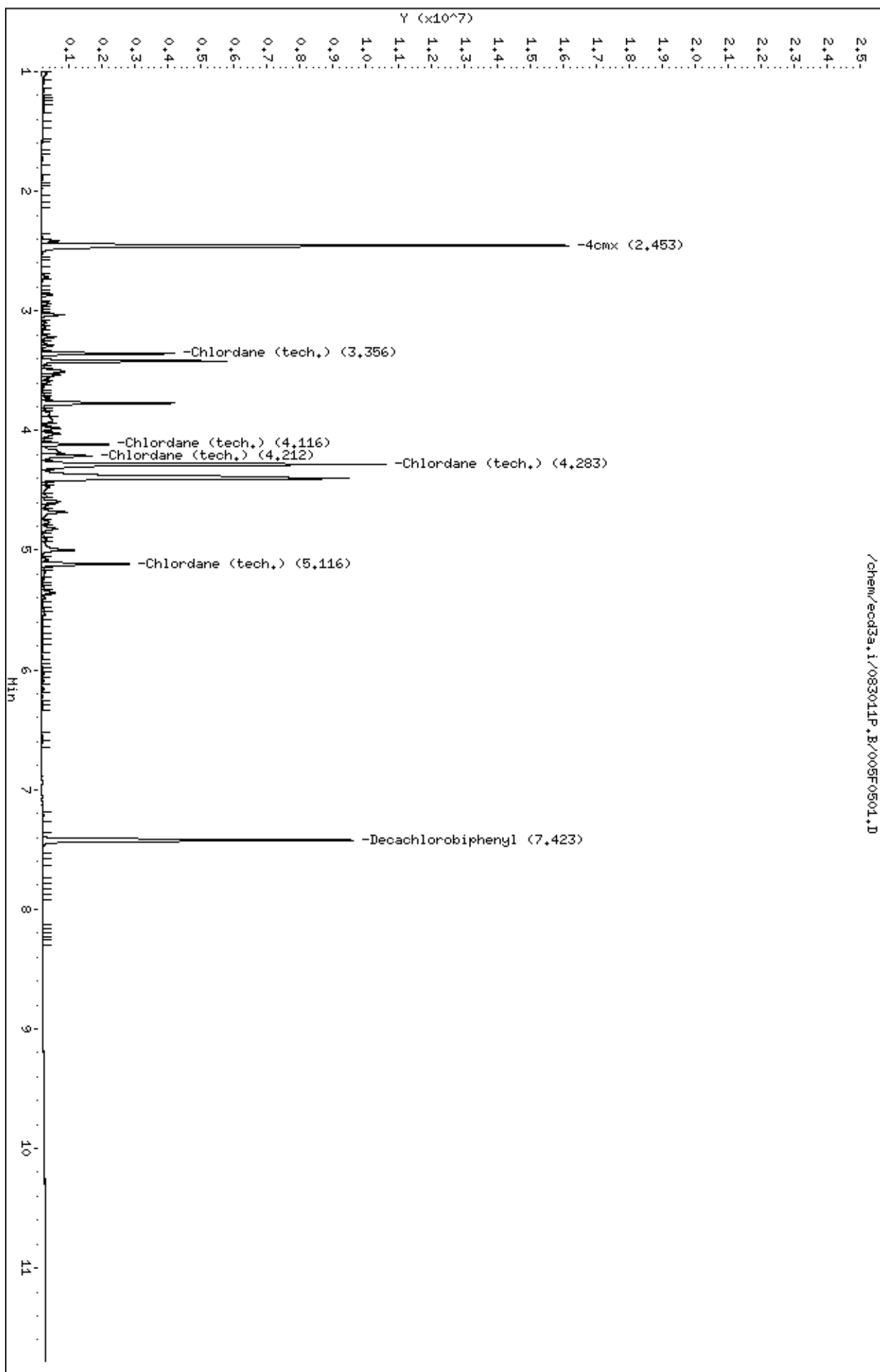
| AMOUNTS                   |        |        |          |         |                   |         |        |           |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|-----------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |           |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO     |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====     |
| 8 Chlordane (tech.)       |        |        |          |         | CAS #: 12789-03-6 |         |        |           |
| 3.356                     | 3.356  | 0.000  | 3833159  | 1000.00 | 847               | 80.00-  | 120.00 | 100.00(M) |
| 4.116                     | 4.116  | 0.000  | 2141635  | 1000.00 | 852               | 35.87-  | 75.87  | 55.87     |
| 4.212                     | 4.212  | 0.000  | 1985601  | 1000.00 | 867               | 31.80-  | 71.80  | 51.80     |
| 4.283                     | 4.283  | 0.000  | 12596864 | 1000.00 | 840               | 308.63- | 348.63 | 328.63    |
| 5.116                     | 5.116  | 0.000  | 3081080  | 1000.00 | 919               | 60.38-  | 100.38 | 80.38     |
| Average of Peak Amounts = |        |        |          |         | 865               |         |        |           |
| -----                     |        |        |          |         |                   |         |        |           |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8   |         |        |           |
| 2.453                     | 2.452  | 0.001  | 19653573 | 200.000 | 154               | 80.00-  | 120.00 | 100.00    |
| -----                     |        |        |          |         |                   |         |        |           |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |           |
| 7.423                     | 7.423  | 0.000  | 11924674 | 200.000 | 150               | 80.00-  | 120.00 | 100.00    |
| -----                     |        |        |          |         |                   |         |        |           |

QC Flag Legend

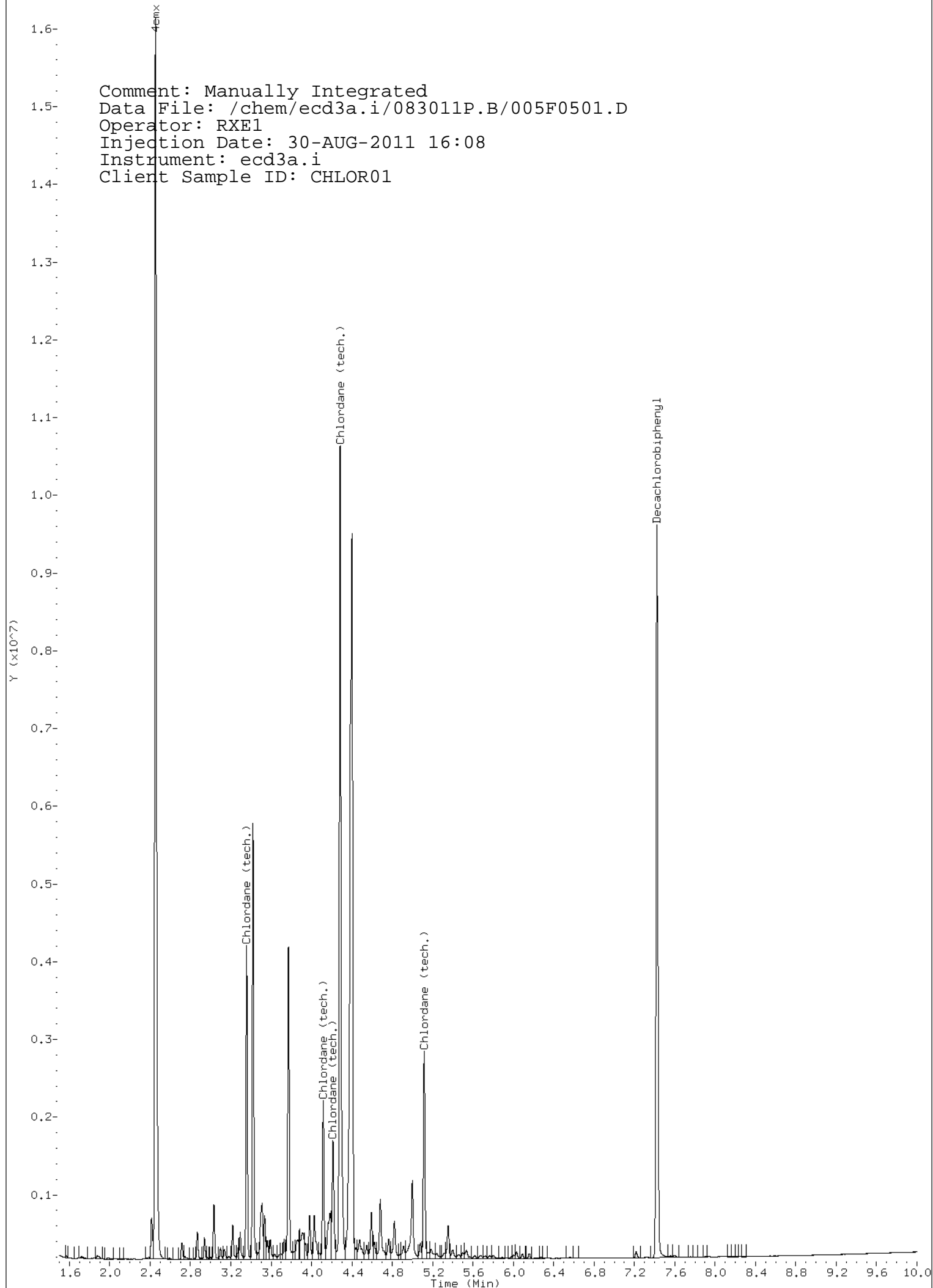
M - Compound response manually integrated.

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Date : 30-JUL-2011 16:08  
Client ID: CHLOR01  
Sample Info: IMPE110724-00CL  
Column phase: CLP-1

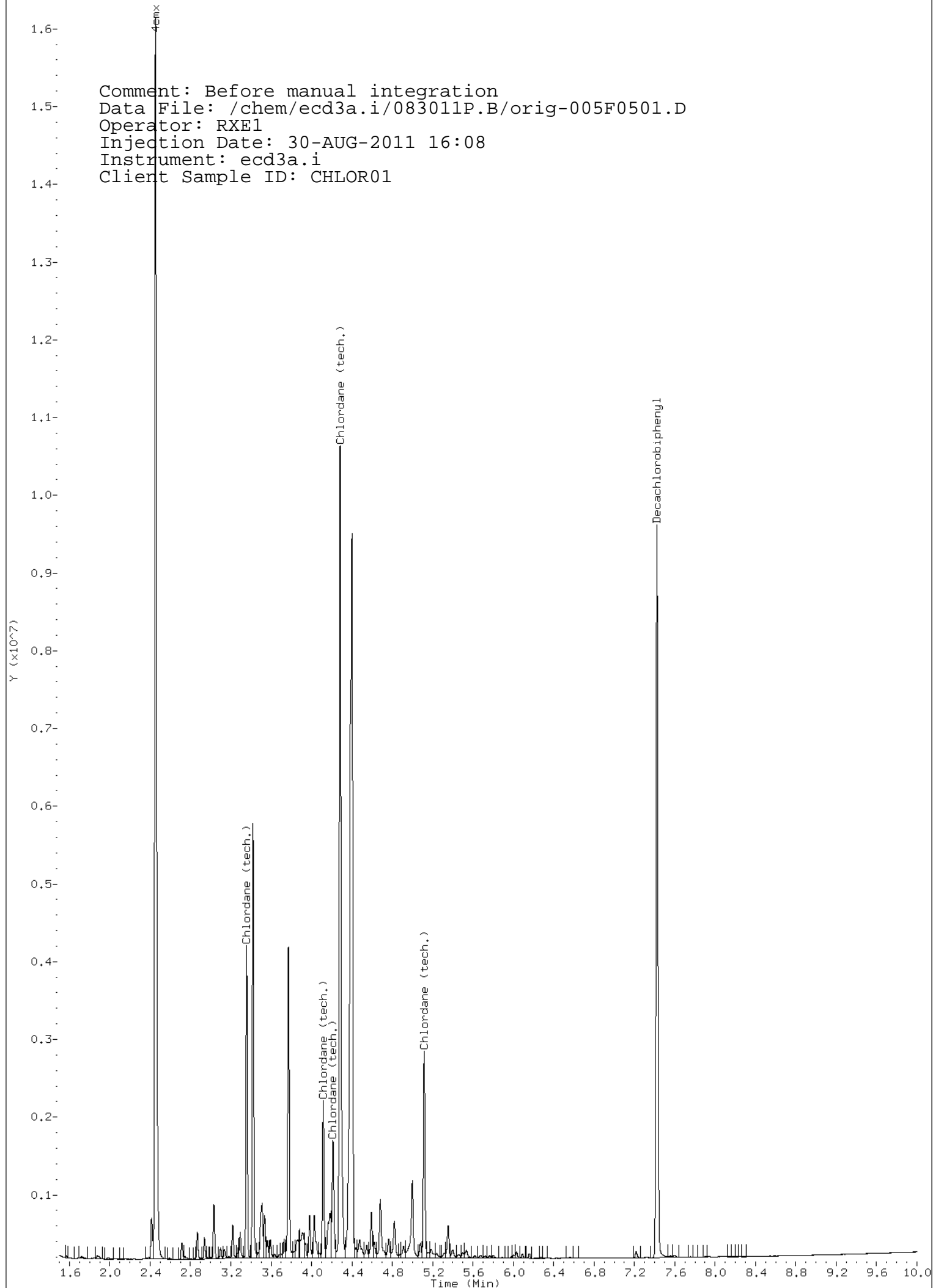
Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



Comment: Manually Integrated  
Data File: /chem/ecd3a.i/083011P.B/005F0501.D  
Operator: RXE1  
Injection Date: 30-AUG-2011 16:08  
Instrument: ecd3a.i  
Client Sample ID: CHLOR01



Comment: Before manual integration  
Data File: /chem/ecd3a.i/083011P.B/orig-005F0501.D  
Operator: RXE1  
Injection Date: 30-AUG-2011 16:08  
Instrument: ecd3a.i  
Client Sample ID: CHLOR01



Data File: /chem/ecd3a.i/083011P.B/005B0501.D  
Report Date: 31-Aug-2011 14:54

Page 1

GEL Laboratories LLC

CLP-2

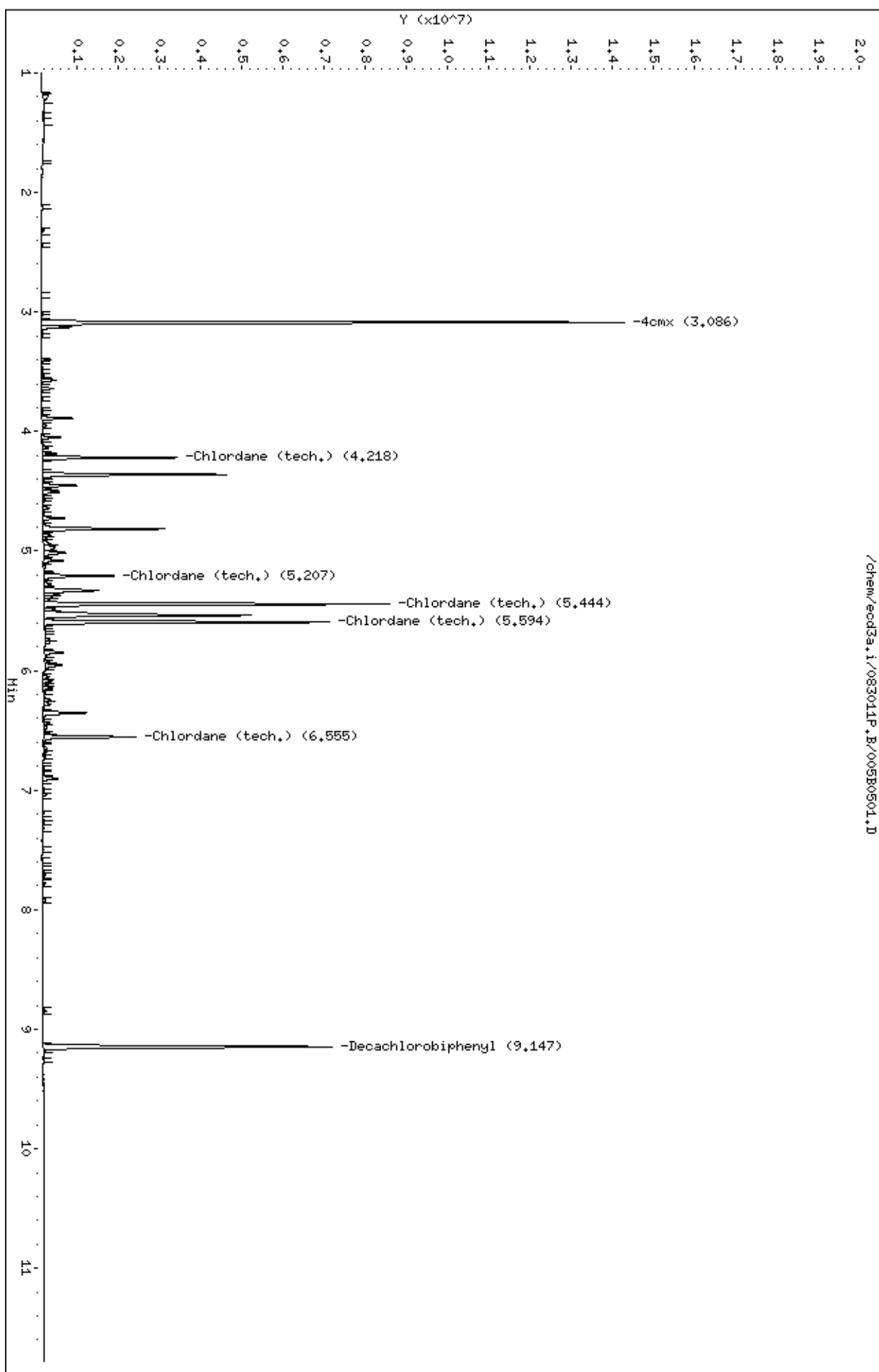
Data file : /chem/ecd3a.i/083011P.B/005B0501.D  
Lab Smp Id: WPE110724-00CL Client Smp ID: CHLOR01  
Inj Date : 30-AUG-2011 16:08  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110724-00CL  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
Meth Date : 31-Aug-2011 11:22 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036b3601.d  
Als bottle: 5 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: chlor.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| 8 Chlordane (tech.)       |        |        |          |         | CAS #: 12789-03-6 |         |        |        |
| 4.218                     | 4.218  | 0.000  | 3257737  | 1000.00 | 934               | 80.00-  | 120.00 | 100.00 |
| 5.207                     | 5.207  | 0.000  | 1891996  | 1000.00 | 908               | 38.08-  | 78.08  | 58.08  |
| 5.444                     | 5.444  | 0.000  | 9131193  | 1000.00 | 945               | 260.29- | 300.29 | 280.29 |
| 5.594                     | 5.594  | 0.000  | 7705723  | 1000.00 | 943               | 216.54- | 256.54 | 236.54 |
| 6.555                     | 6.555  | 0.000  | 2562613  | 1000.00 | 1000              | 58.66-  | 98.66  | 78.66  |
| Average of Peak Amounts = |        |        |          |         | 946               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 1 4cmx                 |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 3.086                     | 3.086  | 0.000  | 15113341 | 200.000 | 174               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 32 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 9.147                     | 9.147  | 0.000  | 8820279  | 200.000 | 168               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecd3a.i/083011P.B/005B0501.D  
Date : 30-JUL-2011 16:08  
Client ID: CHLOR01  
Sample Info: IMPE110724-00CL

Column phase: CLP-2

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/083011P.B/012F1201.D  
Lab Smp Id: WPE110711-10AB Client Smp ID: INDAB01  
Inj Date : 30-AUG-2011 17:57  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110711-10AB  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
Meth Date : 31-Aug-2011 11:26 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036f3601.d  
Als bottle: 12 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: indab.sub  
Target Version: 3.50 Sample Matrix: None

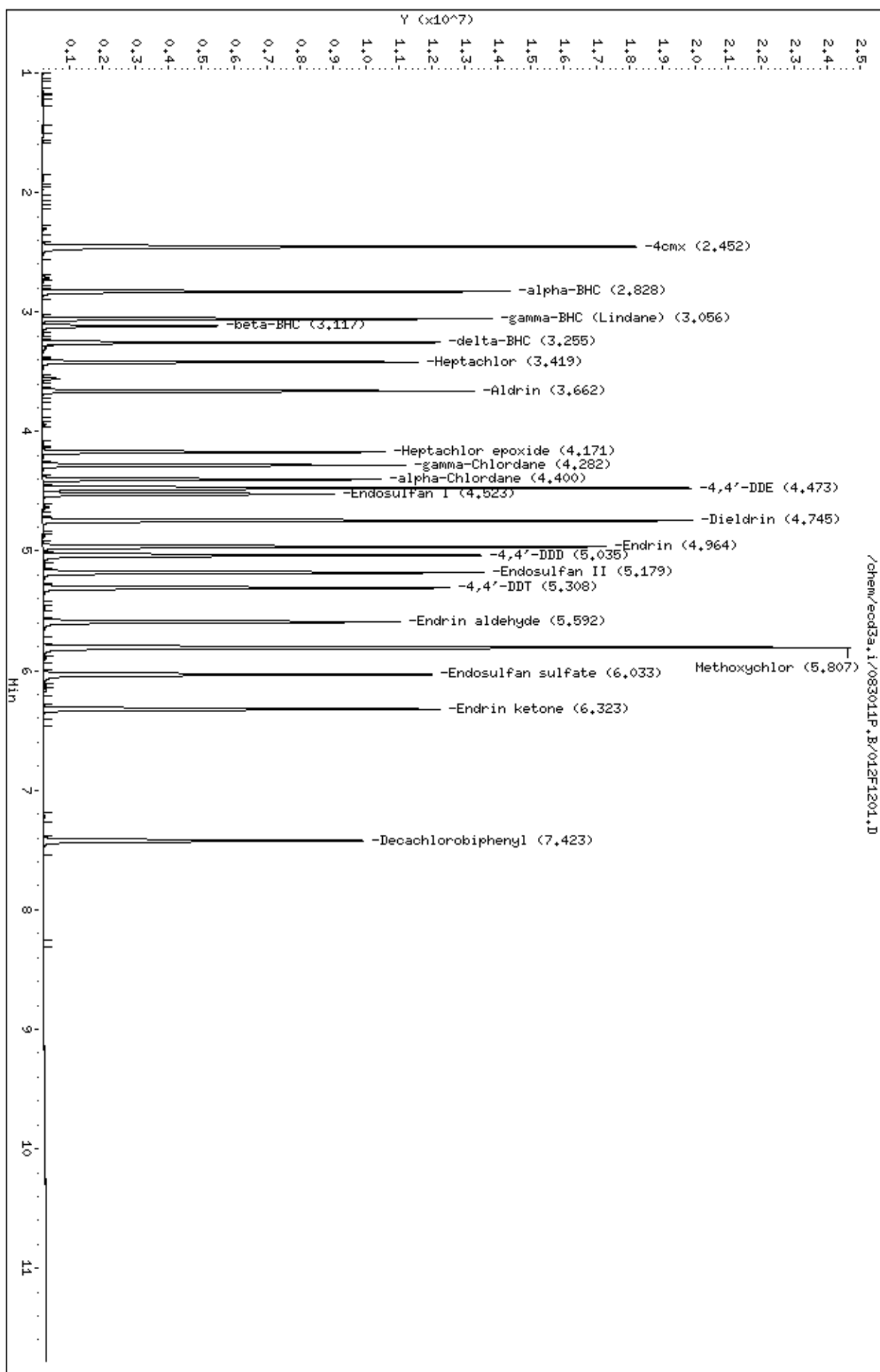
| AMOUNTS |                     |        |                  |         |         |               |        |
|---------|---------------------|--------|------------------|---------|---------|---------------|--------|
|         |                     |        | CAL-AMT          |         | ON-COL  |               |        |
| RT      | EXP RT              | DLT RT | RESPONSE ( ug/L) |         | ( ug/L) | TARGET RANGE  | RATIO  |
| ==      | =====               | =====  | =====            | =====   | =====   | =====         | =====  |
| 5       | alpha-BHC           |        |                  |         | CAS #:  | 319-84-6      |        |
| 2.828   | 2.828               | 0.000  | 13490599         | 100.000 | 114     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 7       | gamma-BHC (Lindane) |        |                  |         | CAS #:  | 58-89-9       |        |
| 3.056   | 3.056               | 0.000  | 12384932         | 100.000 | 115     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 12      | beta-BHC            |        |                  |         | CAS #:  | 319-85-7      |        |
| 3.117   | 3.117               | 0.000  | 4997732          | 100.000 | 101     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 10      | Heptachlor          |        |                  |         | CAS #:  | 76-44-8       |        |
| 3.419   | 3.419               | 0.000  | 10512052         | 100.000 | 109     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 13      | delta-BHC           |        |                  |         | CAS #:  | 319-86-8      |        |
| 3.255   | 3.255               | 0.000  | 10996608         | 100.000 | 112     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 11      | Aldrin              |        |                  |         | CAS #:  | 309-00-2      |        |
| 3.662   | 3.662               | 0.000  | 12447363         | 100.000 | 107     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 14      | Heptachlor epoxide  |        |                  |         | CAS #:  | 1024-57-3     |        |
| 4.171   | 4.171               | 0.000  | 10464623         | 100.000 | 105     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 17      | gamma-Chlordane     |        |                  |         | CAS #:  | 5103-74-2     |        |
| 4.282   | 4.282               | 0.000  | 11169357         | 100.000 | 112     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |
| 18      | alpha-Chlordane     |        |                  |         | CAS #:  | 5103-71-9     |        |
| 4.400   | 4.400               | 0.000  | 10533361         | 100.000 | 108     | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |         |               |        |



| AMOUNTS                  |        |        |          |         |                   |        |        |        |
|--------------------------|--------|--------|----------|---------|-------------------|--------|--------|--------|
|                          |        |        | CAL-AMT  |         | ON-COL            |        |        |        |
| RT                       | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET | RANGE  | RATIO  |
| ==                       | =====  | =====  | =====    | =====   | =====             | =====  | =====  | =====  |
| 16 Endosulfan I          |        |        |          |         | CAS #: 959-98-8   |        |        |        |
| 4.523                    | 4.523  | 0.000  | 9475224  | 100.000 | 108               | 80.00- | 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |        |        |
| 19 4,4'-DDE              |        |        |          |         | CAS #: 72-55-9    |        |        |        |
| 4.473                    | 4.473  | 0.000  | 20814379 | 200.000 | 219               | 80.00- | 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |        |        |
| 20 Dieldrin              |        |        |          |         | CAS #: 60-57-1    |        |        |        |
| 4.745                    | 4.745  | 0.000  | 21515295 | 200.000 | 217               | 80.00- | 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |        |        |
| 22 Endrin                |        |        |          |         | CAS #: 72-20-8    |        |        |        |
| 4.964                    | 4.964  | 0.000  | 18577291 | 200.000 | 227               | 80.00- | 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |        |        |
| 25 4,4'-DDD              |        |        |          |         | CAS #: 72-54-8    |        |        |        |
| 5.035                    | 5.035  | 0.000  | 15167118 | 200.000 | 215               | 80.00- | 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |        |        |
| 24 Endosulfan II         |        |        |          |         | CAS #: 33213-65-9 |        |        |        |
| 5.179                    | 5.179  | 0.000  | 15321322 | 200.000 | 213               | 80.00- | 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |        |        |
| 27 Endrin aldehyde       |        |        |          |         | CAS #: 7421-93-4  |        |        |        |
| 5.592                    | 5.592  | 0.000  | 13179134 | 200.000 | 208               | 80.00- | 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |        |        |
| 26 4,4'-DDT              |        |        |          |         | CAS #: 50-29-3    |        |        |        |
| 5.308                    | 5.308  | 0.000  | 14251678 | 200.000 | 218               | 80.00- | 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |        |        |
| 29 Endosulfan sulfate    |        |        |          |         | CAS #: 1031-07-8  |        |        |        |
| 6.033                    | 6.033  | 0.000  | 14550066 | 200.000 | 213               | 80.00- | 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |        |        |
| 28 Methoxychlor          |        |        |          |         | CAS #: 72-43-5    |        |        |        |
| 5.807                    | 5.807  | 0.000  | 28736559 | 1000.00 | 976               | 80.00- | 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |        |        |
| 31 Endrin ketone         |        |        |          |         | CAS #: 53494-70-5 |        |        |        |
| 6.323                    | 6.323  | 0.000  | 14309411 | 200.000 | 204               | 80.00- | 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |        |        |
| \$ 1 4cmx                |        |        |          |         | CAS #: 877-09-8   |        |        |        |
| 2.452                    | 2.452  | 0.000  | 21221666 | 200.000 | 212               | 80.00- | 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |        |        |
| \$ 32 Decachlorobiphenyl |        |        |          |         | CAS #: 2051-24-3  |        |        |        |
| 7.423                    | 7.423  | 0.000  | 12613003 | 200.000 | 206               | 80.00- | 120.00 | 100.00 |

Data File: /chem/ecd3a.i/083011P.B/012F1201.D  
 Date : 30-JUL-2011 17:57  
 Client ID: INDA801  
 Sample Info: IUP110711-100B  
 Column phase: CLP-1

Instrument: ecd3a.i  
 Operator: RXE1  
 Column diameter: 0.25



Data File: /chem/ecd3a.i/083011P.B/012B1201.D  
Report Date: 31-Aug-2011 14:55

Page 1

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CLP-2

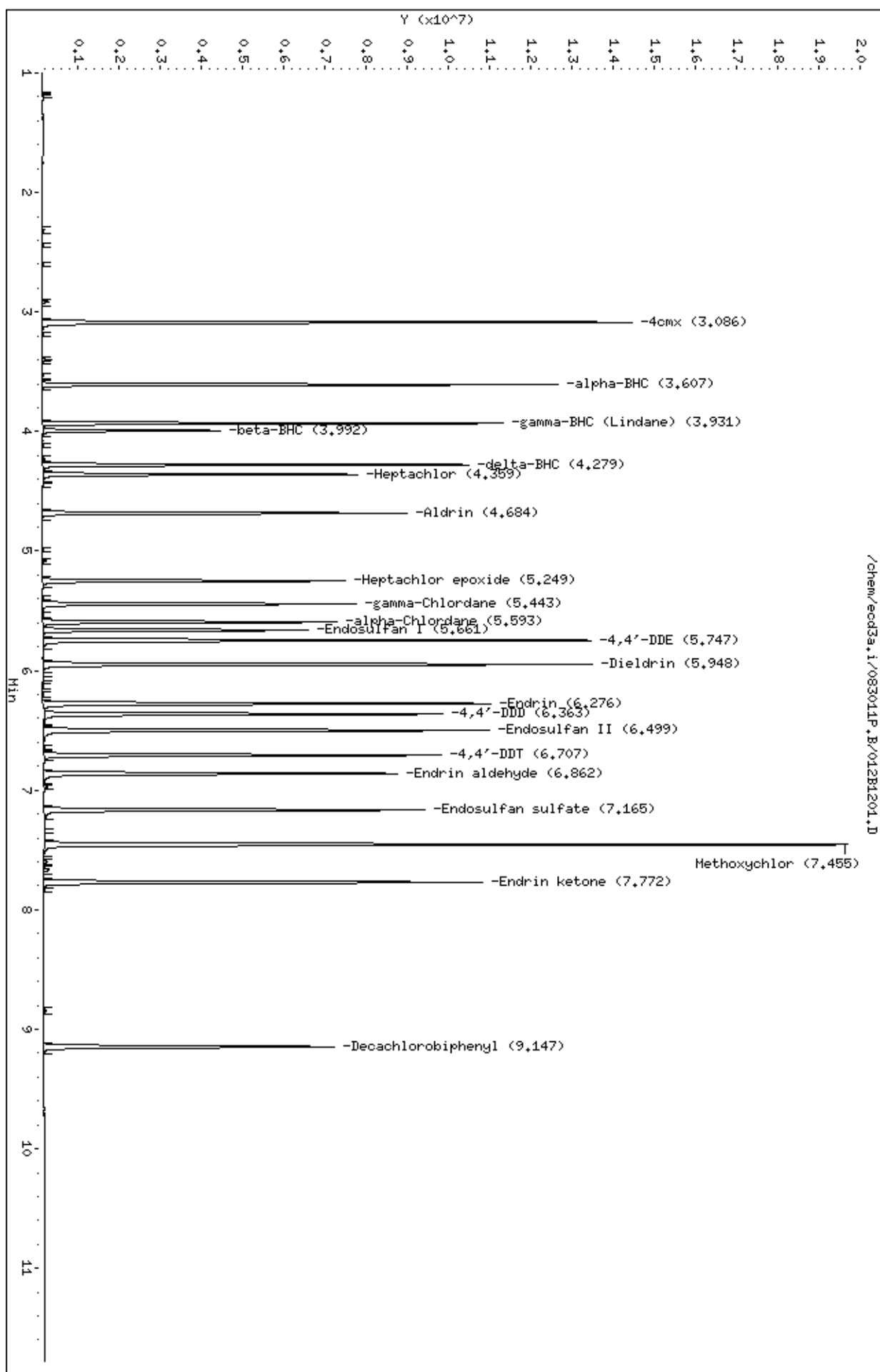
Data file : /chem/ecd3a.i/083011P.B/012B1201.D  
Lab Smp Id: WPE110711-10AB Client Smp ID: INDAB01  
Inj Date : 30-AUG-2011 17:57  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110711-10AB  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
Meth Date : 31-Aug-2011 11:22 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036b3601.d  
Als bottle: 12 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: indab.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS |                     |        |          |         |                  |               |        |
|---------|---------------------|--------|----------|---------|------------------|---------------|--------|
| RT      | EXP RT              | DLT RT | CAL-AMT  |         | ON-COL           | TARGET RANGE  | RATIO  |
| ==      | =====               | =====  | RESPONSE | ( ug/L) | ( ug/L)          | =====         | =====  |
| 5       | alpha-BHC           |        |          |         | CAS #: 319-84-6  |               |        |
| 3.607   | 3.607               | 0.000  | 11739864 | 100.000 | 99.6             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 7       | gamma-BHC (Lindane) |        |          |         | CAS #: 58-89-9   |               |        |
| 3.931   | 3.931               | 0.000  | 10530112 | 100.000 | 101              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 12      | beta-BHC            |        |          |         | CAS #: 319-85-7  |               |        |
| 3.992   | 3.992               | 0.000  | 4085716  | 100.000 | 90.3             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 10      | Heptachlor          |        |          |         | CAS #: 76-44-8   |               |        |
| 4.359   | 4.359               | 0.000  | 7657818  | 100.000 | 94.8             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 13      | delta-BHC           |        |          |         | CAS #: 319-86-8  |               |        |
| 4.279   | 4.279               | 0.000  | 10122987 | 100.000 | 98.1             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 11      | Aldrin              |        |          |         | CAS #: 309-00-2  |               |        |
| 4.684   | 4.684               | 0.000  | 9171076  | 100.000 | 92.4             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 14      | Heptachlor epoxide  |        |          |         | CAS #: 1024-57-3 |               |        |
| 5.249   | 5.249               | 0.000  | 7901964  | 100.000 | 91.6             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 17      | gamma-Chlordane     |        |          |         | CAS #: 5103-74-2 |               |        |
| 5.443   | 5.443               | 0.000  | 8343029  | 100.000 | 96.9             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 18      | alpha-Chlordane     |        |          |         | CAS #: 5103-71-9 |               |        |
| 5.593   | 5.593               | 0.000  | 7890161  | 100.000 | 93.7             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |

| AMOUNTS                  |        |        |          |         |                   |        |               |        |
|--------------------------|--------|--------|----------|---------|-------------------|--------|---------------|--------|
|                          |        |        | CAL-AMT  |         | ON-COL            |        |               |        |
| RT                       | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET | RANGE         | RATIO  |
| ==                       | =====  | =====  | =====    | =====   | =====             | =====  | =====         | =====  |
| 16 Endosulfan I          |        |        |          |         |                   |        |               |        |
| 5.661                    | 5.661  | 0.000  | 7307379  | 100.000 | CAS #: 959-98-8   | 93.7   | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |               |        |
| 19 4,4'-DDE              |        |        |          |         |                   |        |               |        |
| 5.747                    | 5.747  | 0.000  | 14833807 | 200.000 | CAS #: 72-55-9    | 188    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |               |        |
| 20 Dieldrin              |        |        |          |         |                   |        |               |        |
| 5.948                    | 5.948  | 0.000  | 15348719 | 200.000 | CAS #: 60-57-1    | 191    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |               |        |
| 22 Endrin                |        |        |          |         |                   |        |               |        |
| 6.276                    | 6.276  | 0.000  | 12775942 | 200.000 | CAS #: 72-20-8    | 197    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |               |        |
| 25 4,4'-DDD              |        |        |          |         |                   |        |               |        |
| 6.363                    | 6.363  | 0.000  | 11391366 | 200.000 | CAS #: 72-54-8    | 188    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |               |        |
| 24 Endosulfan II         |        |        |          |         |                   |        |               |        |
| 6.499                    | 6.499  | 0.000  | 12985939 | 200.000 | CAS #: 33213-65-9 | 189    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |               |        |
| 27 Endrin aldehyde       |        |        |          |         |                   |        |               |        |
| 6.862                    | 6.862  | 0.000  | 10530585 | 200.000 | CAS #: 7421-93-4  | 186    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |               |        |
| 26 4,4'-DDT              |        |        |          |         |                   |        |               |        |
| 6.707                    | 6.707  | 0.000  | 10965931 | 200.000 | CAS #: 50-29-3    | 193    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |               |        |
| 29 Endosulfan sulfate    |        |        |          |         |                   |        |               |        |
| 7.165                    | 7.165  | 0.000  | 11009913 | 200.000 | CAS #: 1031-07-8  | 188    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |               |        |
| 28 Methoxychlor          |        |        |          |         |                   |        |               |        |
| 7.455                    | 7.455  | 0.000  | 22376434 | 1000.00 | CAS #: 72-43-5    | 913    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |               |        |
| 31 Endrin ketone         |        |        |          |         |                   |        |               |        |
| 7.772                    | 7.772  | 0.000  | 12955135 | 200.000 | CAS #: 53494-70-5 | 184    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |               |        |
| \$ 1 4cmx                |        |        |          |         |                   |        |               |        |
| 3.086                    | 3.086  | 0.000  | 15137231 | 200.000 | CAS #: 877-09-8   | 188    | 80.00- 120.00 | 100.00 |
| -----                    |        |        |          |         |                   |        |               |        |
| \$ 32 Decachlorobiphenyl |        |        |          |         |                   |        |               |        |
| 9.147                    | 9.147  | 0.000  | 8758575  | 200.000 | CAS #: 2051-24-3  | 182    | 80.00- 120.00 | 100.00 |

Data File: /chem/ecod3a.i/083011P.B/012B1201.D  
 Date : 30-JUL-2011 17:57  
 Client ID: INDA801  
 Sample Info: IMPE110711-100B  
 Column phase: CLP-2

Instrument: ecod3a.i  
 Operator: RXE1  
 Column diameter: 0.25



GEL Laboratories LLC

CLP-1

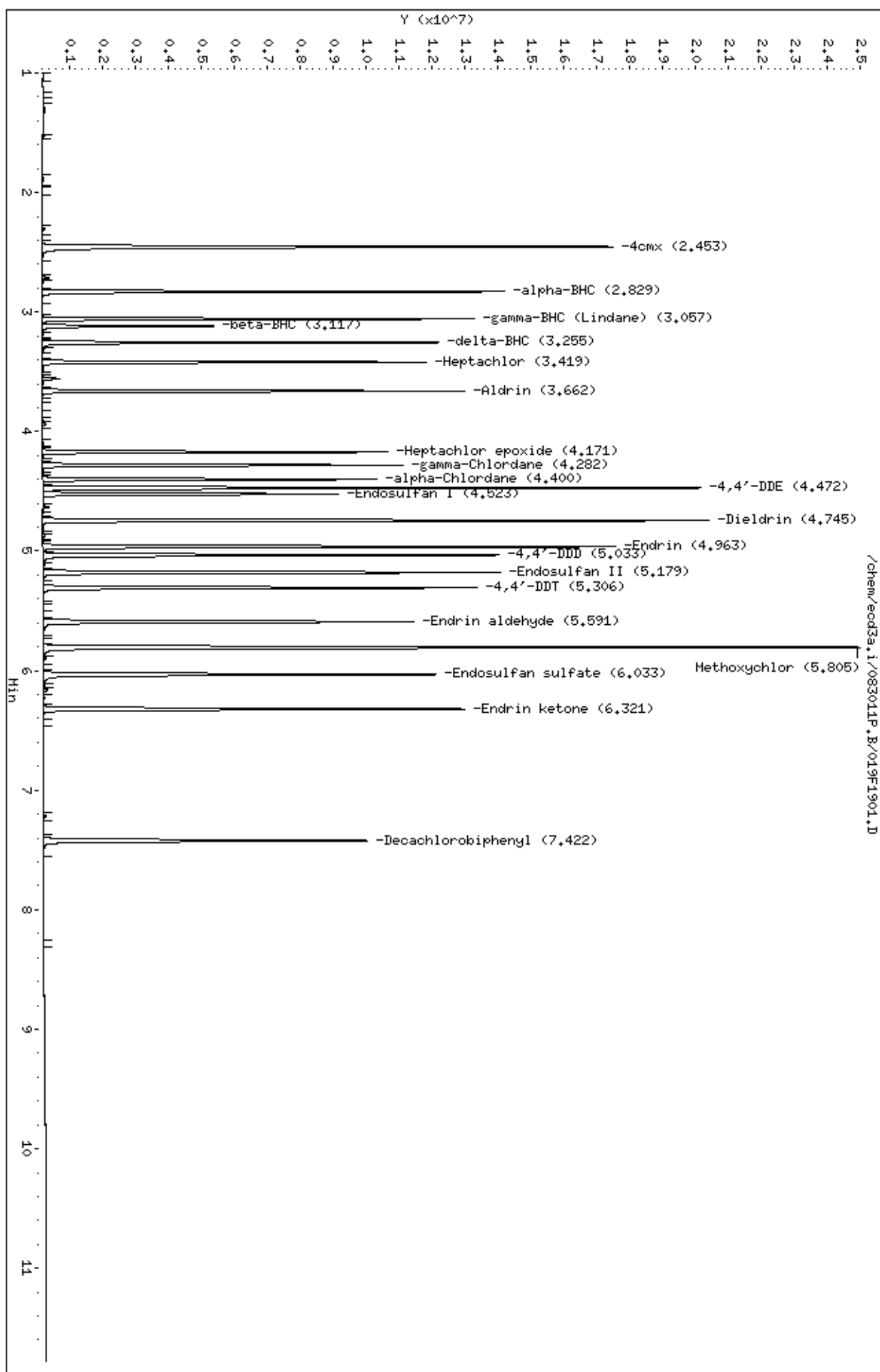
Data file : /chem/ecd3a.i/083011P.B/019F1901.D  
Lab Smp Id: WPE110812-10AB Client Smp ID: INDAB02  
Inj Date : 30-AUG-2011 19:46  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110812-10AB  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
Meth Date : 31-Aug-2011 11:26 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036f3601.d  
Als bottle: 19 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: indab.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS |                     |        |                  |         |                  |               |        |
|---------|---------------------|--------|------------------|---------|------------------|---------------|--------|
| RT      | EXP RT              | DLT RT | CAL-AMT          |         | ON-COL           | TARGET RANGE  | RATIO  |
| ==      | =====               | =====  | RESPONSE ( ug/L) |         | ( ug/L)          | =====         | =====  |
| 5       | alpha-BHC           |        |                  |         | CAS #: 319-84-6  |               |        |
| 2.829   | 2.828               | 0.001  | 13499228         | 100.000 | 114              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 7       | gamma-BHC (Lindane) |        |                  |         | CAS #: 58-89-9   |               |        |
| 3.057   | 3.056               | 0.001  | 12245494         | 100.000 | 114              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 12      | beta-BHC            |        |                  |         | CAS #: 319-85-7  |               |        |
| 3.117   | 3.117               | 0.000  | 4908792          | 100.000 | 98.9             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 10      | Heptachlor          |        |                  |         | CAS #: 76-44-8   |               |        |
| 3.419   | 3.419               | 0.000  | 10826471         | 100.000 | 112              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 13      | delta-BHC           |        |                  |         | CAS #: 319-86-8  |               |        |
| 3.255   | 3.255               | 0.000  | 10979979         | 100.000 | 112              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 11      | Aldrin              |        |                  |         | CAS #: 309-00-2  |               |        |
| 3.662   | 3.662               | 0.000  | 12242720         | 100.000 | 106              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 14      | Heptachlor epoxide  |        |                  |         | CAS #: 1024-57-3 |               |        |
| 4.171   | 4.171               | 0.000  | 10390112         | 100.000 | 104              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 17      | gamma-Chlordane     |        |                  |         | CAS #: 5103-74-2 |               |        |
| 4.282   | 4.282               | 0.000  | 10990407         | 100.000 | 110              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |
| 18      | alpha-Chlordane     |        |                  |         | CAS #: 5103-71-9 |               |        |
| 4.400   | 4.400               | 0.000  | 10338168         | 100.000 | 106              | 80.00- 120.00 | 100.00 |
| -----   |                     |        |                  |         |                  |               |        |

| AMOUNTS                  |        |         |    |                  |         |               |        |
|--------------------------|--------|---------|----|------------------|---------|---------------|--------|
|                          |        | CAL-AMT |    | ON-COL           |         |               |        |
| RT                       | EXP RT | DLT RT  | RT | RESPONSE ( ug/L) | ( ug/L) | TARGET RANGE  | RATIO  |
| ==                       | =====  | =====   |    | =====            | =====   | =====         | =====  |
| 16 Endosulfan I          |        |         |    |                  |         |               |        |
| 4.523                    | 4.523  | 0.000   |    | 9466269 100.000  | 107     | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 19 4,4'-DDE              |        |         |    |                  |         |               |        |
| 4.472                    | 4.473  | -0.001  |    | 20915493 200.000 | 220     | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 20 Dieldrin              |        |         |    |                  |         |               |        |
| 4.745                    | 4.745  | 0.000   |    | 21470528 200.000 | 216     | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 22 Endrin                |        |         |    |                  |         |               |        |
| 4.963                    | 4.964  | -0.001  |    | 19020219 200.000 | 232     | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 25 4,4'-DDD              |        |         |    |                  |         |               |        |
| 5.033                    | 5.035  | -0.002  |    | 15446173 200.000 | 219     | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 24 Endosulfan II         |        |         |    |                  |         |               |        |
| 5.179                    | 5.179  | 0.000   |    | 15601929 200.000 | 217     | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 27 Endrin aldehyde       |        |         |    |                  |         |               |        |
| 5.591                    | 5.592  | -0.001  |    | 13198396 200.000 | 208     | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 26 4,4'-DDT              |        |         |    |                  |         |               |        |
| 5.306                    | 5.308  | -0.002  |    | 14440166 200.000 | 221     | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 29 Endosulfan sulfate    |        |         |    |                  |         |               |        |
| 6.033                    | 6.033  | 0.000   |    | 14755695 200.000 | 216     | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 28 Methoxychlor          |        |         |    |                  |         |               |        |
| 5.805                    | 5.807  | -0.002  |    | 29267471 1000.00 | 994     | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| 31 Endrin ketone         |        |         |    |                  |         |               |        |
| 6.321                    | 6.323  | -0.002  |    | 14805243 200.000 | 211     | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| \$ 1 4cmx                |        |         |    |                  |         |               |        |
| 2.453                    | 2.452  | 0.001   |    | 20834039 200.000 | 208     | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |
| \$ 32 Decachlorobiphenyl |        |         |    |                  |         |               |        |
| 7.422                    | 7.423  | -0.001  |    | 12537824 200.000 | 204     | 80.00- 120.00 | 100.00 |
| -----                    |        |         |    |                  |         |               |        |

Data File: /chem/ecd3a.i/083011P.B/019F1901.D  
Date : 30-JUL-2011 19:46  
Client ID: INDA802  
Sample Info: IUPF110812-10aB  
Column phase: CLP-1

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25





GEL Laboratories LLC

CLP-2

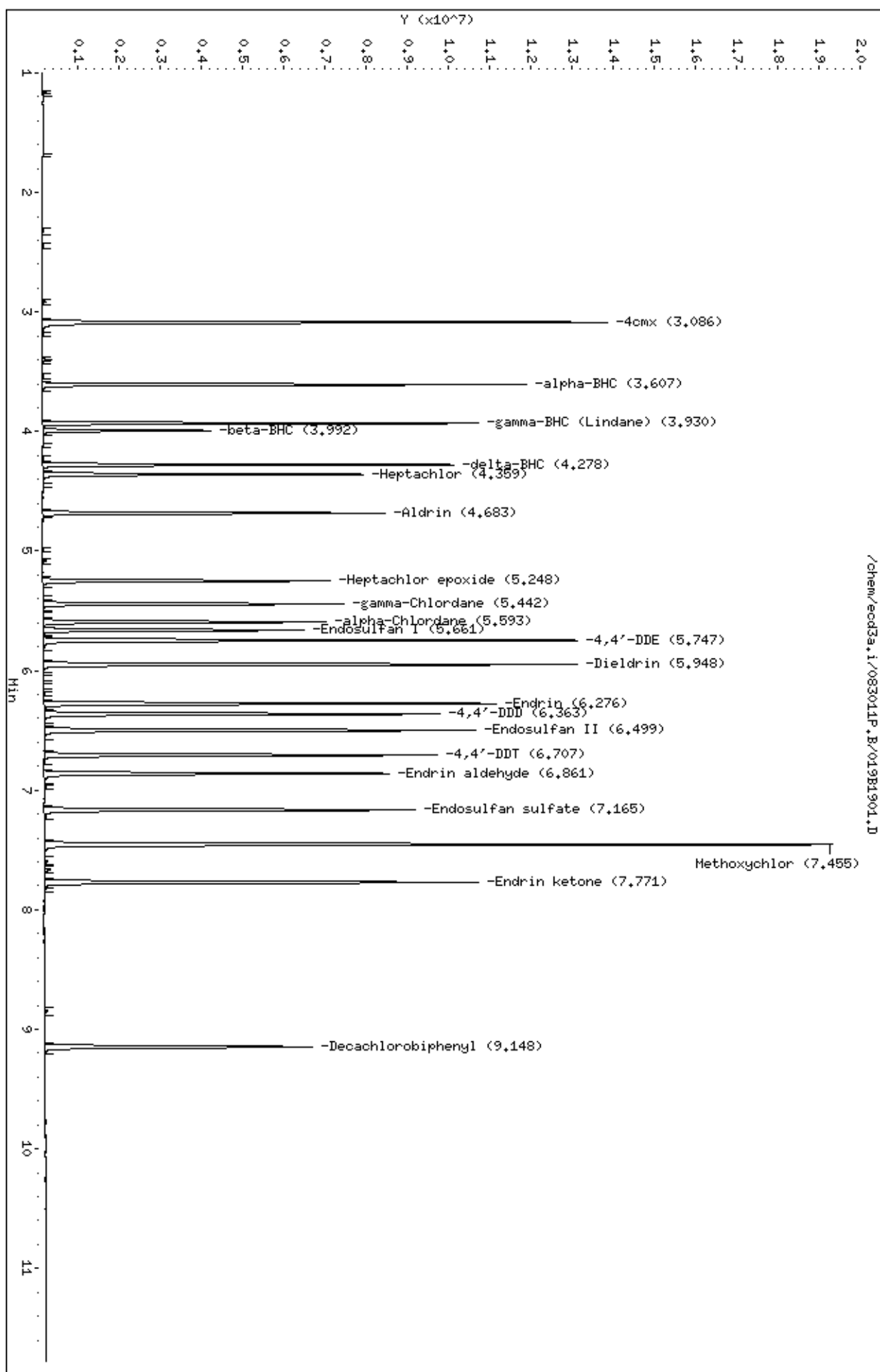
Data file : /chem/ecd3a.i/083011P.B/019B1901.D  
Lab Smp Id: WPE110812-10AB Client Smp ID: INDAB02  
Inj Date : 30-AUG-2011 19:46  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |WPE110812-10AB  
Misc Info :  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
Meth Date : 31-Aug-2011 11:22 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036b3601.d  
Als bottle: 19 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: indab.sub  
Target Version: 3.50 Sample Matrix: None

| AMOUNTS |                     |        |          |         |                  |               |        |
|---------|---------------------|--------|----------|---------|------------------|---------------|--------|
| RT      | EXP RT              | DLT RT | CAL-AMT  |         | ON-COL           | TARGET RANGE  | RATIO  |
| ==      | =====               | =====  | RESPONSE | ( ug/L) | ( ug/L)          | =====         | =====  |
| 5       | alpha-BHC           |        |          |         | CAS #: 319-84-6  |               |        |
| 3.607   | 3.607               | 0.000  | 11127588 | 100.000 | 94.4             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 7       | gamma-BHC (Lindane) |        |          |         | CAS #: 58-89-9   |               |        |
| 3.930   | 3.931               | -0.001 | 10000818 | 100.000 | 95.6             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 12      | beta-BHC            |        |          |         | CAS #: 319-85-7  |               |        |
| 3.992   | 3.992               | 0.000  | 3843345  | 100.000 | 84.9             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 10      | Heptachlor          |        |          |         | CAS #: 76-44-8   |               |        |
| 4.359   | 4.359               | 0.000  | 7754037  | 100.000 | 96.0             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 13      | delta-BHC           |        |          |         | CAS #: 319-86-8  |               |        |
| 4.278   | 4.279               | -0.001 | 9669243  | 100.000 | 93.7             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 11      | Aldrin              |        |          |         | CAS #: 309-00-2  |               |        |
| 4.683   | 4.684               | -0.001 | 8719822  | 100.000 | 87.8             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 14      | Heptachlor epoxide  |        |          |         | CAS #: 1024-57-3 |               |        |
| 5.248   | 5.249               | -0.001 | 7596190  | 100.000 | 88.0             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 17      | gamma-Chlordane     |        |          |         | CAS #: 5103-74-2 |               |        |
| 5.442   | 5.443               | -0.001 | 7898588  | 100.000 | 91.8             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |
| 18      | alpha-Chlordane     |        |          |         | CAS #: 5103-71-9 |               |        |
| 5.593   | 5.593               | 0.000  | 7511926  | 100.000 | 89.2             | 80.00- 120.00 | 100.00 |
| -----   |                     |        |          |         |                  |               |        |

|                          |        |        | AMOUNTS  |         |         |        |            |        |
|--------------------------|--------|--------|----------|---------|---------|--------|------------|--------|
|                          |        |        | CAL-AMT  |         | ON-COL  |        |            |        |
| RT                       | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L) | TARGET | RANGE      | RATIO  |
| ==                       | =====  | =====  | =====    | =====   | =====   | =====  | =====      | =====  |
| 16 Endosulfan I          |        |        |          |         |         | CAS #: | 959-98-8   |        |
| 5.661                    | 5.661  | 0.000  | 7009246  | 100.000 | 89.9    | 80.00- | 120.00     | 100.00 |
| -----                    |        |        |          |         |         |        |            |        |
| 19 4,4'-DDE              |        |        |          |         |         | CAS #: | 72-55-9    |        |
| 5.747                    | 5.747  | 0.000  | 14369188 | 200.000 | 182     | 80.00- | 120.00     | 100.00 |
| -----                    |        |        |          |         |         |        |            |        |
| 20 Dieldrin              |        |        |          |         |         | CAS #: | 60-57-1    |        |
| 5.948                    | 5.948  | 0.000  | 14838565 | 200.000 | 184     | 80.00- | 120.00     | 100.00 |
| -----                    |        |        |          |         |         |        |            |        |
| 22 Endrin                |        |        |          |         |         | CAS #: | 72-20-8    |        |
| 6.276                    | 6.276  | 0.000  | 12678588 | 200.000 | 196     | 80.00- | 120.00     | 100.00 |
| -----                    |        |        |          |         |         |        |            |        |
| 25 4,4'-DDD              |        |        |          |         |         | CAS #: | 72-54-8    |        |
| 6.363                    | 6.363  | 0.000  | 11116496 | 200.000 | 183     | 80.00- | 120.00     | 100.00 |
| -----                    |        |        |          |         |         |        |            |        |
| 24 Endosulfan II         |        |        |          |         |         | CAS #: | 33213-65-9 |        |
| 6.499                    | 6.499  | 0.000  | 12470708 | 200.000 | 182     | 80.00- | 120.00     | 100.00 |
| -----                    |        |        |          |         |         |        |            |        |
| 27 Endrin aldehyde       |        |        |          |         |         | CAS #: | 7421-93-4  |        |
| 6.861                    | 6.862  | -0.001 | 10102475 | 200.000 | 178     | 80.00- | 120.00     | 100.00 |
| -----                    |        |        |          |         |         |        |            |        |
| 26 4,4'-DDT              |        |        |          |         |         | CAS #: | 50-29-3    |        |
| 6.707                    | 6.707  | 0.000  | 10788358 | 200.000 | 190     | 80.00- | 120.00     | 100.00 |
| -----                    |        |        |          |         |         |        |            |        |
| 29 Endosulfan sulfate    |        |        |          |         |         | CAS #: | 1031-07-8  |        |
| 7.165                    | 7.165  | 0.000  | 10820362 | 200.000 | 185     | 80.00- | 120.00     | 100.00 |
| -----                    |        |        |          |         |         |        |            |        |
| 28 Methoxychlor          |        |        |          |         |         | CAS #: | 72-43-5    |        |
| 7.455                    | 7.455  | 0.000  | 22103668 | 1000.00 | 902     | 80.00- | 120.00     | 100.00 |
| -----                    |        |        |          |         |         |        |            |        |
| 31 Endrin ketone         |        |        |          |         |         | CAS #: | 53494-70-5 |        |
| 7.771                    | 7.772  | -0.001 | 12654333 | 200.000 | 179     | 80.00- | 120.00     | 100.00 |
| -----                    |        |        |          |         |         |        |            |        |
| \$ 1 4cmx                |        |        |          |         |         | CAS #: | 877-09-8   |        |
| 3.086                    | 3.086  | 0.000  | 14423830 | 200.000 | 179     | 80.00- | 120.00     | 100.00 |
| -----                    |        |        |          |         |         |        |            |        |
| \$ 32 Decachlorobiphenyl |        |        |          |         |         | CAS #: | 2051-24-3  |        |
| 9.148                    | 9.147  | 0.001  | 8357011  | 200.000 | 174     | 80.00- | 120.00     | 100.00 |

Data File: /chem/ecd3a.i/083011P.B/019B1901.D  
Date : 30-JUL-2011 19:46  
Client ID: INDA802  
Sample Info: IWP110812-100B  
Column phase: CLP-2

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



## Analytical Sequence

Page 1 of 2

Lab Name: GEL Laboratories LLC

Client SDG: 284538

GC Column: CLP-1

Instrument ID: ECD3A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |                |                 | #    | #                  |
|--|---------------|----------------|-----------------|------|--------------------|
| File   | Sample Number | Lab Sample ID  | Analysis Date   | 4cmx | Decachlorobiphenyl |
| 019F1901.D   | CHLOR01       | WPE110816-21CL | 16-AUG-11 15:45 | 2.47 | 7.45               |
| 020F2001.D   | CHLOR02       | WPE110816-22CL | 16-AUG-11 16:01 | 2.47 | 7.45               |
| 021F2101.D   | CHLOR03       | WPE110816-23CL | 16-AUG-11 16:27 | 2.47 | 7.45               |
| 022F2201.D   | CHLOR04       | WPE110816-24CL | 16-AUG-11 16:42 | 2.47 | 7.45               |
| 023F2301.D   | CHLOR05       | IPE110616-06CL | 16-AUG-11 16:58 | 2.47 | 7.45               |

# Column used to flag retention time values with an asterisk.

Analytical Sequence

Lab Name: GEL Laboratories LLC                      Client SDG: 284538

GC Column: CLP-2

Instrument ID: ECD3A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |                |                 | #    | #                  |
|--|---------------|----------------|-----------------|------|--------------------|
| File   | Sample Number | Lab Sample ID  | Analysis Date   | 4cmx | Decachlorobiphenyl |
| 019B1901.D   | CHLOR01       | WPE110816-21CL | 16-AUG-11 15:45 | 3.08 | 9.15               |
| 020B2001.D   | CHLOR02       | WPE110816-22CL | 16-AUG-11 16:01 | 3.09 | 9.15               |
| 021B2101.D   | CHLOR03       | WPE110816-23CL | 16-AUG-11 16:27 | 3.09 | 9.15               |
| 022B2201.D   | CHLOR04       | WPE110816-24CL | 16-AUG-11 16:42 | 3.09 | 9.15               |
| 023B2301.D   | CHLOR05       | IPE110616-06CL | 16-AUG-11 16:58 | 3.09 | 9.15               |

# Column used to flag retention time values with an asterisk.

## Analytical Sequence

Page 1 of 2

Lab Name: GEL Laboratories LLC

Client SDG: 284538

GC Column: CLP-1

Instrument ID: ECD3A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |                |                 | #    | #                  |
|--|---------------|----------------|-----------------|------|--------------------|
| File   | Sample Number | Lab Sample ID  | Analysis Date   | 4cmx | Decachlorobiphenyl |
| 013F1301.D   | TOXAPH01      | WPE110816-11TX | 23-AUG-11 14:29 | 2.45 | 7.43               |
| 014F1401.D   | TOXAPH02      | WPE110816-12TX | 23-AUG-11 14:45 | 2.45 | 7.43               |
| 015F1501.D   | TOXAPH03      | WPE110816-13TX | 23-AUG-11 15:00 | 2.45 | 7.43               |
| 016F1601.D   | TOXAPH04      | WPE110816-14TX | 23-AUG-11 15:16 | 2.45 | 7.42               |
| 017F1701.D   | TOXAPH05      | IPE110418-40TX | 23-AUG-11 15:31 | 2.45 | 7.43               |

# Column used to flag retention time values with an  
asterisk.

## Analytical Sequence

Page 2 of 2

Lab Name: GEL Laboratories LLC

Client SDG: 284538

GC Column: CLP-2

Instrument ID: ECD3A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |                |                 | #    | #                  |
|--|---------------|----------------|-----------------|------|--------------------|
| File   | Sample Number | Lab Sample ID  | Analysis Date   | 4cmx | Decachlorobiphenyl |
| 013B1301.D   | TOXAPH01      | WPE110816-11TX | 23-AUG-11 14:29 | 3.09 | 9.15               |
| 014B1401.D   | TOXAPH02      | WPE110816-12TX | 23-AUG-11 14:45 | 3.09 | 9.15               |
| 015B1501.D   | TOXAPH03      | WPE110816-13TX | 23-AUG-11 15:00 | 3.09 | 9.15               |
| 016B1601.D   | TOXAPH04      | WPE110816-14TX | 23-AUG-11 15:16 | 3.09 | 9.15               |
| 017B1701.D   | TOXAPH05      | IPE110418-40TX | 23-AUG-11 15:31 | 3.09 | 9.15               |

# Column used to flag retention time values with an  
asterisk.

## Analytical Sequence

Page 1 of 2

Lab Name: GEL Laboratories LLC

Client SDG: 284538

GC Column: CLP-1

Instrument ID: ECD3A.

**Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:**

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |                |                 | 2.45<br>2.42 2.48 # | 7.42<br>7.39 7.45 # |
|--|---------------|----------------|-----------------|---------------------|---------------------|
| File   | Sample Number | Lab Sample ID  | Analysis Date   | 4cmx                | Decachlorobiphenyl  |
| 001F0101.D   | PIBLK01       | WAR110724-99IB | 30-AUG-11 15:06 | 2.45                | 7.42                |
| 002F0201.D   | PEM01         | WPE110628-99DG | 30-AUG-11 15:22 | 2.45                | 7.42                |
| 003F0301.D   | ZZZZZZZ       | ZZZZZZZ        | 30-AUG-11 15:37 | 2.45                | 7.42                |
| 004F0401.D   | TOXAPH01      | WPE110630-52TX | 30-AUG-11 15:53 | 2.45                | 7.42                |
| 005F0501.D   | CHLOR01       | WPE110724-00CL | 30-AUG-11 16:08 | 2.45                | 7.42                |
| 006F0601.D   | GAPA01        | WPE110809-05GA | 30-AUG-11 16:24 | 2.45                | 7.42                |
| 007F0701.D   | INDAB01       | WPE110830-01AB | 30-AUG-11 16:39 | 2.45                | 7.42                |
| 008F0801.D   | INDAB02       | WPE110830-02AB | 30-AUG-11 16:55 | 2.45                | 7.42                |
| 009F0901.D   | INDAB03       | WPE110830-03AB | 30-AUG-11 17:10 | 2.45                | 7.42                |
| 010F1001.D   | INDAB04       | WPE110830-04AB | 30-AUG-11 17:26 | 2.45                | 7.42                |
| 011F1101.D   | INDAB05       | IPE110801-02AB | 30-AUG-11 17:41 | 2.45                | 7.42                |
| 012F1201.D   | INDAB01       | WPE110711-10AB | 30-AUG-11 17:57 | 2.45                | 7.42                |
| 013F1301.D   | PIBLK02       | WAR110724-99IB | 30-AUG-11 18:12 | 2.45                | 7.42                |
| 014F1401.D   | PBLK01        | I202473924     | 30-AUG-11 18:28 | 2.45                | 7.42                |
| 015F1501.D   | BLK01LCS      | I202473925     | 30-AUG-11 18:43 | 2.45                | 7.42                |
| 016F1601.D   | I1080101      | 284538001      | 30-AUG-11 18:59 | 2.46                | 7.42                |
| 017F1701.D   | I1080101MS    | I202473926     | 30-AUG-11 19:15 | 2.45                | 7.42                |
| 018F1801.D   | I1080101MSD   | I202473927     | 30-AUG-11 19:30 | 2.45                | 7.42                |
| 019F1901.D   | INDAB02       | WPE110812-10AB | 30-AUG-11 19:46 | 2.45                | 7.42                |
| 020F2001.D   | PIBLK03       | WAR110724-99IB | 30-AUG-11 20:01 | 2.45                | 7.42                |

# Column used to flag retention time values with an asterisk.



## Analytical Sequence

Page 2 of 2

Lab Name: GEL Laboratories LLC

Client SDG: 284538

GC Column: CLP-2

Instrument ID: ECD3A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |                |                 | 3.09<br>3.06 3.12 # | 9.15<br>9.12 9.18 # |
|--|---------------|----------------|-----------------|---------------------|---------------------|
| File   | Sample Number | Lab Sample ID  | Analysis Date   | 4cmx                | Decachlorobiphenyl  |
| 001B0101.D   | PIBLK01       | WAR110724-99IB | 30-AUG-11 15:06 | 3.08                | 9.15                |
| 002B0201.D   | PEM01         | WPE110628-99DG | 30-AUG-11 15:22 | 3.09                | 9.15                |
| 003B0301.D   | ZZZZZZZ       | ZZZZZZZ        | 30-AUG-11 15:37 | 3.09                | 9.15                |
| 004B0401.D   | TOXAPH01      | WPE110630-52TX | 30-AUG-11 15:53 | 3.09                | 9.15                |
| 005B0501.D   | CHLOR01       | WPE110724-00CL | 30-AUG-11 16:08 | 3.09                | 9.15                |
| 006B0601.D   | GAPA01        | WPE110809-05GA | 30-AUG-11 16:24 | 3.09                | 9.15                |
| 007B0701.D   | INDAB01       | WPE110830-01AB | 30-AUG-11 16:39 | 3.09                | 9.15                |
| 008B0801.D   | INDAB02       | WPE110830-02AB | 30-AUG-11 16:55 | 3.09                | 9.15                |
| 009B0901.D   | INDAB03       | WPE110830-03AB | 30-AUG-11 17:10 | 3.09                | 9.15                |
| 010B1001.D   | INDAB04       | WPE110830-04AB | 30-AUG-11 17:26 | 3.09                | 9.15                |
| 011B1101.D   | INDAB05       | IPE110801-02AB | 30-AUG-11 17:41 | 3.09                | 9.15                |
| 012B1201.D   | INDAB01       | WPE110711-10AB | 30-AUG-11 17:57 | 3.09                | 9.15                |
| 013B1301.D   | PIBLK02       | WAR110724-99IB | 30-AUG-11 18:12 | 3.09                | 9.15                |
| 014B1401.D   | PBLK01        | I202473924     | 30-AUG-11 18:28 | 3.09                | 9.15                |
| 015B1501.D   | BLK01LCS      | I202473925     | 30-AUG-11 18:43 | 3.09                | 9.15                |
| 016B1601.D   | I1080101      | 284538001      | 30-AUG-11 18:59 | 3.09                | 9.15                |
| 017B1701.D   | I1080101MS    | I202473926     | 30-AUG-11 19:15 | 3.09                | 9.15                |
| 018B1801.D   | I1080101MSD   | I202473927     | 30-AUG-11 19:30 | 3.09                | 9.15                |
| 019B1901.D   | INDAB02       | WPE110812-10AB | 30-AUG-11 19:46 | 3.09                | 9.15                |
| 020B2001.D   | PIBLK03       | WAR110724-99IB | 30-AUG-11 20:01 | 3.09                | 9.15                |

# Column used to flag retention time values with an asterisk.

Identification Summary

Page 1 of 4

SDG Number: 284538

Client ID: LCS for batch 1136047

Lab Sample ID: 1202473925

Data File: 015F1501.d

Data File: 015B1501.d

Inst: ECD3A.I\_1

Inst: ECD3A.I\_2

Column: CLP-1

Column: CLP-2

Analyzed: 30-AUG-11 18:43

Analyzed: 30-AUG-11 18:43

| Analyte             | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|---------------------|------|------|-------------|-------|-----------|-------|------|
| alpha-BHC           |      |      |             |       |           |       | 15   |
| Column 1            | 1    | 2.83 | 2.8 - 2.86  | .511  |           | ug/L  |      |
| Column 2            | 1    | 3.61 | 3.58 - 3.64 | .44   |           | ug/L  |      |
| gamma-BHC (Lindane) |      |      |             |       |           |       | 14.2 |
| Column 1            | 1    | 3.06 | 3.03 - 3.09 | .516  |           | ug/L  |      |
| Column 2            | 1    | 3.93 | 3.9 - 3.96  | .448  |           | ug/L  |      |
| beta-BHC            |      |      |             |       |           |       | 12.8 |
| Column 1            | 1    | 3.12 | 3.09 - 3.15 | .477  |           | ug/L  |      |
| Column 2            | 1    | 3.99 | 3.96 - 4.02 | .42   |           | ug/L  |      |
| Methoxychlor        |      |      |             |       |           |       | 5.24 |
| Column 1            | 1    | 5.81 | 5.78 - 5.84 | 4.63  |           | ug/L  |      |
| Column 2            | 1    | 7.45 | 7.43 - 7.49 | 4.39  |           | ug/L  |      |
| delta-BHC           |      |      |             |       |           |       | 14   |
| Column 1            | 1    | 3.26 | 3.22 - 3.28 | .512  |           | ug/L  |      |
| Column 2            | 1    | 4.28 | 4.25 - 4.31 | .445  |           | ug/L  |      |

Identification Summary

Page 2 of 4

SDG Number: 284538

Client ID: LCS for batch 1136047

Lab Sample ID: 1202473925

Data File: 015F1501.d

Data File: 015B1501.d

Inst: ECD3A.I\_1

Inst: ECD3A.I\_2

Column: CLP-1

Column: CLP-2

Analyzed: 30-AUG-11 18:43

Analyzed: 30-AUG-11 18:43

| Analyte            | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|--------------------|------|------|-------------|-------|-----------|-------|------|
| Heptachlor         |      |      |             |       |           |       | 13.8 |
| Column 1           | 1    | 3.42 | 3.39 - 3.45 | .473  |           | ug/L  |      |
| Column 2           | 1    | 4.36 | 4.33 - 4.39 | .412  |           | ug/L  |      |
| Aldrin             |      |      |             |       |           |       | 16.2 |
| Column 1           | 1    | 3.66 | 3.63 - 3.69 | .456  |           | ug/L  |      |
| Column 2           | 1    | 4.68 | 4.65 - 4.71 | .388  |           | ug/L  |      |
| Heptachlor epoxide |      |      |             |       |           |       | 15.6 |
| Column 1           | 1    | 4.17 | 4.14 - 4.2  | .5    |           | ug/L  |      |
| Column 2           | 1    | 5.25 | 5.22 - 5.28 | .428  |           | ug/L  |      |
| Endosulfan I       |      |      |             |       |           |       | 13.6 |
| Column 1           | 1    | 4.52 | 4.49 - 4.55 | .461  |           | ug/L  |      |
| Column 2           | 1    | 5.66 | 5.63 - 5.69 | .403  |           | ug/L  |      |
| 4,4'-DDE           |      |      |             |       |           |       | 16.5 |
| Column 1           | 1    | 4.47 | 4.44 - 4.5  | 1.09  |           | ug/L  |      |
| Column 2           | 1    | 5.75 | 5.72 - 5.78 | .921  |           | ug/L  |      |

Identification Summary

Page 3 of 4

SDG Number: 284538

Client ID: LCS for batch 1136047

Lab Sample ID: 1202473925

Data File: 015F1501.d

Data File: 015B1501.d

Inst: ECD3A.I\_1

Inst: ECD3A.I\_2

Column: CLP-1

Column: CLP-2

Analyzed: 30-AUG-11 18:43

Analyzed: 30-AUG-11 18:43

| Analyte         | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|-----------------|------|------|-------------|-------|-----------|-------|------|
| Dieldrin        |      |      |             |       |           |       | 14   |
| Column 1        | 1    | 4.74 | 4.72 - 4.78 | 1.24  |           | ug/L  |      |
| Column 2        | 1    | 5.95 | 5.92 - 5.98 | 1.08  |           | ug/L  |      |
| Endrin          |      |      |             |       |           |       | 15.8 |
| Column 1        | 1    | 4.96 | 4.93 - 4.99 | 1.23  |           | ug/L  |      |
| Column 2        | 1    | 6.28 | 6.25 - 6.31 | 1.05  |           | ug/L  |      |
| 4,4'-DDD        |      |      |             |       |           |       | 15.5 |
| Column 1        | 1    | 5.03 | 5.01 - 5.07 | 1.19  |           | ug/L  |      |
| Column 2        | 1    | 6.36 | 6.33 - 6.39 | 1.02  |           | ug/L  |      |
| Endosulfan II   |      |      |             |       |           |       | 14.9 |
| Column 1        | 1    | 5.18 | 5.15 - 5.21 | 1.2   |           | ug/L  |      |
| Column 2        | 1    | 6.5  | 6.47 - 6.53 | 1.03  |           | ug/L  |      |
| Endrin aldehyde |      |      |             |       |           |       | 12.1 |
| Column 1        | 1    | 5.59 | 5.56 - 5.62 | 1.22  |           | ug/L  |      |
| Column 2        | 1    | 6.86 | 6.83 - 6.89 | 1.08  |           | ug/L  |      |

Identification Summary

Page 4 of 4

SDG Number: 284538

Client ID: LCS for batch 1136047

Lab Sample ID: 1202473925

Data File: 015F1501.d

Inst: ECD3A.I\_1

Column: CLP-1

Analyzed: 30-AUG-11 18:43

Data File: 015B1501.d

Inst: ECD3A.I\_2

Column: CLP-2

Analyzed: 30-AUG-11 18:43

| Analyte            | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|--------------------|------|------|-------------|-------|-----------|-------|------|
| 4,4'-DDT           |      |      |             |       |           |       | 16.5 |
| Column 1           | 1    | 5.31 | 5.28 - 5.34 | 1.21  |           | ug/L  |      |
| Column 2           | 1    | 6.71 | 6.68 - 6.74 | 1.02  |           | ug/L  |      |
| Endosulfan sulfate |      |      |             |       |           |       | 18.3 |
| Column 1           | 1    | 6.03 | 6 - 6.06    | 1.32  |           | ug/L  |      |
| Column 2           | 1    | 7.17 | 7.14 - 7.2  | 1.1   |           | ug/L  |      |
| Endrin ketone      |      |      |             |       |           |       | 14.3 |
| Column 1           | 1    | 6.32 | 6.29 - 6.35 | 1.37  |           | ug/L  |      |
| Column 2           | 1    | 7.77 | 7.74 - 7.8  | 1.19  |           | ug/L  |      |

Identification Summary

Page 1 of 4

SDG Number: 284538

Client ID: 11080101MS

Lab Sample ID: 1202473926

Data File: 017F1701.d

Data File: 017B1701.d

Inst: ECD3A.I\_1

Inst: ECD3A.I\_2

Column: CLP-1

Column: CLP-2

Analyzed: 30-AUG-11 19:15

Analyzed: 30-AUG-11 19:15

| Analyte             | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|---------------------|------|------|-------------|-------|-----------|-------|------|
| alpha-BHC           |      |      |             |       |           |       | 9.69 |
| Column 1            | 1    | 2.83 | 2.8 - 2.86  | .433  |           | ug/L  |      |
| Column 2            | 1    | 3.61 | 3.58 - 3.64 | .393  |           | ug/L  |      |
| gamma-BHC (Lindane) |      |      |             |       |           |       | 11.4 |
| Column 1            | 1    | 3.06 | 3.03 - 3.09 | .452  |           | ug/L  |      |
| Column 2            | 1    | 3.93 | 3.9 - 3.96  | .403  |           | ug/L  |      |
| beta-BHC            |      |      |             |       |           |       | 16   |
| Column 1            | 1    | 3.12 | 3.09 - 3.15 | .438  |           | ug/L  |      |
| Column 2            | 1    | 3.99 | 3.96 - 4.02 | .373  |           | ug/L  |      |
| Methoxychlor        |      |      |             |       |           |       | .547 |
| Column 1            | 1    | 5.81 | 5.78 - 5.84 | 2.54  |           | ug/L  |      |
| Column 2            | 1    | 7.45 | 7.43 - 7.49 | 2.53  |           | ug/L  |      |
| delta-BHC           |      |      |             |       |           |       | 12.6 |
| Column 1            | 1    | 3.26 | 3.22 - 3.28 | .437  |           | ug/L  |      |
| Column 2            | 1    | 4.28 | 4.25 - 4.31 | .385  |           | ug/L  |      |

Identification Summary

Page 2 of 4

SDG Number: 284538

Client ID: 11080101MS

Lab Sample ID: 1202473926

Data File: 017F1701.d

Data File: 017B1701.d

Inst: ECD3A.I\_1

Inst: ECD3A.I\_2

Column: CLP-1

Column: CLP-2

Analyzed: 30-AUG-11 19:15

Analyzed: 30-AUG-11 19:15

| Analyte            | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|--------------------|------|------|-------------|-------|-----------|-------|------|
| Heptachlor         |      |      |             |       |           |       | 9.81 |
| Column 1           | 1    | 3.42 | 3.39 - 3.45 | .277  |           | ug/L  |      |
| Column 2           | 1    | 4.36 | 4.33 - 4.39 | .251  |           | ug/L  |      |
| Aldrin             |      |      |             |       |           |       | 8.84 |
| Column 1           | 1    | 3.66 | 3.63 - 3.69 | .219  |           | ug/L  |      |
| Column 2           | 1    | 4.68 | 4.65 - 4.71 | .201  |           | ug/L  |      |
| Heptachlor epoxide |      |      |             |       |           |       | 13.2 |
| Column 1           | 1    | 4.17 | 4.14 - 4.2  | .357  |           | ug/L  |      |
| Column 2           | 1    | 5.25 | 5.22 - 5.28 | .313  |           | ug/L  |      |
| Endosulfan I       |      |      |             |       |           |       | 9.65 |
| Column 1           | 1    | 4.52 | 4.49 - 4.55 | .323  |           | ug/L  |      |
| Column 2           | 1    | 5.66 | 5.63 - 5.69 | .293  |           | ug/L  |      |
| 4,4'-DDE           |      |      |             |       |           |       | 10.2 |
| Column 1           | 1    | 4.47 | 4.44 - 4.5  | .512  |           | ug/L  |      |
| Column 2           | 1    | 5.75 | 5.72 - 5.78 | .463  |           | ug/L  |      |

Identification Summary

Page 3 of 4

SDG Number: 284538

Client ID: 11080101MS

Lab Sample ID: 1202473926

Data File: 017F1701.d

Data File: 017B1701.d

Inst: ECD3A.I\_1

Inst: ECD3A.I\_2

Column: CLP-1

Column: CLP-2

Analyzed: 30-AUG-11 19:15

Analyzed: 30-AUG-11 19:15

| Analyte         | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|-----------------|------|------|-------------|-------|-----------|-------|------|
| Dieldrin        |      |      |             |       |           |       | 9.82 |
| Column 1        | 1    | 4.74 | 4.72 - 4.78 | .826  |           | ug/L  |      |
| Column 2        | 1    | 5.95 | 5.92 - 5.98 | .749  |           | ug/L  |      |
| Endrin          |      |      |             |       |           |       | 13.2 |
| Column 1        | 1    | 4.96 | 4.93 - 4.99 | .905  |           | ug/L  |      |
| Column 2        | 1    | 6.28 | 6.25 - 6.31 | .793  |           | ug/L  |      |
| 4,4'-DDD        |      |      |             |       |           |       | 13.2 |
| Column 1        | 1    | 5.03 | 5.01 - 5.07 | .629  |           | ug/L  |      |
| Column 2        | 1    | 6.36 | 6.33 - 6.39 | .552  |           | ug/L  |      |
| Endosulfan II   |      |      |             |       |           |       | 14.1 |
| Column 1        | 1    | 5.18 | 5.15 - 5.21 | .845  |           | ug/L  |      |
| Column 2        | 1    | 6.5  | 6.47 - 6.53 | .733  |           | ug/L  |      |
| Endrin aldehyde |      |      |             |       |           |       | .524 |
| Column 1        | 1    | 5.59 | 5.56 - 5.62 | .914  |           | ug/L  |      |
| Column 2        | 1    | 6.86 | 6.83 - 6.89 | .918  |           | ug/L  |      |



Identification Summary

Page 4 of 4

SDG Number: 284538

Client ID: 11080101MS

Lab Sample ID: 1202473926

Data File: 017F1701.d

Data File: 017B1701.d

Inst: ECD3A.I\_1

Inst: ECD3A.I\_2

Column: CLP-1

Column: CLP-2

Analyzed: 30-AUG-11 19:15

Analyzed: 30-AUG-11 19:15

| Analyte            | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|--------------------|------|------|-------------|-------|-----------|-------|------|
| 4,4'-DDT           |      |      |             |       |           |       | 11.8 |
| Column 1           | 1    | 5.31 | 5.28 - 5.34 | .543  |           | ug/L  |      |
| Column 2           | 1    | 6.71 | 6.68 - 6.74 | .482  |           | ug/L  |      |
| Endosulfan sulfate |      |      |             |       |           |       | 13.6 |
| Column 1           | 1    | 6.03 | 6 - 6.06    | 1     |           | ug/L  |      |
| Column 2           | 1    | 7.17 | 7.14 - 7.2  | .873  |           | ug/L  |      |
| Endrin ketone      |      |      |             |       |           |       | 15.4 |
| Column 1           | 1    | 6.32 | 6.29 - 6.35 | 1.16  |           | ug/L  |      |
| Column 2           | 1    | 7.77 | 7.74 - 7.8  | .993  |           | ug/L  |      |

Identification Summary

Page 1 of 4

SDG Number: 284538

Client ID: 11080101MSD

Lab Sample ID: 1202473927

Data File: 018F1801.d

Inst: ECD3A.I\_1

Column: CLP-1

Analyzed: 30-AUG-11 19:30

Data File: 018B1801.d

Inst: ECD3A.I\_2

Column: CLP-2

Analyzed: 30-AUG-11 19:30

| Analyte             | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|---------------------|------|------|-------------|-------|-----------|-------|------|
| alpha-BHC           |      |      |             |       |           |       | 10.8 |
| Column 1            | 1    | 2.83 | 2.8 - 2.86  | .447  |           | ug/L  |      |
| Column 2            | 1    | 3.61 | 3.58 - 3.64 | .401  |           | ug/L  |      |
| gamma-BHC (Lindane) |      |      |             |       |           |       | 12.6 |
| Column 1            | 1    | 3.06 | 3.03 - 3.09 | .466  |           | ug/L  |      |
| Column 2            | 1    | 3.93 | 3.9 - 3.96  | .411  |           | ug/L  |      |
| beta-BHC            |      |      |             |       |           |       | 16.8 |
| Column 1            | 1    | 3.12 | 3.09 - 3.15 | .448  |           | ug/L  |      |
| Column 2            | 1    | 3.99 | 3.96 - 4.02 | .378  |           | ug/L  |      |
| Methoxychlor        |      |      |             |       |           |       | .587 |
| Column 1            | 1    | 5.8  | 5.78 - 5.84 | 2.53  |           | ug/L  |      |
| Column 2            | 1    | 7.45 | 7.43 - 7.49 | 2.51  |           | ug/L  |      |
| delta-BHC           |      |      |             |       |           |       | 13.6 |
| Column 1            | 1    | 3.26 | 3.22 - 3.28 | .446  |           | ug/L  |      |
| Column 2            | 1    | 4.28 | 4.25 - 4.31 | .389  |           | ug/L  |      |

Identification Summary

Page 2 of 4

SDG Number: 284538

Client ID: 11080101MSD

Lab Sample ID: 1202473927

Data File: 018F1801.d

Data File: 018B1801.d

Inst: ECD3A.I\_1

Inst: ECD3A.I\_2

Column: CLP-1

Column: CLP-2

Analyzed: 30-AUG-11 19:30

Analyzed: 30-AUG-11 19:30

| Analyte            | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|--------------------|------|------|-------------|-------|-----------|-------|------|
| Heptachlor         |      |      |             |       |           |       | 9.75 |
| Column 1           | 1    | 3.42 | 3.39 - 3.45 | .283  |           | ug/L  |      |
| Column 2           | 1    | 4.36 | 4.33 - 4.39 | .256  |           | ug/L  |      |
| Aldrin             |      |      |             |       |           |       | 10.1 |
| Column 1           | 1    | 3.66 | 3.63 - 3.69 | .225  |           | ug/L  |      |
| Column 2           | 1    | 4.68 | 4.65 - 4.71 | .204  |           | ug/L  |      |
| Heptachlor epoxide |      |      |             |       |           |       | 14.1 |
| Column 1           | 1    | 4.17 | 4.14 - 4.2  | .363  |           | ug/L  |      |
| Column 2           | 1    | 5.25 | 5.22 - 5.28 | .316  |           | ug/L  |      |
| Endosulfan I       |      |      |             |       |           |       | 10.3 |
| Column 1           | 1    | 4.52 | 4.49 - 4.55 | .327  |           | ug/L  |      |
| Column 2           | 1    | 5.66 | 5.63 - 5.69 | .295  |           | ug/L  |      |
| 4,4'-DDE           |      |      |             |       |           |       | 10.8 |
| Column 1           | 1    | 4.47 | 4.44 - 4.5  | .515  |           | ug/L  |      |
| Column 2           | 1    | 5.75 | 5.72 - 5.78 | .462  |           | ug/L  |      |

GEL Laboratories LLC

Report Date: September 15, 2011

| Identification Summary |                 |      |             |            |                 | Page 3 | of 4 |
|------------------------|-----------------|------|-------------|------------|-----------------|--------|------|
| OG Number:             | 284538          |      |             | Client ID: | 11080101MSD     |        |      |
| Lab Sample ID:         | 1202473927      |      |             |            |                 |        |      |
| Data File:             | 018F1801.d      |      |             | Data File: | 018B1801.d      |        |      |
| Inst:                  | ECD3A.I_1       |      |             | Inst:      | ECD3A.I_2       |        |      |
| Column:                | CLP-1           |      |             | Column:    | CLP-2           |        |      |
| Analyzed:              | 30-AUG-11 19:30 |      |             | Analyzed:  | 30-AUG-11 19:30 |        |      |
| Analyte                | Peak            | RT   | RT Window   | Conc.      | Ave Conc.       | Units  | RPD  |
| Dieldrin               |                 |      |             |            |                 |        | 10.2 |
| Column 1               | 1               | 4.74 | 4.72 - 4.78 | .834       |                 | ug/L   |      |
| Column 2               | 1               | 5.95 | 5.92 - 5.98 | .753       |                 | ug/L   |      |
| Endrin                 |                 |      |             |            |                 |        | 13.4 |
| Column 1               | 1               | 4.96 | 4.93 - 4.99 | .913       |                 | ug/L   |      |
| Column 2               | 1               | 6.28 | 6.25 - 6.31 | .798       |                 | ug/L   |      |
| 4,4'-DDD               |                 |      |             |            |                 |        | 12.6 |
| Column 1               | 1               | 5.03 | 5.01 - 5.07 | .628       |                 | ug/L   |      |
| Column 2               | 1               | 6.36 | 6.33 - 6.39 | .554       |                 | ug/L   |      |
| Endosulfan II          |                 |      |             |            |                 |        | 14.8 |
| Column 1               | 1               | 5.18 | 5.15 - 5.21 | .849       |                 | ug/L   |      |
| Column 2               | 1               | 6.5  | 6.47 - 6.53 | .732       |                 | ug/L   |      |
| Endrin aldehyde        |                 |      |             |            |                 |        | .115 |
| Column 1               | 1               | 5.59 | 5.56 - 5.62 | .915       |                 | ug/L   |      |
| Column 2               | 1               | 6.86 | 6.83 - 6.89 | .916       |                 | ug/L   |      |

GEL Laboratories LLC

Report Date: September 15, 2011

Identification Summary

Page 4 of 4

OG Number: 284538

Lab Sample ID: 1202473927

Client ID: 11080101MSD

Data File: 018F1801.d

Inst: ECD3A.I\_1

Column: CLP-1

Analyzed: 30-AUG-11 19:30

Data File: 018B1801.d

Inst: ECD3A.I\_2

Column: CLP-2

Analyzed: 30-AUG-11 19:30

| Analyte            | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|--------------------|------|------|-------------|-------|-----------|-------|------|
| 4,4'-DDT           |      |      |             |       |           |       | 11.8 |
| Column 1           | 1    | 5.3  | 5.28 - 5.34 | .54   |           | ug/L  |      |
| Column 2           | 1    | 6.71 | 6.68 - 6.74 | .479  |           | ug/L  |      |
| Endosulfan sulfate |      |      |             |       |           |       | 14.6 |
| Column 1           | 1    | 6.03 | 6 - 6.06    | .999  |           | ug/L  |      |
| Column 2           | 1    | 7.16 | 7.14 - 7.2  | .863  |           | ug/L  |      |
| Endrin ketone      |      |      |             |       |           |       | 15.9 |
| Column 1           | 1    | 6.32 | 6.29 - 6.35 | 1.16  |           | ug/L  |      |
| Column 2           | 1    | 7.77 | 7.74 - 7.8  | .992  |           | ug/L  |      |

# QC Data

**Pesticide  
Certificate of Analysis  
Sample Summary**

|                       |                             |                 |                          |
|-----------------------|-----------------------------|-----------------|--------------------------|
| <b>SDG Number:</b>    | <b>284538</b>               | <b>Matrix:</b>  | <b>GROUND WATER</b>      |
| <b>Lab Sample ID:</b> | <b>1202473924</b>           |                 |                          |
| <b>Client Sample:</b> | <b>QC for batch 1136047</b> | <b>Client:</b>  | <b>ECOL008</b>           |
| <b>Client ID:</b>     | <b>MB for batch 1136047</b> | <b>Method:</b>  | <b>SW846 3535A/8081B</b> |
| <b>Batch ID:</b>      | <b>1136049</b>              | <b>Inst:</b>    | <b>ECD3A.I</b>           |
| <b>Run Date:</b>      | <b>08/30/2011 18:28</b>     | <b>Analyst:</b> | <b>RXE1</b>              |
| <b>Prep Date:</b>     | <b>08/25/2011 18:20</b>     | <b>Aliquot:</b> | <b>1000 mL</b>           |
| <b>Data File:</b>     | <b>014F1401.D</b>           | <b>Column:</b>  | <b>1 CLP-1</b>           |
|                       | <b>014B1401.D</b>           |                 | <b>2 CLP-2</b>           |

| CAS No.    | Parmname            | Qualifier | Result  | Units | MDL/LOD | PQL/LOQ | Column |
|------------|---------------------|-----------|---------|-------|---------|---------|--------|
| 319-84-6   | alpha-BHC           | U         | 0.00665 | ug/L  | 0.00665 | 0.020   | 1      |
| 58-89-9    | gamma-BHC (Lindane) | U         | 0.00665 | ug/L  | 0.00665 | 0.020   | 1      |
| 319-85-7   | beta-BHC            | U         | 0.00665 | ug/L  | 0.00665 | 0.020   | 1      |
| 72-43-5    | Methoxychlor        | U         | 0.050   | ug/L  | 0.050   | 0.200   | 1      |
| 319-86-8   | delta-BHC           | U         | 0.00665 | ug/L  | 0.00665 | 0.020   | 1      |
| 76-44-8    | Heptachlor          | U         | 0.00665 | ug/L  | 0.00665 | 0.020   | 1      |
| 309-00-2   | Aldrin              | U         | 0.00665 | ug/L  | 0.00665 | 0.020   | 1      |
| 1024-57-3  | Heptachlor epoxide  | U         | 0.00665 | ug/L  | 0.00665 | 0.020   | 1      |
| 959-98-8   | Endosulfan I        | U         | 0.00665 | ug/L  | 0.00665 | 0.020   | 1      |
| 72-55-9    | 4,4'-DDE            | U         | 0.010   | ug/L  | 0.010   | 0.040   | 1      |
| 60-57-1    | Dieldrin            | U         | 0.010   | ug/L  | 0.010   | 0.040   | 1      |
| 72-20-8    | Endrin              | U         | 0.010   | ug/L  | 0.010   | 0.040   | 1      |
| 72-54-8    | 4,4'-DDD            | U         | 0.010   | ug/L  | 0.010   | 0.040   | 1      |
| 33213-65-9 | Endosulfan II       | U         | 0.010   | ug/L  | 0.010   | 0.040   | 1      |
| 7421-93-4  | Endrin aldehyde     | U         | 0.00665 | ug/L  | 0.00665 | 0.040   | 1      |
| 50-29-3    | 4,4'-DDT            | U         | 0.010   | ug/L  | 0.010   | 0.040   | 1      |
| 1031-07-8  | Endosulfan sulfate  | U         | 0.010   | ug/L  | 0.010   | 0.040   | 1      |
| 53494-70-5 | Endrin ketone       | U         | 0.010   | ug/L  | 0.010   | 0.040   | 1      |
| 57-74-9    | Chlordane (tech.)   | U         | 0.0765  | ug/L  | 0.0765  | 0.250   | 1      |
| 8001-35-2  | Toxaphene           | U         | 0.150   | ug/L  | 0.150   | 0.500   | 1      |

GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/083011P.B/014F1401.D  
Lab Smp Id: 1202473924 Client Smp ID: PBLK01  
Inj Date : 30-AUG-2011 18:28  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |1202473924|1|  
Misc Info : |ECD5A1B\_1L|1136049|SVP|MB|GROUND WATER|MB|||  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
Meth Date : 31-Aug-2011 11:26 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036f3601.d  
Als bottle: 14 QC Sample: BLANK  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water

Concentration Formula:  $\text{Amt} * \text{DF} * \text{Uf} * \text{Vt} / (\text{Vo} * \text{Vi}) * \text{CpndVariable}$

| Name | Value      | Description                     |
|------|------------|---------------------------------|
| DF   | 1.00000    | Dilution Factor                 |
| Uf   | 1.00000    | Correction factor               |
| Vt   | 5.00000    | Volume of final extract (mL)    |
| Vo   | 1000.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000    | Volume injected (uL)            |

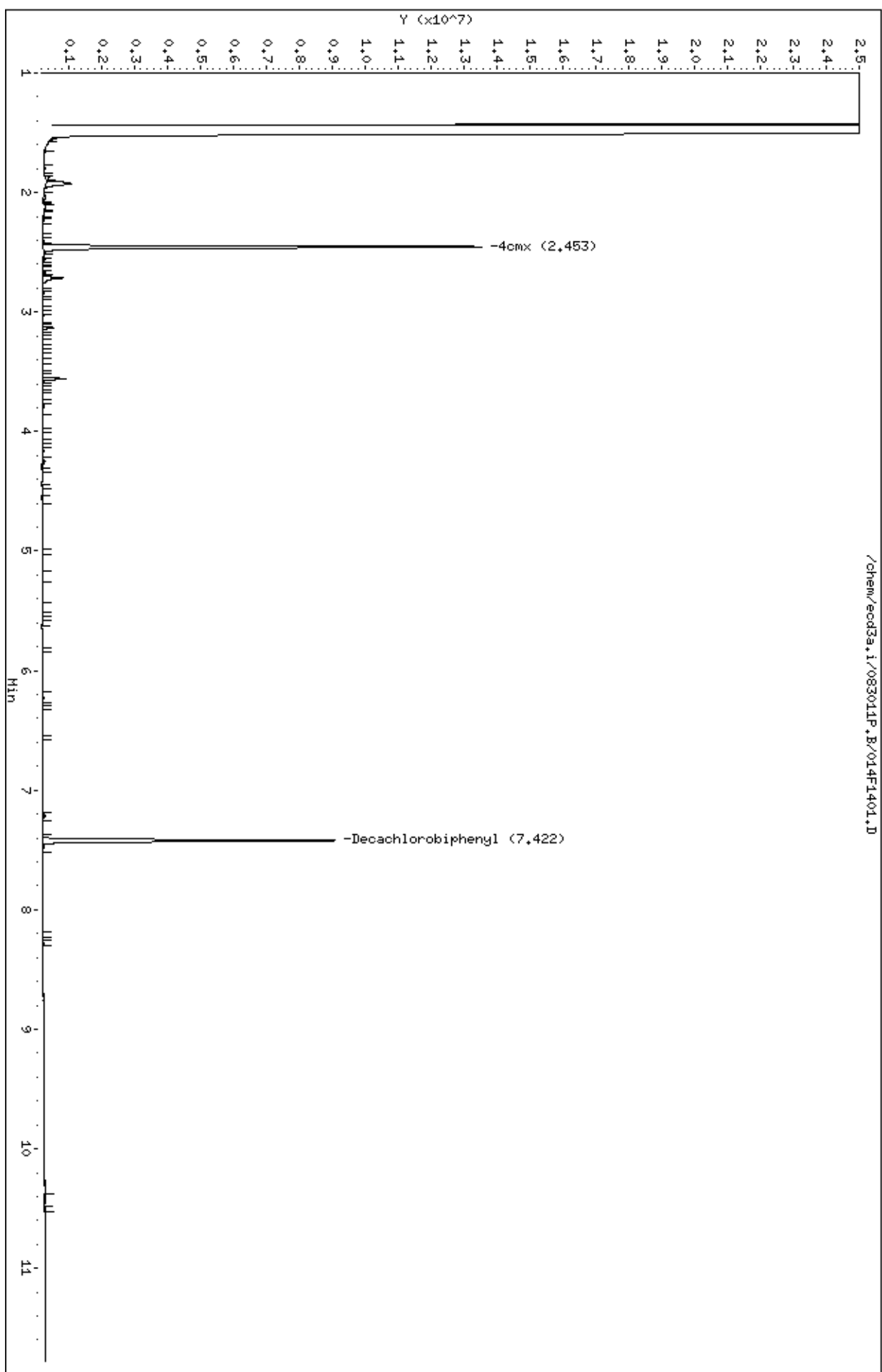
Cpnd Variable Local Compound Variable

| CONCENTRATIONS                            |        |        |                  |         |                     |        |
|---|--------|--------|------------------|---------|---------------------|--------|
|   |        | ON-COL |                  | FINAL   |                     |        |
| RT  | EXP RT | DLT RT | RESPONSE ( ug/L) | ( ug/L) | TARGET RANGE        | RATIO  |
| ==  | =====  | =====  | =====            | =====   | =====               | =====  |
| \$ 1 4cmx CAS #: 877-09-8                 |        |        |                  |         |                     |        |
| 2.453                                     | 2.452  | 0.001  | 16446379         | 164.264 | 0.821 80.00- 120.00 | 100.00 |
| -----                                     |        |        |                  |         |                     |        |
| \$ 32 Decachlorobiphenyl CAS #: 2051-24-3 |        |        |                  |         |                     |        |
| 7.422                                     | 7.423  | -0.001 | 11074152         | 180.667 | 0.903 80.00- 120.00 | 100.00 |
| -----                                     |        |        |                  |         |                     |        |



Data File: /chem/ecd3a.i/083011P.B/014F1401.D  
Date : 30-AUG-2011 18:28  
Client ID: PBLK01  
Sample Info: 1120247392411  
Volume Injected (uL): 1.0  
Column phase: CLP-1

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



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CLP-2

Data file : /chem/ecd3a.i/083011P.B/014B1401.D  
Lab Smp Id: 1202473924 Client Smp ID: PBLK01  
Inj Date : 30-AUG-2011 18:28  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |1202473924|1|  
Misc Info : |ECD5A1B\_1L|1136049|SVP|MB|GROUND WATER|MB|||  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
Meth Date : 31-Aug-2011 11:22 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036b3601.d  
Als bottle: 14 QC Sample: BLANK  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water

Concentration Formula:  $\text{Amt} * \text{DF} * \text{Uf} * \text{Vt} / (\text{Vo} * \text{Vi}) * \text{CpndVariable}$

| Name | Value      | Description                     |
|------|------------|---------------------------------|
| DF   | 1.00000    | Dilution Factor                 |
| Uf   | 1.00000    | Correction factor               |
| Vt   | 5.00000    | Volume of final extract (mL)    |
| Vo   | 1000.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000    | Volume injected (uL)            |

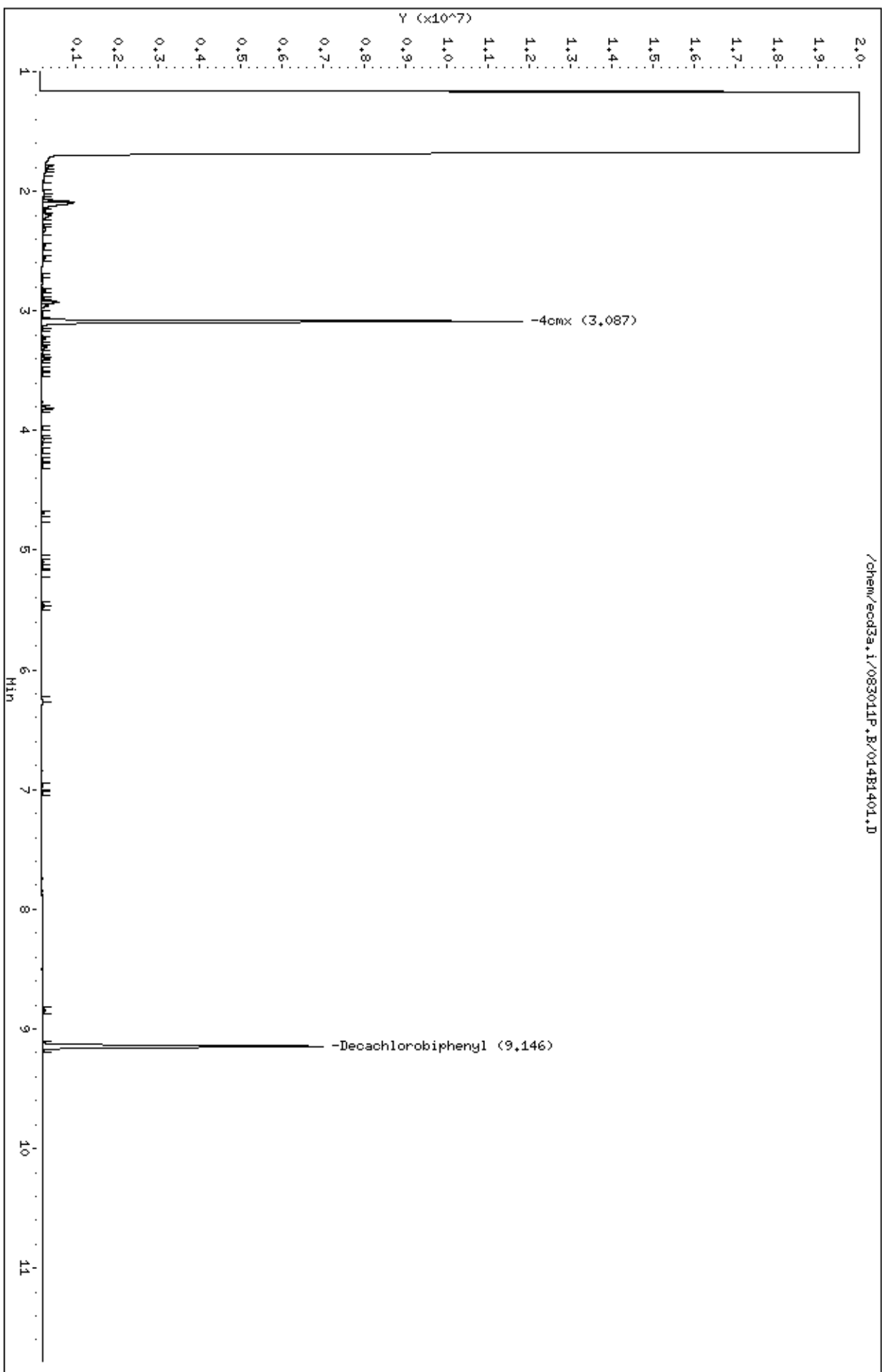
Cpnd Variable Local Compound Variable

| CONCENTRATIONS           |        |        |                  |         |                  |        |
|--------------------------|--------|--------|------------------|---------|------------------|--------|
|                          |        | ON-COL | FINAL            |         |                  |        |
| RT                       | EXP RT | DLT RT | RESPONSE ( ug/L) | ( ug/L) | TARGET RANGE     | RATIO  |
| ==                       | =====  | =====  | =====            | =====   | =====            | =====  |
| \$ 1 4cmx                |        |        |                  |         | CAS #: 877-09-8  |        |
| 3.087                    | 3.086  | 0.001  | 12324112 152.746 | 0.764   | 80.00- 120.00    | 100.00 |
| -----                    |        |        |                  |         |                  |        |
| \$ 32 Decachlorobiphenyl |        |        |                  |         | CAS #: 2051-24-3 |        |
| 9.146                    | 9.147  | -0.001 | 8411095 175.329  | 0.877   | 80.00- 120.00    | 100.00 |
| -----                    |        |        |                  |         |                  |        |

Data File: /chem/ecd3a.i/083011P.B/014B1401.D  
Date : 30-0UC-2011 18:28  
Client ID: PBLK01  
Sample Info: 1120247392411  
Volume Injected (uL): 1.0  
Column phase: CLP-2

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25

Page 1



**Pesticide  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

|  |                                  |                             |
|--|----------------------------------|-----------------------------|
| <b>SDG Number:</b> 284538                  |                                  | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 1202473925           |                                  |                             |
| <b>Client Sample:</b> QC for batch 1136047 | <b>Client:</b> ECOL008           | <b>Project:</b> QC          |
| <b>Client ID:</b> LCS for batch 1136047    | <b>Method:</b> SW846 3535A/8081B | <b>SOP Ref:</b> GL-OA-E-041 |
| <b>Batch ID:</b> 1136049                   | <b>Inst:</b> ECD3A.I             | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/30/2011 18:43          | <b>Analyst:</b> RXE1             | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 08/25/2011 18:20         | <b>Aliquot:</b> 1000 mL          | <b>Final Volume:</b> 5 mL   |
| <b>Data File:</b> 015F1501.D               | <b>Column:</b> 1 CLP-1           | <b>Level:</b> LOW           |
|  | 2 CLP-2                          |                             |

| CAS No.    | Parmname            | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|---------------------|-----------|--------|-------|---------|---------|--------|
| 319-84-6   | alpha-BHC           |           | 0.511  | ug/L  | 0.00665 | 0.020   | 1      |
| 58-89-9    | gamma-BHC (Lindane) |           | 0.516  | ug/L  | 0.00665 | 0.020   | 1      |
| 319-85-7   | beta-BHC            |           | 0.477  | ug/L  | 0.00665 | 0.020   | 1      |
| 72-43-5    | Methoxychlor        |           | 4.63   | ug/L  | 0.050   | 0.200   | 1      |
| 319-86-8   | delta-BHC           |           | 0.512  | ug/L  | 0.00665 | 0.020   | 1      |
| 76-44-8    | Heptachlor          |           | 0.473  | ug/L  | 0.00665 | 0.020   | 1      |
| 309-00-2   | Aldrin              |           | 0.456  | ug/L  | 0.00665 | 0.020   | 1      |
| 1024-57-3  | Heptachlor epoxide  |           | 0.500  | ug/L  | 0.00665 | 0.020   | 1      |
| 959-98-8   | Endosulfan I        |           | 0.461  | ug/L  | 0.00665 | 0.020   | 1      |
| 72-55-9    | 4,4'-DDE            |           | 1.09   | ug/L  | 0.010   | 0.040   | 1      |
| 60-57-1    | Dieldrin            |           | 1.24   | ug/L  | 0.010   | 0.040   | 1      |
| 72-20-8    | Endrin              |           | 1.23   | ug/L  | 0.010   | 0.040   | 1      |
| 72-54-8    | 4,4'-DDD            |           | 1.19   | ug/L  | 0.010   | 0.040   | 1      |
| 33213-65-9 | Endosulfan II       |           | 1.20   | ug/L  | 0.010   | 0.040   | 1      |
| 7421-93-4  | Endrin aldehyde     |           | 1.22   | ug/L  | 0.00665 | 0.040   | 1      |
| 50-29-3    | 4,4'-DDT            |           | 1.21   | ug/L  | 0.010   | 0.040   | 1      |
| 1031-07-8  | Endosulfan sulfate  |           | 1.32   | ug/L  | 0.010   | 0.040   | 1      |
| 53494-70-5 | Endrin ketone       |           | 1.37   | ug/L  | 0.010   | 0.040   | 1      |
| 57-74-9    | Chlordane (tech.)   | U         | 0.0765 | ug/L  | 0.0765  | 0.250   | 1      |
| 8001-35-2  | Toxaphene           | U         | 0.150  | ug/L  | 0.150   | 0.500   | 1      |

GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/083011P.B/015F1501.D  
 Lab Smp Id: 1202473925 Client Smp ID: PBLK01LCS  
 Inj Date : 30-AUG-2011 18:43  
 Operator : RXE1 Inst ID: ecd3a.i  
 Smp Info : |1202473925|1|  
 Misc Info : |ECD5A1B\_1L|1136049|SVP|LCS|GROUND WATER|LCS|||  
 Comment :  
 Method : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
 Meth Date : 31-Aug-2011 11:26 reb01393 Quant Type: ESTD  
 Cal Date : 30-NOV-2010 06:46 Cal File: 036f3601.d  
 Als bottle: 15 QC Sample: LCS  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: 284538.sub  
 Target Version: 3.50 Sample Matrix: Ground Water

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vo \* Vi) \* CpndVariable

| Name | Value      | Description                     |
|------|------------|---------------------------------|
| DF   | 1.00000    | Dilution Factor                 |
| Uf   | 1.00000    | Correction factor               |
| Vt   | 5.00000    | Volume of final extract (mL)    |
| Vo   | 1000.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000    | Volume injected (uL)            |

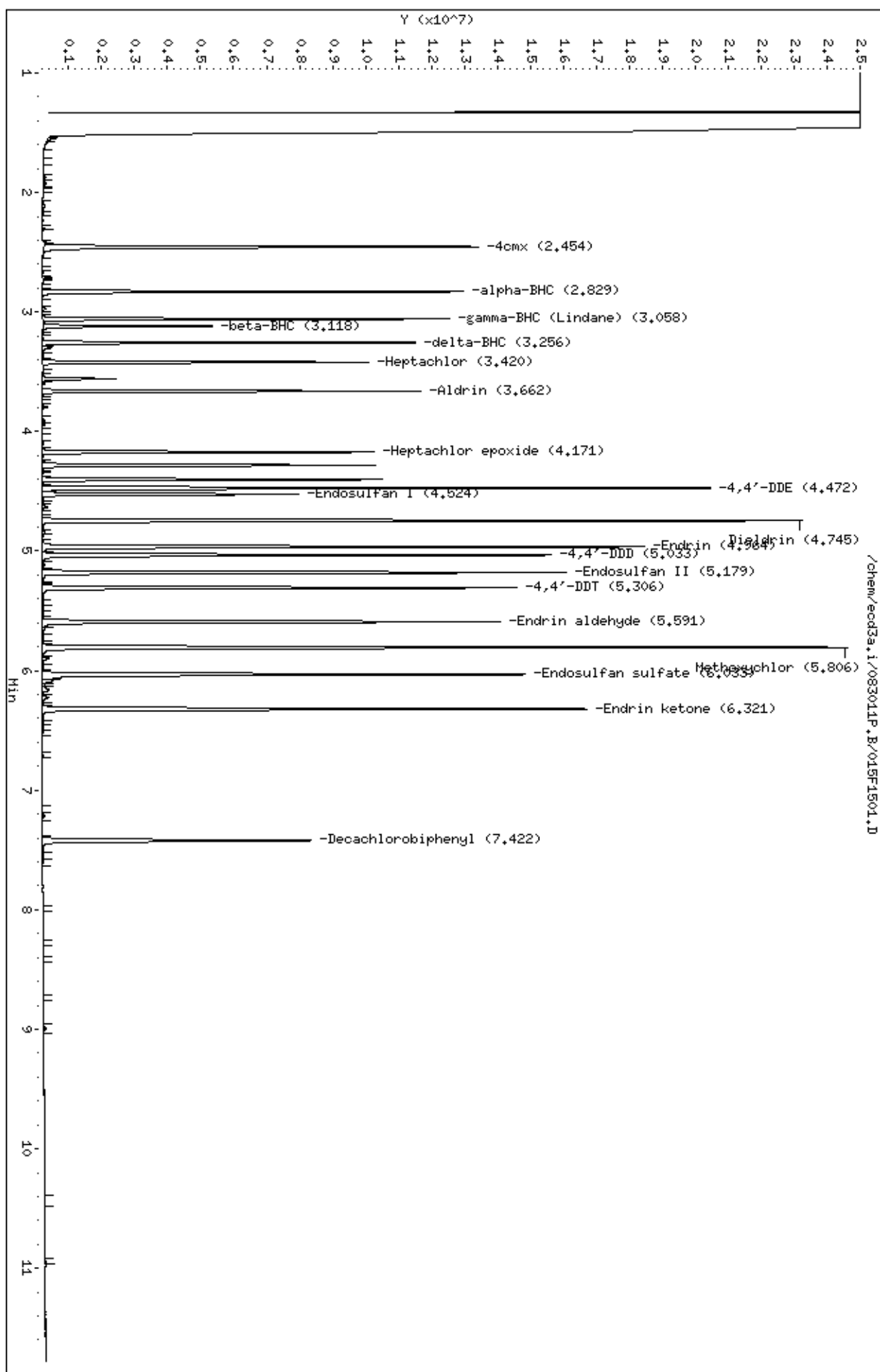
Cpnd Variable Local Compound Variable

| CONCENTRATIONS           |        |        |                  |         |                  |               |        |
|--------------------------|--------|--------|------------------|---------|------------------|---------------|--------|
| RT                       | EXP RT | DLT RT | RESPONSE ( ug/L) | ON-COL  | FINAL            | TARGET RANGE  | RATIO  |
| ==                       | =====  | =====  | =====            | =====   | =====            | =====         | =====  |
| \$ 1 4cmx                |        |        |                  |         | CAS #: 877-09-8  |               |        |
| 2.454                    | 2.452  | 0.002  | 15593899         | 155.750 | 0.779            | 80.00- 120.00 | 100.00 |
| -----                    |        |        |                  |         |                  |               |        |
| \$ 32 Decachlorobiphenyl |        |        |                  |         | CAS #: 2051-24-3 |               |        |
| 7.422                    | 7.423  | -0.001 | 10582850         | 172.652 | 0.863            | 80.00- 120.00 | 100.00 |
| -----                    |        |        |                  |         |                  |               |        |
| 5 alpha-BHC              |        |        |                  |         | CAS #: 319-84-6  |               |        |
| 2.829                    | 2.828  | 0.001  | 12132281         | 102.235 | 0.511            | 80.00- 120.00 | 100.00 |
| -----                    |        |        |                  |         |                  |               |        |
| 7 gamma-BHC (Lindane)    |        |        |                  |         | CAS #: 58-89-9   |               |        |
| 3.058                    | 3.056  | 0.002  | 11141479         | 103.281 | 0.516            | 80.00- 120.00 | 100.00 |
| -----                    |        |        |                  |         |                  |               |        |
| 12 beta-BHC              |        |        |                  |         | CAS #: 319-85-7  |               |        |
| 3.118                    | 3.117  | 0.001  | 4739520          | 95.4529 | 0.477            | 80.00- 120.00 | 100.00 |
| -----                    |        |        |                  |         |                  |               |        |

| CONCENTRATIONS        |        |        |          |         |                   |              |        |        |
|-----------------------|--------|--------|----------|---------|-------------------|--------------|--------|--------|
| RT                    | EXP RT | DLT RT | ON-COL   |         | FINAL             | TARGET RANGE |        | RATIO  |
| ==                    | =====  | =====  | =====    | =====   | =====             | =====        | =====  | =====  |
| 28 Methoxychlor       |        |        |          |         | CAS #: 72-43-5    |              |        |        |
| 5.806                 | 5.807  | -0.001 | 27244936 | 925.545 | 4.63              | 80.00-       | 120.00 | 100.00 |
| -----                 |        |        |          |         |                   |              |        |        |
| 13 delta-BHC          |        |        |          |         | CAS #: 319-86-8   |              |        |        |
| 3.256                 | 3.255  | 0.001  | 10071032 | 102.386 | 0.512             | 80.00-       | 120.00 | 100.00 |
| -----                 |        |        |          |         |                   |              |        |        |
| 10 Heptachlor         |        |        |          |         | CAS #: 76-44-8    |              |        |        |
| 3.420                 | 3.419  | 0.001  | 9115238  | 94.6092 | 0.473             | 80.00-       | 120.00 | 100.00 |
| -----                 |        |        |          |         |                   |              |        |        |
| 11 Aldrin             |        |        |          |         | CAS #: 309-00-2   |              |        |        |
| 3.662                 | 3.662  | 0.000  | 10584310 | 91.2702 | 0.456             | 80.00-       | 120.00 | 100.00 |
| -----                 |        |        |          |         |                   |              |        |        |
| 14 Heptachlor epoxide |        |        |          |         | CAS #: 1024-57-3  |              |        |        |
| 4.171                 | 4.171  | 0.000  | 10003999 | 100.055 | 0.500             | 80.00-       | 120.00 | 100.00 |
| -----                 |        |        |          |         |                   |              |        |        |
| 16 Endosulfan I       |        |        |          |         | CAS #: 959-98-8   |              |        |        |
| 4.524                 | 4.523  | 0.001  | 8127772  | 92.2893 | 0.461             | 80.00-       | 120.00 | 100.00 |
| -----                 |        |        |          |         |                   |              |        |        |
| 19 4,4'-DDE           |        |        |          |         | CAS #: 72-55-9    |              |        |        |
| 4.472                 | 4.473  | -0.001 | 20691086 | 217.518 | 1.09              | 80.00-       | 120.00 | 100.00 |
| -----                 |        |        |          |         |                   |              |        |        |
| 20 Dieldrin           |        |        |          |         | CAS #: 60-57-1    |              |        |        |
| 4.745                 | 4.745  | 0.000  | 24550509 | 247.619 | 1.24              | 80.00-       | 120.00 | 100.00 |
| -----                 |        |        |          |         |                   |              |        |        |
| 22 Endrin             |        |        |          |         | CAS #: 72-20-8    |              |        |        |
| 4.964                 | 4.964  | 0.000  | 20045957 | 245.086 | 1.22              | 80.00-       | 120.00 | 100.00 |
| -----                 |        |        |          |         |                   |              |        |        |
| 25 4,4'-DDD           |        |        |          |         | CAS #: 72-54-8    |              |        |        |
| 5.033                 | 5.035  | -0.002 | 16737413 | 237.667 | 1.19              | 80.00-       | 120.00 | 100.00 |
| -----                 |        |        |          |         |                   |              |        |        |
| 24 Endosulfan II      |        |        |          |         | CAS #: 33213-65-9 |              |        |        |
| 5.179                 | 5.179  | 0.000  | 17278375 | 240.242 | 1.20              | 80.00-       | 120.00 | 100.00 |
| -----                 |        |        |          |         |                   |              |        |        |
| 27 Endrin aldehyde    |        |        |          |         | CAS #: 7421-93-4  |              |        |        |
| 5.591                 | 5.592  | -0.001 | 15422316 | 243.510 | 1.22              | 80.00-       | 120.00 | 100.00 |
| -----                 |        |        |          |         |                   |              |        |        |
| 26 4,4'-DDT           |        |        |          |         | CAS #: 50-29-3    |              |        |        |
| 5.306                 | 5.308  | -0.002 | 15815187 | 241.753 | 1.21              | 80.00-       | 120.00 | 100.00 |
| -----                 |        |        |          |         |                   |              |        |        |
| 29 Endosulfan sulfate |        |        |          |         | CAS #: 1031-07-8  |              |        |        |
| 6.033                 | 6.033  | 0.000  | 18042395 | 264.463 | 1.32              | 80.00-       | 120.00 | 100.00 |
| -----                 |        |        |          |         |                   |              |        |        |
| 31 Endrin ketone      |        |        |          |         | CAS #: 53494-70-5 |              |        |        |
| 6.321                 | 6.323  | -0.002 | 19261596 | 274.875 | 1.37              | 80.00-       | 120.00 | 100.00 |
| -----                 |        |        |          |         |                   |              |        |        |

Data File: /chem/ecd3a.i/083011P.B/01SF1501.D  
 Date : 30-AUG-2011 18:43  
 Client ID: PBLK01LCS  
 Sample Info: 1120247392511  
 Volume Injected (uL): 1.0  
 Column phase: CLP-1

Instrument: ecd3a.i  
 Operator: RXE1  
 Column diameter: 0.25



GEL Laboratories LLC

CLP-2

Data file : /chem/ecd3a.i/083011P.B/015B1501.D  
Lab Smp Id: 1202473925 Client Smp ID: PBLK01LCS  
Inj Date : 30-AUG-2011 18:43  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |1202473925|1|  
Misc Info : |ECD5A1B\_1L|1136049|SVP|LCS|GROUND WATER|LCS|||  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
Meth Date : 31-Aug-2011 11:22 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036b3601.d  
Als bottle: 15 QC Sample: LCS  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water

Concentration Formula:  $\text{Amt} * \text{DF} * \text{Uf} * \text{Vt} / (\text{Vo} * \text{Vi}) * \text{CpndVariable}$

| Name | Value      | Description                     |
|------|------------|---------------------------------|
| DF   | 1.00000    | Dilution Factor                 |
| Uf   | 1.00000    | Correction factor               |
| Vt   | 5.00000    | Volume of final extract (mL)    |
| Vo   | 1000.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000    | Volume injected (uL)            |

Cpnd Variable Local Compound Variable

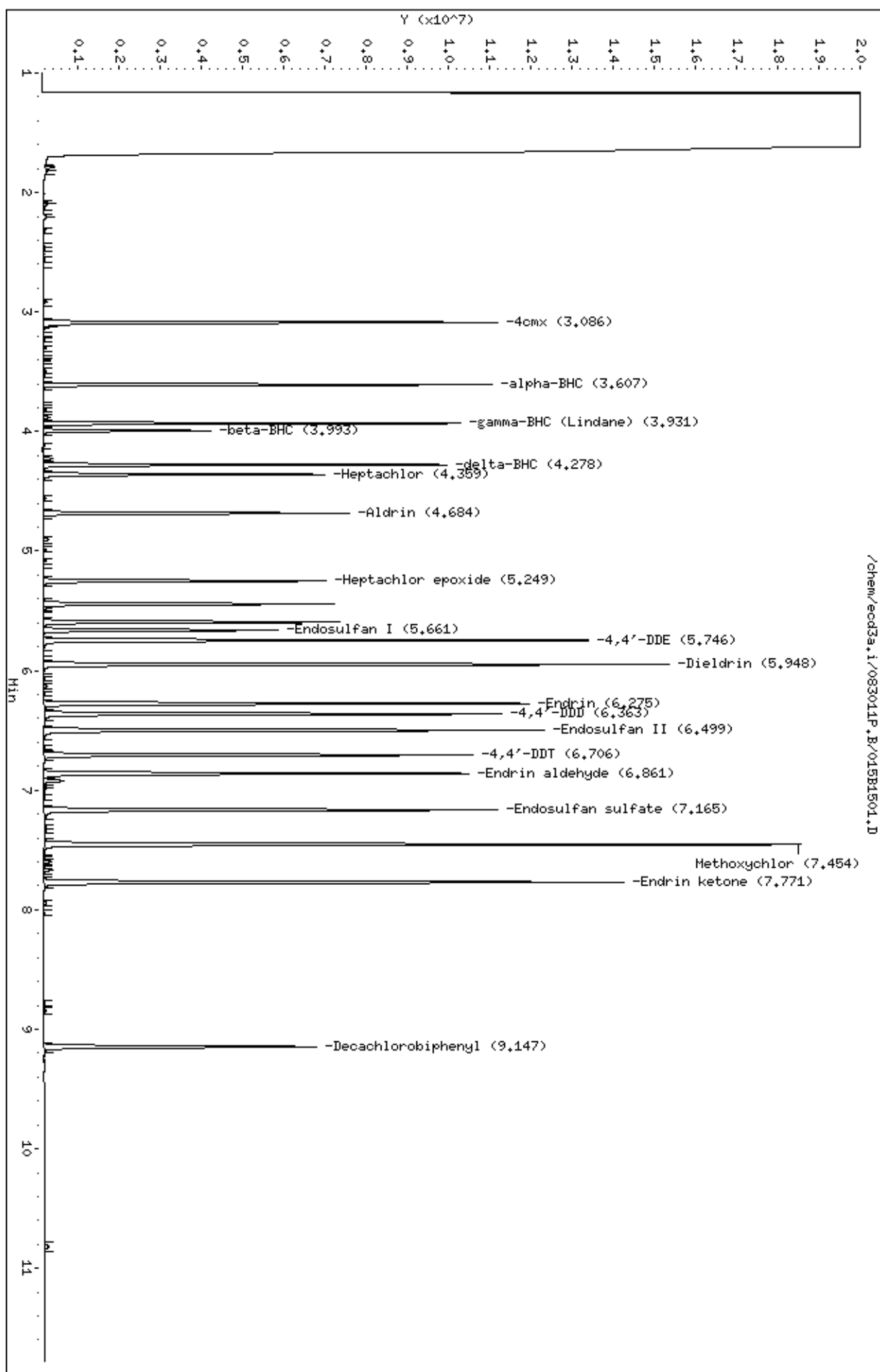
| CONCENTRATIONS                            |        |        |                  |         |         |               |        |
|---|--------|--------|------------------|---------|---------|---------------|--------|
|   |        |        | ON-COL           |         | FINAL   |               |        |
| RT  | EXP RT | DLT RT | RESPONSE ( ug/L) |         | ( ug/L) | TARGET RANGE  | RATIO  |
| ==  | =====  | =====  | =====            | =====   | =====   | =====         | =====  |
| \$ 1 4cmx CAS #: 877-09-8                 |        |        |                  |         |         |               |        |
| 3.086                                     | 3.086  | 0.000  | 11501915         | 142.556 | 0.713   | 80.00- 120.00 | 100.00 |
| \$ 32 Decachlorobiphenyl CAS #: 2051-24-3 |        |        |                  |         |         |               |        |
| 9.147                                     | 9.147  | 0.000  | 8099930          | 168.843 | 0.844   | 80.00- 120.00 | 100.00 |
| 5 alpha-BHC CAS #: 319-84-6               |        |        |                  |         |         |               |        |
| 3.607                                     | 3.607  | 0.000  | 10376024         | 88.0118 | 0.440   | 80.00- 120.00 | 100.00 |
| 7 gamma-BHC (Lindane) CAS #: 58-89-9      |        |        |                  |         |         |               |        |
| 3.931                                     | 3.931  | 0.000  | 9373306          | 89.5722 | 0.448   | 80.00- 120.00 | 100.00 |
| 12 beta-BHC CAS #: 319-85-7               |        |        |                  |         |         |               |        |
| 3.993                                     | 3.992  | 0.001  | 3802207          | 83.9983 | 0.420   | 80.00- 120.00 | 100.00 |



| RT    | EXP RT             | DLT RT | CONCENTRATIONS |         | RESPONSE ( ug/L) | ( ug/L)       | TARGET RANGE | RATIO |
|-------|--------------------|--------|----------------|---------|------------------|---------------|--------------|-------|
|       |                    |        | ON-COL         | FINAL   |                  |               |              |       |
| ==    | =====              | =====  | =====          | =====   | =====            | =====         | =====        | ===== |
| 28    | Methoxychlor       |        |                |         | CAS #:           | 72-43-5       |              |       |
| 7.454 | 7.455              | -0.001 | 21527594       | 878.318 | 4.39             | 80.00- 120.00 | 100.00       |       |
| ----- |                    |        |                |         |                  |               |              |       |
| 13    | delta-BHC          |        |                |         | CAS #:           | 319-86-8      |              |       |
| 4.278 | 4.279              | -0.001 | 9179803        | 88.9746 | 0.445            | 80.00- 120.00 | 100.00       |       |
| ----- |                    |        |                |         |                  |               |              |       |
| 10    | Heptachlor         |        |                |         | CAS #:           | 76-44-8       |              |       |
| 4.359 | 4.359              | 0.000  | 6659307        | 82.4121 | 0.412            | 80.00- 120.00 | 100.00       |       |
| ----- |                    |        |                |         |                  |               |              |       |
| 11    | Aldrin             |        |                |         | CAS #:           | 309-00-2      |              |       |
| 4.684 | 4.684              | 0.000  | 7707259        | 77.6143 | 0.388            | 80.00- 120.00 | 100.00       |       |
| ----- |                    |        |                |         |                  |               |              |       |
| 14    | Heptachlor epoxide |        |                |         | CAS #:           | 1024-57-3     |              |       |
| 5.249 | 5.249              | 0.000  | 7383185        | 85.5797 | 0.428            | 80.00- 120.00 | 100.00       |       |
| ----- |                    |        |                |         |                  |               |              |       |
| 16    | Endosulfan I       |        |                |         | CAS #:           | 959-98-8      |              |       |
| 5.661 | 5.661              | 0.000  | 6280643        | 80.5278 | 0.403            | 80.00- 120.00 | 100.00       |       |
| ----- |                    |        |                |         |                  |               |              |       |
| 19    | 4,4'-DDE           |        |                |         | CAS #:           | 72-55-9       |              |       |
| 5.746 | 5.747              | -0.001 | 14529658       | 184.297 | 0.921            | 80.00- 120.00 | 100.00       |       |
| ----- |                    |        |                |         |                  |               |              |       |
| 20    | Dieldrin           |        |                |         | CAS #:           | 60-57-1       |              |       |
| 5.948 | 5.948              | 0.000  | 17311177       | 215.231 | 1.08             | 80.00- 120.00 | 100.00       |       |
| ----- |                    |        |                |         |                  |               |              |       |
| 22    | Endrin             |        |                |         | CAS #:           | 72-20-8       |              |       |
| 6.275 | 6.276              | -0.001 | 13543318       | 209.119 | 1.04             | 80.00- 120.00 | 100.00       |       |
| ----- |                    |        |                |         |                  |               |              |       |
| 25    | 4,4'-DDD           |        |                |         | CAS #:           | 72-54-8       |              |       |
| 6.363 | 6.363              | 0.000  | 12356124       | 203.474 | 1.02             | 80.00- 120.00 | 100.00       |       |
| ----- |                    |        |                |         |                  |               |              |       |
| 24    | Endosulfan II      |        |                |         | CAS #:           | 33213-65-9    |              |       |
| 6.499 | 6.499              | 0.000  | 14199729       | 206.886 | 1.03             | 80.00- 120.00 | 100.00       |       |
| ----- |                    |        |                |         |                  |               |              |       |
| 27    | Endrin aldehyde    |        |                |         | CAS #:           | 7421-93-4     |              |       |
| 6.861 | 6.862              | -0.001 | 12211950       | 215.723 | 1.08             | 80.00- 120.00 | 100.00       |       |
| ----- |                    |        |                |         |                  |               |              |       |
| 26    | 4,4'-DDT           |        |                |         | CAS #:           | 50-29-3       |              |       |
| 6.706 | 6.707              | -0.001 | 11651583       | 204.998 | 1.02             | 80.00- 120.00 | 100.00       |       |
| ----- |                    |        |                |         |                  |               |              |       |
| 29    | Endosulfan sulfate |        |                |         | CAS #:           | 1031-07-8     |              |       |
| 7.165 | 7.165              | 0.000  | 12903819       | 220.154 | 1.10             | 80.00- 120.00 | 100.00       |       |
| ----- |                    |        |                |         |                  |               |              |       |
| 31    | Endrin ketone      |        |                |         | CAS #:           | 53494-70-5    |              |       |
| 7.771 | 7.772              | -0.001 | 16801573       | 238.112 | 1.19             | 80.00- 120.00 | 100.00       |       |
| ----- |                    |        |                |         |                  |               |              |       |

Data File: /chem/ecd3a.i/083011P.B/015B1501.D  
 Date : 30-JUN-2011 18:43  
 Client ID: PBLK01LCS  
 Sample Info: 1120247392511  
 Volume Injected (uL): 1.0  
 Column phase: CLP-2

Instrument: ecd3a.i  
 Operator: RXE1  
 Column diameter: 0.25



**Pesticide  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

|  |   |                             |
|--|---|-----------------------------|
| <b>SDG Number:</b> 284538                  | <b>Date Collected:</b> 08/18/2011 12:00 | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 1202473926           | <b>Date Received:</b> 08/23/2011 08:50  |                             |
| <b>Client Sample:</b> QC for batch 1136047 | <b>Client:</b> ECOL008                  | <b>Project:</b> QC          |
| <b>Client ID:</b> 11080101MS               | <b>Method:</b> SW846 3535A/8081B        | <b>SOP Ref:</b> GL-OA-E-041 |
| <b>Batch ID:</b> 1136049                   | <b>Inst:</b> ECD3A.I                    | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/30/2011 19:15          | <b>Analyst:</b> RXE1                    | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 08/25/2011 18:20         | <b>Aliquot:</b> 980 mL                  | <b>Final Volume:</b> 5 mL   |
| <b>Data File:</b> 017F1701.D               | <b>Column:</b> 1 CLP-1                  | <b>Level:</b> LOW           |
|  | 2 CLP-2                                 |                             |

| CAS No.    | Parmname            | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|---------------------|-----------|--------|-------|---------|---------|--------|
| 319-84-6   | alpha-BHC           |           | 0.433  | ug/L  | 0.00679 | 0.0204  | 1      |
| 58-89-9    | gamma-BHC (Lindane) |           | 0.452  | ug/L  | 0.00679 | 0.0204  | 1      |
| 319-85-7   | beta-BHC            |           | 0.438  | ug/L  | 0.00679 | 0.0204  | 1      |
| 72-43-5    | Methoxychlor        |           | 2.54   | ug/L  | 0.051   | 0.204   | 1      |
| 319-86-8   | delta-BHC           |           | 0.437  | ug/L  | 0.00679 | 0.0204  | 1      |
| 76-44-8    | Heptachlor          |           | 0.277  | ug/L  | 0.00679 | 0.0204  | 1      |
| 309-00-2   | Aldrin              |           | 0.220  | ug/L  | 0.00679 | 0.0204  | 1      |
| 1024-57-3  | Heptachlor epoxide  |           | 0.357  | ug/L  | 0.00679 | 0.0204  | 1      |
| 959-98-8   | Endosulfan I        |           | 0.323  | ug/L  | 0.00679 | 0.0204  | 1      |
| 72-55-9    | 4,4'-DDE            |           | 0.512  | ug/L  | 0.0102  | 0.0408  | 1      |
| 60-57-1    | Dieldrin            |           | 0.826  | ug/L  | 0.0102  | 0.0408  | 1      |
| 72-20-8    | Endrin              |           | 0.906  | ug/L  | 0.0102  | 0.0408  | 1      |
| 72-54-8    | 4,4'-DDD            |           | 0.630  | ug/L  | 0.0102  | 0.0408  | 1      |
| 33213-65-9 | Endosulfan II       |           | 0.845  | ug/L  | 0.0102  | 0.0408  | 1      |
| 7421-93-4  | Endrin aldehyde     |           | 0.914  | ug/L  | 0.00679 | 0.0408  | 1      |
| 50-29-3    | 4,4'-DDT            |           | 0.543  | ug/L  | 0.0102  | 0.0408  | 1      |
| 1031-07-8  | Endosulfan sulfate  |           | 1.00   | ug/L  | 0.0102  | 0.0408  | 1      |
| 53494-70-5 | Endrin ketone       |           | 1.16   | ug/L  | 0.0102  | 0.0408  | 1      |
| 57-74-9    | Chlordane (tech.)   | U         | 0.0781 | ug/L  | 0.0781  | 0.255   | 1      |
| 8001-35-2  | Toxaphene           | U         | 0.153  | ug/L  | 0.153   | 0.510   | 1      |

GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/083011P.B/017F1701.D  
Lab Smp Id: 1202473926 Client Smp ID: 11080101MS  
Inj Date : 30-AUG-2011 19:15  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |1202473926|1|  
Misc Info : |ECD5A1B\_1L|1136049|SVP|MS|GROUND WATER|MS|||  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
Meth Date : 31-Aug-2011 11:26 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036f3601.d  
Als bottle: 17 QC Sample: MS  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vo \* Vi) \* CpndVariable

| Name | Value     | Description                     |
|------|-----------|---------------------------------|
| DF   | 1.00000   | Dilution Factor                 |
| Uf   | 1.00000   | Correction factor               |
| Vt   | 5.00000   | Volume of final extract (mL)    |
| Vo   | 980.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000   | Volume injected (uL)            |

Cpnd Variable Local Compound Variable

| CONCENTRATIONS           |        |        |                  |         |                     |           |       |
|--------------------------|--------|--------|------------------|---------|---------------------|-----------|-------|
|                          |        |        | ON-COL           | FINAL   |                     |           |       |
| RT                       | EXP RT | DLT RT | RESPONSE ( ug/L) | ( ug/L) | TARGET RANGE        | RATIO     |       |
| ==                       | =====  | =====  | =====            | =====   | =====               | =====     | ===== |
| \$ 1 4cmx                |        |        |                  |         | CAS #: 877-09-8     |           |       |
| 2.454                    | 2.452  | 0.002  | 8245549          | 82.3554 | 0.420 80.00- 120.00 | 100.00(R) |       |
| -----                    |        |        |                  |         |                     |           |       |
| \$ 32 Decachlorobiphenyl |        |        |                  |         | CAS #: 2051-24-3    |           |       |
| 7.422                    | 7.423  | -0.001 | 3666351          | 59.8139 | 0.305 80.00- 120.00 | 100.00(R) |       |
| -----                    |        |        |                  |         |                     |           |       |
| 5 alpha-BHC              |        |        |                  |         | CAS #: 319-84-6     |           |       |
| 2.831                    | 2.828  | 0.003  | 10072500         | 84.8781 | 0.433 80.00- 120.00 | 100.00    |       |
| -----                    |        |        |                  |         |                     |           |       |
| 7 gamma-BHC (Lindane)    |        |        |                  |         | CAS #: 58-89-9      |           |       |
| 3.059                    | 3.056  | 0.003  | 9560125          | 88.6221 | 0.452 80.00- 120.00 | 100.00    |       |
| -----                    |        |        |                  |         |                     |           |       |
| 12 beta-BHC              |        |        |                  |         | CAS #: 319-85-7     |           |       |
| 3.119                    | 3.117  | 0.002  | 4261911          | 85.8340 | 0.438 80.00- 120.00 | 100.00    |       |
| -----                    |        |        |                  |         |                     |           |       |

| CONCENTRATIONS        |        |        |          |         |         |               |           |
|-----------------------|--------|--------|----------|---------|---------|---------------|-----------|
| RT                    | EXP RT | DLT RT | ON-COL   |         | FINAL   | TARGET RANGE  | RATIO     |
| ==                    | =====  | =====  | RESPONSE | ( ug/L) | ( ug/L) | =====         | =====     |
| 28 Methoxychlor       |        |        |          |         |         |               |           |
| 5.806                 | 5.807  | -0.001 | 14663519 | 498.139 | 2.54    | 80.00- 120.00 | 100.00(R) |
| CAS #: 72-43-5        |        |        |          |         |         |               |           |
| -----                 |        |        |          |         |         |               |           |
| 13 delta-BHC          |        |        |          |         |         |               |           |
| 3.256                 | 3.255  | 0.001  | 8426531  | 85.6672 | 0.437   | 80.00- 120.00 | 100.00    |
| CAS #: 319-86-8       |        |        |          |         |         |               |           |
| -----                 |        |        |          |         |         |               |           |
| 10 Heptachlor         |        |        |          |         |         |               |           |
| 3.420                 | 3.419  | 0.001  | 5232828  | 54.3127 | 0.277   | 80.00- 120.00 | 100.00    |
| CAS #: 76-44-8        |        |        |          |         |         |               |           |
| -----                 |        |        |          |         |         |               |           |
| 11 Aldrin             |        |        |          |         |         |               |           |
| 3.663                 | 3.662  | 0.001  | 4989920  | 43.0289 | 0.220   | 80.00- 120.00 | 100.00    |
| CAS #: 309-00-2       |        |        |          |         |         |               |           |
| -----                 |        |        |          |         |         |               |           |
| 14 Heptachlor epoxide |        |        |          |         |         |               |           |
| 4.172                 | 4.171  | 0.001  | 6998902  | 69.9997 | 0.357   | 80.00- 120.00 | 100.00    |
| CAS #: 1024-57-3      |        |        |          |         |         |               |           |
| -----                 |        |        |          |         |         |               |           |
| 16 Endosulfan I       |        |        |          |         |         |               |           |
| 4.524                 | 4.523  | 0.001  | 5572053  | 63.2696 | 0.323   | 80.00- 120.00 | 100.00    |
| CAS #: 959-98-8       |        |        |          |         |         |               |           |
| -----                 |        |        |          |         |         |               |           |
| 19 4,4'-DDE           |        |        |          |         |         |               |           |
| 4.472                 | 4.473  | -0.001 | 9554883  | 100.447 | 0.512   | 80.00- 120.00 | 100.00    |
| CAS #: 72-55-9        |        |        |          |         |         |               |           |
| -----                 |        |        |          |         |         |               |           |
| 20 Dieldrin           |        |        |          |         |         |               |           |
| 4.744                 | 4.745  | -0.001 | 16056581 | 161.948 | 0.826   | 80.00- 120.00 | 100.00    |
| CAS #: 60-57-1        |        |        |          |         |         |               |           |
| -----                 |        |        |          |         |         |               |           |
| 22 Endrin             |        |        |          |         |         |               |           |
| 4.963                 | 4.964  | -0.001 | 14519026 | 177.513 | 0.906   | 80.00- 120.00 | 100.00    |
| CAS #: 72-20-8        |        |        |          |         |         |               |           |
| -----                 |        |        |          |         |         |               |           |
| 25 4,4'-DDD           |        |        |          |         |         |               |           |
| 5.033                 | 5.035  | -0.002 | 8691575  | 123.418 | 0.630   | 80.00- 120.00 | 100.00    |
| CAS #: 72-54-8        |        |        |          |         |         |               |           |
| -----                 |        |        |          |         |         |               |           |
| 24 Endosulfan II      |        |        |          |         |         |               |           |
| 5.178                 | 5.179  | -0.001 | 11913483 | 165.647 | 0.845   | 80.00- 120.00 | 100.00    |
| CAS #: 33213-65-9     |        |        |          |         |         |               |           |
| -----                 |        |        |          |         |         |               |           |
| 27 Endrin aldehyde    |        |        |          |         |         |               |           |
| 5.591                 | 5.592  | -0.001 | 11344923 | 179.130 | 0.914   | 80.00- 120.00 | 100.00    |
| CAS #: 7421-93-4      |        |        |          |         |         |               |           |
| -----                 |        |        |          |         |         |               |           |
| 26 4,4'-DDT           |        |        |          |         |         |               |           |
| 5.306                 | 5.308  | -0.002 | 6959782  | 106.388 | 0.543   | 80.00- 120.00 | 100.00(R) |
| CAS #: 50-29-3        |        |        |          |         |         |               |           |
| -----                 |        |        |          |         |         |               |           |
| 29 Endosulfan sulfate |        |        |          |         |         |               |           |
| 6.031                 | 6.033  | -0.002 | 13386049 | 196.211 | 1.00    | 80.00- 120.00 | 100.00    |
| CAS #: 1031-07-8      |        |        |          |         |         |               |           |
| -----                 |        |        |          |         |         |               |           |
| 31 Endrin ketone      |        |        |          |         |         |               |           |
| 6.321                 | 6.323  | -0.002 | 15914569 | 227.110 | 1.16    | 80.00- 120.00 | 100.00    |
| CAS #: 53494-70-5     |        |        |          |         |         |               |           |
| -----                 |        |        |          |         |         |               |           |

Data File: /chem/ecd3a.i/083011P.B/017F1701.D  
Report Date: 01-Sep-2011 10:02

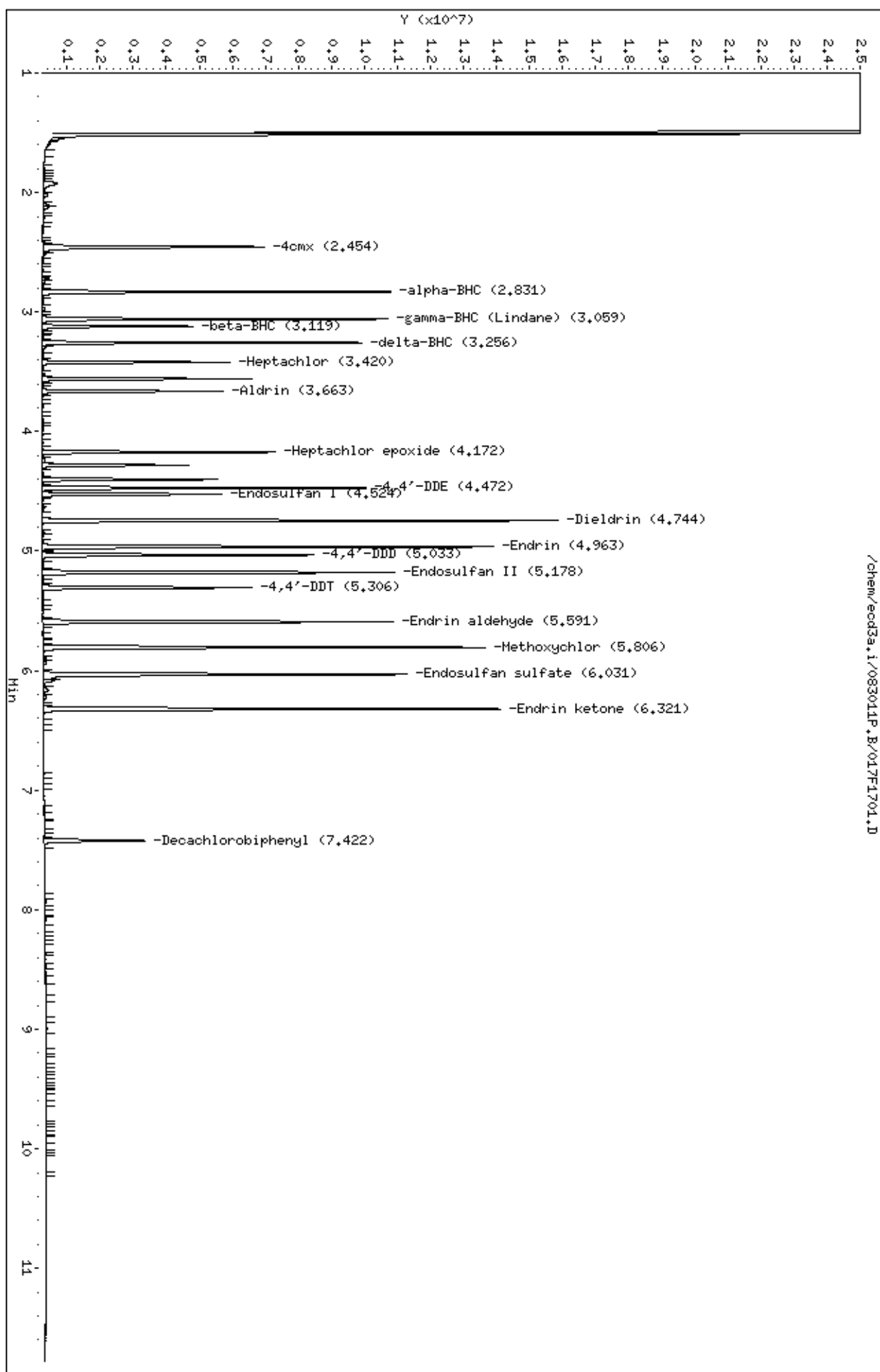
Page 3

#### QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /chem/ecod3a.i/083011P.B/017F1701.D  
 Date : 30-JUN-2011 19:15  
 Client ID: 11080101MS  
 Sample Info: 11202473926141  
 Volume Injected (uL): 1.0  
 Column phase: CLP-1

Instrument: ecod3a.i  
 Operator: RXE1  
 Column diameter: 0.25



GEL Laboratories LLC

CLP-2

Data file : /chem/ecd3a.i/083011P.B/017B1701.D  
Lab Smp Id: 1202473926 Client Smp ID: 11080101MS  
Inj Date : 30-AUG-2011 19:15  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |1202473926|1|  
Misc Info : |ECD5A1B\_1L|1136049|SVP|MS|GROUND WATER|MS|||  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
Meth Date : 31-Aug-2011 11:22 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036b3601.d  
Als bottle: 17 QC Sample: MS  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water

Concentration Formula:  $\text{Amt} * \text{DF} * \text{Uf} * \text{Vt} / (\text{Vo} * \text{Vi}) * \text{CpndVariable}$

| Name | Value     | Description                     |
|------|-----------|---------------------------------|
| DF   | 1.00000   | Dilution Factor                 |
| Uf   | 1.00000   | Correction factor               |
| Vt   | 5.00000   | Volume of final extract (mL)    |
| Vo   | 980.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000   | Volume injected (uL)            |

Cpnd Variable Local Compound Variable

| CONCENTRATIONS                            |        |        |                  |         |         |               |           |
|---|--------|--------|------------------|---------|---------|---------------|-----------|
|   |        |        | ON-COL           |         | FINAL   |               |           |
| RT  | EXP RT | DLT RT | RESPONSE ( ug/L) |         | ( ug/L) | TARGET RANGE  | RATIO     |
| ==  | =====  | =====  | =====            | =====   | =====   | =====         | =====     |
| \$ 1 4cmx CAS #: 877-09-8                 |        |        |                  |         |         |               |           |
| 3.087                                     | 3.086  | 0.001  | 6493915          | 80.4861 | 0.411   | 80.00- 120.00 | 100.00(R) |
| \$ 32 Decachlorobiphenyl CAS #: 2051-24-3 |        |        |                  |         |         |               |           |
| 9.148                                     | 9.147  | 0.001  | 3323134          | 69.2706 | 0.353   | 80.00- 120.00 | 100.00(R) |
| 5 alpha-BHC CAS #: 319-84-6               |        |        |                  |         |         |               |           |
| 3.608                                     | 3.607  | 0.001  | 9082176          | 77.0371 | 0.393   | 80.00- 120.00 | 100.00    |
| 7 gamma-BHC (Lindane) CAS #: 58-89-9      |        |        |                  |         |         |               |           |
| 3.932                                     | 3.931  | 0.001  | 8272755          | 79.0552 | 0.403   | 80.00- 120.00 | 100.00    |
| 12 beta-BHC CAS #: 319-85-7               |        |        |                  |         |         |               |           |
| 3.994                                     | 3.992  | 0.002  | 3309460          | 73.1126 | 0.373   | 80.00- 120.00 | 100.00    |



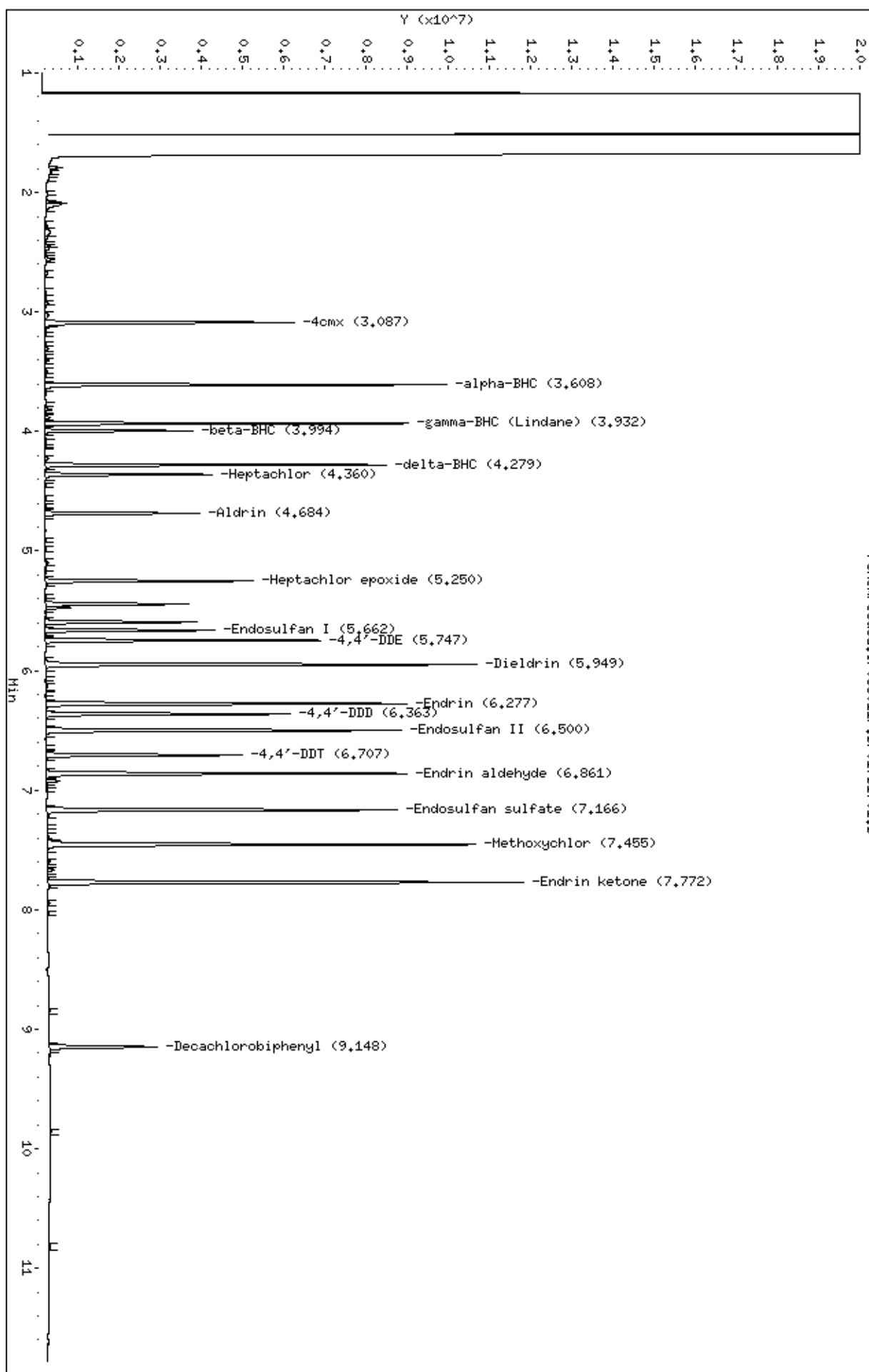
| CONCENTRATIONS        |        |        |          |         |                   |               |           |
|-----------------------|--------|--------|----------|---------|-------------------|---------------|-----------|
| RT                    | EXP RT | DLT RT | ON-COL   |         | FINAL             | TARGET RANGE  | RATIO     |
| ==                    | =====  | =====  | =====    | =====   | =====             | =====         | =====     |
| 28 Methoxychlor       |        |        |          |         | CAS #: 72-43-5    |               |           |
| 7.455                 | 7.455  | 0.000  | 12142837 | 495.423 | 2.53              | 80.00- 120.00 | 100.00(R) |
| -----                 |        |        |          |         |                   |               |           |
| 13 delta-BHC          |        |        |          |         | CAS #: 319-86-8   |               |           |
| 4.279                 | 4.279  | 0.000  | 7794583  | 75.5485 | 0.385             | 80.00- 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |               |           |
| 10 Heptachlor         |        |        |          |         | CAS #: 76-44-8    |               |           |
| 4.360                 | 4.359  | 0.001  | 3978369  | 49.2342 | 0.251             | 80.00- 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |               |           |
| 11 Aldrin             |        |        |          |         | CAS #: 309-00-2   |               |           |
| 4.684                 | 4.684  | 0.000  | 3911046  | 39.3854 | 0.201             | 80.00- 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |               |           |
| 14 Heptachlor epoxide |        |        |          |         | CAS #: 1024-57-3  |               |           |
| 5.250                 | 5.249  | 0.001  | 5290453  | 61.3225 | 0.313             | 80.00- 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |               |           |
| 16 Endosulfan I       |        |        |          |         | CAS #: 959-98-8   |               |           |
| 5.662                 | 5.661  | 0.001  | 4480408  | 57.4460 | 0.293             | 80.00- 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |               |           |
| 19 4,4'-DDE           |        |        |          |         | CAS #: 72-55-9    |               |           |
| 5.747                 | 5.747  | 0.000  | 7153181  | 90.7322 | 0.463             | 80.00- 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |               |           |
| 20 Dieldrin           |        |        |          |         | CAS #: 60-57-1    |               |           |
| 5.949                 | 5.948  | 0.001  | 11805810 | 146.782 | 0.749             | 80.00- 120.00 | 100.00(R) |
| -----                 |        |        |          |         |                   |               |           |
| 22 Endrin             |        |        |          |         | CAS #: 72-20-8    |               |           |
| 6.277                 | 6.276  | 0.001  | 10072264 | 155.523 | 0.793             | 80.00- 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |               |           |
| 25 4,4'-DDD           |        |        |          |         | CAS #: 72-54-8    |               |           |
| 6.363                 | 6.363  | 0.000  | 6567009  | 108.142 | 0.552             | 80.00- 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |               |           |
| 24 Endosulfan II      |        |        |          |         | CAS #: 33213-65-9 |               |           |
| 6.500                 | 6.499  | 0.001  | 9870175  | 143.806 | 0.734             | 80.00- 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |               |           |
| 27 Endrin aldehyde    |        |        |          |         | CAS #: 7421-93-4  |               |           |
| 6.861                 | 6.862  | -0.001 | 10193723 | 180.071 | 0.919             | 80.00- 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |               |           |
| 26 4,4'-DDT           |        |        |          |         | CAS #: 50-29-3    |               |           |
| 6.707                 | 6.707  | 0.000  | 5371271  | 94.5023 | 0.482             | 80.00- 120.00 | 100.00(R) |
| -----                 |        |        |          |         |                   |               |           |
| 29 Endosulfan sulfate |        |        |          |         | CAS #: 1031-07-8  |               |           |
| 7.166                 | 7.165  | 0.001  | 10037282 | 171.248 | 0.874             | 80.00- 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |               |           |
| 31 Endrin ketone      |        |        |          |         | CAS #: 53494-70-5 |               |           |
| 7.772                 | 7.772  | 0.000  | 13737518 | 194.688 | 0.993             | 80.00- 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |               |           |

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /chem/ecd3a.i/083011P.B/017B1701.D  
Date : 30-06-2011 19:15  
Client ID: 11080101MS  
Sample Info: 1120247392611  
Volume Injected (uL): 1.0  
Column phase: CLP-2

Instrument: ecd3a.i  
Operator: RXE1  
Column diameter: 0.25



**Pesticide  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

|  |   |                             |
|--|---|-----------------------------|
| <b>SDG Number:</b> 284538                  | <b>Date Collected:</b> 08/18/2011 12:00 | <b>Matrix:</b> GROUND WATER |
| <b>Lab Sample ID:</b> 1202473927           | <b>Date Received:</b> 08/23/2011 08:50  |                             |
| <b>Client Sample:</b> QC for batch 1136047 | <b>Client:</b> ECOL008                  | <b>Project:</b> QC          |
| <b>Client ID:</b> 11080101MSD              | <b>Method:</b> SW846 3535A/8081B        | <b>SOP Ref:</b> GL-OA-E-041 |
| <b>Batch ID:</b> 1136049                   | <b>Inst:</b> ECD3A.I                    | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 08/30/2011 19:30          | <b>Analyst:</b> RXE1                    | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 08/25/2011 18:20         | <b>Aliquot:</b> 980 mL                  | <b>Final Volume:</b> 5 mL   |
| <b>Data File:</b> 018F1801.D               | <b>Column:</b> 1 CLP-1                  | <b>Level:</b> LOW           |
|  | 2 CLP-2                                 |                             |

| CAS No.    | Parmname            | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|---------------------|-----------|--------|-------|---------|---------|--------|
| 319-84-6   | alpha-BHC           |           | 0.447  | ug/L  | 0.00679 | 0.0204  | 1      |
| 58-89-9    | gamma-BHC (Lindane) |           | 0.466  | ug/L  | 0.00679 | 0.0204  | 1      |
| 319-85-7   | beta-BHC            |           | 0.448  | ug/L  | 0.00679 | 0.0204  | 1      |
| 72-43-5    | Methoxychlor        |           | 2.53   | ug/L  | 0.051   | 0.204   | 1      |
| 319-86-8   | delta-BHC           |           | 0.446  | ug/L  | 0.00679 | 0.0204  | 1      |
| 76-44-8    | Heptachlor          |           | 0.283  | ug/L  | 0.00679 | 0.0204  | 1      |
| 309-00-2   | Aldrin              |           | 0.225  | ug/L  | 0.00679 | 0.0204  | 1      |
| 1024-57-3  | Heptachlor epoxide  |           | 0.363  | ug/L  | 0.00679 | 0.0204  | 1      |
| 959-98-8   | Endosulfan I        |           | 0.327  | ug/L  | 0.00679 | 0.0204  | 1      |
| 72-55-9    | 4,4'-DDE            |           | 0.516  | ug/L  | 0.0102  | 0.0408  | 1      |
| 60-57-1    | Dieldrin            |           | 0.834  | ug/L  | 0.0102  | 0.0408  | 1      |
| 72-20-8    | Endrin              |           | 0.913  | ug/L  | 0.0102  | 0.0408  | 1      |
| 72-54-8    | 4,4'-DDD            |           | 0.629  | ug/L  | 0.0102  | 0.0408  | 1      |
| 33213-65-9 | Endosulfan II       |           | 0.849  | ug/L  | 0.0102  | 0.0408  | 1      |
| 7421-93-4  | Endrin aldehyde     |           | 0.915  | ug/L  | 0.00679 | 0.0408  | 1      |
| 50-29-3    | 4,4'-DDT            |           | 0.540  | ug/L  | 0.0102  | 0.0408  | 1      |
| 1031-07-8  | Endosulfan sulfate  |           | 1.00   | ug/L  | 0.0102  | 0.0408  | 1      |
| 53494-70-5 | Endrin ketone       |           | 1.16   | ug/L  | 0.0102  | 0.0408  | 1      |
| 57-74-9    | Chlordane (tech.)   | U         | 0.0781 | ug/L  | 0.0781  | 0.255   | 1      |
| 8001-35-2  | Toxaphene           | U         | 0.153  | ug/L  | 0.153   | 0.510   | 1      |

GEL Laboratories LLC

CLP-1

Data file : /chem/ecd3a.i/083011P.B/018F1801.D  
Lab Smp Id: 1202473927 Client Smp ID: 11080101MSD  
Inj Date : 30-AUG-2011 19:30  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |1202473927|1|  
Misc Info : |ECD5A1B\_1L|1136049|SVP|MSD|GROUND WATER|MSD|||  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-F-8081-081211p.m  
Meth Date : 31-Aug-2011 11:26 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036f3601.d  
Als bottle: 18 QC Sample: MSD  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vo \* Vi) \* CpndVariable

| Name | Value     | Description                     |
|------|-----------|---------------------------------|
| DF   | 1.00000   | Dilution Factor                 |
| Uf   | 1.00000   | Correction factor               |
| Vt   | 5.00000   | Volume of final extract (mL)    |
| Vo   | 980.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000   | Volume injected (uL)            |

Cpnd Variable Local Compound Variable

| CONCENTRATIONS           |        |        |                  |         |                  |           |       |
|--------------------------|--------|--------|------------------|---------|------------------|-----------|-------|
|                          |        |        | ON-COL           | FINAL   |                  |           |       |
| RT                       | EXP RT | DLT RT | RESPONSE ( ug/L) | ( ug/L) | TARGET RANGE     | RATIO     |       |
| ==                       | =====  | =====  | =====            | =====   | =====            | =====     | ===== |
| \$ 1 4cmx                |        |        |                  |         | CAS #: 877-09-8  |           |       |
| 2.452                    | 2.452  | 0.000  | 8546551 85.3618  | 0.436   | 80.00- 120.00    | 100.00(R) |       |
| -----                    |        |        |                  |         |                  |           |       |
| \$ 32 Decachlorobiphenyl |        |        |                  |         | CAS #: 2051-24-3 |           |       |
| 7.423                    | 7.423  | 0.000  | 3721767 60.7180  | 0.310   | 80.00- 120.00    | 100.00(R) |       |
| -----                    |        |        |                  |         |                  |           |       |
| 5 alpha-BHC              |        |        |                  |         | CAS #: 319-84-6  |           |       |
| 2.830                    | 2.828  | 0.002  | 10404253 87.6737 | 0.447   | 80.00- 120.00    | 100.00    |       |
| -----                    |        |        |                  |         |                  |           |       |
| 7 gamma-BHC (Lindane)    |        |        |                  |         | CAS #: 58-89-9   |           |       |
| 3.058                    | 3.056  | 0.002  | 9861636 91.4171  | 0.466   | 80.00- 120.00    | 100.00    |       |
| -----                    |        |        |                  |         |                  |           |       |
| 12 beta-BHC              |        |        |                  |         | CAS #: 319-85-7  |           |       |
| 3.119                    | 3.117  | 0.002  | 4357389 87.7569  | 0.448   | 80.00- 120.00    | 100.00    |       |
| -----                    |        |        |                  |         |                  |           |       |

| CONCENTRATIONS        |        |        |          |         |                   |              |        |           |
|-----------------------|--------|--------|----------|---------|-------------------|--------------|--------|-----------|
| RT                    | EXP RT | DLT RT | ON-COL   |         | FINAL             | TARGET RANGE |        | RATIO     |
| ==                    | =====  | =====  | =====    | =====   | =====             | =====        | =====  | =====     |
| 28 Methoxychlor       |        |        |          |         | CAS #: 72-43-5    |              |        |           |
| 5.804                 | 5.807  | -0.003 | 14595186 | 495.817 | 2.53              | 80.00-       | 120.00 | 100.00(R) |
| -----                 |        |        |          |         |                   |              |        |           |
| 13 delta-BHC          |        |        |          |         | CAS #: 319-86-8   |              |        |           |
| 3.256                 | 3.255  | 0.001  | 8593503  | 87.3646 | 0.446             | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |              |        |           |
| 10 Heptachlor         |        |        |          |         | CAS #: 76-44-8    |              |        |           |
| 3.420                 | 3.419  | 0.001  | 5338729  | 55.4119 | 0.283             | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |              |        |           |
| 11 Aldrin             |        |        |          |         | CAS #: 309-00-2   |              |        |           |
| 3.662                 | 3.662  | 0.000  | 5120344  | 44.1536 | 0.225             | 80.00-       | 120.00 | 100.00(R) |
| -----                 |        |        |          |         |                   |              |        |           |
| 14 Heptachlor epoxide |        |        |          |         | CAS #: 1024-57-3  |              |        |           |
| 4.171                 | 4.171  | 0.000  | 7123066  | 71.2415 | 0.363             | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |              |        |           |
| 16 Endosulfan I       |        |        |          |         | CAS #: 959-98-8   |              |        |           |
| 4.523                 | 4.523  | 0.000  | 5639842  | 64.0393 | 0.327             | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |              |        |           |
| 19 4,4'-DDE           |        |        |          |         | CAS #: 72-55-9    |              |        |           |
| 4.471                 | 4.473  | -0.002 | 9611983  | 101.048 | 0.516             | 80.00-       | 120.00 | 100.00(R) |
| -----                 |        |        |          |         |                   |              |        |           |
| 20 Dieldrin           |        |        |          |         | CAS #: 60-57-1    |              |        |           |
| 4.744                 | 4.745  | -0.001 | 16204932 | 163.444 | 0.834             | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |              |        |           |
| 22 Endrin             |        |        |          |         | CAS #: 72-20-8    |              |        |           |
| 4.963                 | 4.964  | -0.001 | 14635824 | 178.941 | 0.913             | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |              |        |           |
| 25 4,4'-DDD           |        |        |          |         | CAS #: 72-54-8    |              |        |           |
| 5.032                 | 5.035  | -0.003 | 8676763  | 123.208 | 0.629             | 80.00-       | 120.00 | 100.00(R) |
| -----                 |        |        |          |         |                   |              |        |           |
| 24 Endosulfan II      |        |        |          |         | CAS #: 33213-65-9 |              |        |           |
| 5.178                 | 5.179  | -0.001 | 11970979 | 166.447 | 0.849             | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |              |        |           |
| 27 Endrin aldehyde    |        |        |          |         | CAS #: 7421-93-4  |              |        |           |
| 5.592                 | 5.592  | 0.000  | 11360024 | 179.368 | 0.915             | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |              |        |           |
| 26 4,4'-DDT           |        |        |          |         | CAS #: 50-29-3    |              |        |           |
| 5.305                 | 5.308  | -0.003 | 6920412  | 105.787 | 0.540             | 80.00-       | 120.00 | 100.00(R) |
| -----                 |        |        |          |         |                   |              |        |           |
| 29 Endosulfan sulfate |        |        |          |         | CAS #: 1031-07-8  |              |        |           |
| 6.030                 | 6.033  | -0.003 | 13366031 | 195.918 | 1.00              | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |              |        |           |
| 31 Endrin ketone      |        |        |          |         | CAS #: 53494-70-5 |              |        |           |
| 6.320                 | 6.323  | -0.003 | 15978534 | 228.023 | 1.16              | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |                   |              |        |           |

Data File: /chem/ecd3a.i/083011P.B/018F1801.D  
Report Date: 01-Sep-2011 10:02

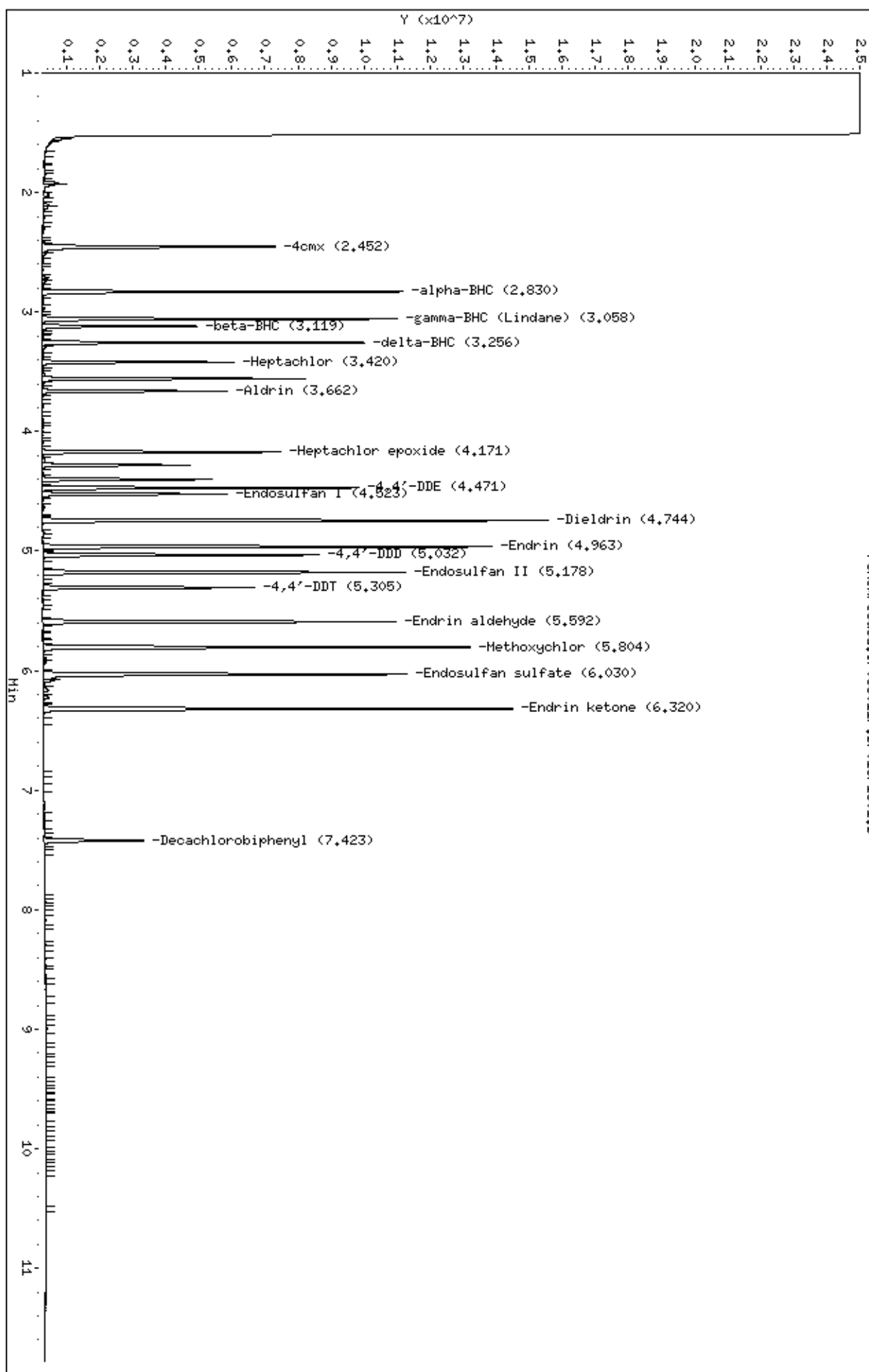
Page 3

#### QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /chem/ecd3a.i/083011P.B/018F1801.D  
 Date : 30-JUN-2011 19:30  
 Client ID: 11080101MSD  
 Sample Info: 1120247392711  
 Volume Injected (uL): 1.0  
 Column phase: CLP-1

Instrument: ecd3a.i  
 Operator: RXE1  
 Column diameter: 0.25





GEL Laboratories LLC

CLP-2

Data file : /chem/ecd3a.i/083011P.B/018B1801.D  
Lab Smp Id: 1202473927 Client Smp ID: 11080101MSD  
Inj Date : 30-AUG-2011 19:30  
Operator : RXE1 Inst ID: ecd3a.i  
Smp Info : |1202473927|1|  
Misc Info : |ECD5A1B\_1L|1136049|SVP|MSD|GROUND WATER|MSD|||  
Comment :  
Method : /chem/ecd3a.i/083011P.B/ECD3-B-8081-081211p.m  
Meth Date : 31-Aug-2011 11:22 reb01393 Quant Type: ESTD  
Cal Date : 30-NOV-2010 06:46 Cal File: 036b3601.d  
Als bottle: 18 QC Sample: MSD  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water

Concentration Formula:  $\text{Amt} * \text{DF} * \text{Uf} * \text{Vt} / (\text{Vo} * \text{Vi}) * \text{CpndVariable}$

| Name | Value     | Description                     |
|------|-----------|---------------------------------|
| DF   | 1.00000   | Dilution Factor                 |
| Uf   | 1.00000   | Correction factor               |
| Vt   | 5.00000   | Volume of final extract (mL)    |
| Vo   | 980.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000   | Volume injected (uL)            |

Cpnd Variable Local Compound Variable

| CONCENTRATIONS                            |        |        |                  |         |         |               |           |
|---|--------|--------|------------------|---------|---------|---------------|-----------|
|   |        |        | ON-COL           |         | FINAL   |               |           |
| RT  | EXP RT | DLT RT | RESPONSE ( ug/L) |         | ( ug/L) | TARGET RANGE  | RATIO     |
| ==  | =====  | =====  | =====            | =====   | =====   | =====         | =====     |
| \$ 1 4cmx CAS #: 877-09-8                 |        |        |                  |         |         |               |           |
| 3.086                                     | 3.086  | 0.000  | 6617049          | 82.0122 | 0.418   | 80.00- 120.00 | 100.00(R) |
| \$ 32 Decachlorobiphenyl CAS #: 2051-24-3 |        |        |                  |         |         |               |           |
| 9.146                                     | 9.147  | -0.001 | 3349031          | 69.8104 | 0.356   | 80.00- 120.00 | 100.00(R) |
| 5 alpha-BHC CAS #: 319-84-6               |        |        |                  |         |         |               |           |
| 3.608                                     | 3.607  | 0.001  | 9274770          | 78.6707 | 0.401   | 80.00- 120.00 | 100.00    |
| 7 gamma-BHC (Lindane) CAS #: 58-89-9      |        |        |                  |         |         |               |           |
| 3.931                                     | 3.931  | 0.000  | 8432106          | 80.5780 | 0.411   | 80.00- 120.00 | 100.00    |
| 12 beta-BHC CAS #: 319-85-7               |        |        |                  |         |         |               |           |
| 3.993                                     | 3.992  | 0.001  | 3355617          | 74.1323 | 0.378   | 80.00- 120.00 | 100.00    |

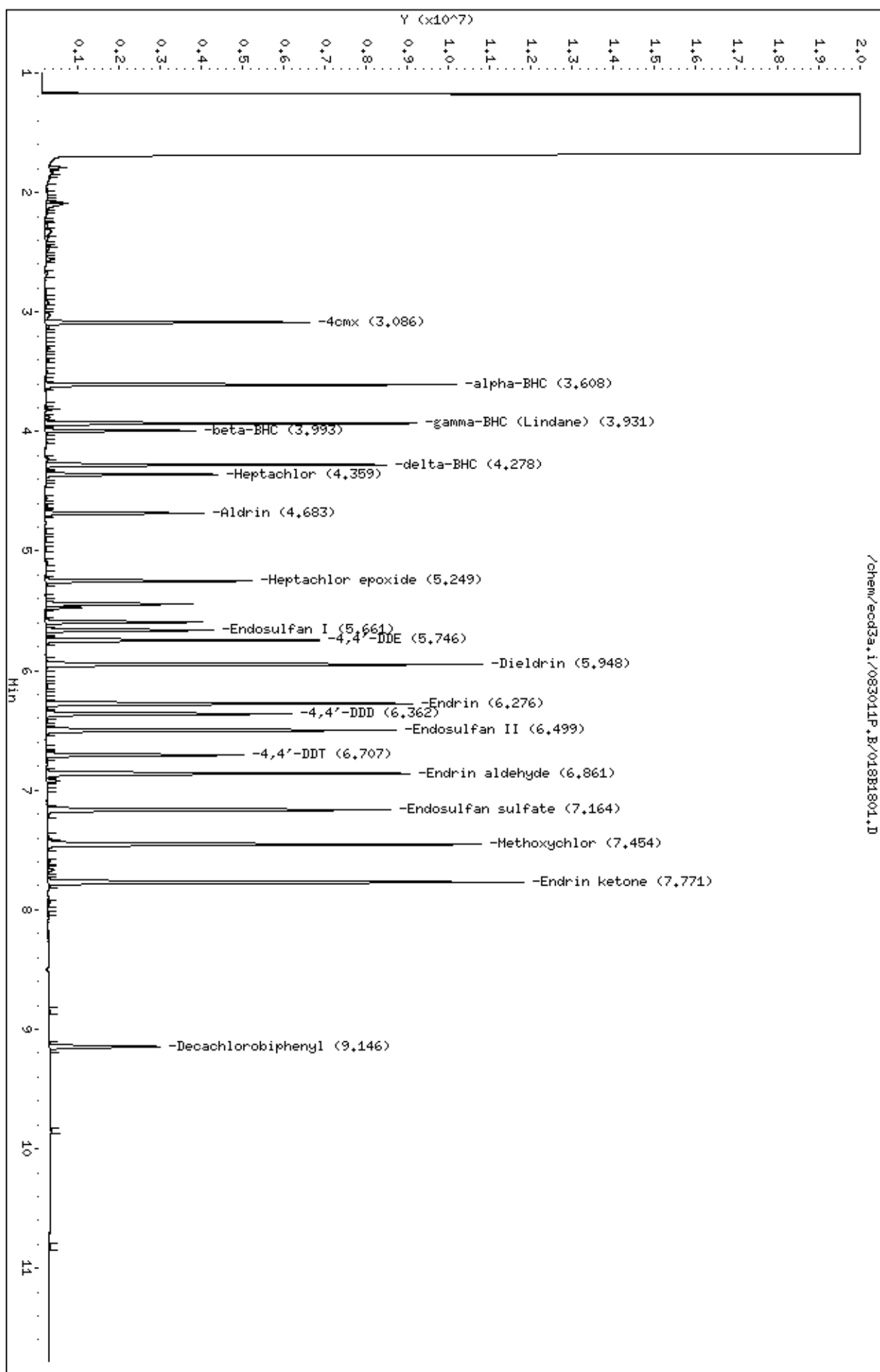
| CONCENTRATIONS        |        |        |          |         |        |              |        |           |
|-----------------------|--------|--------|----------|---------|--------|--------------|--------|-----------|
| RT                    | EXP RT | DLT RT | ON-COL   |         | FINAL  | TARGET RANGE |        | RATIO     |
| ==                    | =====  | =====  | =====    | =====   | =====  | =====        | =====  | =====     |
| 28 Methoxychlor       |        |        |          |         | CAS #: | 72-43-5      |        |           |
| 7.454                 | 7.455  | -0.001 | 12081411 | 492.917 | 2.51   | 80.00-       | 120.00 | 100.00(R) |
| -----                 |        |        |          |         |        |              |        |           |
| 13 delta-BHC          |        |        |          |         | CAS #: | 319-86-8     |        |           |
| 4.278                 | 4.279  | -0.001 | 7867886  | 76.2589 | 0.389  | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |        |              |        |           |
| 10 Heptachlor         |        |        |          |         | CAS #: | 76-44-8      |        |           |
| 4.359                 | 4.359  | 0.000  | 4061176  | 50.2590 | 0.256  | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |        |              |        |           |
| 11 Aldrin             |        |        |          |         | CAS #: | 309-00-2     |        |           |
| 4.683                 | 4.684  | -0.001 | 3963839  | 39.9170 | 0.204  | 80.00-       | 120.00 | 100.00(R) |
| -----                 |        |        |          |         |        |              |        |           |
| 14 Heptachlor epoxide |        |        |          |         | CAS #: | 1024-57-3    |        |           |
| 5.249                 | 5.249  | 0.000  | 5338917  | 61.8843 | 0.316  | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |        |              |        |           |
| 16 Endosulfan I       |        |        |          |         | CAS #: | 959-98-8     |        |           |
| 5.661                 | 5.661  | 0.000  | 4506654  | 57.7825 | 0.295  | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |        |              |        |           |
| 19 4,4'-DDE           |        |        |          |         | CAS #: | 72-55-9      |        |           |
| 5.746                 | 5.747  | -0.001 | 7147323  | 90.6578 | 0.462  | 80.00-       | 120.00 | 100.00(R) |
| -----                 |        |        |          |         |        |              |        |           |
| 20 Dieldrin           |        |        |          |         | CAS #: | 60-57-1      |        |           |
| 5.948                 | 5.948  | 0.000  | 11867510 | 147.549 | 0.753  | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |        |              |        |           |
| 22 Endrin             |        |        |          |         | CAS #: | 72-20-8      |        |           |
| 6.276                 | 6.276  | 0.000  | 10135579 | 156.501 | 0.798  | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |        |              |        |           |
| 25 4,4'-DDD           |        |        |          |         | CAS #: | 72-54-8      |        |           |
| 6.362                 | 6.363  | -0.001 | 6593200  | 108.573 | 0.554  | 80.00-       | 120.00 | 100.00(R) |
| -----                 |        |        |          |         |        |              |        |           |
| 24 Endosulfan II      |        |        |          |         | CAS #: | 33213-65-9   |        |           |
| 6.499                 | 6.499  | 0.000  | 9848837  | 143.495 | 0.732  | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |        |              |        |           |
| 27 Endrin aldehyde    |        |        |          |         | CAS #: | 7421-93-4    |        |           |
| 6.861                 | 6.862  | -0.001 | 10165649 | 179.575 | 0.916  | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |        |              |        |           |
| 26 4,4'-DDT           |        |        |          |         | CAS #: | 50-29-3      |        |           |
| 6.707                 | 6.707  | 0.000  | 5342538  | 93.9968 | 0.480  | 80.00-       | 120.00 | 100.00(R) |
| -----                 |        |        |          |         |        |              |        |           |
| 29 Endosulfan sulfate |        |        |          |         | CAS #: | 1031-07-8    |        |           |
| 7.164                 | 7.165  | -0.001 | 9922909  | 169.296 | 0.864  | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |        |              |        |           |
| 31 Endrin ketone      |        |        |          |         | CAS #: | 53494-70-5   |        |           |
| 7.771                 | 7.772  | -0.001 | 13725188 | 194.513 | 0.992  | 80.00-       | 120.00 | 100.00    |
| -----                 |        |        |          |         |        |              |        |           |

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /chem/ecd3a.i/083011P.B/018B1801.D  
 Date : 30-JUL-2011 19:30  
 Client ID: 11080101MSD  
 Sample Info: 1120247392711  
 Volume Injected (uL): 1.0  
 Column phase: CLP-2

Instrument: ecd3a.i  
 Operator: RXE1  
 Column diameter: 0.25



# Miscellaneous Data

# Prep Logbook

## Solid-Phase Extraction

Batch ID: 1136047  
 Analyst: Tiffany Adams  
 Method: SW846 3535A

Verified by: \_\_\_\_\_

Lab SOP: GL-OA-E-070 REV# 3  
 Instrument: Semi-Volatiles Manual

| Sample ID                  | Run Date             | Initial Volume (mL) | Ph 1 | Ph 2 | Final Volume (mL) | Prepped Factor (mL/mL) |
|----------------------------|----------------------|---------------------|------|------|-------------------|------------------------|
| 1202473924 MB              | 25-AUG-2011 18:20:00 | 1000                | 5    | 1    | 5                 | 0.005                  |
| 1202473925 LCS             | 25-AUG-2011 18:20:00 | 1000                | 5    | 1    | 5                 | 0.005                  |
| 284538001                  | 25-AUG-2011 18:20:00 | 980                 | 5    | 1    | 5                 | 0.0051                 |
| 1202473926 MS (284538001)  | 25-AUG-2011 18:20:00 | 980                 | 5    | 1    | 5                 | 0.0051                 |
| 1202473927 MSD (284538001) | 25-AUG-2011 18:20:00 | 980                 | 5    | 1    | 5                 | 0.0051                 |

| Type  | Sample Id  | Description              | Serial Number | Spike Amt | Units | Comments:  |
|-------|------------|--------------------------|---------------|-----------|-------|--|
| LCS   | 1202473925 | PESTSPIKE                | UE110817-04   | 1         | mL    | Final Solvent: Hexane<br>Verified By: VAQ                                      |
| MS    | 1202473926 | PESTSPIKE                | UE110817-04   | 1         | mL    |  |
| MSD   | 1202473927 | PESTSPIKE                | UE110817-04   | 1         | mL    | Int Ext pH: 1  |
| SURR  | All        | PEST SURROGATE 1000 UG/L | UE110620-08   | 1         | mL    | Lot #91824-TL  |
| REGNT | All        | Hexane                   | 1541543-B4    | 5         | mL    | Samples 8001, MS 8001, and MSD 8001 were brown in color with suspended solids. |
| REGNT | All        | Methanol                 | 1581666-C     | 10        | mL    |  |
| REGNT | All        | Acetone                  | 1601189-B1    | 5         | mL    |  |
| REGNT | All        | Methylene Chloride       | 1605750-D     | 50        | mL    |  |
| REGNT | All        | Sulfuric Acid Sol., 1:1  | 1607507       | 15        | L     |  |
| SOURC | All        | SODIUM SULFATE           | 1594298       | 30        | g     |  |

DATE: 09/09/2011

METHOD: ECD3-B-8081-081211p.m

OPERATOR:RXE1

REVIEWED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

HARDWARE CONFIGURATION &amp; METHOD SUMMARY: No. 1 on pg. 1 SOLVENT LOT

## Calibration &amp; QC Information

Initial Calibration Dates: See Calibration History and Standards Log

Initial Calibration Std ID's: See Calibration History and Standards Log

GEL SOP GL-OA-E-041

EPA Method: 8081

8081A

Sequence Number: 081611P.B

Injection Volume: 1.0 uL

| Data File  | GEL Lab Sample ID | Analyst | Injection Date/Time | Batch | SDG     | Dilution | Client | Comments |
|------------|-------------------|---------|---------------------|-------|---------|----------|--------|----------|
| 001B0101.D | WAR110724-99IB    | RXE1    | 16-AUG-2011 11:06   |       | 081611P | 1.0      |        |          |
| 002B0201.D | WPE110628-99DG    | RXE1    | 16-AUG-2011 11:22   |       | 081611P | 1.0      |        |          |
| 003B0301.D | WPE110711-10AB    | RXE1    | 16-AUG-2011 11:37   |       | 081611P | 1.0      |        |          |
| 004B0401.D | WPE110630-52TX    | RXE1    | 16-AUG-2011 11:52   |       | 081611P | 1.0      |        |          |
| 005B0501.D | WPE110724-00CL    | RXE1    | 16-AUG-2011 12:08   |       | 081611P | 1.0      |        |          |
| 006B0601.D | WPE110809-05GA    | RXE1    | 16-AUG-2011 12:24   |       | 081611P | 1.0      |        |          |
| 007B0701.D | WPE110809-01AB    | RXE1    | 16-AUG-2011 12:39   |       | 081611P | 1.0      |        |          |
| 008B0801.D | WPE110809-02AB    | RXE1    | 16-AUG-2011 12:55   |       | 081611P | 1.0      |        |          |
| 009B0901.D | WPE110809-03AB    | RXE1    | 16-AUG-2011 13:10   |       | 081611P | 1.0      |        |          |
| 010B1001.D | WPE110809-04AB    | RXE1    | 16-AUG-2011 13:26   |       | 081611P | 1.0      |        |          |
| 011B1101.D | IPE110801-02AB    | RXE1    | 16-AUG-2011 13:41   |       | 081611P | 1.0      |        |          |
| 012B1201.D | WPE110711-10AB    | RXE1    | 16-AUG-2011 13:57   |       | 081611P | 1.0      |        |          |
| 013B1301.D | WPE110816-11TX    | RXE1    | 16-AUG-2011 14:12   |       | 081611P | 1.0      |        |          |
| 014B1401.D | WPE110816-12TX    | RXE1    | 16-AUG-2011 14:28   |       | 081611P | 1.0      |        |          |
| 015B1501.D | WPE110816-13TX    | RXE1    | 16-AUG-2011 14:43   |       | 081611P | 1.0      |        |          |

Instrument Batch: /chem/ecd3a.i/081611P.B

Page: 1

| Data File  | GEL Lab Sample ID | Analyst | Injection Date/Time | Batch | SDG     | Dilution | Client | Comments |
|------------|-------------------|---------|---------------------|-------|---------|----------|--------|----------|
| 016B1601.D | WPE110816-14TX    | RXE1    | 16-AUG-2011 14:59   |       | 081611P | 1.0      |        |          |

|            |                |      |                   |         |         |  |      |      |                    |
|------------|----------------|------|-------------------|---------|---------|--|------|------|--------------------|
| 017B1701.D | IPE110418-40TX | RXE1 | 16-AUG-2011 15:14 |         | 081611P |  | 1.0  |      |                    |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 018B1801.D | WPE110630-52TX | RXE1 | 16-AUG-2011 15:30 |         | 081611P |  | 1.0  |      |                    |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 019B1901.D | WPE110816-21CL | RXE1 | 16-AUG-2011 15:45 |         | 081611P |  | 1.0  |      | CHLOR ICAL level 1 |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 020B2001.D | WPE110816-22CL | RXE1 | 16-AUG-2011 16:01 |         | 081611P |  | 1.0  |      | CHLOR ICAL level 2 |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 021B2101.D | WPE110816-23CL | RXE1 | 16-AUG-2011 16:27 |         | 081611P |  | 1.0  |      | CHLOR ICAL level 3 |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 022B2201.D | WPE110816-24CL | RXE1 | 16-AUG-2011 16:42 |         | 081611P |  | 1.0  |      | CHLOR ICAL level 4 |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 023B2301.D | IPE110616-06CL | RXE1 | 16-AUG-2011 16:58 |         | 081611P |  | 1.0  |      | CHLOR ICAL level 5 |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 024B2401.D | WPE110724-00CL | RXE1 | 16-AUG-2011 17:13 |         | 081611P |  | 1.0  |      |                    |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 025B2501.D | WAR110724-99IB | RXE1 | 16-AUG-2011 17:29 |         | 081611P |  | 1.0  |      |                    |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 026B2601.D | 1202465177     | RXE1 | 16-AUG-2011 17:44 | 1132355 | 283865  |  | 1.0  | MB   |                    |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 027B2701.D | 1202465178     | RXE1 | 16-AUG-2011 18:00 | 1132355 | 283865  |  | 1.0  | LCS  |                    |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 028B2801.D | 283865001      | RXE1 | 16-AUG-2011 18:15 | 1132355 | 283865  |  | 5.0  | ENRG |                    |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 029B2901.D | 283865002      | RXE1 | 16-AUG-2011 18:31 | 1132355 | 283865  |  | 20.0 | ENRG |                    |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 030B3001.D | 283865003      | RXE1 | 16-AUG-2011 18:46 | 1132355 | 283865  |  | 20.0 | ENRG |                    |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 031B3101.D | 1202465438     | RXE1 | 16-AUG-2011 19:02 | 1132355 | 283865  |  | 20.0 | MS   |                    |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 032B3201.D | 1202465439     | RXE1 | 16-AUG-2011 19:17 | 1132355 | 283865  |  | 20.0 | MSD  |                    |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 033B3301.D | 283865004      | RXE1 | 16-AUG-2011 19:33 | 1132355 | 283865  |  | 5.0  | ENRG |                    |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 034B3401.D | WAR110724-99IB | RXE1 | 16-AUG-2011 19:48 |         | 081611P |  | 1.0  |      |                    |
| +-----+    |                |      |                   |         |         |  |      |      |                    |
| 035B3501.D | WPE110812-10AB | RXE1 | 16-AUG-2011 20:04 |         | 081611P |  | 1.0  |      |                    |
| +-----+    |                |      |                   |         |         |  |      |      |                    |

Instrument Batch: /chem/ecd3a.i/081611P.B

Page: 2

| +-----+    |                   |         |                     |       |         |          |        |  |          |
|------------|-------------------|---------|---------------------|-------|---------|----------|--------|--|----------|
| Data File  | GEL Lab Sample ID | Analyst | Injection Date/Time | Batch | SDG     | Dilution | Client |  | Comments |
| +-----+    |                   |         |                     |       |         |          |        |  |          |
| 036B3601.D | WAR110724-99IB    | RXE1    | 16-AUG-2011 20:19   |       | 081611P |          | 1.0    |  |          |
| +-----+    |                   |         |                     |       |         |          |        |  |          |



DATE: 08/31/2011

METHOD: ECD3-F-8081-081211p.m

OPERATOR:RXE1

REVIEWED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

HARDWARE CONFIGURATION &amp; METHOD SUMMARY: No. 1 on pg. 1 SOLVENT LOT DE354

## Calibration &amp; QC Information

Initial Calibration Dates: See Calibration History and Standards Log

Initial Calibration Std ID's: See Calibration History and Standards Log

GEL SOP GL-OA-E-041

EPA Method: 8081

8081A

Sequence Number:

Injection Volume: 1.0 uL

| Data File  | GEL Lab Sample ID | Analyst | Injection Date/Time | Batch | SDG     | Dilution | Client            | Comments |
|------------|-------------------|---------|---------------------|-------|---------|----------|-------------------|----------|
| 001F0101.D | WAR110724-99IB    | RXE1    | 23-AUG-2011 11:23   |       | 082311P | 1.0      | CLEAN             |          |
| 002F0201.D | WPE110628-99DG    | RXE1    | 23-AUG-2011 11:39   |       | 082311P | 1.0      |                   |          |
| 003F0301.D | WPE110711-10AB    | RXE1    | 23-AUG-2011 11:54   |       | 082311P | 1.0      | DUSE              |          |
| 004F0401.D | WPE110630-52TX    | RXE1    | 23-AUG-2011 12:10   |       | 082311P | 1.0      | DUSE              |          |
| 005F0501.D | WPE110724-00CL    | RXE1    | 23-AUG-2011 12:25   |       | 082311P | 1.0      | USE. PASSING ALL. |          |
| 006F0601.D | WPE110809-05GA    | RXE1    | 23-AUG-2011 12:41   |       | 082311P | 1.0      | PATTERN ONLY.     |          |
| 007F0701.D | WPE110809-01AB    | RXE1    | 23-AUG-2011 12:56   |       | 082311P | 1.0      | INDAB ICAL 1      |          |
| 008F0801.D | WPE110809-02AB    | RXE1    | 23-AUG-2011 13:12   |       | 082311P | 1.0      | INDAB ICAL 2      |          |
| 009F0901.D | WPE110809-03AB    | RXE1    | 23-AUG-2011 13:27   |       | 082311P | 1.0      | INDAB ICAL 3      |          |
| 010F1001.D | WPE110809-04AB    | RXE1    | 23-AUG-2011 13:43   |       | 082311P | 1.0      | INDAB ICAL 4      |          |
| 011F1101.D | IPE110801-02AB    | RXE1    | 23-AUG-2011 13:58   |       | 082311P | 1.0      | INDAB ICAL 5      |          |
| 012F1201.D | WPE110711-10AB    | RXE1    | 23-AUG-2011 14:14   |       | 082311P | 1.0      | USE. PASSING ALL. |          |
| 013F1301.D | WPE110816-11TX    | RXE1    | 23-AUG-2011 14:29   |       | 082311P | 1.0      | TOXAPH ICAL 1     |          |
| 014F1401.D | WPE110816-12TX    | RXE1    | 23-AUG-2011 14:45   |       | 082311P | 1.0      | TOXAPH ICAL 2     |          |
| 015F1501.D | WPE110816-13TX    | RXE1    | 23-AUG-2011 15:00   |       | 082311P | 1.0      | TOXAPH ICAL 3     |          |

Instrument Batch: /chem/ecd3a.i/082311P.B

Page: 1

| Data File  | GEL Lab Sample ID | Analyst | Injection Date/Time | Batch | SDG     | Dilution | Client        | Comments |
|------------|-------------------|---------|---------------------|-------|---------|----------|---------------|----------|
| 016F1601.D | WPE110816-14TX    | RXE1    | 23-AUG-2011 15:16   |       | 082311P | 1.0      | TOXAPH ICAL 4 |          |

|            |                |      |                   |         |         |  |           |                   |  |
|------------|----------------|------|-------------------|---------|---------|--|-----------|-------------------|--|
| 017F1701.D | IPE110418-40TX | RXE1 | 23-AUG-2011 15:31 |         | 082311P |  | 1.0       | TOXAPH ICAL 5     |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 018F1801.D | WPE110630-52TX | RXE1 | 23-AUG-2011 15:47 |         | 082311P |  | 1.0       | USE. PASSING AVG. |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 019F1901.D | WAR110724-99IB | RXE1 | 23-AUG-2011 16:02 |         | 082311P |  | 1.0       | CLEAN             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 020F2001.D | 1202468426     | RXE1 | 23-AUG-2011 16:18 | 1133709 | 284086  |  | 1.0 MB    | DUSE.             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 021F2101.D | 1202468427     | RXE1 | 23-AUG-2011 16:33 | 1133709 | 284086  |  | 1.0 LCS   | DUSE.             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 022F2201.D | 1202468428     | RXE1 | 23-AUG-2011 16:49 | 1133709 | 284086  |  | 1.0 LCSD  | DUSE.             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 023F2301.D | 284086001      | RXE1 | 23-AUG-2011 17:04 | 1133709 | 284086  |  | 2.0 ENRG  | DUSE.             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 024F2401.D | 284086002      | RXE1 | 23-AUG-2011 17:20 | 1133709 | 284086  |  | 2.0 ENRG  | DUSE.             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 025F2501.D | 284086003      | RXE1 | 23-AUG-2011 17:35 | 1133709 | 284086  |  | 2.0 ENRG  | DUSE.             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 026F2601.D | WAR110724-99IB | RXE1 | 23-AUG-2011 17:51 |         | 082311P |  | 1.0       | CLEAN             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 027F2701.D | WPE110812-10AB | RXE1 | 23-AUG-2011 18:06 |         | 082311P |  | 1.0       | DUSE.             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 028F2801.D | WAR110724-99IB | RXE1 | 23-AUG-2011 18:22 |         | 082311P |  | 1.0       | CLEAN             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 029F2901.D | 1202466688     | RXE1 | 23-AUG-2011 18:37 | 1132923 | 11-3023 |  | 1.0 MB    | DUSE.             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 030F3001.D | 1202466689     | RXE1 | 23-AUG-2011 18:53 | 1132923 | 11-3023 |  | 1.0 LCS   | DUSE.             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 031F3101.D | 1202466692     | RXE1 | 23-AUG-2011 19:08 | 1132923 | 11-3023 |  | 1.0 TLCS  | DUSE.             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 032F3201.D | 283460001      | RXE1 | 23-AUG-2011 19:24 | 1132923 | 11-3023 |  | 10.0 ARSL | DUSE.             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 033F3301.D | 1202466690     | RXE1 | 23-AUG-2011 19:40 | 1132923 | 11-3023 |  | 10.0 MS   | DUSE.             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 034F3401.D | 1202466691     | RXE1 | 23-AUG-2011 19:55 | 1132923 | 11-3023 |  | 10.0 MSD  | DUSE.             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |
| 035F3501.D | 283460002      | RXE1 | 23-AUG-2011 20:11 | 1132923 | 11-3023 |  | 10.0 ARSL | DUSE.             |  |
| +-----+    |                |      |                   |         |         |  |           |                   |  |

Instrument Batch: /chem/ecd3a.i/082311P.B

Page: 2

| +-----+    |                   |         |                     |       |         |          |        |  |                                |
|------------|-------------------|---------|---------------------|-------|---------|----------|--------|--|--------------------------------|
| Data File  | GEL Lab Sample ID | Analyst | Injection Date/Time | Batch | SDG     | Dilution | Client |  | Comments                       |
| +-----+    |                   |         |                     |       |         |          |        |  |                                |
| 036F3601.D | WAR110724-99IB    | RXE1    | 23-AUG-2011 20:26   |       | 082311P |          | 1.0    |  | CLEAN                          |
| +-----+    |                   |         |                     |       |         |          |        |  |                                |
| 037F3701.D | WPE110812-10AB    | RXE1    | 23-AUG-2011 20:42   |       | 082311P |          | 1.0    |  | DUSE - CONFIRMS CHECK FAILURE. |
| +-----+    |                   |         |                     |       |         |          |        |  |                                |

DATE: 09/01/2011

METHOD: ECD3-B-8081-081211p.m

OPERATOR:RXE1

REVIEWED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

HARDWARE CONFIGURATION &amp; METHOD SUMMARY: No. 1 on pg. 1 SOLVENT LOT DE354

## Calibration &amp; QC Information

Initial Calibration Dates: See Calibration History and Standards Log

Initial Calibration Std ID's: See Calibration History and Standards Log

GEL SOP GL-OA-E-041

EPA Method: 8081

8081A

Sequence Number:

Injection Volume: 1.0 uL

| Data File  | GEL Lab Sample ID | Analyst | Injection Date/Time | Batch   | SDG     | Dilution | Client | Comments                                       |
|------------|-------------------|---------|---------------------|---------|---------|----------|--------|--|
| 001B0101.D | WAR110724-99IB    | RXE1    | 30-AUG-2011 15:06   |         | 083011P | 1.0      |        | CLEAN  |
| 002B0201.D | WPE110628-99DG    | RXE1    | 30-AUG-2011 15:22   |         | 083011P | 1.0      |        | (B)DDT:1.3, ENDRIN:3.5 (F)DDT:0.86, ENDRIN:2.5 |
| 003B0301.D | WPE110711-10AB    | RXE1    | 30-AUG-2011 15:37   |         | 083011P | 1.0      |        | DUSE   |
| 004B0401.D | WPE110630-52TX    | RXE1    | 30-AUG-2011 15:53   |         | 083011P | 1.0      |        | USE. PASSING ALL.                              |
| 005B0501.D | WPE110724-00CL    | RXE1    | 30-AUG-2011 16:08   |         | 083011P | 1.0      |        | USE. PASSING ALL B METHOD.                     |
| 006B0601.D | WPE110809-05GA    | RXE1    | 30-AUG-2011 16:24   |         | 083011P | 1.0      |        | PATTERN ONLY.                                  |
| 007B0701.D | WPE110830-01AB    | RXE1    | 30-AUG-2011 16:39   |         | 083011P | 1.0      |        | INDAB ICAL 1                                   |
| 008B0801.D | WPE110830-02AB    | RXE1    | 30-AUG-2011 16:55   |         | 083011P | 1.0      |        | INDAB ICAL 2                                   |
| 009B0901.D | WPE110830-03AB    | RXE1    | 30-AUG-2011 17:10   |         | 083011P | 1.0      |        | INDAB ICAL 3                                   |
| 010B1001.D | WPE110830-04AB    | RXE1    | 30-AUG-2011 17:26   |         | 083011P | 1.0      |        | INDAB ICAL 4                                   |
| 011B1101.D | IPE110801-02AB    | RXE1    | 30-AUG-2011 17:41   |         | 083011P | 1.0      |        | INDAB ICAL 5                                   |
| 012B1201.D | WPE110711-10AB    | RXE1    | 30-AUG-2011 17:57   |         | 083011P | 1.0      |        | USE. PASSING ALL.                              |
| 013B1301.D | WAR110724-99IB    | RXE1    | 30-AUG-2011 18:12   |         | 083011P | 1.0      |        | CLEAN  |
| 014B1401.D | 1202473924        | RXE1    | 30-AUG-2011 18:28   | 1136049 | 284538  | 1.0      | MB     | USE. PASSING BOTH, UPLOAD HIGHER.              |
| 015B1501.D | 1202473925        | RXE1    | 30-AUG-2011 18:43   | 1136049 | 284538  | 1.0      | LCS    | USE. PASSING BOTH, UPLOAD HIGHER.              |

Instrument Batch: /chem/ecd3a.i/083011P.B

Page: 1

| Data File  | GEL Lab Sample ID | Analyst | Injection Date/Time | Batch   | SDG    | Dilution | Client | Comments                          |
|------------|-------------------|---------|---------------------|---------|--------|----------|--------|-----------------------------------|
| 016B1601.D | 284538001         | RXE1    | 30-AUG-2011 18:59   | 1136049 | 284538 | 1.0      | ECOL   | USE. PASSING BOTH, UPLOAD HIGHER. |

|            |                |      |                   |         |          |  |     |      |   |  |
|------------|----------------|------|-------------------|---------|----------|--|-----|------|---|--|
| 017B1701.D | 1202473926     | RXE1 | 30-AUG-2011 19:15 | 1136049 | 284538   |  | 1.0 | MS   | USE. FAILURES CONFIRMED BY MSD.             |  |
| 018B1801.D | 1202473927     | RXE1 | 30-AUG-2011 19:30 | 1136049 | 284538   |  | 1.0 | MSD  | USE. FAILURES CONFIRMED BY MS.              |  |
| 019B1901.D | WPE110812-10AB | RXE1 | 30-AUG-2011 19:46 |         | 083011P  |  | 1.0 |      | USE. PASSING ALL B METHOD.                  |  |
| 020B2001.D | WAR110724-99IB | RXE1 | 30-AUG-2011 20:01 |         | 083011P  |  | 1.0 |      | CLEAN                                       |  |
| 021B2101.D | 1202472051     | RXE1 | 30-AUG-2011 20:16 | 1135299 | EUI-8463 |  | 1.0 | MB   | USE. PASSING BOTH, UPLOAD HIGHER.           |  |
| 022B2201.D | 1202472052     | RXE1 | 30-AUG-2011 20:32 | 1135299 | EUI-8463 |  | 1.0 | LCS  | USE. PASSING BOTH, UPLOAD HIGHER.           |  |
| 023B2301.D | 284350001      | RXE1 | 30-AUG-2011 20:47 | 1135299 | EUI-8463 |  | 1.0 | CARE | USE. PASSING BOTH, UPLOAD HIGHER.           |  |
| 024B2401.D | 1202472053     | RXE1 | 30-AUG-2011 21:03 | 1135299 | EUI-8463 |  | 1.0 | MS   | USE. FAILURES CONFIRMED BY MSD.             |  |
| 025B2501.D | 1202472054     | RXE1 | 30-AUG-2011 21:19 | 1135299 | EUI-8463 |  | 1.0 | MSD  | USE. FAILURES CONFIRMED BY MS.              |  |
| 026B2601.D | 284351001      | RXE1 | 30-AUG-2011 21:34 | 1135299 | EUI-8464 |  | 1.0 | CARE | USE. PASSING BOTH, UPLOAD HIGHER.           |  |
| 027B2701.D | WAR110724-99IB | RXE1 | 30-AUG-2011 21:50 |         | 083011P  |  | 1.0 |      | CLEAN                                       |  |
| 028B2801.D | WPE110812-10AB | RXE1 | 30-AUG-2011 22:05 |         | 083011P  |  | 1.0 |      | USE. MULTIPLE ANALYTES HI (F), PASSING (B). |  |
| 029B2901.D | WAR110724-99IB | RXE1 | 30-AUG-2011 22:21 |         | 083011P  |  | 1.0 |      | CLEAN                                       |  |
| 030B3001.D | 1202476091     | RXE1 | 30-AUG-2011 22:36 | 1136950 | EUI-8472 |  | 1.0 | MB   | USE. PASSING BOTH, UPLOAD HIGHER.           |  |
| 031B3101.D | 1202473061     | RXE1 | 30-AUG-2011 22:52 | 1136950 | EUI-8472 |  | 1.0 | TB   | USE. PASSING BOTH, UPLOAD HIGHER.           |  |
| 032B3201.D | 1202476098     | RXE1 | 30-AUG-2011 23:07 | 1136950 | EUI-8472 |  | 1.0 | LCS  | USE. PASSING BOTH, UPLOAD HIGHER.           |  |
| 033B3301.D | 1202476099     | RXE1 | 30-AUG-2011 23:23 | 1136950 | EUI-8472 |  | 1.0 | TLCS | USE. PASSING BOTH, UPLOAD HIGHER.           |  |
| 034B3401.D | 1202476100     | RXE1 | 30-AUG-2011 23:38 | 1136950 | EUI-8472 |  | 1.0 | CLCS | USE. \$ LOW BOTH, SPIKE PASSING BOTH.       |  |
| 035B3501.D | WPE110812-10AB | RXE1 | 30-AUG-2011 23:54 |         | 083011P  |  | 1.0 |      | USE. MULTIPLE ANALYTES HI (F), PASSING (B). |  |

Instrument Batch: /chem/ecd3a.i/083011P.B

Page: 2

| Data File  | GEL Lab Sample ID | Analyst | Injection Date/Time | Batch   |          | SDG     | Dilution | Client |                                   | Comments |  |
|------------|-------------------|---------|---------------------|---------|----------|---------|----------|--------|-----------------------------------|----------|--|
| 036B3601.D | WAR110724-99IB    | RXE1    | 31-AUG-2011 00:09   |         |          | 083011P |          | 1.0    |                                   | CLEAN    |  |
| 037B3701.D | 284607001         | RXE1    | 31-AUG-2011 00:25   | 1136950 | EUI-8472 |         | 1.0      | CARE   | USE. PASSING BOTH, UPLOAD HIGHER. |          |  |
| 038B3801.D | 1202476092        | RXE1    | 31-AUG-2011 00:40   | 1136950 | EUI-8472 |         | 1.0      | MS     | USE. PASSING BOTH, UPLOAD HIGHER. |          |  |
| 039B3901.D | 1202476095        | RXE1    | 31-AUG-2011 00:56   | 1136950 | EUI-8472 |         | 1.0      | MSD    | USE. PASSING BOTH, UPLOAD HIGHER. |          |  |
| 040B4001.D | 1202476093        | RXE1    | 31-AUG-2011 01:11   | 1136950 | EUI-8472 |         | 1.0      | TMS    | USE. PASSING BOTH, UPLOAD HIGHER. |          |  |
| 041B4101.D | 1202476096        | RXE1    | 31-AUG-2011 01:27   | 1136950 | EUI-8472 |         | 1.0      | TMSD   | USE. PASSING BOTH, UPLOAD HIGHER. |          |  |

|            |                |      |                   |         |          |  |      |      |   |  |
|------------|----------------|------|-------------------|---------|----------|--|------|------|---|--|
| 042B4201.D | 1202476094     | RXE1 | 31-AUG-2011 01:42 | 1136950 | EUI-8472 |  | 1.0  | CMS  | USE. PASSING BOTH, UPLOAD HIGHER.           |  |
| +-----+    |                |      |                   |         |          |  |      |      |   |  |
| 043B4301.D | 1202476097     | RXE1 | 31-AUG-2011 01:58 | 1136950 | EUI-8472 |  | 1.0  | CMSD | USE. PASSING BOTH, UPLOAD HIGHER.           |  |
| +-----+    |                |      |                   |         |          |  |      |      |   |  |
| 044B4401.D | WAR110724-99IB | RXE1 | 31-AUG-2011 02:13 |         | 083011P  |  | 1.0  |      | CLEAN                                       |  |
| +-----+    |                |      |                   |         |          |  |      |      |   |  |
| 045B4501.D | WPE110812-10AB | RXE1 | 31-AUG-2011 02:29 |         | 083011P  |  | 1.0  |      | USE. MULTIPLE ANALYTES HI (F), PASSING (B). |  |
| +-----+    |                |      |                   |         |          |  |      |      |   |  |
| 046B4601.D | WAR110724-99IB | RXE1 | 31-AUG-2011 02:44 |         | 083011P  |  | 1.0  |      | CLEAN                                       |  |
| +-----+    |                |      |                   |         |          |  |      |      |   |  |
| 047B4701.D | 1202476693     | RXE1 | 31-AUG-2011 03:00 | 1137173 | EUI-8476 |  | 1.0  | MB   | USE. PASSING BOTH, UPLOAD HIGHER.           |  |
| +-----+    |                |      |                   |         |          |  |      |      |   |  |
| 048B4801.D | 1202476694     | RXE1 | 31-AUG-2011 03:15 | 1137173 | EUI-8476 |  | 1.0  | LCS  | USE. GAMMA-BHC HI (F), PASSING (B).         |  |
| +-----+    |                |      |                   |         |          |  |      |      |   |  |
| 049B4901.D | 284646001      | RXE1 | 31-AUG-2011 03:31 | 1137173 | EUI-8475 |  | 10.0 | CARE | USE. PASSING BOTH, UPLOAD HIGHER.           |  |
| +-----+    |                |      |                   |         |          |  |      |      |   |  |
| 050B5001.D | 284793001      | RXE1 | 31-AUG-2011 03:46 | 1137173 | EUI-8476 |  | 1.0  | CARE | USE. FCMX LOW (B), CONFIRMED BY MS/MSD.     |  |
| +-----+    |                |      |                   |         |          |  |      |      |   |  |
| 051B5101.D | 1202476695     | RXE1 | 31-AUG-2011 04:02 | 1137173 | EUI-8476 |  | 1.0  | MS   | USE. FAILURES CONFIRMED BY MSD.             |  |
| +-----+    |                |      |                   |         |          |  |      |      |   |  |
| 052B5201.D | 1202476696     | RXE1 | 31-AUG-2011 04:17 | 1137173 | EUI-8476 |  | 1.0  | MSD  | USE. FAILURES CONFIRMED BY MS.              |  |
| +-----+    |                |      |                   |         |          |  |      |      |   |  |
| 053B5301.D | WAR110724-99IB | RXE1 | 31-AUG-2011 04:33 |         | 083011P  |  | 1.0  |      | CLEAN                                       |  |
| +-----+    |                |      |                   |         |          |  |      |      |   |  |
| 054B5401.D | WPE110812-10AB | RXE1 | 31-AUG-2011 04:49 |         | 083011P  |  | 1.0  |      | USE. MULTIPLE ANALYTES HI (F), PASSING (B). |  |
| +-----+    |                |      |                   |         |          |  |      |      |   |  |
| 055B5501.D | WAR110724-99IB | RXE1 | 31-AUG-2011 05:04 |         | 083011P  |  | 1.0  |      | CLEAN                                       |  |
| +-----+    |                |      |                   |         |          |  |      |      |   |  |

DATA EXCEPTION REPORT

|  |  |   |                             |
|--|--|---|-----------------------------|
| <b>Mo.Day Yr.</b><br>01-SEP-11   | <b>Division:</b><br>Industrial             | <b>Quality Criteria:</b><br>Specifications  | <b>Type:</b><br>Process     |
| <b>Instrument Type:</b><br>GC/ECD  | <b>Test / Method:</b><br>SW846 3535A/8081B | <b>Matrix Type:</b><br>Liquid   | <b>Client Code:</b><br>ECOL |
| <b>Batch ID:</b><br>1136049  | <b>Sample Numbers:</b><br>See Below        |   |                             |
| <b>Potentially affected work order(s)(SDG): 284538</b><br><b>Application Issues:</b><br>Failed Recovery for MS/PS<br>Failed Yield for Surrogates<br>Failed Recovery for MSD/PSD  |  |   |                             |
| <b>Specification and Requirements</b><br><b>Exception Description:</b>   |  | <b>DER Disposition:</b>   |                             |
| 1. QC samples 1202473926(MS) and 1202473927(MSD) were outside of the spike recovery acceptance limits.<br><br>2. QC samples 1202473926(MS) and 1202473927(MSD) were outside of the acceptance criteria for surrogate yields. |  | 1. and 2. As the MS and MSD exhibited similar spike and surrogate recoveries, the non-compliances were attributed to sample matrix interference and the data were reported. |                             |

**Originator's Name:**

Rebecca Enzor      01-SEP-11

**Data Validator/Group Leader:**

Heather Joy      15-SEP-11

# **GC Semivolatile PCB Analysis**

**PCB Case Narrative**  
**Ecology and Environment, Inc. Start-3 002233.2008 (ECOL)**  
**SDG 284538**

**Method/Analysis Information**

**Procedure:** Analysis of Polychlorinated Biphenyls by ECD

Analytical Method: SW846 3535A/8082A

Prep Method: SW846 3535A

Analytical Batch Number: 1136663

Prep Batch Number: 1136662

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in SW846 3535A/8082A:

| <b>Sample ID</b> | <b>Client ID</b>                                 |
|------------------|--|
| 284538001        | 11080101   |
| 1202475427       | Method Blank (MB)                                |
| 1202475428       | Laboratory Control Sample (LCS)                  |
| 1202475429       | 284538001(11080101) Matrix Spike (MS)            |
| 1202475430       | 284538001(11080101) Matrix Spike Duplicate (MSD) |

The samples in this SDG were analyzed on an "as received" basis.

**Preparation/Analytical Method Verification**

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-040 REV# 16.

Raw data reports are processed and reviewed by the analyst using the Target software package. False positives have been removed from the Target quantitation reports per standard operating procedures (SOP) section 23.0.

**Calibration Information**

Please note that the 'Cal Date' indicated on each quantitation report reflects the date and time of the most recent calibrated analyte(s) in the Target processing method. Since the laboratory may calibrate with multiple solutions on different days using the same processing method, the Target software will update the 'Cal Date' to the last calibration file, date and time. The correct dates and times for all calibration files are located on the Calibration History report in the Standard Data section in the data package.

Due to software limitations, the Calibration Summary Form 6 may not indicate all the calibration files comprising the initial calibration. A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package.



**Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).

The linear equation used in Target and indicated on the initial calibration summary form is not a conventional linear equation (slope intercept formula) and does not match the equation found in SW-846 method 8000B. The x and y axes are inversed in Target, so that the instrument response is treated as the independent variable (x) and the concentration ratio is treated as the dependent variable (y). The equation used in Target to calculate sample results is adjusted to account for the linear equation inversion and reciprocal slope. The adjusted calculation has been independently verified to produce valid results.

**Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria. All analytes were within the established retention time windows for this method.

**Quality Control (QC) Information****Method Blank (MB) Statement**

The MB analyzed with this SDG did not meet the acceptance criteria. The MB was contaminated with Aroclor-1242, Aroclor-1254 and Aroclor-1260 during sample preparation. This non-compliance had no adverse effects on the data as the associated ECOL sample was not detected with any Aroclors. See DER #991280 in the Miscellaneous Data section.

**Surrogate Recoveries**

Samples 1202475429 (11080101MS), 1202475430 (11080101MSD) and 284538001 (11080101) failed to meet acceptance criteria for surrogate recovery due to sample matrix interference as the MS, MSD and the parent sample failed surrogate recovery in the same manner. See DER #991280 in the Miscellaneous Data section.

**Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

**QC Sample Designation**

Sample 284538001 (11080101) was selected for the matrix spike and matrix spike duplicate analysis.

**Matrix Spike (MS) Recovery Statement**

The MS recovery for this SDG was not within the established acceptance limits due to sample matrix interference. See DER #992128 in the Miscellaneous Data section.

**Matrix Spike Duplicate (MSD) Recovery Statement**

The MSD recovery for this SDG was not within the established acceptance limits due to sample matrix interference. See DER #991280 in the Miscellaneous Data section.

**MS/MSD Relative Percent Difference (RPD) Statement**

The RPD between the MS and MSD met the acceptance limits.

**Technical Information****Holding Time Specifications**

GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

**Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP. All reported analyte detections in client and quality control samples were within the established retention time windows. Reported analyte concentrations were confirmed on dissimilar columns.

**Sample Dilutions**

The samples in this SDG did not require dilutions.

**Sample Re-extraction/Re-analysis**

Re-extractions or re-analyses were not required in this SDG.

**Miscellaneous Information****Electronic Package Comment**

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative of each electronic package will indicate the analyst, reviewer, and report specialist names associated with the generation of the data and package. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

**Data Exception (DER) Documentation**

Data Exception Report (DER) is for documentation of any procedural anomalies that may deviate from referenced SOP or contractual document. DER #991280 was generated for this batch. A copy is included in the Miscellaneous Data section of this package.

**Manual Integrations**

Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this PCB fraction.

**Additional Comments**

The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments were required:

The higher results from either column have been chosen and reported in the data package for the client samples, MB and LCS. The data reported for the MS and MSD are from the same analytical column as the parent sample.

The data reported on the form I and III may differ slightly from the data reported on the form X. This is due to software limitations in rounding differences between the forms.

Aroclors quantitated on the raw data report by the Target data system do not necessarily represent positive Aroclor identification. In order for positive identification to be made, the Aroclor must match in pattern and retention time; as well as quantitate relatively close between the primary and confirmation columns, as specified in SW846 method 8000. When these conditions are not met, the Aroclor is reported as a non-

detect on the data report. These situations will be noted on the raw data as DMP, representing does not match pattern, or DNC does not confirm.

#### **System Configuration**

The Semi-Volatiles-PCB analysis was performed on the following instrument configuration:

| <b>Instrument ID</b> | <b>Instrument</b>   | <b>System Configuration</b> | <b>Column ID</b> | <b>Column Description</b>                 |
|----------------------|---|-----------------------------|------------------|---|
| ECD8A.I_1            | Agilent 6890 Gas Chromatograph/Dual ECD w/ 7683 Autosampler | HP6890 Series ECD           | Rtx-CLP I        | 30m x 0.25mm, 0.25um (Rtx-CLPesticide I)  |
| ECD8A.I_2            | Agilent 6890 Gas Chromatograph/Dual ECD w/ 7683 Autosampler | HP6890 Series ECD           | Rtx-CLP II       | 30m x 0.25mm, 0.20um (Rtx-CLPesticide II) |

#### **Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

**Review Validation**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer: Immi Cav

Date: 9/15/11

## Roadmap for ECOL 284538 PCB

This roadmap was analyzed by YIP00818 on 08-30-2011, 10:58.

This roadmap was reviewed by YIP00818 on 08-30-2011, 12:30.

This roadmap was packaged by jim01140 on 09-15-2011, 09:40.

Front Sample Column

| exclude                  | manual | datafile                          | smpid     | sampletype | injdate     | injtime | sublist    | clientid | dilution | prebatchid | comment                         |
|--------------------------|--------|-----------------------------------|-----------|------------|-------------|---------|------------|----------|----------|------------|---------------------------------|
| <input type="checkbox"/> | N      | /chem/ecd8a.i/083011.b/014f1401.d | 284538001 | sample     | 30-AUG-2011 | 09:41   | 284538.sub | 11080101 | 1.00000  | 1136663    | UPLOAD BOTH COLUMNS, USE HIGHER |

Back Sample Column

| exclude                  | manual | datafile                          | smpid     | sampletype | injdate     | injtime | sublist    | clientid | dilution | prebatchid | comment                         |
|--------------------------|--------|-----------------------------------|-----------|------------|-------------|---------|------------|----------|----------|------------|---------------------------------|
| <input type="checkbox"/> | N      | /chem/ecd8a.i/083011.b/014b1401.d | 284538001 | sample     | 30-AUG-2011 | 09:41   | 284538.sub | 11080101 | 1.00000  | 1136663    | UPLOAD BOTH COLUMNS, USE HIGHER |

Front QC Sample Column

| exclude                  | manual | datafile                          | smpid      | sampletype | injdate     | injtime | sublist    | clientid    | dilution | prebatchid | comment                         |
|--------------------------|--------|-----------------------------------|------------|------------|-------------|---------|------------|-------------|----------|------------|---------------------------------|
| <input type="checkbox"/> | N      | /chem/ecd8a.i/083011.b/012f1201.d | 1202475427 | mb         | 30-AUG-2011 | 09:17   | 284538.sub | PBLK01      | 1.00000  | 1136663    | UPLOAD BOTH COLUMNS, USE HIGHER |
| <input type="checkbox"/> | N      | /chem/ecd8a.i/083011.b/013f1301.d | 1202475428 | lcs        | 30-AUG-2011 | 09:29   | 284538.sub | PBLK01LCS   | 1.00000  | 1136663    | UPLOAD BOTH COLUMNS, USE HIGHER |
| <input type="checkbox"/> | N      | /chem/ecd8a.i/083011.b/015f1501.d | 1202475429 | ms         | 30-AUG-2011 | 09:52   | 284538.sub | 11080101MS  | 1.00000  | 1136663    | UPLOAD BOTH COLUMNS, USE HIGHER |
| <input type="checkbox"/> | N      | /chem/ecd8a.i/083011.b/016f1601.d | 1202475430 | msd        | 30-AUG-2011 | 10:04   | 284538.sub | 11080101MSD | 1.00000  | 1136663    | UPLOAD BOTH COLUMNS, USE HIGHER |

Back QC Sample Column

| exclude                  | manual | datafile                          | smpid      | sampletype | injdate     | injtime | sublist    | clientid    | dilution | prebatchid | comment                         |
|--------------------------|--------|-----------------------------------|------------|------------|-------------|---------|------------|-------------|----------|------------|---------------------------------|
| <input type="checkbox"/> | N      | /chem/ecd8a.i/083011.b/012b1201.d | 1202475427 | mb         | 30-AUG-2011 | 09:17   | 284538.sub | PBLK01      | 1.00000  | 1136663    | UPLOAD BOTH COLUMNS, USE HIGHER |
| <input type="checkbox"/> | N      | /chem/ecd8a.i/083011.b/013b1301.d | 1202475428 | lcs        | 30-AUG-2011 | 09:29   | 284538.sub | PBLK01LCS   | 1.00000  | 1136663    | UPLOAD BOTH COLUMNS, USE HIGHER |
| <input type="checkbox"/> | N      | /chem/ecd8a.i/083011.b/015b1501.d | 1202475429 | ms         | 30-AUG-2011 | 09:52   | PCB.sub    | 11080101MS  | 1.00000  | 1136663    | UPLOAD BOTH COLUMNS, USE HIGHER |
| <input type="checkbox"/> | N      | /chem/ecd8a.i/083011.b/016b1601.d | 1202475430 | msd        | 30-AUG-2011 | 10:04   | 284538.sub | 11080101MSD | 1.00000  | 1136663    | UPLOAD BOTH COLUMNS, USE HIGHER |

# **Sample Data Summary**

**PCB**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 1

|                       |                         |                        |                          |                      |                     |
|-----------------------|-------------------------|------------------------|--------------------------|----------------------|---------------------|
| <b>SDG Number:</b>    | <b>284538</b>           | <b>Date Collected:</b> | <b>08/18/2011 12:00</b>  | <b>Matrix:</b>       | <b>GROUND WATER</b> |
| <b>Lab Sample ID:</b> | <b>284538001</b>        | <b>Date Received:</b>  | <b>08/23/2011 08:50</b>  |                      |                     |
|                       |                         | <b>Client:</b>         | <b>ECOL008</b>           | <b>Project:</b>      | <b>ECOL00111</b>    |
| <b>Client ID:</b>     | <b>11080101</b>         | <b>Method:</b>         | <b>SW846 3535A/8082A</b> | <b>SOP Ref:</b>      | <b>GL-OA-E-040</b>  |
| <b>Batch ID:</b>      | <b>1136663</b>          | <b>Inst:</b>           | <b>ECD8A.I</b>           | <b>Dilution:</b>     | <b>1</b>            |
| <b>Run Date:</b>      | <b>08/30/2011 09:41</b> | <b>Analyst:</b>        | <b>YS1</b>               | <b>Inj. Vol:</b>     | <b>1 uL</b>         |
| <b>Prep Date:</b>     | <b>08/29/2011 08:20</b> | <b>Aliquot:</b>        | <b>980 mL</b>            | <b>Final Volume:</b> | <b>1 mL</b>         |
| <b>Data File:</b>     | <b>014f1401.d</b>       | <b>Column:</b>         | <b>1 CLP1</b>            | <b>Level:</b>        | <b>LOW</b>          |
|                       | <b>014b1401.d</b>       |                        | <b>2 CLP2</b>            |                      |                     |

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 0.034  | ug/L  | 0.034   | 0.102   | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 0.034  | ug/L  | 0.034   | 0.102   | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 0.034  | ug/L  | 0.034   | 0.102   | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 0.034  | ug/L  | 0.034   | 0.102   | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 0.034  | ug/L  | 0.034   | 0.102   | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 0.034  | ug/L  | 0.034   | 0.102   | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 0.034  | ug/L  | 0.034   | 0.102   | 1      |

# QC Summary



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**PCB**  
**Surrogate Recovery Report**

Page 1 of 1

**SDG Number: 284538****Matrix Type: LIQUID****CAP Column (1) : CLP1****CAP Column (2) : CLP2**

| Sample ID  | Client ID             | 4CMX 1 | 4CMX 2 | DCB 1  | DCB 2  |
|------------|-----------------------|--------|--------|--------|--------|
|            |                       | %REC # | %REC # | %REC # | %REC # |
| 1202475427 | MB for batch 1136662  | 64     | 61     | 66     | 72     |
| 1202475428 | LCS for batch 1136662 | 64     | 60     | 64     | 70     |
| 284538001  | 11080101              | 12 *   | 12 *   | 10 *   | 14 *   |
| 1202475429 | 11080101MS            | 16 *   | 16 *   | 22 *   | 26 *   |
| 1202475430 | 11080101MSD           | 18 *   | 17 *   | 22 *   | 26 *   |

**Surrogate****Acceptance Limits**

4CMX = 4cmx

(50%-150%)

DCB = Decachlorobiphenyl

(50%-150%)

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted

**PCB**  
**Quality Control Summary**  
**Spike Recovery Report**

Page 1 of 1

SDG Number: 284538

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1136662

Matrix: GROUND WATER

Lab Sample ID: 1202475428

Instrument: ECD8A.I

Analysis Date: 08/30/2011 09:29

Dilution: 1

Analyst: YS1

Prep Batch ID: 1136662

Inj. Vol: 1 uL

Batch ID: 1136663

| CAS No     | Parmname         | Amount<br>Added<br>ug/L | Sample<br>Conc.<br>ug/L | Spike<br>Conc.<br>ug/L | Recovery<br>% | Acceptance<br>Limits |
|------------|------------------|-------------------------|-------------------------|------------------------|---------------|----------------------|
| 12674-11-2 | LCS Aroclor-1016 | 1.00                    | 0.0                     | 0.660                  | 66            | 48-97                |
| 11096-82-5 | LCS Aroclor-1260 | 1.00                    | 0.0                     | 0.700                  | 70            | 50-94                |

**PCB**  
**Quality Control Summary**  
**Spike Recovery Report**

Page 1 of 2

SDG Number: 284538

Sample Type: Matrix Spike

Client ID: 11080101MS

Matrix: GROUND WATER

Lab Sample ID:1202475429

Instrument: ECD8A.I

Analysis Date: 08/30/2011 09:52

Dilution: 1

Analyst: YS1

Prep Batch ID 1136662

Inj. Vol: 1 uL

Batch ID: 1136663

| CAS No     | Parmname        | Amount<br>Added<br>ug/L | Sample<br>Conc.<br>ug/L |   | Spike<br>Conc.<br>ug/L | Recovery<br>% | Acceptance<br>Limits |
|------------|-----------------|-------------------------|-------------------------|---|------------------------|---------------|----------------------|
| 12674-11-2 | MS Aroclor-1016 | 1.00                    | 0.00                    | U | 0.180                  | 18 *          | 29-142               |
| 11096-82-5 | MS Aroclor-1260 | 1.00                    | 0.00                    | U | 0.250                  | 25 *          | 48-119               |

**PCB**  
**Quality Control Summary**  
**Spike Recovery Report**

Page 2 of 2

SDG Number: 284538

Sample Type: Matrix Spike Duplicate

Client ID: 11080101MSD

Matrix: GROUND WATER

Lab Sample ID: 1202475430

Instrument: ECD8A.I

Analysis Date: 08/30/2011 10:04

Dilution: 1

Analyst: YS1

Prep Batch ID: 1136662

Inj. Vol: 1 uL

Batch ID: 1136663

| CAS No     | Parmname         | Amount<br>Added<br>ug/L | Sample<br>Conc.<br>ug/L |   | Spike<br>Conc.<br>ug/L | Recovery<br>% | Acceptance<br>Limits | RPD<br>% | Acceptance<br>Limits |
|------------|------------------|-------------------------|-------------------------|---|------------------------|---------------|----------------------|----------|----------------------|
| 12674-11-2 | MSD Aroclor-1016 | 1.00                    | 0.00                    | U | 0.220                  | 22 *          | 29-142               | 20       | 0-30                 |
| 11096-82-5 | MSD Aroclor-1260 | 1.00                    | 0.00                    | U | 0.290                  | 29 *          | 48-119               | 15       | 0-30                 |

## Method Blank Summary

Page 1 of 1

|                |                      |                |                  |            |                |
|----------------|----------------------|----------------|------------------|------------|----------------|
| SDG Number:    | 284538               | Client:        | ECOL008          | Matrix:    | GROUND WATER   |
| Client ID:     | MB for batch 1136662 | Instrument ID: | ECD8A.I_2        | Data File: | 012b1201.d     |
| Lab Sample ID: | 1202475427           |                | ECD8A.I_1        |            | 012f1201.d     |
| Column:        | CLP2                 | Prep Date:     | 08/29/2011 08:20 | Analyzed:  | 08/30/11 09:17 |
|                | CLP1                 | Level:         | LOW              |            |                |

This method blank applies to the following samples and quality control samples:

| Client Sample ID         | Lab Sample ID | File ID                  | Date Analyzed | Time Analyzed |
|--------------------------|---------------|--------------------------|---------------|---------------|
| 01 LCS for batch 1136662 | 1202475428    | 013f1301.d<br>013b1301.d | 08/30/11      | 0929          |
| 02 11080101              | 284538001     | 014f1401.d<br>014b1401.d | 08/30/11      | 0941          |
| 03 11080101MS            | 1202475429    | 015f1501.d<br>015b1501.d | 08/30/11      | 0952          |
| 04 11080101MSD           | 1202475430    | 016f1601.d<br>016b1601.d | 08/30/11      | 1004          |

# Sample Data

**PCB**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 1

**SDG Number:** 284538  
**Lab Sample ID:** 284538001

**Date Collected:** 08/18/2011 12:00  
**Date Received:** 08/23/2011 08:50  
**Client:** ECOL008  
**Method:** SW846 3535A/8082A  
**Inst:** ECD8A.I  
**Analyst:** YS1  
**Aliquot:** 980 mL  
**Column:** 1 CLP1  
2 CLP2

**Matrix:** GROUND WATER  
**Project:** ECOL00111  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL  
**Level:** LOW

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 0.034  | ug/L  | 0.034   | 0.102   | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 0.034  | ug/L  | 0.034   | 0.102   | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 0.034  | ug/L  | 0.034   | 0.102   | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 0.034  | ug/L  | 0.034   | 0.102   | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 0.034  | ug/L  | 0.034   | 0.102   | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 0.034  | ug/L  | 0.034   | 0.102   | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 0.034  | ug/L  | 0.034   | 0.102   | 1      |

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/014f1401.d  
Lab Smp Id: 284538001 Client Smp ID: 11080101  
Inj Date : 30-AUG-2011 09:41  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |284538001|1|  
Misc Info : |ECD5A2A\_1L|1136663|SVA|ECOL|GROUND WATER|11080101|||  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
Meth Date : 30-Aug-2011 09:17 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033f3301.d  
Als bottle: 14  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water  
Processing Host: hpclp1

Concentration Formula:  $\text{Amt} * \text{DF} * \text{Uf} * \text{Vt} / (\text{Vo} * \text{Vi}) * \text{CpndVariable}$

| Name | Value     | Description                     |
|------|-----------|---------------------------------|
| DF   | 1.00000   | Dilution Factor                 |
| Uf   | 1.00000   | Correction factor               |
| Vt   | 1.00000   | Volume of final extract (uL)    |
| Vo   | 980.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000   | Volume injected (uL)            |

Cpnd Variable Local Compound Variable

| CONCENTRATIONS                            |        |        |                  |         |               |           |
|---|--------|--------|------------------|---------|---------------|-----------|
|   |        |        | ON-COL           | FINAL   |               |           |
| RT  | EXP RT | DLT RT | RESPONSE ( ug/L) | ( ug/L) | TARGET RANGE  | RATIO     |
| ==  | =====  | =====  | =====            | =====   | =====         | =====     |
| \$ 11 4cmx CAS #: 877-09-8                |        |        |                  |         |               |           |
| 2.135                                     | 2.135  | 0.000  | 1396533 24.5782  | 0.025   | 80.00- 120.00 | 100.00(R) |
| -----                                     |        |        |                  |         |               |           |
| \$ 12 Decachlorobiphenyl CAS #: 2051-24-3 |        |        |                  |         |               |           |
| 6.054                                     | 6.054  | 0.000  | 764132 20.4069   | 0.021   | 80.00- 120.00 | 100.00(R) |
| -----                                     |        |        |                  |         |               |           |

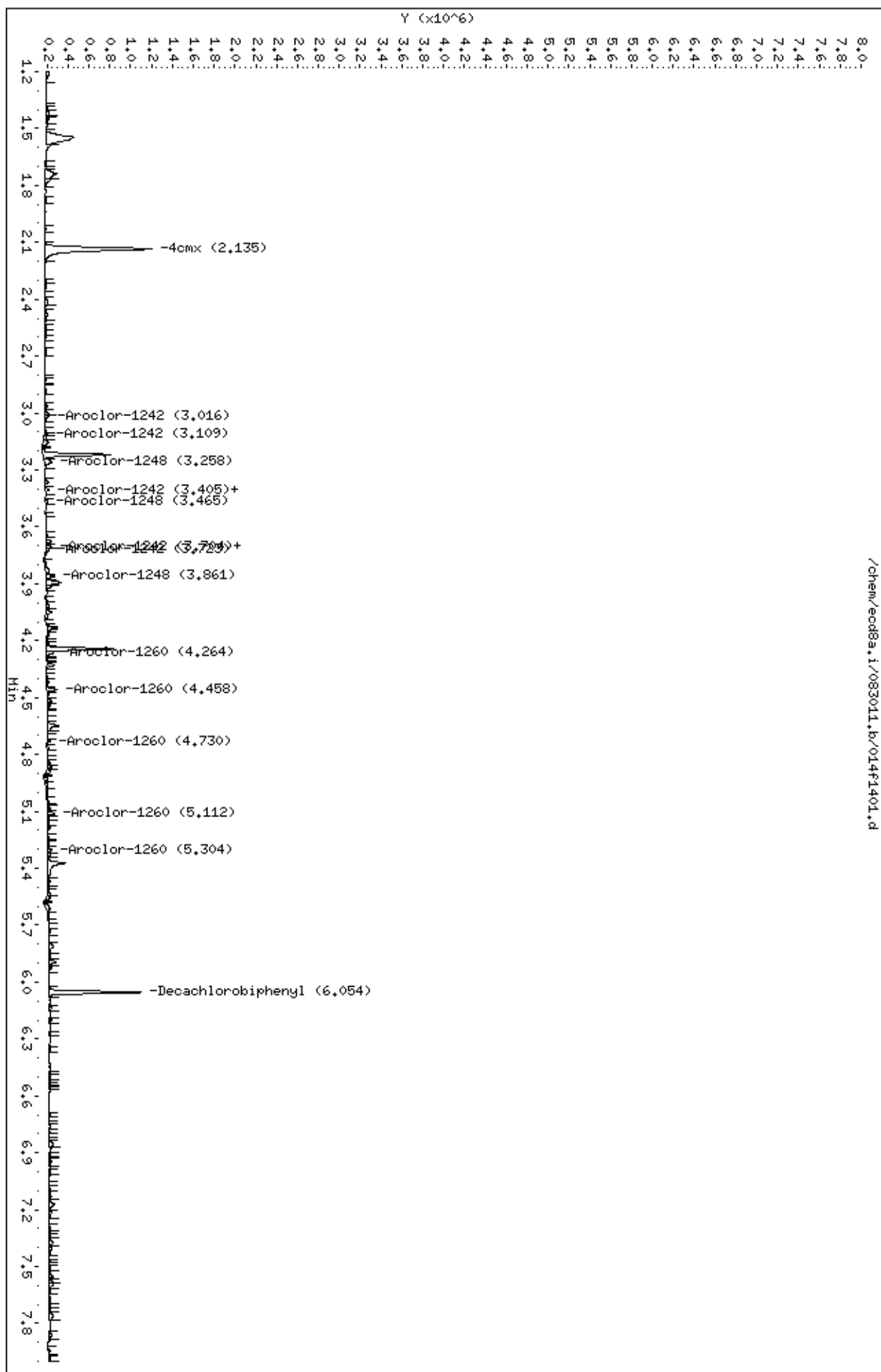
QC Flag Legend

R - Spike/Surrogate failed recovery limits.



Data File: /chem/ecod8a.i/083011.b/014f1401.d  
Date : 30-JUL-2011 09:41  
Client ID: 11080101  
Sample Info: 128453800111  
Volume Injected (uL): 1.0  
Column phase: CLP1

Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/014b1401.d  
Lab Smp Id: 284538001 Client Smp ID: 11080101  
Inj Date : 30-AUG-2011 09:41  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |284538001|1|  
Misc Info : |ECD5A2A\_1L|1136663|SVA|ECOL|GROUND WATER|11080101|||  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
Meth Date : 30-Aug-2011 09:17 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033b3301.d  
Als bottle: 14  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water  
Processing Host: hpclp1

Concentration Formula:  $\text{Amt} * \text{DF} * \text{Uf} * \text{Vt} / (\text{Vo} * \text{Vi}) * \text{CpndVariable}$

| Name | Value     | Description                     |
|------|-----------|---------------------------------|
| DF   | 1.00000   | Dilution Factor                 |
| Uf   | 1.00000   | Correction factor               |
| Vt   | 1.00000   | Volume of final extract (uL)    |
| Vo   | 980.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000   | Volume injected (uL)            |

Cpnd Variable Local Compound Variable

| CONCENTRATIONS           |        |        |                  |         |                  |           |  |
|--------------------------|--------|--------|------------------|---------|------------------|-----------|--|
|                          |        | ON-COL | FINAL            |         |                  |           |  |
| RT                       | EXP RT | DLT RT | RESPONSE ( ug/L) | ( ug/L) | TARGET RANGE     | RATIO     |  |
| ==                       | =====  | =====  | =====            | =====   | =====            | =====     |  |
| \$ 11 4cmx               |        |        |                  |         | CAS #: 877-09-8  |           |  |
| 2.373                    | 2.373  | 0.000  | 1901044 24.8627  | 0.025   | 80.00- 120.00    | 100.00(R) |  |
| -----                    |        |        |                  |         |                  |           |  |
| \$ 12 Decachlorobiphenyl |        |        |                  |         | CAS #: 2051-24-3 |           |  |
| 6.652                    | 6.651  | 0.001  | 1056425 27.9180  | 0.028   | 80.00- 120.00    | 100.00(R) |  |
| -----                    |        |        |                  |         |                  |           |  |

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /chem/ecd8a.i/083011.b/014b1401.d

Date : 30-06-2011 09:41

Client ID: 11080101

Sample Info: 128453800111

Volume Injected (uL): 1.0

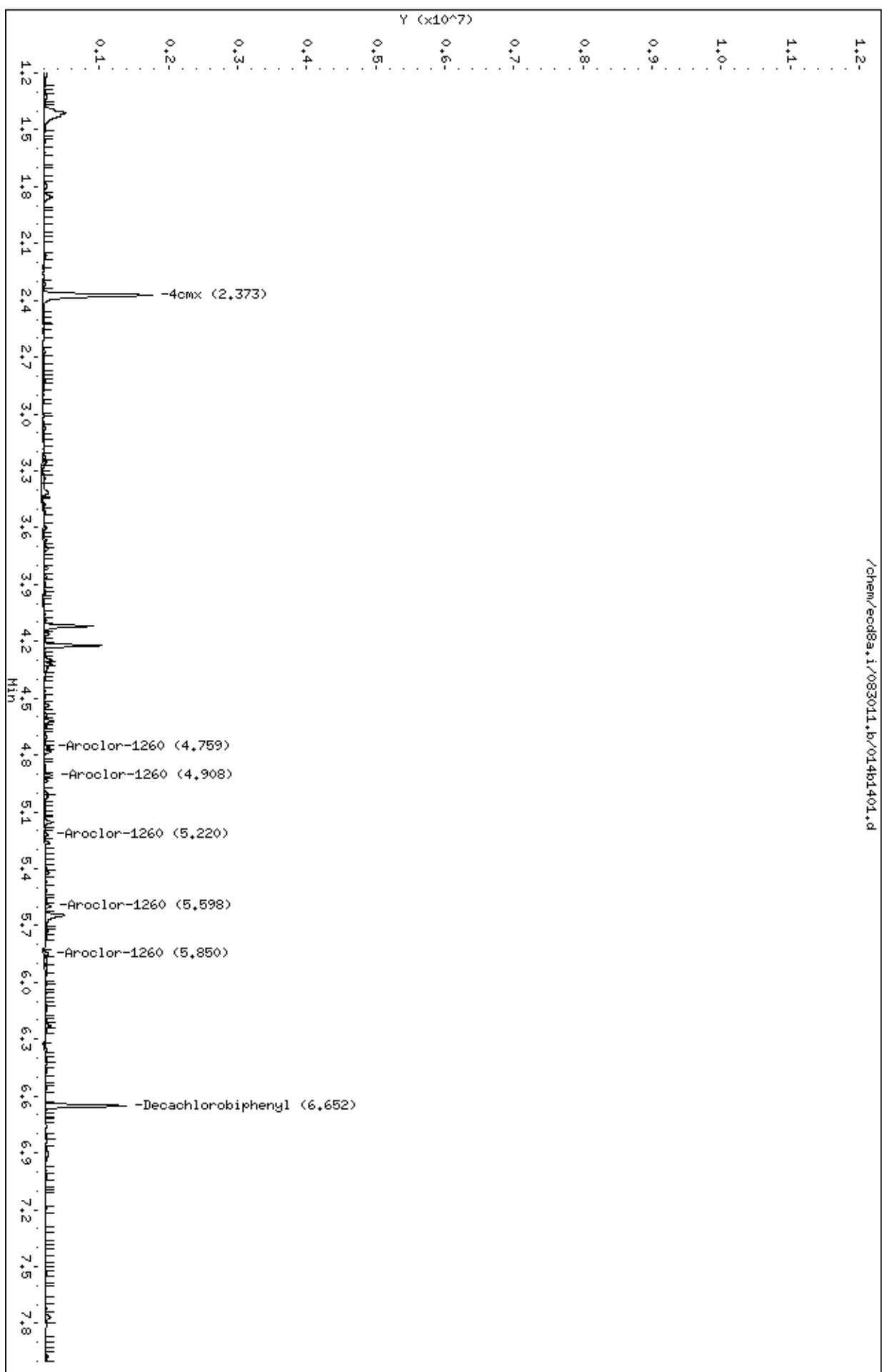
Column phase: CLP2

Instrument: ecd8a.i

Operator: YSL

Column diameter: 0.25

Page 1



# Standard Data

Report Date: 30-Aug-2011 10:55

### Calibration History

Method : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
Start Cal Date: 28-JUL-2011 21:37  
End Cal Date : 17-AUG-2011 17:22

#### Initial Calibration

| Injection Date                        | Sublist      | Calibration File                  |
|---------------------------------------|--------------|-----------------------------------|
| Cal Level: 1 , Cal Amount: 100.00000  |              |                                   |
| 17-AUG-2011 16:36                     | AR1248       | /chem/ecd8a.i/081711.b/029f2901.d |
| 17-AUG-2011 15:26                     | AR1242       | /chem/ecd8a.i/081711.b/023f2301.d |
| 17-AUG-2011 14:16                     | AR1254       | /chem/ecd8a.i/081711.b/017f1701.d |
| 17-AUG-2011 13:06                     | AR1660       | /chem/ecd8a.i/081711.b/011f1101.d |
| Cal Level: 2 , Cal Amount: 250.00000  |              |                                   |
| 17-AUG-2011 16:47                     | AR1248       | /chem/ecd8a.i/081711.b/030f3001.d |
| 17-AUG-2011 15:38                     | AR1242       | /chem/ecd8a.i/081711.b/024f2401.d |
| 17-AUG-2011 14:28                     | AR1254       | /chem/ecd8a.i/081711.b/018f1801.d |
| 17-AUG-2011 13:18                     | AR1660       | /chem/ecd8a.i/081711.b/012f1201.d |
| Cal Level: 3 , Cal Amount: 500.00000  |              |                                   |
| 17-AUG-2011 16:59                     | AR1248       | /chem/ecd8a.i/081711.b/031f3101.d |
| 17-AUG-2011 15:49                     | AR1242       | /chem/ecd8a.i/081711.b/025f2501.d |
| 17-AUG-2011 14:39                     | AR1254       | /chem/ecd8a.i/081711.b/019f1901.d |
| 17-AUG-2011 13:29                     | AR1660       | /chem/ecd8a.i/081711.b/013f1301.d |
| Cal Level: 4 , Cal Amount: 1000.00000 |              |                                   |
| 17-AUG-2011 12:55                     | DDTANALOGSTD | /chem/ecd8a.i/081711.b/010f1001.d |
| 17-AUG-2011 12:43                     | AR1268       | /chem/ecd8a.i/081711.b/009f0901.d |
| 17-AUG-2011 12:31                     | AR1262       | /chem/ecd8a.i/081711.b/008f0801.d |
| 17-AUG-2011 12:20                     | AR1221       | /chem/ecd8a.i/081711.b/007f0701.d |
| 17-AUG-2011 12:01                     | AR1232       | /chem/ecd8a.i/081711.b/006f0601.d |
| 17-AUG-2011 17:11                     | AR1248       | /chem/ecd8a.i/081711.b/032f3201.d |
| 17-AUG-2011 16:01                     | AR1242       | /chem/ecd8a.i/081711.b/026f2601.d |
| 17-AUG-2011 14:51                     | AR1254       | /chem/ecd8a.i/081711.b/020f2001.d |
| 17-AUG-2011 13:41                     | AR1660       | /chem/ecd8a.i/081711.b/014f1401.d |
| Cal Level: 5 , Cal Amount: 4000.00000 |              |                                   |
| 17-AUG-2011 17:22                     | AR1248       | /chem/ecd8a.i/081711.b/033f3301.d |
| 17-AUG-2011 16:12                     | AR1242       | /chem/ecd8a.i/081711.b/027f2701.d |
| 17-AUG-2011 15:03                     | AR1254       | /chem/ecd8a.i/081711.b/021f2101.d |
| 17-AUG-2011 13:53                     | AR1660       | /chem/ecd8a.i/081711.b/015f1501.d |

#### Continuing Calibration

Ccal Level Mode: GLOBAL LEVEL 4

|                                   |        |                                   |
|-----------------------------------|--------|-----------------------------------|
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 10:18                 | AR1660 | /chem/ecd8a.i/083011.b/017f1701.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |

|                                   |        |                                   |
|-----------------------------------|--------|-----------------------------------|
| 30-AUG-2011 08:43                 | AR1268 | /chem/ecd8a.i/083011.b/009f0901.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 08:31                 | AR1262 | /chem/ecd8a.i/083011.b/008f0801.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 08:19                 | AR1221 | /chem/ecd8a.i/083011.b/007f0701.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 08:08                 | AR1232 | /chem/ecd8a.i/083011.b/006f0601.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 07:56                 | AR1248 | /chem/ecd8a.i/083011.b/005f0501.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 07:44                 | AR1242 | /chem/ecd8a.i/083011.b/004f0401.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 07:33                 | AR1254 | /chem/ecd8a.i/083011.b/003f0301.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 07:21                 | AR1660 | /chem/ecd8a.i/083011.b/002f0201.d |

Report Date: 30-Aug-2011 10:55

### Calibration History

Method : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
Start Cal Date: 28-JUL-2011 21:37  
End Cal Date : 17-AUG-2011 17:22

#### Initial Calibration

| Injection Date                        | Sublist      | Calibration File                  |
|---------------------------------------|--------------|-----------------------------------|
| Cal Level: 1 , Cal Amount: 100.00000  |              |                                   |
| 17-AUG-2011 16:36                     | AR1248       | /chem/ecd8a.i/081711.b/029b2901.d |
| 17-AUG-2011 15:26                     | AR1242       | /chem/ecd8a.i/081711.b/023b2301.d |
| 17-AUG-2011 14:16                     | AR1254       | /chem/ecd8a.i/081711.b/017b1701.d |
| 17-AUG-2011 13:06                     | AR1660       | /chem/ecd8a.i/081711.b/011b1101.d |
| Cal Level: 2 , Cal Amount: 250.00000  |              |                                   |
| 17-AUG-2011 16:47                     | AR1248       | /chem/ecd8a.i/081711.b/030b3001.d |
| 17-AUG-2011 15:38                     | AR1242       | /chem/ecd8a.i/081711.b/024b2401.d |
| 17-AUG-2011 14:28                     | AR1254       | /chem/ecd8a.i/081711.b/018b1801.d |
| 17-AUG-2011 13:18                     | AR1660       | /chem/ecd8a.i/081711.b/012b1201.d |
| Cal Level: 3 , Cal Amount: 500.00000  |              |                                   |
| 17-AUG-2011 16:59                     | AR1248       | /chem/ecd8a.i/081711.b/031b3101.d |
| 17-AUG-2011 15:49                     | AR1242       | /chem/ecd8a.i/081711.b/025b2501.d |
| 17-AUG-2011 14:39                     | AR1254       | /chem/ecd8a.i/081711.b/019b1901.d |
| 17-AUG-2011 13:29                     | AR1660       | /chem/ecd8a.i/081711.b/013b1301.d |
| Cal Level: 4 , Cal Amount: 1000.00000 |              |                                   |
| 17-AUG-2011 12:55                     | DDTANALOGSTD | /chem/ecd8a.i/081711.b/010b1001.d |
| 17-AUG-2011 12:43                     | AR1268       | /chem/ecd8a.i/081711.b/009b0901.d |
| 17-AUG-2011 12:31                     | AR1262       | /chem/ecd8a.i/081711.b/008b0801.d |
| 17-AUG-2011 12:20                     | AR1221       | /chem/ecd8a.i/081711.b/007b0701.d |
| 17-AUG-2011 12:01                     | AR1232       | /chem/ecd8a.i/081711.b/006b0601.d |
| 17-AUG-2011 17:11                     | AR1248       | /chem/ecd8a.i/081711.b/032b3201.d |
| 17-AUG-2011 16:01                     | AR1242       | /chem/ecd8a.i/081711.b/026b2601.d |
| 17-AUG-2011 14:51                     | AR1254       | /chem/ecd8a.i/081711.b/020b2001.d |
| 17-AUG-2011 13:41                     | AR1660       | /chem/ecd8a.i/081711.b/014b1401.d |
| Cal Level: 5 , Cal Amount: 4000.00000 |              |                                   |
| 17-AUG-2011 17:22                     | AR1248       | /chem/ecd8a.i/081711.b/033b3301.d |
| 17-AUG-2011 16:12                     | AR1242       | /chem/ecd8a.i/081711.b/027b2701.d |
| 17-AUG-2011 15:03                     | AR1254       | /chem/ecd8a.i/081711.b/021b2101.d |
| 17-AUG-2011 13:53                     | AR1660       | /chem/ecd8a.i/081711.b/015b1501.d |

#### Continuing Calibration

Ccal Level Mode: GLOBAL LEVEL 4

|                                   |        |                                   |
|-----------------------------------|--------|-----------------------------------|
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 10:18                 | AR1660 | /chem/ecd8a.i/083011.b/017b1701.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |

|                                   |        |                                   |
|-----------------------------------|--------|-----------------------------------|
| 30-AUG-2011 08:43                 | AR1268 | /chem/ecd8a.i/083011.b/009b0901.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 08:31                 | AR1262 | /chem/ecd8a.i/083011.b/008b0801.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 08:19                 | AR1221 | /chem/ecd8a.i/083011.b/007b0701.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 08:08                 | AR1232 | /chem/ecd8a.i/083011.b/006b0601.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 07:56                 | AR1248 | /chem/ecd8a.i/083011.b/005b0501.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 07:44                 | AR1242 | /chem/ecd8a.i/083011.b/004b0401.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 07:33                 | AR1254 | /chem/ecd8a.i/083011.b/003b0301.d |
| Ccal Level: 4 , Ccal Amount: 1000 |        |                                   |
| 30-AUG-2011 07:21                 | AR1660 | /chem/ecd8a.i/083011.b/002b0201.d |



## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
Quant Method : ESTD Target Version : 3.50  
Last Update : 30-Aug-2011 10:33 Number of Cpnds : 15  
Data Type : GC MULTI COMP

Global Integrator : Falcon

| Chromat Events          | Values     |
|-------------------------|------------|
| Initial:Start Threshold | 758.000000 |
| Initial:End Threshold   | 379.000000 |
| Initial:Area Threshold  | 734.000000 |
| Initial:P-P Resolution  | 1.000000   |
| Initial:Bunch Factor    | 1.500000   |
| Initial:Negative Peaks  | OFF        |
| Initial:Tension         | 2.000000   |

| Compound       | RT    | RT Window   | RF        |
|----------------|-------|-------------|-----------|
| 1 Aroclor-1016 | 2.674 | 2.644-2.704 | 2.070e+03 |
|                | 3.015 | 2.985-3.045 | 2.481e+03 |
|                | 3.154 | 3.124-3.184 | 9.946e+02 |
|                | 3.246 | 3.216-3.276 | 9.212e+02 |
|                | 3.404 | 3.374-3.434 | 1.312e+03 |
| 2 Aroclor-1221 | 2.272 | 2.242-2.302 | 6.188e+02 |
|                | 2.382 | 2.352-2.412 | 3.384e+02 |
|                | 2.412 | 2.382-2.442 | 1.671e+03 |
| 3 Aroclor-1232 | 2.676 | 2.646-2.706 | 1.032e+03 |
|                | 3.016 | 2.986-3.046 | 1.230e+03 |
|                | 3.111 | 3.081-3.141 | 8.594e+02 |
|                | 3.405 | 3.375-3.435 | 6.293e+02 |
| 4 Aroclor-1242 | 3.705 | 3.675-3.735 | 5.902e+02 |
|                | 3.015 | 2.985-3.045 | 1.996e+03 |
|                | 3.110 | 3.080-3.140 | 1.406e+03 |
|                | 3.405 | 3.375-3.435 | 1.108e+03 |
|                | 3.705 | 3.675-3.735 | 1.101e+03 |
| 5 Aroclor-1248 | 3.724 | 3.694-3.754 | 1.077e+03 |
|                | 3.247 | 3.217-3.277 | 1.484e+03 |
|                | 3.405 | 3.375-3.435 | 1.860e+03 |
|                | 3.465 | 3.435-3.495 | 1.219e+03 |
|                | 3.705 | 3.675-3.735 | 2.131e+03 |
|                | 3.860 | 3.830-3.890 | 1.761e+03 |

## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m

| Compound                 | RT    | RT Window   | RF        |
|--------------------------|-------|-------------|-----------|
| 6 Aroclor-1254           | 3.675 | 3.645-3.705 | 1.702e+03 |
|                          | 3.860 | 3.830-3.890 | 2.239e+03 |
|                          | 4.135 | 4.105-4.165 | 2.845e+03 |
|                          | 4.328 | 4.298-4.358 | 2.148e+03 |
|                          | 4.458 | 4.428-4.488 | 2.067e+03 |
| 7 Aroclor-1260           | 4.264 | 4.234-4.294 | 2.492e+03 |
|                          | 4.456 | 4.426-4.486 | 3.633e+03 |
|                          | 4.729 | 4.699-4.759 | 2.206e+03 |
|                          | 5.111 | 5.081-5.141 | 4.769e+03 |
|                          | 5.302 | 5.272-5.332 | 2.413e+03 |
| 8 Aroclor-1262           | 4.457 | 4.427-4.487 | 2.873e+03 |
|                          | 4.730 | 4.700-4.760 | 3.546e+03 |
|                          | 4.899 | 4.869-4.929 | 3.204e+03 |
|                          | 5.111 | 5.081-5.141 | 6.244e+03 |
|                          | 5.330 | 5.300-5.360 | 2.536e+03 |
| 9 Aroclor-1268           | 5.331 | 5.301-5.361 | 6.408e+03 |
|                          | 5.356 | 5.326-5.386 | 5.988e+03 |
|                          | 5.490 | 5.460-5.520 | 4.835e+03 |
|                          | 5.730 | 5.700-5.760 | 2.398e+03 |
|                          | 5.926 | 5.896-5.956 | 1.383e+04 |
| M 10 Aroclor-Total       | 1.000 | 0.980-1.020 |           |
| \$ 11 4cmx               | 2.135 | 2.105-2.165 | 5.682e+04 |
| \$ 12 Decachlorobiphenyl | 6.054 | 6.024-6.084 | 3.744e+04 |
| 13 4,4'-DDT              | 4.679 | 4.659-4.699 | 1.512e+04 |
| 14 4,4'-DDD              | 4.486 | 4.466-4.506 | 2.756e+04 |
| 15 4,4'-DDE              | 4.072 | 4.052-4.092 | 4.599e+04 |

## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
Quant Method : ESTD Target Version : 3.50  
Last Update : 30-Aug-2011 10:32 Number of Cpnds : 15  
Data Type : GC MULTI COMP

Global Integrator : Falcon

| Chromat Events          | Values     |
|-------------------------|------------|
| Initial:Start Threshold | 733.000000 |
| Initial:End Threshold   | 366.500000 |
| Initial:Area Threshold  | 522.000000 |
| Initial:P-P Resolution  | 0.000000   |
| Initial:Bunch Factor    | 1.500000   |
| Initial:Negative Peaks  | OFF        |
| Initial:Tension         | 2.000000   |

| Compound       | RT    | RT Window   | RF        |
|----------------|-------|-------------|-----------|
| 1 Aroclor-1016 | 3.073 | 3.043-3.103 | 2.971e+03 |
|                | 3.419 | 3.389-3.449 | 3.213e+03 |
|                | 3.516 | 3.486-3.546 | 2.271e+03 |
|                | 3.590 | 3.560-3.620 | 1.357e+03 |
|                | 3.666 | 3.636-3.696 | 1.418e+03 |
| 2 Aroclor-1221 | 2.607 | 2.577-2.637 | 8.719e+02 |
|                | 2.716 | 2.686-2.746 | 5.609e+02 |
|                | 2.762 | 2.732-2.792 | 2.137e+03 |
| 3 Aroclor-1232 | 3.074 | 3.043-3.103 | 1.542e+03 |
|                | 3.419 | 3.389-3.449 | 1.659e+03 |
|                | 3.517 | 3.487-3.547 | 1.130e+03 |
|                | 3.858 | 3.828-3.889 | 8.793e+02 |
| 4 Aroclor-1242 | 4.133 | 4.104-4.163 | 8.967e+02 |
|                | 3.419 | 3.389-3.449 | 2.665e+03 |
|                | 3.516 | 3.486-3.546 | 1.896e+03 |
|                | 3.590 | 3.560-3.620 | 1.121e+03 |
|                | 3.858 | 3.828-3.888 | 1.500e+03 |
| 5 Aroclor-1248 | 4.133 | 4.103-4.163 | 1.549e+03 |
|                | 3.666 | 3.636-3.696 | 2.205e+03 |
|                | 3.858 | 3.828-3.888 | 2.616e+03 |
|                | 3.946 | 3.916-3.976 | 2.790e+03 |
|                | 4.133 | 4.103-4.163 | 2.905e+03 |
|                | 4.164 | 4.134-4.194 | 3.232e+03 |

## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m

| Compound                 | RT    | RT Window   | RF        |
|--------------------------|-------|-------------|-----------|
| 6 Aroclor-1254           | 4.160 | 4.130-4.190 | 2.629e+03 |
|                          | 4.300 | 4.270-4.330 | 2.873e+03 |
|                          | 4.621 | 4.591-4.651 | 3.774e+03 |
|                          | 4.782 | 4.752-4.812 | 2.658e+03 |
|                          | 4.908 | 4.878-4.938 | 1.743e+03 |
| 7 Aroclor-1260           | 4.758 | 4.728-4.788 | 3.278e+03 |
|                          | 4.907 | 4.877-4.937 | 3.813e+03 |
|                          | 5.219 | 5.189-5.249 | 2.821e+03 |
|                          | 5.597 | 5.567-5.627 | 5.709e+03 |
|                          | 5.848 | 5.818-5.878 | 3.978e+03 |
| 8 Aroclor-1262           | 4.908 | 4.878-4.938 | 3.128e+03 |
|                          | 5.220 | 5.190-5.250 | 4.227e+03 |
|                          | 5.422 | 5.392-5.452 | 3.719e+03 |
|                          | 5.597 | 5.567-5.627 | 6.901e+03 |
|                          | 5.847 | 5.817-5.877 | 4.903e+03 |
| 9 Aroclor-1268           | 5.846 | 5.816-5.876 | 7.001e+03 |
|                          | 5.876 | 5.846-5.906 | 6.207e+03 |
|                          | 6.052 | 6.022-6.082 | 4.963e+03 |
|                          | 6.248 | 6.218-6.278 | 2.470e+03 |
|                          | 6.474 | 6.444-6.504 | 1.298e+04 |
| M 10 Aroclor-Total       | 1.000 | 0.980-1.020 |           |
| \$ 11 4cmx               | 2.373 | 2.343-2.403 | 7.646e+04 |
| \$ 12 Decachlorobiphenyl | 6.651 | 6.621-6.681 | 3.784e+04 |
| 13 4,4'-DDT              | 5.166 | 5.146-5.186 | 1.884e+04 |
| 14 4,4'-DDD              | 4.948 | 4.928-4.968 | 3.314e+04 |
| 15 4,4'-DDE              | 4.542 | 4.522-4.562 | 5.011e+04 |

GEL Laboratories LLC  
INITIAL CALIBRATION DATA

Start Cal Date : 28-JUL-2011 21:37  
 End Cal Date : 17-AUG-2011 17:22  
 Quant Method : ESTD  
 Origin : Disabled  
 Target Version : 3.50  
 Integrator : Falcon  
 Method file : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
 Cal Date : 30-Aug-2011 10:33 yip00818  
 Curve Type : Average

## Calibration File Names:

Level 1: /chem/ecd8a.i/081711.b/029f2901.d  
 Level 2: /chem/ecd8a.i/081711.b/030f3001.d  
 Level 3: /chem/ecd8a.i/081711.b/031f3101.d  
 Level 4: /chem/ecd8a.i/081711.b/010f1001.d  
 Level 5: /chem/ecd8a.i/081711.b/033f3301.d

| Compound          | 100.000<br>Level 1 | 250.000<br>Level 2 | 500.000<br>Level 3 | 1000.000<br>Level 4 | 4000.000<br>Level 5 | RRF  | % RSD  |
|-------------------|--------------------|--------------------|--------------------|---------------------|---------------------|------|--------|
| 1 Aroclor-1016(1) | 2462               | 2231               | 2001               | 1962                | 1695                | 2070 | 14.022 |
| (2)               | 2833               | 2649               | 2445               | 2390                | 2089                | 2481 | 11.317 |
| (3)               | 1130               | 1053               | 969                | 936                 | 885                 | 995  | 9.784  |
| (4)               | 1107               | 1002               | 884                | 840                 | 772                 | 921  | 14.499 |
| (5)               | 1560               | 1377               | 1269               | 1227                | 1127                | 1312 | 12.579 |
| 2 Aroclor-1221(1) | +++++              | +++++              | +++++              | 619                 | +++++               | 619  | 0.000  |
| (2)               | +++++              | +++++              | +++++              | 338                 | +++++               | 338  | 0.000  |
| (3)               | +++++              | +++++              | +++++              | 1671                | +++++               | 1671 | 0.000  |
| 3 Aroclor-1232(1) | +++++              | +++++              | +++++              | 1032                | +++++               | 1032 | 0.000  |
| (2)               | +++++              | +++++              | +++++              | 1230                | +++++               | 1230 | 0.000  |
| (3)               | +++++              | +++++              | +++++              | 859                 | +++++               | 859  | 0.000  |
| (4)               | +++++              | +++++              | +++++              | 629                 | +++++               | 629  | 0.000  |
| (5)               | +++++              | +++++              | +++++              | 590                 | +++++               | 590  | 0.000  |
| 4 Aroclor-1242(1) | 2234               | 2098               | 1961               | 1957                | 1728                | 1996 | 9.428  |
| (2)               | 1621               | 1526               | 1372               | 1317                | 1196                | 1406 | 11.993 |
| (3)               | 1340               | 1185               | 1050               | 1016                | 946                 | 1108 | 14.114 |
| (4)               | 1353               | 1172               | 1029               | 1009                | 940                 | 1101 | 14.931 |
| (5)               | 1221               | 1137               | 1047               | 1023                | 960                 | 1077 | 9.482  |
| 5 Aroclor-1248(1) | 1812               | 1535               | 1500               | 1402                | 1172                | 1484 | 15.597 |
| (2)               | 2159               | 1938               | 1912               | 1792                | 1497                | 1860 | 13.030 |
| (3)               | 1380               | 1255               | 1252               | 1185                | 1024                | 1219 | 10.656 |
| (4)               | 2443               | 2183               | 2206               | 2091                | 1733                | 2131 | 12.094 |
| (5)               | 2202               | 1765               | 1762               | 1654                | 1419                | 1761 | 16.144 |
| 6 Aroclor-1254(1) | 1928               | 1749               | 1738               | 1601                | 1496                | 1702 | 9.609  |
| (2)               | 2505               | 2304               | 2295               | 2115                | 1973                | 2239 | 9.048  |
| (3)               | 3137               | 2909               | 2951               | 2717                | 2511                | 2845 | 8.402  |
| (4)               | 2384               | 2184               | 2215               | 2039                | 1919                | 2148 | 8.244  |
| (5)               | 2382               | 2149               | 2084               | 1913                | 1808                | 2067 | 10.736 |

GEL Laboratories LLC  
INITIAL CALIBRATION DATA

Start Cal Date : 28-JUL-2011 21:37  
 End Cal Date : 17-AUG-2011 17:22  
 Quant Method : ESTD  
 Origin : Disabled  
 Target Version : 3.50  
 Integrator : Falcon  
 Method file : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
 Cal Date : 30-Aug-2011 10:33 yip00818  
 Curve Type : Average

| Compound                 | 100.000<br>Level 1 | 250.000<br>Level 2 | 500.000<br>Level 3 | 1000.000<br>Level 4 | 4000.000<br>Level 5 | RRF   | % RSD  |
|--------------------------|--------------------|--------------------|--------------------|---------------------|---------------------|-------|--------|
| =====                    | =====              | =====              | =====              | =====               | =====               | ===== | =====  |
| 7 Aroclor-1260(1)        | 2848               | 2615               | 2423               | 2395                | 2177                | 2492  | 10.139 |
| (2)                      | 4169               | 3825               | 3565               | 3493                | 3115                | 3633  | 10.808 |
| (3)                      | 2544               | 2297               | 2135               | 2102                | 1950                | 2206  | 10.238 |
| (4)                      | 5393               | 5029               | 4715               | 4598                | 4110                | 4769  | 10.074 |
| (5)                      | 2750               | 2503               | 2335               | 2314                | 2162                | 2413  | 9.282  |
| 8 Aroclor-1262(1)        | +++++              | +++++              | +++++              | 2873                | +++++               | 2873  | 0.000  |
| (2)                      | +++++              | +++++              | +++++              | 3546                | +++++               | 3546  | 0.000  |
| (3)                      | +++++              | +++++              | +++++              | 3204                | +++++               | 3204  | 0.000  |
| (4)                      | +++++              | +++++              | +++++              | 6244                | +++++               | 6244  | 0.000  |
| (5)                      | +++++              | +++++              | +++++              | 2536                | +++++               | 2536  | 0.000  |
| 9 Aroclor-1268(1)        | +++++              | +++++              | +++++              | 6408                | +++++               | 6408  | 0.000  |
| (2)                      | +++++              | +++++              | +++++              | 5988                | +++++               | 5988  | 0.000  |
| (3)                      | +++++              | +++++              | +++++              | 4835                | +++++               | 4835  | 0.000  |
| (4)                      | +++++              | +++++              | +++++              | 2398                | +++++               | 2398  | 0.000  |
| (5)                      | +++++              | +++++              | +++++              | 13826               | +++++               | 13826 | 0.000  |
| M 10 Aroclor-Total       | +++++              | +++++              | +++++              | +++++               | +++++               | +++++ | +++++  |
| 13 4,4'-DDT              | +++++              | +++++              | +++++              | 15124               | +++++               | 15124 | 0.000  |
| 14 4,4'-DDD              | +++++              | +++++              | +++++              | 27558               | +++++               | 27558 | 0.000  |
| 15 4,4'-DDE              | +++++              | +++++              | +++++              | 45991               | +++++               | 45991 | 0.000  |
| =====                    | =====              | =====              | =====              | =====               | =====               | ===== | =====  |
| \$ 11 4cmx               | 60821              | 59860              | 57119              | 55952               | 50348               | 56820 | 7.255  |
| \$ 12 Decachlorobiphenyl | 42849              | 39006              | 36294              | 35772               | 33304               | 37445 | 9.713  |
| =====                    | =====              | =====              | =====              | =====               | =====               | ===== | =====  |

GEL Laboratories LLC  
INITIAL CALIBRATION DATA

Start Cal Date : 28-JUL-2011 21:37  
 End Cal Date : 17-AUG-2011 17:22  
 Quant Method : ESTD  
 Origin : Disabled  
 Target Version : 3.50  
 Integrator : Falcon  
 Method file : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
 Cal Date : 30-Aug-2011 10:32 yip00818  
 Curve Type : Average

## Calibration File Names:

Level 1: /chem/ecd8a.i/081711.b/029b2901.d  
 Level 2: /chem/ecd8a.i/081711.b/030b3001.d  
 Level 3: /chem/ecd8a.i/081711.b/031b3101.d  
 Level 4: /chem/ecd8a.i/081711.b/010b1001.d  
 Level 5: /chem/ecd8a.i/081711.b/033b3301.d

| Compound          | 100.000<br>Level 1 | 250.000<br>Level 2 | 500.000<br>Level 3 | 1000.000<br>Level 4 | 4000.000<br>Level 5 | RRF  | % RSD  |
|-------------------|--------------------|--------------------|--------------------|---------------------|---------------------|------|--------|
| 1 Aroclor-1016(1) | 3710               | 3240               | 2916               | 2695                | 2293                | 2971 | 18.108 |
| (2)               | 3652               | 3487               | 3209               | 3024                | 2690                | 3213 | 11.822 |
| (3)               | 2779               | 2446               | 2222               | 2084                | 1822                | 2271 | 15.995 |
| (4)               | 1636               | 1451               | 1307               | 1248                | 1144                | 1357 | 14.080 |
| (5)               | 1791               | 1537               | 1364               | 1271                | 1128                | 1418 | 18.052 |
| 2 Aroclor-1221(1) | +++++              | +++++              | +++++              | 872                 | +++++               | 872  | 0.000  |
| (2)               | +++++              | +++++              | +++++              | 561                 | +++++               | 561  | 0.000  |
| (3)               | +++++              | +++++              | +++++              | 2137                | +++++               | 2137 | 0.000  |
| 3 Aroclor-1232(1) | +++++              | +++++              | +++++              | 1542                | +++++               | 1542 | 0.000  |
| (2)               | +++++              | +++++              | +++++              | 1659                | +++++               | 1659 | 0.000  |
| (3)               | +++++              | +++++              | +++++              | 1130                | +++++               | 1130 | 0.000  |
| (4)               | +++++              | +++++              | +++++              | 879                 | +++++               | 879  | 0.000  |
| (5)               | +++++              | +++++              | +++++              | 897                 | +++++               | 897  | 0.000  |
| 4 Aroclor-1242(1) | 3098               | 2867               | 2610               | 2579                | 2170                | 2665 | 13.040 |
| (2)               | 2286               | 2069               | 1841               | 1757                | 1525                | 1896 | 15.430 |
| (3)               | 1322               | 1212               | 1080               | 1043                | 948                 | 1121 | 13.111 |
| (4)               | 1624               | 1696               | 1497               | 1431                | 1251                | 1500 | 11.581 |
| (5)               | 1937               | 1652               | 1479               | 1419                | 1258                | 1549 | 16.696 |
| 5 Aroclor-1248(1) | 2768               | 2332               | 2238               | 2043                | 1642                | 2205 | 18.660 |
| (2)               | 3124               | 2768               | 2700               | 2486                | 2001                | 2616 | 15.792 |
| (3)               | 3280               | 2950               | 2873               | 2656                | 2188                | 2790 | 14.490 |
| (4)               | 3456               | 3054               | 3000               | 2776                | 2238                | 2905 | 15.364 |
| (5)               | 3976               | 3367               | 3307               | 3050                | 2461                | 3232 | 16.982 |
| 6 Aroclor-1254(1) | 3118               | 2752               | 2692               | 2435                | 2151                | 2629 | 13.769 |
| (2)               | 3387               | 3022               | 2950               | 2664                | 2343                | 2873 | 13.661 |
| (3)               | 4343               | 3945               | 3925               | 3553                | 3105                | 3774 | 12.378 |
| (4)               | 3078               | 2760               | 2733               | 2488                | 2228                | 2658 | 11.993 |
| (5)               | 2091               | 1828               | 1767               | 1583                | 1445                | 1743 | 14.153 |

GEL Laboratories LLC  
INITIAL CALIBRATION DATA

Start Cal Date : 28-JUL-2011 21:37  
 End Cal Date : 17-AUG-2011 17:22  
 Quant Method : ESTD  
 Origin : Disabled  
 Target Version : 3.50  
 Integrator : Falcon  
 Method file : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
 Cal Date : 30-Aug-2011 10:32 yip00818  
 Curve Type : Average

| Compound                 | 100.000<br>Level 1 | 250.000<br>Level 2 | 500.000<br>Level 3 | 1000.000<br>Level 4 | 4000.000<br>Level 5 | RRF   | % RSD  |
|--------------------------|--------------------|--------------------|--------------------|---------------------|---------------------|-------|--------|
| =====                    | =====              | =====              | =====              | =====               | =====               | ===== | =====  |
| 7 Aroclor-1260(1)        | 3985               | 3497               | 3201               | 3056                | 2649                | 3278  | 15.246 |
| (2)                      | 4611               | 4091               | 3745               | 3557                | 3061                | 3813  | 15.235 |
| (3)                      | 3423               | 3003               | 2738               | 2620                | 2323                | 2821  | 14.730 |
| (4)                      | 6760               | 6101               | 5628               | 5386                | 4668                | 5709  | 13.717 |
| (5)                      | 4768               | 4210               | 3865               | 3710                | 3340                | 3978  | 13.592 |
| 8 Aroclor-1262(1)        | +++++              | +++++              | +++++              | 3128                | +++++               | 3128  | 0.000  |
| (2)                      | +++++              | +++++              | +++++              | 4227                | +++++               | 4227  | 0.000  |
| (3)                      | +++++              | +++++              | +++++              | 3719                | +++++               | 3719  | 0.000  |
| (4)                      | +++++              | +++++              | +++++              | 6901                | +++++               | 6901  | 0.000  |
| (5)                      | +++++              | +++++              | +++++              | 4903                | +++++               | 4903  | 0.000  |
| 9 Aroclor-1268(1)        | +++++              | +++++              | +++++              | 7001                | +++++               | 7001  | 0.000  |
| (2)                      | +++++              | +++++              | +++++              | 6207                | +++++               | 6207  | 0.000  |
| (3)                      | +++++              | +++++              | +++++              | 4963                | +++++               | 4963  | 0.000  |
| (4)                      | +++++              | +++++              | +++++              | 2470                | +++++               | 2470  | 0.000  |
| (5)                      | +++++              | +++++              | +++++              | 12980               | +++++               | 12980 | 0.000  |
| M 10 Aroclor-Total       | +++++              | +++++              | +++++              | +++++               | +++++               | +++++ | +++++  |
| 13 4,4'-DDT              | +++++              | +++++              | +++++              | 18837               | +++++               | 18837 | 0.000  |
| 14 4,4'-DDD              | +++++              | +++++              | +++++              | 33135               | +++++               | 33135 | 0.000  |
| 15 4,4'-DDE              | +++++              | +++++              | +++++              | 50114               | +++++               | 50114 | 0.000  |
| =====                    | =====              | =====              | =====              | =====               | =====               | ===== | =====  |
| \$ 11 4cmx               | 85039              | 81144              | 76722              | 74346               | 65058               | 76462 | 9.919  |
| \$ 12 Decachlorobiphenyl | 46677              | 40127              | 36468              | 34866               | 31064               | 37840 | 15.632 |
| =====                    | =====              | =====              | =====              | =====               | =====               | ===== | =====  |



Data File: /chem/ecd8a.i/081711.b/011f1101.d  
Report Date: 18-Aug-2011 09:02

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/011f1101.d

Lab Smp Id: WAR110817-01

Client Smp ID: AR166001

Inj Date : 17-AUG-2011 13:06

Operator : YS1

Inst ID: ecd8a.i

Smp Info : |WAR110817-01

Misc Info :

Comment :

Method : /chem/ecd8a.i/081711.b/ECD8-F-8082-081711.m

Meth Date : 18-Aug-2011 09:02 yip00818

Quant Type: ESTD

Cal Date : 17-AUG-2011 16:36

Cal File: 029f2901.d

Als bottle: 11

Calibration Sample, Level: 1

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1660.sub

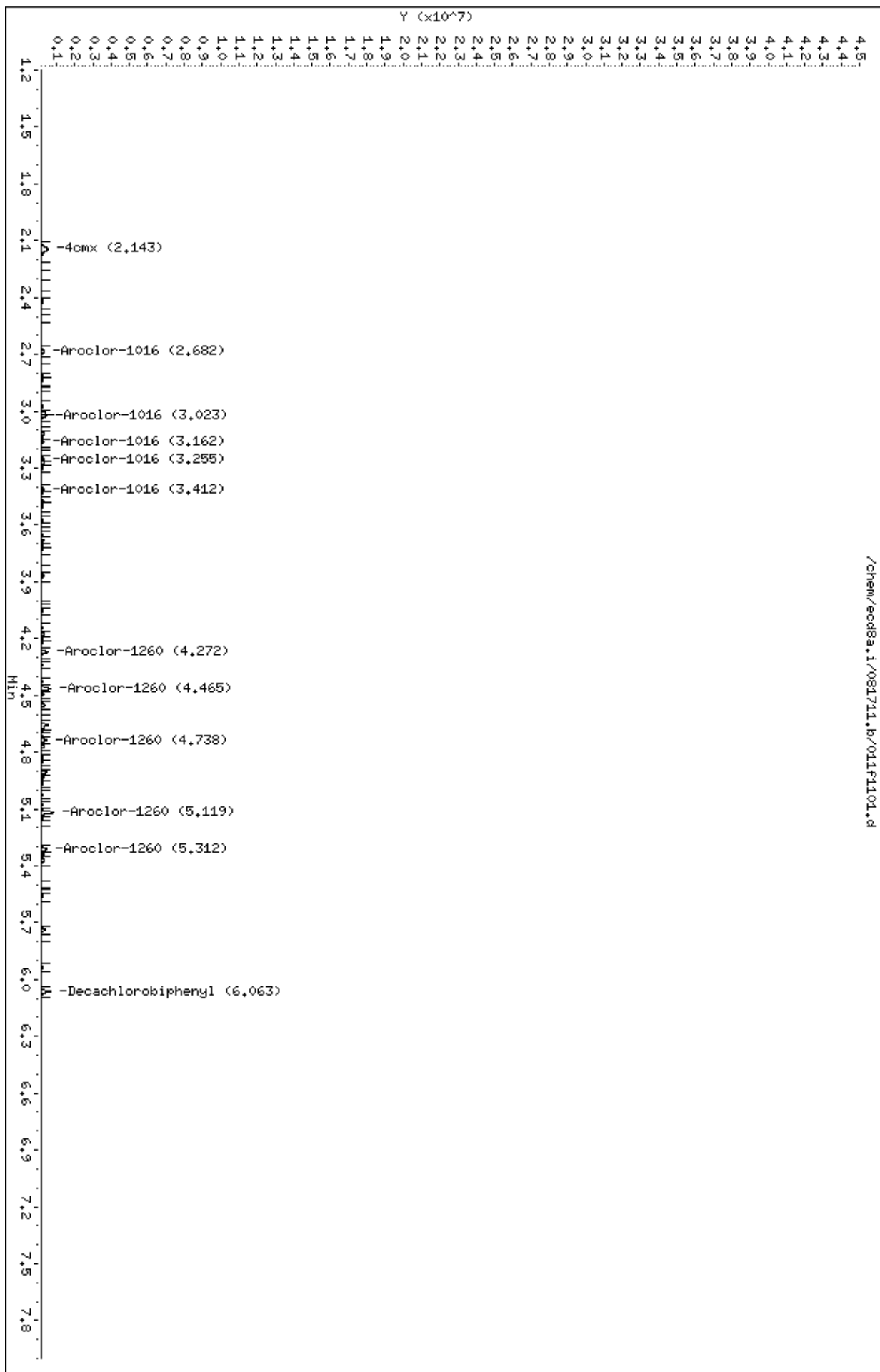
Target Version: 3.50

Sample Matrix: None

Processing Host: hpclp1

| AMOUNTS                   |        |        |                  |         |                   |         |              |        |       |
|---------------------------|--------|--------|------------------|---------|-------------------|---------|--------------|--------|-------|
|                           |        |        | CAL-AMT          |         | ON-COL            |         |              |        |       |
| RT                        | EXP RT | DLT RT | RESPONSE ( ug/L) |         | ( ug/L)           |         | TARGET RANGE |        | RATIO |
| ==                        | =====  | =====  | =====            | =====   | =====             | =====   | =====        | =====  | ===== |
| \$ 11 4cmx                |        |        |                  |         | CAS #: 877-09-8   |         |              |        |       |
| 2.143                     | 2.143  | 0.000  | 608214           | 10.0000 | 10.7              | 80.00-  | 120.00       | 100.00 |       |
| -----                     |        |        |                  |         |                   |         |              |        |       |
| \$ 12 Decachlorobiphenyl  |        |        |                  |         | CAS #: 2051-24-3  |         |              |        |       |
| 6.063                     | 6.062  | 0.001  | 428486           | 10.0000 | 11.4              | 80.00-  | 120.00       | 100.00 |       |
| -----                     |        |        |                  |         |                   |         |              |        |       |
| 1 Aroclor-1016            |        |        |                  |         | CAS #: 12674-11-2 |         |              |        |       |
| 2.682                     | 2.682  | 0.000  | 246229           | 100.000 | 119               | 80.00-  | 120.00       | 100.00 |       |
| 3.023                     | 3.023  | 0.000  | 283269           | 100.000 | 114               | 95.04-  | 135.04       | 115.04 |       |
| 3.162                     | 3.162  | 0.000  | 113041           | 100.000 | 114               | 25.91-  | 65.91        | 45.91  |       |
| 3.255                     | 3.255  | 0.000  | 110724           | 100.000 | 120               | 24.97-  | 64.97        | 44.97  |       |
| 3.412                     | 3.412  | 0.000  | 155968           | 100.000 | 119               | 43.34-  | 83.34        | 63.34  |       |
| Average of Peak Amounts = |        |        |                  |         | 117               |         |              |        |       |
| -----                     |        |        |                  |         |                   |         |              |        |       |
| 7 Aroclor-1260            |        |        |                  |         | CAS #: 11096-82-5 |         |              |        |       |
| 4.272                     | 4.272  | 0.000  | 284774           | 100.000 | 114               | 80.00-  | 120.00       | 100.00 |       |
| 4.465                     | 4.465  | 0.000  | 416923           | 100.000 | 115               | 126.40- | 166.40       | 146.40 |       |
| 4.738                     | 4.738  | 0.000  | 254407           | 100.000 | 115               | 69.34-  | 109.34       | 89.34  |       |
| 5.119                     | 5.119  | 0.000  | 539281           | 100.000 | 113               | 169.37- | 209.37       | 189.37 |       |
| 5.312                     | 5.312  | 0.000  | 275027           | 100.000 | 114               | 76.58-  | 116.58       | 96.58  |       |
| Average of Peak Amounts = |        |        |                  |         | 114               |         |              |        |       |

Data File: /chem/ecod8a.i/081711.b/011f1101.d  
Date : 17-AUG-2011 13:06  
Client ID: AR166001  
Sample Info: IMR110817-01  
Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25  
Column phase: CLP1



Data File: /chem/ecd8a.i/081711.b/011b1101.d  
Report Date: 18-Aug-2011 09:02

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/011b1101.d  
Lab Smp Id: WAR110817-01 Client Smp ID: AR166001  
Inj Date : 17-AUG-2011 13:06  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110817-01  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-B-8082-081711.m  
Meth Date : 18-Aug-2011 09:02 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 16:36 Cal File: 029b2901.d  
Als bottle: 11 Calibration Sample, Level: 1  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1660.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |  |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|--|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |  |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |  |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |  |
| 2.386                     | 2.384  | 0.002  | 850390   | 10.0000 | 11.1              | 80.00-  | 120.00 | 100.00 |  |
| -----                     |        |        |          |         |                   |         |        |        |  |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |  |
| 6.665                     | 6.665  | 0.000  | 466767   | 10.0000 | 12.3              | 80.00-  | 120.00 | 100.00 |  |
| -----                     |        |        |          |         |                   |         |        |        |  |
| 1 Aroclor-1016            |        |        |          |         | CAS #: 2051-24-3  |         |        |        |  |
| 3.086                     | 3.086  | 0.000  | 371028   | 100.000 | 125               | 80.00-  | 120.00 | 100.00 |  |
| 3.432                     | 3.432  | 0.000  | 365235   | 100.000 | 114               | 78.44-  | 118.44 | 98.44  |  |
| 3.529                     | 3.529  | 0.000  | 277945   | 100.000 | 122               | 54.91-  | 94.91  | 74.91  |  |
| 3.603                     | 3.603  | 0.000  | 163595   | 100.000 | 120               | 24.09-  | 64.09  | 44.09  |  |
| 3.678                     | 3.678  | 0.000  | 179097   | 100.000 | 126               | 28.27-  | 68.27  | 48.27  |  |
| Average of Peak Amounts = |        |        |          |         | 122               |         |        |        |  |
| -----                     |        |        |          |         |                   |         |        |        |  |
| 7 Aroclor-1260            |        |        |          |         | CAS #: 11096-82-5 |         |        |        |  |
| 4.772                     | 4.772  | 0.000  | 398526   | 100.000 | 122               | 80.00-  | 120.00 | 100.00 |  |
| 4.920                     | 4.920  | 0.000  | 461078   | 100.000 | 121               | 95.70-  | 135.70 | 115.70 |  |
| 5.232                     | 5.232  | 0.000  | 342266   | 100.000 | 121               | 65.88-  | 105.88 | 85.88  |  |
| 5.611                     | 5.611  | 0.000  | 676016   | 100.000 | 118               | 149.63- | 189.63 | 169.63 |  |
| 5.862                     | 5.862  | 0.000  | 476783   | 100.000 | 120               | 99.64-  | 139.64 | 119.64 |  |
| Average of Peak Amounts = |        |        |          |         | 120               |         |        |        |  |

Data File: /chem/ecd8a.i/081711.b/011b1101.d

Date : 17-AUG-2011 13:06

Client ID: AR166001

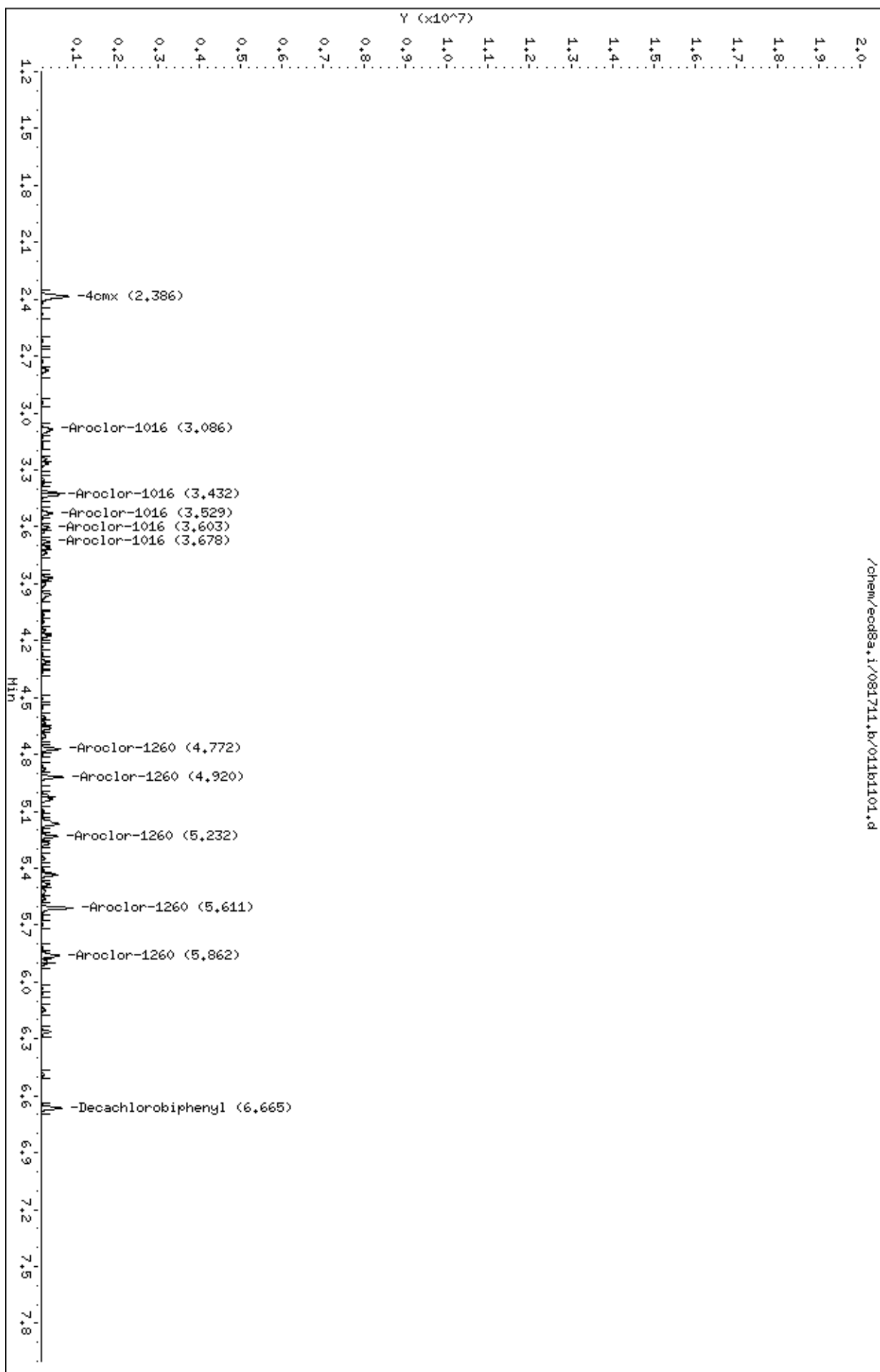
Sample Info: 146R110817-01

Column phase: CLP2

Instrument: ecd8a.i

Operator: YSL

Column diameter: 0.25



Data File: /chem/ecd8a.i/081711.b/012f1201.d  
Report Date: 18-Aug-2011 09:02

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/012f1201.d  
Lab Smp Id: WAR110817-02 Client Smp ID: AR166002  
Inj Date : 17-AUG-2011 13:18  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110817-02  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-F-8082-081711.m  
Meth Date : 18-Aug-2011 09:02 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 16:47 Cal File: 030f3001.d  
Als bottle: 12 Calibration Sample, Level: 2  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1660.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |  |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|--|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |  |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |  |
|                           |        |        |          |         | -----             |         |        |        |  |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |  |
| 2.143                     | 2.143  | 0.000  | 1496491  | 25.0000 | 26.3              | 80.00-  | 120.00 | 100.00 |  |
| -----                     |        |        |          |         |                   |         |        |        |  |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |  |
| 6.063                     | 6.062  | 0.001  | 975147   | 25.0000 | 26.0              | 80.00-  | 120.00 | 100.00 |  |
| -----                     |        |        |          |         |                   |         |        |        |  |
| 1 Aroclor-1016            |        |        |          |         | CAS #: 12674-11-2 |         |        |        |  |
| 2.683                     | 2.683  | 0.000  | 557848   | 250.000 | 269               | 80.00-  | 120.00 | 100.00 |  |
| 3.023                     | 3.023  | 0.000  | 662302   | 250.000 | 267               | 98.72-  | 138.72 | 118.72 |  |
| 3.163                     | 3.163  | 0.000  | 263177   | 250.000 | 264               | 27.18-  | 67.18  | 47.18  |  |
| 3.254                     | 3.254  | 0.000  | 250568   | 250.000 | 272               | 24.92-  | 64.92  | 44.92  |  |
| 3.413                     | 3.413  | 0.000  | 344145   | 250.000 | 262               | 41.69-  | 81.69  | 61.69  |  |
| Average of Peak Amounts = |        |        |          |         | 267               |         |        |        |  |
| -----                     |        |        |          |         |                   |         |        |        |  |
| 7 Aroclor-1260            |        |        |          |         | CAS #: 11096-82-5 |         |        |        |  |
| 4.272                     | 4.272  | 0.000  | 653805   | 250.000 | 262               | 80.00-  | 120.00 | 100.00 |  |
| 4.465                     | 4.465  | 0.000  | 956137   | 250.000 | 263               | 126.24- | 166.24 | 146.24 |  |
| 4.738                     | 4.738  | 0.000  | 574253   | 250.000 | 260               | 67.83-  | 107.83 | 87.83  |  |
| 5.119                     | 5.119  | 0.000  | 1257202  | 250.000 | 264               | 172.29- | 212.29 | 192.29 |  |
| 5.312                     | 5.312  | 0.000  | 625858   | 250.000 | 259               | 75.73-  | 115.73 | 95.73  |  |
| Average of Peak Amounts = |        |        |          |         | 262               |         |        |        |  |
| -----                     |        |        |          |         |                   |         |        |        |  |

Data File: /chem/ecod8a.i/081711.b/012f1201.d

Date : 17-AUG-2011 13:18

Client ID: AR166002

Sample Info: IMR110817-02

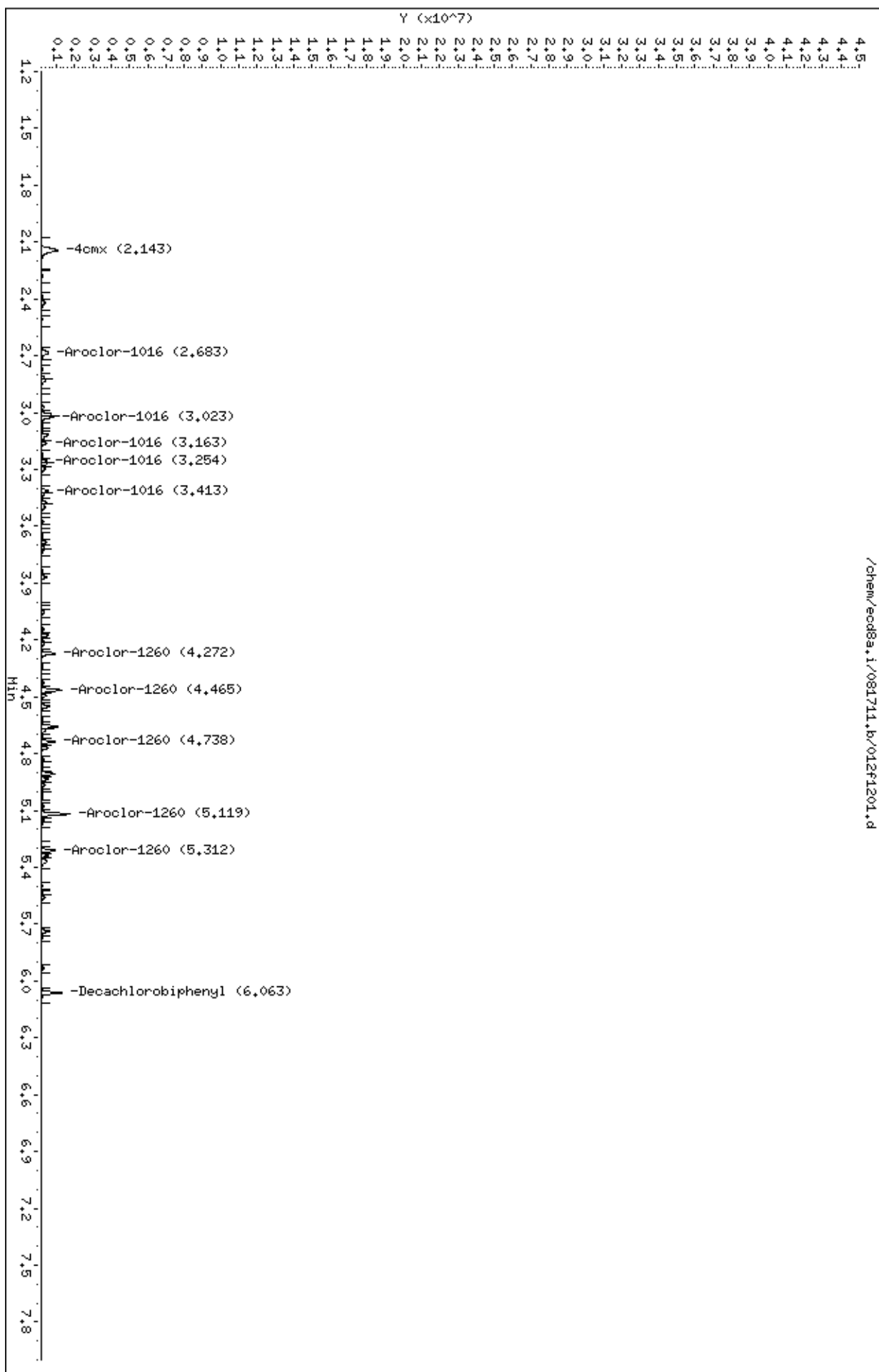
Column phase: CLP1

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25

Page 1



Data File: /chem/ecd8a.i/081711.b/012b1201.d  
Report Date: 18-Aug-2011 09:02

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/012b1201.d  
Lab Smp Id: WAR110817-02 Client Smp ID: AR166002  
Inj Date : 17-AUG-2011 13:18  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110817-02  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-B-8082-081711.m  
Meth Date : 18-Aug-2011 09:02 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 16:47 Cal File: 030b3001.d  
Als bottle: 12 Calibration Sample, Level: 2  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1660.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |  |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|--|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |  |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |  |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |  |
| 2.385                     | 2.384  | 0.001  | 2028588  | 25.0000 | 26.5              | 80.00-  | 120.00 | 100.00 |  |
| -----                     |        |        |          |         |                   |         |        |        |  |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |  |
| 6.665                     | 6.665  | 0.000  | 1003166  | 25.0000 | 26.5              | 80.00-  | 120.00 | 100.00 |  |
| -----                     |        |        |          |         |                   |         |        |        |  |
| 1 Aroclor-1016            |        |        |          |         | CAS #: 2051-24-3  |         |        |        |  |
| 3.086                     | 3.086  | 0.000  | 810017   | 250.000 | 273               | 80.00-  | 120.00 | 100.00 |  |
| 3.432                     | 3.432  | 0.000  | 871771   | 250.000 | 271               | 87.62-  | 127.62 | 107.62 |  |
| 3.528                     | 3.528  | 0.000  | 611451   | 250.000 | 269               | 55.49-  | 95.49  | 75.49  |  |
| 3.603                     | 3.603  | 0.000  | 362648   | 250.000 | 267               | 24.77-  | 64.77  | 44.77  |  |
| 3.678                     | 3.678  | 0.000  | 384251   | 250.000 | 271               | 27.44-  | 67.44  | 47.44  |  |
| Average of Peak Amounts = |        |        |          |         | 270               |         |        |        |  |
| -----                     |        |        |          |         |                   |         |        |        |  |
| 7 Aroclor-1260            |        |        |          |         | CAS #: 11096-82-5 |         |        |        |  |
| 4.772                     | 4.772  | 0.000  | 874355   | 250.000 | 267               | 80.00-  | 120.00 | 100.00 |  |
| 4.919                     | 4.919  | 0.000  | 1022816  | 250.000 | 268               | 96.98-  | 136.98 | 116.98 |  |
| 5.233                     | 5.233  | 0.000  | 750677   | 250.000 | 266               | 65.85-  | 105.85 | 85.85  |  |
| 5.610                     | 5.610  | 0.000  | 1525309  | 250.000 | 267               | 154.45- | 194.45 | 174.45 |  |
| 5.861                     | 5.861  | 0.000  | 1052531  | 250.000 | 264               | 100.38- | 140.38 | 120.38 |  |
| Average of Peak Amounts = |        |        |          |         | 267               |         |        |        |  |

Data File: /chem/ecd8a.i/081711.b/012b1201.d

Page 1

Date : 17-AUG-2011 13:18

Client ID: AR166002

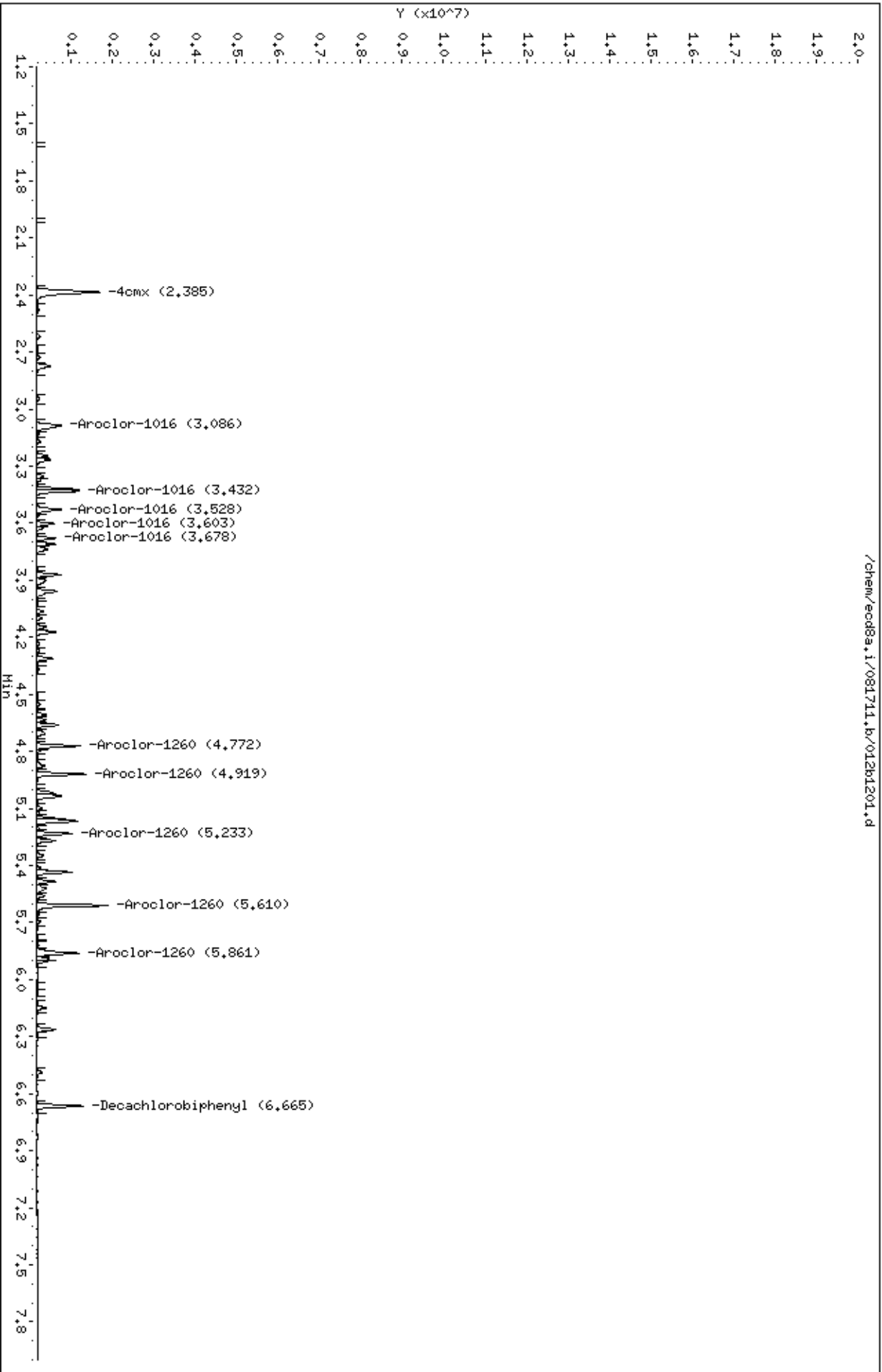
Sample Info: IMR110817-02

Instrument: ecd8a.i

Operator: YSL

Column phase: CLP2

Column diameter: 0.25





Data File: /chem/ecd8a.i/081711.b/013f1301.d  
Report Date: 18-Aug-2011 09:02

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/013f1301.d

Lab Smp Id: WAR110817-03

Client Smp ID: AR166003

Inj Date : 17-AUG-2011 13:29

Operator : YS1

Inst ID: ecd8a.i

Smp Info : |WAR110817-03

Misc Info :

Comment :

Method : /chem/ecd8a.i/081711.b/ECD8-F-8082-081711.m

Meth Date : 18-Aug-2011 09:02 yip00818

Quant Type: ESTD

Cal Date : 17-AUG-2011 16:59

Cal File: 031f3101.d

Als bottle: 13

Calibration Sample, Level: 3

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1660.sub

Target Version: 3.50

Sample Matrix: None

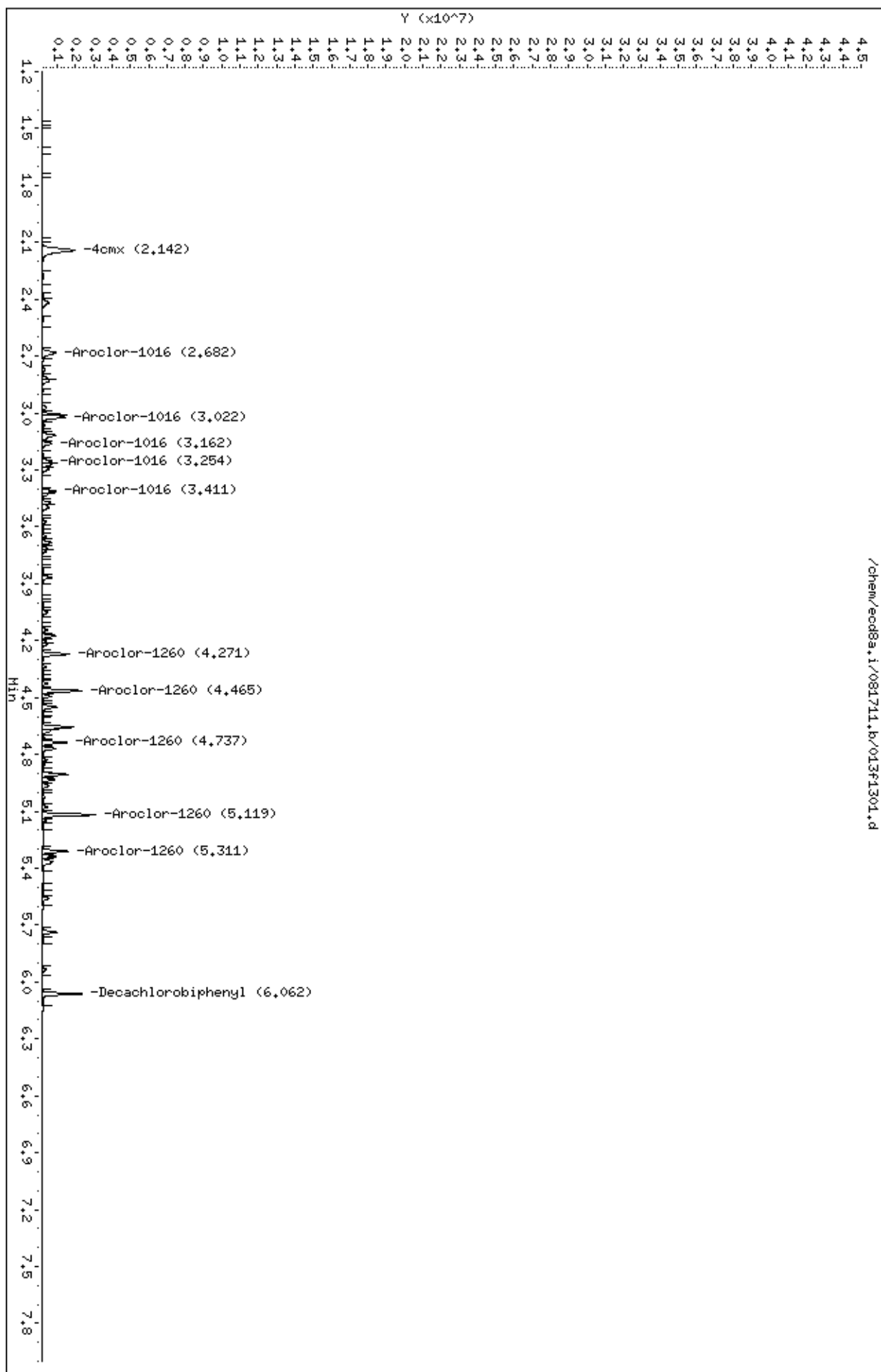
Processing Host: hpc1p1

AMOUNTS

|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.142                     | 2.143  | -0.001 | 2855930  | 50.0000 | 50.3              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.062                     | 6.062  | 0.000  | 1814685  | 50.0000 | 48.5              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 1 Aroclor-1016            |        |        |          |         | CAS #: 12674-11-2 |         |        |        |
| 2.682                     | 2.682  | 0.000  | 1000537  | 500.000 | 483               | 80.00-  | 120.00 | 100.00 |
| 3.022                     | 3.022  | 0.000  | 1222310  | 500.000 | 493               | 102.17- | 142.17 | 122.17 |
| 3.162                     | 3.162  | 0.000  | 484510   | 500.000 | 487               | 28.42-  | 68.42  | 48.42  |
| 3.254                     | 3.254  | 0.000  | 442017   | 500.000 | 480               | 24.18-  | 64.18  | 44.18  |
| 3.411                     | 3.411  | 0.000  | 634718   | 500.000 | 484               | 43.44-  | 83.44  | 63.44  |
| Average of Peak Amounts = |        |        |          |         | 485               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |
| 7 Aroclor-1260            |        |        |          |         | CAS #: 11096-82-5 |         |        |        |
| 4.271                     | 4.271  | 0.000  | 1211534  | 500.000 | 486               | 80.00-  | 120.00 | 100.00 |
| 4.465                     | 4.465  | 0.000  | 1782381  | 500.000 | 490               | 127.12- | 167.12 | 147.12 |
| 4.737                     | 4.737  | 0.000  | 1067446  | 500.000 | 484               | 68.11-  | 108.11 | 88.11  |
| 5.119                     | 5.119  | 0.000  | 2357404  | 500.000 | 494               | 174.58- | 214.58 | 194.58 |
| 5.311                     | 5.311  | 0.000  | 1167283  | 500.000 | 484               | 76.35-  | 116.35 | 96.35  |
| Average of Peak Amounts = |        |        |          |         | 488               |         |        |        |

Data File: /chem/ecod8a.i/081711.b/013f1301.d  
Date : 17-AUG-2011 13:29  
Client ID: AR166003  
Sample Info: IMR110817-03  
Column phase: CLP1

Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25



Data File: /chem/ecd8a.i/081711.b/013b1301.d  
Report Date: 18-Aug-2011 09:02

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/013b1301.d  
Lab Smp Id: WAR110817-03 Client Smp ID: AR166003  
Inj Date : 17-AUG-2011 13:29  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110817-03  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-B-8082-081711.m  
Meth Date : 18-Aug-2011 09:02 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 16:59 Cal File: 031b3101.d  
Als bottle: 13 Calibration Sample, Level: 3  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1660.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |                  |         |                   |         |              |        |       |
|---------------------------|--------|--------|------------------|---------|-------------------|---------|--------------|--------|-------|
|                           |        |        | CAL-AMT          |         | ON-COL            |         |              |        |       |
| RT                        | EXP RT | DLT RT | RESPONSE ( ug/L) |         | ( ug/L)           |         | TARGET RANGE |        | RATIO |
| ==                        | =====  | =====  | =====            | =====   | =====             | =====   | =====        | =====  | ===== |
| \$ 11 4cmx                |        |        |                  |         | CAS #: 877-09-8   |         |              |        |       |
| 2.384                     | 2.384  | 0.000  | 3836125          | 50.0000 | 50.2              | 80.00-  | 120.00       | 100.00 |       |
| -----                     |        |        |                  |         |                   |         |              |        |       |
| \$ 12 Decachlorobiphenyl  |        |        |                  |         | CAS #: 2051-24-3  |         |              |        |       |
| 6.666                     | 6.665  | 0.001  | 1823425          | 50.0000 | 48.2              | 80.00-  | 120.00       | 100.00 |       |
| -----                     |        |        |                  |         |                   |         |              |        |       |
| 1 Aroclor-1016            |        |        |                  |         | CAS #: 2051-24-3  |         |              |        |       |
| 3.085                     | 3.085  | 0.000  | 1457838          | 500.000 | 491               | 80.00-  | 120.00       | 100.00 |       |
| 3.431                     | 3.431  | 0.000  | 1604414          | 500.000 | 499               | 90.05-  | 130.05       | 110.05 |       |
| 3.528                     | 3.528  | 0.000  | 1110853          | 500.000 | 489               | 56.20-  | 96.20        | 76.20  |       |
| 3.602                     | 3.602  | 0.000  | 653582           | 500.000 | 482               | 24.83-  | 64.83        | 44.83  |       |
| 3.679                     | 3.679  | 0.000  | 681795           | 500.000 | 481               | 26.77-  | 66.77        | 46.77  |       |
| Average of Peak Amounts = |        |        |                  |         | 488               |         |              |        |       |
| -----                     |        |        |                  |         |                   |         |              |        |       |
| 7 Aroclor-1260            |        |        |                  |         | CAS #: 11096-82-5 |         |              |        |       |
| 4.771                     | 4.771  | 0.000  | 1600594          | 500.000 | 488               | 80.00-  | 120.00       | 100.00 |       |
| 4.921                     | 4.921  | 0.000  | 1872406          | 500.000 | 491               | 96.98-  | 136.98       | 116.98 |       |
| 5.232                     | 5.232  | 0.000  | 1369197          | 500.000 | 485               | 65.54-  | 105.54       | 85.54  |       |
| 5.611                     | 5.611  | 0.000  | 2813779          | 500.000 | 493               | 155.80- | 195.80       | 175.80 |       |
| 5.862                     | 5.862  | 0.000  | 1932282          | 500.000 | 486               | 100.72- | 140.72       | 120.72 |       |
| Average of Peak Amounts = |        |        |                  |         | 489               |         |              |        |       |

Data File: /chem/ecd8a.i/081711.b/013b1301.d

Date : 17-AUG-2011 13:29

Client ID: AR166003

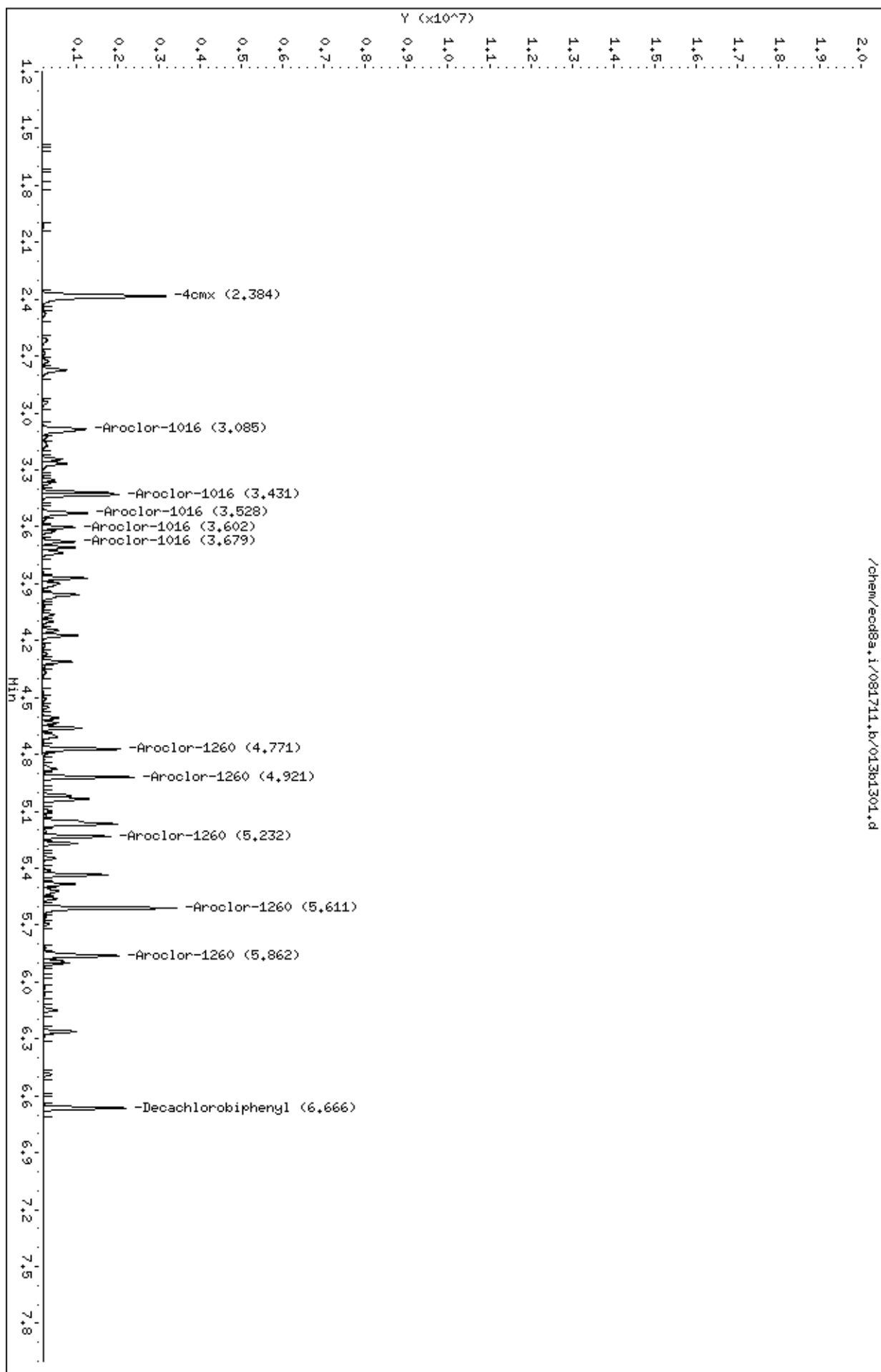
Sample Info: IMR110817-03

Column phase: CLP2

Instrument: ecd8a.i

Operator: YSL

Column diameter: 0.25



Data File: /chem/ecd8a.i/081711.b/014f1401.d  
Report Date: 18-Aug-2011 09:02

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/014f1401.d

Lab Smp Id: WAR110817-04

Client Smp ID: AR166004

Inj Date : 17-AUG-2011 13:41

Operator : YS1

Inst ID: ecd8a.i

Smp Info : |WAR110817-04

Misc Info :

Comment :

Method : /chem/ecd8a.i/081711.b/ECD8-F-8082-081711.m

Meth Date : 18-Aug-2011 09:02 yip00818

Quant Type: ESTD

Cal Date : 17-AUG-2011 12:55

Cal File: 010f1001.d

Als bottle: 14

Calibration Sample, Level: 4

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1660.sub

Target Version: 3.50

Sample Matrix: None

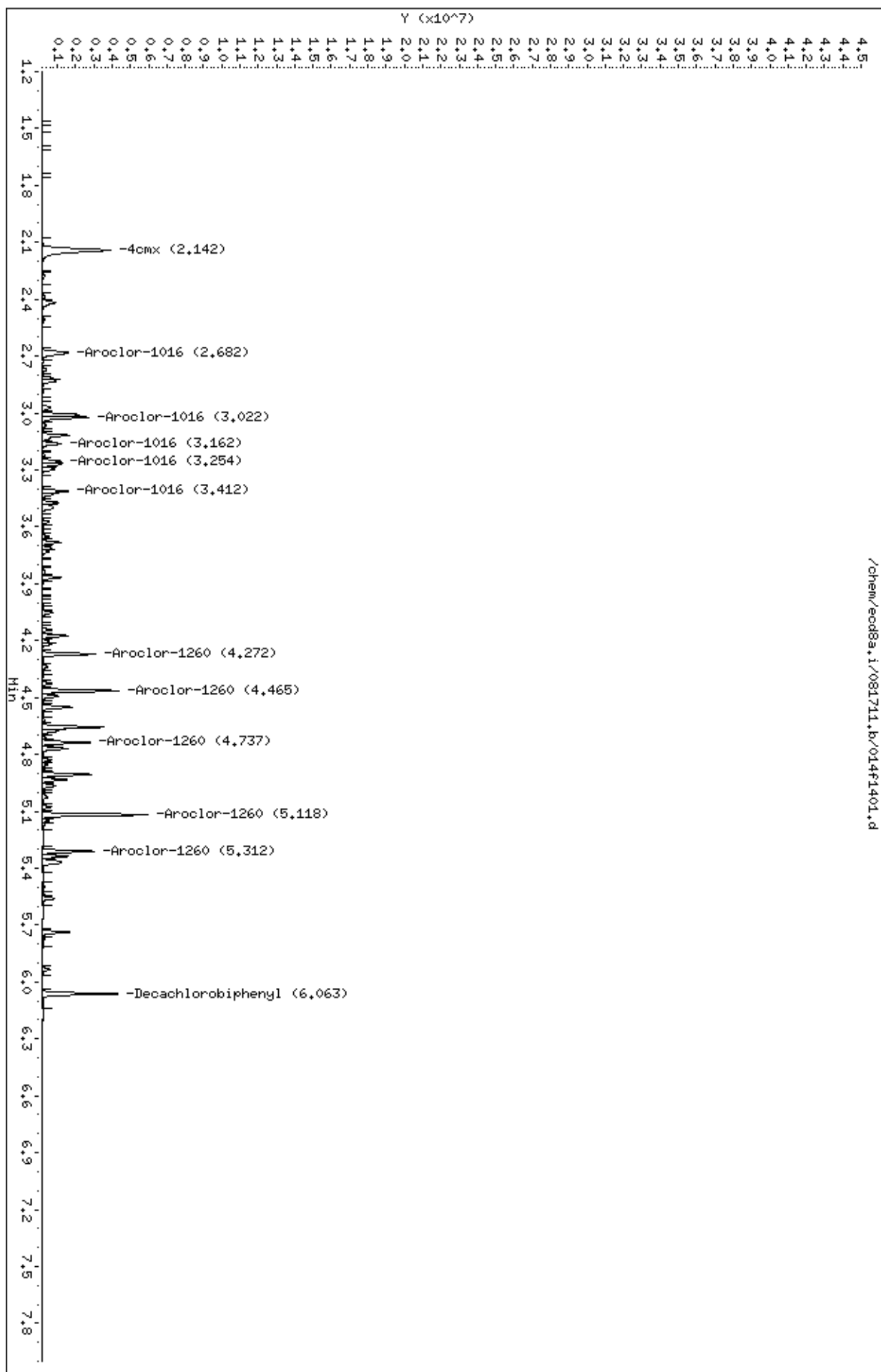
Processing Host: hpclp1

AMOUNTS

|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.142                     | 2.143  | -0.001 | 5595205  | 100.000 | 98.5              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.063                     | 6.062  | 0.001  | 3577221  | 100.000 | 95.5              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 1 Aroclor-1016            |        |        |          |         | CAS #: 12674-11-2 |         |        |        |
| 2.682                     | 2.682  | 0.000  | 1962264  | 1000.00 | 948               | 80.00-  | 120.00 | 100.00 |
| 3.022                     | 3.022  | 0.000  | 2389684  | 1000.00 | 963               | 101.78- | 141.78 | 121.78 |
| 3.162                     | 3.162  | 0.000  | 935731   | 1000.00 | 941               | 27.69-  | 67.69  | 47.69  |
| 3.254                     | 3.254  | 0.000  | 840057   | 1000.00 | 912               | 22.81-  | 62.81  | 42.81  |
| 3.412                     | 3.412  | 0.000  | 1226553  | 1000.00 | 935               | 42.51-  | 82.51  | 62.51  |
| Average of Peak Amounts = |        |        |          |         | 940               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |
| 7 Aroclor-1260            |        |        |          |         | CAS #: 11096-82-5 |         |        |        |
| 4.272                     | 4.272  | 0.000  | 2394728  | 1000.00 | 961               | 80.00-  | 120.00 | 100.00 |
| 4.465                     | 4.465  | 0.000  | 3493120  | 1000.00 | 961               | 125.87- | 165.87 | 145.87 |
| 4.737                     | 4.737  | 0.000  | 2101913  | 1000.00 | 953               | 67.77-  | 107.77 | 87.77  |
| 5.118                     | 5.118  | 0.000  | 4598258  | 1000.00 | 964               | 172.02- | 212.02 | 192.02 |
| 5.312                     | 5.312  | 0.000  | 2314147  | 1000.00 | 959               | 76.64-  | 116.64 | 96.64  |
| Average of Peak Amounts = |        |        |          |         | 960               |         |        |        |

Data File: /chem/ecod8a.i/081711.b/014f1401.d  
Date : 17-AUG-2011 13:41  
Client ID: AR166004  
Sample Info: IMR110817-04  
Column phase: CLP1

Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25



Data File: /chem/ecd8a.i/081711.b/014b1401.d  
Report Date: 18-Aug-2011 09:02

Page 1

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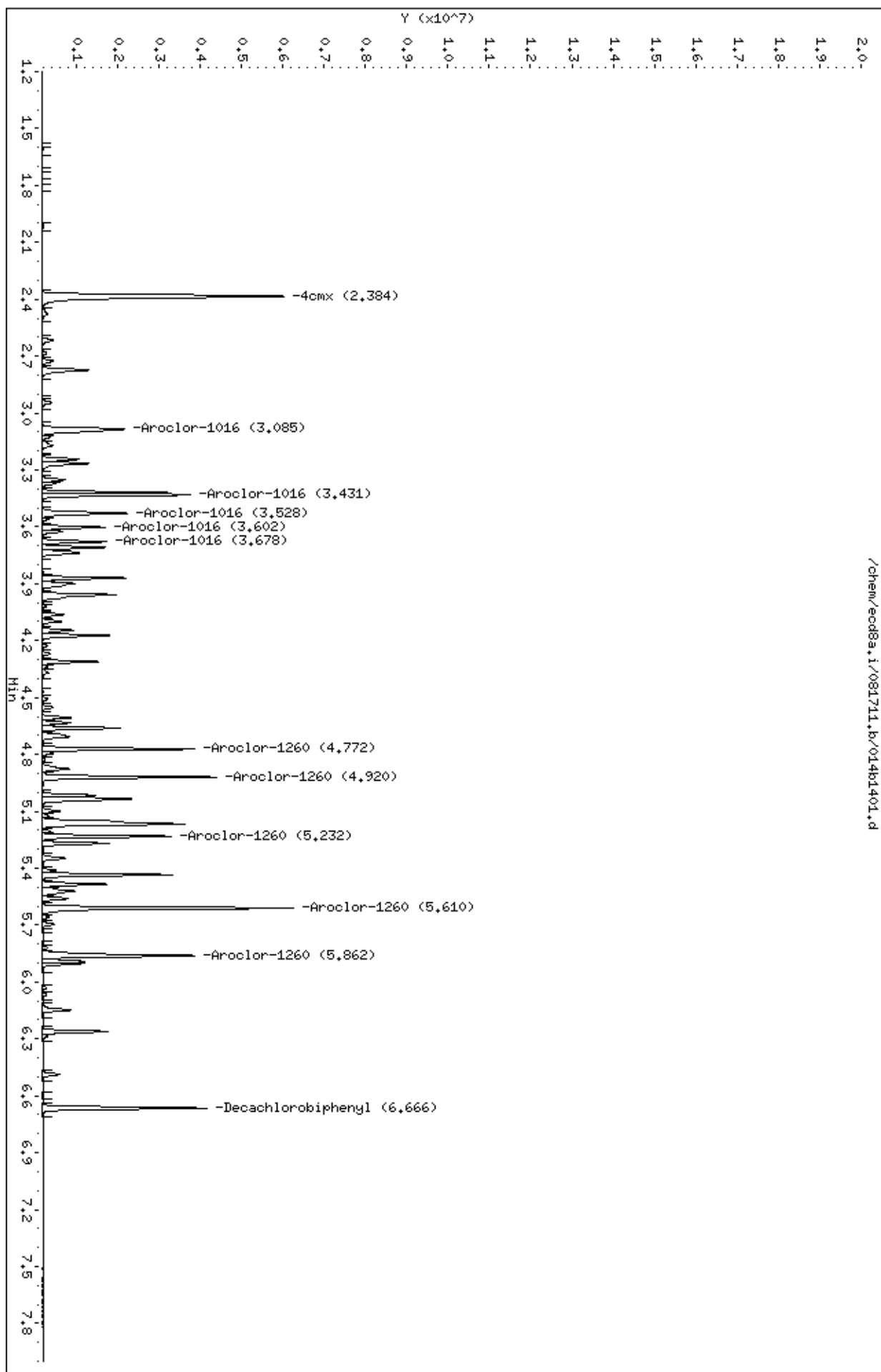
RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/014b1401.d  
Lab Smp Id: WAR110817-04 Client Smp ID: AR166004  
Inj Date : 17-AUG-2011 13:41  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110817-04  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-B-8082-081711.m  
Meth Date : 18-Aug-2011 09:02 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 12:55 Cal File: 010b1001.d  
Als bottle: 14 Calibration Sample, Level: 4  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1660.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
|                           |        |        |          |         |                   |         |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.384                     | 2.384  | 0.000  | 7434569  | 100.000 | 97.2              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.666                     | 6.665  | 0.001  | 3486606  | 100.000 | 92.1              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 1 Aroclor-1016            |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 3.085                     | 3.085  | 0.000  | 2695061  | 1000.00 | 907               | 80.00-  | 120.00 | 100.00 |
| 3.431                     | 3.431  | 0.000  | 3023976  | 1000.00 | 941               | 92.20-  | 132.20 | 112.20 |
| 3.528                     | 3.528  | 0.000  | 2084255  | 1000.00 | 918               | 57.34-  | 97.34  | 77.34  |
| 3.602                     | 3.602  | 0.000  | 1248142  | 1000.00 | 920               | 26.31-  | 66.31  | 46.31  |
| 3.678                     | 3.678  | 0.000  | 1271274  | 1000.00 | 896               | 27.17-  | 67.17  | 47.17  |
| Average of Peak Amounts = |        |        |          |         | 916               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |
| 7 Aroclor-1260            |        |        |          |         | CAS #: 11096-82-5 |         |        |        |
| 4.772                     | 4.772  | 0.000  | 3056281  | 1000.00 | 932               | 80.00-  | 120.00 | 100.00 |
| 4.920                     | 4.920  | 0.000  | 3556674  | 1000.00 | 933               | 96.37-  | 136.37 | 116.37 |
| 5.232                     | 5.232  | 0.000  | 2619725  | 1000.00 | 928               | 65.72-  | 105.72 | 85.72  |
| 5.610                     | 5.610  | 0.000  | 5385729  | 1000.00 | 943               | 156.22- | 196.22 | 176.22 |
| 5.862                     | 5.862  | 0.000  | 3710129  | 1000.00 | 932               | 101.39- | 141.39 | 121.39 |
| Average of Peak Amounts = |        |        |          |         | 934               |         |        |        |

Data File: /chem/ecd8a.i/081711.b/014b1401.d  
Date : 17-AUG-2011 13:41  
Client ID: AR166004  
Sample Info: IMR110817-04  
Column phase: CLP2

Instrument: ecd8a.i  
Operator: YSL  
Column diameter: 0.25





Data File: /chem/ecd8a.i/081711.b/015f1501.d  
Report Date: 18-Aug-2011 09:03

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/015f1501.d

Lab Smp Id: IAR110815-01

Client Smp ID: AR166005

Inj Date : 17-AUG-2011 13:53

Operator : YS1

Inst ID: ecd8a.i

Smp Info : |IAR110815-01

Misc Info :

Comment :

Method : /chem/ecd8a.i/081711.b/ECD8-F-8082-081711.m

Meth Date : 18-Aug-2011 09:03 yip00818

Quant Type: ESTD

Cal Date : 17-AUG-2011 17:22

Cal File: 033f3301.d

Als bottle: 15

Calibration Sample, Level: 5

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1660.sub

Target Version: 3.50

Sample Matrix: None

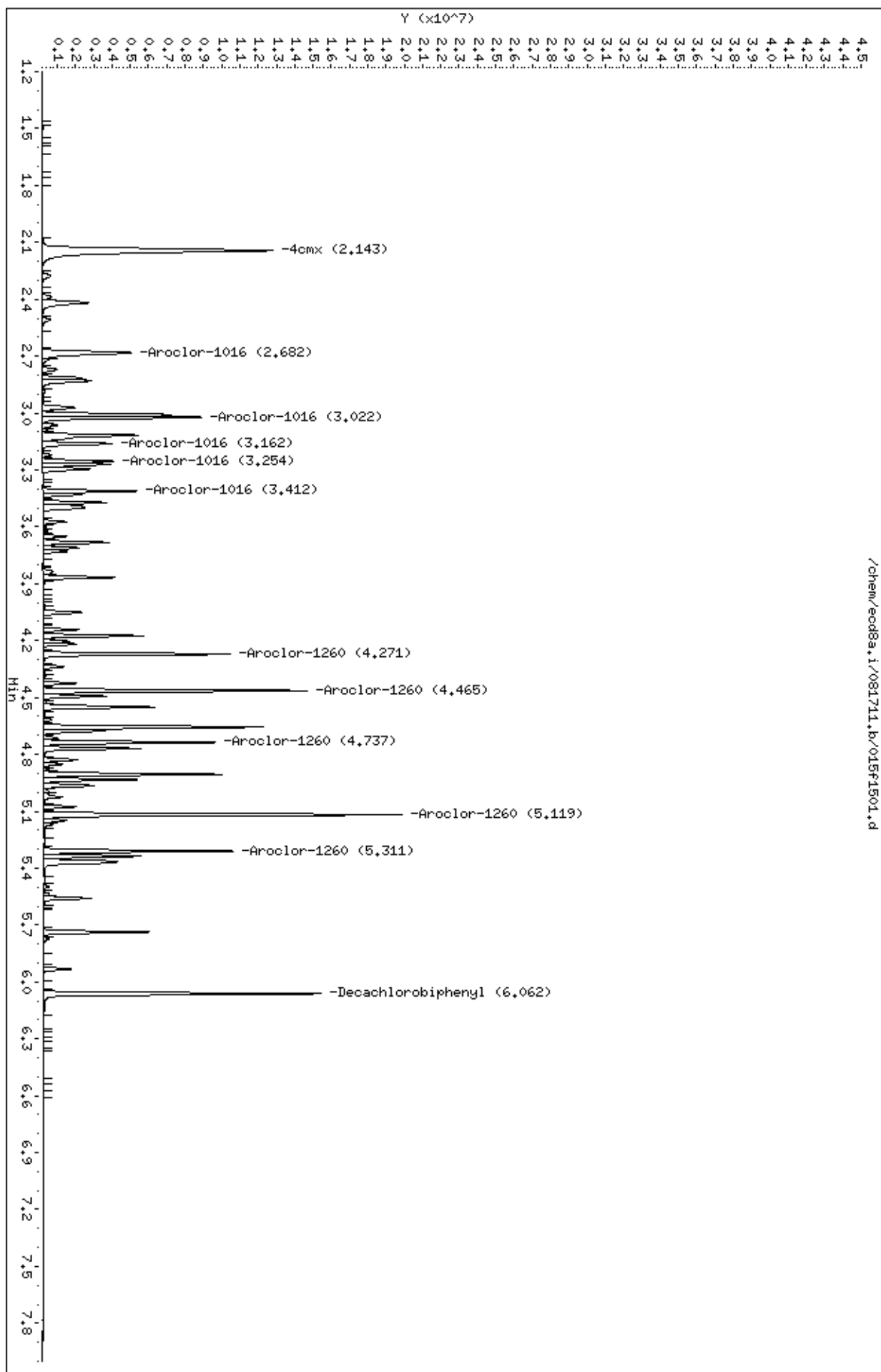
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |  |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|--|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |  |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |  |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |  |
| 2.143                     | 2.143  | 0.000  | 20139265 | 400.000 | 354               | 80.00-  | 120.00 | 100.00 |  |
| -----                     |        |        |          |         |                   |         |        |        |  |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |  |
| 6.062                     | 6.062  | 0.000  | 13321457 | 400.000 | 356               | 80.00-  | 120.00 | 100.00 |  |
| -----                     |        |        |          |         |                   |         |        |        |  |
| 1 Aroclor-1016            |        |        |          |         | CAS #: 12674-11-2 |         |        |        |  |
| 2.682                     | 2.682  | 0.000  | 6779040  | 4000.00 | 3270              | 80.00-  | 120.00 | 100.00 |  |
| 3.022                     | 3.022  | 0.000  | 8355774  | 4000.00 | 3370              | 103.26- | 143.26 | 123.26 |  |
| 3.162                     | 3.162  | 0.000  | 3541249  | 4000.00 | 3560              | 32.24-  | 72.24  | 52.24  |  |
| 3.254                     | 3.254  | 0.000  | 3088795  | 4000.00 | 3350              | 25.56-  | 65.56  | 45.56  |  |
| 3.412                     | 3.412  | 0.000  | 4507318  | 4000.00 | 3440              | 46.49-  | 86.49  | 66.49  |  |
| Average of Peak Amounts = |        |        |          |         | 3.4e+03           |         |        |        |  |
| -----                     |        |        |          |         |                   |         |        |        |  |
| 7 Aroclor-1260            |        |        |          |         | CAS #: 11096-82-5 |         |        |        |  |
| 4.271                     | 4.271  | 0.000  | 8707317  | 4000.00 | 3490              | 80.00-  | 120.00 | 100.00 |  |
| 4.465                     | 4.465  | 0.000  | 12459705 | 4000.00 | 3430              | 123.09- | 163.09 | 143.09 |  |
| 4.737                     | 4.737  | 0.000  | 7800288  | 4000.00 | 3540              | 69.58-  | 109.58 | 89.58  |  |
| 5.119                     | 5.119  | 0.000  | 16439567 | 4000.00 | 3450              | 168.80- | 208.80 | 188.80 |  |
| 5.311                     | 5.311  | 0.000  | 8649562  | 4000.00 | 3580              | 79.34-  | 119.34 | 99.34  |  |
| Average of Peak Amounts = |        |        |          |         | 3.5e+03           |         |        |        |  |

Data File: /chem/ecd8a.i/081711.b/015f1501.d  
Date : 17-AUG-2011 13:53  
Client ID: AR166005  
Sample Info: IIR110815-01

Column phase: CLP1

Instrument: ecd8a.i  
Operator: YSL  
Column diameter: 0.25



Data File: /chem/ecd8a.i/081711.b/015b1501.d  
Report Date: 18-Aug-2011 09:03

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

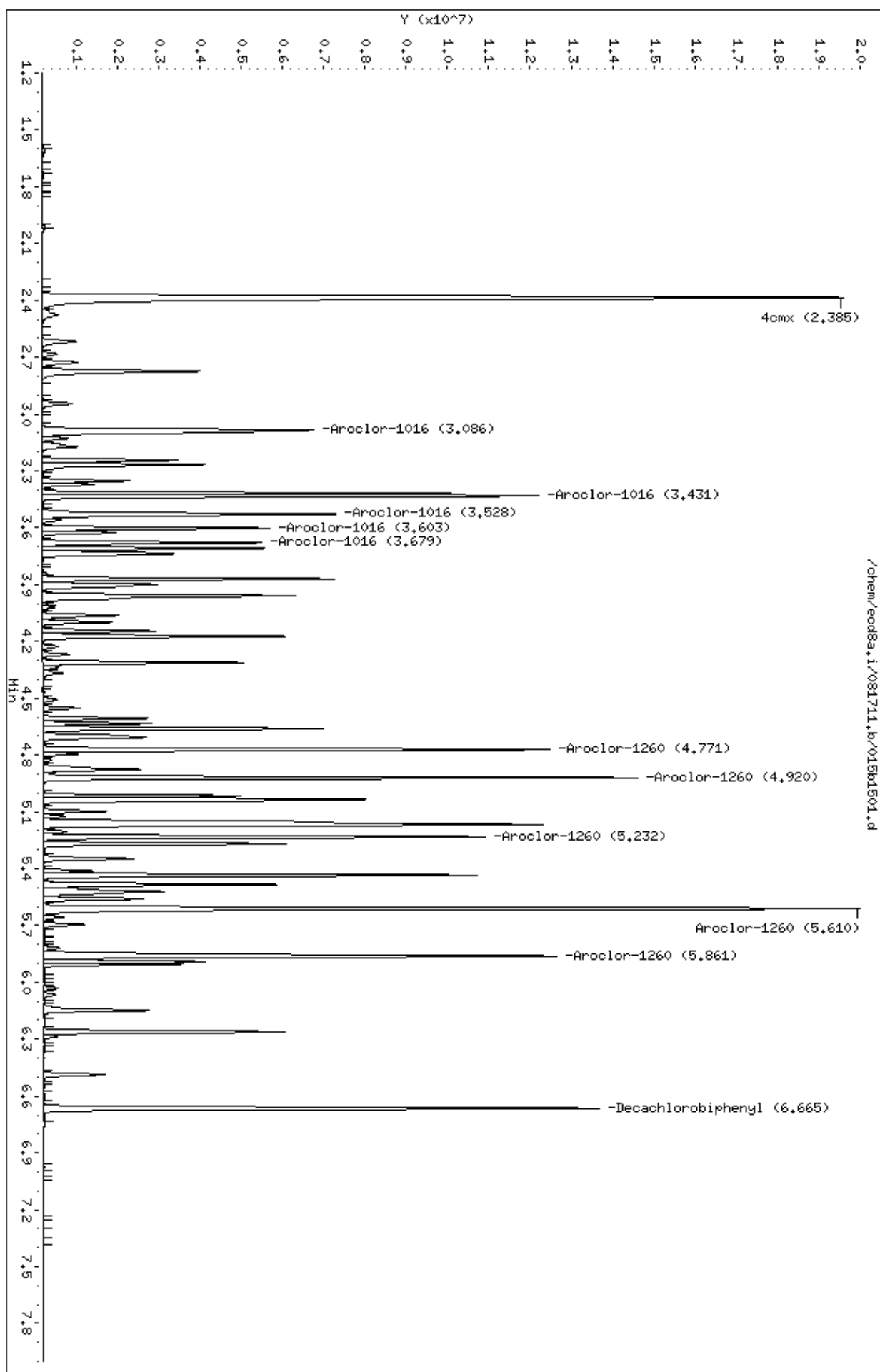
Data file : /chem/ecd8a.i/081711.b/015b1501.d  
Lab Smp Id: IAR110815-01 Client Smp ID: AR166005  
Inj Date : 17-AUG-2011 13:53  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |IAR110815-01  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-B-8082-081711.m  
Meth Date : 18-Aug-2011 09:03 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033b3301.d  
Als bottle: 15 Calibration Sample, Level: 5  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1660.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.385                     | 2.384  | 0.001  | 26023363 | 400.000 | 340               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.665                     | 6.665  | 0.000  | 12425418 | 400.000 | 328               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 1 Aroclor-1016            |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 3.086                     | 3.086  | 0.000  | 9172684  | 4000.00 | 3090              | 80.00-  | 120.00 | 100.00 |
| 3.431                     | 3.431  | 0.000  | 10761681 | 4000.00 | 3350              | 97.32-  | 137.32 | 117.32 |
| 3.528                     | 3.528  | 0.000  | 7289552  | 4000.00 | 3210              | 59.47-  | 99.47  | 79.47  |
| 3.603                     | 3.603  | 0.000  | 4577770  | 4000.00 | 3370              | 29.91-  | 69.91  | 49.91  |
| 3.679                     | 3.679  | 0.000  | 4510201  | 4000.00 | 3180              | 29.17-  | 69.17  | 49.17  |
| Average of Peak Amounts = |        |        |          |         | 3.24e+03          |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |
| 7 Aroclor-1260            |        |        |          |         | CAS #: 11096-82-5 |         |        |        |
| 4.771                     | 4.771  | 0.000  | 10596333 | 4000.00 | 3230              | 80.00-  | 120.00 | 100.00 |
| 4.920                     | 4.920  | 0.000  | 12243827 | 4000.00 | 3210              | 95.55-  | 135.55 | 115.55 |
| 5.232                     | 5.232  | 0.000  | 9290374  | 4000.00 | 3290              | 67.68-  | 107.68 | 87.68  |
| 5.610                     | 5.610  | 0.000  | 18673630 | 4000.00 | 3270              | 156.23- | 196.23 | 176.23 |
| 5.861                     | 5.861  | 0.000  | 13359135 | 4000.00 | 3360              | 106.07- | 146.07 | 126.07 |
| Average of Peak Amounts = |        |        |          |         | 3.27e+03          |         |        |        |

Data File: /chem/ecd8a.i/081711.b/015b1501.d  
Date : 17-AUG-2011 13:53  
Client ID: AR166005  
Sample Info: IIR110815-01

Column phase: CLP2

Instrument: ecd8a.i  
Operator: YSL  
Column diameter: 0.25



Data File: /chem/ecd8a.i/081711.b/017f1701.d  
Report Date: 18-Aug-2011 09:03

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/017f1701.d  
Lab Smp Id: WAR110815-05 Client Smp ID: AR125401  
Inj Date : 17-AUG-2011 14:16  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110815-05  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-F-8082-081711.m  
Meth Date : 18-Aug-2011 09:03 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 16:36 Cal File: 029f2901.d  
Als bottle: 17 Calibration Sample, Level: 1  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1254.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.142                     | 2.143  | -0.001 | 564857   | 10.0000 | 9.9               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.063                     | 6.062  | 0.001  | 391979   | 10.0000 | 10.5              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 6 Aroclor-1254            |        |        |          |         | CAS #: 11097-69-1 |         |        |        |
| 3.683                     | 3.683  | 0.000  | 192750   | 100.000 | 113               | 80.00-  | 120.00 | 100.00 |
| 3.867                     | 3.867  | 0.000  | 250496   | 100.000 | 112               | 109.96- | 149.96 | 129.96 |
| 4.143                     | 4.143  | 0.000  | 313682   | 100.000 | 110               | 142.74- | 182.74 | 162.74 |
| 4.337                     | 4.337  | 0.000  | 238371   | 100.000 | 111               | 103.67- | 143.67 | 123.67 |
| 4.466                     | 4.466  | 0.000  | 238223   | 100.000 | 115               | 103.59- | 143.59 | 123.59 |
| Average of Peak Amounts = |        |        |          |         | 112               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecod8a.i/081711.b/017f1701.d

Date : 17-AUG-2011 14:16

Client ID: AR125401

Sample Info: IMR110815-05

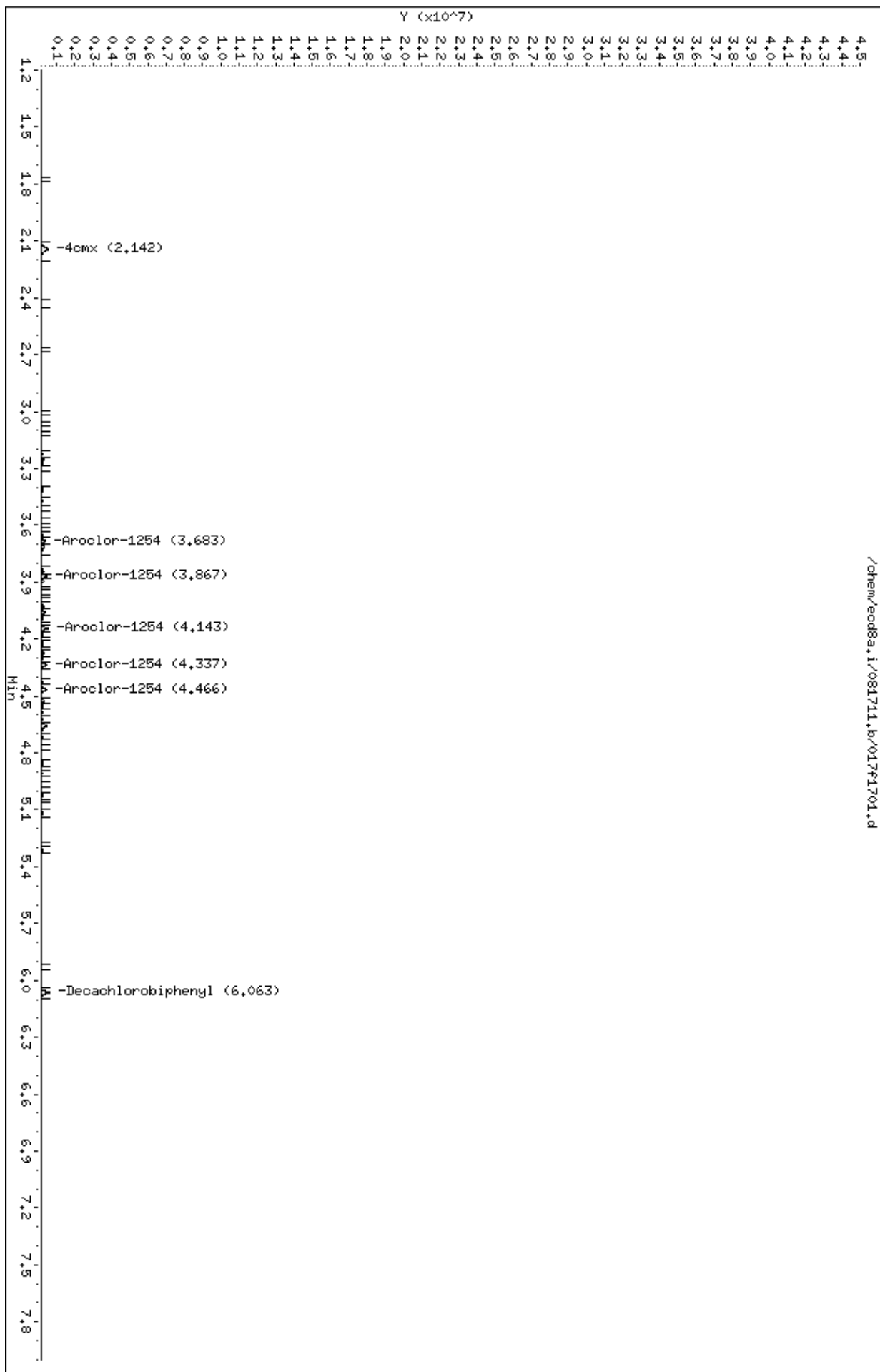
Column phase: CLP1

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25

Page 1



Data File: /chem/ecd8a.i/081711.b/017b1701.d  
Report Date: 18-Aug-2011 09:03

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/017b1701.d  
Lab Smp Id: WAR110815-05 Client Smp ID: AR125401  
Inj Date : 17-AUG-2011 14:16  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110815-05  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-B-8082-081711.m  
Meth Date : 18-Aug-2011 09:03 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 16:36 Cal File: 029b2901.d  
Als bottle: 17 Calibration Sample, Level: 1  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1254.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.385                     | 2.384  | 0.001  | 795824   | 10.0000 | 10.4              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.665                     | 6.665  | 0.000  | 426093   | 10.0000 | 11.3              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 6 Aroclor-1254            |        |        |          |         | CAS #: 11097-69-1 |         |        |        |
| 4.173                     | 4.173  | 0.000  | 311756   | 100.000 | 118               | 80.00-  | 120.00 | 100.00 |
| 4.312                     | 4.312  | 0.000  | 338654   | 100.000 | 118               | 88.63-  | 128.63 | 108.63 |
| 4.634                     | 4.634  | 0.000  | 434346   | 100.000 | 115               | 119.32- | 159.32 | 139.32 |
| 4.795                     | 4.795  | 0.000  | 307818   | 100.000 | 116               | 78.74-  | 118.74 | 98.74  |
| 4.921                     | 4.921  | 0.000  | 209071   | 100.000 | 120               | 47.06-  | 87.06  | 67.06  |
| Average of Peak Amounts = |        |        |          |         | 117               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecod8a.i/081711.b/017b1701.d

Date : 17-AUG-2011 14:16

Client ID: AR125401

Sample Info: IMR110815-05

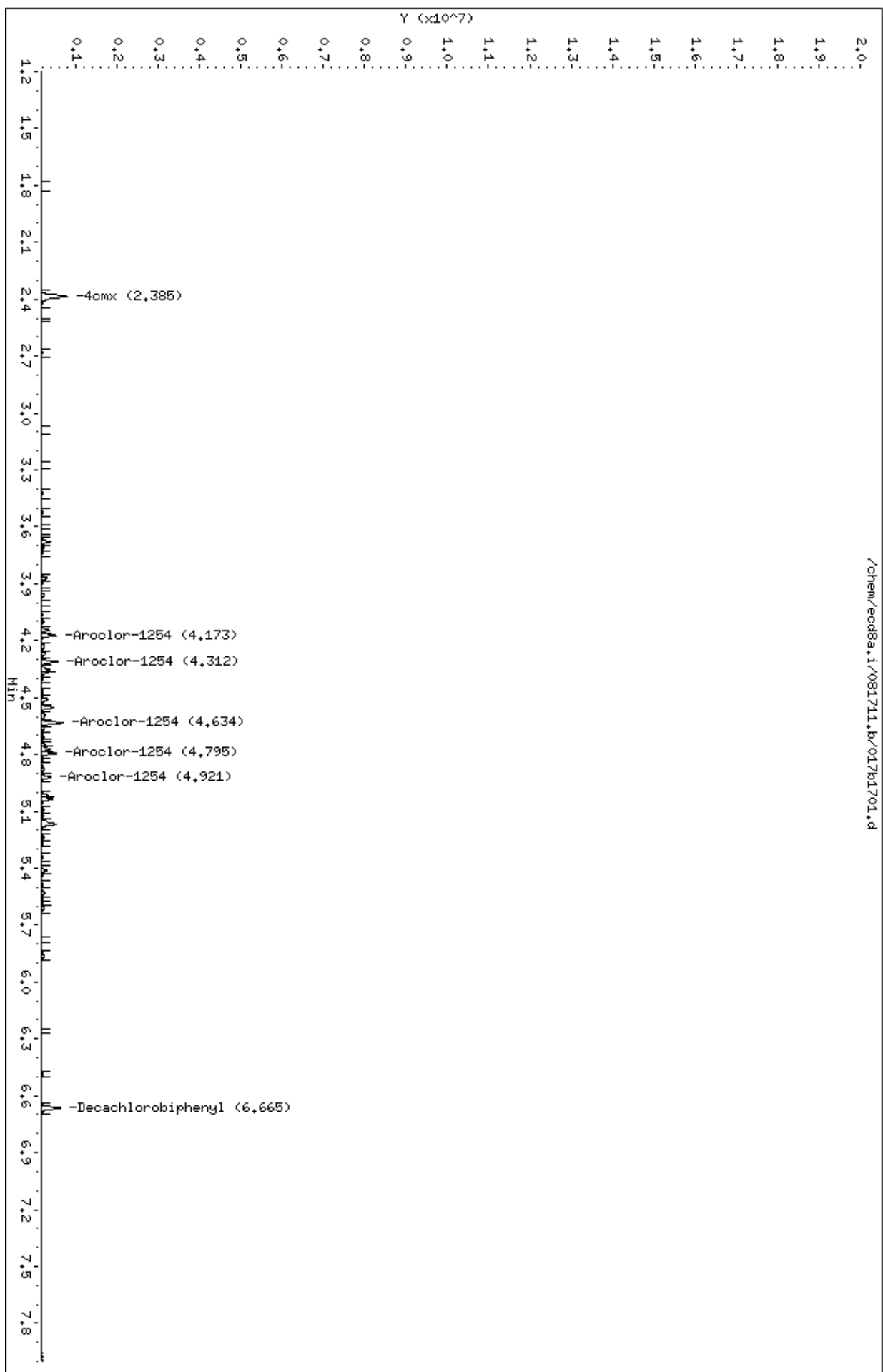
Column phase: CLP2

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25

Page 1





Data File: /chem/ecd8a.i/081711.b/018f1801.d  
Report Date: 18-Aug-2011 09:03

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/018f1801.d

Lab Smp Id: WAR110817-06

Client Smp ID: AR125402

Inj Date : 17-AUG-2011 14:28

Operator : YS1

Inst ID: ecd8a.i

Smp Info : |WAR110817-06

Misc Info :

Comment :

Method : /chem/ecd8a.i/081711.b/ECD8-F-8082-081711.m

Meth Date : 18-Aug-2011 09:03 yip00818

Quant Type: ESTD

Cal Date : 17-AUG-2011 16:47

Cal File: 030f3001.d

Als bottle: 18

Calibration Sample, Level: 2

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1254.sub

Target Version: 3.50

Sample Matrix: None

Processing Host: hpclp1

AMOUNTS

|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.141                     | 2.143  | -0.002 | 1367901  | 25.0000 | 24.1              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.063                     | 6.062  | 0.001  | 885899   | 25.0000 | 23.6              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 6 Aroclor-1254            |        |        |          |         | CAS #: 11097-69-1 |         |        |        |
| 3.683                     | 3.683  | 0.000  | 437269   | 250.000 | 257               | 80.00-  | 120.00 | 100.00 |
| 3.867                     | 3.867  | 0.000  | 576035   | 250.000 | 257               | 111.73- | 151.73 | 131.73 |
| 4.144                     | 4.144  | 0.000  | 727205   | 250.000 | 256               | 146.31- | 186.31 | 166.31 |
| 4.336                     | 4.336  | 0.000  | 545884   | 250.000 | 254               | 104.84- | 144.84 | 124.84 |
| 4.466                     | 4.466  | 0.000  | 537261   | 250.000 | 260               | 102.87- | 142.87 | 122.87 |
| Average of Peak Amounts = |        |        |          |         | 257               |         |        |        |

Data File: /chem/ecod8a.i/081711.b/018f1801.d

Date : 17-JUN-2011 14:28

Client ID: AR125402

Sample Info: IMR110817-06

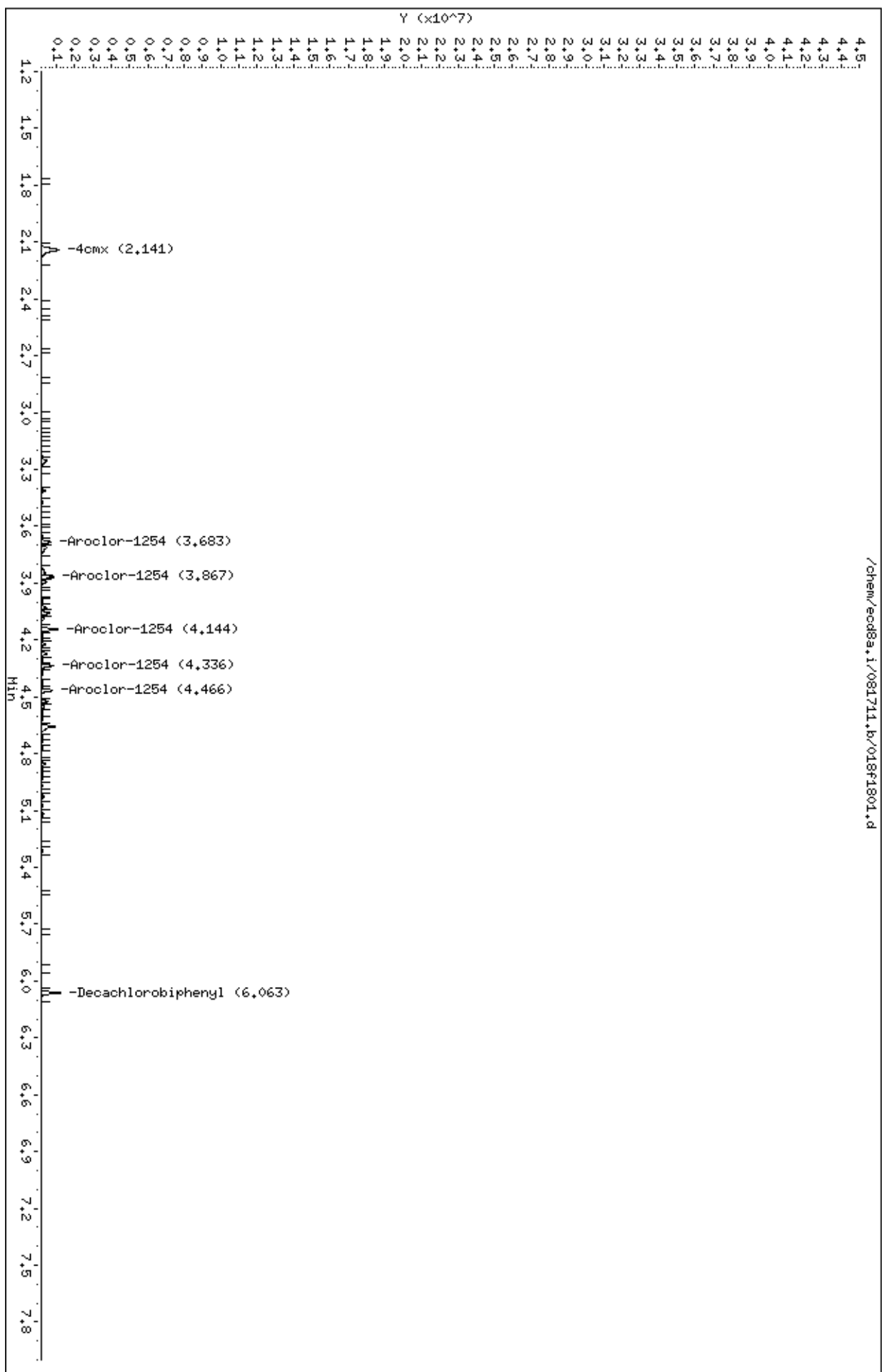
Column phase: CLP1

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25

Page 1



Data File: /chem/ecd8a.i/081711.b/018b1801.d  
Report Date: 18-Aug-2011 09:03

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/018b1801.d  
Lab Smp Id: WAR110817-06 Client Smp ID: AR125402  
Inj Date : 17-AUG-2011 14:28  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110817-06  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-B-8082-081711.m  
Meth Date : 18-Aug-2011 09:03 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 16:47 Cal File: 030b3001.d  
Als bottle: 18 Calibration Sample, Level: 2  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1254.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.384                     | 2.384  | 0.000  | 1893012  | 25.0000 | 24.8              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.665                     | 6.665  | 0.000  | 927853   | 25.0000 | 24.5              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 6 Aroclor-1254            |        |        |          |         | CAS #: 11097-69-1 |         |        |        |
| 4.173                     | 4.173  | 0.000  | 687978   | 250.000 | 262               | 80.00-  | 120.00 | 100.00 |
| 4.311                     | 4.311  | 0.000  | 755384   | 250.000 | 263               | 89.80-  | 129.80 | 109.80 |
| 4.634                     | 4.634  | 0.000  | 986207   | 250.000 | 261               | 123.35- | 163.35 | 143.35 |
| 4.795                     | 4.795  | 0.000  | 690081   | 250.000 | 260               | 80.31-  | 120.31 | 100.31 |
| 4.920                     | 4.920  | 0.000  | 457034   | 250.000 | 262               | 46.43-  | 86.43  | 66.43  |
| Average of Peak Amounts = |        |        |          |         | 262               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecod8a.i/081711.b/018b1801.d

Date : 17-AUG-2011 14:28

Client ID: AR125402

Sample Info: IMR110817-06

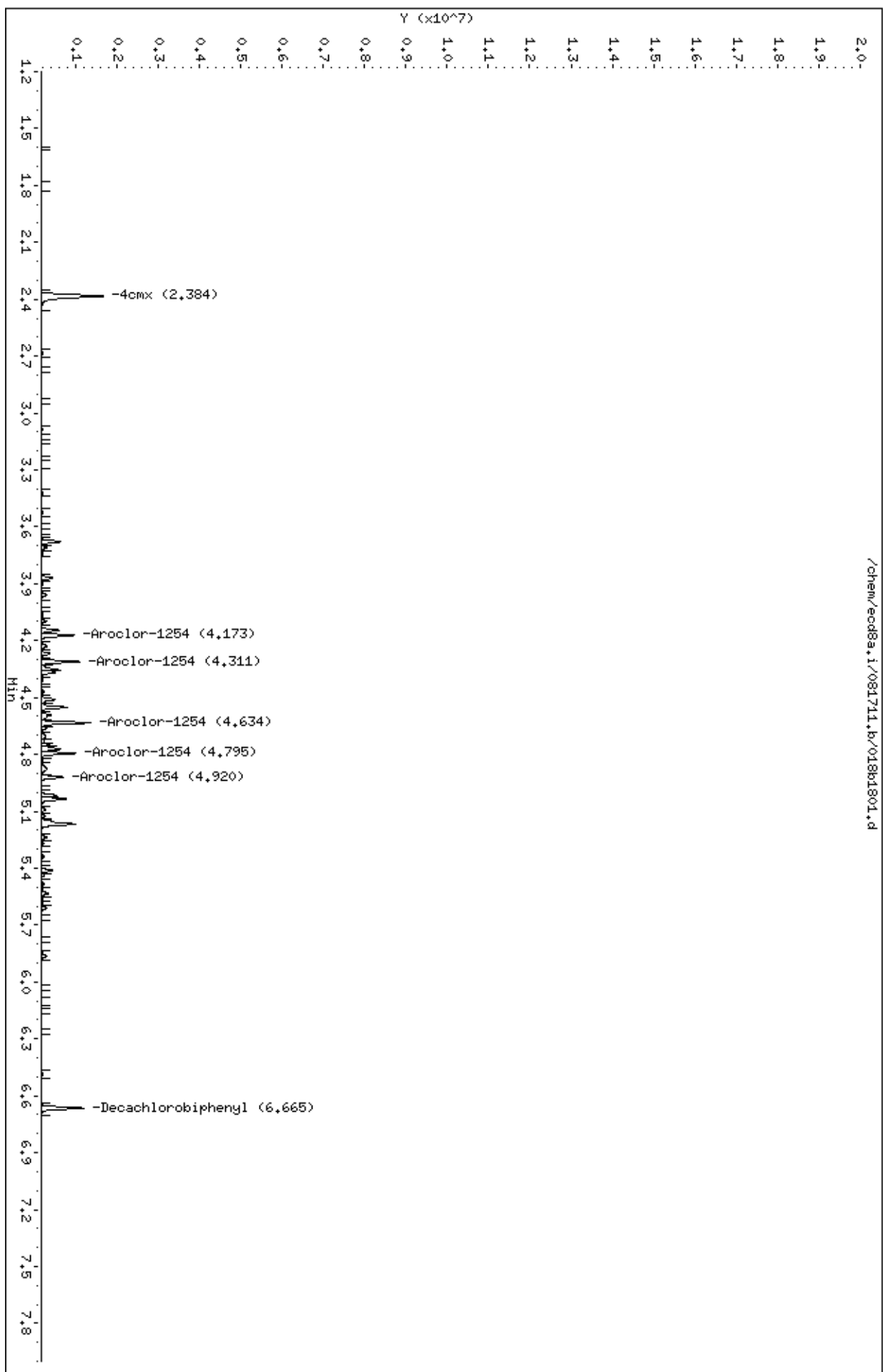
Column phase: CLP2

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25

Page 1



Data File: /chem/ecd8a.i/081711.b/019f1901.d  
Report Date: 18-Aug-2011 09:03

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/019f1901.d

Lab Smp Id: WAR110817-07 Client Smp ID: AR125403

Inj Date : 17-AUG-2011 14:39

Operator : YS1 Inst ID: ecd8a.i

Smp Info : |WAR110817-07

Misc Info :

Comment :

Method : /chem/ecd8a.i/081711.b/ECD8-F-8082-081711.m

Meth Date : 18-Aug-2011 09:03 yip00818 Quant Type: ESTD

Cal Date : 17-AUG-2011 16:59 Cal File: 031f3101.d

Als bottle: 19 Calibration Sample, Level: 3

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1254.sub

Target Version: 3.50

Sample Matrix: None

Processing Host: hpclp1

AMOUNTS

| RT                        | EXP RT | DLT RT | CAL-AMT<br>RESPONSE ( ug/L) | ON-COL<br>( ug/L) | TARGET RANGE      | RATIO  |
|---------------------------|--------|--------|-----------------------------|-------------------|-------------------|--------|
| ==                        | =====  | =====  | =====                       | =====             | =====             | =====  |
| \$ 11 4cmx                |        |        |                             |                   | CAS #: 877-09-8   |        |
| 2.142                     | 2.143  | -0.001 | 2785192 50.0000             | 49.0              | 80.00- 120.00     | 100.00 |
| -----                     |        |        |                             |                   |                   |        |
| \$ 12 Decachlorobiphenyl  |        |        |                             |                   | CAS #: 2051-24-3  |        |
| 6.062                     | 6.062  | 0.000  | 1817594 50.0000             | 48.5              | 80.00- 120.00     | 100.00 |
| -----                     |        |        |                             |                   |                   |        |
| 6 Aroclor-1254            |        |        |                             |                   | CAS #: 11097-69-1 |        |
| 3.682                     | 3.682  | 0.000  | 868773 500.000              | 510               | 80.00- 120.00     | 100.00 |
| 3.867                     | 3.867  | 0.000  | 1147522 500.000             | 513               | 112.09- 152.09    | 132.09 |
| 4.143                     | 4.143  | 0.000  | 1475552 500.000             | 519               | 149.84- 189.84    | 169.84 |
| 4.336                     | 4.336  | 0.000  | 1107267 500.000             | 515               | 107.45- 147.45    | 127.45 |
| 4.466                     | 4.466  | 0.000  | 1041973 500.000             | 504               | 99.94- 139.94     | 119.94 |
| Average of Peak Amounts = |        |        |                             | 512               |                   |        |
| -----                     |        |        |                             |                   |                   |        |

Data File: /chem/ecod8a.i/081711.b/019f1901.d

Date : 17-AUG-2011 14:39

Client ID: AR125403

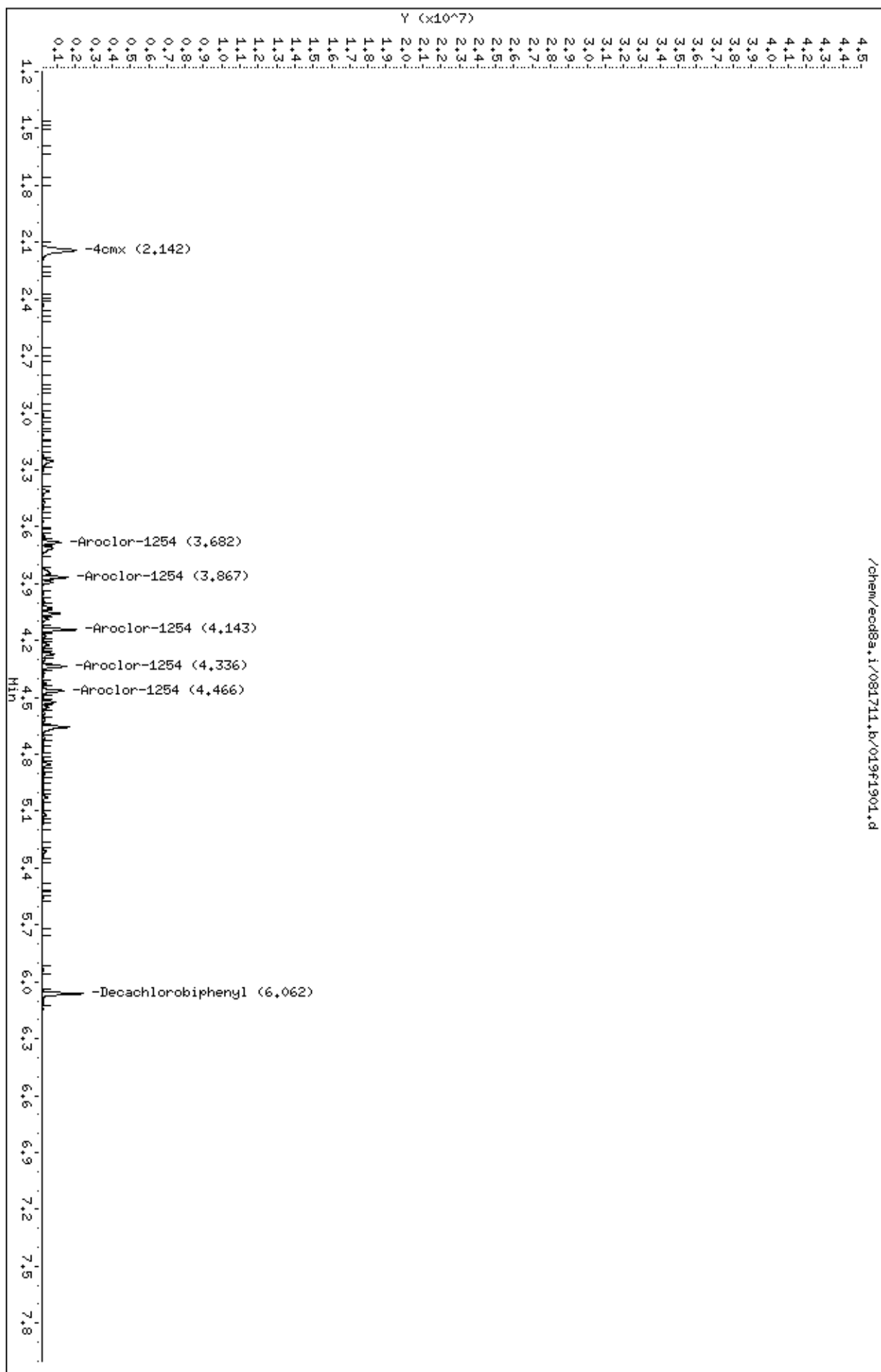
Sample Info: IMR110817-07

Column phase: CLP1

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25



Data File: /chem/ecd8a.i/081711.b/019b1901.d  
Report Date: 18-Aug-2011 09:03

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

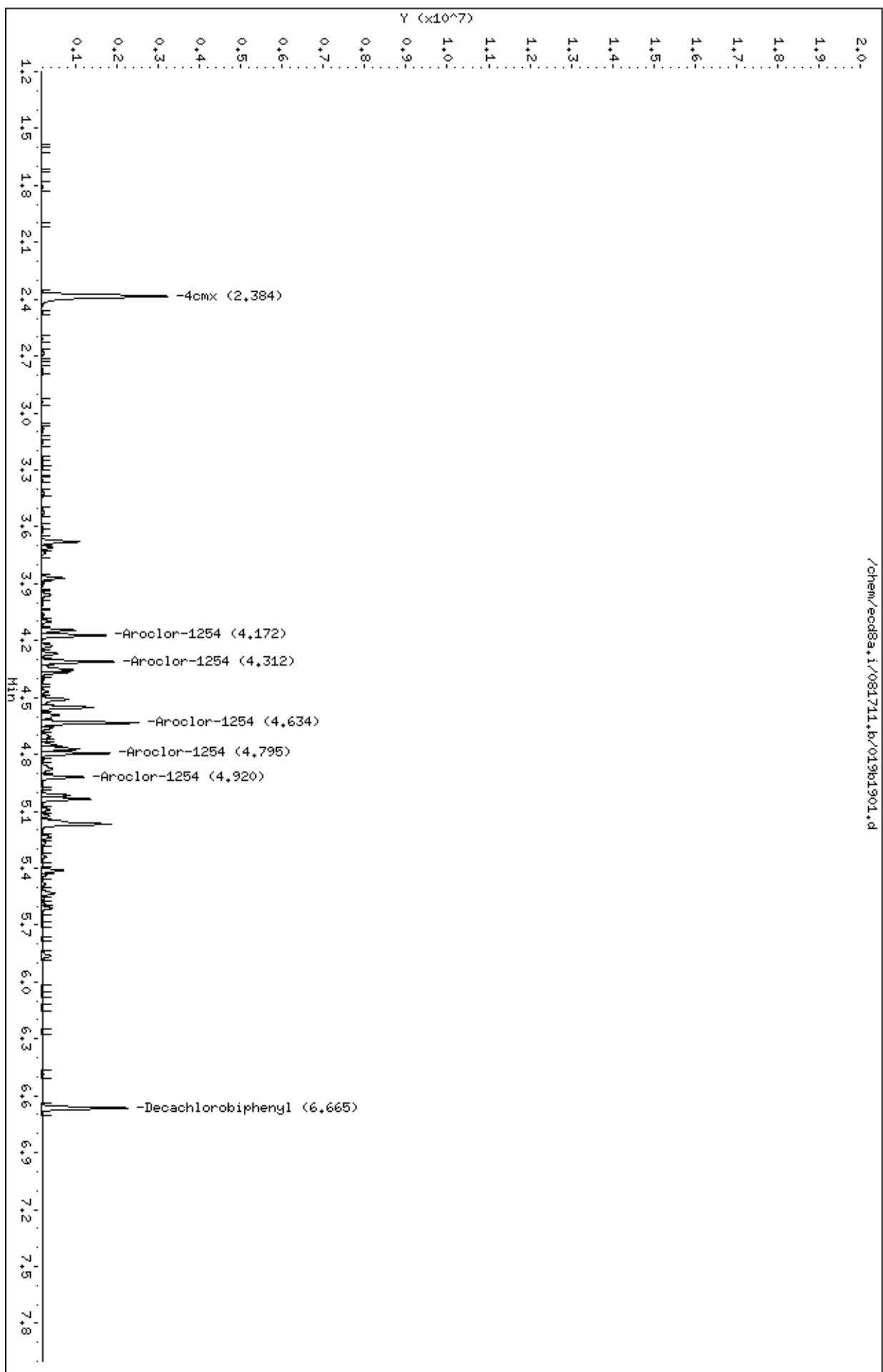
Data file : /chem/ecd8a.i/081711.b/019b1901.d  
Lab Smp Id: WAR110817-07 Client Smp ID: AR125403  
Inj Date : 17-AUG-2011 14:39  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110817-07  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-B-8082-081711.m  
Meth Date : 18-Aug-2011 09:03 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 16:59 Cal File: 031b3101.d  
Als bottle: 19 Calibration Sample, Level: 3  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1254.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.384                     | 2.384  | 0.000  | 3780593  | 50.0000 | 49.4              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.665                     | 6.665  | 0.000  | 1845325  | 50.0000 | 48.8              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 6 Aroclor-1254            |        |        |          |         | CAS #: 11097-69-1 |         |        |        |
| 4.172                     | 4.172  | 0.000  | 1345946  | 500.000 | 512               | 80.00-  | 120.00 | 100.00 |
| 4.312                     | 4.312  | 0.000  | 1474808  | 500.000 | 513               | 89.57-  | 129.57 | 109.57 |
| 4.634                     | 4.634  | 0.000  | 1962311  | 500.000 | 520               | 125.79- | 165.79 | 145.79 |
| 4.795                     | 4.795  | 0.000  | 1366557  | 500.000 | 514               | 81.53-  | 121.53 | 101.53 |
| 4.920                     | 4.920  | 0.000  | 883492   | 500.000 | 507               | 45.64-  | 85.64  | 65.64  |
| Average of Peak Amounts = |        |        |          |         | 513               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecod8a.i/081711.b/019b1901.d  
Date : 17-AUG-2011 14:39  
Client ID: AR125403  
Sample Info: IMR110817-07

Column phase: CLP2

Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25





Data File: /chem/ecd8a.i/081711.b/020f2001.d  
Report Date: 18-Aug-2011 09:03

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/020f2001.d

Lab Smp Id: WAR110815-08

Client Smp ID: AR125404

Inj Date : 17-AUG-2011 14:51

Operator : YS1

Inst ID: ecd8a.i

Smp Info : |WAR110815-08

Misc Info :

Comment :

Method : /chem/ecd8a.i/081711.b/ECD8-F-8082-081711.m

Meth Date : 18-Aug-2011 09:03 yip00818

Quant Type: ESTD

Cal Date : 17-AUG-2011 12:55

Cal File: 010f1001.d

Als bottle: 20

Calibration Sample, Level: 4

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1254.sub

Target Version: 3.50

Sample Matrix: None

Processing Host: hpclp1

AMOUNTS

|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
|                           |        |        |          |         |                   |         |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.142                     | 2.143  | -0.001 | 5278850  | 100.000 | 92.9              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.062                     | 6.062  | 0.000  | 3279568  | 100.000 | 87.6              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 6 Aroclor-1254            |        |        |          |         | CAS #: 11097-69-1 |         |        |        |
| 3.682                     | 3.682  | 0.000  | 1600735  | 1000.00 | 940               | 80.00-  | 120.00 | 100.00 |
| 3.867                     | 3.867  | 0.000  | 2115238  | 1000.00 | 945               | 112.14- | 152.14 | 132.14 |
| 4.142                     | 4.142  | 0.000  | 2717291  | 1000.00 | 955               | 149.75- | 189.75 | 169.75 |
| 4.336                     | 4.336  | 0.000  | 2038734  | 1000.00 | 949               | 107.36- | 147.36 | 127.36 |
| 4.466                     | 4.466  | 0.000  | 1913444  | 1000.00 | 926               | 99.54-  | 139.54 | 119.54 |
| Average of Peak Amounts = |        |        |          |         | 943               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecod8a.i/081711.b/020f2001.d

Date : 17-AUG-2011 14:51

Client ID: AR125404

Sample Info: IMR110815-08

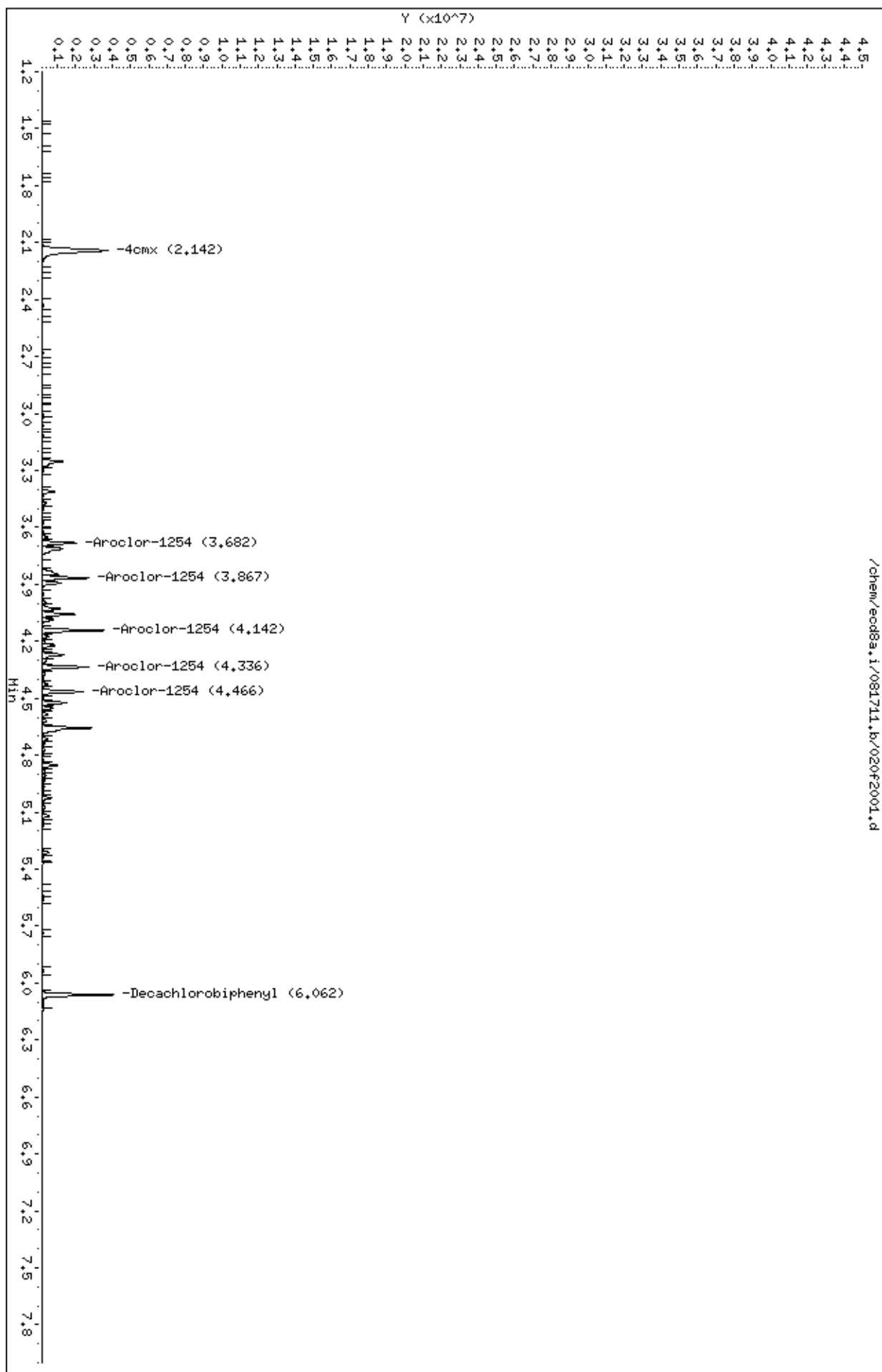
Column phase: CLP1

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25

Page 1



Data File: /chem/ecd8a.i/081711.b/020b2001.d  
Report Date: 18-Aug-2011 09:03

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/020b2001.d

Lab Smp Id: WAR110815-08

Client Smp ID: AR125404

Inj Date : 17-AUG-2011 14:51

Operator : YS1

Inst ID: ecd8a.i

Smp Info : |WAR110815-08

Misc Info :

Comment :

Method : /chem/ecd8a.i/081711.b/ECD8-B-8082-081711.m

Meth Date : 18-Aug-2011 09:03 yip00818

Quant Type: ESTD

Cal Date : 17-AUG-2011 12:55

Cal File: 010b1001.d

Als bottle: 20

Calibration Sample, Level: 4

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1254.sub

Target Version: 3.50

Sample Matrix: None

Processing Host: hpclp1

AMOUNTS

| RT                        | EXP RT | DLT RT | CAL-AMT          |         | ON-COL  |                   | TARGET RANGE | RATIO |
|---------------------------|--------|--------|------------------|---------|---------|-------------------|--------------|-------|
|                           |        |        | RESPONSE ( ug/L) |         | ( ug/L) |                   |              |       |
| ==                        | =====  | =====  | =====            | =====   | =====   | =====             | =====        | ===== |
| -----                     |        |        |                  |         |         |                   |              |       |
| \$ 11 4cmx                |        |        |                  |         |         | CAS #: 877-09-8   |              |       |
| 2.384                     | 2.384  | 0.000  | 7149343          | 100.000 | 93.5    | 80.00- 120.00     | 100.00       |       |
| -----                     |        |        |                  |         |         |                   |              |       |
| \$ 12 Decachlorobiphenyl  |        |        |                  |         |         | CAS #: 2051-24-3  |              |       |
| 6.665                     | 6.665  | 0.000  | 3276710          | 100.000 | 86.6    | 80.00- 120.00     | 100.00       |       |
| -----                     |        |        |                  |         |         |                   |              |       |
| 6 Aroclor-1254            |        |        |                  |         |         | CAS #: 11097-69-1 |              |       |
| 4.172                     | 4.172  | 0.000  | 2435059          | 1000.00 | 926     | 80.00- 120.00     | 100.00       |       |
| 4.311                     | 4.311  | 0.000  | 2663679          | 1000.00 | 927     | 89.39- 129.39     | 109.39       |       |
| 4.634                     | 4.634  | 0.000  | 3553125          | 1000.00 | 941     | 125.92- 165.92    | 145.92       |       |
| 4.795                     | 4.795  | 0.000  | 2488405          | 1000.00 | 936     | 82.19- 122.19     | 102.19       |       |
| 4.920                     | 4.920  | 0.000  | 1583153          | 1000.00 | 908     | 45.01- 85.01      | 65.01        |       |
| Average of Peak Amounts = |        |        |                  |         | 928     |                   |              |       |
| -----                     |        |        |                  |         |         |                   |              |       |

Data File: /chem/ecd8a.i/081711.b/020b2001.d

Date : 17-AUG-2011 14:51

Client ID: AR125404

Sample Info: IMR110815-08

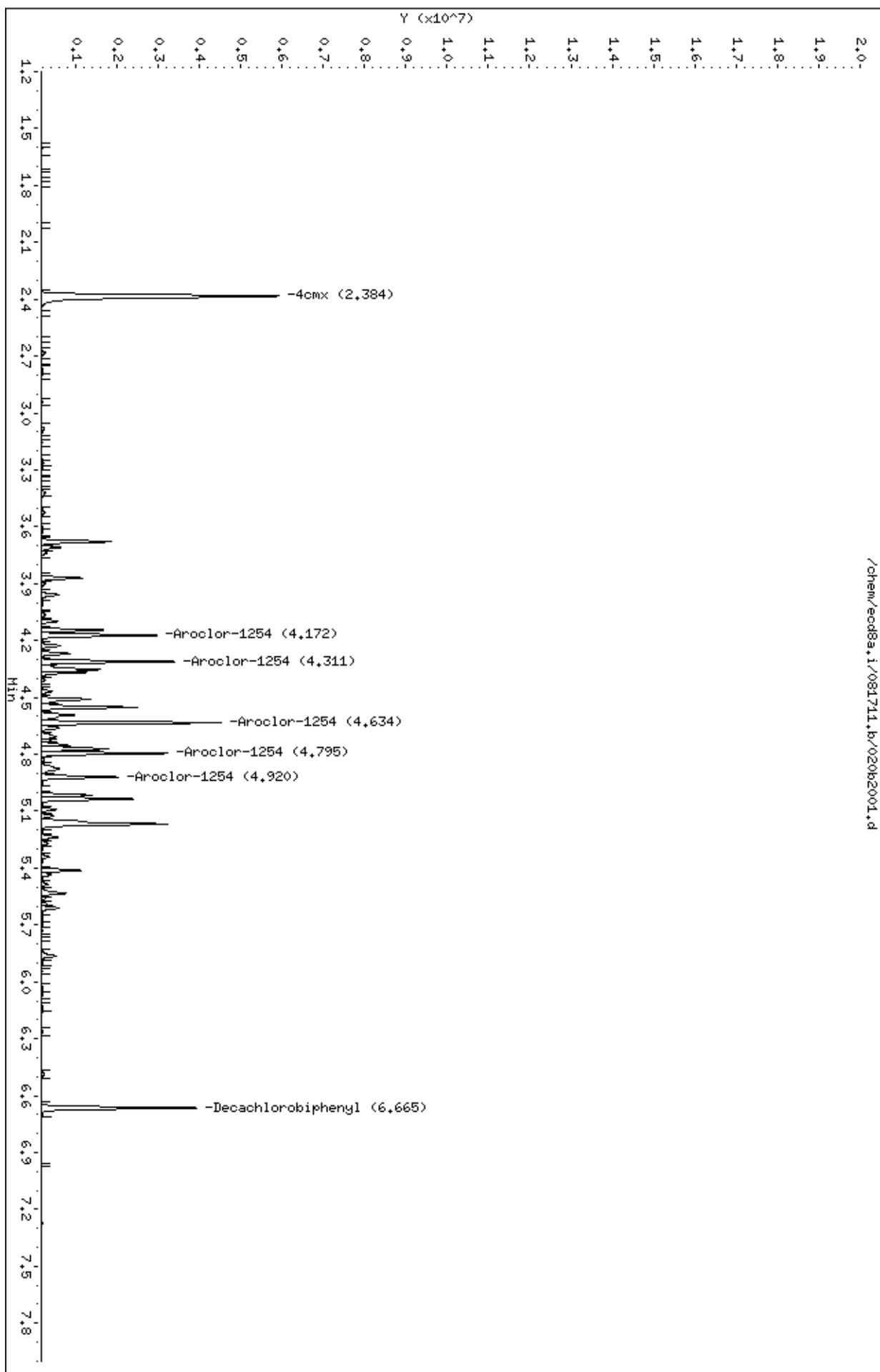
Column phase: CLP2

Instrument: ecd8a.i

Operator: YSL

Column diameter: 0.25

Page 1



Data File: /chem/ecd8a.i/081711.b/021f2101.d  
Report Date: 18-Aug-2011 09:04

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/021f2101.d  
Lab Smp Id: IAR110811-01 Client Smp ID: AR125405  
Inj Date : 17-AUG-2011 15:03  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |IAR110811-01  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-F-8082-081711.m  
Meth Date : 18-Aug-2011 09:04 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033f3301.d  
Als bottle: 21 Calibration Sample, Level: 5  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1254.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.142                     | 2.143  | -0.001 | 19833530 | 400.000 | 349               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.062                     | 6.062  | 0.000  | 12352912 | 400.000 | 330               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 6 Aroclor-1254            |        |        |          |         | CAS #: 11097-69-1 |         |        |        |
| 3.683                     | 3.683  | 0.000  | 5984188  | 4000.00 | 3520              | 80.00-  | 120.00 | 100.00 |
| 3.867                     | 3.867  | 0.000  | 7892769  | 4000.00 | 3520              | 111.89- | 151.89 | 131.89 |
| 4.143                     | 4.143  | 0.000  | 10042835 | 4000.00 | 3530              | 147.82- | 187.82 | 167.82 |
| 4.335                     | 4.335  | 0.000  | 7677799  | 4000.00 | 3570              | 108.30- | 148.30 | 128.30 |
| 4.465                     | 4.465  | 0.000  | 7232045  | 4000.00 | 3500              | 100.85- | 140.85 | 120.85 |
| Average of Peak Amounts = |        |        |          |         | 3.53e+03          |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecod8a.i/081711.b/021f2101.d

Date : 17-AUG-2011 15:03

Client ID: AR125405

Sample Info: 11MR110811-01

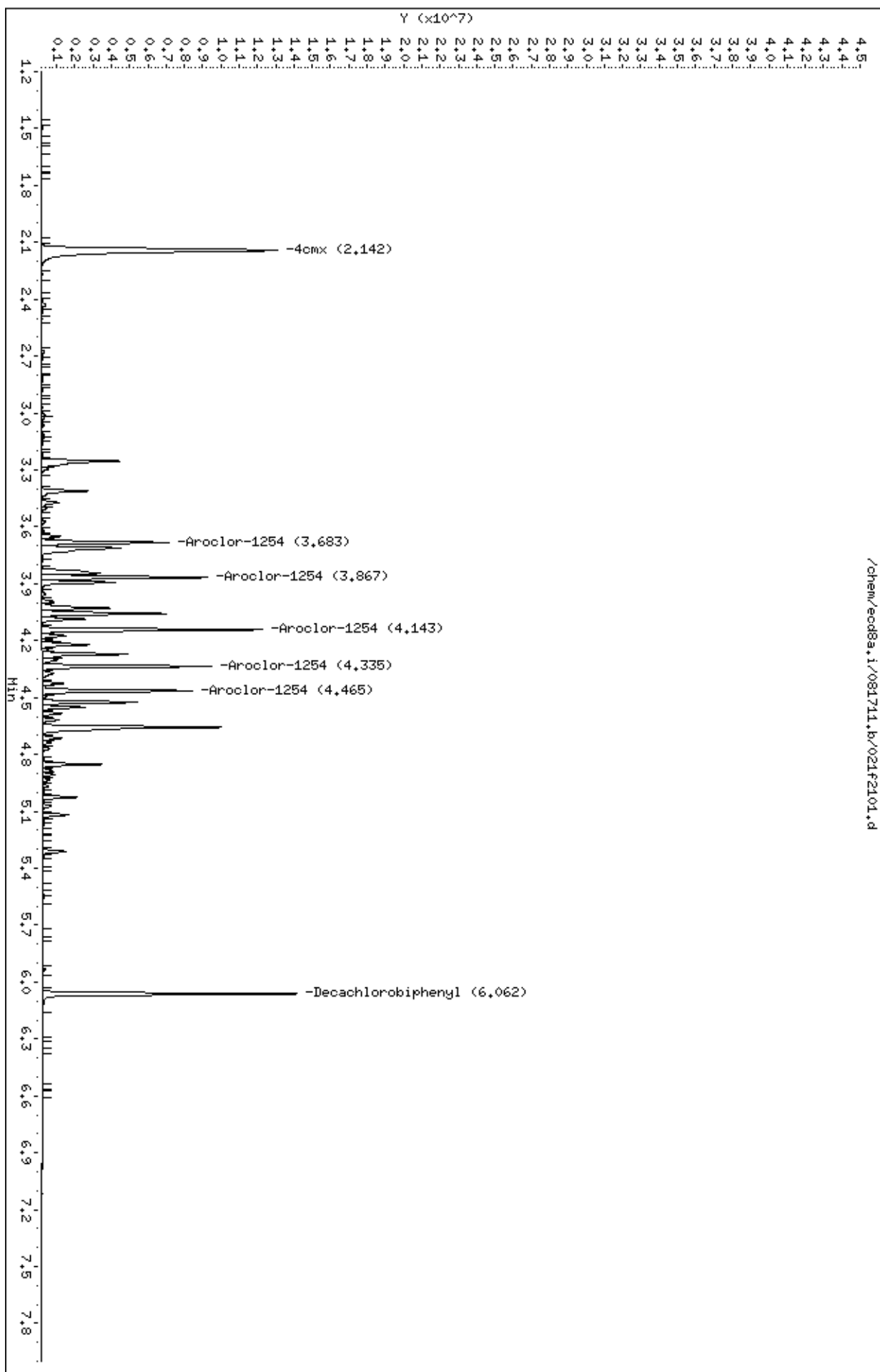
Column phase: CLP1

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25

Page 1



Data File: /chem/ecd8a.i/081711.b/021b2101.d  
Report Date: 18-Aug-2011 09:03

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/021b2101.d  
Lab Smp Id: IAR110811-01 Client Smp ID: AR125405  
Inj Date : 17-AUG-2011 15:03  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |IAR110811-01  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-B-8082-081711.m  
Meth Date : 18-Aug-2011 09:03 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033b3301.d  
Als bottle: 21 Calibration Sample, Level: 5  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1254.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

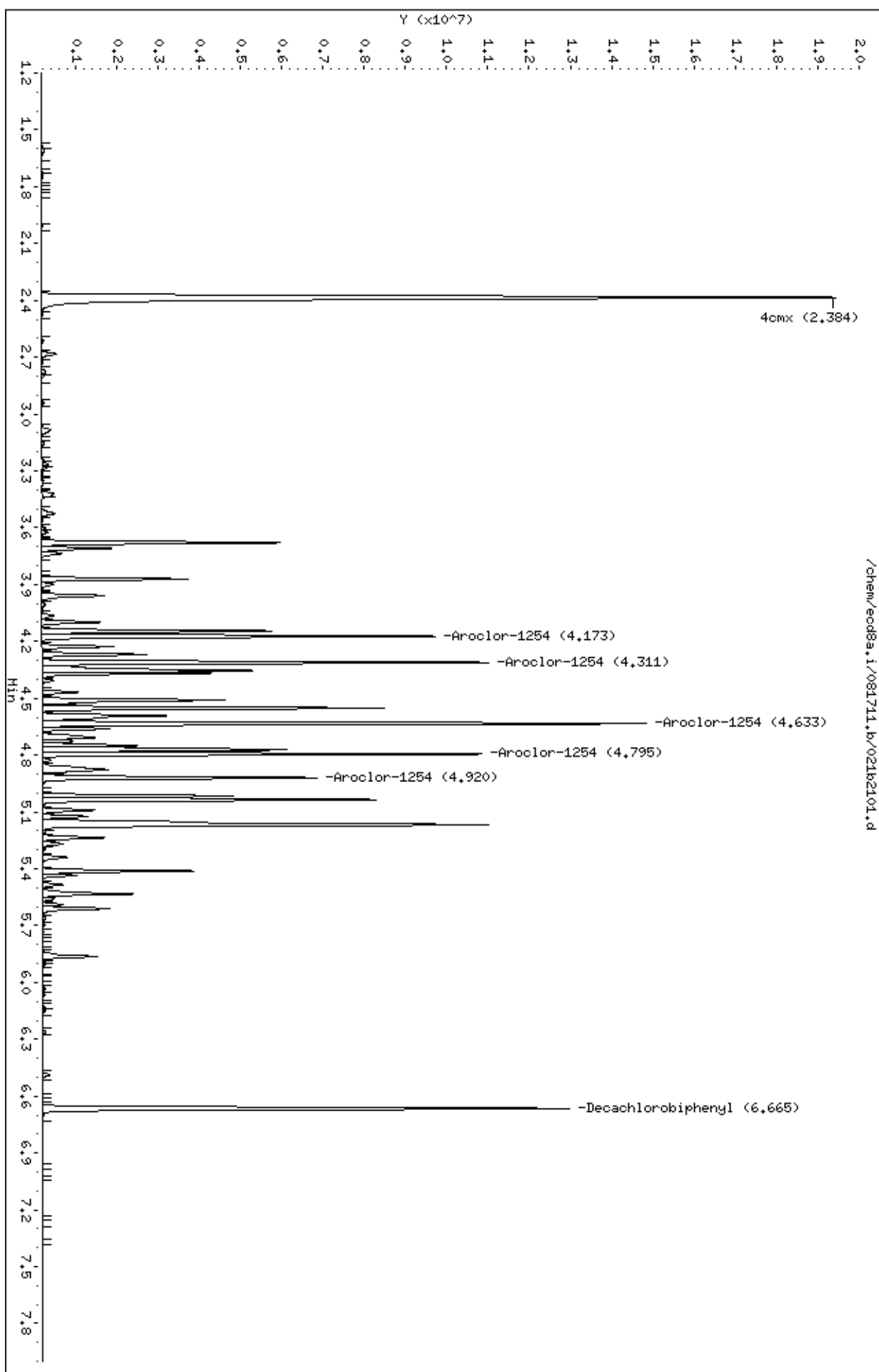
| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.384                     | 2.384  | 0.000  | 25501382 | 400.000 | 334               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.665                     | 6.665  | 0.000  | 11841781 | 400.000 | 313               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 6 Aroclor-1254            |        |        |          |         | CAS #: 11097-69-1 |         |        |        |
| 4.173                     | 4.173  | 0.000  | 8602252  | 4000.00 | 3270              | 80.00-  | 120.00 | 100.00 |
| 4.311                     | 4.311  | 0.000  | 9372917  | 4000.00 | 3260              | 88.96-  | 128.96 | 108.96 |
| 4.633                     | 4.633  | 0.000  | 12418712 | 4000.00 | 3290              | 124.37- | 164.37 | 144.37 |
| 4.795                     | 4.795  | 0.000  | 8911796  | 4000.00 | 3350              | 83.60-  | 123.60 | 103.60 |
| 4.920                     | 4.920  | 0.000  | 5778344  | 4000.00 | 3320              | 47.17-  | 87.17  | 67.17  |
| Average of Peak Amounts = |        |        |          |         | 3.3e+03           |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecod8a.i/081711.b/021b2101.d  
Date : 17-AUG-2011 15:03  
Client ID: AR125405  
Sample Info: IIR110811-01

Column phase: CLP2

Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25

Page 1





Data File: /chem/ecd8a.i/081711.b/023f2301.d  
Report Date: 18-Aug-2011 09:04

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/023f2301.d

Lab Smp Id: WAR110817-09

Client Smp ID: AR124201

Inj Date : 17-AUG-2011 15:26

Operator : YS1

Inst ID: ecd8a.i

Smp Info : |WAR110817-09

Misc Info :

Comment :

Method : /chem/ecd8a.i/081711.b/ECD8-F-8082-081711.m

Meth Date : 18-Aug-2011 09:04 yip00818

Quant Type: ESTD

Cal Date : 17-AUG-2011 16:36

Cal File: 029f2901.d

Als bottle: 23

Calibration Sample, Level: 1

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1242.sub

Target Version: 3.50

Sample Matrix: None

Processing Host: hpclp1

AMOUNTS

| RT                        | EXP RT | DLT RT | CAL-AMT<br>RESPONSE ( ug/L) | ON-COL<br>( ug/L) | TARGET RANGE      | RATIO  |
|---------------------------|--------|--------|-----------------------------|-------------------|-------------------|--------|
| ==                        | =====  | =====  | =====                       | =====             | =====             | =====  |
| <hr/>                     |        |        |                             |                   |                   |        |
| \$ 11 4cmx                |        |        |                             |                   | CAS #: 877-09-8   |        |
| 2.142                     | 2.143  | -0.001 | 588708 10.0000              | 10.4              | 80.00- 120.00     | 100.00 |
| <hr/>                     |        |        |                             |                   |                   |        |
| \$ 12 Decachlorobiphenyl  |        |        |                             |                   | CAS #: 2051-24-3  |        |
| 6.064                     | 6.062  | 0.002  | 389597 10.0000              | 10.4              | 80.00- 120.00     | 100.00 |
| <hr/>                     |        |        |                             |                   |                   |        |
| 4 Aroclor-1242            |        |        |                             |                   | CAS #: 53469-21-9 |        |
| 3.023                     | 3.023  | 0.000  | 223351 100.000              | 112               | 80.00- 120.00     | 100.00 |
| 3.117                     | 3.117  | 0.000  | 162061 100.000              | 115               | 52.56- 92.56      | 72.56  |
| 3.412                     | 3.412  | 0.000  | 134022 100.000              | 121               | 40.01- 80.01      | 60.01  |
| 3.712                     | 3.712  | 0.000  | 135268 100.000              | 123               | 40.56- 80.56      | 60.56  |
| 3.731                     | 3.731  | 0.000  | 122066 100.000              | 113               | 34.65- 74.65      | 54.65  |
| Average of Peak Amounts = |        |        |                             | 117               |                   |        |
| <hr/>                     |        |        |                             |                   |                   |        |

Data File: /chem/ecod8a.i/081711.b/023f2301.d

Date : 17-AUG-2011 15:26

Client ID: AR124201

Sample Info: IMR110817-09

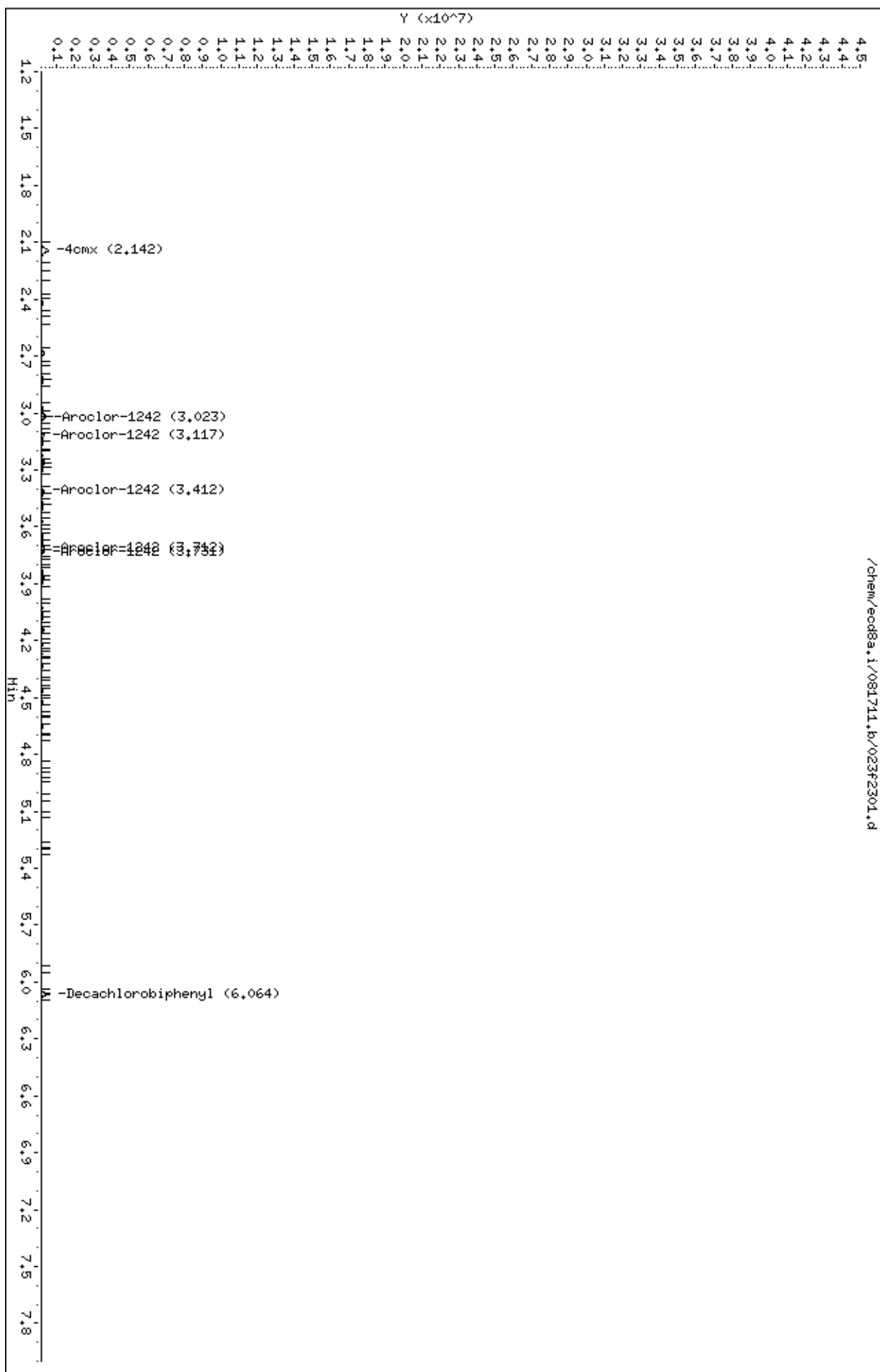
Column phase: CLP1

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25

Page 1



Data File: /chem/ecd8a.i/081711.b/023b2301.d  
Report Date: 18-Aug-2011 09:04

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/023b2301.d  
Lab Smp Id: WAR110817-09 Client Smp ID: AR124201  
Inj Date : 17-AUG-2011 15:26  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110817-09  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-B-8082-081711.m  
Meth Date : 18-Aug-2011 09:04 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 16:36 Cal File: 029b2901.d  
Als bottle: 23 Calibration Sample, Level: 1  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1242.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |        |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|--------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |        |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====  | =====  | =====  |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |        |        |        |
| 2.384                     | 2.384  | 0.000  | 832188   | 10.0000 | 10.9              | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |        |        |        |
| 6.664                     | 6.665  | -0.001 | 430100   | 10.0000 | 11.4              | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| 4 Aroclor-1242            |        |        |          |         | CAS #: 53469-21-9 |        |        |        |
| 3.431                     | 3.431  | 0.000  | 309772   | 100.000 | 116               | 80.00- | 120.00 | 100.00 |
| 3.529                     | 3.529  | 0.000  | 228619   | 100.000 | 120               | 53.80- | 93.80  | 73.80  |
| 3.602                     | 3.602  | 0.000  | 132197   | 100.000 | 118               | 22.68- | 62.68  | 42.68  |
| 3.679                     | 3.679  | 0.000  | 162399   | 100.000 | 108               | 32.43- | 72.43  | 52.43  |
| 3.870                     | 3.870  | 0.000  | 193719   | 100.000 | 125               | 42.54- | 82.54  | 62.54  |
| Average of Peak Amounts = |        |        |          |         | 118               |        |        |        |
| -----                     |        |        |          |         |                   |        |        |        |

Data File: /chem/ecod8a.i/081711.b/023b2301.d

Date : 17-AUG-2011 15:26

Client ID: AR124201

Sample Info: IMR110817-09

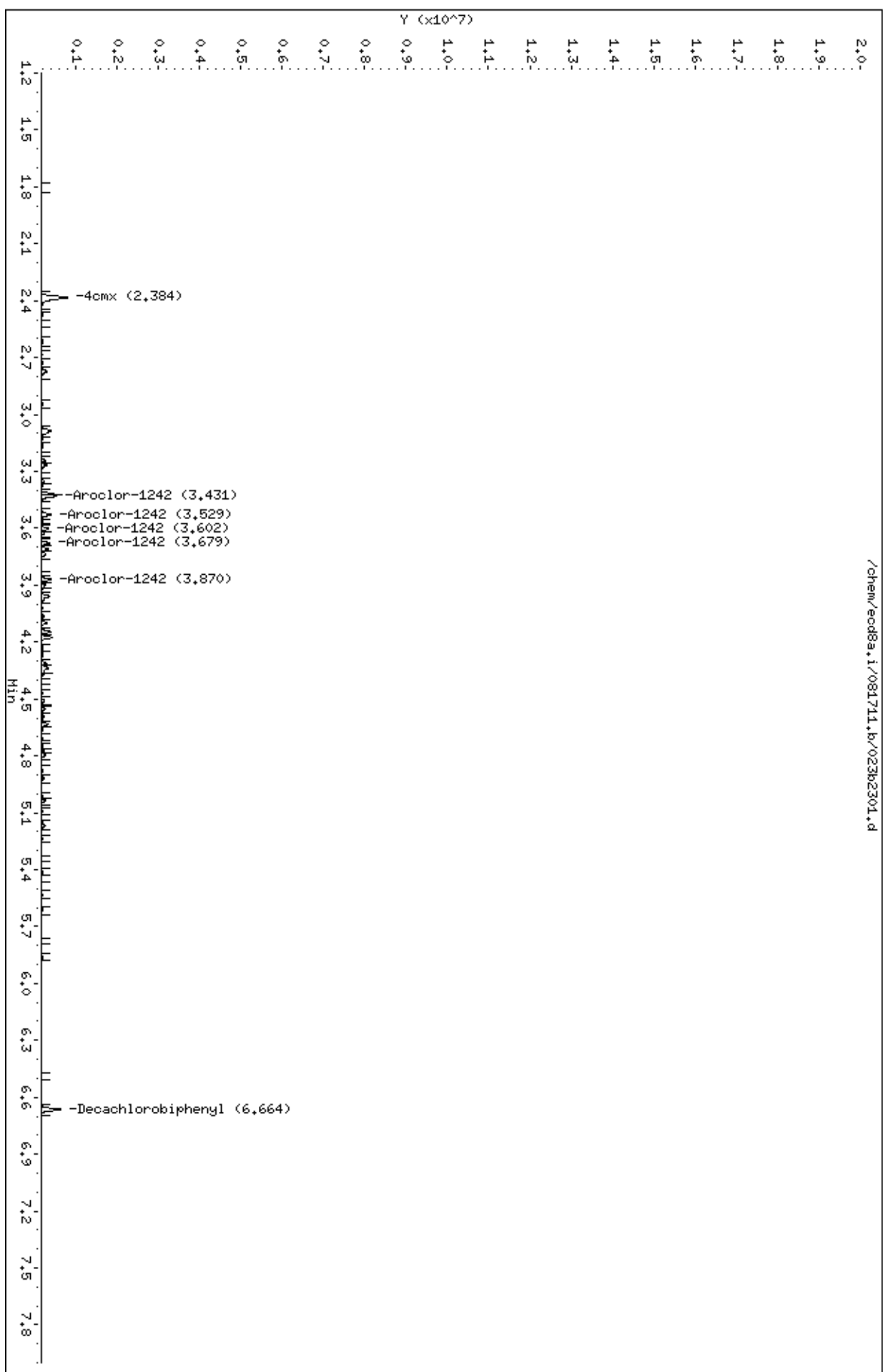
Column phase: CLP2

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25

Page 1



Data File: /chem/ecd8a.i/081711.b/024f2401.d  
Report Date: 18-Aug-2011 09:04

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/024f2401.d  
Lab Smp Id: WAR110817-10 Client Smp ID: AR124202  
Inj Date : 17-AUG-2011 15:38  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110817-10  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-F-8082-081711.m  
Meth Date : 18-Aug-2011 09:04 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 16:47 Cal File: 030f3001.d  
Als bottle: 24 Calibration Sample, Level: 2  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1242.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |        |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|--------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |        |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====  | =====  | =====  |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |        |        |        |
| 2.143                     | 2.143  | 0.000  | 1468366  | 25.0000 | 25.8              | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |        |        |        |
| 6.063                     | 6.062  | 0.001  | 942473   | 25.0000 | 25.2              | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| 4 Aroclor-1242            |        |        |          |         | CAS #: 53469-21-9 |        |        |        |
| 3.023                     | 3.023  | 0.000  | 524588   | 250.000 | 263               | 80.00- | 120.00 | 100.00 |
| 3.118                     | 3.118  | 0.000  | 381574   | 250.000 | 271               | 52.74- | 92.74  | 72.74  |
| 3.412                     | 3.412  | 0.000  | 296326   | 250.000 | 268               | 36.49- | 76.49  | 56.49  |
| 3.712                     | 3.712  | 0.000  | 293021   | 250.000 | 266               | 35.86- | 75.86  | 55.86  |
| 3.731                     | 3.731  | 0.000  | 284144   | 250.000 | 264               | 34.17- | 74.17  | 54.17  |
| Average of Peak Amounts = |        |        |          |         | 266               |        |        |        |
| -----                     |        |        |          |         |                   |        |        |        |

Data File: /chem/ecod8a.i/081711.b/024f2401.d

Date : 17-AUG-2011 15:38

Client ID: AR124202

Sample Info: IMR110817-10

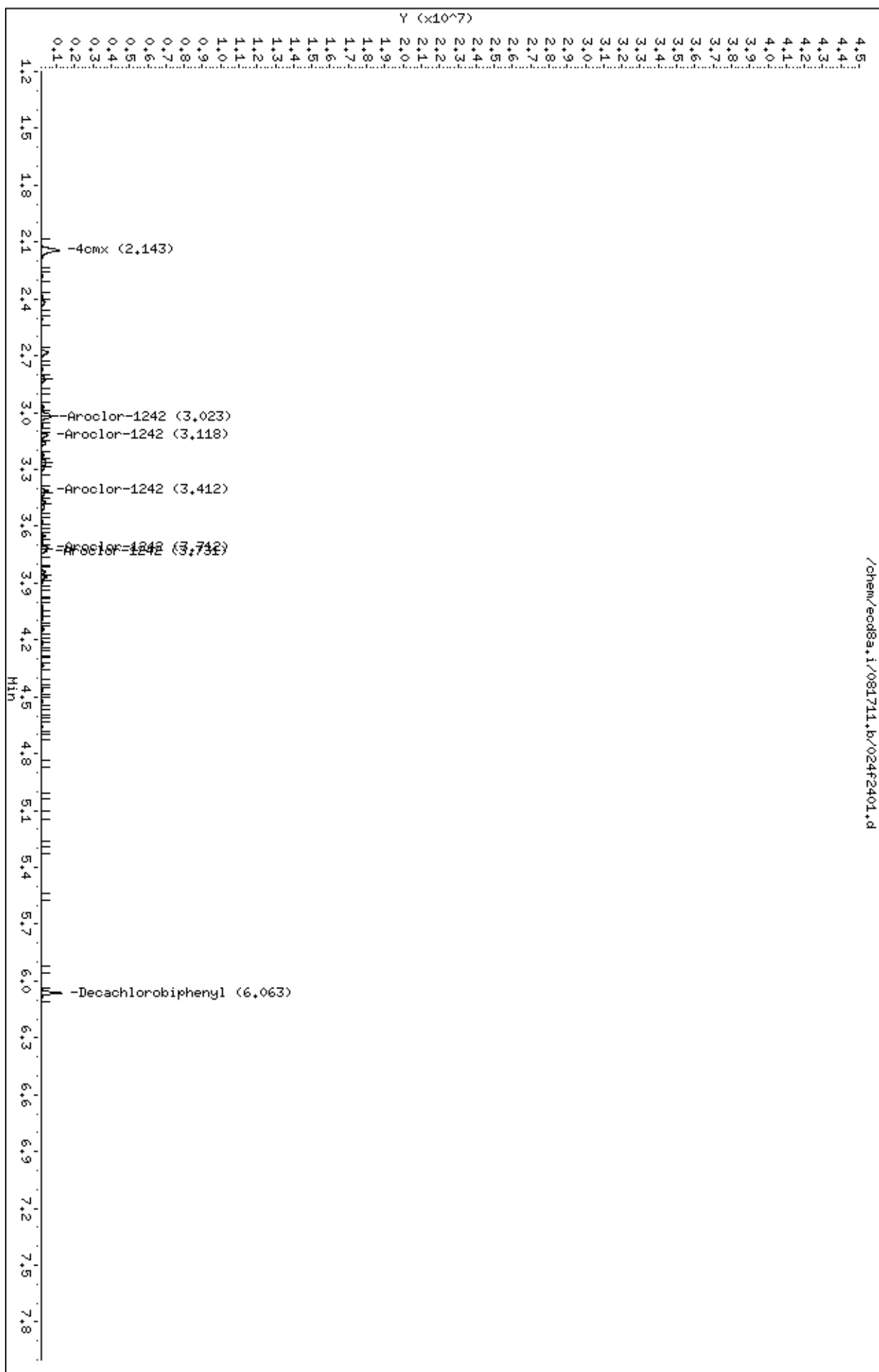
Column phase: CLP1

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25

Page 1



Data File: /chem/ecd8a.i/081711.b/024b2401.d  
Report Date: 18-Aug-2011 09:04

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/024b2401.d  
Lab Smp Id: WAR110817-10 Client Smp ID: AR124202  
Inj Date : 17-AUG-2011 15:38  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110817-10  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-B-8082-081711.m  
Meth Date : 18-Aug-2011 09:04 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 16:47 Cal File: 030b3001.d  
Als bottle: 24 Calibration Sample, Level: 2  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1242.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |                    |        |          |         |         |            |        |        |
|---------------------------|--------------------|--------|----------|---------|---------|------------|--------|--------|
|                           |                    |        | CAL-AMT  |         | ON-COL  |            |        |        |
| RT                        | EXP RT             | DLT RT | RESPONSE | ( ug/L) | ( ug/L) | TARGET     | RANGE  | RATIO  |
| ==                        | =====              | =====  | =====    | =====   | =====   | =====      | =====  | =====  |
|                           |                    |        |          |         |         |            |        |        |
| \$ 11                     | 4cmx               |        |          |         | CAS #:  | 877-09-8   |        |        |
| 2.384                     | 2.384              | 0.000  | 1998684  | 25.0000 | 26.1    | 80.00-     | 120.00 | 100.00 |
| -----                     |                    |        |          |         |         |            |        |        |
| \$ 12                     | Decachlorobiphenyl |        |          |         | CAS #:  | 2051-24-3  |        |        |
| 6.665                     | 6.665              | 0.000  | 998365   | 25.0000 | 26.4    | 80.00-     | 120.00 | 100.00 |
| -----                     |                    |        |          |         |         |            |        |        |
| 4                         | Aroclor-1242       |        |          |         | CAS #:  | 53469-21-9 |        |        |
| 3.431                     | 3.431              | 0.000  | 716626   | 250.000 | 269     | 80.00-     | 120.00 | 100.00 |
| 3.528                     | 3.528              | 0.000  | 517317   | 250.000 | 273     | 52.19-     | 92.19  | 72.19  |
| 3.603                     | 3.603              | 0.000  | 303017   | 250.000 | 270     | 22.28-     | 62.28  | 42.28  |
| 3.870                     | 3.870              | 0.000  | 424101   | 250.000 | 283     | 39.18-     | 79.18  | 59.18  |
| 4.145                     | 4.145              | 0.000  | 412894   | 250.000 | 266     | 37.62-     | 77.62  | 57.62  |
| Average of Peak Amounts = |                    |        |          |         | 272     |            |        |        |
| -----                     |                    |        |          |         |         |            |        |        |

Data File: /chem/ecod8a.i/081711.b/024b2401.d

Date : 17-AUG-2011 15:38

Client ID: AR124202

Sample Info: IMR110817-10

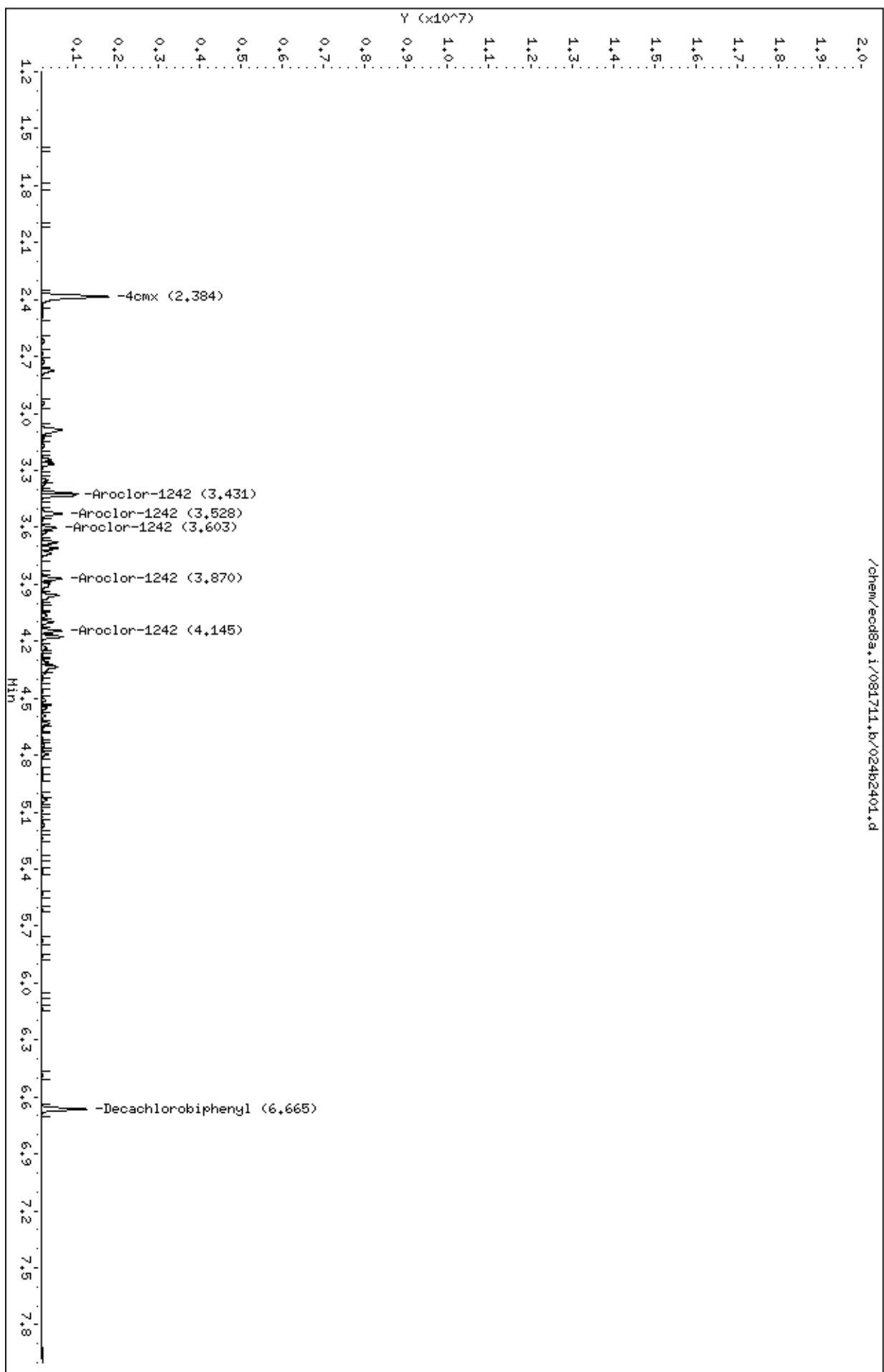
Column phase: CLP2

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25

Page 1





Data File: /chem/ecd8a.i/081711.b/025f2501.d  
Report Date: 18-Aug-2011 09:04

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/025f2501.d

Lab Smp Id: WAR110817-11

Client Smp ID: AR124203

Inj Date : 17-AUG-2011 15:49

Operator : YS1

Inst ID: ecd8a.i

Smp Info : |WAR110817-11

Misc Info :

Comment :

Method : /chem/ecd8a.i/081711.b/ECD8-F-8082-081711.m

Meth Date : 18-Aug-2011 09:04 yip00818

Quant Type: ESTD

Cal Date : 17-AUG-2011 16:59

Cal File: 031f3101.d

Als bottle: 25

Calibration Sample, Level: 3

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1242.sub

Target Version: 3.50

Sample Matrix: None

Processing Host: hpclp1

AMOUNTS

|                           |        |        | CAL-AMT  |         | ON-COL            |        |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|--------|--------|--------|
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====  | =====  | =====  |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |        |        |        |
| 2.142                     | 2.143  | -0.001 | 2785609  | 50.0000 | 49.0              | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |        |        |        |
| 6.062                     | 6.062  | 0.000  | 1698511  | 50.0000 | 45.4              | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| 4 Aroclor-1242            |        |        |          |         | CAS #: 53469-21-9 |        |        |        |
| 3.022                     | 3.022  | 0.000  | 980701   | 500.000 | 491               | 80.00- | 120.00 | 100.00 |
| 3.117                     | 3.117  | 0.000  | 686193   | 500.000 | 488               | 49.97- | 89.97  | 69.97  |
| 3.412                     | 3.412  | 0.000  | 525123   | 500.000 | 474               | 33.55- | 73.55  | 53.55  |
| 3.712                     | 3.712  | 0.000  | 514648   | 500.000 | 468               | 32.48- | 72.48  | 52.48  |
| 3.731                     | 3.731  | 0.000  | 523275   | 500.000 | 486               | 33.36- | 73.36  | 53.36  |
| Average of Peak Amounts = |        |        |          |         | 481               |        |        |        |
| -----                     |        |        |          |         |                   |        |        |        |

Data File: /chem/ecod8a.i/081711.b/025f2501.d

Page 1

Date : 17-AUG-2011 15:49

Client ID: AR124203

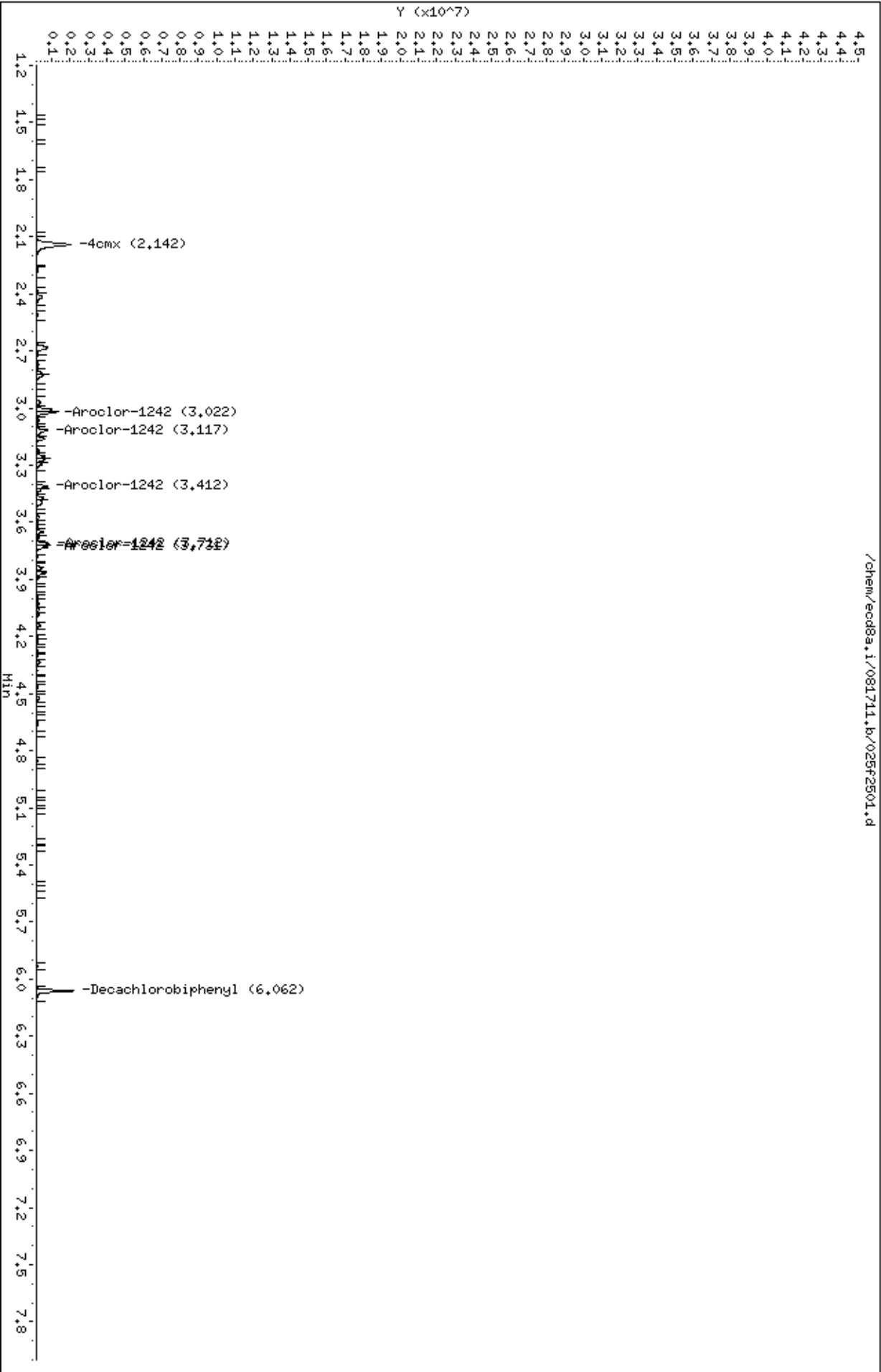
Sample Info: IMR110817-11

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25

Column phase: CLP1



Data File: /chem/ecd8a.i/081711.b/025b2501.d  
Report Date: 18-Aug-2011 09:04

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/025b2501.d  
Lab Smp Id: WAR110817-11 Client Smp ID: AR124203  
Inj Date : 17-AUG-2011 15:49  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110817-11  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-B-8082-081711.m  
Meth Date : 18-Aug-2011 09:04 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 16:59 Cal File: 031b3101.d  
Als bottle: 25 Calibration Sample, Level: 3  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1242.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

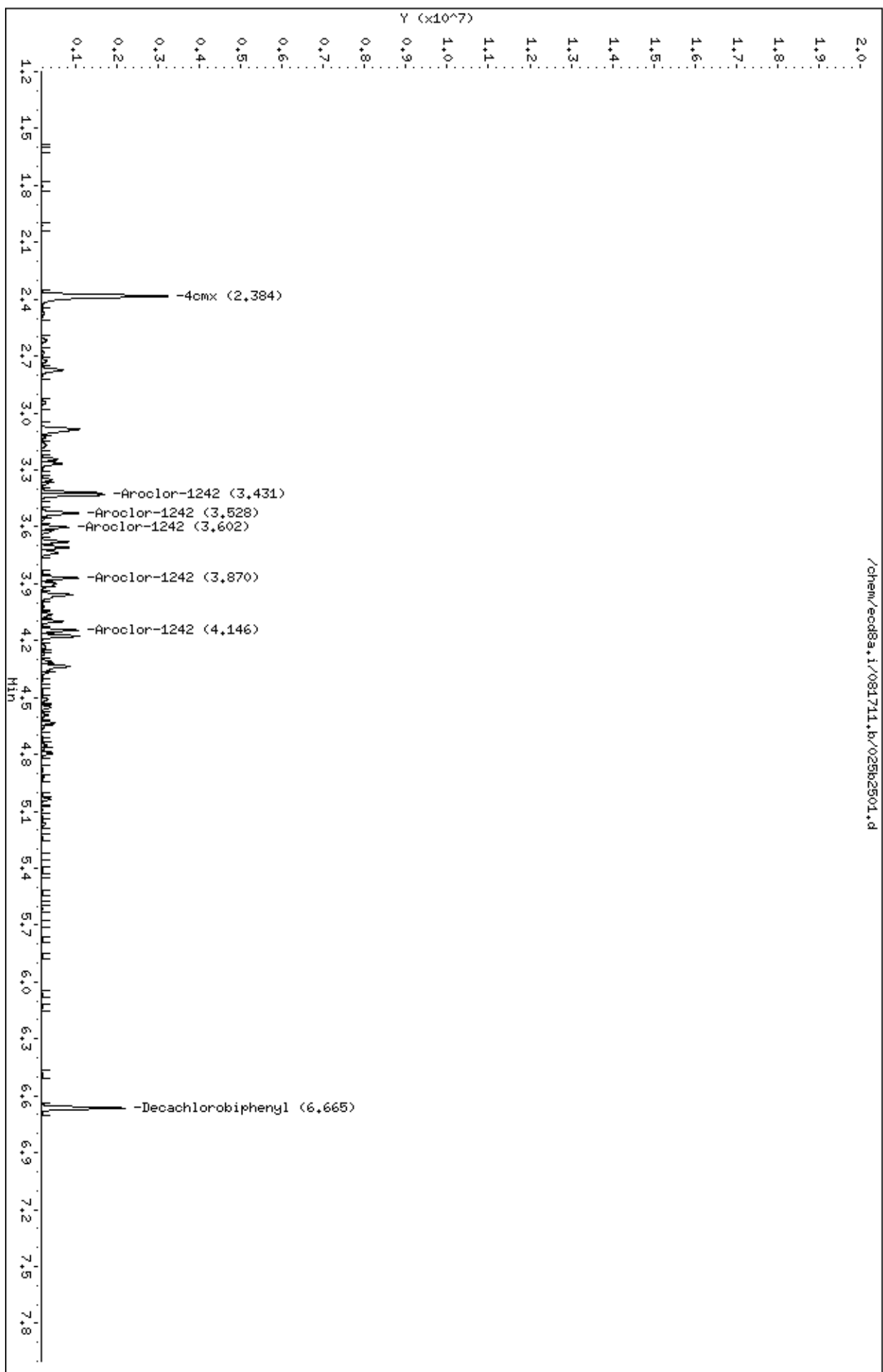
| AMOUNTS                   |        |        |          |         |                   |        |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|--------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |        |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====  | =====  | =====  |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |        |        |        |
| 2.384                     | 2.384  | 0.000  | 3786030  | 50.0000 | 49.5              | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |        |        |        |
| 6.665                     | 6.665  | 0.000  | 1757233  | 50.0000 | 46.4              | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| 4 Aroclor-1242            |        |        |          |         | CAS #: 53469-21-9 |        |        |        |
| 3.431                     | 3.431  | 0.000  | 1304902  | 500.000 | 490               | 80.00- | 120.00 | 100.00 |
| 3.528                     | 3.528  | 0.000  | 920735   | 500.000 | 486               | 50.56- | 90.56  | 70.56  |
| 3.602                     | 3.602  | 0.000  | 539890   | 500.000 | 482               | 21.37- | 61.37  | 41.37  |
| 3.870                     | 3.870  | 0.000  | 748456   | 500.000 | 499               | 37.36- | 77.36  | 57.36  |
| 4.146                     | 4.146  | 0.000  | 739545   | 500.000 | 477               | 36.67- | 76.67  | 56.67  |
| Average of Peak Amounts = |        |        |          |         | 487               |        |        |        |
| -----                     |        |        |          |         |                   |        |        |        |

Data File: /chem/ecod8a.i/081711.b/025b2501.d  
Date : 17-AUG-2011 15:49  
Client ID: AR124203  
Sample Info: IMR110817-11

Column phase: CLP2

Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25

Page 1



Data File: /chem/ecd8a.i/081711.b/026f2601.d  
Report Date: 18-Aug-2011 09:04

Page 1

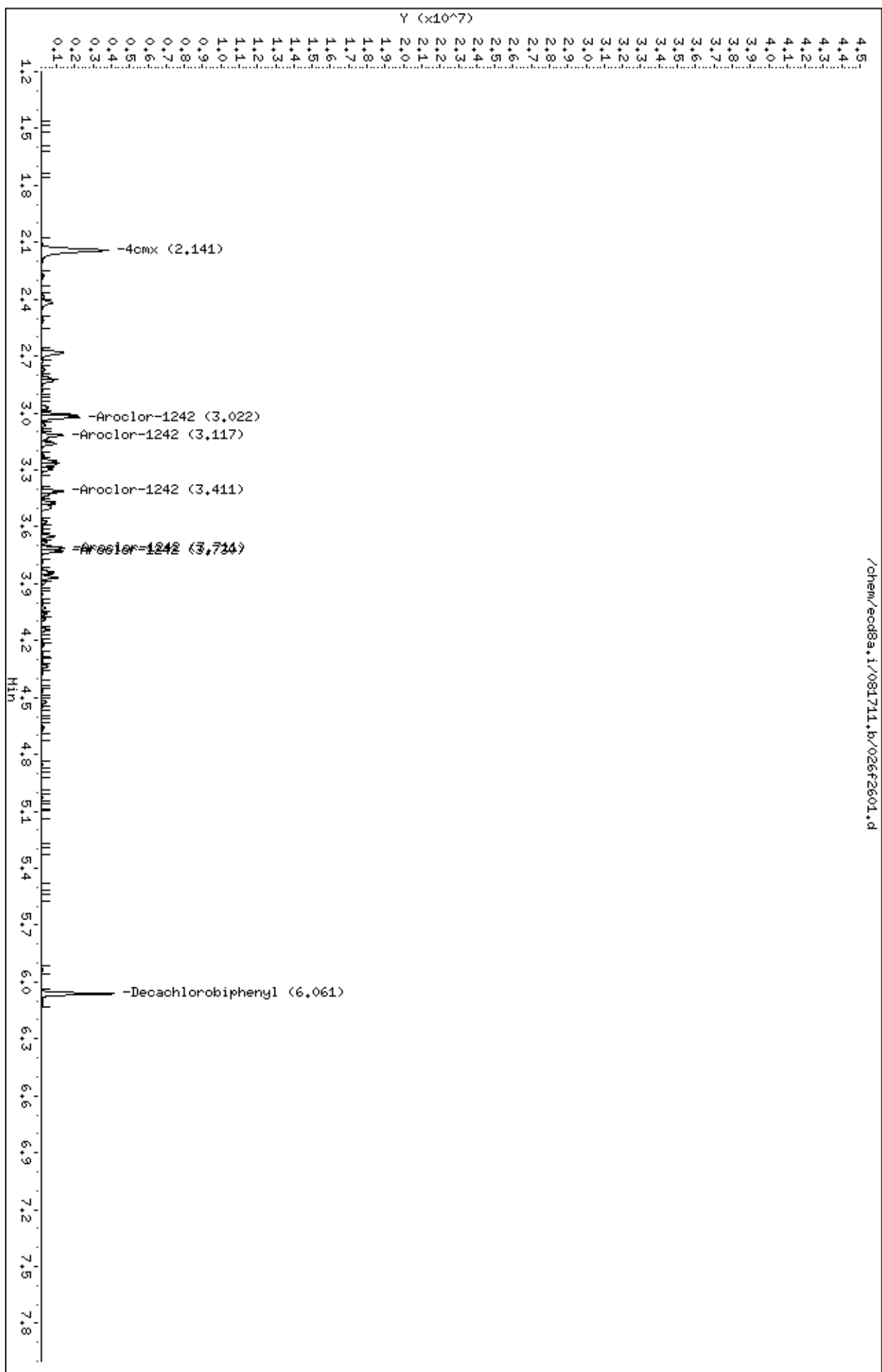
GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/026f2601.d  
Lab Smp Id: WAR111817-12 Client Smp ID: AR124204  
Inj Date : 17-AUG-2011 16:01  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR111817-12  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-F-8082-081711.m  
Meth Date : 18-Aug-2011 09:04 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 12:55 Cal File: 010f1001.d  
Als bottle: 26 Calibration Sample, Level: 4  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1242.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |        |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|--------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |        |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====  | =====  | =====  |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |        |        |        |
| 2.141                     | 2.143  | -0.002 | 5495544  | 100.000 | 96.7              | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |        |        |        |
| 6.061                     | 6.062  | -0.001 | 3357970  | 100.000 | 89.7              | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| 4 Aroclor-1242            |        |        |          |         | CAS #: 53469-21-9 |        |        |        |
| 3.022                     | 3.022  | 0.000  | 1956781  | 1000.00 | 980               | 80.00- | 120.00 | 100.00 |
| 3.117                     | 3.117  | 0.000  | 1316648  | 1000.00 | 936               | 47.29- | 87.29  | 67.29  |
| 3.411                     | 3.411  | 0.000  | 1016483  | 1000.00 | 918               | 31.95- | 71.95  | 51.95  |
| 3.711                     | 3.711  | 0.000  | 1008603  | 1000.00 | 916               | 31.54- | 71.54  | 51.54  |
| 3.730                     | 3.730  | 0.000  | 1023455  | 1000.00 | 950               | 32.30- | 72.30  | 52.30  |
| Average of Peak Amounts = |        |        |          |         | 940               |        |        |        |
| -----                     |        |        |          |         |                   |        |        |        |

Data File: /chem/ecod8a.i/081711.b/026f2601.d  
 Date : 17-AUG-2011 16:01  
 Client ID: AR124204  
 Sample Info: IMR11817-12  
 Column phase: CLP1  
 Instrument: ecod8a.i  
 Operator: YSL  
 Column diameter: 0.25



Data File: /chem/ecd8a.i/081711.b/026b2601.d  
Report Date: 18-Aug-2011 09:04

Page 1

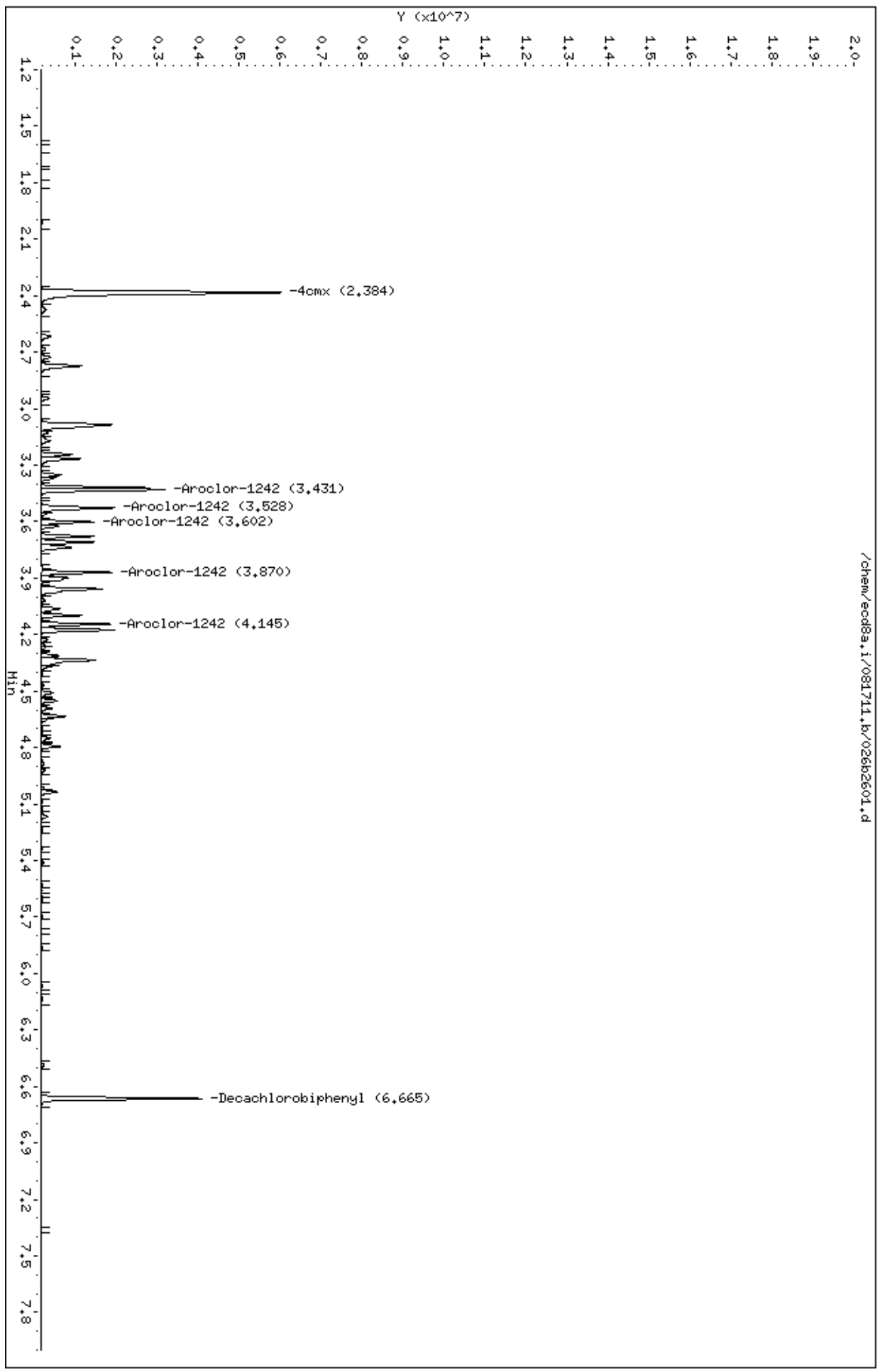
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RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/026b2601.d  
Lab Smp Id: WAR111817-12 Client Smp ID: AR124204  
Inj Date : 17-AUG-2011 16:01  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR111817-12  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-B-8082-081711.m  
Meth Date : 18-Aug-2011 09:04 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 12:55 Cal File: 010b1001.d  
Als bottle: 26 Calibration Sample, Level: 4  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1242.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |        |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|--------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |        |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====  | =====  | =====  |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |        |        |        |
| 2.384                     | 2.384  | 0.000  | 7367264  | 100.000 | 96.4              | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |        |        |        |
| 6.665                     | 6.665  | 0.000  | 3404116  | 100.000 | 90.0              | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| 4 Aroclor-1242            |        |        |          |         | CAS #: 53469-21-9 |        |        |        |
| 3.431                     | 3.431  | 0.000  | 2578507  | 1000.00 | 968               | 80.00- | 120.00 | 100.00 |
| 3.528                     | 3.528  | 0.000  | 1757096  | 1000.00 | 927               | 48.14- | 88.14  | 68.14  |
| 3.602                     | 3.602  | 0.000  | 1042922  | 1000.00 | 930               | 20.45- | 60.45  | 40.45  |
| 3.870                     | 3.870  | 0.000  | 1430809  | 1000.00 | 954               | 35.49- | 75.49  | 55.49  |
| 4.145                     | 4.145  | 0.000  | 1419112  | 1000.00 | 916               | 35.04- | 75.04  | 55.04  |
| Average of Peak Amounts = |        |        |          |         | 939               |        |        |        |
| -----                     |        |        |          |         |                   |        |        |        |

Data File: /chem/ecod8a.i/081711.b/026b2601.d  
Date : 17-AUG-2011 16:01  
Client ID: AR124204  
Sample Info: IMR111817-12  
Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25  
Column phase: CLP2





Data File: /chem/ecd8a.i/081711.b/027f2701.d  
Report Date: 18-Aug-2011 09:05

Page 1

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RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/027f2701.d  
Lab Smp Id: IAR11623-02 Client Smp ID: AR124205  
Inj Date : 17-AUG-2011 16:12  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |IAR11623-02  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-F-8082-081711.m  
Meth Date : 18-Aug-2011 09:05 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033f3301.d  
Als bottle: 27 Calibration Sample, Level: 5  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1242.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |        |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|--------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |        |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====  | =====  | =====  |
|                           |        |        |          |         |                   |        |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |        |        |        |
| 2.142                     | 2.143  | -0.001 | 19682184 | 400.000 | 346               | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |        |        |        |
| 6.063                     | 6.062  | 0.001  | 12074429 | 400.000 | 322               | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| 4 Aroclor-1242            |        |        |          |         | CAS #: 53469-21-9 |        |        |        |
| 3.023                     | 3.023  | 0.000  | 6910909  | 4000.00 | 3460              | 80.00- | 120.00 | 100.00 |
| 3.118                     | 3.118  | 0.000  | 4783583  | 4000.00 | 3400              | 49.22- | 89.22  | 69.22  |
| 3.412                     | 3.412  | 0.000  | 3785056  | 4000.00 | 3420              | 34.77- | 74.77  | 54.77  |
| 3.712                     | 3.712  | 0.000  | 3759877  | 4000.00 | 3420              | 34.40- | 74.40  | 54.40  |
| 3.731                     | 3.731  | 0.000  | 3838783  | 4000.00 | 3560              | 35.55- | 75.55  | 55.55  |
| Average of Peak Amounts = |        |        |          |         | 3.45e+03          |        |        |        |
| -----                     |        |        |          |         |                   |        |        |        |

Data File: /chem/ecod8a.i/081711.b/027f2701.d

Date : 17-AUG-2011 16:12

Client ID: AR124205

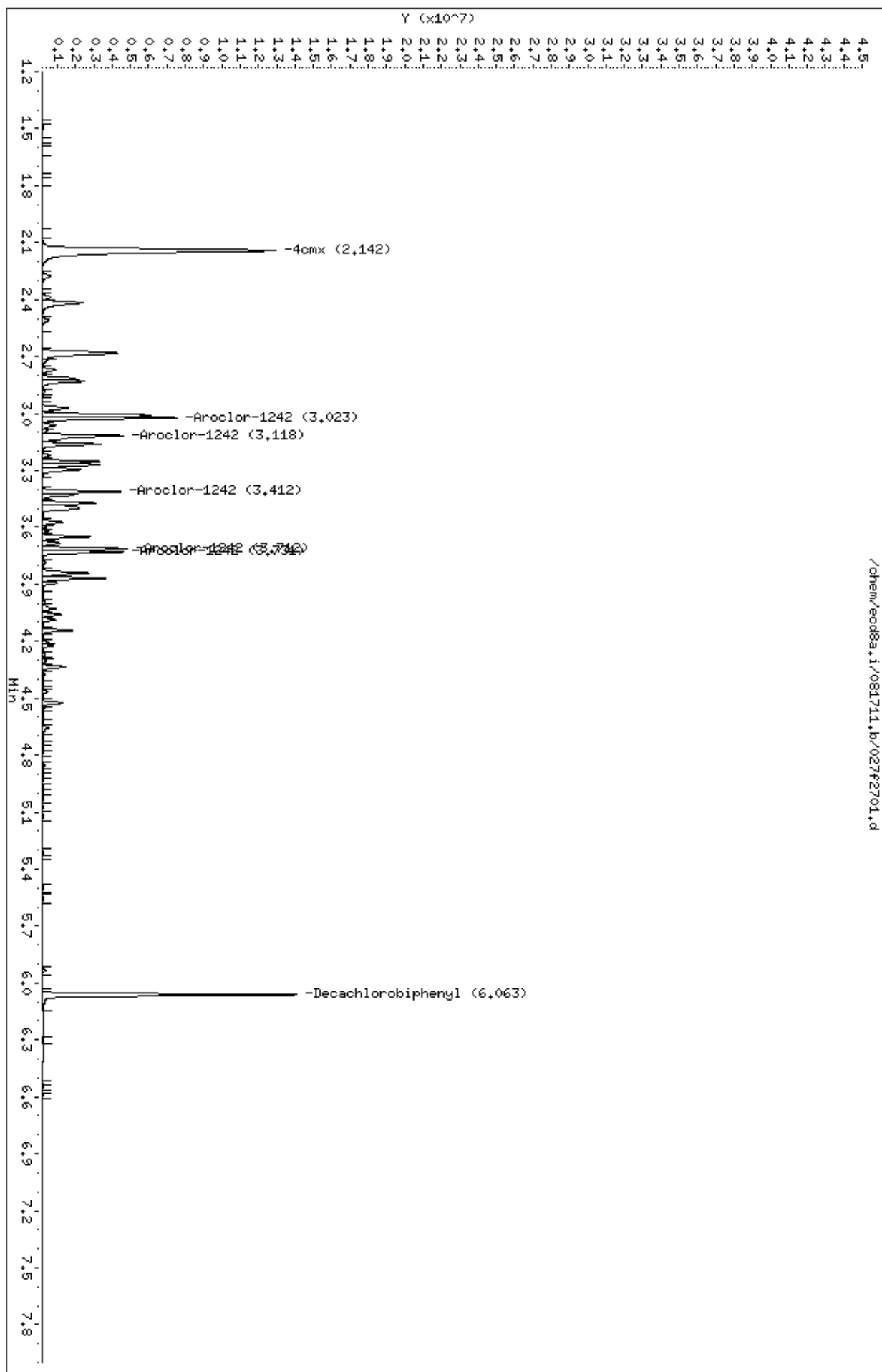
Sample Info: 11MR11623-02

Column phase: CLP1

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25



Data File: /chem/ecd8a.i/081711.b/027b2701.d  
Report Date: 18-Aug-2011 09:05

Page 1

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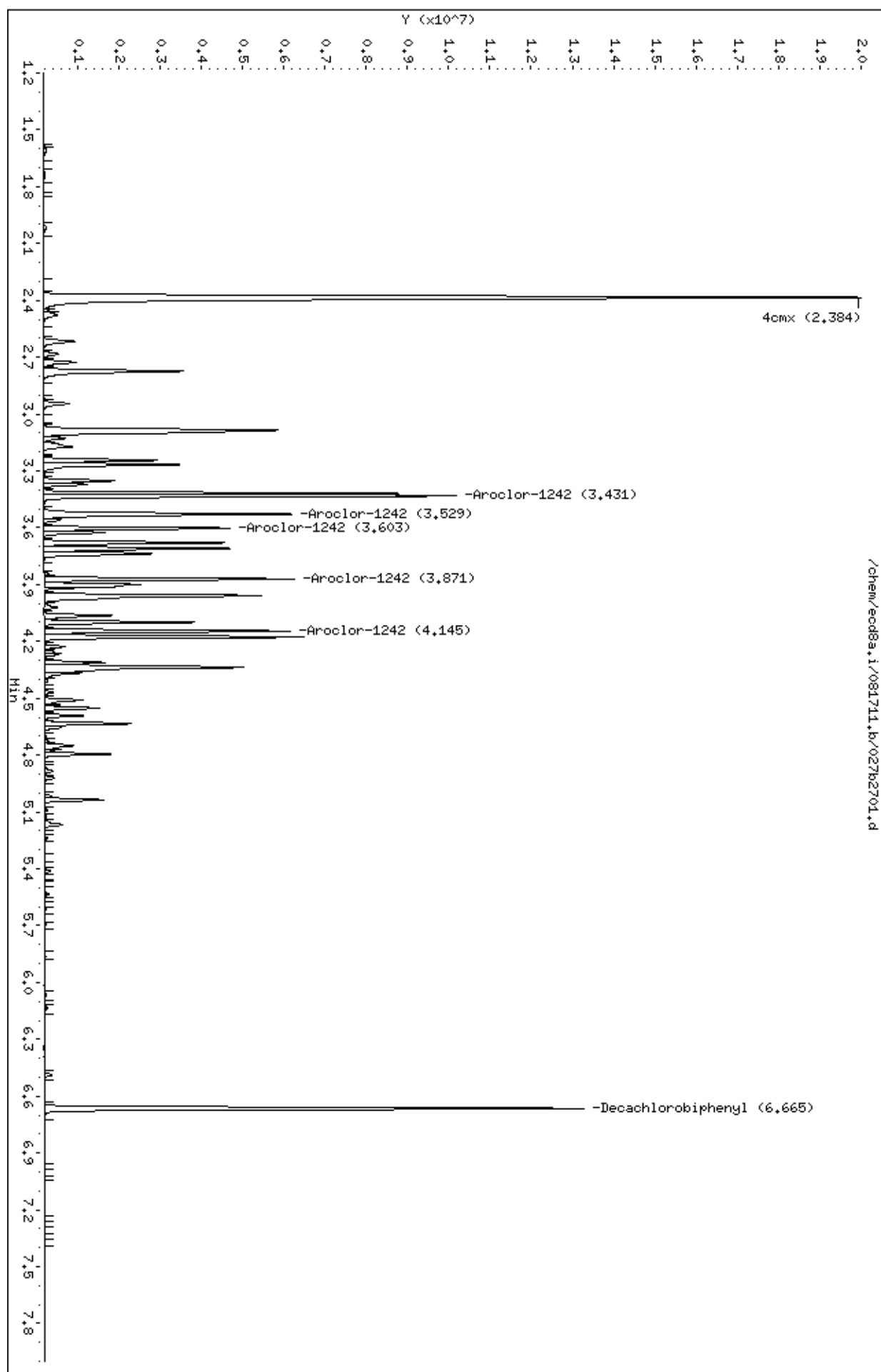
RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/081711.b/027b2701.d  
Lab Smp Id: IAR11623-02 Client Smp ID: AR124205  
Inj Date : 17-AUG-2011 16:12  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |IAR11623-02  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/081711.b/ECD8-B-8082-081711.m  
Meth Date : 18-Aug-2011 09:05 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033b3301.d  
Als bottle: 27 Calibration Sample, Level: 5  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1242.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |        |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|--------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |        |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====  | =====  | =====  |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |        |        |        |
| 2.384                     | 2.384  | 0.000  | 25546133 | 400.000 | 334               | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |        |        |        |
| 6.665                     | 6.665  | 0.000  | 11741210 | 400.000 | 310               | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| 4 Aroclor-1242            |        |        |          |         | CAS #: 53469-21-9 |        |        |        |
| 3.431                     | 3.431  | 0.000  | 8681908  | 4000.00 | 3260              | 80.00- | 120.00 | 100.00 |
| 3.529                     | 3.529  | 0.000  | 6099565  | 4000.00 | 3220              | 50.26- | 90.26  | 70.26  |
| 3.603                     | 3.603  | 0.000  | 3792086  | 4000.00 | 3380              | 23.68- | 63.68  | 43.68  |
| 3.871                     | 3.871  | 0.000  | 5004440  | 4000.00 | 3340              | 37.64- | 77.64  | 57.64  |
| 4.145                     | 4.145  | 0.000  | 5032700  | 4000.00 | 3250              | 37.97- | 77.97  | 57.97  |
| Average of Peak Amounts = |        |        |          |         | 3.29e+03          |        |        |        |
| -----                     |        |        |          |         |                   |        |        |        |

Data File: /chem/ecod8a.i/081711.b/027b2701.d  
Date : 17-AUG-2011 16:12  
Client ID: AR124205  
Sample Info: IIR11623-02  
Column phase: CLP2

Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25



## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_1  
**Data File:** /chem/ecd8a.i/083011.b/002f0201.d  
**Lab Sample ID** WAR110815-60  
**Column ID:** CLP1

**Client SDG:** 284538  
**Injection Date:** 30-AUG-11 07:21  
**Init. Cal. Date(s):** 17-AUG-11 13:06 - 17-AUG-11 13:53  
**Method:** /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
**Quant Type:** ESTD

| Compound                 | AVECF / Amount | CF CCV   | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|----------|-------------|-------------|-----|---------|------------|
| Aroclor-1016             | 2070.36        | 2009.5   | 1000        | -2.94       | 20  |         | Averaged   |
| Aroclor-1016(2)          | 2481.03        | 2617.78  | 1000        | 5.51        | 20  |         | Averaged   |
| Aroclor-1016(3)          | 994.64         | 1019.6   | 1000        | 2.51        | 20  |         | Averaged   |
| Aroclor-1016(4)          | 921.16         | 915.88   | 1000        | -0.57       | 20  |         | Averaged   |
| Aroclor-1016(5)          | 1311.82        | 1316.52  | 1000        | 0.36        | 20  |         | Averaged   |
| Aroclor-1260             | 2491.52        | 2597.56  | 1000        | 4.26        | 20  |         | Averaged   |
| Aroclor-1260(2)          | 3633.32        | 3903.62  | 1000        | 7.44        | 20  |         | Averaged   |
| Aroclor-1260(3)          | 2205.59        | 2339.9   | 1000        | 6.09        | 20  |         | Averaged   |
| Aroclor-1260(4)          | 4768.92        | 5266     | 1000        | 10.42       | 20  |         | Averaged   |
| Aroclor-1260(5)          | 2412.96        | 2637.85  | 1000        | 9.32        | 20  |         | Averaged   |
| 4cmx(Surr)               | 56819.97       | 57566.36 | 100         | 1.31        | 20  |         | Averaged   |
| Decachlorobiphenyl(Surr) | 37444.81       | 38862.01 | 100         | 3.78        | 20  |         | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_2  
**Data File:** /chem/ecd8a.i/083011.b/002b0201.d  
**Lab Sample ID** WAR110815-60  
**Column ID:** CLP2

**Client SDG:** 284538  
**Injection Date:** 30-AUG-11 07:21  
**Init. Cal. Date(s)** 17-AUG-11 13:06 - 17-AUG-11 13:53  
**Method:** /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
**Quant Type:** ESTD

| Compound                 | AVECF / Amount | CF CCV   | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|----------|-------------|-------------|-----|---------|------------|
| Aroclor-1016             | 2970.85        | 2724.58  | 1000        | -8.29       | 20  |         | Averaged   |
| Aroclor-1016(2)          | 3212.53        | 3230.92  | 1000        | 0.57        | 20  |         | Averaged   |
| Aroclor-1016(3)          | 2270.72        | 2100.3   | 1000        | -7.51       | 20  |         | Averaged   |
| Aroclor-1016(4)          | 1357.26        | 1271.86  | 1000        | -6.29       | 20  |         | Averaged   |
| Aroclor-1016(5)          | 1418.08        | 1314.28  | 1000        | -7.32       | 20  |         | Averaged   |
| Aroclor-1260             | 3277.85        | 3208.58  | 1000        | -2.11       | 20  |         | Averaged   |
| Aroclor-1260(2)          | 3812.9         | 3754.31  | 1000        | -1.54       | 20  |         | Averaged   |
| Aroclor-1260(3)          | 2821.22        | 2854.72  | 1000        | 1.19        | 20  |         | Averaged   |
| Aroclor-1260(4)          | 5708.62        | 5943.73  | 1000        | 4.12        | 20  |         | Averaged   |
| Aroclor-1260(5)          | 3978.49        | 4165.28  | 1000        | 4.69        | 20  |         | Averaged   |
| 4cmx(Surr)               | 76461.82       | 72342.46 | 100         | -5.39       | 20  |         | Averaged   |
| Decachlorobiphenyl(Surr) | 37840.29       | 40137.92 | 100         | 6.07        | 20  |         | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_1  
**Data File:** /chem/ecd8a.i/083011.b/003f0301.d  
**Lab Sample ID** WAR110614-54  
**Column ID:** CLP1

**Client SDG:** 284538  
**Injection Date:** 30-AUG-11 07:33  
**Init. Cal. Date(s)** 17-AUG-11 14:16 - 17-AUG-11 15:03  
**Method:** /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
**Quant Type:** ESTD

| Compound                 | AVECF /<br>Amount | CF<br>CCV | Nominal<br>CCV | %D /<br>%Drift | Max | Drift<br>Q | Curve Type |
|--------------------------|-------------------|-----------|----------------|----------------|-----|------------|------------|
| Aroclor-1254             | 1702.18           | 1895.95   | 1000           | 11.38          | 20  |            | Averaged   |
| Aroclor-1254(2)          | 2238.51           | 2550.58   | 1000           | 13.94          | 20  |            | Averaged   |
| Aroclor-1254(3)          | 2844.95           | 3323.78   | 1000           | 16.83          | 20  |            | Averaged   |
| Aroclor-1254(4)          | 2147.99           | 2501.49   | 1000           | 16.46          | 20  |            | Averaged   |
| Aroclor-1254(5)          | 2067.34           | 2341.03   | 1000           | 13.24          | 20  |            | Averaged   |
| 4cmx(Surr)               | 56819.97          | 54968.52  | 100            | -3.26          | 20  |            | Averaged   |
| Decachlorobiphenyl(Surr) | 37444.81          | 36511.03  | 100            | -2.49          | 20  |            | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_2  
**Data File:** /chem/ecd8a.i/083011.b/003b0301.d  
**Lab Sample ID** WAR110614-54  
**Column ID:** CLP2

**Client SDG:** 284538  
**Injection Date:** 30-AUG-11 07:33  
**Init. Cal. Date(s)** 17-AUG-11 14:16 - 17-AUG-11 15:03  
**Method:** /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
**Quant Type:** ESTD

| Compound                 | AVECF /<br>Amount | CF<br>CCV | Nominal<br>CCV | %D /<br>%Drift | Max | Drift<br>Q | Curve Type |
|--------------------------|-------------------|-----------|----------------|----------------|-----|------------|------------|
| Aroclor-1254             | 2629.4            | 2752.16   | 1000           | 4.67           | 20  |            | Averaged   |
| Aroclor-1254(2)          | 2872.92           | 3030.12   | 1000           | 5.47           | 20  |            | Averaged   |
| Aroclor-1254(3)          | 3774.14           | 4012.65   | 1000           | 6.32           | 20  |            | Averaged   |
| Aroclor-1254(4)          | 2657.59           | 2818.79   | 1000           | 6.07           | 20  |            | Averaged   |
| Aroclor-1254(5)          | 1742.71           | 1828.12   | 1000           | 4.9            | 20  |            | Averaged   |
| 4cmx(Surr)               | 76461.82          | 70228.42  | 100            | -8.15          | 20  |            | Averaged   |
| Decachlorobiphenyl(Surr) | 37840.29          | 38108.98  | 100            | 0.71           | 20  |            | Averaged   |



## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_1  
**Data File:** /chem/ecd8a.i/083011.b/004f0401.d  
**Lab Sample ID** WAR110726-42  
**Column ID:** CLP1

**Client SDG:** 284538  
**Injection Date:** 30-AUG-11 07:44  
**Init. Cal. Date(s)** 17-AUG-11 15:26 - 17-AUG-11 16:12  
**Method:** /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
**Quant Type:** ESTD

| Compound                 | AVECF /<br>Amount | CF<br>CCV | Nominal<br>CCV | %D /<br>%Drift | Max | Drift<br>Q | Curve Type |
|--------------------------|-------------------|-----------|----------------|----------------|-----|------------|------------|
| Aroclor-1242             | 1995.55           | 2021.45   | 1000           | 1.3            | 20  |            | Averaged   |
| Aroclor-1242(2)          | 1406.37           | 1333.2    | 1000           | -5.2           | 20  |            | Averaged   |
| Aroclor-1242(3)          | 1107.7            | 1046.1    | 1000           | -5.56          | 20  |            | Averaged   |
| Aroclor-1242(4)          | 1100.53           | 1060.04   | 1000           | -3.68          | 20  |            | Averaged   |
| Aroclor-1242(5)          | 1077.39           | 1043.46   | 1000           | -3.15          | 20  |            | Averaged   |
| 4cmx(Surr)               | 56819.97          | 58682.23  | 100            | 3.28           | 20  |            | Averaged   |
| Decachlorobiphenyl(Surr) | 37444.81          | 38399.27  | 100            | 2.55           | 20  |            | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_2  
**Data File:** /chem/ecd8a.i/083011.b/004b0401.d  
**Lab Sample ID** WAR110726-42  
**Column ID:** CLP2

**Client SDG:** 284538  
**Injection Date:** 30-AUG-11 07:44  
**Init. Cal. Date(s)** 17-AUG-11 15:26 - 17-AUG-11 16:12  
**Method:** /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
**Quant Type:** ESTD

| Compound                 | AVECF /<br>Amount | CF<br>CCV | Nominal<br>CCV | %D /<br>%Drift | Max | Drift<br>Q | Curve Type |
|--------------------------|-------------------|-----------|----------------|----------------|-----|------------|------------|
| Aroclor-1242             | 2664.6            | 2479.19   | 1000           | -6.96          | 20  |            | Averaged   |
| Aroclor-1242(2)          | 1895.78           | 1669.42   | 1000           | -11.94         | 20  |            | Averaged   |
| Aroclor-1242(3)          | 1120.95           | 1005.46   | 1000           | -10.3          | 20  |            | Averaged   |
| Aroclor-1242(4)          | 1499.85           | 1384.3    | 1000           | -7.7           | 20  |            | Averaged   |
| Aroclor-1242(5)          | 1549.03           | 1379.6    | 1000           | -10.94         | 20  |            | Averaged   |
| 4cmx(Surr)               | 76461.82          | 74649.78  | 100            | -2.37          | 20  |            | Averaged   |
| Decachlorobiphenyl(Surr) | 37840.29          | 39867     | 100            | 5.36           | 20  |            | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_1  
**Data File:** /chem/ecd8a.i/083011.b/017f1701.d  
**Lab Sample ID** WAR110815-60  
**Column ID:** CLP1

**Client SDG:** 284538  
**Injection Date:** 30-AUG-11 10:18  
**Init. Cal. Date(s)** 17-AUG-11 13:06 - 17-AUG-11 13:53  
**Method:** /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
**Quant Type:** ESTD

| Compound                 | AVECF /<br>Amount | CF<br>CCV | Nominal<br>CCV | %D /<br>%Drift | Max | Drift<br>Q | Curve Type |
|--------------------------|-------------------|-----------|----------------|----------------|-----|------------|------------|
| Aroclor-1016             | 2070.36           | 1913.99   | 1000           | -7.55          | 20  |            | Averaged   |
| Aroclor-1016(2)          | 2481.03           | 2506.45   | 1000           | 1.02           | 20  |            | Averaged   |
| Aroclor-1016(3)          | 994.64            | 982.92    | 1000           | -1.18          | 20  |            | Averaged   |
| Aroclor-1016(4)          | 921.16            | 866.55    | 1000           | -5.93          | 20  |            | Averaged   |
| Aroclor-1016(5)          | 1311.82           | 1281.71   | 1000           | -2.3           | 20  |            | Averaged   |
| Aroclor-1260             | 2491.52           | 2445.76   | 1000           | -1.84          | 20  |            | Averaged   |
| Aroclor-1260(2)          | 3633.32           | 3609.92   | 1000           | -0.64          | 20  |            | Averaged   |
| Aroclor-1260(3)          | 2205.59           | 2172.39   | 1000           | -1.51          | 20  |            | Averaged   |
| Aroclor-1260(4)          | 4768.92           | 5081.95   | 1000           | 6.56           | 20  |            | Averaged   |
| Aroclor-1260(5)          | 2412.96           | 2564.97   | 1000           | 6.3            | 20  |            | Averaged   |
| 4cmx(Surr)               | 56819.97          | 55413.51  | 100            | -2.48          | 20  |            | Averaged   |
| Decachlorobiphenyl(Surr) | 37444.81          | 37574.61  | 100            | 0.35           | 20  |            | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_2  
**Data File:** /chem/ecd8a.i/083011.b/017b1701.d  
**Lab Sample ID** WAR110815-60  
**Column ID:** CLP2

**Client SDG:** 284538  
**Injection Date:** 30-AUG-11 10:18  
**Init. Cal. Date(s):** 17-AUG-11 13:06 - 17-AUG-11 13:53  
**Method:** /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
**Quant Type:** ESTD

| Compound                 | AVECF /<br>Amount | CF<br>CCV | Nominal<br>CCV | %D /<br>%Drift | Max | Drift<br>Q | Curve Type |
|--------------------------|-------------------|-----------|----------------|----------------|-----|------------|------------|
| Aroclor-1016             | 2970.85           | 2614.2    | 1000           | -12            | 20  |            | Averaged   |
| Aroclor-1016(2)          | 3212.53           | 3192.66   | 1000           | -0.62          | 20  |            | Averaged   |
| Aroclor-1016(3)          | 2270.72           | 2051.32   | 1000           | -9.66          | 20  |            | Averaged   |
| Aroclor-1016(4)          | 1357.26           | 1260.17   | 1000           | -7.15          | 20  |            | Averaged   |
| Aroclor-1016(5)          | 1418.08           | 1255.44   | 1000           | -11.47         | 20  |            | Averaged   |
| Aroclor-1260             | 3277.85           | 3055.1    | 1000           | -6.8           | 20  |            | Averaged   |
| Aroclor-1260(2)          | 3812.9            | 3633.97   | 1000           | -4.69          | 20  |            | Averaged   |
| Aroclor-1260(3)          | 2821.22           | 2718.32   | 1000           | -3.65          | 20  |            | Averaged   |
| Aroclor-1260(4)          | 5708.62           | 5755.16   | 1000           | 0.82           | 20  |            | Averaged   |
| Aroclor-1260(5)          | 3978.49           | 4068.56   | 1000           | 2.26           | 20  |            | Averaged   |
| 4cmx(Surr)               | 76461.82          | 69778.5   | 100            | -8.74          | 20  |            | Averaged   |
| Decachlorobiphenyl(Surr) | 37840.29          | 38233.72  | 100            | 1.04           | 20  |            | Averaged   |

Data File: /chem/ecd8a.i/083011.b/002f0201.d  
Report Date: 30-Aug-2011 08:01

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

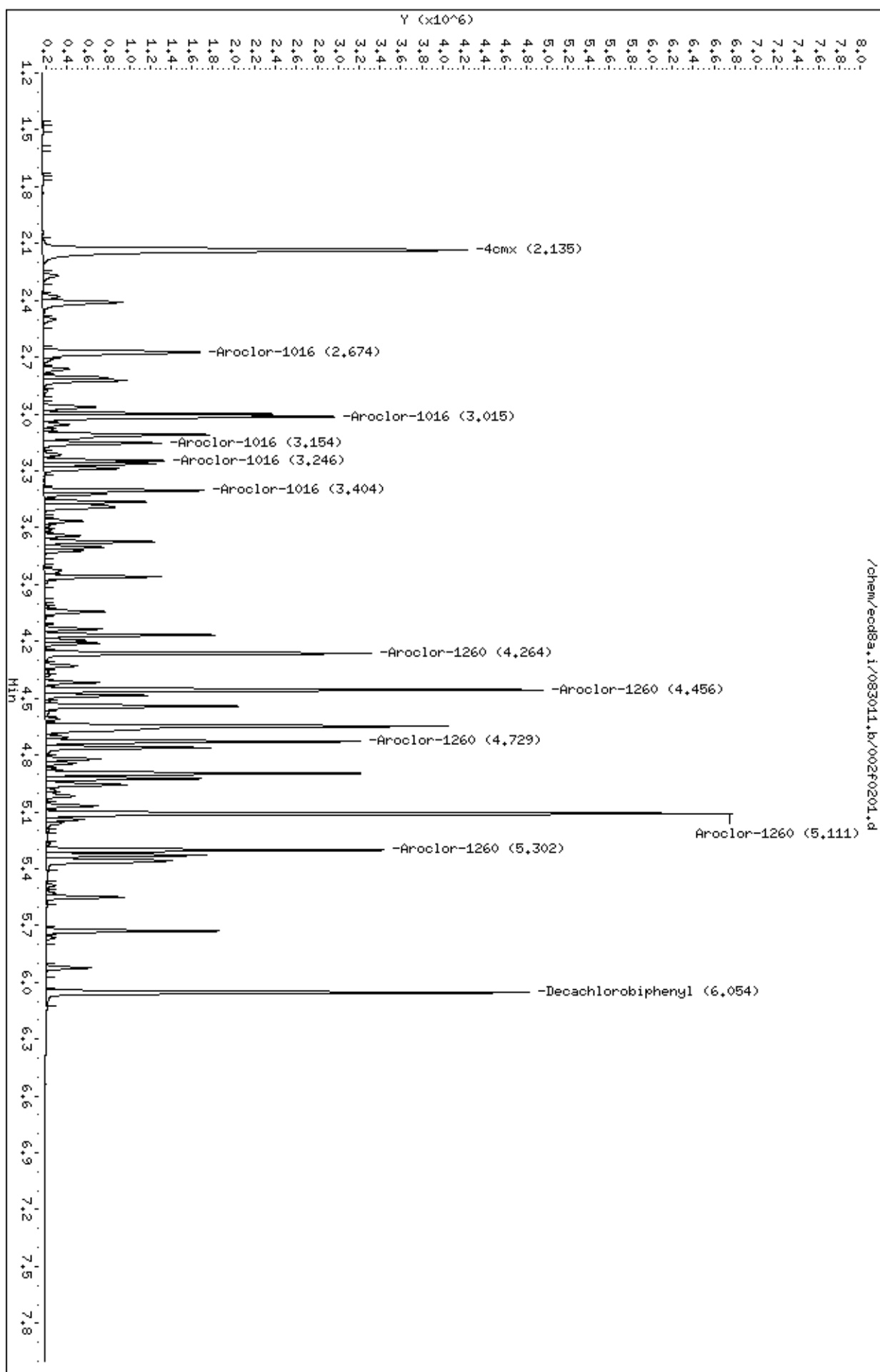
Data file : /chem/ecd8a.i/083011.b/002f0201.d  
Lab Smp Id: WAR110815-60 Client Smp ID: AR166001  
Inj Date : 30-AUG-2011 07:21  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110815-60  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
Meth Date : 30-Aug-2011 08:01 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033f3301.d  
Als bottle: 2 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1660.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.135                     | 2.135  | 0.000  | 5756636  | 100.000 | 101               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.054                     | 6.054  | 0.000  | 3886201  | 100.000 | 104               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 1 Aroclor-1016            |        |        |          |         | CAS #: 12674-11-2 |         |        |        |
| 2.674                     | 2.674  | 0.000  | 2009503  | 1000.00 | 971               | 80.00-  | 120.00 | 100.00 |
| 3.015                     | 3.015  | 0.000  | 2617784  | 1000.00 | 1060              | 110.27- | 150.27 | 130.27 |
| 3.154                     | 3.154  | 0.000  | 1019595  | 1000.00 | 1020              | 30.74-  | 70.74  | 50.74  |
| 3.246                     | 3.246  | 0.000  | 915879   | 1000.00 | 994               | 25.58-  | 65.58  | 45.58  |
| 3.404                     | 3.404  | 0.000  | 1316518  | 1000.00 | 1000              | 45.51-  | 85.51  | 65.51  |
| Average of Peak Amounts = |        |        |          |         | 1.01e+03          |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |
| 7 Aroclor-1260            |        |        |          |         | CAS #: 11096-82-5 |         |        |        |
| 4.264                     | 4.264  | 0.000  | 2597557  | 1000.00 | 1040              | 80.00-  | 120.00 | 100.00 |
| 4.456                     | 4.456  | 0.000  | 3903624  | 1000.00 | 1070              | 130.28- | 170.28 | 150.28 |
| 4.729                     | 4.729  | 0.000  | 2339899  | 1000.00 | 1060              | 70.08-  | 110.08 | 90.08  |
| 5.111                     | 5.111  | 0.000  | 5265996  | 1000.00 | 1100              | 182.73- | 222.73 | 202.73 |
| 5.302                     | 5.302  | 0.000  | 2637846  | 1000.00 | 1090              | 81.55-  | 121.55 | 101.55 |
| Average of Peak Amounts = |        |        |          |         | 1.08e+03          |         |        |        |

Data File: /chem/ecod8a.i/083011.b/002f0201.d  
Date : 30-AUG-2011 07:21  
Client ID: AR166001  
Sample Info: IMR110815-60

Column phase: CLP1

Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25



Data File: /chem/ecd8a.i/083011.b/002b0201.d  
Report Date: 30-Aug-2011 08:01

Page 1

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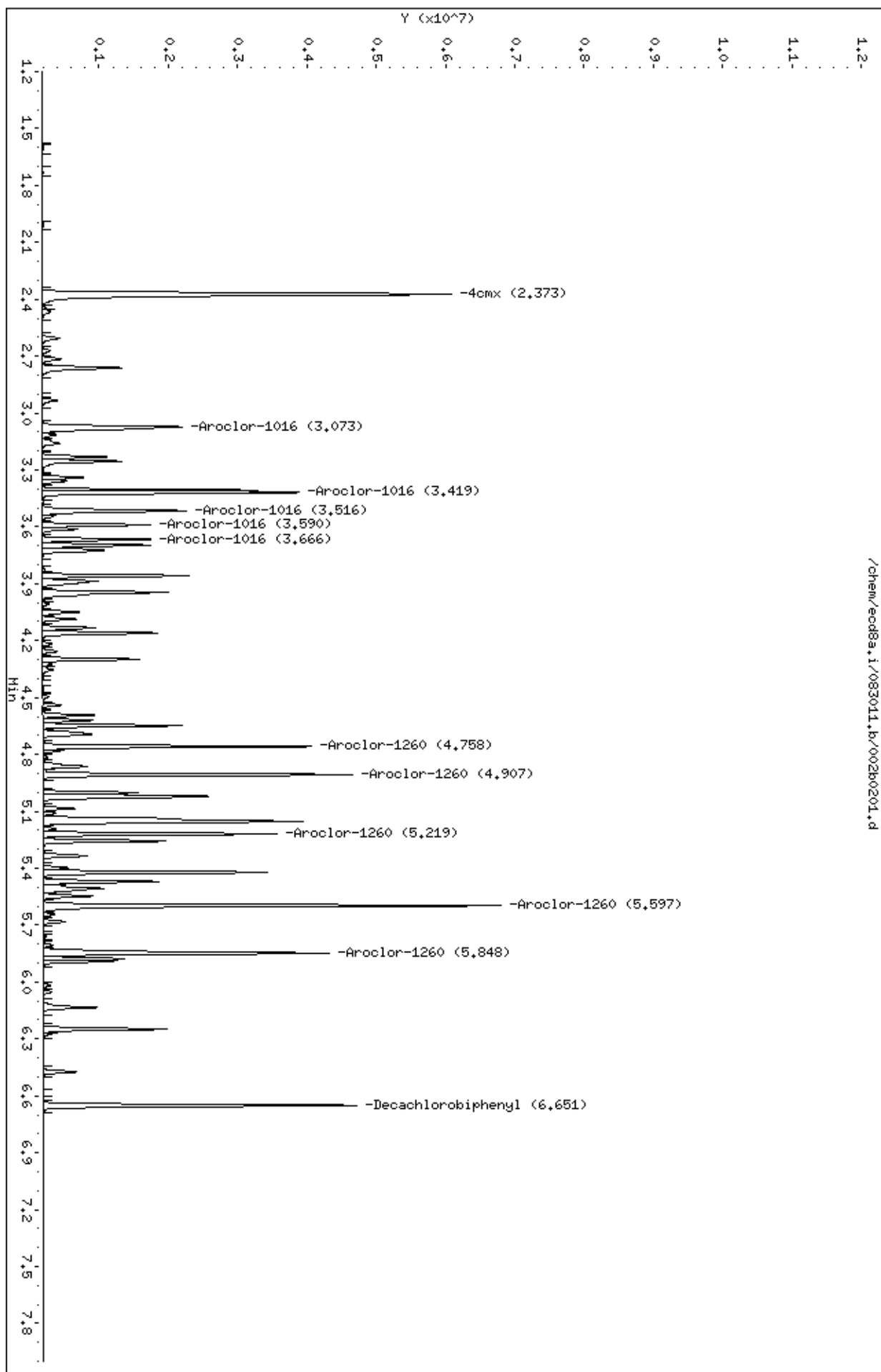
RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/002b0201.d  
Lab Smp Id: WAR110815-60 Client Smp ID: AR166001  
Inj Date : 30-AUG-2011 07:21  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110815-60  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
Meth Date : 30-Aug-2011 08:01 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033b3301.d  
Als bottle: 2 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1660.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.373                     | 2.373  | 0.000  | 7234246  | 100.000 | 94.6              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.651                     | 6.651  | 0.000  | 4013792  | 100.000 | 106               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 1 Aroclor-1016            |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 3.073                     | 3.073  | 0.000  | 2724578  | 1000.00 | 917               | 80.00-  | 120.00 | 100.00 |
| 3.419                     | 3.419  | 0.000  | 3230922  | 1000.00 | 1000              | 98.58-  | 138.58 | 118.58 |
| 3.516                     | 3.516  | 0.000  | 2100298  | 1000.00 | 925               | 57.09-  | 97.09  | 77.09  |
| 3.590                     | 3.590  | 0.000  | 1271864  | 1000.00 | 937               | 26.68-  | 66.68  | 46.68  |
| 3.666                     | 3.666  | 0.000  | 1314276  | 1000.00 | 927               | 28.24-  | 68.24  | 48.24  |
| Average of Peak Amounts = |        |        |          |         | 942               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |
| 7 Aroclor-1260            |        |        |          |         | CAS #: 11096-82-5 |         |        |        |
| 4.758                     | 4.758  | 0.000  | 3208584  | 1000.00 | 979               | 80.00-  | 120.00 | 100.00 |
| 4.907                     | 4.907  | 0.000  | 3754310  | 1000.00 | 985               | 97.01-  | 137.01 | 117.01 |
| 5.219                     | 5.219  | 0.000  | 2854722  | 1000.00 | 1010              | 68.97-  | 108.97 | 88.97  |
| 5.597                     | 5.597  | 0.000  | 5943728  | 1000.00 | 1040              | 165.24- | 205.24 | 185.24 |
| 5.848                     | 5.848  | 0.000  | 4165283  | 1000.00 | 1050              | 109.82- | 149.82 | 129.82 |
| Average of Peak Amounts = |        |        |          |         | 1.01e+03          |         |        |        |

Data File: /chem/ecd8a.i/083011.b/002b0201.d  
Date : 30-AUG-2011 07:21  
Client ID: AR166001  
Sample Info: IMR110815-60  
Column phase: CLP2

Instrument: ecd8a.i  
Operator: YSL  
Column diameter: 0.25





Data File: /chem/ecd8a.i/083011.b/003f0301.d  
Report Date: 30-Aug-2011 08:01

Page 1

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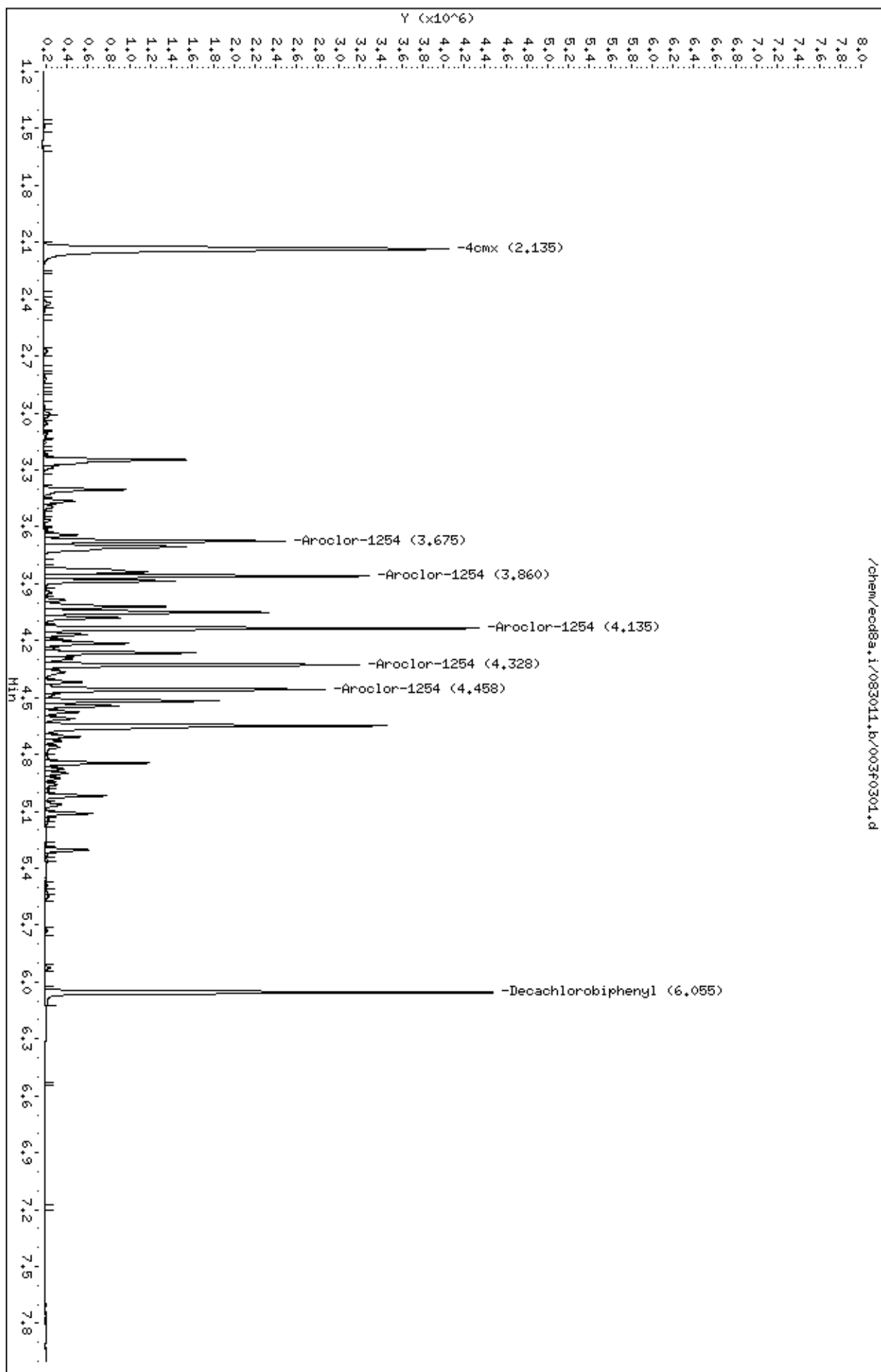
RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/003f0301.d  
Lab Smp Id: WAR110614-54 Client Smp ID: AR125401  
Inj Date : 30-AUG-2011 07:33  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110614-54  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
Meth Date : 30-Aug-2011 08:01 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033f3301.d  
Als bottle: 3 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1254.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.135                     | 2.135  | 0.000  | 5496852  | 100.000 | 96.7              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.055                     | 6.054  | 0.001  | 3651103  | 100.000 | 97.5              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 6 Aroclor-1254            |        |        |          |         | CAS #: 11097-69-1 |         |        |        |
| 3.675                     | 3.675  | 0.000  | 1895947  | 1000.00 | 1110              | 80.00-  | 120.00 | 100.00 |
| 3.860                     | 3.860  | 0.000  | 2550581  | 1000.00 | 1140              | 114.53- | 154.53 | 134.53 |
| 4.135                     | 4.135  | 0.000  | 3323781  | 1000.00 | 1170              | 155.31- | 195.31 | 175.31 |
| 4.328                     | 4.328  | 0.000  | 2501486  | 1000.00 | 1160              | 111.94- | 151.94 | 131.94 |
| 4.458                     | 4.458  | 0.000  | 2341032  | 1000.00 | 1130              | 103.48- | 143.48 | 123.48 |
| Average of Peak Amounts = |        |        |          |         | 1.14e+03          |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecod8a.i/083011.b/003f0301.d  
Date : 30-0UC-2011 07:33  
Client ID: AR125401  
Sample Info: IMR110614-54  
Column phase: CLP1

Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25



Data File: /chem/ecd8a.i/083011.b/003b0301.d  
Report Date: 30-Aug-2011 08:01

Page 1

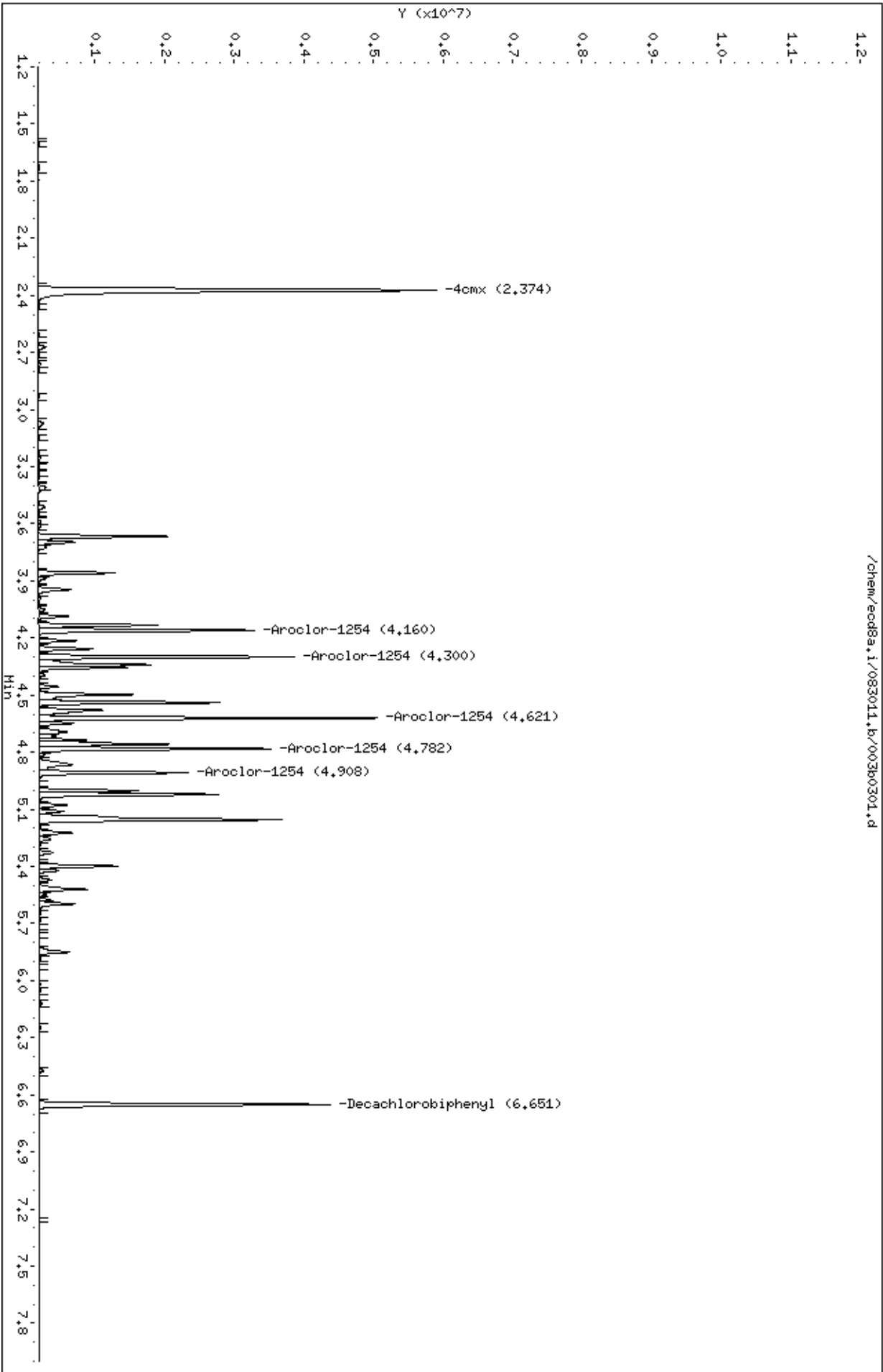
GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/003b0301.d  
Lab Smp Id: WAR110614-54 Client Smp ID: AR125401  
Inj Date : 30-AUG-2011 07:33  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110614-54  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
Meth Date : 30-Aug-2011 08:01 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033b3301.d  
Als bottle: 3 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1254.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.374                     | 2.373  | 0.001  | 7022842  | 100.000 | 91.8              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.651                     | 6.651  | 0.000  | 3810898  | 100.000 | 101               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 6 Aroclor-1254            |        |        |          |         | CAS #: 11097-69-1 |         |        |        |
| 4.160                     | 4.160  | 0.000  | 2752156  | 1000.00 | 1050              | 80.00-  | 120.00 | 100.00 |
| 4.300                     | 4.300  | 0.000  | 3030122  | 1000.00 | 1050              | 90.10-  | 130.10 | 110.10 |
| 4.621                     | 4.621  | 0.000  | 4012647  | 1000.00 | 1060              | 125.80- | 165.80 | 145.80 |
| 4.782                     | 4.782  | 0.000  | 2818788  | 1000.00 | 1060              | 82.42-  | 122.42 | 102.42 |
| 4.908                     | 4.908  | 0.000  | 1828115  | 1000.00 | 1050              | 46.42-  | 86.42  | 66.42  |
| Average of Peak Amounts = |        |        |          |         | 1.05e+03          |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecd8a.i/083011.b/003b0301.d  
Date : 30-DEC-2011 07:33  
Client ID: AR125401  
Sample Info: IMR110614-54  
Instrument: ecd8a.i  
Operator: YSL  
Column phase: CLP2  
Column diameter: 0.25



Data File: /chem/ecd8a.i/083011.b/004f0401.d  
Report Date: 30-Aug-2011 08:01

Page 1

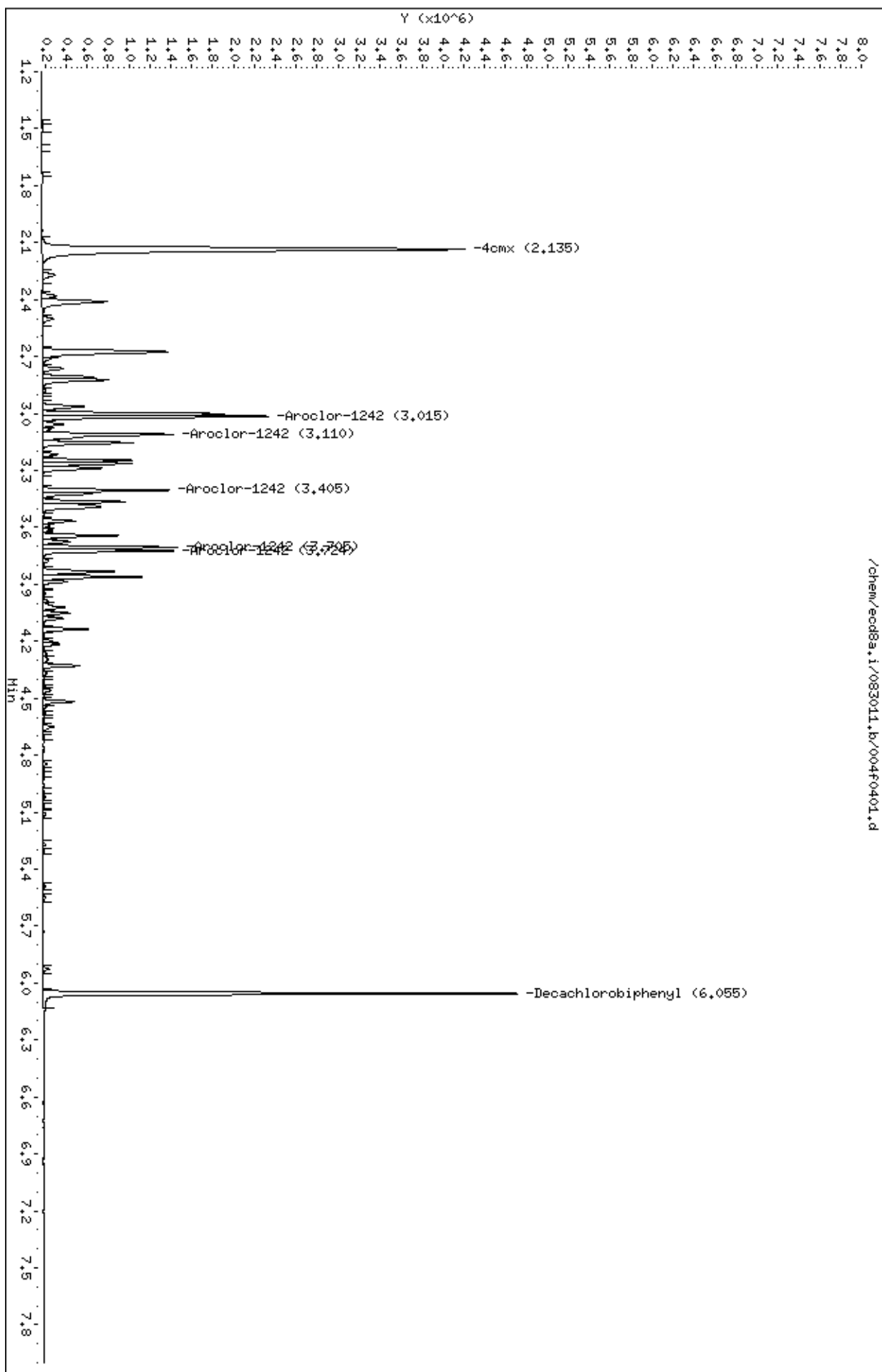
GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/004f0401.d  
Lab Smp Id: WAR110726-42 Client Smp ID: AR124201  
Inj Date : 30-AUG-2011 07:44  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110726-42  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
Meth Date : 30-Aug-2011 08:01 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033f3301.d  
Als bottle: 4 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1242.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |        |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|--------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |        |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====  | =====  | =====  |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |        |        |        |
| 2.135                     | 2.135  | 0.000  | 5868223  | 100.000 | 103               | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |        |        |        |
| 6.055                     | 6.054  | 0.001  | 3839927  | 100.000 | 102               | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| 4 Aroclor-1242            |        |        |          |         | CAS #: 53469-21-9 |        |        |        |
| 3.015                     | 3.015  | 0.000  | 2021451  | 1000.00 | 1010              | 80.00- | 120.00 | 100.00 |
| 3.110                     | 3.110  | 0.000  | 1333204  | 1000.00 | 948               | 45.95- | 85.95  | 65.95  |
| 3.405                     | 3.405  | 0.000  | 1046096  | 1000.00 | 944               | 31.75- | 71.75  | 51.75  |
| 3.705                     | 3.705  | 0.000  | 1060039  | 1000.00 | 963               | 32.44- | 72.44  | 52.44  |
| 3.724                     | 3.724  | 0.000  | 1043457  | 1000.00 | 968               | 31.62- | 71.62  | 51.62  |
| Average of Peak Amounts = |        |        |          |         | 967               |        |        |        |
| -----                     |        |        |          |         |                   |        |        |        |

Data File: /chem/ecod8a.i/083011.b/004f0401.d  
Date : 30-JUL-2011 07:44  
Client ID: AR124201  
Sample Info: IMR110726-42  
Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25  
Column phase: CLP1



Data File: /chem/ecd8a.i/083011.b/004b0401.d  
Report Date: 30-Aug-2011 08:01

Page 1

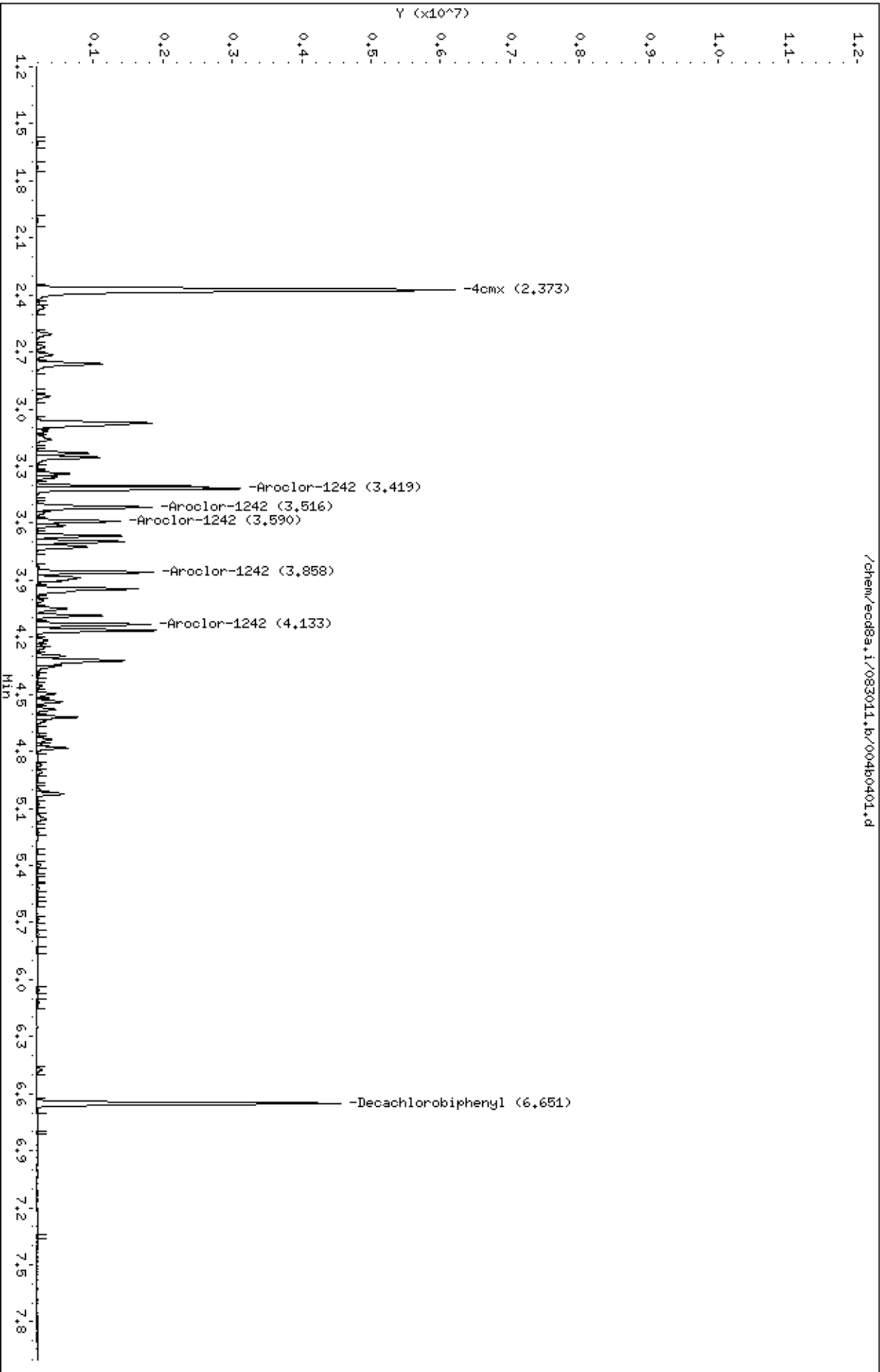
GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/004b0401.d  
Lab Smp Id: WAR110726-42 Client Smp ID: AR124201  
Inj Date : 30-AUG-2011 07:44  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110726-42  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
Meth Date : 30-Aug-2011 08:01 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033b3301.d  
Als bottle: 4 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1242.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |        |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|--------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |        |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====  | =====  | =====  |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |        |        |        |
| 2.373                     | 2.373  | 0.000  | 7464978  | 100.000 | 97.6              | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |        |        |        |
| 6.651                     | 6.651  | 0.000  | 3986700  | 100.000 | 105               | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| 4 Aroclor-1242            |        |        |          |         | CAS #: 53469-21-9 |        |        |        |
| 3.419                     | 3.419  | 0.000  | 2479192  | 1000.00 | 930               | 80.00- | 120.00 | 100.00 |
| 3.516                     | 3.516  | 0.000  | 1669415  | 1000.00 | 880               | 47.34- | 87.34  | 67.34  |
| 3.590                     | 3.590  | 0.000  | 1005457  | 1000.00 | 897               | 20.56- | 60.56  | 40.56  |
| 3.858                     | 3.858  | 0.000  | 1384298  | 1000.00 | 923               | 35.84- | 75.84  | 55.84  |
| 4.133                     | 4.133  | 0.000  | 1379597  | 1000.00 | 891               | 35.65- | 75.65  | 55.65  |
| Average of Peak Amounts = |        |        |          |         | 904               |        |        |        |
| -----                     |        |        |          |         |                   |        |        |        |

Data File: /chem/ecd8a.i/083011.b/004b0401.d  
 Date : 30-AUG-2011 07:44  
 Client ID: AR124201  
 Sample Info: IMR110726-42  
 Column phase: CLP2  
 Instrument: ecd8a.i  
 Operator: YSL  
 Column diameter: 0.25





Data File: /chem/ecd8a.i/083011.b/005f0501.d  
Report Date: 30-Aug-2011 08:08

Page 1

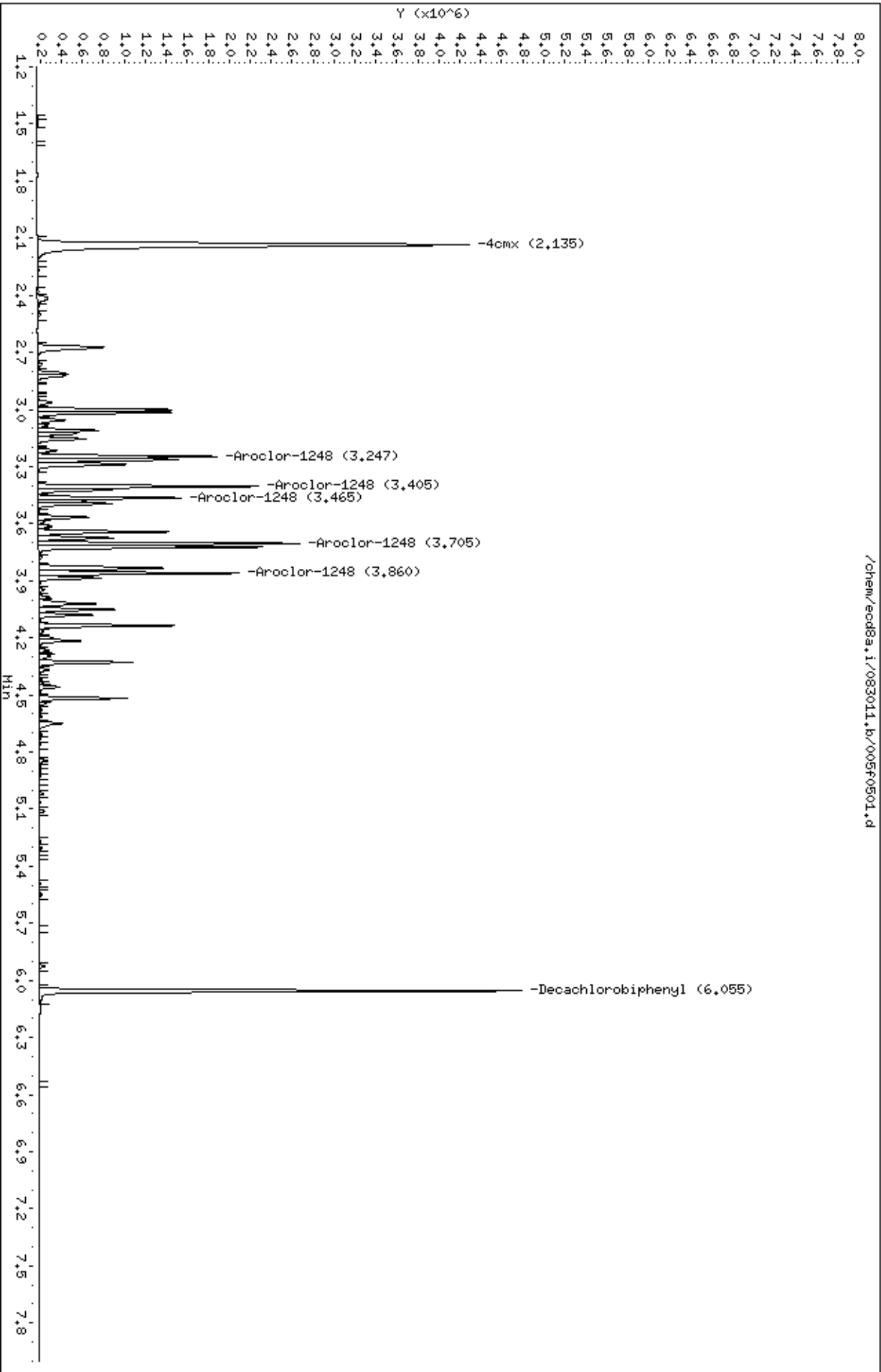
GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/005f0501.d  
Lab Smp Id: WAR110726-48 Client Smp ID: AR124801  
Inj Date : 30-AUG-2011 07:56  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110726-48  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
Meth Date : 30-Aug-2011 08:08 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033f3301.d  
Als bottle: 5 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1248.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |                  |         |         |                |              |
|---------------------------|--------|--------|------------------|---------|---------|----------------|--------------|
|                           |        |        | CAL-AMT          |         | ON-COL  |                |              |
| RT                        | EXP RT | DLT RT | RESPONSE ( ug/L) |         | ( ug/L) |                | TARGET RANGE |
| ==                        | =====  | =====  | =====            | =====   | =====   | =====          | =====        |
| -----                     |        |        |                  |         |         |                |              |
| \$ 11 4cmx                |        |        |                  |         | CAS #:  | 877-09-8       |              |
| 2.135                     | 2.135  | 0.000  | 5784811          | 100.000 | 102     | 80.00- 120.00  | 100.00       |
| -----                     |        |        |                  |         |         |                |              |
| \$ 12 Decachlorobiphenyl  |        |        |                  |         | CAS #:  | 2051-24-3      |              |
| 6.055                     | 6.054  | 0.001  | 3815084          | 100.000 | 102     | 80.00- 120.00  | 100.00       |
| -----                     |        |        |                  |         |         |                |              |
| 5 Aroclor-1248            |        |        |                  |         | CAS #:  | 12672-29-6     |              |
| 3.247                     | 3.247  | 0.000  | 1388785          | 1000.00 | 936     | 80.00- 120.00  | 100.00       |
| 3.405                     | 3.405  | 0.000  | 1784106          | 1000.00 | 959     | 108.47- 148.47 | 128.47       |
| 3.465                     | 3.465  | 0.000  | 1153048          | 1000.00 | 946     | 63.03- 103.03  | 83.03        |
| 3.705                     | 3.705  | 0.000  | 2069970          | 1000.00 | 971     | 129.05- 169.05 | 149.05       |
| 3.860                     | 3.860  | 0.000  | 1623685          | 1000.00 | 922     | 96.91- 136.91  | 116.91       |
| Average of Peak Amounts = |        |        |                  |         | 947     |                |              |
| -----                     |        |        |                  |         |         |                |              |

Data File: /chem/ecod8a.i/083011.b/005f0501.d  
 Date : 30-0UC-2011 07:56  
 Client ID: AR124801  
 Sample Info: IMR110726-48  
 Column phase: CLP1  
 Instrument: ecod8a.i  
 Operator: YSL  
 Column diameter: 0.25



Data File: /chem/ecd8a.i/083011.b/005b0501.d  
Report Date: 30-Aug-2011 08:09

Page 1

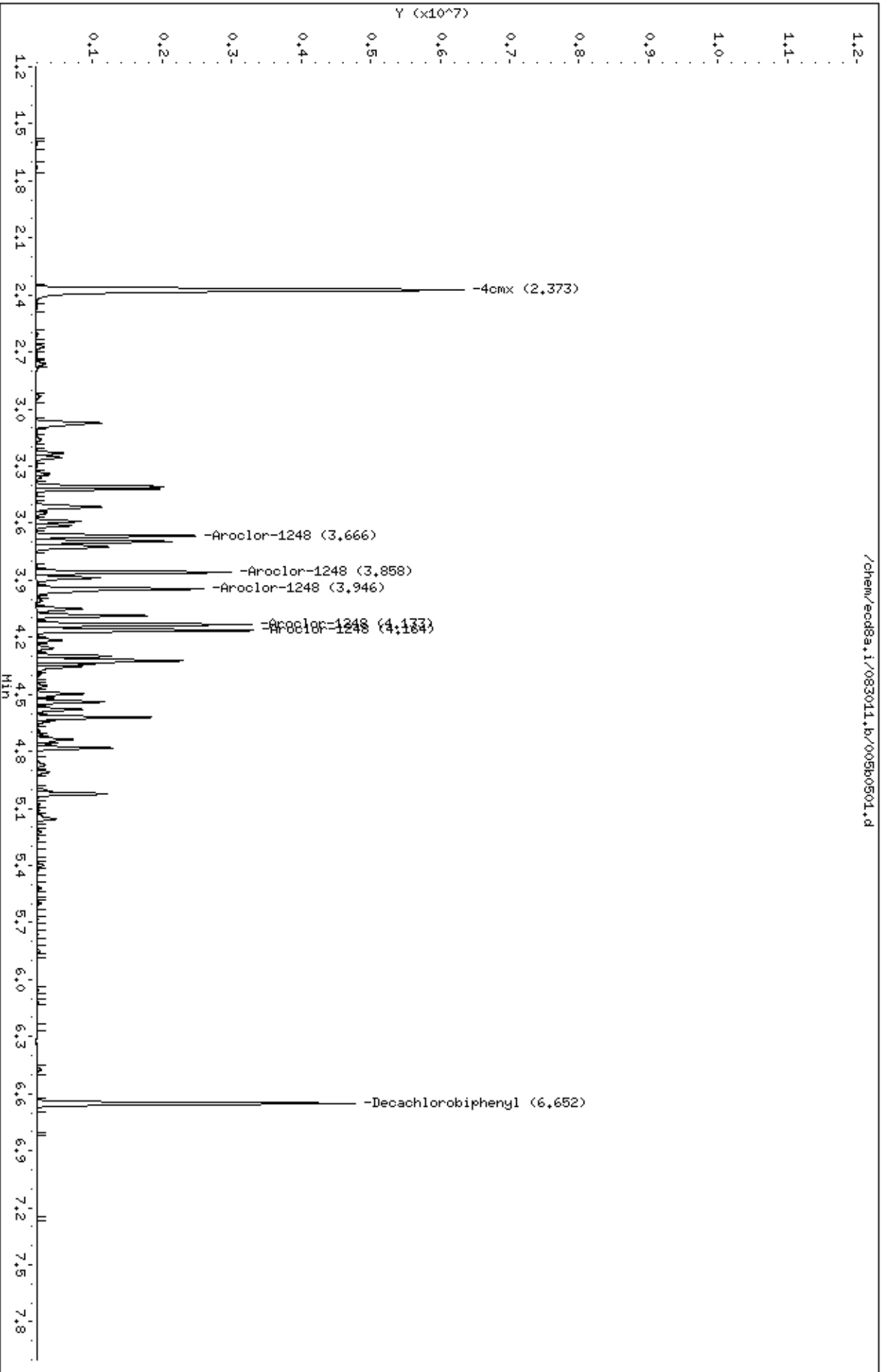
GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/005b0501.d  
Lab Smp Id: WAR110726-48 Client Smp ID: AR124801  
Inj Date : 30-AUG-2011 07:56  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110726-48  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
Meth Date : 30-Aug-2011 08:09 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033b3301.d  
Als bottle: 5 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1248.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.373                     | 2.373  | 0.000  | 7474458  | 100.000 | 97.8              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.652                     | 6.651  | 0.001  | 4020806  | 100.000 | 106               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 5 Aroclor-1248            |        |        |          |         | CAS #: 12672-29-6 |         |        |        |
| 3.666                     | 3.666  | 0.000  | 1921839  | 1000.00 | 872               | 80.00-  | 120.00 | 100.00 |
| 3.858                     | 3.858  | 0.000  | 2327152  | 1000.00 | 890               | 101.09- | 141.09 | 121.09 |
| 3.946                     | 3.946  | 0.000  | 2475354  | 1000.00 | 887               | 108.80- | 148.80 | 128.80 |
| 4.133                     | 4.133  | 0.000  | 2565270  | 1000.00 | 883               | 113.48- | 153.48 | 133.48 |
| 4.164                     | 4.164  | 0.000  | 2825640  | 1000.00 | 874               | 127.03- | 167.03 | 147.03 |
| Average of Peak Amounts = |        |        |          |         | 881               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |

Data File: /chem/ecd8a.i/083011.b/005b0501.d  
 Date : 30-AUG-2011 07:56  
 Client ID: AR124801  
 Sample Info: IMR110726-48  
 Column phase: CLP2  
 Instrument: ecd8a.i  
 Operator: YSL  
 Column diameter: 0.25



Data File: /chem/ecd8a.i/083011.b/006f0601.d  
Report Date: 30-Aug-2011 08:33

Page 1

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RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/006f0601.d  
Lab Smp Id: WAR110701-32 Client Smp ID: AR123201  
Inj Date : 30-AUG-2011 08:08  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110701-32  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
Meth Date : 30-Aug-2011 08:33 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033f3301.d  
Als bottle: 6 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1232.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |                    |        |          |         |                   |         |        |        |
|---------------------------|--------------------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |                    |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT             | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====              | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
|                           |                    |        |          |         |                   |         |        |        |
| \$ 11                     | 4cmx               |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.138                     | 2.135              | 0.003  | 5522140  | 100.000 | 97.2              | 80.00-  | 120.00 | 100.00 |
| -----                     |                    |        |          |         |                   |         |        |        |
| \$ 12                     | Decachlorobiphenyl |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.055                     | 6.054              | 0.001  | 3813713  | 100.000 | 102               | 80.00-  | 120.00 | 100.00 |
| -----                     |                    |        |          |         |                   |         |        |        |
| 3                         | Aroclor-1232       |        |          |         | CAS #: 11141-16-5 |         |        |        |
| 2.676                     | 2.676              | 0.000  | 1046106  | 1000.00 | 1010              | 80.00-  | 120.00 | 100.00 |
| 3.016                     | 3.016              | 0.000  | 1318212  | 1000.00 | 1070              | 106.01- | 146.01 | 126.01 |
| 3.111                     | 3.111              | 0.000  | 885785   | 1000.00 | 1030              | 64.67-  | 104.67 | 84.67  |
| 3.405                     | 3.405              | 0.000  | 662225   | 1000.00 | 1050              | 43.30-  | 83.30  | 63.30  |
| 3.705                     | 3.705              | 0.000  | 621838   | 1000.00 | 1050              | 39.44-  | 79.44  | 59.44  |
| Average of Peak Amounts = |                    |        |          |         | 1.04e+03          |         |        |        |
| -----                     |                    |        |          |         |                   |         |        |        |

Data File: /chem/ecod8a.i/083011.b/006f0601.d

Date : 30-JUL-2011 08:08

Client ID: AR123201

Sample Info: IMR110701-32

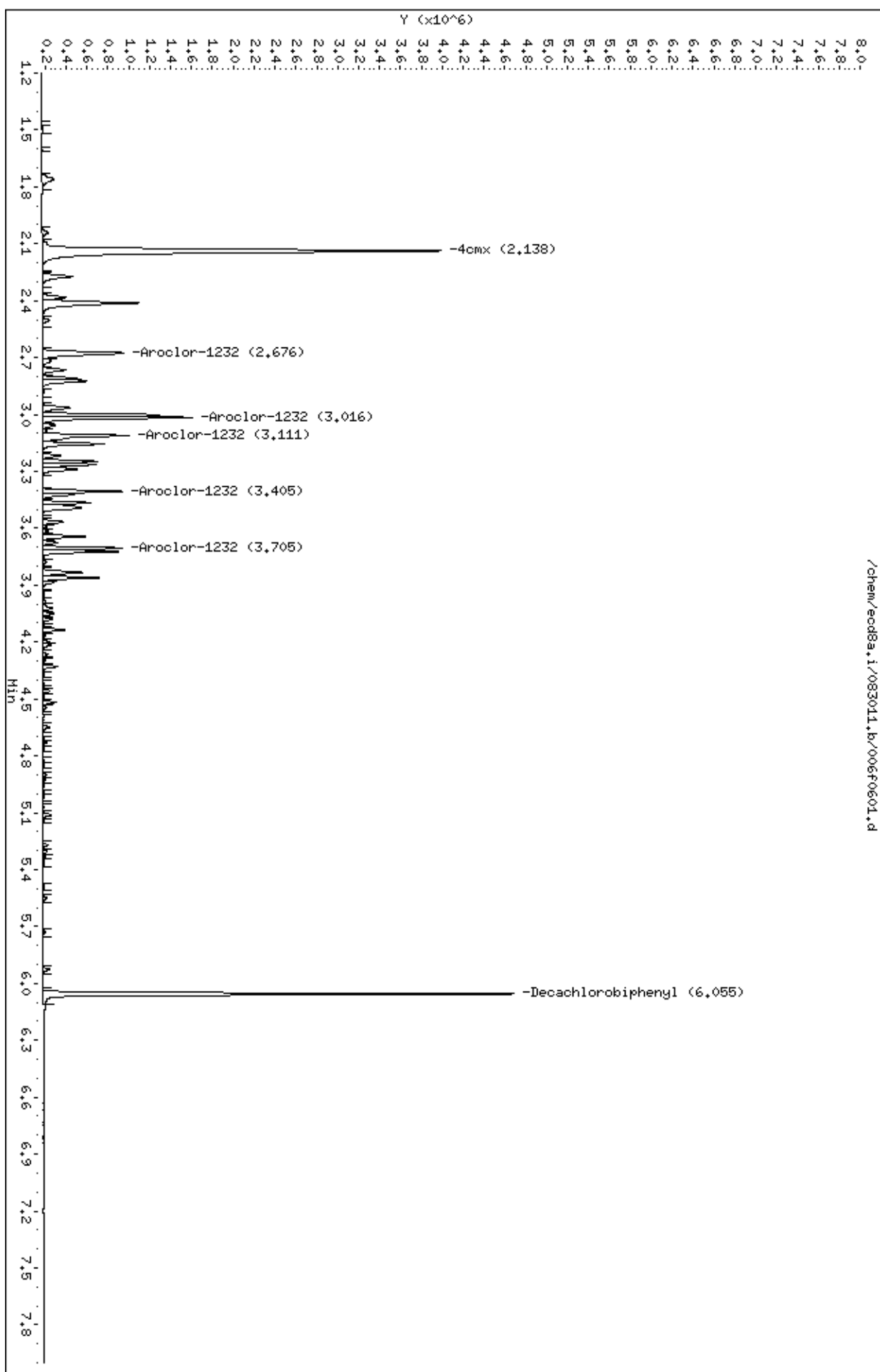
Column phase: CLP1

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25

Page 1



Data File: /chem/ecd8a.i/083011.b/006b0601.d  
Report Date: 30-Aug-2011 08:33

Page 1

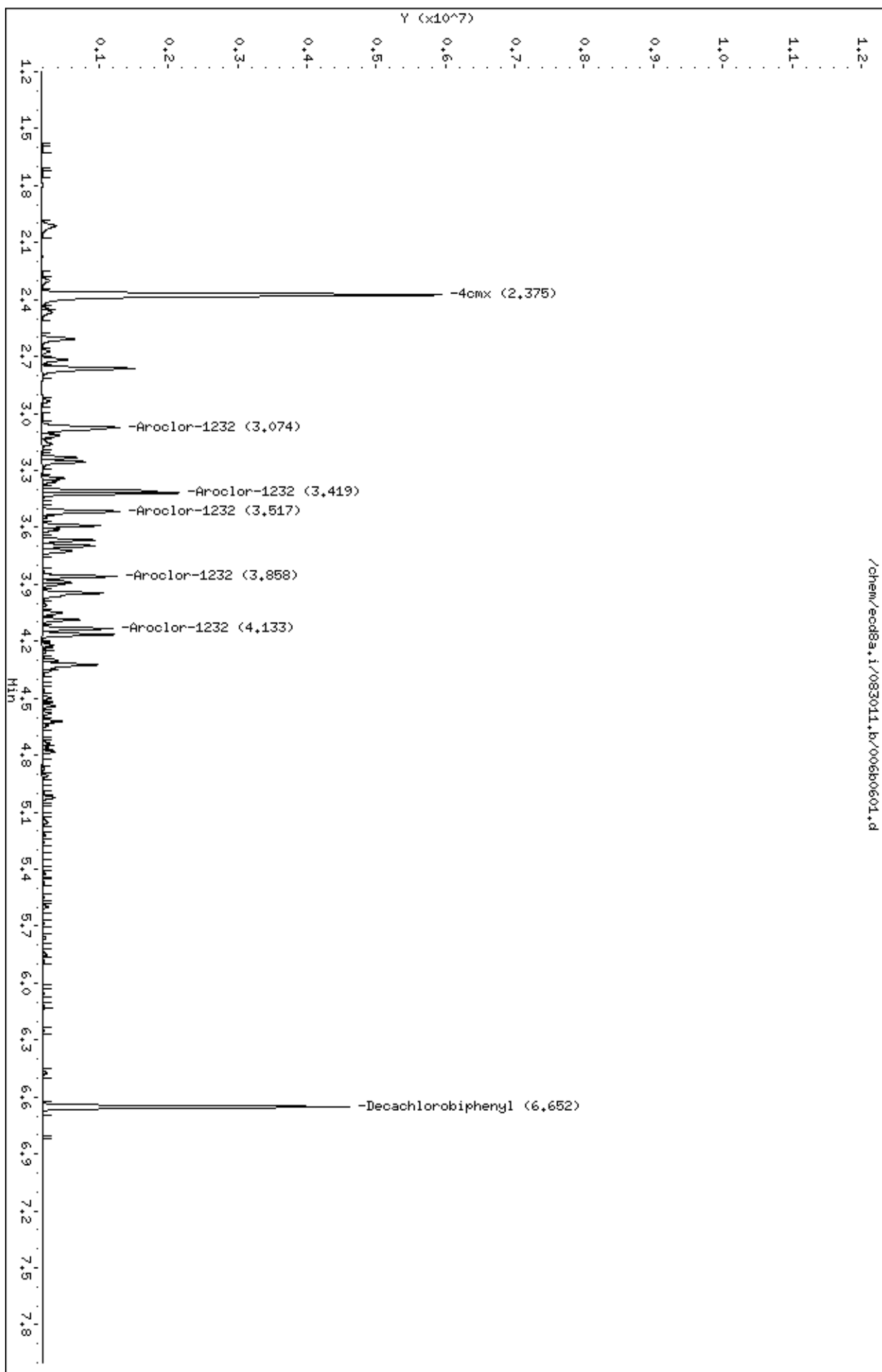
GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/006b0601.d  
Lab Smp Id: WAR110701-32 Client Smp ID: AR123201  
Inj Date : 30-AUG-2011 08:08  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110701-32  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
Meth Date : 30-Aug-2011 08:33 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033b3301.d  
Als bottle: 6 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1232.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |        |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|--------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |        |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====  | =====  | =====  |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |        |        |        |
| 2.375                     | 2.373  | 0.002  | 7045662  | 100.000 | 92.1              | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |        |        |        |
| 6.652                     | 6.651  | 0.001  | 3937666  | 100.000 | 104               | 80.00- | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |        |        |        |
| 3 Aroclor-1232            |        |        |          |         | CAS #: 11141-16-5 |        |        |        |
| 3.074                     | 3.074  | 0.000  | 1554217  | 1000.00 | 1010              | 80.00- | 120.00 | 100.00 |
| 3.419                     | 3.419  | 0.000  | 1675104  | 1000.00 | 1010              | 87.78- | 127.78 | 107.78 |
| 3.517                     | 3.517  | 0.000  | 1142103  | 1000.00 | 1010              | 53.48- | 93.48  | 73.48  |
| 3.858                     | 3.858  | 0.000  | 904998   | 1000.00 | 1030              | 38.23- | 78.23  | 58.23  |
| 4.133                     | 4.133  | 0.000  | 854317   | 1000.00 | 953               | 34.97- | 74.97  | 54.97  |
| Average of Peak Amounts = |        |        |          |         | 1e+03             |        |        |        |
| -----                     |        |        |          |         |                   |        |        |        |

Data File: /chem/ecd8a.i/083011.b/006b0601.d  
Date : 30-JUL-2011 08:08  
Client ID: AR123201  
Sample Info: IMR110701-32  
Column phase: CLP2  
Instrument: ecd8a.i  
Operator: YSL  
Column diameter: 0.25





Data File: /chem/ecd8a.i/083011.b/007f0701.d  
Report Date: 30-Aug-2011 08:33

Page 1

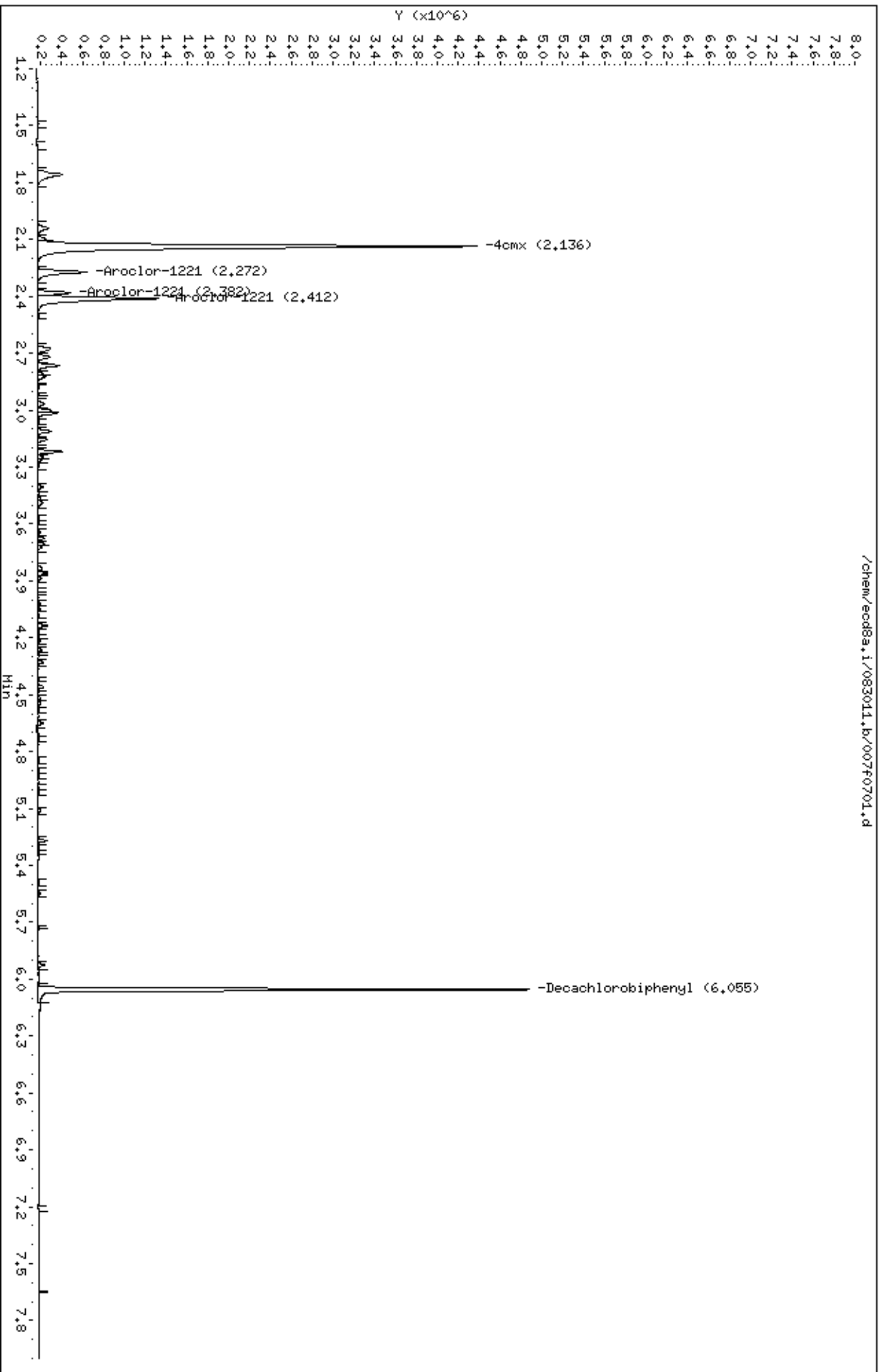
GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/007f0701.d  
Lab Smp Id: WAR110829-21 Client Smp ID: AR122101  
Inj Date : 30-AUG-2011 08:19  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110829-21  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
Meth Date : 30-Aug-2011 08:33 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033f3301.d  
Als bottle: 7 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1221.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |                   |                  |                    |        |  |
|---------------------------|--------|--------|-------------------|------------------|--------------------|--------|--|
|                           |        |        | CAL-AMT           | ON-COL           |                    |        |  |
| RT                        | EXP RT | DLT RT | RESPONSE ( ug/L)  | ( ug/L)          | TARGET RANGE       | RATIO  |  |
| ==                        | =====  | =====  | =====             | =====            | =====              | =====  |  |
| -----                     |        |        |                   |                  |                    |        |  |
| \$ 11 4cmx                |        |        |                   | CAS #: 877-09-8  |                    |        |  |
| 2.136                     | 2.135  | 0.001  | 5725128           | 100.000          | 101 80.00- 120.00  | 100.00 |  |
| -----                     |        |        |                   |                  |                    |        |  |
| \$ 12 Decachlorobiphenyl  |        |        |                   | CAS #: 2051-24-3 |                    |        |  |
| 6.055                     | 6.054  | 0.001  | 3952320           | 100.000          | 106 80.00- 120.00  | 100.00 |  |
| -----                     |        |        |                   |                  |                    |        |  |
| 2 Aroclor-1221            |        |        | CAS #: 11104-28-2 |                  |                    |        |  |
| 2.272                     | 2.272  | 0.000  | 589309            | 1000.00          | 952 80.00- 120.00  | 100.00 |  |
| 2.382                     | 2.382  | 0.000  | 331052            | 1000.00          | 978 36.18- 76.18   | 56.18  |  |
| 2.412                     | 2.412  | 0.000  | 1597994           | 1000.00          | 956 251.16- 291.16 | 271.16 |  |
| Average of Peak Amounts = |        |        |                   | 962              |                    |        |  |
| -----                     |        |        |                   |                  |                    |        |  |

Data File: /chem/ecod8a.i/083011.b/007f0701.d  
 Date : 30-0UC-2011 08:19  
 Client ID: AR122101  
 Sample Info: IMR110829-21  
 Column phase: CLP1  
 Instrument: ecod8a.i  
 Operator: YSL  
 Column diameter: 0.25



Data File: /chem/ecd8a.i/083011.b/007b0701.d  
Report Date: 30-Aug-2011 08:33

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/007b0701.d  
Lab Smp Id: WAR110829-21 Client Smp ID: AR122101  
Inj Date : 30-AUG-2011 08:19  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110829-21  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
Meth Date : 30-Aug-2011 08:33 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033b3301.d  
Als bottle: 7 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1221.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.374                     | 2.373  | 0.001  | 7283945  | 100.000 | 95.3              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.652                     | 6.651  | 0.001  | 4141218  | 100.000 | 109               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 2 Aroclor-1221            |        |        |          |         | CAS #: 11104-28-2 |         |        |        |
| 2.607                     | 2.607  | 0.000  | 833952   | 1000.00 | 956               | 80.00-  | 120.00 | 100.00 |
| 2.716                     | 2.716  | 0.000  | 534318   | 1000.00 | 953               | 44.07-  | 84.07  | 64.07  |
| 2.762                     | 2.762  | 0.000  | 2027777  | 1000.00 | 949               | 223.15- | 263.15 | 243.15 |
| Average of Peak Amounts = |        |        |          |         | 953               |         |        |        |

Data File: /chem/ecod8a.i/083011.b/007b0701.d

Date : 30-AUG-2011 08:19

Client ID: AR122101

Sample Info: IMR110829-21

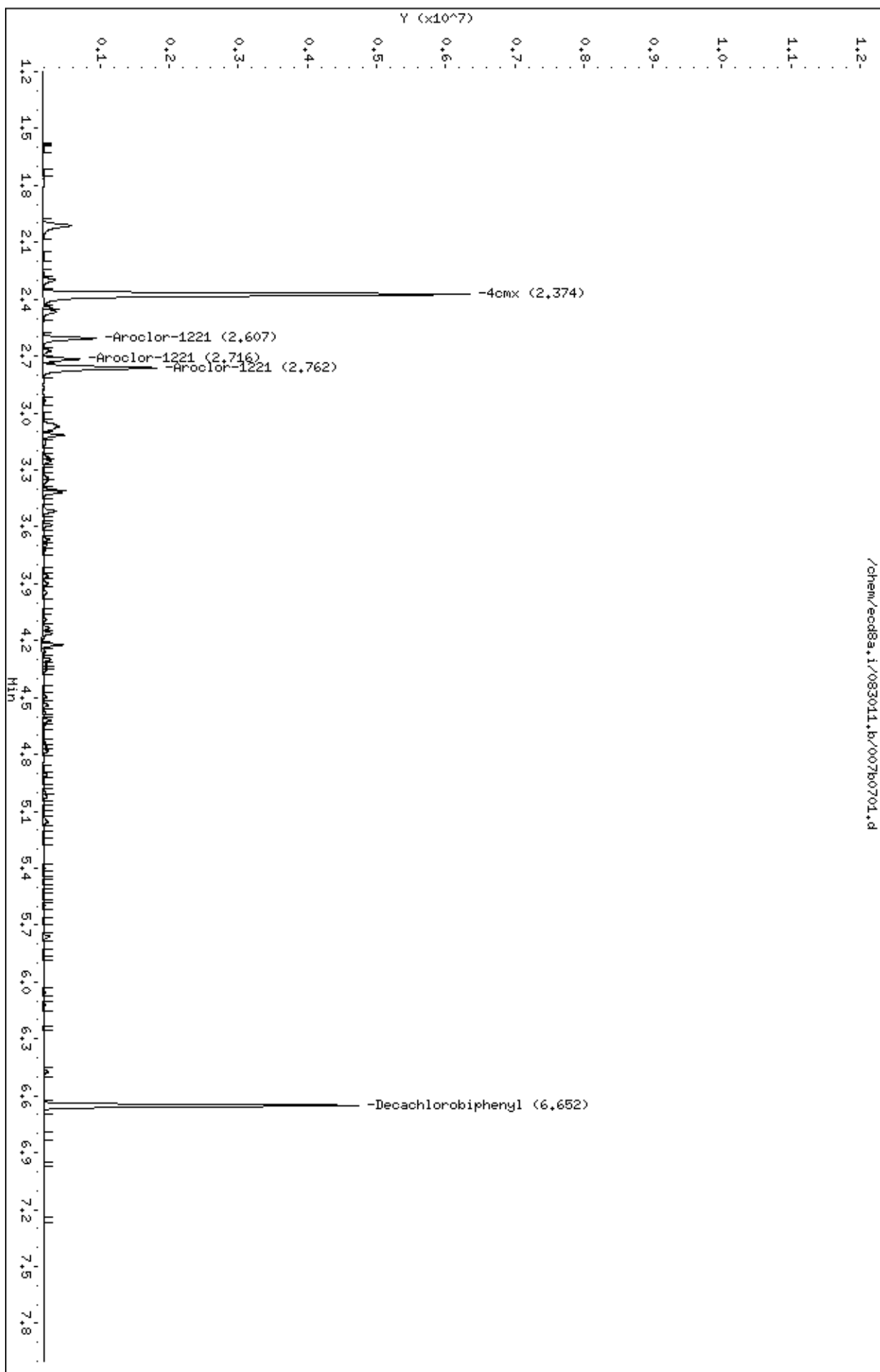
Column phase: CLP2

Instrument: ecod8a.i

Operator: YSL

Column diameter: 0.25

Page 1



Data File: /chem/ecd8a.i/083011.b/017f1701.d  
Report Date: 30-Aug-2011 10:33

Page 1

GEL Laboratories LLC

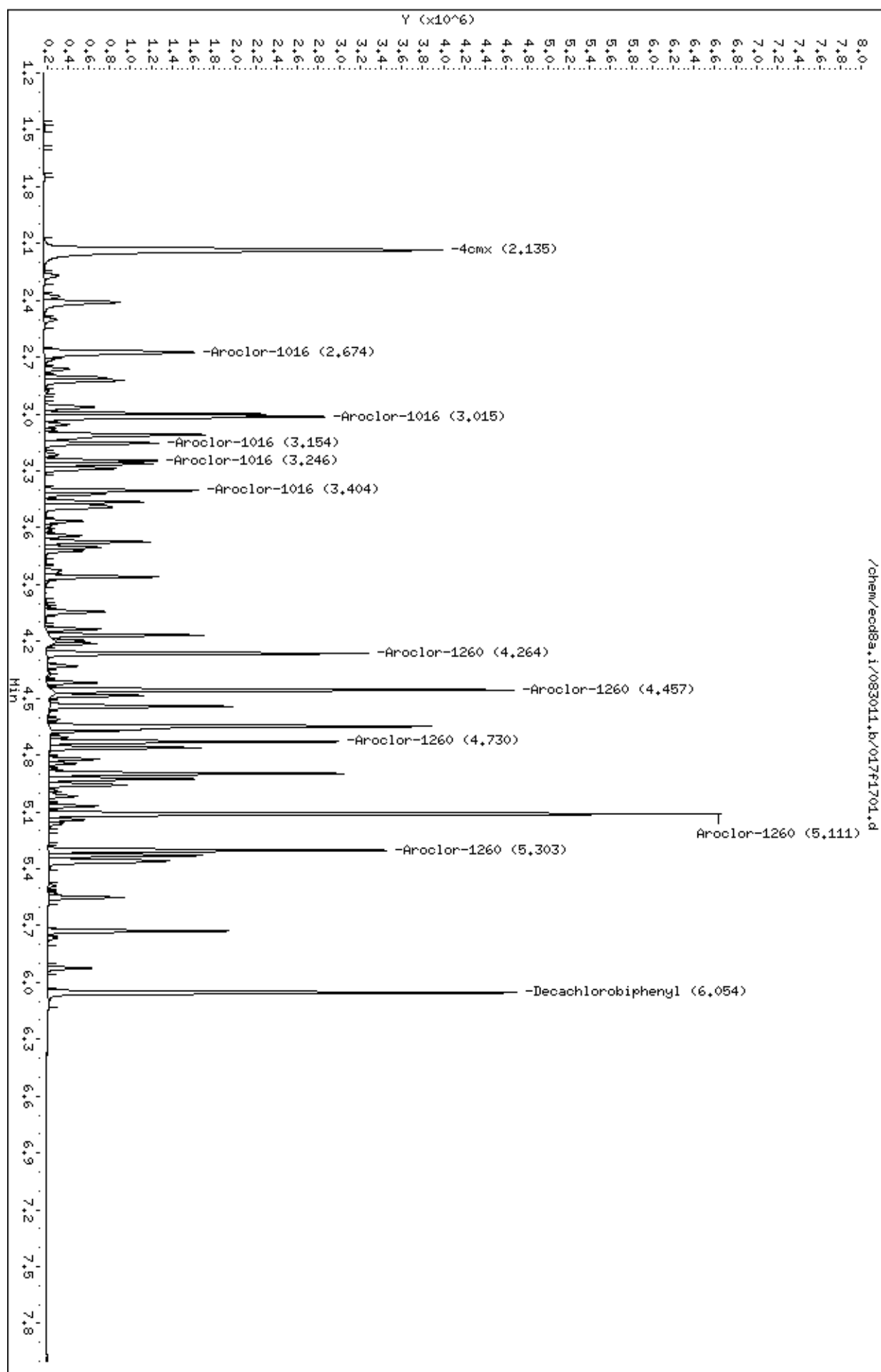
RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/017f1701.d  
Lab Smp Id: WAR110815-60 Client Smp ID: AR166002  
Inj Date : 30-AUG-2011 10:18  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110815-60  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
Meth Date : 30-Aug-2011 10:33 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033f3301.d  
Als bottle: 17 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1660.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |
| 2.135                     | 2.135  | 0.000  | 5541351  | 100.000 | 97.5              | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |
| 6.054                     | 6.054  | 0.000  | 3757461  | 100.000 | 100               | 80.00-  | 120.00 | 100.00 |
| -----                     |        |        |          |         |                   |         |        |        |
| 1 Aroclor-1016            |        |        |          |         | CAS #: 12674-11-2 |         |        |        |
| 2.674                     | 2.674  | 0.000  | 1913994  | 1000.00 | 924               | 80.00-  | 120.00 | 100.00 |
| 3.015                     | 3.015  | 0.000  | 2506451  | 1000.00 | 1010              | 110.95- | 150.95 | 130.95 |
| 3.154                     | 3.154  | 0.000  | 982920   | 1000.00 | 988               | 31.35-  | 71.35  | 51.35  |
| 3.246                     | 3.246  | 0.000  | 866547   | 1000.00 | 941               | 25.27-  | 65.27  | 45.27  |
| 3.404                     | 3.404  | 0.000  | 1281705  | 1000.00 | 977               | 46.96-  | 86.96  | 66.96  |
| Average of Peak Amounts = |        |        |          |         | 968               |         |        |        |
| -----                     |        |        |          |         |                   |         |        |        |
| 7 Aroclor-1260            |        |        |          |         | CAS #: 11096-82-5 |         |        |        |
| 4.264                     | 4.264  | 0.000  | 2445757  | 1000.00 | 982               | 80.00-  | 120.00 | 100.00 |
| 4.457                     | 4.456  | 0.001  | 3609918  | 1000.00 | 994               | 127.60- | 167.60 | 147.60 |
| 4.730                     | 4.729  | 0.001  | 2172388  | 1000.00 | 985               | 68.82-  | 108.82 | 88.82  |
| 5.111                     | 5.111  | 0.000  | 5081949  | 1000.00 | 1060              | 187.79- | 227.79 | 207.79 |
| 5.303                     | 5.302  | 0.001  | 2564972  | 1000.00 | 1060              | 84.87-  | 124.87 | 104.87 |
| Average of Peak Amounts = |        |        |          |         | 1.02e+03          |         |        |        |

Data File: /chem/ecod8a.i/083011.b/017f1701.d  
Date : 30-0UC-2011 10:18  
Client ID: AR166002  
Sample Info: IMR110815-60  
Column phase: CLP1

Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25



Data File: /chem/ecd8a.i/083011.b/017b1701.d  
Report Date: 30-Aug-2011 10:32

Page 1

GEL Laboratories LLC

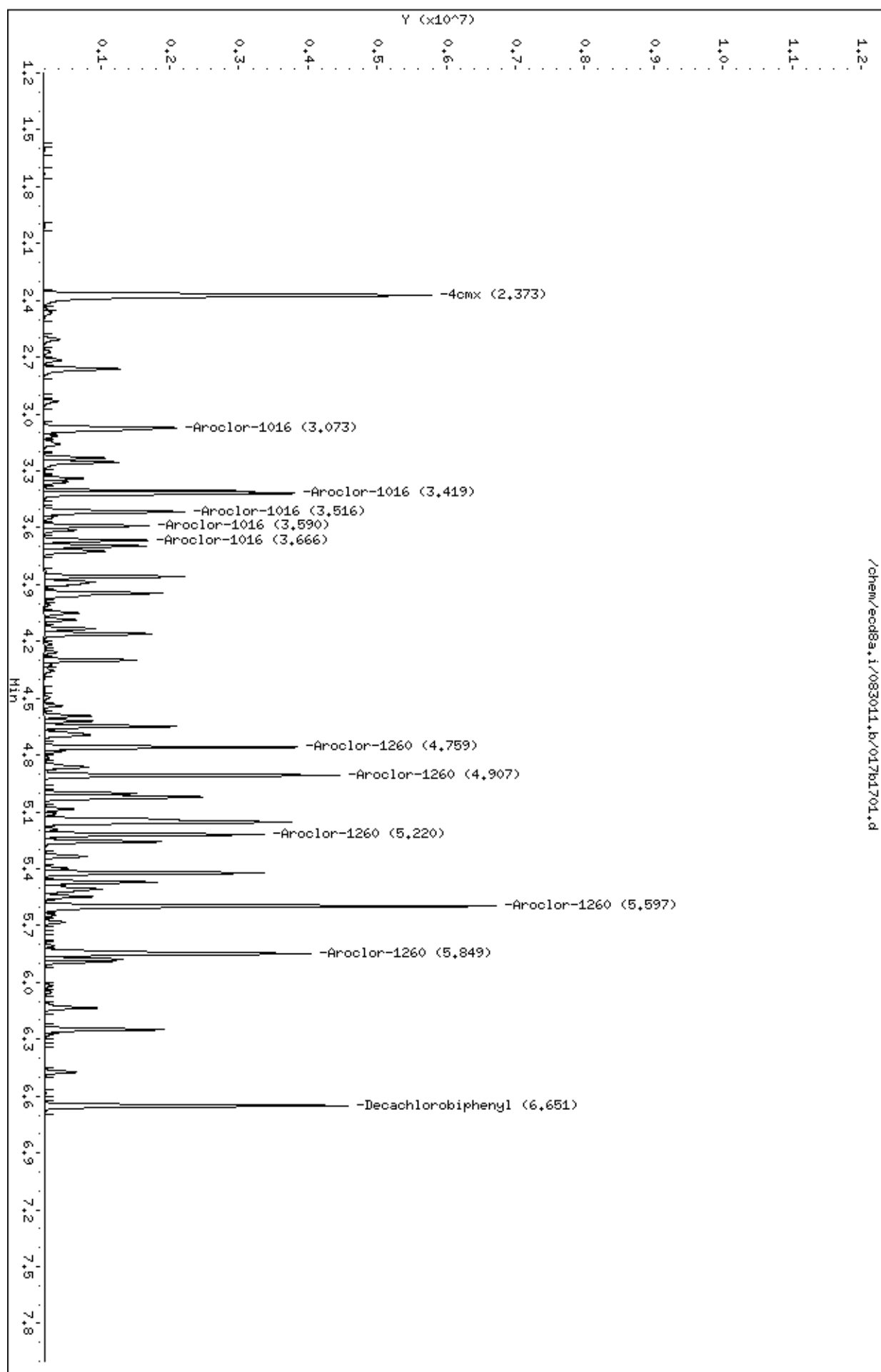
RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/017b1701.d  
Lab Smp Id: WAR110815-60 Client Smp ID: AR166002  
Inj Date : 30-AUG-2011 10:18  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |WAR110815-60  
Misc Info :  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
Meth Date : 30-Aug-2011 10:32 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033b3301.d  
Als bottle: 17 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1660.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpclp1

| AMOUNTS                   |        |        |          |         |                   |         |        |        |  |
|---------------------------|--------|--------|----------|---------|-------------------|---------|--------|--------|--|
|                           |        |        | CAL-AMT  |         | ON-COL            |         |        |        |  |
| RT                        | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |  |
| ==                        | =====  | =====  | =====    | =====   | =====             | =====   | =====  | =====  |  |
| \$ 11 4cmx                |        |        |          |         | CAS #: 877-09-8   |         |        |        |  |
| 2.373                     | 2.373  | 0.000  | 6977850  | 100.000 | 91.2              | 80.00-  | 120.00 | 100.00 |  |
| -----                     |        |        |          |         |                   |         |        |        |  |
| \$ 12 Decachlorobiphenyl  |        |        |          |         | CAS #: 2051-24-3  |         |        |        |  |
| 6.651                     | 6.651  | 0.000  | 3823372  | 100.000 | 101               | 80.00-  | 120.00 | 100.00 |  |
| -----                     |        |        |          |         |                   |         |        |        |  |
| 1 Aroclor-1016            |        |        |          |         | CAS #: 2051-24-3  |         |        |        |  |
| 3.073                     | 3.073  | 0.000  | 2614196  | 1000.00 | 880               | 80.00-  | 120.00 | 100.00 |  |
| 3.419                     | 3.419  | 0.000  | 3192664  | 1000.00 | 994               | 102.13- | 142.13 | 122.13 |  |
| 3.516                     | 3.516  | 0.000  | 2051319  | 1000.00 | 903               | 58.47-  | 98.47  | 78.47  |  |
| 3.590                     | 3.590  | 0.000  | 1260170  | 1000.00 | 928               | 28.20-  | 68.20  | 48.20  |  |
| 3.666                     | 3.666  | 0.000  | 1255444  | 1000.00 | 885               | 28.02-  | 68.02  | 48.02  |  |
| Average of Peak Amounts = |        |        |          |         | 918               |         |        |        |  |
| -----                     |        |        |          |         |                   |         |        |        |  |
| 7 Aroclor-1260            |        |        |          |         | CAS #: 11096-82-5 |         |        |        |  |
| 4.759                     | 4.758  | 0.001  | 3055098  | 1000.00 | 932               | 80.00-  | 120.00 | 100.00 |  |
| 4.907                     | 4.907  | 0.000  | 3633969  | 1000.00 | 953               | 98.95-  | 138.95 | 118.95 |  |
| 5.220                     | 5.219  | 0.001  | 2718324  | 1000.00 | 964               | 68.98-  | 108.98 | 88.98  |  |
| 5.597                     | 5.597  | 0.000  | 5755155  | 1000.00 | 1010              | 168.38- | 208.38 | 188.38 |  |
| 5.849                     | 5.848  | 0.001  | 4068562  | 1000.00 | 1020              | 113.17- | 153.17 | 133.17 |  |
| Average of Peak Amounts = |        |        |          |         | 976               |         |        |        |  |

Data File: /chem/ecd8a.i/083011.b/017b1701.d  
Date : 30-0UC-2011 10:18  
Client ID: AR166002  
Sample Info: IMR110815-60  
Column phase: CLP2

Instrument: ecd8a.i  
Operator: YSL  
Column diameter: 0.25





## Analytical Sequence

Page 1 of 2

Lab Name: GEL Laboratories LLC

Client SDG: 284538

GC Column: CLP1

Instrument ID: ECD8A.

**Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:**

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |                 |                 | #    | #                  |
|--|---------------|-----------------|-----------------|------|--------------------|
| File   | Sample Number | Lab Sample ID   | Analysis Date   | 4cmx | Decachlorobiphenyl |
| 011f1101.d   | AR166001      | WAR110817-01    | 17-AUG-11 13:06 | 2.14 | 6.06               |
| 012f1201.d   | AR166002      | WAR110817-02    | 17-AUG-11 13:18 | 2.14 | 6.06               |
| 013f1301.d   | AR166003      | WAR110817-03    | 17-AUG-11 13:29 | 2.14 | 6.06               |
| 014f1401.d   | AR166004      | WAR110817-04    | 17-AUG-11 13:41 | 2.14 | 6.06               |
| 015f1501.d   | AR166005      | IAR110815-01    | 17-AUG-11 13:53 | 2.14 | 6.06               |
| 016f1601.d   | AR166001      | WAR110815-60 01 | 17-AUG-11 14:04 | 2.14 | 6.06               |
| 017f1701.d   | AR125401      | WAR110815-05    | 17-AUG-11 14:16 | 2.14 | 6.06               |
| 018f1801.d   | AR125402      | WAR110817-06    | 17-AUG-11 14:28 | 2.14 | 6.06               |
| 019f1901.d   | AR125403      | WAR110817-07    | 17-AUG-11 14:39 | 2.14 | 6.06               |
| 020f2001.d   | AR125404      | WAR110815-08    | 17-AUG-11 14:51 | 2.14 | 6.06               |
| 021f2101.d   | AR125405      | IAR110811-01    | 17-AUG-11 15:03 | 2.14 | 6.06               |
| 022f2201.d   | AR125401      | WAR100714-54    | 17-AUG-11 15:14 | 2.14 | 6.06               |
| 023f2301.d   | AR124201      | WAR110817-09    | 17-AUG-11 15:26 | 2.14 | 6.06               |
| 024f2401.d   | AR124202      | WAR110817-10    | 17-AUG-11 15:38 | 2.14 | 6.06               |
| 025f2501.d   | AR124203      | WAR110817-11    | 17-AUG-11 15:49 | 2.14 | 6.06               |
| 026f2601.d   | AR124204      | WAR111817-12    | 17-AUG-11 16:01 | 2.14 | 6.06               |
| 027f2701.d   | AR124205      | IAR11623-02     | 17-AUG-11 16:12 | 2.14 | 6.06               |

# Column used to flag retention time values with an asterisk.

## Analytical Sequence

Page 2 of 2

Lab Name: GEL Laboratories LLC

Client SDG: 284538

GC Column: CLP2

Instrument ID: ECD8A.

**Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:**

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |                 |                 | #    | #                  |
|--|---------------|-----------------|-----------------|------|--------------------|
| File   | Sample Number | Lab Sample ID   | Analysis Date   | 4cmx | Decachlorobiphenyl |
| 011b1101.d   | AR166001      | WAR110817-01    | 17-AUG-11 13:06 | 2.39 | 6.66               |
| 012b1201.d   | AR166002      | WAR110817-02    | 17-AUG-11 13:18 | 2.39 | 6.67               |
| 013b1301.d   | AR166003      | WAR110817-03    | 17-AUG-11 13:29 | 2.38 | 6.67               |
| 014b1401.d   | AR166004      | WAR110817-04    | 17-AUG-11 13:41 | 2.38 | 6.67               |
| 015b1501.d   | AR166005      | IAR110815-01    | 17-AUG-11 13:53 | 2.38 | 6.67               |
| 016b1601.d   | AR166001      | WAR110815-60 01 | 17-AUG-11 14:04 | 2.38 | 6.67               |
| 017b1701.d   | AR125401      | WAR110815-05    | 17-AUG-11 14:16 | 2.38 | 6.66               |
| 018b1801.d   | AR125402      | WAR110817-06    | 17-AUG-11 14:28 | 2.38 | 6.67               |
| 019b1901.d   | AR125403      | WAR110817-07    | 17-AUG-11 14:39 | 2.38 | 6.66               |
| 020b2001.d   | AR125404      | WAR110815-08    | 17-AUG-11 14:51 | 2.38 | 6.66               |
| 021b2101.d   | AR125405      | IAR110811-01    | 17-AUG-11 15:03 | 2.38 | 6.67               |
| 022b2201.d   | AR125401      | WAR100714-54    | 17-AUG-11 15:14 | 2.39 | 6.67               |
| 023b2301.d   | AR124201      | WAR110817-09    | 17-AUG-11 15:26 | 2.38 | 6.66               |
| 024b2401.d   | AR124202      | WAR110817-10    | 17-AUG-11 15:38 | 2.38 | 6.67               |
| 025b2501.d   | AR124203      | WAR110817-11    | 17-AUG-11 15:49 | 2.38 | 6.66               |
| 026b2601.d   | AR124204      | WAR111817-12    | 17-AUG-11 16:01 | 2.38 | 6.66               |
| 027b2701.d   | AR124205      | IAR11623-02     | 17-AUG-11 16:12 | 2.38 | 6.67               |

# Column used to flag retention time values with an asterisk.

## Analytical Sequence

Page 1 of 2

Lab Name: GEL Laboratories LLC

Client SDG: 284538

GC Column: CLP1

Instrument ID: ECD8A.

**Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:**

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |                 |                 | 2.13<br>2.11 2.17 # | 6.05<br>6.02 6.08 # |
|--|---------------|-----------------|-----------------|---------------------|---------------------|
| File   | Sample Number | Lab Sample ID   | Analysis Date   | 4cmx                | Decachlorobiphenyl  |
| 001f0101.d   | PIBLK01       | WAR110802-99 01 | 30-AUG-11 07:09 | 2.13                | 6.05                |
| 002f0201.d   | AR166001      | WAR110815-60    | 30-AUG-11 07:21 | 2.13                | 6.05                |
| 003f0301.d   | AR125401      | WAR110614-54    | 30-AUG-11 07:33 | 2.13                | 6.05                |
| 004f0401.d   | AR124201      | WAR110726-42    | 30-AUG-11 07:44 | 2.14                | 6.06                |
| 005f0501.d   | AR124801      | WAR110726-48    | 30-AUG-11 07:56 | 2.14                | 6.06                |
| 006f0601.d   | AR123201      | WAR110701-32    | 30-AUG-11 08:08 | 2.14                | 6.06                |
| 007f0701.d   | AR122101      | WAR110829-21    | 30-AUG-11 08:19 | 2.14                | 6.05                |
| 008f0801.d   | AR126201      | WAR110829-62    | 30-AUG-11 08:31 | 2.14                | 6.05                |
| 009f0901.d   | AR126801      | WAR110809-68    | 30-AUG-11 08:43 | 2.14                | 6.06                |
| 010f1001.d   | DDTANALOGSTD  | WAR110609-DDT   | 30-AUG-11 08:54 | NA                  | NA                  |
| 011f1101.d   | PIBLK02       | WAR110802-99 02 | 30-AUG-11 09:06 | 2.14                | 6.06                |
| 012f1201.d   | PBLK01        | I202475427      | 30-AUG-11 09:17 | 2.13                | 6.05                |
| 013f1301.d   | BLK01LCS      | I202475428      | 30-AUG-11 09:29 | 2.13                | 6.05                |
| 014f1401.d   | I1080101      | 284538001       | 30-AUG-11 09:41 | 2.14                | 6.05                |
| 015f1501.d   | I1080101MS    | I202475429      | 30-AUG-11 09:52 | 2.13                | 6.05                |
| 016f1601.d   | I1080101MSD   | I202475430      | 30-AUG-11 10:04 | 2.14                | 6.05                |
| 017f1701.d   | AR166002      | WAR110815-60    | 30-AUG-11 10:18 | 2.13                | 6.05                |
| 018f1801.d   | PIBLK03       | WAR110802-99 01 | 30-AUG-11 10:33 | 2.14                | 6.06                |

# Column used to flag retention time values with an asterisk.

## Analytical Sequence

Page 2 of 2

Lab Name: GEL Laboratories LLC

Client SDG: 284538

GC Column: CLP2

Instrument ID: ECD8A.

**Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:**

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |                 |                 | 2.34 <sup>2.37</sup><br>2.4 # | 6.62 <sup>6.65</sup><br>6.68 # |
|--|---------------|-----------------|-----------------|-------------------------------|--------------------------------|
| File   | Sample Number | Lab Sample ID   | Analysis Date   | 4cmx                          | Decachlorobiphenyl             |
| 001b0101.d   | PIBLK01       | WAR110802-99 01 | 30-AUG-11 07:09 | 2.37                          | 6.65                           |
| 002b0201.d   | AR166001      | WAR110815-60    | 30-AUG-11 07:21 | 2.37                          | 6.65                           |
| 003b0301.d   | AR125401      | WAR110614-54    | 30-AUG-11 07:33 | 2.37                          | 6.65                           |
| 004b0401.d   | AR124201      | WAR110726-42    | 30-AUG-11 07:44 | 2.37                          | 6.65                           |
| 005b0501.d   | AR124801      | WAR110726-48    | 30-AUG-11 07:56 | 2.37                          | 6.65                           |
| 006b0601.d   | AR123201      | WAR110701-32    | 30-AUG-11 08:08 | 2.38                          | 6.65                           |
| 007b0701.d   | AR122101      | WAR110829-21    | 30-AUG-11 08:19 | 2.37                          | 6.65                           |
| 008b0801.d   | AR126201      | WAR110829-62    | 30-AUG-11 08:31 | 2.37                          | 6.65                           |
| 009b0901.d   | AR126801      | WAR110809-68    | 30-AUG-11 08:43 | 2.38                          | 6.65                           |
| 010b1001.d   | DDTANALOGSTD  | WAR110609-DDT   | 30-AUG-11 08:54 | NA                            | NA                             |
| 011b1101.d   | PIBLK02       | WAR110802-99 02 | 30-AUG-11 09:06 | 2.37                          | 6.65                           |
| 012b1201.d   | PBLK01        | I202475427      | 30-AUG-11 09:17 | 2.37                          | 6.65                           |
| 013b1301.d   | BLK01LCS      | I202475428      | 30-AUG-11 09:29 | 2.37                          | 6.65                           |
| 014b1401.d   | I1080101      | 284538001       | 30-AUG-11 09:41 | 2.37                          | 6.65                           |
| 015b1501.d   | I1080101MS    | I202475429      | 30-AUG-11 09:52 | 2.37                          | 6.65                           |
| 016b1601.d   | I1080101MSD   | I202475430      | 30-AUG-11 10:04 | 2.38                          | 6.65                           |
| 017b1701.d   | AR166002      | WAR110815-60    | 30-AUG-11 10:18 | 2.37                          | 6.65                           |
| 018b1801.d   | PIBLK03       | WAR110802-99 01 | 30-AUG-11 10:33 | 2.37                          | 6.65                           |

# Column used to flag retention time values with an asterisk.

Identification Summary

SDG Number: 284538

Client ID: MB for batch 1136662

Lab Sample ID: 1202475427

Data File: 012f1201.d

Inst: ECD8A.I\_1

Column: CLP1

Analyzed: 30-AUG-11 09:17

Data File: 012b1201.d

Inst: ECD8A.I\_2

Column: CLP2

Analyzed: 30-AUG-11 09:17

| Analyte      | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|--------------|------|------|-------------|-------|-----------|-------|------|
| Aroclor-1242 |      |      |             |       |           |       | 52.7 |
| Column 1     | 1    | 3.02 | 2.99 - 3.05 | .0638 | .092      | ug/L  |      |
|              | 2    | 3.11 | 3.08 - 3.14 | .0926 |           | ug/L  |      |
|              | 3    | 3.4  | 3.37 - 3.43 | .0871 |           | ug/L  |      |
|              | 4    | 3.7  | 3.67 - 3.73 | .127  |           | ug/L  |      |
|              | 5    | 3.72 | 3.69 - 3.75 | .0895 |           | ug/L  |      |
| Column 2     | 1    | 3.42 | 3.39 - 3.45 | .0646 | .158      | ug/L  |      |
|              | 2    | 3.52 | 3.49 - 3.55 | .0659 |           | ug/L  |      |
|              | 3    | 3.59 | 3.56 - 3.62 | .12   |           | ug/L  |      |
|              | 4    | 3.86 | 3.83 - 3.89 | .0913 |           | ug/L  |      |
|              | 5    | 4.12 | 4.1 - 4.16  | .447  |           | ug/L  |      |
| Aroclor-1254 |      |      |             |       |           |       | 12.4 |
| Column 1     | 1    | 3.68 | 3.65 - 3.71 | .114  | .152      | ug/L  |      |
|              | 2    | 3.86 | 3.83 - 3.89 | .134  |           | ug/L  |      |
|              | 3    | 4.14 | 4.11 - 4.17 | .0993 |           | ug/L  |      |
|              | 4    | 4.33 | 4.3 - 4.36  | .0965 |           | ug/L  |      |
|              | 5    | 4.46 | 4.43 - 4.49 | .315  |           | ug/L  |      |
| Column 2     | 1    | 4.16 | 4.13 - 4.19 | .121  | .172      | ug/L  |      |
|              | 2    | 4.3  | 4.27 - 4.33 | .142  |           | ug/L  |      |
|              | 3    | 4.62 | 4.59 - 4.65 | .102  |           | ug/L  |      |
|              | 4    | 4.78 | 4.75 - 4.81 | .0976 |           | ug/L  |      |
|              | 5    | 4.91 | 4.88 - 4.94 | .395  |           | ug/L  |      |

Identification Summary

SDG Number: 284538

Client ID: MB for batch 1136662

Lab Sample ID: 1202475427

Data File: 012f1201.d

Data File: 012b1201.d

Inst: ECD8A.I\_1

Inst: ECD8A.I\_2

Column: CLP1

Column: CLP2

Analyzed: 30-AUG-11 09:17

Analyzed: 30-AUG-11 09:17

| Analyte      | Peak     | RT | RT Window | Conc.       | Ave Conc. | Units | RPD  |
|--------------|----------|----|-----------|-------------|-----------|-------|------|
| Aroclor-1260 |          |    |           |             |           |       | 3.62 |
|              | Column 1 | 1  | 4.26      | 4.23 - 4.29 | .162      | ug/L  |      |
|              |          | 2  | 4.46      | 4.43 - 4.49 | .179      | ug/L  |      |
|              |          | 3  | 4.73      | 4.7 - 4.76  | .142      | ug/L  |      |
|              |          | 4  | 5.11      | 5.08 - 5.14 | .155      | ug/L  |      |
|              |          | 5  | 5.3       | 5.27 - 5.33 | .153      | ug/L  |      |
|              |          |    |           |             | .158      |       |      |
|              | Column 2 | 1  | 4.76      | 4.73 - 4.79 | .167      | ug/L  |      |
|              |          | 2  | 4.91      | 4.88 - 4.94 | .181      | ug/L  |      |
|              |          | 3  | 5.22      | 5.19 - 5.25 | .158      | ug/L  |      |
|              |          | 4  | 5.6       | 5.57 - 5.63 | .162      | ug/L  |      |
|              |          | 5  | 5.85      | 5.82 - 5.88 | .153      | ug/L  |      |
|              |          |    |           |             | .164      |       |      |

Identification Summary

SDG Number: 284538

Client ID: LCS for batch 1136662

Lab Sample ID: 1202475428

Data File: 013f1301.d

Data File: 013b1301.d

Inst: ECD8A.I\_1

Inst: ECD8A.I\_2

Column: CLP1

Column: CLP2

Analyzed: 30-AUG-11 09:29

Analyzed: 30-AUG-11 09:29

| Analyte      | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|--------------|------|------|-------------|-------|-----------|-------|------|
| Aroclor-1016 |      |      |             |       |           |       | 6.07 |
| Column 1     | 1    | 2.67 | 2.64 - 2.7  | .641  | .667      | ug/L  |      |
|              | 2    | 3.02 | 2.98 - 3.04 | .706  |           | ug/L  |      |
|              | 3    | 3.15 | 3.12 - 3.18 | .684  |           | ug/L  |      |
|              | 4    | 3.25 | 3.22 - 3.28 | .65   |           | ug/L  |      |
|              | 5    | 3.4  | 3.37 - 3.43 | .653  |           | ug/L  |      |
| Column 2     | 1    | 3.07 | 3.04 - 3.1  | .614  | .627      | ug/L  |      |
|              | 2    | 3.42 | 3.39 - 3.45 | .663  |           | ug/L  |      |
|              | 3    | 3.52 | 3.49 - 3.55 | .616  |           | ug/L  |      |
|              | 4    | 3.59 | 3.56 - 3.62 | .634  |           | ug/L  |      |
|              | 5    | 3.67 | 3.64 - 3.7  | .608  |           | ug/L  |      |
| Aroclor-1260 |      |      |             |       |           |       | 6.27 |
| Column 1     | 1    | 4.26 | 4.23 - 4.29 | .687  | .699      | ug/L  |      |
|              | 2    | 4.46 | 4.43 - 4.49 | .682  |           | ug/L  |      |
|              | 3    | 4.73 | 4.7 - 4.76  | .674  |           | ug/L  |      |
|              | 4    | 5.11 | 5.08 - 5.14 | .726  |           | ug/L  |      |
|              | 5    | 5.3  | 5.27 - 5.33 | .724  |           | ug/L  |      |
| Column 2     | 1    | 4.76 | 4.73 - 4.79 | .639  | .656      | ug/L  |      |
|              | 2    | 4.91 | 4.88 - 4.94 | .642  |           | ug/L  |      |
|              | 3    | 5.22 | 5.19 - 5.25 | .643  |           | ug/L  |      |
|              | 4    | 5.6  | 5.57 - 5.63 | .677  |           | ug/L  |      |
|              | 5    | 5.85 | 5.82 - 5.88 | .678  |           | ug/L  |      |

Identification Summary

SDG Number: 284538

Client ID: 11080101MS

Lab Sample ID: 1202475429

Data File: 015f1501.d

Data File: 015b1501.d

Inst: ECD8A.I\_1

Inst: ECD8A.I\_2

Column: CLP1

Column: CLP2

Analyzed: 30-AUG-11 09:52

Analyzed: 30-AUG-11 09:52

| Analyte      | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|--------------|------|------|-------------|-------|-----------|-------|------|
| Aroclor-1016 |      |      |             |       |           |       | 1.32 |
| Column 1     | 1    | 2.67 | 2.64 - 2.7  | .172  |           | ug/L  |      |
|              | 2    | 3.02 | 2.98 - 3.04 | .186  |           | ug/L  |      |
|              | 3    | 3.15 | 3.12 - 3.18 | .199  |           | ug/L  |      |
|              | 4    | 3.25 | 3.22 - 3.28 | .194  |           | ug/L  |      |
|              | 5    | 3.4  | 3.37 - 3.43 | .181  |           | ug/L  |      |
|              |      |      |             |       | .186      |       |      |
| Column 2     | 1    | 3.07 | 3.04 - 3.1  | .171  |           | ug/L  |      |
|              | 2    | 3.42 | 3.39 - 3.45 | .191  |           | ug/L  |      |
|              | 3    | 3.52 | 3.49 - 3.55 | .187  |           | ug/L  |      |
|              | 4    | 3.59 | 3.56 - 3.62 | .195  |           | ug/L  |      |
|              | 5    | 3.67 | 3.64 - 3.7  | .2    |           | ug/L  |      |
|              |      |      |             |       | .189      |       |      |
| Aroclor-1260 |      |      |             |       |           |       | 2.53 |
| Column 1     | 1    | 4.26 | 4.23 - 4.29 | .234  |           | ug/L  |      |
|              | 2    | 4.46 | 4.43 - 4.49 | .225  |           | ug/L  |      |
|              | 3    | 4.73 | 4.7 - 4.76  | .236  |           | ug/L  |      |
|              | 4    | 5.11 | 5.08 - 5.14 | .272  |           | ug/L  |      |
|              | 5    | 5.3  | 5.27 - 5.33 | .274  |           | ug/L  |      |
|              |      |      |             |       | .248      |       |      |
| Column 2     | 1    | 4.76 | 4.73 - 4.79 | .218  |           | ug/L  |      |
|              | 2    | 4.91 | 4.88 - 4.94 | .227  |           | ug/L  |      |
|              | 3    | 5.22 | 5.19 - 5.25 | .239  |           | ug/L  |      |
|              | 4    | 5.6  | 5.57 - 5.63 | .264  |           | ug/L  |      |
|              | 5    | 5.85 | 5.82 - 5.88 | .262  |           | ug/L  |      |
|              |      |      |             |       | .242      |       |      |



Identification Summary

SDG Number: 284538

Client ID: 11080101MSD

Lab Sample ID: 1202475430

Data File: 016f1601.d

Data File: 016b1601.d

Inst: ECD8A.I\_1

Inst: ECD8A.I\_2

Column: CLP1

Column: CLP2

Analyzed: 30-AUG-11 10:04

Analyzed: 30-AUG-11 10:04

| Analyte      | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD   |
|--------------|------|------|-------------|-------|-----------|-------|-------|
| Aroclor-1016 |      |      |             |       |           |       | 4.63  |
| Column 1     | 1    | 2.68 | 2.64 - 2.7  | .193  |           | ug/L  |       |
|              | 2    | 3.02 | 2.98 - 3.04 | .214  |           | ug/L  |       |
|              | 3    | 3.16 | 3.12 - 3.18 | .229  |           | ug/L  |       |
|              | 4    | 3.25 | 3.22 - 3.28 | .24   |           | ug/L  |       |
|              | 5    | 3.41 | 3.37 - 3.43 | .229  |           | ug/L  |       |
|              |      |      |             |       | .221      |       |       |
| Column 2     | 1    | 3.08 | 3.04 - 3.1  | .194  |           | ug/L  |       |
|              | 2    | 3.42 | 3.39 - 3.45 | .223  |           | ug/L  |       |
|              | 3    | 3.52 | 3.49 - 3.55 | .206  |           | ug/L  |       |
|              | 4    | 3.59 | 3.56 - 3.62 | .205  |           | ug/L  |       |
|              | 5    | 3.67 | 3.64 - 3.7  | .226  |           | ug/L  |       |
|              |      |      |             |       | .211      |       |       |
| Aroclor-1260 |      |      |             |       |           |       | .0437 |
| Column 1     | 1    | 4.27 | 4.23 - 4.29 | .287  |           | ug/L  |       |
|              | 2    | 4.46 | 4.43 - 4.49 | .283  |           | ug/L  |       |
|              | 3    | 4.73 | 4.7 - 4.76  | .279  |           | ug/L  |       |
|              | 4    | 5.11 | 5.08 - 5.14 | .313  |           | ug/L  |       |
|              | 5    | 5.3  | 5.27 - 5.33 | .309  |           | ug/L  |       |
|              |      |      |             |       | .294      |       |       |
| Column 2     | 1    | 4.76 | 4.73 - 4.79 | .281  |           | ug/L  |       |
|              | 2    | 4.91 | 4.88 - 4.94 | .287  |           | ug/L  |       |
|              | 3    | 5.22 | 5.19 - 5.25 | .282  |           | ug/L  |       |
|              | 4    | 5.6  | 5.57 - 5.63 | .302  |           | ug/L  |       |
|              | 5    | 5.85 | 5.82 - 5.88 | .319  |           | ug/L  |       |
|              |      |      |             |       | .294      |       |       |

# QC Data

**PCB**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 1

|                       |                             |                      |                     |
|-----------------------|-----------------------------|----------------------|---------------------|
| <b>SDG Number:</b>    | <b>284538</b>               | <b>Matrix:</b>       | <b>GROUND WATER</b> |
| <b>Lab Sample ID:</b> | <b>1202475427</b>           |                      |                     |
| <b>Client Sample:</b> | <b>QC for batch 1136662</b> | <b>Project:</b>      | <b>QC</b>           |
| <b>Client ID:</b>     | <b>MB for batch 1136662</b> | <b>SOP Ref:</b>      | <b>GL-OA-E-040</b>  |
| <b>Batch ID:</b>      | <b>1136663</b>              | <b>Dilution:</b>     | <b>1</b>            |
| <b>Run Date:</b>      | <b>08/30/2011 09:17</b>     | <b>Inj. Vol:</b>     | <b>1 uL</b>         |
| <b>Prep Date:</b>     | <b>08/29/2011 08:20</b>     | <b>Final Volume:</b> | <b>1 mL</b>         |
| <b>Data File:</b>     | <b>012f1201.d</b>           | <b>Level:</b>        | <b>LOW</b>          |
|                       | <b>012b1201.d</b>           |                      |                     |

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 53469-21-9 | Aroclor-1242 | P         | 0.160  | ug/L  | 0.0333  | 0.100   | 2      |
| 12672-29-6 | Aroclor-1248 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 11097-69-1 | Aroclor-1254 |           | 0.170  | ug/L  | 0.0333  | 0.100   | 2      |
| 11096-82-5 | Aroclor-1260 |           | 0.160  | ug/L  | 0.0333  | 0.100   | 1      |

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/012f1201.d  
Lab Smp Id: 1202475427 Client Smp ID: PBLK01  
Inj Date : 30-AUG-2011 09:17  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |1202475427|1|  
Misc Info : |ECD5A2A\_1L|1136663|SVA|QC A|GROUND WATER|MB|||  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
Meth Date : 30-Aug-2011 09:17 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033f3301.d  
Als bottle: 12 QC Sample: BLANK  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water  
Processing Host: hpclp1

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vo \* Vi) \* CpndVariable

| Name | Value      | Description                     |
|------|------------|---------------------------------|
| DF   | 1.00000    | Dilution Factor                 |
| Uf   | 1.00000    | Correction factor               |
| Vt   | 1.00000    | Volume of final extract (uL)    |
| Vo   | 1000.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000    | Volume injected (uL)            |

Cpnd Variable Local Compound Variable

|                                  |        |        | CONCENTRATIONS |         |                   |        |        |            |
|----------------------------------|--------|--------|----------------|---------|-------------------|--------|--------|------------|
|                                  |        |        | ON-COL         |         | FINAL             |        |        |            |
| RT                               | EXP RT | DLT RT | RESPONSE       | ( ug/L) | ( ug/L)           | TARGET | RANGE  | RATIO      |
| ==                               | =====  | =====  | =====          | =====   | =====             | =====  |        | =====      |
| \$ 11 4cmx                       |        |        |                |         | CAS #: 877-09-8   |        |        |            |
| 2.134                            | 2.135  | -0.001 | 7279703        | 128.119 | 0.13              | 80.00- | 120.00 | 100.00     |
| -----                            |        |        |                |         |                   |        |        |            |
| \$ 12 Decachlorobiphenyl         |        |        |                |         | CAS #: 2051-24-3  |        |        |            |
| 6.054                            | 6.054  | 0.000  | 4970156        | 132.733 | 0.13              | 80.00- | 120.00 | 100.00     |
| -----                            |        |        |                |         |                   |        |        |            |
| 4 Aroclor-1242                   |        |        |                |         | CAS #: 53469-21-9 |        |        |            |
| 3.015                            | 3.015  | 0.000  | 127345         | 63.8143 | 0.064             | 80.00- | 120.00 | 100.00 (a) |
| 3.110                            | 3.110  | 0.000  | 130291         | 92.6437 | 0.093             | 45.95- | 85.95  | 102.31     |
| 3.404                            | 3.405  | -0.001 | 96514          | 87.1298 | 0.087             | 31.75- | 71.75  | 75.79      |
| 3.704                            | 3.705  | -0.001 | 139705         | 126.944 | 0.13              | 32.44- | 72.44  | 109.71     |
| 3.724                            | 3.724  | 0.000  | 96474          | 89.5444 | 0.090             | 31.62- | 71.62  | 75.76      |
| Average of Peak Concentrations = |        |        |                |         | 0.093             |        |        |            |
| -----                            |        |        |                |         |                   |        |        |            |

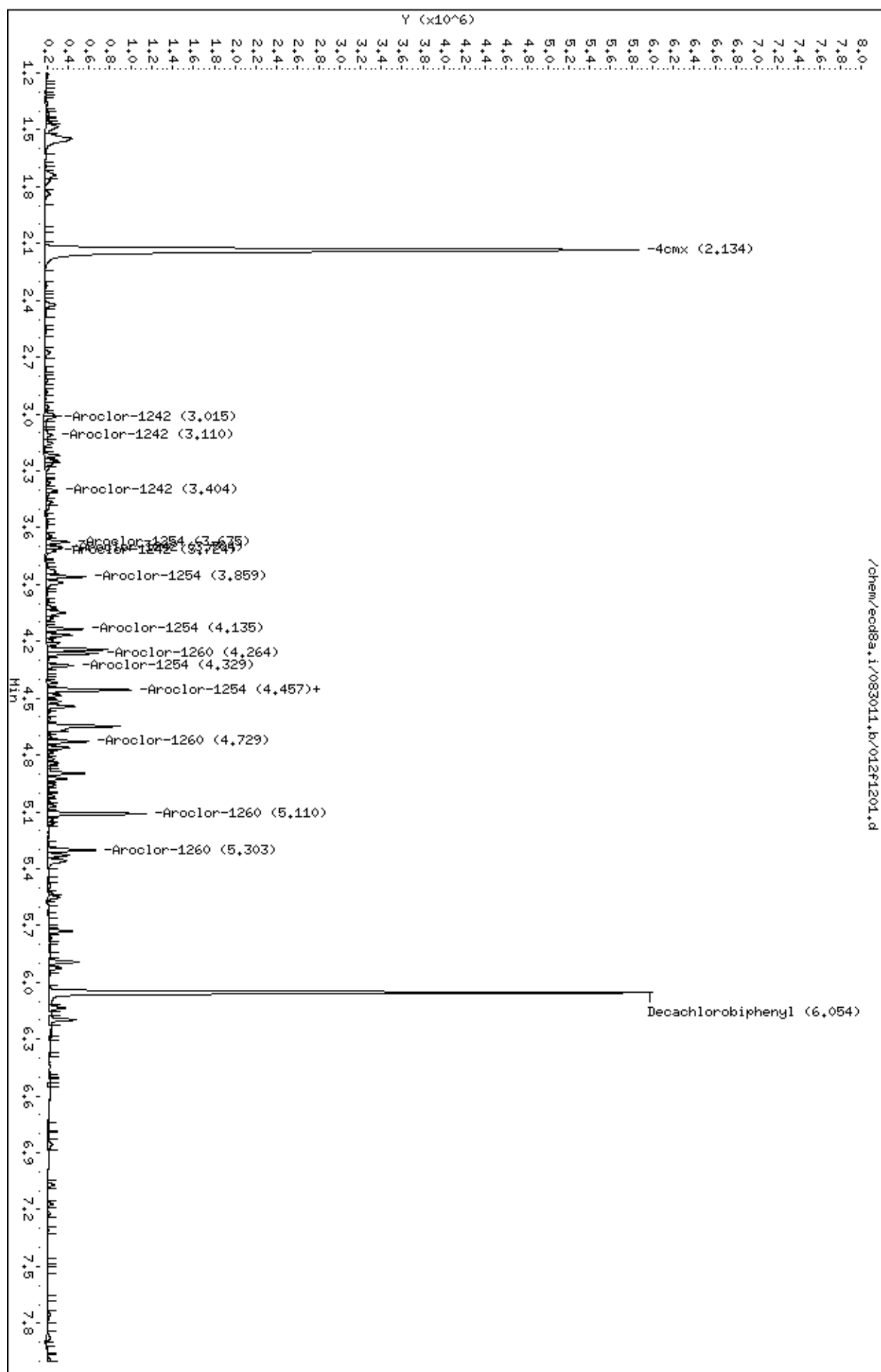
|                                  |        |        | CONCENTRATIONS |         |                   |         |        |        |
|----------------------------------|--------|--------|----------------|---------|-------------------|---------|--------|--------|
|                                  |        |        | ON-COL         |         | FINAL             |         |        |        |
| RT                               | EXP RT | DLT RT | RESPONSE       | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                               | =====  | =====  | =====          | =====   | =====             | =====   | =====  | =====  |
| 6 Aroclor-1254                   |        |        |                |         | CAS #: 11097-69-1 |         |        |        |
| 3.675                            | 3.675  | 0.000  | 193724         | 113.809 | 0.11              | 80.00-  | 120.00 | 100.00 |
| 3.859                            | 3.860  | -0.001 | 299932         | 133.987 | 0.13              | 114.53- | 154.53 | 154.82 |
| 4.135                            | 4.135  | 0.000  | 282609         | 99.3371 | 0.099             | 155.31- | 195.31 | 145.88 |
| 4.329                            | 4.328  | 0.001  | 207315         | 96.5157 | 0.096             | 111.94- | 151.94 | 107.02 |
| 4.457                            | 4.458  | -0.001 | 650331         | 314.575 | 0.31              | 103.48- | 143.48 | 335.70 |
| Average of Peak Concentrations = |        |        |                |         | 0.15              |         |        |        |
| -----                            |        |        |                |         |                   |         |        |        |
| 7 Aroclor-1260                   |        |        |                |         | CAS #: 11096-82-5 |         |        |        |
| 4.264                            | 4.264  | 0.000  | 403541         | 161.966 | 0.16              | 80.00-  | 120.00 | 100.00 |
| 4.457                            | 4.456  | 0.001  | 650331         | 178.991 | 0.18              | 130.28- | 170.28 | 161.16 |
| 4.729                            | 4.729  | 0.000  | 314208         | 142.460 | 0.14              | 70.08-  | 110.08 | 77.86  |
| 5.110                            | 5.111  | -0.001 | 739697         | 155.108 | 0.16              | 182.73- | 222.73 | 183.30 |
| 5.303                            | 5.302  | 0.001  | 368218         | 152.600 | 0.15              | 81.55-  | 121.55 | 91.25  |
| Average of Peak Concentrations = |        |        |                |         | 0.16              |         |        |        |

#### QC Flag Legend

a - Target compound detected but, quantitated amount  
 Below Limit Of Quantitation(BLOQ).

Data File: /chem/ecod8a.i/083011.b/012f1201.d  
Date : 30-JUL-2011 09:17  
Client ID: PBLK01  
Sample Info: 1120247542711  
Volume Injected (uL): 1.0  
Column phase: CLP1

Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/012b1201.d  
Lab Smp Id: 1202475427 Client Smp ID: PBLK01  
Inj Date : 30-AUG-2011 09:17  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |1202475427|1|  
Misc Info : |ECD5A2A\_1L|1136663|SVA|QC A|GROUND WATER|MB|||  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
Meth Date : 30-Aug-2011 09:17 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033b3301.d  
Als bottle: 12 QC Sample: BLANK  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water  
Processing Host: hpclp1

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vo \* Vi) \* CpndVariable

| Name | Value      | Description                     |
|------|------------|---------------------------------|
| DF   | 1.00000    | Dilution Factor                 |
| Uf   | 1.00000    | Correction factor               |
| Vt   | 1.00000    | Volume of final extract (uL)    |
| Vo   | 1000.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000    | Volume injected (uL)            |

Cpnd Variable Local Compound Variable

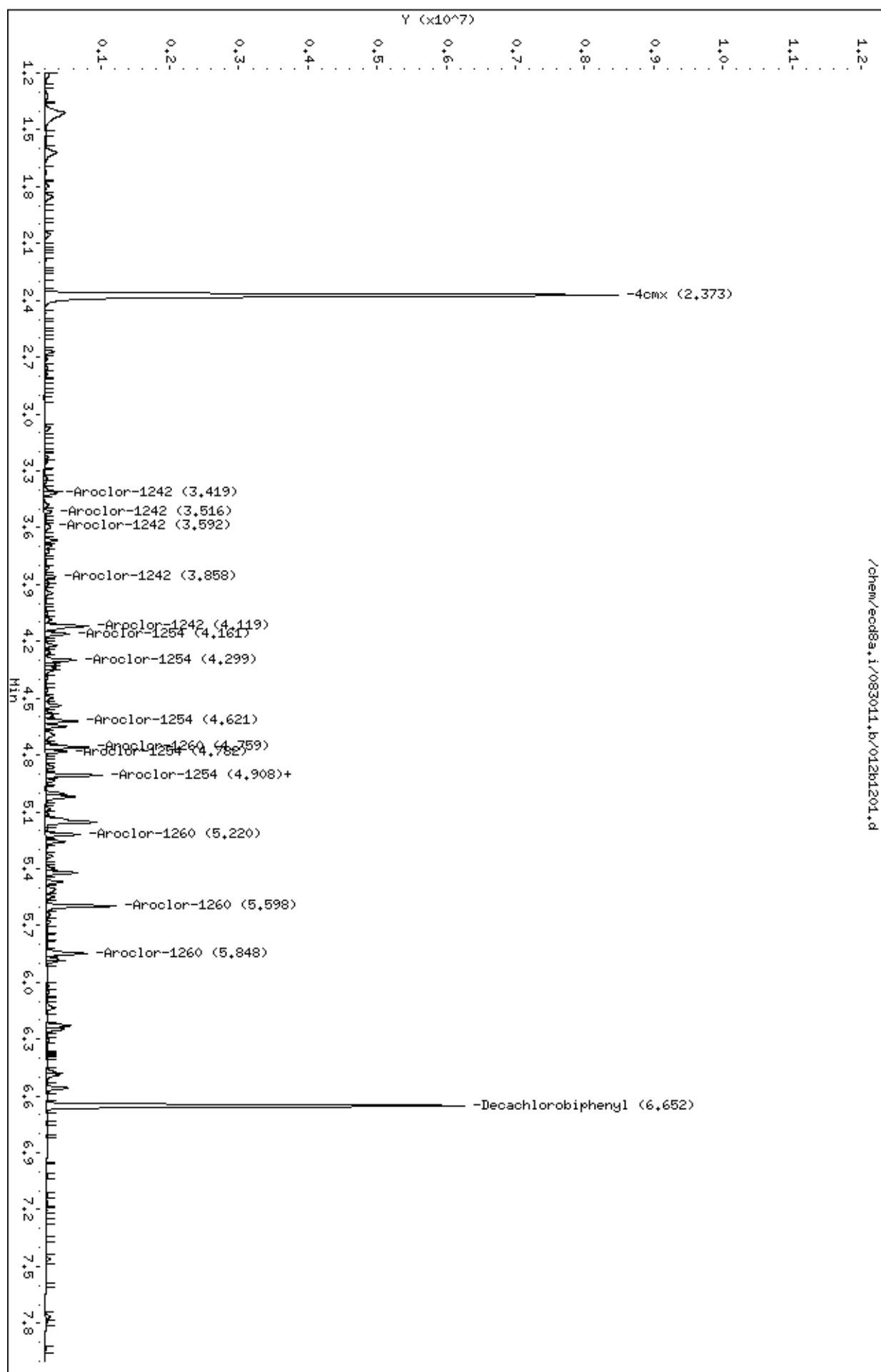
| CONCENTRATIONS                   |        |        |                  |         |                   |               |        |
|----------------------------------|--------|--------|------------------|---------|-------------------|---------------|--------|
|                                  |        |        | ON-COL           |         | FINAL             |               |        |
| RT                               | EXP RT | DLT RT | RESPONSE ( ug/L) |         | ( ug/L)           | TARGET RANGE  | RATIO  |
| ==                               | =====  | =====  | =====            | =====   | =====             | =====         | =====  |
| \$ 11 4cmx                       |        |        |                  |         | CAS #: 877-09-8   |               |        |
| 2.373                            | 2.373  | 0.000  | 9304773          | 121.692 | 0.12              | 80.00- 120.00 | 100.00 |
| \$ 12 Decachlorobiphenyl         |        |        |                  |         | CAS #: 2051-24-3  |               |        |
| 6.652                            | 6.651  | 0.001  | 5479808          | 144.814 | 0.14              | 80.00- 120.00 | 100.00 |
| 4 Aroclor-1242                   |        |        |                  |         | CAS #: 53469-21-9 |               |        |
| 3.419                            | 3.419  | 0.000  | 172219           | 64.6322 | 0.065             | 80.00- 120.00 | 100.00 |
| 3.516                            | 3.516  | 0.000  | 124982           | 65.9263 | 0.066             | 47.34- 87.34  | 72.57  |
| 3.592                            | 3.590  | 0.002  | 134971           | 120.407 | 0.12              | 20.56- 60.56  | 78.37  |
| 3.858                            | 3.858  | 0.000  | 136904           | 91.2788 | 0.091             | 35.84- 75.84  | 79.49  |
| 4.119                            | 4.133  | -0.014 | 692709           | 447.189 | 0.45              | 35.65- 75.65  | 402.23 |
| Average of Peak Concentrations = |        |        |                  |         | 0.16              |               |        |

| CONCENTRATIONS                   |        |        |                  |         |                   |         |        |        |
|----------------------------------|--------|--------|------------------|---------|-------------------|---------|--------|--------|
|                                  |        |        | ON-COL           |         | FINAL             |         |        |        |
| RT                               | EXP RT | DLT RT | RESPONSE ( ug/L) |         | ( ug/L)           | TARGET  | RANGE  | RATIO  |
| ==                               | =====  | =====  | =====            | =====   | =====             | =====   | =====  | =====  |
| 6 Aroclor-1254                   |        |        |                  |         | CAS #: 11097-69-1 |         |        |        |
| 4.161                            | 4.160  | 0.001  | 318634           | 121.181 | 0.12              | 80.00-  | 120.00 | 100.00 |
| 4.299                            | 4.300  | -0.001 | 409037           | 142.377 | 0.14              | 90.10-  | 130.10 | 128.37 |
| 4.621                            | 4.621  | 0.000  | 384844           | 101.969 | 0.10              | 125.80- | 165.80 | 120.78 |
| 4.782                            | 4.782  | 0.000  | 259332           | 97.5815 | 0.098             | 82.42-  | 122.42 | 81.39  |
| 4.908                            | 4.908  | 0.000  | 688820           | 395.257 | 0.40              | 46.42-  | 86.42  | 216.18 |
| Average of Peak Concentrations = |        |        |                  |         | 0.17              |         |        |        |
| -----                            |        |        |                  |         |                   |         |        |        |
| 7 Aroclor-1260                   |        |        |                  |         | CAS #: 11096-82-5 |         |        |        |
| 4.759                            | 4.758  | 0.001  | 548212           | 167.248 | 0.17              | 80.00-  | 120.00 | 100.00 |
| 4.908                            | 4.907  | 0.001  | 688820           | 180.655 | 0.18              | 97.01-  | 137.01 | 125.65 |
| 5.220                            | 5.219  | 0.001  | 444718           | 157.633 | 0.16              | 68.97-  | 108.97 | 81.12  |
| 5.598                            | 5.597  | 0.001  | 924812           | 162.003 | 0.16              | 165.24- | 205.24 | 168.70 |
| 5.848                            | 5.848  | 0.000  | 607637           | 152.731 | 0.15              | 109.82- | 149.82 | 110.84 |
| Average of Peak Concentrations = |        |        |                  |         | 0.16              |         |        |        |



Data File: /chem/ecod8a.i/083011.b/012b1201.d  
Date : 30-JUL-2011 09:17  
Client ID: PBLK01  
Sample Info: 1120247542711  
Volume Injected (uL): 1.0  
Column phase: CLP2

Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25



**PCB**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 1

|                       |                              |                      |                          |
|-----------------------|------------------------------|----------------------|--------------------------|
| <b>SDG Number:</b>    | <b>284538</b>                | <b>Matrix:</b>       | <b>GROUND WATER</b>      |
| <b>Lab Sample ID:</b> | <b>1202475428</b>            |                      |                          |
| <b>Client Sample:</b> | <b>QC for batch 1136662</b>  | <b>Client:</b>       | <b>ECOL008</b>           |
| <b>Client ID:</b>     | <b>LCS for batch 1136662</b> | <b>Method:</b>       | <b>SW846 3535A/8082A</b> |
| <b>Batch ID:</b>      | <b>1136663</b>               | <b>Inst:</b>         | <b>ECD8A.I</b>           |
| <b>Run Date:</b>      | <b>08/30/2011 09:29</b>      | <b>Analyst:</b>      | <b>YS1</b>               |
| <b>Prep Date:</b>     | <b>08/29/2011 08:20</b>      | <b>Aliquot:</b>      | <b>1000 mL</b>           |
| <b>Data File:</b>     | <b>013f1301.d</b>            | <b>Column:</b>       | <b>1 CLP1</b>            |
|                       | <b>013b1301.d</b>            |                      | <b>2 CLP2</b>            |
|                       |                              | <b>Project:</b>      | <b>QC</b>                |
|                       |                              | <b>SOP Ref:</b>      | <b>GL-OA-E-040</b>       |
|                       |                              | <b>Dilution:</b>     | <b>1</b>                 |
|                       |                              | <b>Inj. Vol:</b>     | <b>1 uL</b>              |
|                       |                              | <b>Final Volume:</b> | <b>1 mL</b>              |
|                       |                              | <b>Level:</b>        | <b>LOW</b>               |

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 |           | 0.660  | ug/L  | 0.0333  | 0.100   | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 11096-82-5 | Aroclor-1260 | B         | 0.700  | ug/L  | 0.0333  | 0.100   | 1      |

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RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/013f1301.d  
Lab Smp Id: 1202475428 Client Smp ID: PBLK01LCS  
Inj Date : 30-AUG-2011 09:29  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |1202475428|1|  
Misc Info : |ECD5A2A\_1L|1136663|SVA|QC A|GROUND WATER|LCS|||  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
Meth Date : 30-Aug-2011 09:17 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033f3301.d  
Als bottle: 13 QC Sample: LCS  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water  
Processing Host: hpclp1

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vo \* Vi) \* CpndVariable

| Name | Value      | Description                     |
|------|------------|---------------------------------|
| DF   | 1.00000    | Dilution Factor                 |
| Uf   | 1.00000    | Correction factor               |
| Vt   | 1.00000    | Volume of final extract (uL)    |
| Vo   | 1000.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000    | Volume injected (uL)            |

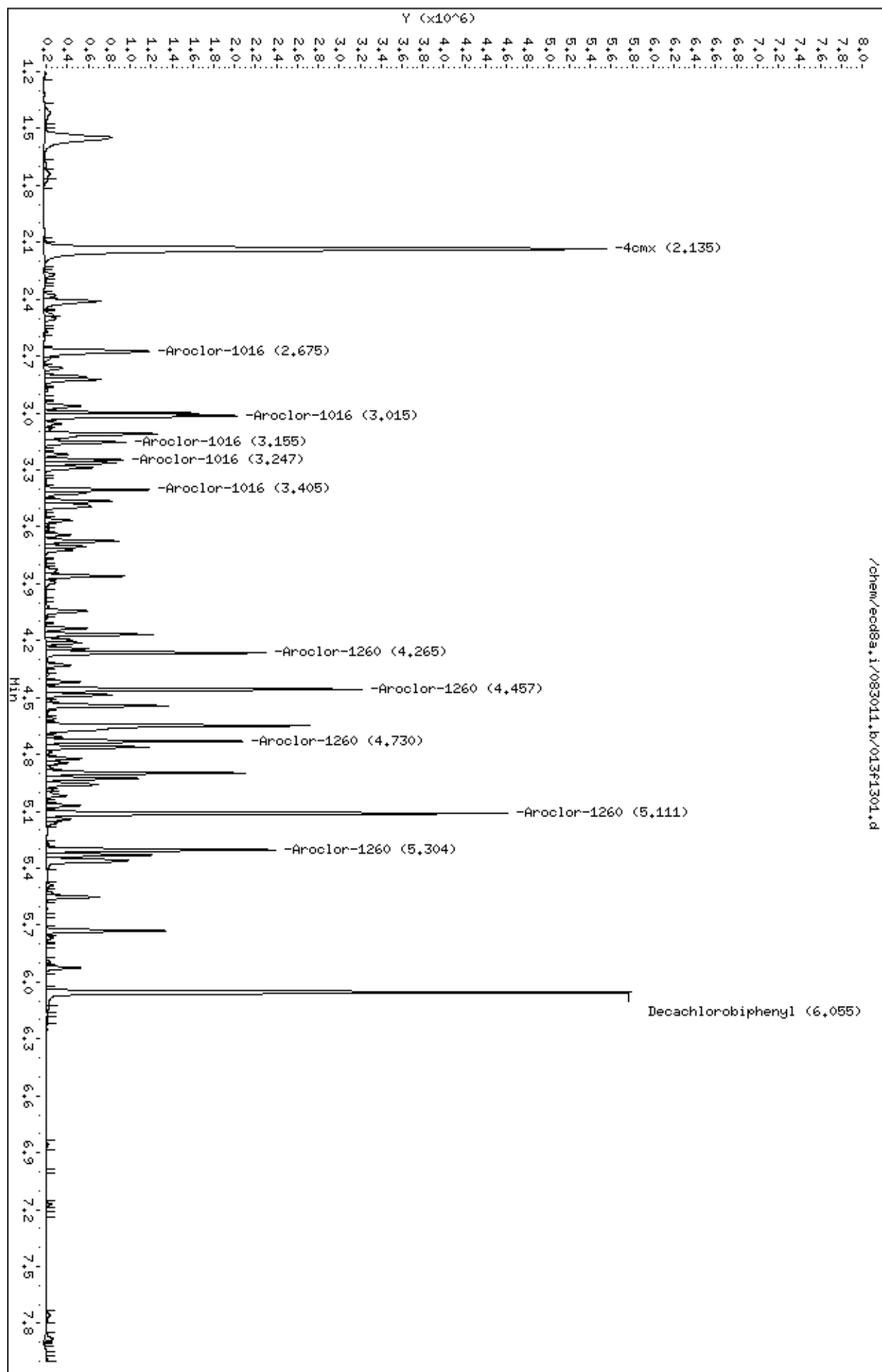
Cpnd Variable Local Compound Variable

| CONCENTRATIONS                            |        |        |                  |         |         |                |        |
|---|--------|--------|------------------|---------|---------|----------------|--------|
|   |        | ON-COL |                  | FINAL   |         |                |        |
| RT  | EXP RT | DLT RT | RESPONSE ( ug/L) |         | ( ug/L) | TARGET RANGE   | RATIO  |
| ==  | =====  | =====  | =====            | =====   | =====   | =====          | =====  |
| \$ 11 4cmx CAS #: 877-09-8                |        |        |                  |         |         |                |        |
| 2.135                                     | 2.135  | 0.000  | 7290466          | 128.308 | 0.13    | 80.00- 120.00  | 100.00 |
| \$ 12 Decachlorobiphenyl CAS #: 2051-24-3 |        |        |                  |         |         |                |        |
| 6.055                                     | 6.054  | 0.001  | 4769734          | 127.380 | 0.13    | 80.00- 120.00  | 100.00 |
| 1 Aroclor-1016 CAS #: 12674-11-2          |        |        |                  |         |         |                |        |
| 2.675                                     | 2.674  | 0.001  | 1326135          | 640.535 | 0.64    | 80.00- 120.00  | 100.00 |
| 3.015                                     | 3.015  | 0.000  | 1751544          | 705.975 | 0.70    | 110.27- 150.27 | 132.08 |
| 3.155                                     | 3.154  | 0.001  | 679958           | 683.625 | 0.68    | 30.74- 70.74   | 51.27  |
| 3.247                                     | 3.246  | 0.001  | 598535           | 649.762 | 0.65    | 25.58- 65.58   | 45.13  |
| 3.405                                     | 3.404  | 0.001  | 856678           | 653.048 | 0.65    | 45.51- 85.51   | 64.60  |
| Average of Peak Concentrations =          |        |        |                  |         | 0.66    |                |        |

| CONCENTRATIONS                   |        |        |                   |         |         |                |        |
|----------------------------------|--------|--------|-------------------|---------|---------|----------------|--------|
|                                  |        |        | ON-COL            |         | FINAL   |                |        |
| RT                               | EXP RT | DLT RT | RESPONSE ( ug/L)  |         | ( ug/L) | TARGET RANGE   | RATIO  |
| ==                               | =====  | =====  | =====             | =====   | =====   | =====          | =====  |
| 7 Aroclor-1260                   |        |        | CAS #: 11096-82-5 |         |         |                |        |
| 4.265                            | 4.264  | 0.001  | 1711116           | 686.777 | 0.69    | 80.00- 120.00  | 100.00 |
| 4.457                            | 4.456  | 0.001  | 2479526           | 682.441 | 0.68    | 130.28- 170.28 | 144.91 |
| 4.730                            | 4.729  | 0.001  | 1485874           | 673.685 | 0.67    | 70.08- 110.08  | 86.84  |
| 5.111                            | 5.111  | 0.000  | 3462795           | 726.118 | 0.73    | 182.73- 222.73 | 202.37 |
| 5.304                            | 5.302  | 0.002  | 1745809           | 723.513 | 0.72    | 81.55- 121.55  | 102.03 |
| Average of Peak Concentrations = |        |        |                   |         | 0.70    |                |        |

Data File: /chem/ecod8a.i/083011.b/013f1301.d  
Date : 30-AUG-2011 09:29  
Client ID: PBLK01LCS  
Sample Info: 1120247542811  
Volume Injected (uL): 1.0  
Column phase: CLP1

Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/013b1301.d  
Lab Smp Id: 1202475428 Client Smp ID: PBLK01LCS  
Inj Date : 30-AUG-2011 09:29  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |1202475428|1|  
Misc Info : |ECD5A2A\_1L|1136663|SVA|QC A|GROUND WATER|LCS|||  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
Meth Date : 30-Aug-2011 10:32 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033b3301.d  
Als bottle: 13 QC Sample: LCS  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water  
Processing Host: hpclp1

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vo \* Vi) \* CpndVariable

| Name | Value      | Description                     |
|------|------------|---------------------------------|
| DF   | 1.00000    | Dilution Factor                 |
| Uf   | 1.00000    | Correction factor               |
| Vt   | 1.00000    | Volume of final extract (uL)    |
| Vo   | 1000.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000    | Volume injected (uL)            |

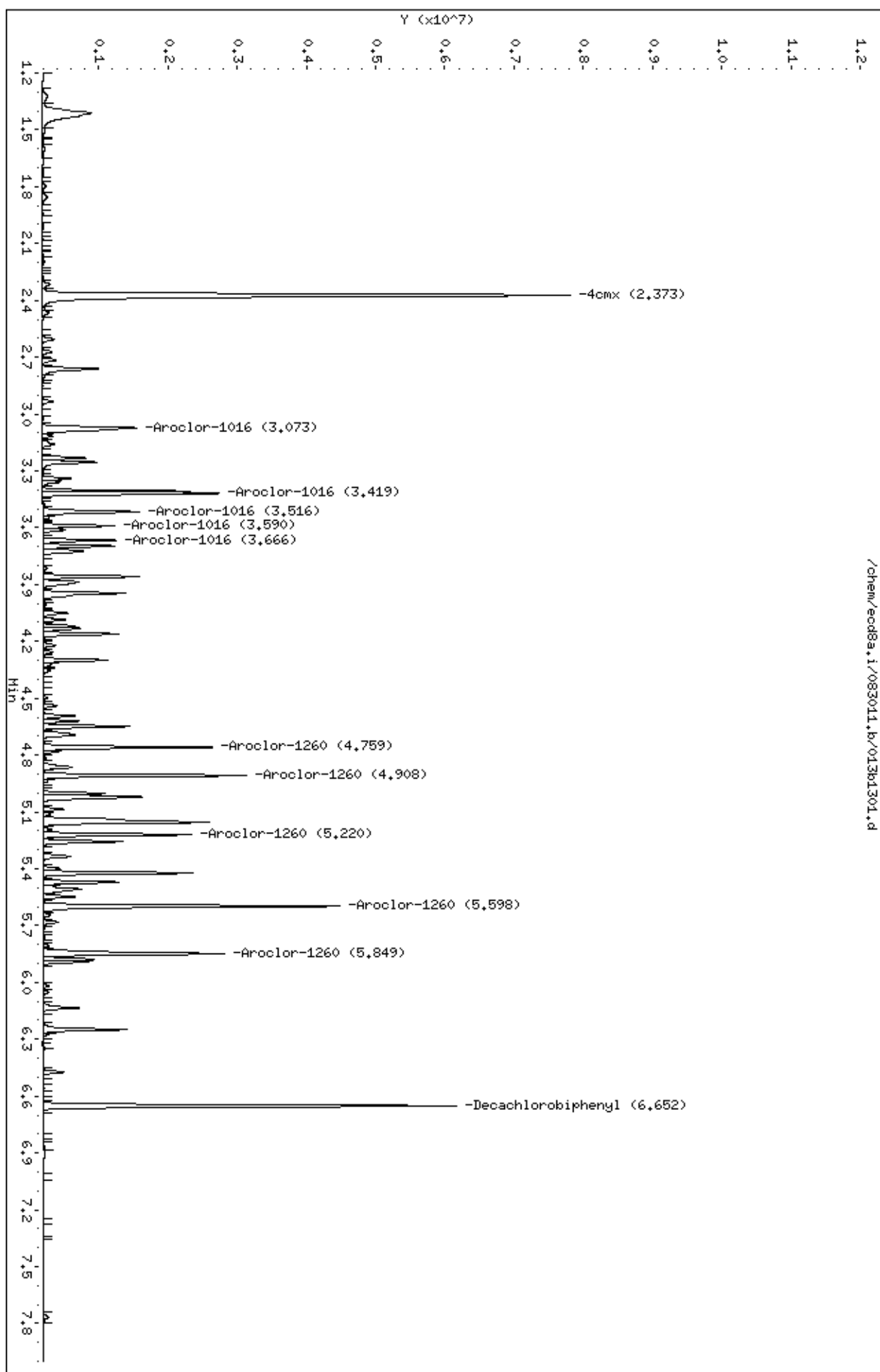
Cpnd Variable Local Compound Variable

| CONCENTRATIONS                   |        |        |                  |         |                  |              |        |        |
|----------------------------------|--------|--------|------------------|---------|------------------|--------------|--------|--------|
|                                  |        |        | ON-COL           |         | FINAL            |              |        |        |
| RT                               | EXP RT | DLT RT | RESPONSE ( ug/L) |         | ( ug/L)          | TARGET RANGE | RATIO  |        |
| ==                               | =====  | =====  | =====            | =====   | =====            | =====        | =====  |        |
| -----                            |        |        |                  |         |                  |              |        |        |
| \$ 11 4cmx                       |        |        |                  |         | CAS #: 877-09-8  |              |        |        |
| 2.373                            | 2.373  | 0.000  | 9211985          | 120.478 | 0.12             | 80.00-       | 120.00 | 100.00 |
| -----                            |        |        |                  |         |                  |              |        |        |
| \$ 12 Decachlorobiphenyl         |        |        |                  |         | CAS #: 2051-24-3 |              |        |        |
| 6.652                            | 6.651  | 0.001  | 5281737          | 139.580 | 0.14             | 80.00-       | 120.00 | 100.00 |
| -----                            |        |        |                  |         |                  |              |        |        |
| 1 Aroclor-1016                   |        |        |                  |         | CAS #: 2051-24-3 |              |        |        |
| 3.073                            | 3.073  | 0.000  | 1825319          | 614.409 | 0.61             | 80.00-       | 120.00 | 100.00 |
| 3.419                            | 3.419  | 0.000  | 2131143          | 663.384 | 0.66             | 102.13-      | 142.13 | 116.75 |
| 3.516                            | 3.516  | 0.000  | 1399607          | 616.371 | 0.62             | 58.47-       | 98.47  | 76.68  |
| 3.590                            | 3.590  | 0.000  | 860468           | 633.975 | 0.63             | 28.20-       | 68.20  | 47.14  |
| 3.666                            | 3.666  | 0.000  | 862855           | 608.468 | 0.61             | 28.02-       | 68.02  | 47.27  |
| Average of Peak Concentrations = |        |        |                  |         | 0.63             |              |        |        |
| -----                            |        |        |                  |         |                  |              |        |        |

| CONCENTRATIONS                   |        |        |    |                   |         |                |        |
|----------------------------------|--------|--------|----|-------------------|---------|----------------|--------|
|                                  |        | ON-COL |    | FINAL             |         |                |        |
| RT                               | EXP RT | DLT RT | RT | RESPONSE ( ug/L)  | ( ug/L) | TARGET RANGE   | RATIO  |
| ==                               | =====  | =====  |    | =====             | =====   | =====          | =====  |
| 7 Aroclor-1260                   |        |        |    | CAS #: 11096-82-5 |         |                |        |
| 4.759                            | 4.758  | 0.001  |    | 2095904 639.415   | 0.64    | 80.00- 120.00  | 100.00 |
| 4.908                            | 4.907  | 0.001  |    | 2448947 642.280   | 0.64    | 98.95- 138.95  | 116.84 |
| 5.220                            | 5.219  | 0.001  |    | 1815058 643.360   | 0.64    | 68.98- 108.98  | 86.60  |
| 5.598                            | 5.597  | 0.001  |    | 3863390 676.764   | 0.68    | 168.38- 208.38 | 184.33 |
| 5.849                            | 5.848  | 0.001  |    | 2698329 678.230   | 0.68    | 113.17- 153.17 | 128.74 |
| Average of Peak Concentrations = |        |        |    | 0.66              |         |                |        |

Data File: /chem/ecd8a.i/083011.b/013b1301.d  
Date : 30-JUL-2011 09:29  
Client ID: PBLK01LCS  
Sample Info: 1120247542811  
Volume Injected (uL): 1.0  
Column phase: CLP2

Instrument: ecd8a.i  
Operator: YSL  
Column diameter: 0.25





**PCB**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 1

|                       |                             |                        |                          |                      |                     |
|-----------------------|-----------------------------|------------------------|--------------------------|----------------------|---------------------|
| <b>SDG Number:</b>    | <b>284538</b>               | <b>Date Collected:</b> | <b>08/18/2011 12:00</b>  | <b>Matrix:</b>       | <b>GROUND WATER</b> |
| <b>Lab Sample ID:</b> | <b>1202475429</b>           | <b>Date Received:</b>  | <b>08/23/2011 08:50</b>  |                      |                     |
| <b>Client Sample:</b> | <b>QC for batch 1136662</b> | <b>Client:</b>         | <b>ECOL008</b>           | <b>Project:</b>      | <b>QC</b>           |
| <b>Client ID:</b>     | <b>11080101MS</b>           | <b>Method:</b>         | <b>SW846 3535A/8082A</b> | <b>SOP Ref:</b>      | <b>GL-OA-E-040</b>  |
| <b>Batch ID:</b>      | <b>1136663</b>              | <b>Inst:</b>           | <b>ECD8A.I</b>           | <b>Dilution:</b>     | <b>1</b>            |
| <b>Run Date:</b>      | <b>08/30/2011 09:52</b>     | <b>Analyst:</b>        | <b>YS1</b>               | <b>Inj. Vol:</b>     | <b>1 uL</b>         |
| <b>Prep Date:</b>     | <b>08/29/2011 08:20</b>     | <b>Aliquot:</b>        | <b>1000 mL</b>           | <b>Final Volume:</b> | <b>1 mL</b>         |
| <b>Data File:</b>     | <b>015f1501.d</b>           | <b>Column:</b>         | <b>1 CLP1</b>            | <b>Level:</b>        | <b>LOW</b>          |
|                       | <b>015b1501.d</b>           |                        | <b>2 CLP2</b>            |                      |                     |

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 |           | 0.180  | ug/L  | 0.0333  | 0.100   | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 11096-82-5 | Aroclor-1260 | B         | 0.250  | ug/L  | 0.0333  | 0.100   | 1      |

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/015f1501.d  
Lab Smp Id: 1202475429 Client Smp ID: 11080101MS  
Inj Date : 30-AUG-2011 09:52  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |1202475429|1|  
Misc Info : |ECD5A2A\_1L|1136663|SVA|QC A|GROUND WATER|MS|||  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
Meth Date : 30-Aug-2011 09:17 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033f3301.d  
Als bottle: 15 QC Sample: MS  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water  
Processing Host: hpclp1

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vo \* Vi) \* CpndVariable

| Name | Value      | Description                     |
|------|------------|---------------------------------|
| DF   | 1.00000    | Dilution Factor                 |
| Uf   | 1.00000    | Correction factor               |
| Vt   | 1.00000    | Volume of final extract (uL)    |
| Vo   | 1000.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000    | Volume injected (uL)            |

Cpnd Variable Local Compound Variable

|                                  |        |        | CONCENTRATIONS |         |                   |         |        |           |
|----------------------------------|--------|--------|----------------|---------|-------------------|---------|--------|-----------|
|                                  |        |        | ON-COL         |         | FINAL             |         |        |           |
| RT                               | EXP RT | DLT RT | RESPONSE       | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO     |
| ==                               | =====  | =====  | =====          | =====   | =====             | =====   |        | =====     |
| \$ 11 4cmx                       |        |        |                |         | CAS #: 877-09-8   |         |        |           |
| 2.134                            | 2.135  | -0.001 | 1803761        | 31.7452 | 0.032             | 80.00-  | 120.00 | 100.00(R) |
| -----                            |        |        |                |         |                   |         |        |           |
| \$ 12 Decachlorobiphenyl         |        |        |                |         | CAS #: 2051-24-3  |         |        |           |
| 6.053                            | 6.054  | -0.001 | 1634789        | 43.6586 | 0.044             | 80.00-  | 120.00 | 100.00(R) |
| -----                            |        |        |                |         |                   |         |        |           |
| 1 Aroclor-1016                   |        |        |                |         | CAS #: 12674-11-2 |         |        |           |
| 2.674                            | 2.674  | 0.000  | 356485         | 172.185 | 0.17              | 80.00-  | 120.00 | 100.00(R) |
| 3.016                            | 3.015  | 0.001  | 460768         | 185.716 | 0.18              | 110.27- | 150.27 | 129.25    |
| 3.155                            | 3.154  | 0.001  | 197719         | 198.785 | 0.20              | 30.74-  | 70.74  | 55.46     |
| 3.247                            | 3.246  | 0.001  | 179003         | 194.323 | 0.19              | 25.58-  | 65.58  | 50.21     |
| 3.405                            | 3.404  | 0.001  | 236998         | 180.664 | 0.18              | 45.51-  | 85.51  | 66.48     |
| Average of Peak Concentrations = |        |        |                |         | 0.18              |         |        |           |
| -----                            |        |        |                |         |                   |         |        |           |

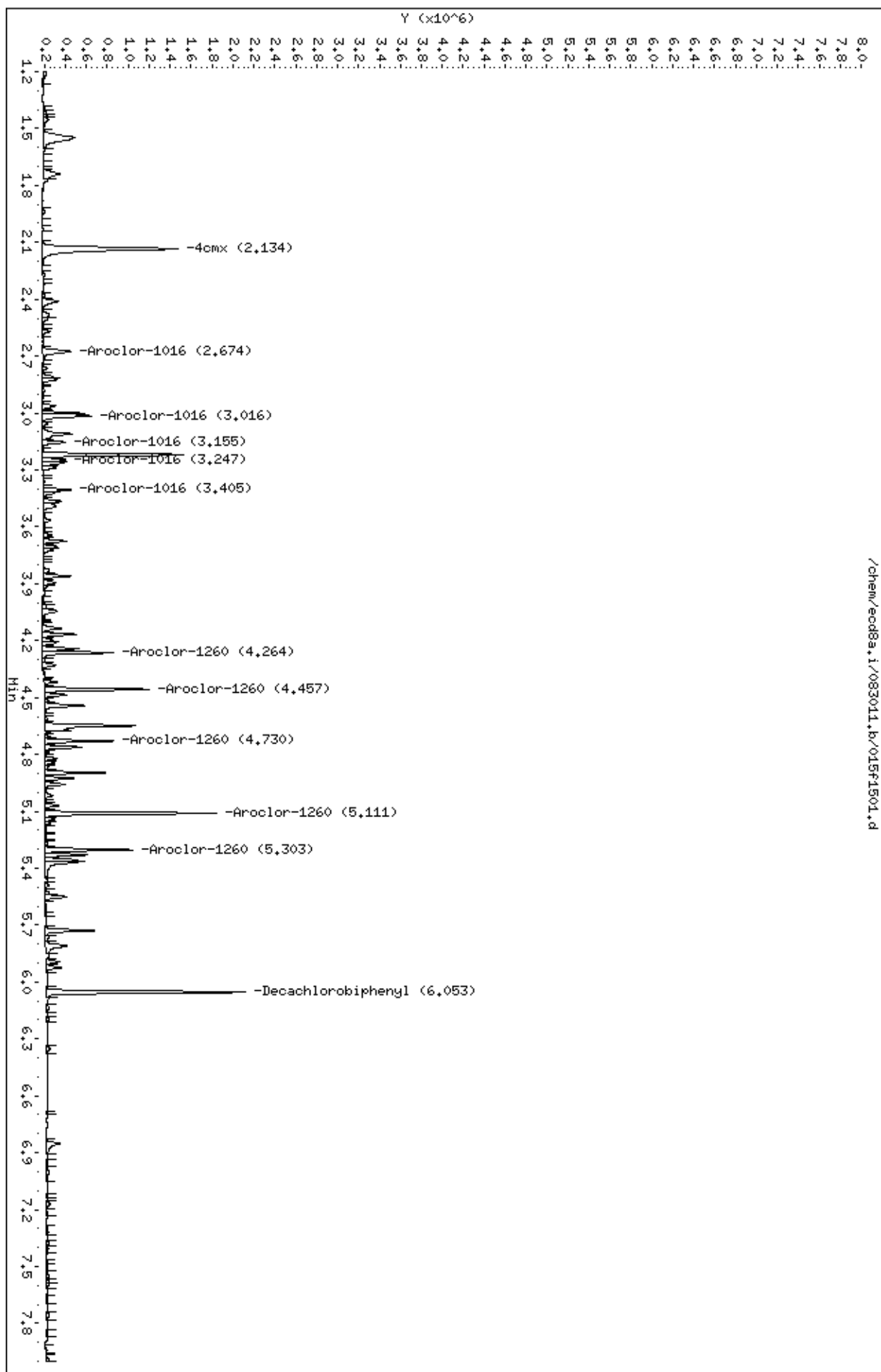
| CONCENTRATIONS                   |        |        |                  |         |                   |                |           |
|----------------------------------|--------|--------|------------------|---------|-------------------|----------------|-----------|
|                                  |        |        | ON-COL           |         | FINAL             |                |           |
| RT                               | EXP RT | DLT RT | RESPONSE ( ug/L) |         | ( ug/L)           | TARGET RANGE   | RATIO     |
| ==                               | =====  | =====  | =====            | =====   | =====             | =====          | =====     |
| 7 Aroclor-1260                   |        |        |                  |         | CAS #: 11096-82-5 |                |           |
| 4.264                            | 4.264  | 0.000  | 582048           | 233.612 | 0.23              | 80.00- 120.00  | 100.00(R) |
| 4.457                            | 4.456  | 0.001  | 818776           | 225.352 | 0.22              | 130.28- 170.28 | 140.67    |
| 4.730                            | 4.729  | 0.001  | 520986           | 236.211 | 0.24              | 70.08- 110.08  | 89.51     |
| 5.111                            | 5.111  | 0.000  | 1298075          | 272.195 | 0.27              | 182.73- 222.73 | 223.02    |
| 5.303                            | 5.302  | 0.001  | 661800           | 274.269 | 0.27              | 81.55- 121.55  | 113.70    |
| Average of Peak Concentrations = |        |        |                  |         | 0.25              |                |           |

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /chem/ecod8a.i/083011.b/015f1501.d  
Date : 30-AUG-2011 09:52  
Client ID: 11080101MS  
Sample Info: 1120247542911  
Volume Injected (uL): 1.0  
Column phase: CLP1

Instrument: ecod8a.i  
Operator: YSL  
Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/015b1501.d  
Lab Smp Id: 1202475429 Client Smp ID: 11080101MS  
Inj Date : 30-AUG-2011 09:52  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |1202475429|1|  
Misc Info : |ECD5A2A\_1L|1136663|SVA|QC A|GROUND WATER|MS|||  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
Meth Date : 30-Aug-2011 09:17 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033b3301.d  
Als bottle: 15 QC Sample: MS  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: PCB.sub  
Target Version: 3.50 Sample Matrix: Ground Water  
Processing Host: hpclp1

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vo \* Vi) \* CpndVariable

| Name | Value      | Description                     |
|------|------------|---------------------------------|
| DF   | 1.00000    | Dilution Factor                 |
| Uf   | 1.00000    | Correction factor               |
| Vt   | 1.00000    | Volume of final extract (uL)    |
| Vo   | 1000.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000    | Volume injected (uL)            |

Cpnd Variable Local Compound Variable

| CONCENTRATIONS                            |        |        |                  |         |         |               |           |
|---|--------|--------|------------------|---------|---------|---------------|-----------|
|   |        |        | ON-COL           |         | FINAL   |               |           |
| RT  | EXP RT | DLT RT | RESPONSE ( ug/L) |         | ( ug/L) | TARGET RANGE  | RATIO     |
| ==  | =====  | =====  | =====            | =====   | =====   | =====         | =====     |
| \$ 11 4cmx CAS #: 877-09-8                |        |        |                  |         |         |               |           |
| 2.372                                     | 2.373  | -0.001 | 2407000          | 31.4798 | 0.031   | 80.00- 120.00 | 100.00(R) |
| \$ 12 Decachlorobiphenyl CAS #: 2051-24-3 |        |        |                  |         |         |               |           |
| 6.651                                     | 6.651  | 0.000  | 2001725          | 52.8993 | 0.053   | 80.00- 120.00 | 100.00    |
| 1 Aroclor-1016 CAS #: 2051-24-3           |        |        |                  |         |         |               |           |
| 3.073                                     | 3.073  | 0.000  | 507436           | 170.805 | 0.17    | 80.00- 120.00 | 100.00(R) |
| 3.419                                     | 3.419  | 0.000  | 612974           | 190.807 | 0.19    | 98.58- 138.58 | 120.80    |
| 3.516                                     | 3.516  | 0.000  | 424215           | 186.820 | 0.19    | 57.09- 97.09  | 83.60     |
| 3.590                                     | 3.590  | 0.000  | 265036           | 195.273 | 0.20    | 26.68- 66.68  | 52.23     |
| 3.667                                     | 3.666  | 0.001  | 284148           | 200.375 | 0.20    | 28.24- 68.24  | 56.00     |
| Average of Peak Concentrations =          |        |        |                  |         | 0.19    |               |           |

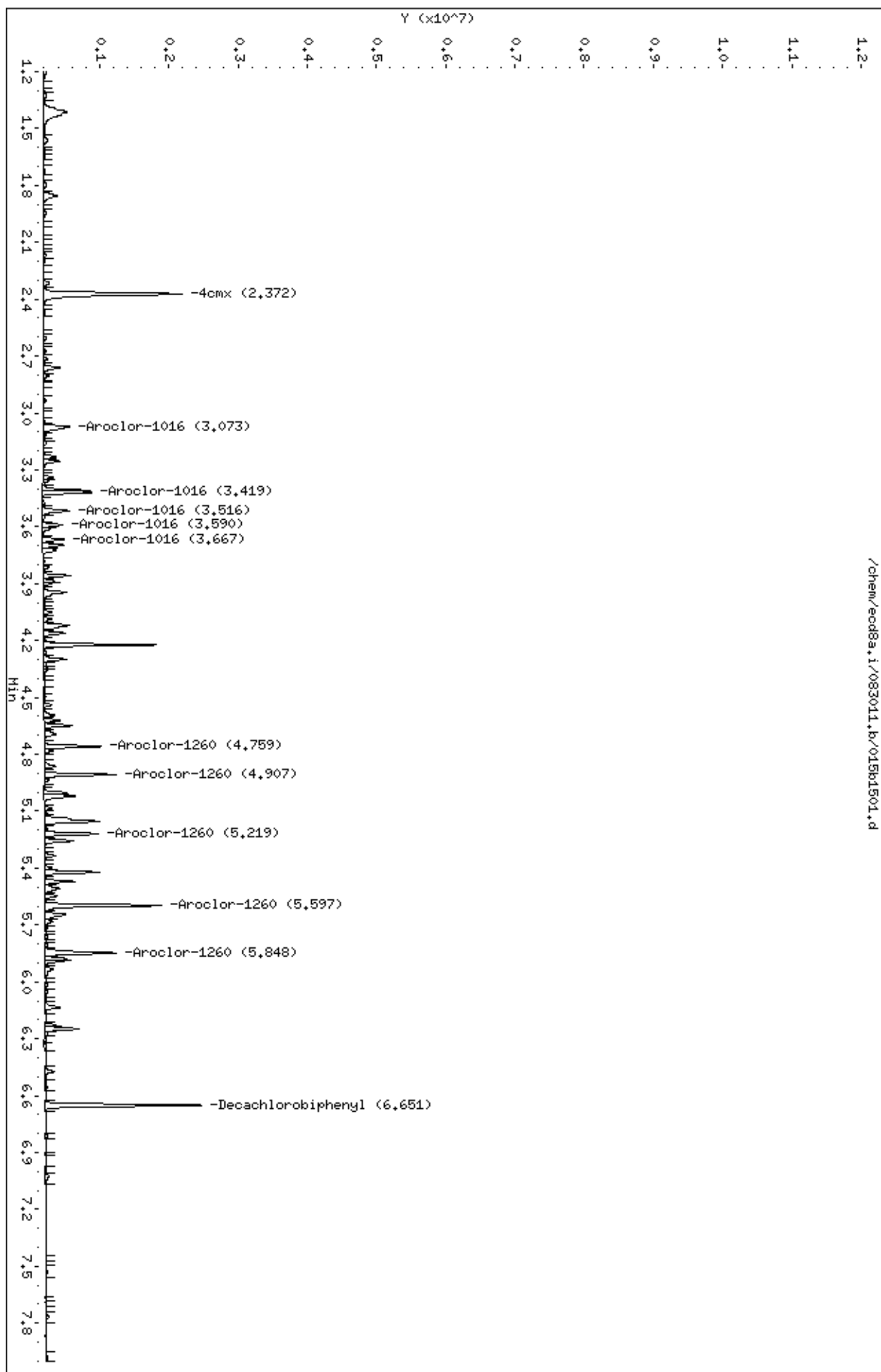
| CONCENTRATIONS                   |        |        |    |                   |         |                     |           |
|----------------------------------|--------|--------|----|-------------------|---------|---------------------|-----------|
|                                  |        | ON-COL |    | FINAL             |         |                     |           |
| RT                               | EXP RT | DLT RT | RT | RESPONSE ( ug/L)  | ( ug/L) | TARGET RANGE        | RATIO     |
| ==                               | =====  | =====  |    | =====             | =====   | =====               | =====     |
| 7 Aroclor-1260                   |        |        |    | CAS #: 11096-82-5 |         |                     |           |
| 4.759                            | 4.758  | 0.001  |    | 713934            | 217.806 | 0.22 80.00- 120.00  | 100.00(R) |
| 4.907                            | 4.907  | 0.000  |    | 864028            | 226.607 | 0.23 97.01- 137.01  | 121.02    |
| 5.219                            | 5.219  | 0.000  |    | 675666            | 239.495 | 0.24 68.97- 108.97  | 94.64     |
| 5.597                            | 5.597  | 0.000  |    | 1508271           | 264.209 | 0.26 165.24- 205.24 | 211.26    |
| 5.848                            | 5.848  | 0.000  |    | 1044133           | 262.445 | 0.26 109.82- 149.82 | 146.25    |
| Average of Peak Concentrations = |        |        |    | 0.24              |         |                     |           |

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /chem/ecd8a.i/083011.b/015b1501.d  
Date : 30-0UC-2011 09:52  
Client ID: 11080101MS  
Sample Info: 1120247542911  
Volume Injected (uL): 1.0  
Column phase: CLP2

Instrument: ecd8a.i  
Operator: YSL  
Column diameter: 0.25



**PCB**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 1

|                       |                             |                        |                          |                      |                     |
|-----------------------|-----------------------------|------------------------|--------------------------|----------------------|---------------------|
| <b>SDG Number:</b>    | <b>284538</b>               | <b>Date Collected:</b> | <b>08/18/2011 12:00</b>  | <b>Matrix:</b>       | <b>GROUND WATER</b> |
| <b>Lab Sample ID:</b> | <b>1202475430</b>           | <b>Date Received:</b>  | <b>08/23/2011 08:50</b>  |                      |                     |
| <b>Client Sample:</b> | <b>QC for batch 1136662</b> | <b>Client:</b>         | <b>ECOL008</b>           | <b>Project:</b>      | <b>QC</b>           |
| <b>Client ID:</b>     | <b>11080101MSD</b>          | <b>Method:</b>         | <b>SW846 3535A/8082A</b> | <b>SOP Ref:</b>      | <b>GL-OA-E-040</b>  |
| <b>Batch ID:</b>      | <b>1136663</b>              | <b>Inst:</b>           | <b>ECD8A.I</b>           | <b>Dilution:</b>     | <b>1</b>            |
| <b>Run Date:</b>      | <b>08/30/2011 10:04</b>     | <b>Analyst:</b>        | <b>YS1</b>               | <b>Inj. Vol:</b>     | <b>1 uL</b>         |
| <b>Prep Date:</b>     | <b>08/29/2011 08:20</b>     | <b>Aliquot:</b>        | <b>1000 mL</b>           | <b>Final Volume:</b> | <b>1 mL</b>         |
| <b>Data File:</b>     | <b>016f1601.d</b>           | <b>Column:</b>         | <b>1 CLP1</b>            | <b>Level:</b>        | <b>LOW</b>          |
|                       | <b>016b1601.d</b>           |                        | <b>2 CLP2</b>            |                      |                     |

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 |           | 0.220  | ug/L  | 0.0333  | 0.100   | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 0.0333 | ug/L  | 0.0333  | 0.100   | 1      |
| 11096-82-5 | Aroclor-1260 | B         | 0.290  | ug/L  | 0.0333  | 0.100   | 1      |



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/016f1601.d  
Lab Smp Id: 1202475430 Client Smp ID: 11080101MSD  
Inj Date : 30-AUG-2011 10:04  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |1202475430|1|  
Misc Info : |ECD5A2A\_1L|1136663|SVA|QC A|GROUND WATER|MSD|||  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-F-8082-081711.m  
Meth Date : 30-Aug-2011 09:17 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033f3301.d  
Als bottle: 16 QC Sample: MSD  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water  
Processing Host: hpclp1

Concentration Formula:  $\text{Amt} * \text{DF} * \text{Uf} * \text{Vt} / (\text{Vo} * \text{Vi}) * \text{CpndVariable}$

| Name | Value      | Description                     |
|------|------------|---------------------------------|
| DF   | 1.00000    | Dilution Factor                 |
| Uf   | 1.00000    | Correction factor               |
| Vt   | 1.00000    | Volume of final extract (uL)    |
| Vo   | 1000.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000    | Volume injected (uL)            |

Cpnd Variable Local Compound Variable

| CONCENTRATIONS                   |        |        |          |         |                   |         |        |           |
|----------------------------------|--------|--------|----------|---------|-------------------|---------|--------|-----------|
|                                  |        |        | ON-COL   |         | FINAL             |         |        |           |
| RT                               | EXP RT | DLT RT | RESPONSE | ( ug/L) | ( ug/L)           | TARGET  | RANGE  | RATIO     |
| ==                               | =====  | =====  | =====    | =====   | =====             | =====   |        | =====     |
| \$ 11 4cmx                       |        |        |          |         | CAS #: 877-09-8   |         |        |           |
| 2.138                            | 2.135  | 0.003  | 2009726  | 35.3701 | 0.035             | 80.00-  | 120.00 | 100.00(R) |
| -----                            |        |        |          |         |                   |         |        |           |
| \$ 12 Decachlorobiphenyl         |        |        |          |         | CAS #: 2051-24-3  |         |        |           |
| 6.053                            | 6.054  | -0.001 | 1618608  | 43.2265 | 0.043             | 80.00-  | 120.00 | 100.00(R) |
| -----                            |        |        |          |         |                   |         |        |           |
| 1 Aroclor-1016                   |        |        |          |         | CAS #: 12674-11-2 |         |        |           |
| 2.677                            | 2.674  | 0.003  | 398573   | 192.514 | 0.19              | 80.00-  | 120.00 | 100.00    |
| 3.017                            | 3.015  | 0.002  | 531075   | 214.054 | 0.21              | 110.27- | 150.27 | 133.24    |
| 3.156                            | 3.154  | 0.002  | 227988   | 229.217 | 0.23              | 30.74-  | 70.74  | 57.20     |
| 3.248                            | 3.246  | 0.002  | 221328   | 240.271 | 0.24              | 25.58-  | 65.58  | 55.53     |
| 3.406                            | 3.404  | 0.002  | 299907   | 228.620 | 0.23              | 45.51-  | 85.51  | 75.25     |
| Average of Peak Concentrations = |        |        |          |         | 0.22              |         |        |           |
| -----                            |        |        |          |         |                   |         |        |           |

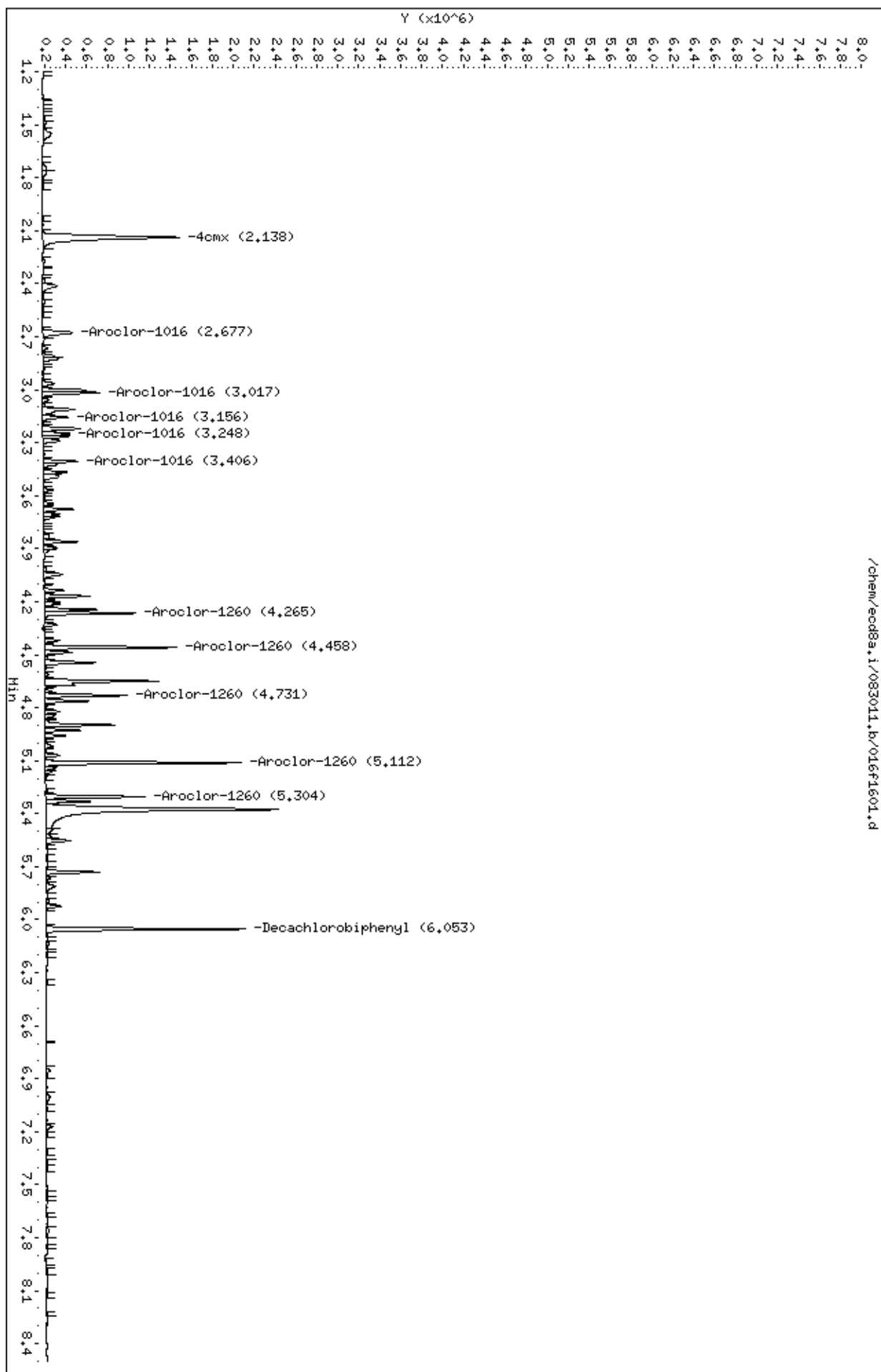
| CONCENTRATIONS                   |        |        |    |                   |         |                |        |
|----------------------------------|--------|--------|----|-------------------|---------|----------------|--------|
|                                  |        | ON-COL |    | FINAL             |         |                |        |
| RT                               | EXP RT | DLT RT | RT | RESPONSE ( ug/L)  | ( ug/L) | TARGET RANGE   | RATIO  |
| ==                               | =====  | =====  |    | =====             | =====   | =====          | =====  |
| 7 Aroclor-1260                   |        |        |    | CAS #: 11096-82-5 |         |                |        |
| 4.265                            | 4.264  | 0.001  |    | 715125 287.024    | 0.29    | 80.00- 120.00  | 100.00 |
| 4.458                            | 4.456  | 0.002  |    | 1029960 283.476   | 0.28    | 130.28- 170.28 | 144.03 |
| 4.731                            | 4.729  | 0.002  |    | 614431 278.579    | 0.28    | 70.08- 110.08  | 85.92  |
| 5.112                            | 5.111  | 0.001  |    | 1490928 312.635   | 0.31    | 182.73- 222.73 | 208.48 |
| 5.304                            | 5.302  | 0.002  |    | 746303 309.289    | 0.31    | 81.55- 121.55  | 104.36 |
| Average of Peak Concentrations = |        |        |    | 0.29              |         |                |        |

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /chem/ecd8a.i/083011.b/016f1601.d  
Date : 30-0UC-2011 10:04  
Client ID: 11080101MSD  
Sample Info: 1120247543011  
Volume Injected (uL): 1.0  
Column phase: CLP1

Instrument: ecd8a.i  
Operator: YSL  
Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd8a.i/083011.b/016b1601.d  
Lab Smp Id: 1202475430 Client Smp ID: 11080101MSD  
Inj Date : 30-AUG-2011 10:04  
Operator : YS1 Inst ID: ecd8a.i  
Smp Info : |1202475430|1|  
Misc Info : |ECD5A2A\_1L|1136663|SVA|QC A|GROUND WATER|MSD|||  
Comment :  
Method : /chem/ecd8a.i/083011.b/ECD8-B-8082-081711.m  
Meth Date : 30-Aug-2011 09:17 yip00818 Quant Type: ESTD  
Cal Date : 17-AUG-2011 17:22 Cal File: 033b3301.d  
Als bottle: 16 QC Sample: MSD  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 284538.sub  
Target Version: 3.50 Sample Matrix: Ground Water  
Processing Host: hpc1p1

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vo \* Vi) \* CpndVariable

| Name | Value      | Description                     |
|------|------------|---------------------------------|
| DF   | 1.00000    | Dilution Factor                 |
| Uf   | 1.00000    | Correction factor               |
| Vt   | 1.00000    | Volume of final extract (uL)    |
| Vo   | 1000.00000 | Volume of sample extracted (mL) |
| Vi   | 1.00000    | Volume injected (uL)            |

Cpnd Variable Local Compound Variable

| CONCENTRATIONS                            |        |        |                  |         |         |               |           |
|---|--------|--------|------------------|---------|---------|---------------|-----------|
|   |        |        | ON-COL           |         | FINAL   |               |           |
| RT  | EXP RT | DLT RT | RESPONSE ( ug/L) |         | ( ug/L) | TARGET RANGE  | RATIO     |
| ==  | =====  | =====  | =====            | =====   | =====   | =====         | =====     |
| \$ 11 4cmx CAS #: 877-09-8                |        |        |                  |         |         |               |           |
| 2.376                                     | 2.373  | 0.003  | 2660179          | 34.7909 | 0.035   | 80.00- 120.00 | 100.00(R) |
| \$ 12 Decachlorobiphenyl CAS #: 2051-24-3 |        |        |                  |         |         |               |           |
| 6.652                                     | 6.651  | 0.001  | 1953958          | 51.6370 | 0.052   | 80.00- 120.00 | 100.00(R) |
| 1 Aroclor-1016 CAS #: 2051-24-3           |        |        |                  |         |         |               |           |
| 3.075                                     | 3.073  | 0.002  | 576934           | 194.198 | 0.19    | 80.00- 120.00 | 100.00(R) |
| 3.420                                     | 3.419  | 0.001  | 716292           | 222.968 | 0.22    | 98.58- 138.58 | 124.15    |
| 3.517                                     | 3.516  | 0.001  | 468804           | 206.456 | 0.21    | 57.09- 97.09  | 81.26     |
| 3.592                                     | 3.590  | 0.002  | 278023           | 204.842 | 0.20    | 26.68- 66.68  | 48.19     |
| 3.668                                     | 3.666  | 0.002  | 320784           | 226.210 | 0.23    | 28.24- 68.24  | 55.60     |
| Average of Peak Concentrations =          |        |        |                  |         | 0.21    |               |           |

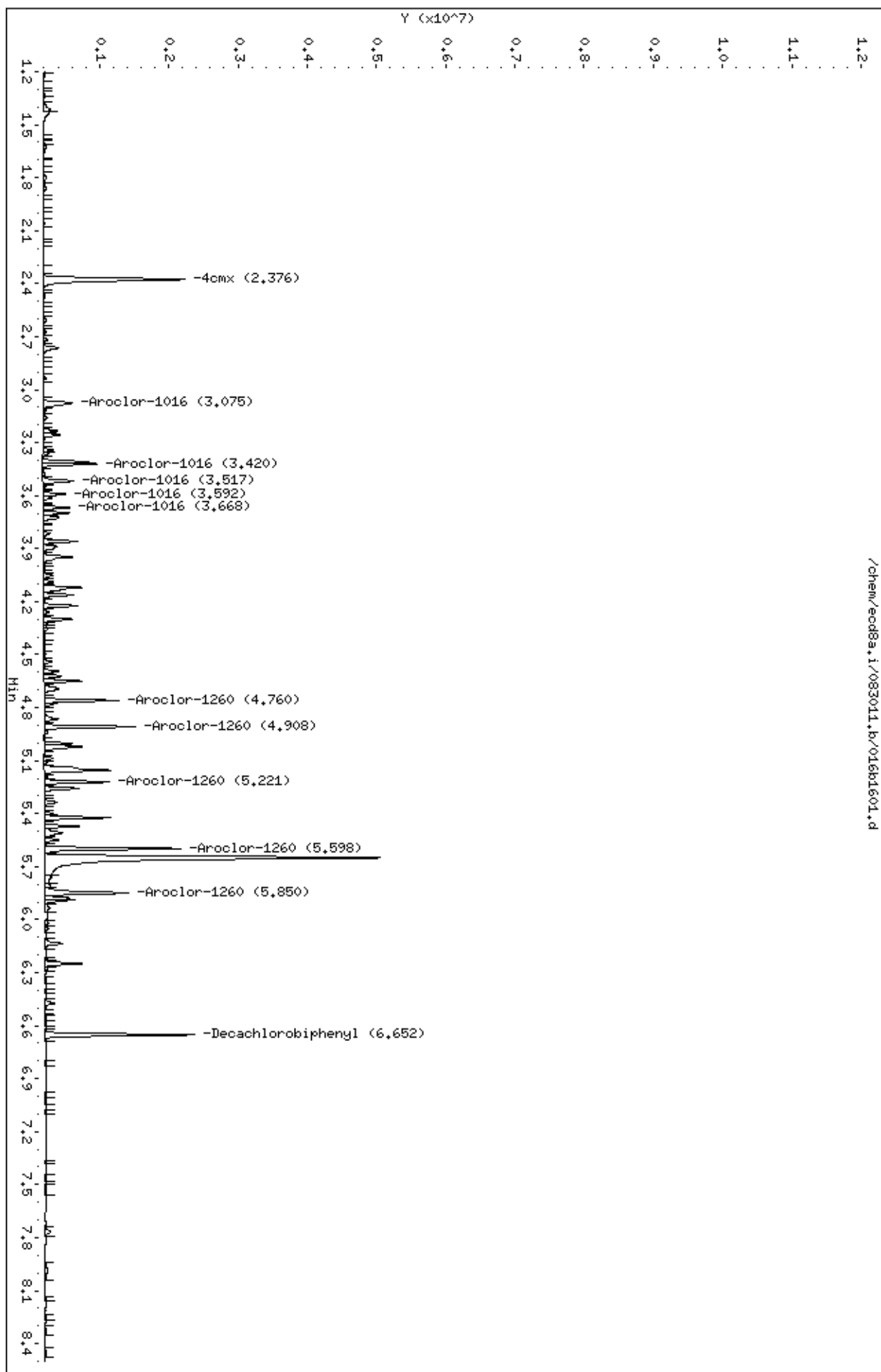
| CONCENTRATIONS                   |        |        |    |                   |         |                |           |
|----------------------------------|--------|--------|----|-------------------|---------|----------------|-----------|
|                                  |        | ON-COL |    | FINAL             |         |                |           |
| RT                               | EXP RT | DLT RT | RT | RESPONSE ( ug/L)  | ( ug/L) | TARGET RANGE   | RATIO     |
| ==                               | =====  | =====  |    | =====             | =====   | =====          | =====     |
| 7 Aroclor-1260                   |        |        |    | CAS #: 11096-82-5 |         |                |           |
| 4.760                            | 4.758  | 0.002  |    | 920793 280.914    | 0.28    | 80.00- 120.00  | 100.00(R) |
| 4.908                            | 4.907  | 0.001  |    | 1092547 286.540   | 0.29    | 97.01- 137.01  | 118.65    |
| 5.221                            | 5.219  | 0.002  |    | 794991 281.790    | 0.28    | 68.97- 108.97  | 86.34     |
| 5.598                            | 5.597  | 0.001  |    | 1722634 301.760   | 0.30    | 165.24- 205.24 | 187.08    |
| 5.850                            | 5.848  | 0.002  |    | 1270552 319.356   | 0.32    | 109.82- 149.82 | 137.98    |
| Average of Peak Concentrations = |        |        |    | 0.29              |         |                |           |

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /chem/ecd8a.i/083011.b/016b1601.d  
Date : 30-JUL-2011 10:04  
Client ID: 11080101MSD  
Sample Info: 1120247543011  
Volume Injected (uL): 1.0  
Column phase: CLP2

Instrument: ecd8a.i  
Operator: YSL  
Column diameter: 0.25



# Miscellaneous Data

DATE: 08/18/2011

METHOD: ECD8-F-8082-081711.m

OPERATOR:YS1

REVIEWED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

HARDWARE CONFIGURATION &amp; METHOD SUMMARY: No. 1 on pg. 1 SOLVENT LOT DE354

ALUMINA LOT

COPPER LOT

## Calibration &amp; QC Information

Initial Calibration Dates: See Calibration History and Standards Log

Initial Calibration Std ID's: See Calibration History and Standards Log

GEL SOP GL-OA-E-040

EPA Method: 8082 Polychlorinated Biphenyls PCBs by Gas Chromatography

Sequence Number: /chem/ecd8a.i/081711.b

Injection Volume: 1.0 ul

| Data File  | GEL Lab Sample ID | Analyst | Injection Date/Time | Batch | SDG    | Dilution | Client               | Comments |
|------------|-------------------|---------|---------------------|-------|--------|----------|----------------------|----------|
| 001f0101.d | WAR110802-99 01   | YS1     | 17-AUG-2011 11:03   |       | 081711 | 1.0      | CLEAN                |          |
| 002f0201.d | WAR110815-60      | YS1     | 17-AUG-2011 11:14   |       | 081711 | 1.0      | DUSE                 |          |
| 003f0301.d | WAR110614-54      | YS1     | 17-AUG-2011 11:26   |       | 081711 | 1.0      | DUSE                 |          |
| 004f0401.d | WAR110726-42      | YS1     | 17-AUG-2011 11:38   |       | 081711 | 1.0      | DUSE                 |          |
| 005f0501.d | WAR110726-48      | YS1     | 17-AUG-2011 11:49   |       | 081711 | 1.0      | DUSE                 |          |
| 006f0601.d | WAR110701-32      | YS1     | 17-AUG-2011 12:01   |       | 081711 | 1.0      | PATTERN ONLY         |          |
| 007f0701.d | WAR110516-21      | YS1     | 17-AUG-2011 12:20   |       | 081711 | 1.0      | PATTERN ONLY         |          |
| 008f0801.d | WAR110504-62      | YS1     | 17-AUG-2011 12:31   |       | 081711 | 1.0      | PATTERN ONLY         |          |
| 009f0901.d | WAR110809-68      | YS1     | 17-AUG-2011 12:43   |       | 081711 | 1.0      | PATTERN ONLY         |          |
| 010f1001.d | WAR110609-DDT     | YS1     | 17-AUG-2011 12:55   |       | 081711 | 1.0      | DDT ANALOG           |          |
| 011f1101.d | WAR110817-01      | YS1     | 17-AUG-2011 13:06   |       | 081711 | 1.0      | AR1660 I-CAL LEVEL 1 |          |
| 012f1201.d | WAR110817-02      | YS1     | 17-AUG-2011 13:18   |       | 081711 | 1.0      | AR1660 I-CAL LEVEL 2 |          |
| 013f1301.d | WAR110817-03      | YS1     | 17-AUG-2011 13:29   |       | 081711 | 1.0      | AR1660 I-CAL LEVEL 3 |          |
| 014f1401.d | WAR110817-04      | YS1     | 17-AUG-2011 13:41   |       | 081711 | 1.0      | AR1660 I-CAL LEVEL 4 |          |
| 015f1501.d | IAR110815-01      | YS1     | 17-AUG-2011 13:53   |       | 081711 | 1.0      | AR1660 I-CAL LEVEL 5 |          |

Instrument Batch: /chem/ecd8a.i/081711.b

Page: 1

| Data File  | GEL Lab Sample ID | Analyst | Injection Date/Time | Batch | SDG    | Dilution | Client                 | Comments |
|------------|-------------------|---------|---------------------|-------|--------|----------|------------------------|----------|
| 016f1601.d | WAR110815-60 01   | YS1     | 17-AUG-2011 14:04   |       | 081711 | 1.0      | PASSED ON BOTH COLUMNS |          |
| 017f1701.d | WAR110815-05      | YS1     | 17-AUG-2011 14:16   |       | 081711 | 1.0      | AR1254 I-CAL LEVEL 1   |          |



|            |                 |     |                   |  |        |  |     |                        |  |
|------------|-----------------|-----|-------------------|--|--------|--|-----|------------------------|--|
| 018f1801.d | WAR110817-06    | YS1 | 17-AUG-2011 14:28 |  | 081711 |  | 1.0 | AR1254 I-CAL LEVEL 2   |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 019f1901.d | WAR110817-07    | YS1 | 17-AUG-2011 14:39 |  | 081711 |  | 1.0 | AR1254 I-CAL LEVEL 3   |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 020f2001.d | WAR110815-08    | YS1 | 17-AUG-2011 14:51 |  | 081711 |  | 1.0 | AR1254 I-CAL LEVEL 4   |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 021f2101.d | IAR110811-01    | YS1 | 17-AUG-2011 15:03 |  | 081711 |  | 1.0 | AR1254 I-CAL LEVEL 5   |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 022f2201.d | WAR100714-54    | YS1 | 17-AUG-2011 15:14 |  | 081711 |  | 1.0 | PASSED ON BOTH COLUMNS |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 023f2301.d | WAR110817-09    | YS1 | 17-AUG-2011 15:26 |  | 081711 |  | 1.0 | AR1242 I-CAL LEVEL 1   |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 024f2401.d | WAR110817-10    | YS1 | 17-AUG-2011 15:38 |  | 081711 |  | 1.0 | AR1242 I-CAL LEVEL 2   |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 025f2501.d | WAR110817-11    | YS1 | 17-AUG-2011 15:49 |  | 081711 |  | 1.0 | AR1242 I-CAL LEVEL 3   |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 026f2601.d | WAR111817-12    | YS1 | 17-AUG-2011 16:01 |  | 081711 |  | 1.0 | AR1242 I-CAL LEVEL 4   |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 027f2701.d | IAR11623-02     | YS1 | 17-AUG-2011 16:12 |  | 081711 |  | 1.0 | AR1242 I-CAL LEVEL 5   |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 028f2801.d | WAR110726-42    | YS1 | 17-AUG-2011 16:24 |  | 081711 |  | 1.0 | PASSED ON BOTH COLUMNS |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 029f2901.d | WAR110817-13    | YS1 | 17-AUG-2011 16:36 |  | 081711 |  | 1.0 | AR1248 I-CAL LEVEL 1   |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 030f3001.d | WAR110817-14    | YS1 | 17-AUG-2011 16:47 |  | 081711 |  | 1.0 | AR1248 I-CAL LEVEL 2   |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 031f3101.d | WAR110817-15    | YS1 | 17-AUG-2011 16:59 |  | 081711 |  | 1.0 | AR1248 I-CAL LEVEL 3   |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 032f3201.d | WAR110817-16    | YS1 | 17-AUG-2011 17:11 |  | 081711 |  | 1.0 | AR1248 I-CAL LEVEL 4   |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 033f3301.d | IAR110623-01    | YS1 | 17-AUG-2011 17:22 |  | 081711 |  | 1.0 | AR1248 I-CAL LEVEL 5   |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 034f3401.d | WAR110726-48    | YS1 | 17-AUG-2011 17:34 |  | 081711 |  | 1.0 | PASSED ON BOTH COLUMNS |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |
| 035f3501.d | WAR110802-99 02 | YS1 | 17-AUG-2011 17:46 |  | 081711 |  | 1.0 | CLEAN                  |  |
| +-----+    |                 |     |                   |  |        |  |     |                        |  |

DATE: 08/30/2011

METHOD: ECD8-F-8082-081711.m

OPERATOR:YS1

REVIEWED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

HARDWARE CONFIGURATION &amp; METHOD SUMMARY: No. 1 on pg. 1 SOLVENT LOT DE354

ALUMINA LOT

COPPER LOT

## Calibration &amp; QC Information

Initial Calibration Dates: See Calibration History and Standards Log

Initial Calibration Std ID's: See Calibration History and Standards Log

GEL SOP GL-OA-E-040

EPA Method: 8082 Polychlorinated Biphenyls PCBs by Gas Chromatography

Sequence Number: /chem/ecd8a.i/083011.b Injection Volume: 1.0 ul

| Data File  | GEL Lab Sample ID | Analyst | Injection Date/Time | Batch   | SDG    | Dilution | Client | Comments                        |
|------------|-------------------|---------|---------------------|---------|--------|----------|--------|---------------------------------|
| 001f0101.d | WAR110802-99 01   | YS1     | 30-AUG-2011 07:09   |         | 083011 | 1.0      |        | CLEAN                           |
| 002f0201.d | WAR110815-60      | YS1     | 30-AUG-2011 07:21   |         | 083011 | 1.0      |        | PASSED ON BOTH COLUMNS          |
| 003f0301.d | WAR110614-54      | YS1     | 30-AUG-2011 07:33   |         | 083011 | 1.0      |        | PASSED ON BOTH COLUMNS          |
| 004f0401.d | WAR110726-42      | YS1     | 30-AUG-2011 07:44   |         | 083011 | 1.0      |        | PASSED ON BOTH COLUMNS          |
| 005f0501.d | WAR110726-48      | YS1     | 30-AUG-2011 07:56   |         | 083011 | 1.0      |        | PASSED ON BOTH COLUMNS          |
| 006f0601.d | WAR110701-32      | YS1     | 30-AUG-2011 08:08   |         | 083011 | 1.0      |        | PATTERN ONLY                    |
| 007f0701.d | WAR110829-21      | YS1     | 30-AUG-2011 08:19   |         | 083011 | 1.0      |        | PATTERN ONLY                    |
| 008f0801.d | WAR110829-62      | YS1     | 30-AUG-2011 08:31   |         | 083011 | 1.0      |        | PATTERN ONLY                    |
| 009f0901.d | WAR110809-68      | YS1     | 30-AUG-2011 08:43   |         | 083011 | 1.0      |        | PATTERN ONLY                    |
| 010f1001.d | WAR110609-DDT     | YS1     | 30-AUG-2011 08:54   |         | 083011 | 1.0      |        | DDT ANALOG                      |
| 011f1101.d | WAR110802-99 02   | YS1     | 30-AUG-2011 09:06   |         | 083011 | 1.0      |        | CLEAN                           |
| 012f1201.d | 1202475427        | YS1     | 30-AUG-2011 09:17   | 1136663 | 284538 | 1.0      | QC A   | UPLOAD BOTH COLUMNS, USE HIGHER |
| 013f1301.d | 1202475428        | YS1     | 30-AUG-2011 09:29   | 1136663 | 284538 | 1.0      | QC A   | UPLOAD BOTH COLUMNS, USE HIGHER |
| 014f1401.d | 284538001         | YS1     | 30-AUG-2011 09:41   | 1136663 | 284538 | 1.0      | ECOL   | UPLOAD BOTH COLUMNS, USE HIGHER |
| 015f1501.d | 1202475429        | YS1     | 30-AUG-2011 09:52   | 1136663 | 284538 | 1.0      | QC A   | UPLOAD BOTH COLUMNS, USE HIGHER |

Instrument Batch: /chem/ecd8a.i/083011.b

Page: 1

| Data File  | GEL Lab Sample ID | Analyst | Injection Date/Time | Batch   | SDG    | Dilution | Client | Comments                        |
|------------|-------------------|---------|---------------------|---------|--------|----------|--------|---------------------------------|
| 016f1601.d | 1202475430        | YS1     | 30-AUG-2011 10:04   | 1136663 | 284538 | 1.0      | QC A   | UPLOAD BOTH COLUMNS, USE HIGHER |
| 017f1701.d | WAR110815-60      | YS1     | 30-AUG-2011 10:18   |         | 083011 | 1.0      |        | PASSED ON BOTH COLUMNS          |

|            |                 |     |                   |  |        |  |     |       |  |
|------------|-----------------|-----|-------------------|--|--------|--|-----|-------|--|
| +-----+    |                 |     |                   |  |        |  |     |       |  |
| 018f1801.d | WAR110802-99 01 | YS1 | 30-AUG-2011 10:33 |  | 083011 |  | 1.0 | CLEAN |  |
| +-----+    |                 |     |                   |  |        |  |     |       |  |

Instrument Batch: /chem/ecd8a.i/083011.b

Page: 2

Prep Logbook

Solid-Phase Extraction

Batch ID: 1136662      Verified by: \_\_\_\_\_

Analyst: Sophia Gathers

Method: SW846 3535A

Lab SOP: GL-OA-E-070 REV# 4

Instrument: Semi-Volatiles Manual

| Sample ID                  | Run Date             | Initial Volume (mL) | Ph 1 | Ph 2 | Clean Up       | Amount 1 (mL) | Amount 2 (mL) | Amount 3 (mL) | Final Volume (mL) | Prepped Factor (mL/mL) |
|----------------------------|----------------------|---------------------|------|------|----------------|---------------|---------------|---------------|-------------------|------------------------|
| 1202475427 MB              | 29-AUG-2011 08:20:00 | 1000                | 5    | 1    | H2SO4/KM 2 nO4 | 2             | 8             | 1             |                   | 0.001                  |
| 1202475428 LCS             | 29-AUG-2011 08:20:00 | 1000                | 5    | 1    | H2SO4/KM 2 nO4 | 2             | 8             | 1             |                   | 0.001                  |
| 284538001                  | 29-AUG-2011 08:20:00 | 980                 | 6    | 1    | H2SO4/KM 2 nO4 | 2             | 8             | 1             |                   | 0.00102                |
| 1202475429 MS (284538001)  | 29-AUG-2011 08:20:00 | 1000                | 6    | 1    | H2SO4/KM 2 nO4 | 2             | 8             | 1             |                   | 0.001                  |
| 1202475430 MSD (284538001) | 29-AUG-2011 08:20:00 | 1000                | 6    | 1    | H2SO4/KM 2 nO4 | 2             | 8             | 1             |                   | 0.001                  |

| Type  | Sample Id  | Description                       | Serial Number | Spike Amt | Units | Comments:   |
|-------|------------|-----------------------------------|---------------|-----------|-------|---|
| LCS   | 1202475428 | PCB Laboratory Control            | WE110727-06   | 1         | mL    | Final Solvent: Hexane<br>Verified By: JAC<br>Clean Up Initials: SCG<br>Clean Up Date: 08/29/11<br>Cart Lot #: 91824-TL<br>PH2:1 |
| MS    | 1202475429 | PCB Laboratory Control            | WE110727-06   | 1         | mL    |   |
| MSD   | 1202475430 | PCB Laboratory Control            | WE110727-06   | 1         | mL    |   |
| SURR  | All        | PEST LOW LEVEL SURROGATE 200 UG/L | UE110822-01   | 1         | mL    |   |
| REGNT | All        | 50g KMnO4 per 1L DI H2O           | 1598033       | 5         | mL    |   |
| REGNT | All        | Acetone                           | 1601189-B1    | 5         | mL    |   |
| REGNT | All        | Hexane                            | 1605285-B4    | 5         | mL    |   |
| REGNT | All        | Methylene Chloride                | 1605750-D     | 50        | mL    |   |
| REGNT | All        | Sulfuric Acid Sol., 1:1           | 1608510       | 20        | mL    |   |
| SOURC | All        | SODIUM SULFATE                    | 1594298       | 30        | g     |   |

| DATA EXCEPTION REPORT  |  |   |                             |
|--|--|---|-----------------------------|
| <b>Mo.Day Yr.</b><br>30-AUG-11   | <b>Division:</b><br>Industrial             | <b>Quality Criteria:</b><br>Specifications  | <b>Type:</b><br>Process     |
| <b>Instrument Type:</b><br>GC/ECD  | <b>Test / Method:</b><br>SW846 3535A/8082A | <b>Matrix Type:</b><br>Liquid   | <b>Client Code:</b><br>ECOL |
| <b>Batch ID:</b><br>1136663  | <b>Sample Numbers:</b><br>See Below        |   |                             |
| <b>Potentially affected work order(s)(SDG): 284538</b><br><b>Application Issues:</b><br>Failed Recovery for MS/PS<br>Method Blank contamination<br>Failed Yield for Surrogates<br>Failed Recovery for MSD/PSD  |  |   |                             |
| <b>Specification and Requirements</b>  |  | <b>DER Disposition:</b>   |                             |
| <b>Exception Description:</b><br><br>1. The MS(1202475429) and MSD(1202475430) did not meet the spike recovery acceptance criteria.<br><br>2. The MB(1202475427) was contaminated with target analytes.<br><br>3. Sample 284583001 and the MS(1202475429) and MSD(1202475430) did not meet the surrogate recovery acceptance criteria. |  | 1., 3. As the sample, MS and MSD displayed similar recoveries, the failures were attributed to matrix interference and the data were reported.<br><br>2. The sample did not have target analytes detected. The data was reported. |                             |

**Originator's Name:**

Yiping Shi 30-AUG-11

**Data Validator/Group Leader:**

Cameron Bearden 30-AUG-11

# Metals Analysis

# Case Narrative

**Metals Fractional Narrative**  
**Ecology and Environment, Inc. Start-3 002233.2008 (ECOL)**  
**SDG 284538**

**Sample Analysis**

| <b>Sample ID</b> | <b>Client ID</b>                                   |
|------------------|--|
| 284538001        | 11080101   |
| 1202472433       | Method Blank (MB) <b>ICP-MS</b>                    |
| 1202472434       | Laboratory Control Sample (LCS)                    |
| 1202472437       | 284538001(11080101L) Serial Dilution (SD)          |
| 1202472435       | 284538001(11080101S) Matrix Spike (MS)             |
| 1202472436       | 284538001(11080101SD) Matrix Spike Duplicate (MSD) |
| 1202472317       | Method Blank (MB) <b>CVAA</b>                      |
| 1202472318       | Laboratory Control Sample (LCS)                    |
| 1202472321       | 284538001(11080101L) Serial Dilution (SD)          |
| 1202472319       | 284538001(11080101D) Sample Duplicate (DUP)        |
| 1202472320       | 284538001(11080101S) Matrix Spike (MS)             |

The samples in this SDG were analyzed on an "as received" basis.

**Method/Analysis Information**

|                                       |   |
|---------------------------------------|---|
| <b>Analytical Batch:</b>              | 1135453 and 1135404   |
| <b>Prep Batch :</b>                   | 1135452 and 1135403   |
| <b>Standard Operating Procedures:</b> | GL-MA-E-014 REV# 23, GL-MA-E-006 REV# 9 and GL-MA-E-010 REV# 25 |
| <b>Analytical Method:</b>             | SW846 3005A/6020A and SW846 7470A                               |
| <b>Prep Method :</b>                  | SW846 3005A and SW846 7470A Prep                                |

**Preparation/Analytical Method Verification**

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.



## **System Configuration**

The Metals analysis - ICPMS was performed on a Perkin Elmer ELAN 9000 inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadrupole mass spectrometer, and dual mode electron multiplier detector. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum. Operating conditions are set at 1400W power and combined argon pressures of 360+/-7 kPa for the plasma and auxiliary gases, and 0.85 L/min carrier gas flow, and an initial lens voltage of 5.2.

The Metals analysis-Mercury was performed on a Perkin-Elmer Flow Injection Mercury System (FIMS-100) automated mercury analyzer. The instrument consists of a cold vapor atomic absorption spectrometer set to detect mercury at a wavelength of 253.7 nm. Sample introduction through the flow injection system is performed via a peristaltic pump at 9 mL/min and nitrogen carrier gas rate of 80 mL/min.

## **Calibration Information**

### **Instrument Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).

### **CRDL Requirements**

All CRDL standard(s) met the referenced advisory control limits.

### **ICSA/ICSAB Statement**

All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

### **Continuing Calibration Blank (CCB) Requirements**

All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

### **Continuing Calibration Verification (CCV) Requirements**

All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

## **Quality Control (QC) Information**

### **Method Blank (MB) Statement**

The MBs analyzed with this SDG met the acceptance criteria.

### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

### **Quality Control (QC) Sample Statement**

The following sample was selected as the quality control (QC) sample for this SDG:

284538001 (11080101).

**Matrix Spike (MS) Recovery Statement**

The percent recoveries (%R) obtained from the MS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. All applicable elements met the acceptance criteria.

**Matrix Spike Duplicate (MSD) Recovery Statement**

The percent recovery (%R) obtained from the MSD analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. All applicable elements met the acceptance criteria.

**MS/MSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the MS and MSD met the acceptance limits.

**Serial Dilution % Difference Statement**

The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations that are 25X the IDL/MDL for CVAA, 50X the IDL/MDL for ICP, and 100X the IDL/MDL for ICP-MS analyses are applicable for serial dilution assessment. All applicable analytes met the acceptance criteria of less than 10% difference (%D).

**Duplicate Relative Percent Difference (RPD) Statement**

The RPD obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is >5X the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control of +/-RL is used to evaluate the DUP results. All applicable analytes met these requirements.

**Technical Information**

**Holding Time Specifications**

GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

**Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

**Sample Dilutions**

Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. The samples in this SDG did not require dilutions.

**Preparation Information**

The samples in this SDG were prepared exactly according to the cited SOP.

**Miscellaneous Information****Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

**Data Exception (DER) Documentation**

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this SDG.


**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

**Review Validation:**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

**The following data validator verified the information presented in this case narrative:**

Reviewer:  Date: 9/14/11

# **Sample Data Summary**

## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Certificate of Analysis Report for

ECOL008 Ecology and Environment, Inc. Start-3 002233.2008

Client SDG: 284538 GEL Work Order: 284538

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- B Metals--Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- J Value is estimated
- P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the RL or LOQ.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

Reviewed By:



9/14/11

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 284538

METHOD TYPE: SW846

SAMPLE ID: 284538001

CLIENT ID: 11080101

CONTRACT: ECOL00111

MATRIX: Ground Water

DATE RECEIVED 23-AUG-11

LEVEL: Low %SOLIDS:

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 8170          | ug/L         |          |             | MS        | 15         | 1         | ICPMS7         | 110824-1              |
| 7440-36-0     | Antimony       | 1             | ug/L         | U        |             | MS        | 1          | 1         | ICPMS7         | 110824-1              |
| 7440-38-2     | Arsenic        | 2             | ug/L         | B        |             | MS        | 1.7        | 1         | ICPMS7         | 110829-2              |
| 7440-39-3     | Barium         | 112           | ug/L         |          |             | MS        | 0.6        | 1         | ICPMS7         | 110824-1              |
| 7440-41-7     | Beryllium      | 0.209         | ug/L         | B        |             | MS        | 0.2        | 1         | ICPMS7         | 110824-1              |
| 7440-43-9     | Cadmium        | 0.11          | ug/L         | U        |             | MS        | 0.11       | 1         | ICPMS7         | 110824-1              |
| 7440-70-2     | Calcium        | 4930          | ug/L         |          |             | MS        | 60         | 1         | ICPMS7         | 110824-1              |
| 7440-47-3     | Chromium       | 14.5          | ug/L         |          |             | MS        | 2          | 1         | ICPMS7         | 110824-1              |
| 7440-48-4     | Cobalt         | 5.14          | ug/L         |          |             | MS        | 0.1        | 1         | ICPMS7         | 110824-1              |
| 7440-50-8     | Copper         | 10            | ug/L         |          |             | MS        | 0.35       | 1         | ICPMS7         | 110824-1              |
| 7439-89-6     | Iron           | 6850          | ug/L         |          |             | MS        | 33         | 1         | ICPMS7         | 110824-1              |
| 7439-92-1     | Lead           | 3.58          | ug/L         |          |             | MS        | 0.5        | 1         | ICPMS7         | 110824-1              |
| 7439-95-4     | Magnesium      | 2590          | ug/L         |          |             | MS        | 10         | 1         | ICPMS7         | 110824-1              |
| 7439-96-5     | Manganese      | 275           | ug/L         |          |             | MS        | 1          | 1         | ICPMS7         | 110824-1              |
| 7439-97-6     | Mercury        | 0.066         | ug/L         | U        |             | AV        | 0.066      | 1         | HG3            | 082411W1-3            |
| 7440-02-0     | Nickel         | 16.4          | ug/L         |          |             | MS        | 0.5        | 1         | ICPMS7         | 110824-1              |
| 7440-09-7     | Potassium      | 907           | ug/L         |          |             | MS        | 80         | 1         | ICPMS7         | 110824-1              |
| 7782-49-2     | Selenium       | 1.5           | ug/L         | U        |             | MS        | 1.5        | 1         | ICPMS7         | 110829-2              |
| 7440-22-4     | Silver         | 0.2           | ug/L         | U        |             | MS        | 0.2        | 1         | ICPMS7         | 110829-2              |
| 7440-23-5     | Sodium         | 3590          | ug/L         |          |             | MS        | 80         | 1         | ICPMS7         | 110824-1              |
| 7440-28-0     | Thallium       | 0.45          | ug/L         | U        |             | MS        | 0.45       | 1         | ICPMS7         | 110824-1              |
| 7440-66-6     | Zinc           | 14.9          | ug/L         |          |             | MS        | 3.5        | 1         | ICPMS7         | 110824-1              |

**\*Analytical Methods:**

P SW846 6010B  
MS SW846 6020  
AV SW846 7470A/7471A  
AF EPA 1631E

# **Quality Control Summary**

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 284538

Contract: ECOL00111

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: HG3,ICPMS7

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
| ICV01            |                |               |              |                   |              |                   |                               |           |                           |                   |
|                  | Mercury        | 4.97          | ug/L         | 5                 | ug/L         | 99.4              | 90.0 – 110.0                  | AV        | 24-AUG-11 17:06           | 082411W1-3        |
|                  | Aluminum       | 5130          | ug/L         | 5050              | ug/L         | 101.6             | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Antimony       | 45.4          | ug/L         | 50                | ug/L         | 90.8              | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Barium         | 49.8          | ug/L         | 50                | ug/L         | 99.6              | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Beryllium      | 49.2          | ug/L         | 50                | ug/L         | 98.4              | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Cadmium        | 50.3          | ug/L         | 50                | ug/L         | 100.7             | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Calcium        | 4960          | ug/L         | 5000              | ug/L         | 99.2              | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Chromium       | 49.6          | ug/L         | 50                | ug/L         | 99.2              | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Cobalt         | 51            | ug/L         | 50                | ug/L         | 102.1             | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Copper         | 50.1          | ug/L         | 50                | ug/L         | 100.2             | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Iron           | 5040          | ug/L         | 5000              | ug/L         | 100.8             | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Lead           | 50.8          | ug/L         | 50                | ug/L         | 101.5             | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Magnesium      | 5010          | ug/L         | 5000              | ug/L         | 100.3             | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Manganese      | 50.9          | ug/L         | 50                | ug/L         | 101.8             | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Nickel         | 51            | ug/L         | 50                | ug/L         | 102               | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Potassium      | 4910          | ug/L         | 5000              | ug/L         | 98.2              | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Sodium         | 4990          | ug/L         | 5000              | ug/L         | 99.9              | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Thallium       | 49.3          | ug/L         | 50                | ug/L         | 98.6              | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Zinc           | 49.7          | ug/L         | 50                | ug/L         | 99.4              | 90.0 – 110.0                  | MS        | 25-AUG-11 06:42           | 110824-1          |
|                  | Arsenic        | 51.4          | ug/L         | 50                | ug/L         | 102.8             | 90.0 – 110.0                  | MS        | 29-AUG-11 12:14           | 110829-2          |
|                  | Selenium       | 51.3          | ug/L         | 50                | ug/L         | 102.5             | 90.0 – 110.0                  | MS        | 29-AUG-11 12:14           | 110829-2          |
|                  | Silver         | 50.1          | ug/L         | 50                | ug/L         | 100.2             | 90.0 – 110.0                  | MS        | 29-AUG-11 12:14           | 110829-2          |
| CCV01            |                |               |              |                   |              |                   |                               |           |                           |                   |
|                  | Mercury        | 5.02          | ug/L         | 5                 | ug/L         | 100.4             | 80.0 – 120.0                  | AV        | 24-AUG-11 17:11           | 082411W1-3        |
|                  | Aluminum       | 5250          | ug/L         | 5050              | ug/L         | 103.9             | 90.0 – 110.0                  | MS        | 25-AUG-11 07:23           | 110824-1          |
|                  | Antimony       | 48.3          | ug/L         | 50                | ug/L         | 96.7              | 90.0 – 110.0                  | MS        | 25-AUG-11 07:23           | 110824-1          |
|                  | Barium         | 49.6          | ug/L         | 50                | ug/L         | 99.3              | 90.0 – 110.0                  | MS        | 25-AUG-11 07:23           | 110824-1          |
|                  | Beryllium      | 48.9          | ug/L         | 50                | ug/L         | 97.9              | 90.0 – 110.0                  | MS        | 25-AUG-11 07:23           | 110824-1          |
|                  | Cadmium        | 50.8          | ug/L         | 50                | ug/L         | 101.6             | 90.0 – 110.0                  | MS        | 25-AUG-11 07:23           | 110824-1          |
|                  | Calcium        | 5050          | ug/L         | 5000              | ug/L         | 100.9             | 90.0 – 110.0                  | MS        | 25-AUG-11 07:23           | 110824-1          |



**METALS**  
**–2a–**  
**Initial and Continuing Calibration Verification**

SDG No: 284538

Contract: ECOL00111

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: HG3,ICPMS7

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
|                  | Chromium       | 48.3          | ug/L         | 50                | ug/L         | 96.6              | 90.0 – 110.0                  | MS        | 25–AUG–11 07:23           | 110824–1          |
|                  | Cobalt         | 50.9          | ug/L         | 50                | ug/L         | 101.8             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:23           | 110824–1          |
|                  | Copper         | 49.8          | ug/L         | 50                | ug/L         | 99.6              | 90.0 – 110.0                  | MS        | 25–AUG–11 07:23           | 110824–1          |
|                  | Iron           | 5040          | ug/L         | 5000              | ug/L         | 100.7             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:23           | 110824–1          |
|                  | Lead           | 50.2          | ug/L         | 50                | ug/L         | 100.3             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:23           | 110824–1          |
|                  | Magnesium      | 5140          | ug/L         | 5000              | ug/L         | 102.8             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:23           | 110824–1          |
|                  | Manganese      | 50.5          | ug/L         | 50                | ug/L         | 100.9             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:23           | 110824–1          |
|                  | Nickel         | 50.8          | ug/L         | 50                | ug/L         | 101.5             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:23           | 110824–1          |
|                  | Potassium      | 5020          | ug/L         | 5000              | ug/L         | 100.5             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:23           | 110824–1          |
|                  | Sodium         | 5190          | ug/L         | 5000              | ug/L         | 103.8             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:23           | 110824–1          |
|                  | Thallium       | 47.7          | ug/L         | 50                | ug/L         | 95.5              | 90.0 – 110.0                  | MS        | 25–AUG–11 07:23           | 110824–1          |
|                  | Zinc           | 49.3          | ug/L         | 50                | ug/L         | 98.7              | 90.0 – 110.0                  | MS        | 25–AUG–11 07:23           | 110824–1          |
|                  | Arsenic        | 50.4          | ug/L         | 50                | ug/L         | 100.9             | 90.0 – 110.0                  | MS        | 29–AUG–11 12:31           | 110829–2          |
|                  | Selenium       | 51.3          | ug/L         | 50                | ug/L         | 102.5             | 90.0 – 110.0                  | MS        | 29–AUG–11 12:31           | 110829–2          |
|                  | Silver         | 49.3          | ug/L         | 50                | ug/L         | 98.6              | 90.0 – 110.0                  | MS        | 29–AUG–11 12:31           | 110829–2          |
| CCV02            | Mercury        | 4.99          | ug/L         | 5                 | ug/L         | 99.7              | 80.0 – 120.0                  | AV        | 24–AUG–11 17:31           | 082411W1–3        |
|                  | Aluminum       | 5150          | ug/L         | 5050              | ug/L         | 102               | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Antimony       | 51.5          | ug/L         | 50                | ug/L         | 103               | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Barium         | 50.1          | ug/L         | 50                | ug/L         | 100.1             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Beryllium      | 49.6          | ug/L         | 50                | ug/L         | 99.2              | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Cadmium        | 51.5          | ug/L         | 50                | ug/L         | 103               | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Calcium        | 5040          | ug/L         | 5000              | ug/L         | 100.8             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Chromium       | 48.7          | ug/L         | 50                | ug/L         | 97.5              | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Cobalt         | 51.6          | ug/L         | 50                | ug/L         | 103.2             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Copper         | 52            | ug/L         | 50                | ug/L         | 104               | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Iron           | 5030          | ug/L         | 5000              | ug/L         | 100.7             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Lead           | 52            | ug/L         | 50                | ug/L         | 104               | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Magnesium      | 5140          | ug/L         | 5000              | ug/L         | 102.8             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Manganese      | 50.7          | ug/L         | 50                | ug/L         | 101.3             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |

**METALS**  
**–2a–**  
**Initial and Continuing Calibration Verification**

SDG No: 284538

Contract: ECOL00111

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: HG3,ICPMS7

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
|                  | Nickel         | 52.6          | ug/L         | 50                | ug/L         | 105.2             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Potassium      | 4980          | ug/L         | 5000              | ug/L         | 99.6              | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Sodium         | 5120          | ug/L         | 5000              | ug/L         | 102.3             | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Thallium       | 50            | ug/L         | 50                | ug/L         | 99.9              | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Zinc           | 49.8          | ug/L         | 50                | ug/L         | 99.5              | 90.0 – 110.0                  | MS        | 25–AUG–11 07:48           | 110824–1          |
|                  | Arsenic        | 50.7          | ug/L         | 50                | ug/L         | 101.4             | 90.0 – 110.0                  | MS        | 29–AUG–11 13:00           | 110829–2          |
|                  | Selenium       | 51.1          | ug/L         | 50                | ug/L         | 102.3             | 90.0 – 110.0                  | MS        | 29–AUG–11 13:00           | 110829–2          |
|                  | Silver         | 49            | ug/L         | 50                | ug/L         | 98                | 90.0 – 110.0                  | MS        | 29–AUG–11 13:00           | 110829–2          |
| CCV03            |                |               |              |                   |              |                   |                               |           |                           |                   |
|                  | Aluminum       | 5150          | ug/L         | 5050              | ug/L         | 101.9             | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Antimony       | 48.4          | ug/L         | 50                | ug/L         | 96.9              | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Barium         | 49.5          | ug/L         | 50                | ug/L         | 98.9              | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Beryllium      | 48.1          | ug/L         | 50                | ug/L         | 96.2              | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Cadmium        | 51.2          | ug/L         | 50                | ug/L         | 102.4             | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Calcium        | 5030          | ug/L         | 5000              | ug/L         | 100.6             | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Chromium       | 48            | ug/L         | 50                | ug/L         | 95.9              | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Cobalt         | 50.1          | ug/L         | 50                | ug/L         | 100.2             | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Copper         | 49.9          | ug/L         | 50                | ug/L         | 99.9              | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Iron           | 4910          | ug/L         | 5000              | ug/L         | 98.2              | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Lead           | 50.9          | ug/L         | 50                | ug/L         | 101.8             | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Magnesium      | 5040          | ug/L         | 5000              | ug/L         | 100.9             | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Manganese      | 49.9          | ug/L         | 50                | ug/L         | 99.8              | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Nickel         | 50.8          | ug/L         | 50                | ug/L         | 101.6             | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Potassium      | 4930          | ug/L         | 5000              | ug/L         | 98.6              | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Sodium         | 5030          | ug/L         | 5000              | ug/L         | 100.7             | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Thallium       | 48.7          | ug/L         | 50                | ug/L         | 97.4              | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
|                  | Zinc           | 49.2          | ug/L         | 50                | ug/L         | 98.4              | 90.0 – 110.0                  | MS        | 25–AUG–11 08:22           | 110824–1          |
| CCV04            |                |               |              |                   |              |                   |                               |           |                           |                   |
|                  | Aluminum       | 5360          | ug/L         | 5050              | ug/L         | 106.2             | 90.0 – 110.0                  | MS        | 25–AUG–11 09:21           | 110824–1          |
|                  | Antimony       | 47.3          | ug/L         | 50                | ug/L         | 94.6              | 90.0 – 110.0                  | MS        | 25–AUG–11 09:21           | 110824–1          |

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 284538

Contract: ECOL00111

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: HG3,ICPMS7

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
|                  | Barium         | 46.5          | ug/L         | 50                | ug/L         | 93                | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |
|                  | Beryllium      | 54.7          | ug/L         | 50                | ug/L         | 109.4             | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |
|                  | Cadmium        | 50.4          | ug/L         | 50                | ug/L         | 100.8             | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |
|                  | Calcium        | 5040          | ug/L         | 5000              | ug/L         | 100.8             | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |
|                  | Chromium       | 47            | ug/L         | 50                | ug/L         | 94                | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |
|                  | Cobalt         | 48.1          | ug/L         | 50                | ug/L         | 96.2              | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |
|                  | Copper         | 46.4          | ug/L         | 50                | ug/L         | 92.8              | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |
|                  | Iron           | 4830          | ug/L         | 5000              | ug/L         | 96.6              | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |
|                  | Lead           | 48            | ug/L         | 50                | ug/L         | 95.9              | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |
|                  | Magnesium      | 5320          | ug/L         | 5000              | ug/L         | 106.5             | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |
|                  | Manganese      | 50.4          | ug/L         | 50                | ug/L         | 100.7             | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |
|                  | Nickel         | 47.5          | ug/L         | 50                | ug/L         | 94.9              | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |
|                  | Potassium      | 4990          | ug/L         | 5000              | ug/L         | 99.8              | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |
|                  | Sodium         | 5400          | ug/L         | 5000              | ug/L         | 107.9             | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |
|                  | Thallium       | 45.6          | ug/L         | 50                | ug/L         | 91.2              | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |
|                  | Zinc           | 49.6          | ug/L         | 50                | ug/L         | 99.3              | 90.0 – 110.0                  | MS        | 25-AUG-11 09:21           | 110824-1          |

**\*Analytical Methods:**

P SW846 6010B  
MS SW846 6020  
AV SW846 7470A/7471A  
AF EPA 1631E

**METALS**  
**-2b-**  
**CRDL Standard for AA & ICP**

SDG No: 284538

Contract: ECOL00111

Lab Code: GEL

AA CRDL Standard Source: SPEX

ICP CRDL Standard Source Solutions Plus

Instrument ID: HG3,ICPMS7

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Advisory Limits (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-----------------------------|-----------|---------------------------|-------------------|
| CRDL01           |                |               |              |                   |              |                   |                             |           |                           |                   |
|                  | Mercury        | .208          | ug/L         | .2                | ug/L         | 104               | 70.0 – 130.0                | AV        | 24–AUG–11 17:10           | 082411W1–3        |
|                  | Aluminum       | 51.1          | ug/L         | 50                | ug/L         | 102.2             | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Antimony       | 3.27          | ug/L         | 3                 | ug/L         | 108.9             | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Barium         | 2.07          | ug/L         | 2                 | ug/L         | 103.3             | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Beryllium      | .509          | ug/L         | .5                | ug/L         | 101.8             | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Cadmium        | 1.07          | ug/L         | 1                 | ug/L         | 107.1             | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Calcium        | 220           | ug/L         | 200               | ug/L         | 110               | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Chromium       | 10.4          | ug/L         | 10                | ug/L         | 104.3             | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Cobalt         | 1.06          | ug/L         | 1                 | ug/L         | 105.7             | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Copper         | 1.08          | ug/L         | 1                 | ug/L         | 107.8             | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Iron           | 105           | ug/L         | 100               | ug/L         | 104.8             | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Lead           | 2.15          | ug/L         | 2                 | ug/L         | 107.5             | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Magnesium      | 29.9          | ug/L         | 30                | ug/L         | 99.6              | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Manganese      | 5.23          | ug/L         | 5                 | ug/L         | 104.5             | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Nickel         | 2.19          | ug/L         | 2                 | ug/L         | 109.7             | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Potassium      | 306           | ug/L         | 300               | ug/L         | 102               | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Sodium         | 256           | ug/L         | 250               | ug/L         | 102.4             | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Thallium       | 2.06          | ug/L         | 2                 | ug/L         | 103.2             | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Zinc           | 10.7          | ug/L         | 10                | ug/L         | 107.1             | 70.0 – 130.0                | MS        | 25–AUG–11 06:59           | 110824–1          |
|                  | Arsenic        | 5.61          | ug/L         | 5                 | ug/L         | 112.2             | 70.0 – 130.0                | MS        | 29–AUG–11 12:21           | 110829–2          |
|                  | Selenium       | 5.92          | ug/L         | 5                 | ug/L         | 118.4             | 70.0 – 130.0                | MS        | 29–AUG–11 12:21           | 110829–2          |
|                  | Silver         | 1.05          | ug/L         | 1                 | ug/L         | 105.2             | 70.0 – 130.0                | MS        | 29–AUG–11 12:21           | 110829–2          |
| CRDL02           |                |               |              |                   |              |                   |                             |           |                           |                   |
|                  | Aluminum       | 52.9          | ug/L         | 50                | ug/L         | 105.8             | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Antimony       | 3.21          | ug/L         | 3                 | ug/L         | 107               | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Barium         | 1.91          | ug/L         | 2                 | ug/L         | 95.5              | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Beryllium      | .567          | ug/L         | .5                | ug/L         | 113.4             | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Cadmium        | 1.03          | ug/L         | 1                 | ug/L         | 103.1             | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Calcium        | 196           | ug/L         | 200               | ug/L         | 98                | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Chromium       | 9.17          | ug/L         | 10                | ug/L         | 91.7              | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |

**METALS**  
**-2b-**  
**CRDL Standard for AA & ICP**

SDG No: 284538

Contract: ECOL00111

Lab Code: GEL

AA CRDL Standard Source:

ICP CRDL Standard Source

Instrument ID: HG3,ICPMS7

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Advisory Limits (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-----------------------------|-----------|---------------------------|-------------------|
|                  | Cobalt         | .965          | ug/L         | 1                 | ug/L         | 96.5              | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Copper         | .967          | ug/L         | 1                 | ug/L         | 96.7              | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Iron           | 96.6          | ug/L         | 100               | ug/L         | 96.6              | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Lead           | 2.02          | ug/L         | 2                 | ug/L         | 101.1             | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Magnesium      | 31.3          | ug/L         | 30                | ug/L         | 104.4             | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Manganese      | 5.03          | ug/L         | 5                 | ug/L         | 100.5             | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Nickel         | 1.93          | ug/L         | 2                 | ug/L         | 96.7              | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Potassium      | 275           | ug/L         | 300               | ug/L         | 91.7              | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Sodium         | 265           | ug/L         | 250               | ug/L         | 106               | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Thallium       | 2.3           | ug/L         | 2                 | ug/L         | 114.8             | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Zinc           | 10.5          | ug/L         | 10                | ug/L         | 104.9             | 70.0 – 130.0                | MS        | 25–AUG–11 09:29           | 110824–1          |
|                  | Arsenic        | 6.37          | ug/L         | 5                 | ug/L         | 127.4             | 70.0 – 130.0                | MS        | 29–AUG–11 13:04           | 110829–2          |
|                  | Selenium       | 4.88          | ug/L         | 5                 | ug/L         | 97.6              | 70.0 – 130.0                | MS        | 29–AUG–11 13:04           | 110829–2          |
|                  | Silver         | 1.03          | ug/L         | 1                 | ug/L         | 103.2             | 70.0 – 130.0                | MS        | 29–AUG–11 13:04           | 110829–2          |

**\*Analytical Methods:**

P SW846 6010B  
MS SW846 6020  
AV SW846 7470A/7471A  
AF EPA 1631E

**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 284538

Contract: ECOL00111

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
| <b>ICB01</b>     |                |                              |                   |                            |            |            |               |           |                                     |            |
|                  | Mercury        | 0.066                        | +/- .2            | U                          | 0.066      | 0.2        | LIQ           | AV        | 24-AUG-11 17:08                     | 082411W1-3 |
|                  | Aluminum       | 15.0                         | +/-50             | U                          | 15.0       | 50.0       | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Antimony       | 1.0                          | +/-3              | U                          | 1.0        | 3.0        | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Barium         | 0.6                          | +/-2              | U                          | 0.6        | 2.0        | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Beryllium      | 0.2                          | +/- .5            | U                          | 0.2        | 0.5        | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Cadmium        | 0.11                         | +/-1              | U                          | 0.11       | 1.0        | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Calcium        | 60.0                         | +/-200            | U                          | 60.0       | 200        | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Chromium       | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Cobalt         | 0.1                          | +/-1              | U                          | 0.1        | 1.0        | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Copper         | 0.35                         | +/-1              | U                          | 0.35       | 1.0        | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Iron           | 33.0                         | +/-100            | U                          | 33.0       | 100        | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Lead           | 0.5                          | +/-2              | U                          | 0.5        | 2.0        | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Magnesium      | 10.0                         | +/-30             | U                          | 10.0       | 30.0       | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Manganese      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Nickel         | 0.5                          | +/-2              | U                          | 0.5        | 2.0        | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Potassium      | 80.0                         | +/-300            | U                          | 80.0       | 300        | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Sodium         | 80.0                         | +/-250            | U                          | 80.0       | 250        | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Thallium       | 0.45                         | +/-2              | U                          | 0.45       | 2.0        | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Zinc           | 3.5                          | +/-10             | U                          | 3.5        | 10.0       | LIQ           | MS        | 25-AUG-11 06:50                     | 110824-1   |
|                  | Arsenic        | 1.7                          | +/-5              | U                          | 1.7        | 5.0        | LIQ           | MS        | 29-AUG-11 12:18                     | 110829-2   |
|                  | Selenium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | LIQ           | MS        | 29-AUG-11 12:18                     | 110829-2   |
|                  | Silver         | 0.2                          | +/-1              | U                          | 0.2        | 1.0        | LIQ           | MS        | 29-AUG-11 12:18                     | 110829-2   |
| <b>CCB01</b>     |                |                              |                   |                            |            |            |               |           |                                     |            |
|                  | Mercury        | 0.066                        | +/- .2            | U                          | 0.066      | 0.2        | LIQ           | AV        | 24-AUG-11 17:13                     | 082411W1-3 |
|                  | Aluminum       | 15.0                         | +/-50             | U                          | 15.0       | 50.0       | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Antimony       | 1.0                          | +/-3              | U                          | 1.0        | 3.0        | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Barium         | 0.6                          | +/-2              | U                          | 0.6        | 2.0        | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Beryllium      | 0.2                          | +/- .5            | U                          | 0.2        | 0.5        | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Cadmium        | 0.11                         | +/-1              | U                          | 0.11       | 1.0        | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Calcium        | 60.0                         | +/-200            | U                          | 60.0       | 200        | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Chromium       | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |

**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 284538

Contract: ECOL00111

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
|                  | Cobalt         | 0.1                          | +/-1              | U                          | 0.1        | 1.0        | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Copper         | 0.35                         | +/-1              | U                          | 0.35       | 1.0        | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Iron           | 33.0                         | +/-100            | U                          | 33.0       | 100        | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Lead           | 0.5                          | +/-2              | U                          | 0.5        | 2.0        | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Magnesium      | 10.0                         | +/-30             | U                          | 10.0       | 30.0       | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Manganese      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Nickel         | 0.5                          | +/-2              | U                          | 0.5        | 2.0        | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Potassium      | 80.0                         | +/-300            | U                          | 80.0       | 300        | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Sodium         | 80.0                         | +/-250            | U                          | 80.0       | 250        | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Thallium       | 0.45                         | +/-2              | U                          | 0.45       | 2.0        | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Zinc           | 3.5                          | +/-10             | U                          | 3.5        | 10.0       | LIQ           | MS        | 25-AUG-11 07:32                     | 110824-1   |
|                  | Arsenic        | 1.7                          | +/-5              | U                          | 1.7        | 5.0        | LIQ           | MS        | 29-AUG-11 12:34                     | 110829-2   |
|                  | Selenium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | LIQ           | MS        | 29-AUG-11 12:34                     | 110829-2   |
|                  | Silver         | 0.2                          | +/-1              | U                          | 0.2        | 1.0        | LIQ           | MS        | 29-AUG-11 12:34                     | 110829-2   |
| <b>CCB02</b>     | Mercury        | 0.066                        | +/-2              | U                          | 0.066      | 0.2        | LIQ           | AV        | 24-AUG-11 17:32                     | 082411W1-3 |
|                  | Aluminum       | 15.0                         | +/-50             | U                          | 15.0       | 50.0       | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Antimony       | 1.0                          | +/-3              | U                          | 1.0        | 3.0        | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Barium         | 0.6                          | +/-2              | U                          | 0.6        | 2.0        | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Beryllium      | 0.2                          | +/-5              | U                          | 0.2        | 0.5        | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Cadmium        | 0.11                         | +/-1              | U                          | 0.11       | 1.0        | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Calcium        | 60.0                         | +/-200            | U                          | 60.0       | 200        | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Chromium       | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Cobalt         | 0.1                          | +/-1              | U                          | 0.1        | 1.0        | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Copper         | 0.35                         | +/-1              | U                          | 0.35       | 1.0        | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Iron           | 33.0                         | +/-100            | U                          | 33.0       | 100        | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Lead           | 0.5                          | +/-2              | U                          | 0.5        | 2.0        | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Magnesium      | 10.0                         | +/-30             | U                          | 10.0       | 30.0       | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Manganese      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Nickel         | 0.5                          | +/-2              | U                          | 0.5        | 2.0        | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Potassium      | 80.0                         | +/-300            | U                          | 80.0       | 300        | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |

**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 284538

Contract: ECOL00111

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
| <b>CCB03</b>     | Sodium         | 80.0                         | +/-250            | U                          | 80.0       | 250        | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Thallium       | 0.524                        | +/-2              | B                          | 0.45       | 2.0        | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Zinc           | 3.5                          | +/-10             | U                          | 3.5        | 10.0       | LIQ           | MS        | 25-AUG-11 07:57                     | 110824-1   |
|                  | Arsenic        | 1.7                          | +/-5              | U                          | 1.7        | 5.0        | LIQ           | MS        | 29-AUG-11 13:07                     | 110829-2   |
|                  | Selenium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | LIQ           | MS        | 29-AUG-11 13:07                     | 110829-2   |
|                  | Silver         | 0.2                          | +/-1              | U                          | 0.2        | 1.0        | LIQ           | MS        | 29-AUG-11 13:07                     | 110829-2   |
|                  | Aluminum       | 15.0                         | +/-50             | U                          | 15.0       | 50.0       | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Antimony       | 1.0                          | +/-3              | U                          | 1.0        | 3.0        | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Barium         | 0.6                          | +/-2              | U                          | 0.6        | 2.0        | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Beryllium      | 0.2                          | +/-5              | U                          | 0.2        | 0.5        | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Cadmium        | 0.11                         | +/-1              | U                          | 0.11       | 1.0        | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Calcium        | 60.0                         | +/-200            | U                          | 60.0       | 200        | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Chromium       | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Cobalt         | 0.1                          | +/-1              | U                          | 0.1        | 1.0        | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Copper         | 0.35                         | +/-1              | U                          | 0.35       | 1.0        | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Iron           | 33.0                         | +/-100            | U                          | 33.0       | 100        | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Lead           | 0.5                          | +/-2              | U                          | 0.5        | 2.0        | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Magnesium      | 10.0                         | +/-30             | U                          | 10.0       | 30.0       | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Manganese      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Nickel         | 0.5                          | +/-2              | U                          | 0.5        | 2.0        | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Potassium      | 80.0                         | +/-300            | U                          | 80.0       | 300        | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
| <b>CCB04</b>     | Sodium         | 80.0                         | +/-250            | U                          | 80.0       | 250        | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Thallium       | 0.531                        | +/-2              | B                          | 0.45       | 2.0        | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Zinc           | 3.5                          | +/-10             | U                          | 3.5        | 10.0       | LIQ           | MS        | 25-AUG-11 08:31                     | 110824-1   |
|                  | Aluminum       | 15.0                         | +/-50             | U                          | 15.0       | 50.0       | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Antimony       | 1.0                          | +/-3              | U                          | 1.0        | 3.0        | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Barium         | 0.6                          | +/-2              | U                          | 0.6        | 2.0        | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Beryllium      | 0.2                          | +/-5              | U                          | 0.2        | 0.5        | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Cadmium        | 0.11                         | +/-1              | U                          | 0.11       | 1.0        | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |



**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 284538

Contract: ECOL00111

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
|                  | Calcium        | 60.0                         | +/-200            | U                          | 60.0       | 200        | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Chromium       | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Cobalt         | 0.1                          | +/-1              | U                          | 0.1        | 1.0        | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Copper         | 0.35                         | +/-1              | U                          | 0.35       | 1.0        | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Iron           | 33.0                         | +/-100            | U                          | 33.0       | 100        | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Lead           | 0.5                          | +/-2              | U                          | 0.5        | 2.0        | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Magnesium      | 10.0                         | +/-30             | U                          | 10.0       | 30.0       | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Manganese      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Nickel         | 0.5                          | +/-2              | U                          | 0.5        | 2.0        | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Potassium      | 80.0                         | +/-300            | U                          | 80.0       | 300        | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Sodium         | 80.0                         | +/-250            | U                          | 80.0       | 250        | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Thallium       | 0.45                         | +/-2              | U                          | 0.45       | 2.0        | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |
|                  | Zinc           | 3.5                          | +/-10             | U                          | 3.5        | 10.0       | LIQ           | MS        | 25-AUG-11 09:38                     | 110824-1   |

**\*Analytical Methods:**

P SW846 6010B  
MS SW846 6020  
AV SW846 7470A/7471A  
AF EPA 1631E

**METALS**  
**-3b-**  
**PREPARATION BLANK SUMMARY**

**SDG NO.** 284538  
**Contract:** ECOL00111  
**Matrix:** Ground Water

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>Acceptance Window</u> | <u>Conc Qual</u> | <u>M*</u> | <u>MDL</u> | <u>RDL</u> |
|------------------|----------------|---------------|--------------|--------------------------|------------------|-----------|------------|------------|
| 1202472317       | Mercury        | 0.066         | ug/L         | +/-0.2                   | U                | AV        | 0.066      | 0.2        |
| 1202472433       | Aluminum       | 15            | ug/L         | +/-50                    | U                | MS        | 15         | 50         |
|                  | Antimony       | 1             | ug/L         | +/-3                     | U                | MS        | 1          | 3          |
|                  | Arsenic        | 1.7           | ug/L         | +/-5                     | U                | MS        | 1.7        | 5          |
|                  | Barium         | 0.6           | ug/L         | +/-2                     | U                | MS        | 0.6        | 2          |
|                  | Beryllium      | 0.2           | ug/L         | +/-0.5                   | U                | MS        | 0.2        | 0.5        |
|                  | Cadmium        | 0.11          | ug/L         | +/-1                     | U                | MS        | 0.11       | 1          |
|                  | Calcium        | 60            | ug/L         | +/-200                   | U                | MS        | 60         | 200        |
|                  | Chromium       | 2             | ug/L         | +/-10                    | U                | MS        | 2          | 10         |
|                  | Cobalt         | 0.1           | ug/L         | +/-1                     | U                | MS        | 0.1        | 1          |
|                  | Copper         | 0.35          | ug/L         | +/-1                     | U                | MS        | 0.35       | 1          |
|                  | Iron           | 33            | ug/L         | +/-100                   | U                | MS        | 33         | 100        |
|                  | Lead           | 0.5           | ug/L         | +/-2                     | U                | MS        | 0.5        | 2          |
|                  | Magnesium      | 10            | ug/L         | +/-30                    | U                | MS        | 10         | 30         |
|                  | Manganese      | 1             | ug/L         | +/-5                     | U                | MS        | 1          | 5          |
|                  | Nickel         | 0.5           | ug/L         | +/-2                     | U                | MS        | 0.5        | 2          |
|                  | Potassium      | 80            | ug/L         | +/-300                   | U                | MS        | 80         | 300        |
|                  | Selenium       | 1.5           | ug/L         | +/-5                     | U                | MS        | 1.5        | 5          |
|                  | Silver         | 0.2           | ug/L         | +/-1                     | U                | MS        | 0.2        | 1          |
|                  | Sodium         | 80            | ug/L         | +/-250                   | U                | MS        | 80         | 250        |
|                  | Thallium       | 0.45          | ug/L         | +/-2                     | U                | MS        | 0.45       | 2          |
|                  | Zinc           | 3.5           | ug/L         | +/-10                    | U                | MS        | 3.5        | 10         |

**\*Analytical Methods:**

P SW846 6010B  
MS SW846 6020  
AV SW846 7470A/7471A  
AF EPA 1631E

**METALS**  
**-4-**  
**Interference Check Sample**

SDG No: 284538

Contract: ECOL00111

Lab Code: GEL

ICS: O2Si

Instrument: ICPMS7

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|---------------------------|-------------------|
| <b>ICSA01</b>    |                |               |              |                   |              |                   |                               |                           |                   |
|                  | Aluminum       | 108000        | ug/L         | 100000            | ug/L         | 108               | 80.0 – 120.0                  | 25-AUG-11 07:07           | 110824-1          |
|                  | Antimony       | 0.343         | ug/L         |                   |              |                   |                               | 25-AUG-11 07:07           | 110824-1          |
|                  | Barium         | 0.326         | ug/L         |                   |              |                   |                               | 25-AUG-11 07:07           | 110824-1          |
|                  | Beryllium      | 0.023         | ug/L         |                   |              |                   |                               | 25-AUG-11 07:07           | 110824-1          |
|                  | Cadmium        | 0.723         | ug/L         |                   |              |                   |                               | 25-AUG-11 07:07           | 110824-1          |
|                  | Calcium        | 104000        | ug/L         | 100000            | ug/L         | 104               | 80.0 – 120.0                  | 25-AUG-11 07:07           | 110824-1          |
|                  | Chromium       | 2.24          | ug/L         |                   |              |                   |                               | 25-AUG-11 07:07           | 110824-1          |
|                  | Cobalt         | 0.185         | ug/L         |                   |              |                   |                               | 25-AUG-11 07:07           | 110824-1          |
|                  | Copper         | 2.47          | ug/L         |                   |              |                   |                               | 25-AUG-11 07:07           | 110824-1          |
|                  | Iron           | 100000        | ug/L         | 100000            | ug/L         | 100               | 80.0 – 120.0                  | 25-AUG-11 07:07           | 110824-1          |
|                  | Lead           | 0.101         | ug/L         |                   |              |                   |                               | 25-AUG-11 07:07           | 110824-1          |
|                  | Magnesium      | 106000        | ug/L         | 100000            | ug/L         | 106               | 80.0 – 120.0                  | 25-AUG-11 07:07           | 110824-1          |
|                  | Manganese      | 1.97          | ug/L         |                   |              |                   |                               | 25-AUG-11 07:07           | 110824-1          |
|                  | Nickel         | 2.96          | ug/L         |                   |              |                   |                               | 25-AUG-11 07:07           | 110824-1          |
|                  | Potassium      | 105000        | ug/L         | 100000            | ug/L         | 105               | 80.0 – 120.0                  | 25-AUG-11 07:07           | 110824-1          |
|                  | Sodium         | 109000        | ug/L         | 100000            | ug/L         | 109               | 80.0 – 120.0                  | 25-AUG-11 07:07           | 110824-1          |
|                  | Thallium       | 0.014         | ug/L         |                   |              |                   |                               | 25-AUG-11 07:07           | 110824-1          |
|                  | Zinc           | 6.46          | ug/L         |                   |              |                   |                               | 25-AUG-11 07:07           | 110824-1          |
| <b>ICSAB01</b>   |                |               |              |                   |              |                   |                               |                           |                   |
|                  | Aluminum       | 108000        | ug/L         | 100000            | ug/L         | 108               | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Antimony       | 21.1          | ug/L         | 20                | ug/L         | 106               | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Barium         | 21.2          | ug/L         | 20.51             | ug/L         | 103               | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Beryllium      | 20.5          | ug/L         | 20                | ug/L         | 102               | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Cadmium        | 21.6          | ug/L         | 20.68             | ug/L         | 104               | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Calcium        | 104000        | ug/L         | 100000            | ug/L         | 104               | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Chromium       | 22.6          | ug/L         | 22.88             | ug/L         | 98.6              | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Cobalt         | 20.2          | ug/L         | 20.21             | ug/L         | 99.8              | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Copper         | 21.6          | ug/L         | 22.41             | ug/L         | 96.4              | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Iron           | 100000        | ug/L         | 100000            | ug/L         | 100               | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |

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**METALS**  
**-4-**  
**Interference Check Sample**

**SDG No:** 284538

**Contract:** ECOL00111

**Lab Code:** GEL

**ICS:**

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| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|---------------------------|-------------------|
|                  | Lead           | 20.7          | ug/L         | 20.12             | ug/L         | 103               | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Magnesium      | 106000        | ug/L         | 100000            | ug/L         | 106               | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Manganese      | 22.3          | ug/L         | 21.95             | ug/L         | 102               | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Nickel         | 22.8          | ug/L         | 22.78             | ug/L         | 100               | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Potassium      | 105000        | ug/L         | 100000            | ug/L         | 105               | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Sodium         | 108000        | ug/L         | 100000            | ug/L         | 108               | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Thallium       | 19.6          | ug/L         | 20                | ug/L         | 98                | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |
|                  | Zinc           | 26.3          | ug/L         | 25.79             | ug/L         | 102               | 80.0 – 120.0                  | 25-AUG-11 07:15           | 110824-1          |

**METALS**  
**-4-**  
**Interference Check Sample**

**SDG No:** 284538**Contract:** ECOL00111**Lab Code:** GEL**ICS:** O2Si**Instrument:** ICPMS7

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| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|---------------------------|-------------------|
| <b>ICSA01</b>    |                |               |              |                   |              |                   |                               |                           |                   |
|                  | Arsenic        | -0.262        | ug/L         |                   |              |                   |                               | 29-AUG-11 12:24           | 110829-2          |
|                  | Selenium       | -0.625        | ug/L         |                   |              |                   |                               | 29-AUG-11 12:24           | 110829-2          |
|                  | Silver         | 0.09          | ug/L         |                   |              |                   |                               | 29-AUG-11 12:24           | 110829-2          |
| <b>ICSAB01</b>   |                |               |              |                   |              |                   |                               |                           |                   |
|                  | Arsenic        | 21.1          | ug/L         | 20                | ug/L         | 105               | 80.0 – 120.0                  | 29-AUG-11 12:27           | 110829-2          |
|                  | Selenium       | 21.2          | ug/L         | 20                | ug/L         | 106               | 80.0 – 120.0                  | 29-AUG-11 12:27           | 110829-2          |
|                  | Silver         | 18.9          | ug/L         | 20                | ug/L         | 94.6              | 80.0 – 120.0                  | 29-AUG-11 12:27           | 110829-2          |

## METALS

-5a-

## Matrix Spike Summary

SDG NO. 284538

Client ID: 11080101S

Contract: ECOL00111

Level: Low

Matrix: GROUND WATER

% Solids:

Sample ID: 284538001

Spike ID: 1202472320

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance<br/>Limit</u> | <u>Spiked<br/>Result</u> | <u>C</u> | <u>Sample<br/>Result</u> | <u>C</u> | <u>Spike<br/>Added</u> | <u>%<br/>Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Mercury        | ug/L         | 75-125                      | 2.01                     |          | 0.066                    | U        | 2                      | 99.8                  |             | AV        |

## \*Analytical Methods:

P SW846 6010B  
MS SW846 6020  
AV SW846 7470A/7471A  
AF EPA 1631E

## METALS

-5a-

## Matrix Spike Summary

SDG NO. 284538 Client ID: 11080101S

Contract: ECOL00111 Level: Low

Matrix: GROUND WATER % Solids:

Sample ID: 284538001 Spike ID: 1202472435

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance<br/>Limit</u> | <u>Spiked<br/>Result</u> | <u>C</u> | <u>Sample<br/>Result</u> | <u>C</u> | <u>Spike<br/>Added</u> | <u>%<br/>Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Aluminum       | ug/L         |                             | 10700                    |          | 8170                     |          | 2000                   | 126                   | N/A         | MS        |
| Antimony       | ug/L         | 75-125                      | 47.5                     |          | 1                        | U        | 50                     | 94.1                  |             | MS        |
| Arsenic        | ug/L         | 75-125                      | 51.8                     |          | 2                        | B        | 50                     | 99.5                  |             | MS        |
| Barium         | ug/L         | 75-125                      | 156                      |          | 112                      |          | 50                     | 88.2                  |             | MS        |
| Beryllium      | ug/L         | 75-125                      | 52.3                     |          | 0.209                    | B        | 50                     | 104                   |             | MS        |
| Cadmium        | ug/L         | 75-125                      | 49.9                     |          | 0.11                     | U        | 50                     | 99.7                  |             | MS        |
| Calcium        | ug/L         | 75-125                      | 6950                     |          | 4930                     |          | 2000                   | 101                   |             | MS        |
| Chromium       | ug/L         | 75-125                      | 60.7                     |          | 14.5                     |          | 50                     | 92.3                  |             | MS        |
| Cobalt         | ug/L         | 75-125                      | 52.4                     |          | 5.14                     |          | 50                     | 94.5                  |             | MS        |
| Copper         | ug/L         | 75-125                      | 56.1                     |          | 10                       |          | 50                     | 92.1                  |             | MS        |
| Iron           | ug/L         | 75-125                      | 8810                     |          | 6850                     |          | 2000                   | 98.2                  |             | MS        |
| Lead           | ug/L         | 75-125                      | 51.2                     |          | 3.58                     |          | 50                     | 95.2                  |             | MS        |
| Magnesium      | ug/L         | 75-125                      | 4650                     |          | 2590                     |          | 2000                   | 103                   |             | MS        |
| Manganese      | ug/L         |                             | 326                      |          | 275                      |          | 50                     | 102                   | N/A         | MS        |
| Nickel         | ug/L         | 75-125                      | 62.5                     |          | 16.4                     |          | 50                     | 92.2                  |             | MS        |
| Potassium      | ug/L         | 75-125                      | 2790                     |          | 907                      |          | 2000                   | 94.1                  |             | MS        |
| Selenium       | ug/L         | 75-125                      | 53.5                     |          | 1.5                      | U        | 50                     | 107                   |             | MS        |
| Silver         | ug/L         | 75-125                      | 48.7                     |          | 0.2                      | U        | 50                     | 97.2                  |             | MS        |
| Sodium         | ug/L         | 75-125                      | 5730                     |          | 3590                     |          | 2000                   | 107                   |             | MS        |
| Thallium       | ug/L         | 75-125                      | 44.8                     |          | 0.45                     | U        | 50                     | 89.3                  |             | MS        |
| Zinc           | ug/L         | 75-125                      | 63.8                     |          | 14.9                     |          | 50                     | 97.8                  |             | MS        |

## METALS

-5a-

## Matrix Spike Summary

SDG NO. 284538

Client ID: 11080101S

Contract: ECOL00111

Level: Low

Matrix: GROUND WATER

% Solids:

Sample ID: 284538001

Spike ID: 1202472435

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance</u><br><u>Limit</u> | <u>Spiked</u><br><u>Result</u> | <u>C</u> | <u>Sample</u><br><u>Result</u> | <u>C</u> | <u>Spike</u><br><u>Added</u> | <u>%</u><br><u>Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------------|--------------------------------|----------|--------------------------------|----------|------------------------------|-----------------------------|-------------|-----------|
|----------------|--------------|-----------------------------------|--------------------------------|----------|--------------------------------|----------|------------------------------|-----------------------------|-------------|-----------|

## \*Analytical Methods:

|    |                   |
|----|-------------------|
| P  | SW846 6010B       |
| MS | SW846 6020        |
| AV | SW846 7470A/7471A |
| AF | EPA 1631E         |



## METALS

-5a-

## Matrix Spike Duplicate Summary

SDG NO. 284538 Client ID: 11080101SD

Contract: ECOL00111 Level: Low

Matrix: GROUND WATER % Solids:

Sample ID: 284538001 Spike ID: 1202472436

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance<br/>Limit</u> | <u>Spiked<br/>Result</u> | <u>C</u> | <u>Sample<br/>Result</u> | <u>C</u> | <u>Spike<br/>Added</u> | <u>%<br/>Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Aluminum       | ug/L         |                             | 10800                    |          | 8170                     |          | 2000                   | 131                   | N/A         | MS        |
| Antimony       | ug/L         | 75-125                      | 48.1                     |          | 1                        | U        | 50                     | 95.4                  |             | MS        |
| Arsenic        | ug/L         | 75-125                      | 53.5                     |          | 2                        | B        | 50                     | 103                   |             | MS        |
| Barium         | ug/L         | 75-125                      | 151                      |          | 112                      |          | 50                     | 78.1                  |             | MS        |
| Beryllium      | ug/L         | 75-125                      | 58.1                     |          | 0.209                    | B        | 50                     | 116                   |             | MS        |
| Cadmium        | ug/L         | 75-125                      | 50.8                     |          | 0.11                     | U        | 50                     | 102                   |             | MS        |
| Calcium        | ug/L         | 75-125                      | 6860                     |          | 4930                     |          | 2000                   | 96.3                  |             | MS        |
| Chromium       | ug/L         | 75-125                      | 61                       |          | 14.5                     |          | 50                     | 92.9                  |             | MS        |
| Cobalt         | ug/L         | 75-125                      | 51                       |          | 5.14                     |          | 50                     | 91.8                  |             | MS        |
| Copper         | ug/L         | 75-125                      | 54.8                     |          | 10                       |          | 50                     | 89.6                  |             | MS        |
| Iron           | ug/L         | 75-125                      | 8770                     |          | 6850                     |          | 2000                   | 96.3                  |             | MS        |
| Lead           | ug/L         | 75-125                      | 50.3                     |          | 3.58                     |          | 50                     | 93.5                  |             | MS        |
| Magnesium      | ug/L         | 75-125                      | 4670                     |          | 2590                     |          | 2000                   | 104                   |             | MS        |
| Manganese      | ug/L         |                             | 319                      |          | 275                      |          | 50                     | 88.1                  | N/A         | MS        |
| Nickel         | ug/L         | 75-125                      | 61.7                     |          | 16.4                     |          | 50                     | 90.7                  |             | MS        |
| Potassium      | ug/L         | 75-125                      | 2760                     |          | 907                      |          | 2000                   | 92.8                  |             | MS        |
| Selenium       | ug/L         | 75-125                      | 55.7                     |          | 1.5                      | U        | 50                     | 111                   |             | MS        |
| Silver         | ug/L         | 75-125                      | 50.1                     |          | 0.2                      | U        | 50                     | 100                   |             | MS        |
| Sodium         | ug/L         | 75-125                      | 5760                     |          | 3590                     |          | 2000                   | 109                   |             | MS        |
| Thallium       | ug/L         | 75-125                      | 44.4                     |          | 0.45                     | U        | 50                     | 88.5                  |             | MS        |
| Zinc           | ug/L         | 75-125                      | 64.6                     |          | 14.9                     |          | 50                     | 99.3                  |             | MS        |

## METALS

-5a-

## Matrix Spike Duplicate Summary

**SDG NO.** 284538 **Client ID:** 11080101SD**Contract:** ECOL00111 **Level:** Low**Matrix:** GROUND WATER **% Solids:****Sample ID:** 284538001 **Spike ID:** 1202472436

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance</u><br><u>Limit</u> | <u>Spiked</u><br><u>Result</u> | <u>C</u> | <u>Sample</u><br><u>Result</u> | <u>C</u> | <u>Spike</u><br><u>Added</u> | <u>%</u><br><u>Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------------|--------------------------------|----------|--------------------------------|----------|------------------------------|-----------------------------|-------------|-----------|
|----------------|--------------|-----------------------------------|--------------------------------|----------|--------------------------------|----------|------------------------------|-----------------------------|-------------|-----------|

## \*Analytical Methods:

|    |                   |
|----|-------------------|
| P  | SW846 6010B       |
| MS | SW846 6020        |
| AV | SW846 7470A/7471A |
| AF | EPA 1631E         |

**Metals**  
**-6-**  
**Duplicate Sample Summary**

**SDG No.:** 284538**Contract:** ECOL00111**Lab Code:** GEL**Matrix:** LIQUID**Level:** Low**Client ID:** 11080101D**Sample ID:** 284538001**Duplicate ID:** 1202472319**Percent Solids for Dup:** N/A

| Analyte | Units | Acceptance<br>Limit | Sample<br>Result | C | Duplicate<br>Result | C | RPD | Qual | M* |
|---------|-------|---------------------|------------------|---|---------------------|---|-----|------|----|
| Mercury | ug/L  |                     | 0.066            | U | 0.066               | U |     |      | AV |

**\*Analytical Methods:**

P SW846 6010B  
MS SW846 6020  
AV SW846 7470A/7471A  
AF EPA 1631E

**Metals**  
**-6-**  
**Duplicate Sample Summary**

SDG No.: 284538

Contract: ECOL00111

Lab Code: GEL

Matrix: LIQUID

Level: Low

Client ID: 11080101SD

Sample ID: 1202472435

Duplicate ID: 1202472436

Percent Solids for Dup: N/A

| Analyte   | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD  | Qual | M* |
|-----------|-------|------------------|---------------|---|------------------|---|------|------|----|
| Aluminum  | ug/L  | +/-20            | 10700         |   | 10800            |   | .842 |      | MS |
| Antimony  | ug/L  | +/-20            | 47.5          |   | 48.1             |   | 1.37 |      | MS |
| Arsenic   | ug/L  | +/-20            | 51.8          |   | 53.5             |   | 3.34 |      | MS |
| Barium    | ug/L  | +/-20            | 156           |   | 151              |   | 3.3  |      | MS |
| Beryllium | ug/L  | +/-20            | 52.3          |   | 58.1             |   | 10.6 |      | MS |
| Cadmium   | ug/L  | +/-20            | 49.9          |   | 50.8             |   | 1.82 |      | MS |
| Calcium   | ug/L  | +/-20            | 6950          |   | 6860             |   | 1.34 |      | MS |
| Chromium  | ug/L  | +/-20            | 60.7          |   | 61               |   | .544 |      | MS |
| Cobalt    | ug/L  | +/-20            | 52.4          |   | 51               |   | 2.59 |      | MS |
| Copper    | ug/L  | +/-20            | 56.1          |   | 54.8             |   | 2.25 |      | MS |
| Iron      | ug/L  | +/-20            | 8810          |   | 8770             |   | .425 |      | MS |
| Lead      | ug/L  | +/-20            | 51.2          |   | 50.3             |   | 1.67 |      | MS |
| Magnesium | ug/L  | +/-20            | 4650          |   | 4670             |   | .243 |      | MS |
| Manganese | ug/L  | +/-20            | 326           |   | 319              |   | 2.22 |      | MS |
| Nickel    | ug/L  | +/-20            | 62.5          |   | 61.7             |   | 1.24 |      | MS |
| Potassium | ug/L  | +/-20            | 2790          |   | 2760             |   | .903 |      | MS |
| Selenium  | ug/L  | +/-20            | 53.5          |   | 55.7             |   | 4.13 |      | MS |
| Silver    | ug/L  | +/-20            | 48.7          |   | 50.1             |   | 2.8  |      | MS |
| Sodium    | ug/L  | +/-20            | 5730          |   | 5760             |   | .442 |      | MS |
| Thallium  | ug/L  | +/-20            | 44.8          |   | 44.4             |   | .82  |      | MS |
| Zinc      | ug/L  | +/-20            | 63.8          |   | 64.6             |   | 1.15 |      | MS |

## SDG No.: 284538

**Contract:** ECOL00111 **Lab Code:** GEL

**Lab Code:** GEL

**Client ID:** 11080101SD

**Percent Solids for Dup:** N/A

SW846

## METALS

-7-

## Laboratory Control Sample Summary

SDG NO. 284538

Contract: ECOL00111

Aqueous LCS Source: GEL

Solid LCS Source:

| <u>Sample ID</u> | <u>Analyte</u> | <u>Units</u> | <u>True Value</u> | <u>Result</u> | <u>C</u> | <u>% Recovery</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|------------------|----------------|--------------|-------------------|---------------|----------|-------------------|-------------------------|-----------|
| 1202472318       | Mercury        | ug/L         | 2                 | 2.04          |          | 102               | 80-120                  | AV        |

## \*Analytical Methods:

P SW846 6010B  
MS SW846 6020  
AV SW846 7470A/7471A  
AF EPA 1631E

## METALS

-7-

## Laboratory Control Sample Summary

SDG NO. 284538

Contract: ECOL00111

Aqueous LCS Source:O2si

Solid LCS Source:

| <u>Sample ID</u> | <u>Analyte</u> | <u>Units</u> | <u>True Value</u> | <u>Result</u> | <u>C</u> | <u>% Recovery</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|------------------|----------------|--------------|-------------------|---------------|----------|-------------------|-------------------------|-----------|
| 1202472434       |                |              |                   |               |          |                   |                         |           |
|                  | Copper         | ug/L         | 50                | 49.7          |          | 99.5              | 80-120                  | MS        |
|                  | Iron           | ug/L         | 2000              | 1890          |          | 94.6              | 80-120                  | MS        |
|                  | Lead           | ug/L         | 50                | 49.1          |          | 98.2              | 80-120                  | MS        |
|                  | Magnesium      | ug/L         | 2000              | 1860          |          | 93.1              | 80-120                  | MS        |
|                  | Manganese      | ug/L         | 50                | 47.1          |          | 94.3              | 80-120                  | MS        |
|                  | Nickel         | ug/L         | 50                | 49.2          |          | 98.4              | 80-120                  | MS        |
|                  | Potassium      | ug/L         | 2000              | 1890          |          | 94.3              | 80-120                  | MS        |
|                  | Selenium       | ug/L         | 50                | 49.3          |          | 98.6              | 80-120                  | MS        |
|                  | Silver         | ug/L         | 50                | 44.6          |          | 89.2              | 80-120                  | MS        |
|                  | Sodium         | ug/L         | 2000              | 1990          |          | 99.5              | 80-120                  | MS        |
|                  | Thallium       | ug/L         | 50                | 46            |          | 91.9              | 80-120                  | MS        |
|                  | Zinc           | ug/L         | 50                | 51.1          |          | 102               | 80-120                  | MS        |
|                  | Cobalt         | ug/L         | 50                | 48.7          |          | 97.3              | 80-120                  | MS        |
|                  | Aluminum       | ug/L         | 2000              | 1940          |          | 97.2              | 80-120                  | MS        |
|                  | Antimony       | ug/L         | 50                | 47.7          |          | 95.3              | 80-120                  | MS        |
|                  | Arsenic        | ug/L         | 50                | 46.3          |          | 92.6              | 80-120                  | MS        |
|                  | Barium         | ug/L         | 50                | 48            |          | 96                | 80-120                  | MS        |
|                  | Beryllium      | ug/L         | 50                | 49.8          |          | 99.6              | 80-120                  | MS        |
|                  | Cadmium        | ug/L         | 50                | 49.3          |          | 98.6              | 80-120                  | MS        |
|                  | Calcium        | ug/L         | 2000              | 1960          |          | 97.8              | 80-120                  | MS        |
|                  | Chromium       | ug/L         | 50                | 46.7          |          | 93.5              | 80-120                  | MS        |

## \*Analytical Methods:

P SW846 6010B  
MS SW846 6020  
AV SW846 7470A/7471A  
AF EPA 1631E

## METALS

-9-

## Serial Dilution Sample Summary

SDG NO. 284538

Client ID: 11080101L

Contract: ECOL00111

Matrix: LIQUID

Level: Low

Sample ID: 284538001

Serial Dilution ID: 1202472321

| <u>Analyte</u> | <u>Initial<br/>Value<br/>ug/L</u> | <u>C</u> | <u>Serial<br/>Value<br/>ug/L</u> | <u>C</u> | <u>%<br/>Difference</u> | <u>Qual</u> | <u>Acceptance<br/>Limit</u> | <u>M*</u> |
|----------------|-----------------------------------|----------|----------------------------------|----------|-------------------------|-------------|-----------------------------|-----------|
| Mercury        | .066                              | U        | .33                              | U        |                         |             |                             | AV        |

## \*Analytical Methods:

P SW846 6010B  
MS SW846 6020  
AV SW846 7470A/7471A  
AF EPA 1631E



## METALS

-9-

## Serial Dilution Sample Summary

SDG NO. 284538

Client ID: 11080101L

Contract: ECOL00111

Matrix: LIQUID

Level: Low

Sample ID: 284538001

Serial Dilution ID: 1202472437

| <u>Analyte</u> | <u>Initial<br/>Value<br/>ug/L</u> | <u>C</u> | <u>Serial<br/>Value<br/>ug/L</u> | <u>C</u> | <u>%<br/>Difference</u> | <u>Qual</u> | <u>Acceptance<br/>Limit</u> | <u>M*</u> |
|----------------|-----------------------------------|----------|----------------------------------|----------|-------------------------|-------------|-----------------------------|-----------|
| Aluminum       | 8170                              |          | 8950                             |          | 9.56                    |             | 10                          | MS        |
| Antimony       | 1                                 | U        | 5                                | U        |                         |             |                             | MS        |
| Arsenic        | 2                                 | B        | 8.5                              | U        | 100                     |             |                             | MS        |
| Barium         | 112                               |          | 111                              |          | .442                    |             | 10                          | MS        |
| Beryllium      | .209                              | B        | 1                                | U        | 100                     |             |                             | MS        |
| Cadmium        | .11                               | U        | .55                              | U        |                         |             |                             | MS        |
| Calcium        | 4930                              |          | 5400                             |          | 9.4                     |             |                             | MS        |
| Chromium       | 14.5                              |          | 10.6                             | B        | 27.2                    |             |                             | MS        |
| Cobalt         | 5.14                              |          | 5.22                             |          | 1.52                    |             |                             | MS        |
| Copper         | 10                                |          | 10.2                             |          | 1.41                    |             |                             | MS        |
| Iron           | 6850                              |          | 7180                             |          | 4.8                     |             | 10                          | MS        |
| Lead           | 3.58                              |          | 3.48                             | B        | 2.96                    |             |                             | MS        |
| Magnesium      | 2590                              |          | 2690                             |          | 3.65                    |             | 10                          | MS        |
| Manganese      | 275                               |          | 290                              |          | 5.71                    |             | 10                          | MS        |
| Nickel         | 16.4                              |          | 16.2                             |          | 1.39                    |             |                             | MS        |
| Potassium      | 907                               |          | 770                              | B        | 15.2                    |             |                             | MS        |
| Selenium       | 1.5                               | U        | 7.5                              | U        |                         |             |                             | MS        |
| Silver         | .2                                | U        | 1                                | U        |                         |             |                             | MS        |
| Sodium         | 3590                              |          | 3810                             |          | 6.12                    |             |                             | MS        |
| Thallium       | .45                               | U        | 2.25                             | U        |                         |             |                             | MS        |
| Zinc           | 14.9                              |          | 17.5                             | U        | 100                     |             |                             | MS        |

## \*Analytical Methods:

P SW846 6010B  
MS SW846 6020  
AV SW846 7470A/7471A  
AF EPA 1631E

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**METALS**  
**-13-**  
**SAMPLE PREPARATION SUMMARY**

**SDG No:** 284538**Method Type:** MS**Contract:** ECOL00111**Lab Code:** GEL

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| <u>Sample ID</u>            | <u>Client ID</u>      | <u>Sample Type</u> | <u>Matrix</u> | <u>Prep Date</u> | <u>Initial Sample Size</u> | <u>Final Sample Volume</u> | <u>Percent Solids</u> |
|-----------------------------|-----------------------|--------------------|---------------|------------------|----------------------------|----------------------------|-----------------------|
| <b>Batch Number</b> 1135452 |                       |                    |               |                  |                            |                            |                       |
| 1202472433                  | MB for batch 1135452  | MB                 | G             | 24-AUG-11        | 50mL                       | 50mL                       |                       |
| 1202472434                  | LCS for batch 1135452 | LCS                | G             | 24-AUG-11        | 50mL                       | 50mL                       |                       |
| 1202472435                  | 11080101S             | MS                 | G             | 24-AUG-11        | 50mL                       | 50mL                       |                       |
| 1202472436                  | 11080101SD            | MSD                | G             | 24-AUG-11        | 50mL                       | 50mL                       |                       |
| 284538001                   | 11080101              | SAMPLE             | G             | 24-AUG-11        | 50mL                       | 50mL                       |                       |

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**SW846**

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**METALS**  
**-13-**  
**SAMPLE PREPARATION SUMMARY**

**SDG No:** 284538**Method Type:** AV**Contract:** ECOL00111**Lab Code:** GEL

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| <u>Sample ID</u>            | <u>Client ID</u>      | <u>Sample Type</u> | <u>Matrix</u> | <u>Prep Date</u> | <u>Initial Sample Size</u> | <u>Final Sample Volume</u> | <u>Percent Solids</u> |
|-----------------------------|-----------------------|--------------------|---------------|------------------|----------------------------|----------------------------|-----------------------|
| <b>Batch Number</b> 1135403 |                       |                    |               |                  |                            |                            |                       |
| 1202472317                  | MB for batch 1135403  | MB                 | G             | 24-AUG-11        | 20mL                       | 20mL                       |                       |
| 1202472318                  | LCS for batch 1135403 | LCS                | G             | 24-AUG-11        | 20mL                       | 20mL                       |                       |
| 1202472320                  | 11080101S             | MS                 | G             | 24-AUG-11        | 20mL                       | 20mL                       |                       |
| 1202472319                  | 11080101D             | DUP                | G             | 24-AUG-11        | 20mL                       | 20mL                       |                       |
| 284538001                   | 11080101              | SAMPLE             | G             | 24-AUG-11        | 20mL                       | 20mL                       |                       |

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**SW846**

**Metals**  
**-14-**  
**Analysis Run Log**

**Contract:** ECOL00111**Lab Code:** GEL**Inst Name:** HG3**Start Date:** 24-AUG-11**End Date:** 24-AUG-11**Client Sdg:** 284538**Method\*:** AV**Data File:** 082411W1-3

| Samp No.   | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | Zn |
|------------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|----|
| S0.0       | 1   | 16:57:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| S0.2       | 1   | 16:58:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| S0.5       | 1   | 17:00:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| S2.0       | 1   | 17:01:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| S5.0       | 1   | 17:03:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| S10.0      | 1   | 17:05:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| ICV01      | 1   | 17:06:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| ICB01      | 1   | 17:08:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| CRDL01     | 1   | 17:10:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| CCV01      | 1   | 17:11:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| CCB01      | 1   | 17:13:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| 1202472317 | 1   | 17:14:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| 1202472318 | 1   | 17:16:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| 284538001  | 1   | 17:18:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| 1202472319 | 1   | 17:19:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| 1202472320 | 1   | 17:21:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| 1202472321 | 5   | 17:22:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| ZZZZZZ     | 1   | 17:24:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |    |
| ZZZZZZ     | 1   | 17:26:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |    |
| ZZZZZZ     | 1   | 17:27:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |    |
| ZZZZZZ     | 1   | 17:29:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |    |
| CCV02      | 1   | 17:31:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |
| CCB02      | 1   | 17:32:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |    |

**\*Analytical Methods:**

P SW846 6010B  
MS SW846 6020  
AV SW846 7470A/7471A  
AF EPA 1631E

**Metals**  
**-14-**  
**Analysis Run Log**

**Contract:** ECOL00111**Lab Code:** GEL**Inst Name:** ICPMS7**Start Date:** 25-AUG-11**Client Sdg:** 284538**Method\*:** MS**Data File:** 110824-1**End Date:** 25-AUG-11

| Samp No.   | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | Zn |
|------------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|----|
| S0.0       | 1   | 06:17:27 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| S10        | 1   | 06:25:46 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| S100       | 1   | 06:34:03 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| ICV01      | 1   | 06:42:20 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| ICB01      | 1   | 06:50:40 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| CRDL01     | 1   | 06:59:00 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| ICSA01     | 1   | 07:07:18 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| ICSAB01    | 1   | 07:15:37 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| CCV01      | 1   | 07:23:57 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| CCB01      | 1   | 07:32:17 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| LR01       | 1   | 07:40:37 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| CCV02      | 1   | 07:48:55 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| CCB02      | 1   | 07:57:15 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| 1202472433 | 1   | 08:05:37 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| 1202472434 | 1   | 08:14:15 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| CCV03      | 1   | 08:22:36 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| CCB03      | 1   | 08:31:13 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| 284538001  | 1   | 08:39:52 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| 1202472435 | 1   | 08:48:13 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| 1202472436 | 1   | 08:56:34 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| ZZZZZZ     | 1   | 09:04:56 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |    |
| 1202472437 | 5   | 09:13:17 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| CCV04      | 1   | 09:21:38 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| CRDL02     | 1   | 09:29:57 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |
| CCB04      | 1   | 09:38:16 | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X |    |    | X  | X  | X  |

**\*Analytical Methods:**

P SW846 6010B  
MS SW846 6020  
AV SW846 7470A/7471A  
AF EPA 1631E

**Metals**  
**-14-**  
**Analysis Run Log**

**Contract:** ECOL00111**Lab Code:** GEL**Inst Name:** ICPMS7**Start Date:** 29-AUG-11**Client Sdg:** 284538**Method\*:** MS**Data File:** 110829-2**End Date:** 29-AUG-11

| Samp No.   | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | Zn |
|------------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|----|
| S0.0       | 1   | 12:04:55 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| S10        | 1   | 12:08:12 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| S100       | 1   | 12:11:28 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| ICV01      | 1   | 12:14:44 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| ICB01      | 1   | 12:18:03 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| CRDL01     | 1   | 12:21:22 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| ICSA01     | 1   | 12:24:39 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| ICSAB01    | 1   | 12:27:56 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| CCV01      | 1   | 12:31:14 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| CCB01      | 1   | 12:34:34 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| 1202472433 | 1   | 12:37:52 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| 1202472434 | 1   | 12:41:09 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| 284538001  | 1   | 12:44:26 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| 1202472435 | 1   | 12:47:43 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| 1202472436 | 1   | 12:51:00 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| ZZZZZZ     | 1   | 12:54:17 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |    |
| 1202472437 | 5   | 12:57:35 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| CCV02      | 1   | 13:00:54 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| CRDL02     | 1   | 13:04:11 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |
| CCB02      | 1   | 13:07:30 |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |   | X  | X  |    |    |    |

**\*Analytical Methods:**

P SW846 6010B  
MS SW846 6020  
AV SW846 7470A/7471A  
AF EPA 1631E

# Standards

METALS  
-10-  
Instrument Detection Limits

SDG NO. 284538

Contract: ECOL00111

Lab Code: GEL

MDL Effective Date: 16-JAN-11

| ICP/MS | <u>Analyte</u> | <u>Wavelength<br/>(nm)</u> | <u>MDL</u>  | <u>RDL</u>  |
|--------|----------------|----------------------------|-------------|-------------|
|        |                |                            | <u>ug/L</u> | <u>ug/L</u> |
| LIQUID | Aluminum       |                            | 15.0        | 50          |
|        | Antimony       |                            | 1.0         | 3           |
|        | Arsenic        |                            | 1.7         | 5           |
|        | Barium         |                            | 0.6         | 2           |
|        | Beryllium      |                            | 0.2         | .5          |
|        | Cadmium        |                            | 0.11        | 1           |
|        | Calcium        |                            | 60.0        | 200         |
|        | Chromium       |                            | 2.0         | 10          |
|        | Cobalt         |                            | 0.1         | 1           |
|        | Copper         |                            | 0.35        | 1           |
|        | Iron           |                            | 33.0        | 100         |
|        | Lead           |                            | 0.5         | 2           |
|        | Magnesium      |                            | 10.0        | 30          |
|        | Manganese      |                            | 1.0         | 5           |
|        | Nickel         |                            | 0.5         | 2           |
|        | Potassium      |                            | 80.0        | 300         |
|        | Selenium       |                            | 1.5         | 5           |
|        | Silver         |                            | 0.2         | 1           |
|        | Sodium         |                            | 80.0        | 250         |
|        | Thallium       |                            | 0.45        | 2           |
|        | Zinc           |                            | 3.5         | 10          |



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METALS  
-10-  
Instrument Detection Limits

SDG NO. 284538

Contract: ECOL00111

Lab Code: GEL

MDL Effective Date: 17-JAN-11

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|         |                | <u>Wavelength</u><br><u>(nm)</u> | <u>MDL</u><br><u>ug/L</u> | <u>RDL</u><br><u>ug/L</u> |
|---------|----------------|----------------------------------|---------------------------|---------------------------|
| MERCURY | <u>Analyte</u> |                                  |                           |                           |
| LIQUID  | Mercury        |                                  | 0.066                     | .2                        |

**METALS**  
**-12-**  
**Linear Ranges**

**SDG NO.** 284538**Contract:** ECOL00111**Lab Code:** GEL**Instrument ID** ICPMS7

| <u>Analyte</u> | <u>Integration<br/>Time<br/>(msec)</u> | <u>LDR</u> | <u>Units</u> | <u>Effective<br/>Date</u> |
|----------------|--|------------|--------------|---------------------------|
| Aluminum       | 1                                      | 50000      | ug/L         | 01-AUG-11                 |
| Antimony       | 1000                                   | 250        | ug/L         | 01-AUG-11                 |
| Arsenic        | 1000                                   | 1000       | ug/L         | 01-AUG-11                 |
| Barium         | 1000                                   | 1000       | ug/L         | 01-AUG-11                 |
| Beryllium      | 1000                                   | 1000       | ug/L         | 01-AUG-11                 |
| Cadmium        | 1000                                   | 1000       | ug/L         | 01-AUG-11                 |
| Calcium        | 500                                    | 50000      | ug/L         | 01-AUG-11                 |
| Chromium       | 1000                                   | 1000       | ug/L         | 01-AUG-11                 |
| Cobalt         | 1000                                   | 1000       | ug/L         | 01-AUG-11                 |
| Copper         | 1000                                   | 1000       | ug/L         | 01-AUG-11                 |
| Iron           | 500                                    | 50000      | ug/L         | 01-AUG-11                 |
| Lead           | 1000                                   | 5000       | ug/L         | 01-AUG-11                 |
| Magnesium      | 1                                      | 50000      | ug/L         | 01-AUG-11                 |
| Manganese      | 1000                                   | 1000       | ug/L         | 01-AUG-11                 |
| Nickel         | 1000                                   | 1000       | ug/L         | 01-AUG-11                 |
| Potassium      | 1                                      | 50000      | ug/L         | 01-AUG-11                 |
| Selenium       | 1000                                   | 500        | ug/L         | 01-AUG-11                 |
| Silver         | 1000                                   | 250        | ug/L         | 01-AUG-11                 |
| Sodium         | 1                                      | 50000      | ug/L         | 01-AUG-11                 |
| Thallium       | 1000                                   | 500        | ug/L         | 01-AUG-11                 |
| Zinc           | 1000                                   | 2500       | ug/L         | 01-AUG-11                 |

# Raw Data

## ICPMS #7 Daily Performance Report

### Sample ID: Sample

Sample Date/Time: Wednesday, August 24, 2011 10:01:15

Sample Description:

Method File: C:\elandata\Method\daily2.mth

Dataset File: C:\elandata\Dataset\default\Sample.3517

Tuning File: C:\elandata\Tuning\default2.tun

Optimization File: C:\elandata\Optimize\Default.dac

Dual Detector Mode: Pulse

Acq. Dead Time(ns): 80

Current Dead Time (ns): 80

### Summary

| Analyte | Mass  | Meas. Intens. Mean | Net Intens. Mean | Net Intens. SD | Net Intens. RSD |
|---------|-------|--------------------|------------------|----------------|-----------------|
| Be      | 9.0   | 1852.7             | 1852.675         | 47.264         | 2.6             |
| Mg      | 24.0  | 19719.1            | 19719.060        | 140.652        | 0.7             |
| Co      | 58.9  | 52920.3            | 52920.323        | 604.577        | 1.1             |
| Rh      | 102.9 | 102673.3           | 102673.344       | 1053.573       | 1.0             |
| In      | 114.9 | 134933.1           | 134933.089       | 1200.095       | 0.9             |
| Pb      | 208.0 | 103719.0           | 103718.971       | 828.011        | 0.8             |
| [> Ba   | 137.9 | 118927.6           | 118927.585       | 1308.615       | 1.1             |
| [ Ba++  | 69.0  | 1274.9             | 0.011            | 0.000          | 3.7             |
| [> Ce   | 139.9 | 144427.5           | 144427.528       | 844.584        | 0.6             |
| [ CeO   | 155.9 | 3764.9             | 0.026            | 0.001          | 2.7             |
| Bkgd    | 220.0 | 6.6                | 6.600            | 2.043          | 31.0            |

### Current Optimization File Data

| Current Value | Description             |
|---------------|-------------------------|
| 0.94          | Nebulizer Gas Flow      |
| 7.00          | Lens Voltage            |
| 1000.00       | ICP RF Power            |
| -1750.00      | Analog Stage Voltage    |
| 1000.00       | Pulse Stage Voltage     |
| 70.00         | Discriminator Threshold |
| -3.00         | AC Rod Offset           |

### Current Autolens Data

| Analyte | Mass | Num of Pts | DAC Value | Maximum Intensity |
|---------|------|------------|-----------|-------------------|
| Be      | 9    | 21         | 6.5       | 3555.0            |
| Co      | 59   | 21         | 7.3       | 71561.4           |
| In      | 115  | 21         | 8.5       | 176754.5          |

## Instrument #7 Tuning Report

File Name: Default2.tun  
File Path: C:\elandata\Tuning\Default2.tun

| Analyte | Exact Mass | Meas. Mass | Mass DAC | Res. DAC | Meas. Pk. Width |
|---------|------------|------------|----------|----------|-----------------|
| He      | 3.0        | 3.0        | 584      | 2060     | 0.624           |
| Be      | 9.0        | 9.0        | 2022     | 2050     | 0.640           |
| Mg      | 24.0       | 24.0       | 5699     | 2100     | 0.485           |
| Mg      | 25.0       | 25.0       | 5903     | 2100     | 0.434           |
| Mg      | 26.0       | 26.0       | 6193     | 2090     | 0.477           |
| Co      | 58.9       | 58.9       | 14164    | 2030     | 0.662           |
| Rh      | 102.9      | 102.9      | 24879    | 2020     | 0.669           |
| In      | 114.9      | 114.9      | 27800    | 2020     | 0.669           |
| Ce      | 139.9      | 139.9      | 33884    | 2010     | 0.671           |
| Pb      | 206.0      | 206.0      | 49956    | 1980     | 0.654           |
| Pb      | 207.0      | 207.0      | 50224    | 2000     | 0.671           |
| Pb      | 208.0      | 208.0      | 50434    | 1980     | 0.660           |
| U       | 238.1      | 238.0      | 57746    | 1980     | 0.685           |

## ICPMS#7 - Summary Report

Sample ID: Blank

Sample Date/Time: Thursday, August 25, 2011 06:17:27

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\Blank.204

### Concentration Results

| Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---------|------|------------|-------------|-----------|--------------------|------------------|
| Li      | 7    |            | ug/L        |           | 36                 |                  |
| Be      | 9    |            | ug/L        |           | 6                  |                  |
| B       | 11   |            | ug/L        |           | 371                |                  |
| Na      | 23   |            | ug/L        |           | 11810              |                  |
| Mg      | 24   |            | ug/L        |           | 1649               |                  |
| Al      | 27   |            | ug/L        |           | 3009               |                  |
| P       | 31   |            | ug/L        |           | 2090               |                  |
| K       | 39   |            | ug/L        |           | 283253             |                  |
| Ca      | 43   |            | ug/L        |           | 187                |                  |
| Sc      | 45   |            | ug/L        |           | 435191             |                  |
| Ti      | 47   |            | ug/L        |           | 100                |                  |
| Cr      | 52   |            | ug/L        |           | 8212               |                  |
| Cr      | 53   |            | ug/L        |           | 109742             |                  |
| Mn      | 55   |            | ug/L        |           | 730                |                  |
| Fe      | 57   |            | ug/L        |           | 3323               |                  |
| Co      | 59   |            | ug/L        |           | 73                 |                  |
| Ni      | 60   |            | ug/L        |           | 47                 |                  |
| Cu      | 63   |            | ug/L        |           | 78                 |                  |
| Cu      | 65   |            | ug/L        |           | 49                 |                  |
| Zn      | 66   |            | ug/L        |           | 113                |                  |
| Zn      | 67   |            | ug/L        |           | 3203               |                  |
| Zn      | 68   |            | ug/L        |           | 289                |                  |
| Ge      | 74   |            | ug/L        |           | 163883             |                  |
| As      | 75   |            | ug/L        |           | 17268              |                  |
| Se      | 77   |            | ug/L        |           | 10318              |                  |
| Se      | 82   |            | ug/L        |           | -278               |                  |
| Kr      | 83   |            | ug/L        |           | 6872               |                  |
| Sr      | 88   |            | ug/L        |           | 226                |                  |
| Zr      | 90   |            | ug/L        |           | 79                 |                  |
| Mo      | 98   |            | ug/L        |           | 63                 |                  |
| Ag      | 107  |            | ug/L        |           | 29                 |                  |
| Cd      | 111  |            | ug/L        |           | 24                 |                  |
| Cd      | 114  |            | ug/L        |           | 48                 |                  |
| In      | 115  |            | ug/L        |           | 104919             |                  |
| Sn      | 120  |            | ug/L        |           | 139                |                  |
| Sb      | 121  |            | ug/L        |           | 148                |                  |
| Sb      | 123  |            | ug/L        |           | 118                |                  |
| Ba      | 135  |            | ug/L        |           | 44                 |                  |
| Ba      | 137  |            | ug/L        |           | 55                 |                  |
| Lu      | 175  |            | ug/L        |           | 186824             |                  |
| Tl      | 205  |            | ug/L        |           | 1054               |                  |
| Pb      | 208  |            | ug/L        |           | 446                |                  |
| Th      | 232  |            | ug/L        |           | 378                |                  |
| U       | 238  |            | ug/L        |           | 576                |                  |

Sample ID: Blank

Report Date/Time: Thursday, August 25, 2011 06:22:44

Page 1

## Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 1.0000                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9991                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
|   | Li      | 7    |                   |                    |                  |                 |                  |
|   | Be      | 9    |                   |                    |                  |                 |                  |
|   | B       | 11   |                   |                    |                  |                 |                  |
|   | Na      | 23   |                   |                    |                  |                 |                  |
|   | Mg      | 24   |                   |                    |                  |                 |                  |
|   | Al      | 27   |                   |                    |                  |                 |                  |
|   | P       | 31   |                   |                    |                  |                 |                  |
|   | K       | 39   |                   |                    |                  |                 |                  |
|   | Ca      | 43   |                   |                    |                  |                 |                  |
| > | Sc      | 45   |                   |                    |                  |                 |                  |
|   | Ti      | 47   |                   |                    |                  |                 |                  |
|   | Cr      | 52   |                   |                    |                  |                 |                  |
|   | Cr      | 53   |                   |                    |                  |                 |                  |
|   | Mn      | 55   |                   |                    |                  |                 |                  |
|   | Fe      | 57   |                   |                    |                  |                 |                  |
|   | Co      | 59   |                   |                    |                  |                 |                  |
|   | Ni      | 60   |                   |                    |                  |                 |                  |
|   | Cu      | 63   |                   |                    |                  |                 |                  |
|   | Cu      | 65   |                   |                    |                  |                 |                  |
|   | Zn      | 66   |                   |                    |                  |                 |                  |
|   | Zn      | 67   |                   |                    |                  |                 |                  |
|   | Zn      | 68   |                   |                    |                  |                 |                  |
| > | Ge      | 74   |                   |                    |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Sr      | 88   |                   |                    |                  |                 |                  |
|   | Zr      | 90   |                   |                    |                  |                 |                  |
|   | Mo      | 98   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
|   | Cd      | 111  |                   |                    |                  |                 |                  |
|   | Cd      | 114  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   |                    |                  |                 |                  |
|   | Sn      | 120  |                   |                    |                  |                 |                  |
|   | Sb      | 121  |                   |                    |                  |                 |                  |
|   | Sb      | 123  |                   |                    |                  |                 |                  |
|   | Ba      | 135  |                   |                    |                  |                 |                  |
|   | Ba      | 137  |                   |                    |                  |                 |                  |
| > | Lu      | 175  |                   |                    |                  |                 |                  |
|   | Tl      | 205  |                   |                    |                  |                 |                  |
|   | Pb      | 208  |                   |                    |                  |                 |                  |
|   | Th      | 232  |                   |                    |                  |                 |                  |
|   | U       | 238  |                   |                    |                  |                 |                  |

## QC Out Of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|------------------|---------|------|-----------------------|
|------------------|---------|------|-----------------------|

## QC Action

QC Action Line: No QC out of limits detected



## ICPMS#7 - Summary Report

Sample ID: Standard 1

Sample Date/Time: Thursday, August 25, 2011 06:25:46

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\Standard 1.205

### Concentration Results

| Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---------|------|------------|-------------|-----------|--------------------|------------------|
| Li      | 7    | 10.000     | ug/L        | 1.749     | 3503               | 0.008            |
| Be      | 9    | 10.000     | ug/L        | 2.687     | 967                | 0.002            |
| B       | 11   | 20.000     | ug/L        | 2.549     | 2380               | 0.005            |
| Na      | 23   | 1000.000   | ug/L        | 1.533     | 1094224            | 2.467            |
| Mg      | 24   | 1000.000   | ug/L        | 1.068     | 760316             | 1.729            |
| Al      | 27   | 1000.000   | ug/L        | 1.787     | 1155179            | 2.626            |
| P       | 31   | 1000.000   | ug/L        | 0.604     | 76933              | 0.171            |
| K       | 39   | 1000.000   | ug/L        | 1.391     | 2386728            | 4.788            |
| Ca      | 43   | 1000.000   | ug/L        | 3.398     | 4190               | 0.009            |
| Sc      | 45   |            | ug/L        |           | 438833             | 438833.292       |
| Ti      | 47   | 10.000     | ug/L        | 0.480     | 2272               | 0.005            |
| Cr      | 52   | 10.000     | ug/L        | 1.650     | 31273              | 0.052            |
| Cr      | 53   |            | ug/L        |           | 114134             | 0.008            |
| Mn      | 55   | 10.000     | ug/L        | 1.206     | 35423              | 0.079            |
| Fe      | 57   | 1000.000   | ug/L        | 1.711     | 75143              | 0.164            |
| Co      | 59   | 10.000     | ug/L        | 2.473     | 29102              | 0.066            |
| Ni      | 60   | 10.000     | ug/L        | 0.767     | 6117               | 0.014            |
| Cu      | 63   |            | ug/L        |           | 13320              | 0.030            |
| Cu      | 65   | 10.000     | ug/L        | 1.686     | 6390               | 0.014            |
| Zn      | 66   | 10.000     | ug/L        | 1.102     | 3485               | 0.021            |
| Zn      | 67   |            | ug/L        |           | 3920               | 0.004            |
| Zn      | 68   |            | ug/L        |           | 2802               | 0.015            |
| Ge      | 74   |            | ug/L        |           | 163723             | 163723.296       |
| As      | 75   | 10.000     | ug/L        | 7.608     | 22614              | 0.033            |
| Se      | 77   |            | ug/L        |           | 11204              | 0.005            |
| Se      | 82   | 10.000     | ug/L        | 28.434    | 182                | 0.003            |
| Kr      | 83   |            | ug/L        |           | 6840               | -0.000           |
| Sr      | 88   | 10.000     | ug/L        | 0.688     | 52934              | 0.508            |
| Zr      | 90   | 10.000     | ug/L        | 5.902     | 24921              | 0.239            |
| Mo      | 98   | 10.000     | ug/L        | 0.585     | 12725              | 0.122            |
| Ag      | 107  | 10.000     | ug/L        | 1.318     | 21192              | 0.204            |
| Cd      | 111  | 10.000     | ug/L        | 1.082     | 4814               | 0.046            |
| Cd      | 114  |            | ug/L        |           | 11674              | 0.112            |
| In      | 115  |            | ug/L        |           | 103858             | 103857.827       |
| Sn      | 120  | 10.000     | ug/L        | 1.213     | 22672              | 0.217            |
| Sb      | 121  | 10.000     | ug/L        | 0.598     | 17992              | 0.172            |
| Sb      | 123  |            | ug/L        |           | 13842              | 0.132            |
| Ba      | 135  |            | ug/L        |           | 5649               | 0.030            |
| Ba      | 137  | 10.000     | ug/L        | 1.875     | 9763               | 0.052            |
| Lu      | 175  |            | ug/L        |           | 186640             | 186640.352       |
| Tl      | 205  | 10.000     | ug/L        | 2.500     | 76546              | 0.405            |
| Pb      | 208  | 10.000     | ug/L        | 1.843     | 98948              | 0.528            |
| Th      | 232  | 10.000     | ug/L        | 2.934     | 112723             | 0.602            |
| U       | 238  | 10.000     | ug/L        | 2.362     | 121459             | 0.648            |

Sample ID: Standard 1

Report Date/Time: Thursday, August 25, 2011 06:31:00

Page 1

## Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 1.0000                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 1.0000                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 1.0000                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
|   | Li      | 7    |                   |                    |                  |                 |                  |
|   | Be      | 9    |                   |                    |                  |                 |                  |
|   | B       | 11   |                   |                    |                  |                 |                  |
|   | Na      | 23   |                   |                    |                  |                 |                  |
|   | Mg      | 24   |                   |                    |                  |                 |                  |
|   | Al      | 27   |                   |                    |                  |                 |                  |
|   | P       | 31   |                   |                    |                  |                 |                  |
|   | K       | 39   |                   |                    |                  |                 |                  |
|   | Ca      | 43   |                   |                    |                  |                 |                  |
| > | Sc      | 45   |                   |                    |                  |                 |                  |
|   | Ti      | 47   |                   |                    |                  |                 |                  |
|   | Cr      | 52   |                   |                    |                  |                 |                  |
|   | Cr      | 53   |                   |                    |                  |                 |                  |
|   | Mn      | 55   |                   |                    |                  |                 |                  |
|   | Fe      | 57   |                   |                    |                  |                 |                  |
|   | Co      | 59   |                   |                    |                  |                 |                  |
|   | Ni      | 60   |                   |                    |                  |                 |                  |
|   | Cu      | 63   |                   |                    |                  |                 |                  |
|   | Cu      | 65   |                   |                    |                  |                 |                  |
|   | Zn      | 66   |                   |                    |                  |                 |                  |
|   | Zn      | 67   |                   |                    |                  |                 |                  |
|   | Zn      | 68   |                   |                    |                  |                 |                  |
| > | Ge      | 74   |                   |                    |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Sr      | 88   |                   |                    |                  |                 |                  |
|   | Zr      | 90   |                   |                    |                  |                 |                  |
|   | Mo      | 98   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
|   | Cd      | 111  |                   |                    |                  |                 |                  |
|   | Cd      | 114  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   |                    |                  |                 |                  |
|   | Sn      | 120  |                   |                    |                  |                 |                  |
|   | Sb      | 121  |                   |                    |                  |                 |                  |
|   | Sb      | 123  |                   |                    |                  |                 |                  |
|   | Ba      | 135  |                   |                    |                  |                 |                  |
|   | Ba      | 137  |                   |                    |                  |                 |                  |
| > | Lu      | 175  |                   |                    |                  |                 |                  |
|   | Tl      | 205  |                   |                    |                  |                 |                  |
|   | Pb      | 208  |                   |                    |                  |                 |                  |
|   | Th      | 232  |                   |                    |                  |                 |                  |
|   | U       | 238  |                   |                    |                  |                 |                  |

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: Standard 2

Sample Date/Time: Thursday, August 25, 2011 06:34:03

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\Standard 2.206

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| [ | Li      | 7    | 99.938     | ug/L        | 1.839     | 32592              | 0.074            |
|   | Be      | 9    | 99.979     | ug/L        | 2.261     | 9392               | 0.021            |
|   | B       | 11   | 199.979    | ug/L        | 3.241     | 20191              | 0.045            |
|   | Na      | 23   | 10001.974  | ug/L        | 1.698     | 11036358           | 25.168           |
|   | Mg      | 24   | 10000.609  | ug/L        | 0.492     | 7621798            | 17.396           |
|   | Al      | 27   | 10000.549  | ug/L        | 0.601     | 11569407           | 26.404           |
|   | P       | 31   | 9998.775   | ug/L        | 0.251     | 739918             | 1.684            |
|   | K       | 39   | 9999.333   | ug/L        | 1.298     | 21120020           | 47.564           |
|   | Ca      | 43   | 9998.290   | ug/L        | 0.018     | 39455              | 0.090            |
| > | Sc      | 45   |            | ug/L        |           | 438053             | 438052.945       |
|   | Ti      | 47   | 100.001    | ug/L        | 0.183     | 21803              | 0.050            |
|   | Cr      | 52   | 99.939     | ug/L        | 1.033     | 224543             | 0.494            |
|   | Cr      | 53   |            | ug/L        |           | 119111             | 0.020            |
|   | Mn      | 55   | 99.977     | ug/L        | 0.484     | 339011             | 0.772            |
|   | Fe      | 57   | 9997.161   | ug/L        | 0.236     | 700112             | 1.591            |
|   | Co      | 59   | 99.954     | ug/L        | 1.340     | 277034             | 0.632            |
|   | Ni      | 60   | 99.946     | ug/L        | 0.583     | 57475              | 0.131            |
|   | Cu      | 63   |            | ug/L        |           | 126612             | 0.289            |
| [ | Cu      | 65   | 99.955     | ug/L        | 0.580     | 60580              | 0.138            |
|   | Zn      | 66   | 99.959     | ug/L        | 0.154     | 32052              | 0.198            |
|   | Zn      | 67   |            | ug/L        |           | 8499               | 0.033            |
|   | Zn      | 68   |            | ug/L        |           | 23800              | 0.146            |
| > | Ge      | 74   |            | ug/L        |           | 161427             | 161426.880       |
|   | As      | 75   | 99.688     | ug/L        | 1.433     | 57195              | 0.249            |
|   | Se      | 77   |            | ug/L        |           | 11761              | 0.010            |
|   | Se      | 82   | 99.847     | ug/L        | 6.822     | 3641               | 0.024            |
| [ | Kr      | 83   |            | ug/L        |           | 6787               | 0.000            |
|   | Sr      | 88   | 99.994     | ug/L        | 1.795     | 515488             | 5.043            |
|   | Zr      | 90   | 100.136    | ug/L        | 0.966     | 283371             | 2.773            |
|   | Mo      | 98   | 99.997     | ug/L        | 0.594     | 124307             | 1.216            |
|   | Ag      | 107  | 99.980     | ug/L        | 1.145     | 204030             | 1.997            |
|   | Cd      | 111  | 99.975     | ug/L        | 2.019     | 46005              | 0.450            |
|   | Cd      | 114  |            | ug/L        |           | 113320             | 1.109            |
| > | In      | 115  |            | ug/L        |           | 102184             | 102183.527       |
|   | Sn      | 120  | 99.993     | ug/L        | 0.873     | 220224             | 2.154            |
|   | Sb      | 121  | 99.988     | ug/L        | 1.144     | 173545             | 1.697            |
| [ | Sb      | 123  |            | ug/L        |           | 135853             | 1.328            |
|   | Ba      | 135  |            | ug/L        |           | 54836              | 0.295            |
|   | Ba      | 137  | 99.988     | ug/L        | 1.537     | 95523              | 0.514            |
| > | Lu      | 175  |            | ug/L        |           | 185693             | 185693.035       |
|   | Tl      | 205  | 99.987     | ug/L        | 0.858     | 742442             | 3.993            |
|   | Pb      | 208  | 99.972     | ug/L        | 0.718     | 953970             | 5.135            |
|   | Th      | 232  | 99.990     | ug/L        | 1.483     | 1106727            | 5.959            |
| [ | U       | 238  | 99.989     | ug/L        | 1.159     | 1189776            | 6.405            |

Sample ID: Standard 2

Report Date/Time: Thursday, August 25, 2011 06:39:18

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
|   | Li      | 7    |                   |                    |                  |                 |                  |
|   | Be      | 9    |                   |                    |                  |                 |                  |
|   | B       | 11   |                   |                    |                  |                 |                  |
|   | Na      | 23   |                   |                    |                  |                 |                  |
|   | Mg      | 24   |                   |                    |                  |                 |                  |
|   | Al      | 27   |                   |                    |                  |                 |                  |
|   | P       | 31   |                   |                    |                  |                 |                  |
|   | K       | 39   |                   |                    |                  |                 |                  |
|   | Ca      | 43   |                   |                    |                  |                 |                  |
| > | Sc      | 45   |                   |                    |                  |                 |                  |
|   | Ti      | 47   |                   |                    |                  |                 |                  |
|   | Cr      | 52   |                   |                    |                  |                 |                  |
|   | Cr      | 53   |                   |                    |                  |                 |                  |
|   | Mn      | 55   |                   |                    |                  |                 |                  |
|   | Fe      | 57   |                   |                    |                  |                 |                  |
|   | Co      | 59   |                   |                    |                  |                 |                  |
|   | Ni      | 60   |                   |                    |                  |                 |                  |
|   | Cu      | 63   |                   |                    |                  |                 |                  |
|   | Cu      | 65   |                   |                    |                  |                 |                  |
|   | Zn      | 66   |                   |                    |                  |                 |                  |
|   | Zn      | 67   |                   |                    |                  |                 |                  |
|   | Zn      | 68   |                   |                    |                  |                 |                  |
| > | Ge      | 74   |                   |                    |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Sr      | 88   |                   |                    |                  |                 |                  |
|   | Zr      | 90   |                   |                    |                  |                 |                  |
|   | Mo      | 98   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
|   | Cd      | 111  |                   |                    |                  |                 |                  |
|   | Cd      | 114  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   |                    |                  |                 |                  |
|   | Sn      | 120  |                   |                    |                  |                 |                  |
|   | Sb      | 121  |                   |                    |                  |                 |                  |
|   | Sb      | 123  |                   |                    |                  |                 |                  |
|   | Ba      | 135  |                   |                    |                  |                 |                  |
|   | Ba      | 137  |                   |                    |                  |                 |                  |
| > | Lu      | 175  |                   |                    |                  |                 |                  |
|   | Tl      | 205  |                   |                    |                  |                 |                  |
|   | Pb      | 208  |                   |                    |                  |                 |                  |
|   | Th      | 232  |                   |                    |                  |                 |                  |
|   | U       | 238  |                   |                    |                  |                 |                  |

## QC Out Of Limits

Measurement Type   Analyte   MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: QC Std 1

Sample Date/Time: Thursday, August 25, 2011 06:42:20

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\QC Std 1.207

### Concentration Results

| Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---------|------|------------|-------------|-----------|--------------------|------------------|
| Li      | 7    | 50.505     | ug/L        | 1.875     | 16756              | 0.038            |
| Be      | 9    | 49.192     | ug/L        | 1.331     | 4699               | 0.011            |
| B       | 11   | 104.111    | ug/L        | 1.678     | 10865              | 0.024            |
| Na      | 23   | 4992.661   | ug/L        | 1.159     | 5604521            | 12.563           |
| Mg      | 24   | 5014.372   | ug/L        | 1.355     | 3884390            | 8.722            |
| Al      | 27   | 5129.847   | ug/L        | 0.623     | 6032353            | 13.544           |
| P       | 31   | 4944.490   | ug/L        | 0.270     | 372909             | 0.833            |
| K       | 39   | 4909.740   | ug/L        | 1.596     | 10685670           | 23.354           |
| Ca      | 43   | 4959.802   | ug/L        | 0.140     | 19986              | 0.044            |
| Sc      | 45   |            | ug/L        |           | 445155             | 445154.931       |
| Ti      | 47   | 49.052     | ug/L        | 0.674     | 10920              | 0.024            |
| Cr      | 52   | 49.599     | ug/L        | 1.109     | 117474             | 0.245            |
| Cr      | 53   |            | ug/L        |           | 103854             | -0.019           |
| Mn      | 55   | 50.884     | ug/L        | 0.919     | 175702             | 0.393            |
| Fe      | 57   | 5038.691   | ug/L        | 0.908     | 360270             | 0.802            |
| Co      | 59   | 51.035     | ug/L        | 0.804     | 143778             | 0.323            |
| Ni      | 60   | 51.021     | ug/L        | 0.260     | 29840              | 0.067            |
| Cu      | 63   |            | ug/L        |           | 65267              | 0.146            |
| Cu      | 65   | 50.104     | ug/L        | 0.845     | 30885              | 0.069            |
| Zn      | 66   | 49.719     | ug/L        | 0.864     | 16195              | 0.098            |
| Zn      | 67   |            | ug/L        |           | 5893               | 0.017            |
| Zn      | 68   |            | ug/L        |           | 12079              | 0.072            |
| Ge      | 74   |            | ug/L        |           | 163408             | 163408.126       |
| As      | 75   | 50.553     | ug/L        | 2.818     | 37846              | 0.126            |
| Se      | 77   |            | ug/L        |           | 9839               | -0.003           |
| Se      | 82   | 51.072     | ug/L        | 2.319     | 1751               | 0.012            |
| Kr      | 83   |            | ug/L        |           | 6926               | 0.000            |
| Sr      | 88   | 51.170     | ug/L        | 0.895     | 267987             | 2.581            |
| Zr      | 90   | 51.197     | ug/L        | 2.559     | 147142             | 1.418            |
| Mo      | 98   | 49.461     | ug/L        | 1.026     | 62464              | 0.601            |
| Ag      | 107  | 41.493     | ug/L        | 0.852     | 86002              | 0.829            |
| Cd      | 111  | 50.328     | ug/L        | 1.086     | 23532              | 0.227            |
| Cd      | 114  |            | ug/L        |           | 59059              | 0.569            |
| In      | 115  |            | ug/L        |           | 103761             | 103761.160       |
| Sn      | 120  | 50.059     | ug/L        | 0.480     | 112031             | 1.078            |
| Sb      | 121  | 45.418     | ug/L        | 2.578     | 80145              | 0.771            |
| Sb      | 123  |            | ug/L        |           | 62214              | 0.598            |
| Ba      | 135  |            | ug/L        |           | 27321              | 0.146            |
| Ba      | 137  | 49.804     | ug/L        | 2.111     | 48058              | 0.256            |
| Lu      | 175  |            | ug/L        |           | 187454             | 187453.850       |
| Tl      | 205  | 49.300     | ug/L        | 1.938     | 370037             | 1.969            |
| Pb      | 208  | 50.762     | ug/L        | 0.845     | 489205             | 2.608            |
| Th      | 232  | 50.459     | ug/L        | 1.253     | 564009             | 3.007            |
| U       | 238  | 52.842     | ug/L        | 1.284     | 635005             | 3.385            |

Sample ID: QC Std 1

Report Date/Time: Thursday, August 25, 2011 06:47:35

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |



## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| Li      | 7    | 101.011           |                    |                  |                 |                  |
| Be      | 9    | 98.383            |                    |                  |                 |                  |
| B       | 11   | 104.111           |                    |                  |                 |                  |
| Na      | 23   | 99.853            |                    |                  |                 |                  |
| Mg      | 24   | 100.287           |                    |                  |                 |                  |
| Al      | 27   | 101.581           |                    |                  |                 |                  |
| P       | 31   | 98.890            |                    |                  |                 |                  |
| K       | 39   | 98.195            |                    |                  |                 |                  |
| Ca      | 43   | 99.196            |                    |                  |                 |                  |
| > Sc    | 45   |                   | 102.3              |                  |                 |                  |
| Ti      | 47   | 98.103            |                    |                  |                 |                  |
| Cr      | 52   | 99.197            |                    |                  |                 |                  |
| Cr      | 53   |                   |                    |                  |                 |                  |
| Mn      | 55   | 101.767           |                    |                  |                 |                  |
| Fe      | 57   | 100.774           |                    |                  |                 |                  |
| Co      | 59   | 102.070           |                    |                  |                 |                  |
| Ni      | 60   | 102.043           |                    |                  |                 |                  |
| Cu      | 63   |                   |                    |                  |                 |                  |
| Cu      | 65   | 100.208           |                    |                  |                 |                  |
| Zn      | 66   | 99.439            |                    |                  |                 |                  |
| Zn      | 67   |                   |                    |                  |                 |                  |
| Zn      | 68   |                   |                    |                  |                 |                  |
| > Ge    | 74   |                   | 99.7               |                  |                 |                  |
| As      | 75   | 101.106           |                    |                  |                 |                  |
| Se      | 77   |                   |                    |                  |                 |                  |
| Se      | 82   | 102.144           |                    |                  |                 |                  |
| Kr      | 83   |                   |                    |                  |                 |                  |
| Sr      | 88   | 102.339           |                    |                  |                 |                  |
| Zr      | 90   | 102.394           |                    |                  |                 |                  |
| Mo      | 98   | 98.923            |                    |                  |                 |                  |
| Ag      | 107  | 82.985            |                    |                  |                 |                  |
| Cd      | 111  | 100.657           |                    |                  |                 |                  |
| Cd      | 114  |                   |                    |                  |                 |                  |
| > In    | 115  |                   | 98.9               |                  |                 |                  |
| Sn      | 120  | 100.119           |                    |                  |                 |                  |
| Sb      | 121  | 90.836            |                    |                  |                 |                  |
| Sb      | 123  |                   |                    |                  |                 |                  |
| Ba      | 135  |                   |                    |                  |                 |                  |
| Ba      | 137  | 99.609            |                    |                  |                 |                  |
| > Lu    | 175  |                   | 100.3              |                  |                 |                  |
| Tl      | 205  | 98.600            |                    |                  |                 |                  |
| Pb      | 208  | 101.525           |                    |                  |                 |                  |
| Th      | 232  | 100.918           |                    |                  |                 |                  |
| U       | 238  | 105.685           |                    |                  |                 |                  |

## QC Out Of Limits

|                  |         |      |                                 |
|------------------|---------|------|---------------------------------|
| Measurement Type | Analyte | Mass | Out of Limits Message           |
| QC Std 1         | Ag      | 107  | ICV is out of limits ( +/- 10%) |

## QC Action

QC Action Line: Continue

## ICPMS#7 - Summary Report

Sample ID: QC Std 2

Sample Date/Time: Thursday, August 25, 2011 06:50:40

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\QC Std 2.208

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| [ | Li      | 7    | -0.027     | ug/L        | 63.359    | 28                 | -0.000           |
|   | Be      | 9    | 0.030      | ug/L        | 17.496    | 9                  | 0.000            |
|   | B       | 11   | 5.048      | ug/L        | 19.516    | 873                | 0.001            |
|   | Na      | 23   | -0.990     | ug/L        | 21.450    | 10779              | -0.002           |
|   | Mg      | 24   | 0.361      | ug/L        | 43.257    | 1932               | 0.001            |
|   | Al      | 27   | 0.392      | ug/L        | 33.644    | 3476               | 0.001            |
|   | P       | 31   | 1.478      | ug/L        | 51.289    | 2210               | 0.000            |
|   | K       | 39   | -1.186     | ug/L        | 18.492    | 282214             | -0.006           |
|   | Ca      | 43   | 6.820      | ug/L        | 9.937     | 215                | 0.000            |
| > | Sc      | 45   |            | ug/L        |           | 437386             | 437386.030       |
|   | Ti      | 47   | -0.029     | ug/L        | 146.071   | 94                 | -0.000           |
|   | Cr      | 52   | -0.398     | ug/L        | 21.026    | 7392               | -0.002           |
|   | Cr      | 53   |            | ug/L        |           | 90631              | -0.045           |
|   | Mn      | 55   | -0.021     | ug/L        | 16.916    | 662                | -0.000           |
|   | Fe      | 57   | 0.347      | ug/L        | 225.291   | 3364               | 0.000            |
|   | Co      | 59   | 0.005      | ug/L        | 34.464    | 87                 | 0.000            |
|   | Ni      | 60   | 0.004      | ug/L        | 143.799   | 49                 | 0.000            |
|   | Cu      | 63   |            | ug/L        |           | 87                 | 0.000            |
| [ | Cu      | 65   | 0.011      | ug/L        | 47.932    | 55                 | 0.000            |
| [ | Zn      | 66   | 0.016      | ug/L        | 53.082    | 119                | 0.000            |
|   | Zn      | 67   |            | ug/L        |           | 3108               | -0.001           |
|   | Zn      | 68   |            | ug/L        |           | 287                | -0.000           |
| > | Ge      | 74   |            | ug/L        |           | 164444             | 164444.316       |
|   | As      | 75   | 0.619      | ug/L        | 248.998   | 17582              | 0.002            |
|   | Se      | 77   |            | ug/L        |           | 8241               | -0.013           |
|   | Se      | 82   | 1.510      | ug/L        | 248.917   | -218               | 0.000            |
| [ | Kr      | 83   |            | ug/L        |           | 6864               | -0.000           |
| [ | Sr      | 88   | 0.000      | ug/L        | 227.650   | 229                | 0.000            |
|   | Zr      | 90   | 0.014      | ug/L        | 31.809    | 120                | 0.000            |
|   | Mo      | 98   | 0.074      | ug/L        | 19.153    | 158                | 0.001            |
|   | Ag      | 107  | 0.008      | ug/L        | 26.730    | 46                 | 0.000            |
|   | Cd      | 111  | -0.007     | ug/L        | 144.954   | 20                 | -0.000           |
|   | Cd      | 114  |            | ug/L        |           | 60                 | 0.000            |
| > | In      | 115  |            | ug/L        |           | 105169             | 105168.861       |
|   | Sn      | 120  | 0.029      | ug/L        | 17.304    | 206                | 0.001            |
|   | Sb      | 121  | 0.447      | ug/L        | 16.893    | 947                | 0.008            |
| [ | Sb      | 123  |            | ug/L        |           | 733                | 0.006            |
| [ | Ba      | 135  |            | ug/L        |           | 46                 | 0.000            |
|   | Ba      | 137  | 0.007      | ug/L        | 88.220    | 62                 | 0.000            |
| > | Lu      | 175  |            | ug/L        |           | 187246             | 187246.333       |
|   | Tl      | 205  | 0.177      | ug/L        | 26.450    | 2379               | 0.007            |
|   | Pb      | 208  | 0.003      | ug/L        | 97.987    | 473                | 0.000            |
|   | Th      | 232  | 0.060      | ug/L        | 14.684    | 1046               | 0.004            |
| [ | U       | 238  | 0.009      | ug/L        | 25.531    | 682                | 0.001            |

Sample ID: QC Std 2

Report Date/Time: Thursday, August 25, 2011 06:55:57

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
|   | Li      | 7    |                   |                    |                  |                 |                  |
|   | Be      | 9    |                   |                    |                  |                 |                  |
|   | B       | 11   |                   |                    |                  |                 |                  |
|   | Na      | 23   |                   |                    |                  |                 |                  |
|   | Mg      | 24   |                   |                    |                  |                 |                  |
|   | Al      | 27   |                   |                    |                  |                 |                  |
|   | P       | 31   |                   |                    |                  |                 |                  |
|   | K       | 39   |                   |                    |                  |                 |                  |
|   | Ca      | 43   |                   |                    |                  |                 |                  |
| > | Sc      | 45   |                   | 100.5              |                  |                 |                  |
|   | Ti      | 47   |                   |                    |                  |                 |                  |
|   | Cr      | 52   |                   |                    |                  |                 |                  |
|   | Cr      | 53   |                   |                    |                  |                 |                  |
|   | Mn      | 55   |                   |                    |                  |                 |                  |
|   | Fe      | 57   |                   |                    |                  |                 |                  |
|   | Co      | 59   |                   |                    |                  |                 |                  |
|   | Ni      | 60   |                   |                    |                  |                 |                  |
|   | Cu      | 63   |                   |                    |                  |                 |                  |
|   | Cu      | 65   |                   |                    |                  |                 |                  |
|   | Zn      | 66   |                   |                    |                  |                 |                  |
|   | Zn      | 67   |                   |                    |                  |                 |                  |
|   | Zn      | 68   |                   |                    |                  |                 |                  |
| > | Ge      | 74   |                   | 100.3              |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Sr      | 88   |                   |                    |                  |                 |                  |
|   | Zr      | 90   |                   |                    |                  |                 |                  |
|   | Mo      | 98   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
|   | Cd      | 111  |                   |                    |                  |                 |                  |
|   | Cd      | 114  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   | 100.2              |                  |                 |                  |
|   | Sn      | 120  |                   |                    |                  |                 |                  |
|   | Sb      | 121  |                   |                    |                  |                 |                  |
|   | Sb      | 123  |                   |                    |                  |                 |                  |
|   | Ba      | 135  |                   |                    |                  |                 |                  |
|   | Ba      | 137  |                   |                    |                  |                 |                  |
| > | Lu      | 175  |                   | 100.2              |                  |                 |                  |
|   | Tl      | 205  |                   |                    |                  |                 |                  |
|   | Pb      | 208  |                   |                    |                  |                 |                  |
|   | Th      | 232  |                   |                    |                  |                 |                  |
|   | U       | 238  |                   |                    |                  |                 |                  |

## QC Out Of Limits

Measurement Type   Analyte   Mass   Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: QC Std 3

Sample Date/Time: Thursday, August 25, 2011 06:59:00

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\QC Std 3.209

### Concentration Results

| Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---------|------|------------|-------------|-----------|--------------------|------------------|
| Li      | 7    | 10.669     | ug/L        | 3.404     | 3534               | 0.008            |
| Be      | 9    | 0.509      | ug/L        | 10.077    | 54                 | 0.000            |
| B       | 11   | 17.531     | ug/L        | 3.134     | 2124               | 0.004            |
| Na      | 23   | 255.903    | ug/L        | 0.262     | 295781             | 0.644            |
| Mg      | 24   | 29.886     | ug/L        | 0.789     | 24583              | 0.052            |
| Al      | 27   | 51.108     | ug/L        | 1.134     | 62524              | 0.135            |
| P       | 31   | 52.431     | ug/L        | 0.740     | 6010               | 0.009            |
| K       | 39   | 306.115    | ug/L        | 0.262     | 928676             | 1.456            |
| Ca      | 43   | 219.908    | ug/L        | 0.482     | 1059               | 0.002            |
| Sc      | 45   |            | ug/L        |           | 440768             | 440767.787       |
| Ti      | 47   | 9.094      | ug/L        | 1.893     | 2087               | 0.005            |
| Cr      | 52   | 10.425     | ug/L        | 0.223     | 31017              | 0.052            |
| Cr      | 53   |            | ug/L        |           | 96797              | -0.033           |
| Mn      | 55   | 5.226      | ug/L        | 2.005     | 18529              | 0.040            |
| Fe      | 57   | 104.753    | ug/L        | 1.121     | 10712              | 0.017            |
| Co      | 59   | 1.057      | ug/L        | 2.118     | 3020               | 0.007            |
| Ni      | 60   | 2.194      | ug/L        | 0.975     | 1315               | 0.003            |
| Cu      | 63   |            | ug/L        |           | 1511               | 0.003            |
| Cu      | 65   | 1.078      | ug/L        | 4.330     | 706                | 0.001            |
| Zn      | 66   | 10.708     | ug/L        | 1.474     | 3594               | 0.021            |
| Zn      | 67   |            | ug/L        |           | 3778               | 0.003            |
| Zn      | 68   |            | ug/L        |           | 2825               | 0.015            |
| Ge      | 74   |            | ug/L        |           | 164225             | 164224.666       |
| As      | 75   | 8.238      | ug/L        | 15.098    | 20680              | 0.021            |
| Se      | 77   |            | ug/L        |           | 8658               | -0.010           |
| Se      | 82   | 6.914      | ug/L        | 46.576    | -3                 | 0.002            |
| Kr      | 83   |            | ug/L        |           | 6927               | 0.000            |
| Sr      | 88   | 10.382     | ug/L        | 1.038     | 55501              | 0.524            |
| Zr      | 90   | 1.659      | ug/L        | 7.059     | 4930               | 0.046            |
| Mo      | 98   | 0.514      | ug/L        | 2.529     | 723                | 0.006            |
| Ag      | 107  | 1.049      | ug/L        | 1.333     | 2241               | 0.021            |
| Cd      | 111  | 1.071      | ug/L        | 1.736     | 533                | 0.005            |
| Cd      | 114  |            | ug/L        |           | 1266               | 0.012            |
| In      | 115  |            | ug/L        |           | 105562             | 105561.911       |
| Sn      | 120  | 5.057      | ug/L        | 0.495     | 11639              | 0.109            |
| Sb      | 121  | 3.267      | ug/L        | 0.210     | 6003               | 0.055            |
| Sb      | 123  |            | ug/L        |           | 4662               | 0.043            |
| Ba      | 135  |            | ug/L        |           | 1197               | 0.006            |
| Ba      | 137  | 2.065      | ug/L        | 2.756     | 2031               | 0.011            |
| Lu      | 175  |            | ug/L        |           | 186109             | 186109.332       |
| Tl      | 205  | 2.063      | ug/L        | 0.140     | 16379              | 0.082            |
| Pb      | 208  | 2.150      | ug/L        | 1.135     | 20994              | 0.110            |
| Th      | 232  | 2.038      | ug/L        | 5.001     | 22977              | 0.121            |
| U       | 238  | 0.188      | ug/L        | 1.555     | 2812               | 0.012            |

Sample ID: QC Std 3

Report Date/Time: Thursday, August 25, 2011 07:04:15

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| Li      | 7    | 106.690           |                    |                  |                 |                  |
| Be      | 9    | 101.859           |                    |                  |                 |                  |
| B       | 11   | 116.872           |                    |                  |                 |                  |
| Na      | 23   | 102.361           |                    |                  |                 |                  |
| Mg      | 24   | 99.618            |                    |                  |                 |                  |
| Al      | 27   | 102.215           |                    |                  |                 |                  |
| P       | 31   | 104.863           |                    |                  |                 |                  |
| K       | 39   | 102.038           |                    |                  |                 |                  |
| Ca      | 43   | 109.954           |                    |                  |                 |                  |
| > Sc    | 45   |                   | 101.3              |                  |                 |                  |
| Ti      | 47   | 90.936            |                    |                  |                 |                  |
| Cr      | 52   | 104.247           |                    |                  |                 |                  |
| Cr      | 53   |                   |                    |                  |                 |                  |
| Mn      | 55   | 104.513           |                    |                  |                 |                  |
| Fe      | 57   | 104.753           |                    |                  |                 |                  |
| Co      | 59   | 105.658           |                    |                  |                 |                  |
| Ni      | 60   | 109.679           |                    |                  |                 |                  |
| Cu      | 63   |                   |                    |                  |                 |                  |
| Cu      | 65   | 107.779           |                    |                  |                 |                  |
| Zn      | 66   | 107.082           |                    |                  |                 |                  |
| Zn      | 67   |                   |                    |                  |                 |                  |
| Zn      | 68   |                   |                    |                  |                 |                  |
| > Ge    | 74   |                   | 100.2              |                  |                 |                  |
| As      | 75   | 164.767           |                    |                  |                 |                  |
| Se      | 77   |                   |                    |                  |                 |                  |
| Se      | 82   | 138.276           |                    |                  |                 |                  |
| Kr      | 83   |                   |                    |                  |                 |                  |
| Sr      | 88   | 103.820           |                    |                  |                 |                  |
| Zr      | 90   | 82.974            |                    |                  |                 |                  |
| Mo      | 98   | 102.798           |                    |                  |                 |                  |
| Ag      | 107  | 104.919           |                    |                  |                 |                  |
| Cd      | 111  | 107.090           |                    |                  |                 |                  |
| Cd      | 114  |                   |                    |                  |                 |                  |
| > In    | 115  |                   | 100.6              |                  |                 |                  |
| Sn      | 120  | 101.136           |                    |                  |                 |                  |
| Sb      | 121  | 108.913           |                    |                  |                 |                  |
| Sb      | 123  |                   |                    |                  |                 |                  |
| Ba      | 135  |                   |                    |                  |                 |                  |
| Ba      | 137  | 103.272           |                    |                  |                 |                  |
| > Lu    | 175  |                   | 99.6               |                  |                 |                  |
| Tl      | 205  | 103.132           |                    |                  |                 |                  |
| Pb      | 208  | 107.484           |                    |                  |                 |                  |
| Th      | 232  | 101.880           |                    |                  |                 |                  |
| U       | 238  | 93.905            |                    |                  |                 |                  |

## QC Out Of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|------------------|---------|------|-----------------------|
| QC Std 3         | As      | 75   | CRDL is out of limits |
| QC Std 3         | Se      | 82   | CRDL is out of limits |

## QC Action

QC Action Line: Continue

## ICPMS#7 - Summary Report

Sample ID: QC Std 4

Sample Date/Time: Thursday, August 25, 2011 07:07:18

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\QC Std 4.210

### Concentration Results

| Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---------|------|------------|-------------|-----------|--------------------|------------------|
| Li      | 7    | 0.058      | ug/L        | 25.565    | 52                 | 0.000            |
| Be      | 9    | 0.023      | ug/L        | 90.578    | 8                  | 0.000            |
| B       | 11   | 4.745      | ug/L        | 13.756    | 793                | 0.001            |
| Na      | 23   | 108539.893 | ug/L        | 1.372     | 112419047          | 273.118          |
| Mg      | 24   | 106237.886 | ug/L        | 1.305     | 76060274           | 184.797          |
| Al      | 27   | 107673.748 | ug/L        | 1.141     | 117014196          | 284.291          |
| P       | 31   | 84857.346  | ug/L        | 0.574     | 5885474            | 14.294           |
| K       | 39   | 104940.405 | ug/L        | 1.435     | 205715706          | 499.168          |
| Ca      | 43   | 104137.515 | ug/L        | 0.975     | 384447             | 0.934            |
| Sc      | 45   |            | ug/L        |           | 411607             | 411606.577       |
| Ti      | 47   | 1848.217   | ug/L        | 0.803     | 376986             | 0.916            |
| Cr      | 52   | 2.242      | ug/L        | 4.428     | 12326              | 0.011            |
| Cr      | 53   |            | ug/L        |           | 69911              | -0.082           |
| Mn      | 55   | 1.971      | ug/L        | 1.387     | 6958               | 0.015            |
| Fe      | 57   | 99975.608  | ug/L        | 0.898     | 6550164            | 15.907           |
| Co      | 59   | 0.185      | ug/L        | 4.457     | 552                | 0.001            |
| Ni      | 60   | 2.964      | ug/L        | 1.113     | 1644               | 0.004            |
| Cu      | 63   |            | ug/L        |           | 2064               | 0.005            |
| Cu      | 65   | 2.468      | ug/L        | 2.162     | 1450               | 0.003            |
| Zn      | 66   | 6.463      | ug/L        | 0.840     | 1941               | 0.013            |
| Zn      | 67   |            | ug/L        |           | 3380               | 0.004            |
| Zn      | 68   |            | ug/L        |           | 890                | 0.004            |
| Ge      | 74   |            | ug/L        |           | 143956             | 143955.528       |
| As      | 75   | 7.745      | ug/L        | 14.431    | 17951              | 0.019            |
| Se      | 77   |            | ug/L        |           | 7128               | -0.013           |
| Se      | 82   | 0.086      | ug/L        | 1853.952  | -241               | 0.000            |
| Kr      | 83   |            | ug/L        |           | 6740               | 0.005            |
| Sr      | 88   | 2.145      | ug/L        | 0.864     | 10209              | 0.108            |
| Zr      | 90   | 0.598      | ug/L        | 43.969    | 1599               | 0.017            |
| Mo      | 98   | 2209.660   | ug/L        | 0.271     | 2486284            | 26.869           |
| Ag      | 107  | 0.085      | ug/L        | 7.942     | 184                | 0.002            |
| Cd      | 111  | 0.723      | ug/L        | 12.285    | 322                | 0.003            |
| Cd      | 114  |            | ug/L        |           | 3476               | 0.037            |
| In      | 115  |            | ug/L        |           | 92534              | 92533.755        |
| Sn      | 120  | 0.275      | ug/L        | 4.216     | 671                | 0.006            |
| Sb      | 121  | 0.343      | ug/L        | 6.399     | 669                | 0.006            |
| Sb      | 123  |            | ug/L        |           | 508                | 0.004            |
| Ba      | 135  |            | ug/L        |           | 221                | 0.001            |
| Ba      | 137  | 0.326      | ug/L        | 5.568     | 336                | 0.002            |
| Lu      | 175  |            | ug/L        |           | 170663             | 170663.276       |
| Tl      | 205  | 0.014      | ug/L        | 41.693    | 1056               | 0.001            |
| Pb      | 208  | 0.101      | ug/L        | 4.210     | 1292               | 0.005            |
| Th      | 232  | 0.123      | ug/L        | 51.064    | 1594               | 0.007            |
| U       | 238  | 0.201      | ug/L        | 2.658     | 2722               | 0.013            |

Sample ID: QC Std 4

Report Date/Time: Thursday, August 25, 2011 07:12:34

Page 1



# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| Li      | 7    |                   |                    |                  |                 |                  |
| Be      | 9    |                   |                    |                  |                 |                  |
| B       | 11   |                   |                    |                  |                 |                  |
| Na      | 23   | 108.540           |                    |                  |                 |                  |
| Mg      | 24   | 106.238           |                    |                  |                 |                  |
| Al      | 27   | 107.674           |                    |                  |                 |                  |
| P       | 31   | 84.857            |                    |                  |                 |                  |
| K       | 39   | 104.940           |                    |                  |                 |                  |
| Ca      | 43   | 104.138           |                    |                  |                 |                  |
| > Sc    | 45   |                   | 94.6               |                  |                 |                  |
| Ti      | 47   | 92.411            |                    |                  |                 |                  |
| Cr      | 52   | 77.862            |                    |                  |                 |                  |
| Cr      | 53   |                   |                    |                  |                 |                  |
| Mn      | 55   | 101.078           |                    |                  |                 |                  |
| Fe      | 57   | 99.976            |                    |                  |                 |                  |
| Co      | 59   | 88.286            |                    |                  |                 |                  |
| Ni      | 60   | 106.623           |                    |                  |                 |                  |
| Cu      | 63   |                   |                    |                  |                 |                  |
| Cu      | 65   | 102.237           |                    |                  |                 |                  |
| Zn      | 66   | 111.644           |                    |                  |                 |                  |
| Zn      | 67   |                   |                    |                  |                 |                  |
| Zn      | 68   |                   |                    |                  |                 |                  |
| > Ge    | 74   |                   | 87.8               |                  |                 |                  |
| As      | 75   |                   |                    |                  |                 |                  |
| Se      | 77   |                   |                    |                  |                 |                  |
| Se      | 82   |                   |                    |                  |                 |                  |
| Kr      | 83   |                   |                    |                  |                 |                  |
| Sr      | 88   | 102.336           |                    |                  |                 |                  |
| Zr      | 90   |                   |                    |                  |                 |                  |
| Mo      | 98   | 110.483           |                    |                  |                 |                  |
| Ag      | 107  |                   |                    |                  |                 |                  |
| Cd      | 111  | 106.604           |                    |                  |                 |                  |
| Cd      | 114  |                   |                    |                  |                 |                  |
| > In    | 115  |                   | 88.2               |                  |                 |                  |
| Sn      | 120  |                   |                    |                  |                 |                  |
| Sb      | 121  |                   |                    |                  |                 |                  |
| Sb      | 123  |                   |                    |                  |                 |                  |
| Ba      | 135  |                   |                    |                  |                 |                  |
| Ba      | 137  | 64.254            |                    |                  |                 |                  |
| > Lu    | 175  |                   | 91.3               |                  |                 |                  |
| Tl      | 205  |                   |                    |                  |                 |                  |
| Pb      | 208  | 87.844            |                    |                  |                 |                  |
| Th      | 232  |                   |                    |                  |                 |                  |
| U       | 238  | 97.981            |                    |                  |                 |                  |

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: QC Std 5

Sample Date/Time: Thursday, August 25, 2011 07:15:37

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\QC Std 5.211

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
|   | Li      | 7    | 20.624     | ug/L        | 0.455     | 6425               | 0.015            |
|   | Be      | 9    | 20.447     | ug/L        | 2.877     | 1832               | 0.004            |
|   | B       | 11   | 23.875     | ug/L        | 2.141     | 2606               | 0.005            |
|   | Na      | 23   | 108374.279 | ug/L        | 1.268     | 113638327          | 272.702          |
|   | Mg      | 24   | 105763.973 | ug/L        | 1.037     | 76656524           | 183.972          |
|   | Al      | 27   | 108109.749 | ug/L        | 0.232     | 118941340          | 285.442          |
|   | P       | 31   | 85224.915  | ug/L        | 1.126     | 5983699            | 14.356           |
|   | K       | 39   | 105380.287 | ug/L        | 0.555     | 209136753          | 501.260          |
|   | Ca      | 43   | 103641.012 | ug/L        | 0.664     | 387345             | 0.929            |
| > | Sc      | 45   |            | ug/L        |           | 416684             | 416684.189       |
|   | Ti      | 47   | 1841.096   | ug/L        | 0.274     | 380177             | 0.912            |
|   | Cr      | 52   | 22.562     | ug/L        | 0.481     | 54308              | 0.111            |
|   | Cr      | 53   |            | ug/L        |           | 71121              | -0.082           |
|   | Mn      | 55   | 22.293     | ug/L        | 0.014     | 72449              | 0.172            |
|   | Fe      | 57   | 100384.914 | ug/L        | 0.801     | 6658597            | 15.972           |
|   | Co      | 59   | 20.165     | ug/L        | 0.315     | 53217              | 0.128            |
|   | Ni      | 60   | 22.825     | ug/L        | 1.780     | 12519              | 0.030            |
|   | Cu      | 63   |            | ug/L        |           | 25279              | 0.060            |
|   | Cu      | 65   | 21.596     | ug/L        | 0.186     | 12487              | 0.030            |
|   | Zn      | 66   | 26.327     | ug/L        | 1.527     | 7572               | 0.052            |
|   | Zn      | 67   |            | ug/L        |           | 4288               | 0.010            |
|   | Zn      | 68   |            | ug/L        |           | 4947               | 0.033            |
| > | Ge      | 74   |            | ug/L        |           | 143421             | 143421.212       |
|   | As      | 75   | 26.646     | ug/L        | 5.246     | 24652              | 0.067            |
|   | Se      | 77   |            | ug/L        |           | 7118               | -0.013           |
|   | Se      | 82   | 20.685     | ug/L        | 11.491    | 478                | 0.005            |
|   | Kr      | 83   |            | ug/L        |           | 6680               | 0.005            |
|   | Sr      | 88   | 23.698     | ug/L        | 1.475     | 110166             | 1.195            |
|   | Zr      | 90   | 22.357     | ug/L        | 0.631     | 57022              | 0.619            |
|   | Mo      | 98   | 2240.365   | ug/L        | 0.533     | 2506482            | 27.242           |
|   | Ag      | 107  | 19.981     | ug/L        | 0.480     | 36738              | 0.399            |
|   | Cd      | 111  | 21.549     | ug/L        | 1.057     | 8946               | 0.097            |
|   | Cd      | 114  |            | ug/L        |           | 24525              | 0.266            |
| > | In      | 115  |            | ug/L        |           | 92007              | 92007.077        |
|   | Sn      | 120  | 31.973     | ug/L        | 31.368    | 63523              | 0.689            |
|   | Sb      | 121  | 21.129     | ug/L        | 1.290     | 33125              | 0.359            |
|   | Sb      | 123  |            | ug/L        |           | 25754              | 0.279            |
|   | Ba      | 135  |            | ug/L        |           | 10643              | 0.063            |
|   | Ba      | 137  | 21.153     | ug/L        | 0.346     | 18353              | 0.109            |
| > | Lu      | 175  |            | ug/L        |           | 168262             | 168261.652       |
|   | Tl      | 205  | 19.604     | ug/L        | 2.440     | 132653             | 0.783            |
|   | Pb      | 208  | 20.706     | ug/L        | 1.712     | 179353             | 1.064            |
|   | Th      | 232  | 21.637     | ug/L        | 0.789     | 217298             | 1.289            |
|   | U       | 238  | 22.044     | ug/L        | 1.196     | 238096             | 1.412            |

Sample ID: QC Std 5

Report Date/Time: Thursday, August 25, 2011 07:20:53

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| Li      | 7    | 103.121           |                    |                  |                 |                  |
| Be      | 9    | 102.236           |                    |                  |                 |                  |
| B       | 11   | 119.374           |                    |                  |                 |                  |
| Na      | 23   | 108.374           |                    |                  |                 |                  |
| Mg      | 24   | 105.764           |                    |                  |                 |                  |
| Al      | 27   | 108.110           |                    |                  |                 |                  |
| P       | 31   | 85.225            |                    |                  |                 |                  |
| K       | 39   | 105.380           |                    |                  |                 |                  |
| Ca      | 43   | 103.641           |                    |                  |                 |                  |
| > Sc    | 45   |                   |                    | 95.7             |                 |                  |
| Ti      | 47   | 92.055            |                    |                  |                 |                  |
| Cr      | 52   | 98.616            |                    |                  |                 |                  |
| Cr      | 53   |                   |                    |                  |                 |                  |
| Mn      | 55   | 101.564           |                    |                  |                 |                  |
| Fe      | 57   | 100.385           |                    |                  |                 |                  |
| Co      | 59   | 99.775            |                    |                  |                 |                  |
| Ni      | 60   | 100.197           |                    |                  |                 |                  |
| Cu      | 63   |                   |                    |                  |                 |                  |
| Cu      | 65   | 96.350            |                    |                  |                 |                  |
| Zn      | 66   | 102.087           |                    |                  |                 |                  |
| Zn      | 67   |                   |                    |                  |                 |                  |
| Zn      | 68   |                   |                    |                  |                 |                  |
| > Ge    | 74   |                   |                    | 87.5             |                 |                  |
| As      | 75   | 133.231           |                    |                  |                 |                  |
| Se      | 77   |                   |                    |                  |                 |                  |
| Se      | 82   | 103.425           |                    |                  |                 |                  |
| Kr      | 83   |                   |                    |                  |                 |                  |
| Sr      | 88   | 107.250           |                    |                  |                 |                  |
| Zr      | 90   | 111.784           |                    |                  |                 |                  |
| Mo      | 98   | 112.018           |                    |                  |                 |                  |
| Ag      | 107  | 99.905            |                    |                  |                 |                  |
| Cd      | 111  | 104.211           |                    |                  |                 |                  |
| Cd      | 114  |                   |                    |                  |                 |                  |
| > In    | 115  |                   |                    | 87.7             |                 |                  |
| Sn      | 120  | 159.865           |                    |                  |                 |                  |
| Sb      | 121  | 105.646           |                    |                  |                 |                  |
| Sb      | 123  |                   |                    |                  |                 |                  |
| Ba      | 135  |                   |                    |                  |                 |                  |
| Ba      | 137  | 103.144           |                    |                  |                 |                  |
| > Lu    | 175  |                   |                    | 90.1             |                 |                  |
| Tl      | 205  | 98.018            |                    |                  |                 |                  |
| Pb      | 208  | 102.937           |                    |                  |                 |                  |
| Th      | 232  | 108.187           |                    |                  |                 |                  |
| U       | 238  | 109.103           |                    |                  |                 |                  |

## QC Out Of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message  |
|------------------|---------|------|------------------------|
| QC Std 5         | As      | 75   | ICSAB is out of limits |
| QC Std 5         | Sn      | 120  | ICSAB is out of limits |

## QC Action

QC Action Line: Continue

## ICPMS#7 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Thursday, August 25, 2011 07:23:57

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\QC Std 6.212

### Concentration Results

| Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---------|------|------------|-------------|-----------|--------------------|------------------|
| Li      | 7    | 51.259     | ug/L        | 2.524     | 17258              | 0.038            |
| Be      | 9    | 48.942     | ug/L        | 1.649     | 4745               | 0.010            |
| B       | 11   | 100.123    | ug/L        | 1.256     | 10620              | 0.023            |
| Na      | 23   | 5190.824   | ug/L        | 0.431     | 5913758            | 13.062           |
| Mg      | 24   | 5139.934   | ug/L        | 0.486     | 4041288            | 8.941            |
| Al      | 27   | 5247.445   | ug/L        | 0.857     | 6262865            | 13.855           |
| P       | 31   | 4967.903   | ug/L        | 0.335     | 380275             | 0.837            |
| K       | 39   | 5023.179   | ug/L        | 0.536     | 11089689           | 23.894           |
| Ca      | 43   | 5046.002   | ug/L        | 1.519     | 20634              | 0.045            |
| Sc      | 45   |            | ug/L        |           | 451827             | 451827.049       |
| Ti      | 47   | 50.717     | ug/L        | 1.099     | 11457              | 0.025            |
| Cr      | 52   | 48.274     | ug/L        | 0.694     | 116277             | 0.238            |
| Cr      | 53   |            | ug/L        |           | 84213              | -0.066           |
| Mn      | 55   | 50.450     | ug/L        | 0.887     | 176815             | 0.390            |
| Fe      | 57   | 5037.132   | ug/L        | 0.598     | 365557             | 0.801            |
| Co      | 59   | 50.898     | ug/L        | 1.097     | 145534             | 0.322            |
| Ni      | 60   | 50.756     | ug/L        | 1.406     | 30128              | 0.067            |
| Cu      | 63   |            | ug/L        |           | 65373              | 0.145            |
| Cu      | 65   | 49.774     | ug/L        | 0.465     | 31141              | 0.069            |
| Zn      | 66   | 49.339     | ug/L        | 0.456     | 16325              | 0.098            |
| Zn      | 67   |            | ug/L        |           | 5589               | 0.014            |
| Zn      | 68   |            | ug/L        |           | 12068              | 0.071            |
| Ge      | 74   |            | ug/L        |           | 165986             | 165986.248       |
| As      | 75   | 48.438     | ug/L        | 3.032     | 37566              | 0.121            |
| Se      | 77   |            | ug/L        |           | 7595               | -0.017           |
| Se      | 82   | 49.511     | ug/L        | 5.465     | 1715               | 0.012            |
| Kr      | 83   |            | ug/L        |           | 6852               | -0.001           |
| Sr      | 88   | 50.802     | ug/L        | 1.254     | 271533             | 2.562            |
| Zr      | 90   | 49.015     | ug/L        | 1.743     | 143780             | 1.357            |
| Mo      | 98   | 48.299     | ug/L        | 0.971     | 62250              | 0.587            |
| Ag      | 107  | 41.193     | ug/L        | 1.629     | 87134              | 0.823            |
| Cd      | 111  | 50.800     | ug/L        | 0.447     | 24239              | 0.229            |
| Cd      | 114  |            | ug/L        |           | 59349              | 0.560            |
| In      | 115  |            | ug/L        |           | 105889             | 105889.483       |
| Sn      | 120  | 49.529     | ug/L        | 0.771     | 113112             | 1.067            |
| Sb      | 121  | 48.341     | ug/L        | 1.106     | 87029              | 0.820            |
| Sb      | 123  |            | ug/L        |           | 68252              | 0.643            |
| Ba      | 135  |            | ug/L        |           | 27577              | 0.146            |
| Ba      | 137  | 49.641     | ug/L        | 0.696     | 48360              | 0.255            |
| Lu      | 175  |            | ug/L        |           | 189218             | 189217.734       |
| Tl      | 205  | 47.733     | ug/L        | 2.278     | 361749             | 1.906            |
| Pb      | 208  | 50.163     | ug/L        | 0.193     | 488019             | 2.577            |
| Th      | 232  | 49.754     | ug/L        | 0.925     | 561422             | 2.965            |
| U       | 238  | 51.210     | ug/L        | 0.364     | 621266             | 3.280            |

Sample ID: QC Std 6

Report Date/Time: Thursday, August 25, 2011 07:29:12

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| Li      | 7    | 102.518           |                    |                  |                 |                  |
| Be      | 9    | 97.885            |                    |                  |                 |                  |
| B       | 11   | 100.123           |                    |                  |                 |                  |
| Na      | 23   | 103.816           |                    |                  |                 |                  |
| Mg      | 24   | 102.799           |                    |                  |                 |                  |
| Al      | 27   | 103.910           |                    |                  |                 |                  |
| P       | 31   | 99.358            |                    |                  |                 |                  |
| K       | 39   | 100.464           |                    |                  |                 |                  |
| Ca      | 43   | 100.920           |                    |                  |                 |                  |
| > Sc    | 45   |                   | 103.8              |                  |                 |                  |
| Ti      | 47   | 101.434           |                    |                  |                 |                  |
| Cr      | 52   | 96.547            |                    |                  |                 |                  |
| Cr      | 53   |                   |                    |                  |                 |                  |
| Mn      | 55   | 100.899           |                    |                  |                 |                  |
| Fe      | 57   | 100.743           |                    |                  |                 |                  |
| Co      | 59   | 101.796           |                    |                  |                 |                  |
| Ni      | 60   | 101.513           |                    |                  |                 |                  |
| Cu      | 63   |                   |                    |                  |                 |                  |
| Cu      | 65   | 99.547            |                    |                  |                 |                  |
| Zn      | 66   | 98.677            |                    |                  |                 |                  |
| Zn      | 67   |                   |                    |                  |                 |                  |
| Zn      | 68   |                   |                    |                  |                 |                  |
| > Ge    | 74   |                   | 101.3              |                  |                 |                  |
| As      | 75   | 96.876            |                    |                  |                 |                  |
| Se      | 77   |                   |                    |                  |                 |                  |
| Se      | 82   | 99.021            |                    |                  |                 |                  |
| Kr      | 83   |                   |                    |                  |                 |                  |
| Sr      | 88   | 101.603           |                    |                  |                 |                  |
| Zr      | 90   | 98.030            |                    |                  |                 |                  |
| Mo      | 98   | 96.598            |                    |                  |                 |                  |
| Ag      | 107  | 82.386            |                    |                  |                 |                  |
| Cd      | 111  | 101.599           |                    |                  |                 |                  |
| Cd      | 114  |                   |                    |                  |                 |                  |
| > In    | 115  |                   | 100.9              |                  |                 |                  |
| Sn      | 120  | 99.057            |                    |                  |                 |                  |
| Sb      | 121  | 96.683            |                    |                  |                 |                  |
| Sb      | 123  |                   |                    |                  |                 |                  |
| Ba      | 135  |                   |                    |                  |                 |                  |
| Ba      | 137  | 99.281            |                    |                  |                 |                  |
| > Lu    | 175  |                   | 101.3              |                  |                 |                  |
| Tl      | 205  | 95.465            |                    |                  |                 |                  |
| Pb      | 208  | 100.327           |                    |                  |                 |                  |
| Th      | 232  | 99.508            |                    |                  |                 |                  |
| U       | 238  | 102.421           |                    |                  |                 |                  |

## QC Out Of Limits

|                  |         |      |                                 |
|------------------|---------|------|---------------------------------|
| Measurement Type | Analyte | Mass | Out of Limits Message           |
| QC Std 6         | Ag      | 107  | CCV is out of limits ( +/- 10%) |

## QC Action

QC Action Line: Continue



## ICPMS#7 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Thursday, August 25, 2011 07:32:17

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\QC Std 7.213

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
|   | Li      | 7    | -0.009     | ug/L        | 157.969   | 34                 | -0.000           |
|   | Be      | 9    | 0.005      | ug/L        | 734.643   | 7                  | 0.000            |
|   | B       | 11   | 1.903      | ug/L        | 41.271    | 575                | 0.000            |
|   | Na      | 23   | 0.302      | ug/L        | 159.264   | 12494              | 0.001            |
|   | Mg      | 24   | 1.601      | ug/L        | 49.731    | 2944               | 0.003            |
|   | Al      | 27   | 1.771      | ug/L        | 23.432    | 5190               | 0.005            |
|   | P       | 31   | 3.099      | ug/L        | 13.020    | 2384               | 0.001            |
|   | K       | 39   | -1.156     | ug/L        | 65.505    | 289012             | -0.006           |
|   | Ca      | 43   | 1.137      | ug/L        | 9.250     | 197                | 0.000            |
| > | Sc      | 45   |            | ug/L        |           | 447819             | 447819.310       |
|   | Ti      | 47   | 0.040      | ug/L        | 61.128    | 111                | 0.000            |
|   | Cr      | 52   | -1.264     | ug/L        | 5.798     | 5654               | -0.006           |
|   | Cr      | 53   |            | ug/L        |           | 73225              | -0.089           |
|   | Mn      | 55   | -0.055     | ug/L        | 8.026     | 560                | -0.000           |
|   | Fe      | 57   | 3.966      | ug/L        | 59.754    | 3702               | 0.001            |
|   | Co      | 59   | 0.004      | ug/L        | 13.395    | 88                 | 0.000            |
|   | Ni      | 60   | 0.005      | ug/L        | 164.821   | 51                 | 0.000            |
|   | Cu      | 63   |            | ug/L        |           | 89                 | 0.000            |
|   | Cu      | 65   | 0.003      | ug/L        | 264.963   | 52                 | 0.000            |
|   | Zn      | 66   | 0.021      | ug/L        | 108.399   | 121                | 0.000            |
|   | Zn      | 67   |            | ug/L        |           | 2903               | -0.002           |
|   | Zn      | 68   |            | ug/L        |           | 271                | -0.000           |
| > | Ge      | 74   |            | ug/L        |           | 164653             | 164653.012       |
|   | As      | 75   | 0.636      | ug/L        | 157.757   | 17611              | 0.002            |
|   | Se      | 77   |            | ug/L        |           | 6106               | -0.026           |
|   | Se      | 82   | 1.450      | ug/L        | 147.759   | -221               | 0.000            |
|   | Kr      | 83   |            | ug/L        |           | 6888               | -0.000           |
|   | Sr      | 88   | -0.001     | ug/L        | 348.337   | 222                | -0.000           |
|   | Zr      | 90   | 0.011      | ug/L        | 43.591    | 112                | 0.000            |
|   | Mo      | 98   | 0.130      | ug/L        | 15.926    | 229                | 0.002            |
|   | Ag      | 107  | 0.004      | ug/L        | 27.673    | 38                 | 0.000            |
|   | Cd      | 111  | -0.006     | ug/L        | 130.500   | 21                 | -0.000           |
|   | Cd      | 114  |            | ug/L        |           | 57                 | 0.000            |
| > | In      | 115  |            | ug/L        |           | 104990             | 104990.085       |
|   | Sn      | 120  | 0.022      | ug/L        | 44.834    | 189                | 0.000            |
|   | Sb      | 121  | 0.114      | ug/L        | 11.617    | 352                | 0.002            |
|   | Sb      | 123  |            | ug/L        |           | 275                | 0.001            |
|   | Ba      | 135  |            | ug/L        |           | 50                 | 0.000            |
|   | Ba      | 137  | 0.010      | ug/L        | 25.817    | 63                 | 0.000            |
| > | Lu      | 175  |            | ug/L        |           | 184768             | 184767.902       |
|   | Tl      | 205  | 0.383      | ug/L        | 33.151    | 3870               | 0.015            |
|   | Pb      | 208  | 0.003      | ug/L        | 60.945    | 474                | 0.000            |
|   | Th      | 232  | 0.043      | ug/L        | 18.909    | 842                | 0.003            |
|   | U       | 238  | 0.008      | ug/L        | 50.473    | 660                | 0.000            |

Sample ID: QC Std 7

Report Date/Time: Thursday, August 25, 2011 07:37:34

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| Li      | 7    |                   |                    |                  |                 |                  |
| Be      | 9    |                   |                    |                  |                 |                  |
| B       | 11   |                   |                    |                  |                 |                  |
| Na      | 23   |                   |                    |                  |                 |                  |
| Mg      | 24   |                   |                    |                  |                 |                  |
| Al      | 27   |                   |                    |                  |                 |                  |
| P       | 31   |                   |                    |                  |                 |                  |
| K       | 39   |                   |                    |                  |                 |                  |
| Ca      | 43   |                   |                    |                  |                 |                  |
| > Sc    | 45   |                   | 102.9              |                  |                 |                  |
| Ti      | 47   |                   |                    |                  |                 |                  |
| Cr      | 52   |                   |                    |                  |                 |                  |
| Cr      | 53   |                   |                    |                  |                 |                  |
| Mn      | 55   |                   |                    |                  |                 |                  |
| Fe      | 57   |                   |                    |                  |                 |                  |
| Co      | 59   |                   |                    |                  |                 |                  |
| Ni      | 60   |                   |                    |                  |                 |                  |
| Cu      | 63   |                   |                    |                  |                 |                  |
| Cu      | 65   |                   |                    |                  |                 |                  |
| Zn      | 66   |                   |                    |                  |                 |                  |
| Zn      | 67   |                   |                    |                  |                 |                  |
| Zn      | 68   |                   |                    |                  |                 |                  |
| > Ge    | 74   |                   | 100.5              |                  |                 |                  |
| As      | 75   |                   |                    |                  |                 |                  |
| Se      | 77   |                   |                    |                  |                 |                  |
| Se      | 82   |                   |                    |                  |                 |                  |
| Kr      | 83   |                   |                    |                  |                 |                  |
| Sr      | 88   |                   |                    |                  |                 |                  |
| Zr      | 90   |                   |                    |                  |                 |                  |
| Mo      | 98   |                   |                    |                  |                 |                  |
| Ag      | 107  |                   |                    |                  |                 |                  |
| Cd      | 111  |                   |                    |                  |                 |                  |
| Cd      | 114  |                   |                    |                  |                 |                  |
| > In    | 115  |                   | 100.1              |                  |                 |                  |
| Sn      | 120  |                   |                    |                  |                 |                  |
| Sb      | 121  |                   |                    |                  |                 |                  |
| Sb      | 123  |                   |                    |                  |                 |                  |
| Ba      | 135  |                   |                    |                  |                 |                  |
| Ba      | 137  |                   |                    |                  |                 |                  |
| > Lu    | 175  |                   | 98.9               |                  |                 |                  |
| Tl      | 205  |                   |                    |                  |                 |                  |
| Pb      | 208  |                   |                    |                  |                 |                  |
| Th      | 232  |                   |                    |                  |                 |                  |
| U       | 238  |                   |                    |                  |                 |                  |

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: QC Std 10

Sample Date/Time: Thursday, August 25, 2011 07:40:37

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\QC Std 10.214

### Concentration Results

| Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---------|------|------------|-------------|-----------|--------------------|------------------|
| Li      | 7    | 1017.046   | ug/L        | 1.187     | 290010             | 0.756            |
| Be      | 9    | 999.967    | ug/L        | 1.492     | 82160              | 0.214            |
| B       | 11   | 0.264      | ug/L        | 77.210    | 350                | 0.000            |
| Na      | 23   | 52008.306  | ug/L        | 1.057     | 50166802           | 130.868          |
| Mg      | 24   | 51100.738  | ug/L        | 0.450     | 34070336           | 88.888           |
| Al      | 27   | 51827.900  | ug/L        | 0.822     | 52471844           | 136.841          |
| P       | 31   | 24843.569  | ug/L        | 1.138     | 1605395            | 4.185            |
| K       | 39   | 50578.935  | ug/L        | 1.181     | 92436621           | 240.588          |
| Ca      | 43   | 50333.088  | ug/L        | 0.651     | 173138             | 0.451            |
| Sc      | 45   |            | ug/L        |           | 383322             | 383322.310       |
| Ti      | 47   | 40.254     | ug/L        | 2.494     | 7731               | 0.020            |
| Cr      | 52   | 1023.724   | ug/L        | 3.060     | 1947076            | 5.057            |
| Cr      | 53   |            | ug/L        |           | 280722             | 0.480            |
| Mn      | 55   | 1050.147   | ug/L        | 2.110     | 3108492            | 8.111            |
| Fe      | 57   | 49133.926  | ug/L        | 1.924     | 2997802            | 7.817            |
| Co      | 59   | 1082.758   | ug/L        | 2.399     | 2623104            | 6.849            |
| Ni      | 60   | 1000.794   | ug/L        | 1.323     | 503010             | 1.313            |
| Cu      | 63   |            | ug/L        |           | 1079083            | 2.817            |
| Cu      | 65   | 965.189    | ug/L        | 1.633     | 511240             | 1.334            |
| Zn      | 66   | 2350.799   | ug/L        | 1.504     | 653128             | 4.653            |
| Zn      | 67   |            | ug/L        |           | 105051             | 0.729            |
| Zn      | 68   |            | ug/L        |           | 468296             | 3.336            |
| Ge      | 74   |            | ug/L        |           | 140317             | 140316.562       |
| As      | 75   | 955.482    | ug/L        | 1.451     | 349501             | 2.386            |
| Se      | 77   |            | ug/L        |           | 17492              | 0.062            |
| Se      | 82   | 490.968    | ug/L        | 1.889     | 16495              | 0.119            |
| Kr      | 83   |            | ug/L        |           | 6201               | 0.002            |
| Sr      | 88   | 1074.900   | ug/L        | 0.693     | 4809828            | 54.212           |
| Zr      | 90   | 527.330    | ug/L        | 0.483     | 1295526            | 14.601           |
| Mo      | 98   | 1050.296   | ug/L        | 1.402     | 1133028            | 12.771           |
| Ag      | 107  | 249.009    | ug/L        | 1.080     | 441176             | 4.973            |
| Cd      | 111  | 1038.842   | ug/L        | 0.538     | 414953             | 4.676            |
| Cd      | 114  |            | ug/L        |           | 1008124            | 11.362           |
| In      | 115  |            | ug/L        |           | 88732              | 88732.135        |
| Sn      | 120  | 1055.176   | ug/L        | 2.084     | 2017891            | 22.730           |
| Sb      | 121  | 234.536    | ug/L        | 1.950     | 353200             | 3.981            |
| Sb      | 123  |            | ug/L        |           | 275069             | 3.100            |
| Ba      | 135  |            | ug/L        |           | 488875             | 2.935            |
| Ba      | 137  | 989.052    | ug/L        | 0.830     | 847193             | 5.086            |
| Lu      | 175  |            | ug/L        |           | 166568             | 166568.153       |
| Tl      | 205  | 500.276    | ug/L        | 1.181     | 3328142            | 19.977           |
| Pb      | 208  | 5129.980   | ug/L        | 0.835     | 43889105           | 263.513          |
| Th      | 232  | 2675.752   | ug/L        | 0.911     | 26558465           | 159.459          |
| U       | 238  | 5453.922   | ug/L        | 0.992     | 58184343           | 349.349          |

Sample ID: QC Std 10

Report Date/Time: Thursday, August 25, 2011 07:45:51

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
|   | Li      | 7    | 101.705           |                    |                  |                 |                  |
|   | Be      | 9    | 99.997            |                    |                  |                 |                  |
|   | B       | 11   |                   |                    |                  |                 |                  |
|   | Na      | 23   | 104.017           |                    |                  |                 |                  |
|   | Mg      | 24   | 102.201           |                    |                  |                 |                  |
|   | Al      | 27   | 103.656           |                    |                  |                 |                  |
|   | P       | 31   | 99.374            |                    |                  |                 |                  |
|   | K       | 39   | 101.158           |                    |                  |                 |                  |
|   | Ca      | 43   | 100.666           |                    |                  |                 |                  |
| > | Sc      | 45   |                   |                    | 88.1             |                 |                  |
|   | Ti      | 47   |                   |                    |                  |                 |                  |
|   | Cr      | 52   | 102.372           |                    |                  |                 |                  |
|   | Cr      | 53   |                   |                    |                  |                 |                  |
|   | Mn      | 55   | 105.015           |                    |                  |                 |                  |
|   | Fe      | 57   | 98.268            |                    |                  |                 |                  |
|   | Co      | 59   | 108.276           |                    |                  |                 |                  |
|   | Ni      | 60   | 100.079           |                    |                  |                 |                  |
|   | Cu      | 63   |                   |                    |                  |                 |                  |
|   | Cu      | 65   | 96.519            |                    |                  |                 |                  |
|   | Zn      | 66   | 94.032            |                    |                  |                 |                  |
|   | Zn      | 67   |                   |                    |                  |                 |                  |
|   | Zn      | 68   |                   |                    |                  |                 |                  |
| > | Ge      | 74   |                   |                    | 85.6             |                 |                  |
|   | As      | 75   | 95.548            |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   | 98.194            |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Sr      | 88   | 107.490           |                    |                  |                 |                  |
|   | Zr      | 90   | 105.466           |                    |                  |                 |                  |
|   | Mo      | 98   | 105.030           |                    |                  |                 |                  |
|   | Ag      | 107  | 99.604            |                    |                  |                 |                  |
|   | Cd      | 111  | 103.884           |                    |                  |                 |                  |
|   | Cd      | 114  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   |                    | 84.6             |                 |                  |
|   | Sn      | 120  | 105.518           |                    |                  |                 |                  |
|   | Sb      | 121  | 93.814            |                    |                  |                 |                  |
|   | Sb      | 123  |                   |                    |                  |                 |                  |
|   | Ba      | 135  |                   |                    |                  |                 |                  |
|   | Ba      | 137  | 98.905            |                    |                  |                 |                  |
| > | Lu      | 175  |                   |                    | 89.2             |                 |                  |
|   | Tl      | 205  | 100.055           |                    |                  |                 |                  |
|   | Pb      | 208  | 102.600           |                    |                  |                 |                  |
|   | Th      | 232  | 107.030           |                    |                  |                 |                  |
|   | U       | 238  | 109.078           |                    |                  |                 |                  |

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: QC Std 11

Sample Date/Time: Thursday, August 25, 2011 07:48:55

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\QC Std 11.215

### Concentration Results

| Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---------|------|------------|-------------|-----------|--------------------|------------------|
| Li      | 7    | 51.377     | ug/L        | 0.940     | 15414              | 0.038            |
| Be      | 9    | 49.620     | ug/L        | 0.280     | 4287               | 0.011            |
| B       | 11   | 96.392     | ug/L        | 2.034     | 9123               | 0.022            |
| Na      | 23   | 5115.357   | ug/L        | 0.786     | 5193010            | 12.872           |
| Mg      | 24   | 5138.495   | ug/L        | 0.902     | 3600014            | 8.938            |
| Al      | 27   | 5149.813   | ug/L        | 2.163     | 5476985            | 13.597           |
| P       | 31   | 4935.666   | ug/L        | 0.792     | 336648             | 0.831            |
| K       | 39   | 4979.640   | ug/L        | 1.101     | 9798093            | 23.687           |
| Ca      | 43   | 5039.569   | ug/L        | 1.614     | 18363              | 0.045            |
| Sc      | 45   |            | ug/L        |           | 402590             | 402590.390       |
| Ti      | 47   | 49.782     | ug/L        | 0.245     | 10022              | 0.025            |
| Cr      | 52   | 48.743     | ug/L        | 1.232     | 104541             | 0.241            |
| Cr      | 53   |            | ug/L        |           | 76861              | -0.061           |
| Mn      | 55   | 50.672     | ug/L        | 1.232     | 158246             | 0.391            |
| Fe      | 57   | 5032.840   | ug/L        | 0.529     | 325447             | 0.801            |
| Co      | 59   | 51.583     | ug/L        | 0.967     | 131428             | 0.326            |
| Ni      | 60   | 52.574     | ug/L        | 0.795     | 27807              | 0.069            |
| Cu      | 63   |            | ug/L        |           | 60413              | 0.150            |
| Cu      | 65   | 51.986     | ug/L        | 0.403     | 28979              | 0.072            |
| Zn      | 66   | 49.761     | ug/L        | 0.326     | 14886              | 0.099            |
| Zn      | 67   |            | ug/L        |           | 5339               | 0.016            |
| Zn      | 68   |            | ug/L        |           | 11109              | 0.072            |
| Ge      | 74   |            | ug/L        |           | 150070             | 150069.613       |
| As      | 75   | 50.879     | ug/L        | 1.825     | 34880              | 0.127            |
| Se      | 77   |            | ug/L        |           | 6550               | -0.019           |
| Se      | 82   | 53.066     | ug/L        | 7.529     | 1680               | 0.013            |
| Kr      | 83   |            | ug/L        |           | 6342               | 0.000            |
| Sr      | 88   | 49.839     | ug/L        | 0.821     | 244797             | 2.514            |
| Zr      | 90   | 49.546     | ug/L        | 0.998     | 133552             | 1.372            |
| Mo      | 98   | 49.168     | ug/L        | 0.280     | 58232              | 0.598            |
| Ag      | 107  | 41.468     | ug/L        | 0.630     | 80603              | 0.828            |
| Cd      | 111  | 51.506     | ug/L        | 0.355     | 22583              | 0.232            |
| Cd      | 114  |            | ug/L        |           | 54841              | 0.563            |
| In      | 115  |            | ug/L        |           | 97304              | 97303.676        |
| Sn      | 120  | 50.600     | ug/L        | 0.332     | 106190             | 1.090            |
| Sb      | 121  | 51.502     | ug/L        | 0.906     | 85189              | 0.874            |
| Sb      | 123  |            | ug/L        |           | 66047              | 0.678            |
| Ba      | 135  |            | ug/L        |           | 26129              | 0.150            |
| Ba      | 137  | 50.064     | ug/L        | 0.755     | 44830              | 0.257            |
| Lu      | 175  |            | ug/L        |           | 173922             | 173921.765       |
| Tl      | 205  | 49.968     | ug/L        | 1.096     | 348036             | 1.995            |
| Pb      | 208  | 51.991     | ug/L        | 0.780     | 464898             | 2.671            |
| Th      | 232  | 53.267     | ug/L        | 0.338     | 552445             | 3.174            |
| U       | 238  | 53.827     | ug/L        | 0.720     | 600189             | 3.448            |

Sample ID: QC Std 11

Report Date/Time: Thursday, August 25, 2011 07:54:10

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |



## QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
|   | Li      | 7    | 102.754           |                    |                  |                 |                  |
|   | Be      | 9    | 99.240            |                    |                  |                 |                  |
|   | B       | 11   | 96.392            |                    |                  |                 |                  |
|   | Na      | 23   | 102.307           |                    |                  |                 |                  |
|   | Mg      | 24   | 102.770           |                    |                  |                 |                  |
|   | Al      | 27   | 101.977           |                    |                  |                 |                  |
|   | P       | 31   | 98.713            |                    |                  |                 |                  |
|   | K       | 39   | 99.593            |                    |                  |                 |                  |
|   | Ca      | 43   | 100.791           |                    |                  |                 |                  |
| > | Sc      | 45   |                   |                    | 92.5             |                 |                  |
|   | Ti      | 47   | 99.564            |                    |                  |                 |                  |
|   | Cr      | 52   | 97.486            |                    |                  |                 |                  |
|   | Cr      | 53   |                   |                    |                  |                 |                  |
|   | Mn      | 55   | 101.345           |                    |                  |                 |                  |
|   | Fe      | 57   | 100.657           |                    |                  |                 |                  |
|   | Co      | 59   | 103.165           |                    |                  |                 |                  |
|   | Ni      | 60   | 105.147           |                    |                  |                 |                  |
|   | Cu      | 63   |                   |                    |                  |                 |                  |
|   | Cu      | 65   | 103.972           |                    |                  |                 |                  |
|   | Zn      | 66   | 99.522            |                    |                  |                 |                  |
|   | Zn      | 67   |                   |                    |                  |                 |                  |
|   | Zn      | 68   |                   |                    |                  |                 |                  |
| > | Ge      | 74   |                   |                    | 91.6             |                 |                  |
|   | As      | 75   | 101.759           |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   | 106.133           |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Sr      | 88   | 99.679            |                    |                  |                 |                  |
|   | Zr      | 90   | 99.092            |                    |                  |                 |                  |
|   | Mo      | 98   | 98.336            |                    |                  |                 |                  |
|   | Ag      | 107  | 82.935            |                    |                  |                 |                  |
|   | Cd      | 111  | 103.011           |                    |                  |                 |                  |
|   | Cd      | 114  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   |                    | 92.7             |                 |                  |
|   | Sn      | 120  | 101.199           |                    |                  |                 |                  |
|   | Sb      | 121  | 103.003           |                    |                  |                 |                  |
|   | Sb      | 123  |                   |                    |                  |                 |                  |
|   | Ba      | 135  |                   |                    |                  |                 |                  |
|   | Ba      | 137  | 100.127           |                    |                  |                 |                  |
| > | Lu      | 175  |                   |                    | 93.1             |                 |                  |
|   | Tl      | 205  | 99.936            |                    |                  |                 |                  |
|   | Pb      | 208  | 103.982           |                    |                  |                 |                  |
|   | Th      | 232  | 106.535           |                    |                  |                 |                  |
|   | U       | 238  | 107.654           |                    |                  |                 |                  |

## QC Out Of Limits

|                  |         |      |                                    |
|------------------|---------|------|------------------------------------|
| Measurement Type | Analyte | Mass | Out of Limits Message              |
| QC Std 11        | Ag      |      | 107CCV is out of limits ( +/- 10%) |

## QC Action

QC Action Line: Continue

## ICPMS#7 - Summary Report

Sample ID: QC Std 12

Sample Date/Time: Thursday, August 25, 2011 07:57:15

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\QC Std 12.216

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| [ | Li      | 7    | 0.033      | ug/L        | 41.073    | 45                 | 0.000            |
|   | Be      | 9    | 0.047      | ug/L        | 80.584    | 10                 | 0.000            |
|   | B       | 11   | 1.374      | ug/L        | 56.027    | 488                | 0.000            |
|   | Na      | 23   | -0.566     | ug/L        | 41.173    | 10777              | -0.001           |
|   | Mg      | 24   | 1.341      | ug/L        | 37.140    | 2565               | 0.002            |
|   | Al      | 27   | 1.353      | ug/L        | 34.423    | 4393               | 0.004            |
|   | P       | 31   | 2.660      | ug/L        | 81.477    | 2200               | 0.000            |
|   | K       | 39   | 1.561      | ug/L        | 75.784    | 275942             | 0.007            |
|   | Ca      | 43   | 1.174      | ug/L        | 734.477   | 185                | 0.000            |
| > | Sc      | 45   |            | ug/L        |           | 419175             | 419175.470       |
|   | Ti      | 47   | -0.036     | ug/L        | 51.662    | 88                 | -0.000           |
|   | Cr      | 52   | -1.201     | ug/L        | 7.509     | 5423               | -0.006           |
|   | Cr      | 53   |            | ug/L        |           | 65103              | -0.097           |
|   | Mn      | 55   | -0.044     | ug/L        | 7.252     | 562                | -0.000           |
|   | Fe      | 57   | 1.939      | ug/L        | 53.485    | 3330               | 0.000            |
|   | Co      | 59   | 0.022      | ug/L        | 14.801    | 130                | 0.000            |
|   | Ni      | 60   | 0.018      | ug/L        | 54.485    | 55                 | 0.000            |
|   | Cu      | 63   |            | ug/L        |           | 123                | 0.000            |
| [ | Cu      | 65   | 0.032      | ug/L        | 39.738    | 65                 | 0.000            |
|   | Zn      | 66   | 0.015      | ug/L        | 134.664   | 112                | 0.000            |
|   | Zn      | 67   |            | ug/L        |           | 2781               | -0.002           |
|   | Zn      | 68   |            | ug/L        |           | 284                | 0.000            |
| > | Ge      | 74   |            | ug/L        |           | 156007             | 156006.909       |
|   | As      | 75   | 0.821      | ug/L        | 49.263    | 16758              | 0.002            |
|   | Se      | 77   |            | ug/L        |           | 5364               | -0.029           |
|   | Se      | 82   | 3.848      | ug/L        | 32.526    | -118               | 0.001            |
| [ | Kr      | 83   |            | ug/L        |           | 6507               | -0.000           |
|   | Sr      | 88   | 0.010      | ug/L        | 66.239    | 265                | 0.000            |
|   | Zr      | 90   | 0.019      | ug/L        | 32.385    | 129                | 0.001            |
|   | Mo      | 98   | 0.217      | ug/L        | 8.599     | 325                | 0.003            |
|   | Ag      | 107  | 0.009      | ug/L        | 22.198    | 46                 | 0.000            |
|   | Cd      | 111  | 0.007      | ug/L        | 213.626   | 26                 | 0.000            |
|   | Cd      | 114  |            | ug/L        |           | 67                 | 0.000            |
| > | In      | 115  |            | ug/L        |           | 100403             | 100403.035       |
|   | Sn      | 120  | 0.141      | ug/L        | 10.866    | 439                | 0.003            |
|   | Sb      | 121  | 0.846      | ug/L        | 6.810     | 1584               | 0.014            |
| [ | Sb      | 123  |            | ug/L        |           | 1255               | 0.011            |
|   | Ba      | 135  |            | ug/L        |           | 52                 | 0.000            |
|   | Ba      | 137  | 0.023      | ug/L        | 40.861    | 73                 | 0.000            |
| > | Lu      | 175  |            | ug/L        |           | 177448             | 177447.969       |
|   | Tl      | 205  | 0.524      | ug/L        | 26.949    | 4714               | 0.021            |
|   | Pb      | 208  | 0.060      | ug/L        | 35.688    | 974                | 0.003            |
|   | Th      | 232  | 0.102      | ug/L        | 14.800    | 1433               | 0.006            |
| [ | U       | 238  | 0.075      | ug/L        | 26.203    | 1396               | 0.005            |

Sample ID: QC Std 12

Report Date/Time: Thursday, August 25, 2011 08:02:32

Page 1

## Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
|   | Li      | 7    |                   |                    |                  |                 |                  |
|   | Be      | 9    |                   |                    |                  |                 |                  |
|   | B       | 11   |                   |                    |                  |                 |                  |
|   | Na      | 23   |                   |                    |                  |                 |                  |
|   | Mg      | 24   |                   |                    |                  |                 |                  |
|   | Al      | 27   |                   |                    |                  |                 |                  |
|   | P       | 31   |                   |                    |                  |                 |                  |
|   | K       | 39   |                   |                    |                  |                 |                  |
|   | Ca      | 43   |                   |                    |                  |                 |                  |
| > | Sc      | 45   |                   | 96.3               |                  |                 |                  |
|   | Ti      | 47   |                   |                    |                  |                 |                  |
|   | Cr      | 52   |                   |                    |                  |                 |                  |
|   | Cr      | 53   |                   |                    |                  |                 |                  |
|   | Mn      | 55   |                   |                    |                  |                 |                  |
|   | Fe      | 57   |                   |                    |                  |                 |                  |
|   | Co      | 59   |                   |                    |                  |                 |                  |
|   | Ni      | 60   |                   |                    |                  |                 |                  |
|   | Cu      | 63   |                   |                    |                  |                 |                  |
|   | Cu      | 65   |                   |                    |                  |                 |                  |
|   | Zn      | 66   |                   |                    |                  |                 |                  |
|   | Zn      | 67   |                   |                    |                  |                 |                  |
|   | Zn      | 68   |                   |                    |                  |                 |                  |
| > | Ge      | 74   |                   | 95.2               |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Sr      | 88   |                   |                    |                  |                 |                  |
|   | Zr      | 90   |                   |                    |                  |                 |                  |
|   | Mo      | 98   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
|   | Cd      | 111  |                   |                    |                  |                 |                  |
|   | Cd      | 114  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   | 95.7               |                  |                 |                  |
|   | Sn      | 120  |                   |                    |                  |                 |                  |
|   | Sb      | 121  |                   |                    |                  |                 |                  |
|   | Sb      | 123  |                   |                    |                  |                 |                  |
|   | Ba      | 135  |                   |                    |                  |                 |                  |
|   | Ba      | 137  |                   |                    |                  |                 |                  |
| > | Lu      | 175  |                   | 95.0               |                  |                 |                  |
|   | Tl      | 205  |                   |                    |                  |                 |                  |
|   | Pb      | 208  |                   |                    |                  |                 |                  |
|   | Th      | 232  |                   |                    |                  |                 |                  |
|   | U       | 238  |                   |                    |                  |                 |                  |

### QC Out Of Limits

Measurement Type   Analyte   MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: 1202472433

Sample Date/Time: Thursday, August 25, 2011 08:05:37

Sample Type: Sample

Sample Description: ECOL 0520 MB

Number of Replicates: 3

Batch ID: 1135453|1|prb

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\1202472433.217

### Concentration Results

| Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---------|------|------------|-------------|-----------|--------------------|------------------|
| Li      | 7    | 0.039      | ug/L        | 72.868    | 48                 | 0.000            |
| Be      | 9    | 0.023      | ug/L        | 50.726    | 8                  | 0.000            |
| B       | 11   | -0.181     | ug/L        | 194.736   | 346                | -0.000           |
| Na      | 23   | 6.113      | ug/L        | 22.506    | 18114              | 0.015            |
| Mg      | 24   | -0.360     | ug/L        | 341.807   | 1341               | -0.001           |
| Al      | 27   | 0.892      | ug/L        | 129.020   | 3941               | 0.002            |
| P       | 31   | -7.958     | ug/L        | 2.589     | 1476               | -0.001           |
| K       | 39   | 1.261      | ug/L        | 216.971   | 279959             | 0.006            |
| Ca      | 43   | 8.304      | ug/L        | 98.311    | 215                | 0.000            |
| > Sc    | 45   |            | ug/L        |           | 426272             | 426271.735       |
| Ti      | 47   | 0.020      | ug/L        | 68.124    | 102                | 0.000            |
| Cr      | 52   | -0.315     | ug/L        | 15.767    | 7382               | -0.002           |
| Cr      | 53   |            | ug/L        |           | 100969             | -0.015           |
| Mn      | 55   | 0.029      | ug/L        | 83.060    | 810                | 0.000            |
| Fe      | 57   | 2.003      | ug/L        | 71.003    | 3390               | 0.000            |
| Co      | 59   | 0.010      | ug/L        | 203.101   | 100                | 0.000            |
| Ni      | 60   | 0.051      | ug/L        | 61.677    | 74                 | 0.000            |
| Cu      | 63   |            | ug/L        |           | 195                | 0.000            |
| Cu      | 65   | 0.092      | ug/L        | 20.582    | 102                | 0.000            |
| Zn      | 66   | 0.618      | ug/L        | 11.926    | 302                | 0.001            |
| Zn      | 67   |            | ug/L        |           | 4252               | 0.007            |
| Zn      | 68   |            | ug/L        |           | 471                | 0.001            |
| > Ge    | 74   |            | ug/L        |           | 157828             | 157827.966       |
| As      | 75   | 3.439      | ug/L        | 15.161    | 17985              | 0.009            |
| Se      | 77   |            | ug/L        |           | 9002               | -0.006           |
| Se      | 82   | 3.323      | ug/L        | 94.817    | -140               | 0.001            |
| Kr      | 83   |            | ug/L        |           | 6591               | -0.000           |
| Sr      | 88   | 0.009      | ug/L        | 220.861   | 267                | 0.000            |
| Zr      | 90   | 0.016      | ug/L        | 49.765    | 124                | 0.000            |
| Mo      | 98   | 0.077      | ug/L        | 34.914    | 157                | 0.001            |
| Ag      | 107  | 0.002      | ug/L        | 410.503   | 32                 | 0.000            |
| Cd      | 111  | 0.004      | ug/L        | 614.929   | 25                 | 0.000            |
| Cd      | 114  |            | ug/L        |           | 54                 | 0.000            |
| > In    | 115  |            | ug/L        |           | 102410             | 102409.812       |
| Sn      | 120  | 0.112      | ug/L        | 15.972    | 382                | 0.002            |
| Sb      | 121  | 0.517      | ug/L        | 7.224     | 1044               | 0.009            |
| Sb      | 123  |            | ug/L        |           | 826                | 0.007            |
| Ba      | 135  |            | ug/L        |           | 112                | 0.000            |
| Ba      | 137  | 0.136      | ug/L        | 19.595    | 178                | 0.001            |
| > Lu    | 175  |            | ug/L        |           | 179687             | 179686.572       |
| Tl      | 205  | 0.111      | ug/L        | 18.145    | 1810               | 0.004            |
| Pb      | 208  | 0.072      | ug/L        | 114.199   | 1094               | 0.004            |
| Th      | 232  | 0.030      | ug/L        | 80.588    | 681                | 0.002            |
| U       | 238  | 0.058      | ug/L        | 139.029   | 1217               | 0.004            |

Sample ID: 1202472433

Report Date/Time: Thursday, August 25, 2011 08:10:54

Page 1

## Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
|   | Li      | 7    |                   |                    |                  |                 |                  |
|   | Be      | 9    |                   |                    |                  |                 |                  |
|   | B       | 11   |                   |                    |                  |                 |                  |
|   | Na      | 23   |                   |                    |                  |                 |                  |
|   | Mg      | 24   |                   |                    |                  |                 |                  |
|   | Al      | 27   |                   |                    |                  |                 |                  |
|   | P       | 31   |                   |                    |                  |                 |                  |
|   | K       | 39   |                   |                    |                  |                 |                  |
|   | Ca      | 43   |                   |                    |                  |                 |                  |
| > | Sc      | 45   |                   | 98.0               |                  |                 |                  |
|   | Ti      | 47   |                   |                    |                  |                 |                  |
|   | Cr      | 52   |                   |                    |                  |                 |                  |
|   | Cr      | 53   |                   |                    |                  |                 |                  |
|   | Mn      | 55   |                   |                    |                  |                 |                  |
|   | Fe      | 57   |                   |                    |                  |                 |                  |
|   | Co      | 59   |                   |                    |                  |                 |                  |
|   | Ni      | 60   |                   |                    |                  |                 |                  |
|   | Cu      | 63   |                   |                    |                  |                 |                  |
|   | Cu      | 65   |                   |                    |                  |                 |                  |
|   | Zn      | 66   |                   |                    |                  |                 |                  |
|   | Zn      | 67   |                   |                    |                  |                 |                  |
|   | Zn      | 68   |                   |                    |                  |                 |                  |
| > | Ge      | 74   |                   | 96.3               |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Sr      | 88   |                   |                    |                  |                 |                  |
|   | Zr      | 90   |                   |                    |                  |                 |                  |
|   | Mo      | 98   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
|   | Cd      | 111  |                   |                    |                  |                 |                  |
|   | Cd      | 114  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   | 97.6               |                  |                 |                  |
|   | Sn      | 120  |                   |                    |                  |                 |                  |
|   | Sb      | 121  |                   |                    |                  |                 |                  |
|   | Sb      | 123  |                   |                    |                  |                 |                  |
|   | Ba      | 135  |                   |                    |                  |                 |                  |
|   | Ba      | 137  |                   |                    |                  |                 |                  |
| > | Lu      | 175  |                   | 96.2               |                  |                 |                  |
|   | Tl      | 205  |                   |                    |                  |                 |                  |
|   | Pb      | 208  |                   |                    |                  |                 |                  |
|   | Th      | 232  |                   |                    |                  |                 |                  |
|   | U       | 238  |                   |                    |                  |                 |                  |

### QC Out Of Limits

Measurement Type   Analyte   MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: 1202472434

Sample Date/Time: Thursday, August 25, 2011 08:14:15

Sample Type: Sample

Sample Description: ECOL 0520 LCS

Number of Replicates: 3

Batch ID: 1135453|1|prb

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\1202472434.218

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
|   | Li      | 7    | 50.555     | ug/L        | 4.631     | 16366              | 0.038            |
|   | Be      | 9    | 49.798     | ug/L        | 3.537     | 4642               | 0.011            |
|   | B       | 11   | 94.997     | ug/L        | 2.330     | 9706               | 0.021            |
|   | Na      | 23   | 1990.659   | ug/L        | 0.645     | 2187430            | 5.009            |
|   | Mg      | 24   | 1862.093   | ug/L        | 0.056     | 1408479            | 3.239            |
|   | Al      | 27   | 1944.433   | ug/L        | 1.378     | 2232776            | 5.134            |
|   | P       | 31   | 1910.190   | ug/L        | 0.665     | 141842             | 0.322            |
|   | K       | 39   | 1886.538   | ug/L        | 0.743     | 4180359            | 8.974            |
|   | Ca      | 43   | 1955.688   | ug/L        | 1.030     | 7802               | 0.018            |
| > | Sc      | 45   |            | ug/L        |           | 434336             | 434335.866       |
|   | Ti      | 47   | 40.801     | ug/L        | 1.818     | 8879               | 0.020            |
|   | Cr      | 52   | 46.748     | ug/L        | 0.996     | 108506             | 0.231            |
|   | Cr      | 53   |            | ug/L        |           | 105614             | -0.009           |
|   | Mn      | 55   | 47.146     | ug/L        | 0.324     | 158893             | 0.364            |
|   | Fe      | 57   | 1891.792   | ug/L        | 1.223     | 134050             | 0.301            |
|   | Co      | 59   | 48.668     | ug/L        | 0.261     | 133781             | 0.308            |
|   | Ni      | 60   | 49.205     | ug/L        | 0.810     | 28079              | 0.065            |
|   | Cu      | 63   |            | ug/L        |           | 62653              | 0.144            |
|   | Cu      | 65   | 49.731     | ug/L        | 1.559     | 29911              | 0.069            |
|   | Zn      | 66   | 51.125     | ug/L        | 0.211     | 16207              | 0.101            |
|   | Zn      | 67   |            | ug/L        |           | 6853               | 0.024            |
|   | Zn      | 68   |            | ug/L        |           | 12019              | 0.074            |
| > | Ge      | 74   |            | ug/L        |           | 159065             | 159065.253       |
|   | As      | 75   | 47.632     | ug/L        | 4.659     | 35676              | 0.119            |
|   | Se      | 77   |            | ug/L        |           | 9517               | -0.003           |
|   | Se      | 82   | 52.692     | ug/L        | 2.484     | 1767               | 0.013            |
|   | Kr      | 83   |            | ug/L        |           | 6607               | -0.000           |
|   | Sr      | 88   | 46.474     | ug/L        | 0.656     | 240681             | 2.344            |
|   | Zr      | 90   | 46.390     | ug/L        | 0.796     | 131845             | 1.284            |
|   | Mo      | 98   | 45.812     | ug/L        | 0.599     | 57208              | 0.557            |
|   | Ag      | 107  | 47.759     | ug/L        | 0.659     | 97870              | 0.954            |
|   | Cd      | 111  | 49.291     | ug/L        | 0.447     | 22786              | 0.222            |
|   | Cd      | 114  |            | ug/L        |           | 56008              | 0.545            |
| > | In      | 115  |            | ug/L        |           | 102591             | 102590.672       |
|   | Sn      | 120  | 46.864     | ug/L        | 0.979     | 103699             | 1.010            |
|   | Sb      | 121  | 47.671     | ug/L        | 0.592     | 83152              | 0.809            |
|   | Sb      | 123  |            | ug/L        |           | 64382              | 0.626            |
|   | Ba      | 135  |            | ug/L        |           | 25887              | 0.143            |
|   | Ba      | 137  | 47.984     | ug/L        | 2.362     | 44677              | 0.247            |
| > | Lu      | 175  |            | ug/L        |           | 180901             | 180901.202       |
|   | Tl      | 205  | 45.971     | ug/L        | 3.519     | 332937             | 1.836            |
|   | Pb      | 208  | 49.083     | ug/L        | 1.986     | 456396             | 2.521            |
|   | Th      | 232  | 48.511     | ug/L        | 2.755     | 523124             | 2.891            |
|   | U       | 238  | 50.387     | ug/L        | 1.991     | 584247             | 3.228            |

Sample ID: 1202472434

Report Date/Time: Thursday, August 25, 2011 08:19:32

Page 1



# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
|   | Li      | 7    |                   |                    |                  |                 |                  |
|   | Be      | 9    |                   |                    |                  |                 |                  |
|   | B       | 11   |                   |                    |                  |                 |                  |
|   | Na      | 23   |                   |                    |                  |                 |                  |
|   | Mg      | 24   |                   |                    |                  |                 |                  |
|   | Al      | 27   |                   |                    |                  |                 |                  |
|   | P       | 31   |                   |                    |                  |                 |                  |
|   | K       | 39   |                   |                    |                  |                 |                  |
|   | Ca      | 43   |                   |                    |                  |                 |                  |
| > | Sc      | 45   |                   | 99.8               |                  |                 |                  |
|   | Ti      | 47   |                   |                    |                  |                 |                  |
|   | Cr      | 52   |                   |                    |                  |                 |                  |
|   | Cr      | 53   |                   |                    |                  |                 |                  |
|   | Mn      | 55   |                   |                    |                  |                 |                  |
|   | Fe      | 57   |                   |                    |                  |                 |                  |
|   | Co      | 59   |                   |                    |                  |                 |                  |
|   | Ni      | 60   |                   |                    |                  |                 |                  |
|   | Cu      | 63   |                   |                    |                  |                 |                  |
|   | Cu      | 65   |                   |                    |                  |                 |                  |
|   | Zn      | 66   |                   |                    |                  |                 |                  |
|   | Zn      | 67   |                   |                    |                  |                 |                  |
|   | Zn      | 68   |                   |                    |                  |                 |                  |
| > | Ge      | 74   |                   | 97.1               |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Sr      | 88   |                   |                    |                  |                 |                  |
|   | Zr      | 90   |                   |                    |                  |                 |                  |
|   | Mo      | 98   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
|   | Cd      | 111  |                   |                    |                  |                 |                  |
|   | Cd      | 114  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   | 97.8               |                  |                 |                  |
|   | Sn      | 120  |                   |                    |                  |                 |                  |
|   | Sb      | 121  |                   |                    |                  |                 |                  |
|   | Sb      | 123  |                   |                    |                  |                 |                  |
|   | Ba      | 135  |                   |                    |                  |                 |                  |
|   | Ba      | 137  |                   |                    |                  |                 |                  |
| > | Lu      | 175  |                   | 96.8               |                  |                 |                  |
|   | Tl      | 205  |                   |                    |                  |                 |                  |
|   | Pb      | 208  |                   |                    |                  |                 |                  |
|   | Th      | 232  |                   |                    |                  |                 |                  |
|   | U       | 238  |                   |                    |                  |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: QC Std 13

Sample Date/Time: Thursday, August 25, 2011 08:22:36

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\QC Std 13.219

### Concentration Results

| Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---------|------|------------|-------------|-----------|--------------------|------------------|
| Li      | 7    | 50.650     | ug/L        | 2.415     | 16151              | 0.038            |
| Be      | 9    | 48.105     | ug/L        | 1.982     | 4417               | 0.010            |
| B       | 11   | 101.577    | ug/L        | 1.026     | 10198              | 0.023            |
| Na      | 23   | 5032.353   | ug/L        | 0.661     | 5430020            | 12.663           |
| Mg      | 24   | 5044.881   | ug/L        | 0.328     | 3756580            | 8.775            |
| Al      | 27   | 5145.660   | ug/L        | 0.600     | 5816308            | 13.586           |
| P       | 31   | 4926.490   | ug/L        | 1.083     | 357153             | 0.830            |
| K       | 39   | 4928.106   | ug/L        | 1.170     | 10308730           | 23.441           |
| Ca      | 43   | 5030.719   | ug/L        | 0.883     | 19485              | 0.045            |
| Sc      | 45   |            | ug/L        |           | 427904             | 427903.547       |
| Ti      | 47   | 49.233     | ug/L        | 0.940     | 10535              | 0.024            |
| Cr      | 52   | 47.945     | ug/L        | 0.244     | 109426             | 0.237            |
| Cr      | 53   |            | ug/L        |           | 85068              | -0.053           |
| Mn      | 55   | 49.885     | ug/L        | 0.281     | 165591             | 0.385            |
| Fe      | 57   | 4911.503   | ug/L        | 0.585     | 337642             | 0.781            |
| Co      | 59   | 50.091     | ug/L        | 0.601     | 135651             | 0.317            |
| Ni      | 60   | 50.781     | ug/L        | 1.618     | 28549              | 0.067            |
| Cu      | 63   |            | ug/L        |           | 62652              | 0.146            |
| Cu      | 65   | 49.936     | ug/L        | 0.481     | 29587              | 0.069            |
| Zn      | 66   | 49.184     | ug/L        | 1.053     | 15430              | 0.097            |
| Zn      | 67   |            | ug/L        |           | 5553               | 0.016            |
| Zn      | 68   |            | ug/L        |           | 11502              | 0.071            |
| Ge      | 74   |            | ug/L        |           | 157373             | 157372.563       |
| As      | 75   | 48.080     | ug/L        | 3.347     | 35474              | 0.120            |
| Se      | 77   |            | ug/L        |           | 7232               | -0.017           |
| Se      | 82   | 55.356     | ug/L        | 5.070     | 1850               | 0.013            |
| Kr      | 83   |            | ug/L        |           | 6490               | -0.001           |
| Sr      | 88   | 50.057     | ug/L        | 1.208     | 254914             | 2.525            |
| Zr      | 90   | 49.287     | ug/L        | 2.732     | 137737             | 1.365            |
| Mo      | 98   | 48.195     | ug/L        | 0.994     | 59183              | 0.586            |
| Ag      | 107  | 40.983     | ug/L        | 0.266     | 82600              | 0.818            |
| Cd      | 111  | 51.183     | ug/L        | 0.845     | 23268              | 0.230            |
| Cd      | 114  |            | ug/L        |           | 56808              | 0.563            |
| In      | 115  |            | ug/L        |           | 100893             | 100892.682       |
| Sn      | 120  | 49.302     | ug/L        | 0.187     | 107285             | 1.062            |
| Sb      | 121  | 48.429     | ug/L        | 0.605     | 83073              | 0.822            |
| Sb      | 123  |            | ug/L        |           | 64969              | 0.643            |
| Ba      | 135  |            | ug/L        |           | 26446              | 0.147            |
| Ba      | 137  | 49.462     | ug/L        | 0.661     | 45759              | 0.254            |
| Lu      | 175  |            | ug/L        |           | 179690             | 179689.952       |
| Tl      | 205  | 48.687     | ug/L        | 0.394     | 350370             | 1.944            |
| Pb      | 208  | 50.921     | ug/L        | 0.356     | 470431             | 2.616            |
| Th      | 232  | 50.974     | ug/L        | 1.207     | 546233             | 3.038            |
| U       | 238  | 52.409     | ug/L        | 0.131     | 603784             | 3.357            |

Sample ID: QC Std 13

Report Date/Time: Thursday, August 25, 2011 08:27:51

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| Li      | 7    | 101.300           |                    |                  |                 |                  |
| Be      | 9    | 96.211            |                    |                  |                 |                  |
| B       | 11   | 101.577           |                    |                  |                 |                  |
| Na      | 23   | 100.647           |                    |                  |                 |                  |
| Mg      | 24   | 100.898           |                    |                  |                 |                  |
| Al      | 27   | 101.894           |                    |                  |                 |                  |
| P       | 31   | 98.530            |                    |                  |                 |                  |
| K       | 39   | 98.562            |                    |                  |                 |                  |
| Ca      | 43   | 100.614           |                    |                  |                 |                  |
| > Sc    | 45   |                   |                    | 98.3             |                 |                  |
| Ti      | 47   | 98.466            |                    |                  |                 |                  |
| Cr      | 52   | 95.889            |                    |                  |                 |                  |
| Cr      | 53   |                   |                    |                  |                 |                  |
| Mn      | 55   | 99.769            |                    |                  |                 |                  |
| Fe      | 57   | 98.230            |                    |                  |                 |                  |
| Co      | 59   | 100.181           |                    |                  |                 |                  |
| Ni      | 60   | 101.562           |                    |                  |                 |                  |
| Cu      | 63   |                   |                    |                  |                 |                  |
| Cu      | 65   | 99.871            |                    |                  |                 |                  |
| Zn      | 66   | 98.369            |                    |                  |                 |                  |
| Zn      | 67   |                   |                    |                  |                 |                  |
| Zn      | 68   |                   |                    |                  |                 |                  |
| > Ge    | 74   |                   |                    | 96.0             |                 |                  |
| As      | 75   | 96.160            |                    |                  |                 |                  |
| Se      | 77   |                   |                    |                  |                 |                  |
| Se      | 82   | 110.711           |                    |                  |                 |                  |
| Kr      | 83   |                   |                    |                  |                 |                  |
| Sr      | 88   | 100.114           |                    |                  |                 |                  |
| Zr      | 90   | 98.573            |                    |                  |                 |                  |
| Mo      | 98   | 96.390            |                    |                  |                 |                  |
| Ag      | 107  | 81.966            |                    |                  |                 |                  |
| Cd      | 111  | 102.367           |                    |                  |                 |                  |
| Cd      | 114  |                   |                    |                  |                 |                  |
| > In    | 115  |                   |                    | 96.2             |                 |                  |
| Sn      | 120  | 98.605            |                    |                  |                 |                  |
| Sb      | 121  | 96.857            |                    |                  |                 |                  |
| Sb      | 123  |                   |                    |                  |                 |                  |
| Ba      | 135  |                   |                    |                  |                 |                  |
| Ba      | 137  | 98.925            |                    |                  |                 |                  |
| > Lu    | 175  |                   |                    | 96.2             |                 |                  |
| Tl      | 205  | 97.373            |                    |                  |                 |                  |
| Pb      | 208  | 101.842           |                    |                  |                 |                  |
| Th      | 232  | 101.949           |                    |                  |                 |                  |
| U       | 238  | 104.818           |                    |                  |                 |                  |

## QC Out Of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message           |
|------------------|---------|------|---------------------------------|
| QC Std 13        | Se      | 82   | CCV is out of limits ( +/- 10%) |
| QC Std 13        | Ag      | 107  | CCV is out of limits ( +/- 10%) |

## QC Action

QC Action Line: Continue

## ICPMS#7 - Summary Report

Sample ID: QC Std 15

Sample Date/Time: Thursday, August 25, 2011 08:31:13

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\QC Std 15.220

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
|   | Li      | 7    | 0.003      | ug/L        | 179.201   | 37                 | 0.000            |
|   | Be      | 9    | 0.015      | ug/L        | 233.611   | 8                  | 0.000            |
|   | B       | 11   | 2.531      | ug/L        | 23.439    | 620                | 0.001            |
|   | Na      | 23   | -2.113     | ug/L        | 5.009     | 9487               | -0.005           |
|   | Mg      | 24   | 1.126      | ug/L        | 11.399    | 2498               | 0.002            |
|   | Al      | 27   | 1.113      | ug/L        | 8.644     | 4283               | 0.003            |
|   | P       | 31   | -0.565     | ug/L        | 115.805   | 2047               | -0.000           |
|   | K       | 39   | -4.787     | ug/L        | 23.812    | 273073             | -0.023           |
|   | Ca      | 43   | -7.239     | ug/L        | 57.699    | 159                | -0.000           |
| > | Sc      | 45   |            | ug/L        |           | 434744             | 434743.737       |
|   | Ti      | 47   | -0.027     | ug/L        | 117.058   | 94                 | -0.000           |
|   | Cr      | 52   | -1.348     | ug/L        | 5.034     | 5309               | -0.007           |
|   | Cr      | 53   |            | ug/L        |           | 69718              | -0.092           |
|   | Mn      | 55   | -0.045     | ug/L        | 10.552    | 578                | -0.000           |
|   | Fe      | 57   | 1.817      | ug/L        | 30.301    | 3445               | 0.000            |
|   | Co      | 59   | 0.014      | ug/L        | 13.513    | 113                | 0.000            |
|   | Ni      | 60   | 0.013      | ug/L        | 70.431    | 54                 | 0.000            |
|   | Cu      | 63   |            | ug/L        |           | 97                 | 0.000            |
|   | Cu      | 65   | 0.019      | ug/L        | 7.703     | 60                 | 0.000            |
|   | Zn      | 66   | 0.051      | ug/L        | 23.521    | 127                | 0.000            |
|   | Zn      | 67   |            | ug/L        |           | 2780               | -0.002           |
|   | Zn      | 68   |            | ug/L        |           | 265                | -0.000           |
| > | Ge      | 74   |            | ug/L        |           | 160545             | 160545.348       |
|   | As      | 75   | 0.945      | ug/L        | 93.941    | 17295              | 0.002            |
|   | Se      | 77   |            | ug/L        |           | 5655               | -0.028           |
|   | Se      | 82   | -1.711     | ug/L        | 122.506   | -339               | -0.000           |
|   | Kr      | 83   |            | ug/L        |           | 6694               | -0.000           |
|   | Sr      | 88   | 0.005      | ug/L        | 32.147    | 250                | 0.000            |
|   | Zr      | 90   | 0.016      | ug/L        | 13.456    | 125                | 0.000            |
|   | Mo      | 98   | 0.086      | ug/L        | 9.088     | 171                | 0.001            |
|   | Ag      | 107  | 0.008      | ug/L        | 36.789    | 46                 | 0.000            |
|   | Cd      | 111  | 0.004      | ug/L        | 273.244   | 25                 | 0.000            |
|   | Cd      | 114  |            | ug/L        |           | 65                 | 0.000            |
| > | In      | 115  |            | ug/L        |           | 104052             | 104051.984       |
|   | Sn      | 120  | 0.041      | ug/L        | 17.946    | 229                | 0.001            |
|   | Sb      | 121  | 0.277      | ug/L        | 6.582     | 636                | 0.005            |
|   | Sb      | 123  |            | ug/L        |           | 527                | 0.004            |
|   | Ba      | 135  |            | ug/L        |           | 54                 | 0.000            |
|   | Ba      | 137  | 0.009      | ug/L        | 41.513    | 62                 | 0.000            |
| > | Lu      | 175  |            | ug/L        |           | 183380             | 183379.994       |
|   | Tl      | 205  | 0.531      | ug/L        | 20.688    | 4923               | 0.021            |
|   | Pb      | 208  | 0.033      | ug/L        | 11.453    | 748                | 0.002            |
|   | Th      | 232  | 0.066      | ug/L        | 7.484     | 1094               | 0.004            |
|   | U       | 238  | 0.038      | ug/L        | 2.807     | 1007               | 0.002            |

Sample ID: QC Std 15

Report Date/Time: Thursday, August 25, 2011 08:36:30

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| Li      | 7    |                   |                    |                  |                 |                  |
| Be      | 9    |                   |                    |                  |                 |                  |
| B       | 11   |                   |                    |                  |                 |                  |
| Na      | 23   |                   |                    |                  |                 |                  |
| Mg      | 24   |                   |                    |                  |                 |                  |
| Al      | 27   |                   |                    |                  |                 |                  |
| P       | 31   |                   |                    |                  |                 |                  |
| K       | 39   |                   |                    |                  |                 |                  |
| Ca      | 43   |                   |                    |                  |                 |                  |
| > Sc    | 45   |                   | 99.9               |                  |                 |                  |
| Ti      | 47   |                   |                    |                  |                 |                  |
| Cr      | 52   |                   |                    |                  |                 |                  |
| Cr      | 53   |                   |                    |                  |                 |                  |
| Mn      | 55   |                   |                    |                  |                 |                  |
| Fe      | 57   |                   |                    |                  |                 |                  |
| Co      | 59   |                   |                    |                  |                 |                  |
| Ni      | 60   |                   |                    |                  |                 |                  |
| Cu      | 63   |                   |                    |                  |                 |                  |
| Cu      | 65   |                   |                    |                  |                 |                  |
| Zn      | 66   |                   |                    |                  |                 |                  |
| Zn      | 67   |                   |                    |                  |                 |                  |
| Zn      | 68   |                   |                    |                  |                 |                  |
| > Ge    | 74   |                   | 98.0               |                  |                 |                  |
| As      | 75   |                   |                    |                  |                 |                  |
| Se      | 77   |                   |                    |                  |                 |                  |
| Se      | 82   |                   |                    |                  |                 |                  |
| Kr      | 83   |                   |                    |                  |                 |                  |
| Sr      | 88   |                   |                    |                  |                 |                  |
| Zr      | 90   |                   |                    |                  |                 |                  |
| Mo      | 98   |                   |                    |                  |                 |                  |
| Ag      | 107  |                   |                    |                  |                 |                  |
| Cd      | 111  |                   |                    |                  |                 |                  |
| Cd      | 114  |                   |                    |                  |                 |                  |
| > In    | 115  |                   | 99.2               |                  |                 |                  |
| Sn      | 120  |                   |                    |                  |                 |                  |
| Sb      | 121  |                   |                    |                  |                 |                  |
| Sb      | 123  |                   |                    |                  |                 |                  |
| Ba      | 135  |                   |                    |                  |                 |                  |
| Ba      | 137  |                   |                    |                  |                 |                  |
| > Lu    | 175  |                   | 98.2               |                  |                 |                  |
| Tl      | 205  |                   |                    |                  |                 |                  |
| Pb      | 208  |                   |                    |                  |                 |                  |
| Th      | 232  |                   |                    |                  |                 |                  |
| U       | 238  |                   |                    |                  |                 |                  |

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



## ICPMS#7 - Summary Report

Sample ID: 284538001

Sample Date/Time: Thursday, August 25, 2011 08:39:52

Sample Type: Sample

Sample Description: ECOL 0520

Number of Replicates: 3

Batch ID: 1135453|1|prb

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\284538001.221

### Concentration Results

| Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---------|------|------------|-------------|-----------|--------------------|------------------|
| Li      | 7    | 1.738      | ug/L        | 5.896     | 650                | 0.001            |
| Be      | 9    | 0.209      | ug/L        | 6.983     | 28                 | 0.000            |
| B       | 11   | 12.960     | ug/L        | 3.722     | 1789               | 0.003            |
| Na      | 23   | 3586.289   | ug/L        | 0.502     | 4279730            | 9.024            |
| Mg      | 24   | 2590.439   | ug/L        | 0.157     | 2132270            | 4.506            |
| Al      | 27   | 8171.490   | ug/L        | 0.534     | 10203948           | 21.575           |
| P       | 31   | 285.390    | ug/L        | 1.439     | 25000              | 0.048            |
| K       | 39   | 907.245    | ug/L        | 0.182     | 2348111            | 4.315            |
| Ca      | 43   | 4933.735   | ug/L        | 0.840     | 21117              | 0.044            |
| Sc      | 45   |            | ug/L        |           | 472810             | 472810.238       |
| Ti      | 47   | 269.400    | ug/L        | 0.840     | 63211              | 0.133            |
| Cr      | 52   | 14.515     | ug/L        | 2.173     | 42820              | 0.072            |
| Cr      | 53   |            | ug/L        |           | 95889              | -0.049           |
| Mn      | 55   | 274.511    | ug/L        | 0.736     | 1003334            | 2.120            |
| Fe      | 57   | 6846.841   | ug/L        | 1.661     | 518631             | 1.089            |
| Co      | 59   | 5.142      | ug/L        | 0.445     | 15457              | 0.033            |
| Ni      | 60   | 16.378     | ug/L        | 1.893     | 10208              | 0.021            |
| Cu      | 63   |            | ug/L        |           | 13948              | 0.029            |
| Cu      | 65   | 10.038     | ug/L        | 1.336     | 6613               | 0.014            |
| Zn      | 66   | 14.925     | ug/L        | 1.718     | 5010               | 0.030            |
| Zn      | 67   |            | ug/L        |           | 4398               | 0.007            |
| Zn      | 68   |            | ug/L        |           | 4425               | 0.025            |
| Ge      | 74   |            | ug/L        |           | 165693             | 165692.952       |
| As      | 75   | 1.608      | ug/L        | 68.809    | 18125              | 0.004            |
| Se      | 77   |            | ug/L        |           | 8161               | -0.014           |
| Se      | 82   | -1.065     | ug/L        | 158.453   | -323               | -0.000           |
| Kr      | 83   |            | ug/L        |           | 6707               | -0.001           |
| Sr      | 88   | 38.980     | ug/L        | 1.747     | 208248             | 1.966            |
| Zr      | 90   | 5.684      | ug/L        | 2.654     | 16729              | 0.157            |
| Mo      | 98   | 2.103      | ug/L        | 1.534     | 2769               | 0.026            |
| Ag      | 107  | 0.101      | ug/L        | 1.130     | 242                | 0.002            |
| Cd      | 111  | 0.060      | ug/L        | 19.483    | 53                 | 0.000            |
| Cd      | 114  |            | ug/L        |           | 100                | 0.000            |
| In      | 115  |            | ug/L        |           | 105822             | 105821.601       |
| Sn      | 120  | 0.190      | ug/L        | 0.826     | 574                | 0.004            |
| Sb      | 121  | 0.433      | ug/L        | 1.586     | 928                | 0.007            |
| Sb      | 123  |            | ug/L        |           | 752                | 0.006            |
| Ba      | 135  |            | ug/L        |           | 64226              | 0.332            |
| Ba      | 137  | 111.639    | ug/L        | 1.908     | 111075             | 0.574            |
| Lu      | 175  |            | ug/L        |           | 193397             | 193397.323       |
| Tl      | 205  | 0.167      | ug/L        | 9.690     | 2384               | 0.007            |
| Pb      | 208  | 3.581      | ug/L        | 0.959     | 36032              | 0.184            |
| Th      | 232  | 0.144      | ug/L        | 1.028     | 2050               | 0.009            |
| U       | 238  | 0.163      | ug/L        | 3.079     | 2617               | 0.010            |

Sample ID: 284538001

Report Date/Time: Thursday, August 25, 2011 08:45:08

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| Li      | 7    |                   |                    |                  |                 |                  |
| Be      | 9    |                   |                    |                  |                 |                  |
| B       | 11   |                   |                    |                  |                 |                  |
| Na      | 23   |                   |                    |                  |                 |                  |
| Mg      | 24   |                   |                    |                  |                 |                  |
| Al      | 27   |                   |                    |                  |                 |                  |
| P       | 31   |                   |                    |                  |                 |                  |
| K       | 39   |                   |                    |                  |                 |                  |
| Ca      | 43   |                   |                    |                  |                 |                  |
| > Sc    | 45   |                   | 108.6              |                  |                 |                  |
| Ti      | 47   |                   |                    |                  |                 |                  |
| Cr      | 52   |                   |                    |                  |                 |                  |
| Cr      | 53   |                   |                    |                  |                 |                  |
| Mn      | 55   |                   |                    |                  |                 |                  |
| Fe      | 57   |                   |                    |                  |                 |                  |
| Co      | 59   |                   |                    |                  |                 |                  |
| Ni      | 60   |                   |                    |                  |                 |                  |
| Cu      | 63   |                   |                    |                  |                 |                  |
| Cu      | 65   |                   |                    |                  |                 |                  |
| Zn      | 66   |                   |                    |                  |                 |                  |
| Zn      | 67   |                   |                    |                  |                 |                  |
| Zn      | 68   |                   |                    |                  |                 |                  |
| > Ge    | 74   |                   | 101.1              |                  |                 |                  |
| As      | 75   |                   |                    |                  |                 |                  |
| Se      | 77   |                   |                    |                  |                 |                  |
| Se      | 82   |                   |                    |                  |                 |                  |
| Kr      | 83   |                   |                    |                  |                 |                  |
| Sr      | 88   |                   |                    |                  |                 |                  |
| Zr      | 90   |                   |                    |                  |                 |                  |
| Mo      | 98   |                   |                    |                  |                 |                  |
| Ag      | 107  |                   |                    |                  |                 |                  |
| Cd      | 111  |                   |                    |                  |                 |                  |
| Cd      | 114  |                   |                    |                  |                 |                  |
| > In    | 115  |                   | 100.9              |                  |                 |                  |
| Sn      | 120  |                   |                    |                  |                 |                  |
| Sb      | 121  |                   |                    |                  |                 |                  |
| Sb      | 123  |                   |                    |                  |                 |                  |
| Ba      | 135  |                   |                    |                  |                 |                  |
| Ba      | 137  |                   |                    |                  |                 |                  |
| > Lu    | 175  |                   | 103.5              |                  |                 |                  |
| Tl      | 205  |                   |                    |                  |                 |                  |
| Pb      | 208  |                   |                    |                  |                 |                  |
| Th      | 232  |                   |                    |                  |                 |                  |
| U       | 238  |                   |                    |                  |                 |                  |

## QC Out Of Limits

|                       |         |  |
|-----------------------|---------|--|
| Measurement Type      | Analyte | MassOut of Limits Message                      |
| Ti 47 Upper, S, EEETi |         | 47Sample is out of limits (over linear range)_ |

## QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: 1202472435

Sample Date/Time: Thursday, August 25, 2011 08:48:13

Sample Type: Sample

Sample Description: ECOL 0520 MS

Number of Replicates: 3

Batch ID: 1135453|1|prb

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\1202472435.222

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
|   | Li      | 7    | 59.477     | ug/L        | 1.120     | 21630              | 0.044            |
|   | Be      | 9    | 52.267     | ug/L        | 0.288     | 5474               | 0.011            |
|   | B       | 11   | 116.478    | ug/L        | 0.526     | 13280              | 0.026            |
|   | Na      | 23   | 5732.461   | ug/L        | 1.410     | 7054504            | 14.425           |
|   | Mg      | 24   | 4654.306   | ug/L        | 0.886     | 3953828            | 8.096            |
|   | Al      | 27   | 10692.658  | ug/L        | 0.566     | 13784414           | 28.232           |
|   | P       | 31   | 2130.760   | ug/L        | 0.564     | 177550             | 0.359            |
|   | K       | 39   | 2788.840   | ug/L        | 0.114     | 6793144            | 13.266           |
|   | Ca      | 43   | 6951.318   | ug/L        | 0.193     | 30632              | 0.062            |
| > | Sc      | 45   |            | ug/L        |           | 488136             | 488135.914       |
|   | Ti      | 47   | 332.646    | ug/L        | 0.379     | 80560              | 0.165            |
|   | Cr      | 52   | 60.651     | ug/L        | 0.269     | 155472             | 0.300            |
|   | Cr      | 53   |            | ug/L        |           | 96812              | -0.054           |
|   | Mn      | 55   | 325.719    | ug/L        | 1.017     | 1228907            | 2.516            |
|   | Fe      | 57   | 8810.420   | ug/L        | 0.507     | 687988             | 1.402            |
|   | Co      | 59   | 52.376     | ug/L        | 0.766     | 161803             | 0.331            |
|   | Ni      | 60   | 62.489     | ug/L        | 0.435     | 40064              | 0.082            |
|   | Cu      | 63   |            | ug/L        |           | 79469              | 0.163            |
|   | Cu      | 65   | 56.068     | ug/L        | 0.065     | 37892              | 0.078            |
|   | Zn      | 66   | 63.816     | ug/L        | 0.827     | 21302              | 0.126            |
|   | Zn      | 67   |            | ug/L        |           | 6898               | 0.022            |
|   | Zn      | 68   |            | ug/L        |           | 16310              | 0.095            |
| > | Ge      | 74   |            | ug/L        |           | 167709             | 167709.174       |
|   | As      | 75   | 47.564     | ug/L        | 3.270     | 37592              | 0.119            |
|   | Se      | 77   |            | ug/L        |           | 9213               | -0.008           |
|   | Se      | 82   | 56.075     | ug/L        | 5.312     | 2001               | 0.014            |
|   | Kr      | 83   |            | ug/L        |           | 6695               | -0.002           |
|   | Sr      | 88   | 88.808     | ug/L        | 1.492     | 485108             | 4.479            |
|   | Zr      | 90   | 33.242     | ug/L        | 1.062     | 99734              | 0.920            |
|   | Mo      | 98   | 48.850     | ug/L        | 0.632     | 64374              | 0.594            |
|   | Ag      | 107  | 47.594     | ug/L        | 1.013     | 102925             | 0.950            |
|   | Cd      | 111  | 49.931     | ug/L        | 1.287     | 24359              | 0.225            |
|   | Cd      | 114  |            | ug/L        |           | 59445              | 0.549            |
| > | In      | 115  |            | ug/L        |           | 108265             | 108264.998       |
|   | Sn      | 120  | 48.570     | ug/L        | 0.532     | 113420             | 1.046            |
|   | Sb      | 121  | 47.468     | ug/L        | 0.464     | 87376              | 0.806            |
|   | Sb      | 123  |            | ug/L        |           | 67429              | 0.622            |
|   | Ba      | 135  |            | ug/L        |           | 92028              | 0.458            |
|   | Ba      | 137  | 155.745    | ug/L        | 1.916     | 160819             | 0.801            |
| > | Lu      | 175  |            | ug/L        |           | 200761             | 200760.734       |
|   | Tl      | 205  | 44.803     | ug/L        | 1.920     | 360399             | 1.789            |
|   | Pb      | 208  | 51.172     | ug/L        | 0.587     | 528162             | 2.629            |
|   | Th      | 232  | 42.236     | ug/L        | 1.011     | 505672             | 2.517            |
|   | U       | 238  | 48.217     | ug/L        | 1.039     | 620600             | 3.089            |

Sample ID: 1202472435

Report Date/Time: Thursday, August 25, 2011 08:53:30

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
|   | Li      | 7    |                   |                    |                  |                 |                  |
|   | Be      | 9    |                   |                    |                  |                 |                  |
|   | B       | 11   |                   |                    |                  |                 |                  |
|   | Na      | 23   |                   |                    |                  |                 |                  |
|   | Mg      | 24   |                   |                    |                  |                 |                  |
|   | Al      | 27   |                   |                    |                  |                 |                  |
|   | P       | 31   |                   |                    |                  |                 |                  |
|   | K       | 39   |                   |                    |                  |                 |                  |
|   | Ca      | 43   |                   |                    |                  |                 |                  |
| > | Sc      | 45   |                   | 112.2              |                  |                 |                  |
|   | Ti      | 47   |                   |                    |                  |                 |                  |
|   | Cr      | 52   |                   |                    |                  |                 |                  |
|   | Cr      | 53   |                   |                    |                  |                 |                  |
|   | Mn      | 55   |                   |                    |                  |                 |                  |
|   | Fe      | 57   |                   |                    |                  |                 |                  |
|   | Co      | 59   |                   |                    |                  |                 |                  |
|   | Ni      | 60   |                   |                    |                  |                 |                  |
|   | Cu      | 63   |                   |                    |                  |                 |                  |
|   | Cu      | 65   |                   |                    |                  |                 |                  |
|   | Zn      | 66   |                   |                    |                  |                 |                  |
|   | Zn      | 67   |                   |                    |                  |                 |                  |
|   | Zn      | 68   |                   |                    |                  |                 |                  |
| > | Ge      | 74   |                   | 102.3              |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Sr      | 88   |                   |                    |                  |                 |                  |
|   | Zr      | 90   |                   |                    |                  |                 |                  |
|   | Mo      | 98   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
|   | Cd      | 111  |                   |                    |                  |                 |                  |
|   | Cd      | 114  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   | 103.2              |                  |                 |                  |
|   | Sn      | 120  |                   |                    |                  |                 |                  |
|   | Sb      | 121  |                   |                    |                  |                 |                  |
|   | Sb      | 123  |                   |                    |                  |                 |                  |
|   | Ba      | 135  |                   |                    |                  |                 |                  |
|   | Ba      | 137  |                   |                    |                  |                 |                  |
| > | Lu      | 175  |                   | 107.5              |                  |                 |                  |
|   | Tl      | 205  |                   |                    |                  |                 |                  |
|   | Pb      | 208  |                   |                    |                  |                 |                  |
|   | Th      | 232  |                   |                    |                  |                 |                  |
|   | U       | 238  |                   |                    |                  |                 |                  |

### QC Out Of Limits

| Measurement Type      | Analyte | Mass | Out of Limits Message                        |
|-----------------------|---------|------|--|
| Ti 47 Upper, S, EEETi |         | 47   | Sample is out of limits (over linear range)_ |

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: 1202472436

Sample Date/Time: Thursday, August 25, 2011 08:56:34

Sample Type: Sample

Sample Description: ECOL 0520 MSD

Number of Replicates: 3

Batch ID: 1135453|1|prb

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\1202472436.223

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| [ | Li      | 7    | 67.597     | ug/L        | 2.447     | 24457              | 0.050            |
|   | Be      | 9    | 58.096     | ug/L        | 0.344     | 6055               | 0.012            |
|   | B       | 11   | 137.084    | ug/L        | 2.821     | 15485              | 0.031            |
|   | Na      | 23   | 5757.860   | ug/L        | 1.203     | 7051231            | 14.488           |
|   | Mg      | 24   | 4665.620   | ug/L        | 0.739     | 3944296            | 8.116            |
|   | Al      | 27   | 10783.124  | ug/L        | 0.195     | 13833706           | 28.471           |
|   | P       | 31   | 2158.332   | ug/L        | 0.867     | 178951             | 0.364            |
|   | K       | 39   | 2763.774   | ug/L        | 0.735     | 6702333            | 13.146           |
|   | Ca      | 43   | 6858.909   | ug/L        | 0.149     | 30081              | 0.061            |
| > | Sc      | 45   |            | ug/L        |           | 485783             | 485782.962       |
|   | Ti      | 47   | 332.472    | ug/L        | 1.531     | 80117              | 0.165            |
|   | Cr      | 52   | 60.982     | ug/L        | 1.637     | 155492             | 0.301            |
|   | Cr      | 53   |            | ug/L        |           | 122782             | 0.001            |
|   | Mn      | 55   | 318.552    | ug/L        | 1.491     | 1195886            | 2.460            |
|   | Fe      | 57   | 8773.038   | ug/L        | 0.817     | 681723             | 1.396            |
|   | Co      | 59   | 51.035     | ug/L        | 1.035     | 156882             | 0.323            |
|   | Ni      | 60   | 61.718     | ug/L        | 1.228     | 39375              | 0.081            |
|   | Cu      | 63   |            | ug/L        |           | 77185              | 0.159            |
| [ | Cu      | 65   | 54.823     | ug/L        | 0.616     | 36870              | 0.076            |
|   | Zn      | 66   | 64.555     | ug/L        | 0.662     | 21410              | 0.128            |
|   | Zn      | 67   |            | ug/L        |           | 8344               | 0.031            |
|   | Zn      | 68   |            | ug/L        |           | 16270              | 0.096            |
| > | Ge      | 74   |            | ug/L        |           | 166637             | 166636.613       |
|   | As      | 75   | 45.548     | ug/L        | 5.315     | 36520              | 0.114            |
|   | Se      | 77   |            | ug/L        |           | 12334              | 0.011            |
|   | Se      | 82   | 55.861     | ug/L        | 5.196     | 1980               | 0.014            |
| [ | Kr      | 83   |            | ug/L        |           | 6113               | -0.005           |
|   | Sr      | 88   | 89.038     | ug/L        | 0.427     | 483473             | 4.491            |
|   | Zr      | 90   | 36.944     | ug/L        | 0.368     | 110160             | 1.023            |
|   | Mo      | 98   | 49.216     | ug/L        | 0.678     | 64466              | 0.598            |
|   | Ag      | 107  | 48.103     | ug/L        | 0.725     | 103404             | 0.961            |
|   | Cd      | 111  | 50.847     | ug/L        | 0.600     | 24656              | 0.229            |
|   | Cd      | 114  |            | ug/L        |           | 59982              | 0.557            |
| > | In      | 115  |            | ug/L        |           | 107613             | 107613.254       |
|   | Sn      | 120  | 49.665     | ug/L        | 1.389     | 115267             | 1.070            |
|   | Sb      | 121  | 48.123     | ug/L        | 0.847     | 88044              | 0.817            |
| [ | Sb      | 123  |            | ug/L        |           | 68310              | 0.634            |
|   | Ba      | 135  |            | ug/L        |           | 90677              | 0.447            |
|   | Ba      | 137  | 150.688    | ug/L        | 0.106     | 157125             | 0.775            |
| > | Lu      | 175  |            | ug/L        |           | 202686             | 202685.560       |
|   | Tl      | 205  | 44.437     | ug/L        | 2.049     | 360809             | 1.774            |
|   | Pb      | 208  | 50.324     | ug/L        | 1.389     | 524407             | 2.585            |
|   | Th      | 232  | 41.782     | ug/L        | 1.238     | 505059             | 2.490            |
| [ | U       | 238  | 46.908     | ug/L        | 0.518     | 609607             | 3.005            |

Sample ID: 1202472436

Report Date/Time: Thursday, August 25, 2011 09:01:51

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |



### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
|   | Li      | 7    |                   |                    |                  |                 |                  |
|   | Be      | 9    |                   |                    |                  |                 |                  |
|   | B       | 11   |                   |                    |                  |                 |                  |
|   | Na      | 23   |                   |                    |                  |                 |                  |
|   | Mg      | 24   |                   |                    |                  |                 |                  |
|   | Al      | 27   |                   |                    |                  |                 |                  |
|   | P       | 31   |                   |                    |                  |                 |                  |
|   | K       | 39   |                   |                    |                  |                 |                  |
|   | Ca      | 43   |                   |                    |                  |                 |                  |
| > | Sc      | 45   |                   | 111.6              |                  |                 |                  |
|   | Ti      | 47   |                   |                    |                  |                 |                  |
|   | Cr      | 52   |                   |                    |                  |                 |                  |
|   | Cr      | 53   |                   |                    |                  |                 |                  |
|   | Mn      | 55   |                   |                    |                  |                 |                  |
|   | Fe      | 57   |                   |                    |                  |                 |                  |
|   | Co      | 59   |                   |                    |                  |                 |                  |
|   | Ni      | 60   |                   |                    |                  |                 |                  |
|   | Cu      | 63   |                   |                    |                  |                 |                  |
|   | Cu      | 65   |                   |                    |                  |                 |                  |
|   | Zn      | 66   |                   |                    |                  |                 |                  |
|   | Zn      | 67   |                   |                    |                  |                 |                  |
|   | Zn      | 68   |                   |                    |                  |                 |                  |
| > | Ge      | 74   |                   | 101.7              |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Sr      | 88   |                   |                    |                  |                 |                  |
|   | Zr      | 90   |                   |                    |                  |                 |                  |
|   | Mo      | 98   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
|   | Cd      | 111  |                   |                    |                  |                 |                  |
|   | Cd      | 114  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   | 102.6              |                  |                 |                  |
|   | Sn      | 120  |                   |                    |                  |                 |                  |
|   | Sb      | 121  |                   |                    |                  |                 |                  |
|   | Sb      | 123  |                   |                    |                  |                 |                  |
|   | Ba      | 135  |                   |                    |                  |                 |                  |
|   | Ba      | 137  |                   |                    |                  |                 |                  |
| > | Lu      | 175  |                   | 108.5              |                  |                 |                  |
|   | Tl      | 205  |                   |                    |                  |                 |                  |
|   | Pb      | 208  |                   |                    |                  |                 |                  |
|   | Th      | 232  |                   |                    |                  |                 |                  |
|   | U       | 238  |                   |                    |                  |                 |                  |

### QC Out Of Limits

| Measurement Type      | Analyte | Mass | Out of Limits Message                        |
|-----------------------|---------|------|--|
| Ti 47 Upper, S, EEETi |         | 47   | Sample is out of limits (over linear range)_ |

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: 1202472437

Sample Date/Time: Thursday, August 25, 2011 09:13:17

Sample Type: Sample

Sample Description: ECOL 0520 SDILT

Number of Replicates: 3

Batch ID: 1135453|5|prb

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\1202472437.225

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
|   | Li      | 7    | 0.464      | ug/L        | 7.659     | 211                | 0.000            |
|   | Be      | 9    | 0.036      | ug/L        | 67.252    | 11                 | 0.000            |
|   | B       | 11   | 8.732      | ug/L        | 9.211     | 1396               | 0.002            |
|   | Na      | 23   | 761.150    | ug/L        | 1.432     | 958688             | 1.915            |
|   | Mg      | 24   | 537.020    | ug/L        | 0.747     | 462914             | 0.934            |
|   | Al      | 27   | 1790.492   | ug/L        | 0.819     | 2336670            | 4.727            |
|   | P       | 31   | 58.127     | ug/L        | 3.878     | 7203               | 0.010            |
|   | K       | 39   | 153.908    | ug/L        | 1.988     | 682574             | 0.732            |
|   | Ca      | 43   | 1079.525   | ug/L        | 0.598     | 4989               | 0.010            |
| > | Sc      | 45   |            | ug/L        |           | 493568             | 493567.672       |
|   | Ti      | 47   | 56.196     | ug/L        | 0.815     | 13855              | 0.028            |
|   | Cr      | 52   | 2.112      | ug/L        | 2.363     | 14464              | 0.010            |
|   | Cr      | 53   |            | ug/L        |           | 72229              | -0.106           |
|   | Mn      | 55   | 58.038     | ug/L        | 1.256     | 222079             | 0.448            |
|   | Fe      | 57   | 1435.064   | ug/L        | 2.181     | 116455             | 0.228            |
|   | Co      | 59   | 1.044      | ug/L        | 1.675     | 3341               | 0.007            |
|   | Ni      | 60   | 3.230      | ug/L        | 0.613     | 2144               | 0.004            |
|   | Cu      | 63   |            | ug/L        |           | 2915               | 0.006            |
|   | Cu      | 65   | 2.036      | ug/L        | 2.480     | 1444               | 0.003            |
|   | Zn      | 66   | 3.196      | ug/L        | 4.612     | 1212               | 0.006            |
|   | Zn      | 67   |            | ug/L        |           | 2953               | -0.002           |
|   | Zn      | 68   |            | ug/L        |           | 1117               | 0.005            |
| > | Ge      | 74   |            | ug/L        |           | 172831             | 172830.629       |
|   | As      | 75   | -1.282     | ug/L        | 106.436   | 17660              | -0.003           |
|   | Se      | 77   |            | ug/L        |           | 6643               | -0.025           |
|   | Se      | 82   | 3.202      | ug/L        | 80.636    | -159               | 0.001            |
|   | Kr      | 83   |            | ug/L        |           | 6697               | -0.003           |
|   | Sr      | 88   | 7.963      | ug/L        | 0.542     | 46015              | 0.402            |
|   | Zr      | 90   | 0.548      | ug/L        | 11.508    | 1815               | 0.015            |
|   | Mo      | 98   | 0.452      | ug/L        | 3.487     | 695                | 0.005            |
|   | Ag      | 107  | 0.015      | ug/L        | 10.232    | 66                 | 0.000            |
|   | Cd      | 111  | -0.014     | ug/L        | 71.816    | 18                 | -0.000           |
|   | Cd      | 114  |            | ug/L        |           | 42                 | -0.000           |
| > | In      | 115  |            | ug/L        |           | 113971             | 113970.709       |
|   | Sn      | 120  | 0.045      | ug/L        | 13.706    | 261                | 0.001            |
|   | Sb      | 121  | 0.599      | ug/L        | 18.414    | 1318               | 0.010            |
|   | Sb      | 123  |            | ug/L        |           | 1021               | 0.008            |
|   | Ba      | 135  |            | ug/L        |           | 13942              | 0.066            |
|   | Ba      | 137  | 22.229     | ug/L        | 1.018     | 24250              | 0.114            |
| > | Lu      | 175  |            | ug/L        |           | 211609             | 211608.940       |
|   | Tl      | 205  | 0.282      | ug/L        | 20.121    | 3580               | 0.011            |
|   | Pb      | 208  | 0.695      | ug/L        | 1.640     | 8060               | 0.036            |
|   | Th      | 232  | 0.095      | ug/L        | 18.597    | 1627               | 0.006            |
|   | U       | 238  | 0.003      | ug/L        | 58.097    | 692                | 0.000            |

Sample ID: 1202472437

Report Date/Time: Thursday, August 25, 2011 09:18:34

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
|   | Li      | 7    |                   |                    |                  |                 |                  |
|   | Be      | 9    |                   |                    |                  |                 |                  |
|   | B       | 11   |                   |                    |                  |                 |                  |
|   | Na      | 23   |                   |                    |                  |                 |                  |
|   | Mg      | 24   |                   |                    |                  |                 |                  |
|   | Al      | 27   |                   |                    |                  |                 |                  |
|   | P       | 31   |                   |                    |                  |                 |                  |
|   | K       | 39   |                   |                    |                  |                 |                  |
|   | Ca      | 43   |                   |                    |                  |                 |                  |
| > | Sc      | 45   |                   | 113.4              |                  |                 |                  |
|   | Ti      | 47   |                   |                    |                  |                 |                  |
|   | Cr      | 52   |                   |                    |                  |                 |                  |
|   | Cr      | 53   |                   |                    |                  |                 |                  |
|   | Mn      | 55   |                   |                    |                  |                 |                  |
|   | Fe      | 57   |                   |                    |                  |                 |                  |
|   | Co      | 59   |                   |                    |                  |                 |                  |
|   | Ni      | 60   |                   |                    |                  |                 |                  |
|   | Cu      | 63   |                   |                    |                  |                 |                  |
|   | Cu      | 65   |                   |                    |                  |                 |                  |
|   | Zn      | 66   |                   |                    |                  |                 |                  |
|   | Zn      | 67   |                   |                    |                  |                 |                  |
|   | Zn      | 68   |                   |                    |                  |                 |                  |
| > | Ge      | 74   |                   | 105.5              |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Sr      | 88   |                   |                    |                  |                 |                  |
|   | Zr      | 90   |                   |                    |                  |                 |                  |
|   | Mo      | 98   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
|   | Cd      | 111  |                   |                    |                  |                 |                  |
|   | Cd      | 114  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   | 108.6              |                  |                 |                  |
|   | Sn      | 120  |                   |                    |                  |                 |                  |
|   | Sb      | 121  |                   |                    |                  |                 |                  |
|   | Sb      | 123  |                   |                    |                  |                 |                  |
|   | Ba      | 135  |                   |                    |                  |                 |                  |
|   | Ba      | 137  |                   |                    |                  |                 |                  |
| > | Lu      | 175  |                   | 113.3              |                  |                 |                  |
|   | Tl      | 205  |                   |                    |                  |                 |                  |
|   | Pb      | 208  |                   |                    |                  |                 |                  |
|   | Th      | 232  |                   |                    |                  |                 |                  |
|   | U       | 238  |                   |                    |                  |                 |                  |

### QC Out Of Limits

Measurement Type   Analyte   MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: QC Std 13

Sample Date/Time: Thursday, August 25, 2011 09:21:38

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\QC Std 13.226

### Concentration Results

| Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---------|------|------------|-------------|-----------|--------------------|------------------|
| Li      | 7    | 64.970     | ug/L        | 3.487     | 23672              | 0.048            |
| Be      | 9    | 54.722     | ug/L        | 2.540     | 5743               | 0.012            |
| B       | 11   | 121.459    | ug/L        | 2.283     | 13864              | 0.027            |
| Na      | 23   | 5397.010   | ug/L        | 0.704     | 6657586            | 13.580           |
| Mg      | 24   | 5322.255   | ug/L        | 0.742     | 4531042            | 9.258            |
| Al      | 27   | 5364.042   | ug/L        | 0.684     | 6932127            | 14.163           |
| P       | 31   | 4996.000   | ug/L        | 1.484     | 414047             | 0.842            |
| K       | 39   | 4988.732   | ug/L        | 0.652     | 11927820           | 23.730           |
| Ca      | 43   | 5037.396   | ug/L        | 0.531     | 22307              | 0.045            |
| > Sc    | 45   |            | ug/L        |           | 489250             | 489250.089       |
| Ti      | 47   | 46.750     | ug/L        | 1.882     | 11444              | 0.023            |
| Cr      | 52   | 46.992     | ug/L        | 0.749     | 122808             | 0.232            |
| Cr      | 53   |            | ug/L        |           | 80924              | -0.087           |
| Mn      | 55   | 50.358     | ug/L        | 0.553     | 191127             | 0.389            |
| Fe      | 57   | 4829.013   | ug/L        | 1.195     | 379665             | 0.768            |
| Co      | 59   | 48.079     | ug/L        | 0.375     | 148875             | 0.304            |
| Ni      | 60   | 47.464     | ug/L        | 0.481     | 30513              | 0.062            |
| Cu      | 63   |            | ug/L        |           | 65438              | 0.134            |
| Cu      | 65   | 46.389     | ug/L        | 0.193     | 31432              | 0.064            |
| Zn      | 66   | 49.641     | ug/L        | 0.253     | 17094              | 0.098            |
| Zn      | 67   |            | ug/L        |           | 5277               | 0.011            |
| Zn      | 68   |            | ug/L        |           | 12843              | 0.073            |
| > Ge    | 74   |            | ug/L        |           | 172748             | 172747.565       |
| As      | 75   | 44.001     | ug/L        | 2.154     | 37181              | 0.110            |
| Se      | 77   |            | ug/L        |           | 8043               | -0.016           |
| Se      | 82   | 49.575     | ug/L        | 5.051     | 1788               | 0.012            |
| Kr      | 83   |            | ug/L        |           | 6784               | -0.003           |
| Sr      | 88   | 50.974     | ug/L        | 1.032     | 290133             | 2.571            |
| Zr      | 90   | 48.873     | ug/L        | 1.196     | 152666             | 1.353            |
| Mo      | 98   | 46.759     | ug/L        | 0.574     | 64181              | 0.569            |
| Ag      | 107  | 39.835     | ug/L        | 0.242     | 89733              | 0.795            |
| Cd      | 111  | 50.404     | ug/L        | 1.121     | 25610              | 0.227            |
| Cd      | 114  |            | ug/L        |           | 62634              | 0.555            |
| > In    | 115  |            | ug/L        |           | 112765             | 112765.130       |
| Sn      | 120  | 49.069     | ug/L        | 0.726     | 119339             | 1.057            |
| Sb      | 121  | 47.273     | ug/L        | 0.964     | 90642              | 0.802            |
| Sb      | 123  |            | ug/L        |           | 70719              | 0.626            |
| Ba      | 135  |            | ug/L        |           | 28903              | 0.137            |
| Ba      | 137  | 46.522     | ug/L        | 1.014     | 50384              | 0.239            |
| > Lu    | 175  |            | ug/L        |           | 210342             | 210342.158       |
| Tl      | 205  | 45.592     | ug/L        | 2.498     | 384128             | 1.821            |
| Pb      | 208  | 47.971     | ug/L        | 0.396     | 518802             | 2.464            |
| Th      | 232  | 46.122     | ug/L        | 1.169     | 578555             | 2.749            |
| U       | 238  | 47.790     | ug/L        | 1.450     | 644525             | 3.061            |

Sample ID: QC Std 13

Report Date/Time: Thursday, August 25, 2011 09:26:53

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| [ | Li      | 7    | 129.941           |                    |                  |                 |                  |
|   | Be      | 9    | 109.444           |                    |                  |                 |                  |
|   | B       | 11   | 121.459           |                    |                  |                 |                  |
|   | Na      | 23   | 107.940           |                    |                  |                 |                  |
|   | Mg      | 24   | 106.445           |                    |                  |                 |                  |
|   | Al      | 27   | 106.219           |                    |                  |                 |                  |
|   | P       | 31   | 99.920            |                    |                  |                 |                  |
|   | K       | 39   | 99.775            |                    |                  |                 |                  |
|   | Ca      | 43   | 100.748           |                    |                  |                 |                  |
| > | Sc      | 45   |                   | 112.4              |                  |                 |                  |
|   | Ti      | 47   | 93.500            |                    |                  |                 |                  |
|   | Cr      | 52   | 93.985            |                    |                  |                 |                  |
|   | Cr      | 53   |                   |                    |                  |                 |                  |
|   | Mn      | 55   | 100.716           |                    |                  |                 |                  |
|   | Fe      | 57   | 96.580            |                    |                  |                 |                  |
|   | Co      | 59   | 96.157            |                    |                  |                 |                  |
|   | Ni      | 60   | 94.928            |                    |                  |                 |                  |
|   | Cu      | 63   |                   |                    |                  |                 |                  |
|   | Cu      | 65   | 92.779            |                    |                  |                 |                  |
| [ | Zn      | 66   | 99.281            |                    |                  |                 |                  |
|   | Zn      | 67   |                   |                    |                  |                 |                  |
|   | Zn      | 68   |                   |                    |                  |                 |                  |
| > | Ge      | 74   |                   | 105.4              |                  |                 |                  |
|   | As      | 75   | 88.001            |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   | 99.150            |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
| [ | Sr      | 88   | 101.947           |                    |                  |                 |                  |
|   | Zr      | 90   | 97.746            |                    |                  |                 |                  |
|   | Mo      | 98   | 93.517            |                    |                  |                 |                  |
|   | Ag      | 107  | 79.669            |                    |                  |                 |                  |
|   | Cd      | 111  | 100.808           |                    |                  |                 |                  |
|   | Cd      | 114  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   | 107.5              |                  |                 |                  |
|   | Sn      | 120  | 98.137            |                    |                  |                 |                  |
|   | Sb      | 121  | 94.545            |                    |                  |                 |                  |
|   | Sb      | 123  |                   |                    |                  |                 |                  |
| [ | Ba      | 135  |                   |                    |                  |                 |                  |
|   | Ba      | 137  | 93.043            |                    |                  |                 |                  |
| > | Lu      | 175  |                   | 112.6              |                  |                 |                  |
|   | Tl      | 205  | 91.183            |                    |                  |                 |                  |
|   | Pb      | 208  | 95.941            |                    |                  |                 |                  |
|   | Th      | 232  | 92.244            |                    |                  |                 |                  |
|   | U       | 238  | 95.580            |                    |                  |                 |                  |

## QC Out Of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message              |
|------------------|---------|------|------------------------------------|
| QC Std 13        | Li      | 7    | 7CCV is out of limits ( +/- 10%)   |
| QC Std 13        | B       | 11   | 11CCV is out of limits ( +/- 10%)  |
| QC Std 13        | As      | 75   | 75CCV is out of limits ( +/- 10%)  |
| QC Std 13        | Ag      | 107  | 107CCV is out of limits ( +/- 10%) |

## QC Action

QC Action Line: Continue

## ICPMS#7 - Summary Report

Sample ID: QC Std 14

Sample Date/Time: Thursday, August 25, 2011 09:29:57

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\QC Std 14.227

### Concentration Results

| Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---------|------|------------|-------------|-----------|--------------------|------------------|
| Li      | 7    | 13.458     | ug/L        | 4.882     | 5035               | 0.010            |
| Be      | 9    | 0.567      | ug/L        | 7.613     | 68                 | 0.000            |
| B       | 11   | 22.300     | ug/L        | 6.851     | 2943               | 0.005            |
| Na      | 23   | 265.089    | ug/L        | 0.722     | 346478             | 0.667            |
| Mg      | 24   | 31.310     | ug/L        | 1.739     | 29074              | 0.054            |
| Al      | 27   | 52.906     | ug/L        | 1.439     | 73172              | 0.140            |
| P       | 31   | 50.492     | ug/L        | 5.699     | 6642               | 0.009            |
| K       | 39   | 275.107    | ug/L        | 2.415     | 977917             | 1.309            |
| Ca      | 43   | 195.967    | ug/L        | 4.473     | 1092               | 0.002            |
| Sc      | 45   |            | ug/L        |           | 499136             | 499136.323       |
| Ti      | 47   | 8.447      | ug/L        | 2.356     | 2203               | 0.004            |
| Cr      | 52   | 9.166      | ug/L        | 1.442     | 32019              | 0.045            |
| Cr      | 53   |            | ug/L        |           | 68858              | -0.114           |
| Mn      | 55   | 5.026      | ug/L        | 0.901     | 20213              | 0.039            |
| Fe      | 57   | 96.552     | ug/L        | 0.944     | 11479              | 0.015            |
| Co      | 59   | 0.965      | ug/L        | 1.468     | 3131               | 0.006            |
| Ni      | 60   | 1.934      | ug/L        | 2.762     | 1320               | 0.003            |
| Cu      | 63   |            | ug/L        |           | 1501               | 0.003            |
| Cu      | 65   | 0.967      | ug/L        | 4.007     | 723                | 0.001            |
| Zn      | 66   | 10.489     | ug/L        | 1.942     | 3805               | 0.021            |
| Zn      | 67   |            | ug/L        |           | 3032               | -0.002           |
| Zn      | 68   |            | ug/L        |           | 2927               | 0.015            |
| Ge      | 74   |            | ug/L        |           | 177342             | 177342.217       |
| As      | 75   | 2.526      | ug/L        | 30.511    | 19806              | 0.006            |
| Se      | 77   |            | ug/L        |           | 6391               | -0.027           |
| Se      | 82   | 6.380      | ug/L        | 20.431    | -26                | 0.002            |
| Kr      | 83   |            | ug/L        |           | 6832               | -0.003           |
| Sr      | 88   | 10.286     | ug/L        | 0.405     | 60649              | 0.519            |
| Zr      | 90   | 1.620      | ug/L        | 6.398     | 5310               | 0.045            |
| Mo      | 98   | 0.525      | ug/L        | 1.965     | 812                | 0.006            |
| Ag      | 107  | 1.004      | ug/L        | 0.806     | 2368               | 0.020            |
| Cd      | 111  | 1.031      | ug/L        | 3.717     | 567                | 0.005            |
| Cd      | 114  |            | ug/L        |           | 1365               | 0.011            |
| In      | 115  |            | ug/L        |           | 116423             | 116423.263       |
| Sn      | 120  | 4.916      | ug/L        | 1.258     | 12484              | 0.106            |
| Sb      | 121  | 3.209      | ug/L        | 0.976     | 6505               | 0.054            |
| Sb      | 123  |            | ug/L        |           | 5032               | 0.042            |
| Ba      | 135  |            | ug/L        |           | 1248               | 0.006            |
| Ba      | 137  | 1.910      | ug/L        | 1.884     | 2141               | 0.010            |
| Lu      | 175  |            | ug/L        |           | 211677             | 211676.521       |
| Tl      | 205  | 2.295      | ug/L        | 3.444     | 20594              | 0.092            |
| Pb      | 208  | 2.022      | ug/L        | 0.890     | 22488              | 0.104            |
| Th      | 232  | 1.870      | ug/L        | 3.455     | 24014              | 0.111            |
| U       | 238  | 0.178      | ug/L        | 3.317     | 3070               | 0.011            |

Sample ID: QC Std 14

Report Date/Time: Thursday, August 25, 2011 09:35:11

Page 1



## Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| Li      | 7    | 134.582           |                    |                  |                 |                  |
| Be      | 9    | 113.311           |                    |                  |                 |                  |
| B       | 11   | 148.664           |                    |                  |                 |                  |
| Na      | 23   | 106.035           |                    |                  |                 |                  |
| Mg      | 24   | 104.365           |                    |                  |                 |                  |
| Al      | 27   | 105.812           |                    |                  |                 |                  |
| P       | 31   | 100.984           |                    |                  |                 |                  |
| K       | 39   | 91.702            |                    |                  |                 |                  |
| Ca      | 43   | 97.984            |                    |                  |                 |                  |
| > Sc    | 45   |                   | 114.7              |                  |                 |                  |
| Ti      | 47   | 84.475            |                    |                  |                 |                  |
| Cr      | 52   | 91.661            |                    |                  |                 |                  |
| Cr      | 53   |                   |                    |                  |                 |                  |
| Mn      | 55   | 100.520           |                    |                  |                 |                  |
| Fe      | 57   | 96.552            |                    |                  |                 |                  |
| Co      | 59   | 96.506            |                    |                  |                 |                  |
| Ni      | 60   | 96.709            |                    |                  |                 |                  |
| Cu      | 63   |                   |                    |                  |                 |                  |
| Cu      | 65   | 96.702            |                    |                  |                 |                  |
| Zn      | 66   | 104.890           |                    |                  |                 |                  |
| Zn      | 67   |                   |                    |                  |                 |                  |
| Zn      | 68   |                   |                    |                  |                 |                  |
| > Ge    | 74   |                   | 108.2              |                  |                 |                  |
| As      | 75   | 50.518            |                    |                  |                 |                  |
| Se      | 77   |                   |                    |                  |                 |                  |
| Se      | 82   | 127.610           |                    |                  |                 |                  |
| Kr      | 83   |                   |                    |                  |                 |                  |
| Sr      | 88   | 102.862           |                    |                  |                 |                  |
| Zr      | 90   | 81.014            |                    |                  |                 |                  |
| Mo      | 98   | 104.923           |                    |                  |                 |                  |
| Ag      | 107  | 100.444           |                    |                  |                 |                  |
| Cd      | 111  | 103.106           |                    |                  |                 |                  |
| Cd      | 114  |                   |                    |                  |                 |                  |
| > In    | 115  |                   | 111.0              |                  |                 |                  |
| Sn      | 120  | 98.328            |                    |                  |                 |                  |
| Sb      | 121  | 106.961           |                    |                  |                 |                  |
| Sb      | 123  |                   |                    |                  |                 |                  |
| Ba      | 135  |                   |                    |                  |                 |                  |
| Ba      | 137  | 95.480            |                    |                  |                 |                  |
| > Lu    | 175  |                   | 113.3              |                  |                 |                  |
| Tl      | 205  | 114.761           |                    |                  |                 |                  |
| Pb      | 208  | 101.095           |                    |                  |                 |                  |
| Th      | 232  | 93.493            |                    |                  |                 |                  |
| U       | 238  | 89.133            |                    |                  |                 |                  |

## QC Out Of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message   |
|------------------|---------|------|-------------------------|
| QC Std 14        | Li      | 7    | 7CRDL is out of limits  |
| QC Std 14        | B       | 11   | 11CRDL is out of limits |
| QC Std 14        | As      | 75   | 75CRDL is out of limits |

## QC Action

QC Action Line: Continue

## ICPMS#7 - Summary Report

Sample ID: QC Std 15

Sample Date/Time: Thursday, August 25, 2011 09:38:16

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a.mth

Dataset File: C:\Elandata\DataSet\110824\QC Std 15.228

### Concentration Results

| Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---------|------|------------|-------------|-----------|--------------------|------------------|
| Li      | 7    | 0.007      | ug/L        | 46.381    | 44                 | 0.000            |
| Be      | 9    | -0.000     | ug/L        | 2619.415  | 7                  | -0.000           |
| B       | 11   | 2.093      | ug/L        | 15.753    | 659                | 0.000            |
| Na      | 23   | -2.899     | ug/L        | 2.789     | 9866               | -0.007           |
| Mg      | 24   | 0.701      | ug/L        | 8.570     | 2490               | 0.001            |
| Al      | 27   | 0.820      | ug/L        | 9.803     | 4515               | 0.002            |
| P       | 31   | 0.741      | ug/L        | 301.449   | 2450               | 0.000            |
| K       | 39   | -32.314    | ug/L        | 6.512     | 247197             | -0.154           |
| Ca      | 43   | -18.848    | ug/L        | 9.071     | 130                | -0.000           |
| Sc      | 45   |            | ug/L        |           | 497217             | 497216.746       |
| Ti      | 47   | -0.106     | ug/L        | 13.384    | 88                 | -0.000           |
| Cr      | 52   | -0.860     | ug/L        | 9.631     | 7270               | -0.004           |
| Cr      | 53   |            | ug/L        |           | 65222              | -0.121           |
| Mn      | 55   | -0.063     | ug/L        | 3.293     | 592                | -0.000           |
| Fe      | 57   | -2.026     | ug/L        | 35.173    | 3636               | -0.000           |
| Co      | 59   | 0.005      | ug/L        | 59.647    | 98                 | 0.000            |
| Ni      | 60   | -0.001     | ug/L        | 593.309   | 53                 | -0.000           |
| Cu      | 63   |            | ug/L        |           | 87                 | -0.000           |
| Cu      | 65   | -0.012     | ug/L        | 53.499    | 47                 | -0.000           |
| Zn      | 66   | 0.033      | ug/L        | 82.316    | 132                | 0.000            |
| Zn      | 67   |            | ug/L        |           | 2386               | -0.006           |
| Zn      | 68   |            | ug/L        |           | 229                | -0.000           |
| Ge      | 74   |            | ug/L        |           | 175333             | 175333.276       |
| As      | 75   | -0.408     | ug/L        | 110.214   | 18297              | -0.001           |
| Se      | 77   |            | ug/L        |           | 6240               | -0.027           |
| Se      | 82   | 2.572      | ug/L        | 121.462   | -187               | 0.001            |
| Kr      | 83   |            | ug/L        |           | 6930               | -0.002           |
| Sr      | 88   | -0.000     | ug/L        | 505.535   | 248                | -0.000           |
| Zr      | 90   | 0.050      | ug/L        | 10.180    | 248                | 0.001            |
| Mo      | 98   | 0.027      | ug/L        | 10.015    | 107                | 0.000            |
| Ag      | 107  | 0.005      | ug/L        | 66.690    | 44                 | 0.000            |
| Cd      | 111  | 0.002      | ug/L        | 299.537   | 27                 | 0.000            |
| Cd      | 114  |            | ug/L        |           | 59                 | 0.000            |
| In      | 115  |            | ug/L        |           | 115452             | 115452.394       |
| Sn      | 120  | 0.012      | ug/L        | 20.362    | 183                | 0.000            |
| Sb      | 121  | 0.132      | ug/L        | 8.288     | 421                | 0.002            |
| Sb      | 123  |            | ug/L        |           | 329                | 0.002            |
| Ba      | 135  |            | ug/L        |           | 49                 | -0.000           |
| Ba      | 137  | 0.004      | ug/L        | 43.580    | 66                 | 0.000            |
| Lu      | 175  |            | ug/L        |           | 210679             | 210678.829       |
| Tl      | 205  | 0.130      | ug/L        | 10.585    | 2283               | 0.005            |
| Pb      | 208  | 0.012      | ug/L        | 11.666    | 630                | 0.001            |
| Th      | 232  | 0.037      | ug/L        | 5.508     | 894                | 0.002            |
| U       | 238  | 0.011      | ug/L        | 6.352     | 801                | 0.001            |

Sample ID: QC Std 15

Report Date/Time: Thursday, August 25, 2011 09:43:33

Page 1

# Calibration

| Analyte | MassCurve Type      | Correlation Coefficient |
|---------|---------------------|-------------------------|
| Li      | 7Linear Thru Zero   | 1.0000                  |
| Be      | 9Linear Thru Zero   | 1.0000                  |
| B       | 11Linear Thru Zero  | 1.0000                  |
| Na      | 23Linear Thru Zero  | 1.0000                  |
| Mg      | 24Linear Thru Zero  | 1.0000                  |
| Al      | 27Linear Thru Zero  | 1.0000                  |
| P       | 31Linear Thru Zero  | 1.0000                  |
| K       | 39Linear Thru Zero  | 1.0000                  |
| Ca      | 43Linear Thru Zero  | 1.0000                  |
| Sc      | 45Linear Thru Zero  |                         |
| Ti      | 47Linear Thru Zero  | 1.0000                  |
| Cr      | 52Linear Thru Zero  | 1.0000                  |
| Cr      | 53Linear Thru Zero  |                         |
| Mn      | 55Linear Thru Zero  | 1.0000                  |
| Fe      | 57Linear Thru Zero  | 1.0000                  |
| Co      | 59Linear Thru Zero  | 1.0000                  |
| Ni      | 60Linear Thru Zero  | 1.0000                  |
| Cu      | 63Linear Thru Zero  |                         |
| Cu      | 65Linear Thru Zero  | 1.0000                  |
| Zn      | 66Linear Thru Zero  | 1.0000                  |
| Zn      | 67Linear Thru Zero  |                         |
| Zn      | 68Linear Thru Zero  |                         |
| Ge      | 74Linear Thru Zero  |                         |
| As      | 75Linear Thru Zero  | 0.9995                  |
| Se      | 77Linear Thru Zero  |                         |
| Se      | 82Linear Thru Zero  | 0.9999                  |
| Kr      | 83Linear Thru Zero  |                         |
| Sr      | 88Linear Thru Zero  | 1.0000                  |
| Zr      | 90Linear Thru Zero  | 0.9999                  |
| Mo      | 98Linear Thru Zero  | 1.0000                  |
| Ag      | 107Linear Thru Zero | 1.0000                  |
| Cd      | 111Linear Thru Zero | 1.0000                  |
| Cd      | 114Linear Thru Zero |                         |
| In      | 115Linear Thru Zero |                         |
| Sn      | 120Linear Thru Zero | 1.0000                  |
| Sb      | 121Linear Thru Zero | 1.0000                  |
| Sb      | 123Linear Thru Zero |                         |
| Ba      | 135Linear Thru Zero |                         |
| Ba      | 137Linear Thru Zero | 1.0000                  |
| Lu      | 175Linear Thru Zero |                         |
| Tl      | 205Linear Thru Zero | 1.0000                  |
| Pb      | 208Linear Thru Zero | 1.0000                  |
| Th      | 232Linear Thru Zero | 1.0000                  |
| U       | 238Linear Thru Zero | 1.0000                  |

## QC Calculated Values

| Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| Li      | 7    |                   |                    |                  |                 |                  |
| Be      | 9    |                   |                    |                  |                 |                  |
| B       | 11   |                   |                    |                  |                 |                  |
| Na      | 23   |                   |                    |                  |                 |                  |
| Mg      | 24   |                   |                    |                  |                 |                  |
| Al      | 27   |                   |                    |                  |                 |                  |
| P       | 31   |                   |                    |                  |                 |                  |
| K       | 39   |                   |                    |                  |                 |                  |
| Ca      | 43   |                   |                    |                  |                 |                  |
| > Sc    | 45   |                   | 114.3              |                  |                 |                  |
| Ti      | 47   |                   |                    |                  |                 |                  |
| Cr      | 52   |                   |                    |                  |                 |                  |
| Cr      | 53   |                   |                    |                  |                 |                  |
| Mn      | 55   |                   |                    |                  |                 |                  |
| Fe      | 57   |                   |                    |                  |                 |                  |
| Co      | 59   |                   |                    |                  |                 |                  |
| Ni      | 60   |                   |                    |                  |                 |                  |
| Cu      | 63   |                   |                    |                  |                 |                  |
| Cu      | 65   |                   |                    |                  |                 |                  |
| Zn      | 66   |                   |                    |                  |                 |                  |
| Zn      | 67   |                   |                    |                  |                 |                  |
| Zn      | 68   |                   |                    |                  |                 |                  |
| > Ge    | 74   |                   | 107.0              |                  |                 |                  |
| As      | 75   |                   |                    |                  |                 |                  |
| Se      | 77   |                   |                    |                  |                 |                  |
| Se      | 82   |                   |                    |                  |                 |                  |
| Kr      | 83   |                   |                    |                  |                 |                  |
| Sr      | 88   |                   |                    |                  |                 |                  |
| Zr      | 90   |                   |                    |                  |                 |                  |
| Mo      | 98   |                   |                    |                  |                 |                  |
| Ag      | 107  |                   |                    |                  |                 |                  |
| Cd      | 111  |                   |                    |                  |                 |                  |
| Cd      | 114  |                   |                    |                  |                 |                  |
| > In    | 115  |                   | 110.0              |                  |                 |                  |
| Sn      | 120  |                   |                    |                  |                 |                  |
| Sb      | 121  |                   |                    |                  |                 |                  |
| Sb      | 123  |                   |                    |                  |                 |                  |
| Ba      | 135  |                   |                    |                  |                 |                  |
| Ba      | 137  |                   |                    |                  |                 |                  |
| > Lu    | 175  |                   | 112.8              |                  |                 |                  |
| Tl      | 205  |                   |                    |                  |                 |                  |
| Pb      | 208  |                   |                    |                  |                 |                  |
| Th      | 232  |                   |                    |                  |                 |                  |
| U       | 238  |                   |                    |                  |                 |                  |

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

## ICPMS #7 Daily Performance Report

### Sample ID: Sample

Sample Date/Time: Monday, August 29, 2011 10:31:00

### Sample Description:

Method File: C:\elandata\Method\daily2.mth

Dataset File: C:\elandata\Dataset\default\Sample.3611

Tuning File: C:\elandata\Tuning\default2.tun

Optimization File: C:\elandata\Optimize\Default.dac

Dual Detector Mode: Pulse

Acq. Dead Time(ns): 80

Current Dead Time (ns): 80

### Summary

| Analyte | Mass  | Meas. Intens. Mean | Net Intens. Mean | Net Intens. SD | Net Intens. RSD |
|---------|-------|--------------------|------------------|----------------|-----------------|
| Be      | 9.0   | 2398.1             | 2398.060         | 53.031         | 2.2             |
| Mg      | 24.0  | 30059.7            | 30059.727        | 465.466        | 1.5             |
| Co      | 58.9  | 69893.7            | 69893.653        | 507.484        | 0.7             |
| Rh      | 102.9 | 132610.2           | 132610.175       | 1308.257       | 1.0             |
| In      | 114.9 | 172695.1           | 172695.102       | 1441.428       | 0.8             |
| Pb      | 208.0 | 140053.4           | 140053.434       | 1901.336       | 1.4             |
| [> Ba   | 137.9 | 160193.3           | 160193.266       | 1227.913       | 0.8             |
| [ Ba++  | 69.0  | 1471.4             | 0.009            | 0.000          | 2.5             |
| [> Ce   | 139.9 | 191070.0           | 191069.990       | 2365.684       | 1.2             |
| [ CeO   | 155.9 | 5354.5             | 0.028            | 0.001          | 4.0             |
| Bkgd    | 220.0 | 4.1                | 4.100            | 1.432          | 34.9            |

### Current Optimization File Data

| Current Value | Description             |
|---------------|-------------------------|
| 0.92          | Nebulizer Gas Flow      |
| 7.00          | Lens Voltage            |
| 1000.00       | ICP RF Power            |
| -1750.00      | Analog Stage Voltage    |
| 1000.00       | Pulse Stage Voltage     |
| 70.00         | Discriminator Threshold |
| -3.00         | AC Rod Offset           |

### Current Autolens Data

| Analyte | Mass | Num of Pts | DAC Value | Maximum Intensity |
|---------|------|------------|-----------|-------------------|
| Be      | 9    | 21         | 7.0       | 3580.0            |
| Co      | 59   | 21         | 8.0       | 74988.2           |
| In      | 115  | 21         | 9.3       | 186080.4          |

## Instrument #7 Tuning Report

File Name: Default2.tun  
File Path: C:\elandata\Tuning\Default2.tun

| Analyte | Exact Mass | Meas. Mass | Mass DAC | Res. DAC | Meas. Pk. Width |
|---------|------------|------------|----------|----------|-----------------|
| He      | 3.0        | 3.0        | 572      | 2060     | 0.639           |
| Be      | 9.0        | 9.1        | 2035     | 2050     | 0.643           |
| Mg      | 24.0       | 24.0       | 5681     | 2100     | 0.473           |
| Mg      | 25.0       | 25.0       | 5921     | 2100     | 0.448           |
| Mg      | 26.0       | 26.0       | 6181     | 2090     | 0.469           |
| Co      | 58.9       | 58.9       | 14163    | 2030     | 0.665           |
| Rh      | 102.9      | 102.9      | 24879    | 2020     | 0.672           |
| In      | 114.9      | 114.9      | 27791    | 2020     | 0.679           |
| Ce      | 139.9      | 139.9      | 33884    | 2010     | 0.674           |
| Pb      | 206.0      | 205.9      | 49942    | 1980     | 0.695           |
| Pb      | 207.0      | 207.0      | 50206    | 2000     | 0.674           |
| Pb      | 208.0      | 208.0      | 50452    | 1980     | 0.668           |
| U       | 238.1      | 238.1      | 57768    | 1980     | 0.687           |

## ICPMS#7 - Summary Report

Sample ID: Blank

Sample Date/Time: Monday, August 29, 2011 12:04:55

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\Blank.241

### Concentration Results

|    | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|----|---------|------|------------|-------------|-----------|--------------------|------------------|
| [> | Ge      | 74   |            | ug/L        |           | 213791             |                  |
|    | As      | 75   |            | ug/L        |           | 569                |                  |
|    | Se      | 77   |            | ug/L        |           | 4226               |                  |
|    | Se      | 82   |            | ug/L        |           | -3                 |                  |
|    | Kr      | 83   |            | ug/L        |           | 178                |                  |
|    | Ag      | 107  |            | ug/L        |           | 21                 |                  |
| [> | In      | 115  |            | ug/L        |           | 151849             |                  |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero |                         |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero |                         |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero |                         |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|    | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|----|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| [> | Ge      | 74   |                   |                    |                  |                 |                  |
|    | As      | 75   |                   |                    |                  |                 |                  |
|    | Se      | 77   |                   |                    |                  |                 |                  |
|    | Se      | 82   |                   |                    |                  |                 |                  |
|    | Kr      | 83   |                   |                    |                  |                 |                  |
|    | Ag      | 107  |                   |                    |                  |                 |                  |
| [> | In      | 115  |                   |                    |                  |                 |                  |

### QC Out Of Limits

| Measurement Type | Analyte | Mass | Out of Limits Message |
|------------------|---------|------|-----------------------|
|------------------|---------|------|-----------------------|

### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#7 - Summary Report

Sample ID: Standard 1

Sample Date/Time: Monday, August 29, 2011 12:08:12

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\Standard 1.242

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 197891             | 197891.260       |
|   | As      | 75   | 10.000     | ug/L        | 6.836     | 6389               | 0.030            |
|   | Se      | 77   |            | ug/L        |           | 7288               | 0.017            |
|   | Se      | 82   | 10.000     | ug/L        | 4.940     | 608                | 0.003            |
|   | Kr      | 83   |            | ug/L        |           | 179                | 0.000            |
|   | Ag      | 107  | 10.000     | ug/L        | 0.768     | 32871              | 0.235            |
| > | In      | 115  |            | ug/L        |           | 140083             | 140082.711       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   |                    |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   |                    |                  |                 |                  |

### QC Out Of Limits

Measurement Type   Analyte   Mass   Out of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: Standard 2

Sample Date/Time: Monday, August 29, 2011 12:11:28

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\Standard 2.243

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 193486             | 193486.327       |
|   | As      | 75   | 99.962     | ug/L        | 1.155     | 55727              | 0.285            |
|   | Se      | 77   |            | ug/L        |           | 10552              | 0.035            |
|   | Se      | 82   | 99.971     | ug/L        | 1.038     | 5803               | 0.030            |
|   | Kr      | 83   |            | ug/L        |           | 264                | 0.001            |
|   | Ag      | 107  | 99.990     | ug/L        | 1.206     | 313774             | 2.321            |
| > | In      | 115  |            | ug/L        |           | 135164             | 135163.923       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   |                    |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   |                    |                  |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: QC Std 1

Sample Date/Time: Monday, August 29, 2011 12:14:44

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\QC Std 1.244

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 194612             | 194612.229       |
|   | As      | 75   | 51.414     | ug/L        | 3.725     | 29069              | 0.147            |
|   | Se      | 77   |            | ug/L        |           | 8530               | 0.024            |
|   | Se      | 82   | 51.248     | ug/L        | 2.668     | 2990               | 0.015            |
|   | Kr      | 83   |            | ug/L        |           | 581                | 0.002            |
|   | Ag      | 107  | 50.087     | ug/L        | 2.233     | 158354             | 1.163            |
| > | In      | 115  |            | ug/L        |           | 136184             | 136184.101       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   | 91.0               |                  |                 |                  |
|   | As      | 75   | 102.829           |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   | 102.496           |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  | 100.174           |                    |                  |                 |                  |
| > | In      | 115  |                   | 89.7               |                  |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: QC Std 2

Sample Date/Time: Monday, August 29, 2011 12:18:03

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\QC Std 2.245

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 216292             | 216291.543       |
|   | As      | 75   | 0.773      | ug/L        | 31.819    | 1054               | 0.002            |
|   | Se      | 77   |            | ug/L        |           | 4316               | 0.000            |
|   | Se      | 82   | -0.121     | ug/L        | 102.576   | -11                | -0.000           |
|   | Kr      | 83   |            | ug/L        |           | 431                | 0.001            |
|   | Ag      | 107  | 0.006      | ug/L        | 15.439    | 41                 | 0.000            |
| > | In      | 115  |            | ug/L        |           | 153339             | 153339.278       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   | 101.2              |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   | 101.0              |                  |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: QC Std 3

Sample Date/Time: Monday, August 29, 2011 12:21:22

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\QC Std 3.246

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 199418             | 199417.521       |
|   | As      | 75   | 5.608      | ug/L        | 24.785    | 3726               | 0.016            |
|   | Se      | 77   |            | ug/L        |           | 6530               | 0.013            |
|   | Se      | 82   | 5.922      | ug/L        | 7.786     | 351                | 0.002            |
|   | Kr      | 83   |            | ug/L        |           | 255                | 0.000            |
|   | Ag      | 107  | 1.052      | ug/L        | 1.343     | 3469               | 0.024            |
| > | In      | 115  |            | ug/L        |           | 141207             | 141206.955       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   |                    | 93.3             |                 |                  |
|   | As      | 75   | 112.152           |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   | 118.446           |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  | 105.235           |                    |                  |                 |                  |
| > | In      | 115  |                   |                    | 93.0             |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: QC Std 4

Sample Date/Time: Monday, August 29, 2011 12:24:39

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\QC Std 4.247

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 177674             | 177673.574       |
|   | As      | 75   | -0.262     | ug/L        | 147.988   | 339                | -0.001           |
|   | Se      | 77   |            | ug/L        |           | 6271               | 0.016            |
|   | Se      | 82   | -0.625     | ug/L        | 119.710   | -36                | -0.000           |
|   | Kr      | 83   |            | ug/L        |           | 322                | 0.001            |
|   | Ag      | 107  | 0.090      | ug/L        | 7.724     | 284                | 0.002            |
| > | In      | 115  |            | ug/L        |           | 128047             | 128046.580       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   | 83.1               |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   | 84.3               |                  |                 |                  |

### QC Out Of Limits

Measurement Type    Analyte    Mass    Out of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: QC Std 5

Sample Date/Time: Monday, August 29, 2011 12:27:56

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\QC Std 5.248

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 180219             | 180219.439       |
|   | As      | 75   | 21.076     | ug/L        | 0.631     | 11323              | 0.060            |
|   | Se      | 77   |            | ug/L        |           | 6957               | 0.019            |
|   | Se      | 82   | 21.211     | ug/L        | 2.612     | 1144               | 0.006            |
|   | Kr      | 83   |            | ug/L        |           | 329                | 0.001            |
|   | Ag      | 107  | 18.912     | ug/L        | 0.853     | 56405              | 0.439            |
| > | In      | 115  |            | ug/L        |           | 128439             | 128438.736       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   |                    | 84.3             |                 |                  |
|   | As      | 75   | 105.379           |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   | 106.054           |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  | 94.558            |                    |                  |                 |                  |
| > | In      | 115  |                   |                    | 84.6             |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Monday, August 29, 2011 12:31:14

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\QC Std 6.249

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 194237             | 194236.919       |
|   | As      | 75   | 50.427     | ug/L        | 1.661     | 28479              | 0.144            |
|   | Se      | 77   |            | ug/L        |           | 8272               | 0.023            |
|   | Se      | 82   | 51.261     | ug/L        | 1.738     | 2986               | 0.015            |
|   | Kr      | 83   |            | ug/L        |           | 250                | 0.000            |
|   | Ag      | 107  | 49.316     | ug/L        | 0.743     | 155891             | 1.145            |
| > | In      | 115  |            | ug/L        |           | 136149             | 136148.579       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   |                    | 90.9             |                 |                  |
|   | As      | 75   | 100.853           |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   | 102.522           |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  | 98.633            |                    |                  |                 |                  |
| > | In      | 115  |                   |                    | 89.7             |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#7 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Monday, August 29, 2011 12:34:34

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\QC Std 7.250

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 217958             | 217958.151       |
|   | As      | 75   | 0.164      | ug/L        | 272.702   | 683                | 0.000            |
|   | Se      | 77   |            | ug/L        |           | 4288               | -0.000           |
|   | Se      | 82   | -0.166     | ug/L        | 167.733   | -14                | -0.000           |
|   | Kr      | 83   |            | ug/L        |           | 293                | 0.001            |
|   | Ag      | 107  | 0.007      | ug/L        | 18.132    | 46                 | 0.000            |
| > | In      | 115  |            | ug/L        |           | 155188             | 155188.241       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   | 101.9              |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   | 102.2              |                  |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: 1202472433

Sample Date/Time: Monday, August 29, 2011 12:37:52

Sample Type: Sample

Sample Description: ECOL 0520 MB

Number of Replicates: 3

Batch ID: 1135453|1|prb

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\1202472433.251

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 207452             | 207451.692       |
|   | As      | 75   | 0.904      | ug/L        | 22.935    | 1089               | 0.003            |
|   | Se      | 77   |            | ug/L        |           | 8900               | 0.023            |
|   | Se      | 82   | -0.024     | ug/L        | 182.194   | -5                 | -0.000           |
|   | Kr      | 83   |            | ug/L        |           | 258                | 0.000            |
|   | Ag      | 107  | 0.002      | ug/L        | 57.945    | 28                 | 0.000            |
| > | In      | 115  |            | ug/L        |           | 147314             | 147314.352       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   |                    | 97.0             |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   |                    | 97.0             |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: 1202472434

Sample Date/Time: Monday, August 29, 2011 12:41:09

Sample Type: Sample

Sample Description: ECOL 0520 LCS

Number of Replicates: 3

Batch ID: 1135453|1|prb

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\1202472434.252

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 209765             | 209765.413       |
|   | As      | 75   | 46.293     | ug/L        | 3.945     | 28272              | 0.132            |
|   | Se      | 77   |            | ug/L        |           | 10572              | 0.031            |
|   | Se      | 82   | 49.296     | ug/L        | 2.327     | 3100               | 0.015            |
|   | Kr      | 83   |            | ug/L        |           | 278                | 0.000            |
|   | Ag      | 107  | 44.608     | ug/L        | 0.947     | 154886             | 1.036            |
| > | In      | 115  |            | ug/L        |           | 149546             | 149545.798       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   |                    | 98.1             |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   |                    | 98.5             |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: 284538001

Sample Date/Time: Monday, August 29, 2011 12:44:26

Sample Type: Sample

Sample Description: ECOL 0520

Number of Replicates: 3

Batch ID: 1135453|1|prb

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\284538001.253

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 202233             | 202232.534       |
|   | As      | 75   | 1.996      | ug/L        | 29.205    | 1689               | 0.006            |
|   | Se      | 77   |            | ug/L        |           | 7614               | 0.018            |
|   | Se      | 82   | -0.046     | ug/L        | 90.400    | -6                 | -0.000           |
|   | Kr      | 83   |            | ug/L        |           | 251                | 0.000            |
|   | Ag      | 107  | 0.102      | ug/L        | 1.749     | 354                | 0.002            |
| > | In      | 115  |            | ug/L        |           | 141813             | 141812.660       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   |                    | 94.6             |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   |                    | 93.4             |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: 1202472435

Sample Date/Time: Monday, August 29, 2011 12:47:43

Sample Type: Sample

Sample Description: ECOL 0520 MS

Number of Replicates: 3

Batch ID: 1135453|1|prb

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\1202472435.254

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 192254             | 192254.204       |
|   | As      | 75   | 51.763     | ug/L        | 1.907     | 28916              | 0.148            |
|   | Se      | 77   |            | ug/L        |           | 9098               | 0.028            |
|   | Se      | 82   | 53.488     | ug/L        | 2.031     | 3083               | 0.016            |
|   | Kr      | 83   |            | ug/L        |           | 296                | 0.001            |
|   | Ag      | 107  | 48.720     | ug/L        | 1.847     | 154704             | 1.131            |
| > | In      | 115  |            | ug/L        |           | 136773             | 136772.653       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   |                    | 89.9             |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   |                    | 90.1             |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: 1202472436

Sample Date/Time: Monday, August 29, 2011 12:51:00

Sample Type: Sample

Sample Description: ECOL 0520 MSD

Number of Replicates: 3

Batch ID: 1135453|1|prb

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\1202472436.255

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 186248             | 186247.821       |
|   | As      | 75   | 53.521     | ug/L        | 1.598     | 28955              | 0.153            |
|   | Se      | 77   |            | ug/L        |           | 12178              | 0.046            |
|   | Se      | 82   | 55.741     | ug/L        | 0.879     | 3113               | 0.017            |
|   | Kr      | 83   |            | ug/L        |           | 303                | 0.001            |
|   | Ag      | 107  | 50.106     | ug/L        | 1.544     | 153941             | 1.163            |
| > | In      | 115  |            | ug/L        |           | 132335             | 132334.981       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   | 87.1               |                  |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   | 87.1               |                  |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: 1202472437

Sample Date/Time: Monday, August 29, 2011 12:57:35

Sample Type: Sample

Sample Description: ECOL 0520 SDILT

Number of Replicates: 3

Batch ID: 1135453|5|prb

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\1202472437.257

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 180958             | 180958.089       |
|   | As      | 75   | 0.556      | ug/L        | 75.782    | 768                | 0.002            |
|   | Se      | 77   |            | ug/L        |           | 5504               | 0.011            |
|   | Se      | 82   | 0.240      | ug/L        | 138.481   | 10                 | 0.000            |
|   | Kr      | 83   |            | ug/L        |           | 219                | 0.000            |
|   | Ag      | 107  | 0.024      | ug/L        | 15.487    | 92                 | 0.001            |
| > | In      | 115  |            | ug/L        |           | 131149             | 131149.082       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   |                    | 84.6             |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   |                    | 86.4             |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: QC Std 13

Sample Date/Time: Monday, August 29, 2011 13:00:54

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\QC Std 13.258

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 182510             | 182509.944       |
|   | As      | 75   | 50.679     | ug/L        | 1.057     | 26890              | 0.145            |
|   | Se      | 77   |            | ug/L        |           | 8064               | 0.024            |
|   | Se      | 82   | 51.125     | ug/L        | 0.973     | 2798               | 0.015            |
|   | Kr      | 83   |            | ug/L        |           | 221                | 0.000            |
|   | Ag      | 107  | 49.000     | ug/L        | 1.457     | 147297             | 1.138            |
| > | In      | 115  |            | ug/L        |           | 129463             | 129462.969       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   | 85.4               |                  |                 |                  |
|   | As      | 75   | 101.359           |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   | 102.249           |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  | 97.999            |                    |                  |                 |                  |
| > | In      | 115  |                   | 85.3               |                  |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#7 - Summary Report

Sample ID: QC Std 14

Sample Date/Time: Monday, August 29, 2011 13:04:11

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\QC Std 14.259

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 184170             | 184170.398       |
|   | As      | 75   | 6.369      | ug/L        | 21.576    | 3837               | 0.018            |
|   | Se      | 77   |            | ug/L        |           | 6061               | 0.013            |
|   | Se      | 82   | 4.882      | ug/L        | 13.880    | 267                | 0.001            |
|   | Kr      | 83   |            | ug/L        |           | 344                | 0.001            |
|   | Ag      | 107  | 1.032      | ug/L        | 3.800     | 3152               | 0.024            |
| > | In      | 115  |            | ug/L        |           | 130930             | 130930.350       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   |                    | 86.1             |                 |                  |
|   | As      | 75   | 127.390           |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   | 97.637            |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  | 103.156           |                    |                  |                 |                  |
| > | In      | 115  |                   |                    | 86.2             |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#7 - Summary Report

Sample ID: QC Std 15

Sample Date/Time: Monday, August 29, 2011 13:07:30

Sample Type: Sample

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: C:\elandata\Method\6020a misc.mth

Dataset File: C:\Elandata\DataSet\110826\QC Std 15.260

### Concentration Results

|   | Analyte | Mass | Conc. Mean | Report Unit | Conc. RSD | Meas. Intens. Mean | Net Intens. Mean |
|---|---------|------|------------|-------------|-----------|--------------------|------------------|
| > | Ge      | 74   |            | ug/L        |           | 201809             | 201809.209       |
|   | As      | 75   | 0.402      | ug/L        | 166.427   | 768                | 0.001            |
|   | Se      | 77   |            | ug/L        |           | 4047               | 0.000            |
|   | Se      | 82   | 0.111      | ug/L        | 132.787   | 3                  | 0.000            |
|   | Kr      | 83   |            | ug/L        |           | 231                | 0.000            |
|   | Ag      | 107  | 0.003      | ug/L        | 52.623    | 31                 | 0.000            |
| > | In      | 115  |            | ug/L        |           | 141740             | 141739.699       |

### Calibration

| Analyte | Mass | Curve Type       | Correlation Coefficient |
|---------|------|------------------|-------------------------|
| Ge      | 74   | Linear Thru Zero |                         |
| As      | 75   | Linear Thru Zero | 1.0000                  |
| Se      | 77   | Linear Thru Zero |                         |
| Se      | 82   | Linear Thru Zero | 1.0000                  |
| Kr      | 83   | Linear Thru Zero |                         |
| Ag      | 107  | Linear Thru Zero | 1.0000                  |
| In      | 115  | Linear Thru Zero |                         |

### QC Calculated Values

|   | Analyte | Mass | QC Std % Recovery | Int Std % Recovery | Spike % Recovery | Dilution % Diff | Dup. Rel. % Diff |
|---|---------|------|-------------------|--------------------|------------------|-----------------|------------------|
| > | Ge      | 74   |                   |                    | 94.4             |                 |                  |
|   | As      | 75   |                   |                    |                  |                 |                  |
|   | Se      | 77   |                   |                    |                  |                 |                  |
|   | Se      | 82   |                   |                    |                  |                 |                  |
|   | Kr      | 83   |                   |                    |                  |                 |                  |
|   | Ag      | 107  |                   |                    |                  |                 |                  |
| > | In      | 115  |                   |                    | 93.3             |                 |                  |

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

=====  
Analysis Begun

Logged In Analyst: Administrator

Technique: AA FIMS-MHS

Spectrometer Model: FIMS-100, S/N B050-9550

Autosampler Model: S10

Sample Information File: C:\data-AA\Administrator\Sample Information\082411W1.SIF

Batch ID:

Results Data Set: 082411W1

Results Library: C:\data-AA\Administrator\Results\Results.mdb

=====  
Method Loaded

Method Name: WATER

Method Last Saved: 1/27/2011 16:34:14

Method Description: 7470A, 245.2, ILM04 ANALYST JXL

Sequence No.: 1

Autosampler Location: 1

Sample ID: Calib Blank

Date Collected: 8/24/2011 16:55:46

Analyst:

Data Type: Original

-----  
Replicate Data: Calib Blank

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      |                 | [0.00]       | 0.0007         | 0.0025    | 0.0007      | 16:56:35 | Yes         |
| 2      |                 | [0.00]       | 0.0007         | 0.0025    | 0.0007      | 16:57:03 | Yes         |
| Mean:  |                 | [0.00]       | 0.0007         |           |             |          |             |
| SD:    |                 | 0.00         | 0.0000         |           |             |          |             |
| %RSD:  |                 | 0.00         | 3.27           |           |             |          |             |

Auto-zero performed.

Sequence No.: 2

Autosampler Location: 2

Sample ID: S0.2

Date Collected: 8/24/2011 16:57:22

Analyst:

Data Type: Original

-----  
Replicate Data: S0.2

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      |                 | [0.2]        | 0.0022         | 0.0128    | 0.0029      | 16:58:11 | Yes         |
| 2      |                 | [0.2]        | 0.0021         | 0.0114    | 0.0028      | 16:58:40 | Yes         |
| Mean:  |                 | [0.2]        | 0.0021         |           |             |          |             |
| SD:    |                 | 0.0          | 0.0000         |           |             |          |             |
| %RSD:  |                 | 0.0          | 2.03           |           |             |          |             |

Standard number 1 applied. [0.2]

Correlation Coef.: 1.000000 Slope: 0.01061 Intercept: 0.00000

Sequence No.: 3

Autosampler Location: 3

Sample ID: S0.5

Date Collected: 8/24/2011 16:58:58

Analyst:

Data Type: Original

-----  
Replicate Data: S0.5

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      |                 | [0.5]        | 0.0052         | 0.0245    | 0.0060      | 16:59:48 | Yes         |
| 2      |                 | [0.5]        | 0.0052         | 0.0255    | 0.0059      | 17:00:17 | Yes         |
| Mean:  |                 | [0.5]        | 0.0052         |           |             |          |             |
| SD:    |                 | 0.0          | 0.0000         |           |             |          |             |
| %RSD:  |                 | 0.0          | 0.58           |           |             |          |             |

Standard number 2 applied. [0.5]

Correlation Coef.: 0.999962 Slope: 0.01040 Intercept: 0.00002

Sequence No.: 4

Autosampler Location: 4

Sample ID: S2.0

Date Collected: 8/24/2011 17:00:36

Analyst:

Data Type: Original

-----  
Replicate Data: S2.0

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      |                 | [2.0]        | 0.0210         | 0.0937    | 0.0217      | 17:01:26 | Yes         |
| 2      |                 | [2.0]        | 0.0207         | 0.0911    | 0.0215      | 17:01:55 | Yes         |
| Mean:  |                 | [2.0]        | 0.0209         |           |             |          |             |
| SD:    |                 | 0.0          | 0.0002         |           |             |          |             |
| %RSD:  |                 | 0.0          | 0.92           |           |             |          |             |

Standard number 3 applied. [2.0]  
Correlation Coef.: 0.999998 Slope: 0.01042 Intercept: 0.00001

Sequence No.: 5

Autosampler Location: 5

Sample ID: S5.0

Date Collected: 8/24/2011 17:02:14

Analyst:

Data Type: Original

-----  
Replicate Data: S5.0

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      |                 | [5.0]        | 0.0517         | 0.2283    | 0.0525      | 17:03:04 | Yes         |
| 2      |                 | [5.0]        | 0.0512         | 0.2236    | 0.0520      | 17:03:32 | Yes         |
| Mean:  |                 | [5.0]        | 0.0515         |           |             |          |             |
| SD:    |                 | 0.0          | 0.0004         |           |             |          |             |
| %RSD:  |                 | 0.0          | 0.69           |           |             |          |             |

Standard number 4 applied. [5.0]  
Correlation Coef.: 0.999988 Slope: 0.01030 Intercept: 0.00008

Sequence No.: 6

Autosampler Location: 6

Sample ID: S10.0

Date Collected: 8/24/2011 17:03:52

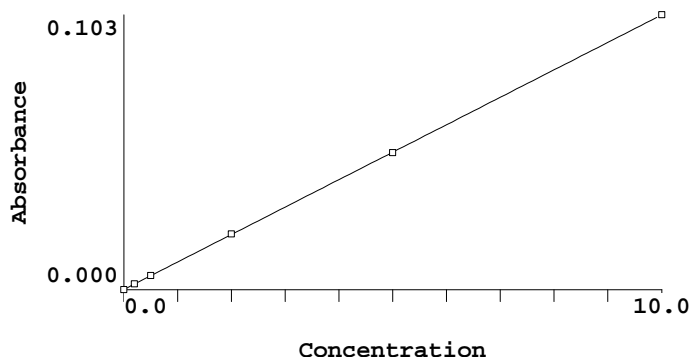
Analyst:

Data Type: Original

-----  
Replicate Data: S10.0

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      |                 | [10.0]       | 0.1036         | 0.4538    | 0.1043      | 17:04:41 | Yes         |
| 2      |                 | [10.0]       | 0.1034         | 0.4546    | 0.1041      | 17:05:09 | Yes         |
| Mean:  |                 | [10.0]       | 0.1035         |           |             |          |             |
| SD:    |                 | 0.0          | 0.0002         |           |             |          |             |
| %RSD:  |                 | 0.0          | 0.16           |           |             |          |             |

Standard number 5 applied. [10.0]  
Correlation Coef.: 0.999995 Slope: 0.01034 Intercept: 0.00003

-----  
Calibration data for Hg 253.7

Equation: Linear, Calculated Intercept

| ID          | Mean Signal (Abs) | Entered Conc. ug/L | Calculated Conc. ug/L | Standard Deviation | %RSD |
|-------------|-------------------|--------------------|-----------------------|--------------------|------|
| Calib Blank | 0.0000            | 0                  | -0.003                | 0.00               | 3.3  |
| S0.2        | 0.0021            | 0.2                | 0.202                 | 0.00               | 2.0  |
| S0.5        | 0.0052            | 0.5                | 0.501                 | 0.00               | 0.6  |
| S2.0        | 0.0209            | 2.0                | 2.014                 | 0.00               | 0.9  |

|       |        |      |        |      |     |
|-------|--------|------|--------|------|-----|
| S5.0  | 0.0515 | 5.0  | 4.978  | 0.00 | 0.7 |
| S10.0 | 0.1035 | 10.0 | 10.008 | 0.00 | 0.2 |

Correlation Coef.: 0.999995    Slope: 0.01034    Intercept: 0.00003

Sequence No.: 7

Autosampler Location: 9

Sample ID: ICV

Date Collected: 8/24/2011 17:05:28

Analyst:

Data Type: Original

## Replicate Data: ICV

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | 4.965           | 4.965          | 0.0514          | 0.2248    | 0.0521      | 17:06:17 | Yes         |
| 2      | 4.970           | 4.970          | 0.0514          | 0.2250    | 0.0521      | 17:06:46 | Yes         |
| Mean:  | 4.968           | 4.968          | 0.0514          |           |             |          |             |
| SD:    | 0.003           | 0.003          | 0.0000          |           |             |          |             |
| %RSD:  | 0.069           | 0.069          | 0.07            |           |             |          |             |

QC value within limits for Hg 253.7    Recovery = 99.35%  
All analyte(s) passed QC.

Sequence No.: 8

Autosampler Location: 10

Sample ID: ICB

Date Collected: 8/24/2011 17:07:05

Analyst:

Data Type: Original

## Replicate Data: ICB

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | -0.012          | -0.012         | -0.0001         | 0.0014    | 0.0006      | 17:07:55 | Yes         |
| 2      | 0.022           | 0.022          | 0.0003          | 0.0026    | 0.0010      | 17:08:23 | Yes         |
| Mean:  | 0.005           | 0.005          | 0.0001          |           |             |          |             |
| SD:    | 0.025           | 0.025          | 0.0003          |           |             |          |             |
| %RSD:  | 498.5           | 498.5          | 303.19          |           |             |          |             |

QC value within limits for Hg 253.7    Recovery = Not calculated  
All analyte(s) passed QC.

Sequence No.: 9

Autosampler Location: 11

Sample ID: CRDL

Date Collected: 8/24/2011 17:08:43

Analyst:

Data Type: Original

## Replicate Data: CRDL

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | 0.204           | 0.204          | 0.0021          | 0.0130    | 0.0029      | 17:09:33 | Yes         |
| 2      | 0.212           | 0.212          | 0.0022          | 0.0120    | 0.0030      | 17:10:01 | Yes         |
| Mean:  | 0.208           | 0.208          | 0.0022          |           |             |          |             |
| SD:    | 0.005           | 0.005          | 0.0001          |           |             |          |             |
| %RSD:  | 2.570           | 2.570          | 2.53            |           |             |          |             |

QC value within limits for Hg 253.7    Recovery = 104.05%  
All analyte(s) passed QC.

Sequence No.: 10

Autosampler Location: 7

Sample ID: CCV

Date Collected: 8/24/2011 17:10:21

Analyst:

Data Type: Original

## Replicate Data: CCV

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | 5.042           | 5.042          | 0.0522          | 0.2297    | 0.0529      | 17:11:10 | Yes         |
| 2      | 4.994           | 4.994          | 0.0517          | 0.2262    | 0.0524      | 17:11:39 | Yes         |
| Mean:  | 5.018           | 5.018          | 0.0519          |           |             |          |             |
| SD:    | 0.033           | 0.033          | 0.0003          |           |             |          |             |
| %RSD:  | 0.667           | 0.667          | 0.67            |           |             |          |             |

QC value within limits for Hg 253.7    Recovery = 100.36%  
All analyte(s) passed QC.

Sequence No.: 11

Sample ID: CCB

Analyst:

Autosampler Location: 8

Date Collected: 8/24/2011 17:11:57

Data Type: Original

## Replicate Data: CCB

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.016     | -0.016  | -0.0001 | 0.0017 | 0.0006 | 17:12:47 | Yes    |
| 2     | -0.004     | -0.004  | -0.0000 | 0.0023 | 0.0007 | 17:13:15 | Yes    |
| Mean: | -0.010     | -0.010  | -0.0001 |        |        |          |        |
| SD:   | 0.009      | 0.009   | 0.0001  |        |        |          |        |
| %RSD: | 87.64      | 87.64   | 129.75  |        |        |          |        |

QC value within limits for Hg 253.7 Recovery = Not calculated

All analyte(s) passed QC.

Sequence No.: 12

Sample ID: 1202472317|1135404|1

Analyst: JXL1

Autosampler Location: 12

Date Collected: 8/24/2011 17:13:34

Data Type: Original

## Replicate Data: 1202472317|1135404|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.013     | -0.013  | -0.0001 | 0.0018 | 0.0006 | 17:14:24 | Yes    |
| 2     | -0.003     | -0.003  | 0.0000  | 0.0025 | 0.0007 | 17:14:53 | Yes    |
| Mean: | -0.008     | -0.008  | -0.0000 |        |        |          |        |
| SD:   | 0.007      | 0.007   | 0.0001  |        |        |          |        |
| %RSD: | 93.25      | 93.25   | 159.14  |        |        |          |        |

Sequence No.: 13

Sample ID: 1202472318|1135404|1

Analyst: JXL1

Autosampler Location: 13

Date Collected: 8/24/2011 17:15:13

Data Type: Original

## Replicate Data: 1202472318|1135404|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 2.050      | 2.050   | 0.0212  | 0.0940 | 0.0220 | 17:16:03 | Yes    |
| 2     | 2.038      | 2.038   | 0.0211  | 0.0932 | 0.0218 | 17:16:32 | Yes    |
| Mean: | 2.044      | 2.044   | 0.0212  |        |        |          |        |
| SD:   | 0.009      | 0.009   | 0.0001  |        |        |          |        |
| %RSD: | 0.442      | 0.442   | 0.44    |        |        |          |        |

Sequence No.: 14

Sample ID: 284538001|1135404|1

Analyst: JXL1

Autosampler Location: 14

Date Collected: 8/24/2011 17:16:52

Data Type: Original

## Replicate Data: 284538001|1135404|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 0.015      | 0.015   | 0.0002  | 0.0029 | 0.0009 | 17:17:41 | Yes    |
| 2     | 0.012      | 0.012   | 0.0002  | 0.0032 | 0.0009 | 17:18:09 | Yes    |
| Mean: | 0.014      | 0.014   | 0.0002  |        |        |          |        |
| SD:   | 0.002      | 0.002   | 0.0000  |        |        |          |        |
| %RSD: | 12.54      | 12.54   | 10.18   |        |        |          |        |

Sequence No.: 15

Sample ID: 1202472319|1135404|1

Analyst: JXL1

Autosampler Location: 15

Date Collected: 8/24/2011 17:18:28

Data Type: Original

## Replicate Data: 1202472319|1135404|1

| Repl | SampleConc | StdConc | BlkCorr | Peak | Peak | Time | Peak |
|------|------------|---------|---------|------|------|------|------|
|------|------------|---------|---------|------|------|------|------|

| #     | ug/L  | ug/L  | Signal | Area   | Height |          | Stored |
|-------|-------|-------|--------|--------|--------|----------|--------|
| 1     | 0.003 | 0.003 | 0.0001 | 0.0026 | 0.0008 | 17:19:17 | Yes    |
| 2     | 0.014 | 0.014 | 0.0002 | 0.0038 | 0.0009 | 17:19:45 | Yes    |
| Mean: | 0.009 | 0.009 | 0.0001 |        |        |          |        |
| SD:   | 0.008 | 0.008 | 0.0001 |        |        |          |        |
| %RSD: | 94.98 | 94.98 | 69.19  |        |        |          |        |

Sequence No.: 16

Sample ID: 1202472320|1135404|1

Analyst: JXL1

Autosampler Location: 16

Date Collected: 8/24/2011 17:20:04

Data Type: Original

Replicate Data: 1202472320|1135404|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 2.022      | 2.022   | 0.0209  | 0.0942 | 0.0217 | 17:20:53 | Yes    |
| 2     | 1.996      | 1.996   | 0.0207  | 0.0910 | 0.0214 | 17:21:21 | Yes    |
| Mean: | 2.009      | 2.009   | 0.0208  |        |        |          |        |
| SD:   | 0.019      | 0.019   | 0.0002  |        |        |          |        |
| %RSD: | 0.925      | 0.925   | 0.92    |        |        |          |        |

Sequence No.: 17

Sample ID: 1202472321|1135404|5

Analyst: JXL1

Autosampler Location: 17

Date Collected: 8/24/2011 17:21:40

Data Type: Original

Replicate Data: 1202472321|1135404|5

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.008     | -0.008  | -0.0000 | 0.0016 | 0.0007 | 17:22:29 | Yes    |
| 2     | -0.015     | -0.015  | -0.0001 | 0.0020 | 0.0006 | 17:22:58 | Yes    |
| Mean: | -0.011     | -0.011  | -0.0001 |        |        |          |        |
| SD:   | 0.005      | 0.005   | 0.0001  |        |        |          |        |
| %RSD: | 44.23      | 44.23   | 61.54   |        |        |          |        |

Sequence No.: 18

Sample ID: 1202472312|1135401|1

Analyst: JXL1

Autosampler Location: 18

Date Collected: 8/24/2011 17:23:17

Data Type: Original

Replicate Data: 1202472312|1135401|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.011     | -0.011  | -0.0001 | 0.0023 | 0.0006 | 17:24:06 | Yes    |
| 2     | -0.001     | -0.001  | 0.0000  | 0.0027 | 0.0007 | 17:24:34 | Yes    |
| Mean: | -0.006     | -0.006  | -0.0000 |        |        |          |        |
| SD:   | 0.007      | 0.007   | 0.0001  |        |        |          |        |
| %RSD: | 107.6      | 107.6   | 218.54  |        |        |          |        |

Sequence No.: 19

Sample ID: 1202472313|1135401|1

Analyst: JXL1

Autosampler Location: 19

Date Collected: 8/24/2011 17:24:53

Data Type: Original

Replicate Data: 1202472313|1135401|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 2.031      | 2.031   | 0.0210  | 0.0940 | 0.0218 | 17:25:42 | Yes    |
| 2     | 2.059      | 2.059   | 0.0213  | 0.0958 | 0.0220 | 17:26:10 | Yes    |
| Mean: | 2.045      | 2.045   | 0.0212  |        |        |          |        |
| SD:   | 0.019      | 0.019   | 0.0002  |        |        |          |        |
| %RSD: | 0.952      | 0.952   | 0.95    |        |        |          |        |

Sequence No.: 20

Sample ID: 284537001|1135401|1

Analyst: JXL1

Autosampler Location: 20

Date Collected: 8/24/2011 17:26:29

Data Type: Original

-----  
Replicate Data: 284537001|1135401|1

| Repl  | SampleConc | StdConc | Blncorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 0.014      | 0.014   | 0.0002  | 0.0034 | 0.0009 | 17:27:19 | Yes    |
| 2     | 0.034      | 0.034   | 0.0004  | 0.0057 | 0.0011 | 17:27:48 | Yes    |
| Mean: | 0.024      | 0.024   | 0.0003  |        |        |          |        |
| SD:   | 0.014      | 0.014   | 0.0001  |        |        |          |        |
| %RSD: | 58.57      | 58.57   | 51.78   |        |        |          |        |

Sequence No.: 21

Autosampler Location: 21

Sample ID: 1202472314|1135401|1

Date Collected: 8/24/2011 17:28:07

Analyst: JXL1

Data Type: Original

-----  
Replicate Data: 1202472314|1135401|1

| Repl  | SampleConc | StdConc | Blncorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 0.021      | 0.021   | 0.0002  | 0.0034 | 0.0010 | 17:28:56 | Yes    |
| 2     | 0.024      | 0.024   | 0.0003  | 0.0042 | 0.0010 | 17:29:24 | Yes    |
| Mean: | 0.022      | 0.022   | 0.0003  |        |        |          |        |
| SD:   | 0.002      | 0.002   | 0.0000  |        |        |          |        |
| %RSD: | 8.992      | 8.992   | 7.87    |        |        |          |        |

Sequence No.: 22

Autosampler Location: 7

Sample ID: CCV

Date Collected: 8/24/2011 17:29:44

Analyst:

Data Type: Original

-----  
Replicate Data: CCV

| Repl  | SampleConc | StdConc | Blncorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 5.002      | 5.002   | 0.0517  | 0.2276 | 0.0525 | 17:30:33 | Yes    |
| 2     | 4.969      | 4.969   | 0.0514  | 0.2277 | 0.0521 | 17:31:01 | Yes    |
| Mean: | 4.985      | 4.985   | 0.0516  |        |        |          |        |
| SD:   | 0.023      | 0.023   | 0.0002  |        |        |          |        |
| %RSD: | 0.462      | 0.462   | 0.46    |        |        |          |        |

QC value within limits for Hg 253.7 Recovery = 99.71%  
All analyte(s) passed QC.

Sequence No.: 23

Autosampler Location: 8

Sample ID: CCB

Date Collected: 8/24/2011 17:31:20

Analyst:

Data Type: Original

-----  
Replicate Data: CCB

| Repl  | SampleConc | StdConc | Blncorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.002     | -0.002  | 0.0000  | 0.0022 | 0.0007 | 17:32:10 | Yes    |
| 2     | 0.000      | 0.000   | 0.0000  | 0.0022 | 0.0008 | 17:32:39 | Yes    |
| Mean: | -0.001     | -0.001  | 0.0000  |        |        |          |        |
| SD:   | 0.001      | 0.001   | 0.0000  |        |        |          |        |
| %RSD: | 97.26      | 97.26   | 73.70   |        |        |          |        |

QC value within limits for Hg 253.7 Recovery = Not calculated  
All analyte(s) passed QC.

Sequence No.: 24

Autosampler Location: 22

Sample ID: 1202472315|1135401|1

Date Collected: 8/24/2011 17:32:58

Analyst: JXL1

Data Type: Original

-----  
Replicate Data: 1202472315|1135401|1

| Repl | SampleConc | StdConc | Blncorr | Peak   | Peak   | Time     | Peak   |
|------|------------|---------|---------|--------|--------|----------|--------|
| #    | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1    | 2.027      | 2.027   | 0.0210  | 0.0952 | 0.0217 | 17:33:47 | Yes    |
| 2    | 2.030      | 2.030   | 0.0210  | 0.0945 | 0.0218 | 17:34:16 | Yes    |



# Miscellaneous

# Prep Logbook

## Acid Digestion of Total Recoverable or Dissolved Metals in Surface and Groundwater Samples for Analysis by ICP or ICP-MS

|                  |                    |                    |      |            |   |               |              |             |
|------------------|--------------------|--------------------|------|------------|---|---------------|--------------|-------------|
| <b>Batch ID:</b> | <b>1135452.0</b>   | Verified by: _____ | Type | Sample Id  | Description   | Serial Number | Spike Amount | Spike Units |
| Analyst:         | Anthony Green      |                    | LCS  | 1202472434 | ICP-MS SPIKE FOR ALL CLIENTS EXCEPT DOE CLIENTS (Solution A). | UI1589187-A   | .5           | mL          |
| Method:          | SW846 3005A        |                    | LCS  | 1202472434 | MS SPIKE FOR ALL CLIENTS EXCEPT DOE CLIENTS (Solution B).     | UI1589189-B   | .5           | mL          |
| Lab SOP:         | GL-MA-E-006 REV# 9 |                    | MS   | 1202472435 | ICP-MS SPIKE FOR ALL CLIENTS EXCEPT DOE CLIENTS (Solution A). | UI1589187-A   | .5           | mL          |
| Instrument:      | NO_INSTRUMENT      |                    | MS   | 1202472435 | MS SPIKE FOR ALL CLIENTS EXCEPT DOE CLIENTS (Solution B).     | UI1589189-B   | .5           | mL          |
|                  |                    |                    | MSD  | 1202472436 | ICP-MS SPIKE FOR ALL CLIENTS EXCEPT DOE CLIENTS (Solution A). | UI1589187-A   | .5           | mL          |
|                  |                    |                    | MSD  | 1202472436 | MS SPIKE FOR ALL CLIENTS EXCEPT DOE CLIENTS (Solution B).     | UI1589189-B   | .5           | mL          |

| Sample ID                    | Run Date             | Matrix       | Initial Volume (mL) | Final Volume (mL) | Prep Factor (mL/mL) | pH Check |
|------------------------------|----------------------|--------------|---------------------|-------------------|---------------------|----------|
| 1202472433 MB                | 24-AUG-2011 07:30:00 | Ground Water | 50                  | 50                | 1                   | <2       |
| 1202472434 LCS               | 24-AUG-2011 07:30:00 | Ground Water | 50                  | 50                | 1                   | <2       |
| 284538001                    | 24-AUG-2011 07:30:00 | Ground Water | 50                  | 50                | 1                   | <2       |
| 1202472435 MS (284538001)    | 24-AUG-2011 07:30:00 | Ground Water | 50                  | 50                | 1                   | <2       |
| 1202472436 MSD (284538001)   | 24-AUG-2011 07:30:00 | Ground Water | 50                  | 50                | 1                   | <2       |
| 1202472437 SDILT (284538001) | 24-AUG-2011 07:30:00 | Ground Water | 50                  | 50                | 1                   | <2       |

| Reagent/Solvent Lot ID | Description              | Amount | Comments: |
|------------------------|--------------------------|--------|-----------|
| 1586906                | HYDROCHLORIC ACID        | 2.5 mL |           |
| 1604895                | Concentrated Nitric Acid | 1 mL   |           |

# Prep Logbook

## Mercury Analysis Using the Perkin Elmer Automated Mercury Analyzer

|                  |                     |                    |      |            |  |               |              |             |
|------------------|---------------------|--------------------|------|------------|--|---------------|--------------|-------------|
| <b>Batch ID:</b> | <b>1135403.0</b>    | Verified by: _____ | Type | Sample Id  | Description                                      | Serial Number | Spike Amount | Spike Units |
| Analyst:         | Tara Griffin        |                    | LCS  | 1202472318 | Mercury working intermediate standard for LCS/MS | WHG110824-13  | .2           | mL          |
| Method:          | SW846 7470A Prep    |                    | MS   | 1202472320 | Mercury working intermediate standard for LCS/MS | WHG110824-13  | .2           | mL          |
| Lab SOP:         | GL-MA-E-010 REV# 25 |                    |      |            |  |               |              |             |
| Instrument:      | NO_INSTRUMENT       |                    |      |            |  |               |              |             |

| Sample ID                    | Run Date             | Matrix       | Initial Volume (mL) | Final Volume (mL) | Prep Factor (mL/mL) | pH Check |
|------------------------------|----------------------|--------------|---------------------|-------------------|---------------------|----------|
| 1202472317 MB                | 24-AUG-2011 10:00:00 | Ground Water | 20                  | 20                | 1                   | <2       |
| 1202472318 LCS               | 24-AUG-2011 10:00:00 | Ground Water | 20                  | 20                | 1                   | <2       |
| 284538001                    | 24-AUG-2011 10:00:00 | Ground Water | 20                  | 20                | 1                   | <2       |
| 1202472319 DUP (284538001)   | 24-AUG-2011 10:00:00 | Ground Water | 20                  | 20                | 1                   | <2       |
| 1202472320 MS (284538001)    | 24-AUG-2011 10:00:00 | Ground Water | 20                  | 20                | 1                   | <2       |
| 1202472321 SDILT (284538001) | 24-AUG-2011 10:00:00 | Ground Water | 20                  | 20                | 1                   | <2       |

| Reagent/Solvent Lot ID | Description                            | Amount | Comments:                             |
|------------------------|--|--------|---------------------------------------|
| 1522928                | Sulfuric Acid, Concentrated            | 1 mL   | Digestion Start Date: 24-AUG-11 10:00 |
| 1588420-C              | 5% KMnO4 solution                      | 3 mL   | Digestion End Date: 24-AUG-11 12:00   |
| 1596475-1              | NITRIC ACID                            | .5 mL  | Hot Block ID: 12                      |
| 1596553-C              | Hg reducing agent                      | 1 mL   | Thermometer ID: 10461                 |
| 1601203-C              | 5% Potassium Persulfate                | 1.5 mL | Block Temperature: 95 C               |
| WHG110824-01a          | Mercury Working 1st Source CAL 0.2/CRA | 20 uL  |                                       |
| WHG110824-02           | Mercury Working 1st Source CAL 0.5     | 50 uL  |                                       |
| WHG110824-03           | Mercury Working 1st Source CAL 2.0     | 200 uL |                                       |
| WHG110824-04           | Mercury Working 1st Source CAL 5.0/CCV | 500 uL |                                       |
| WHG110824-05           | Mercury Working 1st Source CAL 10.0    | 1 mL   |                                       |
| WHG110824-06           | Mercury Working 2nd Source 5.0/ICV     | 500 uL |                                       |

# Standard Logbook

**Serial ID:** UHG1576853-02      **Opened:** 13-JUN-11      **Amount :** 100 mL  
**Name:** MHGSTOCK2      **Received:** 13-JUN-11      **Catalog Number :** AHG1KN-100  
**Type:** Source Material      **Expires:** 13-JUN-12      **Lot Number :** 4105720  
**Employee:** Tara Griffin      **Verified:** 10-JUN-11      **Solvent :** 3% HNO3  
**Supplier:** Ricca Chemical Company  
**Description:** Mercury Source Standard #2 1,000 mg/L  
**Comments:** None

| Analyte | Concentration | Analyte | Concentration |
|---------|---------------|---------|---------------|
| Mercury | 999.7 mg/L    |         |               |

**Serial ID:** UHG1576854-01      **Opened:** 13-JUN-11      **Amount :** 125 mL  
**Name:** MHGSTOCK1      **Received:** 13-JUN-11      **Catalog Number :** PLHG4-2Y  
**Type:** Source Material      **Expires:** 13-JUN-12      **Lot Number :** 16-81HG  
**Employee:** Tara Griffin      **Verified:** 10-JUN-11      **Solvent :** 10% HNO3  
**Supplier:** Spex  
**Description:** Mercury Source Standard #1 1,000 mg/L  
**Comments:** None

| Analyte | Concentration | Analyte | Concentration |
|---------|---------------|---------|---------------|
| Mercury | 1000 mg/L     |         |               |

**Serial ID:** UI110222-10      **Opened:** 22-FEB-11      **Amount :** 250 mL  
**Name:** ICP-MS CRDL Master #2      **Received:** 22-FEB-11      **Catalog Number :** 160044-11-02  
**Type:** Source Material      **Expires:** 22-FEB-12      **Lot Number :** 1024009  
**Employee:** Paul Boyd      **Solvent :** +/- 0.5% IN 2% HNO3  
**Supplier:** O2SI  
**Description:** ICPMS CRDL Soln #2  
**Comments:** None

| Analyte   | Concentration | Analyte    | Concentration |
|-----------|---------------|------------|---------------|
| Antimony  | 3 mg/L        | Molybdenum | .5 mg/L       |
| Silver    | 1 mg/L        | Tin        | 5 mg/L        |
| Titanium  | 10 mg/L       | Tungsten   | 5 mg/L        |
| Zirconium | 2 mg/L        |            |               |

**Serial ID:** UI110411-03      **Opened:** 11-APR-11      **Catalog Number :** 060074-05-01  
**Name:** ICPMS Tungsten - 10mg/L      **Received:** 11-APR-11      **Lot Number :** 1025015  
**Type:** Source Material      **Expires:** 11-APR-12      **Solvent :** 2% HNO3  
**Employee:** Paul Boyd  
**Supplier:** O2SI  
**Description:** ICPMS Tungsten standard SPIKE - 10mg/L  
**Comments:** None

| Analyte  | Concentration | Analyte | Concentration |
|----------|---------------|---------|---------------|
| Tungsten | 10 mg/L       |         |               |

# Standard Logbook

**Serial ID:** UI110503-11      **Opened:** 03-MAY-11      **Amount :** 1000 mL  
**Name:** ICP-MS ICSA Master A      **Received:** 03-MAY-11      **Catalog Number :** 160013-01-01L  
**Type:** Source Material      **Expires:** 03-MAY-12      **Lot Number :** 1024844  
**Employee:** Paul Boyd      **Solvent :** 2% HNO3  
**Supplier:** 02SI  
**Description:** ICP-MS ICSA Master A  
**Comments:** None

| Analyte    | Concentration | Analyte     | Concentration |
|------------|---------------|-------------|---------------|
| Aluminum   | 1000 mg/L     | Calcium     | 1000 mg/L     |
| Carbon     | 2000 mg/L     | Chloride    | 10000 mg/L    |
| Iron       | 1000 mg/L     | Magnesium   | 1000 mg/L     |
| Molybdenum | 20 mg/L       | Phosphorous | 1000 mg/L     |
| Potassium  | 1000 mg/L     | Sodium      | 1000 mg/L     |
| Sulfur     | 1000 mg/L     | Titanium    | 20 mg/L       |

**Serial ID:** UI110602-09      **Opened:** 02-JUN-11      **Amount :** 250 mL  
**Name:** ICP-MS CRDL Master #1      **Received:** 02-JUN-11      **Catalog Number :** 160044-13-02  
**Type:** Source Material      **Expires:** 02-JUN-12      **Lot Number :** 1026190  
**Employee:** Paul Boyd      **Solvent :** +/- 0.5% IN 2% HNO3  
**Supplier:** 02SI  
**Description:** ICPMS CRDL Master Soln #1  
**Comments:** None

| Analyte     | Concentration | Analyte   | Concentration |
|-------------|---------------|-----------|---------------|
| Aluminum    | 50 mg/L       | Arsenic   | 5 mg/L        |
| Barium      | 2 mg/L        | Beryllium | .5 mg/L       |
| Boron       | 15 mg/L       | Cadmium   | 1 mg/L        |
| Calcium     | 200 mg/L      | Chromium  | 30 mg/L       |
| Cobalt      | 1 mg/L        | Copper    | 1 mg/L        |
| Iron        | 100 mg/L      | Lead      | 2 mg/L        |
| Lithium     | 10 mg/L       | Magnesium | 30 mg/L       |
| Manganese   | 5 mg/L        | Nickel    | 2 mg/L        |
| Phosphorous | 50 mg/L       | Potassium | 300 mg/L      |
| Selenium    | 5 mg/L        | Sodium    | 250 mg/L      |
| Strontium   | 10 mg/L       | Thallium  | 2 mg/L        |
| Thorium     | 2 mg/L        | Uranium   | .2 mg/L       |
| Vanadium    | 10 mg/L       | Zinc      | 10 mg/L       |

**Serial ID:** UI110720-12      **Opened:** 20-JUL-11      **Amount :** 250 mL  
**Name:** ICP-MS ICSAB Master B      **Received:** 20-JUL-11      **Catalog Number :** 160033-02  
**Type:** Source Material      **Expires:** 01-MAY-12      **Lot Number :** 1024788  
**Employee:** Paul Boyd      **Solvent :** +/- 0.5% in 2% HNO3  
**Supplier:** 02SI  
**Description:** ICPMS ICSAB Master B

# Standard Logbook

Comments: None

| Analyte   | Concentration | Analyte   | Concentration |
|-----------|---------------|-----------|---------------|
| Arsenic   | 2 mg/L        | Barium    | 2 mg/L        |
| Beryllium | 2 mg/L        | Boron     | 2 mg/L        |
| Cadmium   | 2 mg/L        | Chromium  | 2 mg/L        |
| Cobalt    | 2 mg/L        | Copper    | 2 mg/L        |
| Lead      | 2 mg/L        | Lithium   | 2 mg/L        |
| Manganese | 2 mg/L        | Nickel    | 2 mg/L        |
| Selenium  | 2 mg/L        | Strontium | 2 mg/L        |
| Thallium  | 2 mg/L        | Thorium   | 2 mg/L        |
| Uranium   | 2 mg/L        | Vanadium  | 2 mg/L        |
| Zinc      | 2 mg/L        |           |               |

**Serial ID:** UI110720-13      **Opened:** 20-JUL-11      **Amount :** 250 mL  
**Name:** ICP-MS ICSAB Master C      **Received:** 20-JUL-11      **Catalog Number :** 160033-03  
**Type:** Source Material      **Expires:** 01-MAY-12      **Lot Number :** 1024789  
**Employee:** Paul Boyd      **Solvent :** +/- 0.5% in 2% HNO3  
**Supplier:** 02SI  
**Description:** ICPMS ICSAB Master C  
**Comments:** None

| Analyte   | Concentration | Analyte  | Concentration |
|-----------|---------------|----------|---------------|
| Antimony  | 2 mg/L        | Silver   | 2 mg/L        |
| Tin       | 2 mg/L        | Tungsten | 2 mg/L        |
| Zirconium | 2 mg/L        |          |               |

**Serial ID:** UI110817-07      **Opened:** 17-AUG-11      **Amount :** 250 mL  
**Name:** ICP-MS ICV/CCV Master B      **Received:** 17-AUG-11      **Catalog Number :** 160054-02  
**Type:** Source Material      **Expires:** 17-AUG-12      **Lot Number :** 1027953  
**Employee:** Paul Boyd      **Solvent :** +/- 0.5% in 5% HNO3 100 cm2  
**Supplier:** 02SI  
**Description:** ICPMS ICV/CCV Soln B - 20ppm  
**Comments:** None

| Analyte   | Concentration | Analyte   | Concentration |
|-----------|---------------|-----------|---------------|
| Arsenic   | 20 mg/L       | Barium    | 20 mg/L       |
| Beryllium | 20 mg/L       | Boron     | 40 mg/L       |
| Cadmium   | 20 mg/L       | Chromium  | 20 mg/L       |
| Cobalt    | 20 mg/L       | Copper    | 20 mg/L       |
| Lead      | 20 mg/L       | Lithium   | 20 mg/L       |
| Manganese | 20 mg/L       | Nickel    | 20 mg/L       |
| Selenium  | 20 mg/L       | Strontium | 20 mg/L       |
| Thallium  | 20 mg/L       | Thorium   | 20 mg/L       |
| Uranium   | 20 mg/L       | Vanadium  | 20 mg/L       |
| Zinc      | 20 mg/L       |           |               |

# Standard Logbook

**Serial ID:** UI110817-08      **Opened:** 17-AUG-11      **Amount :** 250 mL  
**Name:** ICP-MS ICV/CCV Master C      **Received:** 17-AUG-11      **Catalog Number :** 160054-03  
**Type:** Source Material      **Expires:** 29-AUG-11      **Lot Number :** 1027961  
**Employee:** Paul Boyd      **Solvent :** +/- 0.5% in 5% HNO3 100 cm2  
**Supplier:** 02SI  
**Description:** ICPMS ICV/CCV Soln C - 20ppm  
**Comments:** None

| Analyte   | Concentration | Analyte    | Concentration |
|-----------|---------------|------------|---------------|
| Antimony  | 20 mg/L       | Molybdenum | 20 mg/L       |
| Silver    | 20 mg/L       | Tin        | 20 mg/L       |
| Titanium  | 20 mg/L       | Tungsten   | 20 mg/L       |
| Zirconium | 20 mg/L       |            |               |

**Serial ID:** UI110817-09      **Opened:** 17-AUG-11      **Amount :** 250 mL  
**Name:** ICP-MS ICV/CCV Master A      **Received:** 17-AUG-11      **Catalog Number :** 160055-01  
**Type:** Source Material      **Expires:** 17-AUG-12      **Lot Number :** 1027978  
**Employee:** Paul Boyd      **Solvent :** +/- 0.5% in 5% HNO3 100 cm2  
**Supplier:** 02SI  
**Description:** ICPMS ICV/CCV SOLN A - 2000ppm  
**Comments:** None

| Analyte     | Concentration | Analyte   | Concentration |
|-------------|---------------|-----------|---------------|
| Aluminum    | 2020 mg/L     | Calcium   | 2000 mg/L     |
| Iron        | 2000 mg/L     | Magnesium | 2000 mg/L     |
| Phosphorous | 2000 mg/L     | Potassium | 2000 mg/L     |
| Sodium      | 2000 mg/L     |           |               |

**Serial ID:** UI110824-11      **Opened:** 24-AUG-11      **Amount :** 1000 mL  
**Name:** ICP-MS ICSA Master A      **Received:** 24-AUG-11      **Catalog Number :** 160013-01-01L  
**Type:** Source Material      **Expires:** 24-AUG-12      **Lot Number :** 1026046  
**Employee:** Paul Boyd      **Solvent :** 2% HNO3  
**Supplier:** 02SI  
**Description:** ICP-MS ICSA Master A  
**Comments:** None

| Analyte    | Concentration | Analyte     | Concentration |
|------------|---------------|-------------|---------------|
| Aluminum   | 1000 mg/L     | Calcium     | 1000 mg/L     |
| Carbon     | 2000 mg/L     | Chloride    | 10000 mg/L    |
| Iron       | 1000 mg/L     | Magnesium   | 1000 mg/L     |
| Molybdenum | 20 mg/L       | Phosphorous | 1000 mg/L     |
| Potassium  | 1000 mg/L     | Sodium      | 1000 mg/L     |
| Sulfur     | 1000 mg/L     | Titanium    | 20 mg/L       |

# Standard Logbook

**Serial ID:** UI110824-60      **Opened:** 24-AUG-11      **Amount :** .5 mL  
**Name:** ICPMS High Range Standard      **Received:** 24-AUG-11      **Catalog Number :** 160212-02-01  
**Type:** Source Material      **Expires:** 01-AUG-12      **Lot Number :** 1027453  
**Employee:** Paul Boyd      **Solvent :** 2%HNO3 + Tr HF  
**Supplier:** O2SI  
**Description:** Linear Range Standard A  
**Comments:** None

| Analyte   | Concentration | Analyte     | Concentration |
|-----------|---------------|-------------|---------------|
| Aluminum  | 5000 mg/L     | Arsenic     | 100 mg/L      |
| Barium    | 250 mg/L      | Beryllium   | 100 mg/L      |
| Cadmium   | 100 mg/L      | Calcium     | 5000 mg/L     |
| Chromium  | 100 mg/L      | Cobalt      | 100 mg/L      |
| Copper    | 100 mg/L      | Iron        | 5000 mg/L     |
| Lead      | 500 mg/L      | Lithium     | 100 mg/L      |
| Magnesium | 5000 mg/L     | Manganese   | 100 mg/L      |
| Nickel    | 100 mg/L      | Phosphorous | 2500 mg/L     |
| Potassium | 5000 mg/L     | Selenium    | 50 mg/L       |
| Sodium    | 5000 mg/L     | Strontium   | 100 mg/L      |
| Thallium  | 50 mg/L       | Thorium     | 250 mg/L      |
| Uranium   | 500 mg/L      | Vanadium    | 100 mg/L      |
| Zinc      | 250 mg/L      |             |               |

**Serial ID:** UI110824-61      **Opened:** 24-AUG-11      **Amount :** .5 mL  
**Name:** ICPMS High Range Standard      **Received:** 24-AUG-11      **Catalog Number :** 160212-02-01  
**Type:** Source Material      **Expires:** 01-AUG-12      **Lot Number :** 1027453  
**Employee:** Paul Boyd      **Solvent :** 2%HNO3 + Tr HF  
**Supplier:** O2SI  
**Description:** Linear Range Standard B  
**Comments:** None

| Analyte  | Concentration | Analyte    | Concentration |
|----------|---------------|------------|---------------|
| Antimony | 25 mg/L       | Molybdenum | 100 mg/L      |
| Silver   | 25 mg/L       | Tin        | 100 mg/L      |
| Tungsten | 100 mg/L      | Zirconium  | 50 mg/L       |

**Serial ID:** UI110829-08      **Opened:** 29-AUG-11      **Amount :** 250 mL  
**Name:** ICP-MS ICV/CCV Master C      **Received:** 29-AUG-11      **Catalog Number :** 160054-03  
**Type:** Source Material      **Expires:** 01-AUG-12      **Lot Number :** 1027375  
**Employee:** Paul Boyd      **Solvent :** +/- 0.5% in 5% HNO3 100 cm2  
**Supplier:** O2SI  
**Description:** ICPMS ICV/CCV Soln C - 20ppm  
**Comments:** None

| Analyte  | Concentration | Analyte    | Concentration |
|----------|---------------|------------|---------------|
| Antimony | 20 mg/L       | Molybdenum | 20 mg/L       |



# Standard Logbook

| Analyte   | Concentration | Analyte  | Concentration |
|-----------|---------------|----------|---------------|
| Silver    | 20 mg/L       | Tin      | 20 mg/L       |
| Titanium  | 20 mg/L       | Tungsten | 20 mg/L       |
| Zirconium | 20 mg/L       |          |               |

**Serial ID:** UI1589187-A      **Opened:** 11-JUL-11      **Catalog Number :** 160067-05  
**Name:** ICP-MS ALL OTHER SPIKE      **Received:** 11-JUL-11      **Lot Number :** 1027275  
**Type:** Source Material      **Expires:** 11-JUL-12  
**Employee:** Anthony Green  
**Supplier:** O2si  
**Description:** ICP-MS SPIKE FOR ALL CLIENTS EXCEPT DOE CLIENTS (Solution A).  
**Comments:** None

| Analyte     | Concentration | Analyte     | Concentration |
|-------------|---------------|-------------|---------------|
| Aluminum    | 200 mg/L      | Arsenic     | 5 mg/L        |
| Barium      | 5 mg/L        | Beryllium   | 5 mg/L        |
| Bismuth     | 5 mg/L        | Boron       | 10 mg/L       |
| Cadmium     | 5 mg/L        | Calcium     | 200 mg/L      |
| Cesium      | 5 mg/L        | Chromium    | 5 mg/L        |
| Cobalt      | 5 mg/L        | Copper      | 5 mg/L        |
| Iron        | 200 mg/L      | Lead        | 5 mg/L        |
| Lithium     | 5 mg/L        | Magnesium   | 200 mg/L      |
| Manganese   | 5 mg/L        | Nickel      | 5 mg/L        |
| Phosphorous | 200 mg/L      | Potassium   | 200 mg/L      |
| Selenium    | 5 mg/L        | Sodium      | 200 mg/L      |
| Strontium   | 5 mg/L        | Thallium    | 5 mg/L        |
| Thorium     | 5 mg/L        | Uranium     | 5 mg/L        |
| Uranium-235 | .036 mg/L     | Uranium-238 | 4.964 mg/L    |
| Vanadium    | 5 mg/L        | Zinc        | 5 mg/L        |

**Serial ID:** UI1589189-B      **Opened:** 11-JUL-11      **Catalog Number :** 160067-05  
**Name:** ICP-MS ALL OTHER SPIKE      **Received:** 11-JUL-11      **Lot Number :** 1027275  
**Type:** Source Material      **Expires:** 11-JUL-12  
**Employee:** Anthony Green  
**Supplier:** O2si  
**Description:** MS SPIKE FOR ALL CLIENTS EXCEPT DOE CLIENTS (Solution B).  
**Comments:** None

| Analyte  | Concentration | Analyte    | Concentration |
|----------|---------------|------------|---------------|
| Antimony | 5 mg/L        | Molybdenum | 5 mg/L        |
| Silver   | 5 mg/L        | Tin        | 5 mg/L        |
| Titanium | 5 mg/L        | Zirconium  | 5 mg/L        |

# Standard Logbook

**Serial ID:** UMS110812-01      **Opened:** 12-AUG-11      **Amount :** 250 mL  
**Name:** ICPMSCalSPIKEB      **Received:** 12-AUG-11      **Catalog Number :** ZGEL-100-250  
**Type:** Source Material      **Expires:** 12-AUG-12      **Lot Number :** 8-095CR  
**Employee:** Paul Boyd  
**Supplier:** SPEX  
**Description:** ICPMS Calibration Standard Solution B  
**Comments:** None

| Analyte   | Concentration | Analyte  | Concentration |
|-----------|---------------|----------|---------------|
| Arsenic   | 10 mg/L       | Barium   | 10 mg/L       |
| Beryllium | 10 mg/L       | Boron    | 20 mg/L       |
| Cadmium   | 10 mg/L       | Chromium | 10 mg/L       |
| Cobalt    | 10 mg/L       | Copper   | 10 mg/L       |
| Lead      | 10 mg/L       | Lithium  | 10 mg/L       |
| Manganese | 10 mg/L       | Nickel   | 10 mg/L       |
| Selenium  | 10 mg/L       | Silver   | 10 mg/L       |
| Strontium | 10 mg/L       | Thallium | 10 mg/L       |
| Thorium   | 10 mg/L       | Uranium  | 10 mg/L       |
| Vanadium  | 10 mg/L       | Zinc     | 10 mg/L       |

**Serial ID:** UMS110812-02      **Opened:** 12-AUG-11      **Catalog Number :** ZGEL-102-250  
**Name:** ICPMSCalSPIKEA      **Received:** 12-AUG-11      **Lot Number :** 8-097CR  
**Type:** Source Material      **Expires:** 12-AUG-12  
**Employee:** Paul Boyd  
**Supplier:** SPEX  
**Description:** ICPMS Calibration Standard Solution A  
**Comments:** None

| Analyte     | Concentration | Analyte   | Concentration |
|-------------|---------------|-----------|---------------|
| Aluminum    | 1000 mg/L     | Calcium   | 1000 mg/L     |
| Iron        | 1000 mg/L     | Magnesium | 1000 mg/L     |
| Phosphorous | 1000 mg/L     | Potassium | 1000 mg/L     |
| Sodium      | 1000 mg/L     |           |               |

**Serial ID:** UMS110812-03      **Opened:** 12-AUG-11      **Amount :** 250 ml  
**Name:** ICPMSCalSPIKEC      **Received:** 12-AUG-11      **Catalog Number :** ZGEL-101-250  
**Type:** Source Material      **Expires:** 12-AUG-12      **Lot Number :** 8-096CR  
**Employee:** Paul Boyd  
**Supplier:** SPEX  
**Description:** ICPMS Calibration Standard Solution C  
**Comments:** None

| Analyte   | Concentration | Analyte    | Concentration |
|-----------|---------------|------------|---------------|
| Antimony  | 10 mg/L       | Molybdenum | 10 mg/L       |
| Tin       | 10 mg/L       | Titanium   | 10 mg/L       |
| Zirconium | 10 mg/L       |            |               |

# Standard Logbook

**Serial ID:** IHG110823-01      **Opened:** 23-AUG-11      **Instrument Id :** Mercury  
**Name:** MHGINTER1      **Received:** 23-AUG-11      **Pipet Id :** Minou1  
**Type:** Intermediate      **Expires:** 24-AUG-11      **Solvent :** 1mL HNO3 + TypeI H2O  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Intermediate 1st Source 200 ug/L  
**Comments:** Prepare fresh daily

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| UHG1576854-01   | Mercury | 1000 mg/L    | .05 mL  | 250 mL     | 200 ug/L    |

**Serial ID:** IHG110823-02      **Opened:** 23-AUG-11      **Pipet Id :** Minou1  
**Name:** MHGINTER2      **Received:** 23-AUG-11      **Solvent :** 2% HNO3-1596475  
**Type:** Intermediate      **Expires:** 24-AUG-11  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Intermediate 2nd Source 200 ug/L  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| UHG1576853-02   | Mercury | 999.7 mg/L   | .05 mL  | 250 mL     | 200 ug/L    |

**Serial ID:** IHG110824-01      **Opened:** 24-AUG-11      **Instrument Id :** Mercury  
**Name:** MHGINTER1      **Received:** 24-AUG-11      **Pipet Id :** Minou1  
**Type:** Intermediate      **Expires:** 25-AUG-11      **Solvent :** 1mL HNO3 + TypeI H2O  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Intermediate 1st Source 200 ug/L  
**Comments:** Prepare fresh daily

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| UHG1576854-01   | Mercury | 1000 mg/L    | .05 mL  | 250 mL     | 200 ug/L    |

**Serial ID:** IHG110824-02      **Opened:** 24-AUG-11      **Pipet Id :** Minou1  
**Name:** MHGINTER2      **Received:** 24-AUG-11      **Solvent :** 2% HNO3-1596475  
**Type:** Intermediate      **Expires:** 25-AUG-11  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Intermediate 2nd Source 200 ug/L  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| UHG1576853-02   | Mercury | 999.7 mg/L   | .05 mL  | 250 mL     | 200 ug/L    |

# Standard Logbook

**Serial ID:** WHG110823-01a      **Opened:** 23-AUG-11      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCAL0.2CRA      **Received:** 23-AUG-11      **Solvent :** 2% HNO3-1596475  
**Type:** Working      **Expires:** 30-AUG-11  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL 0.2/CRA  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG110823-01    | Mercury | 200 ug/L     | 20 uL   | 20 mL      | .2 ug/L     |

**Serial ID:** WHG110823-02      **Opened:** 23-AUG-11      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCAL0.5      **Received:** 23-AUG-11      **Solvent :** 2% HNO3-1596475  
**Type:** Working      **Expires:** 30-AUG-11  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL 0.5  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG110823-01    | Mercury | 200 ug/L     | 50 uL   | 20 mL      | .5 ug/L     |

**Serial ID:** WHG110823-03      **Opened:** 23-AUG-11      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCAL2.0      **Received:** 23-AUG-11      **Solvent :** 2% HNO3-1596475  
**Type:** Working      **Expires:** 30-AUG-11  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL 2.0  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG110823-01    | Mercury | 200 ug/L     | 200 uL  | 20 mL      | 2 ug/L      |

**Serial ID:** WHG110823-04      **Opened:** 23-AUG-11      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCAL5.0CCV      **Received:** 23-AUG-11      **Solvent :** 2% HNO3-1596475  
**Type:** Working      **Expires:** 30-AUG-11  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL 5.0/CCV  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG110823-01    | Mercury | 200 ug/L     | 500 uL  | 20 mL      | 5 ug/L      |

# Standard Logbook

**Serial ID:** WHG110823-05      **Opened:** 23-AUG-11      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCAL10.0      **Received:** 23-AUG-11      **Solvent :** 2% HNO3-1596475  
**Type:** Working      **Expires:** 30-AUG-11  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL 10.0  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG110823-01    | Mercury | 200 ug/L     | 1 mL    | 20 mL      | 10 ug/L     |

**Serial ID:** WHG110823-06      **Opened:** 23-AUG-11      **Pipet Id :** Hg1289245  
**Name:** MHGWORK5.0ICV      **Received:** 23-AUG-11      **Solvent :** 2% HNO3-1596475  
**Type:** Working      **Expires:** 30-AUG-11  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Working 2nd Source 5.0/ICV  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG110823-02    | Mercury | 200 ug/L     | 500 uL  | 20 mL      | 5 ug/L      |

**Serial ID:** WHG110824-01a      **Opened:** 24-AUG-11      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCAL0.2CRA      **Received:** 24-AUG-11      **Solvent :** 2% HNO3-1596475  
**Type:** Working      **Expires:** 31-AUG-11  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL 0.2/CRA  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG110824-01    | Mercury | 200 ug/L     | 20 uL   | 20 mL      | .2 ug/L     |

**Serial ID:** WHG110824-02      **Opened:** 24-AUG-11      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCAL0.5      **Received:** 24-AUG-11      **Solvent :** 2% HNO3-1596475  
**Type:** Working      **Expires:** 31-AUG-11  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL 0.5  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG110824-01    | Mercury | 200 ug/L     | 50 uL   | 20 mL      | .5 ug/L     |

# Standard Logbook

**Serial ID:** WHG110824-03      **Opened:** 24-AUG-11      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCAL2.0      **Received:** 24-AUG-11      **Solvent :** 2% HNO3-1596475  
**Type:** Working      **Expires:** 31-AUG-11  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL 2.0  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG110824-01    | Mercury | 200 ug/L     | 200 uL  | 20 mL      | 2 ug/L      |

**Serial ID:** WHG110824-04      **Opened:** 24-AUG-11      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCAL5.0CCV      **Received:** 24-AUG-11      **Solvent :** 2% HNO3-1596475  
**Type:** Working      **Expires:** 31-AUG-11  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL 5.0/CCV  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG110824-01    | Mercury | 200 ug/L     | 500 uL  | 20 mL      | 5 ug/L      |

**Serial ID:** WHG110824-05      **Opened:** 24-AUG-11      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCAL10.0      **Received:** 24-AUG-11      **Solvent :** 2% HNO3-1596475  
**Type:** Working      **Expires:** 31-AUG-11  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL 10.0  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG110824-01    | Mercury | 200 ug/L     | 1 mL    | 20 mL      | 10 ug/L     |

**Serial ID:** WHG110824-06      **Opened:** 24-AUG-11      **Pipet Id :** Hg1289245  
**Name:** MHGWORK5.0ICV      **Received:** 24-AUG-11      **Solvent :** 2% HNO3-1596475  
**Type:** Working      **Expires:** 31-AUG-11  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Working 2nd Source 5.0/ICV  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG110824-02    | Mercury | 200 ug/L     | 500 uL  | 20 mL      | 5 ug/L      |

# Standard Logbook

**Serial ID:** WHG110824-13      **Opened:** 24-AUG-11      **Pipet Id :** Hg1289245  
**Name:** MHGLIQLCSMSSPIKE      **Received:** 24-AUG-11      **Solvent :** 2% HNO3-1596475  
**Type:** Working      **Expires:** 31-AUG-11  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury working intermediate standard for LCS/MS  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| UHG1576854-01   | Mercury | 1000 mg/L    | .05 mL  | 250 mL     | 200 ug/L    |

**Serial ID:** WMS110824-04      **Opened:** 24-AUG-11      **Amount :** 50 mL  
**Name:** ICPMS Cal Standard 100      **Received:** 24-AUG-11      **Balance Id :** 4025216  
**Type:** Working      **Expires:** 25-AUG-11      **Pipet Id :** 3541598  
**Employee:** Paul Boyd      **Solvent :** 2%HNO3/1%HCl-1605968  
**Supplier:** GEL  
**Description:** ICPMS Calibration Standard (100 ppb)  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI110411-03     | Tungsten    | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Arsenic     | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Barium      | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Beryllium   | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Boron       | 20 mg/L      | .5 mL   | 50 mL      | 200 ug/l    |
| UMS110812-01    | Cadmium     | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Chromium    | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Cobalt      | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Copper      | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Lead        | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Lithium     | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Manganese   | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Nickel      | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Selenium    | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Silver      | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Strontium   | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Thallium    | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Thorium     | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Uranium     | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Vanadium    | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Zinc        | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-02    | Aluminum    | 1000 mg/L    | .5 mL   | 50 mL      | 10000 ug/l  |
| UMS110812-02    | Calcium     | 1000 mg/L    | .5 mL   | 50 mL      | 10000 ug/l  |
| UMS110812-02    | Iron        | 1000 mg/L    | .5 mL   | 50 mL      | 10000 ug/l  |
| UMS110812-02    | Magnesium   | 1000 mg/L    | .5 mL   | 50 mL      | 10000 ug/l  |
| UMS110812-02    | Phosphorous | 1000 mg/L    | .5 mL   | 50 mL      | 10000 ug/l  |
| UMS110812-02    | Potassium   | 1000 mg/L    | .5 mL   | 50 mL      | 10000 ug/l  |

# Standard Logbook

| Parent Material | Analyte    | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|------------|--------------|---------|------------|-------------|
| UMS110812-02    | Sodium     | 1000 mg/L    | .5 mL   | 50 mL      | 10000 ug/l  |
| UMS110812-03    | Antimony   | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-03    | Molybdenum | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-03    | Tin        | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-03    | Titanium   | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-03    | Zirconium  | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |

**Serial ID:** WMS110824-04A      **Opened:** 24-AUG-11      **Balance Id :** 4025216  
**Name:** ICPMS Cal Standard 10      **Received:** 24-AUG-11      **Pipet Id :** 3541598  
**Type:** Working      **Expires:** 25-AUG-11      **Solvent :** 2%HNO3/1%HCl - 1605968  
**Employee:** Paul Boyd  
**Supplier:** GEL  
**Description:** ICPMS Calibration Standard (10 ppb)  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| WMS110824-04    | Aluminum    | 10000 ug/l   | 5 mL    | 50 mL      | 1000 ug/l   |
| WMS110824-04    | Antimony    | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Arsenic     | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Barium      | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Beryllium   | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Boron       | 200 ug/l     | 5 mL    | 50 mL      | 20 ug/l     |
| WMS110824-04    | Cadmium     | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Calcium     | 10000 ug/l   | 5 mL    | 50 mL      | 1000 ug/l   |
| WMS110824-04    | Chromium    | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Cobalt      | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Copper      | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Iron        | 10000 ug/l   | 5 mL    | 50 mL      | 1000 ug/l   |
| WMS110824-04    | Lead        | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Lithium     | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Magnesium   | 10000 ug/l   | 5 mL    | 50 mL      | 1000 ug/l   |
| WMS110824-04    | Manganese   | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Molybdenum  | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Nickel      | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Phosphorous | 10000 ug/l   | 5 mL    | 50 mL      | 1000 ug/l   |
| WMS110824-04    | Potassium   | 10000 ug/l   | 5 mL    | 50 mL      | 1000 ug/l   |
| WMS110824-04    | Selenium    | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Silver      | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Sodium      | 10000 ug/l   | 5 mL    | 50 mL      | 1000 ug/l   |
| WMS110824-04    | Strontium   | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Thallium    | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Thorium     | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Tin         | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Titanium    | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Tungsten    | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |



# Standard Logbook

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| WMS110824-04    | Uranium   | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Vanadium  | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Zinc      | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110824-04    | Zirconium | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |

**Serial ID:** WMS110824-05      **Opened:** 24-AUG-11      **Balance Id :** 40245216  
**Name:** ICPMS ICV      **Received:** 24-AUG-11      **Pipet Id :** 3541598  
**Type:** Working      **Expires:** 25-AUG-11      **Solvent :** 2%HNO3/1%HCl - 1605968  
**Employee:** Paul Boyd  
**Supplier:** GEL  
**Description:** ICPMS ICV  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI110817-07     | Arsenic     | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Barium      | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Beryllium   | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Boron       | 40 mg/L      | .125 mL | 50 mL      | 100 ug/L    |
| UI110817-07     | Cadmium     | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Chromium    | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Cobalt      | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Copper      | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Lead        | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Lithium     | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Manganese   | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Nickel      | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Selenium    | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Strontium   | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Thallium    | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Thorium     | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Uranium     | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Vanadium    | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Zinc        | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-08     | Antimony    | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-08     | Molybdenum  | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-08     | Silver      | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-08     | Tin         | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-08     | Titanium    | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-08     | Tungsten    | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-08     | Zirconium   | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-09     | Aluminum    | 2000 mg/L    | .125 mL | 50 mL      | 5050 ug/L   |
| UI110817-09     | Calcium     | 2000 mg/L    | .125 mL | 50 mL      | 5000 ug/L   |
| UI110817-09     | Iron        | 2000 mg/L    | .125 mL | 50 mL      | 5000 ug/L   |
| UI110817-09     | Magnesium   | 2000 mg/L    | .125 mL | 50 mL      | 5000 ug/L   |
| UI110817-09     | Phosphorous | 2000 mg/L    | .125 mL | 50 mL      | 5000 ug/L   |

# Standard Logbook

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI110817-09     | Potassium | 2000 mg/L    | .125 mL | 50 mL      | 5000 ug/L   |
| UI110817-09     | Sodium    | 2000 mg/L    | .125 mL | 50 mL      | 5000 ug/L   |

**Serial ID:** WMS110824-06      **Opened:** 24-AUG-11      **Balance Id :** 40245216  
**Name:** ICPMS CRDL      **Received:** 24-AUG-11      **Pipet Id :** 3820544  
**Type:** Working      **Expires:** 25-AUG-11      **Solvent :** 2%HNO3/1%HCl - 1605968  
**Employee:** Paul Boyd  
**Supplier:** GEL  
**Description:** ICPMS CRDL  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI110222-10     | Antimony    | 3 mg/L       | .05 mL  | 50 mL      | 3 ug/L      |
| UI110222-10     | Molybdenum  | .5 mg/L      | .05 mL  | 50 mL      | .5 ug/L     |
| UI110222-10     | Silver      | 1 mg/L       | .05 mL  | 50 mL      | 1 ug/L      |
| UI110222-10     | Tin         | 5 mg/L       | .05 mL  | 50 mL      | 5 ug/L      |
| UI110222-10     | Titanium    | 10 mg/L      | .05 mL  | 50 mL      | 10 ug/L     |
| UI110222-10     | Tungsten    | 5 mg/L       | .05 mL  | 50 mL      | 5 ug/L      |
| UI110222-10     | Zirconium   | 2 mg/L       | .05 mL  | 50 mL      | 2 ug/L      |
| UI110602-09     | Aluminum    | 50 mg/L      | .05 mL  | 50 mL      | 30 ug/L     |
| UI110602-09     | Arsenic     | 5 mg/L       | .05 mL  | 50 mL      | 5 ug/L      |
| UI110602-09     | Barium      | 2 mg/L       | .05 mL  | 50 mL      | 2 ug/L      |
| UI110602-09     | Beryllium   | .5 mg/L      | .05 mL  | 50 mL      | .5 ug/L     |
| UI110602-09     | Boron       | 15 mg/L      | .05 mL  | 50 mL      | 15 ug/L     |
| UI110602-09     | Cadmium     | 1 mg/L       | .05 mL  | 50 mL      | 1 ug/L      |
| UI110602-09     | Calcium     | 200 mg/L     | .05 mL  | 50 mL      | 200 ug/L    |
| UI110602-09     | Chromium    | 30 mg/L      | .05 mL  | 50 mL      | 10 ug/L     |
| UI110602-09     | Cobalt      | 1 mg/L       | .05 mL  | 50 mL      | 1 ug/L      |
| UI110602-09     | Copper      | 1 mg/L       | .05 mL  | 50 mL      | 1 ug/L      |
| UI110602-09     | Iron        | 100 mg/L     | .05 mL  | 50 mL      | 100 ug/L    |
| UI110602-09     | Lead        | 2 mg/L       | .05 mL  | 50 mL      | 2 ug/L      |
| UI110602-09     | Lithium     | 10 mg/L      | .05 mL  | 50 mL      | 10 ug/L     |
| UI110602-09     | Magnesium   | 30 mg/L      | .05 mL  | 50 mL      | 15 ug/L     |
| UI110602-09     | Manganese   | 5 mg/L       | .05 mL  | 50 mL      | 5 ug/L      |
| UI110602-09     | Nickel      | 2 mg/L       | .05 mL  | 50 mL      | 2 ug/L      |
| UI110602-09     | Phosphorous | 50 mg/L      | .05 mL  | 50 mL      | 50 ug/L     |
| UI110602-09     | Potassium   | 300 mg/L     | .05 mL  | 50 mL      | 300 ug/L    |
| UI110602-09     | Selenium    | 5 mg/L       | .05 mL  | 50 mL      | 5 ug/L      |
| UI110602-09     | Sodium      | 250 mg/L     | .05 mL  | 50 mL      | 250 ug/L    |
| UI110602-09     | Strontium   | 10 mg/L      | .05 mL  | 50 mL      | 10 ug/L     |
| UI110602-09     | Thallium    | 2 mg/L       | .05 mL  | 50 mL      | 1 ug/L      |
| UI110602-09     | Thorium     | 2 mg/L       | .05 mL  | 50 mL      | 1 ug/L      |
| UI110602-09     | Uranium     | .2 mg/L      | .05 mL  | 50 mL      | .2 ug/L     |
| UI110602-09     | Vanadium    | 10 mg/L      | .05 mL  | 50 mL      | 10 ug/L     |
| UI110602-09     | Zinc        | 10 mg/L      | .05 mL  | 50 mL      | 10 ug/L     |

# Standard Logbook

**Serial ID:** WMS110824-07      **Opened:** 24-AUG-11      **Balance Id :** 40245216  
**Name:** ICPMS ICSA      **Received:** 24-AUG-11      **Lot Number :** 1010773  
**Type:** Working      **Expires:** 25-AUG-11      **Pipet Id :** 3541598  
**Employee:** Paul Boyd      **Solvent :** 2%HNO3/1%HCl - 1605968  
**Supplier:** GEL  
**Description:** ICPMS ICSA  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc.  |
|-----------------|-------------|--------------|---------|------------|--------------|
| UI110824-11     | Aluminum    | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Calcium     | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Carbon      | 2000 mg/L    | 5 mL    | 50 mL      | 200000 ug/L  |
| UI110824-11     | Chloride    | 10000 mg/L   | 5 mL    | 50 mL      | 1000000 ug/L |
| UI110824-11     | Iron        | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Magnesium   | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Molybdenum  | 20 mg/L      | 5 mL    | 50 mL      | 2000 ug/L    |
| UI110824-11     | Phosphorous | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Potassium   | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Sodium      | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Sulfur      | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Titanium    | 20 mg/L      | 5 mL    | 50 mL      | 2000 ug/L    |

**Serial ID:** WMS110824-08      **Opened:** 24-AUG-11      **Balance Id :** 40245216  
**Name:** ICPMS ICSAB      **Received:** 24-AUG-11      **Pipet Id :** 1758088  
**Type:** Working      **Expires:** 25-AUG-11      **Solvent :** 2%HNO3/1%HCl - 1605968  
**Employee:** Paul Boyd  
**Supplier:** GEL  
**Description:** ICPMS ICSAB  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc.  |
|-----------------|-------------|--------------|---------|------------|--------------|
| UI110503-11     | Aluminum    | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110503-11     | Calcium     | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110503-11     | Carbon      | 2000 mg/L    | 5 mL    | 50 mL      | 200000 ug/L  |
| UI110503-11     | Chloride    | 10000 mg/L   | 5 mL    | 50 mL      | 1000000 ug/L |
| UI110503-11     | Iron        | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110503-11     | Magnesium   | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110503-11     | Molybdenum  | 20 mg/L      | 5 mL    | 50 mL      | 2000 ug/L    |
| UI110503-11     | Phosphorous | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110503-11     | Potassium   | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110503-11     | Sodium      | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110503-11     | Sulfur      | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110503-11     | Titanium    | 20 mg/L      | 5 mL    | 50 mL      | 2000 ug/L    |
| UI110720-12     | Arsenic     | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |
| UI110720-12     | Barium      | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |
| UI110720-12     | Beryllium   | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |
| UI110720-12     | Boron       | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |

# Standard Logbook

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI110720-12     | Cadmium   | 2 mg/L       | .5 mL   | 50 mL      | 20.2 ug/L   |
| UI110720-12     | Chromium  | 2 mg/L       | .5 mL   | 50 mL      | 22.2 ug/L   |
| UI110720-12     | Cobalt    | 2 mg/L       | .5 mL   | 50 mL      | 20.4 ug/L   |
| UI110720-12     | Copper    | 2 mg/L       | .5 mL   | 50 mL      | 23.4 ug/L   |
| UI110720-12     | Lead      | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |
| UI110720-12     | Lithium   | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |
| UI110720-12     | Manganese | 2 mg/L       | .5 mL   | 50 mL      | 22.7 ug/L   |
| UI110720-12     | Nickel    | 2 mg/L       | .5 mL   | 50 mL      | 22.4 ug/L   |
| UI110720-12     | Selenium  | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |
| UI110720-12     | Strontium | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |
| UI110720-12     | Thallium  | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |
| UI110720-12     | Thorium   | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |
| UI110720-12     | Uranium   | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |
| UI110720-12     | Vanadium  | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |
| UI110720-12     | Zinc      | 2 mg/L       | .5 mL   | 50 mL      | 27 ug/L     |
| UI110720-13     | Antimony  | 2 mg/L       | .5 mL   | 50 mL      | 20.5 ug/L   |
| UI110720-13     | Silver    | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |
| UI110720-13     | Tin       | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |
| UI110720-13     | Tungsten  | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |
| UI110720-13     | Zirconium | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |

**Serial ID:** WMS110824-70      **Opened:** 24-AUG-11      **Balance Id :** 40245216  
**Name:** ICPMS LINEAR RANGE ST      **Received:** 24-AUG-11      **Pipet Id :** 1758088  
**Type:** Working      **Expires:** 25-AUG-11      **Solvent :** 2%HNO3/1%HCl-1605968  
**Employee:** Paul Boyd  
**Supplier:** 02SI  
**Description:** ICPMS LINEAR RANGE STANDARD  
**Comments:** None

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI110824-60     | Aluminum  | 5000 mg/L    | .5 mL   | 50 mL      | 50000 ug/L  |
| UI110824-60     | Arsenic   | 100 mg/L     | .5 mL   | 50 mL      | 1000 ug/L   |
| UI110824-60     | Barium    | 250 mg/L     | .5 mL   | 50 mL      | 2500 ug/L   |
| UI110824-60     | Beryllium | 100 mg/L     | .5 mL   | 50 mL      | 1000 ug/L   |
| UI110824-60     | Cadmium   | 100 mg/L     | .5 mL   | 50 mL      | 1000 ug/L   |
| UI110824-60     | Calcium   | 5000 mg/L    | .5 mL   | 50 mL      | 50000 ug/L  |
| UI110824-60     | Chromium  | 100 mg/L     | .5 mL   | 50 mL      | 1000 ug/L   |
| UI110824-60     | Cobalt    | 100 mg/L     | .5 mL   | 50 mL      | 1000 ug/L   |
| UI110824-60     | Copper    | 100 mg/L     | .5 mL   | 50 mL      | 1000 ug/L   |
| UI110824-60     | Iron      | 5000 mg/L    | .5 mL   | 50 mL      | 50000 ug/L  |
| UI110824-60     | Lead      | 500 mg/L     | .5 mL   | 50 mL      | 5000 ug/L   |
| UI110824-60     | Lithium   | 100 mg/L     | .5 mL   | 50 mL      | 1000 ug/L   |
| UI110824-60     | Magnesium | 5000 mg/L    | .5 mL   | 50 mL      | 50000 ug/L  |
| UI110824-60     | Manganese | 100 mg/L     | .5 mL   | 50 mL      | 1000 ug/L   |
| UI110824-60     | Nickel    | 100 mg/L     | .5 mL   | 50 mL      | 1000 ug/L   |

# Standard Logbook

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI110824-60     | Phosphorous | 2500 mg/L    | .5 mL   | 50 mL      | 25000 ug/L  |
| UI110824-60     | Potassium   | 5000 mg/L    | .5 mL   | 50 mL      | 50000 ug/L  |
| UI110824-60     | Selenium    | 50 mg/L      | .5 mL   | 50 mL      | 500 ug/L    |
| UI110824-60     | Sodium      | 5000 mg/L    | .5 mL   | 50 mL      | 50000 ug/L  |
| UI110824-60     | Strontium   | 100 mg/L     | .5 mL   | 50 mL      | 1000 ug/L   |
| UI110824-60     | Thallium    | 50 mg/L      | .5 mL   | 50 mL      | 500 ug/L    |
| UI110824-60     | Thorium     | 250 mg/L     | .5 mL   | 50 mL      | 2500 ug/L   |
| UI110824-60     | Uranium     | 500 mg/L     | .5 mL   | 50 mL      | 5000 ug/L   |
| UI110824-60     | Vanadium    | 100 mg/L     | .5 mL   | 50 mL      | 1000 ug/L   |
| UI110824-60     | Zinc        | 250 mg/L     | .5 mL   | 50 mL      | 2500 ug/L   |
| UI110824-61     | Antimony    | 25 mg/L      | .5 mL   | 50 mL      | 250 ug/L    |
| UI110824-61     | Molybdenum  | 100 mg/L     | .5 mL   | 50 mL      | 1000 ug/L   |
| UI110824-61     | Silver      | 25 mg/L      | .5 mL   | 50 mL      | 250 ug/L    |
| UI110824-61     | Tin         | 100 mg/L     | .5 mL   | 50 mL      | 1000 ug/L   |
| UI110824-61     | Tungsten    | 100 mg/L     | .5 mL   | 50 mL      | 1000 ug/L   |
| UI110824-61     | Zirconium   | 50 mg/L      | .5 mL   | 50 mL      | 500 ug/L    |

**Serial ID:** WMS110829-04      **Opened:** 29-AUG-11      **Amount :** 50 mL  
**Name:** ICPMS Cal Standard 100      **Received:** 29-AUG-11      **Balance Id :** 4025216  
**Type:** Working      **Expires:** 30-AUG-11      **Pipet Id :** 3541598  
**Employee:** Paul Boyd      **Solvent :** 2%HNO3/1%HCl-1608947  
**Supplier:** GEL  
**Description:** ICPMS Calibration Standard (100 ppb)  
**Comments:** None

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI110411-03     | Tungsten  | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Arsenic   | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Barium    | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Beryllium | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Boron     | 20 mg/L      | .5 mL   | 50 mL      | 200 ug/l    |
| UMS110812-01    | Cadmium   | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Chromium  | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Cobalt    | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Copper    | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Lead      | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Lithium   | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Manganese | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Nickel    | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Selenium  | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Silver    | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Strontium | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Thallium  | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Thorium   | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Uranium   | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |

# Standard Logbook

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UMS110812-01    | Vanadium    | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-01    | Zinc        | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-02    | Aluminum    | 1000 mg/L    | .5 mL   | 50 mL      | 10000 ug/l  |
| UMS110812-02    | Calcium     | 1000 mg/L    | .5 mL   | 50 mL      | 10000 ug/l  |
| UMS110812-02    | Iron        | 1000 mg/L    | .5 mL   | 50 mL      | 10000 ug/l  |
| UMS110812-02    | Magnesium   | 1000 mg/L    | .5 mL   | 50 mL      | 10000 ug/l  |
| UMS110812-02    | Phosphorous | 1000 mg/L    | .5 mL   | 50 mL      | 10000 ug/l  |
| UMS110812-02    | Potassium   | 1000 mg/L    | .5 mL   | 50 mL      | 10000 ug/l  |
| UMS110812-02    | Sodium      | 1000 mg/L    | .5 mL   | 50 mL      | 10000 ug/l  |
| UMS110812-03    | Antimony    | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-03    | Molybdenum  | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-03    | Tin         | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-03    | Titanium    | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |
| UMS110812-03    | Zirconium   | 10 mg/L      | .5 mL   | 50 mL      | 100 ug/l    |

**Serial ID:** WMS110829-04A      **Opened:** 29-AUG-11      **Balance Id :** 4025216  
**Name:** ICPMS Cal Standard 10      **Received:** 29-AUG-11      **Pipet Id :** 3541598  
**Type:** Working      **Expires:** 30-AUG-11      **Solvent :** 2%HNO3/1%HCl - 1608947  
**Employee:** Paul Boyd  
**Supplier:** GEL  
**Description:** ICPMS Calibration Standard (10 ppb)  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| WMS110829-04    | Aluminum    | 10000 ug/l   | 5 mL    | 50 mL      | 1000 ug/l   |
| WMS110829-04    | Antimony    | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Arsenic     | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Barium      | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Beryllium   | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Boron       | 200 ug/l     | 5 mL    | 50 mL      | 20 ug/l     |
| WMS110829-04    | Cadmium     | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Calcium     | 10000 ug/l   | 5 mL    | 50 mL      | 1000 ug/l   |
| WMS110829-04    | Chromium    | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Cobalt      | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Copper      | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Iron        | 10000 ug/l   | 5 mL    | 50 mL      | 1000 ug/l   |
| WMS110829-04    | Lead        | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Lithium     | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Magnesium   | 10000 ug/l   | 5 mL    | 50 mL      | 1000 ug/l   |
| WMS110829-04    | Manganese   | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Molybdenum  | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Nickel      | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Phosphorous | 10000 ug/l   | 5 mL    | 50 mL      | 1000 ug/l   |
| WMS110829-04    | Potassium   | 10000 ug/l   | 5 mL    | 50 mL      | 1000 ug/l   |
| WMS110829-04    | Selenium    | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |

# Standard Logbook

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| WMS110829-04    | Silver    | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Sodium    | 10000 ug/l   | 5 mL    | 50 mL      | 1000 ug/l   |
| WMS110829-04    | Strontium | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Thallium  | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Thorium   | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Tin       | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Titanium  | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Tungsten  | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Uranium   | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Vanadium  | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Zinc      | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |
| WMS110829-04    | Zirconium | 100 ug/l     | 5 mL    | 50 mL      | 10 ug/l     |

**Serial ID:** WMS110829-05      **Opened:** 29-AUG-11      **Balance Id :** 40245216  
**Name:** ICPMS ICV      **Received:** 29-AUG-11      **Pipet Id :** 3541598  
**Type:** Working      **Expires:** 30-AUG-11      **Solvent :** 2%HNO3/1%HCl - 1608947  
**Employee:** Paul Boyd  
**Supplier:** GEL  
**Description:** ICPMS ICV  
**Comments:** None

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI110817-07     | Arsenic   | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Barium    | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Beryllium | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Boron     | 40 mg/L      | .125 mL | 50 mL      | 100 ug/L    |
| UI110817-07     | Cadmium   | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Chromium  | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Cobalt    | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Copper    | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Lead      | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Lithium   | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Manganese | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Nickel    | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Selenium  | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Strontium | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Thallium  | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Thorium   | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Uranium   | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Vanadium  | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-07     | Zinc      | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110817-09     | Aluminum  | 2020 mg/L    | .125 mL | 50 mL      | 5050 ug/L   |
| UI110817-09     | Calcium   | 2000 mg/L    | .125 mL | 50 mL      | 5000 ug/L   |
| UI110817-09     | Iron      | 2000 mg/L    | .125 mL | 50 mL      | 5000 ug/L   |
| UI110817-09     | Magnesium | 2000 mg/L    | .125 mL | 50 mL      | 5000 ug/L   |

# Standard Logbook

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI110817-09     | Phosphorous | 2000 mg/L    | .125 mL | 50 mL      | 5000 ug/L   |
| UI110817-09     | Potassium   | 2000 mg/L    | .125 mL | 50 mL      | 5000 ug/L   |
| UI110817-09     | Sodium      | 2000 mg/L    | .125 mL | 50 mL      | 5000 ug/L   |
| UI110829-08     | Antimony    | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110829-08     | Molybdenum  | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110829-08     | Silver      | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110829-08     | Tin         | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110829-08     | Titanium    | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110829-08     | Tungsten    | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |
| UI110829-08     | Zirconium   | 20 mg/L      | .125 mL | 50 mL      | 50 ug/L     |

**Serial ID:** WMS110829-06      **Opened:** 29-AUG-11      **Balance Id :** 40245216  
**Name:** ICPMS CRDL      **Received:** 29-AUG-11      **Pipet Id :** 3820544  
**Type:** Working      **Expires:** 30-AUG-11      **Solvent :** 2%HNO3/1%HCl - 1608947  
**Employee:** Paul Boyd  
**Supplier:** GEL  
**Description:** ICPMS CRDL  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI110222-10     | Antimony    | 3 mg/L       | .05 mL  | 50 mL      | 3 ug/L      |
| UI110222-10     | Molybdenum  | .5 mg/L      | .05 mL  | 50 mL      | .5 ug/L     |
| UI110222-10     | Silver      | 1 mg/L       | .05 mL  | 50 mL      | 1 ug/L      |
| UI110222-10     | Tin         | 5 mg/L       | .05 mL  | 50 mL      | 5 ug/L      |
| UI110222-10     | Titanium    | 10 mg/L      | .05 mL  | 50 mL      | 10 ug/L     |
| UI110222-10     | Tungsten    | 5 mg/L       | .05 mL  | 50 mL      | 5 ug/L      |
| UI110222-10     | Zirconium   | 2 mg/L       | .05 mL  | 50 mL      | 2 ug/L      |
| UI110602-09     | Aluminum    | 50 mg/L      | .05 mL  | 50 mL      | 30 ug/L     |
| UI110602-09     | Arsenic     | 5 mg/L       | .05 mL  | 50 mL      | 5 ug/L      |
| UI110602-09     | Barium      | 2 mg/L       | .05 mL  | 50 mL      | 2 ug/L      |
| UI110602-09     | Beryllium   | .5 mg/L      | .05 mL  | 50 mL      | .5 ug/L     |
| UI110602-09     | Boron       | 15 mg/L      | .05 mL  | 50 mL      | 15 ug/L     |
| UI110602-09     | Cadmium     | 1 mg/L       | .05 mL  | 50 mL      | 1 ug/L      |
| UI110602-09     | Calcium     | 200 mg/L     | .05 mL  | 50 mL      | 200 ug/L    |
| UI110602-09     | Chromium    | 30 mg/L      | .05 mL  | 50 mL      | 10 ug/L     |
| UI110602-09     | Cobalt      | 1 mg/L       | .05 mL  | 50 mL      | 1 ug/L      |
| UI110602-09     | Copper      | 1 mg/L       | .05 mL  | 50 mL      | 1 ug/L      |
| UI110602-09     | Iron        | 100 mg/L     | .05 mL  | 50 mL      | 100 ug/L    |
| UI110602-09     | Lead        | 2 mg/L       | .05 mL  | 50 mL      | 2 ug/L      |
| UI110602-09     | Lithium     | 10 mg/L      | .05 mL  | 50 mL      | 10 ug/L     |
| UI110602-09     | Magnesium   | 30 mg/L      | .05 mL  | 50 mL      | 15 ug/L     |
| UI110602-09     | Manganese   | 5 mg/L       | .05 mL  | 50 mL      | 5 ug/L      |
| UI110602-09     | Nickel      | 2 mg/L       | .05 mL  | 50 mL      | 2 ug/L      |
| UI110602-09     | Phosphorous | 50 mg/L      | .05 mL  | 50 mL      | 50 ug/L     |
| UI110602-09     | Potassium   | 300 mg/L     | .05 mL  | 50 mL      | 300 ug/L    |



# Standard Logbook

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI110602-09     | Selenium  | 5 mg/L       | .05 mL  | 50 mL      | 5 ug/L      |
| UI110602-09     | Sodium    | 250 mg/L     | .05 mL  | 50 mL      | 250 ug/L    |
| UI110602-09     | Strontium | 10 mg/L      | .05 mL  | 50 mL      | 10 ug/L     |
| UI110602-09     | Thallium  | 2 mg/L       | .05 mL  | 50 mL      | 1 ug/L      |
| UI110602-09     | Thorium   | 2 mg/L       | .05 mL  | 50 mL      | 1 ug/L      |
| UI110602-09     | Uranium   | .2 mg/L      | .05 mL  | 50 mL      | .2 ug/L     |
| UI110602-09     | Vanadium  | 10 mg/L      | .05 mL  | 50 mL      | 10 ug/L     |
| UI110602-09     | Zinc      | 10 mg/L      | .05 mL  | 50 mL      | 10 ug/L     |

**Serial ID:** WMS110829-07      **Opened:** 29-AUG-11      **Balance Id :** 40245216  
**Name:** ICPMS ICSA      **Received:** 29-AUG-11      **Lot Number :** 1010773  
**Type:** Working      **Expires:** 30-AUG-11      **Pipet Id :** 3541598  
**Employee:** Paul Boyd      **Solvent :** 2%HNO3/1%HCl - 1608947  
**Supplier:** GEL  
**Description:** ICPMS ICSA  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc.  |
|-----------------|-------------|--------------|---------|------------|--------------|
| UI110824-11     | Aluminum    | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Calcium     | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Carbon      | 2000 mg/L    | 5 mL    | 50 mL      | 200000 ug/L  |
| UI110824-11     | Chloride    | 10000 mg/L   | 5 mL    | 50 mL      | 1000000 ug/L |
| UI110824-11     | Iron        | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Magnesium   | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Molybdenum  | 20 mg/L      | 5 mL    | 50 mL      | 2000 ug/L    |
| UI110824-11     | Phosphorous | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Potassium   | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Sodium      | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Sulfur      | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Titanium    | 20 mg/L      | 5 mL    | 50 mL      | 2000 ug/L    |

**Serial ID:** WMS110829-08      **Opened:** 29-AUG-11      **Balance Id :** 40245216  
**Name:** ICPMS ICSAB      **Received:** 29-AUG-11      **Pipet Id :** 1758088  
**Type:** Working      **Expires:** 30-AUG-11      **Solvent :** 2%HNO3/1%HCl - 1608947  
**Employee:** Paul Boyd  
**Supplier:** GEL  
**Description:** ICPMS ICSAB  
**Comments:** None

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI110720-12     | Arsenic   | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |
| UI110720-12     | Barium    | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |
| UI110720-12     | Beryllium | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |
| UI110720-12     | Boron     | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L     |
| UI110720-12     | Cadmium   | 2 mg/L       | .5 mL   | 50 mL      | 20.2 ug/L   |

# Standard Logbook

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc.  |
|-----------------|-------------|--------------|---------|------------|--------------|
| UI110720-12     | Chromium    | 2 mg/L       | .5 mL   | 50 mL      | 22.2 ug/L    |
| UI110720-12     | Cobalt      | 2 mg/L       | .5 mL   | 50 mL      | 20.4 ug/L    |
| UI110720-12     | Copper      | 2 mg/L       | .5 mL   | 50 mL      | 23.4 ug/L    |
| UI110720-12     | Lead        | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |
| UI110720-12     | Lithium     | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |
| UI110720-12     | Manganese   | 2 mg/L       | .5 mL   | 50 mL      | 22.7 ug/L    |
| UI110720-12     | Nickel      | 2 mg/L       | .5 mL   | 50 mL      | 22.4 ug/L    |
| UI110720-12     | Selenium    | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |
| UI110720-12     | Strontium   | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |
| UI110720-12     | Thallium    | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |
| UI110720-12     | Thorium     | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |
| UI110720-12     | Uranium     | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |
| UI110720-12     | Vanadium    | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |
| UI110720-12     | Zinc        | 2 mg/L       | .5 mL   | 50 mL      | 27 ug/L      |
| UI110720-13     | Antimony    | 2 mg/L       | .5 mL   | 50 mL      | 20.5 ug/L    |
| UI110720-13     | Silver      | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |
| UI110720-13     | Tin         | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |
| UI110720-13     | Tungsten    | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |
| UI110720-13     | Zirconium   | 2 mg/L       | .5 mL   | 50 mL      | 20 ug/L      |
| UI110824-11     | Aluminum    | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Calcium     | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Carbon      | 2000 mg/L    | 5 mL    | 50 mL      | 200000 ug/L  |
| UI110824-11     | Chloride    | 10000 mg/L   | 5 mL    | 50 mL      | 1000000 ug/L |
| UI110824-11     | Iron        | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Magnesium   | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Molybdenum  | 20 mg/L      | 5 mL    | 50 mL      | 2000 ug/L    |
| UI110824-11     | Phosphorous | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Potassium   | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Sodium      | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Sulfur      | 1000 mg/L    | 5 mL    | 50 mL      | 100000 ug/L  |
| UI110824-11     | Titanium    | 20 mg/L      | 5 mL    | 50 mL      | 2000 ug/L    |

**Serial ID:** 110622-tclp      **Opened:** 22-JUN-11      **Lot Number :** K11061  
**Name:** I-HNO3      **Received:** 22-JUN-11  
**Type:** Reagent/Solvent      **Expires:** 22-JUN-12  
**Employee:** Edmund Frampton  
**Supplier:** Macron Chemicals  
**Description:** Concentrated Nitric Acid  
**Comments:** None

# Standard Logbook

**Serial ID:** 1305056      **Opened:** 21-APR-10      **Lot Number :** 200924601  
**Name:** I-HCL      **Received:** 21-APR-10  
**Type:** Reagent/Solvent      **Expires:** 21-APR-12  
**Employee:** Edmund Frampton  
**Supplier:** VWR  
**Description:** HYDROCHLORIC ACID  
**Comments:** None

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**Serial ID:** 1344209-A      **Opened:** 26-MAY-10      **Lot Number :** G37587  
**Name:** B-NaCl-MER      **Received:** 26-MAY-10  
**Type:** Reagent/Solvent      **Expires:** 26-MAY-12  
**Employee:** Tara Griffin  
**Supplier:** VWR  
**Description:** Sodium Chloride  
**Comments:** None

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**Serial ID:** 1499766-A      **Opened:** 15-DEC-10      **Lot Number :** 1850C368  
**Name:** B-NH2OH.HCl-MER      **Received:** 15-DEC-10  
**Type:** Reagent/Solvent      **Expires:** 15-DEC-12  
**Employee:** Tara Griffin  
**Supplier:** EMD  
**Description:** Hydroxylamine Hydrochloride  
**Comments:** None

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**Serial ID:** 1522928      **Opened:** 10-FEB-11      **Lot Number :** J51J06  
**Name:** B-H2SO4-MER      **Received:** 10-FEB-11  
**Type:** Reagent/Solvent      **Expires:** 10-FEB-12  
**Employee:** Tara Griffin  
**Supplier:** Mallinckrodt  
**Description:** Sulfuric Acid, Concentrated  
**Comments:** None

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**Serial ID:** 1543794-A      **Opened:** 28-MAR-11      **Lot Number :** TB09AZEMS  
**Name:** B-KMnO4(VWR)-MER      **Received:** 28-MAR-11  
**Type:** Reagent/Solvent      **Expires:** 28-MAR-12  
**Employee:** Tara Griffin  
**Supplier:** EMD  
**Description:** Potassium Permanganate  
**Comments:** None

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# Standard Logbook

**Serial ID:** 1586906      **Opened:** 05-JUL-11      **Lot Number :** K14068  
**Name:** I-HCL      **Received:** 05-JUL-11      **Preservative\_Id :** 5 none  
**Type:** Reagent/Solvent      **Expires:** 05-JUL-12  
**Employee:** Anthony Green  
**Supplier:** J.T. BAKER  
**Description:** HYDROCHLORIC ACID  
**Comments:** None

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**Serial ID:** 1588420-C      **Opened:** 08-JUL-11      **Balance Id :** BAL-002  
**Name:** B-KMnO4-MER      **Received:** 08-JUL-11  
**Type:** Reagent/Solvent      **Expires:** 08-JAN-12  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** 5% KMnO4 solution  
**Comments:** None

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| Parent Material | Analyte          | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|------------------|--------------|---------|------------|-------------|
| 1543794-A       | B-KMnO4(VWR)-MER | Crystals     | 50 g    | 1000 mL    | 5%          |

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**Serial ID:** 1596475-1      **Opened:** 28-JUL-11      **Instrument Id :** MERCURY  
**Name:** B-HNO3-MER      **Received:** 28-JUL-11      **Lot Number :** K15030  
**Type:** Reagent/Solvent      **Expires:** 28-JUL-12  
**Employee:** Tara Griffin  
**Supplier:** J T Baker  
**Description:** NITRIC ACID  
**Comments:** None

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**Serial ID:** 1596503      **Opened:** 28-JUL-11      **Lot Number :** K10H00  
**Name:** B-K2S2O8S-MER      **Received:** 28-JUL-11  
**Type:** Reagent/Solvent      **Expires:** 28-JUL-12  
**Employee:** Tara Griffin  
**Supplier:** J.T BAKER  
**Description:** Potassium Persulfate Concentrate.  
**Comments:** None

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**Serial ID:** 1596553-C      **Opened:** 28-JUL-11      **Balance Id :** BAL-002  
**Name:** B-NaCl.NH2OH.HCl-MER      **Received:** 28-JUL-11  
**Type:** Reagent/Solvent      **Expires:** 28-JAN-12  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Hg reducing agent  
**Comments:** None

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# Standard Logbook

| Parent Material | Analyte         | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------------|--------------|---------|------------|-------------|
| 1344209-A       | B-NaCl-MER      | N/A          | 120 g   | 1000 mL    | N/A         |
| 1499766-A       | B-NH2OH.HCl-MER | N/A          | 120 g   | 1000 mL    | N/A         |

**Serial ID:** 1601203-C      **Opened:** 09-AUG-11      **Balance Id :** BAL-002  
**Name:** B-K2S2O8-MER      **Received:** 09-AUG-11  
**Type:** Reagent/Solvent      **Expires:** 09-FEB-12  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** 5% Potassium Persulfate  
**Comments:** None

| Parent Material | Analyte       | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------------|--------------|---------|------------|-------------|
| 1596503         | B-K2S2O8S-MER | N/A          |         | 1000 mL    | N/A         |

**Serial ID:** 1604895      **Opened:** 18-AUG-11      **Lot Number :** K26028  
**Name:** I-HNO3      **Received:** 18-AUG-11  
**Type:** Reagent/Solvent      **Expires:** 18-AUG-12  
**Employee:** Anthony Green  
**Supplier:** Macron Chemicals  
**Description:** Concentrated Nitric Acid  
**Comments:** None

**Serial ID:** 1605968      **Opened:** 22-AUG-11      **Solvent :** Type I Water  
**Name:** B-2%HNO3/1%HCl-ICPMS      **Received:** 22-AUG-11  
**Type:** Reagent/Solvent      **Expires:** 29-AUG-11  
**Employee:** Dale Mori  
**Supplier:** GEL  
**Description:** 2%HNO3/1%HCl Solution (Type I Water)  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| 110622-tclp     | I-HNO3  | 68.0-70.0%   | 160 mL  | 8 l        | N/A         |
| 1305056         | I-HCL   | 36.5-38.0    | 80 mL   | 8 l        | N/A         |

**Serial ID:** 1608947      **Opened:** 29-AUG-11      **Solvent :** Type I Water  
**Name:** B-2%HNO3/1%HCl-ICPMS      **Received:** 29-AUG-11  
**Type:** Reagent/Solvent      **Expires:** 05-SEP-11  
**Employee:** Dale Mori  
**Supplier:** GEL  
**Description:** 2%HNO3/1%HCl Solution (Type I Water)  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| 110622-tclp     | I-HNO3  | 68.0-70.0%   | 160 mL  | 8 l        | N/A         |

# Standard Logbook

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| 1586906         | I-HCL   | 36.5-38.0    | 80 mL   | 8 l        | N/A         |

Table 2-1

**HART CROWSER 2000 SURFACE SOIL SAMPLES ANALYTICAL RESULTS SUMMARY**  
**GORST CREEK - BREMERTON AUTO WRECKING LANDFILL INTEGRATED ASSESSMENT**  
**PORT ORCHARD, WASHINGTON**

| Sample ID               | GL-SS-01   | GL-SS-02      | GL-SS-03  | GL-SS-04  | GL-SS-05  | GL-SS-06  | GL-SS-07  | GL-SS-08        |
|-------------------------|------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------------|
| Sample Date             | 1/10/2000  | 1/10/2000     | 1/10/2000 | 1/10/2000 | 1/10/2000 | 1/10/2000 | 1/10/2000 | 1/10/2000       |
| Description             | Background | Discrete Grab |           |           | Composite |           |           | Field Duplicate |
| Pesticides/PCBs (mg/kg) |            |               |           |           |           |           |           |                 |
| Aroclor 1248            | 0.044 U    | 0.039 U       | 0.23      | 0.44      | 0.036 U   | 0.04 U    | 0.04 U    | 0.04 U          |
| Aroclor 1254            | 0.044 U    | 0.039 U       | 0.039 U   | 0.038 U   | 0.14      | 0.04 U    | 0.04 U    | 0.04 U          |
| Aroclor 1260            | 0.044 U    | 0.042         | 0.14      | 0.12      | 0.036 U   | 0.04 U    | 0.04 U    | 0.04 U          |
| Total PCBs              | 0.044 U    | 0.042         | 0.37      | 0.56      | 0.14      | 0.04 U    | 0.04 U    | 0.04 U          |
| 4,4'-DDD                | 0.0044 U   | 0.004 U       | 0.004 U   | 0.037 J   | 0.0036 U  | 0.004 U   | 0.004 U   | 0.004 U         |
| 4,4'-DDE                | 0.0044 U   | 0.004 U       | 0.016 J   | 0.026 J   | 0.03 J    | 0.004 U   | 0.004 U   | 0.004 U         |
| 4,4'-DDT                | 0.0044 U   | 0.015 J       | 0.03 J    | 0.04 J    | 0.058     | 0.004 U   | 0.004 U   | 0.004 U         |
| Alpha-Chlordane         | 0.0022 U   | 0.011 J       | 0.002 U   | 0.0019 U  | 0.0018 U  | 0.002 U   | 0.002 U   | 0.002 U         |
| Dieldrin                | 0.0044 U   | 0.004 U       | 0.017     | 0.029 J   | 0.038 J   | 0.004 U   | 0.004 U   | 0.004 U         |
| Endosulfan I            | 0.0022 U   | 0.002 U       | 0.002 U   | 0.0019 U  | 0.01 J    | 0.002 U   | 0.002 U   | 0.002 U         |
| Endosulfan II           | 0.0044 U   | 0.004 U       | 0.004 U   | 0.0038 U  | 0.0095 J  | 0.004 U   | 0.004 U   | 0.004 U         |
| Endosulfan Sulfate      | 0.0044 U   | 0.009         | 0.004 U   | 0.0038 U  | 0.0036 U  | 0.004 U   | 0.004 U   | 0.004 U         |
| Endrin                  | 0.0044 U   | 0.004 U       | 0.004 U   | 0.0038 U  | 0.0077 J  | 0.004 U   | 0.004 U   | 0.004 U         |
| Endrin Ketone           | 0.0044 U   | 0.004 U       | 0.005     | 0.0038 U  | 0.0036 U  | 0.004 U   | 0.004 U   | 0.004 U         |
| Gamma-Chlordane         | 0.0022 U   | 0.008         | 0.009 J   | 0.015 J   | 0.02 J    | 0.002 U   | 0.002 U   | 0.002 U         |
| Heptachlor Epoxide      | 0.0022 U   | 0.002 U       | 0.007 J   | 0.0019 U  | 0.0087 J  | 0.002 U   | 0.002 U   | 0.002 U         |
| SVOCs (mg/kg)           |            |               |           |           |           |           |           |                 |
| 2-Methylnaphthalene     | 0.44 U     | 0.013 J       | 0.39 U    | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Acenaphthene            | 0.44 U     | 0.026 J       | 0.39 U    | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Acenaphthylene          | 0.44 U     | 0.014 J       | 0.39 U    | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Anthracene              | 0.44 U     | 0.067 J       | 0.39 U    | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Benz(a)anthracene       | 0.44 U     | 0.15 J        | 0.39 U    | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Benzo(a)pyrene          | 0.44 U     | 0.14 J        | 0.016 J   | 0.37 U    | 0.015 J   | 0.4 U     | 0.4 U     | 0.4 U           |
| Benzo(b)fluoranthene    | 0.44 U     | 0.12          | 0.009 J   | 0.006 J   | 0.36 U    | 0.4 U     | 0.4       | 0.4 U           |
| Benzo(g,h,i)perylene    | 0.44 U     | 0.096 J       | 0.011 J   | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Benzo(k)fluoranthene    | 0.44 U     | 0.1           | 0.005 J   | 0.003 J   | 0.36 U    | 0.4 U     | 0.4       | 0.4 U           |
| Butylbenzylphthalate    | 0.016 J    | 0.15 J        | 0.048 J   | 0.031 J   | 0.024 J   | 0.009 J   | 0.4 U     | 0.009 J         |
| Carbazole               | 0.44 U     | 0.034 J       | 0.39 U    | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Chrysene                | 0.44 U     | 0.18 J        | 0.39 U    | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Dibenz(a,h)anthracene   | 0.44 U     | 0.03 J        | 0.39 U    | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Dibenzofuran            | 0.44 U     | 0.013 J       | 0.39 U    | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Dimethylphthalate       | 0.44 U     | 0.089 J       | 0.39 U    | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Di-n-butylphthalate     | 0.44 U     | 0.39 U        | 0.39 U    | 0.028 J   | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Fluoranthene            | 0.44 U     | 0.28 J        | 0.39 U    | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Fluorene                | 0.44 U     | 0.032 J       | 0.39 U    | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Indeno(1,2,3-cd)pyrene  | 0.44 U     | 0.088J        | 0.39 U    | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Naphthalene             | 0.44 U     | 0.032 J       | 0.39 U    | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Phenanthrene            | 0.44 U     | 0.28 J        | 0.39 U    | 0.37 U    | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |
| Pyrene                  | 0.44 U     | 0.29 J        | 0.009 J   | 0.009 J   | 0.36 U    | 0.4 U     | 0.4 U     | 0.4 U           |

Table 2-1

**HART CROWSER 2000 SURFACE SOIL SAMPLES ANALYTICAL RESULTS SUMMARY**  
**GORST CREEK - BREMERTON AUTO WRECKING LANDFILL INTEGRATED ASSESSMENT**  
**PORT ORCHARD, WASHINGTON**

| Sample ID          | GL-SS-01   | GL-SS-02      | GL-SS-03  | GL-SS-04  | GL-SS-05  | GL-SS-06  | GL-SS-07  | GL-SS-08        |
|--------------------|------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------------|
| Sample Date        | 1/10/2000  | 1/10/2000     | 1/10/2000 | 1/10/2000 | 1/10/2000 | 1/10/2000 | 1/10/2000 | 1/10/2000       |
| Description        | Background | Discrete Grab |           |           | Composite |           |           | Field Duplicate |
| TAL Metals (mg/kg) |            |               |           |           |           |           |           |                 |
| Antimony           | 3.6 U      | 3.0 U         | 5.9       | 3.1 U     | 4.7       | 3.2 U     | 3.3 U     | 3.2 U           |
| Arsenic            | 2.3        | 5.2           | 1.7       | 1.2       | 0.91      | 1.6       | 1.6       | 1.4             |
| Cadmium            | 0.36 U     | 1             | 0.83      | 0.31 U    | 0.3 U     | 0.32 U    | 0.33 U    | 0.32 U          |
| Chromium           | 23         | 28            | 30.3      | 25.2      | 22.4      | 19        | 27.9      | 19.8            |
| Copper             | 12.5       | 34.1          | 64.8      | 30.7      | 22.3      | 10        | 13        | 11.7            |
| Lead               | 10         | 235           | 57.9      | 32.8      | 17.8      | 12.7      | 16.3      | 10.6            |
| Mercury            | 0.045 U    | 0.1           | 0.25      | 0.094     | 0.046     | 0.046 U   | 0.047 U   | 0.049 U         |
| Nickel             | 32.1       | 35.7          | 44        | 28.5      | 34.3      | 24.4      | 35.4      | 32.1            |
| Zinc               | 31.5       | 178           | 235       | 105       | 77.4      | 27.7      | 44.5      | 40.3            |

Source: Hart Crowser 2000.

Note: Bold type indicates the sample results is above the instrument detection limit.

Key:

DDD = Dichlorodiphenyldichloroethane.  
 DDE = Dichlorodiphenyldichloroethylene.  
 DDT = Dichlorodiphenyltrichloroethane.  
 ID = Identification.  
 J = Estimated value.  
 mg/kg = Milligrams per kilogram.  
 PCBs = Polychlorinated biphenyls.  
 SVOCs = Semivolatile organic compounds.  
 TAL = Target Analyte List.  
 U = Not detected at indicated detection limit.



Table 2-2

**HART CROWSER 2000**  
**SEDIMENT SAMPLES ANALYTICAL RESULTS SUMMARY**  
**GORST CREEK - BREMERTON AUTO WRECKING LANDFILL**  
**INTEGRATED ASSESSMENT**  
**PORT ORCHARD, WASHINGTON**

| Sample ID               | GL-SED-01  | GL-SED-02 | GL-SED-03 | GL-SED-04 |
|-------------------------|------------|-----------|-----------|-----------|
| Sample Date             | 1/10/2000  | 1/11/2000 | 1/11/2000 | 1/11/2000 |
| Description             | Background | Composite |           |           |
| Pesticides/PCBs (mg/kg) |            |           |           |           |
| 4,4'-DDT                | 0.0043 U   | 0.012 J   | 0.0041 U  | 0.0041 U  |
| SVOCs (mg/kg)           |            |           |           |           |
| 4-Methylphenol          | 0.43 U     | 0.017 J   | 0.4 U     | 0.4 U     |
| Benzo(a)anthracene      | 0.43 U     | 0.045 J   | 0.4 U     | 0.4 U     |
| Benzo(a)anthracene      | 0.43 U     | 0.045 J   | 0.4 U     | 0.4 U     |
| Benzo(b)fluoranthene    | 0.43       | 0.058 J   | 0.4 U     | 0.4 U     |
| Benzo(k)fluoranthene    | 0.43       | 0.042 J   | 0.4 U     | 0.4 U     |
| Butylbenzylphthalate    | 0.43 U     | 0.095 J   | 0.4 U     | 0.4 U     |
| Chrysene                | 0.43 U     | 0.073 J   | 0.4 U     | 0.4 U     |
| Di-n-butylphthalate     | 0.43 U     | 0.03 J    | 0.4 U     | 0.4 U     |
| Di-n-octylphthalate     | 0.43 U     | 0.027 J   | 0.4 U     | 0.4 U     |
| Fluoranthene            | 0.43 U     | 0.097 J   | 0.4 U     | 0.4 U     |
| Indeno(1,2,3-cd)pyrene  | 0.43 U     | 0.045 J   | 0.4 U     | 0.4 U     |
| Pentachlorophenol       | 1.1 U      | 0.036 J   | 1 U       | 1 U       |
| Phenanthrene            | 0.43 U     | 0.06 J    | 0.4 U     | 0.4 U     |
| Pyrene                  | 0.43 U     | 0.097 J   | 0.4 U     | 0.4 U     |
| TAL Metals (mg/kg)      |            |           |           |           |
| Antimony                | 3.4 U      | 7.6       | 3.2 U     | 3.2 U     |
| Arsenic                 | 2          | 3.5       | 27.7      | 2.1       |
| Chromium                | 35.7       | 30.5      | 17.3      | 30.3      |
| Copper                  | 11.3       | 159       | 12.7      | 19.7      |
| Lead                    | 4.2        | 113       | 16.6      | 12.4      |
| Nickel                  | 54         | 53.2      | 23.1      | 32.1      |
| Zinc                    | 45.4       | 108       | 76.4      | 97.3      |

Source: Hart Crowser 2000.

Note: Bold type indicates the sample result is above the detection limit.

Key:

DDT = Dichlorodiphenyltrichloroethane.  
 ID = Identification.  
 J = Estimated value.  
 mg/kg = Milligrams per kilogram.  
 PCBs = Polychlorinated biphenyl.  
 SVOCs = Semivolatile organic compounds.  
 TAL = Target Analyte List.  
 U = Not detected at indicated detection limit.

## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

### Certificate of Analysis Report for

ECOL008 Ecology and Environment, Inc. Start-3 002233.2008

Client SDG: 284538 GEL Work Order: 284538

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- E Organics—Concentration of the target analyte exceeds the instrument calibration range
- J Value is estimated
- P Organics—The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

Reviewed by



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: September 7, 2011

Company : US EPA Equipment Warehouse  
Address : 1620 S. 92nd Place, Unit B

Seattle, Washington 98108  
Contact: Mr. Steve Hall  
Project: Project No. 002233.0599.01SF

Client Sample ID: 11080101      Project: ECOL00111  
Sample ID: 284538001      Client ID: ECOL008  
Matrix: Ground Water  
Collect Date: 18-AUG-11 12:00  
Receive Date: 23-AUG-11  
Collector: Client

| Parameter   | Qualifier | Result | DL    | RL    | Units | DF | Analyst | Date     | Time | Batch   | Method |
|---|-----------|--------|-------|-------|-------|----|---------|----------|------|---------|--------|
| Mercury Analysis-CVAA                                 |           |        |       |       |       |    |         |          |      |         |        |
| 7470 Cold Vapor Hg Liquid "As Received"               |           |        |       |       |       |    |         |          |      |         |        |
| Mercury   | U         | ND     | 0.066 | 0.200 | ug/L  | 1  | JXL1    | 08/24/11 | 1718 | 1135404 | 1      |
| Metals Analysis-ICP-MS                                |           |        |       |       |       |    |         |          |      |         |        |
| SW846 3005A/6020A Liquid "As Received"                |           |        |       |       |       |    |         |          |      |         |        |
| Aluminum  |           | 8170   | 15.0  | 50.0  | ug/L  | 1  | PRB     | 08/25/11 | 0839 | 1135453 | 2      |
| Antimony  | U         | ND     | 1.00  | 3.00  | ug/L  | 1  |         |          |      |         |        |
| Barium  |           | 112    | 0.600 | 2.00  | ug/L  | 1  |         |          |      |         |        |
| Beryllium   | J         | 0.209  | 0.200 | 0.500 | ug/L  | 1  |         |          |      |         |        |
| Cadmium   | U         | ND     | 0.110 | 1.00  | ug/L  | 1  |         |          |      |         |        |
| Calcium   |           | 4930   | 60.0  | 200   | ug/L  | 1  |         |          |      |         |        |
| Chromium  |           | 14.5   | 2.00  | 10.0  | ug/L  | 1  |         |          |      |         |        |
| Cobalt  |           | 5.14   | 0.100 | 1.00  | ug/L  | 1  |         |          |      |         |        |
| Copper  |           | 10.0   | 0.350 | 1.00  | ug/L  | 1  |         |          |      |         |        |
| Iron  |           | 6850   | 33.0  | 100   | ug/L  | 1  |         |          |      |         |        |
| Lead  |           | 3.58   | 0.500 | 2.00  | ug/L  | 1  |         |          |      |         |        |
| Magnesium   |           | 2590   | 10.0  | 30.0  | ug/L  | 1  |         |          |      |         |        |
| Manganese   |           | 275    | 1.00  | 5.00  | ug/L  | 1  |         |          |      |         |        |
| Nickel  |           | 16.4   | 0.500 | 2.00  | ug/L  | 1  |         |          |      |         |        |
| Potassium   |           | 907    | 80.0  | 300   | ug/L  | 1  |         |          |      |         |        |
| Sodium  |           | 3590   | 80.0  | 250   | ug/L  | 1  |         |          |      |         |        |
| Thallium  | U         | ND     | 0.450 | 2.00  | ug/L  | 1  |         |          |      |         |        |
| Zinc  |           | 14.9   | 3.50  | 10.0  | ug/L  | 1  |         |          |      |         |        |
| Arsenic   | J         | 2.00   | 1.70  | 5.00  | ug/L  | 1  | PRB     | 08/29/11 | 1244 | 1135453 | 3      |
| Selenium  | U         | ND     | 1.50  | 5.00  | ug/L  | 1  |         |          |      |         |        |
| Silver  | U         | ND     | 0.200 | 1.00  | ug/L  | 1  |         |          |      |         |        |
| Semi-Volatile-GC/MS                                   |           |        |       |       |       |    |         |          |      |         |        |
| SW846 3510C/8270D Semivolatile Analysis "As Received" |           |        |       |       |       |    |         |          |      |         |        |
| 1,1'-Biphenyl   | U         | ND     | 3.00  | 10.0  | ug/L  | 1  | JLD1    | 08/26/11 | 1307 | 1135988 | 4      |
| 1,2,4,5-Tetrachlorobenzene                            | U         | ND     | 3.00  | 10.0  | ug/L  | 1  |         |          |      |         |        |
| 2,3,4,6-Tetrachlorophenol                             | U         | ND     | 3.00  | 10.0  | ug/L  | 1  |         |          |      |         |        |
| 2,4,5-Trichlorophenol                                 | U         | ND     | 3.00  | 10.0  | ug/L  | 1  |         |          |      |         |        |
| 2,4,6-Trichlorophenol                                 | U         | ND     | 3.00  | 10.0  | ug/L  | 1  |         |          |      |         |        |
| 2,4-Dichlorophenol                                    | U         | ND     | 3.00  | 10.0  | ug/L  | 1  |         |          |      |         |        |
| 2,4-Dimethylphenol                                    | U         | ND     | 3.00  | 10.0  | ug/L  | 1  |         |          |      |         |        |
| 2,4-Dinitrophenol                                     | U         | ND     | 5.00  | 20.0  | ug/L  | 1  |         |          |      |         |        |
| 2,4-Dinitrotoluene                                    | U         | ND     | 3.00  | 10.0  | ug/L  | 1  |         |          |      |         |        |
| 2,6-Dinitrotoluene                                    | U         | ND     | 3.00  | 10.0  | ug/L  | 1  |         |          |      |         |        |
| 2-Chloronaphthalene                                   | U         | ND     | 0.300 | 1.00  | ug/L  | 1  |         |          |      |         |        |

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## Certificate of Analysis

Report Date: September 7, 2011

Company : US EPA Equipment Warehouse  
Address : 1620 S. 92nd Place, Unit B

Seattle, Washington 98108  
Contact: Mr. Steve Hall  
Project: Project No. 002233.0599.01SF

Client Sample ID: 11080101 Project: ECOL00111  
Sample ID: 284538001 Client ID: ECOL008

| Parameter   | Qualifier | Result | DL    | RL   | Units | DF | Analyst | Date | Time | Batch | Method |
|---|-----------|--------|-------|------|-------|----|---------|------|------|-------|--------|
| Semi-Volatile-GC/MS                                   |           |        |       |      |       |    |         |      |      |       |        |
| SW846 3510C/8270D Semivolatile Analysis "As Received" |           |        |       |      |       |    |         |      |      |       |        |
| 2-Chlorophenol  | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| 2-Methyl-4,6-dinitrophenol                            | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| 2-Methylnaphthalene                                   | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| 2-Nitrophenol   | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| 3,3'-Dichlorobenzidine                                | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| 4-Bromophenylphenylether                              | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| 4-Chloro-3-methylphenol                               | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| 4-Chloroaniline                                       | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| 4-Chlorophenylphenylether                             | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| 4-Nitrophenol   | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| Acenaphthene  | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Acenaphthylene  | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Acetophenone  | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| Anthracene  | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Atrazine  | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| Benzaldehyde  | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| Benzo(a)anthracene                                    | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Benzo(a)pyrene  | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Benzo(b)fluoranthene                                  | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Benzo(ghi)perylene                                    | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Benzo(k)fluoranthene                                  | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Butylbenzylphthalate                                  | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| Caprolactam   | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| Carbazole   | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Chrysene  | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Di-n-butylphthalate                                   | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| Di-n-octylphthalate                                   | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| Dibenzo(a,h)anthracene                                | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Dibenzofuran  | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| Diethylphthalate                                      | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| Dimethylphthalate                                     | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| Diphenylamine   | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| Fluoranthene  | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Fluorene  | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Hexachlorobenzene                                     | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| Hexachlorobutadiene                                   | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| Hexachlorocyclopentadiene                             | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |
| Hexachloroethane                                      | U         | ND     | 3.00  | 10.0 | ug/L  | 1  |         |      |      |       |        |

# GEL LABORATORIES LLC

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## Certificate of Analysis

Report Date: September 7, 2011

Company : US EPA Equipment Warehouse  
Address : 1620 S. 92nd Place, Unit B

Seattle, Washington 98108  
Contact: Mr. Steve Hall  
Project: Project No. 002233.0599.01SF

Client Sample ID: 11080101 Project: ECOL00111  
Sample ID: 284538001 Client ID: ECOL008

| Parameter   | Qualifier | Result | DL      | RL     | Units | DF | Analyst | Date     | Time | Batch   | Method |
|---|-----------|--------|---------|--------|-------|----|---------|----------|------|---------|--------|
| Semi-Volatile-GC/MS                                   |           |        |         |        |       |    |         |          |      |         |        |
| SW846 3510C/8270D Semivolatile Analysis "As Received" |           |        |         |        |       |    |         |          |      |         |        |
| Indeno(1,2,3-cd)pyrene                                | U         | ND     | 0.300   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| Isophorone  | U         | ND     | 3.00    | 10.0   | ug/L  | 1  |         |          |      |         |        |
| N-Nitrosodipropylamine                                | U         | ND     | 3.00    | 10.0   | ug/L  | 1  |         |          |      |         |        |
| Naphthalene   | U         | ND     | 0.300   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| Nitrobenzene  | U         | ND     | 3.00    | 10.0   | ug/L  | 1  |         |          |      |         |        |
| Pentachlorophenol                                     | U         | ND     | 3.00    | 10.0   | ug/L  | 1  |         |          |      |         |        |
| Phenanthrene  | U         | ND     | 0.300   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| Phenol  | U         | ND     | 3.00    | 10.0   | ug/L  | 1  |         |          |      |         |        |
| Pyrene  | U         | ND     | 0.300   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| bis(2-Chloroethoxy)methane                            | U         | ND     | 3.00    | 10.0   | ug/L  | 1  |         |          |      |         |        |
| bis(2-Chloroethyl) ether                              | U         | ND     | 3.00    | 10.0   | ug/L  | 1  |         |          |      |         |        |
| bis(2-Chloroisopropyl)ether                           | U         | ND     | 3.00    | 10.0   | ug/L  | 1  |         |          |      |         |        |
| bis(2-Ethylhexyl)phthalate                            | J         | 4.56   | 3.00    | 10.0   | ug/L  | 1  |         |          |      |         |        |
| m,p-Cresols   | U         | ND     | 3.00    | 10.0   | ug/L  | 1  |         |          |      |         |        |
| m-Nitroaniline  | U         | ND     | 3.00    | 10.0   | ug/L  | 1  |         |          |      |         |        |
| o-Cresol  | U         | ND     | 3.00    | 10.0   | ug/L  | 1  |         |          |      |         |        |
| o-Nitroaniline  | U         | ND     | 3.00    | 10.0   | ug/L  | 1  |         |          |      |         |        |
| p-Nitroaniline  | U         | ND     | 3.00    | 10.0   | ug/L  | 1  |         |          |      |         |        |
| Semi-Volatiles-PCB                                    |           |        |         |        |       |    |         |          |      |         |        |
| SW846 3535A/8082A PCB Liquids "As Received"           |           |        |         |        |       |    |         |          |      |         |        |
| Aroclor-1016  | U         | ND     | 0.034   | 0.102  | ug/L  | 1  | YS1     | 08/30/11 | 0941 | 1136663 | 5      |
| Aroclor-1221  | U         | ND     | 0.034   | 0.102  | ug/L  | 1  |         |          |      |         |        |
| Aroclor-1232  | U         | ND     | 0.034   | 0.102  | ug/L  | 1  |         |          |      |         |        |
| Aroclor-1242  | U         | ND     | 0.034   | 0.102  | ug/L  | 1  |         |          |      |         |        |
| Aroclor-1248  | U         | ND     | 0.034   | 0.102  | ug/L  | 1  |         |          |      |         |        |
| Aroclor-1254  | U         | ND     | 0.034   | 0.102  | ug/L  | 1  |         |          |      |         |        |
| Aroclor-1260  | U         | ND     | 0.034   | 0.102  | ug/L  | 1  |         |          |      |         |        |
| Semi-Volatiles-Pesticide                              |           |        |         |        |       |    |         |          |      |         |        |
| SW846 3535A/8081B Liquid "As Received"                |           |        |         |        |       |    |         |          |      |         |        |
| 4,4'-DDD  | U         | ND     | 0.0102  | 0.0408 | ug/L  | 1  | RXE1    | 08/30/11 | 1859 | 1136049 | 7      |
| 4,4'-DDE  | U         | ND     | 0.0102  | 0.0408 | ug/L  | 1  |         |          |      |         |        |
| 4,4'-DDT  | U         | ND     | 0.0102  | 0.0408 | ug/L  | 1  |         |          |      |         |        |
| Aldrin  | U         | ND     | 0.00679 | 0.0204 | ug/L  | 1  |         |          |      |         |        |
| Chlordane (tech.)                                     | U         | ND     | 0.0781  | 0.255  | ug/L  | 1  |         |          |      |         |        |
| Dieldrin  | U         | ND     | 0.0102  | 0.0408 | ug/L  | 1  |         |          |      |         |        |
| Endosulfan I  | U         | ND     | 0.00679 | 0.0204 | ug/L  | 1  |         |          |      |         |        |
| Endosulfan II   | U         | ND     | 0.0102  | 0.0408 | ug/L  | 1  |         |          |      |         |        |

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Seattle, Washington 98108  
Contact: Mr. Steve Hall  
Project: Project No. 002233.0599.01SF

Client Sample ID: 11080101 Project: ECOL00111  
Sample ID: 284538001 Client ID: ECOL008

| Parameter                                  | Qualifier | Result | DL      | RL     | Units | DF | Analyst | Date     | Time | Batch   | Method |
|--|-----------|--------|---------|--------|-------|----|---------|----------|------|---------|--------|
| Semi-Volatiles-Pesticide                   |           |        |         |        |       |    |         |          |      |         |        |
| SW846 3535A/8081B Liquid "As Received"     |           |        |         |        |       |    |         |          |      |         |        |
| Endosulfan sulfate                         | U         | ND     | 0.0102  | 0.0408 | ug/L  | 1  |         |          |      |         |        |
| Endrin                                     | U         | ND     | 0.0102  | 0.0408 | ug/L  | 1  |         |          |      |         |        |
| Endrin aldehyde                            | U         | ND     | 0.00679 | 0.0408 | ug/L  | 1  |         |          |      |         |        |
| Endrin ketone                              | U         | ND     | 0.0102  | 0.0408 | ug/L  | 1  |         |          |      |         |        |
| Heptachlor                                 | U         | ND     | 0.00679 | 0.0204 | ug/L  | 1  |         |          |      |         |        |
| Heptachlor epoxide                         | U         | ND     | 0.00679 | 0.0204 | ug/L  | 1  |         |          |      |         |        |
| Methoxychlor                               | U         | ND     | 0.051   | 0.204  | ug/L  | 1  |         |          |      |         |        |
| Toxaphene                                  | U         | ND     | 0.153   | 0.510  | ug/L  | 1  |         |          |      |         |        |
| alpha-BHC                                  | U         | ND     | 0.00679 | 0.0204 | ug/L  | 1  |         |          |      |         |        |
| beta-BHC                                   | U         | ND     | 0.00679 | 0.0204 | ug/L  | 1  |         |          |      |         |        |
| delta-BHC                                  | U         | ND     | 0.00679 | 0.0204 | ug/L  | 1  |         |          |      |         |        |
| gamma-BHC (Lindane)                        | U         | ND     | 0.00679 | 0.0204 | ug/L  | 1  |         |          |      |         |        |
| Volatile Organics                          |           |        |         |        |       |    |         |          |      |         |        |
| GEL 8260B Method List Liquid "As Received" |           |        |         |        |       |    |         |          |      |         |        |
| 1,1,1,2-Tetrachloroethane                  | U         | ND     | 0.300   | 1.00   | ug/L  | 1  | SYK1    | 08/30/11 | 2328 | 1137563 | 9      |
| 1,1,1-Trichloroethane                      | U         | ND     | 0.325   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,1,2,2-Tetrachloroethane                  | U         | ND     | 0.250   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,1,2-Trichloroethane                      | U         | ND     | 0.250   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,1-Dichloroethane                         | U         | ND     | 0.300   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,1-Dichloroethylene                       | U         | ND     | 0.300   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,1-Dichloropropene                        | U         | ND     | 0.250   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,2,3-Trichlorobenzene                     | U         | ND     | 0.332   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,2,3-Trichloropropane                     | U         | ND     | 0.300   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,2,4-Trichlorobenzene                     | U         | ND     | 0.300   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,2,4-Trimethylbenzene                     | U         | ND     | 0.250   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,2-Dibromo-3-chloropropane                | U         | ND     | 0.300   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,2-Dibromoethane                          | U         | ND     | 0.250   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,2-Dichlorobenzene                        | U         | ND     | 0.250   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,2-Dichloroethane                         | U         | ND     | 0.250   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,2-Dichloroethylene (total)               | U         | ND     | 0.300   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,2-Dichloropropane                        | U         | ND     | 0.250   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,3,5-Trimethylbenzene                     | U         | ND     | 0.250   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,3-Dichlorobenzene                        | U         | ND     | 0.250   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,3-Dichloropropane                        | U         | ND     | 0.300   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 1,4-Dichlorobenzene                        | U         | ND     | 0.250   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 2,2-Dichloropropane                        | U         | ND     | 0.300   | 1.00   | ug/L  | 1  |         |          |      |         |        |
| 2-Butanone                                 | U         | ND     | 1.25    | 5.00   | ug/L  | 1  |         |          |      |         |        |

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Seattle, Washington 98108  
Contact: Mr. Steve Hall  
Project: Project No. 002233.0599.01SF

Client Sample ID: 11080101 Project: ECOL00111  
Sample ID: 284538001 Client ID: ECOL008

| Parameter                                  | Qualifier | Result | DL    | RL   | Units | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|------|-------|----|---------|------|------|-------|--------|
| Volatile Organics                          |           |        |       |      |       |    |         |      |      |       |        |
| GEL 8260B Method List Liquid "As Received" |           |        |       |      |       |    |         |      |      |       |        |
| 2-Chloro-1,3-butadiene                     | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| 2-Chloroethylvinyl ether                   | U         | ND     | 1.50  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| 2-Chlorotoluene                            | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| 2-Hexanone                                 | U         | ND     | 1.25  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| 2-Nitropropane                             | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| 4-Chlorotoluene                            | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| 4-Isopropyltoluene                         | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| 4-Methyl-2-pentanone                       | U         | ND     | 1.25  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Acetone                                    | U         | ND     | 1.50  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Acetonitrile                               | U         | ND     | 6.25  | 25.0 | ug/L  | 1  |         |      |      |       |        |
| Acrolein                                   | U         | ND     | 1.25  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Acrylonitrile                              | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Allyl chloride                             | U         | ND     | 1.50  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Benzene                                    | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Benzyl chloride                            | U         | ND     | 1.30  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Bromobenzene                               | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Bromochloromethane                         | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Bromodichloromethane                       | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Bromoform                                  | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Bromomethane                               | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Carbon disulfide                           | U         | ND     | 1.25  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Carbon tetrachloride                       | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Chlorobenzene                              | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Chloroethane                               | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Chloroform                                 | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Chloromethane                              | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Cyclohexane                                | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Cyclohexanone                              | U         | ND     | 15.0  | 50.0 | ug/L  | 1  |         |      |      |       |        |
| Dibromochloromethane                       | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Dibromomethane                             | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Dichlorodifluoromethane                    | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Ethyl ether                                | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Ethyl methacrylate                         | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Ethylbenzene                               | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Hexachlorobutadiene                        | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Iodomethane                                | U         | ND     | 1.25  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Isobutyl alcohol                           | U         | ND     | 12.5  | 50.0 | ug/L  | 1  |         |      |      |       |        |
| Isopropylbenzene                           | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |

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| Parameter                                  | Qualifier | Result | DL    | RL   | Units | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|------|-------|----|---------|------|------|-------|--------|
| Volatile Organics                          |           |        |       |      |       |    |         |      |      |       |        |
| GEL 8260B Method List Liquid "As Received" |           |        |       |      |       |    |         |      |      |       |        |
| Methacrylonitrile                          | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Methyl acetate                             | U         | ND     | 1.25  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Methyl methacrylate                        | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Methylcyclohexane                          | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Methylene chloride                         | U         | ND     | 2.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Naphthalene                                | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Pentachloroethane                          | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Propionitrile                              | U         | ND     | 1.50  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Styrene                                    | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Tetrachloroethylene                        | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Toluene                                    | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Trichloroethylene                          | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Trichlorofluoromethane                     | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Trichlorotrifluoroethane                   | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Vinyl acetate                              | U         | ND     | 1.50  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Vinyl chloride                             | U         | ND     | 0.500 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Xylenes (total)                            | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| bis(2-Chloroisopropyl)ether                | U         | ND     | 1.50  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| cis-1,2-Dichloroethylene                   | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| cis-1,3-Dichloropropylene                  | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| cis-1,4-Dichloro-2-butene                  | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| m,p-Xylenes                                | U         | ND     | 0.500 | 2.00 | ug/L  | 1  |         |      |      |       |        |
| n-Butyl alcohol                            | U         | ND     | 15.0  | 50.0 | ug/L  | 1  |         |      |      |       |        |
| n-Butylbenzene                             | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| n-Propylbenzene                            | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| o-Xylene                                   | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| sec-Butylbenzene                           | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| tert-Butyl methyl ether                    | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| tert-Butylbenzene                          | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| trans-1,2-Dichloroethylene                 | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| trans-1,3-Dichloropropylene                | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| trans-1,4-Dichloro-2-butene                | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |

The following Prep Methods were performed:

| Method      | Description                          | Analyst | Date     | Time | Prep Batch |
|-------------|--------------------------------------|---------|----------|------|------------|
| SW846 3005A | ICP-MS 3005A PREP                    | AXG2    | 08/24/11 | 0730 | 1135452    |
| SW846 3510C | SW846 3510C Prep Semivolatiles 8270D | AXW1    | 08/25/11 | 1855 | 1135986    |
| SW846 3535A | SW3535A PCB SPE Extraction           | SXC2    | 08/29/11 | 0820 | 1136662    |



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Sample ID: 284538001 Client ID: ECOL008

| Parameter        | Qualifier                         | Result | DL   | RL | Units    | DF   | Analyst | Date    | Time | Batch | Method |
|------------------|-----------------------------------|--------|------|----|----------|------|---------|---------|------|-------|--------|
| SW846 3535A      | SW3535A Pesticides SPE Extraction |        | TXA2 |    | 08/25/11 | 1820 |         | 1136047 |      |       |        |
| SW846 7470A Prep | EPA 7470A Mercury Prep Liquid     |        | TXB3 |    | 08/24/11 | 1000 |         | 1135403 |      |       |        |

The following Analytical Methods were performed:

| Method | Description       | Analyst Comments |
|--------|-------------------|------------------|
| 1      | SW846 7470A       |                  |
| 2      | SW846 3005A/6020A |                  |
| 3      | SW846 3005A/6020A |                  |
| 4      | SW846 3510C/8270D |                  |
| 5      | SW846 3535A/8082A |                  |
| 6      | SW846 3535A/8082A |                  |
| 7      | SW846 3535A/8081B |                  |
| 8      | SW846 3535A/8081B |                  |
| 9      | SW846 8260B       |                  |

| Surrogate/Tracer Recovery | Test  | Result      | Nominal | Recovery% | Acceptable Limits |
|---------------------------|---|-------------|---------|-----------|-------------------|
| 2,4,6-Tribromophenol      | SW846 3510C/8270D Semivolatile Analysis "As Received" | 89.8 ug/L   | 100     | 89.8      | (33%-126%)        |
| 2-Fluorophenol            | SW846 3510C/8270D Semivolatile Analysis "As Received" | 41.1 ug/L   | 100     | 41.1      | (14%-78%)         |
| Phenol-d5                 | SW846 3510C/8270D Semivolatile Analysis "As Received" | 24.4 ug/L   | 100     | 24.4      | (14%-80%)         |
| 2-Fluorobiphenyl          | SW846 3510C/8270D Semivolatile Analysis "As Received" | 36.0 ug/L   | 50.0    | 71.9      | (37%-102%)        |
| Nitrobenzene-d5           | SW846 3510C/8270D Semivolatile Analysis "As Received" | 37.5 ug/L   | 50.0    | 74.9      | (40%-117%)        |
| p-Terphenyl-d14           | SW846 3510C/8270D Semivolatile Analysis "As Received" | 29.9 ug/L   | 50.0    | 59.7      | (44%-134%)        |
| 4cmx                      | SW846 3535A/8082A PCB Liquids "As Received"           | 0.0254 ug/L | 0.204   | 12.4*     | (50%-150%)        |
| Decachlorobiphenyl        | SW846 3535A/8082A PCB Liquids "As Received"           | 0.0285 ug/L | 0.204   | 14.0*     | (50%-150%)        |
| 4cmx                      | SW846 3535A/8081B Liquid "As Received"                | 0.632 ug/L  | 1.02    | 62.0      | (50%-150%)        |
| Decachlorobiphenyl        | SW846 3535A/8081B Liquid "As Received"                | 0.766 ug/L  | 1.02    | 75.1      | (50%-150%)        |
| 1,2-Dichloroethane-d4     | GEL 8260B Method List Liquid "As Received"            | 47.8 ug/L   | 50.0    | 95.7      | (79%-124%)        |
| Bromofluorobenzene        | GEL 8260B Method List Liquid "As Received"            | 50.9 ug/L   | 50.0    | 102       | (80%-120%)        |
| Toluene-d8                | GEL 8260B Method List Liquid "As Received"            | 49.7 ug/L   | 50.0    | 99.3      | (80%-120%)        |

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## Certificate of Analysis

Report Date: September 7, 2011

Company : US EPA Equipment Warehouse  
Address : 1620 S. 92nd Place, Unit B

Seattle, Washington 98108  
Contact: Mr. Steve Hall  
Project: Project No. 002233.0599.01SF

Client Sample ID: 11080106 Project: ECOL00111  
Sample ID: 284538002 Client ID: ECOL008  
Matrix: Water  
Collect Date: 18-AUG-11 12:00  
Receive Date: 23-AUG-11  
Collector: Client

| Parameter                                  | Qualifier | Result | DL    | RL   | Units | DF | Analyst | Date     | Time | Batch   | Method |
|--|-----------|--------|-------|------|-------|----|---------|----------|------|---------|--------|
| Volatile Organics                          |           |        |       |      |       |    |         |          |      |         |        |
| GEL 8260B Method List Liquid "As Received" |           |        |       |      |       |    |         |          |      |         |        |
| 1,1,1,2-Tetrachloroethane                  | U         | ND     | 0.300 | 1.00 | ug/L  | 1  | SYK1    | 08/30/11 | 2258 | 1137563 | 1      |
| 1,1,1-Trichloroethane                      | U         | ND     | 0.325 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,1,2,2-Tetrachloroethane                  | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,1,2-Trichloroethane                      | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,1-Dichloroethane                         | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,1-Dichloroethylene                       | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,1-Dichloropropene                        | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,2,3-Trichlorobenzene                     | U         | ND     | 0.332 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,2,3-Trichloropropane                     | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,2,4-Trichlorobenzene                     | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,2,4-Trimethylbenzene                     | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,2-Dibromo-3-chloropropane                | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,2-Dibromoethane                          | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,2-Dichlorobenzene                        | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,2-Dichloroethane                         | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,2-Dichloroethylene (total)               | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,2-Dichloropropane                        | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,3,5-Trimethylbenzene                     |           | 2.90   | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,3-Dichlorobenzene                        | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,3-Dichloropropane                        | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 1,4-Dichlorobenzene                        | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 2,2-Dichloropropane                        | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 2-Butanone                                 |           | 12.1   | 1.25  | 5.00 | ug/L  | 1  |         |          |      |         |        |
| 2-Chloro-1,3-butadiene                     | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 2-Chloroethylvinyl ether                   | U         | ND     | 1.50  | 5.00 | ug/L  | 1  |         |          |      |         |        |
| 2-Chlorotoluene                            | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 2-Hexanone                                 | U         | ND     | 1.25  | 5.00 | ug/L  | 1  |         |          |      |         |        |
| 2-Nitropropane                             | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |          |      |         |        |
| 4-Chlorotoluene                            | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 4-Isopropyltoluene                         | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| 4-Methyl-2-pentanone                       |           | 7.81   | 1.25  | 5.00 | ug/L  | 1  |         |          |      |         |        |
| Acetone                                    | E         | 1040   | 1.50  | 5.00 | ug/L  | 1  |         |          |      |         |        |
| Acetonitrile                               | U         | ND     | 6.25  | 25.0 | ug/L  | 1  |         |          |      |         |        |
| Acrolein                                   | U         | ND     | 1.25  | 5.00 | ug/L  | 1  |         |          |      |         |        |
| Acrylonitrile                              | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |          |      |         |        |
| Allyl chloride                             | U         | ND     | 1.50  | 5.00 | ug/L  | 1  |         |          |      |         |        |
| Benzene                                    | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| Benzyl chloride                            | U         | ND     | 1.30  | 5.00 | ug/L  | 1  |         |          |      |         |        |

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## Certificate of Analysis

Report Date: September 7, 2011

Company : US EPA Equipment Warehouse  
Address : 1620 S. 92nd Place, Unit B

Seattle, Washington 98108  
Contact: Mr. Steve Hall  
Project: Project No. 002233.0599.01SF

Client Sample ID: 11080106 Project: ECOL00111  
Sample ID: 284538002 Client ID: ECOL008

| Parameter                                  | Qualifier | Result | DL    | RL   | Units | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|------|-------|----|---------|------|------|-------|--------|
| Volatile Organics                          |           |        |       |      |       |    |         |      |      |       |        |
| GEL 8260B Method List Liquid "As Received" |           |        |       |      |       |    |         |      |      |       |        |
| Bromobenzene                               | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Bromochloromethane                         | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Bromodichloromethane                       | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Bromoform                                  | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Bromomethane                               | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Carbon disulfide                           | U         | ND     | 1.25  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Carbon tetrachloride                       | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Chlorobenzene                              | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Chloroethane                               | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Chloroform                                 | J         | 0.430  | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Chloromethane                              | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Cyclohexane                                | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Cyclohexanone                              | U         | ND     | 15.0  | 50.0 | ug/L  | 1  |         |      |      |       |        |
| Dibromochloromethane                       | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Dibromomethane                             | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Dichlorodifluoromethane                    | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Ethyl ether                                | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Ethyl methacrylate                         | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Ethylbenzene                               | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Hexachlorobutadiene                        | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Iodomethane                                | U         | ND     | 1.25  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Isobutyl alcohol                           | U         | ND     | 12.5  | 50.0 | ug/L  | 1  |         |      |      |       |        |
| Isopropylbenzene                           | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Methacrylonitrile                          | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Methyl acetate                             | U         | ND     | 1.25  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Methyl methacrylate                        | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Methylcyclohexane                          | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Methylene chloride                         | U         | ND     | 2.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Naphthalene                                | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Pentachloroethane                          | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Propionitrile                              | U         | ND     | 1.50  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Styrene                                    | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Tetrachloroethylene                        | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Toluene                                    | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Trichloroethylene                          | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Trichlorofluoromethane                     | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |      |      |       |        |
| Trichlorotrifluoroethane                   | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |      |      |       |        |
| Vinyl acetate                              | U         | ND     | 1.50  | 5.00 | ug/L  | 1  |         |      |      |       |        |

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## Certificate of Analysis

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Address : 1620 S. 92nd Place, Unit B

Seattle, Washington 98108  
Contact: Mr. Steve Hall  
Project: Project No. 002233.0599.01SF

Client Sample ID: 11080106 Project: ECOL00111  
Sample ID: 284538002 Client ID: ECOL008

| Parameter                                  | Qualifier | Result | DL    | RL   | Units | DF | Analyst | Date     | Time | Batch   | Method |
|--|-----------|--------|-------|------|-------|----|---------|----------|------|---------|--------|
| Volatile Organics                          |           |        |       |      |       |    |         |          |      |         |        |
| GEL 8260B Method List Liquid "As Received" |           |        |       |      |       |    |         |          |      |         |        |
| Vinyl chloride                             | U         | ND     | 0.500 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| Xylenes (total)                            | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| bis(2-Chloroisopropyl)ether                | U         | ND     | 1.50  | 5.00 | ug/L  | 1  |         |          |      |         |        |
| cis-1,2-Dichloroethylene                   | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| cis-1,3-Dichloropropylene                  | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| cis-1,4-Dichloro-2-butene                  | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |          |      |         |        |
| m,p-Xylenes                                | U         | ND     | 0.500 | 2.00 | ug/L  | 1  |         |          |      |         |        |
| n-Butyl alcohol                            | U         | ND     | 15.0  | 50.0 | ug/L  | 1  |         |          |      |         |        |
| n-Butylbenzene                             | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| n-Propylbenzene                            | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| o-Xylene                                   | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| sec-Butylbenzene                           | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| tert-Butyl methyl ether                    |           | 55.0   | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| tert-Butylbenzene                          | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| trans-1,2-Dichloroethylene                 | U         | ND     | 0.300 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| trans-1,3-Dichloropropylene                | U         | ND     | 0.250 | 1.00 | ug/L  | 1  |         |          |      |         |        |
| trans-1,4-Dichloro-2-butene                | U         | ND     | 1.00  | 5.00 | ug/L  | 1  |         |          |      |         |        |
| 1,1,1,2-Tetrachloroethane                  | U         | ND     | 1.50  | 5.00 | ug/L  | 5  | SYK1    | 08/31/11 | 1054 | 1137563 | 2      |
| 1,1,1-Trichloroethane                      | U         | ND     | 1.63  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,1,2,2-Tetrachloroethane                  | U         | ND     | 1.25  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,1,2-Trichloroethane                      | U         | ND     | 1.25  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,1-Dichloroethane                         | U         | ND     | 1.50  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,1-Dichloroethylene                       | U         | ND     | 1.50  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,1-Dichloropropene                        | U         | ND     | 1.25  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,2,3-Trichlorobenzene                     | U         | ND     | 1.66  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,2,3-Trichloropropane                     | U         | ND     | 1.50  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,2,4-Trichlorobenzene                     | U         | ND     | 1.50  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,2,4-Trimethylbenzene                     | U         | ND     | 1.25  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,2-Dibromo-3-chloropropane                | U         | ND     | 1.50  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,2-Dibromoethane                          | U         | ND     | 1.25  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,2-Dichlorobenzene                        | U         | ND     | 1.25  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,2-Dichloroethane                         | U         | ND     | 1.25  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,2-Dichloroethylene (total)               | U         | ND     | 1.50  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,2-Dichloropropane                        | U         | ND     | 1.25  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,3,5-Trimethylbenzene                     | J         | 2.80   | 1.25  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,3-Dichlorobenzene                        | U         | ND     | 1.25  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,3-Dichloropropane                        | U         | ND     | 1.50  | 5.00 | ug/L  | 5  |         |          |      |         |        |
| 1,4-Dichlorobenzene                        | U         | ND     | 1.25  | 5.00 | ug/L  | 5  |         |          |      |         |        |

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Seattle, Washington 98108  
Contact: Mr. Steve Hall  
Project: Project No. 002233.0599.01SF

Client Sample ID: 11080106 Project: ECOL00111  
Sample ID: 284538002 Client ID: ECOL008

| Parameter                                  | Qualifier | Result | DL   | RL   | Units | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|------|------|-------|----|---------|------|------|-------|--------|
| Volatile Organics                          |           |        |      |      |       |    |         |      |      |       |        |
| GEL 8260B Method List Liquid "As Received" |           |        |      |      |       |    |         |      |      |       |        |
| 2,2-Dichloropropane                        | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| 2-Butanone                                 |           | 32.6   | 6.25 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| 2-Chloro-1,3-butadiene                     | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| 2-Chloroethylvinyl ether                   | U         | ND     | 7.50 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| 2-Chlorotoluene                            | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| 2-Hexanone                                 | U         | ND     | 6.25 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| 2-Nitropropane                             | U         | ND     | 5.00 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| 4-Chlorotoluene                            | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| 4-Isopropyltoluene                         | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| 4-Methyl-2-pentanone                       |           | 35.1   | 6.25 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Acetone                                    |           | 959    | 7.50 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Acetonitrile                               | U         | ND     | 31.3 | 125  | ug/L  | 5  |         |      |      |       |        |
| Acrolein                                   | U         | ND     | 6.25 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Acrylonitrile                              | U         | ND     | 5.00 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Allyl chloride                             | U         | ND     | 7.50 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Benzene                                    | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Benzyl chloride                            | U         | ND     | 6.50 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Bromobenzene                               | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Bromochloromethane                         | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Bromodichloromethane                       | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Bromoform                                  | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Bromomethane                               | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Carbon disulfide                           | U         | ND     | 6.25 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Carbon tetrachloride                       | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Chlorobenzene                              | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Chloroethane                               | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Chloroform                                 | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Chloromethane                              | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Cyclohexane                                | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Cyclohexanone                              | U         | ND     | 75.0 | 250  | ug/L  | 5  |         |      |      |       |        |
| Dibromochloromethane                       | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Dibromomethane                             | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Dichlorodifluoromethane                    | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Ethyl ether                                | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Ethyl methacrylate                         | U         | ND     | 5.00 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Ethylbenzene                               | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Hexachlorobutadiene                        | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Iodomethane                                | U         | ND     | 6.25 | 25.0 | ug/L  | 5  |         |      |      |       |        |

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: September 7, 2011

Company : US EPA Equipment Warehouse  
Address : 1620 S. 92nd Place, Unit B

Seattle, Washington 98108  
Contact: Mr. Steve Hall  
Project: Project No. 002233.0599.01SF

Client Sample ID: 11080106 Project: ECOL00111  
Sample ID: 284538002 Client ID: ECOL008

| Parameter                                  | Qualifier | Result | DL   | RL   | Units | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|------|------|-------|----|---------|------|------|-------|--------|
| Volatile Organics                          |           |        |      |      |       |    |         |      |      |       |        |
| GEL 8260B Method List Liquid "As Received" |           |        |      |      |       |    |         |      |      |       |        |
| Isobutyl alcohol                           | U         | ND     | 62.5 | 250  | ug/L  | 5  |         |      |      |       |        |
| Isopropylbenzene                           | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Methacrylonitrile                          | U         | ND     | 5.00 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Methyl acetate                             | U         | ND     | 6.25 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Methyl methacrylate                        | U         | ND     | 5.00 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Methylcyclohexane                          | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Methylene chloride                         | U         | ND     | 10.0 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Naphthalene                                | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Pentachloroethane                          | U         | ND     | 5.00 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Propionitrile                              | U         | ND     | 7.50 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Styrene                                    | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Tetrachloroethylene                        | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Toluene                                    | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Trichloroethylene                          | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Trichlorofluoromethane                     | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Trichlorotrifluoroethane                   | U         | ND     | 5.00 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Vinyl acetate                              | U         | ND     | 7.50 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| Vinyl chloride                             | U         | ND     | 2.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| Xylenes (total)                            | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| bis(2-Chloroisopropyl)ether                | U         | ND     | 7.50 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| cis-1,2-Dichloroethylene                   | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| cis-1,3-Dichloropropylene                  | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| cis-1,4-Dichloro-2-butene                  | U         | ND     | 5.00 | 25.0 | ug/L  | 5  |         |      |      |       |        |
| m,p-Xylenes                                | U         | ND     | 2.50 | 10.0 | ug/L  | 5  |         |      |      |       |        |
| n-Butyl alcohol                            | U         | ND     | 75.0 | 250  | ug/L  | 5  |         |      |      |       |        |
| n-Butylbenzene                             | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| n-Propylbenzene                            | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| o-Xylene                                   | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| sec-Butylbenzene                           | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| tert-Butyl methyl ether                    |           | 69.0   | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| tert-Butylbenzene                          | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| trans-1,2-Dichloroethylene                 | U         | ND     | 1.50 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| trans-1,3-Dichloropropylene                | U         | ND     | 1.25 | 5.00 | ug/L  | 5  |         |      |      |       |        |
| trans-1,4-Dichloro-2-butene                | U         | ND     | 5.00 | 25.0 | ug/L  | 5  |         |      |      |       |        |

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## Certificate of Analysis

Report Date: September 7, 2011

Company : US EPA Equipment Warehouse  
Address : 1620 S. 92nd Place, Unit B

Seattle, Washington 98108  
Contact: Mr. Steve Hall  
Project: Project No. 002233.0599.01SF

Client Sample ID: 11080106 Project: ECOL00111  
Sample ID: 284538002 Client ID: ECOL008

| Parameter | Qualifier | Result | DL | RL | Units | DF | Analyst | Date | Time | Batch | Method |
|-----------|-----------|--------|----|----|-------|----|---------|------|------|-------|--------|
|-----------|-----------|--------|----|----|-------|----|---------|------|------|-------|--------|

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|-------------|------------------|
| 1      | SW846 8260B |                  |
| 2      | SW846 8260B |                  |

| Surrogate/Tracer Recovery | Test                                       | Result    | Nominal | Recovery% | Acceptable Limits |
|---------------------------|--|-----------|---------|-----------|-------------------|
| 1,2-Dichloroethane-d4     | GEL 8260B Method List Liquid "As Received" | 44.8 ug/L | 50.0    | 89.5      | (79%-124%)        |
| Bromofluorobenzene        | GEL 8260B Method List Liquid "As Received" | 50.5 ug/L | 50.0    | 101       | (80%-120%)        |
| Toluene-d8                | GEL 8260B Method List Liquid "As Received" | 48.1 ug/L | 50.0    | 96.2      | (80%-120%)        |
| 1,2-Dichloroethane-d4     | GEL 8260B Method List Liquid "As Received" | 235 ug/L  | 50.0    | 93.9      | (79%-124%)        |
| Bromofluorobenzene        | GEL 8260B Method List Liquid "As Received" | 252 ug/L  | 50.0    | 101       | (80%-120%)        |
| Toluene-d8                | GEL 8260B Method List Liquid "As Received" | 240 ug/L  | 50.0    | 96.2      | (80%-120%)        |

# GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Report Date: September 7, 2011

Page 1 of 16

US EPA Equipment Warehouse  
1620 S. 92nd Place, Unit B  
Seattle, Washington

Contact: Mr.Steve Hall

Workorder: 284538

| Parmname                | NOM     | Sample | Qual | QC   | Units | RPD% | REC% | Range      | Anlst | Date     | Time  |
|-------------------------|---------|--------|------|------|-------|------|------|------------|-------|----------|-------|
| Metals Analysis - ICPMS |         |        |      |      |       |      |      |            |       |          |       |
| Batch                   | 1135453 |        |      |      |       |      |      |            |       |          |       |
| QC1202472434            | LCS     |        |      |      |       |      |      |            |       |          |       |
| Aluminum                | 2000    |        |      | 1940 | ug/L  |      | 97.2 | (80%-120%) | PRB   | 08/25/11 | 08:14 |
| Antimony                | 50.0    |        |      | 47.7 | ug/L  |      | 95.3 | (80%-120%) |       |          |       |
| Arsenic                 | 50.0    |        |      | 46.3 | ug/L  |      | 92.6 | (80%-120%) |       | 08/29/11 | 12:41 |
| Barium                  | 50.0    |        |      | 48.0 | ug/L  |      | 96   | (80%-120%) |       | 08/25/11 | 08:14 |
| Beryllium               | 50.0    |        |      | 49.8 | ug/L  |      | 99.6 | (80%-120%) |       |          |       |
| Cadmium                 | 50.0    |        |      | 49.3 | ug/L  |      | 98.6 | (80%-120%) |       |          |       |
| Calcium                 | 2000    |        |      | 1960 | ug/L  |      | 97.8 | (80%-120%) |       |          |       |
| Chromium                | 50.0    |        |      | 46.7 | ug/L  |      | 93.5 | (80%-120%) |       |          |       |
| Cobalt                  | 50.0    |        |      | 48.7 | ug/L  |      | 97.3 | (80%-120%) |       |          |       |
| Copper                  | 50.0    |        |      | 49.7 | ug/L  |      | 99.5 | (80%-120%) |       |          |       |
| Iron                    | 2000    |        |      | 1890 | ug/L  |      | 94.6 | (80%-120%) |       |          |       |
| Lead                    | 50.0    |        |      | 49.1 | ug/L  |      | 98.2 | (80%-120%) |       |          |       |
| Magnesium               | 2000    |        |      | 1860 | ug/L  |      | 93.1 | (80%-120%) |       |          |       |
| Manganese               | 50.0    |        |      | 47.1 | ug/L  |      | 94.3 | (80%-120%) |       |          |       |
| Nickel                  | 50.0    |        |      | 49.2 | ug/L  |      | 98.4 | (80%-120%) |       |          |       |
| Potassium               | 2000    |        |      | 1890 | ug/L  |      | 94.3 | (80%-120%) |       |          |       |
| Selenium                | 50.0    |        |      | 49.3 | ug/L  |      | 98.6 | (80%-120%) |       | 08/29/11 | 12:41 |
| Silver                  | 50.0    |        |      | 44.6 | ug/L  |      | 89.2 | (80%-120%) |       |          |       |
| Sodium                  | 2000    |        |      | 1990 | ug/L  |      | 99.5 | (80%-120%) |       | 08/25/11 | 08:14 |
| Thallium                | 50.0    |        |      | 46.0 | ug/L  |      | 91.9 | (80%-120%) |       |          |       |
| Zinc                    | 50.0    |        |      | 51.1 | ug/L  |      | 102  | (80%-120%) |       |          |       |
| QC1202472433            | MB      |        |      |      |       |      |      |            |       |          |       |
| Aluminum                |         |        | U    | ND   | ug/L  |      |      |            |       | 08/25/11 | 08:05 |
| Antimony                |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Arsenic                 |         |        | U    | ND   | ug/L  |      |      |            |       | 08/29/11 | 12:37 |
| Barium                  |         |        | U    | ND   | ug/L  |      |      |            |       | 08/25/11 | 08:05 |
| Beryllium               |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Cadmium                 |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Calcium                 |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Chromium                |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Cobalt                  |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Copper                  |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Iron                    |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Lead                    |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Magnesium               |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Manganese               |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Nickel                  |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |



# GEL LABORATORIES LLC

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## QC Summary

Workorder: 284538

Page 2 of 16

| Parmname                       | NOM     | Sample  | Qual | QC    | Units | RPD%  | REC% | Range      | Anlst | Date     | Time  |
|--------------------------------|---------|---------|------|-------|-------|-------|------|------------|-------|----------|-------|
| <b>Metals Analysis - ICPMS</b> |         |         |      |       |       |       |      |            |       |          |       |
| Batch                          | 1135453 |         |      |       |       |       |      |            |       |          |       |
| Potassium                      |         |         | U    | ND    | ug/L  |       |      |            |       |          |       |
| Selenium                       |         |         | U    | ND    | ug/L  |       |      |            | PRB   | 08/29/11 | 12:37 |
| Silver                         |         |         | U    | ND    | ug/L  |       |      |            |       |          |       |
| Sodium                         |         |         | U    | ND    | ug/L  |       |      |            |       | 08/25/11 | 08:05 |
| Thallium                       |         |         | U    | ND    | ug/L  |       |      |            |       |          |       |
| Zinc                           |         |         | U    | ND    | ug/L  |       |      |            |       |          |       |
| QC1202472435 284538001 MS      |         |         |      |       |       |       |      |            |       |          |       |
| Aluminum                       | 2000    | 8170    |      | 10700 | ug/L  |       | N/A  | (75%-125%) |       | 08/25/11 | 08:48 |
| Antimony                       | 50.0    | U ND    |      | 47.5  | ug/L  |       | 94.1 | (75%-125%) |       |          |       |
| Arsenic                        | 50.0    | J 2.00  |      | 51.8  | ug/L  |       | 99.5 | (75%-125%) |       | 08/29/11 | 12:47 |
| Barium                         | 50.0    | 112     |      | 156   | ug/L  |       | 88.2 | (75%-125%) |       | 08/25/11 | 08:48 |
| Beryllium                      | 50.0    | J 0.209 |      | 52.3  | ug/L  |       | 104  | (75%-125%) |       |          |       |
| Cadmium                        | 50.0    | U ND    |      | 49.9  | ug/L  |       | 99.7 | (75%-125%) |       |          |       |
| Calcium                        | 2000    | 4930    |      | 6950  | ug/L  |       | 101  | (75%-125%) |       |          |       |
| Chromium                       | 50.0    | 14.5    |      | 60.7  | ug/L  |       | 92.3 | (75%-125%) |       |          |       |
| Cobalt                         | 50.0    | 5.14    |      | 52.4  | ug/L  |       | 94.5 | (75%-125%) |       |          |       |
| Copper                         | 50.0    | 10.0    |      | 56.1  | ug/L  |       | 92.1 | (75%-125%) |       |          |       |
| Iron                           | 2000    | 6850    |      | 8810  | ug/L  |       | 98.2 | (75%-125%) |       |          |       |
| Lead                           | 50.0    | 3.58    |      | 51.2  | ug/L  |       | 95.2 | (75%-125%) |       |          |       |
| Magnesium                      | 2000    | 2590    |      | 4650  | ug/L  |       | 103  | (75%-125%) |       |          |       |
| Manganese                      | 50.0    | 275     |      | 326   | ug/L  |       | N/A  | (75%-125%) |       |          |       |
| Nickel                         | 50.0    | 16.4    |      | 62.5  | ug/L  |       | 92.2 | (75%-125%) |       |          |       |
| Potassium                      | 2000    | 907     |      | 2790  | ug/L  |       | 94.1 | (75%-125%) |       |          |       |
| Selenium                       | 50.0    | U ND    |      | 53.5  | ug/L  |       | 107  | (75%-125%) |       | 08/29/11 | 12:47 |
| Silver                         | 50.0    | U ND    |      | 48.7  | ug/L  |       | 97.2 | (75%-125%) |       |          |       |
| Sodium                         | 2000    | 3590    |      | 5730  | ug/L  |       | 107  | (75%-125%) |       | 08/25/11 | 08:48 |
| Thallium                       | 50.0    | U ND    |      | 44.8  | ug/L  |       | 89.3 | (75%-125%) |       |          |       |
| Zinc                           | 50.0    | 14.9    |      | 63.8  | ug/L  |       | 97.8 | (75%-125%) |       |          |       |
| QC1202472436 284538001 MSD     |         |         |      |       |       |       |      |            |       |          |       |
| Aluminum                       | 2000    | 8170    |      | 10800 | ug/L  | 0.842 | N/A  | (0%-20%)   |       | 08/25/11 | 08:56 |
| Antimony                       | 50.0    | U ND    |      | 48.1  | ug/L  | 1.37  | 95.4 | (0%-20%)   |       |          |       |
| Arsenic                        | 50.0    | J 2.00  |      | 53.5  | ug/L  | 3.34  | 103  | (0%-20%)   |       | 08/29/11 | 12:51 |
| Barium                         | 50.0    | 112     |      | 151   | ug/L  | 3.30  | 78.1 | (0%-20%)   |       | 08/25/11 | 08:56 |
| Beryllium                      | 50.0    | J 0.209 |      | 58.1  | ug/L  | 10.6  | 116  | (0%-20%)   |       |          |       |
| Cadmium                        | 50.0    | U ND    |      | 50.8  | ug/L  | 1.82  | 102  | (0%-20%)   |       |          |       |
| Calcium                        | 2000    | 4930    |      | 6860  | ug/L  | 1.34  | 96.3 | (0%-20%)   |       |          |       |
| Chromium                       | 50.0    | 14.5    |      | 61.0  | ug/L  | 0.544 | 92.9 | (0%-20%)   |       |          |       |
| Cobalt                         | 50.0    | 5.14    |      | 51.0  | ug/L  | 2.59  | 91.8 | (0%-20%)   |       |          |       |
| Copper                         | 50.0    | 10.0    |      | 54.8  | ug/L  | 2.25  | 89.6 | (0%-20%)   |       |          |       |
| Iron                           | 2000    | 6850    |      | 8770  | ug/L  | 0.425 | 96.3 | (0%-20%)   |       |          |       |
| Lead                           | 50.0    | 3.58    |      | 50.3  | ug/L  | 1.67  | 93.5 | (0%-20%)   |       |          |       |
| Magnesium                      | 2000    | 2590    |      | 4670  | ug/L  | 0.243 | 104  | (0%-20%)   |       |          |       |

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**Workorder: 284538**

Page 3 of 16

| Parmname                     | NOM     | Sample | Qual  | QC | Units | RPD% | REC%  | Range | Anlst      | Date | Time           |
|------------------------------|---------|--------|-------|----|-------|------|-------|-------|------------|------|----------------|
| Metals Analysis - ICPMS      |         |        |       |    |       |      |       |       |            |      |                |
| Batch                        | 1135453 |        |       |    |       |      |       |       |            |      |                |
| Manganese                    | 50.0    |        | 275   |    | 319   | ug/L | 2.22  | N/A   | (0%-20%)   |      |                |
| Nickel                       | 50.0    |        | 16.4  |    | 61.7  | ug/L | 1.24  | 90.7  | (0%-20%)   | PRB  | 08/25/11 08:56 |
| Potassium                    | 2000    |        | 907   |    | 2760  | ug/L | 0.903 | 92.8  | (0%-20%)   |      |                |
| Selenium                     | 50.0    | U      | ND    |    | 55.7  | ug/L | 4.13  | 111   | (0%-20%)   |      | 08/29/11 12:51 |
| Silver                       | 50.0    | U      | ND    |    | 50.1  | ug/L | 2.80  | 100   | (0%-20%)   |      |                |
| Sodium                       | 2000    |        | 3590  |    | 5760  | ug/L | 0.442 | 109   | (0%-20%)   |      | 08/25/11 08:56 |
| Thallium                     | 50.0    | U      | ND    |    | 44.4  | ug/L | 0.820 | 88.5  | (0%-20%)   |      |                |
| Zinc                         | 50.0    |        | 14.9  |    | 64.6  | ug/L | 1.15  | 99.3  | (0%-20%)   |      |                |
| QC1202472437 284538001 SDILT |         |        |       |    |       |      |       |       |            |      |                |
| Aluminum                     |         |        | 8170  |    | 1790  | ug/L | 9.56  |       | (0%-10%)   |      | 08/25/11 09:13 |
| Antimony                     |         | U      | ND    | U  | ND    | ug/L | N/A   |       | (0%-10%)   |      |                |
| Arsenic                      |         | J      | 2.00  | U  | ND    | ug/L | N/A   |       | (0%-10%)   |      | 08/29/11 12:57 |
| Barium                       |         |        | 112   |    | 22.2  | ug/L | .442  |       | (0%-10%)   |      | 08/25/11 09:13 |
| Beryllium                    |         | J      | 0.209 | U  | ND    | ug/L | N/A   |       | (0%-10%)   |      |                |
| Cadmium                      |         | U      | ND    | U  | ND    | ug/L | N/A   |       | (0%-10%)   |      |                |
| Calcium                      |         |        | 4930  |    | 1080  | ug/L | 9.4   |       | (0%-10%)   |      |                |
| Chromium                     |         |        | 14.5  | J  | 2.11  | ug/L | 27.2  |       | (0%-10%)   |      |                |
| Cobalt                       |         |        | 5.14  |    | 1.04  | ug/L | 1.52  |       | (0%-10%)   |      |                |
| Copper                       |         |        | 10.0  |    | 2.04  | ug/L | 1.41  |       | (0%-10%)   |      |                |
| Iron                         |         |        | 6850  |    | 1440  | ug/L | 4.8   |       | (0%-10%)   |      |                |
| Lead                         |         |        | 3.58  | J  | 0.695 | ug/L | 2.96  |       | (0%-10%)   |      |                |
| Magnesium                    |         |        | 2590  |    | 537   | ug/L | 3.65  |       | (0%-10%)   |      |                |
| Manganese                    |         |        | 275   |    | 58.0  | ug/L | 5.71  |       | (0%-10%)   |      |                |
| Nickel                       |         |        | 16.4  |    | 3.23  | ug/L | 1.39  |       | (0%-10%)   |      |                |
| Potassium                    |         |        | 907   | J  | 154   | ug/L | 15.2  |       | (0%-10%)   |      |                |
| Selenium                     |         | U      | ND    | U  | ND    | ug/L | N/A   |       | (0%-10%)   |      | 08/29/11 12:57 |
| Silver                       |         | U      | ND    | U  | ND    | ug/L | N/A   |       | (0%-10%)   |      |                |
| Sodium                       |         |        | 3590  |    | 761   | ug/L | 6.12  |       | (0%-10%)   |      | 08/25/11 09:13 |
| Thallium                     |         | U      | ND    | U  | ND    | ug/L | N/A   |       | (0%-10%)   |      |                |
| Zinc                         |         |        | 14.9  | U  | ND    | ug/L | N/A   |       | (0%-10%)   |      |                |
| Metals Analysis-Mercury      |         |        |       |    |       |      |       |       |            |      |                |
| Batch                        | 1135404 |        |       |    |       |      |       |       |            |      |                |
| QC1202472319 284538001 DUP   |         |        |       |    |       |      |       |       |            |      |                |
| Mercury                      |         | U      | ND    | U  | ND    | ug/L | N/A   |       |            | JXL1 | 08/24/11 17:19 |
| QC1202472318 LCS             |         |        |       |    |       |      |       |       |            |      |                |
| Mercury                      | 2.00    |        |       |    | 2.04  | ug/L |       | 102   | (80%-120%) |      | 08/24/11 17:16 |
| QC1202472317 MB              |         |        |       |    |       |      |       |       |            |      |                |
| Mercury                      |         |        |       | U  | ND    | ug/L |       |       |            |      | 08/24/11 17:14 |
| QC1202472320 284538001 MS    |         |        |       |    |       |      |       |       |            |      |                |
| Mercury                      | 2.00    | U      | ND    |    | 2.01  | ug/L |       | 99.8  | (75%-125%) |      | 08/24/11 17:21 |
| QC1202472321 284538001 SDILT |         |        |       |    |       |      |       |       |            |      |                |
| Mercury                      |         | U      | ND    | U  | ND    | ug/L | N/A   |       | (0%-10%)   |      | 08/24/11 17:22 |
| Semi-Volatile-GC/MS          |         |        |       |    |       |      |       |       |            |      |                |

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## QC Summary

Workorder: 284538

Page 4 of 16

| Parmname                   | NOM     | Sample | Qual | QC   | Units | RPD% | REC% | Range      | Anlst | Date     | Time  |
|----------------------------|---------|--------|------|------|-------|------|------|------------|-------|----------|-------|
| <b>Semi-Volatile-GC/MS</b> |         |        |      |      |       |      |      |            |       |          |       |
| Batch                      | 1135988 |        |      |      |       |      |      |            |       |          |       |
| QC1202473716               | LCS     |        |      |      |       |      |      |            |       |          |       |
| 2,4-Dinitrotoluene         | 50.0    |        |      | 57.8 | ug/L  |      | 116  | (58%-118%) | JLD1  | 08/26/11 | 11:49 |
| 2-Chlorophenol             | 50.0    |        |      | 40.3 | ug/L  |      | 80.6 | (49%-98%)  |       |          |       |
| 4-Chloro-3-methylphenol    | 50.0    |        |      | 43.2 | ug/L  |      | 86.3 | (55%-107%) |       |          |       |
| 4-Nitrophenol              | 50.0    |        |      | 17.3 | ug/L  |      | 34.5 | (15%-103%) |       |          |       |
| Acenaphthene               | 50.0    |        |      | 39.0 | ug/L  |      | 78   | (50%-96%)  |       |          |       |
| N-Nitrosodipropylamine     | 50.0    |        |      | 37.0 | ug/L  |      | 74.1 | (50%-114%) |       |          |       |
| Pentachlorophenol          | 50.0    |        |      | 44.6 | ug/L  |      | 89.2 | (40%-107%) |       |          |       |
| Phenol                     | 50.0    |        |      | 15.0 | ug/L  |      | 29.9 | (15%-103%) |       |          |       |
| Pyrene                     | 50.0    |        |      | 41.2 | ug/L  |      | 82.4 | (53%-113%) |       |          |       |
| **2,4,6-Tribromophenol     | 100     |        |      | 107  | ug/L  |      | 107  | (33%-126%) |       |          |       |
| **2-Fluorobiphenyl         | 50.0    |        |      | 42.3 | ug/L  |      | 84.6 | (37%-102%) |       |          |       |
| **2-Fluorophenol           | 100     |        |      | 50.0 | ug/L  |      | 50   | (14%-78%)  |       |          |       |
| **Nitrobenzene-d5          | 50.0    |        |      | 38.9 | ug/L  |      | 77.7 | (40%-117%) |       |          |       |
| **Phenol-d5                | 100     |        |      | 28.8 | ug/L  |      | 28.8 | (14%-80%)  |       |          |       |
| **p-Terphenyl-d14          | 50.0    |        |      | 44.2 | ug/L  |      | 88.5 | (44%-134%) |       |          |       |
| QC1202473715               | MB      |        |      |      |       |      |      |            |       |          |       |
| 1,1'-Biphenyl              |         |        | U    | ND   | ug/L  |      |      |            |       | 08/26/11 | 11:24 |
| 1,2,4,5-Tetrachlorobenzene |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2,3,4,6-Tetrachlorophenol  |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2,4,5-Trichlorophenol      |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2,4,6-Trichlorophenol      |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2,4-Dichlorophenol         |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2,4-Dimethylphenol         |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2,4-Dinitrophenol          |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2,4-Dinitrotoluene         |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2,6-Dinitrotoluene         |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2-Chloronaphthalene        |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2-Chlorophenol             |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2-Methyl-4,6-dinitrophenol |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2-Methylnaphthalene        |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2-Nitrophenol              |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 3,3'-Dichlorobenzidine     |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 4-Bromophenylphenylether   |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 4-Chloro-3-methylphenol    |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 4-Chloroaniline            |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 4-Chlorophenylphenylether  |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 4-Nitrophenol              |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Acenaphthene               |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Acenaphthylene             |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Acetophenone               |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Anthracene                 |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |

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## QC Summary

Workorder: 284538

Page 5 of 16

| Parmname                    | NOM     | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date     | Time  |
|-----------------------------|---------|--------|------|----|-------|------|------|-------|-------|----------|-------|
| <b>Semi-Volatile-GC/MS</b>  |         |        |      |    |       |      |      |       |       |          |       |
| Batch                       | 1135988 |        |      |    |       |      |      |       |       |          |       |
| Atrazine                    |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Benzaldehyde                |         |        | U    | ND | ug/L  |      |      |       | JLD1  | 08/26/11 | 11:24 |
| Benzo(a)anthracene          |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Benzo(a)pyrene              |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Benzo(b)fluoranthene        |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Benzo(ghi)perylene          |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Benzo(k)fluoranthene        |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Butylbenzylphthalate        |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Caprolactam                 |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Carbazole                   |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Chrysene                    |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Di-n-butylphthalate         |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Di-n-octylphthalate         |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Dibenzo(a,h)anthracene      |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Dibenzofuran                |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Diethylphthalate            |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Dimethylphthalate           |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Diphenylamine               |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Fluoranthene                |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Fluorene                    |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Hexachlorobenzene           |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Hexachlorobutadiene         |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Hexachlorocyclopentadiene   |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Hexachloroethane            |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Indeno(1,2,3-cd)pyrene      |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Isophorone                  |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| N-Nitrosodipropylamine      |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Naphthalene                 |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Nitrobenzene                |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Pentachlorophenol           |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Phenanthrene                |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Phenol                      |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Pyrene                      |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| bis(2-Chloroethoxy)methane  |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| bis(2-Chloroethyl) ether    |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| bis(2-Chloroisopropyl)ether |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| bis(2-Ethylhexyl)phthalate  |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| m,p-Cresols                 |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| m-Nitroaniline              |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| o-Cresol                    |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| o-Nitroaniline              |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
|                             |         |        | U    | ND |       |      |      |       |       |          |       |

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**Workorder: 284538**

Page 6 of 16

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## QC Summary

Workorder: 284538

Page 7 of 16

| Parmname                        | NOM       | Sample | Qual   | QC     | Units | RPD% | REC%   | Range      | Anlst | Date     | Time  |
|---------------------------------|-----------|--------|--------|--------|-------|------|--------|------------|-------|----------|-------|
| <b>Semi-Volatiles-PCB</b>       |           |        |        |        |       |      |        |            |       |          |       |
| Batch                           | 1136663   |        |        |        |       |      |        |            |       |          |       |
| Aroclor-1016                    | 1.00      |        |        | 0.660  | ug/L  |      | 66     | (48%-97%)  | YS1   | 08/30/11 | 09:29 |
| Aroclor-1260                    | 1.00      |        |        | 0.700  | ug/L  |      | 70     | (50%-94%)  |       |          |       |
| **4cmx                          | 0.200     |        |        | 0.128  | ug/L  |      | 64.2   | (50%-150%) |       |          |       |
| **Decachlorobiphenyl            | 0.200     |        |        | 0.140  | ug/L  |      | 69.8   | (50%-150%) |       |          |       |
| QC1202475427                    | MB        |        |        |        |       |      |        |            |       |          |       |
| Aroclor-1016                    |           |        | U      | ND     | ug/L  |      |        |            |       | 08/30/11 | 09:17 |
| Aroclor-1221                    |           |        | U      | ND     | ug/L  |      |        |            |       |          |       |
| Aroclor-1232                    |           |        | U      | ND     | ug/L  |      |        |            |       |          |       |
| Aroclor-1242                    |           |        | P      | 0.160  | ug/L  |      |        |            |       |          |       |
| Aroclor-1248                    |           |        | U      | ND     | ug/L  |      |        |            |       |          |       |
| Aroclor-1254                    |           |        |        | 0.170  | ug/L  |      |        |            |       |          |       |
| Aroclor-1260                    |           |        |        | 0.160  | ug/L  |      |        |            |       |          |       |
| **4cmx                          | 0.200     |        |        | 0.128  | ug/L  |      | 64.1   | (50%-150%) |       |          |       |
| **Decachlorobiphenyl            | 0.200     |        |        | 0.145  | ug/L  |      | 72.4   | (50%-150%) |       |          |       |
| QC1202475429                    | 284538001 | MS     |        |        |       |      |        |            |       |          |       |
| Aroclor-1016                    | 1.00      | U      | ND     | 0.180  | ug/L  |      | 18 *   | (29%-142%) |       | 08/30/11 | 09:52 |
| Aroclor-1260                    | 1.00      | U      | ND     | 0.250  | ug/L  |      | 25 *   | (48%-119%) |       |          |       |
| **4cmx                          | 0.200     |        | 0.0254 | 0.0315 | ug/L  |      | 15.7 * | (50%-150%) |       |          |       |
| **Decachlorobiphenyl            | 0.200     |        | 0.0285 | 0.0529 | ug/L  |      | 26.4 * | (50%-150%) |       |          |       |
| QC1202475430                    | 284538001 | MSD    |        |        |       |      |        |            |       |          |       |
| Aroclor-1016                    | 1.00      | U      | ND     | 0.220  | ug/L  | 20.0 | 22 *   | (0%-30%)   |       | 08/30/11 | 10:04 |
| Aroclor-1260                    | 1.00      | U      | ND     | 0.290  | ug/L  | 14.8 | 29 *   | (0%-30%)   |       |          |       |
| **4cmx                          | 0.200     |        | 0.0254 | 0.0348 | ug/L  |      | 17.4 * | (50%-150%) |       |          |       |
| **Decachlorobiphenyl            | 0.200     |        | 0.0285 | 0.0516 | ug/L  |      | 25.8 * | (50%-150%) |       |          |       |
| <b>Semi-Volatiles-Pesticide</b> |           |        |        |        |       |      |        |            |       |          |       |
| Batch                           | 1136049   |        |        |        |       |      |        |            |       |          |       |
| QC1202473925                    | LCS       |        |        |        |       |      |        |            |       |          |       |
| 4,4'-DDD                        | 1.25      |        |        | 1.19   | ug/L  |      | 95.1   | (70%-130%) | RXE1  | 08/30/11 | 18:43 |
| 4,4'-DDE                        | 1.25      |        |        | 1.09   | ug/L  |      | 87     | (70%-130%) |       |          |       |
| 4,4'-DDT                        | 1.25      |        |        | 1.21   | ug/L  |      | 96.7   | (70%-130%) |       |          |       |
| Aldrin                          | 0.500     |        |        | 0.456  | ug/L  |      | 91.3   | (70%-130%) |       |          |       |
| Chlordane (tech.)               |           |        | U      | ND     | ug/L  |      |        | (33%-134%) |       |          |       |
| Dieldrin                        | 1.25      |        |        | 1.24   | ug/L  |      | 99     | (70%-130%) |       |          |       |
| Endosulfan I                    | 0.500     |        |        | 0.461  | ug/L  |      | 92.3   | (70%-130%) |       |          |       |
| Endosulfan II                   | 1.25      |        |        | 1.20   | ug/L  |      | 96.1   | (70%-130%) |       |          |       |
| Endosulfan sulfate              | 1.25      |        |        | 1.32   | ug/L  |      | 106    | (70%-130%) |       |          |       |
| Endrin                          | 1.25      |        |        | 1.23   | ug/L  |      | 98     | (70%-130%) |       |          |       |
| Endrin aldehyde                 | 1.25      |        |        | 1.22   | ug/L  |      | 97.4   | (70%-130%) |       |          |       |
| Endrin ketone                   | 1.25      |        |        | 1.37   | ug/L  |      | 110    | (70%-130%) |       |          |       |
| Heptachlor                      | 0.500     |        |        | 0.473  | ug/L  |      | 94.6   | (70%-130%) |       |          |       |
| Heptachlor epoxide              | 0.500     |        |        | 0.500  | ug/L  |      | 100    | (70%-130%) |       |          |       |
| Methoxychlor                    | 5.00      |        |        | 4.63   | ug/L  |      | 92.6   | (70%-130%) |       |          |       |
| Toxaphene                       |           |        | U      | ND     | ug/L  |      |        | (39%-144%) |       |          |       |

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## QC Summary

Workorder: 284538

Page 8 of 16

| Parmname                        | NOM       | Sample | Qual | QC    | Units | RPD% | REC%   | Range      | Anlst | Date     | Time  |
|---------------------------------|-----------|--------|------|-------|-------|------|--------|------------|-------|----------|-------|
| <b>Semi-Volatiles-Pesticide</b> |           |        |      |       |       |      |        |            |       |          |       |
| Batch                           | 1136049   |        |      |       |       |      |        |            |       |          |       |
| alpha-BHC                       | 0.500     |        |      | 0.511 | ug/L  |      | 102    | (70%-130%) |       |          |       |
| beta-BHC                        | 0.500     |        |      | 0.477 | ug/L  |      | 95.5   | (70%-130%) | RXE1  | 08/30/11 | 18:43 |
| delta-BHC                       | 0.500     |        |      | 0.512 | ug/L  |      | 102    | (70%-130%) |       |          |       |
| gamma-BHC (Lindane)             | 0.500     |        |      | 0.516 | ug/L  |      | 103    | (70%-130%) |       |          |       |
| **4cmx                          | 1.00      |        |      | 0.779 | ug/L  |      | 77.9   | (50%-150%) |       |          |       |
| **Decachlorobiphenyl            | 1.00      |        |      | 0.863 | ug/L  |      | 86.3   | (50%-150%) |       |          |       |
| QC1202473924                    | MB        |        |      |       |       |      |        |            |       |          |       |
| 4,4'-DDD                        |           |        | U    | ND    | ug/L  |      |        |            |       | 08/30/11 | 18:28 |
| 4,4'-DDE                        |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| 4,4'-DDT                        |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| Aldrin                          |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| Chlordane (tech.)               |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| Dieldrin                        |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| Endosulfan I                    |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| Endosulfan II                   |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| Endosulfan sulfate              |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| Endrin                          |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| Endrin aldehyde                 |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| Endrin ketone                   |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| Heptachlor                      |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| Heptachlor epoxide              |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| Methoxychlor                    |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| Toxaphene                       |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| alpha-BHC                       |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| beta-BHC                        |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| delta-BHC                       |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| gamma-BHC (Lindane)             |           |        | U    | ND    | ug/L  |      |        |            |       |          |       |
| **4cmx                          | 1.00      |        |      | 0.821 | ug/L  |      | 82.1   | (50%-150%) |       |          |       |
| **Decachlorobiphenyl            | 1.00      |        |      | 0.903 | ug/L  |      | 90.3   | (50%-150%) |       |          |       |
| QC1202473926                    | 284538001 | MS     |      |       |       |      |        |            |       |          |       |
| 4,4'-DDD                        | 1.28      | U      | ND   | 0.630 | ug/L  |      | 49.4 * | (50%-150%) |       | 08/30/11 | 19:15 |
| 4,4'-DDE                        | 1.28      | U      | ND   | 0.512 | ug/L  |      | 40.2 * | (50%-150%) |       |          |       |
| 4,4'-DDT                        | 1.28      | U      | ND   | 0.543 | ug/L  |      | 42.6 * | (50%-150%) |       |          |       |
| Aldrin                          | 0.510     | U      | ND   | 0.220 | ug/L  |      | 43 *   | (50%-150%) |       |          |       |
| Chlordane (tech.)               |           | U      | ND   | ND    | ug/L  |      |        | (35%-121%) |       |          |       |
| Dieldrin                        | 1.28      | U      | ND   | 0.826 | ug/L  |      | 64.8   | (50%-150%) |       |          |       |
| Endosulfan I                    | 0.510     | U      | ND   | 0.323 | ug/L  |      | 63.3   | (50%-150%) |       |          |       |
| Endosulfan II                   | 1.28      | U      | ND   | 0.845 | ug/L  |      | 66.3   | (50%-150%) |       |          |       |
| Endosulfan sulfate              | 1.28      | U      | ND   | 1.00  | ug/L  |      | 78.5   | (50%-150%) |       |          |       |
| Endrin                          | 1.28      | U      | ND   | 0.906 | ug/L  |      | 71     | (50%-150%) |       |          |       |
| Endrin aldehyde                 | 1.28      | U      | ND   | 0.914 | ug/L  |      | 71.7   | (50%-150%) |       |          |       |
| Endrin ketone                   | 1.28      | U      | ND   | 1.16  | ug/L  |      | 90.8   | (50%-150%) |       |          |       |

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## QC Summary

Workorder: 284538

Page 9 of 16

| Parmname                        | NOM       | Sample | Qual  | QC    | Units | RPD%  | REC%   | Range      | Anlst | Date     | Time  |
|---------------------------------|-----------|--------|-------|-------|-------|-------|--------|------------|-------|----------|-------|
| <b>Semi-Volatiles-Pesticide</b> |           |        |       |       |       |       |        |            |       |          |       |
| Batch                           | 1136049   |        |       |       |       |       |        |            |       |          |       |
| Heptachlor                      | 0.510     | U      | ND    | 0.277 | ug/L  |       | 54.3   | (50%-150%) |       |          |       |
| Heptachlor epoxide              | 0.510     | U      | ND    | 0.357 | ug/L  |       | 70     | (50%-150%) | RXE1  | 08/30/11 | 19:15 |
| Methoxychlor                    | 5.10      | U      | ND    | 2.54  | ug/L  |       | 49.8 * | (50%-150%) |       |          |       |
| Toxaphene                       |           | U      | ND    | ND    | ug/L  |       |        | (36%-138%) |       |          |       |
| alpha-BHC                       | 0.510     | U      | ND    | 0.433 | ug/L  |       | 84.9   | (50%-150%) |       |          |       |
| beta-BHC                        | 0.510     | U      | ND    | 0.438 | ug/L  |       | 85.8   | (50%-150%) |       |          |       |
| delta-BHC                       | 0.510     | U      | ND    | 0.437 | ug/L  |       | 85.7   | (50%-150%) |       |          |       |
| gamma-BHC (Lindane)             | 0.510     | U      | ND    | 0.452 | ug/L  |       | 88.6   | (50%-150%) |       |          |       |
| **4cmx                          | 1.02      |        | 0.632 | 0.420 | ug/L  |       | 41.2 * | (50%-150%) |       |          |       |
| **Decachlorobiphenyl            | 1.02      |        | 0.766 | 0.353 | ug/L  |       | 34.6 * | (50%-150%) |       |          |       |
| QC1202473927                    | 284538001 | MSD    |       |       |       |       |        |            |       |          |       |
| 4,4'-DDD                        | 1.28      | U      | ND    | 0.629 | ug/L  | 0.170 | 49.3 * | (0%-30%)   |       | 08/30/11 | 19:30 |
| 4,4'-DDE                        | 1.28      | U      | ND    | 0.516 | ug/L  | 0.597 | 40.4 * | (0%-30%)   |       |          |       |
| 4,4'-DDT                        | 1.28      | U      | ND    | 0.540 | ug/L  | 0.567 | 42.3 * | (0%-30%)   |       |          |       |
| Aldrin                          | 0.510     | U      | ND    | 0.225 | ug/L  | 2.58  | 44.2 * | (0%-30%)   |       |          |       |
| Chlordane (tech.)               |           | U      | ND    | ND    | ug/L  | N/A   |        | (0%-20%)   |       |          |       |
| Dieldrin                        | 1.28      | U      | ND    | 0.834 | ug/L  | 0.920 | 65.4   | (0%-30%)   |       |          |       |
| Endosulfan I                    | 0.510     | U      | ND    | 0.327 | ug/L  | 1.21  | 64     | (0%-30%)   |       |          |       |
| Endosulfan II                   | 1.28      | U      | ND    | 0.849 | ug/L  | 0.482 | 66.6   | (0%-30%)   |       |          |       |
| Endosulfan sulfate              | 1.28      | U      | ND    | 1.00  | ug/L  | 0.149 | 78.4   | (0%-30%)   |       |          |       |
| Endrin                          | 1.28      | U      | ND    | 0.913 | ug/L  | 0.801 | 71.6   | (0%-30%)   |       |          |       |
| Endrin aldehyde                 | 1.28      | U      | ND    | 0.915 | ug/L  | 0.133 | 71.7   | (0%-30%)   |       |          |       |
| Endrin ketone                   | 1.28      | U      | ND    | 1.16  | ug/L  | 0.401 | 91.2   | (0%-30%)   |       |          |       |
| Heptachlor                      | 0.510     | U      | ND    | 0.283 | ug/L  | 2.00  | 55.4   | (0%-30%)   |       |          |       |
| Heptachlor epoxide              | 0.510     | U      | ND    | 0.363 | ug/L  | 1.76  | 71.2   | (0%-30%)   |       |          |       |
| Methoxychlor                    | 5.10      | U      | ND    | 2.53  | ug/L  | 0.467 | 49.6 * | (0%-30%)   |       |          |       |
| Toxaphene                       |           | U      | ND    | ND    | ug/L  | N/A   |        | (0%-20%)   |       |          |       |
| alpha-BHC                       | 0.510     | U      | ND    | 0.447 | ug/L  | 3.24  | 87.7   | (0%-30%)   |       |          |       |
| beta-BHC                        | 0.510     | U      | ND    | 0.448 | ug/L  | 2.22  | 87.8   | (0%-30%)   |       |          |       |
| delta-BHC                       | 0.510     | U      | ND    | 0.446 | ug/L  | 1.96  | 87.4   | (0%-30%)   |       |          |       |
| gamma-BHC (Lindane)             | 0.510     | U      | ND    | 0.466 | ug/L  | 3.10  | 91.4   | (0%-30%)   |       |          |       |
| **4cmx                          | 1.02      |        | 0.632 | 0.436 | ug/L  |       | 42.7 * | (50%-150%) |       |          |       |
| **Decachlorobiphenyl            | 1.02      |        | 0.766 | 0.356 | ug/L  |       | 34.9 * | (50%-150%) |       |          |       |
| <b>Volatile-GC/MS</b>           |           |        |       |       |       |       |        |            |       |          |       |
| Batch                           | 1137563   |        |       |       |       |       |        |            |       |          |       |
| QC1202477760                    | LCS       |        |       |       |       |       |        |            |       |          |       |
| 1,1-Dichloroethylene            | 50.0      |        |       | 43.3  | ug/L  |       | 86.6   | (73%-125%) | SYK1  | 08/30/11 | 21:28 |
| Benzene                         | 50.0      |        |       | 45.2  | ug/L  |       | 90.4   | (80%-120%) |       |          |       |
| Chlorobenzene                   | 50.0      |        |       | 45.9  | ug/L  |       | 91.8   | (80%-120%) |       |          |       |
| Toluene                         | 50.0      |        |       | 44.2  | ug/L  |       | 88.3   | (77%-120%) |       |          |       |
| Trichloroethylene               | 50.0      |        |       | 44.9  | ug/L  |       | 89.9   | (80%-120%) |       |          |       |
| **1,2-Dichloroethane-d4         | 50.0      |        |       | 49.5  | ug/L  |       | 99     | (79%-124%) |       |          |       |



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## QC Summary

Workorder: 284538

Page 10 of 16

| Parmname                     | NOM     | Sample | Qual | QC   | Units | RPD% | REC% | Range      | Anlst | Date     | Time  |
|------------------------------|---------|--------|------|------|-------|------|------|------------|-------|----------|-------|
| <b>Volatile-GC/MS</b>        |         |        |      |      |       |      |      |            |       |          |       |
| Batch                        | 1137563 |        |      |      |       |      |      |            |       |          |       |
| **Bromofluorobenzene         | 50.0    |        |      | 50.6 | ug/L  |      | 101  | (80%-120%) |       |          |       |
| **Toluene-d8                 | 50.0    |        |      | 47.7 | ug/L  |      | 95.4 | (80%-120%) | SYK1  | 08/30/11 | 21:28 |
| QC1202478371                 | LCS     |        |      |      |       |      |      |            |       |          |       |
| 1,1-Dichloroethylene         | 50.0    |        |      | 45.4 | ug/L  |      | 90.8 | (73%-125%) |       | 08/31/11 | 07:53 |
| Benzene                      | 50.0    |        |      | 45.2 | ug/L  |      | 90.4 | (80%-120%) |       |          |       |
| Chlorobenzene                | 50.0    |        |      | 46.0 | ug/L  |      | 92.1 | (80%-120%) |       |          |       |
| Toluene                      | 50.0    |        |      | 45.4 | ug/L  |      | 90.9 | (77%-120%) |       |          |       |
| Trichloroethylene            | 50.0    |        |      | 45.9 | ug/L  |      | 91.8 | (80%-120%) |       |          |       |
| **1,2-Dichloroethane-d4      | 50.0    |        |      | 48.3 | ug/L  |      | 96.6 | (79%-124%) |       |          |       |
| **Bromofluorobenzene         | 50.0    |        |      | 50.1 | ug/L  |      | 100  | (80%-120%) |       |          |       |
| **Toluene-d8                 | 50.0    |        |      | 48.3 | ug/L  |      | 96.6 | (80%-120%) |       |          |       |
| QC1202477757                 | MB      |        |      |      |       |      |      |            |       |          |       |
| 1,1,1,2-Tetrachloroethane    |         |        | U    | ND   | ug/L  |      |      |            |       | 08/30/11 | 22:28 |
| 1,1,1-Trichloroethane        |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,1,2,2-Tetrachloroethane    |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,1,2-Trichloroethane        |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,1-Dichloroethane           |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,1-Dichloroethylene         |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,1-Dichloropropene          |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2,3-Trichlorobenzene       |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2,3-Trichloropropane       |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2,4-Trichlorobenzene       |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2,4-Trimethylbenzene       |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2-Dibromo-3-chloropropane  |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2-Dibromoethane            |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2-Dichlorobenzene          |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2-Dichloroethane           |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2-Dichloroethylene (total) |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2-Dichloropropane          |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,3,5-Trimethylbenzene       |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,3-Dichlorobenzene          |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,3-Dichloropropane          |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,4-Dichlorobenzene          |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2,2-Dichloropropane          |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2-Butanone                   |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2-Chloro-1,3-butadiene       |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2-Chloroethylvinyl ether     |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2-Chlorotoluene              |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2-Hexanone                   |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 2-Nitropropane               |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 4-Chlorotoluene              |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 4-Isopropyltoluene           |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |

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2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 284538

Page 11 of 16

| Parmname                | NOM     | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date     | Time  |
|-------------------------|---------|--------|------|----|-------|------|------|-------|-------|----------|-------|
| <b>Volatile-GC/MS</b>   |         |        |      |    |       |      |      |       |       |          |       |
| Batch                   | 1137563 |        |      |    |       |      |      |       |       |          |       |
| 4-Methyl-2-pentanone    |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Acetone                 |         |        | U    | ND | ug/L  |      |      |       | SYK1  | 08/30/11 | 22:28 |
| Acetonitrile            |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Acrolein                |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Acrylonitrile           |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Allyl chloride          |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Benzene                 |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Benzyl chloride         |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Bromobenzene            |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Bromochloromethane      |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Bromodichloromethane    |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Bromoform               |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Bromomethane            |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Carbon disulfide        |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Carbon tetrachloride    |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Chlorobenzene           |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Chloroethane            |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Chloroform              |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Chloromethane           |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Cyclohexane             |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Cyclohexanone           |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Dibromochloromethane    |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Dibromomethane          |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Dichlorodifluoromethane |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Ethyl ether             |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Ethyl methacrylate      |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Ethylbenzene            |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Hexachlorobutadiene     |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Iodomethane             |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Isobutyl alcohol        |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Isopropylbenzene        |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Methacrylonitrile       |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Methyl acetate          |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Methyl methacrylate     |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Methylcyclohexane       |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Methylene chloride      |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Naphthalene             |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Pentachloroethane       |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Propionitrile           |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Styrene                 |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Tetrachloroethylene     |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
|                         |         |        | U    | ND |       |      |      |       |       |          |       |

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2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 284538

Page 12 of 16

| Parmname                     | NOM     | Sample | Qual | QC   | Units | RPD% | REC% | Range      | Anlst | Date     | Time  |
|------------------------------|---------|--------|------|------|-------|------|------|------------|-------|----------|-------|
| <b>Volatile-GC/MS</b>        |         |        |      |      |       |      |      |            |       |          |       |
| Batch                        | 1137563 |        |      |      |       |      |      |            |       |          |       |
| Toluene                      |         |        |      |      | ug/L  |      |      |            |       |          |       |
| Trichloroethylene            |         |        | U    | ND   | ug/L  |      |      |            | SYK1  | 08/30/11 | 22:28 |
| Trichlorofluoromethane       |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Trichlorotrifluoroethane     |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Vinyl acetate                |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Vinyl chloride               |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Xylenes (total)              |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| bis(2-Chloroisopropyl)ether  |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| cis-1,2-Dichloroethylene     |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| cis-1,3-Dichloropropylene    |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| cis-1,4-Dichloro-2-butene    |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| m,p-Xylenes                  |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| n-Butyl alcohol              |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| n-Butylbenzene               |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| n-Propylbenzene              |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| o-Xylene                     |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| sec-Butylbenzene             |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| tert-Butyl methyl ether      |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| tert-Butylbenzene            |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| trans-1,2-Dichloroethylene   |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| trans-1,3-Dichloropropylene  |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| trans-1,4-Dichloro-2-butene  |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| **1,2-Dichloroethane-d4      | 50.0    |        |      | 50.1 | ug/L  |      | 100  | (79%-124%) |       |          |       |
| **Bromofluorobenzene         | 50.0    |        |      | 51.4 | ug/L  |      | 103  | (80%-120%) |       |          |       |
| **Toluene-d8                 | 50.0    |        |      | 50.6 | ug/L  |      | 101  | (80%-120%) |       |          |       |
| QC1202478370 MB              |         |        |      |      |       |      |      |            |       |          |       |
| 1,1,1,2-Tetrachloroethane    |         |        | U    | ND   | ug/L  |      |      |            |       | 08/31/11 | 10:24 |
| 1,1,1-Trichloroethane        |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,1,2,2-Tetrachloroethane    |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,1,2-Trichloroethane        |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,1-Dichloroethane           |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,1-Dichloroethylene         |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,1-Dichloropropene          |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2,3-Trichlorobenzene       |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2,3-Trichloropropane       |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2,4-Trichlorobenzene       |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2,4-Trimethylbenzene       |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2-Dibromo-3-chloropropane  |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2-Dibromoethane            |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2-Dichlorobenzene          |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2-Dichloroethane           |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| 1,2-Dichloroethylene (total) |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |

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## QC Summary

Workorder: 284538

Page 13 of 16

| Parmname                 | NOM     | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date     | Time  |
|--------------------------|---------|--------|------|----|-------|------|------|-------|-------|----------|-------|
| <b>Volatile-GC/MS</b>    |         |        |      |    |       |      |      |       |       |          |       |
| Batch                    | 1137563 |        |      |    |       |      |      |       |       |          |       |
| 1,2-Dichloropropane      |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| 1,3,5-Trimethylbenzene   |         |        | U    | ND | ug/L  |      |      |       | SYK1  | 08/31/11 | 10:24 |
| 1,3-Dichlorobenzene      |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| 1,3-Dichloropropane      |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| 1,4-Dichlorobenzene      |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| 2,2-Dichloropropane      |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| 2-Butanone               |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| 2-Chloro-1,3-butadiene   |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| 2-Chloroethylvinyl ether |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| 2-Chlorotoluene          |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| 2-Hexanone               |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| 2-Nitropropane           |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| 4-Chlorotoluene          |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| 4-Isopropyltoluene       |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| 4-Methyl-2-pentanone     |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Acetone                  |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Acetonitrile             |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Acrolein                 |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Acrylonitrile            |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Allyl chloride           |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Benzene                  |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Benzyl chloride          |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Bromobenzene             |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Bromochloromethane       |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Bromodichloromethane     |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Bromoform                |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Bromomethane             |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Carbon disulfide         |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Carbon tetrachloride     |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Chlorobenzene            |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Chloroethane             |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Chloroform               |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Chloromethane            |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Cyclohexane              |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Cyclohexanone            |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Dibromochloromethane     |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Dibromomethane           |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Dichlorodifluoromethane  |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Ethyl ether              |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Ethyl methacrylate       |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
| Ethylbenzene             |         |        | U    | ND | ug/L  |      |      |       |       |          |       |
|                          |         |        | U    | ND |       |      |      |       |       |          |       |

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## QC Summary

Workorder: 284538

Page 14 of 16

| Parmname                    | NOM     | Sample | Qual | QC   | Units | RPD% | REC% | Range      | Anlst | Date     | Time  |
|-----------------------------|---------|--------|------|------|-------|------|------|------------|-------|----------|-------|
| <b>Volatile-GC/MS</b>       |         |        |      |      |       |      |      |            |       |          |       |
| Batch                       | 1137563 |        |      |      |       |      |      |            |       |          |       |
| Hexachlorobutadiene         |         |        |      |      | ug/L  |      |      |            |       |          |       |
| Iodomethane                 |         |        | U    | ND   | ug/L  |      |      |            | SYK1  | 08/31/11 | 10:24 |
| Isobutyl alcohol            |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Isopropylbenzene            |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Methacrylonitrile           |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Methyl acetate              |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Methyl methacrylate         |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Methylcyclohexane           |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Methylene chloride          |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Naphthalene                 |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Pentachloroethane           |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Propionitrile               |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Styrene                     |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Tetrachloroethylene         |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Toluene                     |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Trichloroethylene           |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Trichlorofluoromethane      |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Trichlorotrifluoroethane    |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Vinyl acetate               |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Vinyl chloride              |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| Xylenes (total)             |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| bis(2-Chloroisopropyl)ether |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| cis-1,2-Dichloroethylene    |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| cis-1,3-Dichloropropylene   |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| cis-1,4-Dichloro-2-butene   |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| m,p-Xylenes                 |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| n-Butyl alcohol             |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| n-Butylbenzene              |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| n-Propylbenzene             |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| o-Xylene                    |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| sec-Butylbenzene            |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| tert-Butyl methyl ether     |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| tert-Butylbenzene           |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| trans-1,2-Dichloroethylene  |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| trans-1,3-Dichloropropylene |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| trans-1,4-Dichloro-2-butene |         |        | U    | ND   | ug/L  |      |      |            |       |          |       |
| **1,2-Dichloroethane-d4     | 50.0    |        |      | 50.3 | ug/L  |      | 101  | (79%-124%) |       |          |       |
| **Bromofluorobenzene        | 50.0    |        |      | 50.1 | ug/L  |      | 100  | (80%-120%) |       |          |       |
| **Toluene-d8                | 50.0    |        |      | 49.9 | ug/L  |      | 99.9 | (80%-120%) |       |          |       |
| QC1202477758 284538001 PS   |         |        |      |      |       |      |      |            |       |          |       |
| 1,1-Dichloroethylene        | 50.0    | U      | ND   | 42.5 | ug/L  |      | 85   | (64%-127%) |       | 08/31/11 | 00:28 |
| Benzene                     | 50.0    | U      | ND   | 44.3 | ug/L  |      | 88.7 | (75%-118%) |       |          |       |

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## QC Summary

Workorder: 284538

Page 15 of 16

| Parmname                   | NOM     | Sample | Qual | QC   | Units | RPD%  | REC% | Range      | Anlst | Date     | Time  |
|----------------------------|---------|--------|------|------|-------|-------|------|------------|-------|----------|-------|
| <b>Volatile-GC/MS</b>      |         |        |      |      |       |       |      |            |       |          |       |
| Batch                      | 1137563 |        |      |      |       |       |      |            |       |          |       |
| Chlorobenzene              | 50.0    | U      | ND   | 44.1 | ug/L  |       | 88.3 | (73%-123%) |       |          |       |
| Toluene                    | 50.0    | U      | ND   | 43.5 | ug/L  |       | 87   | (67%-119%) | SYK1  | 08/31/11 | 00:28 |
| Trichloroethylene          | 50.0    | U      | ND   | 43.5 | ug/L  |       | 87   | (69%-128%) |       |          |       |
| **1,2-Dichloroethane-d4    | 50.0    |        | 47.8 | 47.9 | ug/L  |       | 95.7 | (79%-124%) |       |          |       |
| **Bromofluorobenzene       | 50.0    |        | 50.9 | 51.5 | ug/L  |       | 103  | (80%-120%) |       |          |       |
| **Toluene-d8               | 50.0    |        | 49.7 | 48.7 | ug/L  |       | 97.4 | (80%-120%) |       |          |       |
| QC1202477759 284538001 PSD |         |        |      |      |       |       |      |            |       |          |       |
| 1,1-Dichloroethylene       | 50.0    | U      | ND   | 42.1 | ug/L  | 1.02  | 84.1 | (0%-20%)   |       | 08/31/11 | 00:58 |
| Benzene                    | 50.0    | U      | ND   | 43.3 | ug/L  | 2.42  | 86.5 | (0%-20%)   |       |          |       |
| Chlorobenzene              | 50.0    | U      | ND   | 44.0 | ug/L  | 0.272 | 88   | (0%-20%)   |       |          |       |
| Toluene                    | 50.0    | U      | ND   | 43.6 | ug/L  | 0.184 | 87.2 | (0%-20%)   |       |          |       |
| Trichloroethylene          | 50.0    | U      | ND   | 42.3 | ug/L  | 2.94  | 84.5 | (0%-20%)   |       |          |       |
| **1,2-Dichloroethane-d4    | 50.0    |        | 47.8 | 48.4 | ug/L  |       | 96.8 | (79%-124%) |       |          |       |
| **Bromofluorobenzene       | 50.0    |        | 50.9 | 51.1 | ug/L  |       | 102  | (80%-120%) |       |          |       |
| **Toluene-d8               | 50.0    |        | 49.7 | 49.5 | ug/L  |       | 98.9 | (80%-120%) |       |          |       |

### Notes:

The Qualifiers in this report are defined as follows:

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- FB Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
- H Analytical holding time was exceeded
- J Value is estimated
- JNX Non Calibrated Compound
- M Matrix Related Failure
- N Metals--The Matrix spike sample recovery is not within specified control limits
- N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit

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## QC Summary

Workorder: 284538

Page 16 of 16

| Parmname | NOM  | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|----------|--|--------|------|----|-------|------|------|-------|-------|------|------|
| NJ       | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier   |        |      |    |       |      |      |       |       |      |      |
| P        | Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70% |        |      |    |       |      |      |       |       |      |      |
| Q        | One or more quality control criteria have not been met. Refer to the applicable narrative or DER.  |        |      |    |       |      |      |       |       |      |      |
| R        | Sample results are rejected  |        |      |    |       |      |      |       |       |      |      |
| U        | Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.   |        |      |    |       |      |      |       |       |      |      |
| UJ       | Compound cannot be extracted   |        |      |    |       |      |      |       |       |      |      |
| X        | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier   |        |      |    |       |      |      |       |       |      |      |
| Y        | QC Samples were not spiked with this compound  |        |      |    |       |      |      |       |       |      |      |
| ^        | RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.           |        |      |    |       |      |      |       |       |      |      |
| h        | Preparation or preservation holding time was exceeded  |        |      |    |       |      |      |       |       |      |      |

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

\* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

## DATA EXCEPTION REPORT

|  |  |  |                             |
|--|--|--|-----------------------------|
| <b>Mo.Day Yr.</b><br>29–AUG–11           | <b>Division:</b><br>Industrial             | <b>Quality Criteria:</b><br>Specifications | <b>Type:</b><br>Process     |
| <b>Instrument Type:</b><br>SEMIVOA GC/MS | <b>Test / Method:</b><br>SW846 3510C/8270D | <b>Matrix Type:</b><br>Liquid              | <b>Client Code:</b><br>ECOL |
| <b>Batch ID:</b><br>1135988              | <b>Sample Numbers:</b><br>See Below        |  |                             |

**Potentially affected work order(s)(SDG): 284538**

**Application Issues:**

Failed Recovery for MS/PS

Failed RPD for MS/MSD, or PS/PSD

Failed Recovery for MSD/PSD

Failed Yield for Surrogates

| <b>Specification and Requirements<br/>Exception Description:</b>  | <b>DER Disposition:</b>  |
|---|--|
| <p>1. The MS(1202473717(11080101)) recovered 2,4,6–Tribromophenol at 14%. The limits are 33%–126%.</p> <p>2. The MS(1202473717(11080101)) recovered multiple spike analytes outside of the established acceptance limits. Please see the QC Summary for specific failures.</p> <p>3. The MSD(1202473718(11080101)) recovered 4–Nitrophenol at 34%. The limits are 39%–96%.</p> <p>4. Multiple MS(1202473717(11080101))/MSD(1202473718(11080101)) RPD values were outside of the established acceptance limits. Please see the QC Summary for specific failures.</p> | <p>1. The MB(1202473715), LCS(1202473716) and MSD(1202473718) satisfied batch QC acceptance criteria. Also, all associated client samples displayed acceptable surrogate recoveries. Therefore, it was determined that the failure was limited to the MS sample only and re–extraction was considered un–necessary. The data were reported.</p> <p>2. The MB(1202473715), LCS(1202473716) and MSD(1202473718) satisfied batch QC acceptance criteria. Therefore, it was determined that the failures were limited to the MS(1202473717) sample only and re–extraction was considered un–necessary. The data were reported.</p> <p>3. 4–Nitrophenol was identified as poor responding analyte in the analytical method (EPA 8270 D). This may account for the low recovery it displayed in the MSD (as well as in the MS). The data were reported.</p> <p>4. The MB(1202473715), LCS(1202473716) and MSD(1202473718) satisfied batch QC acceptance criteria. Therefore, it was determined that the failures were limited to the MS(1202473717) sample only and re–extraction was considered un–necessary. The data were reported.</p> |

**Originator’s Name:**

Jennifer Dunagan Jones29–AUG–11

**Data Validator/Group Leader:**

Barbara Bailey

30–AUG–11



| DATA EXCEPTION REPORT   |  |   |                             |
|---|--|---|-----------------------------|
| <b>Mo.Day Yr.</b><br>30-AUG-11  | <b>Division:</b><br>Industrial             | <b>Quality Criteria:</b><br>Specifications  | <b>Type:</b><br>Process     |
| <b>Instrument Type:</b><br>GC/ECD   | <b>Test / Method:</b><br>SW846 3535A/8082A | <b>Matrix Type:</b><br>Liquid   | <b>Client Code:</b><br>ECOL |
| <b>Batch ID:</b><br>1136663   | <b>Sample Numbers:</b><br>See Below        |   |                             |
| <b>Potentially affected work order(s)(SDG): 284538</b><br><b>Application Issues:</b><br>Failed Recovery for MS/PS<br>Method Blank contamination<br>Failed Yield for Surrogates<br>Failed Recovery for MSD/PSD   |  |   |                             |
| <b>Specification and Requirements</b><br><b>Exception Description:</b>  |  | <b>DER Disposition:</b>   |                             |
| 1. The MS(1202475429(11080101)) and MSD(1202475430(11080101)) did not meet the spike recovery acceptance criteria.<br><br>2. The MB(1202475427) was contaminated with target analytes.<br><br>3. Sample 284583001 and the MS(1202475429(11080101)) and MSD(1202475430(11080101)) did not meet the surrogate recovery acceptance criteria. |  | 1., 3. As the sample, MS and MSD displayed similar recoveries, the failures were attributed to matrix interference and the data were reported.<br><br>2. The sample did not have target analytes detected. The data was reported. |                             |

**Originator's Name:**  
Yiping Shi                      30-AUG-11

**Data Validator/Group Leader:**  
Cameron Bearden              30-AUG-11

### DATA EXCEPTION REPORT

|                                      |  |  |                             |
|--------------------------------------|--|--|-----------------------------|
| <b>Mo.Day Yr.</b><br>01-SEP-11       | <b>Division:</b><br>Industrial                   | <b>Quality Criteria:</b><br>Specifications | <b>Type:</b><br>Process     |
| <b>Instrument Type:</b><br>VOA GC/MS | <b>Test / Method:</b><br>SW846 8260B             | <b>Matrix Type:</b><br>Liquid              | <b>Client Code:</b><br>ECOL |
| <b>Batch ID:</b><br>1137563          | <b>Sample Numbers:</b><br>1202477758, 1202477759 |  |                             |

**Potentially affected work order(s)(SDG): 284538**

**Application Issues:**

Failed Recovery for MS/PS

Failed Recovery for MSD/PSD

**Specification and Requirements  
Exception Description:**

1. The recoveries for 2-Chloroethylvinyl ether were below acceptance limits for 1202477758(11080101) (MS) and 1202477759(11080101) (MSD).

2-Chloroethylvinyl ether: MS, 0.0%; MSD, 0.0%; limits, 52.0%–125.0%

**DER Disposition:**

1. Preservation by acidification causes degradation of 2-Chloroethylvinyl ether, resulting in the low recoveries observed in these samples.

**Originator's Name:**

Suzanne Kacenas 01-SEP-11

**Data Validator/Group Leader:**

Erin Haubert 02-SEP-11

| DATA EXCEPTION REPORT  |  |  |                             |
|--|--|--|-----------------------------|
| <b>Mo.Day Yr.</b><br>01-SEP-11   | <b>Division:</b><br>Industrial             | <b>Quality Criteria:</b><br>Specifications   | <b>Type:</b><br>Process     |
| <b>Instrument Type:</b><br>GC/ECD  | <b>Test / Method:</b><br>SW846 3535A/8081B | <b>Matrix Type:</b><br>Liquid  | <b>Client Code:</b><br>ECOL |
| <b>Batch ID:</b><br>1136049  | <b>Sample Numbers:</b><br>See Below        |  |                             |
| <b>Potentially affected work order(s)(SDG): 284538</b><br><b>Application Issues:</b><br>Failed Recovery for MS/PS<br>Failed Yield for Surrogates<br>Failed Recovery for MSD/PSD  |  |  |                             |
| <b>Specification and Requirements</b><br><b>Exception Description:</b>   |  | <b>DER Disposition:</b>  |                             |
| 1. The MS(1202473926(11080101)) and MSD(1202473927(11080101)) recovered outside of the acceptance limits.<br><br>2. Surrogates recovered outside of the acceptance limits in the MS(1202473926(11080101)) and MSD(1202473927(11080101)). |  | 1., 2. As the MS/MSD exhibited similar recoveries, the failures were attributed to matrix interference and the data were reported. |                             |

**Originator's Name:**  
Rebecca Enzor      01-SEP-11

**Data Validator/Group Leader:**  
Cameron Bearden      02-SEP-11

**Report**

**of**

**Test No. 826-1**

**Toxicity of freshwater sediments collected from Kitsap County, WA  
using a 28-day amphipod, *Hyaella azteca*, sediment bioassay as part of  
Project No. 002233.0599.01SF, TDD No. 10-08-0011.**

**Submitted to**

**Ecology and Environment, Inc.  
720 Third Ave.  
Suite 1700  
Seattle, WA 98104**

**Prepared by**

**Northwestern Aquatic Sciences  
3814 Yaquina Bay Road  
P.O. Box 1437  
Newport, OR 97365**

**October 7, 2011**

## TOXICITY TEST REPORT

## TEST IDENTIFICATION

Test No.: 826-1

Title: Toxicity of freshwater sediments collected from Kitsap County, WA using a 28-day amphipod, *Hyalella azteca*, sediment bioassay as part of Project No. 002233.0599.01SF, TDD No. 10-08-0011.

Protocol No.: NAS-XXX-HA4c, February 11, 2000. Revision 3 (4-26-05). Based on ASTM 2001 (Standard test methods for measuring the toxicity of sediment-associated contaminants with fresh water invertebrates, E1706-00), Am. Soc. Test. Mat., Phila., PA, and EPA Method 100.1 (Methods for measuring the toxicity and bioaccumulation of sediment-associated contaminants with freshwater invertebrates, EPA/600/R-99/064).

## STUDY MANAGEMENT

Study Sponsor: Ecology and Environment, Inc., 720 Third Ave., Suite 1700, Seattle, WA 98104

Sponsor's Study Monitor: Mr. Mark Woodke

Testing Laboratory: Northwestern Aquatic Sciences, P.O. Box 1437, Newport, OR 97365

Test Location: Newport laboratory

Laboratory's Study Personnel: G.J. Irissarri, B.S., Proj. Man./Study Dir.; L.K. Nemeth, B.A., M.B.A., QA Officer; R.S. Caldwell, PhD, Sr. Aq. Toxicologist; G.A. Buhler, B.S., Aq. Toxicologist; L.P. Sandoval, B.S., Tech.; Y. Nakahama, Tech., B. Hurst, M.S., Tech.

Study Schedule:

Test Beginning: 8-26-11, 1005 hrs.

Test Ending: 9-23-11, 0930 hrs.

Disposition of Study Records: All raw data, reports and other study records are stored at Northwestern Aquatic Sciences, 3814 Yaquina Bay Rd., Newport, OR 97365.

Statement of Quality Assurance: The test data were reviewed by the Quality Assurance Unit to assure that the study was performed in accordance with the protocol and standard operating procedures. This report is an accurate reflection of the raw data.

## TEST MATERIAL

Test Sediments: Freshwater test sediments collected from Kitsap County, WA. as part of Project No. 002233.0599.01SF, TDD No. 10-08-0011. Details are as follows:

|                 |          |          |          |          |
|-----------------|----------|----------|----------|----------|
| NAS Sample No.  | 3838G    | 3839G    | 3840G    | 3841G    |
| Description     | 11070001 | 11070002 | 11070003 | 11070004 |
| Collection Date | 7/27/11  | 7/27/11  | 7/27/11  | 7/27/11  |
| Receipt Date    | 8/14/11  | 8/24/11  | 8/24/11  | 8/24/11  |

Control Sediment: The negative control sediment (NAS#3820G) was collected on 8-14-11 from an area approximately one mile east of the Hwy. 101 bridge at Beaver Creek, approx. 8 miles south of Newport, OR.

Treatments: Homogenized at test set up by mixing using stainless steel implements.

Storage: All test and control sediments were stored at 4°C in the dark in sealed containers until used.

## TEST WATER

Source: Dechlorinated municipal tap water.

Date of Preparation: Four batches of test water were collected on: 8/17/11, 8/25/11, 8/26/11, 9/7/11.

Water Quality (mean  $\pm$  S.D.):

pH:  $7.5 \pm 0.1$  (n=4)

conductivity:  $141 \pm 4$   $\mu$ mhos/cm (n=4)

hardness:  $43 \pm 0$  mg/L as CaCO<sub>3</sub> (n=4)

alkalinity:  $30 \pm 0$  mg/L as CaCO<sub>3</sub>. (n=4)

total chlorine: All batches were  $< 0.02$  mg/L (n=4)

Pretreatment: Dechlorinated and aerated  $\geq 24$  hr.

## TEST ORGANISMS

Species: *Hyalomma azteca*, amphipod.

Age/Size: 7-8 days old

Source: Chesapeake Cultures, Hayes, VA; received 8-24-11

Acclimation: Holding conditions for the three days prior to testing averaged: Temperature,  $22.9 \pm 0.3$  °C; dissolved oxygen,  $10.3 \pm 4.1$  mg/L; pH,  $7.7 \pm 0.7$ ; conductivity,  $351 \pm 115$  µmhos/cm; hardness,  $137 \pm 54$  mg/L as CaCO<sub>3</sub>; and alkalinity,  $120 \pm 46$  mg/L as CaCO<sub>3</sub>. Photoperiod, 16:8, L:D. Half of the water was replaced daily with dechlorinated municipal tap water during holding. Animals were fed YTC daily during holding.

## TEST PROCEDURES AND CONDITIONS

The following is an abbreviated statement of the test procedures and a statement of the test conditions actually employed. See the test protocol (Appendix I) for a more detailed description of the test procedures used in this study.

Test Chambers: 300 ml high-form glass beakers

Test Volumes: 100 ml sediment layer; 175 ml test water.

Replicates/Treatment: 8

Organisms/Treatment: 80

Water Volume Changes: 2 water volumes per day

Aeration: None.

Feeding: Animals are fed 1.0 ml of YTC suspension per beaker daily.

Effects Criteria: 1) survival after 28 days, and 2) average individual dry weight after 28 days. Death is defined as no visible movement or response to tactile stimulation. Missing organisms were considered to be dead.

Water Quality and Other Test Conditions: The temperature, dissolved oxygen, conductivity, pH, hardness, alkalinity, and ammonia-nitrogen were measured in the overlying water of one replicate test container per treatment on days 0 and 28 of the test. Temperature was measured daily, pH and dissolved oxygen three times per week, and conductivity weekly, in the overlying water of one replicate test container per treatment. Hardness and alkalinity were measured with titrimetric methods. Ammonia-N was measured using Hach reagents based on the salicylate (Clin. Chim. Acta 14:403, 1996) colorimetric method; samples were not distilled prior to analysis. The photoperiod was 16:8, L:D.

## DATA ANALYSIS METHODS

Survival, mortality and average individual dry weight were calculated for each replicate as follows:

percent survival =  $100 \times (\text{number surviving} / \text{initial number tested})$

percent mortality =  $100 \times (\text{number dead} / \text{initial number tested})$

average individual dry weight =  $(\text{final wt.} - \text{tare wt.}) / \text{number weighed}$ ,

where:

final wt. = tare wt. + dry weight of organisms recovered on day 28, in mg

Means and standard deviations for the biological endpoints described above, and for water quality data, were computed using Microsoft Excel 2000.

## PROTOCOL DEVIATIONS

None

## REFERENCE TOXICANT TEST

The reference toxicant test is a multi-concentration toxicity test using potassium chloride, to evaluate the performance of the test organisms used in the sediment toxicity test. The performance is evaluated by comparing the results of this test with historical results obtained at the laboratory. A summary of the reference toxicant test result is given below. The reference toxicant test raw data are found in Appendix III.

Test No.: 999-2930

Reference Toxicant and Source: Potassium Chloride (KCl), Fisher Lot #073280.

Test Date: 8-26-11.

Dilution Water Used: Moderately hard synthetic water prepared from Milli-Q® deionized water.

Result: 96-hr LC50, 0.45 g/L. This result is within the laboratory's control chart warning limits (0.31 – 0.47 g/L).

## TEST RESULTS

Observations of water quality in the overlying water throughout the test are summarized in Table 1. A detailed tabulation of the water quality results by sample and test day can be found in Appendix II. The means and standard deviations of percent mortality and average dry weight of *Hyaella* exposed for 28 days to sediments are summarized in Tables 2 and 3. Detailed data organized by sample and replicate, and summary statistics for these observations, are given in Appendix II.

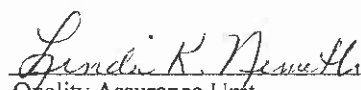
Except as noted above, all other water quality observations of overlying water temperature and dissolved oxygen were within the protocol specified ranges. Ammonia-N in the overlying water ranged between <0.1 and 0.2 mg/L for all day 0 and day 28 measurements.

The test met the survival and weight acceptability criteria specified in the test protocol with 5.0% mean control mortality ( $\leq 20\%$  required) and a control individual mean dry weight of 0.50 mg per amphipod. The reference toxicant (positive control) LC50 result was within the laboratory's control chart limits (0.41 g/L; control chart mean  $\pm 2$  S.D. =  $0.39 \pm 0.08$ ). It is concluded, therefore, that the test has developed fully acceptable data for use in making management decisions.

The percent mortality of all test sediments was not significantly greater than that of the control. The average individual biomass of test sediments 11070002 and 11070004 was significantly less than that of the control at the 0.05 level of significance.

## STUDY APPROVAL

 10-7-11  
Project Manager/Study Director Date

 10/6/11  
Quality Assurance Unit Date

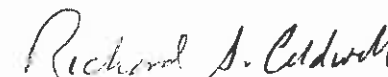
 10/7/11  
Laboratory Director Date

Table 1. Summary of water quality conditions during tests of the amphipod, *Hyaella azteca*, exposed to freshwater sediments.

| Water Quality Parameter               | Mean $\pm$ S.D. | Minimum | Maximum | N   |
|---------------------------------------|-----------------|---------|---------|-----|
| Temperature ( $^{\circ}\text{C}$ )    | $23.1 \pm 0.5$  | 22.0    | 23.8    | 145 |
| Dissolved oxygen (mg/L)               | $7.4 \pm 0.7$   | 6.0     | 9.5     | 65  |
| Conductivity ( $\mu\text{mhos/cm}$ )  | $155 \pm 8$     | 142     | 175     | 30  |
| pH                                    | $7.0 \pm 0.3$   | 6.4     | 7.8     | 65  |
| Hardness (mg/L as $\text{CaCO}_3$ )   | $45 \pm 6$      | 34      | 51      | 10  |
| Alkalinity (mg/L as $\text{CaCO}_3$ ) | $30 \pm 0$      | 30      | 30      | 10  |
| Total ammonia (mg/L)                  | ---             | <0.1    | 0.2     | 10  |

Table 2. Mortality results of *Hyaella* toxicity test.

| Sample description    | Percent mortality<br>(Mean $\pm$ SD) | Statistically significantly<br>different than that of the<br>control? |
|-----------------------|--------------------------------------|---|
| Control (NAS# 3820G)  | $5.0 \pm 10.7$                       | ---   |
| 11070001 (NAS# 3838G) | $3.8 \pm 5.2$                        | No  |
| 11070002 (NAS# 3839G) | $11.3 \pm 9.9$                       | No  |
| 11070003 (NAS# 3840G) | $6.3 \pm 7.4$                        | No  |
| 11070004 (NAS# 3841G) | $3.8 \pm 5.2$                        | No  |

Table 3. Growth results of *Hyaella* toxicity test.

| Sample description    | Dry wt/amphipod (mg)<br>(Mean $\pm$ SD) | Statistically significantly<br>different than that of the<br>control? |
|-----------------------|---|---|
| Control (NAS# 3820G)  | $0.50 \pm 0.08$                         | ---   |
| 11070001 (NAS# 3838G) | $0.52 \pm 0.07$                         | No  |
| 11070002 (NAS# 3839G) | $0.40 \pm 0.06$                         | Yes   |
| 11070003 (NAS# 3840G) | $0.50 \pm 0.12$                         | No  |
| 11070004 (NAS# 3841G) | $0.33 \pm 0.04$                         | Yes   |



## **APPENDIX I**

## **PROTOCOL**

## TEST PROTOCOL

### FRESHWATER AMPHIPOD, *HYALELLA AZTECA*, 28-DAY SEDIMENT SURVIVAL AND GROWTH TEST

#### 1. INTRODUCTION

1.1 Purpose of Study: The purpose of this study is to characterize the chronic toxicity of freshwater sediments using a 28-day exposure and survival and growth endpoints with the amphipod, *Hyaella azteca*.

1.2 Referenced Method: This protocol is based on ASTM Method E 1706-00 (ASTM 2001) and EPA Method 100.1 (EPA/600/R-99/064)

1.3 Summary of Method: A summary of test conditions for the amphipod 28-day sediment survival and growth test is tabulated below. The test with *Hyaella azteca* is conducted at  $23 \pm 1^\circ\text{C}$  with a 16L:8D photoperiod at an illuminance of about 100-1000 lux. Test chambers are 300-mL high-form lipless beakers containing 100 mL of sediment and 175 mL of overlying water. Ten 7-8day old amphipods are used in each replicate. The number of replicates/treatment depends on the objective of the test. Eight replicates are recommended for routine testing. Amphipods in each test chamber are fed 1.0 mL of YCT food daily. Each chamber receives two volume additions per day of overlying water. Test endpoints include survival and growth.

#### 2. STUDY MANAGEMENT

2.1 Sponsor's Name and Address:

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---

2.2 Sponsor's Study Monitor:

---

2.3 Name of Testing Laboratory:

Northwestern Aquatic Sciences  
3814 Yaquina Bay Road, P.O. Box 1437  
Newport, OR 97365.

2.4 Test Location:

---

2.5 Laboratory's Personnel to be Assigned to the Study:

Study Director: \_\_\_\_\_  
Quality Assurance Unit: \_\_\_\_\_  
Aquatic Toxicologist: \_\_\_\_\_  
Aquatic Toxicologist: \_\_\_\_\_

2.6 Proposed Testing Schedule: Tests are normally begun within 14 days of sample collection. Reference toxicant test to be run concurrently.

2.7 Good Laboratory Practices: The test is conducted following the principles of Good Laboratory Practices (GLP) as defined in the EPA/TSCA Good Laboratory Practice regulations revised August 17, 1989 (40 CFR Part 792).

### 3. TEST MATERIAL

The test materials are freshwater sediments. The control, reference, and test sediments are placed in solvent cleaned 1 L glass jars fitted with PTFE-lined screw caps. At the laboratory the samples are stored at 4°C in the dark. The original sealed containers may be stored for up to 8 weeks prior to testing, depending on the testing requirements. If jars are not full when received or if sediment is removed for testing, headspaces should be filled with nitrogen to retard deterioration. A negative control sediment is collected from a clean site. In addition, a reference sediment, a clean sediment with physical characteristics similar to the test sediments, may be employed as a comparison station.

### 4. TEST WATER

Test water (overlying water) at NAS is normally dechlorinated tap water or moderately hard synthetic water. Synthetic dilution water is prepared from Milli-Q reagent grade water and reagent grade chemicals. Test water may also be well water, surface water, site water, or other water depending on the study design. The hardness or other water quality parameters of the dilution water may need to be adjusted to meet the study design.

### 5. TEST ORGANISMS

5.1 Species: amphipod, *Hyalella azteca*.

5.2 Source: Cultured at NAS. Alternatively, animals may be purchased from a reputable commercial supplier.

5.3 Age: 7-8 days old at start of test

5.4 Acclimation and Pretest Observation: Cultures are maintained at  $23 \pm 1^\circ\text{C}$  under a 16:8 L:D photoperiod. Cultured amphipods are fed dried maple leaves with YTC. Rabbit chow, Tetramin® or TetraFin® flakes may also be used. Acclimation of test organisms to the test water may be desirable, depending on culture water, but it is not required. If test organisms are to be acclimated, fifty percent of the holding water is changed daily with the addition of test water.

### 6. DESCRIPTION OF TEST SYSTEM

6.1 Test Chambers and Environmental Control: Test chambers used in the toxicity test are 300-mL high-form lipless glass beakers. Test chambers are maintained at constant temperature by partial immersion in a temperature-controlled water bath or by placement in a temperature-controlled room. Aeration is not employed unless dissolved oxygen drops below 2.5 mg/L. The test is conducted under an illuminance of 100-1000 lux with a 16L:8D photoperiod.

6.2 Cleaning: All laboratory glassware, including test chambers, is cleaned as described in EPA/600/4-90/027F. New glassware and test systems are soaked 15 minutes in tap water and scrubbed with detergent (or cleaned in automatic dishwasher); rinsed twice with tap water; carefully rinsed once with fresh, dilute (10%, V:V) hydrochloric or nitric acid to remove scale, metals, and bases; rinsed twice with deionized water; rinsed once with acetone to remove organic compounds (using a fume hood or canopy); and rinsed three times with deionized water. Test systems and chambers are rinsed again with dilution water just before use.

## 7. EXPERIMENTAL DESIGN AND TEST PROCEDURES

7.1 Experimental Design: The test involves exposure of amphipods to test, control, and reference sediments. The sediments are placed on the bottom of the test containers and are overlain with test water. The test exposure is for 28 days. The renewal of overlying water consists of two volume additions per day, either continuous or intermittent. Each treatment consists of eight replicate test containers, each containing 10 organisms. Test chamber positions are completely randomized. Test organisms are randomly distributed to the test chambers. Blind testing is normally used.

7.2 Setup of Test Containers: Sediments are homogenized and placed in test chambers on the day before addition of test organisms. Sediment (100 ml) is placed into each of eight replicate beakers. After addition of the sediment, 175 ml of test water is gently added to each beaker in a manner to prevent resuspension. The overlying water is replaced twice daily. The test begins when amphipods are introduced to the test chambers. Initial water quality measurements are taken prior to the addition of test organisms.

7.3 Effect Criterion: The effect criteria used in the 28-day amphipod bioassay are mortality and growth. Death is defined as the lack of movement of body or appendages on response to tactile stimulation. Growth is measured as change in dry weight.

7.4 Test Conditions: No aeration is employed unless dissolved oxygen falls below 2.5 mg/L. The test temperature employed is  $23 \pm 1^\circ\text{C}$ . A 16:8, L:D photoperiod is used. Illumination is supplied by daylight fluorescent lamps at 100-1000lux. The overlying water is replaced twice daily.

7.5 Beginning the Test: On the day the test begins, amphipods are impartially counted into small containers of test water (10/container). The test is begun by rinsing test organisms into the equilibrated test containers. For the growth endpoint, time-zero weight data should be collected.

7.6 Feeding: Amphipods are fed 1.0 mL of YCT daily per test chamber. A feeding may be skipped if there is a build up of excess food. However, all beakers must be treated similarly.

7.7 Test Duration, Type and Frequency of Observations, and Methods: The duration of the toxicity test is 28 days. The type and frequency of observations to be made are summarized as follows:

| TYPE OF OBSERVATION                               | TIMES OF OBSERVATION   |
|---|--|
| <i>BIOLOGICAL DATA</i>                            |  |
| Survival, growth                                  | Day 28   |
| <i>PHYSICAL AND CHEMICAL DATA</i>                 |  |
| Hardness, alkalinity, conductivity, and ammonia-N | Beginning and end of test in overlying water of one replicate beaker from each treatment.  |
| Temperature                                       | Daily in overlying water of one replicate beaker from each treatment.  |
| Conductivity                                      | Weekly   |
| Dissolved oxygen and pH                           | 3X/week  |
| Optional pore water ammonia and/or sulfide        | In test sediments prior to initiating the tests.<br>Optionally in sediments from sacrificial test chambers at test beginning and/or end. |

Dissolved oxygen is measured using a polarographic oxygen probe calibrated according to the manufacturer's recommendations. The pH is measured using a pH probe and a properly calibrated meter with scale divisions of 0.1 pH units. Temperature is measured with a calibrated mercury thermometer or telethermometer. Conductivity is measured with a conductivity meter. Hardness and alkalinity are measured using titrimetric methods. Total soluble sulfide and total ammonia-N were

measured using Hach test kits based on the methylene blue (EPA Method 376.2) and salicylate (Clin. Chim. Acta 14:403, 1996) colorimetric methods, respectively; samples were not distilled prior to analysis.

Overlying water should be sampled just before water renewal from about 1 to 2 cm above the sediment surface using a pipet. It may be necessary to pool water samples from individual replicates. The pipet should be checked to make sure no organisms are removed during sampling of overlying water.

**7.8 Test Termination:** At test termination, the contents of each test container are sieved through a #35 (500  $\mu$ m mesh) sieve to recover the amphipods. Amphipods from each replicate are put into a 30 mL plastic cup, rinsed with DI water, gently blotted and placed into the appropriate tared aluminum weighing pan. The number of survivors for each container is recorded on the datasheet.

**7.9 Growth Measurement:** Growth is measured as average dry weight of animals in a test replicate at the end of the test on day 28. Pooled animals from each test replicate are gently blotted and placed into tared aluminum weigh pans. The pans are dried at 60-90°C to constant weight. The dried amphipods are placed into a dessicator and weighed as soon as possible to the nearest 0.01 mg (desirable to use 0.001 mg). The total weight of the dried amphipods in each pan is divided by the number of amphipods weighed to obtain an average dry weight per surviving amphipod per replicate.

## 8. CRITERIA OF TEST ACCEPTANCE

The test results are acceptable if the minimum survival of organisms in the control treatment at the end of the test is at least 80%.

## 9. DATA ANALYSIS

The endpoints of the toxicity test are survival and growth. Survival is obtained as a direct count of living organisms in each test container at the end of the test. Average amphipod dry weight, also measured at the end of the test, may be used to compare growth between treatment sediments and the control or reference sediment. Ordinarily the following data analysis is performed. Due to special requirements, alternative methods may be used. The means and standard deviations are calculated for each treatment level. Identification of toxic sediments is established by statistical comparison of test endpoints between test and control or reference sediments. Between treatment comparisons may be made using a Student's t-test or Wilcoxon's Two-Sample test, where each treatment is compared to the control or the reference sediment. An arcsine-square root transformation of proportional data, and tests for normality and heterogeneity of variances, are performed prior to statistical comparisons.

## 10. REPORTING

The final report of the test results must include all of the following standard information at a minimum: name and identification of the test; the investigator and laboratory; date and time of test beginning and end; information on the test material; information on the source and quality of the overlying/test water; detailed information about the test organisms including acclimation conditions; a description of the experimental design and test chambers and other test conditions including feeding, if any, and water quality; definition of the effect criteria and other observations; responses, if any, in the control treatment; tabulation and statistical analysis of measured responses and a summary table of endpoints; a description of the statistical methods used; any unusual information about the test or deviations from procedures; reference toxicant testing information.

11. STUDY DESIGN ALTERATION

Amendments made to the protocol must be approved by the sponsor and study director and should include a description of the change, the reason for the change, the date the change took effect and the dated signatures of the study director and sponsor. Any deviations in the protocol must be described and recorded in the study raw data.

12. REFERENCE TOXICANT

The reference toxicant test is a standard multi-concentration toxicity test using a specified chemical toxicant to evaluate the performance of test organisms used in the study. Reference toxicant tests are 96-hour, water only exposures, not 28-day sediment exposures. The reference toxicant test is run concurrently. Performance is evaluated by comparing the results of the reference toxicant test with historical results (e.g., control charts) obtained at the laboratory.

13. REFERENCED GUIDELINES

ASTM. 2001. Standard Test Methods for Measuring the Toxicity of Sediment-Associated Contaminants with Fresh Water Invertebrates. ASTM Standard Method No. E 1706-00. Am. Soc. Test. Mat., Philadelphia, PA.

U.S. EPA. 2000. Section 11, Test Method 100.1, *Hyalella azteca* 10-d Survival and Growth Test for Sediments, pp. 47-54 In: Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates (Second Edition). EPA/600/R-99/064.

Weber, C.I. (Ed.) 1993. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (Fourth Edition). EPA/600/4-90/027F.

14. APPROVALS

\_\_\_\_\_ for \_\_\_\_\_  
Name Date

\_\_\_\_\_ for **Northwestern Aquatic Sciences**  
Name Date

**Appendix A**  
**Test Conditions Summary**

|                                 |  |
|---------------------------------|--|
| 1. Test type                    | whole sediment toxicity test with renewal of overlying water   |
| 2. Test duration                | 28 days  |
| 3. Temperature                  | 23 ± 1°C   |
| 4. Light quality                | daylight fluorescent light   |
| 5. Illuminance                  | 100-1000 lux   |
| 6. Photoperiod                  | 16L:8D   |
| 7. Test chamber size            | 300-mL high-form lipless beakers, (Pyrex® 1040 or equivalent)  |
| 8. Sediment volume              | 100 mL   |
| 9. Overlying water volume       | 175 mL   |
| 10. Renewal overlying water     | 2 volume additions/day (continuous or intermittent)  |
| 11. Age of test organisms       | 7-8 days old at test initiation  |
| 12. Organisms per test chamber  | 10   |
| 13. Replicates per treatment    | 8 recommended for routine testing (depends on design)  |
| 14. Organisms per treatment     | 80   |
| 15. Feeding regime              | YCT food, fed 1.0 mL daily/chamber   |
| 16. Cleaning                    | if screens are used, clean as needed   |
| 17. Aeration                    | None, unless DO falls below 2.5 mg/L   |
| 18. Overlying (test) water      | Dechlorinated tap water, culture water, well water, surface water, site water or reconstituted water, depending on study design. |
| 19. Water quality               | Hardness, alkalinity, conductivity, ammonia-N beginning and end; temperature daily; conductivity weekly; DO & pH 3X/wk           |
| 20. Endpoints                   | Survival & growth (based on weight)  |
| 21. Test acceptability criteria | Minimum control survival of 80%  |
| 22. Sample holding              | 14 days at 4°C in the dark (recommended)   |
| 23. Sample volume required      | 1L (800 mL per sediment)   |
| 24. Reference toxicant          | Concurrent testing required  |

## **APPENDIX II**

### **RAW DATA**



**TEST DESCRIPTION, MONITORING, AND RESULTS  
BENCHSHEETS**

## HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 826-1 Client \_\_\_\_\_

Ecology &amp; Environment

Investigator \_\_\_\_\_

REVIEWED  
PAGES 1-41  
-631**STUDY MANAGEMENT**Client: Ecology & Environment, Inc., 720 Third Ave., Suite 1700, Seattle, WA 98104Client's Study Monitor: Mark WoodkeTesting Laboratory: Northwestern Aquatic SciencesTest Location: Newport Laboratory

Laboratory's Study Personnel:

Proj. Man./Study Dir. G.J. Irissarri 631QA Officer L.K. Nemeth1. GABRIEL GT2. Yves Nakahama YN3. Lidia P. Sandoval US4. Brian Hurst BH5. G.J. Irissarri 631

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

Study Schedule:

Test Beginning: 8-26-11 1005Test Ending: 9-23-11 0930**TEST MATERIAL**General description (see sample logbook/chain-of-custody for details):

| NAS Sample No.:  | 3820G   | 3838G    | 3839G    | 3840G    | 3841G    |
|------------------|---------|----------|----------|----------|----------|
| Description:     | Control | 11070001 | 11070002 | 11070003 | 11070004 |
| Collection Date: | 8/14/11 | 7/27/11  | 7/27/11  | 7/27/11  | 7/27/11  |
| Receipt Date:    | 8/14/11 | 8/24/11  | 8/24/11  | 8/24/11  | 8/24/11  |

|                  |  |  |  |  |  |
|------------------|--|--|--|--|--|
| NAS Sample No.:  |  |  |  |  |  |
| Description:     |  |  |  |  |  |
| Collection Date: |  |  |  |  |  |
| Receipt Date:    |  |  |  |  |  |

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|------------------|--|--|--|--|--|
| NAS Sample No.:  |  |  |  |  |  |
| Description:     |  |  |  |  |  |
| Collection Date: |  |  |  |  |  |
| Receipt Date:    |  |  |  |  |  |

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|------------------|--|--|--|--|--|
| NAS Sample No.:  |  |  |  |  |  |
| Description:     |  |  |  |  |  |
| Collection Date: |  |  |  |  |  |
| Receipt Date:    |  |  |  |  |  |

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| NAS Sample No.:  |  |  |  |  |  |
| Description:     |  |  |  |  |  |
| Collection Date: |  |  |  |  |  |
| Receipt Date:    |  |  |  |  |  |

Error codes: 1) correction of handwriting error

2) written in wrong location; entry deleted

3) wrong date deleted, replaced with correct date

4) error found in measurement; measurement repeated

Test No. 826-1 Client Ecology & Environment Investigator

## SEDIMENT DESCRIPTIONS – SUPPLEMENTAL NOTES

[illegible]

## HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 826-1 Client Ecology & Environment Investigator                     

## TEST WATER

Source: Dechlorinated Newport, OR tap waterDate of Collection/Preparation: 8-17-11, 8-25-11, 8-26-11, 9-7-11pH 7.6, 7.6, 7.5, 7.3  $\bar{X} = 7.5 \pm 0.1$ Cond (umhos/cm<sup>2</sup>) 145, 130, 143, 140  $\bar{X} = 141 \pm 4$ Hardness (mg/La0) 43, 43, 43, 43  $\bar{X} = 43 \pm 0$ Alkalinity (mg/L) 30, 30, 30, 30  $\bar{X} = 30 \pm 0$ 

Total Chlorine (mg/l)

Treatments: Aerated  $\geq$  24 hrs

## TEST ORGANISMS

Species: Hyalella azteca Age: 7-8 DAYS Date received: 8-24-11Source: Chesapeake Cultures, Hayes, VA

## Acclimation Data:

| Date    | Temp.<br>(deg.C) | pH  | DO<br>(mg/L) | Cond<br>umhos/cm | Feeding |             | Water<br>changes | Hardness | Alkalinity<br>(mg/L) |
|---------|------------------|-----|--------------|------------------|---------|-------------|------------------|----------|----------------------|
|         |                  |     |              |                  | amount  | description |                  |          |                      |
| 8-24-11 | 22.6             | 7.0 | 5.73         | 473              | 10 mL   | YTC         | yes              | 197      | 170                  |
| 8-25-11 | 22.8             | 8.3 | 7.33         | 334              | "       | "           | yes              | 120      | 110                  |
| 8-26-11 | 23.2             | 7.7 | 7.24         | 245              | -       | -           | -                | 94       | 80                   |
|         |                  |     | 9-12-16-11   |                  |         |             |                  |          |                      |
| Mean    | 22.9             | 7.7 | 10.3         | 351              |         |             |                  | 137      | 120                  |
| S.D.    | 0.3              | 0.7 | 4.1          | 115              |         |             |                  | 54       | 46                   |
| (N)     | 3                | 3   | 3            | 3                |         |             |                  | 3        | 3                    |

Photoperiod during acclimation: 16:8, L:D

## TEST PROCEDURES AND CONDITIONS

Test chambers: 300 ml glass beakers

Test volumes: 100 ml of test sediment; 275 ml total volume

Replicates/treatment: (8) 8 Organisms/treatment: (80) 80 (10/REP)

Test water changes: Twice daily

Aeration: only if DO falls below 2.5 mg/L

Beaker placement: Total randomization

Feeding: everyday beginning with day zero

Photoperiod: 16:8, L:D

Test temperature (deg.C): 23

## Control Sediment:

Source: From an area approximately one mile east of the Hwy. 101 bridge at Beaver Creek,  
approx. 8 miles south of Newport, OR.Date collected: 8/14/11Sieved through 0.5 -mm screenStorage: 4°C in the dark in closed containers.NAS# 3820G

## MISCELLANEOUS NOTES

Light Intensity:

| Date    | Location   | Light Intensity (ft-candles*) | Initials |
|---------|------------|-------------------------------|----------|
| 8-30-11 | BEAKER #18 | 88.3                          | 601      |

\*To convert ft-candles to lux multiply by 10.76

## HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 826-2 Client Ecology & Environment Investigator \_\_\_\_\_

Test conducted in (circle one): room 1 room 2 trailer water bath other: \_\_\_\_\_

Randomization chart:

TOP SHELF

|   |    |    |    |    |    |    |    |  |  |
|---|----|----|----|----|----|----|----|--|--|
| 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 |  |  |
| 4 | 9  | 14 | 19 | 24 | 29 | 34 | 39 |  |  |
| 3 | 8  | 13 | 18 | 23 | 28 | 33 | 38 |  |  |
| 2 | 7  | 12 | 17 | 22 | 27 | 32 | 37 |  |  |
| 1 | 6  | 11 | 16 | 21 | 26 | 31 | 36 |  |  |

Randomization chart:

|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|
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Randomization chart:

|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|
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Randomization chart:

|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|
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|  |  |  |  |  |  |  |  |  |  |

Test No 826-1 Client Ecology & Environment Investigator \_\_\_\_\_

# DAILY RECORD SHEET

Day 0 (8/26/11) YK/GS

[illegible]

\*Water quality measurements to be taken.

Day 1 (8/27/11) GJI

[illegible]

\*Water quality measurements to be taken.

## HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 826-1 Client Ecology & Environment Investigator         

## DAILY RECORD SHEET

Day 2 ( 8 / 28 / 11 ) GSJ

| Beaker No. | Temp.* (deg.C) | DO (ppm) | Cond. (umhos/cm) | pH | Hardness (mg/L) | Alkalinity (mg/L) | NH3 (ppm) | Comments               |
|------------|----------------|----------|------------------|----|-----------------|-------------------|-----------|------------------------|
| 4          | 23.0           |          |                  |    |                 |                   |           | Each beaker fed 1.0 ml |
| 5          | 23.0           |          |                  |    |                 |                   |           | YTC suspension         |
| 11         | 22.8           |          |                  |    |                 |                   |           | Initials: <u>GSJ</u>   |
| 30         | 23.0           |          |                  |    |                 |                   |           |                        |
| 33         | 22.8           |          |                  |    |                 |                   |           |                        |
|            |                |          |                  |    |                 |                   |           |                        |
|            |                |          |                  |    |                 |                   |           |                        |
|            |                |          |                  |    |                 |                   |           |                        |
|            |                |          |                  |    |                 |                   |           | Water changed in all   |
|            |                |          |                  |    |                 |                   |           | beakers.               |
|            |                |          |                  |    |                 |                   |           | Time: <u>0555</u>      |
|            |                |          |                  |    |                 |                   |           | Initials: <u>GSJ</u>   |
|            |                |          |                  |    |                 |                   |           |                        |
|            |                |          |                  |    |                 |                   |           |                        |
|            |                |          |                  |    |                 |                   |           | Water changed in all   |
|            |                |          |                  |    |                 |                   |           | beakers.               |
|            |                |          |                  |    |                 |                   |           | Time: <u>1700</u>      |
|            |                |          |                  |    |                 |                   |           | Initials: <u>YK</u>    |

\*Water quality measurements to be taken.

Day 3 ( 8 / 29 / 11 ) GSJ

| Beaker No. | Temp.* (deg.C) | DO* (ppm) | Cond. (umhos/cm) | pH* | Hardness (mg/L) | Alkalinity (mg/L) | NH3 (ppm) | Comments               |
|------------|----------------|-----------|------------------|-----|-----------------|-------------------|-----------|------------------------|
| 4          | 22.8           | 7.5       |                  | 7.1 |                 |                   |           | Each beaker fed 1.0 ml |
| 5          | 22.9           | 7.3       |                  | 7.1 |                 |                   |           | YTC suspension         |
| 11         | 22.7           | 7.6       |                  | 7.2 |                 |                   |           | Initials: <u>GSJ</u>   |
| 30         | 22.8           | 7.2       |                  | 7.0 |                 |                   |           |                        |
| 33         | 22.7           | 7.2       |                  | 6.9 |                 |                   |           |                        |
|            |                |           |                  |     |                 |                   |           |                        |
|            |                |           |                  |     |                 |                   |           |                        |
|            |                |           |                  |     |                 |                   |           |                        |
|            |                |           |                  |     |                 |                   |           | Water changed in all   |
|            |                |           |                  |     |                 |                   |           | beakers.               |
|            |                |           |                  |     |                 |                   |           | Time: <u>0550</u>      |
|            |                |           |                  |     |                 |                   |           | Initials: <u>GSJ</u>   |
|            |                |           |                  |     |                 |                   |           |                        |
|            |                |           |                  |     |                 |                   |           |                        |
|            |                |           |                  |     |                 |                   |           | Water changed in all   |
|            |                |           |                  |     |                 |                   |           | beakers.               |
|            |                |           |                  |     |                 |                   |           | Time: <u>1645</u>      |
|            |                |           |                  |     |                 |                   |           | Initials: <u>YK</u>    |

\*Water quality measurements to be taken.

## HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 826-1 Client Ecology & Environment Investigator         

## DAILY RECORD SHEET

Day 4 (9/30/11) BSJ

| Beaker No. | Temp.* (deg.C) | DO (ppm) | Cond. (umhos/cm) | pH | Hardness (mg/L) | Alkalinity (mg/L) | NH3 (ppm) | Comments               |
|------------|----------------|----------|------------------|----|-----------------|-------------------|-----------|------------------------|
| 4          | 23.1           |          |                  |    |                 |                   |           | Each beaker fed 1.0 ml |
| 5          | 23.2           |          |                  |    |                 |                   |           | YTC suspension         |
| 11         | 23.0           |          |                  |    |                 |                   |           | Initials: <u>BSJ</u>   |
| 30         | 23.1           |          |                  |    |                 |                   |           |                        |
| 33         | 22.9           |          |                  |    |                 |                   |           |                        |
|            |                |          |                  |    |                 |                   |           |                        |
|            |                |          |                  |    |                 |                   |           |                        |
|            |                |          |                  |    |                 |                   |           |                        |
|            |                |          |                  |    |                 |                   |           | Water changed in all   |
|            |                |          |                  |    |                 |                   |           | beakers.               |
|            |                |          |                  |    |                 |                   |           | Time: <u>0555</u>      |
|            |                |          |                  |    |                 |                   |           | Initials: <u>BSJ</u>   |
|            |                |          |                  |    |                 |                   |           |                        |
|            |                |          |                  |    |                 |                   |           |                        |
|            |                |          |                  |    |                 |                   |           | Water changed in all   |
|            |                |          |                  |    |                 |                   |           | beakers.               |
|            |                |          |                  |    |                 |                   |           | Time: <u>1715</u>      |
|            |                |          |                  |    |                 |                   |           | Initials: <u>UPJ</u>   |

\*Water quality measurements to be taken.

Day 5 (10/31/11) BSJ

| Beaker No. | Temp.* (deg.C) | DO* (ppm) | Cond.* (umhos/cm) | pH* | Hardness (mg/L) | Alkalinity (mg/L) | NH3 (ppm) | Comments               |
|------------|----------------|-----------|-------------------|-----|-----------------|-------------------|-----------|------------------------|
| 4          | 22.6           | 6.2       | 146               | 6.7 |                 |                   |           | Each beaker fed 1.0 ml |
| 5          | 22.8           | 6.4       | 151               | 6.7 |                 |                   |           | YTC suspension         |
| 11         | 22.4           | 6.4       | 149               | 7.0 |                 |                   |           | Initials: <u>BSJ</u>   |
| 30         | 22.7           | 6.1       | 156               | 6.8 |                 |                   |           |                        |
| 33         | 22.4           | 6.0       | 150               | 6.8 |                 |                   |           |                        |
|            |                |           |                   |     |                 |                   |           |                        |
|            |                |           |                   |     |                 |                   |           |                        |
|            |                |           |                   |     |                 |                   |           |                        |
|            |                |           |                   |     |                 |                   |           | Water changed in all   |
|            |                |           |                   |     |                 |                   |           | beakers.               |
|            |                |           |                   |     |                 |                   |           | Time: <u>0540</u>      |
|            |                |           |                   |     |                 |                   |           | Initials: <u>BSJ</u>   |
|            |                |           |                   |     |                 |                   |           |                        |
|            |                |           |                   |     |                 |                   |           |                        |
|            |                |           |                   |     |                 |                   |           | Water changed in all   |
|            |                |           |                   |     |                 |                   |           | beakers.               |
|            |                |           |                   |     |                 |                   |           | Time: <u>1830</u>      |
|            |                |           |                   |     |                 |                   |           | Initials: <u>BSJ</u>   |

\*Water quality measurements to be taken.



## HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No 826-1 Client \_\_\_\_\_ Ecology & Environment \_\_\_\_\_ Investigator \_\_\_\_\_

## DAILY RECORD SHEET

Day 6 (9 / 1 / 11) UP

| Beaker No. | Temp.* (deg.C) | DO (ppm) | Cond. (umhos/cm) | pH | Hardness (mg/L) | Alkalinity (mg/L) | NH3 (ppm) | Comments                |
|------------|----------------|----------|------------------|----|-----------------|-------------------|-----------|-------------------------|
| 4          | 22.0           |          |                  |    |                 |                   |           | Each beaker fed 1.0 ml  |
| 5          | 22.2           |          |                  |    |                 |                   |           | YTC suspension          |
| 11         | 22.0           |          |                  |    |                 |                   |           | Initials: <u>631</u>    |
| 30         | 22.1           |          |                  |    |                 |                   |           |                         |
| 33         | 22.0           |          |                  |    |                 |                   |           |                         |
|            |                |          |                  |    |                 |                   |           |                         |
|            |                |          |                  |    |                 |                   |           |                         |
|            |                |          |                  |    |                 |                   |           |                         |
|            |                |          |                  |    |                 |                   |           | Water changed in all    |
|            |                |          |                  |    |                 |                   |           | beakers.                |
|            |                |          |                  |    |                 |                   |           | Time: <u>0545</u>       |
|            |                |          |                  |    |                 |                   |           | Initials: <u>631</u>    |
|            |                |          |                  |    |                 |                   |           |                         |
|            |                |          |                  |    |                 |                   |           |                         |
|            |                |          |                  |    |                 |                   |           | Water changed in all    |
|            |                |          |                  |    |                 |                   |           | beakers. <u>0841-11</u> |
|            |                |          |                  |    |                 |                   |           | Time: <u>01345</u>      |
|            |                |          |                  |    |                 |                   |           | Initials: <u>631</u>    |

\*Water quality measurements to be taken.

Day 7 (9 / 2 / 11) UP

| Beaker No. | Temp.* (deg.C) | DO* (ppm) | Cond. (umhos/cm) | pH* | Hardness (mg/L) | Alkalinity (mg/L) | NH3 (ppm) | Comments               |
|------------|----------------|-----------|------------------|-----|-----------------|-------------------|-----------|------------------------|
| 4          | 22.3           | 7.5       |                  | 6.6 |                 |                   |           | Each beaker fed 1.0 ml |
| 5          | 22.5           | 7.6       |                  | 6.7 |                 |                   |           | YTC suspension         |
| 11         | 22.1           | 7.5       |                  | 6.8 |                 |                   |           | Initials: <u>631</u>   |
| 30         | 22.3           | 7.2       |                  | 6.8 |                 |                   |           |                        |
| 33         | 22.0           | 7.1       |                  | 6.7 |                 |                   |           |                        |
|            |                |           |                  |     |                 |                   |           |                        |
|            |                |           |                  |     |                 |                   |           |                        |
|            |                |           |                  |     |                 |                   |           |                        |
|            |                |           |                  |     |                 |                   |           | Water changed in all   |
|            |                |           |                  |     |                 |                   |           | beakers.               |
|            |                |           |                  |     |                 |                   |           | Time: <u>0545</u>      |
|            |                |           |                  |     |                 |                   |           | Initials: <u>631</u>   |
|            |                |           |                  |     |                 |                   |           |                        |
|            |                |           |                  |     |                 |                   |           |                        |
|            |                |           |                  |     |                 |                   |           | Water changed in all   |
|            |                |           |                  |     |                 |                   |           | beakers.               |
|            |                |           |                  |     |                 |                   |           | Time: <u>1615</u>      |
|            |                |           |                  |     |                 |                   |           | Initials: <u>Y</u>     |

\*Water quality measurements to be taken.

Test No 826-1 Client Ecology & Environment Investigator \_\_\_\_\_

## DAILY RECORD SHEET

Day 8 (9/3/11) 

[illegible]

\*Water quality measurements to be taken.

Day 9 (9 / 4 / 11) 651

[illegible]

\*Water quality measurements to be taken.



Test No. 826-1 Client Ecology & Environment Investigator \_\_\_\_\_

## DAILY RECORD SHEET

Day 12 (9 / 7 / 11) Yr

[illegible]

\*Water quality measurements to be taken.

Day 13 (9 / 8 / 11) ✓

[illegible]

\*Water quality measurements to be taken.

Test No 826-1 Client Ecology & Environment Investigator \_\_\_\_\_

### DAILY RECORD SHEET

Day 14 ( 9 / 9 / 11 ) JS

[illegible]

\*Water quality measurements to be taken.

Day 15 (9 / 10 / 11) 651

[illegible]

\*Water quality measurements to be taken.

Test No 826-1 Client Ecology & Environment Investigator \_\_\_\_\_

## DAILY RECORD SHEET

Day 16 (9/11/11) 63

| Beaker No. | Temp.*<br>(deg.C) | DO<br>(ppm) | Cond.<br>(umhos/cm) | pH | Hardness<br>(mg/L) | Alkalinity<br>(mg/L) | NH3<br>(ppm) | Comments  |
|------------|-------------------|-------------|---------------------|----|--------------------|----------------------|--------------|---|
| 4          | 23-3              |             |                     |    |                    |                      |              | Each beaker fed 1.0 ml YTC suspension<br>Initials: <i>[Signature]</i> |
| 5          | 23-6              |             |                     |    |                    |                      |              |   |
| 11         | 23-0              |             |                     |    |                    |                      |              |   |
| 30         | 23-4              |             |                     |    |                    |                      |              |   |
| 33         | 23-4              |             |                     |    |                    |                      |              |   |
|            |                   |             |                     |    |                    |                      |              |   |
|            |                   |             |                     |    |                    |                      |              |   |
|            |                   |             |                     |    |                    |                      |              |   |
|            |                   |             |                     |    |                    |                      |              |   |
|            |                   |             |                     |    |                    |                      |              |   |
|            |                   |             |                     |    |                    |                      |              | Water changed in all beakers.   |
|            |                   |             |                     |    |                    |                      |              | Time: 0640  |
|            |                   |             |                     |    |                    |                      |              | Initials: <i>[Signature]</i>  |
|            |                   |             |                     |    |                    |                      |              |   |
|            |                   |             |                     |    |                    |                      |              |   |
|            |                   |             |                     |    |                    |                      |              |   |
|            |                   |             |                     |    |                    |                      |              | Water changed in all beakers.   |
|            |                   |             |                     |    |                    |                      |              | Time: 1730  |
|            |                   |             |                     |    |                    |                      |              | Initials: <i>[Signature]</i>  |

\*Water quality measurements to be taken.

Day 17 (9 / 12 / 11) *YF*

[illegible]

\*Water quality measurements to be taken.

Test No 826-1 Client Ecology & Environment Investigator \_\_\_\_\_

## DAILY RECORD SHEET

Day 18 (9/13/11) yr

| Beaker No. | Temp.*<br>(deg.C) | DO<br>(ppm) | Cond.<br>(umhos/cm) | pH | Hardness<br>(mg/L) | Alkalinity<br>(mg/L) | NH3<br>(ppm) | Comments                     |
|------------|-------------------|-------------|---------------------|----|--------------------|----------------------|--------------|------------------------------|
| 4          | 23.3              |             |                     |    |                    |                      |              | Each beaker fed 1.0 ml       |
| 5          | 23.5              |             |                     |    |                    |                      |              | YTC suspension               |
| 11         | 23.4              |             |                     |    |                    |                      |              | Initials: <i>[Signature]</i> |
| 30         | 23.5              |             |                     |    |                    |                      |              |                              |
| 33         | 23.6              |             |                     |    |                    |                      |              |                              |
|            |                   |             |                     |    |                    |                      |              |                              |
|            |                   |             |                     |    |                    |                      |              |                              |
|            |                   |             |                     |    |                    |                      |              |                              |
|            |                   |             |                     |    |                    |                      |              |                              |
|            |                   |             |                     |    |                    |                      |              | Water changed in all         |
|            |                   |             |                     |    |                    |                      |              | beakers.                     |
|            |                   |             |                     |    |                    |                      |              | Time: 0545                   |
|            |                   |             |                     |    |                    |                      |              | Initials: <i>[Signature]</i> |
|            |                   |             |                     |    |                    |                      |              |                              |
|            |                   |             |                     |    |                    |                      |              |                              |
|            |                   |             |                     |    |                    |                      |              | Water changed in all         |
|            |                   |             |                     |    |                    |                      |              | beakers.                     |
|            |                   |             |                     |    |                    |                      |              | Time: 1640                   |
|            |                   |             |                     |    |                    |                      |              | Initials: <i>[Signature]</i> |

\*Water quality measurements to be taken.

Day 19 (9/14/11) GA BH

[illegible]

\*Water quality measurements to be taken.

Test No 826-1 Client Ecology & Environment Investigator \_\_\_\_\_

## DAILY RECORD SHEET

Day 20 ( 9/15/11 ) y-j/pf

[illegible]

\*Water quality measurements to be taken.

Day 21 ( 9 / 10 / 10 ) BH


[illegible]

\*Water quality measurements to be taken.



|         |       |        |                       |              |
|---------|-------|--------|-----------------------|--------------|
| Test No | 826-1 | Client | Ecology & Environment | Investigator |
|---------|-------|--------|-----------------------|--------------|

### DAILY RECORD SHEET

Day 22 (9/17/11) 

[illegible]

\*Water quality measurements to be taken.

Day 23 (911811) 1/2

[illegible]

\*Water quality measurements to be taken.

Test No 826-1 Client Ecology & Environment Investigator

# DAILY RECORD SHEET

Day 24 (91911)GB/BH

[illegible]

\*Water quality measurements to be taken.

Day 25 (9/20/10) YN

[illegible]

\*Water quality measurements to be taken.

|         |       |        |                       |              |
|---------|-------|--------|-----------------------|--------------|
| Test No | 826-1 | Client | Ecology & Environment | Investigator |
|---------|-------|--------|-----------------------|--------------|

### DAILY RECORD SHEET

Day 26 ( 9/21/11) yr / BH

[illegible]

\*Water quality measurements to be taken.

Day 27 ( 9/22/11 ) ✓

[illegible]

\*Water quality measurements to be taken.

|         |       |        |                       |              |
|---------|-------|--------|-----------------------|--------------|
| Test No | 826-1 | Client | Ecology & Environment | Investigator |
|---------|-------|--------|-----------------------|--------------|

## DAILY RECORD SHEET

Day 28 (9/23/11) Yr/UPF

[illegible]

\*Water quality measurements to be taken.

Day \_\_\_\_ (   /   /   )

[illegible]

\*Water quality measurements to be taken.

Test No. 826-1 Client Ecology & Environment Investigator \_\_\_\_\_

DAY 28 TEST TERMINATION SHEET

| Beaker No. | Number of survivors | Initials |
|------------|---------------------|----------|
| 1          | 8                   | GB       |
| 2          | 9                   | GB       |
| 3          | 9                   | GB       |
| 4          | 9                   | GB       |
| 5          | 9                   | YK       |
| 6          | 10                  | GB       |
| 7          | 10                  | GB       |
| 8          | 10                  | YK       |
| 9          | 7                   | YK       |
| 10         | 10                  | GB       |
| 11         | 10                  | GB       |
| 12         | 10                  | GB       |
| 13         | 7                   | GB       |
| 14         | 10                  | YK       |
| 15         | 10                  | YK       |
| 16         | 9                   | GB       |
| 17         | 10                  | GB       |
| 18         | 9                   | YK       |
| 19         | 10                  | YK       |
| 20         | 10                  | GB       |
| 21         | 10                  | GB       |
| 22         | 9                   | GB       |
| 23         | 9                   | GB       |
| 24         | 10                  | YK       |
| 25         | 10                  | YK       |
| 26         | 10                  | GB       |
| 27         | 10                  | GB       |
| 28         | 10                  | GB       |
| 29         | 9                   | GB       |
| 30         | 10                  | YK       |
| 31         | 8                   | YK       |
| 32         | 10                  | GB       |
| 33         | 10                  | GB       |
| 34         | 9                   | GB       |
| 35         | 9                   | GB       |
| 36         | 9                   | YK       |
| 37         | 9                   | YK       |
| 38         | 9                   | GB       |
| 39         | 10                  | GB       |
| 40         | 10                  | GB       |
| 41         |                     |          |
| 42         |                     |          |
| 43         |                     |          |
| 44         |                     |          |
| 45         |                     |          |

| Beaker No. | Number of survivors | Initials |
|------------|---------------------|----------|
| 46         |                     |          |
| 47         |                     |          |
| 48         |                     |          |
| 49         |                     |          |
| 50         |                     |          |
| 51         |                     |          |
| 52         |                     |          |
| 53         |                     |          |
| 54         |                     |          |
| 55         |                     |          |
| 56         |                     |          |
| 57         |                     |          |
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| 65         |                     |          |
| 66         |                     |          |
| 67         |                     |          |
| 68         |                     |          |
| 69         |                     |          |
| 70         |                     |          |
| 71         |                     |          |
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| 73         |                     |          |
| 74         |                     |          |
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| 76         |                     |          |
| 77         |                     |          |
| 78         |                     |          |
| 79         |                     |          |
| 80         |                     |          |
| 81         |                     |          |
| 82         |                     |          |
| 83         |                     |          |
| 84         |                     |          |
| 85         |                     |          |
| 86         |                     |          |
| 87         |                     |          |
| 88         |                     |          |
| 89         |                     |          |
| 90         |                     |          |

## HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 826-1 Client Ecology & Environment Investigator 

## ZERO-TIME WEIGHING DATA SHEET

Tare: Date 8-24-11 Oven temp (C.) 62 Drying time (hr.) 24 Initials GSJ  
Standard Weights: 10 mg: 10.009 100mg: 100.017Final: Date 8-28-11 Oven temp (C.) 63 Drying time (hr.) 24 Initials GSJ  
Standard Weights: 10 mg: 10.007 100mg: 100.017Equip. used: Oven: BLUE M #1 Balance: SARTORIUS M3P

(Dry overnight at 60-90 degrees C)

| Pan # | Tare wt. (mg) | Total wt. (mg) | #weighed | Comments |
|-------|---------------|----------------|----------|----------|
| 1     | 37.323        | 37.947         | 10       |          |
| 2     | 37.386        | 38.138         | 10       |          |
| 3     | 34.710        | 35.401         | 10       |          |
| 4     | 33.055        | 33.730         | 10       |          |
| 5     | 33.431        | 34.181         | 10       |          |

## HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 826-1 Client Ecology & Environment Investigator                     

## WEIGHING DATA SHEET

Tare: Date 8-29-11 Oven temp (C.) 63 Drying time (hr.) 24 Initials GJL  
 Standard Weights: 10 mg: 10.007 100mg: 100.017

Final #1: Date 9-26-11 Oven temp (C.) 65 Drying time (hr.) 24 Initials UP  
 Standard Weights: 10 mg: 10.007 100mg: 100.015

Final #2: Date 9-27-11 Oven temp (C.) 58 Drying time (hr.) 24 Initials JRF  
 Standard Weights: 10 mg: 10.005 100mg: 100.015

Equip. used: Oven BLUE M #1 Balance SARTORUS M3P

(Dry overnight at 60-90 degrees C)

| Bkr. # | Pan # | Tare wt. (mg) | Total wt. (mg)           |        | no. weighed | put into pans-initials | Comments |
|--------|-------|---------------|--------------------------|--------|-------------|------------------------|----------|
|        |       |               | 1                        | 2      |             |                        |          |
| 1      | 1     | 35.381        | 41.580                   | 41.492 | 8           | UP                     |          |
| 2      | 2     | 35.832        | 40.103                   | 40.050 | 9           | UP                     |          |
| 3      | 3     | 35.854        | 39.902                   | 39.850 | 9           | UP                     |          |
| 4      | 4     | 35.551        | 39.104                   | 39.064 | 9           | UP                     |          |
| 5      | 5     | 33.871        | 38.127                   | 38.076 | 9           | UP                     |          |
| 6      | 6     | 36.242        | 40.701                   | 40.658 | 10          | UP                     |          |
| 7      | 7     | 36.373        | 40.967                   | 40.924 | 10          | UP                     |          |
| 8      | 8     | 34.983        | 40.524                   | 40.484 | 10          | UP                     |          |
| 9      | 9     | 33.684        | 37.679                   | 37.654 | 7           | UP                     |          |
| 10     | 10    | 33.932        | 38.586                   | 38.569 | 10          | UP                     |          |
| 11     | 11    | 32.911        | 36.106                   | 36.109 | 10          | UP                     |          |
| 12     | 12    | 35.716        | 39.258                   | 39.268 | 10          | UP                     |          |
| 13     | 13    | 32.849        | 35.560                   | 35.564 | 7           | UP                     |          |
| 14     | 14    | 34.374        | 39.164                   | 39.156 | 10          | UP                     |          |
| 15     | 15    | 34.874        | 37.543                   | 37.549 | 10          | UP                     |          |
| 16     | 16    | 35.338        | 38.988                   | 38.990 | 9           | UP                     |          |
| 17     | 17    | 35.637        | 40.845                   | 40.847 | 10          | UP                     |          |
| 18     | 18    | 33.523        | 36.000                   | 36.015 | 9           | UP                     |          |
| 19     | 19    | 35.874        | 39.633                   | 39.640 | 10          | UP                     |          |
| 20     | 20    | 34.395        | <del>36.333</del> 37.266 | 37.266 | 10          | UP                     |          |
| 21     | 21    | 32.832        | <del>37.397</del> 36.432 | 36.432 | 10          | UP                     |          |
| 22     | 22    | 34.775        | 37.657                   | 37.699 | 9           | UP                     |          |
| 23     | 23    | 35.091        | 38.846                   | 38.884 | 9           | UP                     |          |
| 24     | 24    | 32.858        | 38.551                   | 38.597 | 10          | UP                     |          |
| 25     | 25    | 35.691        | 40.948                   | 40.988 | 10          | UP                     |          |
| 26     | 26    | 32.448        | 36.016                   | 36.052 | 10          | UP                     |          |
| 27     | 27    | 35.169        | 39.569                   | 39.609 | 10          | UP                     |          |
| 28     | 28    | 36.194        | 40.909                   | 40.957 | 10          | UP                     |          |
| 29     | 29    | 35.976        | 41.333                   | 41.371 | 9           | UP                     |          |
| 30     | 30    | 34.610        | 39.676                   | 39.733 | 10          | UP                     |          |
| 31     | 31    | 33.858        | 36.796                   | 36.821 | 8           | UP                     |          |
| 32     | 32    | 36.179        | 41.411                   | 41.454 | 10          | UP                     |          |
| 33     | 33    | 34.109        | 39.012                   | 39.045 | 10          | UP                     |          |

## HYALELLA AZTECA 28-DAY SOLID PHASE SEDIMENT TEST

Test No. 826-1 Client Ecology & Environment Investigator 

## WEIGHING DATA SHEET

See page 22 for information on drying times and temperatures, standard weights, etc.

| Bkr.<br># | Pan<br># | Tare wt.<br>(mg) | Total wt. (mg) |        | no.<br>weighed | put into<br>pans-initials | Comments |
|-----------|----------|------------------|----------------|--------|----------------|---------------------------|----------|
|           |          |                  | 1              | 2      |                |                           |          |
| 34        | 34       | 33.749           | 36.933         | 36.951 | 9              | UPS                       |          |
| 35        | 35       | 33.882           | 39.572         | 39.612 | 9              | UPS                       |          |
| 36        | 36       | 35.645           | 40.595         | 40.626 | 9              | UPS                       |          |
| 37        | 37       | 33.745           | 37.641         | 37.655 | 9              | UPS                       |          |
| 38        | 38       | 36.947           | 40.123         | 40.135 | 9              | UPS                       |          |
| 39        | 39       | 34.184           | 38.664         | 38.688 | 10             | UPS                       |          |
| 40        | 40       | 33.317           | 38.191         | 38.216 | 10             | UPS                       |          |
| 41        | 41       |                  |                |        |                |                           |          |
| 42        | 42       |                  |                |        |                |                           |          |
| 43        | 43       |                  |                |        |                |                           |          |
| 44        | 44       |                  |                |        |                |                           |          |
| 45        | 45       |                  |                |        |                |                           |          |
| 46        | 46       |                  |                |        |                |                           |          |
| 47        | 47       |                  |                |        |                |                           |          |
| 48        | 48       |                  |                |        |                |                           |          |
| 49        | 49       |                  |                |        |                |                           |          |
| 50        | 50       |                  |                |        |                |                           |          |
| 51        | 51       |                  |                |        |                |                           |          |
| 52        | 52       |                  |                |        |                |                           |          |
| 53        | 53       |                  |                |        |                |                           |          |
| 54        | 54       |                  |                |        |                |                           |          |
| 55        | 55       |                  |                |        |                |                           |          |
| 56        | 56       |                  |                |        |                |                           |          |
| 57        | 57       |                  |                |        |                |                           |          |
| 58        | 58       |                  |                |        |                |                           |          |
| 59        | 59       |                  |                |        |                |                           |          |
| 60        | 60       |                  |                |        |                |                           |          |
| 61        | 61       |                  |                |        |                |                           |          |
| 62        | 62       |                  |                |        |                |                           |          |
| 63        | 63       |                  |                |        |                |                           |          |
| 64        | 64       |                  |                |        |                |                           |          |
| 65        | 65       |                  |                |        |                |                           |          |
| 66        | 66       |                  |                |        |                |                           |          |
| 67        | 67       |                  |                |        |                |                           |          |
| 68        | 68       |                  |                |        |                |                           |          |
| 69        | 69       |                  |                |        |                |                           |          |
| 70        | 70       |                  |                |        |                |                           |          |
| 71        | 71       |                  |                |        |                |                           |          |
| 72        | 72       |                  |                |        |                |                           |          |
| 73        | 73       |                  |                |        |                |                           |          |
| 74        | 74       |                  |                |        |                |                           |          |
| 75        | 75       |                  |                |        |                |                           |          |
| 76        | 76       |                  |                |        |                |                           |          |



### TAP WATER RECORD

(Dechlorinated Newport, OR city water)

[illegible]

REC'D

8-24-11 CJ

# Chesapeake Cultures

P.O. Box 507 Hayes, VA 23072 (804)693-4046 (804)694-4704 fax

www.c-cultures.com

growfish@c-cultures.com

## NAS Shipment Information

Species Hyalilla azteca

Date 8/23/11

Age/Size 4-5 d; 1.5 mm

P.O. No. verbal

Quantity 620+

Invoice No. 7312

Temperature 24°C Salinity — pH 7.93

Notes Thanks!

RECEIVED 8-24-11

-651

Biologist 

\*Please inspect shipment and report any problem immediately \*

## **TEST DATA ANALYSIS RECORDS**

### Endpoints Data Entry and Calculations File

| Endpoints Data Entry and Calculations File  |     |       |          |      |           |      |       |       |              |          |             |          |         |       |      |       |       |    |
|---|-----|-------|----------|------|-----------|------|-------|-------|--------------|----------|-------------|----------|---------|-------|------|-------|-------|----|
| TARE WT=ashed weight of pen used for that replicate at test termination (mg), or<br>dry weight of pen if ash-free dry weight is not an endpoint |     |       |          |      |           |      |       |       |              |          |             |          |         |       |      |       |       |    |
| WT COUNT= number of test organisms weighed at test end  |     |       |          |      |           |      |       |       |              |          |             |          |         |       |      |       |       |    |
| DRY WT= TARE WT + dry weight of test organisms recovered at test termination (mg)   |     |       |          |      |           |      |       |       |              |          |             |          |         |       |      |       |       |    |
| TWT=total biomass=DRY WT-TARE WT  |     |       |          |      |           |      |       |       |              |          |             |          |         |       |      |       |       |    |
| WT=average individual biomass=TWT/WT COUNT  |     |       |          |      |           |      |       |       |              |          |             |          |         |       |      |       |       |    |
| INDEX   | BKR | SMPL  | DESCRIP  | REPL | INIT SURV | MORT | PSURV | PMORT | TARE WT (mg) | WT COUNT | DRY WT (mg) | TWT (mg) | WT (mg) | SURV  | MORT | PSURV | PMORT | WT |
|   |     |       |          |      |           |      |       |       |              |          |             |          |         |       |      |       |       |    |
| 1   | 9   | 3820G | Cont'd   | 1    | 10        | 7    | 3     | 70.0  | 30.0         | 33.684   | 7           | 37.654   | 3.970   | 0.567 |      |       |       |    |
| 2   | 25  | 3820G | Cont'd   | 2    | 10        | 10   | 0     | 100.0 | 0.0          | 35.691   | 10          | 40.988   | 5.297   | 0.530 |      |       |       |    |
| 3   | 29  | 3820G | Cont'd   | 3    | 10        | 9    | 1     | 90.0  | 10.0         | 35.876   | 9           | 41.371   | 5.395   | 0.599 |      |       |       |    |
| 4   | 28  | 3820G | Cont'd   | 4    | 10        | 10   | 0     | 100.0 | 0.0          | 36.194   | 10          | 40.957   | 4.763   | 0.476 |      |       |       |    |
| 5   | 12  | 3820G | Cont'd   | 5    | 10        | 10   | 0     | 100.0 | 0.0          | 35.716   | 10          | 39.268   | 3.552   | 0.355 |      |       |       |    |
| 6   | 27  | 3820G | Cont'd   | 6    | 10        | 10   | 0     | 100.0 | 0.0          | 35.169   | 10          | 39.609   | 4.440   | 0.444 |      |       |       |    |
| 7   | 14  | 3820G | Cont'd   | 7    | 10        | 10   | 0     | 100.0 | 0.0          | 34.374   | 10          | 39.156   | 4.782   | 0.478 |      |       |       |    |
| 8   | 30  | 3820G | Cont'd   | 8    | 10        | 10   | 0     | 100.0 | 0.0          | 34.610   | 10          | 39.597   | 5.123   | 0.512 |      |       |       |    |
| 9   | 24  | 3838G | 11070001 | 1    | 10        | 10   | 0     | 100.0 | 0.0          | 32.858   | 10          | 38.597   | 5.739   | 0.574 |      |       |       |    |
| 10  | 17  | 3838G | 11070001 | 2    | 10        | 10   | 0     | 100.0 | 0.0          | 35.637   | 10          | 40.847   | 5.210   | 0.521 |      |       |       |    |
| 11  | 3   | 3838G | 11070001 | 3    | 10        | 9    | 1     | 90.0  | 10.0         | 35.854   | 9           | 39.650   | 3.996   | 0.444 |      |       |       |    |
| 12  | 36  | 3838G | 11070001 | 4    | 10        | 9    | 1     | 90.0  | 10.0         | 35.645   | 9           | 40.626   | 4.981   | 0.553 |      |       |       |    |
| 13  | 10  | 3838G | 11070001 | 5    | 10        | 10   | 0     | 100.0 | 0.0          | 33.932   | 10          | 38.569   | 4.837   | 0.464 |      |       |       |    |
| 14  | 7   | 3838G | 11070001 | 6    | 10        | 10   | 0     | 100.0 | 0.0          | 36.373   | 10          | 40.924   | 4.551   | 0.455 |      |       |       |    |
| 15  | 35  | 3838G | 11070001 | 7    | 10        | 9    | 1     | 90.0  | 10.0         | 33.882   | 9           | 39.612   | 5.730   | 0.637 |      |       |       |    |
| 16  | 33  | 3838G | 11070001 | 8    | 10        | 10   | 0     | 100.0 | 0.0          | 34.109   | 10          | 39.045   | 4.936   | 0.494 |      |       |       |    |
| 17  | 23  | 3839G | 11070002 | 1    | 10        | 9    | 1     | 90.0  | 10.0         | 35.091   | 9           | 38.884   | 3.793   | 0.421 |      |       |       |    |
| 18  | 18  | 3839G | 11070002 | 2    | 10        | 9    | 1     | 90.0  | 10.0         | 33.523   | 9           | 36.015   | 2.492   | 0.277 |      |       |       |    |
| 19  | 40  | 3839G | 11070002 | 3    | 10        | 10   | 0     | 100.0 | 0.0          | 33.317   | 10          | 38.216   | 4.899   | 0.490 |      |       |       |    |
| 20  | 39  | 3839G | 11070002 | 4    | 10        | 10   | 0     | 100.0 | 0.0          | 34.184   |             |          |         |       |      |       |       |    |

Project Name: P826-1 Hyalella 28-day; % Mortality

Sample: x1  
 Samp ID: 11070001  
 Alias: NAS# 3838G - X1  
 Replicates: 8  
 Mean: 3.75  
 SD: 5.175  
 Tr Mean: 6.913  
 Trans SD: 9.541

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 5  
 SD: 10.69  
 Tr Mean: 6.456  
 Trans SD: 12.589

| Shapiro-Wilk Results:  | Levene's Results:   | Test Results:   |
|--|---|---|
| Residual Mean: 0<br>Residual SD: 9.588<br>SS: 1746.606<br>K: 8<br>b: 34.128<br><br>Alpha Level: 0.05<br>Calculated Value: 0.6668<br>Critical Value: $\leq 0.887$<br><br>Normally Distributed: No<br><br>Override Option: Not Invoked | Test Residual Mean: 8.641<br>Test Residual SD: 2.385<br>Ref. Residual Mean: 9.684<br>Ref. Residual SD: 7.164<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 0.3904<br>Critical Value: $\geq 1.761$<br><br>Variances Homogeneous: Yes | Statistic: Mann-Whitney<br>Balanced Design: Yes<br>Transformation: rank-order<br><br>Experimental Hypothesis<br>Null: $x1 \leq x2$<br>Alternate: $x1 > x2$<br><br>Mann-Whitney N1: 8<br>Mann-Whitney N2: 8<br>Degrees of Freedom:<br>Experimental Alpha Level: 0.05<br>Calculated Value: 34.5<br>Critical Value: $\geq 49.0$<br>Accept Null Hypothesis: Yes<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Shapiro-Wilk Residuals |
|------------------|-----------|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|------------------------|
| 1                | 0         | 6                | 30             | 16                    | 6.913                   | 26.755                       | 0                  | -6.913                 |
| 2                | 0         | 6                | 0              | 6                     | 6.913                   | 6.456                        | 0                  | -6.913                 |
| 3                | 10        | 13.5             | 10             | 13.5                  | 11.522                  | 11.979                       | 0                  | -6.913                 |
| 4                | 10        | 13.5             | 0              | 6                     | 11.522                  | 6.456                        | 0                  | -6.913                 |
| 5                | 0         | 6                | 0              | 6                     | 6.913                   | 6.456                        | 0                  | -6.913                 |
| 6                | 0         | 6                | 0              | 6                     | 6.913                   | 6.456                        | 0                  | -6.456                 |
| 7                | 10        | 13.5             | 0              | 6                     | 11.522                  | 6.456                        | 0                  | -6.456                 |
| 8                | 0         | 6                | 0              | 6                     | 6.913                   | 6.456                        | 0                  | -6.456                 |
| 9                |           |                  |                |                       |                         |                              | 0                  | -6.456                 |
| 10               |           |                  |                |                       |                         |                              | 0                  | -6.456                 |
| 11               |           |                  |                |                       |                         |                              | 0                  | -6.456                 |
| 12               |           |                  |                |                       |                         |                              | 18.435             | 11.522                 |
| 13               |           |                  |                |                       |                         |                              | 18.435             | 11.522                 |
| 14               |           |                  |                |                       |                         |                              | 18.435             | 11.522                 |
| 15               |           |                  |                |                       |                         |                              | 18.435             | 11.979                 |
| 16               |           |                  |                |                       |                         |                              | 33.211             | 26.755                 |

THE % MORTALITY OF 11070001 WAS NOT SIGNIFICANTLY GREATER THAN THAT OF THE CONTROL AT  $\alpha = 0.05$ .  
 -601

Project Name: P826-1 Hyalella 28-day; % Mortality

Sample: x1  
 Samp ID: 11070002  
 Alias: NAS# 3839G - X1  
 Replicates: 8  
 Mean: 11.25  
 SD: 9.91  
 Tr Mean: 16.689  
 Trans SD: 11.587

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 5  
 SD: 10.69  
 Tr Mean: 6.456  
 Trans SD: 12.589

| Shapiro-Wilk Results:  | Levene's Results:   | Test Results:  |
|--|---|--|
| Residual Mean: 0<br>Residual SD: 10.385<br>SS: 2049.139<br>K: 8<br>b: 43.364<br><br>Alpha Level: 0.05<br>Calculated Value: 0.9177<br>Critical Value: $\leq 0.887$<br><br>Normally Distributed: Yes<br><br>Override Option: N/A | Test Residual Mean: 8.345<br>Test Residual SD: 7.394<br>Ref. Residual Mean: 9.684<br>Ref. Residual SD: 7.164<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 0.3678<br>Critical Value: $\geq 1.761$<br><br>Variances Homogeneous: Yes | Statistic: Student's t<br>Balanced Design: Yes<br>Transformation: ArcSin<br><br>Experimental Hypothesis<br>Null: $x1 \leq x2$<br>Alternate: $x1 > x2$<br><br>Degrees of Freedom: 14<br>Experimental Alpha Level: 0.05<br>Calculated Value: 1.6918<br>Critical Value: $\geq 1.761$<br>Accept Null Hypothesis: Yes<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Rankits | Shapiro-Wilk Residuals |
|------------------|-----------|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|---------|------------------------|
| 1                | 10        | 18.435           | 30             | 33.211                | 1.745                   | 26.755                       |                    |         | -16.689                |
| 2                | 10        | 18.435           | 0              | 0                     | 1.745                   | 6.456                        |                    |         | -16.689                |
| 3                | 0         | 0                | 10             | 18.435                | 16.689                  | 11.979                       |                    |         | -6.456                 |
| 4                | 0         | 0                | 0              | 0                     | 16.689                  | 6.456                        |                    |         | -6.456                 |
| 5                | 20        | 26.565           | 0              | 0                     | 9.876                   | 6.456                        |                    |         | -6.456                 |
| 6                | 30        | 33.211           | 0              | 0                     | 16.521                  | 6.456                        |                    |         | -6.456                 |
| 7                | 10        | 18.435           | 0              | 0                     | 1.745                   | 6.456                        |                    |         | -6.456                 |
| 8                | 10        | 18.435           | 0              | 0                     | 1.745                   | 6.456                        |                    |         | -6.456                 |
| 9                |           |                  |                |                       |                         |                              |                    |         | 1.745                  |
| 10               |           |                  |                |                       |                         |                              |                    |         | 1.745                  |
| 11               |           |                  |                |                       |                         |                              |                    |         | 1.745                  |
| 12               |           |                  |                |                       |                         |                              |                    |         | 1.745                  |
| 13               |           |                  |                |                       |                         |                              |                    |         | 9.876                  |
| 14               |           |                  |                |                       |                         |                              |                    |         | 11.979                 |
| 15               |           |                  |                |                       |                         |                              |                    |         | 16.521                 |
| 16               |           |                  |                |                       |                         |                              |                    |         | 26.755                 |

THE % MORTALITY OF 11070002 WAS NOT SIGNIFICANTLY GREATER THAN THAT OF THE CONTROL AT  $\alpha = 0.05$ .  
 -651

Project Name: P826-1 Hyalella 28-day; % Mortality

Sample: x1  
 Samp ID: 11070003  
 Alias: NAS# 3840G - X1  
 Replicates: 8  
 Mean: 6.25  
 SD: 7.44  
 Tr Mean: 10.234  
 Trans SD: 11.259

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 5  
 SD: 10.69  
 Tr Mean: 6.456  
 Trans SD: 12.589

| Shapiro-Wilk Results:  | Levene's Results:  | Test Results:   |
|--|--|---|
| Residual Mean: 0<br>Residual SD: 10.252<br>SS: 1996.8<br>K: 8<br>b: 40.21<br><br>Alpha Level: 0.05<br>Calculated Value: 0.8097<br>Critical Value: $\leq 0.887$<br><br>Normally Distributed: No<br><br>Override Option: Not Invoked | Test Residual Mean: 10.234<br>Test Residual SD: 2.661<br>Ref. Residual Mean: 9.684<br>Ref. Residual SD: 7.164<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 0.2036<br>Critical Value: $\geq 1.761$<br><br>Variances Homogeneous: Yes | Statistic: Mann-Whitney<br>Balanced Design: Yes<br>Transformation: rank-order<br><br>Experimental Hypothesis<br>Null: $x1 \leq x2$<br>Alternate: $x1 > x2$<br><br>Mann-Whitney N1: 8<br>Mann-Whitney N2: 8<br>Degrees of Freedom:<br>Experimental Alpha Level: 0.05<br>Calculated Value: 38.5<br>Critical Value: $\geq 49.0$<br>Accept Null Hypothesis: Yes<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data   | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Shapiro-Wilk Residuals |
|------------------|---|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|------------------------|
| 1                | 0   | 5.5              | 30             | 16                    | 10.234                  | 26.755                       | 0                  | -10.234                |
| 2                | 10  | 12.5             | 0              | 5.5                   | 8.201                   | 6.456                        | 0                  | -10.234                |
| 3                | 10  | 12.5             | 10             | 12.5                  | 8.201                   | 11.979                       | 0                  | -10.234                |
| 4                | 0   | 5.5              | 0              | 5.5                   | 10.234                  | 6.456                        | 0                  | -10.234                |
| 5                | 20  | 15               | 0              | 5.5                   | 16.331                  | 6.456                        | 0                  | -6.456                 |
| 6                | 0   | 5.5              | 0              | 5.5                   | 10.234                  | 6.456                        | 0                  | -6.456                 |
| 7                | 0   | 5.5              | 0              | 5.5                   | 10.234                  | 6.456                        | 0                  | -6.456                 |
| 8                | 10  | 12.5             | 0              | 5.5                   | 8.201                   | 6.456                        | 0                  | -6.456                 |
| 9                |   |                  |                |                       |                         |                              | 0                  | -6.456                 |
| 10               |   |                  |                |                       |                         |                              | 0                  | -6.456                 |
| 11               | THE % MORTALITY OF 11070001 WAS NOT<br>SIGNIFICANTLY GREATER THAN THAT OF<br>THE CONTROL AT $\alpha = 0.05$<br>-6J1 |                  |                |                       |                         |                              | 18.435             | 8.201                  |
| 12               |   |                  |                |                       |                         |                              | 18.435             | 8.201                  |
| 13               |   |                  |                |                       |                         |                              | 18.435             | 8.201                  |
| 14               |   |                  |                |                       |                         |                              | 18.435             | 11.979                 |
| 15               |   |                  |                |                       |                         |                              | 26.565             | 16.331                 |
| 16               |   |                  |                |                       |                         |                              | 33.211             | 26.755                 |

Project Name: P826-1 Hyalella 28-day; % Mortality

Sample: x1  
 Samp ID: 11070004  
 Alias: NAS# 3841G - X1  
 Replicates: 8  
 Mean: 3.75  
 SD: 5.175  
 Tr Mean: 6.913  
 Trans SD: 9.541

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 5  
 SD: 10.69  
 Tr Mean: 6.456  
 Trans SD: 12.589

| Shapiro-Wilk Results:  | Levene's Results:   | Test Results:   |
|--|---|---|
| Residual Mean: 0<br>Residual SD: 9.588<br>SS: 1746.606<br>K: 8<br>b: 34.128<br><br>Alpha Level: 0.05<br>Calculated Value: 0.6668<br>Critical Value: $\leq 0.887$<br><br>Normally Distributed: No<br><br>Override Option: Not Invoked | Test Residual Mean: 8.641<br>Test Residual SD: 2.385<br>Ref. Residual Mean: 9.684<br>Ref. Residual SD: 7.164<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 0.3904<br>Critical Value: $\geq 1.761$<br><br>Variances Homogeneous: Yes | Statistic: Mann-Whitney<br>Balanced Design: Yes<br>Transformation: rank-order<br><br>Experimental Hypothesis<br>Null: $x1 \leq x2$<br>Alternate: $x1 > x2$<br><br>Mann-Whitney N1: 8<br>Mann-Whitney N2: 8<br>Degrees of Freedom:<br>Experimental Alpha Level: 0.05<br>Calculated Value: 34.5<br>Critical Value: $\geq 49.0$<br>Accept Null Hypothesis: Yes<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Rankits | Shapiro-Wilk Residuals |
|------------------|-----------|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|---------|------------------------|
| 1                | 10        | 13.5             | 30             | 16                    | 11.522                  | 26.755                       | 0                  |         | -6.913                 |
| 2                | 10        | 13.5             | 0              | 6                     | 11.522                  | 6.456                        | 0                  |         | -6.913                 |
| 3                | 0         | 6                | 10             | 13.5                  | 6.913                   | 11.979                       | 0                  |         | -6.913                 |
| 4                | 10        | 13.5             | 0              | 6                     | 11.522                  | 6.456                        | 0                  |         | -6.913                 |
| 5                | 0         | 6                | 0              | 6                     | 6.913                   | 6.456                        | 0                  |         | -6.913                 |
| 6                | 0         | 6                | 0              | 6                     | 6.913                   | 6.456                        | 0                  |         | -6.456                 |
| 7                | 0         | 6                | 0              | 6                     | 6.913                   | 6.456                        | 0                  |         | -6.456                 |
| 8                | 0         | 6                | 0              | 6                     | 6.913                   | 6.456                        | 0                  |         | -6.456                 |
| 9                |           |                  |                |                       |                         |                              | 0                  |         | -6.456                 |
| 10               |           |                  |                |                       |                         |                              | 0                  |         | -6.456                 |
| 11               |           |                  |                |                       |                         |                              | 0                  |         | -6.456                 |
| 12               |           |                  |                |                       |                         |                              | 18.435             |         | 11.522                 |
| 13               |           |                  |                |                       |                         |                              | 18.435             |         | 11.522                 |
| 14               |           |                  |                |                       |                         |                              | 18.435             |         | 11.522                 |
| 15               |           |                  |                |                       |                         |                              | 18.435             |         | 11.979                 |
| 16               |           |                  |                |                       |                         |                              | 33.211             |         | 26.755                 |

THE % MORTALITY OF 11070001 WAS NOT SIGNIFICANTLY GREATER THAN THAT OF THE CONTROL AT  $\alpha = 0.05$   
 -632



Project Name: P826-1 Hyalella 28-day; Ind. dry wt.

Sample: x1  
 Samp ID: 11070001  
 Alias: NAS# 3838G - X1  
 Replicates: 8  
 Mean: 0.518  
 SD: 0.067  
 Tr Mean: 0.518  
 Trans SD: 0.067

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 0.495  
 SD: 0.076  
 Tr Mean: 0.495  
 Trans SD: 0.076

| Shapiro-Wilk Results:   | Levene's Results:   | Test Results:  |
|---|---|--|
| Residual Mean: 0<br>Residual SD: 0.061<br>SS: 0.072<br>K: 8<br>b: 0.266<br><br>Alpha Level: 0.05<br>Calculated Value: 0.9833<br>Critical Value: $\leq 0.887$<br><br>Normally Distributed: Yes<br><br>Override Option: N/A | Test Residual Mean: 0.054<br>Test Residual SD: 0.035<br>Ref. Residual Mean: 0.057<br>Ref. Residual SD: 0.045<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 0.1663<br>Critical Value: $\geq 1.761$<br><br>Variances Homogeneous: Yes | Statistic: Student's t<br>Balanced Design: Yes<br>Transformation: No Transformation<br><br>Experimental Hypothesis<br>Null: $x1 \geq x2$<br>Alternate: $x1 < x2$<br><br>Degrees of Freedom: 14<br>Experimental Alpha Level: 0.05<br>Calculated Value: -0.6317<br>Critical Value: $\geq 1.761$<br>Accept Null Hypothesis: Yes<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Rankits | Shapiro-Wilk Residuals |
|------------------|-----------|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|---------|------------------------|
| 1                | 0.574     | 0.574            | 0.567          | 0.567                 | 0.056                   | 0.072                        |                    |         | -0.14                  |
| 2                | 0.521     | 0.521            | 0.53           | 0.53                  | 0.003                   | 0.035                        |                    |         | -0.074                 |
| 3                | 0.444     | 0.444            | 0.599          | 0.599                 | 0.074                   | 0.104                        |                    |         | -0.063                 |
| 4                | 0.553     | 0.553            | 0.476          | 0.476                 | 0.035                   | 0.019                        |                    |         | -0.054                 |
| 5                | 0.464     | 0.464            | 0.355          | 0.355                 | 0.054                   | 0.14                         |                    |         | -0.051                 |
| 6                | 0.455     | 0.455            | 0.444          | 0.444                 | 0.063                   | 0.051                        |                    |         | -0.024                 |
| 7                | 0.637     | 0.637            | 0.478          | 0.478                 | 0.119                   | 0.017                        |                    |         | -0.019                 |
| 8                | 0.494     | 0.494            | 0.512          | 0.512                 | 0.024                   | 0.017                        |                    |         | -0.017                 |
| 9                |           |                  |                |                       |                         |                              |                    |         | 0.003                  |
| 10               |           |                  |                |                       |                         |                              |                    |         | 0.017                  |
| 11               |           |                  |                |                       |                         |                              |                    |         | 0.035                  |
| 12               |           |                  |                |                       |                         |                              |                    |         | 0.035                  |
| 13               |           |                  |                |                       |                         |                              |                    |         | 0.056                  |
| 14               |           |                  |                |                       |                         |                              |                    |         | 0.072                  |
| 15               |           |                  |                |                       |                         |                              |                    |         | 0.104                  |
| 16               |           |                  |                |                       |                         |                              |                    |         | 0.119                  |

THE MEAN INDIVIDUAL DRY WT OF 11070001  
 WAS NOT SIGNIFICANTLY LESS THAN THAT  
 OF THE CONTROL AT  $\alpha = 0.05$   
 -ESI

Project Name: P826-1 Hyaella 28-day; Ind. dry wt.

Sample: x1  
 Samp ID: 11070002  
 Alias: NAS# 3839G - X1  
 Replicates: 8  
 Mean: 0.399  
 SD: 0.062  
 Tr Mean: 0.399  
 Trans SD: 0.062

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 0.495  
 SD: 0.076  
 Tr Mean: 0.495  
 Trans SD: 0.076

| Shapiro-Wilk Results:   | Levene's Results:  | Test Results:  |
|---|--|--|
| Residual Mean: 0<br>Residual SD: 0.06<br>SS: 0.068<br>K: 8<br>b: 0.254<br><br>Alpha Level: 0.05<br>Calculated Value: 0.9504<br>Critical Value: $\leq 0.887$<br><br>Normally<br>Distributed: Yes<br><br>Override Option: N/A | Test Residual Mean: 0.043<br>Test Residual SD: 0.043<br>Ref. Residual Mean: 0.057<br>Ref. Residual SD: 0.045<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 0.6408<br>Critical Value: $\geq 1.761$<br><br>Variances<br>Homogeneous: Yes | Statistic: Student's t<br>Balanced Design: Yes<br>Transformation: No Transformation<br><br>Experimental Hypothesis<br>Null: $x1 \geq x2$<br>Alternate: $x1 < x2$<br><br>Degrees of Freedom: 14<br>Experimental Alpha Level: 0.05<br>Calculated Value: 2.7645<br>Critical Value: $\geq 1.761$<br>Accept Null Hypothesis: No<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Shapiro-Wilk Residuals |
|------------------|-----------|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|------------------------|
| 1                | 0.421     | 0.421            | 0.567          | 0.567                 | 0.022                   | 0.072                        |                    | -0.14                  |
| 2                | 0.277     | 0.277            | 0.53           | 0.53                  | 0.122                   | 0.035                        |                    | -0.122                 |
| 3                | 0.49      | 0.49             | 0.599          | 0.599                 | 0.091                   | 0.104                        |                    | -0.051                 |
| 4                | 0.45      | 0.45             | 0.476          | 0.476                 | 0.051                   | 0.019                        |                    | -0.029                 |
| 5                | 0.37      | 0.37             | 0.355          | 0.355                 | 0.029                   | 0.14                         |                    | -0.019                 |
| 6                | 0.388     | 0.388            | 0.444          | 0.444                 | 0.011                   | 0.051                        |                    | -0.017                 |
| 7                | 0.406     | 0.406            | 0.478          | 0.478                 | 0.007                   | 0.017                        |                    | -0.011                 |
| 8                | 0.39      | 0.39             | 0.512          | 0.512                 | 0.009                   | 0.017                        |                    | -0.009                 |
| 9                |           |                  |                |                       |                         |                              |                    | 0.007                  |
| 10               |           |                  |                |                       |                         |                              |                    | 0.017                  |
| 11               |           |                  |                |                       |                         |                              |                    | 0.022                  |
| 12               |           |                  |                |                       |                         |                              |                    | 0.035                  |
| 13               |           |                  |                |                       |                         |                              |                    | 0.051                  |
| 14               |           |                  |                |                       |                         |                              |                    | 0.072                  |
| 15               |           |                  |                |                       |                         |                              |                    | 0.091                  |
| 16               |           |                  |                |                       |                         |                              |                    | 0.104                  |

THE MEAN INDIVIDUAL DRY WT OF 11070002  
 WAS SIGNIFICANTLY LESS THAN THAT  
 OF THE CONTROL AT  $\alpha = 0.05$   
 -632

Project Name: P826-1 Hyalella 28-day; Ind. dry wt.

Sample: x1  
 Samp ID: 11070003  
 Alias: NAS# 3840G - X1  
 Replicates: 8  
 Mean: 0.504  
 SD: 0.118  
 Tr Mean: 0.504  
 Trans SD: 0.118

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 0.495  
 SD: 0.076  
 Tr Mean: 0.495  
 Trans SD: 0.076

| Shapiro-Wilk Results:   | Levene's Results:   | Test Results:  |
|---|---|--|
| Residual Mean: 0<br>Residual SD: 0.085<br>SS: 0.138<br>K: 8<br>b: 0.357<br><br>Alpha Level: 0.05<br>Calculated Value: 0.9209<br>Critical Value: $\leq 0.887$<br><br>Normally Distributed: Yes<br><br>Override Option: N/A | Test Residual Mean: 0.083<br>Test Residual SD: 0.079<br>Ref. Residual Mean: 0.057<br>Ref. Residual SD: 0.045<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 0.8014<br>Critical Value: $\geq 1.761$<br><br>Variances Homogeneous: Yes | Statistic: Student's t<br>Balanced Design: Yes<br>Transformation: No Transformation<br><br>Experimental Hypothesis<br>Null: $x_1 \geq x_2$<br>Alternate: $x_1 < x_2$<br><br>Degrees of Freedom: 14<br>Experimental Alpha Level: 0.05<br>Calculated Value: -0.1762<br>Critical Value: $\geq 1.761$<br>Accept Null Hypothesis: Yes<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Shapiro-Wilk Residuals |
|------------------|-----------|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|------------------------|
| 1                | 0.528     | 0.528            | 0.567          | 0.567                 | 0.024                   | 0.072                        |                    | -0.14                  |
| 2                | 0.469     | 0.469            | 0.53           | 0.53                  | 0.035                   | 0.035                        |                    | -0.127                 |
| 3                | 0.434     | 0.434            | 0.599          | 0.599                 | 0.07                    | 0.104                        |                    | -0.07                  |
| 4                | 0.377     | 0.377            | 0.476          | 0.476                 | 0.127                   | 0.019                        |                    | -0.062                 |
| 5                | 0.764     | 0.764            | 0.355          | 0.355                 | 0.26                    | 0.14                         |                    | -0.051                 |
| 6                | 0.442     | 0.442            | 0.444          | 0.444                 | 0.062                   | 0.051                        |                    | -0.037                 |
| 7                | 0.55      | 0.55             | 0.478          | 0.478                 | 0.046                   | 0.017                        |                    | -0.035                 |
| 8                | 0.467     | 0.467            | 0.512          | 0.512                 | 0.037                   | 0.017                        |                    | -0.019                 |
| 9                |           |                  |                |                       |                         |                              |                    | -0.017                 |
| 10               |           |                  |                |                       |                         |                              |                    | 0.017                  |
| 11               |           |                  |                |                       |                         |                              |                    | 0.024                  |
| 12               |           |                  |                |                       |                         |                              |                    | 0.035                  |
| 13               |           |                  |                |                       |                         |                              |                    | 0.046                  |
| 14               |           |                  |                |                       |                         |                              |                    | 0.072                  |
| 15               |           |                  |                |                       |                         |                              |                    | 0.104                  |
| 16               |           |                  |                |                       |                         |                              |                    | 0.26                   |

THE MEAN INDIVIDUAL DRY WT OF 11070003 WAS NOT SIGNIFICANTLY LESS THAN THAT OF THE CONTROL AT  $\alpha = 0.05$   
 -631

Project Name: PB26-1 Hyalella 28-day; ind. dry wt.

Sample: x1  
 Samp ID: 11070004  
 Alias: NAS# 3841G - X1  
 Replicates: 8  
 Mean: 0.329  
 SD: 0.036  
 Tr Mean: 0.329  
 Trans SD: 0.036

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 0.495  
 SD: 0.076  
 Tr Mean: 0.495  
 Trans SD: 0.076

| Shapiro-Wilk Results:  | Levene's Results:  | Test Results:  |
|--|--|--|
| Residual Mean: 0<br>Residual SD: 0.051<br>SS: 0.049<br>K: 8<br>b: 0.217<br><br>Alpha Level: 0.05<br>Calculated Value: 0.9567<br>Critical Value: $\leq 0.887$<br><br>Normally<br>Distributed: Yes<br><br>Override Option: N/A | Test Residual Mean: 0.029<br>Test Residual SD: 0.018<br>Ref. Residual Mean: 0.057<br>Ref. Residual SD: 0.045<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 1.6271<br>Critical Value: $\geq 1.761$<br><br>Variances<br>Homogeneous: Yes | Statistic: Student's t<br>Balanced Design: Yes<br>Transformation: No Transformation<br><br>Experimental Hypothesis<br>Null: $x1 \geq x2$<br>Alternate: $x1 < x2$<br><br>Degrees of Freedom: 14<br>Experimental Alpha Level: 0.05<br>Calculated Value: 5.6118<br>Critical Value: $\geq 1.761$<br>Accept Null Hypothesis: No<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data  | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Shapiro-Wilk Residuals |
|------------------|--|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|------------------------|
| 1                | 0.325  | 0.325            | 0.567          | 0.567                 | 0.004                   | 0.072                        |                    | -0.14                  |
| 2                | 0.354  | 0.354            | 0.53           | 0.53                  | 0.025                   | 0.035                        |                    | -0.061                 |
| 3                | 0.36   | 0.36             | 0.599          | 0.599                 | 0.031                   | 0.104                        |                    | -0.051                 |
| 4                | 0.356  | 0.356            | 0.476          | 0.476                 | 0.027                   | 0.019                        |                    | -0.042                 |
| 5                | 0.36   | 0.36             | 0.355          | 0.355                 | 0.031                   | 0.14                         |                    | -0.019                 |
| 6                | 0.287  | 0.287            | 0.444          | 0.444                 | 0.042                   | 0.051                        |                    | -0.017                 |
| 7                | 0.268  | 0.268            | 0.478          | 0.478                 | 0.061                   | 0.017                        |                    | -0.009                 |
| 8                | 0.32   | 0.32             | 0.512          | 0.512                 | 0.009                   | 0.017                        |                    | -0.004                 |
| 9                |  |                  |                |                       |                         |                              |                    | 0.017                  |
| 10               |  |                  |                |                       |                         |                              |                    | 0.025                  |
| 11               | THE MEAN INDIVIDUAL DRY WT OF 11070004 WAS SIGNIFICANTLY LESS THAN THAT OF THE CONTROL AT $\alpha = 0.05$<br>- 651 |                  |                |                       |                         |                              |                    | 0.027                  |
| 12               |  |                  |                |                       |                         |                              |                    | 0.031                  |
| 13               |  |                  |                |                       |                         |                              |                    | 0.031                  |
| 14               |  |                  |                |                       |                         |                              |                    | 0.035                  |
| 15               |  |                  |                |                       |                         |                              |                    | 0.072                  |
| 16               |  |                  |                |                       |                         |                              |                    | 0.104                  |

| Water Quality Data |       |          |      |     |                 |     |      |     |      |      |     |
|--------------------|-------|----------|------|-----|-----------------|-----|------|-----|------|------|-----|
| BKR                | NAS   | CLIENT   | REPL | DAY | Overlying water |     |      |     |      |      |     |
|                    |       |          |      |     | TEMP            | DO  | COND | pH  | NH3  | HARD | ALK |
| 4                  | 3839G | 11070002 | 8    | 0   | 23.5            | 8.4 | 145  | 7.2 | <0.1 | 43   | 30  |
| 5                  | 3840G | 11070003 | 8    | 0   | 23.7            | 8.3 | 143  | 7.1 | <0.1 | 43   | 30  |
| 11                 | 3841G | 11070004 | 8    | 0   | 23.4            | 8.2 | 147  | 7.1 | 0.1  | 43   | 30  |
| 30                 | 3820G | Control  | 8    | 0   | 23.7            | 7.2 | 156  | 7.0 | 0.2  | 34   | 30  |
| 33                 | 3838G | 11070001 | 8    | 0   | 23.4            | 7.6 | 142  | 6.9 | 0.1  | 43   | 30  |
| 4                  | 3839G | 11070002 | 8    | 1   | 23.0            |     |      |     |      |      |     |
| 5                  | 3840G | 11070003 | 8    | 1   | 23.1            |     |      |     |      |      |     |
| 11                 | 3841G | 11070004 | 8    | 1   | 22.9            |     |      |     |      |      |     |
| 30                 | 3820G | Control  | 8    | 1   | 23.0            |     |      |     |      |      |     |
| 33                 | 3838G | 11070001 | 8    | 1   | 22.9            |     |      |     |      |      |     |
| 4                  | 3839G | 11070002 | 8    | 2   | 23.0            |     |      |     |      |      |     |
| 5                  | 3840G | 11070003 | 8    | 2   | 23.0            |     |      |     |      |      |     |
| 11                 | 3841G | 11070004 | 8    | 2   | 22.8            |     |      |     |      |      |     |
| 30                 | 3820G | Control  | 8    | 2   | 23.0            |     |      |     |      |      |     |
| 33                 | 3838G | 11070001 | 8    | 2   | 22.8            |     |      |     |      |      |     |
| 4                  | 3839G | 11070002 | 8    | 3   | 22.8            | 7.5 |      | 7.1 |      |      |     |
| 5                  | 3840G | 11070003 | 8    | 3   | 22.9            | 7.3 |      | 7.1 |      |      |     |
| 11                 | 3841G | 11070004 | 8    | 3   | 22.7            | 7.6 |      | 7.2 |      |      |     |
| 30                 | 3820G | Control  | 8    | 3   | 22.8            | 7.2 |      | 7.0 |      |      |     |
| 33                 | 3838G | 11070001 | 8    | 3   | 22.7            | 7.2 |      | 6.9 |      |      |     |
| 4                  | 3839G | 11070002 | 8    | 4   | 23.1            |     |      |     |      |      |     |
| 5                  | 3840G | 11070003 | 8    | 4   | 23.2            |     |      |     |      |      |     |
| 11                 | 3841G | 11070004 | 8    | 4   | 23.0            |     |      |     |      |      |     |
| 30                 | 3820G | Control  | 8    | 4   | 23.1            |     |      |     |      |      |     |
| 33                 | 3838G | 11070001 | 8    | 4   | 22.9            |     |      |     |      |      |     |
| 4                  | 3839G | 11070002 | 8    | 5   | 22.6            | 6.2 | 146  | 6.7 |      |      |     |
| 5                  | 3840G | 11070003 | 8    | 5   | 22.8            | 6.4 | 151  | 6.7 |      |      |     |
| 11                 | 3841G | 11070004 | 8    | 5   | 22.4            | 6.4 | 149  | 7.0 |      |      |     |
| 30                 | 3820G | Control  | 8    | 5   | 22.7            | 6.1 | 156  | 6.8 |      |      |     |
| 33                 | 3838G | 11070001 | 8    | 5   | 22.4            | 6.0 | 150  | 6.8 |      |      |     |
| 4                  | 3839G | 11070002 | 8    | 6   | 22.0            |     |      |     |      |      |     |
| 5                  | 3840G | 11070003 | 8    | 6   | 22.2            |     |      |     |      |      |     |
| 11                 | 3841G | 11070004 | 8    | 6   | 22.0            |     |      |     |      |      |     |
| 30                 | 3820G | Control  | 8    | 6   | 22.1            |     |      |     |      |      |     |
| 33                 | 3838G | 11070001 | 8    | 6   | 22.0            |     |      |     |      |      |     |
| 4                  | 3839G | 11070002 | 8    | 7   | 22.3            | 7.5 |      | 6.6 |      |      |     |
| 5                  | 3840G | 11070003 | 8    | 7   | 22.5            | 7.6 |      | 6.7 |      |      |     |
| 11                 | 3841G | 11070004 | 8    | 7   | 22.1            | 7.5 |      | 6.8 |      |      |     |
| 30                 | 3820G | Control  | 8    | 7   | 22.3            | 7.2 |      | 6.8 |      |      |     |
| 33                 | 3838G | 11070001 | 8    | 7   | 22.0            | 7.1 |      | 6.7 |      |      |     |
| 4                  | 3839G | 11070002 | 8    | 8   | 22.2            |     |      |     |      |      |     |
| 5                  | 3840G | 11070003 | 8    | 8   | 22.5            |     |      |     |      |      |     |
| 11                 | 3841G | 11070004 | 8    | 8   | 22.5            |     |      |     |      |      |     |
| 30                 | 3820G | Control  | 8    | 8   | 22.2            |     |      |     |      |      |     |
| 33                 | 3838G | 11070001 | 8    | 8   | 22.2            |     |      |     |      |      |     |
| 4                  | 3839G | 11070002 | 8    | 9   | 22.2            |     |      |     |      |      |     |
| 5                  | 3840G | 11070003 | 8    | 9   | 22.5            |     |      |     |      |      |     |

Freshwater Sediment Test  
28-Day Hyalella azteca

|    |       |          |   |    |      |     |     |     |
|----|-------|----------|---|----|------|-----|-----|-----|
| 11 | 3841G | 11070004 | 8 | 9  | 22.0 |     |     |     |
| 30 | 3820G | Control  | 8 | 9  | 22.3 |     |     |     |
| 33 | 3838G | 11070001 | 8 | 9  | 22.1 |     |     |     |
| 4  | 3839G | 11070002 | 8 | 10 | 23.0 | 7.1 |     | 6.6 |
| 5  | 3840G | 11070003 | 8 | 10 | 23.4 | 6.7 |     | 6.6 |
| 11 | 3841G | 11070004 | 8 | 10 | 22.7 | 7.2 |     | 6.8 |
| 30 | 3820G | Control  | 8 | 10 | 23.0 | 7.0 |     | 6.7 |
| 33 | 3838G | 11070001 | 8 | 10 | 22.5 | 7.0 |     | 6.7 |
| 4  | 3839G | 11070002 | 8 | 11 | 23.1 |     |     |     |
| 5  | 3840G | 11070003 | 8 | 11 | 23.5 |     |     |     |
| 11 | 3841G | 11070004 | 8 | 11 | 22.9 |     |     |     |
| 30 | 3820G | Control  | 8 | 11 | 23.2 |     |     |     |
| 33 | 3838G | 11070001 | 8 | 11 | 23.6 |     |     |     |
| 4  | 3839G | 11070002 | 8 | 12 | 22.9 | 7.5 | 146 | 7.0 |
| 5  | 3840G | 11070003 | 8 | 12 | 23.3 | 7.1 | 151 | 6.9 |
| 11 | 3841G | 11070004 | 8 | 12 | 22.8 | 7.3 | 147 | 7.0 |
| 30 | 3820G | Control  | 8 | 12 | 23.0 | 7.1 | 153 | 7.0 |
| 33 | 3838G | 11070001 | 8 | 12 | 23.3 | 7.3 | 151 | 6.9 |
| 4  | 3839G | 11070002 | 8 | 13 | 23.0 |     |     |     |
| 5  | 3840G | 11070003 | 8 | 13 | 23.1 |     |     |     |
| 11 | 3841G | 11070004 | 8 | 13 | 23.5 |     |     |     |
| 30 | 3820G | Control  | 8 | 13 | 23.2 |     |     |     |
| 33 | 3838G | 11070001 | 8 | 13 | 23.2 |     |     |     |
| 4  | 3839G | 11070002 | 8 | 14 | 23.3 | 7.5 |     | 6.7 |
| 5  | 3840G | 11070003 | 8 | 14 | 23.7 | 7.1 |     | 6.7 |
| 11 | 3841G | 11070004 | 8 | 14 | 23.2 | 7.3 |     | 6.8 |
| 30 | 3820G | Control  | 8 | 14 | 23.5 | 7.3 |     | 6.8 |
| 33 | 3838G | 11070001 | 8 | 14 | 23.7 | 7.3 |     | 6.7 |
| 4  | 3839G | 11070002 | 8 | 15 | 23.4 |     |     |     |
| 5  | 3840G | 11070003 | 8 | 15 | 23.7 |     |     |     |
| 11 | 3841G | 11070004 | 8 | 15 | 23.2 |     |     |     |
| 30 | 3820G | Control  | 8 | 15 | 23.6 |     |     |     |
| 33 | 3838G | 11070001 | 8 | 15 | 23.8 |     |     |     |
| 4  | 3839G | 11070002 | 8 | 16 | 23.3 |     |     |     |
| 5  | 3840G | 11070003 | 8 | 16 | 23.6 |     |     |     |
| 11 | 3841G | 11070004 | 8 | 16 | 23.0 |     |     |     |
| 30 | 3820G | Control  | 8 | 16 | 23.4 |     |     |     |
| 33 | 3838G | 11070001 | 8 | 16 | 23.4 |     |     |     |
| 4  | 3839G | 11070002 | 8 | 17 | 23.3 | 6.7 |     | 7.0 |
| 5  | 3840G | 11070003 | 8 | 17 | 23.5 | 6.3 |     | 6.8 |
| 11 | 3841G | 11070004 | 8 | 17 | 23.0 | 6.7 |     | 7.0 |
| 30 | 3820G | Control  | 8 | 17 | 23.4 | 6.9 |     | 7.1 |
| 33 | 3838G | 11070001 | 8 | 17 | 23.5 | 7.1 |     | 6.9 |
| 4  | 3839G | 11070002 | 8 | 18 | 23.3 |     |     |     |
| 5  | 3840G | 11070003 | 8 | 18 | 23.5 |     |     |     |
| 11 | 3841G | 11070004 | 8 | 18 | 23.4 |     |     |     |
| 30 | 3820G | Control  | 8 | 18 | 23.5 |     |     |     |
| 33 | 3838G | 11070001 | 8 | 18 | 23.6 |     |     |     |
| 4  | 3839G | 11070002 | 8 | 19 | 23.2 | 7.7 | 151 | 6.4 |
| 5  | 3840G | 11070003 | 8 | 19 | 23.4 | 6.8 | 158 | 6.8 |
| 11 | 3841G | 11070004 | 8 | 19 | 22.8 | 8.0 | 156 | 7.2 |
| 30 | 3820G | Control  | 8 | 19 | 23.4 | 6.8 | 162 | 7.0 |

Freshwater Sediment Test  
28-Day Hyalella azteca

|    |       |          |   |      |      |     |     |     |      |    |
|----|-------|----------|---|------|------|-----|-----|-----|------|----|
| 33 | 3838G | 11070001 | 8 | 19   | 23.4 | 8.0 | 159 | 7.0 |      |    |
| 4  | 3839G | 11070002 | 8 | 20   | 23.7 |     |     |     |      |    |
| 5  | 3840G | 11070003 | 8 | 20   | 23.8 |     |     |     |      |    |
| 11 | 3841G | 11070004 | 8 | 20   | 23.8 |     |     |     |      |    |
| 30 | 3820G | Control  | 8 | 20   | 23.8 |     |     |     |      |    |
| 33 | 3838G | 11070001 | 8 | 20   | 23.7 |     |     |     |      |    |
| 4  | 3839G | 11070002 | 8 | 21   | 23.6 | 7.0 |     | 7.0 |      |    |
| 5  | 3840G | 11070003 | 8 | 21   | 23.8 | 6.1 |     | 6.9 |      |    |
| 11 | 3841G | 11070004 | 8 | 21   | 22.9 | 7.6 |     | 7.3 |      |    |
| 30 | 3820G | Control  | 8 | 21   | 23.4 | 7.0 |     | 7.2 |      |    |
| 33 | 3838G | 11070001 | 8 | 21   | 23.6 | 7.3 |     | 7.0 |      |    |
| 4  | 3839G | 11070002 | 8 | 22   | 23.2 |     |     |     |      |    |
| 5  | 3840G | 11070003 | 8 | 22   | 23.1 |     |     |     |      |    |
| 11 | 3841G | 11070004 | 8 | 22   | 22.9 |     |     |     |      |    |
| 30 | 3820G | Control  | 8 | 22   | 23.3 |     |     |     |      |    |
| 33 | 3838G | 11070001 | 8 | 22   | 23.3 |     |     |     |      |    |
| 4  | 3839G | 11070002 | 8 | 23   | 23.3 |     |     |     |      |    |
| 5  | 3840G | 11070003 | 8 | 23   | 23.6 |     |     |     |      |    |
| 11 | 3841G | 11070004 | 8 | 23   | 23.1 |     |     |     |      |    |
| 30 | 3820G | Control  | 8 | 23   | 23.6 |     |     |     |      |    |
| 33 | 3838G | 11070001 | 8 | 23   | 23.5 |     |     |     |      |    |
| 4  | 3839G | 11070002 | 8 | 24   | 23.3 | 7.6 |     | 6.6 |      |    |
| 5  | 3840G | 11070003 | 8 | 24   | 23.6 | 6.8 |     | 6.7 |      |    |
| 11 | 3841G | 11070004 | 8 | 24   | 22.9 | 9.1 |     | 7.8 |      |    |
| 30 | 3820G | Control  | 8 | 24   | 23.5 | 7.8 |     | 7.5 |      |    |
| 33 | 3838G | 11070001 | 8 | 24   | 23.4 | 8.4 |     | 7.2 |      |    |
| 4  | 3839G | 11070002 | 8 | 25   | 23.3 |     |     |     |      |    |
| 5  | 3840G | 11070003 | 8 | 25   | 23.5 |     |     |     |      |    |
| 11 | 3841G | 11070004 | 8 | 25   | 23.0 |     |     |     |      |    |
| 30 | 3820G | Control  | 8 | 25   | 23.5 |     |     |     |      |    |
| 33 | 3838G | 11070001 | 8 | 25   | 23.5 |     |     |     |      |    |
| 4  | 3839G | 11070002 | 8 | 26   | 23.2 | 6.9 | 168 | 6.7 |      |    |
| 5  | 3840G | 11070003 | 8 | 26   | 23.5 | 7.3 | 168 | 6.8 |      |    |
| 11 | 3841G | 11070004 | 8 | 26   | 23.0 | 9.5 | 165 | 7.7 |      |    |
| 30 | 3820G | Control  | 8 | 26   | 23.6 | 8.4 | 175 | 7.5 |      |    |
| 33 | 3838G | 11070001 | 8 | 26   | 23.5 | 8.7 | 170 | 7.3 |      |    |
| 4  | 3839G | 11070002 | 8 | 27   | 23.3 |     |     |     |      |    |
| 5  | 3840G | 11070003 | 8 | 27   | 23.6 |     |     |     |      |    |
| 11 | 3841G | 11070004 | 8 | 27   | 23.1 |     |     |     |      |    |
| 30 | 3820G | Control  | 8 | 27   | 23.5 |     |     |     |      |    |
| 33 | 3838G | 11070001 | 8 | 27   | 23.5 |     |     |     |      |    |
| 4  | 3839G | 11070002 | 8 | 28   | 23.2 | 7.0 | 159 | 6.8 | <0.1 | 51 |
| 5  | 3840G | 11070003 | 8 | 28   | 23.6 | 7.7 | 160 | 6.8 | <0.1 | 43 |
| 11 | 3841G | 11070004 | 8 | 28   | 23.2 | 9.5 | 150 | 7.8 | <0.1 | 51 |
| 30 | 3820G | Control  | 8 | 28   | 23.8 | 8.3 | 159 | 7.3 | <0.1 | 51 |
| 33 | 3838G | 11070001 | 8 | 28   | 23.7 | 8.3 | 151 | 7.0 | 0.1  | 51 |
|    |       |          |   | Mean | 23.1 | 7.4 | 155 | 7.0 | —    | 45 |
|    |       |          |   | SD   | 0.5  | 0.7 | 8   | 0.3 | —    | 6  |
|    |       |          |   | n    | 145  | 65  | 30  | 65  | 10   | 10 |
|    |       |          |   | Min  | 22.0 | 6.0 | 142 | 6.4 | <0.1 | 34 |
|    |       |          |   | Max  | 23.8 | 9.5 | 175 | 7.8 | 0.2  | 51 |

**AMMONIA EXPOSURE BENCHSHEETS AND ANALYSIS**

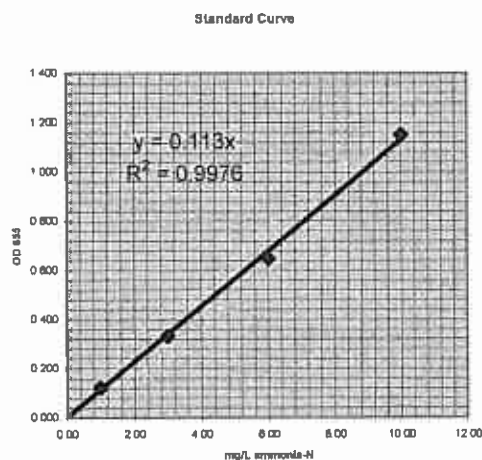


## Total Ammonia-N in Water: Computation Worksheet

### Salicylate Method (SOP #5492)

**Result**

| Sample description                | Dilution factor | OD <sub>655</sub> | NH <sub>3</sub> -N (mg/L) |
|-----------------------------------|-----------------|-------------------|---------------------------|
| Blank                             | ----            | ----              | ----                      |
| 1.0 mg/L NH <sub>3</sub> -N Std.  | ----            | 0.121             | 1.00                      |
| 3.0 mg/L NH <sub>3</sub> -N Std.  | ----            | 0.331             | 3.00                      |
| 6.0 mg/L NH <sub>3</sub> -N Std.  | ----            | 0.648             | 6.00                      |
| 10.0 mg/L NH <sub>3</sub> -N Std. | ----            | 1.150             | 10.00                     |
| 3.0 mg/L spike                    | ----            | 0.339             | 3.00                      |
| 3.0 mg/L spike dupl.              | ----            | 0.338             | 2.99                      |
| 5.0 mg/L 2nd source               | ----            | 0.560             | 4.95                      |



|     |                  |       |       |      |
|-----|------------------|-------|-------|------|
| 1.  | Day 0 (8-16-11)  | ##### |       |      |
| 2.  | 4                | 1     | 0.008 | ND   |
| 3.  | 5                | 1     | 0.010 | ND   |
| 4.  | 11               | 1     | 0.014 | 0.12 |
| 5.  | 30               | 1     | 0.027 | 0.24 |
| 6.  | 33               | 1     | 0.012 | 0.11 |
| 7.  | Day 28 (9-23-11) | ##### |       |      |
| 8.  | 4                | 1     | 0.008 | ND   |
| 9.  | 5                | 1     | 0.001 | ND   |
| 10. | 11               | 1     | 0.006 | ND   |
| 11. | 30               | 1     | 0.010 | ND   |
| 12. | 33               | 1     | 0.012 | 0.11 |

Reporting limit (mg/L) = 0.1

Recovery (%) = 99.8

Precision (RPD) = 0.30

2nd source (%) = 99.0

Sample volume (ml): 0.50

Dilution factor 1

**Sample Set Description:**

Test No.: 826-1

Test Day: 0&amp;28

Species: *Hyalella*

Overlying water

Analyst:

Date analysed:

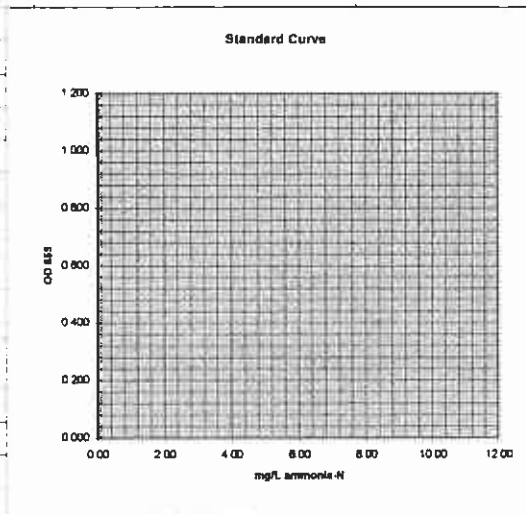
RSC

10/4/2011

# **Total Ammonia-N in Water: Computation Worksheet** **Salicylate Method (SOP #5492)**

**Result**

| Sample description   | Dilution factor | OD655 | NH3-N (mg/L) |
|----------------------|-----------------|-------|--------------|
| Blank                | ----            | ----  | ----         |
| 1.0 mg/L NH3-N Std.  | ----            | .121  | 1.00         |
| 3.0 mg/L NH3-N Std.  | ----            | .331  | 3.00         |
| 6.0 mg/L NH3-N Std.  | ----            | .648  | 6.00         |
| 10.0 mg/L NH3-N Std. | ----            | 1.15  | 10.00        |
| 3.0 mg/L spike       | ----            | .339  |              |
| 3.0 mg/L spike dupl. | ----            | .338  |              |
| 5.0 mg/L 2nd source  | ----            | .560  |              |
| 1. Day 0 (8-16-11)   | #####           |       |              |
| 2. 4                 | 1               | .008  |              |
| 3. 5                 | 1               | .010  |              |
| 4. 11                | 1               | .014  |              |
| 5. 30                | 1               | .027  |              |
| 6. 33                | 1               | .012  |              |
| 7. Day 28 (9-23-11)  | #####           |       |              |
| 8. 4                 | 1               | .008  |              |
| 9. 5                 | 1               | .001  |              |
| 10. 11               | 1               | .006  |              |
| 11. 30               | 1               | .010  |              |
| 12. 33               | 1               | .012  |              |
| 13.                  |                 |       |              |
| 14.                  |                 |       |              |
| 15.                  |                 |       |              |
| 16.                  |                 |       |              |
| 17.                  |                 |       |              |
| 18.                  |                 |       |              |
| 19.                  |                 |       |              |
| 20.                  |                 |       |              |
| 21.                  |                 |       |              |
| 22.                  |                 |       |              |
| 23.                  |                 |       |              |
| 24.                  |                 |       |              |
| 25.                  |                 |       |              |
| 26.                  |                 |       |              |
| 27.                  |                 |       |              |
| 28.                  |                 |       |              |
| 29.                  |                 |       |              |
| 30.                  |                 |       |              |
| 31.                  |                 |       |              |
| 32.                  |                 |       |              |
| 33.                  |                 |       |              |
| 34.                  |                 |       |              |
| 35.                  |                 |       |              |
| 36.                  |                 |       |              |



Reporting limit (mg/L) = 0.1

Recovery (%) = #VALUE!

Precision (RPD) = #VALUE!

2nd source (%) = #VALUE!

Sample volume (ml): 0.50

Dilution factor 1

**Sample Set Description:**

Test No.: 826-1

Test Day: 08/28

Species: *Hyaella*

Overlying water

Analyst: RSC

Date analysed: 10/4/2011

**CHAIN-OF-CUSTODY RECORDS**

## CHAIN OF CUSTODY RECORD

**No: 10-082311-124153-0001**

10GL

Contact Name: Mark Woodke  
Contact Phone: (206) 624 9537

DateShipped: 8/23/2011

CarrierName: FedEx

AirbillNo:

Lab: Northwest Aquatic Sciences

Lab Phone: 5412657225

[illegible]

INTERNAL TEMP OF COOLER UPON RECEIPT: 4.5 °C

**Special Instructions:**

| SAMPLES TRANSFERRED FROM | CHAIN OF CUSTODY # |
|--------------------------|--------------------|
|                          |                    |

[illegible]

P 826  
ECOLOGY ; ENV  
8-24-11



**CUSTODY SEAL**

Date:

8-23-11

Signature:

[Signature]



**CUSTODY SEAL**

Date:

8-23-11

Signature:

[Signature]



**FedEx** **Express** **NEW Package US Airbill**

FedEx Tracking Number

8762 5167 3792

Form 0200

Recipient's Copy

From [Redacted] Date [Redacted]

Sender's Name [Redacted] Phone [Redacted]

Company [Redacted]

Address [Redacted] Dept./Floor/Suite/Room [Redacted]

City [Redacted] State [Redacted] ZIP [Redacted]

Your Internal Billing Reference [Redacted]

To Recipient's Name [Redacted] Phone [Redacted]

Company [Redacted]

Address [Redacted] We cannot deliver to PO boxes or PO ZIP codes. Dept./Floor/Suite/Room [Redacted]

Address [Redacted] Use this line for the HGLD location address or for confirmation of your shipping address.

City [Redacted] State [Redacted] ZIP [Redacted]

**HOLD Weekday**  
FedEx location address  
**REQUIRED NOT** available for  
FedEx First Overnight.  
**HOLD Saturday**  
FedEx location address  
**REQUIRED** Available ONLY for  
FedEx Priority Overnight and  
FedEx 2Day to select locations.

**4 Express Package Service** \*To meet location.  
NOTE: Service order law changed. Please select carefully.

Packages up to 150 lbs.  
For packages over 250 lbs., use the separate  
FedEx Express Freight US Airbill.

**Next Business Day**

- ☐ **FedEx First Overnight**  
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☒ **FedEx Priority Overnight**  
Next business morning \* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ **FedEx Standard Overnight**  
Next business afternoon. Saturday Delivery NOT available.

**2 or 3 Business Days**

- ☐ **NEW FedEx 2Day A.M.**  
Second business morning. Saturday Delivery NOT available.
- ☐ **FedEx 2Day**  
Second business afternoon. \* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ **FedEx Express Saver**  
Third business day. Saturday Delivery NOT available.

**5 Packaging** \*Declared value limit \$500.

- ☐ FedEx Envelope\* ☐ FedEx Pak\* ☐ FedEx Box ☐ FedEx Tube ☒ Other

**6 Special Handling and Delivery Signature Options**

☐ **SATURDAY Delivery**  
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☒ **No Signature Required**  
Package may be left without obtaining a signature for delivery.

☐ **Direct Signature**  
Someone at recipient's address every sign for delivery. Fee applies.

☐ **Indirect Signature**  
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

**Does this shipment contain dangerous goods?**

- One box must be checked:  
☐ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry Ice, 5, UN 1845 ☐ Cargo Aircraft Only

**7 Payment Bill to:**

- ☒ **Sender** Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

Total Packages Total Weight Total Declared Value\* Credit Card Acct. No.

\*Our liability is limited to \$500 unless you declare a higher value. See the current FedEx Service Guide for details.

612

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### **APPENDIX III**

#### **RAW DATA – REFERENCE TOXICANT TEST**

## ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-2930 Client: QC Test

Test Type (ranging/definitive)

Investigator

Test Length (hr)

96

Species *Hyalella azteca*REVIEWED  
PAGES 1-7  
-651

## STUDY MANAGEMENT

Client: QC test

Client's Study Monitor: QC test

Testing Laboratory: Northwestern Aquatic Sciences

Test Location: Newport Laboratory

Laboratory's Study Personnel:

Proj. Man./Study Dir. G.J. Irissarri 651

QA Officer L. K. Nemeth

1. GA B. J. L. 651 2.

3. 4.

Test Beginning: 8-26-11 0950

Test Ending: 8-30-11 1050

## TEST MATERIAL

Description: Potassium Chloride Crystals - Lot No.: FISHER 073280

NAS Sample No.

Date of Collection:

Date of Receipt:

Temperature (deg C):

Dissolved oxygen (mg/L):

pH:

Conductivity (umhos/cm):

Hardness (mg/L):

Alkalinity (mg/L):

Salinity (ppt):

Total chlorine (mg/L):

Total ammonia-N (mg/L):

## DILUTION WATER

Description: Moderately hard synthetic water

Date of Preparation/Collection: 8-22-11

Water Quality: Cond. (umhos/cm): 256

Salinity (ppt) pH 7.9

Hardness (mg/L as CaCO<sub>3</sub>): 86Alkalinity (mg/L as CaCO<sub>3</sub>): 70

Treatments: Aerated ≥ 24 hrs

## TEST LOCATION

Test conducted in (circle one): room 1 room 2 trailer water bath other:

## Randomization chart:

|       |       |     |       |       |      |     |  |  |  |  |
|-------|-------|-----|-------|-------|------|-----|--|--|--|--|
| REP B | 0.063 | 1   | 0.125 | φ     | 0.25 | 0.5 |  |  |  |  |
| A     | 0.25  | 0.5 | 0.063 | 0.125 | 1    | φ   |  |  |  |  |
|       |       |     |       |       |      |     |  |  |  |  |
|       |       |     |       |       |      |     |  |  |  |  |
|       |       |     |       |       |      |     |  |  |  |  |
|       |       |     |       |       |      |     |  |  |  |  |

Error codes: 1) Correction of handwriting error

2) Written in wrong location; entry deleted

3) Wrong date deleted; replaced with correct date

4) Error found in measurement; measurement repeated

NORTHWESTERN AQUATIC SCIENCES  
ACUTE TOXICITY TEST (ALL SPECIES)

PROTOCOL NO. NAS-\_\_\_\_\_

Test No. 999-2930 Client \_\_\_\_\_ QC Test \_\_\_\_\_ Investigator \_\_\_\_\_

**TEST ORGANISMS**

Species: *Hyalella azteca* Age: 7-8 DAYS Size: \_\_\_\_\_  
Source: Chesapeake Cultures, Hayes, VA Date received: 8-24-11

**Acclimation Data:**

| Date    | Temp.<br>(deg.C) | pH  | Cond.<br>umhos/cm | DO<br>(mg/L) | Hardness<br>(mg/L) | Alkalinity<br>(mg/L) | Feeding |             | Water<br>changes |
|---------|------------------|-----|-------------------|--------------|--------------------|----------------------|---------|-------------|------------------|
|         |                  |     |                   |              |                    |                      | Amount  | description |                  |
| 8-24-11 | 22.6             | 7.0 | 473               | >15.0        | 197                | 170                  | 10 mL   | YTC         | YES              |
| 8-25-11 | 22.8             | 8.3 | 334               | 7.9          | 120                | 110                  | 11      | "           | YES              |
| 8-26-11 | 23.2             | 7.7 | 245               | 7.9          | 94                 | 80                   | -       | -           | -                |
|         |                  |     |                   |              |                    |                      |         |             |                  |
|         |                  |     |                   |              |                    |                      |         |             |                  |
| Mean    | 22.9             | 7.7 | 351               | 10.3         | 137                | 120                  |         |             |                  |
| S.D.    | 0.3              | 0.7 | 115               | 4.1          | 54                 | 46                   |         |             |                  |
| (N)     | 3                | 3   | 3                 | 3            | 3                  | 3                    |         |             |                  |

Photoperiod during acclimation: 16:8, L:D

**TEST PROCEDURES AND CONDITIONS**

Test concentrations (50% series recommended): 1, 0.5, 0.25, 0.125, 0.063 0 g/L

Test chamber: 250 ml glass beakers Test volume: 100 ml  
Replicates/treatment: 2 Organisms/treatment: 20 (10/rep)  
Test water changes: None Aeration during test: None  
Feeding: 0.5 ml YTC suspension per beaker on days 0 and 2

Duration: 24-hr, 48-hr, 96-hr Test temperature (deg.C): 23 ± 1 or 20 ± 1  
Beaker placement: Stratified randomization Photoperiod: 16:8, L:D

**MISCELLANEOUS NOTES**

**Test solution preparation:**

Working stock: Dissolve 0.5g KCl crystals in dilution water and dilute to 500 mL.  
Final conc.: 1.0 g/L.

| Test concentration<br>(g/L) | KCl working stock<br>(ml/200ml) | Dilution water  |
|-----------------------------|---------------------------------|-----------------|
| 1                           | 200                             | Brought up to   |
| 0.5                         | 100                             | final volume of |
| 0.25                        | 50                              | 200 ml with     |
| 0.125                       | 25                              | dilution water  |
| 0.063                       | 12.5                            | and distributed |
| 0                           | 0                               | evenly between  |
|                             |                                 | two replicates  |

8-26-11  
651



Test No. 999-2930 Client

QC Test

DAILY RECORD SHEET

Day 0 (8/26/11) 651

| Conc.<br>(g/L) | Temp.<br>(deg.C) | pH  | Cond.<br>(umhos/cm) | DO<br>(ppm) | Hardness<br>(mg/L) | Alkalinity<br>(mg/L) | Survivors |    |
|----------------|------------------|-----|---------------------|-------------|--------------------|----------------------|-----------|----|
|                |                  |     |                     |             |                    |                      | A         | B  |
| 1. 1           | 23.1             | 7.9 | 1874                | 8.2         | 86                 | 80                   | 10        | 10 |
| 2. 0.5         | 23.6             | 7.9 | 1075                | 8.2         |                    |                      | 10        | 10 |
| 3. 0.25        | 23.6             | 7.8 | 664                 | 8.2         |                    |                      | 10        | 10 |
| 4. 0.125       | 23.6             | 7.8 | 456                 | 8.4         |                    |                      | 10        | 10 |
| 5. 0.063       | 23.7             | 7.8 | 360                 | 8.3         |                    |                      | 10        | 10 |
| 6. 0           | 23.7             | 7.9 | 256                 | 8.3         | 86                 | 70                   | 10        | 10 |

All animals fed 0.5 ml YTC suspension. Initials: 651

Day 1 (8/27/11) 651

| Conc.<br>(g/L) | Temp.<br>(deg.C) | pH  | Cond.<br>(umhos/cm) | DO<br>(ppm) | Hardness<br>(mg/L) | Alkalinity<br>(mg/L) | Survivors |         |
|----------------|------------------|-----|---------------------|-------------|--------------------|----------------------|-----------|---------|
|                |                  |     |                     |             |                    |                      | A         | B       |
| 1. 1           | 23.3             | 7.8 | 1842                | 7.7         |                    |                      | 0 (100)   | 0 (100) |
| 2. 0.5         | 23.3             | 7.8 | 1065                | 7.7         |                    |                      | 8 (20)    | 6 (40)  |
| 3. 0.25        | 23.3             | 7.8 | 670                 | 7.6         |                    |                      | 10        | 10      |
| 4. 0.125       | 23.3             | 7.8 | 473                 | 7.8         |                    |                      | 10        | 10      |
| 5. 0.063       | 23.2             | 7.7 | 372                 | 7.8         |                    |                      | 10        | 10      |
| 6. 0           | 23.2             | 7.7 | 263                 | 7.8         |                    |                      | 10        | 10      |

Day 2 (8/28/11) 651

| Conc.<br>(g/L) | Temp.<br>(deg.C) | pH  | Cond.<br>(umhos/cm) | DO<br>(ppm) | Hardness<br>(mg/L) | Alkalinity<br>(mg/L) | Survivors |        |
|----------------|------------------|-----|---------------------|-------------|--------------------|----------------------|-----------|--------|
|                |                  |     |                     |             |                    |                      | A         | B      |
| 1. 1           | -                | -   | -                   | -           |                    |                      | 0         | 0      |
| 2. 0.5         | 23.5             | 7.7 | 1061                | 7.7         |                    |                      | 3 (50)    | 5 (10) |
| 3. 0.25        | 23.5             | 7.6 | 668                 | 7.7         |                    |                      | 10        | 10     |
| 4. 0.125       | 23.4             | 7.6 | 470                 | 7.7         |                    |                      | 10        | 10     |
| 5. 0.063       | 23.4             | 7.8 | 371                 | 7.8         |                    |                      | 10        | 10     |
| 6. 0           | 23.4             | 7.7 | 265                 | 7.8         |                    |                      | 10        | 10     |

All animals fed 0.5 ml YTC suspension. Initials: 651

Day 3 (8/29/11) 651

| Conc.<br>(g/L) | Temp.<br>(deg.C) | pH  | Cond.<br>(umhos/cm) | DO<br>(ppm) | Hardness<br>(mg/L) | Alkalinity<br>(mg/L) | Survivors |    |
|----------------|------------------|-----|---------------------|-------------|--------------------|----------------------|-----------|----|
|                |                  |     |                     |             |                    |                      | A         | B  |
| 1. 1           | -                | -   | -                   | -           |                    |                      | 0         | 0  |
| 2. 0.5         | 23.4             | 7.8 | 1078                | 7.6         |                    |                      | 3         | 5  |
| 3. 0.25        | 23.4             | 7.8 | 676                 | 7.5         |                    |                      | 10        | 10 |
| 4. 0.125       | 23.4             | 7.8 | 468                 | 7.6         |                    |                      | 10        | 10 |
| 5. 0.063       | 23.4             | 7.8 | 383                 | 7.7         |                    |                      | 10        | 10 |
| 6. 0           | 23.5             | 7.7 | 269                 | 7.6         |                    |                      | 10        | 10 |

Day 4 (8/30/11) 651

| Conc.<br>(g/L) | Temp.<br>(deg.C) | pH  | Cond.<br>(umhos/cm) | DO<br>(ppm) | Hardness<br>(mg/L) | Alkalinity<br>(mg/L) | Survivors |        |
|----------------|------------------|-----|---------------------|-------------|--------------------|----------------------|-----------|--------|
|                |                  |     |                     |             |                    |                      | A         | B      |
| 1. 1           | -                | -   | -                   | -           |                    |                      | 0         | 0      |
| 2. 0.5         | 23.5             | 7.8 | 1087                | 7.9         |                    |                      | 2 (10)    | 5      |
| 3. 0.25        | 23.6             | 7.8 | 682                 | 7.7         |                    |                      | 10        | 10     |
| 4. 0.125       | 23.6             | 7.8 | 489                 | 7.8         |                    |                      | 10        | 10     |
| 5. 0.063       | 23.6             | 7.7 | 385                 | 7.9         |                    |                      | 10        | 10     |
| 6. 0           | 23.6             | 7.7 | 273                 | 7.8         | 86                 | 70                   | 10        | 9 (10) |

Mean 23.5 7.8 1002 7.8 86 73  
SD 0.1 0.1 265 0.3 0 6  
n 27 27 5 2 27 3 3

REC'D

8-24-11 CB

# Chesapeake Cultures

P.O. Box 507 Hayes, VA 23072 (804)693-4046 (804)694-4704 fax

www.c-cultures.com

growfish@c-cultures.com

## NAS Shipment Information

Species Hyalilla azteca

Date 8/23/11

Age/Size 4-5 d; 1.5 mm

P.O. No. verbal

Quantity 620+

Invoice No. 7312

Temperature 24°C Salinity — pH 7.93

Notes Thanks!

RECEIVED 8-24-11

-651

Biologist

[Signature]

\* Please inspect shipment and report any problem immediately \*

# Acute 96-hr Toxicity Test-96 Hr Survival

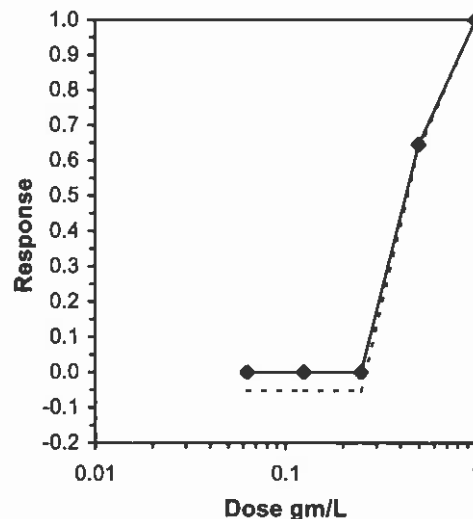
Start Date: 8/26/2011 09:50 Test ID: 999-2930 Sample ID: REF-Ref Toxicant  
 End Date: 8/30/2011 10:50 Lab ID: ORNAS-Northwestern Aquatic Sample Type: KCL-Potassium chloride  
 Sample Date: Protocol: EPAA 91-EPA Acute Test Species: HA-Hyalella azteca  
 Comments:

| Conc-gm/L | 1      | 2      |
|-----------|--------|--------|
| D-Control | 1.0000 | 0.9000 |
| 0.063     | 1.0000 | 1.0000 |
| 0.125     | 1.0000 | 1.0000 |
| 0.25      | 1.0000 | 1.0000 |
| 0.5       | 0.2000 | 0.5000 |
| 1         | 0.0000 | 0.0000 |

| Conc-gm/L | Mean   | N-Mean | Transform: Arcsin Square Root |        |        |        |   | N | Number<br>Resp | Total<br>Number |
|-----------|--------|--------|-------------------------------|--------|--------|--------|---|---|----------------|-----------------|
|           |        |        | Mean                          | Min    | Max    | CV%    |   |   |                |                 |
| D-Control | 0.9500 | 1.0000 | 1.3305                        | 1.2490 | 1.4120 | 8.661  | 2 |   | 1              | 20              |
| 0.063     | 1.0000 | 1.0526 | 1.4120                        | 1.4120 | 1.4120 | 0.000  | 2 |   | 0              | 20              |
| 0.125     | 1.0000 | 1.0526 | 1.4120                        | 1.4120 | 1.4120 | 0.000  | 2 |   | 0              | 20              |
| 0.25      | 1.0000 | 1.0526 | 1.4120                        | 1.4120 | 1.4120 | 0.000  | 2 |   | 0              | 20              |
| 0.5       | 0.3500 | 0.3684 | 0.6245                        | 0.4636 | 0.7854 | 36.430 | 2 |   | 13             | 20              |
| 1         | 0.0000 | 0.0000 | 0.1588                        | 0.1588 | 0.1588 | 0.000  | 2 |   | 20             | 20              |

| Auxiliary Tests                               | Statistic | Critical | Skew | Kurt |
|---|-----------|----------|------|------|
| Normality of the data set cannot be confirmed |           |          |      |      |
| Equality of variance cannot be confirmed      |           |          |      |      |

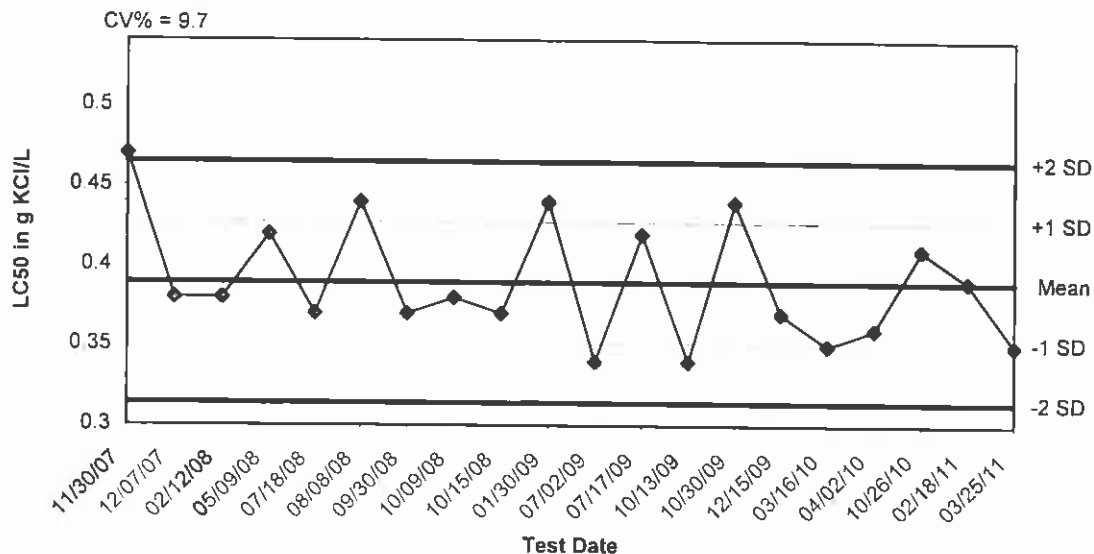
| Trimmed Spearman-Kärber |        |        |        |  |
|-------------------------|--------|--------|--------|--|
| Trim Level              | EC50   | 95% CL |        |  |
| 0.0%                    | 0.4520 | 0.3897 | 0.5243 |  |
| 5.0%                    | 0.4475 | 0.3800 | 0.5271 |  |
| 10.0%                   | 0.4432 | 0.3701 | 0.5307 |  |
| 20.0%                   | 0.4352 | 0.3494 | 0.5421 |  |
| Auto-0.0%               | 0.4520 | 0.3897 | 0.5243 |  |



| Test: AT-Acute 96-hr Toxicity Test |    |     |           |       | Test ID: 999-2930  |       |       |       |       |
|------------------------------------|----|-----|-----------|-------|--|-------|-------|-------|-------|
| Species: HA-Hyalella azteca        |    |     |           |       | Protocol: EPAA 91-EPA Acute  |       |       |       |       |
| Sample ID: REF-Ref Toxicant        |    |     |           |       | Sample Type: KCL-Potassium chloride                                  |       |       |       |       |
| Start Date: 8/26/2011 09:50        |    |     |           |       | End Date: 8/30/2011 10:5 Lab ID: ORNAS-Northwestern Aquatic Sciences |       |       |       |       |
| Pos                                | ID | Rep | Group     | Start | 24 Hr  | 48 Hr | 72 Hr | 96 Hr | Notes |
|                                    | 1  | 1   | D-Control | 10    | 10   | 10    | 10    | 10    |       |
|                                    | 2  | 2   | D-Control | 10    | 10   | 10    | 10    | 9     |       |
|                                    | 3  | 1   | 0.063     | 10    | 10   | 10    | 10    | 10    |       |
|                                    | 4  | 2   | 0.063     | 10    | 10   | 10    | 10    | 10    |       |
|                                    | 5  | 1   | 0.125     | 10    | 10   | 10    | 10    | 10    |       |
|                                    | 6  | 2   | 0.125     | 10    | 10   | 10    | 10    | 10    |       |
|                                    | 7  | 1   | 0.250     | 10    | 10   | 10    | 10    | 10    |       |
|                                    | 8  | 2   | 0.250     | 10    | 10   | 10    | 10    | 10    |       |
|                                    | 9  | 1   | 0.500     | 10    | 8  | 3     | 3     | 2     |       |
|                                    | 10 | 2   | 0.500     | 10    | 6  | 5     | 5     | 5     |       |
|                                    | 11 | 1   | 1.000     | 10    | 0  | 0     | 0     | 0     |       |
|                                    | 12 | 2   | 1.000     | 10    | 0  | 0     | 0     | 0     |       |

Comments:

# Amphipod, Hyalella azteca, acute reference toxicant test



| Dates    | Values | Mean   | -1 SD  | -2 SD  | +1 SD  | +2 SD  |
|----------|--------|--------|--------|--------|--------|--------|
| 11/30/07 | 0.4700 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 12/07/07 | 0.3800 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 02/12/08 | 0.3800 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 05/09/08 | 0.4200 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 07/18/08 | 0.3700 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 08/08/08 | 0.4400 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 09/30/08 | 0.3700 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 10/09/08 | 0.3800 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 10/15/08 | 0.3700 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 01/30/09 | 0.4400 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 07/02/09 | 0.3400 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 07/17/09 | 0.4200 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 10/13/09 | 0.3400 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 10/30/09 | 0.4400 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 12/15/09 | 0.3700 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 03/16/10 | 0.3500 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 04/02/10 | 0.3600 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 10/26/10 | 0.4100 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 02/18/11 | 0.3900 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |
| 03/25/11 | 0.3500 | 0.3895 | 0.3517 | 0.3140 | 0.4273 | 0.4650 |

msr  
4-15-11

**Report**

**of**

**Test No. 826-2**

**Toxicity of freshwater sediments collected from Kitsap County, WA  
using a 10-day midge, *Chironomus dilutus* (formerly *C. tentans*), sediment  
bioassay as part of Project No. 002233.0599.01SF, TDD No. 10-08-0011.**

**Submitted to**

**Ecology and Environment, Inc.  
720 Third Ave.  
Suite 1700  
Seattle, WA 98104**

**Submitted to**

**Northwestern Aquatic Sciences  
3814 Yaquina Bay Road  
P.O. Box 1437  
Newport, OR 97365**

**September 13, 2011**

## TOXICITY TEST REPORT

## TEST IDENTIFICATION

Test No.: 826-2

Title: Toxicity of freshwater sediments collected from Kitsap County, WA using a 10-day midge, *Chironomus dilutus* (formerly *C. tentans*), sediment bioassay as part of Project No. 002233.0599.01SF, TDD No. 10-08-0011.

Protocol No.: NAS-XXX-CT4b, April 7, 1998. Revision 1 (10-28-03). Based on ASTM 2001 (Standard test methods for measuring the toxicity of sediment-associated contaminants with fresh water invertebrates, E1706-00), Am. Soc. Test. Mat., Phila., PA, and EPA Method 100.2 (Methods for measuring the toxicity and bioaccumulation of sediment-associated contaminants with freshwater invertebrates, EPA/600/R-99/064).

## STUDY MANAGEMENT

Study Sponsor: Ecology and Environment, Inc., 720 Third Ave., Suite 1700, Seattle, WA 98104

Sponsor's Study Monitor: Mr. Mark Woodke

Testing Laboratory: Northwestern Aquatic Sciences, P.O. Box 1437, Newport, OR 97365

Test Location: Newport laboratory

Laboratory's Study Personnel: G.J. Irissarri, B.S., Proj. Man./Study Dir.; L.K. Nemeth, B.A., M.B.A., QA Officer; R.S. Caldwell, PhD, Sr. Aq. Toxicologist; G.A. Buhler, B.S., Aq. Toxicologist; L.P. Sandoval, B.S., Tech.; Y. Nakahama, Tech., B. Hurst, M.S., Tech.

Study Schedule:

Test Beginning: 8-26-11, 1155 hrs.

Test Ending: 9-5-11, 1330 hrs.

Disposition of Study Records: All raw data, reports and other study records are stored at Northwestern Aquatic Sciences, 3814 Yaquina Bay Rd., Newport, OR 97365.

Statement of Quality Assurance: The test data were reviewed by the Quality Assurance Unit to assure that the study was performed in accordance with the protocol and standard operating procedures. This report is an accurate reflection of the raw data.

## TEST MATERIAL

Test Sediments: Freshwater test sediments collected as part the characterization of Terminal 5 for the Port of Portland. Details are as follows:

|                 |          |          |          |          |
|-----------------|----------|----------|----------|----------|
| NAS Sample No.  | 3838G    | 3839G    | 3840G    | 3841G    |
| Description     | 11070001 | 11070002 | 11070003 | 11070004 |
| Collection Date | 7/27/11  | 7/27/11  | 7/27/11  | 7/27/11  |
| Receipt Date    | 8/14/11  | 8/24/11  | 8/24/11  | 8/24/11  |

Control Sediment: The negative control sediment (NAS#3820G) was collected on 8-14-11 from an area approximately one mile east of the Hwy. 101 bridge at Beaver Creek, approx. 8 miles south of Newport, OR.

Treatments: Homogenized at test set up by mixing using stainless steel implements.

Storage: All test and control sediments were stored at 4°C in the dark in sealed containers until used.

## TEST WATER

Source: Dechlorinated municipal tap water.

Date of Preparation: 8-25-11, 8-26-11

Water Quality:

pH: 7.6, 7.5

conductivity: 136, 143 µmhos/cm

hardness: 43, 43 mg/L as CaCO<sub>3</sub>

alkalinity: 30, 30 mg/L as CaCO<sub>3</sub>.

total chlorine: both collections were below 0.02 mg/L

Pretreatment: Dechlorinated and aerated ≥24 hr.

## TEST ORGANISMS

Species: *Chironomus dilutus* (formerly *C. tentans*), midge.

Size: 3rd instar, mean initial wt:  $0.14 \pm 0.01$  mg

Source: NAS cultures, originally obtained from EPA, Duluth, MN.

Acclimation: Holding conditions prior to testing averaged: Temperature,  $21.9 \pm 0.5^\circ\text{C}$ ; dissolved oxygen,  $8.1 \pm 0.3$  mg/L; pH,  $7.4 \pm 0.3$ ; conductivity,  $161 \pm 3$   $\mu\text{mhos/cm}$ ; hardness, 52 mg/L as  $\text{CaCO}_3$ ; and alkalinity, 30 mg/L as  $\text{CaCO}_3$ . Photoperiod was 16:8, L:D. Half of the water in culture tanks was replaced twice weekly with dechlorinated municipal tap water during holding. Animals were fed Tetra Fin suspension and *Selenastrum*.

## TEST PROCEDURES AND CONDITIONS

The following is an abbreviated statement of the test procedures and a statement of the test conditions actually employed. See the test protocol (Appendix I) for a more detailed description of the test procedures used in this study.

Test Chambers: 300 ml high-form glass beakers

Test Volumes: 100 ml sediment layer; 175 ml test water.

Replicates/Treatment: 8 (plus one additional WQ beaker for the four test sediments)

Organisms/Treatment: 80

Water Volume Changes: 2 water volumes per day

Aeration: None.

Feeding: Animals were fed 1.5 ml of Tetra Fin suspension (1.5 ml contains 6 mg dry solids) per beaker daily.

Effects Criteria: 1) survival after 10 days, and 2) average individual biomass (based on ash-free dry weight) after 10 days. Death is defined as no visible movement or response to tactile stimulation. Missing organisms were considered to be dead.

Water Quality and Other Test Conditions: The temperature, dissolved oxygen, conductivity, pH, hardness, alkalinity and ammonia-nitrogen were measured in the overlying water of one replicate test container per treatment on days 0 and 10 of the test. Temperature and dissolved oxygen were measured daily in the overlying water of one replicate test container per treatment. Hardness and alkalinity were measured with titrimetric methods. Ammonia-N was measured using Hach reagents based on the salicylate (Clin. Chim. Acta 14:403, 1996) colorimetric method; samples were not distilled prior to analysis. The photoperiod was 16:8, L:D.

## DATA ANALYSIS METHODS

Survival and individual biomass were calculated for each replicate as follows:

percent survival =  $100 \times (\text{number surviving}/\text{initial number tested})$

average individual ash-free dry wt. =  $(\text{ash-free dry wt.})/\text{number weighed}$ ,

where:

ash-free dry wt. = dry weight of organisms recovered on day 10 – ashed dry weight, in mg

Means and standard deviations for the biological endpoints described above, and for water quality data, were computed using Microsoft Excel 2000. The values for percent mortality and individual ash-free dry wt for each test sediment were statistically compared against the reference sediment. Where appropriate, an arcsine square root transformation was performed on proportional mortality data before analysis. Following determination of normality and homogeneity of variances, a one-tailed Student T-test, Mann-Whitney or Approximate T test was conducted at the 0.05 level of significance. The statistical software used was BioStat (Beta v.4.1 (EXCEL)) bioassay software developed by the U.S. Army Corps of Engineers, Seattle District.

## PROTOCOL DEVIATIONS

None

## REFERENCE TOXICANT TEST

The reference toxicant test is a multi-concentration toxicity test using potassium chloride, to evaluate the performance of the test organisms used in the sediment toxicity test. The performance is evaluated by



comparing the results of this test with historical results obtained at the laboratory. A summary of the reference toxicant test result is given below. The reference toxicant test raw data are found in Appendix III.

Test No.: 999-2931

Reference Toxicant and Source: Potassium Chloride (KCl), Fisher Lot #073280.

Test Date: 8-26-11.

Dilution Water Used: Moderately hard synthetic water prepared from Milli-Q<sup>®</sup> deionized water.

Result: 96-hr LC50, 6.27. This result is within the laboratory's control chart warning limits (3.01– 7.76 g/L).

## TEST RESULTS

Observations of water quality in the overlying water throughout the test are summarized in Table 1. A detailed tabulation of the water quality results by sample and test day can be found in Appendix II. The means and standard deviations of percent mortality and growth (ash-free dry wt.) of midges exposed for 10 days to sediments are summarized in Tables 2 and 3. Detailed data organized by sample and replicate, and summary statistics for these observations, are given in Appendix II.

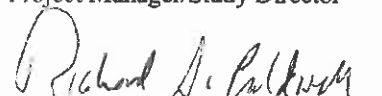
All water quality observations of overlying water were within the protocol specified ranges. Ammonia-N in the overlying water ranged between <0.1 and 1.5 mg/L for all day 0 and day 10 measurements.

The test met the survival and weight acceptability criteria specified in the test protocol with 15.0% mean control mortality ( $\leq 30\%$  required) and a control individual mean ash-free dry weight of 0.85 mg per larvae ( $\geq 0.48$  mg required). The reference toxicant (positive control) result was within the laboratory's control chart limits (6.27 g/L; control chart mean  $\pm 2$  S.D. =  $5.38 \pm 2.37$ ). It is concluded, therefore, that the test has developed fully acceptable data for use in making management decisions.

The percent mortality of all test sediments was not significantly greater than that of the control. The average individual biomass of test sediments 11070002, 11070003, and 11070004 was significantly less than that of the control at the 0.05 level of significance.

## STUDY APPROVAL

 7-12-11  
Project Manager/Study Director Date

 9-12-11  
Laboratory Director Date

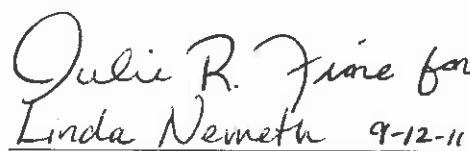
 9-12-11  
Quality Assurance Unit Date

Table 1. Summary of water quality conditions during tests of the midge, *Chironomus dilutus*, exposed to freshwater sediments.

| Water Quality Parameter                 | Mean $\pm$ S.D. | Minimum | Maximum | N  |
|---|-----------------|---------|---------|----|
| Temperature ( $^{\circ}$ C)             | 22.6 $\pm$ 0.4  | 21.9    | 23.4    | 55 |
| Dissolved oxygen (mg/L)                 | 6.6 $\pm$ 0.9   | 3.9     | 8.4     | 55 |
| Conductivity ( $\mu$ mh/cm)             | 149 $\pm$ 5     | 141     | 157     | 10 |
| pH                                      | 6.9 $\pm$ 0.1   | 6.7     | 7.0     | 10 |
| Hardness (mg/L as CaCO <sub>3</sub> )   | 43 $\pm$ 4      | 34      | 51      | 10 |
| Alkalinity (mg/L as CaCO <sub>3</sub> ) | 32 $\pm$ 4      | 30      | 40      | 10 |
| Total ammonia (mg/L)                    | ---             | <0.1    | 1.5     | 10 |

Table 2. Mortality results of *Chironomus* toxicity test.

| Sample description    | Percent mortality<br>(Mean $\pm$ SD) | Statistically significantly<br>different than that of the<br>control? |
|-----------------------|--------------------------------------|---|
| Control (NAS# 3820G)  | 15.0 $\pm$ 5.3                       | ---   |
| 11070001 (NAS# 3838G) | 28.8 $\pm$ 19.6                      | No  |
| 11070002 (NAS# 3839G) | 16.3 $\pm$ 5.2                       | No  |
| 11070003 (NAS# 3840G) | 13.8 $\pm$ 11.9                      | No  |
| 11070004 (NAS# 3841G) | 11.3 $\pm$ 6.4                       | No  |

Table 3. Growth results of *Chironomus* toxicity test.

| Sample description    | Average ash-free dry<br>wt/midge (mg)*<br>(Mean $\pm$ SD) | Statistically significantly<br>different than that of the<br>control? |
|-----------------------|---|---|
| Control (NAS# 3820G)  | 0.85 $\pm$ 0.13   | ---   |
| 11070001 (NAS# 3838G) | 0.81 $\pm$ 0.18   | No  |
| 11070002 (NAS# 3839G) | 0.73 $\pm$ 0.11   | Yes   |
| 11070003 (NAS# 3840G) | 0.71 $\pm$ 0.09   | Yes   |
| 11070004 (NAS# 3841G) | 0.59 $\pm$ 0.10   | Yes   |

\* Pupae were not included in the sample to estimate ash-free dry weight (as per EPA/600/R-99/064, p. 59, section 12.3.8.2)

**APPENDIX I**  
**PROTOCOL**

**TEST PROTOCOL**

**FRESHWATER MIDGE, *CHIRONOMUS TENTANS*,  
10-DAY SEDIMENT TOXICITY TEST**

**1. INTRODUCTION**

1.1 Purpose of Study: The purpose of this study is to characterize the toxicity of freshwater sediments based on midge survival and growth using the midge, *Chironomus tentans*.

1.2 Referenced Method: This protocol is based on EPA Method 100.2 (EPA/600/R-99/064) and ASTM Method E 1706-00 (ASTM 2001).

1.3 Summary of Method: A summary of test conditions for the midge 10-day sediment toxicity test is tabulated below. The 10-day sediment toxicity test with *Chironomus tentans* is conducted at 23°C with a 16L:8D photoperiod at an illuminance of about 100-1000 lux. Test chambers are 300-mL high-form lipless beakers containing 100 mL of sediment and 175 mL of overlying water. Ten second to third-instar midges are used in each replicate (all organisms must be third instar or younger and at least 50% of the larvae must be third instar). The number of replicates/treatment depends on the objective of the test. Eight replicates are recommended for routine testing. Midges in each test chamber are fed 1.5 mL of a 4 g/L fish food flakes suspension daily. Each chamber receives two volume additions per day of overlying water. Overlying water can be culture water, well water, surface water, site water, or reconstituted water. Test endpoints include survival and/or growth.

**2. STUDY MANAGEMENT**

2.1 Sponsor's Name and Address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2.2 Sponsor's Study Monitor:

\_\_\_\_\_

2.3 Name of Testing Laboratory:

Northwestern Aquatic Sciences  
3814 Yaquina Bay Road, P.O. Box 1437  
Newport, OR 97365.

2.4 Test Location: \_\_\_\_\_

2.5 Laboratory's Personnel to be Assigned to the Study:

Study Director: \_\_\_\_\_  
Quality Assurance Unit: \_\_\_\_\_  
Aquatic Toxicologist: \_\_\_\_\_  
Aquatic Toxicologist: \_\_\_\_\_

2.6 Proposed Testing Schedule: Tests are to begin within 14 days of sample collection. Eight week holding times may apply in some circumstances. Reference toxicant test to be run concurrently.

2.7 Good Laboratory Practices: The test is conducted following the principles of Good Laboratory Practices (GLP) as defined in the EPA/TSCA Good Laboratory Practice regulations revised August 17, 1989 (40 CFR Part 792).

### 3. TEST MATERIAL

The test materials are freshwater sediments. The control, reference, and test sediments are placed in solvent cleaned 1 L glass jars fitted with PTFE-lined screw caps. At the laboratory the samples are stored at 4°C in the dark. The original sealed containers may be stored for up to 14 days prior to testing. Eight week holding times may apply in some circumstances. If jars are not full when received or if sediment is removed for testing, headspaces should be filled with nitrogen to retard deterioration. A negative control sediment is collected from a clean site. In addition, a reference sediment, a clean sediment with physical characteristics similar to the test sediments, may be employed as a comparison station.

### 4. TEST WATER

Test water (overlying water) at NAS is normally *C. tentans* culture water, which is moderately hard synthetic water at a hardness of 80-100 mg/L as CaCO<sub>3</sub> and alkalinity of 60-70 mg/L as CaCO<sub>3</sub>. Dilution water is prepared from Milli-Q reagent grade water and reagent grade chemicals. Test water may also be well water, surface water or site water depending on the study design.

### 5. TEST ORGANISMS

5.1 Species: midge, *Chironomus tentans*.

5.2 Source: Cultured at NAS (Originally obtained from U.S. EPA Environmental Research Lab, Duluth, MN) or purchased from a reputable commercial supplier.

5.3 Age: Third instar or younger larvae (at least 50% of the larvae must be in the third instar at the start of the test). Third instar is normally 9 to 11 days after hatching; head capsule widths range from 0.33 to 0.45 mm; or length ranges from 4-6 mm; or dry weight ranges 0.08 to 0.23 mg/individual.

5.4 Acclimation and Pretest Observation: Cultures are maintained at 23 ± 1°C under a 16:8 L:D photoperiod. The culture water is moderately hard synthetic water. Midge are fed finely ground Tetrafin flakes in suspension (10g Tetrafin in 100 mL Milli-Q water). Mortality during the 48-hr prior to testing should not be excessive.

### 6. DESCRIPTION OF TEST SYSTEM

6.1 Test Chambers and Environmental Control: Test chambers used in the toxicity test are 300-mL high-form lipless glass beakers (Pyrex® 1040 or equivalent). Test chambers are maintained at constant temperature by partial immersion in a temperature-controlled water bath or by placement in a temperature-controlled room. Aeration is not employed unless dissolved oxygen drops below 2.5 mg/L. The test is conducted under an illuminance of 100 to 1000 lux with a 16L:8D photoperiod.

6.2 Cleaning: All laboratory glassware, including test chambers, is cleaned as described in EPA/600/4-90/027F. New glassware and test systems are soaked 15 minutes in tap water and scrubbed with detergent (or cleaned in automatic dishwasher); rinsed twice with tap water; carefully rinsed once with fresh, dilute (10%, V:V) hydrochloric or nitric acid to remove scale, metals, and bases; rinsed twice with deionized water; rinsed once with acetone to remove organic compounds (using a fume hood or canopy); and rinsed three times with deionized water. Test systems and chambers are rinsed again with dilution water just before use.

### 7. EXPERIMENTAL DESIGN AND TEST PROCEDURES

7.1 Experimental Design: The test involves exposure of midge larvae to test, control, and reference sediments. The sediments are placed on the bottom of the test containers and are overlain with test water. The test exposure is

for 10 days. The renewal of overlying water consists of two volume additions per day, either continuous or intermittent. Each treatment consists of eight replicate test containers, each containing 10 organisms. Test chamber positions are completely randomized. Test organisms are randomly distributed to the test chambers. Blind testing is normally used.

**7.2 Setup of Test Containers:** Sediments are homogenized and placed in test chambers on the day before addition of test organisms. Sediment (100 ml) is placed into each of eight replicate beakers. After addition of the sediment, 175 ml of test water is gently added to each beaker in a manner to prevent resuspension. The overlying water is replaced twice daily. The test begins when midges are introduced to the test chambers. Initial water quality measurements are taken prior to the addition of test organisms.

**7.3 Effect Criterion:** The acute effect criterion used in the midge bioassay is mortality, defined as the lack of movement of body or appendages on response to tactile stimulation. The optional chronic effect criterion is growth which is determined by using dry weight measurements.

**7.4 Test Conditions:** No aeration is employed unless dissolved oxygen falls below 2.5 mg/L. The test temperature employed is 23°C (range of  $\pm 1^\circ\text{C}$ ). A 16:8, L:D photoperiod is used. Illumination is supplied by daylight fluorescent lamps at 100-1000 lux. The overlying water is replaced twice daily.

**7.5 Beginning the Test:** The test is begun by adding the organisms to the equilibrated test containers as previously described. Three extra replicates of midge larvae should be counted out and randomly selected for drying to determine initial average weight and instar data.

**7.6 Feeding:** Midge larvae are fed 1.5 mL daily per test chamber (1.5 mL contains 6.0 mg of dry solids). A feeding may be skipped if there is a build up of excess food. However, all beakers must be treated similarly.

**7.7 Test Duration, Type and Frequency of Observations, and Methods:** The duration of the acute toxicity test is 10 days. The type and frequency of observations to be made are summarized as follows:

| Type Of Observation  | Times Of Observation  |
|--|---|
| <b>Biological Data</b>   |   |
| Survival, growth   | Day 10  |
| <b>Physical And Chemical Data</b>  |   |
| Hardness, alkalinity, ammonia-N, conductivity, pH, dissolved oxygen, and temperature | Beginning and end of test in overlying water of one replicate beaker from each treatment. |
| Dissolved oxygen, temperature  | Daily in overlying water of one replicate beaker from each treatment.                     |

Dissolved oxygen is measured using a polarographic oxygen probe calibrated according to the manufacturer's recommendations. The pH is measured using a pH probe and a properly calibrated meter with scale divisions of 0.1 pH units. Temperature is measured with a calibrated mercury thermometer or telethermometer. Conductivity is measured with a conductivity meter. Hardness and alkalinity are measured using titrometric methods. Ammonia-nitrogen is measured using the salicylate colorimetric method (Clin. Chim. Acta 14:403, 1996).

**7.8 Growth Measurement:** Growth is measured as ash-free dry weight (AFDW) of animals in a test replicate at the end of the test on day 10. Pooled animals from each test replicate are rinsed with deionized water, gently blotted and placed into tared aluminum weigh pans. The pans are dried at 60-90°C to constant weight. The dried organisms are placed into a dessicator and weighed as soon as possible to the nearest 0.01 mg (desirable to use 0.001 mg). The total weight of the dried midge in each pan is divided by the number of midge weighed to obtain an average dry weight per midge. The dried larvae in the pan are then ashed at 550°C for two hours. The pan with the ashed larvae is then reweighed and the tissue mass of the larvae is determined as the difference between the weight

of the dried larvae plus pan and the weight of the ashed larvae plus pan. Pupae or adult organisms are not included in the sample to estimate AFDW.

8. CRITERIA OF TEST ACCEPTANCE:

The test results are acceptable if the minimum survival of organisms in the control treatment at the end of the test is at least 70% and the average ash-free dry weight of *C. tentans* in the surviving controls is at least 0.48 mg.

9. DATA ANALYSIS

The endpoints of the toxicity test are survival and growth. Survival is obtained as a direct count of living organisms in each test container at the end of the test. Average midge ash-free dry weight, also measured at the end of the test, may be used to compare growth between treatment sediments and the control or reference sediment. Ordinarily the following data analysis is performed. Due to special requirements, alternative methods may be used. The means and standard deviations are calculated for each treatment level. Identification of toxic sediments is established by statistical comparison of test endpoints between test and control or reference sediments. Between treatment comparisons may be made using a Student's t-test or Wilcoxon's Two-Sample test, where each treatment is compared to the control or the reference sediment. An arcsine-square root transformation of proportional data, and tests for normality and heterogeneity of variances, are performed prior to statistical comparisons.

10. REPORTING

The final report of the test results must include all of the following standard information at a minimum: name and identification of the test; the investigator and laboratory; date and time of test beginning and end; information on the test material; information on the source and quality of the overlying/test water; detailed information about the test organisms including acclimation conditions; a description of the experimental design and test chambers and other test conditions including feeding, if any, and water quality; definition of the effect criteria and other observations; responses, if any, in the control treatment; tabulation and statistical analysis of measured responses and a summary table of endpoints; a description of the statistical methods used; any unusual information about the test or deviations from procedures; reference toxicant testing information.

11. STUDY DESIGN ALTERATION

Amendments made to the protocol must be approved by the sponsor and study director and should include a description of the change, the reason for the change, the date the change took effect and the dated signatures of the study director and sponsor. Any deviations in the protocol must be described and recorded in the study raw data.

12. REFERENCE TOXICANT

The reference toxicant test is a standard multi-concentration toxicity test using a specified chemical toxicant to evaluate the performance of test organisms used in the study. Reference toxicant tests are 96-hour, water only exposures, not 10-day sediment exposures. The reference toxicant test is run concurrently. Performance is evaluated by comparing the results of the reference toxicant test with historical results (e.g., control charts) obtained at the laboratory.

13. REFERENCED GUIDELINES

ASTM. 2001. Standard Test Methods for Measuring the Toxicity of Sediment-associated Contaminants with Fresh water Invertebrates. ASTM Standard Method No. E 1706-00. Am. Soc. Test. Mat., Philadelphia, PA.

U.S. EPA. 2000. Section 12, Test Method 100.2, *Chironomus tentans* 10-d Survival and Growth Test for Sediments, pp. 55-62. In: Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates (Second Edition). EPA/600/R-99/064.

Weber, C.I. (Ed.) 1993. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (Fourth Edition). EPA/600/4-90/027F.

14. APPROVALS

\_\_\_\_\_  
Name Date for \_\_\_\_\_

\_\_\_\_\_  
Name Date for **Northwestern Aquatic Sciences**



**Appendix A**  
**Test Conditions Summary**

|                                 |  |
|---------------------------------|--|
| 1. Test type                    | whole sediment toxicity test with renewal of overlying water                                     |
| 2. Test duration                | 10 days  |
| 3. Temperature                  | 23 ± 1°C   |
| 4. Light quality                | daylight flourescent light   |
| 5. Illuminance                  | 100-1000 lux   |
| 6. Photoperiod                  | 16L:8D   |
| 7. Test chamber size            | 300-mL high-form lipless beakers (Pyrex® 1040 or equivalent)                                     |
| 8. Sediment volume              | 100 mL   |
| 9. Overlying water volume       | 175 mL   |
| 10. Renewal overlying water     | 2 volume additions/day (continuous or intermittent)  |
| 11. Age of test organisms       | 2nd to 3rd instar or younger larvae (≥ 50% of organisms must be 3rd instar)                      |
| 12. Organisms per test chamber  | 10   |
| 13. Replicates per treatment    | 8 recommended for routine (depends on design)  |
| 14. Organisms per treatment     | 80   |
| 15. Feeding regime              | Fish food flakes, fed 1.5 mL chamber (1.5 mL contains 6.0 mg of dry solids) daily on days 0 - 9. |
| 16. Aeration                    | None, unless DO falls below 2.5 mg/L.  |
| 17. Overlying (test) water      | Culture water, well water, surface water, site water or reconstituted water                      |
| 18. Water quality               | Hardness, alkalinity, conductivity, pH, ammonia-N beginning and end; temperature and DO daily    |
| 19. Endpoints                   | Survival and growth (dry weight)   |
| 20. Test acceptability criteria | Minimum control survival of 70%; mean weight of surviving control organisms 0.48 mg AFDW         |
| 21. Sample holding              | ≤14 days at 4°C in the dark Longer under certain conditions                                      |
| 22. Sample volume required      | 1L (800 mL per sediment)   |
| 23. Reference toxicant          | Concurrent testing required  |

## **APPENDIX II**

### **RAW DATA**

**TEST DESCRIPTION, MONITORING, AND RESULTS  
BENCHSHEETS**

NORTHWESTERN AQUATIC SCIENCES  
CHIRONOMUS DILUTUS 10-DAY SOLID PHASE SEDIMENT TEST

PROTOCOL NO. NAS-XXX-CT4b

REVIEWED  
PAGE 1-28  
-631

Test No. 826-2 Client Ecology & Environment Investigator

**STUDY MANAGEMENT**

Client: Ecology & Environment, Inc., 720 Third Ave., Suite 1700, Seattle, WA 98104

Client's Study Monitor: Mark Woodke

Testing Laboratory: Northwestern Aquatic Sciences

Test Location: Newport Laboratory

Laboratory's Study Personnel:

Proj. Man./Study Dir. G.J. Irissarri <sup>631</sup>

QA Officer L.K. Nemeth

- |  |   |
|--|---|
| 1. <u>G.A. Hiler</u> <sup>85</sup>     | 2. <u>Y. Ver Nalchamaya</u>               |
| 3. <u>Brian Horst</u> <sup>BH</sup>    | 4. <u>Lidia P. Sandoval</u> <sup>LP</sup> |
| 5. <u>R.S. Caldwell</u> <sup>128</sup> | 6. <u></u>                                |
| 7. <u></u>                             | 8. <u></u>                                |

Study Schedule:

Test Beginning: 8-26-11 1155

Test Ending: 9-5-11 1330

**TEST MATERIAL**

General description (see sample logbook/chain-of-custody for details):

| NAS Sample No.:  | 3820G   | 3838G    | 3839G    | 3840G    | 3841G    |
|------------------|---------|----------|----------|----------|----------|
| Description:     | Control | 11070001 | 11070002 | 11070003 | 11070004 |
| Collection Date: | 8/14/11 | 7/27/11  | 7/27/11  | 7/27/11  | 7/27/11  |
| Receipt Date:    | 8/14/11 | 8/24/11  | 8/24/11  | 8/24/11  | 8/24/11  |
| :                |         |          |          |          |          |
| NAS Sample No.:  |         |          |          |          |          |
| Description:     |         |          |          |          |          |
| Collection Date: |         |          |          |          |          |
| Receipt Date:    |         |          |          |          |          |
| :                |         |          |          |          |          |
| NAS Sample No.:  |         |          |          |          |          |
| Description:     |         |          |          |          |          |
| Collection Date: |         |          |          |          |          |
| Receipt Date:    |         |          |          |          |          |
| :                |         |          |          |          |          |
| NAS Sample No.:  |         |          |          |          |          |
| Description:     |         |          |          |          |          |
| Collection Date: |         |          |          |          |          |
| Receipt Date:    |         |          |          |          |          |
| :                |         |          |          |          |          |
| NAS Sample No.:  |         |          |          |          |          |
| Description:     |         |          |          |          |          |
| Collection Date: |         |          |          |          |          |
| Receipt Date:    |         |          |          |          |          |
| :                |         |          |          |          |          |

Error codes: 1) correction of handwriting error

2) written in wrong location; entry deleted

3) wrong date deleted, replaced with correct date

4) error found in measurement; measurement repeated

Test No. 826-2 Client Ecology & Environment Investigator \_\_\_\_\_

## SEDIMENT DESCRIPTIONS – SUPPLEMENTAL NOTES

[illegible]

## CHIRONOMUS DILUTUS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 826-2 Client Ecology & Environment Investigator                     **TEST WATER**Source: Dechlorinated municipal tap waterDate of Collection: 8-25-11, 8-26-11pH 7.6, 7.5Cond (umhos/cm<sup>2</sup>) 136, 143Hardness (mg/L) 43, 43Alkalinity (mg/L) 30, 30Total Chlorine (mg/L)                     Treatments: Dechlorinated, aerated**TEST ORGANISMS**Species: Chironomus dilutusAge: 3rd instarSource: NAS culturesDate received: N/A**Acclimation Data:**

| Date    | Temp.<br>(deg.C) | pH  | DO<br>(mg/L) | Cond.<br>umhos/cm | Hardness<br>(mg/L) | Alkalinity<br>(mg/L) | Feeding               | Water<br>changes |
|---------|------------------|-----|--------------|-------------------|--------------------|----------------------|-----------------------|------------------|
| 8-15-11 | 21.4             | 7.4 | 8.0          | 163               | -                  | -                    | Animals fed Tetra Fin | yes              |
| 8-17-11 | 21.7             | 7.6 | 8.5          | 158               | 43                 | 30                   | and Selenastrum       | 1                |
| 8-19-11 | 21.8             | 7.6 | 8.6          | 157               | -                  | -                    | Details recorded on   | -                |
| 8-22-11 | 22.4             | 7.4 | 9.0          | 164               | -                  | -                    | Chironomid culture    | yes              |
| 8-24-11 | 22.6             | 7.0 | 7.0          | 159               | 60                 | 30                   | data sheets           | -                |
| 8-26-11 | 21.6             | 7.1 | 7.4          | 163               | -                  | -                    |                       | yes              |
| Mean    | 21.9             | 7.4 | 8.1          | 161               | 52                 | 30                   |                       |                  |
| S.D.    | 0.5              | 0.3 | 0.9          | 3                 | -                  | -                    |                       |                  |
| (N)     | 6                | 6   | 6            | 6                 | 2                  | 2                    |                       |                  |

Photoperiod during acclimation: 16:8, L:D**TEST PROCEDURES AND CONDITIONS**

Test chambers: 300 ml glass beakers

Test volumes: 100 ml of test sediment; 275 ml total volume

Replicates/treatment: (8) 8 Organisms/treatment: (80) 80 (10/REP)

Test water changes: Twice daily

Aeration: only if DO falls below 2.5 mg/L

Beaker placement: Total randomization

Feeding: everyday beginning with day zero

Photoperiod: 16:8, L:D

Test temperature (°C): 23 ± 1

**Control Sediment:**Source: From an area approximately one mile east of the Hwy. 101 bridge at Beaver Creek,  
approx. 8 miles south of Newport, OR.Date collected: 0.5 8/14/11Sieved through                     -mm screenStorage: darkness at 4°C, in sealed containersNAS# 3820G**MISCELLANEOUS NOTES**

Light intensity:

| Date    | Location   | Light Intensity (ft-candles*) | Initials |
|---------|------------|-------------------------------|----------|
| 8-30-11 | BEAKER #23 | 84.7                          | LSL      |

\*To convert ft-candles to lux multiply by 10.76

## CHIRONOMUS DILUTUS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 826-2 Client Ecology & Environment Investigator \_\_\_\_\_

Test conducted in (circle one): room 1 room 2 trailer water bath other: \_\_\_\_\_

Randomization chart:

TOP SHELF

|   |    |    |    |    |    |    |  |  |  |
|---|----|----|----|----|----|----|--|--|--|
| 6 | 12 | 18 | 24 | 30 | 36 |    |  |  |  |
| 5 | 11 | 17 | 23 | 29 | 35 |    |  |  |  |
| 4 | 10 | 16 | 22 | 28 | 34 | 40 |  |  |  |
| 3 | 9  | 15 | 21 | 27 | 33 | 39 |  |  |  |
| 2 | 8  | 14 | 20 | 26 | 32 | 38 |  |  |  |
| 1 | 7  | 13 | 19 | 25 | 31 | 37 |  |  |  |

Randomization chart:

|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|
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|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |

Randomization chart:

|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|
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Test No. 826-2 Client Ecology & Environment Investigator

## DAILY RECORD SHEET

Day 0 ( 8/26/11 ) YR/OS

[illegible]

\*Water quality measurements to be taken.

Day 1 (8/27/11) 632

[illegible]

\*Water quality measurements to be taken.



|          |       |        |                       |              |
|----------|-------|--------|-----------------------|--------------|
| Test No. | 826-2 | Client | Ecology & Environment | Investigator |
|----------|-------|--------|-----------------------|--------------|

# DAILY RECORD SHEET

Day 2 ( 8 / 28 / 11 ) 6:1

[illegible]

\*Water quality measurements to be taken.

Day 3 (8/29/11) 652

[illegible]

\*Water quality measurements to be taken.

Test No. 826-2 Client Ecology & Environment Investigator

## DAILY RECORD SHEET

Day 4 (9/30/11) 651

[illegible]

\*Water quality measurements to be taken.

Day 5 ( 8/21/11 ) BH

[illegible]

\*Water quality measurements to be taken.

Test No. 826-2 Client Ecology & Environment Investigator

# DAILY RECORD SHEET

Day 6 ( 9 / 1 / 11 ) up

[illegible]

\*Water quality measurements to be taken.

Day 7 ( 9/2/11 ) JP

[illegible]

\*Water quality measurements to be taken.

Test No. 826-2 Client Ecology & Environment Investigator

## DAILY RECORD SHEET

Day 8 (9/3/11) 1013

[illegible]

\*Water quality measurements to be taken.

Day 9 (9/4/11) LS1

[illegible]

\*Water quality measurements to be taken.

## CHIRONOMUS DILUTUS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 826-2 Client Ecology & Environment Investigator                     

## DAILY RECORD SHEET

Day 10 (9 / 5 / 11) 651

| Beaker No. | Temp.* (deg.C) | DO* (ppm) | Cond.* (umhos/cm) | pH* | Hardness* (mg/L) | Alkalinity* (mg/L) | NH3* (ppm) | Comments                  |
|------------|----------------|-----------|-------------------|-----|------------------|--------------------|------------|---------------------------|
| 1          | 22.7           | 7.4       | 149               | 6.8 | 43               | 40                 |            | Each beaker fed 1.5 ml    |
| 7          | 22.7           | 6.9       | 153               | 6.8 | 34               | 40                 |            | Tetra Fin suspension      |
| 8          | 22.6           | 7.1       | 151               | 6.8 | 51               | 30                 |            | Initials: <u>        </u> |
| 10         | 22.7           | 6.6       | 153               | 6.8 | 43               | 30                 |            |                           |
| 22         | 22.7           | 6.0       | 151               | 6.7 | 43               | 30                 |            |                           |
|            |                |           |                   |     |                  |                    |            |                           |
|            |                |           |                   |     |                  |                    |            |                           |
|            |                |           |                   |     |                  |                    |            |                           |
|            |                |           |                   |     |                  |                    |            |                           |
|            |                |           |                   |     |                  |                    |            | Water changed in all      |
|            |                |           |                   |     |                  |                    |            | beakers.                  |
|            |                |           |                   |     |                  |                    |            | Time: <u>0540</u>         |
|            |                |           |                   |     |                  |                    |            | Initials: <u>651</u>      |
|            |                |           |                   |     |                  |                    |            |                           |
|            |                |           |                   |     |                  |                    |            |                           |
|            |                |           |                   |     |                  |                    |            | Water changed in all      |
|            |                |           |                   |     |                  |                    |            | beakers.                  |
|            |                |           |                   |     |                  |                    |            | Time: <u>        </u>     |
|            |                |           |                   |     |                  |                    |            | Initials: <u>        </u> |
|            |                |           |                   |     |                  |                    |            |                           |

\*Water quality measurements to be taken.

Day          (    /    /    )

| Beaker No. | Temp. (deg.C) | DO (ppm) | Cond. (umhos/cm) | pH | Hardness (mg/L) | Alkalinity (mg/L) | NH3 (ppm) | Comments               |
|------------|---------------|----------|------------------|----|-----------------|-------------------|-----------|------------------------|
| 1          |               |          |                  |    |                 |                   |           | Each beaker fed 1.5 ml |
| 7          |               |          |                  |    |                 |                   |           | Tetra Fin suspension   |
| 8          |               |          |                  |    |                 |                   |           | Initials:              |
| 10         |               |          |                  |    |                 |                   |           |                        |
| 22         |               |          |                  |    |                 |                   |           |                        |
|            |               |          |                  |    |                 |                   |           |                        |
|            |               |          |                  |    |                 |                   |           |                        |
|            |               |          |                  |    |                 |                   |           |                        |
|            |               |          |                  |    |                 |                   |           |                        |
|            |               |          |                  |    |                 |                   |           | Water changed in all   |
|            |               |          |                  |    |                 |                   |           | beakers.               |
|            |               |          |                  |    |                 |                   |           | Time:                  |
|            |               |          |                  |    |                 |                   |           | Initials:              |
|            |               |          |                  |    |                 |                   |           |                        |
|            |               |          |                  |    |                 |                   |           |                        |
|            |               |          |                  |    |                 |                   |           | Water changed in all   |
|            |               |          |                  |    |                 |                   |           | beakers.               |
|            |               |          |                  |    |                 |                   |           | Time:                  |
|            |               |          |                  |    |                 |                   |           | Initials:              |
|            |               |          |                  |    |                 |                   |           |                        |

\*Water quality measurements to be taken.

Test No. 826-2 Client Ecology & Environment Investigator

DAY 10 TEST TERMINATION SHEET

| Beaker No. | Number of survivors | Initials |
|------------|---------------------|----------|
| 1          | 10                  | 631      |
| 2          | 10                  | 631      |
| 3          | 10                  | 631      |
| 4          | 8                   | 631      |
| 5          | 9                   | 631      |
| 6          | 8                   | 631      |
| 7          | 8                   | 631      |
| 8          | 9                   | 631      |
| 9          | 9                   | 631      |
| 10         | 8                   | 631      |
| 11         | 10                  | 631      |
| 12         | 8                   | 631      |
| 13         | 10                  | 631      |
| 14         | 9                   | 631      |
| 15         | 9                   | 631      |
| 16         | 9                   | 631      |
| 17         | 9                   | 631      |
| 18         | 7                   | 631      |
| 19         | 8                   | 631      |
| 20         | 9                   | 631      |
| 21         | 8                   | 631      |
| 22         | 5                   | 631      |
| 23         | 5                   | 631      |
| 24         | 10                  | 631      |
| 25         | 8                   | 631      |
| 26         | 8                   | 631      |
| 27         | 7                   | 631      |
| 28         | 10                  | 631      |
| 29         | 8                   | 631      |
| 30         | 9                   | 631      |
| 31         | 9                   | 631      |
| 32         | 6                   | 631      |
| 33         | 8                   | 631      |
| 34         | 7                   | 631      |
| 35         | 7                   | 631      |
| 36         | 8                   | 631      |
| 37         | 8                   | 631      |
| 38         | 8                   | 631      |
| 39         | 9                   | 631      |
| 40         | 8                   | 631      |
| 41         |                     |          |
| 42         |                     |          |
| 43         |                     |          |
| 44         |                     |          |
| 45         |                     |          |

| Beaker No. | Number of survivors | Initials |
|------------|---------------------|----------|
| 46         |                     |          |
| 47         |                     |          |
| 48         |                     |          |
| 49         |                     |          |
| 50         |                     |          |
| 51         |                     |          |
| 52         |                     |          |
| 53         |                     |          |
| 54         |                     |          |
| 55         |                     |          |
| 56         |                     |          |
| 57         |                     |          |
| 58         |                     |          |
| 59         |                     |          |
| 60         |                     |          |
| 61         |                     |          |
| 62         |                     |          |
| 63         |                     |          |
| 64         |                     |          |
| 65         |                     |          |
| 66         |                     |          |
| 67         |                     |          |
| 68         |                     |          |
| 69         |                     |          |
| 70         |                     |          |
| 71         |                     |          |
| 72         |                     |          |
| 73         |                     |          |
| 74         |                     |          |
| 75         |                     |          |
| 76         |                     |          |
| 77         |                     |          |
| 78         |                     |          |
| 79         |                     |          |
| 80         |                     |          |
| 81         |                     |          |
| 82         |                     |          |
| 83         |                     |          |
| 84         |                     |          |
| 85         |                     |          |
| 86         |                     |          |
| 87         |                     |          |
| 88         |                     |          |
| 89         |                     |          |
| 90         |                     |          |

## CHIRONOMUS DILUTUS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 826-2 Client Ecology & Environment Investigator

Tare: Date 8-24-11 Oven temp (C.) 62 Drying time (hr.) 24 Initials 631  
 Standard Weights: 10 mg: 10.009 100mg: 100.017

Final Date 8-28-11 Oven temp (C.) 63 Drying time (hr.) 24 Initials 631  
 #1 Standard Weights: 10 mg: 10.007 100mg: 100.017

Final: Date 8-29-11 Oven temp (C.) 65 Drying time (hr.) 24 Initials 631  
 #2 Standard Weights: 10 mg: 10.007 100mg: 100.017

Equip. used: Oven: BLUE M #1 Balance: SARTORIUS M3P

(Dry overnight at 60-90 degrees C)

| Pan # | Tare wt.<br>(mg) | Total wt. (mg)       |       | #weighed |  |
|-------|------------------|----------------------|-------|----------|--|
|       |                  | 1                    | 2     |          |  |
| 1     | 83.93            | 85.31 <sup>631</sup> | 85.27 | 10       |  |
| 2     | 86.56            | 87.99                | 87.96 | 10       |  |
| 3     | 85.27            | 86.65                | 86.63 | 10       |  |
| 4     | 85.03            | 86.60                | 86.57 | 10       |  |
| 5     | 78.45            | 80.01                | 79.98 | 10       |  |

## CHIRONOMUS DILUTUS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 826-2 Client Ecology & Environment Investigator 

## WEIGHING DATA SHEET

Tare: Date 8-29-11 Oven temp (C.) 550 Drying time (hr.) 2 Initials 6J1  
 Standard Weights: 10 mg: 10.007 100mg: 100.017

Final #1: Date 9-6-11 Oven temp (C.) 62 Drying time (hr.) 23.5 Initials 6J1  
 Standard Weights: 10 mg: 10.007 100mg: 100.016

Final #2: Date 9-7-11 Oven temp (C.) 62 Drying time (hr.) 24 Initials 6J1  
 Standard Weights: 10 mg: 10.007 100mg: 100.015

Final #3: Date 9-10-11 Oven temp (C.) 550 Drying time (hr.) 2 Initials 6J1  
 Standard Weights: 10 mg: 10.008 100mg: 100.014

Equip. used: Oven BLUE M #1, FISHER ISOTEMP MUFFLE FURNACE Balance SARTORIUS M3P  
 (Dry overnight at 60-90 degrees C) (Final ashing is at 550 degrees C for 2 hours)

| Bkr. # | Pan # | Tare wt. (mg) | Dry total wt. (mg) |       | no. weighed | put into pans-initials | Ash weight (mg) | Comments |
|--------|-------|---------------|--------------------|-------|-------------|------------------------|-----------------|----------|
|        |       |               | 1                  | 2     |             |                        |                 |          |
| 1      | 1     | 74.66         | 81.33              | 81.28 | 10          | YR                     | 75.22           |          |
| 2      | 2     | 80.73         | 89.09              | 89.01 | 10          | YR                     | 81.71           |          |
| 3      | 3     | 83.84         | 91.76              | 91.68 | 10          | YR                     | 84.68           |          |
| 4      | 4     | 84.26         | 90.64              | 90.57 | 8           | YR                     | 84.83           |          |
| 5      | 5     | 82.18         | 88.88              | 88.82 | 9           | YR                     | 82.86           |          |
| 6      | 6     | 79.63         | 87.06              | 86.97 | 8           | YR                     | 80.20           |          |
| 7      | 7     | 81.46         | 90.76              | 90.65 | 8           | YR                     | 82.38           |          |
| 8      | 8     | 79.09         | 85.84              | 85.74 | 9           | YR                     | 79.62           |          |
| 9      | 9     | 74.33         | 84.99              | 84.84 | 9           | YR                     | 75.91           |          |
| 10     | 10    | 77.60         | 83.49              | 83.41 | 8           | YR                     | 78.13           |          |
| 11     | 11    | 82.03         | 89.76              | 89.63 | 10          | YR                     | 82.69           |          |
| 12     | 12    | 74.84         | 83.69              | 83.55 | 8           | YR                     | 76.25           |          |
| 13     | 13    | 79.16         | 86.34              | 86.23 | 10          | YR                     | 79.73           |          |
| 14     | 14    | 77.07         | 83.08              | 83.01 | 9           | YR                     | 77.65           |          |
| 15     | 15    | 81.44         | 89.77              | 89.60 | 9           | YR                     | 82.58           |          |
| 16     | 16    | 79.63         | 88.95              | 88.72 | 9           | YR                     | 81.21           |          |
| 17     | 17    | 81.72         | 88.08              | 87.94 | 9           | YR                     | 82.31           |          |
| 18     | 18    | 78.39         | 85.58              | 85.42 | 7           | YR                     | 79.03           |          |
| 19     | 19    | 76.78         | 84.10              | 83.94 | 8           | YR                     | 77.85           |          |
| 20     | 20    | 77.18         | 82.30              | 82.21 | 9           | YR                     | 78.00           |          |
| 21     | 21    | 80.33         | 86.23              | 86.16 | 8           | YR                     | 81.12           |          |
| 22     | 22    | 80.52         | 86.97              | 86.87 | 5           | YR                     | 81.55           |          |
| 23     | 23    | 80.27         | 83.84              | 83.81 | 5           | YR                     | 80.78           |          |
| 24     | 24    | 77.29         | 84.87              | 84.86 | 10          | YR                     | 78.25           |          |
| 25     | 25    | 82.04         | 87.47              | 87.46 | 8           | YR                     | 82.67           |          |
| 26     | 26    | 75.04         | 83.29              | 83.28 | 8           | YR                     | 75.79           |          |
| 27     | 27    | 90.49         | 97.61              | 97.58 | 7           | YR                     | 91.73           |          |
| 28     | 28    | 83.68         | 91.04              | 91.00 | 9           | YR                     | 84.59           |          |
| 29     | 29    | 82.42         | 89.12              | 89.08 | 8           | YR                     | 83.24           |          |
| 30     | 30    | 79.54         | 87.00              | 86.97 | 9           | YR                     | 80.48           |          |
| 31     | 31    | 73.07         | 82.29              | 82.25 | 9           | YR                     | 74.70           |          |
| 32     | 32    | 76.29         | 84.09              | 84.05 | 6           | YR                     | 77.45           |          |
| 33     | 33    | 79.77         | 86.21              | 86.17 | 8           | YR                     | 80.68           |          |



## CHIRONOMUS DILUTUS 10-DAY SOLID PHASE SEDIMENT TEST

Test No. 826-2

Client \_\_\_\_\_

Ecology &amp; Environment

Investigator \_\_\_\_\_

## WEIGHING DATA SHEET

See page \_\_\_\_\_ for information on drying times and temperatures, standard weights, etc.

| Bkr.<br># | Pan<br># | Tare wt.<br>(mg)          | Dry total wt. (mg) |       | no.<br>weighed | put into<br>pans-initials | Ash weight<br>(mg) |  |
|-----------|----------|---------------------------|--------------------|-------|----------------|---------------------------|--------------------|--|
|           |          |                           | 1                  | 2     |                |                           |                    |  |
| 34        | 34       | 77.87                     | 84.09              | 84.06 | 7              | YR                        | 78.97              |  |
| 35        | 35       | 81.35                     | 87.67              | 87.64 | 7              | YR                        | 82.53              |  |
| 36        | 36       | 75.93                     | 83.05              | 83.01 | 8              | YR                        | 76.84              |  |
| 37        | 37       | 77.68                     | 84.20              | 84.17 | 8              | YR                        | 78.72              |  |
| 38        | 38       | 78.77                     | 84.84              | 84.81 | 8              | YR                        | 80.18              |  |
| 39        | 39       | 75.09                     | 79.79              | 79.77 | 8              | YR                        | 75.98              |  |
| 40        | 40       | 80.36                     | 86.80              | 86.77 | 8              | YR                        | 81.39              |  |
| 41        | 41       | 74.81<br><del>83.85</del> |                    |       |                |                           |                    |  |
| 42        | 42       | 84.83                     |                    |       |                |                           |                    |  |
| 43        | 43       |                           |                    |       |                |                           |                    |  |
| 44        | 44       |                           |                    |       |                |                           |                    |  |
| 45        | 45       |                           |                    |       |                |                           |                    |  |
| 46        | 46       |                           |                    |       |                |                           |                    |  |
| 47        | 47       |                           |                    |       |                |                           |                    |  |
| 48        | 48       |                           |                    |       |                |                           |                    |  |
| 49        | 49       |                           |                    |       |                |                           |                    |  |
| 50        | 50       |                           |                    |       |                |                           |                    |  |
| 51        | 51       |                           |                    |       |                |                           |                    |  |
| 52        | 52       |                           |                    |       |                |                           |                    |  |
| 53        | 53       |                           |                    |       |                |                           |                    |  |
| 54        | 54       |                           |                    |       |                |                           |                    |  |
| 55        | 55       |                           |                    |       |                |                           |                    |  |
| 56        | 56       |                           |                    |       |                |                           |                    |  |
| 57        | 57       |                           |                    |       |                |                           |                    |  |
| 58        | 58       |                           |                    |       |                |                           |                    |  |
| 59        | 59       |                           |                    |       |                |                           |                    |  |
| 60        | 60       |                           |                    |       |                |                           |                    |  |
| 61        | 61       |                           |                    |       |                |                           |                    |  |
| 62        | 62       |                           |                    |       |                |                           |                    |  |
| 63        | 63       |                           |                    |       |                |                           |                    |  |
| 64        | 64       |                           |                    |       |                |                           |                    |  |
| 65        | 65       |                           |                    |       |                |                           |                    |  |
| 66        | 66       |                           |                    |       |                |                           |                    |  |
| 67        | 67       |                           |                    |       |                |                           |                    |  |
| 68        | 68       |                           |                    |       |                |                           |                    |  |
| 69        | 69       |                           |                    |       |                |                           |                    |  |
| 70        | 70       |                           |                    |       |                |                           |                    |  |
| 71        | 71       |                           |                    |       |                |                           |                    |  |
| 72        | 72       |                           |                    |       |                |                           |                    |  |
| 73        | 73       |                           |                    |       |                |                           |                    |  |
| 74        | 74       |                           |                    |       |                |                           |                    |  |
| 75        | 75       |                           |                    |       |                |                           |                    |  |
| 76        | 76       |                           |                    |       |                |                           |                    |  |

## TEST DATA ANALYSIS RECORDS

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| pan # | INITIAL WEIGHT  |                  |    | wt   | count | avg. wt/<br>organism |
|-------|-----------------|------------------|----|------|-------|----------------------|
|       | tare wt<br>(mg) | final wt<br>(mg) | wt |      |       |                      |
| 1     | 83.93           | 85.27            | 10 | 0.13 |       |                      |
| 2     | 86.56           | 87.96            | 10 | 0.14 |       |                      |
| 3     | 85.27           | 86.63            | 10 | 0.14 |       |                      |
| 4     | 85.03           | 86.57            | 10 | 0.15 |       |                      |
| 5     | 78.45           | 79.98            | 10 | 0.15 |       |                      |

Project Name: P826-2 Chironomus 10-day; % Mortality

Sample: x1  
 Samp ID: 11070001  
 Alias: NAS# 3838G - X1  
 Replicates: 8  
 Mean: 28.75  
 SD: 19.594  
 Tr Mean: 0.34  
 Trans SD: 1.217

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 15  
 SD: 5.345  
 Tr Mean: -0.34  
 Trans SD: 0.363

| Shapiro-Wilk Results:   | Levene's Results:  | Test Results:   |
|---|--|---|
| Residual Mean:<br>Residual SD:<br>SS:<br>K:<br>b:<br><br>Alpha Level: N/A<br>Calculated Value: N/A<br>Critical Value: N/A<br><br>Normally<br>Distributed: N/A<br><br>Override Option: Not Invoked | Test Residual Mean: 0.933<br>Test Residual SD: 0.697<br>Ref. Residual Mean: 0.34<br>Ref. Residual SD: 0<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 2.4052<br>Critical Value: $\geq 1.761$<br><br>Variances<br>Homogeneous: No | Statistic: Approximate t<br>Balanced Design: Yes<br>Transformation: Ranks<br><br>Experimental Hypothesis<br>Null: $x1 \leq x2$<br>Alternate: $x1 > x2$<br><br>Degrees of Freedom: 8<br>Experimental Alpha Level: 0.05<br>Calculated Value: 1.5142<br>Critical Value: $\geq 1.86$<br>Accept Null Hypothesis: Yes<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Shapiro-Wilk Residuals |
|------------------|-----------|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|------------------------|
| 1                | 50        | 1.526            | 10             | -0.68                 | 1.186                   | 0.34                         |                    |                        |
| 2                | 30        | 0.576            | 10             | -0.68                 | 0.236                   | 0.34                         |                    |                        |
| 3                | 0         | -1.526           | 20             | 0                     | 1.865                   | 0.34                         |                    |                        |
| 4                | 30        | 0.576            | 20             | 0                     | 0.236                   | 0.34                         |                    |                        |
| 5                | 0         | -1.526           | 10             | -0.68                 | 1.865                   | 0.34                         |                    |                        |
| 6                | 30        | 0.576            | 20             | 0                     | 0.236                   | 0.34                         |                    |                        |
| 7                | 40        | 0.99             | 10             | -0.68                 | 0.65                    | 0.34                         |                    |                        |
| 8                | 50        | 1.526            | 20             | 0                     | 1.186                   | 0.34                         |                    |                        |
| 9                |           |                  |                |                       |                         |                              |                    |                        |
| 10               |           |                  |                |                       |                         |                              |                    |                        |
| 11               |           |                  |                |                       |                         |                              |                    |                        |
| 12               |           |                  |                |                       |                         |                              |                    |                        |
| 13               |           |                  |                |                       |                         |                              |                    |                        |
| 14               |           |                  |                |                       |                         |                              |                    |                        |
| 15               |           |                  |                |                       |                         |                              |                    |                        |
| 16               |           |                  |                |                       |                         |                              |                    |                        |

THE % MORTALITY OF 11070001 WAS NOT SIGNIFICANTLY GREATER THAN THAT OF THE CONTROL ~~AT~~ AT  $\alpha = 0.05$ .  
 632 -632

Project Name: P826-2 Chironomus 10-day; % Mortality

Sample: x1  
 Samp ID: 11070002  
 Alias: NAS# 3839G - X1  
 Replicates: 8  
 Mean: 16.25  
 SD: 5.175  
 Tr Mean: 23.516  
 Trans SD: 4.208

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 15  
 SD: 5.345  
 Tr Mean: 22.5  
 Trans SD: 4.346

| Shapiro-Wilk Results:   | Levene's Results:   | Test Results:   |
|---|---|---|
| Residual Mean: 0<br>Residual SD: 3.672<br>SS: 256.131<br>K: 8<br>b: 13.682<br><br>Alpha Level: 0.05<br>Calculated Value: 0.7309<br>Critical Value: $\leq 0.887$<br><br>Normally Distributed: No<br><br>Override Option: Not Invoked | Test Residual Mean: 3.811<br>Test Residual SD: 1.052<br>Ref. Residual Mean: 4.065<br>Ref. Residual SD: 0<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 0.6831<br>Critical Value: $\geq 1.761$<br><br>Variances Homogeneous: Yes | Statistic: Mann-Whitney<br>Balanced Design: Yes<br>Transformation: rank-order<br><br>Experimental Hypothesis<br>Null: $x1 \leq x2$<br>Alternate: $x1 > x2$<br><br>Mann-Whitney N1: 8<br>Mann-Whitney N2: 8<br>Degrees of Freedom:<br>Experimental Alpha Level: 0.05<br>Calculated Value: 36<br>Critical Value: $\geq 49.0$<br>Accept Null Hypothesis: Yes<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Rankits | Shapiro-Wilk Residuals |
|------------------|-----------|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|---------|------------------------|
| 1                | 20        | 12               | 10             | 4                     | 3.049                   | 4.065                        | 18.435             |         | -5.081                 |
| 2                | 20        | 12               | 10             | 4                     | 3.049                   | 4.065                        | 18.435             |         | -5.081                 |
| 3                | 20        | 12               | 20             | 12                    | 3.049                   | 4.065                        | 18.435             |         | -5.081                 |
| 4                | 10        | 4                | 20             | 12                    | 5.081                   | 4.065                        | 18.435             |         | -4.065                 |
| 5                | 20        | 12               | 10             | 4                     | 3.049                   | 4.065                        | 18.435             |         | -4.065                 |
| 6                | 10        | 4                | 20             | 12                    | 5.081                   | 4.065                        | 18.435             |         | -4.065                 |
| 7                | 20        | 12               | 10             | 4                     | 3.049                   | 4.065                        | 18.435             |         | -4.065                 |
| 8                | 10        | 4                | 20             | 12                    | 5.081                   | 4.065                        | 26.565             |         | 3.049                  |
| 9                |           |                  |                |                       |                         |                              | 26.565             |         | 3.049                  |
| 10               |           |                  |                |                       |                         |                              | 26.565             |         | 3.049                  |
| 11               |           |                  |                |                       |                         |                              | 26.565             |         | 3.049                  |
| 12               |           |                  |                |                       |                         |                              | 26.565             |         | 3.049                  |
| 13               |           |                  |                |                       |                         |                              | 26.565             |         | 4.065                  |
| 14               |           |                  |                |                       |                         |                              | 26.565             |         | 4.065                  |
| 15               |           |                  |                |                       |                         |                              | 26.565             |         | 4.065                  |
| 16               |           |                  |                |                       |                         |                              | 26.565             |         | 4.065                  |

THE % MORTALITY OF 11070002 WAS NOT SIGNIFICANTLY GREATER THAN THAT OF THE CONTROL AT  $\alpha = 0.05$ .  
 -657

Project Name: P826-2 Chironomus 10-day; % Mortality

Sample: x1  
 Samp ID: 11070003  
 Alias: NAS# 3840G - X1  
 Replicates: 8  
 Mean: 13.75  
 SD: 11.877  
 Tr Mean: 17.434  
 Trans SD: 14.61

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 15  
 SD: 5.345  
 Tr Mean: 22.5  
 Trans SD: 4.346

| Shapiro-Wilk Results:   | Levene's Results:   | Test Results:   |
|---|---|---|
| Residual Mean: 0<br>Residual SD: 9.252<br>SS: 1626.438<br>K: 8<br>b: 37.996<br><br>Alpha Level: 0.05<br>Calculated Value: 0.8876<br>Critical Value: $\leq 0.887$<br><br>Normally Distributed: Yes<br><br>Override Option: N/A | Test Residual Mean: 13.075<br>Test Residual SD: 4.251<br>Ref. Residual Mean: 4.065<br>Ref. Residual SD: 0<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 5.9946<br>Critical Value: $\geq 1.761$<br><br>Variances Homogeneous: No | Statistic: Approximate t<br>Balanced Design: Yes<br>Transformation: ArcSin<br><br>Experimental Hypothesis<br>Null: $x1 \leq x2$<br>Alternate: $x1 > x2$<br><br>Degrees of Freedom: 8<br>Experimental Alpha Level: 0.05<br>Calculated Value: -0.94<br>Critical Value: $\geq 1.86$<br>Accept Null Hypothesis: Yes<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Rankits | Shapiro-Wilk Residuals |
|------------------|-----------|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|---------|------------------------|
| 1                | 20        | 26.565           | 10             | 18.435                | 9.131                   | 4.065                        |                    |         | -17.434                |
| 2                | 0         | 0                | 10             | 18.435                | 17.434                  | 4.065                        |                    |         | -17.434                |
| 3                | 20        | 26.565           | 20             | 26.565                | 9.131                   | 4.065                        |                    |         | -17.434                |
| 4                | 20        | 26.565           | 20             | 26.565                | 9.131                   | 4.065                        |                    |         | -4.065                 |
| 5                | 0         | 0                | 10             | 18.435                | 17.434                  | 4.065                        |                    |         | -4.065                 |
| 6                | 20        | 26.565           | 20             | 26.565                | 9.131                   | 4.065                        |                    |         | -4.065                 |
| 7                | 30        | 33.211           | 10             | 18.435                | 15.777                  | 4.065                        |                    |         | -4.065                 |
| 8                | 0         | 0                | 20             | 26.565                | 17.434                  | 4.065                        |                    |         | 4.065                  |
| 9                |           |                  |                |                       |                         |                              |                    |         | 4.065                  |
| 10               |           |                  |                |                       |                         |                              |                    |         | 4.065                  |
| 11               |           |                  |                |                       |                         |                              |                    |         | 4.065                  |
| 12               |           |                  |                |                       |                         |                              |                    |         | 9.131                  |
| 13               |           |                  |                |                       |                         |                              |                    |         | 9.131                  |
| 14               |           |                  |                |                       |                         |                              |                    |         | 9.131                  |
| 15               |           |                  |                |                       |                         |                              |                    |         | 9.131                  |
| 16               |           |                  |                |                       |                         |                              |                    |         | 15.777                 |

THE % MORTALITY OF 11070003 WAS NOT SIGNIFICANTLY  
 GREATER THAN THAT OF THE CONTROL AT  $\alpha=0.05$   
 -602

Project Name: P826-2 Chironomus 10-day; % Mortality

Sample: x1  
 Samp ID: 11070004  
 Alias: NAS# 3841G - X1  
 Replicates: 8  
 Mean: 11.25  
 SD: 6.409  
 Tr Mean: 18.163  
 Trans SD: 8.207

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 15  
 SD: 5.345  
 Tr Mean: 22.5  
 Trans SD: 4.346

| Shapiro-Wilk Results:   | Levene's Results:   | Test Results:   |
|---|---|---|
| Residual Mean: 0<br>Residual SD: 5.637<br>SS: 603.648<br>K: 8<br>b: 22.717<br><br>Alpha Level: 0.05<br>Calculated Value: 0.8549<br>Critical Value: $\leq 0.887$<br><br>Normally Distributed: No<br><br>Override Option: Not Invoked | Test Residual Mean: 4.541<br>Test Residual SD: 6.617<br>Ref. Residual Mean: 4.065<br>Ref. Residual SD: 0<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 0.2033<br>Critical Value: $\geq 1.761$<br><br>Variances Homogeneous: Yes | Statistic: Mann-Whitney<br>Balanced Design: Yes<br>Transformation: rank-order<br><br>Experimental Hypothesis<br>Null: $x1 \leq x2$<br>Alternate: $x1 > x2$<br><br>Mann-Whitney N1: 8<br>Mann-Whitney N2: 8<br>Degrees of Freedom:<br>Experimental Alpha Level: 0.05<br>Calculated Value: 22<br>Critical Value: $\geq 49.0$<br>Accept Null Hypothesis: Yes<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Rankits | Shapiro-Wilk Residuals |
|------------------|-----------|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|---------|------------------------|
| 1                | 10        | 6                | 10             | 6                     | 0.272                   | 4.065                        | 0                  |         | -18.163                |
| 2                | 10        | 6                | 10             | 6                     | 0.272                   | 4.065                        | 18.435             |         | -4.065                 |
| 3                | 10        | 6                | 20             | 13.5                  | 0.272                   | 4.065                        | 18.435             |         | -4.065                 |
| 4                | 20        | 13.5             | 20             | 13.5                  | 8.402                   | 4.065                        | 18.435             |         | -4.065                 |
| 5                | 10        | 6                | 10             | 6                     | 0.272                   | 4.065                        | 18.435             |         | -4.065                 |
| 6                | 10        | 6                | 20             | 13.5                  | 0.272                   | 4.065                        | 18.435             |         | 0.272                  |
| 7                | 0         | 1                | 10             | 6                     | 18.163                  | 4.065                        | 18.435             |         | 0.272                  |
| 8                | 20        | 13.5             | 20             | 13.5                  | 8.402                   | 4.065                        | 18.435             |         | 0.272                  |
| 9                |           |                  |                |                       |                         |                              | 18.435             |         | 0.272                  |
| 10               |           |                  |                |                       |                         |                              | 18.435             |         | 0.272                  |
| 11               |           |                  |                |                       |                         |                              | 26.565             |         | 4.065                  |
| 12               |           |                  |                |                       |                         |                              | 26.565             |         | 4.065                  |
| 13               |           |                  |                |                       |                         |                              | 26.565             |         | 4.065                  |
| 14               |           |                  |                |                       |                         |                              | 26.565             |         | 4.065                  |
| 15               |           |                  |                |                       |                         |                              | 26.565             |         | 8.402                  |
| 16               |           |                  |                |                       |                         |                              | 26.565             |         | 8.402                  |

THE % MORTALITY OF 11070004 WAS NOT SIGNIFICANTLY GREATER THAN THAT OF THE CONTROL AT  $\alpha = 0.05$ .  
 -651

Project Name: P826-2 Midge 10-d; ind.biomass (ash-free dry wt)

Sample: x1  
 Samp ID: 11070001  
 Alias: NAS# 3838G - X1  
 Replicates: 8  
 Mean: 0.813  
 SD: 0.177  
 Tr Mean: 0.813  
 Trans SD: 0.177

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 0.846  
 SD: 0.129  
 Tr Mean: 0.846  
 Trans SD: 0.129

| Shapiro-Wilk Results:  | Levene's Results:   | Test Results:   |
|--|---|---|
| Residual Mean: 0<br>Residual SD: 0.133<br>SS: 0.336<br>K: 8<br>b: 0.56<br><br>Alpha Level: 0.05<br>Calculated Value: 0.9321<br>Critical Value: $\leq 0.887$<br><br>Normally Distributed: Yes<br><br>Override Option: N/A | Test Residual Mean: 0.141<br>Test Residual SD: 0.093<br>Ref. Residual Mean: 0.098<br>Ref. Residual SD: 0.076<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 1.0061<br>Critical Value: $\geq 1.761$<br><br>Variances Homogeneous: Yes | Statistic: Student's t<br>Balanced Design: Yes<br>Transformation: No Transformation<br><br>Experimental Hypothesis<br>Null: $x1 \geq x2$<br>Alternate: $x1 < x2$<br><br>Degrees of Freedom: 14<br>Experimental Alpha Level: 0.05<br>Calculated Value: 0.4356<br>Critical Value: $\geq 1.761$<br>Accept Null Hypothesis: Yes<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data  | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Rankits | Shapiro-Wilk Residuals |
|------------------|--|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|---------|------------------------|
| 1                | 0.61   | 0.61             | 0.83           | 0.83                  | 0.203                   | 0.016                        |                    |         | -0.216                 |
| 2                | 0.84   | 0.84             | 0.99           | 0.99                  | 0.028                   | 0.144                        |                    |         | -0.203                 |
| 3                | 0.7  | 0.7              | 0.76           | 0.76                  | 0.113                   | 0.086                        |                    |         | -0.113                 |
| 4                | 0.73   | 0.73             | 0.91           | 0.91                  | 0.083                   | 0.064                        |                    |         | -0.086                 |
| 5                | 0.73   | 0.73             | 0.78           | 0.78                  | 0.083                   | 0.066                        |                    |         | -0.083                 |
| 6                | 0.73   | 0.73             | 0.63           | 0.63                  | 0.083                   | 0.216                        |                    |         | -0.083                 |
| 7                | 1.1  | 1.1              | 0.84           | 0.84                  | 0.288                   | 0.006                        |                    |         | -0.083                 |
| 8                | 1.06   | 1.06             | 1.03           | 1.03                  | 0.248                   | 0.184                        |                    |         | -0.066                 |
| 9                |  |                  |                |                       |                         |                              |                    |         | -0.016                 |
| 10               | THE MEAN INDIVIDUAL ASH-FREE DRY WT OF 11070001<br>WAS NOT SIGNIFICANTLY LESS THAN THAT OF<br>THE CONTROL AT $\alpha = 0.05$ .<br>-652 |                  |                |                       |                         |                              |                    |         | -0.006                 |
| 11               |  |                  |                |                       |                         |                              |                    |         | 0.028                  |
| 12               |  |                  |                |                       |                         |                              |                    |         | 0.064                  |
| 13               |  |                  |                |                       |                         |                              |                    |         | 0.144                  |
| 14               |  |                  |                |                       |                         |                              |                    |         | 0.184                  |
| 15               |  |                  |                |                       |                         |                              |                    |         | 0.248                  |
| 16               |  |                  |                |                       |                         |                              |                    |         | 0.288                  |



Project Name: P826-2 Midge 10-d; ind.biomass (ash-free dry wt)

Sample: x1  
 Samp ID: 11070002  
 Alias: NAS# 3839G - X1  
 Replicates: 8  
 Mean: 0.729  
 SD: 0.114  
 Tr Mean: 0.729  
 Trans SD: 0.114

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 0.846  
 SD: 0.129  
 Tr Mean: 0.846  
 Trans SD: 0.129

| Shapiro-Wilk Results:   | Levene's Results:   | Test Results:  |
|---|---|--|
| Residual Mean: 0<br>Residual SD: 0.105<br>SS: 0.208<br>K: 8<br>b: 0.445<br><br>Alpha Level: 0.05<br>Calculated Value: 0.9538<br>Critical Value: $\leq 0.887$<br><br>Normally Distributed: Yes<br><br>Override Option: N/A | Test Residual Mean: 0.083<br>Test Residual SD: 0.071<br>Ref. Residual Mean: 0.098<br>Ref. Residual SD: 0.076<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 0.3985<br>Critical Value: $\geq 1.761$<br><br>Variances Homogeneous: Yes | Statistic: Student's t<br>Balanced Design: Yes<br>Transformation: No Transformation<br><br>Experimental Hypothesis<br>Null: $x1 \geq x2$<br>Alternate: $x1 < x2$<br><br>Degrees of Freedom: 14<br>Experimental Alpha Level: 0.05<br>Calculated Value: 1.9285<br>Critical Value: $\geq 1.761$<br>Accept Null Hypothesis: No<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Rankits | Shapiro-Wilk Residuals |
|------------------|-----------|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|---------|------------------------|
| 1                | 0.72      | 0.72             | 0.83           | 0.83                  | 0.009                   | 0.016                        |                    |         | -0.216                 |
| 2                | 0.94      | 0.94             | 0.99           | 0.99                  | 0.211                   | 0.144                        |                    |         | -0.149                 |
| 3                | 0.69      | 0.69             | 0.76           | 0.76                  | 0.039                   | 0.086                        |                    |         | -0.086                 |
| 4                | 0.66      | 0.66             | 0.91           | 0.91                  | 0.069                   | 0.064                        |                    |         | -0.069                 |
| 5                | 0.58      | 0.58             | 0.78           | 0.78                  | 0.149                   | 0.066                        |                    |         | -0.066                 |
| 6                | 0.71      | 0.71             | 0.63           | 0.63                  | 0.019                   | 0.216                        |                    |         | -0.049                 |
| 7                | 0.85      | 0.85             | 0.84           | 0.84                  | 0.121                   | 0.006                        |                    |         | -0.039                 |
| 8                | 0.68      | 0.68             | 1.03           | 1.03                  | 0.049                   | 0.184                        |                    |         | -0.019                 |
| 9                |           |                  |                |                       |                         |                              |                    |         | -0.016                 |
| 10               |           |                  |                |                       |                         |                              |                    |         | -0.009                 |
| 11               |           |                  |                |                       |                         |                              |                    |         | -0.006                 |
| 12               |           |                  |                |                       |                         |                              |                    |         | 0.064                  |
| 13               |           |                  |                |                       |                         |                              |                    |         | 0.121                  |
| 14               |           |                  |                |                       |                         |                              |                    |         | 0.144                  |
| 15               |           |                  |                |                       |                         |                              |                    |         | 0.184                  |
| 16               |           |                  |                |                       |                         |                              |                    |         | 0.211                  |

THE MEAN INDIVIDUAL ASH-FREE DRY WT OF 11070002 WAS SIGNIFICANTLY LESS THAN THAT OF THE CONTROL AT  $\alpha = 0.05$ .  
 -631

Project Name: P826-2 Midge 10-d; ind.biomass (ash-free dry wt)

Sample: x1  
 Samp ID: 11070003  
 Alias: NAS# 3840G - X1  
 Replicates: 8  
 Mean: 0.714  
 SD: 0.093  
 Tr Mean: 0.714  
 Trans SD: 0.093

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 0.846  
 SD: 0.129  
 Tr Mean: 0.846  
 Trans SD: 0.129

| Shapiro-Wilk Results:   | Levene's Results:   | Test Results:  |
|---|---|--|
| Residual Mean: 0<br>Residual SD: 0.097<br>SS: 0.178<br>K: 8<br>b: 0.412<br><br>Alpha Level: 0.05<br>Calculated Value: 0.9526<br>Critical Value: $\leq 0.887$<br><br>Normally Distributed: Yes<br><br>Override Option: N/A | Test Residual Mean: 0.067<br>Test Residual SD: 0.059<br>Ref. Residual Mean: 0.098<br>Ref. Residual SD: 0.076<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 0.8981<br>Critical Value: $\geq 1.761$<br><br>Variances Homogeneous: Yes | Statistic: Student's t<br>Balanced Design: Yes<br>Transformation: No Transformation<br><br>Experimental Hypothesis<br>Null: $x1 \geq x2$<br>Alternate: $x1 < x2$<br><br>Degrees of Freedom: 14<br>Experimental Alpha Level: 0.05<br>Calculated Value: 2.3517<br>Critical Value: $\geq 1.761$<br>Accept Null Hypothesis: No<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Rankits | Shapiro-Wilk Residuals |
|------------------|-----------|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|---------|------------------------|
| 1                | 0.77      | 0.77             | 0.83           | 0.83                  | 0.056                   | 0.016                        |                    |         | -0.216                 |
| 2                | 0.69      | 0.69             | 0.99           | 0.99                  | 0.024                   | 0.144                        |                    |         | -0.104                 |
| 3                | 0.68      | 0.68             | 0.76           | 0.76                  | 0.034                   | 0.086                        |                    |         | -0.086                 |
| 4                | 0.67      | 0.67             | 0.91           | 0.91                  | 0.044                   | 0.064                        |                    |         | -0.066                 |
| 5                | 0.65      | 0.65             | 0.78           | 0.78                  | 0.064                   | 0.066                        |                    |         | -0.064                 |
| 6                | 0.73      | 0.73             | 0.63           | 0.63                  | 0.016                   | 0.216                        |                    |         | -0.044                 |
| 7                | 0.91      | 0.91             | 0.84           | 0.84                  | 0.196                   | 0.006                        |                    |         | -0.034                 |
| 8                | 0.61      | 0.61             | 1.03           | 1.03                  | 0.104                   | 0.184                        |                    |         | -0.024                 |
| 9                |           |                  |                |                       |                         |                              |                    |         | -0.016                 |
| 10               |           |                  |                |                       |                         |                              |                    |         | -0.006                 |
| 11               |           |                  |                |                       |                         |                              |                    |         | 0.016                  |
| 12               |           |                  |                |                       |                         |                              |                    |         | 0.056                  |
| 13               |           |                  |                |                       |                         |                              |                    |         | 0.064                  |
| 14               |           |                  |                |                       |                         |                              |                    |         | 0.144                  |
| 15               |           |                  |                |                       |                         |                              |                    |         | 0.184                  |
| 16               |           |                  |                |                       |                         |                              |                    |         | 0.196                  |

THE MEAN INDIVIDUAL ASH-FREE DRY WT OF 11070003 WAS SIGNIFICANTLY LESS THAN THAT OF THE CONTROL AT  $\alpha = 0.05$   
 -652

Project Name: P826-2 Midge 10-d; ind.biomass (ash-free dry wt)

Sample: x1  
 Samp ID: 11070004  
 Alias: NAS# 3841G - X1  
 Replicates: 8  
 Mean: 0.595  
 SD: 0.101  
 Tr Mean: 0.595  
 Trans SD: 0.101

Ref Samp: x2  
 Ref ID: Control  
 Alias: NAS# 3820G - X2  
 Replicates: 8  
 Mean: 0.846  
 SD: 0.129  
 Tr Mean: 0.846  
 Trans SD: 0.129

| Shapiro-Wilk Results:   | Levene's Results:   | Test Results:   |
|---|---|---|
| Residual Mean: 0<br>Residual SD: 0.1<br>SS: 0.189<br>K: 8<br>b: 0.429<br><br>Alpha Level: 0.05<br>Calculated Value: 0.9735<br>Critical Value: $\leq 0.887$<br><br>Normally Distributed: Yes<br><br>Override Option: N/A | Test Residual Mean: 0.075<br>Test Residual SD: 0.062<br>Ref. Residual Mean: 0.098<br>Ref. Residual SD: 0.076<br>Deg. of Freedom: 14<br><br>Alpha Level: 0.1<br>Calculated Value: 0.6573<br>Critical Value: $\geq 1.761$<br><br>Variances Homogeneous: Yes | Statistic: Student's t<br>Balanced Design: Yes<br>Transformation: No Transformation<br><br>Experimental Hypothesis<br>Null: $x1 \geq x2$<br>Alternate: $x1 < x2$<br><br>Degrees of Freedom: 14<br>Experimental Alpha Level: 0.05<br>Calculated Value: 4.325<br>Critical Value: $\geq 1.761$<br>Accept Null Hypothesis: No<br><br>Power:<br>Min. Difference for Power: |

| Replicate Number | Test Data | Trans. Test Data | Reference Data | Trans. Reference Data | Levene's Test Residuals | Levene's Reference Residuals | Mann-Whitney Ranks | Rankits | Shapiro-Wilk Residuals |
|------------------|-----------|------------------|----------------|-----------------------|-------------------------|------------------------------|--------------------|---------|------------------------|
| 1                | 0.47      | 0.47             | 0.83           | 0.83                  | 0.125                   | 0.016                        |                    |         | -0.216                 |
| 2                | 0.6       | 0.6              | 0.99           | 0.99                  | 0.005                   | 0.144                        |                    |         | -0.175                 |
| 3                | 0.42      | 0.42             | 0.76           | 0.76                  | 0.175                   | 0.086                        |                    |         | -0.125                 |
| 4                | 0.6       | 0.6              | 0.91           | 0.91                  | 0.005                   | 0.064                        |                    |         | -0.086                 |
| 5                | 0.72      | 0.72             | 0.78           | 0.78                  | 0.125                   | 0.066                        |                    |         | -0.066                 |
| 6                | 0.63      | 0.63             | 0.63           | 0.63                  | 0.035                   | 0.216                        |                    |         | -0.016                 |
| 7                | 0.66      | 0.66             | 0.84           | 0.84                  | 0.065                   | 0.006                        |                    |         | -0.006                 |
| 8                | 0.66      | 0.66             | 1.03           | 1.03                  | 0.065                   | 0.184                        |                    |         | 0.005                  |
| 9                |           |                  |                |                       |                         |                              |                    |         | 0.005                  |
| 10               |           |                  |                |                       |                         |                              |                    |         | 0.035                  |
| 11               |           |                  |                |                       |                         |                              |                    |         | 0.064                  |
| 12               |           |                  |                |                       |                         |                              |                    |         | 0.065                  |
| 13               |           |                  |                |                       |                         |                              |                    |         | 0.065                  |
| 14               |           |                  |                |                       |                         |                              |                    |         | 0.125                  |
| 15               |           |                  |                |                       |                         |                              |                    |         | 0.144                  |
| 16               |           |                  |                |                       |                         |                              |                    |         | 0.184                  |

THE MEAN INDIVIDUAL ASH-FREE DRY WT OF 11070004 WAS SIGNIFICANTLY LESS THAN THAT OF THE CONTROL AT  $\alpha = 0.05$ .  
 - 651

## Water Quality Data

| BKR | NAS<br>SMPL | CLIENT<br>DESCRIP | REPL | DAY | Overlying water |     |      |     |      |      |     |
|-----|-------------|-------------------|------|-----|-----------------|-----|------|-----|------|------|-----|
|     |             |                   |      |     | TEMP            | DO  | COND | pH  | NH3  | HARD | ALK |
| 1   | 3840G       | 11070003          | 8    | 0   | 23.4            | 8.3 | 144  | 6.9 | <0.1 | 43   | 30  |
| 7   | 3820G       | Contol            | 8    | 0   | 23.4            | 7.4 | 157  | 7.0 | 0.2  | 43   | 30  |
| 8   | 3839G       | 11070002          | 8    | 0   | 23.4            | 8.2 | 143  | 7.0 | <0.1 | 43   | 30  |
| 10  | 3841G       | 11070004          | 8    | 0   | 23.4            | 8.4 | 144  | 7.0 | <0.1 | 43   | 30  |
| 22  | 3838G       | 11070001          | 8    | 0   | 23.4            | 7.7 | 141  | 7.0 | <0.1 | 43   | 30  |
| 1   | 3840G       | 11070003          | 8    | 1   | 22.9            | 7.7 |      |     |      |      |     |
| 7   | 3820G       | Contol            | 8    | 1   | 22.8            | 7.1 |      |     |      |      |     |
| 8   | 3839G       | 11070002          | 8    | 1   | 22.8            | 7.6 |      |     |      |      |     |
| 10  | 3841G       | 11070004          | 8    | 1   | 22.9            | 7.6 |      |     |      |      |     |
| 22  | 3838G       | 11070001          | 8    | 1   | 22.9            | 7.7 |      |     |      |      |     |
| 1   | 3840G       | 11070003          | 8    | 2   | 22.9            | 6.5 |      |     |      |      |     |
| 7   | 3820G       | Contol            | 8    | 2   | 22.8            | 6.4 |      |     |      |      |     |
| 8   | 3839G       | 11070002          | 8    | 2   | 22.8            | 6.5 |      |     |      |      |     |
| 10  | 3841G       | 11070004          | 8    | 2   | 22.8            | 6.6 |      |     |      |      |     |
| 22  | 3838G       | 11070001          | 8    | 2   | 22.8            | 6.0 |      |     |      |      |     |
| 1   | 3840G       | 11070003          | 8    | 3   | 22.7            | 6.4 |      |     |      |      |     |
| 7   | 3820G       | Contol            | 8    | 3   | 22.7            | 6.5 |      |     |      |      |     |
| 8   | 3839G       | 11070002          | 8    | 3   | 22.7            | 6.4 |      |     |      |      |     |
| 10  | 3841G       | 11070004          | 8    | 3   | 22.7            | 6.7 |      |     |      |      |     |
| 22  | 3838G       | 11070001          | 8    | 3   | 22.7            | 6.2 |      |     |      |      |     |
| 1   | 3840G       | 11070003          | 8    | 4   | 23.0            | 6.2 |      |     |      |      |     |
| 7   | 3820G       | Contol            | 8    | 4   | 22.9            | 6.5 |      |     |      |      |     |
| 8   | 3839G       | 11070002          | 8    | 4   | 22.9            | 6.3 |      |     |      |      |     |
| 10  | 3841G       | 11070004          | 8    | 4   | 22.9            | 6.3 |      |     |      |      |     |
| 22  | 3838G       | 11070001          | 8    | 4   | 22.8            | 6.1 |      |     |      |      |     |
| 1   | 3840G       | 11070003          | 8    | 5   | 22.5            | 5.3 |      |     |      |      |     |
| 7   | 3820G       | Contol            | 8    | 5   | 22.5            | 5.2 |      |     |      |      |     |
| 8   | 3839G       | 11070002          | 8    | 5   | 22.4            | 4.8 |      |     |      |      |     |
| 10  | 3841G       | 11070004          | 8    | 5   | 22.5            | 4.8 |      |     |      |      |     |
| 22  | 3838G       | 11070001          | 8    | 5   | 22.5            | 3.9 |      |     |      |      |     |
| 1   | 3840G       | 11070003          | 8    | 6   | 22.0            | 7.2 |      |     |      |      |     |
| 7   | 3820G       | Contol            | 8    | 6   | 22.0            | 7.2 |      |     |      |      |     |
| 8   | 3839G       | 11070002          | 8    | 6   | 22.1            | 6.7 |      |     |      |      |     |
| 10  | 3841G       | 11070004          | 8    | 6   | 22.1            | 6.8 |      |     |      |      |     |
| 22  | 3838G       | 11070001          | 8    | 6   | 21.9            | 5.9 |      |     |      |      |     |
| 1   | 3840G       | 11070003          | 8    | 7   | 22.1            | 7.0 |      |     |      |      |     |
| 7   | 3820G       | Contol            | 8    | 7   | 22.0            | 7.0 |      |     |      |      |     |
| 8   | 3839G       | 11070002          | 8    | 7   | 22.0            | 6.7 |      |     |      |      |     |
| 10  | 3841G       | 11070004          | 8    | 7   | 22.0            | 6.2 |      |     |      |      |     |
| 22  | 3838G       | 11070001          | 8    | 7   | 22.0            | 5.8 |      |     |      |      |     |
| 1   | 3840G       | 11070003          | 8    | 8   | 22.2            | 6.9 |      |     |      |      |     |
| 7   | 3820G       | Contol            | 8    | 8   | 22.2            | 6.4 |      |     |      |      |     |
| 8   | 3839G       | 11070002          | 8    | 8   | 22.2            | 6.8 |      |     |      |      |     |
| 10  | 3841G       | 11070004          | 8    | 8   | 22.1            | 6.5 |      |     |      |      |     |
| 22  | 3838G       | 11070001          | 8    | 8   | 22.0            | 5.9 |      |     |      |      |     |
| 1   | 3840G       | 11070003          | 8    | 9   | 22.2            | 6.6 |      |     |      |      |     |
| 7   | 3820G       | Contol            | 8    | 9   | 22.2            | 6.2 |      |     |      |      |     |

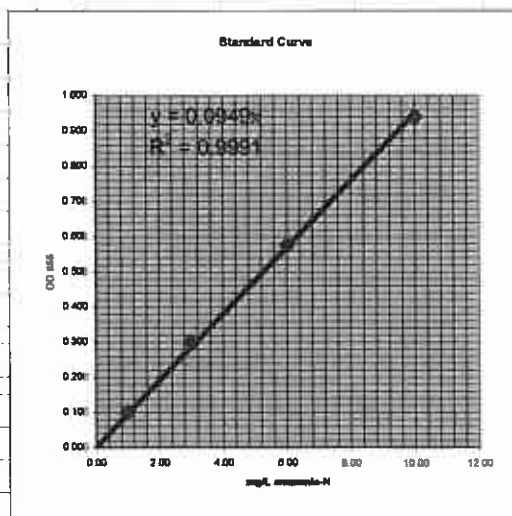
|    |       |          |   |      |      |     |     |     |      |    |    |
|----|-------|----------|---|------|------|-----|-----|-----|------|----|----|
| 8  | 3839G | 11070002 | 8 | 9    | 22.2 | 6.5 |     |     |      |    |    |
| 10 | 3841G | 11070004 | 8 | 9    | 22.2 | 6.0 |     |     |      |    |    |
| 22 | 3838G | 11070001 | 8 | 9    | 22.1 | 5.2 |     |     |      |    |    |
| 1  | 3840G | 11070003 | 8 | 10   | 22.7 | 7.4 | 149 | 6.8 | <0.1 | 43 | 40 |
| 7  | 3820G | Contol   | 8 | 10   | 22.7 | 6.9 | 153 | 6.8 | <0.1 | 34 | 40 |
| 8  | 3839G | 11070002 | 8 | 10   | 22.6 | 7.1 | 151 | 6.8 | <0.1 | 51 | 30 |
| 10 | 3841G | 11070004 | 8 | 10   | 22.7 | 6.6 | 153 | 6.8 | 1.5  | 43 | 30 |
| 22 | 3838G | 11070001 | 8 | 10   | 22.7 | 6.0 | 151 | 6.7 | 0.1  | 43 | 30 |
|    |       |          |   | Mean | 22.6 | 6.6 | 149 | 6.9 | —    | 43 | 32 |
|    |       |          |   | SD   | 0.4  | 0.9 | 5   | 0.1 | —    | 4  | 4  |
|    |       |          |   | n    | 55   | 55  | 10  | 10  | 10   | 10 | 10 |
|    |       |          |   | Min  | 21.9 | 3.9 | 141 | 6.7 | <0.1 | 34 | 30 |
|    |       |          |   | Max  | 23.4 | 8.4 | 157 | 7.0 | 1.5  | 51 | 40 |

**AMMONIA EXPOSURE BENCHSHEETS AND ANALYSIS**

### Total Ammonia-N in Water: Computation Worksheet Salicylate Method (SOP #5492)

**Result**

| Sample description                | Dilution factor | OD <sub>655</sub> | NH <sub>3</sub> -N (mg/L) |
|-----------------------------------|-----------------|-------------------|---------------------------|
| Blank                             | —               | —                 | —                         |
| 1.0 mg/L NH <sub>3</sub> -N Std.  | —               | 0.100             | 1.00                      |
| 3.0 mg/L NH <sub>3</sub> -N Std.  | —               | 0.300             | 3.00                      |
| 6.0 mg/L NH <sub>3</sub> -N Std.  | —               | 0.575             | 6.00                      |
| 10.0 mg/L NH <sub>3</sub> -N Std. | —               | 0.940             | 10.00                     |
| 3.0 mg/L spike                    | —               | 0.319             | 3.36                      |
| 3.0 mg/L spike dupl.              | —               | 0.329             | 3.47                      |
| 5.0 mg/L 2nd source               | —               | 0.490             | 5.16                      |



|     |        |   |       |      |
|-----|--------|---|-------|------|
| 1.  | Day 0  |   |       |      |
| 2.  | 1      | 1 | 0.000 | ND   |
| 3.  | 7      | 1 | 0.022 | 0.23 |
| 4.  | 8      | 1 | 0.000 | ND   |
| 5.  | 10     | 1 | 0.000 | ND   |
| 6.  | 22     | 1 | 0.000 | ND   |
| 7.  |        |   |       |      |
| 8.  | Day 10 |   |       |      |
| 9.  | 1      | 1 | 0.000 | ND   |
| 10. | 7      | 1 | 0.000 | ND   |
| 11. | 8      | 1 | 0.000 | ND   |
| 12. | 10     | 1 | 0.145 | 1.53 |
| 13. | 22     | 1 | 0.010 | 0.11 |

Reporting limit (mg/L) = 0.1

Recovery (%) = 113.8

Precision (RPD) = -3.09

2nd source (%) = 103.3

Sample volume (ml): 0.50

Dilution factor 1

**Sample Set Description:**

Test No.: P826-2

Species: *Chironomus dilutus*

Overlying water

Days 0 &amp; 10

Analyst: GJI

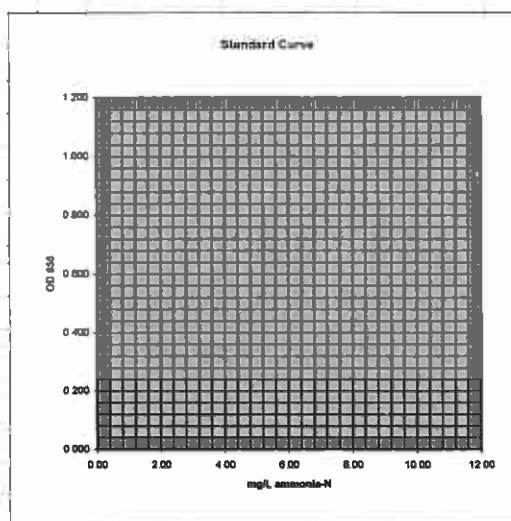
Date analysed: 09/08/11

## Total Ammonia-N in Water: Computation Worksheet

### Salicylate Method (SOP #5492)

**Result**

| Sample description                | Dilution factor | OD <sub>655</sub> | NH <sub>3</sub> -N (mg/L) |
|-----------------------------------|-----------------|-------------------|---------------------------|
| Blank                             | ---             | ---               | ---                       |
| 1.0 mg/L NH <sub>3</sub> -N Std.  | ---             | 0.100             | 1.00                      |
| 3.0 mg/L NH <sub>3</sub> -N Std.  | ---             | 0.300             | 3.00                      |
| 6.0 mg/L NH <sub>3</sub> -N Std.  | ---             | 0.515             | 6.00                      |
| 10.0 mg/L NH <sub>3</sub> -N Std. | ---             | 0.940             | 10.00                     |
| 3.0 mg/L spike                    | ---             | 0.319             |                           |
| 3.0 mg/L spike dupl.              | ---             | 0.329             |                           |
| 5.0 mg/L 2nd source               | ---             | 0.490             |                           |



|     |        |   |       |
|-----|--------|---|-------|
| 1.  | Day 0  |   |       |
| 2.  | 1      | 1 | 0.000 |
| 3.  | 7      | 1 | 0.022 |
| 4.  | 8      | 1 | 0.000 |
| 5.  | 10     | 1 | 0.000 |
| 6.  | 22     | 1 | 0.000 |
| 7.  |        |   |       |
| 8.  | Day 10 |   |       |
| 9.  | 1      | 1 | 0.000 |
| 10. | 7      | 1 | 0.000 |
| 11. | 8      | 1 | 0.000 |
| 12. | 10     | 1 | 0.145 |
| 13. | 22     | 1 | 0.010 |
| 14. |        |   |       |
| 15. |        |   |       |
| 16. |        |   |       |
| 17. |        |   |       |
| 18. |        |   |       |
| 19. |        |   |       |
| 20. |        |   |       |
| 21. |        |   |       |
| 22. |        |   |       |
| 23. |        |   |       |
| 24. |        |   |       |
| 25. |        |   |       |
| 26. |        |   |       |
| 27. |        |   |       |
| 28. |        |   |       |
| 29. |        |   |       |
| 30. |        |   |       |
| 31. |        |   |       |
| 32. |        |   |       |
| 33. |        |   |       |
| 34. |        |   |       |
| 35. |        |   |       |
| 36. |        |   |       |

Reporting limit (mg/L) = 0.1

Recovery (%) = #VALUE!

Precision (RPD) = #VALUE!

2nd source (%) = #VALUE!

Sample volume (ml): 0.50

Dilution factor 1

**Sample Set Description:**

Test No.: P826-2

Species: *Chironomus dilutus*

Overlying water

Days 0 &amp; 10

Analyst: GJI

Date analysed: 09/08/11



## **CHAIN-OF-CUSTODY RECORDS**

## USEPA

DateShipped: 8/23/2011  
CarrierName: FedEx  
AirbillNo:

## CHAIN OF CUSTODY RECORD

10GL

Contact Name: Mark Woodke  
Contact Phone: (706) 634-9000

**No: 10-082311-124153-0001**  
**Cooler #: 1**  
**Lab: Northwest Aquatic Sciences**  
**Lab Phone: 5412657225**

[illegible]

INTERNAL TEMP OF COOLER UPON RECEIPT: 4.5°C

**Special Instructions:**

| SAMPLES TRANSFERRED FROM | CHAIN OF CUSTODY # |
|--------------------------|--------------------|
|                          |                    |

[illegible]

P 826  
ECL264 ; ENV  
8-24-11



**CUSTODY SEAL**

Date:

Signature:

8-23-11  
J. J. J. J.



**CUSTODY SEAL**

Date:

Signature:

8-23-11



**FedEx** NEW Package  
Express US Airbill

FedEx  
Tracking  
Number

8762 5167 3792

Form  
5010

0200

Recipient's Duty

From \_\_\_\_\_  
Date \_\_\_\_\_

Sender's Name \_\_\_\_\_ Phone \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_  
Dept./Floor/Suite/Room \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

Your Internal Billing Reference \_\_\_\_\_

To Recipient's Name \_\_\_\_\_ Phone \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_  
We cannot deliver to PO boxes or PO ZIP codes. Dept./Floor/Suite/Room \_\_\_\_\_

Address \_\_\_\_\_  
Use this line for the HOLD location address or for continuation of your shipping address.

City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

**HOLD Weekday**  
FedEx location address  
REQUIRED: NOT available for  
FedEx First Overnight

**HOLD Saturday**  
FedEx location address  
REQUIRED: Available ONLY for  
FedEx Priority Overnight and  
FedEx 2Day to select locations.

**4 Express Package Service** \* To most locations.  
NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs.  
For packages over 250 lbs., use the next  
FedEx Express Freight US Airbill.

**Next Business Day**

- ☐ **FedEx First Overnight**  
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☒ **FedEx Priority Overnight**  
Next business morning \* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ **FedEx Standard Overnight**  
Next business afternoon \* Saturday Delivery NOT available.

**2 or 3 Business Days**

- ☐ **NEW FedEx 2Day A.M.**  
Second business morning \* Saturday Delivery NOT available.
- ☐ **FedEx 2Day**  
Second business afternoon \* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ **FedEx Express Saver**  
Third business day \* Saturday Delivery NOT available.

**5 Packaging** \* Declared value limit \$500.

- ☐ FedEx Envelope\* ☐ FedEx Pak\* ☐ FedEx Box ☐ FedEx Tube ☒ Other

**6 Special Handling and Delivery Signature Options**

☐ **SATURDAY Delivery**  
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☒ **No Signature Required**  
Package may be left without obtaining a signature for delivery.

☐ **Direct Signature**  
Someone at recipient's address may sign for delivery. Fee applies.

☐ **Indirect Signature**  
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. Fee applies for residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?

- One box must be checked:  
☒ No ☐ Yes All per attached Shipper's Declaration ☐ Yes Shipper's Declaration not required
- Dry Ice: 9, UN 1845 \_\_\_\_\_ x \_\_\_\_\_ kg  
Dry Ice: 9, UN 1845 \_\_\_\_\_ x \_\_\_\_\_ kg
- Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box. ☐ Cargo Aircraft Only

**7 Payment Bill to:**

- ☒ **Sender** Acct. No. in Section I will be billed. ☐ **Recipient** ☐ **Third Party** ☐ **Credit Card** ☐ **Cash/Check**

Total Packages \_\_\_\_\_ Total Weight \_\_\_\_\_ Total Declared Value\* \_\_\_\_\_ Credit Card Auth. \_\_\_\_\_

\*Our liability is limited to \$500 unless you declare a higher value. See the current FedEx Service Guide for details.

612

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### **APPENDIX III**

#### **RAW DATA – REFERENCE TOXICANT TEST**

REVIEWED  
PAGES 1-7  
-621

NORTHWESTERN AQUATIC SCIENCES  
ACUTE TOXICITY TEST (ALL SPECIES) PROTOCOL NO. NAS-

Test No. 999-2931 Client: QC Test Investigator  
Test Type (ranging/definitive) Test Length (hr) 96  
Species *Chironomus dilutus*

STUDY MANAGEMENT

Client: QC test  
Client's Study Monitor: QC test  
Testing Laboratory: Northwestern Aquatic Sciences  
Test Location: Newport Laboratory  
Laboratory's Study Personnel:  
Proj. Man./Study Dir. G.J. Irissari  
QA Officer L. K. Nemeth  
1. GAB-Inter 621  
2.  
3.  
4.  
Study Schedule:  
Test Beginning: 8-26-11 1235 Test Ending: 8-30-11 1130

TEST MATERIAL

Description: Potassium Chloride Crystals - Lot No.: FISHER 073280  
NAS Sample No.  
Date of Collection:  
Date of Receipt:  
Temperature (deg C):  
Dissolved oxygen (mg/L):  
pH:  
Conductivity (umhos/cm):  
Hardness (mg/L):  
Alkalinity (mg/L):  
Salinity (ppt):  
Total chlorine (mg/L):  
Total ammonia-N (mg/L):

DILUTION WATER

Description: Moderately hard synthetic water  
Date of Preparation/Collection: 8-22-11  
Water Quality: Cond. (umhos/cm): 256 Salinity (ppt) pH 7.9  
Hardness (mg/L as CaCO<sub>3</sub>): 86 Alkalinity (mg/L as CaCO<sub>3</sub>): 70  
Treatments: Aerated ≥ 24 hrs

TEST LOCATION

Test conducted in (circle one): room 1 room 2 trailer water bath other:

Randomization chart:

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 1.25 | ∅    | 20   | 1.25 | 20   | ∅    | 20   | 10   | ∅    | 5    |
| ∅    | 20   | 2.5  | ∅    | 1.25 | 20   | 2.5  | 1.25 | 5    | 20   |
| 10   | 5    | 1.25 | 5    | 2.5  | 5    | 1.25 | 2.5  | 20   | 1.25 |
| 5    | 10   | ∅    | 2.5  | 10   | 1.25 | ∅    | 20   | 2.5  | 10   |
| 10   | 2.5  | 5    | 10   | 5    | 2.5  | 5    | ∅    | 10   | 2.5  |
| 2.5  | 1.25 | 10   | 20   | ∅    | 20   | 10   | 5    | 1.25 | ∅    |

- Error codes: 1) Correction of handwriting error  
2) Written in wrong location; entry deleted  
3) Wrong date deleted; replaced with correct date  
4) Error found in measurement; measurement repeated

NORTHWESTERN AQUATIC SCIENCES  
ACUTE TOXICITY TEST (ALL SPECIES)

PROTOCOL NO. NAS-\_\_\_\_\_

Test No. 999-2931 Client \_\_\_\_\_ QC Test \_\_\_\_\_ Investigator \_\_\_\_\_

**TEST ORGANISMS**

Species: Chironomus dilutus Age: 3rd instar  
Source: NAS cultures Date received: N/A

**Acclimation Data:**

| Date    | Temp. (deg.C) | pH  | DO (mg/L) | Cond. umhos/cm | Hardness (mg/L) | Alkalinity (mg/L) | Feeding               | Water changes |
|---------|---------------|-----|-----------|----------------|-----------------|-------------------|-----------------------|---------------|
| 8-15-11 | 21.4          | 7.4 | 8.0       | 163            | —               | —                 | Animals fed Tetra Fin | yes           |
| 8-17-11 | 21.7          | 7.6 | 8.5       | 158            | 43              | 30                | and Selenastrum       | —             |
| 8-19-11 | 21.8          | 7.6 | 8.6       | 157            | —               | —                 | Details recorded on   | —             |
| 8-22-11 | 22.4          | 7.4 | 9.0       | 164            | —               | —                 | Chironomid culture    | yes           |
| 8-24-11 | 22.6          | 7.0 | 7.0       | 159            | 60              | 30                | data sheets           | —             |
| 8-26-11 | 21.6          | 7.1 | 7.4       | 163            | —               | —                 |                       | yes           |
| Mean    | 21.9          | 7.4 | 8.1       | 161            | 52              | 30                |                       |               |
| S.D.    | 0.5           | 0.3 | 0.8       | 3              | —               | —                 |                       |               |
| (N)     | 6             | 6   | 6         | 6              | 2               | 2                 |                       |               |

Photoperiod during acclimation: 16:8, L:D

**TEST PROCEDURES AND CONDITIONS**

Test concentrations (50% series recommended): 20, 10, 5, 2.5, 1.25, 0 g/L

Test chamber: 30 ml plastic cups Test volume: 20 ml  
Replicates/treatment: 10 Organisms/treatment: 10 (1/rep)  
Test water changes: None Aeration during test: None  
Feeding: 0.25 ml Prime Tropical Flakes (4g/L) suspension per cup on days 0 and 2

Duration: 24-hr, 48-hr, 96-hr Test temperature (deg.C): 23 ± 1  
Beaker placement: Stratified randomization Photoperiod: 16:8, L:D

**MISCELLANEOUS NOTES**

**Test solution preparation:**

Working stock: Dissolve 10g KCl crystals in dilution water and dilute to 500 mL.  
Final conc.: 20 g/L.

|         | Test concentration (g/L) | KCl working stock (ml/200ml) | ml of dilution water per 200 ml |
|---------|--------------------------|------------------------------|---------------------------------|
|         | 20                       | 200                          | 0                               |
| 8-25-11 | 10                       | 100                          | 100                             |
| 602     | 5                        | 50                           | 150                             |
|         | 2.5                      | 25                           | 175                             |
|         | 1.25                     | 12.5                         | 187.5                           |
|         | 0                        | 0                            | 0                               |

NORTHWESTERN AQUATIC SCIENCES  
ACUTE TOXICITY TEST (ALL SPECIES)

PROTOCOL NO. NAS-\_\_\_\_\_

Test No. 999-2931 Client \_\_\_\_\_ QC Test \_\_\_\_\_

DAILY RECORD SHEET

Day 0 (8/26/11) CS

Temp Beaker (°C): 23.7

| Conc.<br>(g/L) | Temp.<br>(deg.C) | pH  | Cond.<br>(umhos/cm) | DO<br>(ppm) | Hardness<br>(mg/L) | Alkalinity<br>(mg/L) | Comments |
|----------------|------------------|-----|---------------------|-------------|--------------------|----------------------|----------|
| 1. 20          | 23.5             | 8.0 | 13620               | 8.0         | 86                 | 70                   |          |
| 2. 10          | 23.5             | 8.0 | 11000               | 8.1         |                    |                      |          |
| 3. 5           | 23.6             | 7.9 | 7220                | 8.2         |                    |                      |          |
| 4. 2.5         | 23.6             | 7.9 | 2340                | 8.2         |                    |                      |          |
| 5. 1.25        | 23.6             | 7.9 | 2140                | 8.4         |                    |                      |          |
| 6. 0           | 23.6             | 8.0 | 258                 | 8.3         | 86                 | 70                   |          |

All animals fed 0.25 ml Tetra Fin suspension. Initials: CS

Day 1 (8/27/11) CS

Temp Beaker (°C): 23.2

| Conc.<br>(g/L) | Temp.<br>(deg.C) | pH | Cond.<br>(umhos/cm) | DO<br>(ppm) | Hardness<br>(mg/L) | Alkalinity<br>(mg/L) | Comments |
|----------------|------------------|----|---------------------|-------------|--------------------|----------------------|----------|
| 1. 20          |                  |    |                     |             |                    |                      |          |
| 2. 10          |                  |    |                     |             |                    |                      |          |
| 3. 5           |                  |    |                     |             |                    |                      |          |
| 4. 2.5         |                  |    |                     |             |                    |                      |          |
| 5. 1.25        |                  |    |                     |             |                    |                      |          |
| 6. 0           |                  |    |                     |             |                    |                      |          |

Day 2 (8/28/11) CS

Temp Beaker (°C): 23.4

| Conc.<br>(g/L) | Temp.<br>(deg.C) | pH | Cond.<br>(umhos/cm) | DO<br>(ppm) | Hardness<br>(mg/L) | Alkalinity<br>(mg/L) | Comments |
|----------------|------------------|----|---------------------|-------------|--------------------|----------------------|----------|
| 1. 20          |                  |    |                     |             |                    |                      |          |
| 2. 10          |                  |    |                     |             |                    |                      |          |
| 3. 5           |                  |    |                     |             |                    |                      |          |
| 4. 2.5         |                  |    |                     |             |                    |                      |          |
| 5. 1.25        |                  |    |                     |             |                    |                      |          |
| 6. 0           |                  |    |                     |             |                    |                      |          |

All animals fed 0.25 ml Tetra Fin suspension. Initials: CS

Day 3 (8/29/11) CS

Temp Beaker (°C): 23.5

| Conc.<br>(g/L) | Temp.<br>(deg.C) | pH | Cond.<br>(umhos/cm) | DO<br>(ppm) | Hardness<br>(mg/L) | Alkalinity<br>(mg/L) | Comments |
|----------------|------------------|----|---------------------|-------------|--------------------|----------------------|----------|
| 1. 20          |                  |    |                     |             |                    |                      |          |
| 2. 10          |                  |    |                     |             |                    |                      |          |
| 3. 5           |                  |    |                     |             |                    |                      |          |
| 4. 2.5         |                  |    |                     |             |                    |                      |          |
| 5. 1.25        |                  |    |                     |             |                    |                      |          |
| 6. 0           |                  |    |                     |             |                    |                      |          |

Day 4 (8/30/11) CS

Temp Beaker (°C): 23.6

| Conc.<br>(g/L) | Temp.<br>(deg.C) | pH  | Cond.<br>(umhos/cm) | DO<br>(ppm) | Hardness<br>(mg/L) | Alkalinity<br>(mg/L) | Comments |
|----------------|------------------|-----|---------------------|-------------|--------------------|----------------------|----------|
| 1. 20          | —                | —   | —                   | —           | —                  | —                    |          |
| 2. 10          | —                | —   | —                   | —           |                    |                      |          |
| 3. 5           | 23.3             | 7.8 | 7650                | 7.6         |                    |                      |          |
| 4. 2.5         | 23.3             | 7.8 | 4140                | 7.6         |                    |                      |          |
| 5. 1.25        | 23.3             | 7.8 | 2340                | 7.7         |                    |                      |          |
| 6. 0           | 23.3             | 7.8 | 313                 | 7.7         | 94                 | 80                   |          |

Mean 23.5 7.9 286 8.0 99 73  
SD 0.1 0.1 \* 0.3 5 6  
n 10 10 2 10 3 3

## ACUTE TOXICITY TEST (ALL SPECIES)

Test No. 999-2931 Client \_\_\_\_\_

QC Test \_\_\_\_\_

Investigator \_\_\_\_\_

## DAILY RECORD SHEET - Survivors

Day 0 (8/26/11) 631

| Conc.<br>(g/L) | Survivors in Replicate: |   |   |   |   |   |   |   |   |    | Total |
|----------------|-------------------------|---|---|---|---|---|---|---|---|----|-------|
|                | 1                       | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |       |
| 1. 20          | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10    |
| 2. 10          | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10    |
| 3. 5           | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10    |
| 4. 2.5         | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10    |
| 5. 1.25        | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10    |
| 6. 0           | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10    |

Day 1 (8/27/11) 631

| Conc.<br>(g/L) | Survivors in Replicate: |   |   |   |   |   |   |   |   |    | Total  |
|----------------|-------------------------|---|---|---|---|---|---|---|---|----|--------|
|                | 1                       | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |        |
| 1. 20          | 0                       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0 (10) |
| 2. 10          | 1                       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0  | 2 (10) |
| 3. 5           | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10     |
| 4. 2.5         | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10     |
| 5. 1.25        | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10     |
| 6. 0           | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10     |

Day 2 (8/28/11) 631

| Conc.<br>(g/L) | Survivors in Replicate: |   |   |   |   |   |   |   |   |    | Total |
|----------------|-------------------------|---|---|---|---|---|---|---|---|----|-------|
|                | 1                       | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |       |
| 1. 20          | 0                       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0     |
| 2. 10          | 0                       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0 (2) |
| 3. 5           | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10    |
| 4. 2.5         | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10    |
| 5. 1.25        | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10    |
| 6. 0           | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10    |

Day 3 (8/29/11) 631

| Conc.<br>(g/L) | Survivors in Replicate: |   |   |   |   |   |   |   |   |    | Total  |
|----------------|-------------------------|---|---|---|---|---|---|---|---|----|--------|
|                | 1                       | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |        |
| 1. 20          | 0                       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0      |
| 2. 10          | 0                       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0      |
| 3. 5           | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0  | 9 (10) |
| 4. 2.5         | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10     |
| 5. 1.25        | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10     |
| 6. 0           | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10     |

Day 4 (8/30/11)

| Conc.<br>(g/L) | Survivors in Replicate: |   |   |   |   |   |   |   |   |    | Total  |
|----------------|-------------------------|---|---|---|---|---|---|---|---|----|--------|
|                | 1                       | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |        |
| 1. 20          | 0                       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0      |
| 2. 10          | 0                       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0      |
| 3. 5           | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0  | 8 (10) |
| 4. 2.5         | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10     |
| 5. 1.25        | 1                       | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 10     |
| 6. 0           | 1                       | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 9 (10) |



# Acute 96-hr Toxicity Test-96 Hr Survival

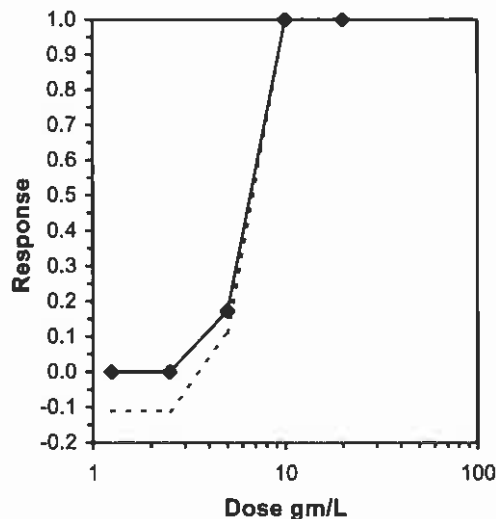
Start Date: 8/26/2011 12:35 Test ID: 999-2931 Sample ID: REF-Ref Toxicant  
 End Date: 8/30/2011 11:30 Lab ID: ORNAS-Northwestern Aquatic Sample Type: KCL-Potassium chloride  
 Sample Date: Protocol: EPAF 91-EPA Freshwater Test Species: CT-Chironomus dilutus  
 Comments:

| Conc-gm/L | 1      |
|-----------|--------|
| D-Control | 0.9000 |
| 1.25      | 1.0000 |
| 2.5       | 1.0000 |
| 5         | 0.8000 |
| 10        | 0.0000 |
| 20        | 0.0000 |

| Conc-gm/L | Mean   | N-Mean | Resp | Not Resp | Total | N | Fisher's Exact P | 1-Tailed Critical | Number Resp | Total Number |
|-----------|--------|--------|------|----------|-------|---|------------------|-------------------|-------------|--------------|
| D-Control | 0.9000 | 1.0000 | 1    | 9        | 10    | 1 |                  |                   | 1           | 10           |
| 1.25      | 1.0000 | 1.1111 | 0    | 10       | 10    | 1 | 0.5000           | 0.0500            | 0           | 10           |
| 2.5       | 1.0000 | 1.1111 | 0    | 10       | 10    | 1 | 0.5000           | 0.0500            | 0           | 10           |
| 5         | 0.8000 | 0.8889 | 2    | 8        | 10    | 1 | 0.5000           | 0.0500            | 2           | 10           |
| *10       | 0.0000 | 0.0000 | 10   | 0        | 10    | 1 | 0.0001           | 0.0500            | 10          | 10           |
| *20       | 0.0000 | 0.0000 | 10   | 0        | 10    | 1 | 0.0001           | 0.0500            | 10          | 10           |

| Hypothesis Test (1-tail, 0.05) | NOEC | LOEC | ChV     | TU |
|--------------------------------|------|------|---------|----|
| Fisher's Exact Test            | 5    | 10   | 7.07107 |    |

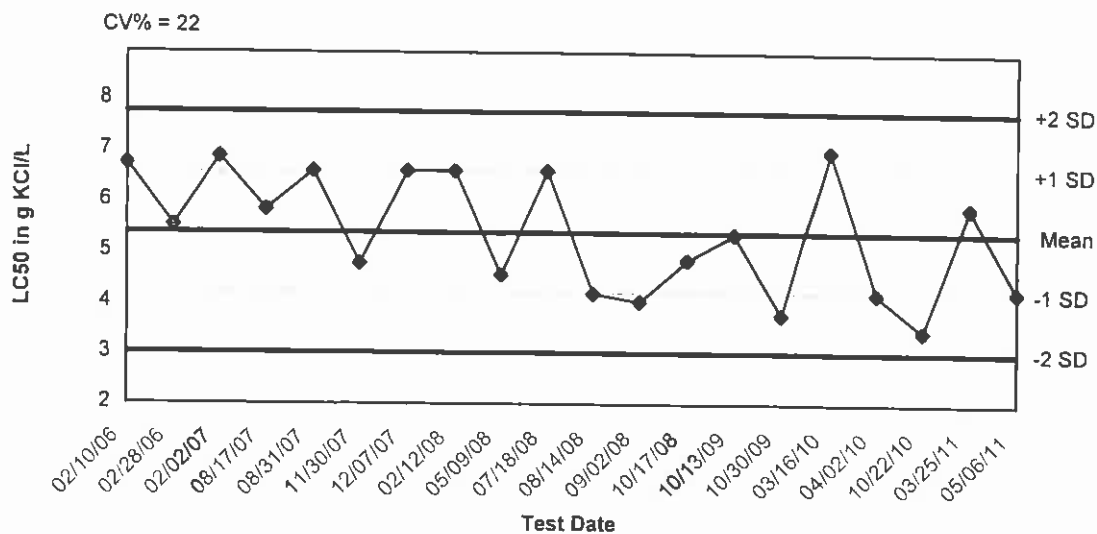
| Trim Level | EC50   | 95% CL        |  |
|------------|--------|---------------|--|
| 0.0%       | 6.2746 | 5.3170 7.4046 |  |
| 5.0%       | 6.4065 | 5.2905 7.7579 |  |
| 10.0%      | 6.5102 | 5.1196 8.2786 |  |
| 20.0%      | 6.5785 | 5.8294 7.4239 |  |
| Auto-0.0%  | 6.2746 | 5.3170 7.4046 |  |



| Test: AT-Acute 96-hr Toxicity Test |    |     |           |       | Test ID: 999-2931  |       |       |       |       |
|------------------------------------|----|-----|-----------|-------|--|-------|-------|-------|-------|
| Species: CT-Chironomus dilutus     |    |     |           |       | Protocol: EPAF 91-EPA Freshwater                                     |       |       |       |       |
| Sample ID: REF-Ref Toxicant        |    |     |           |       | Sample Type: KCL-Potassium chloride                                  |       |       |       |       |
| Start Date: 8/26/2011 12:35        |    |     |           |       | End Date: 8/30/2011 11:3 Lab ID: ORNAS-Northwestern Aquatic Sciences |       |       |       |       |
| Pos                                | ID | Rep | Group     | Start | 24 Hr  | 48 Hr | 72 Hr | 96 Hr | Notes |
|                                    | 1  | 1   | D-Control | 10    | 10   | 10    | 10    | 9     |       |
|                                    | 2  | 1   | 1.250     | 10    | 10   | 10    | 10    | 10    |       |
|                                    | 3  | 1   | 2.500     | 10    | 10   | 10    | 10    | 10    |       |
|                                    | 4  | 1   | 5.000     | 10    | 10   | 10    | 9     | 8     |       |
|                                    | 5  | 1   | 10.000    | 10    | 2  | 0     | 0     | 0     |       |
|                                    | 6  | 1   | 20.000    | 10    | 0  | 0     | 0     | 0     |       |

Comments:

**Midge, Chironomus dilutus, 3rd instar larvae acute reference toxicant test**



| Dates    | Values | Mean   | -1 SD  | -2 SD  | +1 SD  | +2 SD  |
|----------|--------|--------|--------|--------|--------|--------|
| 02/10/06 | 6.7400 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 02/28/06 | 5.5300 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 02/02/07 | 6.8800 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 08/17/07 | 5.8400 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 08/31/07 | 6.6000 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 11/30/07 | 4.7700 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 12/07/07 | 6.6000 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 02/12/08 | 6.6000 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 05/09/08 | 4.5600 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 07/18/08 | 6.6000 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 08/14/08 | 4.1900 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 09/02/08 | 4.0300 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 10/17/08 | 4.8500 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 10/13/09 | 5.3600 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 10/30/09 | 3.7700 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 03/16/10 | 6.9900 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 04/02/10 | 4.1900 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 10/22/10 | 3.4500 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 03/25/11 | 5.8900 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |
| 05/06/11 | 4.2400 | 5.3840 | 4.1978 | 3.0115 | 6.5702 | 7.7565 |

*mlp*  
6-6-11

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**B**

# **GEOTECHNICAL LABORATORY REPORTS AND BORING LOGS**

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125 Nagog Park  
Acton, MA 01720  
978 635 0424 Tel  
978 635 0266 Fax

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## Transmittal

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TO:

Tim Adair

Ecology & Environment, Inc.

720 Third Avenue, Suite 1700

Seattle, WA 98104

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DATE: 9/21/2011

GTX NO: 11124

RE: 10-08-0011

---

| COPIES | DATE      | DESCRIPTION                           |
|--------|-----------|---------------------------------------|
|        | 9/21/2011 | September 2011 Laboratory Test Report |
|        |           |                                       |
|        |           |                                       |
|        |           |                                       |

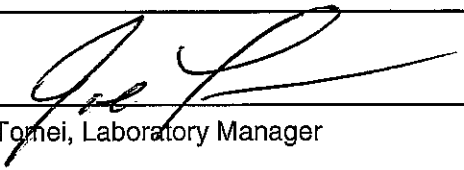
REMARKS:

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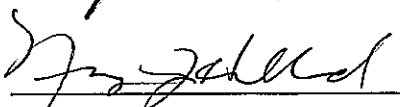
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SIGNED: \_\_\_\_\_

  
Joe Tomei, Laboratory Manager

CC:

APPROVED BY: \_\_\_\_\_

  
Nancy Hubbard, Project Manager

September 21, 2011

Tim Adair  
Ecology & Environment, Inc.  
720 Third Avenue, Suite 1700  
Seattle, WA 98104

RE: 10-08-0011, (GTX-11124)

Dear Tim:

Enclosed are the test results you requested for the above referenced project. GeoTesting Express, Inc. (GTX) received 18 samples from you between 9/2/2011 and 9/6/2011. These samples were labeled as follows:

| Boring Number | Depth |
|---------------|-------|
| SB-01         | 20.5  |
| SB-01         | 25    |
| SB-01         | 50-52 |
| SB-02         | 22    |
| SB-02         | 30.5  |
| SB-02         | 50.5  |
| SB-02         | 55    |
| SB-03         | 20.5  |
| SB-03         | 21    |
| SB-03         | 25    |
| SB-03         | 50    |
| SB-03         | 57.5  |
| SB-04         | 10    |
| SB-04         | 10.5  |
| SB-04         | 11    |
| SB-05         | 20    |
| SB-05         | 25.5  |
| SB-05         | 55    |

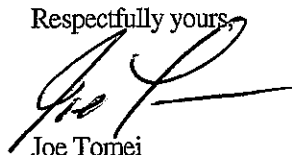
GTX performed the following tests on these samples:

- 9 ASTM D 422 - Grain Size Analyses (sieve only)
- 9 ASTM D 3080 - Direct Shear Test Points

A copy of your test request is attached.

The results presented in this report apply only to the items tested. This report shall not be reproduced except in full, without written approval from GeoTesting Express. The remainder of these samples will be retained for a period of sixty (60) days and will then be discarded unless otherwise notified by you. Please call me if you have any questions or require additional information. Thank you for allowing GeoTesting Express the opportunity of providing you with testing services. We look forward to working with you again in the future.

Respectfully yours,



Joe Tomei  
Laboratory Manager





125 Nagog Park  
Acton, MA 01720  
978 635 0424 Tel  
978 635 0266 Fax

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## **Geotechnical Test Report**

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**9/21/2011**

**GTX-11124**  
**10-08-0011**

**Client Project No.: TDD No. 10-08-0011**

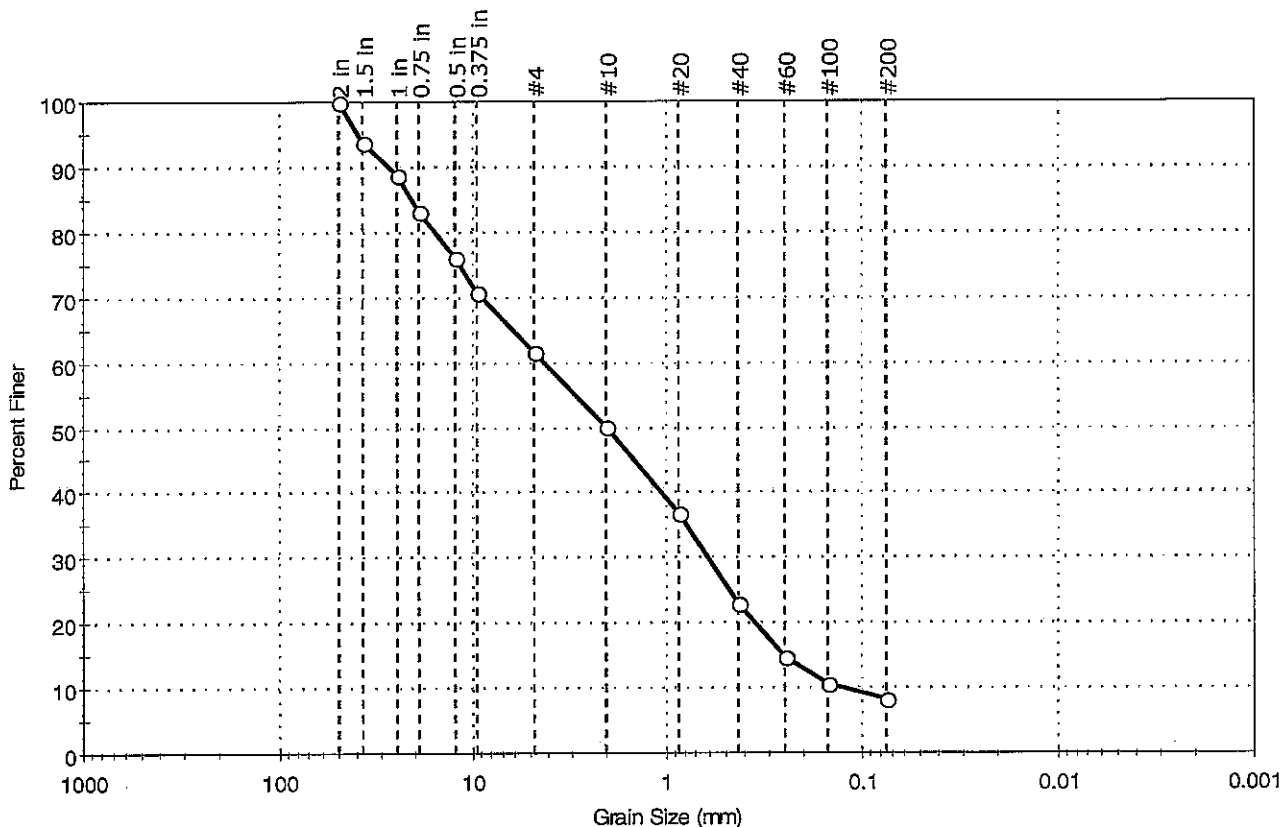
Prepared for:

**Ecology & Environment, Inc.**

---

|                                     |  |                       |
|-------------------------------------|--|-----------------------|
| Client: Ecology & Environment, Inc. | Project: 10-08-0011  | Project No: GTX-11124 |
| Location: ---                       | Boring ID: SB-01   | Sample Type: bag      |
| Sample ID:---                       | Test Date: 09/12/11  | Tested By: jbr        |
| Depth : 25                          | Test Id: 217167  | Checked By: jdt       |
| Test Comment: ---                   | Sample Description: Moist, brown sand with silt and gravel |                       |
| Sample Comment: ---                 |  |                       |

## Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| ---      | 38.3     | 53.4   | 8.3                |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 2 in       | 50.00          | 100           |               |          |
| 1.5 in     | 37.50          | 94            |               |          |
| 1 in       | 25.00          | 89            |               |          |
| 0.75 in    | 19.00          | 83            |               |          |
| 0.5 in     | 12.50          | 76            |               |          |
| 0.375 in   | 9.50           | 71            |               |          |
| #4         | 4.75           | 62            |               |          |
| #10        | 2.00           | 50            |               |          |
| #20        | 0.85           | 37            |               |          |
| #40        | 0.42           | 23            |               |          |
| #60        | 0.25           | 15            |               |          |
| #100       | 0.15           | 11            |               |          |
| #200       | 0.075          | 8             |               |          |

### Coefficients

|                              |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 20.7886 mm | D <sub>30</sub> = 0.6037 mm |
| D <sub>60</sub> = 4.1858 mm  | D <sub>15</sub> = 0.2554 mm |
| D <sub>50</sub> = 1.9716 mm  | D <sub>10</sub> = 0.1224 mm |
| C <sub>u</sub> = 34.198      | C <sub>c</sub> = 0.711      |

### Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

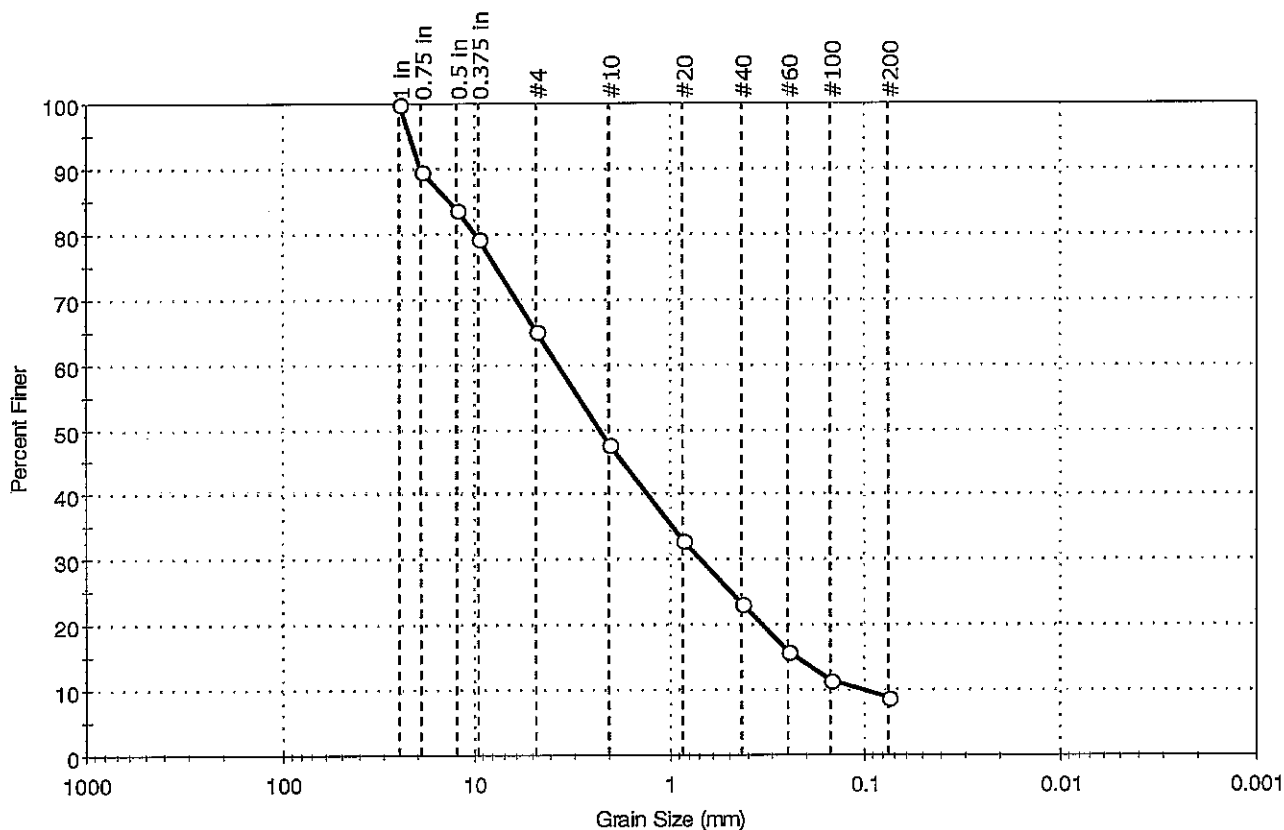
### Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED  
Sand/Gravel Hardness : HARD



|  |                       |
|--|-----------------------|
| Client: Ecology & Environment, Inc.                        | Project No: GTX-11124 |
| Project: 10-08-0011  | Tested By: jbr        |
| Location: ---  | Checked By: jdt       |
| Boring ID: SB-01   | Sample Type: bag      |
| Sample ID:---  | Test Date: 09/14/11   |
| Depth : 50-52  | Test Id: 217168       |
| Test Comment: ---  |                       |
| Sample Description: Moist, brown sand with silt and gravel |                       |
| Sample Comment: ---  |                       |

## Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| %Cobble | %Gravel | %Sand | %Silt & Clay Size |
|---------|---------|-------|-------------------|
| ---     | 34.9    | 56.3  | 8.8               |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 1 in       | 25.00          | 100           |               |          |
| 0.75 in    | 19.00          | 90            |               |          |
| 0.5 in     | 12.50          | 84            |               |          |
| 0.375 in   | 9.50           | 79            |               |          |
| #4         | 4.75           | 65            |               |          |
| #10        | 2.00           | 48            |               |          |
| #20        | 0.85           | 33            |               |          |
| #40        | 0.42           | 23            |               |          |
| #60        | 0.25           | 16            |               |          |
| #100       | 0.15           | 11            |               |          |
| #200       | 0.075          | 9             |               |          |

### Coefficients

|                              |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 13.6407 mm | D <sub>30</sub> = 0.6882 mm |
| D <sub>60</sub> = 3.6895 mm  | D <sub>15</sub> = 0.2238 mm |
| D <sub>50</sub> = 2.2436 mm  | D <sub>10</sub> = 0.1031 mm |
| C <sub>u</sub> = 35.786      | C <sub>c</sub> = 1.245      |

### Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-a (0))

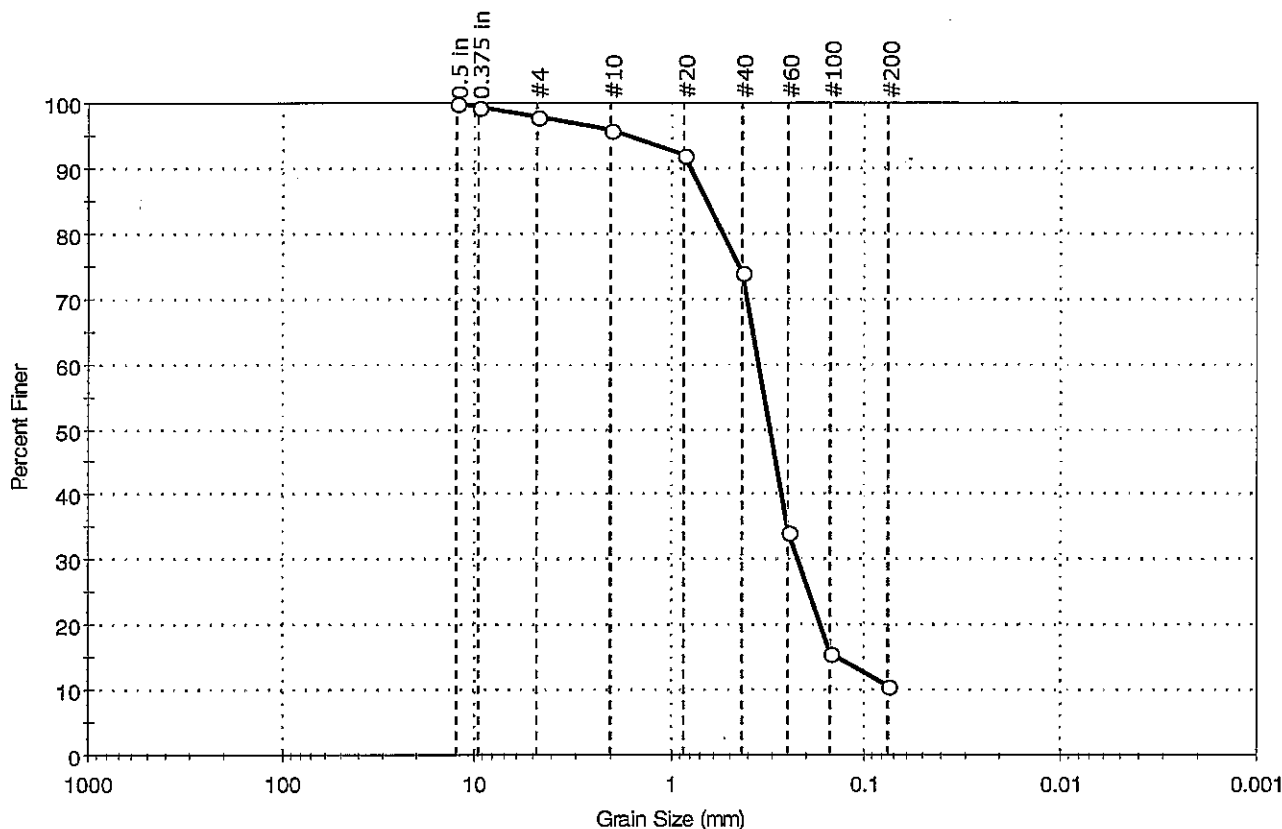
### Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED  
Sand/Gravel Hardness : HARD



|   |                       |
|---|-----------------------|
| Client: Ecology & Environment, Inc.             | Project No: GTX-11124 |
| Project: 10-08-0011                             |                       |
| Location: ---                                   |                       |
| Boring ID: SB-02                                | Sample Type: bag      |
| Sample ID:---                                   | Test Date: 09/13/11   |
| Depth: 22                                       | Test Id: 217169       |
| Test Comment: ---                               | Tested By: jbr        |
| Sample Description: Moist, brown sand with silt | Checked By: jdt       |
| Sample Comment: ---                             |                       |

## Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| —        | 2.0      | 87.3   | 10.7               |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 0.5 in     | 12.50          | 100           |               |          |
| 0.375 in   | 9.50           | 99            |               |          |
| #4         | 4.75           | 98            |               |          |
| #10        | 2.00           | 96            |               |          |
| #20        | 0.85           | 92            |               |          |
| #40        | 0.42           | 74            |               |          |
| #60        | 0.25           | 34            |               |          |
| #100       | 0.15           | 16            |               |          |
| #200       | 0.075          | 11            |               |          |

### Coefficients

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.6476 mm | D <sub>30</sub> = 0.2234 mm |
| D <sub>60</sub> = 0.3528 mm | D <sub>15</sub> = 0.1387 mm |
| D <sub>50</sub> = 0.3089 mm | D <sub>10</sub> = 0.0680 mm |
| C <sub>u</sub> = 5.188      | C <sub>c</sub> = 2.080      |

### Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

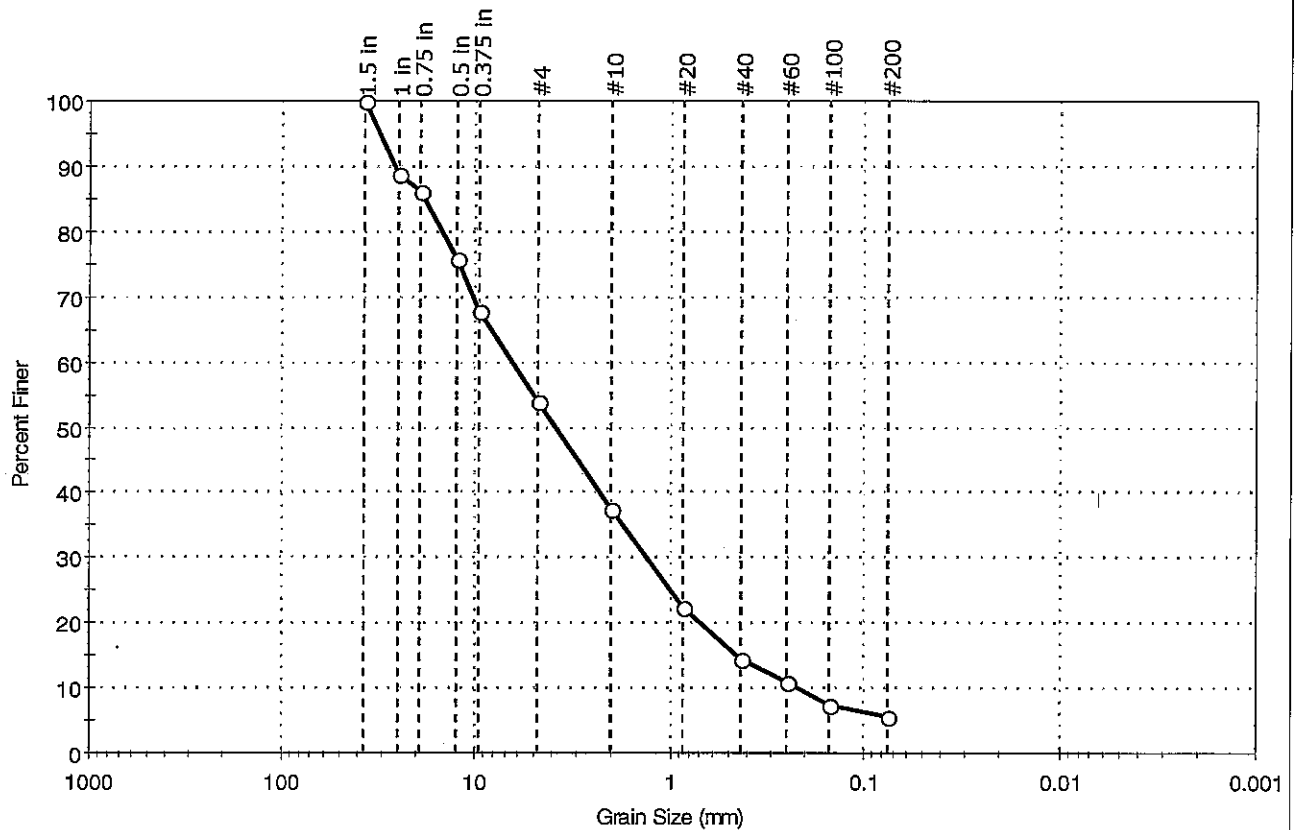
### Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

|  |                       |
|--|-----------------------|
| Client: Ecology & Environment, Inc.                        | Project No: GTX-11124 |
| Project: 10-08-0011  |                       |
| Location: ---  |                       |
| Boring ID: SB-02   | Sample Type: bag      |
| Sample ID:---  | Test Date: 09/13/11   |
| Depth : 55   | Test Id: 217170       |
| Test Comment: ---  | Tested By: jbr        |
| Sample Description: Moist, brown sand with silt and gravel | Checked By: jdt       |
| Sample Comment: ---  |                       |

## Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| —        | 46.1     | 48.4   | 5.5                |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 1.5 in     | 37.50          | 100           |               |          |
| 1 in       | 25.00          | 89            |               |          |
| 0.75 in    | 19.00          | 86            |               |          |
| 0.5 in     | 12.50          | 76            |               |          |
| 0.375 in   | 9.50           | 68            |               |          |
| #4         | 4.75           | 54            |               |          |
| #10        | 2.00           | 38            |               |          |
| #20        | 0.85           | 22            |               |          |
| #40        | 0.42           | 15            |               |          |
| #60        | 0.25           | 11            |               |          |
| #100       | 0.15           | 7             |               |          |
| #200       | 0.075          | 6             |               |          |

| Coefficients                 |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 18.1146 mm | D <sub>30</sub> = 1.3047 mm |
| D <sub>60</sub> = 6.4238 mm  | D <sub>15</sub> = 0.4417 mm |
| D <sub>50</sub> = 3.8666 mm  | D <sub>10</sub> = 0.2203 mm |
| C <sub>u</sub> = 29.159      | C <sub>c</sub> = 1.203      |

| Classification |  |
|----------------|--|
| ASTM           | N/A  |
| AASHTO         | Stone Fragments, Gravel and Sand (A-1-a (0)) |

| Sample/Test Description      |         |
|------------------------------|---------|
| Sand/Gravel Particle Shape : | ROUNDED |
| Sand/Gravel Hardness :       | HARD    |

Client: Ecology & Environment, Inc.

Project: 10-08-0011

Location: ---

Project No: GTX-11124

Boring ID: SB-03

Sample Type: bag

Tested By: jbr

Sample ID:---

Test Date: 09/14/11

Checked By: jdt

Depth : 25

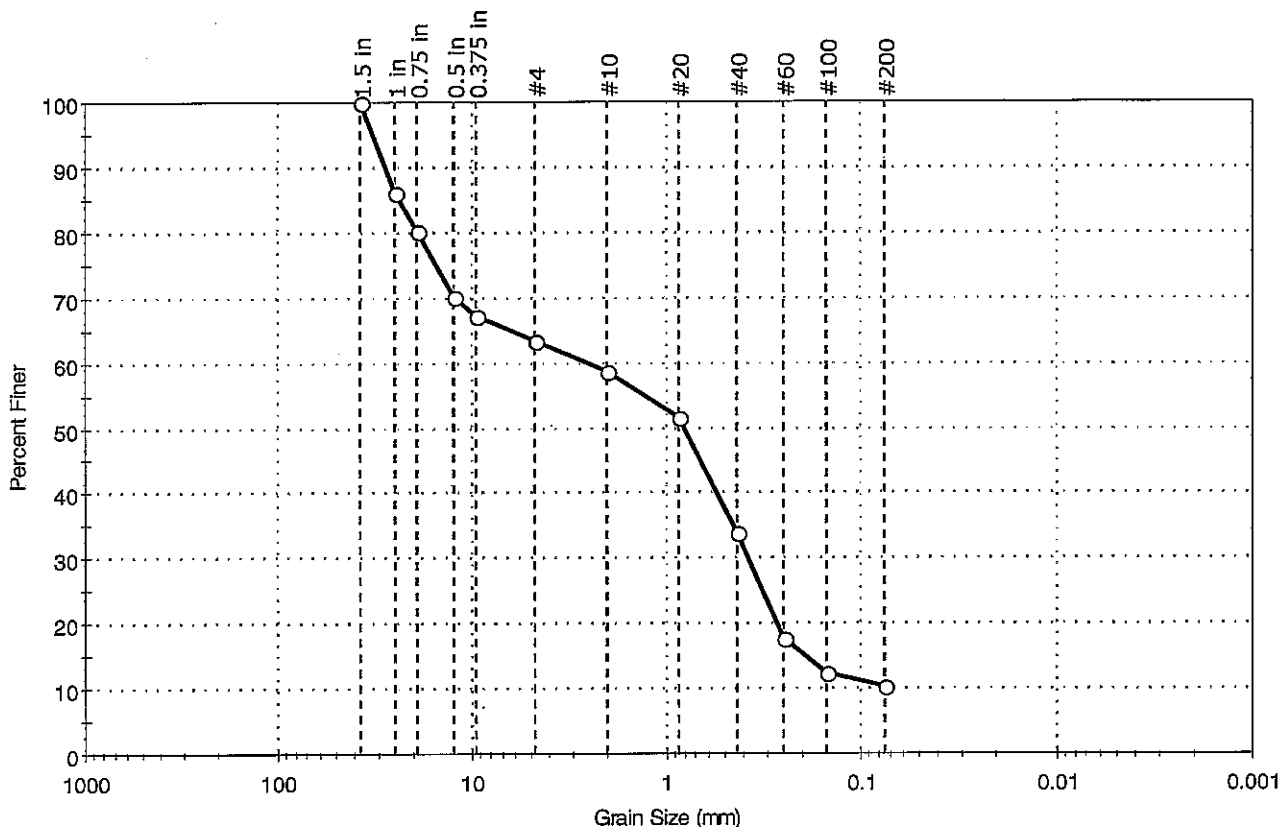
Test Id: 217171

Test Comment: ---

Sample Description: Moist, yellowish brown sand with silt and gravel

Sample Comment: ---

## Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| ---      | 36.5     | 53.1   | 10.4               |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 1.5 in     | 37.50          | 100           |               |          |
| 1 in       | 25.00          | 86            |               |          |
| 0.75 in    | 19.00          | 80            |               |          |
| 0.5 in     | 12.50          | 70            |               |          |
| 0.375 in   | 9.50           | 67            |               |          |
| #4         | 4.75           | 64            |               |          |
| #10        | 2.00           | 59            |               |          |
| #20        | 0.85           | 52            |               |          |
| #40        | 0.42           | 34            |               |          |
| #60        | 0.25           | 18            |               |          |
| #100       | 0.15           | 12            |               |          |
| #200       | 0.075          | 10            |               |          |

### Coefficients

|                              |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 23.7701 mm | D <sub>30</sub> = 0.3742 mm |
| D <sub>60</sub> = 2.5118 mm  | D <sub>15</sub> = 0.1928 mm |
| D <sub>50</sub> = 0.7955 mm  | D <sub>10</sub> = 0.0660 mm |
| C <sub>u</sub> = 38.058      | C <sub>c</sub> = 0.845      |

### Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

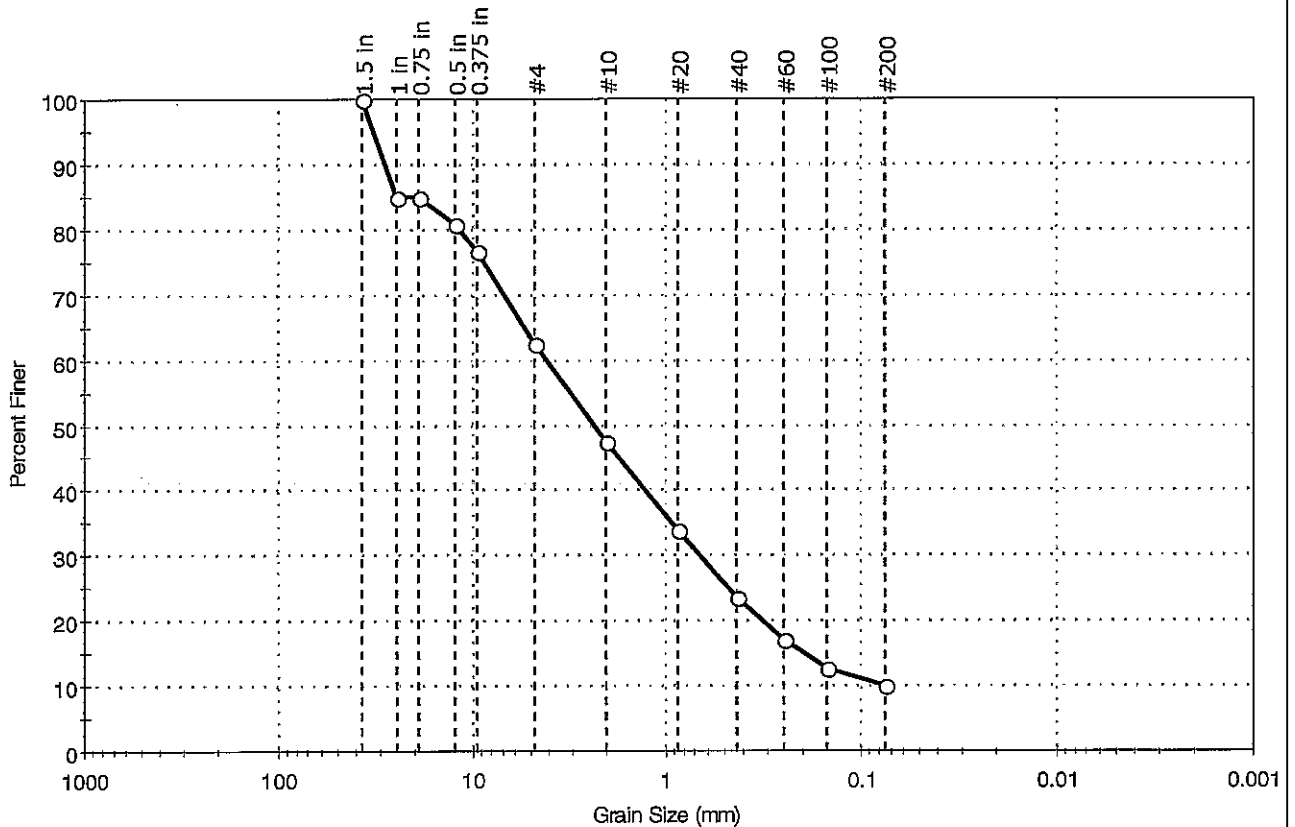
### Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

|  |                       |
|--|-----------------------|
| Client: Ecology & Environment, Inc.                        | Project No: GTX-11124 |
| Project: 10-08-0011  | Tested By: jbr        |
| Location: ---  | Checked By: jdt       |
| Boring ID: SB-03   | Sample Type: bag      |
| Sample ID: ---   | Test Date: 09/14/11   |
| Depth: 50  | Test Id: 217172       |
| Test Comment: ---  |                       |
| Sample Description: Moist, brown sand with silt and gravel |                       |
| Sample Comment: ---  |                       |

## Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| ---      | 37.4     | 52.7   | 9.9                |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 1.5 in     | 37.50          | 100           |               |          |
| 1 in       | 25.00          | 85            |               |          |
| 0.75 in    | 19.00          | 85            |               |          |
| 0.5 in     | 12.50          | 81            |               |          |
| 0.375 in   | 9.50           | 77            |               |          |
| #4         | 4.75           | 63            |               |          |
| #10        | 2.00           | 47            |               |          |
| #20        | 0.85           | 34            |               |          |
| #40        | 0.42           | 24            |               |          |
| #60        | 0.25           | 17            |               |          |
| #100       | 0.15           | 13            |               |          |
| #200       | 0.075          | 10            |               |          |

### Coefficients

|                              |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 25.0761 mm | D <sub>30</sub> = 0.6515 mm |
| D <sub>60</sub> = 4.0841 mm  | D <sub>15</sub> = 0.1970 mm |
| D <sub>50</sub> = 2.3175 mm  | D <sub>10</sub> = 0.0764 mm |
| C <sub>u</sub> = 53.457      | C <sub>c</sub> = 1.360      |

### Classification

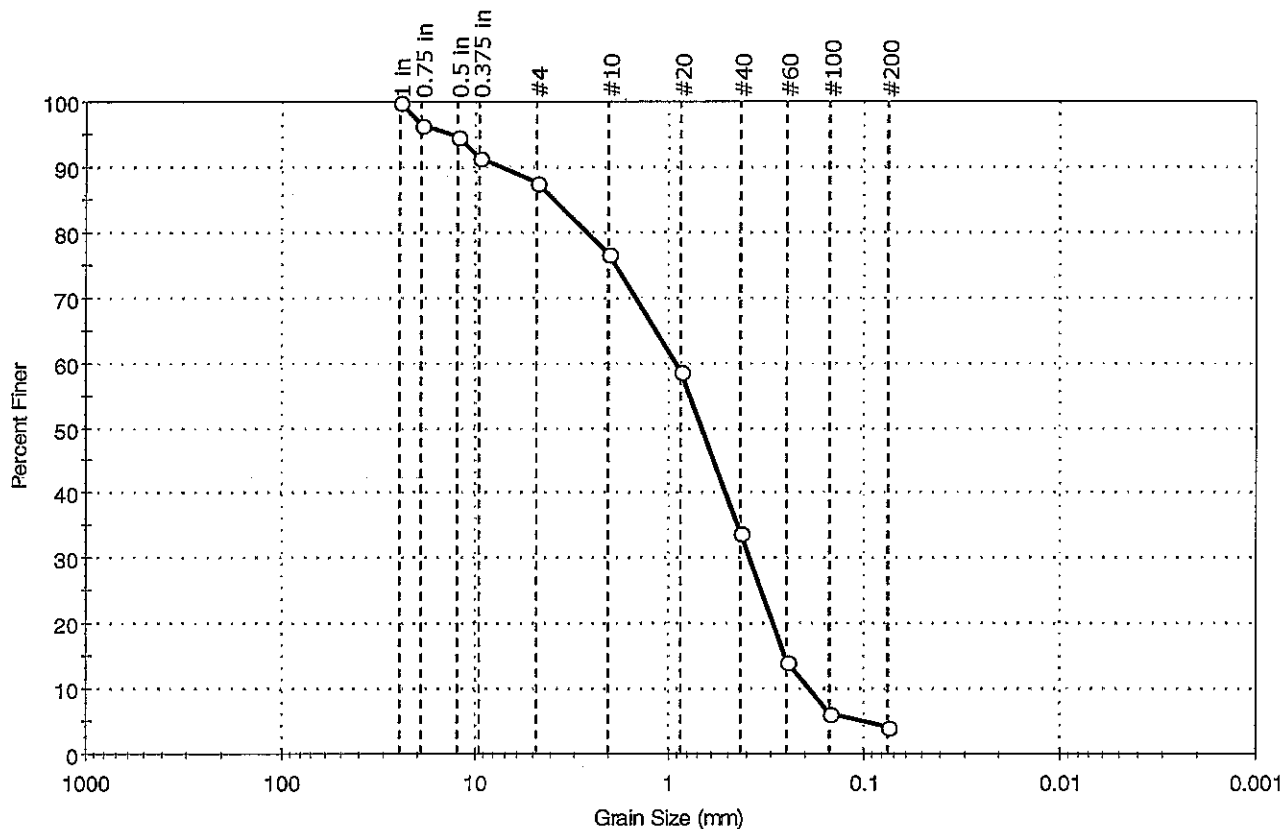
|        |  |
|--------|--|
| ASTM   | N/A  |
| AASHTO | Stone Fragments, Gravel and Sand (A-1-a (0)) |

### Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED  
Sand/Gravel Hardness : HARD

|   |                     |                 |                       |
|---|---------------------|-----------------|-----------------------|
| Client: Ecology & Environment, Inc.             | Project: 10-08-0011 | Location: ---   | Project No: GTX-11124 |
| Boring ID: SB-04                                | Sample Type: bag    | Tested By: jbr  | Checked By: jdt       |
| Sample ID:---                                   | Test Date: 09/14/11 | Test Id: 217173 |                       |
| Depth: 10                                       |                     |                 |                       |
| Test Comment: ---                               |                     |                 |                       |
| Sample Description: Moist, brownish yellow sand |                     |                 |                       |
| Sample Comment: ---                             |                     |                 |                       |

## Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| —        | 12.4     | 83.4   | 4.2                |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 1 in       | 25.00          | 100           |               |          |
| 0.75 in    | 19.00          | 96            |               |          |
| 0.5 in     | 12.50          | 95            |               |          |
| 0.375 in   | 9.50           | 91            |               |          |
| #4         | 4.75           | 88            |               |          |
| #10        | 2.00           | 77            |               |          |
| #20        | 0.85           | 59            |               |          |
| #40        | 0.42           | 34            |               |          |
| #60        | 0.25           | 14            |               |          |
| #100       | 0.15           | 6             |               |          |
| #200       | 0.075          | 4             |               |          |

### Coefficients

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 3.8405 mm | D <sub>30</sub> = 0.3814 mm |
| D <sub>60</sub> = 0.8979 mm | D <sub>15</sub> = 0.2548 mm |
| D <sub>50</sub> = 0.6639 mm | D <sub>10</sub> = 0.1909 mm |
| C <sub>u</sub> = 4.704      | C <sub>c</sub> = 0.849      |

### Classification

**ASTM** Poorly graded sand (SP)

**AASHTO** Stone Fragments, Gravel and Sand (A-1-b (0))

### Sample/Test Description

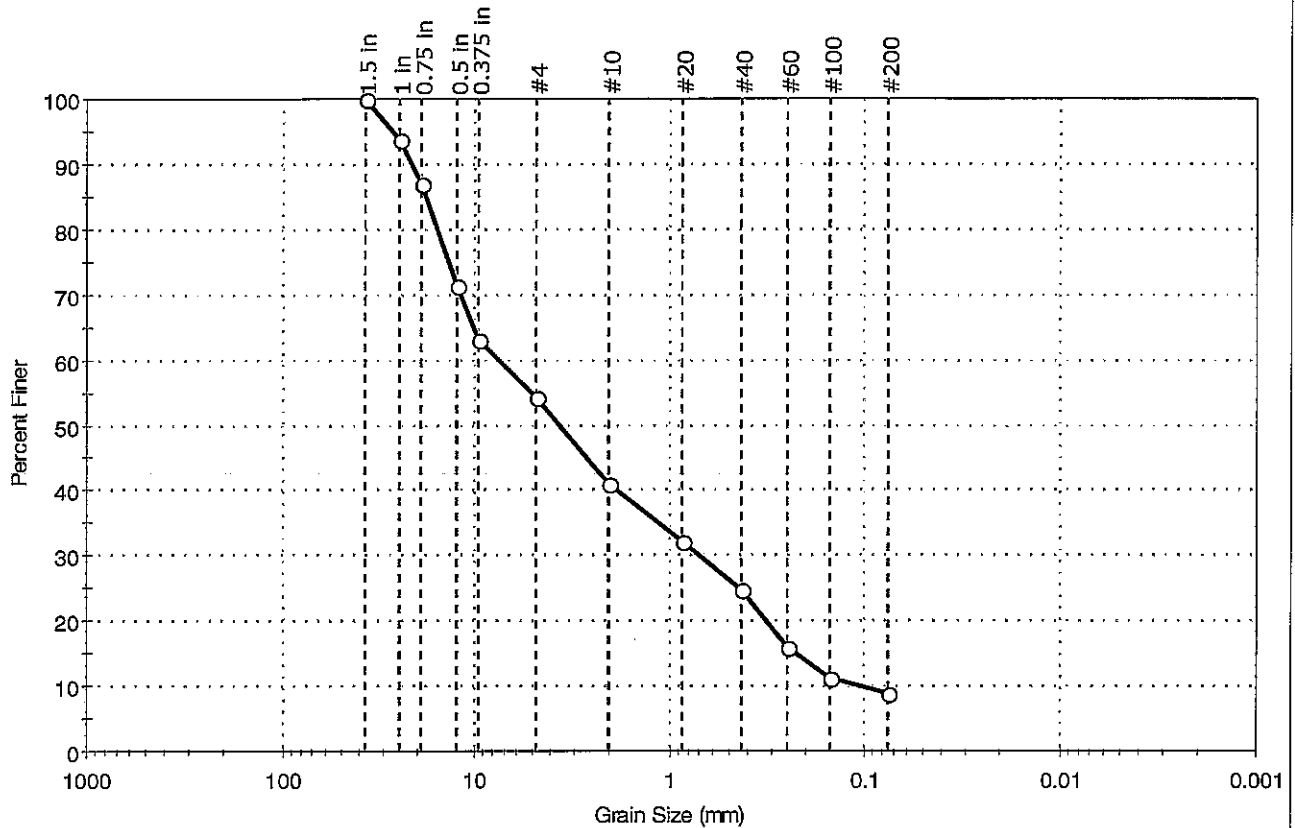
Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD



|  |                       |
|--|-----------------------|
| Client: Ecology & Environment, Inc.                        | Project No: GTX-11124 |
| Project: 10-08-0011  | Tested By: jbr        |
| Location: ---  | Checked By: jdt       |
| Boring ID: SB-05   | Sample Type: bag      |
| Sample ID:---  | Test Date: 09/12/11   |
| Depth : 20   | Test Id: 217174       |
| Test Comment: ---  |                       |
| Sample Description: Moist, brown gravel with silt and sand |                       |
| Sample Comment: ---  |                       |

## Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| ---      | 45.8     | 45.4   | 8.8                |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 1.5 in     | 37.50          | 100           |               |          |
| 1 in       | 25.00          | 94            |               |          |
| 0.75 in    | 19.00          | 87            |               |          |
| 0.5 in     | 12.50          | 71            |               |          |
| 0.375 in   | 9.50           | 63            |               |          |
| #4         | 4.75           | 54            |               |          |
| #10        | 2.00           | 41            |               |          |
| #20        | 0.85           | 32            |               |          |
| #40        | 0.42           | 25            |               |          |
| #60        | 0.25           | 16            |               |          |
| #100       | 0.15           | 11            |               |          |
| #200       | 0.075          | 9             |               |          |

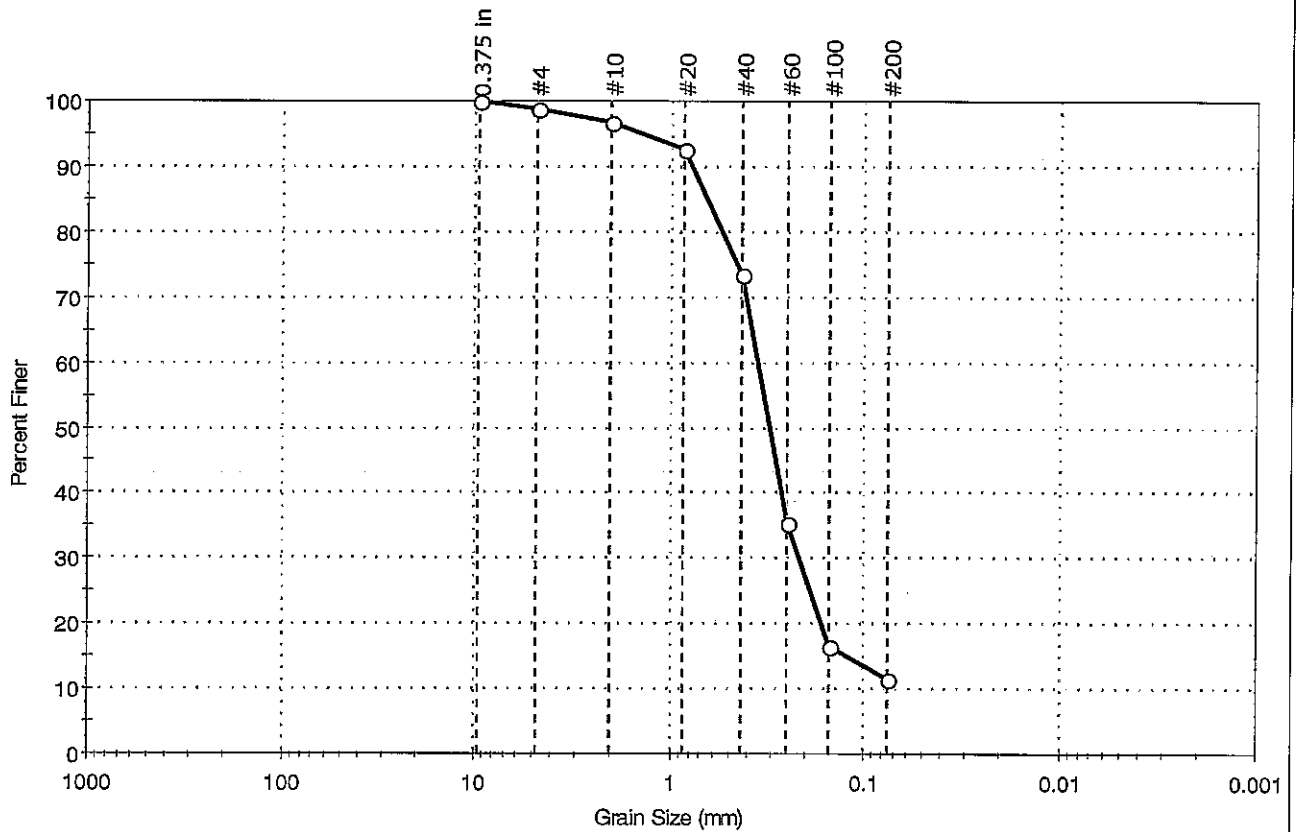
| Coefficients                 |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 17.9761 mm | D <sub>30</sub> = 0.7003 mm |
| D <sub>60</sub> = 7.4095 mm  | D <sub>15</sub> = 0.2279 mm |
| D <sub>50</sub> = 3.5984 mm  | D <sub>10</sub> = 0.1081 mm |
| C <sub>u</sub> = 68.543      | C <sub>c</sub> = 0.612      |

| Classification |  |
|----------------|--|
| ASTM           | N/A  |
| AASHTO         | Stone Fragments, Gravel and Sand (A-1-a (0)) |

| Sample/Test Description      |         |
|------------------------------|---------|
| Sand/Gravel Particle Shape : | ROUNDED |
| Sand/Gravel Hardness :       | HARD    |

|   |                       |
|---|-----------------------|
| Client: Ecology & Environment, Inc.             | Project No: GTX-11124 |
| Project: 10-08-0011                             |                       |
| Location: ---                                   |                       |
| Boring ID: SB-05                                | Sample Type: bag      |
| Sample ID:---                                   | Test Date: 09/14/11   |
| Depth : 55                                      | Test Id: 217175       |
| Test Comment: ---                               | Tested By: jbr        |
| Sample Description: Moist, brown sand with silt | Checked By: jdt       |
| Sample Comment: ---                             |                       |

## Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| —        | 1.2      | 87.3   | 11.5               |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 0.375 in   | 9.50           | 100           |               |          |
| #4         | 4.75           | 99            |               |          |
| #10        | 2.00           | 97            |               |          |
| #20        | 0.85           | 93            |               |          |
| #40        | 0.42           | 74            |               |          |
| #60        | 0.25           | 36            |               |          |
| #100       | 0.15           | 16            |               |          |
| #200       | 0.075          | 11            |               |          |

### Coefficients

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.6429 mm | D <sub>30</sub> = 0.2156 mm |
| D <sub>60</sub> = 0.3519 mm | D <sub>15</sub> = 0.1230 mm |
| D <sub>50</sub> = 0.3060 mm | D <sub>10</sub> = 0.0610 mm |
| C <sub>u</sub> = 5.769      | C <sub>c</sub> = 2.165      |

### Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

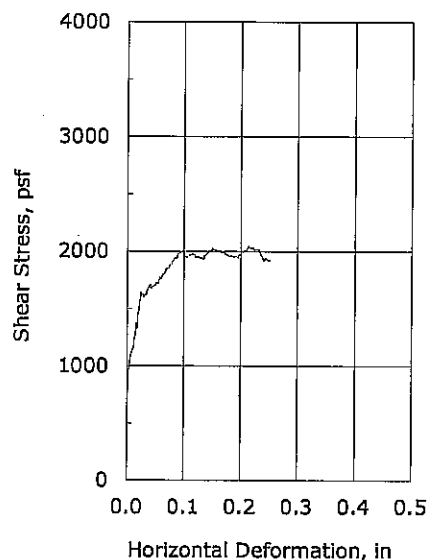
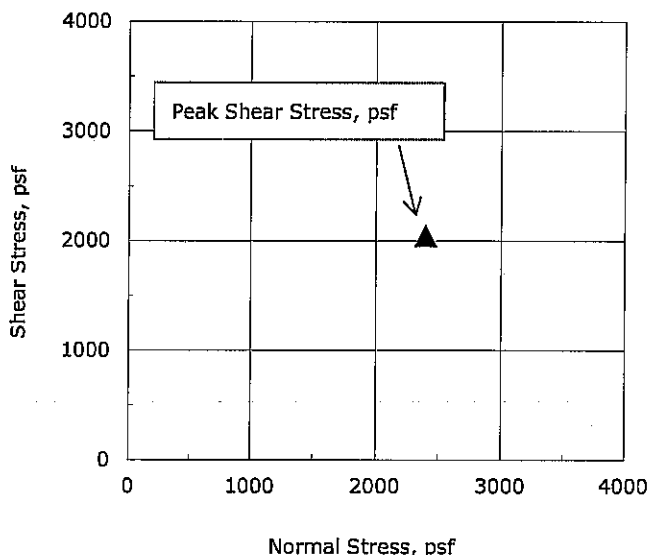
### Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

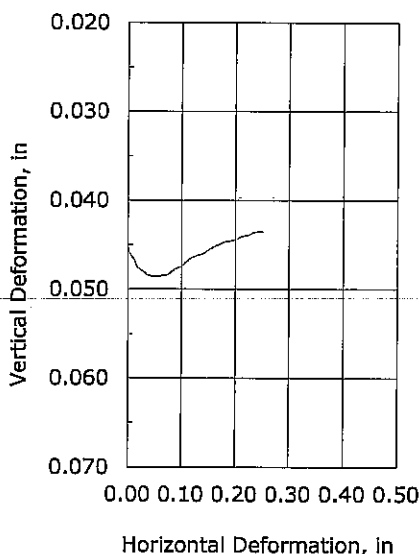
|                     |                             |
|---------------------|-----------------------------|
| Client:             | Ecology & Environment, Inc. |
| Project Name:       | 10-08-0011                  |
| Project Location:   | ---                         |
| GTX #:              | 11124                       |
| Test Date:          | 9/12/2011                   |
| Tested By:          | md                          |
| Checked By:         | jdt                         |
| Boring ID:          | SB-01                       |
| Sample ID:          | ---                         |
| Depth, ft:          | 20.5                        |
| Visual Description: | Dry, brown sand             |

## Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D 3080-04



|                              |       |  |  |
|------------------------------|-------|--|--|
| Test No.:                    | DS-4  |  |  |
| Initial Diameter, in         | 2.00  |  |  |
| Initial Height, in           | 1.00  |  |  |
| Initial Mass, grams          | 80.0  |  |  |
| Initial Dry Density, pcf     | 90.8  |  |  |
| Initial Moisture Content, %  | 6.7   |  |  |
| Initial Bulk Density, pcf    | 97    |  |  |
| Initial Degree of Saturation | 21.7  |  |  |
| Initial Void Ratio           | 0.82  |  |  |
| Final Dry Density, pcf       | 95.0  |  |  |
| Final Moisture Content, %    | 26.3  |  |  |
| Final Bulk Density, pcf      | 120   |  |  |
| Normal Stress, psf           | 2400  |  |  |
| Maximum Shear Stress, psf    | 2044  |  |  |
| Shear Rate, in/min           | 0.004 |  |  |

|                             |      |
|-----------------------------|------|
| Sample Type:                | tube |
| Estimated Specific Gravity: | 2.65 |
| Liquid Limit:               | ---  |
| Plastic Limit:              | ---  |
| Plasticity Index:           | ---  |
| % Passing #200 sieve:       | ---  |
| Soil Classification:        | ---  |
| Group Symbol:               | ---  |



**Notes:** Moisture content obtained before shear from sample trimmings

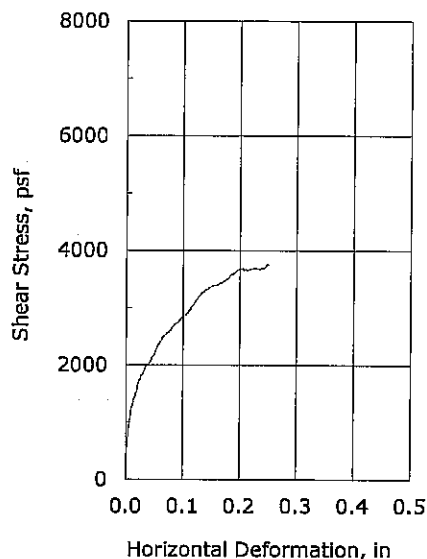
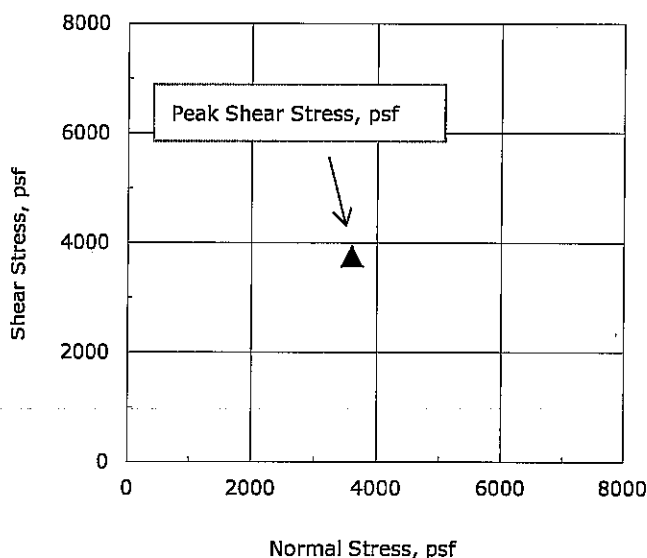
Moisture Content determined by ASTM D 2216

Values for cohesion and friction angle not presented because only one test point was requested. If zero cohesion is assumed, the approximate friction angle would be 40.4°.

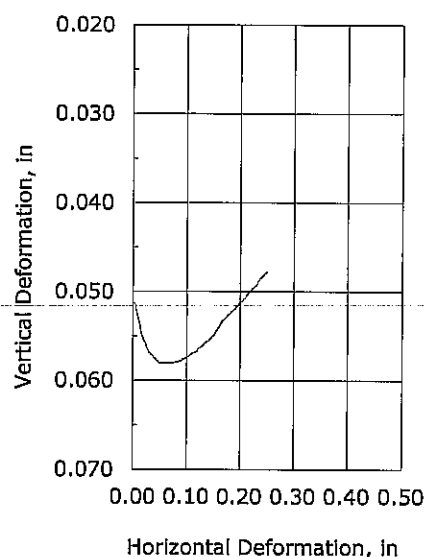
"---" indicates testing required to determine these values was not requested.

|                     |                             |
|---------------------|-----------------------------|
| Client:             | Ecology & Environment, Inc. |
| Project Name:       | 10-08-0011                  |
| Project Location:   | ---                         |
| GTX #:              | 11124                       |
| Test Date:          | 9/12/2011                   |
| Tested By:          | md                          |
| Checked By:         | jdt                         |
| Boring ID:          | SB-02                       |
| Sample ID:          | ---                         |
| Depth, ft:          | 30.5                        |
| Visual Description: | Dry, brown sand             |

## Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D 3080-04



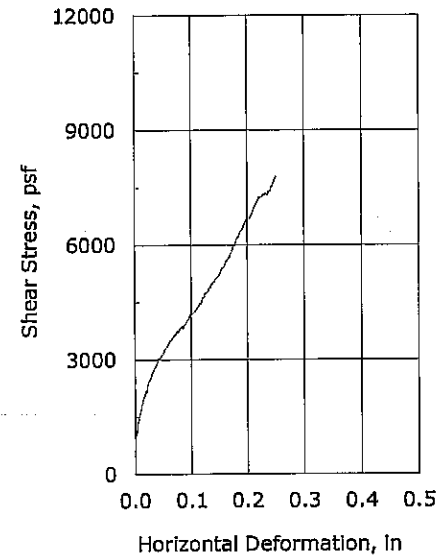
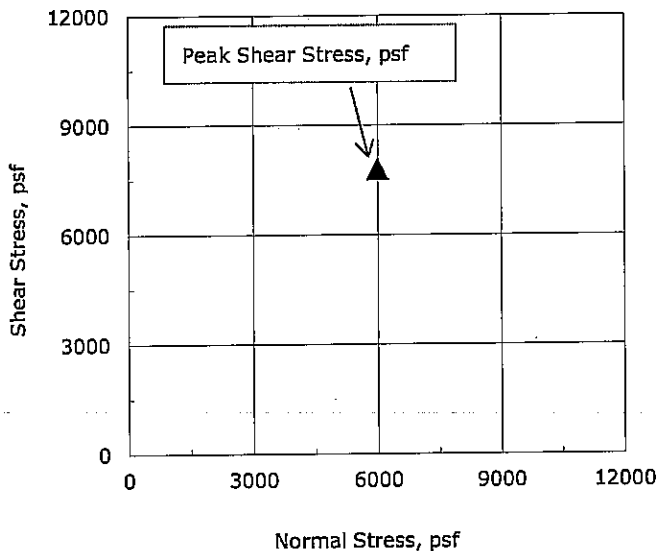
|                              |       |  |  |
|------------------------------|-------|--|--|
| Test No.:                    | DS-5  |  |  |
| Initial Diameter, in         | 2.00  |  |  |
| Initial Height, in           | 1.00  |  |  |
| Initial Mass, grams          | 93.5  |  |  |
| Initial Dry Density, pcf     | 107.4 |  |  |
| Initial Moisture Content, %  | 5.5   |  |  |
| Initial Bulk Density, pcf    | 113   |  |  |
| Initial Degree of Saturation | 27.1  |  |  |
| Initial Void Ratio           | 0.54  |  |  |
| Final Dry Density, pcf       | 113   |  |  |
| Final Moisture Content, %    | 18.0  |  |  |
| Final Bulk Density, pcf      | 133   |  |  |
| Normal Stress, psf           | 3600  |  |  |
| Maximum Shear Stress, psf    | 3755  |  |  |
| Shear Rate, in/min           | 0.004 |  |  |
| Sample Type:                 | tube  |  |  |
| Estimated Specific Gravity:  | 2.65  |  |  |
| Liquid Limit:                | ---   |  |  |
| Plastic Limit:               | ---   |  |  |
| Plasticity Index:            | ---   |  |  |
| % Passing #200 sieve:        | ---   |  |  |
| Soil Classification:         | ---   |  |  |
| Group Symbol:                | ---   |  |  |



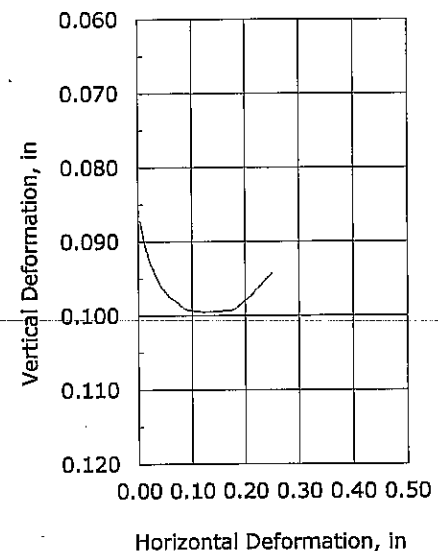
Notes: Moisture content obtained before shear from sample trimmings  
 Moisture Content determined by ASTM D 2216  
 Values for cohesion and friction angle not presented because only one test point was requested. If zero cohesion is assumed, the approximate friction angle would be 46.2°.  
 "----" indicates testing required to determine these values was not requested.

Client: Ecology & Environment, Inc.  
 Project Name: 10-08-0011  
 Project Location: ---  
 GTX #: 11124  
 Test Date: 9/13/2011  
 Tested By: md  
 Checked By: jdt  
 Boring ID: SB-02  
 Sample ID: ---  
 Depth, ft: 50.5  
 Visual Description: Dry, brown sand with gravel

## Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D 3080-04



|                              |       |  |  |
|------------------------------|-------|--|--|
| Test No.:                    | DS-6  |  |  |
| Initial Diameter, in         | 2.00  |  |  |
| Initial Height, in           | 1.00  |  |  |
| Initial Mass, grams          | 96.0  |  |  |
| Initial Dry Density, pcf     | 110   |  |  |
| Initial Moisture Content, %  | 6.0   |  |  |
| Initial Bulk Density, pcf    | 116   |  |  |
| Initial Degree of Saturation | 31.4  |  |  |
| Initial Void Ratio           | 0.51  |  |  |
| Final Dry Density, pcf       | 121   |  |  |
| Final Moisture Content, %    | 13.3  |  |  |
| Final Bulk Density, pcf      | 137   |  |  |
| Normal Stress, psf           | 6000  |  |  |
| Maximum Shear Stress, psf    | 7794  |  |  |
| Shear Rate, in/min           | 0.004 |  |  |
| Sample Type:                 | tube  |  |  |
| Estimated Specific Gravity:  | 2.65  |  |  |
| Liquid Limit:                | ---   |  |  |
| Plastic Limit:               | ---   |  |  |
| Plasticity Index:            | ---   |  |  |
| % Passing #200 sieve:        | ---   |  |  |
| Soil Classification:         | ---   |  |  |
| Group Symbol:                | ---   |  |  |

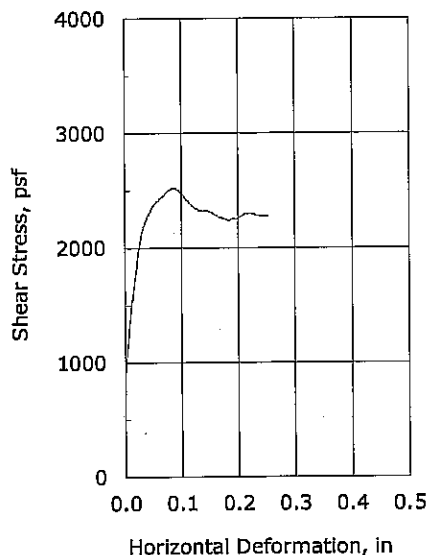
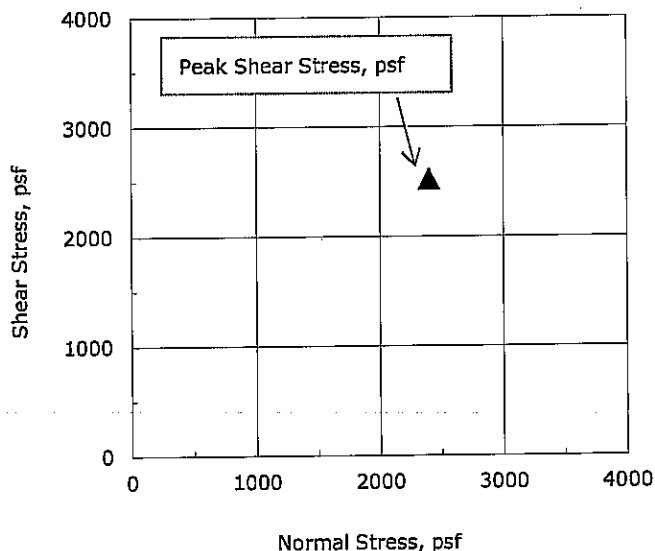


Notes: Moisture content obtained before shear from sample trimmings  
 Moisture Content determined by ASTM D 2216  
 Values for cohesion and friction angle not presented because only one test point was requested. If zero cohesion is assumed, the approximate friction angle would be 52.4°.

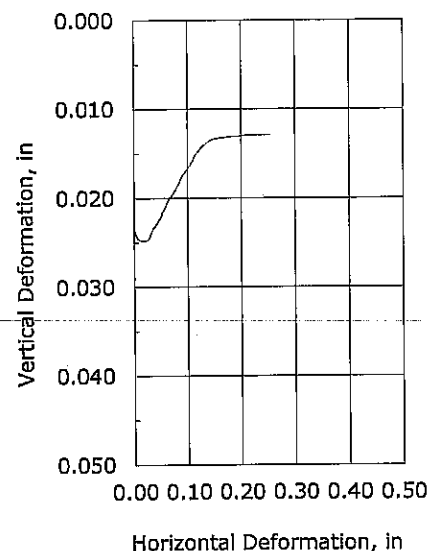
"---" indicates testing required to determine these values was not requested.

|                     |                             |
|---------------------|-----------------------------|
| Client:             | Ecology & Environment, Inc. |
| Project Name:       | 10-08-0011                  |
| Project Location:   | ---                         |
| GTX #:              | 11124                       |
| Test Date:          | 9/9/2011                    |
| Tested By:          | md                          |
| Checked By:         | jdt                         |
| Boring ID:          | SB-03                       |
| Sample ID:          | ---                         |
| Depth, ft:          | 20.5                        |
| Visual Description: | Moist, brown sand           |

## Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D 3080-04



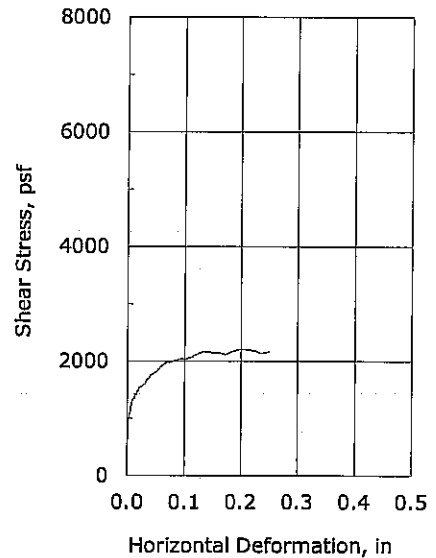
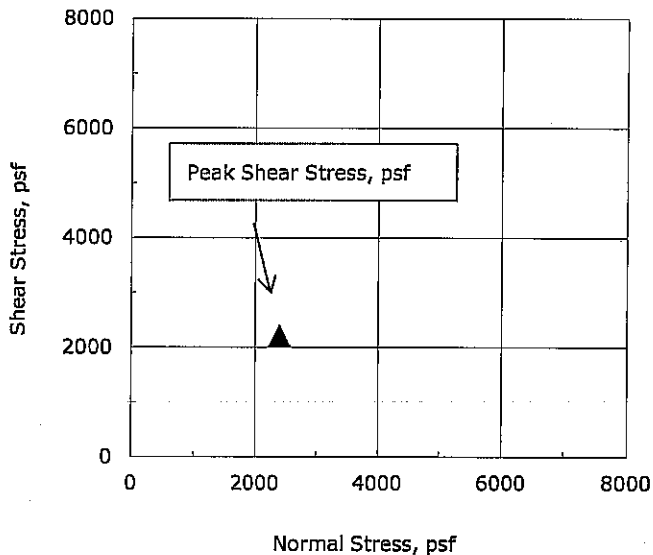
|                              |       |  |  |
|------------------------------|-------|--|--|
| Test No.:                    | DS-3  |  |  |
| Initial Diameter, in         | 2.00  |  |  |
| Initial Height, in           | 1.00  |  |  |
| Initial Mass, grams          | 91.2  |  |  |
| Initial Dry Density, pcf     | 98.1  |  |  |
| Initial Moisture Content, %  | 12.8  |  |  |
| Initial Bulk Density, pcf    | 111   |  |  |
| Initial Degree of Saturation | 49.4  |  |  |
| Initial Void Ratio           | 0.69  |  |  |
| Final Dry Density, pcf       | 99.4  |  |  |
| Final Moisture Content, %    | 22.9  |  |  |
| Final Bulk Density, pcf      | 122   |  |  |
| Normal Stress, psf           | 2401  |  |  |
| Maximum Shear Stress, psf    | 2522  |  |  |
| Shear Rate, in/min           | 0.004 |  |  |
| Sample Type:                 | tube  |  |  |
| Estimated Specific Gravity:  | 2.65  |  |  |
| Liquid Limit:                | ---   |  |  |
| Plastic Limit:               | ---   |  |  |
| Plasticity Index:            | ---   |  |  |
| % Passing #200 sieve:        | ---   |  |  |
| Soil Classification:         | ---   |  |  |
| Group Symbol:                | ---   |  |  |



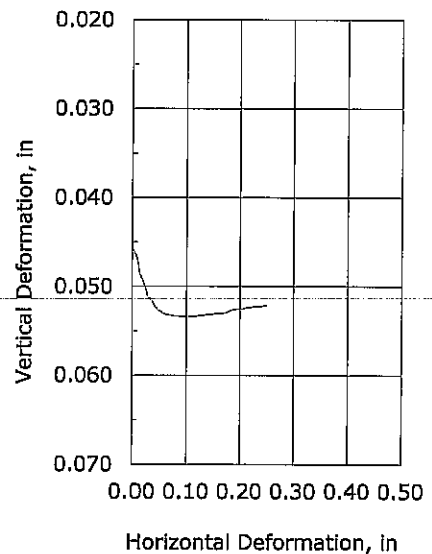
Notes: Moisture content obtained before shear from sample trimmings  
 Moisture Content determined by ASTM D 2216  
 Values for cohesion and friction angle not presented because only one test point was requested. If zero cohesion is assumed, the approximate friction angle would be 46.4°.  
 "----" indicates testing required to determine these values was not requested.

|                     |                             |
|---------------------|-----------------------------|
| Client:             | Ecology & Environment, Inc. |
| Project Name:       | 10-08-0011                  |
| Project Location:   | ---                         |
| GTX #:              | 11124                       |
| Test Date:          | 9/14/2011                   |
| Tested By:          | md                          |
| Checked By:         | jdt                         |
| Boring ID:          | SB-03                       |
| Sample ID:          | ---                         |
| Depth, ft:          | 21                          |
| Visual Description: | Moist, brown sand           |

## Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D 3080-04



|                              |       |  |  |
|------------------------------|-------|--|--|
| Test No.:                    | DS-7  |  |  |
| Initial Diameter, in         | 2.00  |  |  |
| Initial Height, in           | 1.00  |  |  |
| Initial Mass, grams          | 90.4  |  |  |
| Initial Dry Density, pcf     | 98.8  |  |  |
| Initial Moisture Content, %  | 10.9  |  |  |
| Initial Bulk Density, pcf    | 110   |  |  |
| Initial Degree of Saturation | 42.8  |  |  |
| Initial Void Ratio           | 0.67  |  |  |
| Final Dry Density, pcf       | 104   |  |  |
| Final Moisture Content, %    | 19.4  |  |  |
| Final Bulk Density, pcf      | 124   |  |  |
| Normal Stress, psf           | 2400  |  |  |
| Maximum Shear Stress, psf    | 2210  |  |  |
| Shear Rate, in/min           | 0.004 |  |  |
| Sample Type:                 | tube  |  |  |
| Estimated Specific Gravity:  | 2.65  |  |  |
| Liquid Limit:                | ---   |  |  |
| Plastic Limit:               | ---   |  |  |
| Plasticity Index:            | ---   |  |  |
| % Passing #200 sieve:        | ---   |  |  |
| Soil Classification:         | ---   |  |  |
| Group Symbol:                | ---   |  |  |

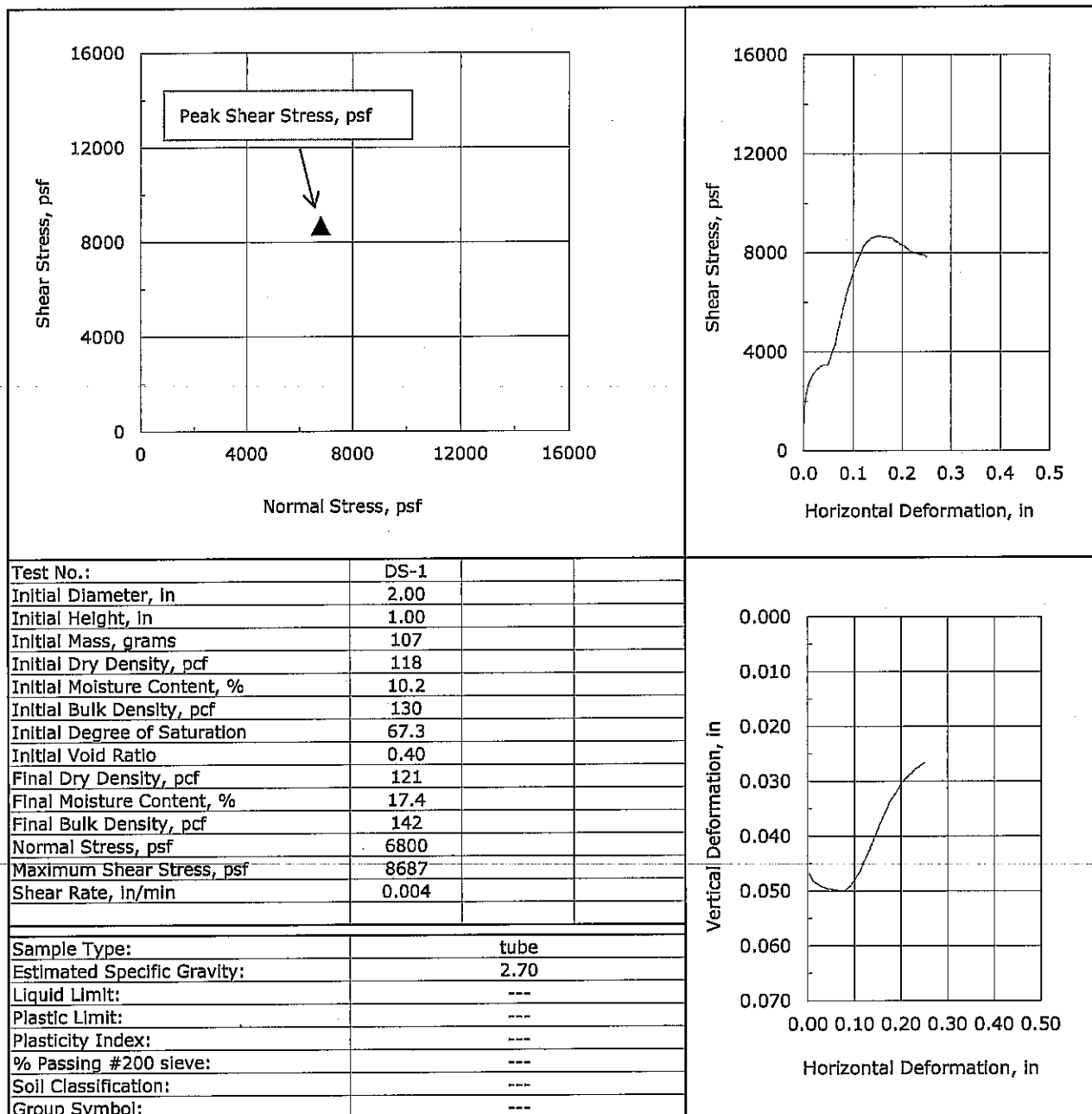


Notes: Moisture content obtained before shear from sample trimmings  
 Moisture Content determined by ASTM D 2216  
 Values for cohesion and friction angle not presented because only one test point was requested. If zero cohesion is assumed, the approximate friction angle would be 42.6°.  
 "----" indicates testing required to determine these values was not requested.



|                     |                                   |
|---------------------|-----------------------------------|
| Client:             | Ecology & Environment, Inc.       |
| Project Name:       | 10-08-0011                        |
| Project Location:   | ---                               |
| GTX #:              | 11124                             |
| Test Date:          | 9/8/2011                          |
| Tested By:          | md                                |
| Checked By:         | jdt                               |
| Boring ID:          | SB-03                             |
| Sample ID:          | ---                               |
| Depth, ft:          | 57.5                              |
| Visual Description: | Molst, dark gray sand with gravel |

## Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D 3080-04



**Notes:** Moisture content obtained before shear from sample trimmings

Moisture Content determined by ASTM D 2216

Values for cohesion and friction angle not presented because only one test point was requested. If zero cohesion is assumed, the approximate friction angle would be 51.9°.

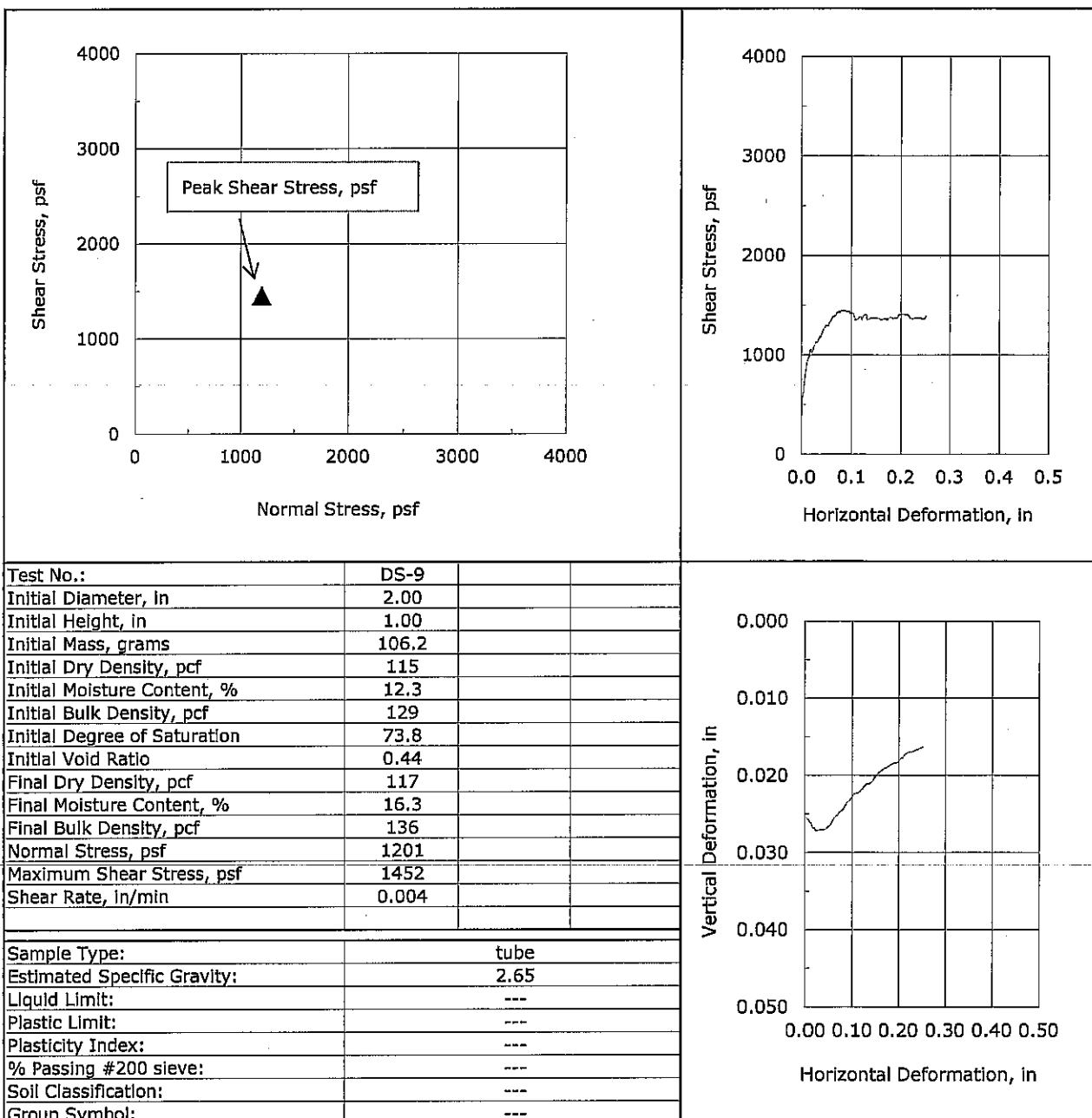
"---" indicates testing required to determine these values was not requested.





|                     |                                     |
|---------------------|-------------------------------------|
| Client:             | Ecology & Environment, Inc.         |
| Project Name:       | 10-08-0011                          |
| Project Location:   | ---                                 |
| GTX #:              | 11124                               |
| Test Date:          | 9/16/2011                           |
| Tested By:          | md                                  |
| Checked By:         | jdt                                 |
| Boring ID:          | SB-04                               |
| Sample ID:          | ---                                 |
| Depth, ft:          | 10.5                                |
| Visual Description: | Moist, brown coarse sand and gravel |

## Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D 3080-04



**Notes:** Moisture content obtained before shear from sample trimmings

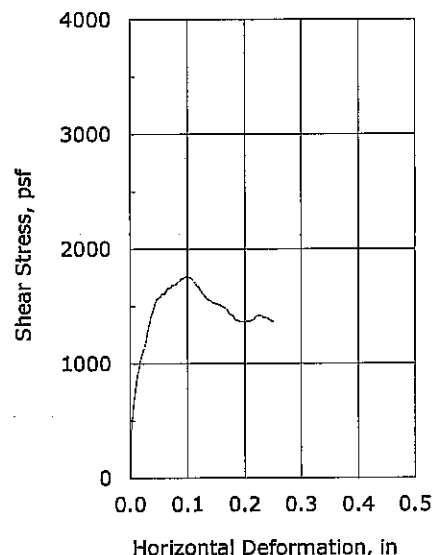
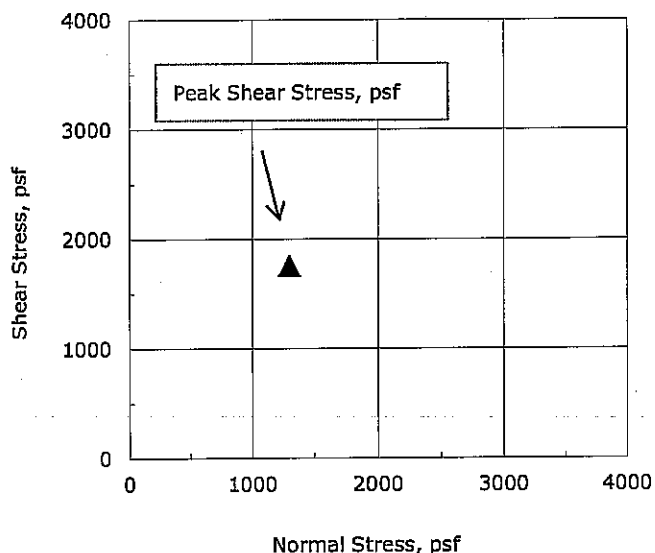
Moisture Content determined by ASTM D 2216

Values for cohesion and friction angle not presented because only one test point was requested. If zero cohesion is assumed, the approximate friction angle would be 50.4°.

"---" indicates testing required to determine these values was not requested.

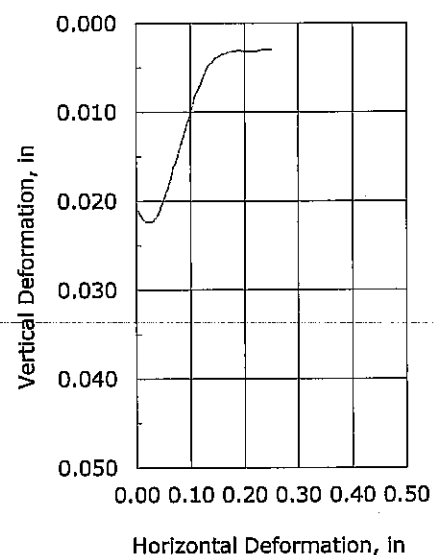
Client: Ecology & Environment, Inc.  
 Project Name: 10-08-0011  
 Project Location: ---  
 GTX #: 11124  
 Test Date: 9/9/2011  
 Tested By: md  
 Checked By: jdt  
 Boring ID: SB-04  
 Sample ID: ---  
 Depth, ft: 11  
 Visual Description: Moist, brown sand with clay

## Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D 3080-04



|                              |       |  |  |
|------------------------------|-------|--|--|
| Test No.:                    | DS-2  |  |  |
| Initial Diameter, in         | 2.00  |  |  |
| Initial Height, in           | 1.00  |  |  |
| Initial Mass, grams          | 104   |  |  |
| Initial Dry Density, pcf     | 105   |  |  |
| Initial Moisture Content, %  | 20.3  |  |  |
| Initial Bulk Density, pcf    | 126   |  |  |
| Initial Degree of Saturation | 90.0  |  |  |
| Initial Void Ratio           | 0.61  |  |  |
| Final Dry Density, pcf       | 105   |  |  |
| Final Moisture Content, %    | 26.0  |  |  |
| Final Bulk Density, pcf      | 132   |  |  |
| Normal Stress, psf           | 1300  |  |  |
| Maximum Shear Stress, psf    | 1756  |  |  |
| Shear Rate, in/min           | 0.004 |  |  |

|                             |      |
|-----------------------------|------|
| Sample Type:                | tube |
| Estimated Specific Gravity: | 2.70 |
| Liquid Limit:               | ---  |
| Plastic Limit:              | ---  |
| Plasticity Index:           | ---  |
| % Passing #200 sieve:       | ---  |
| Soil Classification:        | ---  |
| Group Symbol:               | ---  |

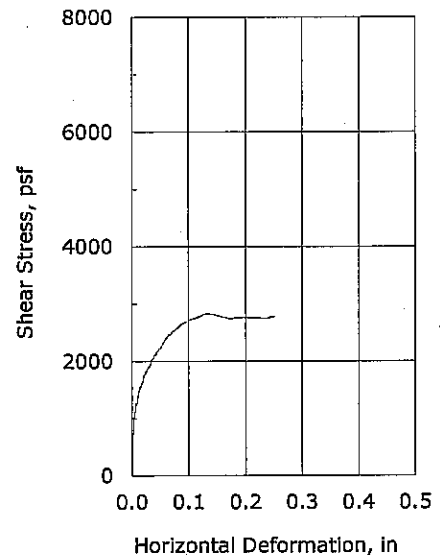
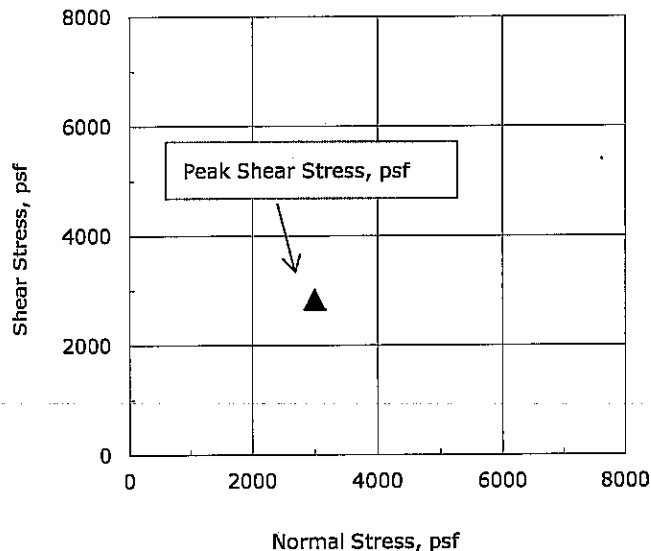


Notes: Moisture content obtained before shear from sample trimmings  
 Moisture Content determined by ASTM D 2216  
 Values for cohesion and friction angle not presented because only one test point was requested. If zero cohesion is assumed, the approximate friction angle would be 53.5°.

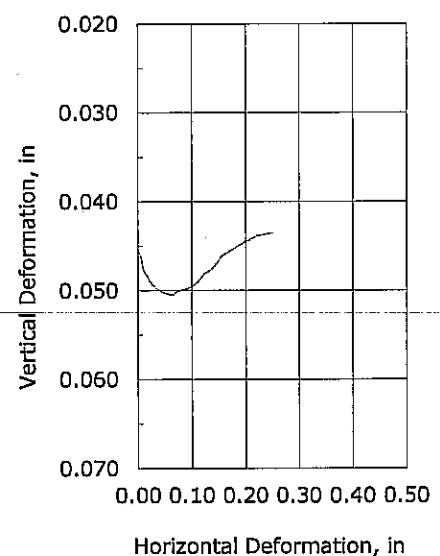
"---" indicates testing required to determine these values was not requested.

Client: Ecology & Environment, Inc.  
 Project Name: 10-08-0011  
 Project Location: ---  
 GTX #: 11124  
 Test Date: 9/14/2011  
 Tested By: md  
 Checked By: jdt  
 Boring ID: SB-05  
 Sample ID: ---  
 Depth, ft: 25.5  
 Visual Description: Moist, brown sand with gravel

## Direct Shear Test of Soils Under Consolidated Drained Conditions by ASTM D 3080-04



|                              |       |  |  |
|------------------------------|-------|--|--|
| Test No.:                    | DS-8  |  |  |
| Initial Diameter, in         | 2.00  |  |  |
| Initial Height, in           | 1.00  |  |  |
| Initial Mass, grams          | 89.9  |  |  |
| Initial Dry Density, pcf     | 98.9  |  |  |
| Initial Moisture Content, %  | 10.2  |  |  |
| Initial Bulk Density, pcf    | 109   |  |  |
| Initial Degree of Saturation | 40.2  |  |  |
| Initial Void Ratio           | 0.67  |  |  |
| Final Dry Density, pcf       | 103   |  |  |
| Final Moisture Content, %    | 22.6  |  |  |
| Final Bulk Density, pcf      | 127   |  |  |
| Normal Stress, psf           | 3000  |  |  |
| Maximum Shear Stress, psf    | 2833  |  |  |
| Shear Rate, in/min           | 0.004 |  |  |
| Sample Type:                 | tube  |  |  |
| Estimated Specific Gravity:  | 2.65  |  |  |
| Liquid Limit:                | ---   |  |  |
| Plastic Limit:               | ---   |  |  |
| Plasticity Index:            | ---   |  |  |
| % Passing #200 sieve:        | ---   |  |  |
| Soil Classification:         | ---   |  |  |
| Group Symbol:                | ---   |  |  |



Notes: Moisture content obtained before shear from sample trimmings  
 Moisture Content determined by ASTM D 2216  
 Values for cohesion and friction angle not presented because only one test point was requested. If zero cohesion is assumed, the approximate friction angle would be 43.4°.  
 "---" Indicates testing required to determine these values was not requested.



## CHAIN OF CUSTODY RECORD

No: 10-081611-135111-0003

Cooler #:

Lab: GeoTesting Express  
Lab Phone: 978-635-0424

Site #: 10GL

Contact Name: Tim Adair

Contact Phone: 503-248-5600

| Lab # | Sample #     | Location | Analyses     | Matrix | Collected | Numb<br>Cont | Container | Preservative | M/S/MSD |
|-------|--------------|----------|--------------|--------|-----------|--------------|-----------|--------------|---------|
| ✓     | SB01-20.5    | SB01     | Direct Shear | Soil   | 8/18/2011 | 1            | sleeve    |              |         |
| ✓     | SB01-25      | SB01     | Grain Size   | Soil   | 8/18/2011 | 1            | bag       |              |         |
| ✓     | SB01-50 - 52 | SB01     | Grain Size   | Soil   | 8/18/2011 | 1            | bag       |              |         |
| ✓     | SB02-22      | SB02     | Grain Size   | Soil   | 8/18/2011 | 1            | bag       |              |         |
| ✓     | SB02-30.5    | SB02     | Direct Shear | Soil   | 8/18/2011 | 1            | sleeve    |              |         |
| ✓     | SB02-55      | SB02     | Grain Size   | Soil   | 8/18/2011 | 1            | bag       |              |         |
| ✓     | SB03-20.5    | SB03     | Direct Shear | Soil   | 8/18/2011 | 1            | sleeve    |              |         |
| ✓     | SB03-21      | SB03     | Direct Shear | Soil   | 8/18/2011 | 1            | sleeve    |              |         |
| ✓     | SB03-25      | SB03     | Grain Size   | Soil   | 8/18/2011 | 1            | bag       |              |         |
| ✓     | SB03-50      | SB03     | Grain Size   | Soil   | 8/18/2011 | 1            | bag       |              |         |
| ✓     | SB03-57.5    | SB03     | Direct Shear | Soil   | 8/18/2011 | 1            | sleeve    |              |         |
| ✓     | SB04-10      | SB04     | Grain Size   | Soil   | 8/18/2011 | 1            | bag       |              |         |
| ✓     | SB04-10.5    | SB04     | Direct Shear | Soil   | 8/18/2011 | 1            | sleeve    |              |         |
| ✓     | SB04-11      | SB04     | Direct Shear | Soil   | 8/18/2011 | 1            | sleeve    |              |         |
| ✓     | SB05-20      | SB05     | Grain Size   | Soil   | 8/18/2011 | 1            | bag       |              |         |
| ✓     | SB05-25.5    | SB05     | Direct Shear | Soil   | 8/18/2011 | 1            | sleeve    |              |         |
| ✓     | SB05-55      | SB05     | Grain Size   | Soil   | 8/18/2011 | 1            | bag       |              |         |
| ✓     | SB02-50.5    | SB02     | Direct Shear | Soil   | 8/18/2011 | 1            | sleeve    |              |         |

|                       |                          |
|-----------------------|--------------------------|
| Special Instructions: | SAMPLES TRANSFERRED FROM |
|                       | CHAIN OF CUSTODY #       |

[illegible]

## WARRANTY and LIABILITY

GeoTesting Express (GTX) warrants that all tests it performs are run in general accordance with the specified test procedures and accepted industry practice. GTX will correct or repeat any test that does not comply with this warranty. GTX has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.

GTX may report engineering parameters that require us to interpret the test data. Such parameters are determined using accepted engineering procedures. However, GTX does not warrant that these parameters accurately reflect the true engineering properties of the *in situ* material. Responsibility for interpretation and use of the test data and these parameters for engineering and/or construction purposes rests solely with the user and not with GTX or any of its employees.

GTX's liability will be limited to correcting or repeating a test which fails our warranty. GTX's liability for damages to the Purchaser of testing services for any cause whatsoever shall be limited to the amount GTX received for the testing services. GTX will not be liable for any damages, or for any lost benefits or other consequential damages resulting from the use of these test results, even if GTX has been advised of the possibility of such damages. GTX will not be responsible for any liability of the Purchaser to any third party.

## Commonly Used Symbols

|            |   |                          |   |
|------------|---|--------------------------|---|
| A          | pore pressure parameter for $\Delta\sigma_1 - \Delta\sigma_3$   | T                        | temperature                                     |
| B          | pore pressure parameter for $\Delta\sigma_3$                    | t                        | time  |
| CIU        | isotropically consolidated undrained triaxial shear test        | U, UC                    | unconfined compression test                     |
| CR         | compression ratio for one dimensional consolidation             | UU, Q                    | unconsolidated undrained triaxial test          |
| $C_c$      | coefficient of curvature, $(D_{30})^2 / (D_{10} \times D_{60})$ | $u_a$                    | pore gas pressure                               |
| $C_u$      | coefficient of uniformity, $D_{60}/D_{10}$                      | $u_e$                    | excess pore water pressure                      |
| $C_c$      | compression index for one dimensional consolidation             | $u, u_w$                 | pore water pressure                             |
| $C_\alpha$ | coefficient of secondary compression                            | V                        | total volume                                    |
| $c_v$      | coefficient of consolidation                                    | $V_g$                    | volume of gas                                   |
| c          | cohesion intercept for total stresses                           | $V_s$                    | volume of solids                                |
| $c'$       | cohesion intercept for effective stresses                       | $V_v$                    | volume of voids                                 |
| D          | diameter of specimen  | $V_w$                    | volume of water                                 |
| $D_{10}$   | diameter at which 10% of soil is finer                          | $V_o$                    | initial volume                                  |
| $D_{15}$   | diameter at which 15% of soil is finer                          | v                        | velocity  |
| $D_{30}$   | diameter at which 30% of soil is finer                          | W                        | total weight                                    |
| $D_{50}$   | diameter at which 50% of soil is finer                          | $W_s$                    | weight of solids                                |
| $D_{60}$   | diameter at which 60% of soil is finer                          | $W_w$                    | weight of water                                 |
| $D_{85}$   | diameter at which 85% of soil is finer                          | w                        | water content                                   |
| $d_{50}$   | displacement for 50% consolidation                              | $w_c$                    | water content at consolidation                  |
| $d_{90}$   | displacement for 90% consolidation                              | $w_f$                    | final water content                             |
| $d_{100}$  | displacement for 100% consolidation                             | $w_l$                    | liquid limit                                    |
| E          | Young's modulus   | $w_n$                    | natural water content                           |
| e          | void ratio  | $w_p$                    | plastic limit                                   |
| $e_c$      | void ratio after consolidation                                  | $w_s$                    | shrinkage limit                                 |
| $e_o$      | initial void ratio  | $w_o, w_i$               | initial water content                           |
| G          | shear modulus   | $\alpha$                 | slope of $q_f$ versus $p_f$                     |
| $G_s$      | specific gravity of soil particles                              | $\alpha'$                | slope of $q_f$ versus $p_f'$                    |
| H          | height of specimen  | $\gamma_t$               | total unit weight                               |
| PI         | plasticity index  | $\gamma_d$               | dry unit weight                                 |
| i          | gradient  | $\gamma_s$               | unit weight of solids                           |
| $K_o$      | lateral stress ratio for one dimensional strain                 | $\gamma_w$               | unit weight of water                            |
| k          | permeability  | $\epsilon$               | strain  |
| LI         | Liquidity Index   | $\epsilon_{vol}$         | volume strain                                   |
| $m_v$      | coefficient of volume change                                    | $\epsilon_h, \epsilon_v$ | horizontal strain, vertical strain              |
| n          | porosity  | $\mu$                    | Poisson's ratio, also viscosity                 |
| PI         | plasticity index  | $\sigma$                 | normal stress                                   |
| $P_c$      | preconsolidation pressure                                       | $\sigma'$                | effective normal stress                         |
| p          | $(\sigma_1 + \sigma_3) / 2, (\sigma_v + \sigma_h) / 2$          | $\sigma_c, \sigma'_c$    | consolidation stress in isotropic stress system |
| $p'$       | $(\sigma'_1 + \sigma'_3) / 2, (\sigma'_v + \sigma'_h) / 2$      | $\sigma_h, \sigma'_h$    | horizontal normal stress                        |
| $p'_c$     | $p'$ at consolidation   | $\sigma_v, \sigma'_v$    | vertical normal stress                          |
| Q          | quantity of flow  | $\sigma_1$               | major principal stress                          |
| q          | $(\sigma_1 - \sigma_3) / 2$                                     | $\sigma_2$               | intermediate principal stress                   |
| $q_f$      | q at failure  | $\sigma_3$               | minor principal stress                          |
| $q_o, q_i$ | initial q   | $\tau$                   | shear stress                                    |
| $q_c$      | q at consolidation  | $\phi$                   | friction angle based on total stresses          |
| S          | degree of saturation  | $\phi'$                  | friction angle based on effective stresses      |
| SL         | shrinkage limit   | $\phi'_r$                | residual friction angle                         |
| $s_u$      | undrained shear strength  | $\phi_{ult}$             | $\phi$ for ultimate strength                    |
| T          | time factor for consolidation                                   |                          |   |

# DRILLING LOG OF BORING NO. SB01

DATE DRILLED: 8/17/2011  
 LOGGED BY: Tim Adair  
 CHECKED BY: Tim Adair  
 DRILLING CONTRACTOR: Cascade Drilling  
 DRILLING METHOD: Hollow Stem Auger  
 COORDINATE REFERENCE SYSTEM: NAD 83

PROJECT NAME: Gorst Creek  
 PROJECT LOCATION: Kitsap County, Washington  
 EPA TASK MONITOR: Jeff Rodin  
 PROJECT #: 002233.0599  
 PROJ MGR: Jim Peterson

| ELEVATION<br>DEPTH (feet) | USCS  | GRAPHIC LOG<br>CONTACT<br>DEPTH (feet) | SOIL DESCRIPTION  | PHOTO IONIZATION<br>DETECTOR READINGS<br>(PPM) | FLAME IONIZATION<br>DETECTOR READINGS<br>(PPM) | COMMENTS   |
|---------------------------|-------|--|---|--|--|--|
|                           |       |  | <i>Top of Ground Surface (GS)<br/>Elevation</i>   |  |  | This log is part of the report prepared for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered. |
| 5                         | SM    | 5                                      | Silty Sand, fine to coarse sand with silt, trace fine to coarse gravel, trace cobbles, some metal, garbage fragments, plastic, etc., slightly moist |  |  | Using SPT and 140 lb slide auto-hammer for blow counts   |
| 10                        |       | 10                                     |   |  |  |  |
| 15                        |       | 15                                     |   |  |  | 20/33/40 at 15'  |
| 20                        | SP    | 20                                     | Silty Sand, fine to coarse sand, with fine to coarse, gravel, moist   | 40   | 25   | Debris to ~18' BGS   |
| 25                        | SP-SM | 25                                     | Sand, fine to coarse sand, some silt, moist   |  |  |  |
| 30                        |       | 30                                     |   |  |  | 19/36/54 at 30'  |
| 35                        |       | 35                                     |   | 5  | 6  |  |
| 40                        |       | 40                                     |   | 4  | 5  |  |
| 45                        |       | 45                                     | Sand, fine to coarse sand, trace silt, moist more coarse sand, increasing coarse sand and gravel  |  |  | 27/37/41 at 45'  |
| 50                        |       | 50                                     |   | 5  | 4  |  |
| 55                        |       |  |   |  |  |  |
| 60                        |       | 60                                     |   |  |  | 50 for 6" at 60'   |
| 65                        |       |  |   |  |  |  |
| 70                        |       |  |   |  |  |  |
| 75                        |       |  |   |  |  |  |
| 80                        |       |  |   |  |  |  |
| 85                        |       |  |   |  |  |  |
| 90                        | GP    | 90                                     | Gravelly Sand, fine to coarse sand and fine to coarse gravel  |  |  | Total Depth = 90', Boring backfilled with bentonite chips, hydrated and cement from 5' - 0' bgs.   |
| 95                        |       |  |   |  |  |  |
| 100                       |       |  |   |  |  |  |

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# DRILLING LOG OF BORING NO. SB02

DATE DRILLED: 8/17/2011  
 LOGGED BY: Tim Adair  
 CHECKED BY: Tim Adair  
 DRILLING CONTRACTOR: Cascade Drilling  
 DRILLING METHOD: Hollow Stem Auger  
 COORDINATE REFERENCE SYSTEM: NAD 83

PROJECT NAME: Gorst Creek  
 PROJECT LOCATION: Kitsap County, Washington  
 EPA TASK MONITOR: Jeff Rodin  
 PROJECT #: 002233.0599  
 PROJ MGR: Jim Peterson

| ELEVATION<br>DEPTH (feet)  | USCS                            | GRAPHIC LOG<br>CONTACT<br>DEPTH (feet) | SOIL DESCRIPTION  | PHOTO IONIZATION<br>DETECTOR READINGS<br>(PPM) | FLAME IONIZATION<br>DETECTOR READINGS<br>(PPM) | COMMENTS   |
|--|---------------------------------|--|---|--|--|--|
|  |                                 |  | <i>Top of Ground Surface (GS)<br/>Elevation</i>   |  |  | This log is part of the report prepared for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered. |
| 5<br>10<br>15<br>20<br>25<br>30<br>35<br>40<br>45<br>50<br>55<br>60<br>65<br>70<br>75<br>80<br>85<br>90<br>95<br>100 | SM<br><br>SP<br>SP-SM<br><br>GP |  | Landfill debris plus Silty Sand, fine to medium sand and fine to coarse gravel, moist, black 10YR2/1<br>Silty Sand, fine to coarse sand and fine to coarse gravel, some silt, moist, olive brown, 2.5Y4/4<br>Sand, fine to coarse coarse, moist, olive brown, 2.5Y4/3<br>Sand, fine to coarse coarse, moist, increasing coarseness, olive brown, 2.5Y4/3<br>Sand, fine to coarse coarse, moist, olive brown, 2.5Y4/3, coarse gravel cobble in shoe<br>Gravelly Sand, fine to coarse sand and fine to coarse gravel<br>Gravelly Sand, fine to coarse sand and fine to coarse gravel, trace silt, moist, olive brown, 2.5Y4/4 | 3<br>3<br>1                                    | 2<br>2<br>1                                    | Using SPT and 140 lb slide auto-hammer for low counts<br><br>20/37/46 at 15'<br><br>50/50 for 6" at 30'<br><br>50 for 5.5" at 45'<br><br>Total Depth = 60', Boring backfilled with bentonite chips hydrated, and wet cement from 5' - 0' bgs.  |

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# DRILLING LOG OF BORING NO. SB03

DATE DRILLED: 8/18/2011  
 LOGGED BY: Tim Adair  
 CHECKED BY: Tim Adair  
 DRILLING CONTRACTOR: Cascade Drilling  
 DRILLING METHOD: Hollow Stem Auger  
 COORDINATE REFERENCE SYSTEM: NAD 83

PROJECT NAME: Gorst Creek  
 PROJECT LOCATION: Kitsap County, Washington  
 EPA TASK MONITOR: Jeff Rodin  
 PROJECT #: 002233.0599  
 PROJ MGR: Jim Peterson

| ELEVATION<br>DEPTH (feet) | USCS | GRAPHIC LOG<br>CONTACT<br>DEPTH (feet) | SOIL DESCRIPTION   | PHOTO IONIZATION<br>DETECTOR READINGS<br>(PPM) | FLAME IONIZATION<br>DETECTOR READINGS<br>(PPM) | COMMENTS   |
|---------------------------|------|--|--|--|--|--|
|                           |      |  | <i>Top of Ground Surface (GS)<br/>Elevation</i>  |  |  | This log is part of the report prepared for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered. |
| 5                         | SM   |  | Silty Sand, fine to coarse sand, trace fine to coarse gravel, debris, wood and landfill waste, moist, olive brown, 2.5Y4/4                       | 37   | 29   | Using SPT and 140 lb slide auto-hammer for blow counts, overburden contains landfill waste<br>Still in waste black material (stained soil)   |
| 10                        |      |  |  | 27   | 12   |  |
| 15                        |      |  | Silty Sand, fine to coarse sand, trace fine to coarse gravel, debris, wood and landfill waste, moist, black, 10YR2/1                             |  |  | Waste to approximately 18' based on drilling conditions  |
| 20                        | SP   |  |  | 12   | 2  |  |
| 25                        |      |  | Silty Sand, fine to coarse sand, moist, trace fine to coarse gravel  |  |  |  |
| 30                        | GP   |  | Sand, fine to coarse sand, trace silt, moist, gray 2.5Y5/1, trace fine to coarse gravel, color change to dark yellowish brown 10YR4/6 at 22.5 ft |  |  | 3/50 for 5" at 30'   |
| 35                        |      |  |  |  |  |  |
| 40                        |      |  | Sand, fine to coarse sand, trace silt, moist   |  |  | 50 for 4" at 45'   |
| 45                        |      |  | Gravelly Sand, fine to coarse sand with fine to coarse gravel, trace silty, moist, dark yellowish brown 10YR3/6                                  |  |  |  |
| 50                        |      |  |  |  |  | 50 for 3" at 55'   |
| 55                        |      |  |  |  |  |  |
| 60                        |      |  |  |  |  |  |
| 65                        |      |  |  |  |  |  |
| 70                        |      |  |  |  |  |  |
| 75                        |      |  |  |  |  |  |
| 80                        |      |  | Gravelly Sand, fine to coarse sand with fine to coarse gravel, trace silty, moist, dark yellowish brown 10YR3/6                                  |  |  | Total Depth = 80', Boring backfilled with bentonite chips, hydrated, wet cement from 5' - 0' bgs.  |
| 85                        |      |  |  |  |  |  |
| 90                        |      |  |  |  |  |  |
| 95                        |      |  |  |  |  |  |
| 100                       |      |  |  |  |  |  |

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# DRILLING LOG OF BORING NO. SB04

DATE DRILLED: 8/18/2011  
 LOGGED BY: Tim Adair  
 CHECKED BY: Tim Adair  
 DRILLING CONTRACTOR: Cascade Drilling  
 DRILLING METHOD: Hollow Stem Auger  
 COORDINATE REFERENCE SYSTEM: NAD 83

PROJECT NAME: Gorst Creek  
 PROJECT LOCATION: Kitsap County, Washington  
 EPA TASK MONITOR: Jeff Rodin  
 PROJECT #: 002233.0599  
 PROJ MGR: Jim Peterson

| ELEVATION<br>DEPTH (feet)  | USCS | GRAPHIC LOG<br>CONTACT<br>DEPTH (feet) | SOIL DESCRIPTION  | PHOTO IONIZATION<br>DETECTOR READINGS<br>(PPM) | FLAME IONIZATION<br>DETECTOR READINGS<br>(PPM) | COMMENTS   |
|--|------|--|---|--|--|--|
|  |      |  | <i>Top of Ground Surface (GS)<br/>Elevation</i>   |  |  | This log is part of the report prepared for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered. |
| 5<br>10<br>15<br>20<br>25<br>30<br>35<br>40<br>45<br>50<br>55<br>60<br>65<br>70<br>75<br>80<br>85<br>90<br>95<br>100 | SP   |  | Sand, fine to coarse grained some fine to coarse gravel, trace silt, wet, groundwater at 5' | 0  | 0  | Depth to water 5'<br>25/33/41 at 5'<br>18/30/39 at 10'<br>Total Depth = 13', Boring backfilled with bentonite chips, hydrated, wet cement from 5' - 0' bgs.  |

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# DRILLING LOG OF BORING NO. SB05

DATE DRILLED: 8/18/2011  
 LOGGED BY: Tim Adair  
 CHECKED BY: Tim Adair  
 DRILLING CONTRACTOR: Cascade Drilling  
 DRILLING METHOD: Hollow Stem Auger  
 COORDINATE REFERENCE SYSTEM: NAD 83

PROJECT NAME: Gorst Creek  
 PROJECT LOCATION: Kitsap County, Washington  
 EPA TASK MONITOR: Jeff Rodin  
 PROJECT #: 002233.0599  
 PROJ MGR: Jim Peterson

| ELEVATION<br>DEPTH (feet)  | USCS                                       | GRAPHIC LOG<br>CONTACT<br>DEPTH (feet) | SOIL DESCRIPTION  | PHOTO IONIZATION<br>DETECTOR READINGS<br>(PPM) | FLAME IONIZATION<br>DETECTOR READINGS<br>(PPM) | COMMENTS   |
|--|--|--|---|--|--|--|
|  |  |  | <i>Top of Ground Surface (GS)<br/>Elevation</i>   |  |  | This log is part of the report prepared for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered. |
| 5<br>10<br>15<br>20<br>25<br>30<br>35<br>40<br>45<br>50<br>55<br>60<br>65<br>70<br>75<br>80<br>85<br>90<br>95<br>100 | SM<br>SP<br>SP-SM<br><br>GP<br>SP<br>SP-SM |  | Silty Sand, fine to coarse sand, some fine to coarse gravel some silt, cobbles, slightly moist, light yellowish brown, 10YR4/6<br>Sand, fine to coarse trace silt, some fine to coarse gravel, slightly moist<br><br>Gravelly Sand, fine to coarse trace silt, and fine to coarse gravel, slightly moist<br>Gravelly Sand, fine to coarse sand and fine to coarse gravel, moist, light yellowish brown, 10YR4/6<br>Sand, fine to coarse, trace fine to coarse gravel, moist<br>Silty Sand, fine to coarse, trace fine to coarse gravel, moist |  |  | Using SPT and 140 lb slide auto-hammer for blow counts<br>Rounded gravel to 5' then more coarse sand<br><br>26/26/50 for 6" at 15'<br><br>40/50 for 6" at 25'<br><br>31/50 for 6" at 35'<br>40/5 for 6" at 40'<br>50/50 for 2" at 45'<br>100 for 6" at 50'<br><br>Total Depth = 61.5', Boring backfilled with bentonite chips, hydrated, wet cement from 5' - 0' bgs.  |

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**C**

# **STREAMLINED HUMAN HEALTH RISK EVALUATION**

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## **Appendix C -- Gorst Creek Streamlined Human Health Risk Evaluation**

### **C.1 Streamlined Human Health Evaluation**

This section presents a streamlined human health risk evaluation (HHRE) for the Gorst Creek – Bremerton Auto Wrecking Landfill. The streamlined evaluation is intended to focus on the specific problem that the EE/CA for the site is addressing, which is to identify the scope of the removal action for the site. In a streamlined evaluation, the chemicals of potential concern (COPCs) for which actions may be taken are identified by defining potential exposure pathways and receptors, and comparing analyte concentrations to screening levels. Screening levels are conservative risk-based criteria consistent with the pathways and receptors identified. This evaluation was performed in accordance with federal guidance for assessing risks associated with non-time critical removal actions (USEPA 1993) and other applicable federal and state human health risk assessment guidance (USEPA 1989 and 2010a, Ecology 2007).

The HHRE is organized in the following sections:

Section C.1 describes site data that is included in the HHRE

Section C.2 presents the conceptual site model (CSM) for human health

Section C.3 describes the exposure pathways and receptors identified in the CSM

Section C.4 describes screening values used for the HHRE

Section C.5 compares site data with screening values and presents the results

Section C.7 discusses the uncertainties with the HHRE

Section C.8 presents a summary of the HHRE

### **C.2 Data Used for HHRE**

Environmental media samples have been collected at the Gorst Creek Landfill site at different times beginning in 2000, then in 2003, and most recently in 2011. The quantitative portion of the HHRE is primarily based on the data collected during the July 2011 field investigation because these data represent current conditions. With one exception, historical data from the site hazard assessment (Hart Crowser 2000) and the integrated assessment (E & E 2004) were used primarily for field investigation planning purposes and to help develop the CSM described above. However, surface water samples were not collected during the 2011 field investigation due to the lack of water flow in Gorst Creek in the vicinity of the site. In this case, the historical surface water data were relied upon for the screening level comparison.

During the 2011 investigation, seven surface soil samples (LF01SS to LF07SS) were collected from the landfill surface (0 to 6 inches bgs), four sediment samples (GC01SD to GC04SD) were collected from Gorst Creek near the landfill, and one groundwater sample (SB04) was collected northwest of the landfill. Two of the sediment samples (GC01SD and GC02SD) were collected upstream from the landfill and two sediment samples (GC03SD and GC04SD) were collected downstream from the landfill. Samples collected during July 2011 were analyzed for metals, VOCs, SVOCs, PCBs, and pesticides. Sample location maps and additional information about sample collection and results are provided in Section 1.4.3.

For the HHRE, historical surface water data from November 2003 were used, including results from two samples collected from the site's probable points of entry (PPEs) and one background sample collected 0.3 mile upstream of the first PPE (E&E 2004). These surface water samples were analyzed for metals SVOCs, VOCs, and PCBs/pesticides (E&E 2004).

### **C.3 Human Health Conceptual Site Model**

The human health CSM provides an overall picture of site conditions as they relate to the HHRE. The CSM is a tool used to identify the following:

- the primary source of contamination in the environment;
- how chemicals at the original point of release migrate through the environment;
- the types of human populations who might come into contact with contaminated media; and
- the potential exposure pathways that may occur for each population.

In risk assessment, exposure pathways are means by which chemicals move from the contaminated media to a point of contact by receptors. They describe the exposure medium (e.g., surface soil) and the exposure route (e.g., incidental ingestion). A complete exposure pathway must exist for exposure and subsequent risks to occur. If one or more of the aforementioned elements is missing, the exposure pathway is not considered complete and is not evaluated in the HHRE (USEPA 1989).

The CSM for the Gorst Creek Landfill site is provided in Figure 1-5. Based on local land use and zoning information, exposure scenarios evaluated in the HHRE include current and future residential, current and future worker, current and future trespasser, and current and future recreational. Human receptors at the Gorst Creek Landfill site could be exposed to chemicals through contact with surface soil, sediment, surface water, and groundwater. Potential routes of exposure include ingestion, dermal absorption, and inhalation. Descriptions of exposure pathways and receptors, including a summary of area land use and zoning, are provided in the following section.

### **C.4 Exposure Pathways and Receptors**

#### *Residential*

A residential exposure scenario is included in the HHRE due to the proximity of current and potential future residential properties to the site. The population residing within a 1-mile radius of the site includes 1,027 people and within a 4-mile radius is 8,425 people (see Table C-1). Sunnyslope Elementary School is located within 1 mile of the site, and Pleasant Valley School is located within 3 miles of the site. No other schools or daycare facilities are located within 1 mile of the site (USGS 2011).

The landfill site and immediate properties to the northeast are zoned “business center” and are not occupied by residents. Adjoining land is zoned as incorporated city and rural residential (Kitsap County 2010a). The landfill site is bordered by an auto wrecking facility, a privately-owned Christmas tree plantation (Alpine Farms), McCormick Land Co., Washington State Department of Transportation property which contains a highway and easement corridors, and one private residential property. There are no other residential properties bordering the site. Kitsap County comprehensive land use planning indicates that the zoning will remain the same in the future for the site property and surrounding area (Kitsap County 2010b).

Two exposure pathways for residents were initially considered in the CSM: exposure to contaminants in groundwater and in onsite surface soil. Consumption of and dermal contact with groundwater as drinking water are considered potentially complete exposure pathways for residents because municipal and domestic wells are completed in aquifers in which site contaminants may have infiltrated. As discussed in Section 1.2.3, several aquifers are present in the region. While not all of the aquifers are used for drinking water purposes, all are available to be used as drinking water.

Table C-1 presents a tally of various drinking water wells located within a 4-mile radius of the Gorst Creek Landfill site. There are 587 domestic wells and 40 municipality wells serving a population of more than 8,400 people. The residential population relying on domestic wells is approximately 1,500 persons,



which was determined by multiplying the number of domestic wells within 4 miles by the number of persons per Kitsap County household (USCB 2010 and 2011, WDOE 2011a).

Exposure to contaminants in onsite soil is not considered a complete pathway for residents. Access to the site is restricted to an easement through the adjacent Airport Auto Wrecking, Too facility. In addition, the future land use of the property is expected to remain industrial or commercial and therefore will not be occupied by residents. The site is not a desirable location for recreational purposes and residents are not expected to hike around the site. The majority of the site is covered with vegetation, limiting the potential for windblown soil and dust. While there may be small patches of exposed soil (i.e., with little or no vegetation), residential and school properties are located far enough from the site such that receptors would not likely have exposure to windblown soil and dust from the site.

#### *Workers*

A future worker scenario is evaluated in the HHRE because future land use plans at the site indicate that zoning will remain industrial and commercial. Therefore, if no cleanup action is taken at the site, workers onsite in the future may have contact with COPCs in soil via incidental ingestion, dermal contact, and particulate inhalation. A current worker scenario was also evaluated for workers on adjacent properties (i.e., Airport Auto Wrecking, Too facility) because workers may have limited exposure potential via windblown soil and dust from the site. Data for soil samples collected up to 0 to 6 inches bgs were included in the screening analysis due to potential erosion of surficial soil over time. VOCs were not detected during air monitoring; therefore, inhalation of volatiles was not evaluated as an exposure route.

#### *Trespassers*

A current trespasser scenario is evaluated in the HHRE because there are reported cases of individuals trespassing on the site for scrap metal. Although vehicular access to the site is restricted to an easement through the auto wrecking facility, the site is not fenced and access to pedestrians is not restricted. It is assumed that the site will be eventually developed in the future for industrial or commercial purposes (Kitsap County 2010b). Trespassers could have direct contact with contaminants in surface soil via incidental ingestion, dermal contact, and particulate inhalation. Data for soil samples collected 0 to 6 inches bgs were evaluated to account for contact with surface soil currently exposed as well as with soil that may be exposed over time due to natural erosion. VOCs were not detected during air monitoring; therefore, inhalation of volatiles was not evaluated as an exposure route.

#### *Recreational Users*

Current and future recreational scenarios are evaluated in the HHRE. As discussed in Section 1.3, contaminants from the landfill may be seeping into Gorst Creek. In addition, soil from the landfill may erode directly into the creek. Visitors to the area and residents have the potential for exposure via direct contact with surface water and sediment while wading in Gorst Creek. There is generally unrestricted access at various points along the creek, as well as a recreational park (Otto Jarstad Park) located within 4 miles downstream of the site. A tribal fishery is also located near the mouth of Gorst Creek, on Sinclair Inlet, approximately 3.7 miles downstream of the site. The fishery is supported by a tribal Chinook salmon fish-rearing facility, located on Gorst Creek approximately 2.7 miles downstream of the site and 1 mile upstream of the confluence with Sinclair Inlet (Zischke 2003). Fishing reportedly does not occur on Gorst Creek downstream of the site; rather, fish are harvested from Sinclair Inlet (Huff 2003). In addition, a golf course is located near the landfill site and Gorst Creek; however, it relies on City of Bremerton municipal water for irrigation and drinking water (Folk 2011).

### **C.5 Screening Values for the HHRE**

The USEPA (1989) suggests that, at sites where a large number of chemicals are present, it can be useful to eliminate from further consideration those chemicals that represent a small contribution to risk. To accomplish this, site concentrations of chemicals are compared to numerical screening values. If the

maximum concentration of a chemical is above a screening value, the chemical is considered a COPC for the site. Generally, at sites where contaminant concentrations fall below screening levels, no further action or study is warranted for that COPC to ensure the protection of human health.

Several metrics are used for screening and selecting COPCs, including:

- Health-based screening values based on toxicological characteristics of each chemical;
- Comparison to background concentrations; and
- Evaluation of essential nutrients.

The sources of the screening levels selected for the HHRE are described below for each of the media of concern. The values for the screening levels are presented in Tables C-2 to C-5. Background concentration data were available for surface water and sediment samples, as described in the previous section, and are included in Tables C-2 to C-5 for comparison to detected concentrations.

The USEPA (1989) recommends removing chemicals from further consideration if they are considered “essential nutrients”; that is, naturally occurring chemicals essential to human life that are toxic only at very high doses. Essential nutrients are noted in Tables C-2 to C-5 and were eliminated from further consideration.

#### *Soil*

As shown in Table C-2, two primary sources of health-based screening levels are used for screening analyte concentrations reported for onsite soil. These sources include USEPA’s Regional Screening Levels for Chemical Contaminants at Superfund Sites (RSLs) (USEPA 2011a) and Washington State Model Toxics Control Act (MTCA) Method A and Method C cleanup levels generated using the online Cleanup Levels and Risk Calculations (CLARC) database (Ecology 2011b). The USEPA RSLs are risk-based concentrations derived from standard risk equations that combine default reasonable maximum exposure (RME) assumptions with USEPA toxicity data. Exposure assumptions are for a full-time (8 hours per day) worker who may work both indoors and outdoors (i.e., composite worker) and may contact chemicals in soil via incidental ingestion, dermal absorption, or particulate inhalation (USEPA 2011b). Target risk levels in the equations are set to  $1 \times 10^{-6}$  (or one in one million) for carcinogenic chemicals and a hazard index of 1 for noncarcinogens. The screening levels are considered by the USEPA to be protective for humans (including sensitive groups) over a lifetime.

With the exception of arsenic, the MTCA cleanup levels are risk-based concentrations using the equations and default parameter values set forth in the MTCA Cleanup Regulation, Chapter 173-340 WAC. The lower of the Method A and Method C values was used for the screening. Exposure assumptions for both Method A and Method C cleanup levels are for a full-time (10 hours per day) adult worker who may contact chemicals in soil via incidental ingestion (Ecology 2005) under RME conditions. Method A has an additional component in which the cleanup levels are based on concentrations that are protective of soil leaching into groundwater. MTCA cleanup levels are set to a target risk level of  $1 \times 10^{-5}$  (or one in one hundred thousand) for carcinogens and a hazard index of 1 for noncarcinogens (Ecology 2005). For arsenic in soil, the MTCA cleanup level was calculated assuming direct contact and protection of groundwater for drinking water use, then adjusted to account for natural background levels determined for Washington State (Ecology 2007).

The industrial screening levels for workers are assumed to be sufficiently conservative to be adequately protective for the shorter exposure duration and frequency of a trespasser going onsite. Therefore, scenario-specific screening levels were not calculated for the trespasser scenario; rather, the worker exposure scenario values were used.

### *Groundwater*

The health-based screening levels used for comparing groundwater concentrations are based on residential consumption of tap water because, as described in Section C.2, groundwater in the vicinity of the site is used for drinking water purposes. Three primary sources of screening levels are used in this evaluation. These sources include USEPA's RSLs for residential tap water (USEPA 2011a), USEPA Maximum Contaminant Levels (MCLs) (USEPA 2011c), and MTCA Method B cleanup levels calculated using the online CLARC database (Ecology 2011b). The USEPA RSLs are risk-based concentrations derived from standard risk equations that combine default RME assumptions with USEPA toxicity data. RSLs for tap water are based on exposure assumptions for a resident who consumes 2 liters of water per day and showers once per day. During a shower a resident may contact chemicals in the water via incidental ingestion, dermal contact, and volatile inhalation (USEPA 2011b). However, it should be noted that while the USEPA screening levels incorporate inhalation exposure in the equations, no volatiles have been detected in monitoring wells in the vicinity of the site. Target risk levels in the equations are set to  $1 \times 10^{-6}$  (or one in one million) for carcinogenic chemicals and a hazard index of 1 for noncarcinogens. The screening levels are considered by the USEPA to be protective for humans (including sensitive groups) over a lifetime.

MCLs are USEPA standards for public water systems and are developed under the National Primary Drinking Water Regulations per the Safe Drinking Water Act (SDWA). Under the SDWA, EPA sets legal limits on the levels of certain contaminants in the drinking water. The limits reflect both the level that protects human health and the level that water systems can achieve using the best available technology (USEPA 2011c).

The MTCA cleanup levels are risk-based concentrations using the equations and default parameter values set forth in the MTCA Cleanup Regulation, Chapter 173-340 WAC. Exposure assumptions are for a RME resident who may contact chemicals in groundwater via ingestion and dermal absorption (Ecology 2005). Under MTCA Method B, cleanup levels are set to a target risk level of  $1 \times 10^{-5}$  for carcinogens and a hazard index of 1 for noncarcinogens (Ecology 2005).

Screening levels for groundwater are presented in Table C-3.

### *Sediment*

Sources for sediment screening levels based on a recreational scenario are limited to the USEPA recreational RSLs, which account for either soil or sediment contact (USEPA 2011a). While the recreational RSLs are not available in USEPA generic tables as the residential and industrial RSLs are, they can be generated using the online RSL calculator. This calculator allows input of either default or site-specific exposure assumptions for incidental ingestion and dermal contact. To be efficient, the site analyte concentrations in sediment were initially compared to the soil RSLs for residential exposure (USEPA 2011a). Relying on these levels for sediment is a highly conservative approach because several exposure factors are significantly lower under the recreational scenario than they are for residential exposure. These parameters include, but are not limited to, the incidental ingestion rate, dermal contact time, and exposure frequency. If analyte concentrations exceeded the residential soil RSLs, then screening levels for recreational exposure were generated using the USEPA online RSL calculator.

Sediment concentrations were also compared to the maximum background level reported for two background samples collected upstream of the landfill. All screening values for sediment are presented in Table C-4.

### *Surface Water*

As shown in Table C-5, sources for surface water screening levels based on a recreational scenario include the USEPA RSLs and the Ambient Water Quality Criteria (AWQC) for human health. Similar to

the USEPA sediment RSLs, surface water RSLs must be generated using the online calculator and default or site-specific exposure assumptions. Exposure routes include incidental ingestion and dermal contact (USEPA 2011b). Human health AWQC are numeric values limiting the amount of chemicals present in surface water bodies and are published pursuant to the Clean Water Act (CWA). The criteria are designed to protect humans from recreational or subsistence exposure to chemicals in water and aquatic biota (e.g., fish). The values are based on the risk assessment of incidental water ingestion and consumption of aquatic organisms by individuals using a surface water body. Exposure parameters incorporated into the AWQC calculations include a water ingestion rate of 2 liters per day (L/day), a fish ingestion rate of 17.5 grams per day (g/day), a chemical-specific bioconcentration factor, and fraction of fish intake from contaminant source (USEPA 2002).

The surface water analyte concentrations were initially compared to the USEPA residential tapwater RSLs and AWQCs. If exceedances occurred, site-specific recreation surface water RSLs were calculated for the comparison. Given that fishing on Gorst Creek near the landfill site reportedly does not occur and a consumption water rate of 2 L/day for individuals recreating in the creek is highly unlikely, the screening values assumed for the surface water comparison are considered very conservative.

### **C.6 Screening Evaluation Results**

This section presents the human health screening assessment of chemical concentrations in soil, groundwater, sediment, and surface water samples using the screening levels described above and maximum detected concentrations. If the maximum concentration of a chemical is above a screening value, the chemical is considered a COPC for the site. Generally, at sites where contaminant concentrations fall below screening and/or natural background levels, no further action or study is warranted to ensure the protection of human health.

The screening evaluations for soil, groundwater, sediment, and surface water are shown in Tables C-2 to C-5, respectively. Table C-6 provides a summary of all screening level exceedances and COPCs. The results for each medium are discussed below.

#### *Soil*

Of the chemicals detected in surface soil, only chromium had concentrations exceeding screening levels (Table C-2). Chromium was detected in all seven surface soil samples collected at total concentrations ranging from 19.6 to 47.8 mg/kg, with an average of 29.6 mg/kg. All samples exceeded the USEPA RSL and MTCA CUL for hexavalent chromium assuming an industrial/worker scenario (5.6 mg/kg and 19 mg/kg, respectively) but not for trivalent chromium (1.5E+06 mg/kg and 2,000 mg/kg, respectively). Magnitude of screening level exceedances ranged from 4 to 9 times the hexavalent chromium RSL and slight to 3 times the MTCA Method A CUL (Table C-6). Current site-specific background data are not available for comparison to site concentrations.

Site-specific speciation data for chromium are not available to determine the proportions of the various forms of chromium in site soil. Therefore, the screening level comparison in this HHRE does not provide a definitive picture of the COPC status of this metal at the site. While the total chromium concentrations found at the site are comparable to typical background levels (42 mg/kg state-wide, 48 mg/kg in the Puget Sound area) and trivalent chromium is the form predominantly found in natural background soils, chromium cannot be completely ruled out as a COPC given the previous use of and disposal of chromium-related products at the landfill. Hexavalent and trivalent chromium data would be needed to resolve the uncertainty. It should be noted that, as discussed in Section C.5, the USEPA RSLs are based on a target cancer risk level of  $1 \times 10^{-6}$  (USEPA 2011b). Increasing the target risk level to  $1 \times 10^{-5}$  increases the hexavalent chromium RSL ten-fold to 56 mg/kg. The maximum detected chromium concentration is lower than this level and would not be considered a COPC when assuming this higher target risk level. The MTCA Method A CUL is already based on this higher target risk level.

The essential nutrients that were eliminated from the list of soil COPCs include magnesium, calcium, potassium, and sodium. The concentrations of these minerals in site soil samples are well below levels associated with toxicity.

#### *Groundwater*

Three metals (arsenic, chromium, and cobalt) and two volatile organic compounds (chloroform and methyl tert-butyl ether [MTBE]) were identified as human health COPCs in groundwater (Table C-3). The concentrations for all five chemicals exceeded respective USEPA RSLs for residential tap water (As 0.045 ug/L, Cr 0.043 ug/L, Co 4.7 ug/L, chloroform 0.19 ug/L, and MTBE 12 ug/L) in the one sample collected in 2011 (Table C-3). The arsenic concentration was 44 times its RSL, chromium was over 300 times its RSL, and MTBE was 5 times its RSL (Table C-6). The concentrations for these three chemicals were 2 ug/L, 14.5 ug/L, and 55 ug/L, respectively. For chloroform (0.43 ug/L), the exceedance was slightly greater than two times and for cobalt only slightly higher (site concentration of 5.1 ug/L). In addition, the arsenic concentration (2 ug/L) was nearly two times the MTCA Method B cleanup level for a residential scenario. However, with the exception of cobalt and MTBE, which have no promulgated national standards, all chemical concentrations were well below the respective USEPA MCLs (Table C-3).

For MTBE, USEPA provides a drinking water health advisory range of 20 to 40 ug/L to prevent adverse taste and odor in the water (USEPA 1997). Studies have shown that concentrations in this range are several orders of magnitude lower than the range of exposure levels in which adverse health effects were observed in rodents (USEPA 1997). Advisories are for communities concerned with potential risk from exposure to chemicals for which no national regulations currently exist. Advisories are used only for guidance and are not mandatory standards for action. The MTBE concentration in groundwater (55 ug/L) was slightly above the upper end of the advisory range. Cobalt has no such advisory published.

Current background data for groundwater were not available for comparison. The essential nutrients that were eliminated from the list of groundwater COPCs include calcium, magnesium, potassium, and sodium. The concentrations of these minerals in site groundwater samples are well below levels associated with toxicity.

#### *Sediment*

Metals, PCBs, and VOCs were detected in the two sediment samples collected downstream of the site. With the exception of arsenic and the PCBs (Aroclor 1248, Aroclor 1254, and Aroclor 1260), concentrations of all detected analytes were below the USEPA RSLs for a residential scenario (Table C-4). The arsenic concentrations of 1.11 mg/kg and 1.73 mg/kg in the sediment samples exceeded the residential RSL by 3 to 4 times (0.39 mg/kg). However, these concentrations were below the site-specific background concentration of 2.42 mg/kg). The maximum Aroclor concentrations, ranging from 516 to 908 ug/kg, exceeded the Aroclor residential RSL by 2 to 4 times, as well as the site-specific background concentrations (Table C-6). However, USEPA's online RSL calculator generated recreational screening levels 10 times greater than those for the residential scenario by assuming a reduced exposure frequency of 35 days/year rather than 365 days/year (Table C-4). The lower value represents a RME number of days an individual might recreate in Gorst Creek given the maritime climate typical of Kitsap County (i.e., 7 days per month for 5 months). The arsenic sediment concentrations are 2 to 3 times lower than the recreational RSL. Similarly, the Aroclor sediment concentrations are 2 to 4 times lower than respective recreational RSLs. Therefore, arsenic and the Aroclors are not considered human health COPCs in sediment.

While several other chemicals in the downstream samples were detected above background levels, the concentrations of these chemicals were all well below screening levels (see Table C-4). No human health COPCs were identified for sediment.

#### *Surface Water*

Three metals (iron, manganese, and zinc) and one essential nutrient (calcium) were detected in the two surface water samples collected downstream of the site in 2003 (Table C-5). Concentrations of these metals were well below the respective USEPA residential tapwater RSLs and AWQC. Zinc was only slightly above the background level, and both iron and manganese were below background levels. Therefore, no COPCs in surface water for human health concerns were identified.

### **C.7 Uncertainties**

Uncertainty is inherent in every step of the risk evaluation process. Significant sources of uncertainty in the HHRE include the following:

- The standard methodology for risk assessment relies on fixed input parameters in the equations used to calculate risk estimates, cleanup levels, or screening levels. These parameters are based on a considerable number of assumptions and do not characterize the variability inherent in a population or in environmental media concentrations.
- Screening criteria are based on published screening levels or standards, both of which tend to rely on conservative default assumptions. These assumptions are selected to represent a high-end estimate of exposure for an individual (i.e., RME) that is a conservative, or protective, estimate of actual exposures. Potential exposures may be less than estimated.
- The HHRE relied on maximum concentrations for comparison to screening levels due to the streamlined nature of the evaluation and the limited number of available data points. In the case of groundwater, the results for only one recent sample were available for screening. Not knowing the variability and distribution of concentrations within different areas of the groundwater introduces significant uncertainty in the screening results. Similarly, the sediment data set was limited to two samples and, while there were no exceedances, the small sample size introduces uncertainty into these results.
- For the HHRE, a conservative assumption was made that all of the chromium detected in surface soil samples was in the hexavalent form, which is considered carcinogenic. However, most of the chromium is likely to be in the trivalent form which is not carcinogenic and has a higher RSL. Speciation data to determine amounts of each form were not available.
- Surface water was not sampled in 2011 due to low water levels in the vicinity of the site. Therefore, the screening evaluation relied upon historical data which may not accurately reflect current conditions in Gorst Creek.
- The lack of background data for comparing to groundwater concentrations could lead to an assumption that screening level exceedances are due entirely to the landfill site. Given that the site is located in an industrial and commercial area, sources other than the landfill site are likely to be present.

## C.8 HHRE Summary

The HHRE is a streamlined evaluation in which COPCs for the landfill site were identified by comparing site concentrations to screening levels. Screening levels included USEPA published and calculated risk-based concentrations, Washington State cleanup levels, and applicable standards.

Exposure scenarios evaluated in the HHRE include current and future residential, current and future worker, current and future trespasser, and current and future recreational. Human receptors at the Gorst Creek Landfill site could be exposed to chemicals through contact with surface soil, groundwater, sediment, and surface water. Routes of exposure include ingestion, dermal absorption, and inhalation. Screening levels were selected to be consistent with these exposure scenarios.

Screening levels were compared to maximum detected concentrations reported for surface soil, groundwater, and sediment samples collected in July and August 2011. Surface water samples were not collected at this time due to lack of water flow; therefore, historical data from 2003 were used in the HHRE. If the maximum concentration of a chemical was above a screening value, the chemical was considered a COPC for the site. Generally, at sites where contaminant concentrations fall below screening and/or natural background levels, no further action or study is warranted to ensure the protection of human health for that compound. Results of the screening level comparison are summarized in Table C-6 and are described as follows:

- The total chromium concentrations in all seven surface soil samples exceeded the USEPA industrial worker RSL for hexavalent chromium based on a cancer target risk level of  $1 \times 10^{-6}$ ; however, none of the total chromium concentrations exceeded the RSL for trivalent chromium. Trivalent chromium is the predominant form of chromium typically found in soil and the total chromium concentrations found are comparable to typical background levels. Modifying the target risk level to  $1 \times 10^{-5}$  in the RSL calculation results in no chromium exceedances of the hexavalent chromium RSL. It should be noted that Washington state MTCA cleanup levels assume a  $1 \times 10^{-5}$  target risk level in the calculations. Chromium is nominally a COPC for soil because no chromium speciation data is available and the total chromium concentrations exceed the RSL for hexavalent chromium. However, for the reasons stated, it is unlikely that chromium is actually a site-related COPC. No other chemicals in soil exceeded screening levels.
- Arsenic, chromium, cobalt, chloroform, and MTBE concentrations exceeded respective USEPA RSLs for residential tap water in the one sample collected in 2011. Arsenic also exceeded the MTCA Method B drinking water cleanup level. However, with the exception of cobalt and MTBE, which have no promulgated national standards, the other chemicals had concentrations that were well below the respective MCLs. The MTBE concentration is only slightly above USEPA's drinking water advisory concentration range. This range is only for guidance and not mandatory regulation. Cobalt has no such advisory.
- All chemicals detected in sediment and historical surface water samples had site concentrations below applicable screening levels.

## C.9 References

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**Table C-1. Number of Drinking Water Wells and Population Within a 4-Mile Radius of Gorst Creek Landfill Site**

| <b>Distance Ring From Site</b> | <b>Household Population</b> | <b>Number of Domestic Wells</b> | <b>Domestic Well Population<sup>a</sup></b> | <b>Number of Municipality Wells</b> | <b>Number of Other Wells<sup>b</sup></b> |
|--------------------------------|-----------------------------|---------------------------------|---|-------------------------------------|--|
| 0-0.25                         | 9                           | 0                               | 0   | 1                                   | 0  |
| 0.25-0.5                       | 184                         | 1                               | 3   | 0                                   | 2  |
| 0.5-1                          | 834                         | 30                              | 77  | 10                                  | 0  |
| 1-2                            | 1,006                       | 109                             | 279   | 14                                  | 3  |
| 2-3                            | 2,994                       | 116                             | 297   | 9                                   | 3  |
| 3-4                            | 3,398                       | 331                             | 847   | 6                                   | 1  |
| Totals                         | 8,425                       | 587                             | 1,503                                       | 40                                  | 9  |

<sup>a</sup>Well population = number wells in distance ring X 2.56 persons per Kitsap County household

<sup>b</sup>Other wells include Sunnyslope Water District, Sunnyslope Water Development, WSDOT, McCormick Woods Water Co., and Veterans Administration  
Sources: USCB 2010 and 2011; WDOE 2011a

**Table C-2. Surface Soil Human Health Screening Results for Samples Collected in July 2011, Gorst Creek - Bremerton Auto Wrecking Landfill.**

| Analyte <sup>a</sup>                            | Minimum Detect | Maximum Detect | FoD | Health-Based Screening Level Comparison |     |                     |     | COPC? | Rationale       |
|---|----------------|----------------|-----|---|-----|---------------------|-----|-------|-----------------|
|   |                |                |     | USEPA RSL Industrial                    |     | MTCA CUL Industrial |     |       |                 |
|   |                |                |     | Value                                   | FoE | Value               | FoE |       |                 |
| Metals (mg/kg)                                  |                |                |     |   |     |                     |     |       |                 |
| Aluminum  | 9160           | 19300          | 7/7 | 9.9E+05                                 | 0/7 | 3.5E+09             | 0/7 | N     | < SLs           |
| Arsenic   | 1.25           | 10.1           | 7/7 | 1.6                                     | 0/7 | 20                  | 0/7 | N     | < SLs           |
| Barium  | 47.4           | 194            | 7/7 | 1.9E+05                                 | 0/7 | 7.0E+05             | 0/7 | N     | < SLs           |
| Beryllium                                       | 0.132          | 0.269          | 7/7 | 2000                                    | 0/7 | 7000                | 0/7 | N     | < SLs           |
| Cadmium   | 0.0942         | 3.24           | 7/7 | 800                                     | 0/7 | NA                  | --  | N     | < SLs           |
| Calcium   | 3150           | 14100          | 7/7 | NA                                      | --  | NA                  | --  | N     | NUT             |
| Chromium <sup>b</sup>                           | 19.6           | 47.8           | 7/7 | 5.6                                     | 7/7 | 19                  | 7/7 | Y     | > SLs           |
| Cobalt  | 5.08           | 9.93           | 7/7 | 300                                     | 0/7 | NA                  | --  | N     | < SLs           |
| Copper  | 10.7           | 83.1           | 7/7 | 4.1E+04                                 | 0/7 | 1.4E+05             | 0/7 | N     | < SLs           |
| Iron  | 9940           | 23500          | 7/7 | 7.2E+04                                 | 0/7 | 2.5E+06             | 0/7 | N     | < SLs           |
| Lead  | 3.21           | 691            | 7/7 | 800                                     | 0/7 | 1000                | 0/7 | N     | < SLs           |
| Mercury   | 0.00943        | 1.28           | 7/7 | 310                                     | 0/7 | 1100                | 0/7 | N     | < SLs           |
| Magnesium                                       | 3170           | 5520           | 7/7 | NA                                      | --  | NA                  | --  | N     | NUT             |
| Manganese                                       | 168            | 654            | 7/7 | 2.3E+04                                 | 0/7 | 4.9E+05             | 0/7 | N     | < SLs           |
| Nickel  | 21.8           | 44.8           | 7/7 | 2.0E+04                                 | 0/7 | 7.0E+04             | 0/7 | N     | < SLs           |
| Potassium                                       | 382            | 868            | 7/7 | NA                                      | --  | NA                  | --  | N     | NUT             |
| Selenium  | 0.405          | 0.405          | 1/7 | 5100                                    | 0/7 | 1.8E+04             | 0/7 | N     | < SLs           |
| Sodium  | 74.2           | 358            | 7/7 | NA                                      | --  | NA                  | --  | N     | NUT             |
| Zinc  | 31.1           | 836            | 7/7 | 3.1E+05                                 | 0/7 | 1.1E+06             | 0/7 | N     | < SLs           |
| Volatile Organic Compounds (µg/kg)              |                |                |     |   |     |                     |     |       |                 |
| Acetone   | 5.12           | 30.3           | 3/7 | 6.3E+08                                 | 0/7 | 3.2E+09             | 0/7 | N     | < SLs           |
| 2-Butanone (MEK)                                | 2.13           | 2.13           | 1/7 | 2.0E+08                                 | 0/7 | 2.1E+09             | 0/7 | N     | < SLs           |
| Ethylbenzene                                    | 0.51           | 0.51           | 1/7 | 2.7E+04                                 | 0/7 | 6000                | 0/7 | N     | < SLs           |
| 4-Isopropyltoluene <sup>c</sup>                 | 0.315          | 0.956          | 2/7 | 4.5E+07                                 | 0/7 | 7000                | 0/7 | N     | < SLs           |
| m,p-Xylene                                      | 0.416          | 0.5            | 2/7 | 2.6E+06                                 | 0/7 | 7.0E+08             | 0/7 | N     | < SLs           |
| Methylene chloride                              | 4.18           | 4.18           | 1/7 | 5.3E+04                                 | 0/7 | 20                  | 0/7 | N     | < SLs           |
| Styrene   | 0.305          | 1.3            | 7/7 | 3.6E+07                                 | 0/7 | 7.0E+08             | 0/7 | N     | < SLs           |
| Toluene   | 0.429          | 1.12           | 3/7 | 4.5E+07                                 | 0/7 | 7000                | 0/7 | N     | < SLs           |
| Xylenes (total)                                 | 0.416          | 0.5            | 2/7 | 2.7E+06                                 | 0/7 | 9000                | 0/7 | N     | < SLs           |
| Polychlorinated Biphenyls (PCBs) (µg/kg)        |                |                |     |   |     |                     |     |       |                 |
| Aroclor-1248                                    | 243            | 243            | 1/7 | 740                                     | 0/7 | NA                  | --  | N     | Similar PCB <SL |
| Aroclor-1254                                    | 345            | 345            | 1/7 | 740                                     | 0/7 | 6.6E+04             | 0/7 | N     | < SLs           |
| Aroclor-1260                                    | 136            | 171            | 1/7 | 740                                     | 0/7 | 6.6E+04             | 0/7 | N     | < SLs           |
| Pesticides (µg/kg)                              |                |                |     |   |     |                     |     |       |                 |
| alpha-BHC                                       | 25.2           | 25.2           | 1/7 | 2.7E+05                                 | 0/7 | 2.1E+04             | 0/7 | N     | < SLs           |
| 4,4'-DDD  | 6.37           | 6.37           | 1/7 | 7200                                    | 0/7 | 5.5E+05             | 0/7 | N     | < SLs           |
| 4,4'-DDT  | 9.1            | 89.9           | 3/7 | 700                                     | 0/7 | 4000                | 0/7 | N     | < SLs           |
| endosulfan sulfate                              | 42.1           | 42.1           | 1/7 | 3.7E+06                                 | 0/7 | 2.1E+07             | 0/7 | N     | < SLs           |
| Polycyclic Aromatic Hydrocarbons (PAHs) (µg/kg) |                |                |     |   |     |                     |     |       |                 |
| Anthracene                                      | 56.7           | 56.7           | 1/7 | 1.7E+08                                 | 0/7 | 1.1E+09             | 0/7 | N     | < SLs           |
| Benzo(a)anthracene                              | 151            | 164            | 2/7 | 2100                                    | 0/7 | 1.8E+05             | 0/7 | N     | < SLs           |
| Benzo(a)pyrene                                  | 145            | 155            | 2/7 | 210                                     | 0/7 | 2000                | 0/7 | N     | < SLs           |
| Benzo(b)fluoranthene                            | 291            | 291            | 1/7 | 2100                                    | 0/7 | 1.8E+05             | 0/7 | N     | < SLs           |
| Benzo(ghi)perylene                              | 89.5           | 117            | 2/7 | NA                                      | 0/7 | NA                  | --  | N     | Similar PAH <SL |
| Chrysene  | 204            | 210            | 2/7 | 2.1E+05                                 | 0/7 | 1.8E+07             | 0/7 | N     | < SLs           |
| Fluoranthene                                    | 250            | 254            | 2/7 | 2.2E+07                                 | 0/7 | 1.4E+08             | 0/7 | N     | < SLs           |
| Fluorene  | 42.7           | 42.7           | 1/7 | 2.2E+07                                 | 0/7 | 1.4E+08             | 0/7 | N     | < SLs           |
| Indeno(1,2,3-cd)pyrene                          | 78.8           | 117            | 2/7 | 2.1E+06                                 | 0/7 | 1.8E+05             | 0/7 | N     | < SLs           |
| Phenanthrene                                    | 91.1           | 409            | 2/7 | NA                                      | 0/7 | NA                  | --  | N     | Similar PAH <SL |
| Pyrene  | 351            | 425            | 2/7 | 1.7E+07                                 | 0/7 | 1.1E+08             | 0/7 | N     | < SLs           |
| HPAH sum  | 218.15         | 1723.6         | 3/7 | NA                                      | 0/7 | NA                  | --  | N     | PAHs < SL       |
| LPAH sum  | 326.9          | 672.6          | 2/7 | NA                                      | 0/7 | NA                  | --  | N     | PAHs < SL       |
| Other Semivolatile Organic Compounds (µg/kg)    |                |                |     |   |     |                     |     |       |                 |
| bis(2-Ethylhexyl)phthalate                      | 335            | 568            | 2/7 | 1.2E+05                                 | 0/7 | 9.4E+06             | 0/7 | N     | < SLs           |
| Butylbenzylphthalate                            | 1230           | 1230           | 1/7 | 9.1E+05                                 | 0/7 | 6.9E+07             | 0/7 | N     | < SLs           |

<sup>a</sup>Includes only analytes detected at least once in soil samples; bold type indicates chemical is a COPC

<sup>b</sup>In the absence of speciated site data for chromium RSL and MTCA CUL are for hexavalent chromium (Cr VI) (see text). The RSL and MTCA CUL for trivalent chromium (Cr III) are 1.5E+06 mg/kg and 2,000 mg/kg, respectively.

<sup>c</sup>No specific screening levels are available for this chemical; therefore, the screening level for toluene was used as a substitute.

Key:

NA = not available

COPC = chemical of potential concern

CUL = cleanup level

FoD = frequency of detection (number of detects over total number of samples)

FoE = frequency of exceedence (number of samples that exceed screening level over total number of samples)

HPAH = high molecular weight PAH

LPAH = low molecular weight PAH

mg/kg = milligrams per kilogram

MTCA = Model Toxics Control Act (value is the lowest of Methods A and C)

NUT = considered essential nutrient for humans

PAH = polycyclic aromatic hydrocarbon

RSL = regional screening level

µg/kg = micrograms per kilogram

USEPA = United States Environmental Protection Agency

? = status as COPC uncertain

-- = not applicable

**Table C-3. Groundwater Human Health Screening Results for Samples Collected in August 2011, Gorst Creek - Bremerton Auto Wrecking Landfill.**

Working Landfill:

| Analyte <sup>a</sup>                  | Health-Based Screening Level Comparison |             |           |         |                   |          | Sample Results             | COPC? | Rationale   |
|---------------------------------------|---|-------------|-----------|---------|-------------------|----------|----------------------------|-------|-------------|
|                                       | USEPA RSL Resident Tap                  | Res RSL FoE | USEPA MCL | MCL FoE | MTCA Method B CUL | MTCA FoE | SB04                       |       |             |
|                                       |   |             |           |         |                   |          | 11080101                   |       |             |
|                                       |   |             |           |         |                   |          | Northwest of Landfill Site |       |             |
| Metals (µg/L)                         |   |             |           |         |                   |          |                            |       |             |
| Aluminum                              | 37000                                   | 0/1         | NA        | --      | 16000             | 0/1      | 8170                       | N     | < SLs       |
| Arsenic                               | 0.045                                   | 1/1         | 10        | 0/1     | 0.058             | 1/1      | 2                          | Y     | >RSL & MTCA |
| Barium                                | 7300                                    | 0/1         | 2000      | 0/1     | 3200              | 0/1      | 112                        | N     | < SLs       |
| Beryllium                             | 73                                      | 0/1         | 4         | 0/1     | 32                | 0/1      | 0.21                       | N     | < SLs       |
| Calcium                               | NA                                      | --          | NA        | --      | NA                | --       | 4930                       | N     | NUT         |
| Chromium <sup>b</sup>                 | 0.031                                   | 1/1         | 100       | 0/1     | 48                | 0/1      | 14.5                       | Y     | >RSL        |
| Cobalt                                | 4.7                                     | 1/1         | NA        | --      | NA                | --       | 5.1                        | Y     | >RSL        |
| Copper                                | 1500                                    | 0/1         | 1300      | 0/1     | 640               | 0/1      | 10                         | N     | < SLs       |
| Iron                                  | 26000                                   | 0/1         | NA        | --      | 11000             | 0/1      | 6850                       | N     | < SLs       |
| Lead                                  | NA                                      | --          | 15        | 0/1     | NA                | --       | 3.6                        | N     | < SLs       |
| Magnesium                             | NA                                      | --          | NA        | --      | NA                | --       | 2590                       | N     | NUT         |
| Manganese                             | 880                                     | 0/1         | NA        | --      | 2200              | 0/1      | 275                        | N     | < SLs       |
| Nickel                                | 730                                     | 0/1         | NA        | --      | 320               | 0/1      | 16.4                       | N     | < SLs       |
| Potassium                             | NA                                      | --          | NA        | --      | NA                | --       | 907                        | N     | NUT         |
| Sodium                                | NA                                      | --          | NA        | --      | NA                | --       | 3590                       | N     | NUT         |
| Zinc                                  | 11000                                   | 0/1         | NA        | --      | 4800              | 0/1      | 14.9                       | N     | < SLs       |
| Semivolatile Organic Compounds (µg/L) |   |             |           |         |                   |          |                            |       |             |
| bis(2-Ethylhexyl)phthalate            | 4.8                                     | 0/1         | 6         | 1/1     | 6.3               | 1/1      | 4.6                        | N     | < SLs       |
| Volatile Organic Compounds (µg/L)     |   |             |           |         |                   |          |                            |       |             |
| 1,3,5-Trimethylbenzene                | 370                                     | 0/1         | NA        | --      | 80                | 0/1      | 2.9                        | N     | < SLs       |
| 2-Butanone (MEK)                      | 7100                                    | 0/1         | NA        | --      | 4800              | 0/1      | 12.1                       | N     | < SLs       |
| 4-Methyl-2-pentanone (MIBK)           | 2000                                    | 0/1         | NA        | --      | 640               | 0/1      | 7.8                        | N     | < SLs       |
| Acetone                               | 22000                                   | 0/1         | NA        | --      | 7200              | 0/1      | 959                        | N     | < SLs       |
| Chloroform                            | 0.19                                    | 1/1         | 80        | 0/1     | 80                | 0/1      | 0.43                       | Y     | >RSL        |
| Methyl tert-butyl Ether (MTBE)        | 12                                      | 1/1         | NA        | --      | NA                | --       | 55                         | Y     | >RSL        |

<sup>a</sup>Includes only analytes detected at least once in groundwater sample

<sup>b</sup>In the absence of speciated chromium data, RSL and MTCA CUL are for hexavalent chromium (Cr VI) (see text); MCL is for total chromium. Chromium III screening levels are 55,000 ug/L (RSL resident tap) and 24,000 ug/L (MTCA Method B).

-- = Not applicable  
COPC = chemical of potential concern  
CUL = cleanup level  
FoE = frequency of exceedence (number of samples that exceed screening level over total number of samples)  
MCL = maximum contaminant level  
MTCA = Model Toxics Control Act  
NA = Not available  
NUT = essential nutrient for humans  
µg/L = micrograms per liter  
RSL = Regional Screening Level  
USEPA = United States Environmental Protection Agency

**Table C-4. Sediment Human Health Screening Results for Samples Collected in July 2011, Gorst Creek - Bremerton Auto Wrecking Landfill.**

| Analyte <sup>a</sup>               | Health-Based Screening Level Comparison |             |                                   |             | Background Level Comparison      |                | Site-Related Samples           |                           | COPC? | Rationale         |
|------------------------------------|---|-------------|-----------------------------------|-------------|----------------------------------|----------------|--------------------------------|---------------------------|-------|-------------------|
|                                    | USEPA RSL Resident                      | Res RSL FoE | USEPA RSL Recreation <sup>b</sup> | Rec RSL FoE | Maximum Background Concentration | Background FoE | GC03SD                         | GC04SD                    |       |                   |
|                                    |   |             |                                   |             |                                  |                | 11070004                       | 11070003                  |       |                   |
|                                    |   |             |                                   |             |                                  |                | Between Landfill and Highway 3 | Downstream from Highway 3 |       |                   |
| Metals (mg/kg)                     |   |             |                                   |             |                                  |                |                                |                           |       |                   |
| Aluminum                           | 77000                                   | 0/2         | --                                | --          | 13400                            | 0/2            | 12300                          | 11200                     | N     | < Res SL & Bckgro |
| Arsenic                            | 0.39                                    | 2/2         | 3.9                               | 0/2         | 2.42                             | 0/2            | 1.73                           | 1.11                      | N     | < Rec SL          |
| Barium                             | 15000                                   | 0/2         | --                                | --          | 68.4                             | 0/2            | 54.7                           | 44.8                      | N     | < Res SL & Bckgro |
| Beryllium                          | 160                                     | 0/2         | --                                | --          | 0.197                            | 0/2            | 0.168                          | 0.181                     | N     | < Res SL & Bckgro |
| Cadmium                            | 70                                      | 0/2         | --                                | --          | 0.133                            | 2/2            | 0.522                          | 0.605                     | N     | < Res SL          |
| Calcium                            | NA                                      | --          | --                                | --          | 3130                             | 0/2            | 3090                           | 2860                      | N     | NUT               |
| Chromium                           | 0.29                                    | 0/2         | --                                | --          | 23.5                             | 0/2            | 18.1                           | 19.6                      | N     | < Res SL & Bckgro |
| Cobalt                             | 23                                      | 0/2         | --                                | --          | 16.9                             | 0/2            | 5.53                           | 6.13                      | N     | < Res SL & Bckgro |
| Copper                             | 3100                                    | 0/2         | --                                | --          | 9.94                             | 0/2            | 38.5                           | 30.5                      | N     | < Res SL & Bckgro |
| Iron                               | 55000                                   | 0/2         | --                                | --          | 17500                            | 0/2            | 14600                          | 14400                     | N     | < Res SL & Bckgro |
| Lead                               | 400                                     | 0/2         | --                                | --          | 4.57                             | 0/2            | 35.3                           | 25.5                      | N     | < Res SL & Bckgro |
| Magnesium                          | NA                                      | --          | --                                | --          | 4360                             | 1/2            | 4050                           | 4600                      | N     | NUT               |
| Manganese                          | 1800                                    | 0/2         | --                                | --          | 1160                             | 0/2            | 239                            | 237                       | N     | < Res SL & Bckgro |
| Mercury                            | 23                                      | 0/2         | --                                | --          | 0.0251                           | 2/2            | 0.0593                         | 0.0442                    | N     | < SL              |
| Nickel                             | 1500                                    | 0/2         | --                                | --          | 35.7                             | 0/2            | 33.4                           | 32.3                      | N     | < Res SL & Bckgro |
| Potassium                          | NA                                      | --          | --                                | --          | 334                              | 2/2            | 426                            | 419                       | N     | NUT               |
| Selenium                           | 390                                     | 0/2         | --                                | --          | 0.185                            | 0/2            | 0.0467                         | 0.00455                   | N     | < Res SL & Bckgro |
| Sodium                             | NA                                      | --          | --                                | --          | 123                              | 0/2            | 94.4                           | 113                       | N     | NUT               |
| Thallium                           | 0.78                                    | 0/2         | --                                | --          | 0.101                            | 0/2            | 0.0449                         | 0.0362                    | N     | < Res SL & Bckgro |
| Zinc                               | 23000                                   | 0/2         | --                                | --          | 41                               | 2/2            | 130                            | 115                       | N     | < Res SL          |
| Polychlorinated Biphenyls (µg/kg)  |   |             |                                   |             |                                  |                |                                |                           |       |                   |
| Aroclor 1248                       | 220                                     | 2/2         | 2200                              | 0/2         | ND                               | 2/2            | 746                            | 437                       | N     | < Rec SL          |
| Aroclor 1254                       | 220                                     | 1/2         | 2200                              | 0/2         | ND                               | 2/2            | 908                            | 84                        | N     | < Rec SL          |
| Aroclor 1260                       | 220                                     | 2/2         | 2200                              | 0/2         | 7.2                              | 2/2            | 516                            | 248                       | N     | < Rec SL          |
| Volatile Organic Compounds (µg/kg) |   |             |                                   |             |                                  |                |                                |                           |       |                   |
| 4-Isopropyltoluene <sup>c</sup>    | 5.0E+06                                 | 0/2         | --                                | --          | ND                               | 1/2            | ND                             | 3.19                      | N     | < Res SL          |
| Acetone                            | 6.1E+07                                 | 0/2         | --                                | --          | 2.7                              | 1/2            | ND                             | 3.85                      | N     | < Res SL          |
| Styrene                            | 6.3E+06                                 | 0/2         | --                                | --          | ND                               | 1/2            | 0.426                          | ND                        | N     | < Res SL          |

<sup>a</sup>Includes only analytes detected at least once in sediment samples

<sup>b</sup>USEPA recreational (Rec) RSL was calculated only for analytes with sediment concentrations that exceeded the USEPA Residential RSL; the Rec RSL was calculated assuming an exposure frequency (EF) of 35 days/year or 1/10 of the residential EF (see text).

<sup>c</sup>No specific screening levels are available for this chemical; therefore, the screening level for toluene was used as a substitute.

Key:

-- = Not applicable

Bckgrd = background level

COPC = chemical of potential concern

FoE = frequency of exceedence (number of samples that exceed screening level over total number of samples)

mg/kg = milligrams per kilogram

NA = Not available

ND = Non-detect

NUT = essential nutrient for humans

Rec = recreational

Res = residential

µg/kg = micrograms per kilogram

USEPA RSL = United States Environmental Protection Agency Regional Screening Level

**Table C-5. Surface Water Human Health Screening Results for Samples Collected in November 2003, Gorst Creek - Bremerton Auto Wrecking Landfill.**

| Analyte <sup>a</sup> | Health-Based Screening Level Comparison |                |               |             | Background Level Comparison             |                   | Site-Related Samples |                    | COPC? | Rationale      |
|----------------------|---|----------------|---------------|-------------|---|-------------------|----------------------|--------------------|-------|----------------|
|                      | USEPA<br>RSL<br>Resident<br>Tap         | Res RSL<br>FoE | USEPA<br>AWQC | AWQC<br>FoE | Background<br>Concentration<br>(BG02SW) | Background<br>FoE | GC03SW               | GC04SW             |       |                |
|                      |   |                |               |             |   |                   | 3464424              | 3464430            |       |                |
|                      |   |                |               |             |   |                   | PPE1<br>Upstream     | PPE2<br>Downstream |       |                |
| Metals (µg/L)        |   |                |               |             |   |                   |                      |                    |       |                |
| Calcium              | NA                                      | 0/2            | NA            | --          | 1970                                    | 2/2               | 2060                 | 6830               | N     | NUT            |
| Iron                 | 26000                                   | 0/2            | 300           | 0/2         | 270                                     | 0/2               | 30                   | 31.2               | N     | < SLs & Bckgrd |
| Manganese            | 880                                     | 0/2            | 50            | 0/2         | 1703                                    | 0/2               | 3.1                  | 11                 | N     | < SLs & Bckgrd |
| Zinc                 | 11000                                   | 0/2            | 7,400         | 0/2         | 21.8                                    | 2/2               | 23.5                 | 31.5               | N     | < RSL & AWQC   |

<sup>a</sup>Includes only analytes detected at least once in surface water samples

Key:

-- = Not applicable

AWQC = ambient water quality criteria

Bckgrd = background level

COPC = chemical of potential concern

FoE = frequency of exceedence (number of samples that exceed screening level over total number of samples)

NA = Not available

NUT = essential nutrient for humans

PPE = probable points of entry

µg/L = micrograms per liter

USEPA RSL = United States Environmental Protection Agency Regional Screening Level

**Table C-6. Summary of Human Health Risk Screening Results, Gorst Creek - Bremerton Auto Wrecking Landfill.**

| Chemical of Potential Concern (COPC) <sup>a</sup> | Minimum Detected Concentration | Maximum Detected Concentration | Screening Level Exceeded | Basis for Screening Level | Frequency of Exceedance | Magnitude of SL Exceedance <sup>b</sup> |
|---|--------------------------------|--------------------------------|--------------------------|---------------------------|-------------------------|---|
| <b>Soil mg/kg</b>                                 |                                |                                |                          |                           |                         |   |
| Chromium  | 19.6                           | 47.8                           | 5.6                      | USEPA RSL Indus           | 7/7                     | 9                                       |
| Chromium  | 19.6                           | 47.8                           | 19                       | MTCA Method A             | 7/7                     | 3                                       |
| <b>Groundwater ug/L</b>                           |                                |                                |                          |                           |                         |   |
| Arsenic   | 2                              | 2                              | 0.045                    | USEPA RSL Res             | 1/1                     | 44                                      |
| Arsenic   | 2                              | 2                              | 0.058                    | MTCA Method B             | 1/1                     | 34                                      |
| Chromium  | 14.5                           | 14.5                           | 0.043                    | USEPA RSL Res             | 1/1                     | 337                                     |
| Chloroform  | 0.43                           | 0.43                           | 0.19                     | USEPA RSL Res             | 1/1                     | 2                                       |
| Methyl tert-butyl Ether (MTBE)                    | 55                             | 55                             | 12                       | USEPA RSL Res             | 1/1                     | 5                                       |
| <b>Sediment</b>                                   |                                |                                |                          |                           |                         |   |
| No Screening Exceedances                          |                                |                                |                          |                           |                         |   |
| <b>Surface Water</b>                              |                                |                                |                          |                           |                         |   |
| No Screening Exceedances                          |                                |                                |                          |                           |                         |   |

<sup>a</sup>COPCs identified in screening assessment presented in Tables C-2 to C-5.

<sup>b</sup>Maximum detected concentration/screening level.

Key:

Indus = industrial soil

mg/kg = micrograms per kilogram

MTCA = Model Toxics Control Act

µg/L = micrograms per liter

Res = residential tap water

SL = screening level

USEPA RSL = United States Environmental Protection Agency Regional Screening Level

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**D**

# **STREAMLINED ECOLOGICAL RISK EVALUATION**

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## **Appendix D -- Gorst Creek Streamlined Ecological Risk Evaluation**

### **Table of Contents**

#### D.1 Introduction

#### D.2 Site Description

##### D.2.1 Summary of Site History and Characteristics

##### D.2.2 Species of Special Concern

#### D.3 Problem Formulation

##### D.3.1 Contaminant Sources and Migration Pathways

##### D.3.2 Site-Related Chemicals

##### D.3.3 Ecological Receptors

##### D.3.4 Ecological Conceptual Site Model

##### D.3.5 Assessment Endpoints and Measures (Table D-1)

##### D.3.6 Data Used in Risk Evaluation

#### D.4 Ecological Risk Evaluation

##### D.4.1 Benthic Macroinvertebrates

###### D.4.1.1 Sediment Chemical Concentrations Compared with Screening Levels (Table D-2)

###### D.4.1.2 Sediment Toxicity Tests (Table D-3)

##### D.4.2 Terrestrial Vegetation

##### D.4.3 Soil Invertebrates

##### D.4.4 Wildlife

###### D.4.4.1 Surface Soil Chemical Concentrations Compared with Screening Levels (Table D-4)

###### D.4.4.2 Wildlife Risk Evaluation

###### D.4.4.2.1 Exposure Assessment

###### D.4.4.2.1.1 Wildlife Exposure Scenarios and Pathways

###### D.4.4.2.1.2 Wildlife Exposure Calculations (Table D-5)

###### D.4.4.2.1.3 Screening Level Exposure Assumptions

###### D.4.4.2.1.4 Exposure Point Concentrations (Tables D-6 and D-7)

###### D.4.4.2.2 Ecological Effects Assessment (Table D-8)

###### D.4.4.2.3 Wildlife Risk Characterization (Tables D-9 to D-12)

###### D.4.4.2.3.1 Terrestrial Wildlife Risks

###### D.4.4.2.3.2 Aquatic Dependent Wildlife Risks

###### D.4.4.2.4 Effect of ED, SUF, and EPC on Wildlife Risks (Table D-13)

#### D.5 Uncertainties

#### D.6 Summary (Table D-14)

#### D.7 References

#### Sediment Toxicity Testing Results (Appendix A)

**List of Figures**

1-6 Ecological Conceptual Site Model

**List of Tables**

D-1 Assessment Endpoints and Measured for the Gorst Creek Streamlined Ecological Risk Evaluation

D-2 Gorst Creek Sediment Ecological Screening Results (July 2011 Samples)

D-3 Gorst Creek Sediment Bioassay Results (July 2011 Samples)

D-4 Surface Soil Ecological Screening Results (July 2011 Samples)

D-5 Exposure Parameters for Wildlife Species

D-6 Surface Soil and Earthworm Exposure Point Concentrations for American Robin and Masked Shrew

D-7 Sediment and Benthic Invertebrate Exposure Point Concentrations for Barn Swallow and Raccoon

D-8 Toxicity Reference Values for Birds and Mammals

D-9 American Robin Exposure Estimates and Hazard Quotients

D-10 Masked Shrew Exposure Estimates and Hazard Quotients

D-11 Swallow Exposure Estimates and Hazard Quotients

D-12 Raccoon Exposure Estimates and Hazard Quotients

D-13 Effect of Exposure Duration, Site Use, and Exposure Point Concentration on Wildlife Risks

D-14 Summary of Chemicals Exceeding Screening Levels or Toxicity Reference Values

## **Appendix B -- Streamlined Ecological Risk Evaluation**

### **D.1 Introduction**

This section presents a streamlined ecological risk evaluation for the Gorst Creek – Bremerton Auto Wrecking Landfill and portion of Gorst Creek near the landfill. The evaluation was undertaken to determine if contaminant concentrations in environmental media at and near the site pose an ecological risk and, if so, to aid in making risk-management decisions.

The methodology used in the streamlined ecological risk evaluation was generally consistent with United States Environmental Protection Agency (USEPA) and Washington State Department of Ecology (Ecology) guidance, including, but not limited to:

- *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA* (USEPA 1993a)
- *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments* (USEPA 1997);
- *Guidelines for Ecological Risk Assessment* (USEPA 1998);
- *Wildlife Exposure Factors Handbook* (USEPA 1993b);
- *Guidance for Developing Ecological Soil Screening Levels* (USEPA 2005a); and
- *Model Toxics Control Act Chapter 70.105D RCW and Cleanup Regulation Chapter 173-340 WAC* (Ecology 2007).

In addition to the above mentioned state and federal guidance documents, E & E also used publications from Oak Ridge National Laboratory (ORNL) and articles from the peer-reviewed literature, as appropriate.

The remainder of this section is organized as follows:

- Section D.2 provides a brief site description.
- Section D.3 presents the problem formulation for the streamlined ecological risk evaluation.
- Sections D.4 compares chemical concentrations in sediment and soil with risk-based screening levels for benthic invertebrates, terrestrial vegetation, soil invertebrates, and wildlife; presents the results of toxicity tests conducted with Gorst Creek sediment; and presents a supplemental risk evaluation for wildlife.
- Section D.5 identifies and discusses sources of uncertainty in the risk evaluation.
- Section D.6 presents a summary of the risk evaluation.

### **D.2 Site Description**

#### **D.2.1 Summary of Site History and Characteristics**

The Gorst Creek – Bremerton Auto Wrecking Landfill is a closed landfill located in Kitsap County, Washington approximately 5 miles southwest of Port Orchard, 6 miles south-southwest of Bremerton, and

1.5 miles west of Gorst, Washington along the southwest side of Highway 3 (see Figure 1-1 for site location figure). The property began operating as a landfill in 1950 under the name of Ames Auto Wrecking. Beginning in 1980, the landfill operated under the name of Bremerton Auto Wrecking, Inc. until its closure in 1989 by the Kitsap County Health Department as a result of non-compliance with state and local solid-waste regulations. In addition to automotive debris, the landfill accepted waste from public dumping, occasional demolition debris contracts, and refuse from the Puget Sound Naval Shipyard, including a limited amount of medical waste from that facility (E & E 2003).

The landfill is a triangular-shaped parcel of 5.7 acres centered over 700 feet of the Gorst Creek ravine. The ravine was 60 to 80 feet deep at this location before being used as a landfill. Gorst Creek is located in the ravine and is conveyed under the landfill through a culvert that was constructed when landfill operations began in 1968. Presently, the top of the landfill is flush with the surrounding topography over much of the landfill surface and is overgrown with saplings, blackberry bushes, and other vegetation. The invasive Himalayan blackberry (*Rubus armeniacus* or *R. discolor*) is the predominant plant species on the landfill surface.

Gorst Creek is an intermittent stream in the site vicinity. During field work in July 2011, no surface water was present in the creek near the site. Downstream from the site, Gorst Creek becomes a perennial stream and flows for 3.7 miles to Sinclair Inlet, an arm of Puget Sound.

Additional information about site conditions and current and past use of the site is provided in Sections 1.2 and 1.3).

#### **D.2.2 Species of Special Concern**

E & E examined available information from the Washington Department of Fish and Wildlife (WDFW), Washington State Department of Natural Resources (WSDNR), United States Fish and Wildlife Service (USFWS), and National Oceanic and Atmospheric Administration (NOAA) regarding the presence of sensitive plant and animal species in the site vicinity. A summary of the information from these agencies is provided below.

The WDFW Priority Habitats and Species (PHS) database (WDFW 2011) indicated that the Coho salmon (*Oncorhynchus kisutch*, federally listed threatened) and coast-resident cutthroat trout (*O. clarki*, PHS listed) occur or migrate in Gorst Creek. The information in the PHS database suggests that these species may occur throughout Gorst Creek, including the portion of the creek near the site.

The WSDNR (2011) indicated that six rare plants species occur in Kitsap County: pink sand-verbena (*Abronia umbrellata* var. *brevifolia*, state-listed endangered); Vancouver ground-cone (*Boschniakia hookeri*, state-listed of potential concern); bog clubmoss (*Lycopodium inundata*, state-listed sensitive); western yellow oxalis (*Oxalis suksdorfii*, state-listed threatened); humped bladderwort (*Utricularia gibba*; state-listed of potential concern); and chain fern (*Woodwardia fimbriata*; state-listed sensitive). The Vancouver ground-cone, bog clubmoss, humped bladderwort, and chain fern were sited in west Kitsap County within approximately 10 miles of the site. However, none of these species were observed at the site during field activities in July 2011 and they would not be expected to occur there given their habitat requirements. Vancouver ground pine is a root parasite and typically is found growing in young forest stands near salt water. Associated tree species include western hemlock, western red cedar, Sitka spruce, and Douglas fir. Bog clubmoss, humped bladderwort, and chain fern prefer perennially wet habitats (bogs, lakeshores, etc.) that are not offered by the site.

The USFWS (2010) indicated that the bull trout (*Salvelinus confluentus*) – Coastal-Puget Sound Distinct Population Segment (DPS) and marbled murrelet (*Brachyramphus marmoratus*) are listed as threatened and endangered species, respectively, in Kitsap County. Also, the USFWS considers the yellow-billed

cuckoo (*Coccyzus americanus*) as a candidate species in Kitsap County and 12 other animals as species of concern in Kitsap County, including: bald eagle (*Haliaeetus leucocephalus*), long-eared myotis (*Myotis evotis*), long-legged myotis (*Myotis volans*), northern goshawk (*Accipiter gentilis*), northern sea otter (*Enhydra lutris kenyoni*), northwestern pond turtle (*Emys* (= *Clemmys*) *marmorata marmorata*), Pacific lamprey (*Lampetra tridentata*), Pacific Townsend's big-eared bat (*Corynorhinus townsendii townsendii*), peregrine falcon (*Falco peregrinus*), river lamprey (*Lampetra ayresi*), tailed frog (*Ascaphus truei*), and western toad (*Bufo boreas*). Some of these species (e.g., marbled murrelet, northern sea otter, and peregrine falcon) would not be expected to occur in the site vicinity given their habitat requirements. However, the possibility that the other mentioned-above species might occur in the site vicinity cannot be definitely ruled out, although none were observed during field work at the site in July 2011.

The National Marine Fisheries Service, a branch of NOAA, identified the Puget Sound Chinook salmon (*O. tshawytscha*) evolutionarily significant unit (ESU) and Puget Sound steelhead (*O. mykiss*) DPS as federally threatened species in Puget Sound (NOAA 2011). Because Gorst Creek is a tributary of Puget Sound, the occurrence of these species in Gorst Creek cannot be definitely ruled out.

### **D.3 Problem Formulation**

Problem formulation is the first step in the ecological risk assessment process and identifies the goals, breadth, and focus of the assessment (USEPA 1997, 1998). The problem formulation step identifies site-related contaminants (i.e., stressors), potential ecological receptors, and potential exposure pathways. A conceptual model is then developed to summarize the relationship between stressors and receptors. Lastly, assessment endpoints and measures (previously called measurement endpoints) are developed to guide the remaining steps of the risk assessment process. The problem formulation and conceptual site model (CSM) for the Gorst Creek – Bremerton Auto Wrecking Landfill site are presented below.

#### **D.3.1 Contaminant Sources and Migration Pathways**

In addition to automotive debris, the Gorst Creek – Bremerton Auto Wrecking Landfill accepted waste from public dumping, occasional demolition debris contracts, and refuse from the Puget Sound Naval Shipyard, including a limited amount of medical waste from that facility (E & E 2003). The landfill is estimated to contain 150,000 cubic yards of waste (E & E 2003, 2004) from these sources. The landfill is not capped. In March 1997, after a significant storm event (7.3 inches in a 24-hour period), Gorst Creek backed up on the upstream side of the landfill and overtopped the surface of the landfill, causing a portion of the northwest slope of the landfill to fail and wash into Gorst Creek. In January 2002, after another significant storm event, Gorst Creek again backed up and overtopped the landfill, resulting in another (smaller) slope failure. Landfill debris was again released to Gorst Creek. Other less significant releases may have taken place over the past 15 years. Gorst Creek backs up behind the landfill during periods of heavy precipitation because a portion of the culvert beneath the landfill has collapsed (E & E 2004).

#### **D.3.2 Site-Related Chemicals**

Chemicals detected in soil, sediment, and surface water in past site investigations included metals, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and pesticides (E & E 2003, 2004). Based on these investigations, DDT, DDE, and PCBs (Aroclor 1254) in sediment in Gorst Creek downstream from the site appeared to be of greatest concern from an ecological standpoint; sediment concentrations of these chemicals exceeded their respective probable effect concentration (PEC, MacDonald et al. 2000), indicating that the concentrations were great enough to adversely effect benthic invertebrates. These chemicals also were detected in surface and subsurface soil from the site, suggesting that the landfill is a source to the creek.

#### **D.3.3 Ecological Receptors**

The following ecological receptor groups have the potential to be affected by site-related contaminants at the site:

- Terrestrial plants and soil invertebrates living on the landfill surface;
- Mammals, birds, and reptiles that use the landfill surface and Gorst Creek near the landfill to satisfy their food and habitat needs; and
- Benthic invertebrates, fish, amphibians, and other aquatic organisms in Gorst Creek near the landfill.

### **D.3.4 Ecological Conceptual Site Model**

Potential receptors and exposure pathways are summarized in the site conceptual model shown in Figure 1-6. Terrestrial plants and soil invertebrates on the landfill surface may be exposed to site-related chemicals by direct contact with contaminated soil. Birds, mammals, and reptiles that use the site may be exposed to site-related chemicals by incidental ingestion of contaminated soil, consumption of contaminated prey, and consumption of contaminated water. Direct contact with contaminated media also is a potential exposure pathway for wildlife, but is considered insignificant due to the protection provided by their external coverings (i.e., fur, feathers, and scales). Amphibians, benthic invertebrates, and fish in Gorst Creek near the site may be affected by direct contact with contaminated water and sediment, ingestion of contaminated water and sediment, and through the food chain, although not all of these exposure pathways are equally significant. Direct contact with sediment typically is considered a minor exposure pathway for fish, amphibians, and many other aquatic organisms (e.g., zooplankton and phytoplankton).

### **D.3.5 Assessment Endpoints and Measures**

Assessment endpoints are expressions of the ecological resources that are to be protected (USEPA 1997). An assessment endpoint consists of an ecological entity and a characteristic of the entity that is important to protect. According to USEPA (1998), assessment endpoints do not represent a desired achievement or goal, and should not contain words such as protect or restore, or indicate a direction for change such as loss or increase. Assessment endpoints are distinguished from management goals by their neutrality (USEPA 1998).

Measurements used to evaluate risks to the assessment endpoints are termed “measures” and may include measures of effect (e.g., results of sediment toxicity tests), measures of exposure (e.g., chemical concentrations in soil) and/or measures of ecosystem and receptor characteristics (e.g., habitat characteristics or water quality conditions) (USEPA 1998). Based on the site ecology, potential site-related contaminants, and preliminary conceptual model, the ecological resources potentially at risk at the site include populations of plants, soil invertebrates, mammals, birds, reptiles, fish, amphibians, and benthic invertebrates that use the landfill surface and/or Gorst Creek near the landfill. The assessment endpoints and measures for these receptor groups are listed in Table D-1.

### **D.3.6 Data Used in Risk Evaluation**

The streamlined ecological risk evaluation is based on soil and sediment data collected in July 2011. In July 2011, seven surface soil samples (LF01SS to LF07SS) were collected from the landfill surface and four sediment samples (GC01SD to GC04SD) were collected from Gorst Creek near the landfill. Two sediment samples (GC01CD and GC02SD) were collected upstream from the landfill and two sediment samples (GC03SD and GC04SD) were collected downstream from the landfill. Sample location maps are provided in Section 1.4.2 and E & E (2011). The samples were analyzed for metals, VOCs, SVOCs, PCBs, and pesticides. In addition, sediment samples were analyzed for toxicity to benthic invertebrates using USEPA (2000) and ASTM (1993) protocols. Surface water samples were not collected in July 2011 because the creek was dry in the site vicinity at that time. Historical data from Hart Crowser (2000)



and E & E (2004) were deemed to not reflect current site conditions and therefore were not used in the ecological risk evaluation.

#### **D.4 Ecological Risk Evaluation**

The ecological risk evaluation is presented under four main headings, one each for the principal assessment endpoints being evaluated: (1) benthic invertebrates; (2) terrestrial vegetation; (3) soil invertebrates; and (4) wildlife. Fish and other aquatic organisms exposed to surface water in Gorst Creek could not be evaluated in the current assessment because no surface water was present in the creek near the site at the time of sampling (July 2011).

##### **D.4.1 Benthic Macroinvertebrates**

Two approaches were used to evaluate risks to benthic macroinvertebrates in Gorst Creek (see Table D-1): (1) sediment chemical concentrations compared with screening levels for effects on freshwater benthic macroinvertebrates and (2) toxicity tests with Gorst Creek sediment. These two measures are discussed in turn below.

###### **D.4.1.1 Sediment Chemical Concentrations Compared with Screening Levels**

Chemical concentrations in Gorst Creek sediment were compared with Threshold Effect Concentrations (TECs) and Probable Effect Concentrations (PECs) from MacDonald et al. (2000). Concentrations less than the TEC are assumed to be nontoxic to benthic macroinvertebrates, while those greater than the PEC often are associated with adverse effects. Samples with chemical concentrations between the TEC and PEC are neither predicted to be toxic or nontoxic (i.e., the screening levels are not intended to provide guidance within this concentration range). If a TEC was not available for a particular chemical, an alternate screening level that was analogous to the TEC was taken from Mac Donald et al. (1999). The sediment data from July 2011 are presented and compared with screening levels in Table D-2. Aroclor 1248 and 1254 marginally exceeded the PEC in one of two sediment samples collected downstream from the landfill. No other chemicals in sediment exceeded the available PECs. Overall, the sediment screening results suggest that only levels of PCBs in sediment downstream from landfill are likely to be great enough to adversely affect benthic macroinvertebrates.

###### **D.4.1.2 Sediment Toxicity Tests**

Two different sediment bioassays were conducted with Gorst Creek sediment: (1) 10-day survival and growth test with *Chironomus dilutus* (midge) and (2) 28-day survival and growth test with *Hyalella azteca* (amphipod). The tests were conducted by Northwest Aquatic Sciences (NAS) following USEPA (2000) and ASTM (1993) protocols. Full test reports from NAS are included in Appendix A. Table D-3 provides a summary of the results. No effects on survival were observed in either test. Three samples (GC01SD, GC03SD, and GC04SD) showed reduced midge growth and two samples (GC01SD and GC03SD) showed reduced amphipod growth compared with clean control sediment. One of the samples that resulted in reduced growth was collected upstream from the landfill. The sample with the lowest midge and amphipod growth (GC03SD, see Table D-3) was collected downstream from the landfill and contained the greatest concentrations of Aroclor 1248 and 1254 (see Table D-2).

##### **D.4.2 Terrestrial Vegetation**

Potential risks to terrestrial vegetation from chemicals in soil were evaluated by comparing soil chemical concentrations with ecological soil screening levels for effects on plant survival, growth, or reproduction from USEPA (2005a, e-g, 2007a-e), Efroymson et al. (1997), or Alloway (1984). The results of the comparisons are shown in Table D-4. Copper, lead, manganese, mercury, nickel, and zinc concentrations in soil exceeded the available screening levels and therefore may be great enough to affect plant growth, reproduction, or survival in some areas of the landfill surface.

#### **D.4.3 Soil Invertebrates**

Potential risks to soil invertebrates from chemicals in soil were evaluated by comparing soil chemical concentrations with ecological soil screening levels for effects on earthworm survival, growth, or reproduction from USEPA (2005c-e, g, 2007a-e). The results of the comparisons are shown in Table D-4. Copper, manganese and zinc concentrations in soil exceeded the available screening levels and therefore may be great enough to adversely affect growth, reproduction, or survival of soil invertebrates in some areas of the landfill surface. However, both copper and manganese exceeded their respective screening level in only one sample, suggesting that potential impacts to soil invertebrates from these metals are limited in extent.

#### **D.4.4 Wildlife**

Two approaches were used to evaluate risks to wildlife at the site (see Table D-1): (1) comparing soil chemical concentrations with screening levels for effects on wildlife and (2) estimating an ingested chemical dose for comparison with a toxicity reference value (hazard quotient [HQ] method). These two measures are discussed in turn below.

##### **D.4.4.1 Surface Soil Chemical Concentrations Compared with Screening Levels**

Potential risks to terrestrial wildlife were evaluated by comparing soil chemical concentrations with ecological soil screening levels (Eco-SSLs) for effects on wildlife. Most of the available wildlife screening levels are based on exposure scenarios with wildlife species that consume soil invertebrates, such as the woodcock and shrew, but a few are based on other wildlife species. For example, the mammalian and avian Eco-SSLs for nickel are based on scenarios with a weasel (carnivore) and dove (herbivore). The results of the comparisons are shown in Table D-4. Soil concentrations of cadmium, chromium, copper, lead, zinc, DDT, and high molecular weight PAHs exceeded the available screening levels and therefore may be great enough to adversely affect growth, reproduction, or survival of wildlife on the landfill.

Unfortunately, soil screening levels for terrestrial wildlife are not available for some metals and most organic compounds. Also, sediment screening levels for effects on wildlife are not available. Hence, comparing chemical concentrations with screening levels does not provide a complete assessment of potential wildlife risks. To address this shortcoming, screening-level exposure estimates and HQs were calculated for four representative wildlife species using maximum detected concentrations of chemicals in surface soil and sediment. Details are provided in the following section.

##### **D.4.4.2 Wildlife Risk Evaluation**

This section presents an evaluation of potential risks to wildlife at the Gorst Creek – Bremerton Auto Wrecking site. The evaluation was performed in accordance with state, federal, and other available guidance for ecological risk assessment (e.g., USEPA 1997, 1998, 2005a; Sample *et al.* 1996). The wildlife risk evaluation consists of three parts: (1) exposure assessment, (2) ecological effects assessment, and (3) risk characterization. The exposure assessment estimates wildlife exposure to site-related chemicals using measured concentrations of chemicals in environmental media and exposure parameters for the chosen receptor species. The ecological effects assessment summarizes the potential toxic effects of site-related chemicals on wildlife by selecting a toxicity reference value for each chemical for each receptor. The risk characterization combines the results of the exposure and ecological effects assessments to provide an estimate of potential risk to wildlife at the site.

###### **D.4.4.2.1 Exposure Assessment**

This section discusses potential wildlife exposures to chemicals at the site. Potential receptors and exposure pathways were generally discussed in Section D.3.3 and identified in the ecological conceptual site model (see Figure 1-6). This section describes specific wildlife exposure scenarios that will be

evaluated in the assessment; estimates of concentrations of chemicals in soil, sediment, and prey; and quantifies exposure.

#### **D.4.4.2.1.1 Wildlife Exposure Scenarios and Pathways**

Four wildlife species representing different functional groups were selected as receptors for the assessment: (1) American robin (*Turdus migratorius*); (2) masked shrew (*Sorex cinereus*); (3) barn swallow (*Hirundo rustica*); (4) raccoon (*Procyon lotor*). The robin and shrew have relatively small home ranges and could derive a large portion of their food and habitat requirements from the site. In addition, both the robin and shrew feed extensively on soil invertebrates, such as earthworms, and therefore are often highly exposed to contaminants in soil. The raccoon is an omnivorous mammal that often forages in aquatic habitats. Given its foraging behavior, the raccoon is likely to use Gorst Creek near the landfill, where it may be exposed to site-related chemicals in water, sediment, and prey. Lastly, the barn swallow is an insectivorous songbird that readily consumes emergent aquatic insects in riparian settings. The barn swallow also may be exposed to chemicals in sediment while collecting mud for nest building.

For these four wildlife receptors, this assessment evaluates exposure from incidental ingestion of contaminated soil or sediment and consumption of contaminated prey. Exposure through drinking was not quantitatively evaluated because consumption of surface water typically accounts for only a small fraction of the total chemical exposure for wildlife. This results from the fact that chemicals occur in soil, sediment, and biota at much greater concentrations (part per million concentration range) than in surface water (part per billion concentration range). Direct contact with contaminated media is considered an insignificant route of exposure for wildlife due to the protection provided by fur and feathers and therefore was not quantitatively evaluated. A summary of important life-history characteristics of the chosen receptor species is provided below.

**American Robin** – The American robin is a common resident of open areas, woodland edges, and early successional habitats (USEPA 1993b). The makeup of the diet varies seasonally, with invertebrates making up the majority of food items during the spring and early summer. During this time, robins feed on the ground, searching the soil and leaf litter for invertebrates, such as earthworms. Robins establish small territories during the breeding season, and potentially could reside entirely within the area provided by the site. Northern populations typically winter in southern locations.

**Masked Shrew** – The masked shrew is the most common shrew in moist forests, open country, and brush in the northern United States and throughout Canada and Alaska (USEPA 1993b). It feeds primarily on invertebrates, including insects, earthworms, slugs, and snails. Vertebrates and plants typically make up a minor component of the diet. The species is active year-round. Shrews have a small home range (USEPA 1993b); therefore, the masked shrew could reside entirely within the area provided by the site.

**Raccoon** – The raccoon is the most abundant and widespread medium-sized omnivore in North America. Raccoons are found near virtually every aquatic habitat (USEPA 1993b). They also are common in suburban residential areas and cultivated and abandoned farmlands. Raccoons use surface water bodies for both drinking and foraging. The raccoon is an omnivore and opportunistic feeder. They feed primarily on fleshy fruits, nuts, acorns, and corn, but also eat grain, insects, frogs, crayfish, eggs, and virtually any animal and vegetable matter. The proportion of the diet depends on location and season, although plant material is usually a more important component of the diet than animal material. Typically, it is only in the spring and early summer that raccoons eat more animal than plant material. The size of a raccoon's home range depends on several factors, including its sex and age, habitat quality, food sources, and season. Values from a few hectares to more than a few thousand hectares have been reported, although home ranges of several hundred hectares appear to be most common (USEPA 1993b). Raccoons may forage in Gorst Creek near the site.

**Barn Swallow** – The barn swallow is an insectivorous songbird that readily consumes emergent aquatic insects in stream and lake settings (Bent 1963). The barn swallow was conservatively assumed to feed entirely on emergent (adult forms) of aquatic insects from Gorst Creek. Barn swallows also could be exposed to chemicals in creek sediment while collecting mud for nest building. Barn swallows reside in the Puget Sound area from mid-April to mid-October (Wahl 1995).

#### **D.4.4.2.1.2 Wildlife Exposure Calculations**

The total chemical exposure for wildlife was calculated as the sum of exposures from diet and incidental soil or sediment ingestion. As noted above, chemical exposure from surface-water consumption was not quantitatively evaluated. Dietary exposure is calculated by multiplying the chemical concentration in each food item by its fraction of the total diet and summing the contribution from each item. This sum is then multiplied by the receptor's site use factor (SUF), exposure duration (ED), and ingestion rate (IR), and divided by the receptor's body weight (BW), as shown in the following equation:

$$EE_{\text{diet}} = [(C_1 \times F_1) + (C_2 \times F_2) + \dots (C_n \times F_n)] \times \text{SUF} \times \text{ED} \times \text{IR} / \text{BW}$$

where:

$EE_{\text{diet}}$  = Estimated exposure from diet (mg/kg-day);

$C_n$  = Chemical concentration in food item  $n$  (mg/kg dry weight);

$F_n$  = Fraction of diet represented by food item  $n$ ;

SUF = Site use factor (unitless);

ED = Exposure duration (unitless), equal to fraction of year spent at site;

IR = Ingestion rate of receptor (kg/day dry weight); and

BW = Body weight of receptor (kg).

The site use factor (SUF) indicates the portion of an animal's home range represented by the site. If the home range is larger than the site, the SUF equals the site area divided by the home range area. If the site area is greater than or equal to the home range, the SUF is equal to 1. Exposure duration (ED) is the percentage of the year spent in the site area by the receptor species. Home-range size, IR, and BW for the robin, shrew, swallow, and raccoon were taken from USEPA (1993b), Sample and Suter (1994), and Sample *et al.* (1996). The values are presented in Table X-5. Critical exposure assumptions are described in the following section.

Wildlife exposure to chemicals through incidental ingestion of soil/sediment is estimated in a manner similar to dietary exposure. Specifically, the soil/sediment chemical concentration is multiplied by the soil/sediment IR and then multiplied by the SUF and ED and divided by BW. Soil/sediment ingestion estimates for the receptor species were taken from Sample and Suter (1994), Sample *et al.* (1996), and Beyer *et al.* (1994). The values are presented in Table X-5.

The total exposure for a receptor is the sum of exposure from diet and soil/sediment ingestion, as represented by the following equation:

$$EE_{\text{total}} = EE_{\text{diet}} + EE_{\text{soil/sediment}}$$

where:

$EE_{\text{total}}$  = Total exposure (mg/kg-day);

$EE_{\text{diet}}$  = Estimated exposure from diet (mg/kg-day);

$EE_{\text{soil/sediment}}$  = Estimated exposure from soil/sediment ingestion (mg/kg-day).

#### **D.4.4.2.1.3 Screening-Level Exposure Assumptions**

**Diet** -- The robin and shrew were conservatively assumed to prey entirely on earthworms. Earthworms were chosen as a representative prey item for these receptors because earthworms typically are abundant in surface soil, are important in the diets of shrews and robins, and have been well studied compared with other groups of soil invertebrates. The diet of the swallow was conservatively assumed to consist entirely of emergent aquatic insects from Gorst Creek. Swallows often prey on midges, mayflies, and other emergent aquatic insects. The diet of the raccoon was conservatively assumed to consist entirely of crayfish from Gorst Creek. Crayfish were chosen as a representative aquatic prey species for the raccoon because they typically are abundant in small streams and are readily eaten by raccoons (USEPA 1993b). Table D-5 summarizes the assumed diets. Contaminant levels in earthworms, benthic invertebrates, and crayfish were estimated as described below.

**Site Use Factor (SUF) and Exposure Duration (ED)** -- To provide a conservative estimate of exposure to site-related chemicals, the SUF and ED were assumed to be 1 for all receptors. That is, the site was assumed to be a closed system and the shrew, robin, swallow, and raccoon were assumed to derive all of their food and habitat requirements from the landfill or Gorst Creek near the landfill. For this assessment, the robin and shrew were assumed to forage exclusively on the landfill surface and the swallow and raccoon were assumed to forage exclusively along Gorst Creek near the landfill. These assumptions are highly conservative and often are used in screening-level risk calculations to avoid overlooking chemicals that may be of concern for wildlife (USEPA 1997).

#### **D.4.4.2.1.4 Exposure Point Concentrations**

**Soil** -- Maximum surface soil chemical concentrations were used as the exposure point concentrations (EPCs) to estimate exposure for the robin and shrew. The soil EPCs were used for two purposes: (1) to estimate exposure from incidental soil ingestion; and (2) to model chemical concentrations in earthworms, the assumed prey for the shrew and robin. Soil EPCs are listed in Table D-6.

**Earthworms** -- Chemical concentrations in earthworms were modeled from the soil EPCs using soil-to-earthworm bioaccumulation factors (BAFs) and uptake equations from USEPA (2005a) and Sample *et al.* (1998). If a BAF or uptake equation was not available, a soil-to-earthworm uptake factor of 1 was assumed (i.e., earthworm chemical concentration was set equal to the soil chemical concentration). Table D-6 lists the soil-to-earthworm uptake factors and equations and earthworm EPCs used in the assessment.

**Sediment** -- The maximum detected concentration was used to estimate wildlife exposure to chemicals in sediment. The sediment EPCs were used for two purposes: (1) to estimate exposure from incidental sediment ingestion for the swallow and raccoon; and (2) to model chemical concentrations in benthic invertebrates and crayfish, the assumed prey of the swallow and raccoon, respectively. Sediment EPCs are listed in Table D-7.

**Benthic Invertebrates** -- Chemical concentrations in benthic invertebrates, including crayfish, were modeled from the sediment EPC using biota-sediment accumulation factor (BSAFs) and equations developed by Bechtel Jacobs (1998). For metals not addressed by Bechtel Jacobs (1998), a BSAF of 1 was assumed (i.e., the prey chemical concentration was set equal to the sediment EPC). The benthic invertebrate EPCs are listed in Table D-7.

#### **D.4.4.2.2 Ecological Effects Assessment**

No observed adverse effect levels (NOAELs) and lowest observed adverse effect levels (LOAELs) for chemicals of interest were taken from USEPA (2008, 2007a to g, 2005b to f) and Sample *et al.* (1996). The values and sources are listed in Table D-8. The NOAELs and LOAELs were not scaled for

differences in body weight between the test species and wildlife receptors being evaluated because this practice is no longer considered appropriate (Allard et al. 2009). Therefore, information on test-species body weight is not included in Table D-8.

#### **D.4.4.2.3 Wildlife Risk Characterization**

The potential risks posed by site-related chemicals were determined by calculating a hazard quotient (HQ) for each contaminant for each endpoint species. The HQ was determined by dividing the total exposure ( $EE_{total}$ ) by the NOAEL or LOAEL, as shown in the following equations:

$$HQ-NOAEL = EE_{total}/NOAEL$$

$$HQ-LOAEL = EE_{total}/LOAEL$$

For a given receptor and chemical, a HQ-NOAEL greater than 1 indicates that the estimated exposure exceeds the highest dose at which no adverse effect was observed. Such a result does not necessarily imply that the receptor is at risk, especially if the HQ-NOAEL is only marginally above 1. An HQ-LOAEL greater than 1 suggests that a chronic adverse affect is possible to an individual receptor, assuming that the estimated exposure for that receptor is accurate. Tables D-9 to D-12 list the estimated exposures from food and soil/sediment ingestion, total exposure, and HQs for the robin, shrew, swallow, and raccoon.

##### **D.4.4.2.3.1 Terrestrial Wildlife Risks**

Aroclor 1254, cadmium, chromium, copper, lead, nickel, and zinc were predicted to pose a potential risk to the American robin (see Table D-9). Cadmium, copper, lead, nickel and zinc were predicted to pose a potential risk to the masked shrew (see Table D-10). Lead appears to pose the greatest potential risks for both receptors based on the magnitude of the HQs (HQ-LOAEL of 20 for the American robin and 5.9 for the masked shrew).

##### **D.4.4.2.3.2 Aquatic-Dependent Wildlife Risks**

Aroclor 1248, 1254, and 1260 and copper and manganese were predicted to pose a potential risk to the barn swallow (see Table D-11). Aroclor 1248 and 1254 and manganese were predicted to pose a potential risk to the raccoon (see Table D-12). Except for the HQ-NOAELs for the Aroclors for the swallow, the HQs for the chemicals posing a potential risk to the swallow and raccoon were only marginally above 1.

As noted above, the exposure estimates and risks in Tables D-9 to D-11 are based on maximum chemical concentrations in surface soil or sediment and the assumption that all four receptors forage only at the site on a year-round basis. The following section examines the sensitivity of the exposure estimates and risks to changes in these assumptions

##### **D.4.4.2.4 Effect of Exposure Duration, Site Use Factor, and Exposure Point Concentration on Wildlife Risks**

To provide a more realistic evaluation of risks to wildlife, the SUF, ED, and EPCs were changed as follows:

- For the robin and swallow, the ED was changed from 1.0 to 0.5 to account for the migratory behavior of these species.
- For the robin and shrew, the 95% upper confidence limit (UCL) on the average chemical concentration in soil was used as the soil EPC. ProUCL Version 4 software was used to calculate UCLs for surface soil using data for the seven surface soils samples collected in July 2011. It was not possible to revise the sediment EPCs for the swallow and raccoon because only four

sediment samples were collected in July 2011, too few to support calculation of a UCL.

- For the swallow, the exposure estimates and risks were recalculated assuming that the swallow only forages on emergent aquatic insects from Gorst Creek near the site when the creek contains water, which was assumed to be 50% of the time between mid-April and mid-October.
- For the raccoon, the exposure estimates and risks were recalculated based on a more realistic SUF of 0.0003. This SUF is based on the approximate area of the Gorst Creek ravine near the site (0.2 ha) divided by the average home range size for this receptor (630 ha; USEPA 1993b).

Table D-13 illustrates the effects of these changes on the HQs for these receptors (only chemicals with HQs greater than 1 in Tables D-9 to D-12 are included in Table D-13). The following points are noteworthy:

- No chemicals are predicted to pose a risk to the raccoon when receptor-specific estimates of the SUF and ED are used.
- For the barn swallow, only Arcolor 1254 remains as a COPC; however, because the HQ-NOAEL for Aroclor 1254 is only marginally greater than 1, and because the HQ-LOAEL is much less than 1, it seems unlikely that Aroclor 1254 poses an actual risk to this receptor.
- For the American robin, cadmium, lead, and zinc remain as COPCs. However, because the HQ-NOAEL for cadmium only marginally exceeds 1, it seems unlikely that cadmium poses an actual risk to the robin.
- For the masked shrew, cadmium, lead, nickel, and zinc remain as COPCs.

The recalculated HQs in Table D-13 are referred to as “moderately conservative” because they still incorporate several conservative assumptions. For example, the recalculated HQs for the robin and shrew both assume a SUF of 1, which implies that these receptors forage only on the landfill surface. In all likelihood, these receptors probably forage more often on nearby areas with better natural habitat. Also, the recalculated HQs for the swallow and raccoon are based on maximum detected chemical concentrations in sediment because a UCL cannot be calculated from four samples, as noted above.

The final HQ results in Table D-13 (moderately conservative case) differ from the screening results for wildlife in Table D-4 in several noteworthy ways;

- The final HQ results in Table D-13 do not predict a potential risk to terrestrial wildlife from chromium, DDT, and high molecular weight PAHs in soil, whereas the screening results in Table D-4 do.
- The final HQ results in Table D-13 suggest that PCBs may be a concern for terrestrial wildlife. The screening results in Table D-4 are inconclusive for PCBs because an ecological soil screening level for PCBs for wildlife is not available.
- The final HQ results in Table D-13 suggest that aquatic-dependent wildlife (swallow and raccoon) are unlikely to be at risk from chemicals in Gorst Creek sediment. The screening results in Table D-4 are inconclusive for aquatic-dependent wildlife because sediment screening levels for effects on wildlife are not available.

In general, the HQ approach for evaluating risks to wildlife is more thorough and flexible than the simple screening approach used in Table D-4 because it allows one to examine a wider range of potential receptors, a greater number of chemicals, and the sensitivity of the risk estimates to the assumptions used. For these reasons, the wildlife risk results based on the HQ approach will be given priority over those based on simple screening when drawing conclusions about potential ecological risks to wildlife at the site.

## D.5 Uncertainties

Significant sources of uncertainty in this ecological risk assessment include the following:

- **Bioavailability** – The bioavailability of chemicals in environmental media at the site is poorly understood. To be conservative, it was assumed that 100% of the chemicals in soil and sediment were bioavailable to all ecological receptors. If bioavailability is less than 100%, which seems likely, the potential risks to all categories of ecological receptors would be correspondingly lower.
- **Reliability of Soil Benchmarks** – Many of the available soil screening benchmarks for plants and soil invertebrates (i.e. earthworms) were developed from laboratory studies in which chemical solutions were added to clean soil to arrive at a range of test concentrations. In such studies, the added chemicals are highly bioavailable. Comparing total chemical concentrations in field samples to solution-based soil benchmarks is conservative and likely results in an overestimation of risk. For aluminum, USEPA (2003) has deemed that such a comparison is inappropriate.
- **Availability of Soil Benchmarks** – As indicated in Tables D-2 and D-4, screening benchmarks are not available for all chemicals in all media. For example, soil screening benchmarks for plants and soil fauna are not available for many volatile and semivolatile organic compounds and pesticides. Hence, risks to certain receptor groups from certain chemicals could not be evaluated.
- **Chemicals in Surface Water** – Recent data for chemicals in surface water are not available because no surface water was present in Gorst Creek near the site July 2011.
- **Chemicals in Wildlife Prey** – Food-chain transfer of chemicals at the site is poorly understood. The potential risks to wildlife at the site are largely driven by estimated concentrations of chemicals in wildlife prey. For this assessment, prey concentrations were estimated from measured soil and sediment concentrations using uptake factors from the literature. Or, if a literature-based uptake factor was not available, it was assumed that the prey concentration was the same as the soil or sediment concentration. The uncertainty associated with this approach often is high because a number of site-specific factors affect food-chain transfer of chemicals. In general, the uptake factors used in this assessment are intended to provide a conservative estimate of chemicals in wildlife prey and are likely to result in an overestimation of risk.
- **Wildlife Diet** – Uncertainty may result from the assumptions made about the diets of the wildlife receptors evaluated in this assessment. For the shrew and robin, the assumption of a diet consisting entirely of earthworms is conservative. In addition to earthworms, shrews consume other invertebrates (i.e. slugs, snails, centipedes, and various insects), fungi, plant materials, and small mammals (USEPA 1993b). Similarly, robins also consume other invertebrates (i.e., spiders, sowbugs, and various insects) and plant materials (USEPA 1993b). These foods are less intimately associated with the soil matrix than earthworms, and thus accumulate lesser amounts of soil contamination. The diet assumed for the shrew and robin in this assessment likely



overestimates exposure and risks from chemicals in soil. The diet assumed for the raccoon (100% crayfish from Gorst Creek) also is highly conservative. Raccoons typically consume a considerable amount of plant material.

- **Chemical Concentrations in Environmental Media** – For sediment, the small sample size (4 samples) necessitated use of the maximum detected concentration to estimate wildlife risks. Although a larger sample size was available for surface soil (7 samples), the distribution of the data for some chemicals (e.g., lead) necessitated using the maximum detected concentration to estimate wildlife risks. Use of the maximum lead soil concentration in the wildlife risk evaluation likely resulted in an overestimate of potential risks to terrestrial wildlife from lead.

#### D.6 Summary

The assessment endpoints for this risk evaluation were stated in Table D-1 and include: terrestrial vegetation, soil invertebrates, wildlife, benthic invertebrates, and fish and other aquatic organisms exposed to surface water. Table D-14 provides a summary of the chemical that may pose a potential risk to these assessment endpoints. The following points are noteworthy.

- **Terrestrial Vegetation** – Potential risks to terrestrial plants on the landfill surface were evaluated by comparing soil chemical concentrations to screening benchmarks for effects on plant survival, growth, or reproduction. Based on these comparisons, copper, lead, manganese, mercury, nickel, and zinc in soil may pose a potential risk to terrestrial plants in some areas of the landfill surface.
- **Soil Invertebrates** – Potential risks to soil invertebrates on the landfill surface were evaluated by comparing soil chemical concentrations to screening benchmarks for effects on survival, growth, or reproduction or earthworms. Based on these comparisons, copper, manganese and zinc in soil may pose a potential risk to soil invertebrates in some areas of the landfill surface. Potential risks from copper and manganese are restricted to a single location, whereas the risks from zinc appear to be more widespread.
- **Birds and Mammals** – Based on food-chain modeling, cadmium, lead, nickel, and zinc in soil are likely to pose a risk to song birds and small mammals that feed extensively on soil invertebrates, such as the American robin and masked shrew. Risks to aquatic-dependent wildlife that may forage in Gorst Creek near the site appear to be minimal. This conclusion is based on the result that no LOAEL-based HQs exceeded the critical value of 1.0 for the swallow or raccoon.
- **Benthic Invertebrates** – Potential risks to benthic macroinvertebrates were evaluated by comparing sediment chemical concentrations with sediment screening levels and by conducting toxicity tests with Gorst Creek sediment. The sediment screening results suggest that levels of PCBs in sediment downstream from landfill are great enough to adversely affect benthic macroinvertebrates. The sediment toxicity tests found no effects on survival of laboratory-reared organisms (midge larvae and amphipods) in Gorst Creek sediment. However, three sediment samples showed reduced midge growth and two samples showed reduced amphipod growth compared with clean control sediment. The sample with the lowest midge and amphipod growth (GC03SD) contained the greatest concentrations of Aroclor 1248 and 1254. This sample was collected downstream from the landfill and upstream from Highway 3
- **Fish, Amphibian, and Other Aquatic Organisms Exposed to Surface Water** – No surface water samples were collected in July 2011 because Gorst Creek near the landfill was dry. Hence, potential risks to this assessment endpoint from site-related chemicals were not evaluated.

Overall, this evaluation identified potential risks to several ecological receptor groups using the landfill surface or Gorst Creek near the landfill. On the landfill surface, terrestrial plants, soil invertebrates, and wildlife (songbird and small mammals) may be at risk from high levels of metals in soil; cadmium, lead, nickel, and zinc pose the greatest potential risks. In Gorst Creek downstream from the landfill, sediment PCB levels are great enough to reduce growth of benthic macroinvertebrates. Birds and mammals using the creek are unlikely to be adversely affected by current levels of chemicals in sediment.

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Table D-1. Assessment Endpoints and Measures for Gorst Creek - Bremerton Auto Wrecking Landfill Streamlined Ecological Risk Evaluation.

| Assessment Endpoint   | Risk Question  | Measure Selected for Streamlined Ecological Risk Evaluation   | Analysis Approach  |
|---|--|---|--|
| <b>Terrestrial Vegetation</b>   |  |   |  |
| Survival, growth, and reproduction or terrestrial plants                        | Are levels of contaminants in surface soil from the site greater than benchmarks for effects on survival, growth, or reproduction of terrestrial plants?                     | Chemical concentrations in soil.  | Compare soil chemical concentrations with literature-based toxicity thresholds.  |
| <b>Soil Invertebrates</b>   |  |   |  |
| Survival, growth, and reproduction or soil invertebrates                        | Are levels of contaminants in surface soil from the site greater than benchmarks for effects on survival, growth, or reproduction of soil invertebrates?                     | Chemical concentrations in soil.  | Compare soil chemical concentrations with literature-based toxicity thresholds.  |
| <b>Birds</b>  |  |   |  |
| Survival, growth, and reproduction or birds                                     | Are levels of contaminants in surface soil from the site greater than benchmarks for the survival, growth, or reproduction of birds?   | Chemical concentrations in soil.  | Compare soil chemical concentrations with literature-based toxicity thresholds.  |
|   | Does the daily dose of chemicals received by birds from consumption of prey and other media at the site exceed TRVs for survival, growth, or reproduction of birds?          | Chemical concentration in surface water, sediment, soil, and modeled or measured tissue concentrations in prey species. | Modeled dose from diet, surface water ingestion, and incidental ingestion of soil or sediment compared with literature-based TRVs.   |
| <b>Mammals</b>  |  |   |  |
| Survival, growth, and reproduction or mammals                                   | Are levels of contaminants in surface soil from the site greater than benchmarks for the survival, growth, or reproduction of mammals?                                       | Chemical concentrations in soil.  | Compare soil chemical concentrations with literature-based toxicity thresholds.  |
|   | Does the daily dose of chemicals received by mammals from consumption of prey and other media at the site exceed TRVs for survival, growth, or reproduction of mammals?      | Chemical concentration in surface water, sediment, soil, and modeled or measured tissue concentrations in prey species. | Modeled dose from diet, surface water ingestion, and incidental ingestion of soil or sediment compared with literature-based TRVs.   |
| <b>Reptiles</b>   |  |   |  |
| Survival, growth, and reproduction or reptiles                                  | None. Quantitative methods for evaluating the toxicity of contaminants to reptiles are poorly developed.   | None.   | None.  |
| <b>Benthic Invertebrates</b>  |  |   |  |
| Survival, growth, and reproduction or benthic invertebrates                     | Are levels of contaminants in sediment from Gorst Creek greater than sediment benchmarks for survival, growth, or reproduction of benthic invertebrates?                     | Chemical concentrations in sediment.  | Compare sediment chemical concentrations with literature-based toxicity thresholds.  |
|   | Are survival and growth of benthic invertebrates exposed to sediment downstream from the Gorst Creek landfill significantly lower than those exposed to reference sediments? | Survival and growth of benthic invertebrates in laboratory toxicity tests.  | Compare survival and growth of laboratory-reared benthic invertebrates in sediment collected upstream and downstream from the Gorst Creek Landfill. Use growth and survival tests with the freshwater amphipod ( <i>Hyalella azteca</i> ) and midge ( <i>Chironomus dilutus</i> ). |
| <b>Fish, Amphibians, and Other Aquatic Biota</b>                                |  |   |  |
| Survival, growth, and reproduction or fish, amphibians, and other aquatic biota | Are levels of contaminants in surface water from Gorst Creek greater than water quality criteria and standards for protection of aquatic life?                               | Chemical concentrations in surface water.   | Compare surface water chemical concentrations with federal and state water quality criteria and standards.   |

Key:  
TRVs = toxicity reference values

Table D-2. Gorst Creek Sediment Ecological Screening Results (July 2011 Samples).

| Analyte <sup>a</sup>                                  | Sediment Screening Levels |      |                    | Sample Number, Location, and Concentration            |                                      |                                      |                                 |
|---|---------------------------|------|--------------------|---|--------------------------------------|--------------------------------------|---------------------------------|
|   |                           |      |                    | GC01SD  | GC02SD                               | GC03SD                               | GC04SD                          |
|   |                           |      |                    | 11070002  | 11070001                             | 11070004                             | 11070003                        |
|   | TEC                       | PEC  | Other <sup>b</sup> | 150 feet<br>Upstream from<br>Landfill<br>(background) | 50 feet<br>Upstream from<br>Landfill | Between<br>Landfill and<br>Highway 3 | Downstream<br>from Highway<br>3 |
| <b>Metals (mg/kg)</b>                                 |                           |      |                    |   |                                      |                                      |                                 |
| Aluminum  | --                        | --   | 58,000             | 11900   | 13400                                | 12300                                | 11200                           |
| Arsenic   | 9.8                       | 33   | --                 | 2.03  | 2.42                                 | 1.73                                 | 1.11                            |
| Barium  | --                        | --   | --                 | 43.6  | 68.4                                 | 54.7                                 | 44.8                            |
| Beryllium   | --                        | --   | --                 | 0.119   | 0.197                                | 0.168                                | 0.181                           |
| Cadmium   | 1                         | 4.98 | --                 | 0.111   | 0.133                                | 0.522                                | 0.605                           |
| Calcium   | --                        | --   | --                 | 3100  | 3130                                 | 3090                                 | 2860                            |
| Chromium  | 43.4                      | 111  | --                 | 22.5  | 23.5                                 | 18.1                                 | 19.6                            |
| Cobalt  | --                        | --   | 50                 | 7.32  | 16.9                                 | 5.53                                 | 6.13                            |
| Copper  | 31.6                      | 149  | --                 | 9.94  | 8.94                                 | 38.5                                 | 30.5                            |
| Iron  | --                        | --   | 21,200             | 16600   | 17500                                | 14600                                | 14400                           |
| Lead  | 35.8                      | 128  | --                 | 2.57  | 4.57                                 | 35.3                                 | 25.5                            |
| Magnesium   | --                        | --   | --                 | 4360  | 3540                                 | 4050                                 | 4600                            |
| Manganese   | --                        | --   | 460                | 505   | 1160                                 | 239                                  | 237                             |
| Mercury   | 0.18                      | 1.06 | --                 | 0.0251  | 0.00713                              | 0.0593                               | 0.0442                          |
| Nickel  | 22.7                      | 48.6 | --                 | 29.6  | 35.7                                 | 33.4                                 | 32.3                            |
| Potassium   | --                        | --   | --                 | 334   | 281                                  | 426                                  | 419                             |
| Sodium  | --                        | --   | --                 | 123   | 88.5                                 | 94.4                                 | 113                             |
| Zinc  | 121                       | 459  | --                 | 35.4  | 41                                   | 130                                  | 115                             |
| <b>Semivolatile Organic Compounds (µg/kg)</b>         |                           |      |                    |   |                                      |                                      |                                 |
| All compounds   | --                        | --   | --                 | ND  | ND                                   | ND                                   | ND                              |
| <b>Polychlorinated Biphenyls (µg/kg)</b>              |                           |      |                    |   |                                      |                                      |                                 |
| Aroclor 1248  | 60                        | 676  | --                 | ND  | ND                                   | 746                                  | 437                             |
| Aroclor 1256  | 60                        | 676  | --                 | ND  | ND                                   | 908                                  | 84                              |
| Aroclor 1260  | 60                        | 676  | --                 | ND  | 7.2                                  | 516                                  | 248                             |
| <b>Pesticides (µg/kg)</b>                             |                           |      |                    |   |                                      |                                      |                                 |
| All compounds   | --                        | --   | --                 | ND  | ND                                   | ND                                   | ND                              |
| <b>Volatile Organic Compounds (µg/kg)<sup>c</sup></b> |                           |      |                    |   |                                      |                                      |                                 |
| 4-Isopropyltoluene                                    | --                        | --   | --                 | ND  | ND                                   | ND                                   | 3.19                            |
| Acetone   | --                        | --   | --                 | 2.7   | ND                                   | ND                                   | 3.85                            |
| Styrene   | --                        | --   | --                 | ND  | ND                                   | 0.426                                | ND                              |

## Key:

-- = Not available or not applicable

ND = Non-detect

PEC = Probable effect concentration (MacDonald et al. 2000)

TEC = Threshold effect concentration (MacDonald et al. 2000)

Value = Exceeds TEC or other benchmark.

Value = Exceeds PEC. Adverse effect likely.

## Notes:

a = Detected chemicals only are listed.

b = From MacDonald et al. (1999); screening level analogous to TEC.

c = VOCs do not accumulate in sediment; hence, sediment benchmarks typically are not available for VOCs.

Table D-3. Gorst Creek Sediment Bioassay Results (July 2011 Samples).

| E & E<br>Sample ID  | Laboratory<br>Sample ID | Sample Location                 | 10-day <i>Chironomus dilutus</i> (Midge) Test Results |   |   |   | 28-day <i>Hyalella azteca</i> (Amphipod) Test Results |   |  |   |
|---------------------|-------------------------|---------------------------------|---|---|---|---|---|---|--|---|
|                     |                         |                                 | % Mortality<br>(mean $\pm$ s.d.)                      | Significantly<br>Different<br>than Control<br>( $p < 0.05$ )? | Average ash<br>free dry weight<br>per midge (mg)<br>(mean $\pm$ s.d.) | Significantly<br>Different<br>than Control<br>( $p < 0.05$ )? | % Mortality<br>(mean $\pm$ s.d.)                      | Significantly<br>Different<br>than Control<br>( $p < 0.05$ )? | Average ash free<br>dry weight per<br>amphipod (mg)<br>(mean $\pm$ s.d.) | Significantly<br>Different<br>than Control<br>( $p < 0.05$ )? |
| Control             | --                      | Clean control sediment.         | 15.0 $\pm$ 5.3  | --  | 0.85 $\pm$ 0.13   | --  | 5.0 $\pm$ 10.7  | --  | 0.50 $\pm$ 0.08  | --  |
| CG01SD <sup>a</sup> | 11070002                | 150 ft upstream from landfill.  | 16.3 $\pm$ 5.2  | No  | 0.73 $\pm$ 0.11   | Yes   | 11.3 $\pm$ 9.9  | No  | 0.40 $\pm$ 0.06  | Yes   |
| GC02SD              | 11070001                | 50 ft upstream from landfill.   | 28.8 $\pm$ 19.6                                       | No  | 0.81 $\pm$ 0.18   | No  | 3.8 $\pm$ 5.2   | No  | 0.52 $\pm$ 0.07  | No  |
| GC03SD              | 11070004                | Between landfill and Highway 3. | 11.4 $\pm$ 6.4  | No  | 0.59 $\pm$ 0.10   | Yes   | 3.8 $\pm$ 5.2   | No  | 0.33 $\pm$ 0.04  | Yes   |
| GC04SD              | 11070003                | Downstream from Highway 3.      | 13.8 $\pm$ 11.9                                       | No  | 0.71 $\pm$ 0.09   | Yes   | 6.3 $\pm$ 7.4   | No  | 0.50 $\pm$ 0.12  | No  |

Key:

ft = feet

p = probability

s.d. = standard deviation

Note: a = Site-specific background sample.



Table D-4. Surface Soil Ecological Screening Results for Samples Collected in July 2011, Gorst Creek - Bremerton Auto Wrecking Landfill.

| Analyte <sup>a</sup>                            | Minimum Detect | Maximum Detect | FoD | Ecological Benchmarks for Soil and Frequency of Exceedance |     |                           |     |                   |     |                     |     | COPC? | Rationale <sup>d</sup> |
|---|----------------|----------------|-----|--|-----|---------------------------|-----|-------------------|-----|---------------------|-----|-------|------------------------|
|   |                |                |     | Plant <sup>b</sup>   |     | Soil Invert. <sup>c</sup> |     | Bird <sup>c</sup> |     | Mammal <sup>c</sup> |     |       |                        |
|   |                |                |     | Value  | FoE | Value                     | FoE | Value             | FoE | Value               | FoE |       |                        |
| Metals (mg/kg)                                  |                |                |     |  |     |                           |     |                   |     |                     |     |       |                        |
| Aluminum  | 9160           | 19300          | 7/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | No    | MSC                    |
| Arsenic   | 1.25           | 10.1           | 7/7 | 18   | 0/7 | --                        | --  | 43                | 0/7 | 46                  | 0/7 | No    | < SL                   |
| Barium  | 47.4           | 194            | 7/7 | --   | --  | 330                       | 0/7 | --                | --  | 2000                | 0/7 | No    | < SL                   |
| Beryllium                                       | 0.132          | 0.269          | 7/7 | --   | --  | 40                        | 0/7 | --                | --  | 21                  | 0/7 | No    | < SL                   |
| Cadmium   | 0.0942         | 3.24           | 7/7 | 32   | 0/7 | 140                       | 0/7 | 0.77              | 3/7 | 0.36                | 5/7 | Yes   | SL-W                   |
| Calcium   | 3150           | 14100          | 7/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | No    | NUT                    |
| Chromium  | 19.6           | 47.8           | 7/7 | 75   | 0/7 | --                        | --  | 26                | 3/7 | 34                  | 1/7 | Yes   | SL-W                   |
| Cobalt  | 5.08           | 9.93           | 7/7 | 13   | 0/7 | --                        | --  | 120               | 0/7 | 230                 | 0/7 | No    | < SL                   |
| Copper  | 10.7           | 83.1           | 7/7 | 70   | 1/7 | 80                        | 1/7 | 28                | 3/7 | 49                  | 1/7 | Yes   | SL-P, SL-I, SL-W       |
| Iron  | 9940           | 23500          | 7/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | No    | MSC                    |
| Lead  | 3.21           | 691            | 7/7 | 120  | 2/7 | 1700                      | 0/7 | 11                | 6/7 | 56                  | 3/7 | Yes   | SL-P, SL-W             |
| Mercury   | 0.00943        | 1.28           | 7/7 | 0.3  | 2/7 | --                        | --  | --                | --  | --                  | --  | Yes   | SL-P                   |
| Magnesium                                       | 3170           | 5520           | 7/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | No    | NUT                    |
| Manganese                                       | 168            | 654            | 7/7 | 220  | 6/7 | 450                       | 1/7 | 4300              | 0/7 | 4000                | 0/7 | Yes   | SL-P, SL-I             |
| Nickel  | 21.8           | 44.8           | 7/7 | 38   | 3/7 | 280                       | 0/7 | 210               | 0/7 | 130                 | 0/7 | Yes   | SL-P                   |
| Potassium                                       | 382            | 868            | 7/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | No    | NUT                    |
| Selenium  | 0.405          | 0.405          | 1/7 | 0.52   | 0/7 | 4.1                       | 0/7 | 1.2               | 0/7 | 0.63                | 0/7 | No    | < SL                   |
| Sodium  | 74.2           | 358            | 7/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | No    | NUT                    |
| Thallium  | --             | --             | 0/7 | 1  | 0/7 | --                        | --  | --                | --  | --                  | --  | No    | < SL                   |
| Zinc  | 31.1           | 836            | 7/7 | 160  | 4/7 | 120                       | 4/7 | 46                | 6/7 | 79                  | 5/7 | Yes   | SL-W                   |
| Volatile Organic Compounds (µg/kg)              |                |                |     |  |     |                           |     |                   |     |                     |     |       |                        |
| Acetone   | 5.12           | 30.3           | 3/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | ?     | NSL                    |
| 2-Butanone (MEK)                                | 2.13           | 2.13           | 1/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | ?     | NSL                    |
| Ethylbenzene                                    | 0.51           | 0.51           | 1/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | ?     | NSL                    |
| 4-Isopropyltoluene                              | 0.315          | 0.956          | 2/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | ?     | NSL                    |
| m,p-Xylene                                      | 0.416          | 0.5            | 2/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | ?     | NSL                    |
| Methylene chloride                              | 4.18           | 4.18           | 1/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | ?     | NSL                    |
| Styrene   | 0.305          | 1.3            | 7/7 | 300000   | 0/7 | --                        | --  | --                | --  | --                  | --  | No    | < SL                   |
| Toluene   | 0.429          | 1.12           | 3/7 | 200000   | 0/7 | --                        | --  | --                | --  | --                  | --  | No    | < SL                   |
| Xylenes (total)                                 | 0.416          | 0.5            | 2/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | ?     | NSL                    |
| Polychlorinated Biphenyls (PCBs) (µg/kg)        |                |                |     |  |     |                           |     |                   |     |                     |     |       |                        |
| Aroclor-1248                                    | 243            | 243            | 1/7 | 40000  | 0/7 | --                        | --  | --                | --  | --                  | --  | No    | < SL                   |
| Aroclor-1254                                    | 345            | 345            | 1/7 | 40000  | 0/7 | --                        | --  | --                | --  | --                  | --  | No    | < SL                   |
| Aroclor-1260                                    | 136            | 171            | 1/7 | 40000  | 0/7 | --                        | --  | --                | --  | --                  | --  | No    | < SL                   |
| Pesticides (µg/kg)                              |                |                |     |  |     |                           |     |                   |     |                     |     |       |                        |
| alpha-BHC                                       | 25.2           | 25.2           | 1/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | ?     | NSL                    |
| 4,4'-DDD  | 6.37           | 6.37           | 1/7 | --   | --  | --                        | --  | 93                | 0/7 | 21                  | 0/7 | No    | < SL                   |
| 4,4'-DDT  | 9.1            | 89.9           | 3/7 | --   | --  | --                        | --  | 93                | 0/7 | 21                  | 1/7 | Yes   | SL-W                   |
| endosulfan sulfate                              | 42.1           | 42.1           | 1/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | ?     | NSL                    |
| Polycyclic Aromatic Hydrocarbons (PAHs) (µg/kg) |                |                |     |  |     |                           |     |                   |     |                     |     |       |                        |
| HPAH sum  | 218.15         | 1723.6         | 3/7 | --   | --  | 18000                     | 0/7 | --                | --  | 1100                | 2/7 | Yes   | SL-W                   |
| LPAH sum  | 326.9          | 672.6          | 2/7 | --   | --  | 29000                     | 0/7 | --                | --  | 100000              | 0/7 | No    | < SL                   |
| Other Semivolatile Organic Compounds (µg/kg)    |                |                |     |  |     |                           |     |                   |     |                     |     |       |                        |
| bis(2-Ethylhexyl)phthalate                      | 335            | 568            | 2/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | ?     | NSL                    |
| Butylbenzylphthalate                            | 1230           | 1230           | 1/7 | --   | --  | --                        | --  | --                | --  | --                  | --  | ?     | NSL                    |

## Key:

-- (double dash) = not available or not applicable

COPC = chemical of potential concern

Eco-SSL = Ecological Soil Screening Level

FoD = frequency of detection (number of detects over total number of samples)

FoE = frequency of exceedance (number of samples that exceed screening level over total number of samples)

HPAH = high molecular weight PAH

LPAH = low molecular weight PAH

mg/kg = milligrams per kilogram

PAH = polycyclic aromatic hydrocarbon

µg/kg = micrograms per kilogram

? = status as COPC uncertain

Value / Value = exceeds screening value

## Notes:

a = Detected chemicals only are listed.

b = Eco-SSLs ([www.epa.gov/ecotox/ecossl/](http://www.epa.gov/ecotox/ecossl/)), except for chromium, which is from Alloway (1984), and mercury, thallium, styrene, toluene, and PCBs, which are from Efraymson et al. (1997).c = Eco-SSLs ([www.epa.gov/ecotox/ecossl/](http://www.epa.gov/ecotox/ecossl/)).

d = Rationale codes.

For Yes: SL-I = soil invertebrate screening level exceeded.

SL-P = plant screening level exceeded.

SL-W = wildlife screening level exceeded.

For No: &lt; SL = less than screening level

MSC = Major soil constituent (of low toxicity; Gough et al. 1979, USEPA 2003).

NUT = Essential nutrient (USEPA 1989).

For ? : NSL = no screening level

Table D-5. Exposure Parameters for Wildlife Species, Gorst Creek - Bremerton Auto Wrecking Landfill Site.

| Species                       | Dietary Composition |                       | Soil or Sediment Ingestion (kg/d) dry | Home Range (ha) | Fraction Soil in Dry Diet | Food Ingestion Rate (kg/d) wet | Percent Water in Diet | Food Ingestion Rate (kg/d) dry | Body Weight (kg wet) |
|-------------------------------|---------------------|-----------------------|---------------------------------------|-----------------|---------------------------|--------------------------------|-----------------------|--------------------------------|----------------------|
|                               | Earthworms          | Aquatic Invertebrates |                                       |                 |                           |                                |                       |                                |                      |
| Terrestrial Invertivores      |                     |                       |                                       |                 |                           |                                |                       |                                |                      |
| American Robin <sup>a</sup>   | 100%                |                       | 0.00019                               | 0.42            | 0.104                     | 0.093                          | 80%                   | 0.0186                         | 0.077                |
| Masked Shrew <sup>b</sup>     | 100%                |                       | 0.00023                               | 0.39            | 0.13                      | 0.009                          | 80%                   | 0.0018                         | 0.015                |
| Aquatic-Dependent Invertivore |                     |                       |                                       |                 |                           |                                |                       |                                |                      |
| Barn Swallow <sup>c</sup>     |                     | 100%                  | 0.00006                               | 0.5             | 0.02                      | 0.012                          | 75%                   | 0.003                          | 0.0159               |
| Raccoon <sup>d</sup>          |                     | 100%                  | 0.027                                 | 630             | 0.094                     | 1.1                            | 75%                   | 0.283                          | 5.3                  |

Notes:

a - Diet of 100% earthworms assumed. Home range size, food ingestion (wet), and body mass taken without modification from Sample and Suter (1994). Soil ingestion of 10.4% (of dry diet) assumed based on data from Beyer et al. (1994) for American woodcock.

b - Diet of 100% earthworms assumed. Home-range size, food ingestion (wet), and body mass are for short-tailed shrew and were taken without modification from Sample and Sutter (1994). Soil ingestion of 13% (of dry diet) based on data from Talmage and Walton (1993) as cited in Sample and Suter (1994).

c - Diet of 100% emergent aquatic insects assumed. Body weight and food ingestion from Sample et al. (1996) for rough-winged swallow ( *Stelgidopteryx serripennis* ). Soil intake assumed to be 2% of dry food ingestion. Home range of 0.5 ha assumed. Exposure duration based on observations in Wahl (1995).

d - Diet of 100% crayfish assumed. Home range and body weigh from (USEPA 1993b). Food ingestion (dry) calculated from allometric equations presented in Sample et al. (1996). Soil ingestion of 9.4% (of dry diet) based on Beyer et al. (1994).

Table D-6. Surface Soil and Earthworm Exposure Point Concentrations for American Robin and Masked Shrew, Gorst Creek - Bremerton Auto Wrecking Landfill.

| Analyte <sup>a</sup>                                | Minimum Detected Value | Maximum Detected Value | Frequency of Detection | Soil EPC | BAF <sup>b</sup> | Earthworm EPC |
|---|------------------------|------------------------|------------------------|----------|------------------|---------------|
| <b>Polychlorinated Biphenyls (µg/kg)</b>            |                        |                        |                        |          |                  |               |
| Aroclor-1248  | 243                    | 243                    | 1/7                    | 243      | See note c       | 597           |
| Aroclor-1254  | 345                    | 345                    | 1/7                    | 345      | See note c       | 962           |
| Aroclor-1260  | 136                    | 171                    | 1/7                    | 171      | See note c       | 370           |
| <b>Metals (mg/kg)</b>                               |                        |                        |                        |          |                  |               |
| Arsenic   | 1.25                   | 10.1                   | 7/7                    | 10.1     | See note c       | 1.24          |
| Barium  | 47.4                   | 194                    | 7/7                    | 194      | 0.091            | 17.7          |
| Beryllium   | 0.132                  | 0.269                  | 7/7                    | 0.269    | 0.045            | 0.012         |
| Cadmium   | 0.0942                 | 3.24                   | 7/7                    | 3.24     | See note c       | 21.1          |
| Chromium  | 19.6                   | 47.8                   | 7/7                    | 47.8     | 0.306            | 14.6          |
| Cobalt  | 5.08                   | 9.93                   | 7/7                    | 9.93     | 0.122            | 1.21          |
| Copper  | 10.7                   | 83.1                   | 7/7                    | 83.1     | 0.515            | 42.8          |
| Lead  | 3.21                   | 691                    | 7/7                    | 691      | See note c       | 157           |
| Manganese   | 168                    | 654                    | 7/7                    | 654      | See note c       | 37.1          |
| Mercury   | 0.00943                | 1.28                   | 7/7                    | 1.28     | See note c       | 0.52          |
| Nickel  | 21.8                   | 44.8                   | 7/7                    | 44.8     | 1.059            | 47.4          |
| Selenium  | 0.405                  | 0.405                  | 1/7                    | 0.405    | See note c       | 0.48          |
| Zinc  | 31.1                   | 836                    | 7/7                    | 836      | See note c       | 777           |
| <b>Volatile Organic Compounds (µg/kg)</b>           |                        |                        |                        |          |                  |               |
| Acetone   | 5.12                   | 30.3                   | 3/7                    | 30.3     | 1                | 30.3          |
| 2-Butanone (MEK)                                    | 2.13                   | 2.13                   | 1/7                    | 2.13     | 1                | 2.13          |
| Ethylbenzene  | 0.51                   | 0.51                   | 1/7                    | 0.51     | 1                | 0.51          |
| 4-Isopropyltoluene                                  | 0.315                  | 0.956                  | 2/7                    | 0.956    | 1                | 0.96          |
| m,p-Xylene  | 0.416                  | 0.5                    | 2/7                    | 0.5      | 1                | 0.5           |
| Methylene chloride                                  | 4.18                   | 4.18                   | 1/7                    | 4.18     | 1                | 4.18          |
| Styrene   | 0.305                  | 1.3                    | 7/7                    | 1.3      | 1                | 1.3           |
| Toluene   | 0.429                  | 1.12                   | 3/7                    | 1.12     | 1                | 1.12          |
| Xylenes (total)                                     | 0.416                  | 0.5                    | 2/7                    | 0.5      | 1                | 0.5           |
| <b>Pesticides (µg/kg)</b>                           |                        |                        |                        |          |                  |               |
| alpha-BHC   | 25.2                   | 25.2                   | 1/7                    | 25.2     | 1                | 25.2          |
| 4,4'-DDD  | 6.37                   | 6.37                   | 1/7                    | 6.37     | See note c       | 11.6          |
| 4,4'-DDT  | 9.1                    | 89.9                   | 3/7                    | 89.9     | See note c       | 417           |
| Endosulfan sulfate                                  | 42.1                   | 42.1                   | 1/7                    | 42.1     | 1                | 42.1          |
| <b>Polycyclic Aromatic Hydrocarbons (µg/kg)</b>     |                        |                        |                        |          |                  |               |
| HPAH sum  | 218                    | 1724                   | 3/7                    | 1724     | 2.6              | 4481          |
| LPAH sum  | 327                    | 673                    | 2/7                    | 673      | 3.0              | 2045          |
| <b>Other Semivolatile Organic Compounds (µg/kg)</b> |                        |                        |                        |          |                  |               |
| Bis(2-ethylhexyl)phthalate                          | 335                    | 568                    | 2/7                    | 568      | 1                | 568           |
| Butylbenzylphthalate                                | 1230                   | 1230                   | 1/7                    | 1230     | 1                | 1230          |

Key:

BAF = Bioaccumulation factor

EPC = Exposure Point Concentration

HPAH = high molecular weight PAH

LPAH = low molecular weight PAH

PAH = polycyclic aromatic hydrocarbon

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

Notes:

a. Detected chemicals only are listed. Essential nutrients (calcium, iron, magnesium, sodium, and potassium) and major soil constituents (aluminum) were excluded from the evaluation as per USEPA guidance (USEPA 1989, 2003).

b. Soil-to-earthworm BAFs from USEPA (2005a), except for nickel, which is from Sample et al. (1998). BAF of 1 assumed for chemicals not addressed by USEPA (2005a) or Sample et al. (1998).

c. Soil-to-earthworm uptake equation from USEPA (2005a) used to calculate earthworm EPC.

Table D-7. Sediment and Benthic Invertebrate Exposure Point Concentrations for Barn Swallow and Raccoon, Gorst Creek - Bremerton Auto Wrecking Landfill.

| Analyte <sup>a</sup>               | Minimum Detected value | Maximum Detected value | Frequency of Detection | Sediment EPC | BSAF <sup>b</sup> | Benthic Invertebrate EPC |
|------------------------------------|------------------------|------------------------|------------------------|--------------|-------------------|--------------------------|
| Polychlorinated Biphenyls (µg/kg)  |                        |                        |                        |              |                   |                          |
| Aroclor-1248                       | 437                    | 746                    | 2/4                    | 746          | 4.67              | 3,484                    |
| Aroclor-1254                       | 84                     | 908                    | 2/4                    | 908          | 4.67              | 4,240                    |
| Aroclor-1260                       | 7.2                    | 516                    | 3/4                    | 516          | 4.67              | 2,410                    |
| Metals (mg/kg)                     |                        |                        |                        |              |                   |                          |
| Arsenic                            | 1.11                   | 2.42                   | 4/4                    | 2.42         | See note c        | 1.0                      |
| Barium                             | 43.6                   | 68.4                   | 4/4                    | 68.4         | 1                 | 68                       |
| Beryllium                          | 0.119                  | 0.197                  | 4/4                    | 0.197        | 1                 | 0.20                     |
| Cadmium                            | 0.111                  | 0.605                  | 4/4                    | 0.605        | See note c        | 0.8                      |
| Chromium                           | 18.1                   | 23.5                   | 4/4                    | 23.5         | See note c        | 5.1                      |
| Cobalt                             | 5.53                   | 16.9                   | 4/4                    | 16.9         | 1                 | 16.9                     |
| Copper                             | 8.94                   | 38.5                   | 4/4                    | 38.5         | See note c        | 33.9                     |
| Lead                               | 2.57                   | 35.5                   | 4/4                    | 35.5         | See note c        | 2.9                      |
| Manganese                          | 237                    | 1,160                  | 4/4                    | 1,160        | 1                 | 1,160                    |
| Mercury                            | 0.00713                | 0.0593                 | 4/4                    | 0.0593       | 1.136             | 0.067                    |
| Nickel                             | 29.6                   | 35.7                   | 4/4                    | 35.7         | 0.486             | 17.4                     |
| Zinc                               | 35.4                   | 130                    | 4/4                    | 130          | See note c        | 174                      |
| Volatile Organic Compounds (µg/kg) |                        |                        |                        |              |                   |                          |
| Acetone                            | 2.7                    | 3.85                   | 2/4                    | 3.85         | 1                 | 3.85                     |
| 4-Isopropyltoluene                 | 3.19                   | 3.19                   | 1/4                    | 3.19         | 1                 | 3.19                     |
| Styrene                            | 0.426                  | 0.426                  | 1/4                    | 0.426        | 1                 | 0.43                     |

Key:

BSAF = Biota Sediment Accumulation Factor

EPC = Exposure Point Concentration

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

Notes:

a. Detected chemicals only are listed. Essential nutrients (calcium, iron, magnesium, sodium, and potassium) and major soil constituents (aluminum) were excluded from the evaluation as per USEPA guidance (USEPA 1989, 2003).

b. From Bechtel Jacobs (1998). BSAF of 1 assumed for chemicals not addressed by Bechtel Jacobs (1998)

c. Sediment-to-benthic invertebrate uptake equation from Bechtel Jacobs (1998) used to calculate benthic invert. EPC.

Table D-8. Toxicity Reference Values for Birds and Mammals.

| Analyte                          | Wildlife Class | NOAEL (mg/kg-day) | Critical Effect                    | LOAEL (mg/kg-day) | Critical Effect     | Reference and Comments  |
|----------------------------------|----------------|-------------------|------------------------------------|-------------------|---------------------|---|
| <b>Polychlorinated Biphenyls</b> |                |                   |                                    |                   |                     |   |
| Aroclors 1254                    | Birds          | 0.18              | Reproduction                       | 1.8               | Reproduction        | Sample et al. (1996) for Aroclor 1254.  |
|                                  | Mammals        | 0.14              | Reproduction                       | 0.69              | Reproduction        | Sample et al. (1996) for Aroclor 1254 effects on mink.  |
| <b>Metals</b>                    |                |                   |                                    |                   |                     |   |
| Arsenic                          | Birds          | 2.24              | Reproduction                       | 3.55              | Growth              | USEPA(2005b). Lowest NOAEL for growth, reproduction, or survival from nine laboratory toxicity studies. Lowest LOAEL for growth, reproduction, or survival greater than selected NOAEL.                                     |
|                                  | Mammals        | 1.04              | Growth                             | 1.66              | Growth              | USEPA (2005b). Highest bounded NOAEL for growth, reproduction, or survival less than lowest bounded LOAEL for growth, reproduction, or survival from 62 laboratory toxicity studies.  |
| Barium                           | Birds          | 20.8              | Survival                           | 41.7              | Survival            | Sample et al. (1996).   |
|                                  | Mammals        | 51.8              | Reproduction, growth, and survival | 121               | Growth and survival | USEPA (2005c). Geometric mean NOAEL for growth, reproduction, and survival from 12 laboratory toxicity studies. Lowest bounded LOAEL for reproduction, growth, or survival greater than geometric mean NOAEL.               |
| Beryllium                        | Birds          | na                | na                                 | na                | na                  | na  |
|                                  | Mammals        | 0.532             | Survival                           | na                | na                  | USEPA (2005d). Lowest NOAEL for growth, reproduction, or survival from four laboratory toxicity studies.  |
| Cadmium                          | Birds          | 1.47              | Reproduction, growth, and survival | 2.37              | Reproduction        | USEPA (2005e). Geometric mean NOAEL for growth, reproduction, and survival from 49 laboratory toxicity studies. Lowest bounded LOAEL for growth, reproduction, or survival greater than geometric mean NOAEL.               |
|                                  | Mammals        | 0.77              | Growth                             | 1                 | Growth              | USEPA (2005e). Highest bounded NOAEL (0.77 mg/kg-d) for reproduction, growth, or survival less than the lowest bounded LOAEL (1.0 mg/kg-d) from 141 laboratory toxicity studies.  |
| Chromium                         | Birds          | 2.66              | Reproduction, growth, and survival | 2.78              | Survival            | USEPA (2008). Geometric mean NOAEL for growth, reproduction, and survival from 17 laboratory toxicity studies. Lowest bounded LOAEL for reproduction, growth, or survival greater than geometric mean NOAEL.                |
|                                  | Mammals        | 9.24              | Reproduction and growth            | na                | na                  | USEPA (2008). Geometric mean NOAEL for reproduction and growth from 10 studies with trivalent chromium.   |
| Cobalt                           | Birds          | 7.61              | Growth                             | 7.8               | Growth              | USEPA (2005f). Geometric mean NOAEL for growth from 10 toxicity studies. Lowest bounded LOAEL for growth or reproduction greater than geometric mean NOAEL.   |
|                                  | Mammals        | 7.33              | Reproduction and Growth            | 10.9              | Reproduction        | USEPA (2005f). Geometric mean NOAEL for reproduction and growth based on 21 laboratory toxicity studies. Lowest bounded LOAEL for growth or reproduction greater than geometric mean NOAEL.                                 |
| Copper                           | Birds          | 4.05              | Reproduction                       | 4.68              | Growth              | USEPA (2007a). Highest bounded NOAEL for reproduction, growth, or survival (4.05 mg/kg-day) lower than the lowest bounded LOAEL for reproduction, growth, or survival (4.68 mg/kg-day).                                     |
|                                  | Mammals        | 5.6               | Reproduction                       | 6.79              | Growth              | USEPA (2007a). Highest bounded NOAEL for reproduction, growth, or survival (5.6 mg/kg-day) lower than the lowest bounded LOAEL for reproduction, growth, or survival (6.79 mg/kg-day).                                      |
| Lead                             | Birds          | 1.63              | Reproduction                       | 1.94              | Reproduction        | USEPA (2005g). Highest bounded NOAEL (1.63 mg/kg-d) for growth, reproduction, or survival lower than the lowest bounded LOAEL (1.94 mg/kg-d) for growth, reproduction, or survival based on 57 laboratory toxicity studies. |
|                                  | Mammals        | 4.7               | Growth                             | 5                 | Growth              | USEPA (2005g). Highest bounded NOAEL (4.7 mg/kg-d) for growth, reproduction, or survival lower than the lowest bounded LOAEL (5 mg/kg-d) for growth, reproduction, or survival based on 220 laboratory toxicity studies.    |
| Manganese                        | Birds          | 179               | Reproduction and Growth            | 348               | Growth              | USEPA (2007b). Geometric mean NOAEL for reproduction and growth. Lowest bounded LOAEL for reproduction or growth greater than geometric mean NOAEL.   |
|                                  | Mammals        | 51.5              | Reproduction and Growth            | 65                | Growth              | USEPA (2007b). Geometric mean NOAEL for reproduction and growth. Lowest bounded LOAEL for reproduction or growth greater than geometric mean NOAEL.   |

Table D-8. Toxicity Reference Values for Birds and Mammals.

| Analyte                          | Wildlife Class | NOAEL (mg/kg-day) | Critical Effect           | LOAEL (mg/kg-day) | Critical Effect | Reference and Comments  |
|----------------------------------|----------------|-------------------|---------------------------|-------------------|-----------------|---|
| Mercury                          | Birds          | 0.45              | Reproduction              | 0.9               | Reproduction    | Sample et al. (1996).   |
|                                  | Mammals        | 13.2              | Reproduction and survival | na                | na              | Sample et al. (1996).   |
| Nickel                           | Birds          | 6.71              | Growth and survival       | 11.5              | Growth          | USEPA (2007c). Geometric mean NOAEL for reproduction and growth. Lowest bounded LOAEL for reproduction or growth greater than geometric mean NOAEL. |
|                                  | Mammals        | 1.7               | Reproduction              | 2.71              | Reproduction    | USEPA (2007c). Highest bounded NOAEL for reproduction, growth, or survival below lowest bounded LOAEL for reproduction, growth, or survival.        |
| Selenium                         | Birds          | 0.291             | Survival                  | 0.368             | Reproduction    | USEPA (2007d). Highest bounded NOAEL for reproduction, growth, or survival below lowest bounded LOAEL for reproduction, growth, or survival.        |
|                                  | Mammals        | 0.143             | Growth                    | 0.145             | Reproduction    | USEPA (2007d). Highest bounded NOAEL for reproduction, growth, or survival below lowest bounded LOAEL for reproduction, growth, or survival.        |
| Zinc                             | Birds          | 66.1              | Reproduction and Growth   | 66.5              | Reproduction    | USEPA (2007e). Geometric mean NOAEL for reproduction and growth. Lowest bounded LOAEL for reproduction or growth greater than geometric mean NOAEL. |
|                                  | Mammals        | 75.4              | Reproduction and Growth   | 75.9              | Reproduction    | USEPA (2007e). Geometric mean NOAEL for reproduction and growth. Lowest bounded LOAEL for reproduction or growth greater than geometric mean NOAEL. |
| Volatile Organic Compounds       |                |                   |                           |                   |                 |   |
| Acetone                          | Birds          | na                | na                        | na                | na              | na  |
|                                  | Mammals        | 10                | Kidney damage             | 50                | Kidney damage   | Sample et al. (1996).   |
| 2-Butanone (MEK)                 | Birds          | na                | na                        | na                | na              | na  |
|                                  | Mammals        | 1771              | Reproduction              | 4571              | Reproduction    | Sample et al. (1996).   |
| Ethylbenzene                     | Birds          | na                | na                        | na                | na              | na  |
|                                  | Mammals        | na                | na                        | na                | na              | na  |
| 4-Isopropyltoluene               | Birds          | na                | na                        | na                | na              | na  |
|                                  | Mammals        | na                | na                        | na                | na              | na  |
| m,p-Xylene                       | Birds          | na                | na                        | na                | na              | na  |
|                                  | Mammals        | 2.1               | Reproduction              | 2.6               | Reproduction    | Sample et al. (1996), for xylene (mixed isomers).   |
| Methylene chloride               | Birds          | na                | na                        | na                | na              | na  |
|                                  | Mammals        | 5.85              | Liver histology           | 50                | Liver histology | Sample et al. (1996).   |
| Styrene                          | Birds          | na                | na                        | na                | na              | na  |
|                                  | Mammals        | na                | na                        | na                | na              | na  |
| Toluene                          | Birds          | na                | na                        | na                | na              | na  |
|                                  | Mammals        | 26                | Reproduction              | 260               | Reproduction    | Sample et al. (1996).   |
| Xylenes (total)                  | Birds          | na                | na                        | na                | na              | na  |
|                                  | Mammals        | 2.1               | Reproduction              | 2.6               | Reproduction    | Sample et al. (1996), for xylene (mixed isomers).   |
| Pesticides                       |                |                   |                           |                   |                 |   |
| DDT and metabolites              | Birds          | 0.227             | Growth                    | 0.281             | Reproduction    | USEPA (2007f). Highest bounded NOAEL below the lowest bounded LOAEL for reproduction, growth, or survival.  |
|                                  | Mammals        | 0.147             | Reproduction              | 0.247             | Reproduction    | USEPA (2007f). Highest bounded NOAEL below the lowest bounded LOAEL for reproduction, growth, or survival.  |
| Alpha-BHC                        | Birds          | 0.56              | Reproduction              | 2.25              | Reproduction    | Sample et al. (1996) for BHC mixed isomers.   |
|                                  | Mammals        | 0.014             | Reproduction              | 0.14              | Reproduction    | Sample et al. (1996) for BHC mixed isomers.   |
| Endosulfan Sulfate               | Birds          | 11.1              | Reproduction              | na                | na              | NYSDEC (2002).  |
|                                  | Mammals        | 0.15              | na                        | na                | na              | NYSDEC (2002).  |
| Polycyclic Aromatic Hydrocarbons |                |                   |                           |                   |                 |   |
| LPAHs                            | Birds          | na                | na                        | na                | na              | na  |
|                                  | Mammals        | 65.6              | Growth                    | 110               | Growth          | USEPA (2007g). Highest bounded NOAEL (65.5 mg/kg-d) below the lowest bounded LOAEL (110 mg/kg-d) for reproduction, growth, or survival.             |
| HPAHs                            | Birds          | 2                 | Growth                    | 20                | Growth          | USEPA (2007g); from Appendix 5.2A for European starling.  |
|                                  | Mammals        | 0.615             | Survival                  | 3.07              | Survival        | USEPA (2007g). Highest bounded NOAEL (0.615 mg/kg-day) below the lowest bounded LOAEL (3.07 mg/kg-day) for reproduction, growth, or survival.       |

Table D-8. Toxicity Reference Values for Birds and Mammals.

| Analyte                              | Wildlife Class | NOAEL (mg/kg-day) | Critical Effect | LOAEL (mg/kg-day) | Critical Effect | Reference and Comments |
|--------------------------------------|----------------|-------------------|-----------------|-------------------|-----------------|------------------------|
| Other Semivolatile Organic Compounds |                |                   |                 |                   |                 |                        |
| Bis(2-ethylhexyl)phthalate           | Birds          | 1.11              | Reproduction    | na                | na              | Sample et al. (1996).  |
|                                      | Mammals        | 18.33             | Reproduction    | 183.3             | Reproduction    | Sample et al. (1996).  |
| Butyl Benzyl Phthalate               | Birds          | na                | na              | na                | na              | na                     |
|                                      | Mammals        | na                | na              | na                | na              | na                     |

Key:

DDT = dichlorodiphenyltrichloroethane

HPAH = high molecular weight PAH

LOAEL = lowest observed adverse effect level

LPAH = low molecular weight PAH

MEK = methyl ethyl ketone

mg/kg/day = milligrams per kilogram per day

na = no available

NOAEL = no observed adverse effect level

NYSDEC = New York State Department of Environmental Conservation

TRV = toxicity reference value

Table D-9. American Robin Exposure Estimates and Hazard Quotients, Gorst Creek - Bremerton Auto Wrecking Landfill.

| Analyte <sup>a</sup>                        | Soil EPC <sup>b</sup> | EE-soil<br>(mg/kg/d) | EE-diet<br>(mg/kg/d) | EE-total<br>(mg/kg/d) | NOAEL<br>(mg/kg/d) | LOAEL<br>(mg/kg/d) | HQ-<br>NOAEL | HQ-LOAEL |
|---|-----------------------|----------------------|----------------------|-----------------------|--------------------|--------------------|--------------|----------|
| <b>Polychlorinated Biphenyls</b>            |                       |                      |                      |                       |                    |                    |              |          |
| Aroclor-1248                                | 243                   | 0.001                | 0.14                 | 0.14                  | 0.18               | 1.8                | 0.8          | 0.08     |
| Aroclor-1254                                | 345                   | 0.001                | 0.23                 | 0.23                  | 0.18               | 1.8                | 1.3          | 0.13     |
| Aroclor-1260                                | 171                   | 0.0004               | 0.09                 | 0.09                  | 0.18               | 1.8                | 0.5          | 0.05     |
| <b>Metals</b>                               |                       |                      |                      |                       |                    |                    |              |          |
| Arsenic                                     | 10.1                  | 0.025                | 0.30                 | 0.32                  | 2.24               | 3.55               | 0.14         | 0.09     |
| Barium                                      | 194                   | 0.479                | 4.26                 | 4.74                  | 20.8               | 41.7               | 0.23         | 0.11     |
| Beryllium                                   | 0.269                 | 0.001                | 0.003                | 0.004                 | NA                 | NA                 | NA           | NA       |
| Cadmium                                     | 3.24                  | 0.008                | 5.09                 | 5.10                  | 1.47               | 2.37               | 3.5          | 2.2      |
| Chromium                                    | 47.8                  | 0.118                | 3.53                 | 3.65                  | 2.66               | 2.78               | 1.4          | 1.3      |
| Cobalt                                      | 9.93                  | 0.025                | 0.29                 | 0.32                  | 7.61               | 7.8                | 0.042        | 0.041    |
| Copper                                      | 83.1                  | 0.205                | 10.34                | 10.54                 | 4.05               | 4.68               | 2.6          | 2.3      |
| Lead  | 691                   | 1.705                | 38.00                | 39.71                 | 1.63               | 1.94               | 24           | 20       |
| Manganese                                   | 654                   | 1.614                | 8.95                 | 10.57                 | 179                | 348                | 0.06         | 0.03     |
| Mercury                                     | 1.28                  | 0.003                | 0.13                 | 0.13                  | 0.45               | 0.9                | 0.29         | 0.14     |
| Nickel                                      | 44.8                  | 0.111                | 11.46                | 11.57                 | 6.71               | 11.5               | 1.7          | 1.0      |
| Selenium                                    | 0.405                 | 0.001                | 0.12                 | 0.12                  | 0.291              | 0.368              | 0.40         | 0.32     |
| Zinc  | 836                   | 2.063                | 187.79               | 189.86                | 66.1               | 66.5               | 2.87         | 2.85     |
| <b>Volatile Organic Compounds</b>           |                       |                      |                      |                       |                    |                    |              |          |
| Acetone                                     | 30.3                  | 7.5E-05              | 7.3E-03              | 7.4E-03               | NA                 | NA                 | NA           | NA       |
| 2-Butanone (MEK)                            | 2.13                  | 5.3E-06              | 5.1E-04              | 5.2E-04               | NA                 | NA                 | NA           | NA       |
| Ethylbenzene                                | 0.51                  | 1.3E-06              | 1.2E-04              | 1.2E-04               | NA                 | NA                 | NA           | NA       |
| 4-Isopropyltoluene                          | 0.956                 | 2.4E-06              | 2.3E-04              | 2.3E-04               | NA                 | NA                 | NA           | NA       |
| m,p-Xylene                                  | 0.5                   | 1.2E-06              | 1.2E-04              | 1.2E-04               | NA                 | NA                 | NA           | NA       |
| Methylene chloride                          | 4.18                  | 1.0E-05              | 1.0E-03              | 1.0E-03               | NA                 | NA                 | NA           | NA       |
| Styrene                                     | 1.3                   | 3.2E-06              | 3.1E-04              | 3.2E-04               | NA                 | NA                 | NA           | NA       |
| Toluene                                     | 1.12                  | 2.8E-06              | 2.7E-04              | 2.7E-04               | NA                 | NA                 | NA           | NA       |
| Xylenes (total)                             | 0.5                   | 1.2E-06              | 1.2E-04              | 1.2E-04               | NA                 | NA                 | NA           | NA       |
| <b>Pesticides</b>                           |                       |                      |                      |                       |                    |                    |              |          |
| alpha-BHC                                   | 25.2                  | 6.2E-05              | 6.1E-03              | 6.1E-03               | 0.56               | 2.25               | 0.011        | 0.003    |
| 4,4'-DDD                                    | 6.37                  | 1.6E-05              | 2.8E-03              | 2.8E-03               | 0.227              | 0.281              | 0.012        | 0.010    |
| 4,4'-DDT                                    | 89.9                  | 2.2E-04              | 1.0E-01              | 1.0E-01               | 0.227              | 0.281              | 0.44         | 0.36     |
| Endosulfan sulfate                          | 42.1                  | 1.0E-04              | 1.0E-02              | 1.0E-02               | 11.1               | NA                 | 0.001        | NA       |
| <b>Polycyclic Aromatic Hydrocarbons</b>     |                       |                      |                      |                       |                    |                    |              |          |
| HPAH sum                                    | 1723.6                | 0.004                | 1.08                 | 1.09                  | 2                  | 20                 | 0.54         | 0.05     |
| LPAH sum                                    | 672.6                 | 0.002                | 0.49                 | 0.50                  | NA                 | NA                 | NA           | NA       |
| <b>Other Semivolatile Organic Compounds</b> |                       |                      |                      |                       |                    |                    |              |          |
| Bis(2-Ethylhexyl)phthalate                  | 335                   | 0.001                | 0.14                 | 0.14                  | 1.11               | NA                 | 0.12         | NA       |
| Butylbenzylphthalate                        | 1230                  | 0.003                | 0.30                 | 0.30                  | NA                 | NA                 | NA           | NA       |

## Key:

EE-diet = estimated chemical exposure from diet

EE-soil = estimated chemical exposure from incidental soil ingestion

EE-total = total chemical exposure

EPC = exposure point concentration

HPAH = high molecular weight PAH

HQ = hazard quotient

LOAEL = lowest observed adverse effect level

LPAH = low molecular weight PAH

NOAEL = no observed adverse effect level

mg/kg = Milligrams per kilogram

mg/kg/day = Milligrams per kilogram per day

µg/kg = micrograms per kilogram

NA = Not available

Grey shading = HQ exceeds 1.0

## Note:

a = Chemicals detected in surface soil are listed. Essential nutrients (calcium, iron, magnesium, sodium, and potassium) and major soil constituents (aluminum) were excluded from the evaluation as per USEPA guidance (USEPA 1989, 2003).

b = mg/kg for metals. µg/kg for other analytes.



Table D-10. Masked Shrew Exposure Estimates and Hazard Quotients, Gorst Creek - Bremerton Auto Wrecking Landfill.

| Analyte <sup>a</sup>                        | Soil EPC <sup>b</sup> | EE-soil<br>(mg/kg/d) | EE-diet<br>(mg/kg/d) | EE-total<br>(mg/kg/d) | NOAEL<br>(mg/kg/d) | LOAEL<br>(mg/kg/d) | HQ-<br>NOAEL | HQ-<br>LOAEL |
|---|-----------------------|----------------------|----------------------|-----------------------|--------------------|--------------------|--------------|--------------|
| <b>Polychlorinated Biphenyls</b>            |                       |                      |                      |                       |                    |                    |              |              |
| Aroclor-1248                                | 243                   | 0.004                | 0.07                 | 0.08                  | 0.14               | 0.69               | 0.54         | 0.11         |
| Aroclor-1254                                | 345                   | 0.005                | 0.12                 | 0.12                  | 0.14               | 0.69               | 0.86         | 0.18         |
| Aroclor-1260                                | 171                   | 0.003                | 0.04                 | 0.05                  | 0.14               | 0.69               | 0.34         | 0.07         |
| <b>Metals</b>                               |                       |                      |                      |                       |                    |                    |              |              |
| Arsenic                                     | 10.1                  | 0.15                 | 0.15                 | 0.30                  | 1.04               | 1.66               | 0.29         | 0.18         |
| Barium                                      | 194                   | 2.97                 | 2.12                 | 5.09                  | 51.8               | 121                | 0.10         | 0.04         |
| Beryllium                                   | 0.269                 | 0.004                | 0.001                | 0.01                  | 0.532              | NA                 | 0.01         | NA           |
| Cadmium                                     | 3.24                  | 0.050                | 2.53                 | 2.58                  | 0.77               | 1                  | 3.4          | 2.6          |
| Chromium                                    | 47.8                  | 0.73                 | 1.76                 | 2.49                  | 9.24               | NA                 | 0.27         | NA           |
| Cobalt                                      | 9.93                  | 0.15                 | 0.15                 | 0.30                  | 7.33               | 10.9               | 0.041        | 0.027        |
| Copper                                      | 83.1                  | 1.27                 | 5.14                 | 6.41                  | 5.6                | 6.79               | 1.1          | 0.94         |
| Lead  | 691                   | 10.6                 | 18.9                 | 29.5                  | 4.7                | 5                  | 6.3          | 5.9          |
| Manganese                                   | 654                   | 10.0                 | 4.4                  | 14.5                  | 51.5               | 65                 | 0.28         | 0.22         |
| Mercury                                     | 1.28                  | 0.020                | 0.062                | 0.08                  | 13.2               | NA                 | 0.006        | NA           |
| Nickel                                      | 44.8                  | 0.687                | 5.69                 | 6.38                  | 1.7                | 2.71               | 3.8          | 2.4          |
| Selenium                                    | 0.405                 | 0.006                | 0.057                | 0.06                  | 0.143              | 0.145              | 0.44         | 0.44         |
| Zinc  | 836                   | 12.8                 | 93.3                 | 106.1                 | 75.4               | 75.9               | 1.41         | 1.40         |
| <b>Volatile Organic Compounds</b>           |                       |                      |                      |                       |                    |                    |              |              |
| Acetone                                     | 30.3                  | 4.6E-04              | 3.6E-03              | 4.1E-03               | 10                 | 50                 | 4.1E-04      | 8.2E-05      |
| 2-Butanone (MEK)                            | 2.13                  | 3.3E-05              | 2.6E-04              | 2.9E-04               | 1771               | 4571               | 1.6E-07      | 6.3E-08      |
| Ethylbenzene                                | 0.51                  | 7.8E-06              | 6.1E-05              | 6.9E-05               | NA                 | NA                 | NA           | NA           |
| 4-Isopropyltoluene                          | 0.956                 | 1.5E-05              | 1.1E-04              | 1.3E-04               | NA                 | NA                 | NA           | NA           |
| m,p-Xylene                                  | 0.5                   | 7.7E-06              | 6.0E-05              | 6.8E-05               | 2.1                | 2.6                | 3.2E-05      | 2.6E-05      |
| Methylene chloride                          | 4.18                  | 6.4E-05              | 5.0E-04              | 5.7E-04               | 5.85               | 50                 | 9.7E-05      | 1.1E-05      |
| Styrene                                     | 1.3                   | 2.0E-05              | 1.6E-04              | 1.8E-04               | NA                 | NA                 | NA           | NA           |
| Toluene                                     | 1.12                  | 1.7E-05              | 1.3E-04              | 1.5E-04               | 26                 | 260                | 5.8E-06      | 5.8E-07      |
| Xylenes (total)                             | 0.5                   | 7.7E-06              | 6.0E-05              | 6.8E-05               | 2.1                | 2.6                | 3.2E-05      | 2.6E-05      |
| <b>Pesticides</b>                           |                       |                      |                      |                       |                    |                    |              |              |
| alpha-BHC                                   | 25.2                  | 3.9E-04              | 3.0E-03              | 3.4E-03               | 0.014              | 0.14               | 0.24         | 0.02         |
| 4,4'-DDD                                    | 6.37                  | 9.8E-05              | 1.4E-03              | 1.5E-03               | 0.147              | 0.247              | 0.01         | 0.01         |
| 4,4'-DDT                                    | 89.9                  | 1.4E-03              | 5.0E-02              | 5.1E-02               | 0.147              | 0.247              | 0.35         | 0.21         |
| Endosulfan sulfate                          | 42.1                  | 6.5E-04              | 5.1E-03              | 5.7E-03               | 0.15               | NA                 | 0.04         | NA           |
| <b>Polycyclic Aromatic Hydrocarbons</b>     |                       |                      |                      |                       |                    |                    |              |              |
| HPAH sum                                    | 1723.6                | 0.026                | 0.54                 | 0.56                  | 0.615              | 3.07               | 0.92         | 0.18         |
| LPAH sum                                    | 672.6                 | 0.010                | 0.25                 | 0.26                  | 65.6               | 110                | 0.004        | 0.002        |
| <b>Other Semivolatile Organic Compounds</b> |                       |                      |                      |                       |                    |                    |              |              |
| Bis(2-Ethylhexyl)phthalate                  | 335                   | 0.005                | 0.07                 | 0.07                  | 18.33              | 183.3              | 0.004        | 0.0004       |
| Butylbenzylphthalate                        | 1230                  | 0.019                | 0.15                 | 0.17                  | NA                 | NA                 | NA           | NA           |

## Key:

EE-diet = estimated chemical exposure from diet

EE-soil = estimated chemical exposure from incidental soil ingestion

EE-total = total chemical exposure

EPC = exposure point concentration

HPAH = high molecular weight PAH

HQ = hazard quotient

LOAEL = lowest observed adverse effect level

LPAH = low molecular weight PAH

NOAEL = no observed adverse effect level

mg/kg = milligrams per kilogram

mg/kg/day = milligrams per kilogram per day

µg/kg = micrograms per kilogram

NA = not available

Grey shading = HQ exceeds 1.0

## Note:

a = Chemicals detected in surface soil are listed. Essential nutrients (calcium, iron, magnesium, sodium, and potassium) and major soil constituents (aluminum) were excluded from the evaluation as per USEPA guidance (USEPA 1989, 2003).

b = mg/kg for metals. µg/kg for other analytes.

Table D-11. Swallow Exposure Estimates and Hazard Quotients, Gorst Creek - Bremerton Auto Wrecking Landfill.

| Analyte <sup>a</sup>              | Sediment<br>EPC <sup>b</sup> | EE-sediment<br>(mg/kg/d) | EE-diet<br>(mg/kg/d) | EE-total<br>(mg/kg/d) | NOAEL<br>(mg/kg/d) | LOAEL<br>(mg/kg/d) | HQ-<br>NOAEL | HQ-<br>LOAEL |
|-----------------------------------|------------------------------|--------------------------|----------------------|-----------------------|--------------------|--------------------|--------------|--------------|
| <b>Polychlorinated Biphenyls</b>  |                              |                          |                      |                       |                    |                    |              |              |
| Aroclor-1248                      | 746                          | 2.8E-03                  | 0.66                 | 0.66                  | 0.18               | 1.8                | 3.7          | 0.37         |
| Aroclor-1254                      | 908                          | 3.4E-03                  | 0.80                 | 0.80                  | 0.18               | 1.8                | 4.5          | 0.45         |
| Aroclor-1260                      | 516                          | 1.9E-03                  | 0.45                 | 0.46                  | 0.18               | 1.8                | 2.5          | 0.25         |
| <b>Metals</b>                     |                              |                          |                      |                       |                    |                    |              |              |
| Arsenic                           | 2.42                         | 0.01                     | 0.19                 | 0.20                  | 2.24               | 3.55               | 0.088        | 0.055        |
| Barium                            | 68.4                         | 0.26                     | 12.9                 | 13.2                  | 20.8               | 41.7               | 0.63         | 0.32         |
| Beryllium                         | 0.197                        | 0.001                    | 0.04                 | 0.04                  | NA                 | NA                 | NA           | NA           |
| Cadmium                           | 0.605                        | 0.002                    | 0.15                 | 0.15                  | 1.47               | 2.37               | 0.10         | 0.06         |
| Chromium                          | 23.5                         | 0.09                     | 0.97                 | 1.06                  | 2.66               | 2.78               | 0.40         | 0.38         |
| Cobalt                            | 16.9                         | 0.06                     | 3.19                 | 3.25                  | 7.61               | 7.8                | 0.43         | 0.42         |
| Copper                            | 38.5                         | 0.15                     | 6.39                 | 6.54                  | 4.05               | 4.68               | 1.6          | 1.4          |
| Lead                              | 35.5                         | 0.13                     | 0.55                 | 0.69                  | 1.63               | 1.94               | 0.42         | 0.35         |
| Manganese                         | 1,160                        | 4.38                     | 219                  | 223                   | 179                | 348                | 1.2          | 0.64         |
| Mercury                           | 0.0593                       | 0.0002                   | 0.013                | 0.013                 | 0.45               | 0.9                | 0.029        | 0.014        |
| Nickel                            | 35.7                         | 0.13                     | 3.3                  | 3.4                   | 6.71               | 11.5               | 0.51         | 0.30         |
| Zinc                              | 130                          | 0.49                     | 32.8                 | 33.3                  | 66.1               | 66.5               | 0.50         | 0.50         |
| <b>Volatile Organic Compounds</b> |                              |                          |                      |                       |                    |                    |              |              |
| Acetone                           | 3.85                         | 1.5E-05                  | 7.3E-04              | 7.4E-04               | NA                 | NA                 | NA           | NA           |
| 4-Isopropyltoluene                | 3.19                         | 1.2E-05                  | 6.0E-04              | 6.1E-04               | NA                 | NA                 | NA           | NA           |
| Styrene                           | 0.426                        | 1.6E-06                  | 8.0E-05              | 8.2E-05               | NA                 | NA                 | NA           | NA           |

**Key:**

EE-diet = estimated chemical exposure from diet

EE-sediment = estimated chemical exposure from incidental sediment ingestion

EE-total = total chemical exposure

EPC = exposure point concentration

HQ = hazard quotient

LOAEL = lowest observed adverse effect level

NOAEL = no observed adverse effect level

mg/kg = milligrams per kilogram

mg/kg/day = milligrams per kilogram per day

µg/kg = micrograms per kilogram

NA = Not available

Grey shading = HQ exceed 1.0

**Note:**

a = Chemicals detected in sediment are listed. Essential nutrients (calcium, iron, magnesium, sodium, and potassium) and major soil /sediment constituents (aluminum) were excluded from the evaluation as per USEPA guidance (USEPA 1989, 2003).

b = mg/kg for metals. µg/kg for other analytes.

Table D-12. Raccoon Exposure Estimates and Hazard Quotients, Gorst Creek - Bremerton Auto Wrecking Landfill.

| Analyte <sup>a</sup>              | Sediment EPC <sup>b</sup> | EE-sediment (mg/kg/d) | EE-diet (mg/kg/d) | EE-total (mg/kg/d) | NOAEL (mg/kg/d) | LOAEL (mg/kg/d) | HQ-NOAEL | HQ-LOAEL |
|-----------------------------------|---------------------------|-----------------------|-------------------|--------------------|-----------------|-----------------|----------|----------|
| <b>Polychlorinated Biphenyls</b>  |                           |                       |                   |                    |                 |                 |          |          |
| Aroclor-1248                      | 746                       | 0.004                 | 0.19              | 0.19               | 0.14            | 0.69            | 1.36     | 0.28     |
| Aroclor-1254                      | 908                       | 0.005                 | 0.23              | 0.23               | 0.14            | 0.69            | 1.65     | 0.33     |
| Aroclor-1260                      | 516                       | 0.003                 | 0.13              | 0.13               | 0.14            | 0.69            | 0.94     | 0.19     |
| <b>Metals</b>                     |                           |                       |                   |                    |                 |                 |          |          |
| Arsenic                           | 2.42                      | 0.012                 | 0.053             | 0.065              | 1.04            | 1.66            | 0.06     | 0.04     |
| Barium                            | 68.4                      | 0.348                 | 3.7               | 4.0                | 51.8            | 121             | 0.08     | 0.03     |
| Beryllium                         | 0.197                     | 0.001                 | 0.011             | 0.01               | 0.532           | NA              | 0.02     | NA       |
| Cadmium                           | 0.605                     | 0.003                 | 0.041             | 0.04               | 0.77            | 1               | 0.06     | 0.04     |
| Chromium                          | 23.5                      | 0.120                 | 0.274             | 0.39               | 9.24            | NA              | 0.04     | NA       |
| Cobalt                            | 16.9                      | 0.086                 | 0.902             | 0.99               | 7.33            | 10.9            | 0.13     | 0.09     |
| Copper                            | 38.5                      | 0.196                 | 1.808             | 2.00               | 5.6             | 5.79            | 0.36     | 0.35     |
| Lead                              | 35.5                      | 0.181                 | 0.156             | 0.34               | 4.7             | 5               | 0.07     | 0.07     |
| Manganese                         | 1,160                     | 5.9                   | 62                | 68                 | 51.5            | 65              | 1.32     | 1.04     |
| Mercury                           | 0.0593                    | 0.0003                | 0.004             | 0.00               | 13.2            | NA              | 0.0003   | NA       |
| Nickel                            | 35.7                      | 0.182                 | 0.926             | 1.11               | 1.7             | 2.71            | 0.65     | 0.41     |
| Zinc                              | 130                       | 0.662                 | 9.273             | 9.94               | 75.4            | 75.9            | 0.13     | 0.13     |
| <b>Volatile Organic Compounds</b> |                           |                       |                   |                    |                 |                 |          |          |
| Acetone                           | 3.85                      | 2.0E-05               | 2.1E-04           | 2.3E-04            | 10              | 50              | 2.3E-05  | 4.5E-06  |
| 4-Isopropyltoluene                | 3.19                      | 1.6E-05               | 1.7E-04           | 1.9E-04            | NA              | NA              | NA       | NA       |
| Styrene                           | 0.426                     | 2.2E-06               | 2.3E-05           | 2.5E-05            | NA              | NA              | NA       | NA       |

## Key:

EE-diet = estimated chemical exposure from diet

EE-sediment = estimated chemical exposure from incidental sediment ingestion

EE-total = total chemical exposure

EPC = exposure point concentration

HQ = hazard quotient

LOAEL = lowest observed adverse effect level

NOAEL = no observed adverse effect level

mg/kg = milligrams per kilogram

mg/kg/day = milligrams per kilogram per day

µg/kg = micrograms per

kilogram

NA = Not available

Grey shading = HQ &gt; 1

## Note:

a = Chemicals detected in sediment are listed. Essential nutrients (calcium, iron, magnesium, sodium, and potassium) and major soil/sediment constituents (aluminum) were excluded from the evaluation as per USEPA guidance (USEPA 1989, 2003).

b = mg/kg for metals. µg/kg for other analytes.

Table D-13. Effect of Exposure Duration, Site Use, and Exposure Point Concentration on Wildlife Hazard Quotients.

| Analyte        | Highly Conservative Case <sup>a</sup> |    |                                     |              |              | Moderately Conservative Case |     |                             |                           |              |              |
|----------------|---------------------------------------|----|-------------------------------------|--------------|--------------|------------------------------|-----|-----------------------------|---------------------------|--------------|--------------|
|                | SUF                                   | ED | EPC<br>Max. <sup>b</sup><br>(mg/kg) | HQ-<br>NOAEL | HQ-<br>LOAEL | SUF                          | ED  | EPC (ProUCL Recommendation) |                           | HQ-<br>NOAEL | HQ-<br>LOAEL |
|                |                                       |    |                                     |              |              |                              |     | Value                       | Basis                     |              |              |
| American Robin |                                       |    |                                     |              |              |                              |     |                             |                           |              |              |
| Aroclor 1254   | 1                                     | 1  | 0.345                               | 1.3          | 0.13         | 1                            | 0.5 | 345                         | Maximum concentration     | 0.65         | 0.07         |
| Cadmium        | 1                                     | 1  | 3.24                                | 3.5          | 2.2          | 1                            | 0.5 | 2.36                        | 95% Approximate gamma UCL | 1.4          | 0.85         |
| Chromium       | 1                                     | 1  | 47.8                                | 1.4          | 1.3          | 1                            | 0.5 | 36.6                        | 95% Student's-t UCL       | 0.55         | 0.51         |
| Copper         | 1                                     | 1  | 83.1                                | 2.6          | 2.3          | 1                            | 0.5 | 55.9                        | 95% Approximate gamma UCL | 0.90         | 0.75         |
| Lead           | 1                                     | 1  | 691                                 | 24           | 20           | 1                            | 0.5 | 691                         | Maximum concentration     | 12           | 10           |
| Nickel         | 1                                     | 1  | 44.8                                | 1.7          | 1.0          | 1                            | 0.5 | 40.5                        | 95% Student's-t UCL       | 0.8          | 0.46         |
| Zinc           | 1                                     | 1  | 836                                 | 2.87         | 2.85         | 1                            | 0.5 | 527                         | 95% Student's-t UCL       | 1.23         | 1.23         |
| Masked Shrew   |                                       |    |                                     |              |              |                              |     |                             |                           |              |              |
| Cadmium        | 1                                     | 1  | 3.24                                | 3.4          | 2.6          | 1                            | 1   | 2.36                        | 95% Approximate gamma UCL | 2.6          | 2.0          |
| Copper         | 1                                     | 1  | 83.1                                | 1.1          | 0.94         | 1                            | 1   | 55.9                        | 95% Approximate gamma UCL | 0.8          | 0.6          |
| Lead           | 1                                     | 1  | 691                                 | 6.3          | 5.9          | 1                            | 1   | 691                         | Maximum concentration     | 6.3          | 5.9          |
| Nickel         | 1                                     | 1  | 44.8                                | 3.8          | 2.4          | 1                            | 1   | 40.5                        | 95% Student's-t UCL       | 3.4          | 2.1          |
| Zinc           | 1                                     | 1  | 836                                 | 1.41         | 1.40         | 1                            | 1   | 527                         | 95% Student's-t UCL       | 1.17         | 1.16         |
| Barn Swallow   |                                       |    |                                     |              |              |                              |     |                             |                           |              |              |
| Aroclor 1248   | 1                                     | 1  | 0.746                               | 3.7          | 0.5          | 0.5                          | 0.5 | 0.746                       | Maximum concentration     | 0.93         | 0.13         |
| Aroclor 1254   | 1                                     | 1  | 0.908                               | 4.5          | 0.45         | 0.5                          | 0.5 | 0.908                       | Maximum concentration     | 1.1          | 0.11         |
| Aroclor 1260   | 1                                     | 1  | 0.516                               | 2.5          | 0.25         | 0.5                          | 0.5 | 0.516                       | Maximum concentration     | 0.63         | 0.06         |
| Copper         | 1                                     | 1  | 38.5                                | 1.6          | 1.4          | 0.5                          | 0.5 | 38.5                        | Maximum concentration     | 0.40         | 0.35         |
| Manganese      | 1                                     | 1  | 1160                                | 1.2          | 0.64         | 0.5                          | 0.5 | 1160                        | Maximum concentration     | 0.30         | 0.16         |
| Raccoon        |                                       |    |                                     |              |              |                              |     |                             |                           |              |              |
| Aroclor 1248   | 1                                     | 1  | 0.746                               | 1.4          | 0.28         | 0.0003                       | 1   | 0.746                       | Maximum concentration     | 0.0004       | 0.0001       |
| Aroclor 1254   | 1                                     | 1  | 0.908                               | 1.7          | 0.33         | 0.0003                       | 1   | 0.908                       | Maximum concentration     | 0.0005       | 0.0001       |
| Manganese      | 1                                     | 1  | 1160                                | 1.3          | 1.04         | 0.0003                       | 1   | 1160                        | Maximum concentration     | 0.0004       | 0.0003       |

Notes:

a = Robin, shrew, swallow, and raccoon HQs from Tables X-9 to X-12, respectively.

b = Maximum soil concentration for robin and shrew. Maximum sediment concentration for swallow and raccoon.

Key:

ED = exposure duration (i.e. fraction of year spent at site)

EPC = exposure point concentration

HQ = hazard quotient

LOAEL = lowest observed adverse effect level

NOAEL = no observed adverse effect level

SUF = site use factor (i.e. fraction of receptor's home range represented by the site).

UCL = upper confidence limit

Table D-14. Summary of Chemicals Exceeding Screening Levels or Toxicity Reference Values, Gorst Creek - Bremerton Auto Wrecking Site.

| Analyte <sup>a</sup>                 | Environmental Medium and Receptor Group |                            |                       |       |                      |                       |       |
|--------------------------------------|---|----------------------------|-----------------------|-------|----------------------|-----------------------|-------|
|                                      | Soil                                    |                            |                       |       | Sediment             |                       |       |
|                                      | Plants <sup>b</sup>                     | Soil<br>Fauna <sup>c</sup> | Wildlife <sup>d</sup> |       | Benthos <sup>e</sup> | Wildlife <sup>f</sup> |       |
|                                      |   |                            | NOAEL                 | LOAEL |                      | NOAEL                 | LOAEL |
| Polychlorinated Biphenyls            |   |                            |                       |       |                      |                       |       |
| Aroclor 1248                         |   |                            |                       |       | X                    | X                     |       |
| Aroclor 1254                         |   |                            | X                     |       | X                    | X                     |       |
| Aroclor 1260                         |   |                            |                       |       | X                    | X                     |       |
| Metals                               |   |                            |                       |       |                      |                       |       |
| Arsenic                              |   |                            |                       |       |                      |                       |       |
| Barium                               |   |                            |                       |       |                      |                       |       |
| Beryllium                            |   |                            |                       |       |                      |                       |       |
| Cadmium                              |   |                            | X                     | X     |                      |                       |       |
| Chromium                             |   |                            | X                     | X     |                      |                       |       |
| Cobalt                               |   |                            |                       |       |                      |                       |       |
| Copper                               | X                                       | X                          | X                     | X     | X                    | X                     | X     |
| Lead                                 | X                                       |                            | X                     | X     |                      |                       |       |
| Manganese                            | X                                       | X                          |                       |       | X                    | X                     | X     |
| Mercury                              | X                                       |                            |                       |       |                      |                       |       |
| Nickel                               | X                                       |                            | X                     | X     | X                    |                       |       |
| Selenium                             |   |                            |                       |       |                      |                       |       |
| Zinc                                 | X                                       | X                          | X                     | X     | X                    |                       |       |
| Volatile Organic Compounds           |   |                            |                       |       |                      |                       |       |
| Acetone                              |   |                            |                       |       |                      |                       |       |
| 2-Butanone (MEK)                     |   |                            |                       |       |                      |                       |       |
| Ethylbenzene                         |   |                            |                       |       |                      |                       |       |
| 4-Isopropyltoluene                   |   |                            |                       |       |                      |                       |       |
| m,p-Xylene                           |   |                            |                       |       |                      |                       |       |
| Methylene chloride                   |   |                            |                       |       |                      |                       |       |
| Styrene                              |   |                            |                       |       |                      |                       |       |
| Toluene                              |   |                            |                       |       |                      |                       |       |
| Xylenes (total)                      |   |                            |                       |       |                      |                       |       |
| Pesticides                           |   |                            |                       |       |                      |                       |       |
| alpha-BHC                            |   |                            |                       |       |                      |                       |       |
| 4,4'-DDD                             |   |                            |                       |       |                      |                       |       |
| 4,4'-DDT                             |   |                            |                       |       |                      |                       |       |
| Endosulfan sulfate                   |   |                            |                       |       |                      |                       |       |
| Polycyclic Aromatic Hydrocarbons     |   |                            |                       |       |                      |                       |       |
| HPAH sum                             |   |                            |                       |       |                      |                       |       |
| LPAH sum                             |   |                            |                       |       |                      |                       |       |
| Other Semivolatile Organic Compounds |   |                            |                       |       |                      |                       |       |
| Bis(2-ethylhexyl)phthalate           |   |                            |                       |       |                      |                       |       |
| Butylbenzylphthalate                 |   |                            |                       |       |                      |                       |       |

**Key:**

HPAH = high molecular weight PAH

LOAEL = Lowest observed adverse effect

LPAH = low molecular weight PAH

MEK = methyl ethyl ketone

NOAEL = No observed adverse effect level

TRV = toxicity reference value

X = screening level exceeded or HQ > 1.

X = Likely chemical of concern for wildlife (see Table X-13 and Section X.4.5.1.4) or benthos (see Section X.4.1.2).

**Notes:**

a = Chemicals detected in soil or sediment are listed.

b - Based on comparing soil chemical concentrations with soil screening levels for plants (see Table X-4).

c - Based on comparing soil chemical concentrations with soil screening levels for earthworms (see Table X-4).

d - Based on modeled exposure estimates for the American robin and masked shrew (see Tables X-9 and X-10).

e - Based on comparing chemical concentrations in sediment with sediment screening levels (see Table X-2).

f - Based on modeled exposure estimates for the barn swallow and raccoon (see Tables X-11 and X-12).

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**E**

# **APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS**

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| Standard, Requirement, Criterion, or Limitation   | Citation  | Description   | ARAR/TBC  |
|---|---|---|---|
| <b>Chemical Specific</b>  |   |   |   |
| <b>Federal</b>  |   |   |   |
| Clean Water Act 40 (Federal Water Pollution Control Act; as amended)  | 33 USC §§ 1251- 1387<br>40 CFR 129  | Toxic Pollutant Effluent Standards  | Relevant and appropriate  |
| Federal Safe Drinking Water Act   | 42 USC 300f et seq.<br>40 CFR 141, 143  | Defines Maximum Contaminant Levels for drinking water   | Applicable  |
| EPA Regional Screening Levels   | EPA 2011  | Chemical-specific risk-based concentrations derived from standard risk equations for soil, groundwater, surface water, and sediment.  | To be considered  |
| Ambient Water Quality Criteria (AWQC)   | 33 USC Sec. 304;<br><a href="http://water.epa.gov/scitech/wguidance/standards/current/index.cfm">http://water.epa.gov/scitech/wguidance/standards/current/index.cfm</a> | Published pursuant to the Clean Water Act, numeric values limiting the amount of chemicals present in surface water bodies  | To be considered  |
| Ecological Soil Screening Levels  | EPA 2005a, 2005 e-g, 2007a-e  | Includes chemical-specific ecological soil screening levels   | To be considered  |
| <b>State</b>  |   |   |   |
| State of Washington ARARs Model Toxics Control Act  | RCW 70.105D Chapter 173-340 WAC   | Identifies procedures for establishing cleanup levels for groundwater, surface water, sediments, and soil   | Applicable  |
| Water quality standards for surface waters of the state of Washington   | RCW 90.48 Chapter 173-201A WAC  | Establishes water quality standards for surface waters of the state of Washington consistent with public health and public enjoyment of the waters and the propagation and protection of fish, shellfish, and wildlife                              | Applicable  |
| State Water Pollution Control Act, State Water Resources Act of 1971  | RCW 90.54 Chapter 173-200 WAC   | Establishes ground water quality standards and applies to all ground waters of the state that occur in a saturated zone or stratum beneath the surface of land or below a surface water body  | Applicable  |
| <b>Other</b>  |   |   |   |
| Ecological Soil Screening Levels  | Efroymsen et al. (1997), or Alloway (1984)  | critical soil levels and potential concern for effects for terrestrial plants.  | To be considered  |
| Ecological Sediment Screening Levels  | MacDonald et al. 2000<br>MacDonald et al. 1999  | Threshold Effect Concentrations (TECs) and Probable Effect Concentrations (PECs) Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems  | To be considered  |
| <b>Action Specific</b>  |   |   |   |
| <b>Federal</b>  |   |   |   |
| Federal Resource Conservation and Recovery Act (RCRA)   | 42 USC 6902 et seq.<br>40 CFR 261 et seq.   | Defines hazardous waste management requirements. Applies to management of hazardous/dangerous waste. If wastes are removed from the disposal areas, they will be managed in accordance with these requirements.                                     | Relevant and appropriate (State is authorized for RCRA)   |
| Federal Endangered Species Act (1973)   | 16 USC 1531 et seq. 50 CFR 200, 402   | Establishes program to conserve and protect threatened or endangered species.   | Applicable to the site for listed and proposed to be listed threatened or endangered species and their habitat areas which will, or could, be impacted by removal action. |
| Federal Water Pollution Control Act (a.k.a. Clean Water Act), National Pollutant Discharge Elimination System (NPDES) | 33 USC Sec. 303, 304 40 CFR Part 122, 125   | Establishes State permit program for discharge of pollutants and wastewater to surface waters. Requires all known, available, and reasonable methods of treatment (AKART). Applies to discharge of extracted, treated groundwater to surface water. | Applicable for any point source discharge of pollutants to surface water, including storm water runoff at the site.   |

| Standard, Requirement, Criterion, or Limitation              | Citation   | Description   | ARAR/TBC   |
|--|--|---|--|
| Federal Water Pollution Control Act (a.k.a. Clean Water Act) | 33 USC 1251-1387 33 CFR 320-330 40 CFR 230                                     | Establishes permit program for activities performed within 200 ft. of shorelines. Applies to construction of outfall for discharge of treated groundwater to surface water.   | Applicable   |
| Toxic Substances Control Act                                 | 15 U.S.C § 2601 et seq.  | Provides requirements for reporting, record-keeping, testing, and disposal of certain chemical substances and/or mixtures, including polychlorinated biphenyls [PCB]s.  | Applicable if PCB concentrations exceed specific thresholds  |
| Clean Air Act, 42 USC s/s 7401 et seq. (1970)                | 40 CFR Parts 61 and 63   | Part 61- National Emission Standards for Hazardous Air Pollutants.<br>Part 63 - National Emission Standards for Hazardous Air Pollutants for Source Categories.   | Applicable   |
| U.S. Fish and Wildlife Coordination Act                      | 16 USC 661 et seq.   | Prohibits water pollution with any substance deleterious to fish, plant life, or bird life. Discharges to surface water controlled through state NPDES program. However, discharges to surface water may require a consultation with the United States Fish and Wildlife Service.   | Applicable if threatened or endangered species could be impacted by the response action.   |
| Migratory Bird Treaty Act (MBTA)                             | 16 USC § 703 et seq  | Makes it unlawful to “hunt, take, capture, kill” or take various other actions adversely affecting a broad range of migratory birds, including tundra swans, hawks, falcons, songbirds, without prior approval by the U.S. Fish and Wildlife Service. (See 50 CFR 10.13 for the list of birds protected under the MBTA.) Under the MBTA, permits may be issued for take (e.g., for research) or killing of migratory birds (e.g., hunting licenses). The mortality of migratory birds due to ingestion of contaminated sediment is not a permitted take under the MBTA. | Applicable for protecting migratory bird species identified. The selected removal action to be carried out in a manner that avoids the taking or killing of protected migratory bird species, including individual birds or their nests or eggs. |
| Archaeological Resources Protection Act                      | 16 USC § 470aa et seq.; 43 CFR Part 7  | Prohibits the unauthorized disturbance of archaeological resources on public or Indian lands. Archaeological resources are “any material remains of past human life and activities which are of archaeological interest,” including pottery, baskets, tools, and human skeletal remains. The unauthorized removal of archaeological resources from public or Indian lands is prohibited without a permit, and any archaeological investigations at a site must be conducted by a professional archeologist.   | Applicable for the conduct of any selected response actions that may result in ground disturbance.   |
| American Indian Religious Freedom Act                        | 42 USC § 1996 et seq   | The American Indian Religious Freedom Act and implementing regulations are intended to protect Native American religious, ceremonial, and burial sites, and the free practice of religions by Native American groups. The requirements of this Act must be followed if sacred sites graves are discovered in the course of ground-disturbing activities.  | Potentially applicable to a site where response actions involve disturbance/alteration of the ground and/or site terrain.  |
| Native American Graves Protection and Repatriation Act       | 25 USC § 3001 et seq<br>43 CFR Part 10<br><br>25 USC 3001 et seq.<br>43 CFR 10 | Intended to protect Native American graves from desecration through the removal and trafficking of human remains and “cultural items” including funerary and sacred objects. The requirements of this Act must be followed when graves are discovered or ground-disturbing activities encounter Native American burial sites.   | Potentially applicable to a site where response actions involve disturbance/alteration of the ground and/or site terrain.  |
| <b>State</b>   |  |   |  |
| Model Toxics Control Act                                     | RCW 70.105D.090<br>WAC 173-340   | Establishes administrative processes and standards to identify, investigate, and clean up facilities where hazardous substances have come to be located. Applies to any facility (including landfills) where hazardous substance releases to the environment have been confirmed. Also specifies application of cleanup levels.   | Applicable   |

| Standard, Requirement, Criterion, or Limitation                                   | Citation                      | Description  | ARAR/TBC  |
|---|-------------------------------|--|---|
| State Minimum Functional Standards for Solid Waste Handling                       | WAC 173-304                   | Defines requirements for solid waste management and disposal facilities. Applies to closure of solid waste landfill, including capping, installation of gas system, and environmental monitoring.  | Does not apply if dangerous wastes are present. |
| State Hazardous Waste Management Act (HWMA)                                       | RCW 70.105                    | Defines threshold levels and criteria to determine whether materials are hazardous/dangerous wastes. Applies to designation, handling, and disposal of wastes. Treatment residuals meeting these criteria will be handled and disposed of in accordance with regulatory requirements   | Applicable                                      |
| State Dangerous Waste Regulations   | WAC 173-303-140 WAC           | Defines pre-treatment and land disposal restrictions for certain wastes. Applies to disposal of hazardous/dangerous wastes off-site. Wastes probably will not require additional treatment or be subject to restrictions.  | Applicable if any waste is disposed off site.   |
| State Hydraulics Act  | RCW 75.20 Chapter 220-110 WAC | Establishes permit program under Dept. of Wildlife/ Fisheries for projects that may change natural flow of "waters of the state." Applies to discharge of treated groundwater to surface water (additional flow to creek is a "change").   | Applicable                                      |
| State Clean Air Act: Source Registration, Emissions Limits, Air Quality Standards | RCW 70.94 Chapter 173-400 WAC | Establishes state approved program for source registration and fee payment to restrict emissions, use of BACT, and ensures compliance with air quality standards. Applies to installing or operating source having emissions to atmosphere. Alternatives emitting contaminants to atmosphere will comply with substantive requirements of these regulations. | Applicable                                      |
| <b>Location Specific</b>  |                               |  |   |
| <b>Local</b>  |                               |  |   |
| Kitsap County Local Development Ordinances  | KCC Title 12                  | Local codes for construction activities including storm water related management. Planned construction must meet the requirements of the applicable ordinances.  | To be considered                                |
| Kitsap County Board of Health   | Ordinance 2010-1              | Adoption of the full text of WAC 173-250 by the Kitsap County Board of Health. Applies to landfills in the county. It is rules and regulations that govern the handling, storage, collection, transportation, treatment, utilization, processing and final disposal of all solid waste within Kitsap County.   | To be considered                                |

Key:

ARAR = applicable or relevant and appropriate requirement

TBC = to be considered

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**F**

# **HYDROLOGIC AND HYDRAULIC CALCULATIONS**

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## APPENDIX F

This appendix includes the hydrologic and hydraulic calculations used in the preliminary design of the alternatives identified for evaluation under the Gorst Landfill EECA. Peak flow rates were calculated based on the Santa Barbara Urban Hydrograph Method as required by local and state design guidelines for storm water conveyance systems. Precipitation depths used to predict peak flows were estimated from spreadsheet hyetographs provided by Washington State Department of Ecology (WSDOE) under Technical Note 3. All assumptions should be noted as such in the calculations. Maps showing the estimated drainage basin and the precipitation travel routes used in the hydrologic calculations are also provided at the end of this appendix. Time of concentration calculations are based on the National Resource Conservation Service (NRCS) Technical Release 55 (TR-55) method which presents simplified procedures to calculate storm runoff volume.

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2 YEAR PEAK FLOW ESTIMATE

Site: 

Gorst Creek

Rainfall: 

3.04

 in.

Return Period  
year

2

Duration  
hour

24

Time Increment: 

10

 minutes

w: 0.0344

w = Time increment / ( 2 \* Time of Concentration + Time Increment)

Pervious Area: 

300.00

 acres

CN

68

S4.71

0.2 S0.94

Impervious Area: 

0.00

 acres

CN

89

S1.24

0.2 S0.25

Total Area: 300.00 acres

Time of Concentration: 

140.1

 minutes

2.34 hours

Qmax=12.3 cfs

| Column         |                |                                   |                                |                          |                           |                         |                          |                         |                       |                        |                       |                                 |
|----------------|----------------|-----------------------------------|--------------------------------|--------------------------|---------------------------|-------------------------|--------------------------|-------------------------|-----------------------|------------------------|-----------------------|---------------------------------|
| 1              | 2              | 3                                 | 4                              | 5                        | PERVIOUS                  |                         | IMPERVIOUS               |                         | 10                    | 11                     | 12                    | 13                              |
| Time Increment | Time (minutes) | Rainfall Distribu-tion (fraction) | Incre-mental Rainfall (inches) | Accum. Rainfall (inches) | Accum. Rainfall (inches ) | Increm. Runoff (inches) | Accum. Rainfall (inches) | Increm. Runoff (inches) | Total Runoff (inches) | Instant Flowrate (cfs) | Design Flowrate (cfs) | Design Flowrate with Tail (cfs) |
| 1              | 0              | 0.0000                            | 0.000                          | 0.000                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 2              | 10             | 0.0040                            | 0.012                          | 0.012                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 3              | 20             | 0.0040                            | 0.012                          | 0.024                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 4              | 30             | 0.0040                            | 0.012                          | 0.036                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 5              | 40             | 0.0040                            | 0.012                          | 0.049                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 6              | 50             | 0.0040                            | 0.012                          | 0.061                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 7              | 60             | 0.0040                            | 0.012                          | 0.073                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 8              | 70             | 0.0040                            | 0.012                          | 0.085                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 9              | 80             | 0.0040                            | 0.012                          | 0.097                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 10             | 90             | 0.0040                            | 0.012                          | 0.109                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 11             | 100            | 0.0040                            | 0.012                          | 0.122                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 12             | 110            | 0.0040                            | 0.012                          | 0.134                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 13             | 120            | 0.0050                            | 0.015                          | 0.149                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 14             | 130            | 0.0050                            | 0.015                          | 0.164                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 15             | 140            | 0.0050                            | 0.015                          | 0.179                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 16             | 150            | 0.0050                            | 0.015                          | 0.195                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 17             | 160            | 0.0050                            | 0.015                          | 0.210                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 18             | 170            | 0.0050                            | 0.015                          | 0.225                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 19             | 180            | 0.0060                            | 0.018                          | 0.243                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 20             | 190            | 0.0060                            | 0.018                          | 0.261                    | 0.000                     | 0.000                   | 0.000                    | 0.000                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 21             | 200            | 0.0060                            | 0.018                          | 0.280                    | 0.000                     | 0.000                   | 0.001                    | 0.001                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 22             | 210            | 0.0060                            | 0.018                          | 0.298                    | 0.000                     | 0.000                   | 0.002                    | 0.001                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 23             | 220            | 0.0060                            | 0.018                          | 0.316                    | 0.000                     | 0.000                   | 0.004                    | 0.002                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 24             | 230            | 0.0060                            | 0.018                          | 0.334                    | 0.000                     | 0.000                   | 0.006                    | 0.002                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 25             | 240            | 0.0070                            | 0.021                          | 0.356                    | 0.000                     | 0.000                   | 0.009                    | 0.003                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 26             | 250            | 0.0070                            | 0.021                          | 0.377                    | 0.000                     | 0.000                   | 0.012                    | 0.004                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 27             | 260            | 0.0070                            | 0.021                          | 0.398                    | 0.000                     | 0.000                   | 0.016                    | 0.004                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 28             | 270            | 0.0070                            | 0.021                          | 0.420                    | 0.000                     | 0.000                   | 0.021                    | 0.005                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 29             | 280            | 0.0070                            | 0.021                          | 0.441                    | 0.000                     | 0.000                   | 0.026                    | 0.005                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 30             | 290            | 0.0070                            | 0.021                          | 0.462                    | 0.000                     | 0.000                   | 0.032                    | 0.006                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 31             | 300            | 0.0080                            | 0.024                          | 0.486                    | 0.000                     | 0.000                   | 0.039                    | 0.007                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 32             | 310            | 0.0080                            | 0.024                          | 0.511                    | 0.000                     | 0.000                   | 0.046                    | 0.008                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 33             | 320            | 0.0080                            | 0.024                          | 0.535                    | 0.000                     | 0.000                   | 0.054                    | 0.008                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 34             | 330            | 0.0080                            | 0.024                          | 0.559                    | 0.000                     | 0.000                   | 0.063                    | 0.009                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 35             | 340            | 0.0080                            | 0.024                          | 0.584                    | 0.000                     | 0.000                   | 0.072                    | 0.009                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 36             | 350            | 0.0080                            | 0.024                          | 0.608                    | 0.000                     | 0.000                   | 0.082                    | 0.010                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 37             | 360            | 0.0100                            | 0.030                          | 0.638                    | 0.000                     | 0.000                   | 0.094                    | 0.013                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 38             | 370            | 0.0100                            | 0.030                          | 0.669                    | 0.000                     | 0.000                   | 0.107                    | 0.013                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 39             | 380            | 0.0100                            | 0.030                          | 0.699                    | 0.000                     | 0.000                   | 0.121                    | 0.014                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 40             | 390            | 0.0100                            | 0.030                          | 0.730                    | 0.000                     | 0.000                   | 0.135                    | 0.014                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 41             | 400            | 0.0100                            | 0.030                          | 0.760                    | 0.000                     | 0.000                   | 0.150                    | 0.015                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 42             | 410            | 0.0130                            | 0.040                          | 0.800                    | 0.000                     | 0.000                   | 0.171                    | 0.020                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 43             | 420            | 0.0130                            | 0.040                          | 0.839                    | 0.000                     | 0.000                   | 0.192                    | 0.021                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 44             | 430            | 0.0130                            | 0.040                          | 0.879                    | 0.000                     | 0.000                   | 0.213                    | 0.022                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 45             | 440            | 0.0180                            | 0.055                          | 0.933                    | 0.000                     | 0.000                   | 0.245                    | 0.031                   | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 46             | 450            | 0.0180                            | 0.055                          | 0.988                    | 0.000                     | 0.000                   | 0.278                    | 0.033                   | 0.000                 | 0.8                    | 0.0                   | 0.0                             |
| 47             | 460            | 0.0340                            | 0.103                          | 1.091                    | 0.005                     | 0.004                   | 0.343                    | 0.065                   | 0.004                 | 7.6                    | 0.3                   | 0.3                             |
| 48             | 470            | 0.0540                            | 0.164                          | 1.256                    | 0.020                     | 0.015                   | 0.453                    | 0.110                   | 0.015                 | 27.3                   | 1.5                   | 1.5                             |
| 49             | 480            | 0.0270                            | 0.082                          | 1.338                    | 0.031                     | 0.011                   | 0.511                    | 0.058                   | 0.011                 | 20.2                   | 3.0                   | 3.0                             |
| 50             | 490            | 0.0180                            | 0.055                          | 1.392                    | 0.039                     | 0.009                   | 0.551                    | 0.040                   | 0.009                 | 15.7                   | 4.1                   | 4.1                             |
| 51             | 500            | 0.0130                            | 0.040                          | 1.432                    | 0.046                     | 0.007                   | 0.580                    | 0.029                   | 0.007                 | 12.5                   | 4.7                   | 4.7                             |
| 52             | 510            | 0.0130                            | 0.040                          | 1.471                    | 0.054                     | 0.007                   | 0.609                    | 0.029                   | 0.007                 | 13.3                   | 5.3                   | 5.3                             |
| 53             | 520            | 0.0130                            | 0.040                          | 1.511                    | 0.062                     | 0.008                   | 0.639                    | 0.030                   | 0.008                 | 14.2                   | 5.9                   | 5.9                             |
| 54             | 530            | 0.0090                            | 0.027                          | 1.538                    | 0.067                     | 0.006                   | 0.660                    | 0.021                   | 0.006                 | 10.3                   | 6.3                   | 6.3                             |
| 55             | 540            | 0.0090                            | 0.027                          | 1.566                    | 0.073                     | 0.006                   | 0.680                    | 0.021                   | 0.006                 | 10.8                   | 6.6                   | 6.6                             |
| 56             | 550            | 0.0090                            | 0.027                          | 1.593                    | 0.079                     | 0.006                   | 0.702                    | 0.021                   | 0.006                 | 11.2                   | 6.9                   | 6.9                             |
| 57             | 560            | 0.0090                            | 0.027                          | 1.620                    | 0.086                     | 0.006                   | 0.723                    | 0.021                   | 0.006                 | 11.5                   | 7.2                   | 7.2                             |
| 58             | 570            | 0.0090                            | 0.027                          | 1.648                    | 0.092                     | 0.007                   | 0.744                    | 0.021                   | 0.007                 | 11.9                   | 7.5                   | 7.5                             |
| 59             | 580            | 0.0090                            | 0.027                          | 1.675                    | 0.099                     | 0.007                   | 0.765                    | 0.021                   | 0.007                 | 12.3                   | 7.9                   | 7.9                             |
| 60             | 590            | 0.0090                            | 0.027                          | 1.702                    | 0.106                     | 0.007                   | 0.787                    | 0.022                   | 0.007                 | 12.7                   | 8.2                   | 8.2                             |
| 61             | 600            | 0.0090                            | 0.027                          | 1.730                    | 0.113                     | 0.007                   | 0.809                    | 0.022                   | 0.007                 | 13.0                   | 8.5                   | 8.5                             |
| 62             | 610            | 0.0090                            | 0.027                          | 1.757                    | 0.121                     | 0.007                   | 0.830                    | 0.022                   | 0.007                 | 13.4                   | 8.8                   | 8.8                             |
| 63             | 620            | 0.0090                            | 0.027                          | 1.784                    | 0.128                     | 0.008                   | 0.852                    | 0.022                   | 0.008                 | 13.8                   | 9.2                   | 9.2                             |
| 64             | 630            | 0.0090                            | 0.027                          | 1.812                    | 0.136                     | 0.008                   | 0.874                    | 0.022                   | 0.008                 | 14.1                   | 9.5                   | 9.5                             |
| 65             | 640            | 0.0090                            | 0.027                          | 1.839                    | 0.144                     | 0.008                   | 0.896                    | 0.022                   | 0.008                 | 14.5                   | 9.8                   | 9.8                             |
| 66             | 650            | 0.0090                            | 0.027                          | 1.867                    | 0.152                     | 0.008                   | 0.918                    | 0.022                   | 0.008                 | 14.8                   | 10.1                  | 10.1                            |
| 67             | 660            | 0.0070                            | 0.021                          | 1.888                    | 0.159                     | 0.006                   | 0.936                    | 0.017                   | 0.006                 | 11.8                   | 10.4                  | 10.4                            |
| 68             | 670            | 0.0070                            | 0.021                          | 1.909                    | 0.165                     | 0.007                   | 0.953                    | 0.017                   | 0.007                 | 12.0                   | 10.5                  | 10.5                            |
| 69             | 680            | 0.0070                            | 0.021                          | 1.930                    | 0.172                     | 0.007                   | 0.971                    | 0.017                   | 0.007                 | 12.2                   | 10.6                  | 10.6                            |
| 70             | 690            | 0.0070                            | 0.021                          | 1.952                    | 0.179                     | 0.007                   | 0.988                    | 0.017                   | 0.007                 | 12.4                   | 10.7                  | 10.7                            |
| 71             | 700            | 0.0070                            | 0.021                          | 1.973                    | 0.186                     | 0.007                   | 1.006                    | 0.018                   | 0.007                 | 12.5                   | 10.8                  | 10.8                            |
| 72             | 710            | 0.0070                            | 0.021                          | 1.994                    | 0.193                     | 0.007                   | 1.023                    | 0.018                   | 0.007                 | 12.7                   | 10.9                  | 10.9                            |

|        |       |        |        |       |       |        |       |        |        |      |      |      |
|--------|-------|--------|--------|-------|-------|--------|-------|--------|--------|------|------|------|
| 73     | 720   | 0.0070 | 0.021  | 2.016 | 0.200 | 0.007  | 1.041 | 0.018  | 0.007  | 12.9 | 11.1 | 11.1 |
| 74     | 730   | 0.0070 | 0.021  | 2.037 | 0.207 | 0.007  | 1.059 | 0.018  | 0.007  | 13.1 | 11.2 | 11.2 |
| 75     | 740   | 0.0070 | 0.021  | 2.058 | 0.214 | 0.007  | 1.076 | 0.018  | 0.007  | 13.3 | 11.3 | 11.3 |
| 76     | 750   | 0.0070 | 0.021  | 2.079 | 0.222 | 0.007  | 1.094 | 0.018  | 0.007  | 13.5 | 11.5 | 11.5 |
| 77     | 760   | 0.0070 | 0.021  | 2.101 | 0.229 | 0.008  | 1.112 | 0.018  | 0.008  | 13.7 | 11.6 | 11.6 |
| 78     | 770   | 0.0070 | 0.021  | 2.122 | 0.237 | 0.008  | 1.130 | 0.018  | 0.008  | 13.9 | 11.8 | 11.8 |
| 79     | 780   | 0.0060 | 0.018  | 2.140 | 0.243 | 0.007  | 1.145 | 0.015  | 0.007  | 12.0 | 11.9 | 11.9 |
| 80     | 790   | 0.0060 | 0.018  | 2.158 | 0.250 | 0.007  | 1.161 | 0.015  | 0.007  | 12.1 | 11.9 | 11.9 |
| 81     | 800   | 0.0060 | 0.018  | 2.177 | 0.257 | 0.007  | 1.176 | 0.015  | 0.007  | 12.3 | 11.9 | 11.9 |
| 82     | 810   | 0.0060 | 0.018  | 2.195 | 0.264 | 0.007  | 1.192 | 0.015  | 0.007  | 12.4 | 11.9 | 11.9 |
| 83     | 820   | 0.0060 | 0.018  | 2.213 | 0.271 | 0.007  | 1.207 | 0.016  | 0.007  | 12.5 | 12.0 | 12.0 |
| 84     | 830   | 0.0060 | 0.018  | 2.231 | 0.278 | 0.007  | 1.223 | 0.016  | 0.007  | 12.7 | 12.0 | 12.0 |
| 85     | 840   | 0.0060 | 0.018  | 2.250 | 0.285 | 0.007  | 1.238 | 0.016  | 0.007  | 12.8 | 12.1 | 12.1 |
| 86     | 850   | 0.0060 | 0.018  | 2.268 | 0.292 | 0.007  | 1.254 | 0.016  | 0.007  | 12.9 | 12.1 | 12.1 |
| 87     | 860   | 0.0060 | 0.018  | 2.286 | 0.299 | 0.007  | 1.269 | 0.016  | 0.007  | 13.0 | 12.2 | 12.2 |
| 88     | 870   | 0.0060 | 0.018  | 2.304 | 0.306 | 0.007  | 1.285 | 0.016  | 0.007  | 13.1 | 12.2 | 12.2 |
| 89     | 880   | 0.0060 | 0.018  | 2.323 | 0.313 | 0.007  | 1.301 | 0.016  | 0.007  | 13.3 | 12.3 | 12.3 |
| 90     | 890   | 0.0050 | 0.015  | 2.338 | 0.320 | 0.006  | 1.314 | 0.013  | 0.006  | 11.1 | 12.3 | 12.3 |
| 91     | 900   | 0.0050 | 0.015  | 2.353 | 0.326 | 0.006  | 1.327 | 0.013  | 0.006  | 11.2 | 12.2 | 12.2 |
| 92     | 910   | 0.0050 | 0.015  | 2.368 | 0.332 | 0.006  | 1.340 | 0.013  | 0.006  | 11.3 | 12.1 | 12.1 |
| 93     | 920   | 0.0050 | 0.015  | 2.383 | 0.338 | 0.006  | 1.353 | 0.013  | 0.006  | 11.4 | 12.1 | 12.1 |
| 94     | 930   | 0.0050 | 0.015  | 2.399 | 0.345 | 0.006  | 1.366 | 0.013  | 0.006  | 11.5 | 12.0 | 12.0 |
| 95     | 940   | 0.0050 | 0.015  | 2.414 | 0.351 | 0.006  | 1.380 | 0.013  | 0.006  | 11.5 | 12.0 | 12.0 |
| 96     | 950   | 0.0050 | 0.015  | 2.429 | 0.357 | 0.006  | 1.393 | 0.013  | 0.006  | 11.6 | 12.0 | 12.0 |
| 97     | 960   | 0.0050 | 0.015  | 2.444 | 0.364 | 0.006  | 1.406 | 0.013  | 0.006  | 11.7 | 12.0 | 12.0 |
| 98     | 970   | 0.0050 | 0.015  | 2.459 | 0.370 | 0.006  | 1.419 | 0.013  | 0.006  | 11.8 | 11.9 | 11.9 |
| 99     | 980   | 0.0050 | 0.015  | 2.475 | 0.377 | 0.007  | 1.432 | 0.013  | 0.007  | 11.9 | 11.9 | 11.9 |
| 100    | 990   | 0.0050 | 0.015  | 2.490 | 0.383 | 0.007  | 1.446 | 0.013  | 0.007  | 11.9 | 11.9 | 11.9 |
| 101    | 1,000 | 0.0050 | 0.015  | 2.505 | 0.390 | 0.007  | 1.459 | 0.013  | 0.007  | 12.0 | 11.9 | 11.9 |
| 102    | 1,010 | 0.0040 | 0.012  | 2.517 | 0.395 | 0.005  | 1.470 | 0.011  | 0.005  | 9.7  | 11.9 | 11.9 |
| 103    | 1,020 | 0.0040 | 0.012  | 2.529 | 0.401 | 0.005  | 1.480 | 0.011  | 0.005  | 9.7  | 11.7 | 11.7 |
| 104    | 1,030 | 0.0040 | 0.012  | 2.541 | 0.406 | 0.005  | 1.491 | 0.011  | 0.005  | 9.8  | 11.6 | 11.6 |
| 105    | 1,040 | 0.0040 | 0.012  | 2.554 | 0.411 | 0.005  | 1.502 | 0.011  | 0.005  | 9.8  | 11.4 | 11.4 |
| 106    | 1,050 | 0.0040 | 0.012  | 2.566 | 0.417 | 0.005  | 1.512 | 0.011  | 0.005  | 9.9  | 11.3 | 11.3 |
| 107    | 1,060 | 0.0040 | 0.012  | 2.578 | 0.422 | 0.005  | 1.523 | 0.011  | 0.005  | 9.9  | 11.2 | 11.2 |
| 108    | 1,070 | 0.0040 | 0.012  | 2.590 | 0.428 | 0.005  | 1.534 | 0.011  | 0.005  | 9.9  | 11.1 | 11.1 |
| 109    | 1,080 | 0.0040 | 0.012  | 2.602 | 0.433 | 0.006  | 1.544 | 0.011  | 0.006  | 10.0 | 11.1 | 11.1 |
| 110    | 1,090 | 0.0040 | 0.012  | 2.614 | 0.439 | 0.006  | 1.555 | 0.011  | 0.006  | 10.0 | 11.0 | 11.0 |
| 111    | 1,100 | 0.0040 | 0.012  | 2.627 | 0.444 | 0.006  | 1.566 | 0.011  | 0.006  | 10.1 | 10.9 | 10.9 |
| 112    | 1,110 | 0.0040 | 0.012  | 2.639 | 0.450 | 0.006  | 1.577 | 0.011  | 0.006  | 10.1 | 10.9 | 10.9 |
| 113    | 1,120 | 0.0040 | 0.012  | 2.651 | 0.456 | 0.006  | 1.587 | 0.011  | 0.006  | 10.2 | 10.8 | 10.8 |
| 114    | 1,130 | 0.0040 | 0.012  | 2.663 | 0.461 | 0.006  | 1.598 | 0.011  | 0.006  | 10.2 | 10.8 | 10.8 |
| 115    | 1,140 | 0.0040 | 0.012  | 2.675 | 0.467 | 0.006  | 1.609 | 0.011  | 0.006  | 10.3 | 10.7 | 10.7 |
| 116    | 1,150 | 0.0040 | 0.012  | 2.687 | 0.473 | 0.006  | 1.620 | 0.011  | 0.006  | 10.3 | 10.7 | 10.7 |
| 117    | 1,160 | 0.0040 | 0.012  | 2.700 | 0.478 | 0.006  | 1.631 | 0.011  | 0.006  | 10.4 | 10.7 | 10.7 |
| 118    | 1,170 | 0.0040 | 0.012  | 2.712 | 0.484 | 0.006  | 1.641 | 0.011  | 0.006  | 10.4 | 10.7 | 10.7 |
| 119    | 1,180 | 0.0040 | 0.012  | 2.724 | 0.490 | 0.006  | 1.652 | 0.011  | 0.006  | 10.4 | 10.6 | 10.6 |
| 120    | 1,190 | 0.0040 | 0.012  | 2.736 | 0.496 | 0.006  | 1.663 | 0.011  | 0.006  | 10.5 | 10.6 | 10.6 |
| 121    | 1,200 | 0.0040 | 0.012  | 2.748 | 0.501 | 0.006  | 1.674 | 0.011  | 0.006  | 10.5 | 10.6 | 10.6 |
| 122    | 1,210 | 0.0040 | 0.012  | 2.760 | 0.507 | 0.006  | 1.685 | 0.011  | 0.006  | 10.6 | 10.6 | 10.6 |
| 123    | 1,220 | 0.0040 | 0.012  | 2.772 | 0.513 | 0.006  | 1.695 | 0.011  | 0.006  | 10.6 | 10.6 | 10.6 |
| 124    | 1,230 | 0.0040 | 0.012  | 2.785 | 0.519 | 0.006  | 1.706 | 0.011  | 0.006  | 10.7 | 10.6 | 10.6 |
| 125    | 1,240 | 0.0040 | 0.012  | 2.797 | 0.525 | 0.006  | 1.717 | 0.011  | 0.006  | 10.7 | 10.6 | 10.6 |
| 126    | 1,250 | 0.0040 | 0.012  | 2.809 | 0.531 | 0.006  | 1.728 | 0.011  | 0.006  | 10.7 | 10.6 | 10.6 |
| 127    | 1,260 | 0.0040 | 0.012  | 2.821 | 0.537 | 0.006  | 1.739 | 0.011  | 0.006  | 10.8 | 10.6 | 10.6 |
| 128    | 1,270 | 0.0040 | 0.012  | 2.833 | 0.543 | 0.006  | 1.750 | 0.011  | 0.006  | 10.8 | 10.6 | 10.6 |
| 129    | 1,280 | 0.0040 | 0.012  | 2.845 | 0.549 | 0.006  | 1.761 | 0.011  | 0.006  | 10.9 | 10.7 | 10.7 |
| 130    | 1,290 | 0.0040 | 0.012  | 2.858 | 0.555 | 0.006  | 1.772 | 0.011  | 0.006  | 10.9 | 10.7 | 10.7 |
| 131    | 1,300 | 0.0040 | 0.012  | 2.870 | 0.561 | 0.006  | 1.783 | 0.011  | 0.006  | 10.9 | 10.7 | 10.7 |
| 132    | 1,310 | 0.0040 | 0.012  | 2.882 | 0.567 | 0.006  | 1.793 | 0.011  | 0.006  | 11.0 | 10.7 | 10.7 |
| 133    | 1,320 | 0.0040 | 0.012  | 2.894 | 0.573 | 0.006  | 1.804 | 0.011  | 0.006  | 11.0 | 10.7 | 10.7 |
| 134    | 1,330 | 0.0040 | 0.012  | 2.906 | 0.579 | 0.006  | 1.815 | 0.011  | 0.006  | 11.1 | 10.8 | 10.8 |
| 135    | 1,340 | 0.0040 | 0.012  | 2.918 | 0.585 | 0.006  | 1.826 | 0.011  | 0.006  | 11.1 | 10.8 | 10.8 |
| 136    | 1,350 | 0.0040 | 0.012  | 2.931 | 0.591 | 0.006  | 1.837 | 0.011  | 0.006  | 11.1 | 10.8 | 10.8 |
| 137    | 1,360 | 0.0040 | 0.012  | 2.943 | 0.597 | 0.006  | 1.848 | 0.011  | 0.006  | 11.2 | 10.8 | 10.8 |
| 138    | 1,370 | 0.0040 | 0.012  | 2.955 | 0.603 | 0.006  | 1.859 | 0.011  | 0.006  | 11.2 | 10.9 | 10.9 |
| 139    | 1,380 | 0.0040 | 0.012  | 2.967 | 0.610 | 0.006  | 1.870 | 0.011  | 0.006  | 11.3 | 10.9 | 10.9 |
| 140    | 1,390 | 0.0040 | 0.012  | 2.979 | 0.616 | 0.006  | 1.881 | 0.011  | 0.006  | 11.3 | 10.9 | 10.9 |
| 141    | 1,400 | 0.0040 | 0.012  | 2.991 | 0.622 | 0.006  | 1.892 | 0.011  | 0.006  | 11.3 | 10.9 | 10.9 |
| 142    | 1,410 | 0.0040 | 0.012  | 3.004 | 0.628 | 0.006  | 1.903 | 0.011  | 0.006  | 11.4 | 11.0 | 11.0 |
| 143    | 1,420 | 0.0040 | 0.012  | 3.016 | 0.635 | 0.006  | 1.914 | 0.011  | 0.006  | 11.4 | 11.0 | 11.0 |
| 144    | 1,430 | 0.0040 | 0.012  | 3.028 | 0.641 | 0.006  | 1.925 | 0.011  | 0.006  | 11.5 | 11.0 | 11.0 |
| 145    | 1,440 | 0.0040 | 0.0122 | 3.040 | 0.647 | 0.006  | 1.936 | 0.011  | 0.006  | 11.5 | 11.1 | 11.1 |
| Total: |       | 1.0000 | 3.0400 |       |       | 0.6474 |       | 1.9360 | 0.6474 |      |      |      |

Max:12.3

Cumulative Runoff at Period 1450.56 inchesStart Flow11.1

Unaccounted Runoff0.09 inchesEnd Flow-0.3

17,440.85 secFlow Dec./per0.4

|        |  |                     |
|--------|--|---------------------|
| Column | Description  |                     |
| 1      | Time Increment   | 290.68 min          |
| 2      | Time (min)   | 29.07 periods       |
| 3      | Type IA Storm Distribution   | 30 periods          |
| 4      | Column 3 * Precipitation   | 0.5619 Total Runoff |
| 5      | Accumulated Sum of Column 4  |                     |
| 6      | If P<0.2S then 0, else (Column 5 - 0.2 * S)/(Column 5 +0.8 * S)  |                     |
| 7      | Column 6 of the present step - Column 6 of the previous step   |                     |
| 8      | Same as Column 6, except Impervious Area Calculations  |                     |
| 9      | Column 8 of the present step - Column 8 of the previous step   |                     |
| 10     | PerviousArea/TotalArea*Column 7 + ImperviousArea/TotalArea*Column 9  |                     |
| 11     | (60.5 * Column 10 * TotalArea)/Time Increment  |                     |
| 12     | Column 12 of previous step + w * ((Column 11 of previous step + column 11 of present step) - (2 * Column 12 of previous step)) |                     |

10 YEAR PEAK FLOW ESTIMATE

Site: 

Gorst Creek

Rainfall: 

4.53

 in.

Return Period  
year

10

Duration  
hour

24

Time Increment: 

10

 minutes

w: 0.0344

w = Time increment / ( 2 \* Time of Concentration + Time Increment)

Pervious Area: 

300.00

 acres

CN

68

S

4.71

0.2 S

0.94

Impervious Area: 

0.00

 acres

CN

89

S

1.24

0.2 S

0.25

Total Area: 300.00 acres

Time of Concentration: 

140.1

 minutes

2.34 hours

Qmax= 30.2 cfs

| Column         |                |                                  |                               |                          |                           |                            |                          |                            |                       |                        |                       |                                 |
|----------------|----------------|----------------------------------|-------------------------------|--------------------------|---------------------------|----------------------------|--------------------------|----------------------------|-----------------------|------------------------|-----------------------|---------------------------------|
| 1              | 2              | 3                                | 4                             | 5                        | 6                         | 7                          | 8                        | 9                          | 10                    | 11                     | 12                    | 13                              |
| Time Increment | Time (minutes) | Rainfall Distribution (fraction) | Incremental Rainfall (inches) | Accum. Rainfall (inches) | PERVIOUS                  |                            | IMPERVIOUS               |                            | Total Runoff (inches) | Instant Flowrate (cfs) | Design Flowrate (cfs) | Design Flowrate with Tail (cfs) |
|                |                |                                  |                               |                          | Accum. Rainfall (inches ) | Increment. Runoff (inches) | Accum. Rainfall (inches) | Increment. Runoff (inches) |                       |                        |                       |                                 |
| 1              | 0              | 0.0000                           | 0.000                         | 0.000                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 2              | 10             | 0.0040                           | 0.018                         | 0.018                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 3              | 20             | 0.0040                           | 0.018                         | 0.036                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 4              | 30             | 0.0040                           | 0.018                         | 0.054                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 5              | 40             | 0.0040                           | 0.018                         | 0.072                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 6              | 50             | 0.0040                           | 0.018                         | 0.091                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 7              | 60             | 0.0040                           | 0.018                         | 0.109                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 8              | 70             | 0.0040                           | 0.018                         | 0.127                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 9              | 80             | 0.0040                           | 0.018                         | 0.145                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 10             | 90             | 0.0040                           | 0.018                         | 0.163                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 11             | 100            | 0.0040                           | 0.018                         | 0.181                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 12             | 110            | 0.0040                           | 0.018                         | 0.199                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 13             | 120            | 0.0050                           | 0.023                         | 0.222                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 14             | 130            | 0.0050                           | 0.023                         | 0.245                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 15             | 140            | 0.0050                           | 0.023                         | 0.267                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 16             | 150            | 0.0050                           | 0.023                         | 0.290                    | 0.000                     | 0.000                      | 0.001                    | 0.001                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 17             | 160            | 0.0050                           | 0.023                         | 0.313                    | 0.000                     | 0.000                      | 0.003                    | 0.002                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 18             | 170            | 0.0050                           | 0.023                         | 0.335                    | 0.000                     | 0.000                      | 0.006                    | 0.003                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 19             | 180            | 0.0060                           | 0.027                         | 0.362                    | 0.000                     | 0.000                      | 0.010                    | 0.004                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 20             | 190            | 0.0060                           | 0.027                         | 0.390                    | 0.000                     | 0.000                      | 0.015                    | 0.005                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 21             | 200            | 0.0060                           | 0.027                         | 0.417                    | 0.000                     | 0.000                      | 0.020                    | 0.006                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 22             | 210            | 0.0060                           | 0.027                         | 0.444                    | 0.000                     | 0.000                      | 0.027                    | 0.007                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 23             | 220            | 0.0060                           | 0.027                         | 0.471                    | 0.000                     | 0.000                      | 0.034                    | 0.007                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 24             | 230            | 0.0060                           | 0.027                         | 0.498                    | 0.000                     | 0.000                      | 0.042                    | 0.008                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 25             | 240            | 0.0070                           | 0.032                         | 0.530                    | 0.000                     | 0.000                      | 0.053                    | 0.010                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 26             | 250            | 0.0070                           | 0.032                         | 0.562                    | 0.000                     | 0.000                      | 0.064                    | 0.011                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 27             | 260            | 0.0070                           | 0.032                         | 0.593                    | 0.000                     | 0.000                      | 0.076                    | 0.012                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 28             | 270            | 0.0070                           | 0.032                         | 0.625                    | 0.000                     | 0.000                      | 0.089                    | 0.013                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 29             | 280            | 0.0070                           | 0.032                         | 0.657                    | 0.000                     | 0.000                      | 0.102                    | 0.013                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 30             | 290            | 0.0070                           | 0.032                         | 0.689                    | 0.000                     | 0.000                      | 0.116                    | 0.014                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 31             | 300            | 0.0080                           | 0.036                         | 0.725                    | 0.000                     | 0.000                      | 0.133                    | 0.017                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 32             | 310            | 0.0080                           | 0.036                         | 0.761                    | 0.000                     | 0.000                      | 0.151                    | 0.018                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 33             | 320            | 0.0080                           | 0.036                         | 0.797                    | 0.000                     | 0.000                      | 0.169                    | 0.019                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 34             | 330            | 0.0080                           | 0.036                         | 0.834                    | 0.000                     | 0.000                      | 0.189                    | 0.019                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 35             | 340            | 0.0080                           | 0.036                         | 0.870                    | 0.000                     | 0.000                      | 0.209                    | 0.020                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 36             | 350            | 0.0080                           | 0.036                         | 0.906                    | 0.000                     | 0.000                      | 0.229                    | 0.021                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 37             | 360            | 0.0100                           | 0.045                         | 0.951                    | 0.000                     | 0.000                      | 0.256                    | 0.026                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 38             | 370            | 0.0100                           | 0.045                         | 0.997                    | 0.001                     | 0.001                      | 0.283                    | 0.027                      | 0.001                 | 1.1                    | 0.0                   | 0.0                             |
| 39             | 380            | 0.0100                           | 0.045                         | 1.042                    | 0.002                     | 0.001                      | 0.311                    | 0.028                      | 0.001                 | 2.7                    | 0.2                   | 0.2                             |
| 40             | 390            | 0.0100                           | 0.045                         | 1.087                    | 0.004                     | 0.002                      | 0.340                    | 0.029                      | 0.002                 | 4.1                    | 0.4                   | 0.4                             |
| 41             | 400            | 0.0100                           | 0.045                         | 1.133                    | 0.007                     | 0.003                      | 0.369                    | 0.030                      | 0.003                 | 5.6                    | 0.7                   | 0.7                             |
| 42             | 410            | 0.0130                           | 0.059                         | 1.191                    | 0.013                     | 0.005                      | 0.409                    | 0.039                      | 0.005                 | 9.4                    | 1.2                   | 1.2                             |
| 43             | 420            | 0.0130                           | 0.059                         | 1.250                    | 0.019                     | 0.006                      | 0.449                    | 0.040                      | 0.006                 | 11.7                   | 1.8                   | 1.8                             |
| 44             | 430            | 0.0130                           | 0.059                         | 1.309                    | 0.027                     | 0.008                      | 0.491                    | 0.041                      | 0.008                 | 13.9                   | 2.6                   | 2.6                             |
| 45             | 440            | 0.0180                           | 0.082                         | 1.391                    | 0.039                     | 0.013                      | 0.550                    | 0.059                      | 0.013                 | 22.7                   | 3.6                   | 3.6                             |
| 46             | 450            | 0.0180                           | 0.082                         | 1.472                    | 0.054                     | 0.015                      | 0.610                    | 0.060                      | 0.015                 | 26.6                   | 5.1                   | 5.1                             |
| 47             | 460            | 0.0340                           | 0.154                         | 1.626                    | 0.087                     | 0.033                      | 0.727                    | 0.117                      | 0.033                 | 60.3                   | 7.7                   | 7.7                             |
| 48             | 470            | 0.0540                           | 0.245                         | 1.871                    | 0.153                     | 0.066                      | 0.922                    | 0.195                      | 0.066                 | 120.4                  | 13.4                  | 13.4                            |
| 49             | 480            | 0.0270                           | 0.122                         | 1.993                    | 0.192                     | 0.039                      | 1.022                    | 0.100                      | 0.039                 | 70.5                   | 19.1                  | 19.1                            |
| 50             | 490            | 0.0180                           | 0.082                         | 2.075                    | 0.220                     | 0.028                      | 1.090                    | 0.068                      | 0.028                 | 50.5                   | 21.9                  | 21.9                            |
| 51             | 500            | 0.0130                           | 0.059                         | 2.134                    | 0.241                     | 0.021                      | 1.140                    | 0.049                      | 0.021                 | 38.2                   | 23.5                  | 23.5                            |
| 52             | 510            | 0.0130                           | 0.059                         | 2.193                    | 0.263                     | 0.022                      | 1.190                    | 0.050                      | 0.022                 | 39.5                   | 24.5                  | 24.5                            |
| 53             | 520            | 0.0130                           | 0.059                         | 2.251                    | 0.285                     | 0.023                      | 1.240                    | 0.050                      | 0.023                 | 40.8                   | 25.6                  | 25.6                            |
| 54             | 530            | 0.0090                           | 0.041                         | 2.292                    | 0.301                     | 0.016                      | 1.275                    | 0.035                      | 0.016                 | 29.0                   | 26.3                  | 26.3                            |
| 55             | 540            | 0.0090                           | 0.041                         | 2.333                    | 0.318                     | 0.016                      | 1.310                    | 0.035                      | 0.016                 | 29.6                   | 26.5                  | 26.5                            |
| 56             | 550            | 0.0090                           | 0.041                         | 2.374                    | 0.334                     | 0.017                      | 1.345                    | 0.035                      | 0.017                 | 30.2                   | 26.7                  | 26.7                            |
| 57             | 560            | 0.0090                           | 0.041                         | 2.414                    | 0.351                     | 0.017                      | 1.380                    | 0.035                      | 0.017                 | 30.8                   | 27.0                  | 27.0                            |
| 58             | 570            | 0.0090                           | 0.041                         | 2.455                    | 0.369                     | 0.017                      | 1.416                    | 0.035                      | 0.017                 | 31.4                   | 27.2                  | 27.2                            |
| 59             | 580            | 0.0090                           | 0.041                         | 2.496                    | 0.386                     | 0.018                      | 1.451                    | 0.036                      | 0.018                 | 31.9                   | 27.6                  | 27.6                            |
| 60             | 590            | 0.0090                           | 0.041                         | 2.537                    | 0.404                     | 0.018                      | 1.487                    | 0.036                      | 0.018                 | 32.5                   | 27.9                  | 27.9                            |
| 61             | 600            | 0.0090                           | 0.041                         | 2.578                    | 0.422                     | 0.018                      | 1.523                    | 0.036                      | 0.018                 | 33.0                   | 28.2                  | 28.2                            |
| 62             | 610            | 0.0090                           | 0.041                         | 2.618                    | 0.441                     | 0.018                      | 1.559                    | 0.036                      | 0.018                 | 33.5                   | 28.6                  | 28.6                            |
| 63             | 620            | 0.0090                           | 0.041                         | 2.659                    | 0.459                     | 0.019                      | 1.595                    | 0.036                      | 0.019                 | 34.0                   | 28.9                  | 28.9                            |
| 64             | 630            | 0.0090                           | 0.041                         | 2.700                    | 0.478                     | 0.019                      | 1.631                    | 0.036                      | 0.019                 | 34.5                   | 29.3                  | 29.3                            |
| 65             | 640            | 0.0090                           | 0.041                         | 2.741                    | 0.498                     | 0.019                      | 1.667                    | 0.036                      | 0.019                 | 35.0                   | 29.7                  | 29.7                            |
| 66             | 650            | 0.0090                           | 0.041                         | 2.781                    | 0.517                     | 0.020                      | 1.703                    | 0.036                      | 0.020                 | 35.5                   | 30.0                  | 30.0                            |
| 67             | 660            | 0.0070                           | 0.032                         | 2.813                    | 0.533                     | 0.015                      | 1.732                    | 0.028                      | 0.015                 | 28.0                   | 30.2                  | 30.2                            |
| 68             | 670            | 0.0070                           | 0.032                         | 2.845                    | 0.548                     | 0.016                      | 1.760                    | 0.028                      | 0.016                 | 28.2                   | 30.0                  | 30.0                            |
| 69             | 680            | 0.0070                           | 0.032                         | 2.877                    | 0.564                     | 0.016                      | 1.789                    | 0.028                      | 0.016                 | 28.5                   | 29.9                  | 29.9                            |
| 70             | 690            | 0.0070                           | 0.032                         | 2.908                    | 0.580                     | 0.016                      | 1.817                    | 0.028                      | 0.016                 | 28.8                   | 29.8                  | 29.8                            |
| 71             | 700            | 0.0070                           | 0.032                         | 2.940                    | 0.596                     | 0.016                      | 1.846                    | 0.029                      | 0.016                 | 29.1                   | 29.8                  | 29.8                            |
| 72             | 710            | 0.0070                           | 0.032                         | 2.972                    | 0.612                     | 0.016                      | 1.874                    | 0.029                      | 0.016                 | 29.3                   | 29.7                  | 29.7                            |

|        |       |        |        |       |       |        |       |        |        |      |      |      |
|--------|-------|--------|--------|-------|-------|--------|-------|--------|--------|------|------|------|
| 73     | 720   | 0.0070 | 0.032  | 3.003 | 0.628 | 0.016  | 1.903 | 0.029  | 0.016  | 29.6 | 29.7 | 29.7 |
| 74     | 730   | 0.0070 | 0.032  | 3.035 | 0.645 | 0.016  | 1.932 | 0.029  | 0.016  | 29.9 | 29.7 | 29.7 |
| 75     | 740   | 0.0070 | 0.032  | 3.067 | 0.661 | 0.017  | 1.960 | 0.029  | 0.017  | 30.1 | 29.7 | 29.7 |
| 76     | 750   | 0.0070 | 0.032  | 3.099 | 0.678 | 0.017  | 1.989 | 0.029  | 0.017  | 30.4 | 29.8 | 29.8 |
| 77     | 760   | 0.0070 | 0.032  | 3.130 | 0.695 | 0.017  | 2.018 | 0.029  | 0.017  | 30.6 | 29.8 | 29.8 |
| 78     | 770   | 0.0070 | 0.032  | 3.162 | 0.712 | 0.017  | 2.047 | 0.029  | 0.017  | 30.9 | 29.9 | 29.9 |
| 79     | 780   | 0.0060 | 0.027  | 3.189 | 0.727 | 0.015  | 2.072 | 0.025  | 0.015  | 26.7 | 29.8 | 29.8 |
| 80     | 790   | 0.0060 | 0.027  | 3.216 | 0.741 | 0.015  | 2.096 | 0.025  | 0.015  | 26.8 | 29.6 | 29.6 |
| 81     | 800   | 0.0060 | 0.027  | 3.243 | 0.756 | 0.015  | 2.121 | 0.025  | 0.015  | 27.0 | 29.4 | 29.4 |
| 82     | 810   | 0.0060 | 0.027  | 3.271 | 0.771 | 0.015  | 2.146 | 0.025  | 0.015  | 27.2 | 29.2 | 29.2 |
| 83     | 820   | 0.0060 | 0.027  | 3.298 | 0.786 | 0.015  | 2.171 | 0.025  | 0.015  | 27.3 | 29.1 | 29.1 |
| 84     | 830   | 0.0060 | 0.027  | 3.325 | 0.802 | 0.015  | 2.196 | 0.025  | 0.015  | 27.5 | 29.0 | 29.0 |
| 85     | 840   | 0.0060 | 0.027  | 3.352 | 0.817 | 0.015  | 2.221 | 0.025  | 0.015  | 27.7 | 28.9 | 28.9 |
| 86     | 850   | 0.0060 | 0.027  | 3.379 | 0.832 | 0.015  | 2.246 | 0.025  | 0.015  | 27.8 | 28.8 | 28.8 |
| 87     | 860   | 0.0060 | 0.027  | 3.407 | 0.848 | 0.015  | 2.271 | 0.025  | 0.015  | 28.0 | 28.8 | 28.8 |
| 88     | 870   | 0.0060 | 0.027  | 3.434 | 0.863 | 0.016  | 2.296 | 0.025  | 0.016  | 28.2 | 28.7 | 28.7 |
| 89     | 880   | 0.0060 | 0.027  | 3.461 | 0.879 | 0.016  | 2.321 | 0.025  | 0.016  | 28.3 | 28.7 | 28.7 |
| 90     | 890   | 0.0050 | 0.023  | 3.484 | 0.892 | 0.013  | 2.342 | 0.021  | 0.013  | 23.7 | 28.5 | 28.5 |
| 91     | 900   | 0.0050 | 0.023  | 3.506 | 0.905 | 0.013  | 2.363 | 0.021  | 0.013  | 23.8 | 28.2 | 28.2 |
| 92     | 910   | 0.0050 | 0.023  | 3.529 | 0.918 | 0.013  | 2.384 | 0.021  | 0.013  | 23.9 | 27.9 | 27.9 |
| 93     | 920   | 0.0050 | 0.023  | 3.552 | 0.931 | 0.013  | 2.405 | 0.021  | 0.013  | 24.0 | 27.6 | 27.6 |
| 94     | 930   | 0.0050 | 0.023  | 3.574 | 0.945 | 0.013  | 2.426 | 0.021  | 0.013  | 24.2 | 27.4 | 27.4 |
| 95     | 940   | 0.0050 | 0.023  | 3.597 | 0.958 | 0.013  | 2.447 | 0.021  | 0.013  | 24.3 | 27.1 | 27.1 |
| 96     | 950   | 0.0050 | 0.023  | 3.619 | 0.971 | 0.013  | 2.468 | 0.021  | 0.013  | 24.4 | 27.0 | 27.0 |
| 97     | 960   | 0.0050 | 0.023  | 3.642 | 0.985 | 0.013  | 2.489 | 0.021  | 0.013  | 24.5 | 26.8 | 26.8 |
| 98     | 970   | 0.0050 | 0.023  | 3.665 | 0.998 | 0.014  | 2.510 | 0.021  | 0.014  | 24.6 | 26.6 | 26.6 |
| 99     | 980   | 0.0050 | 0.023  | 3.687 | 1.012 | 0.014  | 2.531 | 0.021  | 0.014  | 24.7 | 26.5 | 26.5 |
| 100    | 990   | 0.0050 | 0.023  | 3.710 | 1.026 | 0.014  | 2.552 | 0.021  | 0.014  | 24.8 | 26.4 | 26.4 |
| 101    | 1,000 | 0.0050 | 0.023  | 3.733 | 1.039 | 0.014  | 2.573 | 0.021  | 0.014  | 24.9 | 26.3 | 26.3 |
| 102    | 1,010 | 0.0040 | 0.018  | 3.751 | 1.050 | 0.011  | 2.590 | 0.017  | 0.011  | 20.0 | 26.0 | 26.0 |
| 103    | 1,020 | 0.0040 | 0.018  | 3.769 | 1.061 | 0.011  | 2.607 | 0.017  | 0.011  | 20.0 | 25.6 | 25.6 |
| 104    | 1,030 | 0.0040 | 0.018  | 3.787 | 1.072 | 0.011  | 2.624 | 0.017  | 0.011  | 20.1 | 25.2 | 25.2 |
| 105    | 1,040 | 0.0040 | 0.018  | 3.805 | 1.084 | 0.011  | 2.641 | 0.017  | 0.011  | 20.1 | 24.8 | 24.8 |
| 106    | 1,050 | 0.0040 | 0.018  | 3.823 | 1.095 | 0.011  | 2.658 | 0.017  | 0.011  | 20.2 | 24.5 | 24.5 |
| 107    | 1,060 | 0.0040 | 0.018  | 3.841 | 1.106 | 0.011  | 2.675 | 0.017  | 0.011  | 20.3 | 24.2 | 24.2 |
| 108    | 1,070 | 0.0040 | 0.018  | 3.860 | 1.117 | 0.011  | 2.691 | 0.017  | 0.011  | 20.3 | 24.0 | 24.0 |
| 109    | 1,080 | 0.0040 | 0.018  | 3.878 | 1.128 | 0.011  | 2.708 | 0.017  | 0.011  | 20.4 | 23.7 | 23.7 |
| 110    | 1,090 | 0.0040 | 0.018  | 3.896 | 1.140 | 0.011  | 2.725 | 0.017  | 0.011  | 20.4 | 23.5 | 23.5 |
| 111    | 1,100 | 0.0040 | 0.018  | 3.914 | 1.151 | 0.011  | 2.742 | 0.017  | 0.011  | 20.5 | 23.3 | 23.3 |
| 112    | 1,110 | 0.0040 | 0.018  | 3.932 | 1.162 | 0.011  | 2.759 | 0.017  | 0.011  | 20.6 | 23.1 | 23.1 |
| 113    | 1,120 | 0.0040 | 0.018  | 3.950 | 1.174 | 0.011  | 2.776 | 0.017  | 0.011  | 20.6 | 22.9 | 22.9 |
| 114    | 1,130 | 0.0040 | 0.018  | 3.968 | 1.185 | 0.011  | 2.793 | 0.017  | 0.011  | 20.7 | 22.8 | 22.8 |
| 115    | 1,140 | 0.0040 | 0.018  | 3.986 | 1.196 | 0.011  | 2.810 | 0.017  | 0.011  | 20.7 | 22.6 | 22.6 |
| 116    | 1,150 | 0.0040 | 0.018  | 4.005 | 1.208 | 0.011  | 2.827 | 0.017  | 0.011  | 20.8 | 22.5 | 22.5 |
| 117    | 1,160 | 0.0040 | 0.018  | 4.023 | 1.219 | 0.011  | 2.844 | 0.017  | 0.011  | 20.8 | 22.4 | 22.4 |
| 118    | 1,170 | 0.0040 | 0.018  | 4.041 | 1.231 | 0.012  | 2.861 | 0.017  | 0.012  | 20.9 | 22.3 | 22.3 |
| 119    | 1,180 | 0.0040 | 0.018  | 4.059 | 1.242 | 0.012  | 2.878 | 0.017  | 0.012  | 21.0 | 22.2 | 22.2 |
| 120    | 1,190 | 0.0040 | 0.018  | 4.077 | 1.254 | 0.012  | 2.895 | 0.017  | 0.012  | 21.0 | 22.1 | 22.1 |
| 121    | 1,200 | 0.0040 | 0.018  | 4.095 | 1.266 | 0.012  | 2.912 | 0.017  | 0.012  | 21.1 | 22.0 | 22.0 |
| 122    | 1,210 | 0.0040 | 0.018  | 4.113 | 1.277 | 0.012  | 2.930 | 0.017  | 0.012  | 21.1 | 22.0 | 22.0 |
| 123    | 1,220 | 0.0040 | 0.018  | 4.131 | 1.289 | 0.012  | 2.947 | 0.017  | 0.012  | 21.2 | 21.9 | 21.9 |
| 124    | 1,230 | 0.0040 | 0.018  | 4.149 | 1.301 | 0.012  | 2.964 | 0.017  | 0.012  | 21.2 | 21.9 | 21.9 |
| 125    | 1,240 | 0.0040 | 0.018  | 4.168 | 1.312 | 0.012  | 2.981 | 0.017  | 0.012  | 21.3 | 21.8 | 21.8 |
| 126    | 1,250 | 0.0040 | 0.018  | 4.186 | 1.324 | 0.012  | 2.998 | 0.017  | 0.012  | 21.3 | 21.8 | 21.8 |
| 127    | 1,260 | 0.0040 | 0.018  | 4.204 | 1.336 | 0.012  | 3.015 | 0.017  | 0.012  | 21.4 | 21.8 | 21.8 |
| 128    | 1,270 | 0.0040 | 0.018  | 4.222 | 1.348 | 0.012  | 3.032 | 0.017  | 0.012  | 21.4 | 21.7 | 21.7 |
| 129    | 1,280 | 0.0040 | 0.018  | 4.240 | 1.360 | 0.012  | 3.049 | 0.017  | 0.012  | 21.5 | 21.7 | 21.7 |
| 130    | 1,290 | 0.0040 | 0.018  | 4.258 | 1.371 | 0.012  | 3.066 | 0.017  | 0.012  | 21.5 | 21.7 | 21.7 |
| 131    | 1,300 | 0.0040 | 0.018  | 4.276 | 1.383 | 0.012  | 3.083 | 0.017  | 0.012  | 21.6 | 21.7 | 21.7 |
| 132    | 1,310 | 0.0040 | 0.018  | 4.294 | 1.395 | 0.012  | 3.100 | 0.017  | 0.012  | 21.6 | 21.7 | 21.7 |
| 133    | 1,320 | 0.0040 | 0.018  | 4.313 | 1.407 | 0.012  | 3.118 | 0.017  | 0.012  | 21.7 | 21.7 | 21.7 |
| 134    | 1,330 | 0.0040 | 0.018  | 4.331 | 1.419 | 0.012  | 3.135 | 0.017  | 0.012  | 21.7 | 21.7 | 21.7 |
| 135    | 1,340 | 0.0040 | 0.018  | 4.349 | 1.431 | 0.012  | 3.152 | 0.017  | 0.012  | 21.8 | 21.7 | 21.7 |
| 136    | 1,350 | 0.0040 | 0.018  | 4.367 | 1.443 | 0.012  | 3.169 | 0.017  | 0.012  | 21.8 | 21.7 | 21.7 |
| 137    | 1,360 | 0.0040 | 0.018  | 4.385 | 1.455 | 0.012  | 3.186 | 0.017  | 0.012  | 21.9 | 21.7 | 21.7 |
| 138    | 1,370 | 0.0040 | 0.018  | 4.403 | 1.467 | 0.012  | 3.203 | 0.017  | 0.012  | 21.9 | 21.7 | 21.7 |
| 139    | 1,380 | 0.0040 | 0.018  | 4.421 | 1.479 | 0.012  | 3.220 | 0.017  | 0.012  | 22.0 | 21.7 | 21.7 |
| 140    | 1,390 | 0.0040 | 0.018  | 4.439 | 1.492 | 0.012  | 3.238 | 0.017  | 0.012  | 22.0 | 21.8 | 21.8 |
| 141    | 1,400 | 0.0040 | 0.018  | 4.458 | 1.504 | 0.012  | 3.255 | 0.017  | 0.012  | 22.1 | 21.8 | 21.8 |
| 142    | 1,410 | 0.0040 | 0.018  | 4.476 | 1.516 | 0.012  | 3.272 | 0.017  | 0.012  | 22.1 | 21.8 | 21.8 |
| 143    | 1,420 | 0.0040 | 0.018  | 4.494 | 1.528 | 0.012  | 3.289 | 0.017  | 0.012  | 22.2 | 21.8 | 21.8 |
| 144    | 1,430 | 0.0040 | 0.018  | 4.512 | 1.540 | 0.012  | 3.306 | 0.017  | 0.012  | 22.2 | 21.9 | 21.9 |
| 145    | 1,440 | 0.0040 | 0.0181 | 4.530 | 1.553 | 0.012  | 3.324 | 0.017  | 0.012  | 22.3 | 21.9 | 21.9 |
| Total: |       | 1.0000 | 4.5300 |       |       | 1.5528 |       | 3.3237 | 1.5528 |      |      |      |

|                                 |               |               |      |
|---------------------------------|---------------|---------------|------|
| Max:                            | 30.2          |               |      |
| Cumulative Runoff at Period 145 | 1.38 inches   | Start Flow    | 21.9 |
| Unaccounted Runoff              | 0.18 inches   | End Flow      | -0.7 |
|                                 | 17,427.85 sec | Flow Dec./per | 0.8  |

|        |  |                     |
|--------|--|---------------------|
| Column | Description  |                     |
| 1      | Time Increment   | 290.46 min          |
| 2      | Time (min)   | 29.05 periods       |
| 3      | Type IA Storm Distribution   | 30 periods          |
| 4      | Column 3 * Precipitation   | 1.3837 Total Runoff |
| 5      | Accumulated Sum of Column 4  |                     |
| 6      | If P<0.2S then 0, else (Column 5 - 0.2 * S)/(Column 5 +0.8 * S)  |                     |
| 7      | Column 6 of the present step - Column 6 of the previous step   |                     |
| 8      | Same as Column 6, except Impervious Area Calculations  |                     |
| 9      | Column 8 of the present step - Column 8 of the previous step   |                     |
| 10     | PerviousArea/TotalArea*Column 7 + ImperviousArea/TotalArea*Column 9  |                     |
| 11     | (60.5 * Column 10 * TotalArea)/Time Increment  |                     |
| 12     | Column 12 of previous step + w * ((Column 11 of previous step + column 11 of present step) - (2 * Column 12 of previous step)) |                     |

25 YEAR PEAK FLOW ESTIMATE

Site: 

Gorst Creek

Rainfall: 

5.20

 in.

Return Period  
year

25

Duration  
hour

24

Time Increment: 

10

 minutes

w: 0.0344

w = Time increment / ( 2 \* Time of Concentration + Time Increment)

Pervious Area: 

300.00

 acres

CN

68

S

4.71

0.2 S

0.94

Impervious Area: 

0.00

 acres

CN

89

S

1.24

0.2 S

0.25

Total Area: 300.00 acres

Time of Concentration: 

140.1

 minutes

2.34 hours

Qmax= 40.7 cfs

| Column         |                |                                  |                               |                          |                           |                            |                          |                            |                       |                        |                       |                                 |
|----------------|----------------|----------------------------------|-------------------------------|--------------------------|---------------------------|----------------------------|--------------------------|----------------------------|-----------------------|------------------------|-----------------------|---------------------------------|
| 1              | 2              | 3                                | 4                             | 5                        | 6                         | 7                          | 8                        | 9                          | 10                    | 11                     | 12                    | 13                              |
|                |                |                                  |                               |                          | PERVIOUS                  |                            | IMPERVIOUS               |                            |                       |                        |                       |                                 |
| Time Increment | Time (minutes) | Rainfall Distribution (fraction) | Incremental Rainfall (inches) | Accum. Rainfall (inches) | Accum. Rainfall (inches ) | Increment. Runoff (inches) | Accum. Rainfall (inches) | Increment. Runoff (inches) | Total Runoff (inches) | Instant Flowrate (cfs) | Design Flowrate (cfs) | Design Flowrate with Tail (cfs) |
| 1              | 0              | 0.0000                           | 0.000                         | 0.000                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 2              | 10             | 0.0040                           | 0.021                         | 0.021                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 3              | 20             | 0.0040                           | 0.021                         | 0.042                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 4              | 30             | 0.0040                           | 0.021                         | 0.062                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 5              | 40             | 0.0040                           | 0.021                         | 0.083                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 6              | 50             | 0.0040                           | 0.021                         | 0.104                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 7              | 60             | 0.0040                           | 0.021                         | 0.125                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 8              | 70             | 0.0040                           | 0.021                         | 0.146                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 9              | 80             | 0.0040                           | 0.021                         | 0.166                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 10             | 90             | 0.0040                           | 0.021                         | 0.187                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 11             | 100            | 0.0040                           | 0.021                         | 0.208                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 12             | 110            | 0.0040                           | 0.021                         | 0.229                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 13             | 120            | 0.0050                           | 0.026                         | 0.255                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 14             | 130            | 0.0050                           | 0.026                         | 0.281                    | 0.000                     | 0.000                      | 0.001                    | 0.001                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 15             | 140            | 0.0050                           | 0.026                         | 0.307                    | 0.000                     | 0.000                      | 0.003                    | 0.002                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 16             | 150            | 0.0050                           | 0.026                         | 0.333                    | 0.000                     | 0.000                      | 0.006                    | 0.003                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 17             | 160            | 0.0050                           | 0.026                         | 0.359                    | 0.000                     | 0.000                      | 0.009                    | 0.004                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 18             | 170            | 0.0050                           | 0.026                         | 0.385                    | 0.000                     | 0.000                      | 0.014                    | 0.005                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 19             | 180            | 0.0060                           | 0.031                         | 0.416                    | 0.000                     | 0.000                      | 0.020                    | 0.006                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 20             | 190            | 0.0060                           | 0.031                         | 0.447                    | 0.000                     | 0.000                      | 0.028                    | 0.008                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 21             | 200            | 0.0060                           | 0.031                         | 0.478                    | 0.000                     | 0.000                      | 0.036                    | 0.009                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 22             | 210            | 0.0060                           | 0.031                         | 0.510                    | 0.000                     | 0.000                      | 0.046                    | 0.010                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 23             | 220            | 0.0060                           | 0.031                         | 0.541                    | 0.000                     | 0.000                      | 0.056                    | 0.010                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 24             | 230            | 0.0060                           | 0.031                         | 0.572                    | 0.000                     | 0.000                      | 0.068                    | 0.011                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 25             | 240            | 0.0070                           | 0.036                         | 0.608                    | 0.000                     | 0.000                      | 0.082                    | 0.014                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 26             | 250            | 0.0070                           | 0.036                         | 0.645                    | 0.000                     | 0.000                      | 0.097                    | 0.015                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 27             | 260            | 0.0070                           | 0.036                         | 0.681                    | 0.000                     | 0.000                      | 0.113                    | 0.016                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 28             | 270            | 0.0070                           | 0.036                         | 0.718                    | 0.000                     | 0.000                      | 0.130                    | 0.017                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 29             | 280            | 0.0070                           | 0.036                         | 0.754                    | 0.000                     | 0.000                      | 0.147                    | 0.018                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 30             | 290            | 0.0070                           | 0.036                         | 0.790                    | 0.000                     | 0.000                      | 0.166                    | 0.018                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 31             | 300            | 0.0080                           | 0.042                         | 0.832                    | 0.000                     | 0.000                      | 0.188                    | 0.022                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 32             | 310            | 0.0080                           | 0.042                         | 0.874                    | 0.000                     | 0.000                      | 0.211                    | 0.023                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 33             | 320            | 0.0080                           | 0.042                         | 0.915                    | 0.000                     | 0.000                      | 0.234                    | 0.024                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 34             | 330            | 0.0080                           | 0.042                         | 0.957                    | 0.000                     | 0.000                      | 0.259                    | 0.024                      | 0.000                 | 0.1                    | 0.0                   | 0.0                             |
| 35             | 340            | 0.0080                           | 0.042                         | 0.998                    | 0.001                     | 0.001                      | 0.284                    | 0.025                      | 0.001                 | 1.2                    | 0.0                   | 0.0                             |
| 36             | 350            | 0.0080                           | 0.042                         | 1.040                    | 0.002                     | 0.001                      | 0.310                    | 0.026                      | 0.001                 | 2.4                    | 0.2                   | 0.2                             |
| 37             | 360            | 0.0100                           | 0.052                         | 1.092                    | 0.005                     | 0.003                      | 0.343                    | 0.033                      | 0.003                 | 4.8                    | 0.4                   | 0.4                             |
| 38             | 370            | 0.0100                           | 0.052                         | 1.144                    | 0.008                     | 0.004                      | 0.377                    | 0.034                      | 0.004                 | 6.7                    | 0.8                   | 0.8                             |
| 39             | 380            | 0.0100                           | 0.052                         | 1.196                    | 0.013                     | 0.005                      | 0.412                    | 0.035                      | 0.005                 | 8.5                    | 1.2                   | 1.2                             |
| 40             | 390            | 0.0100                           | 0.052                         | 1.248                    | 0.019                     | 0.006                      | 0.448                    | 0.036                      | 0.006                 | 10.3                   | 1.8                   | 1.8                             |
| 41             | 400            | 0.0100                           | 0.052                         | 1.300                    | 0.025                     | 0.007                      | 0.484                    | 0.036                      | 0.007                 | 12.1                   | 2.5                   | 2.5                             |
| 42             | 410            | 0.0130                           | 0.068                         | 1.368                    | 0.035                     | 0.010                      | 0.533                    | 0.048                      | 0.010                 | 18.2                   | 3.3                   | 3.3                             |
| 43             | 420            | 0.0130                           | 0.068                         | 1.435                    | 0.047                     | 0.012                      | 0.582                    | 0.050                      | 0.012                 | 20.9                   | 4.4                   | 4.4                             |
| 44             | 430            | 0.0130                           | 0.068                         | 1.503                    | 0.060                     | 0.013                      | 0.633                    | 0.051                      | 0.013                 | 23.5                   | 5.7                   | 5.7                             |
| 45             | 440            | 0.0180                           | 0.094                         | 1.596                    | 0.080                     | 0.020                      | 0.704                    | 0.071                      | 0.020                 | 36.7                   | 7.3                   | 7.3                             |
| 46             | 450            | 0.0180                           | 0.094                         | 1.690                    | 0.103                     | 0.023                      | 0.777                    | 0.073                      | 0.023                 | 41.2                   | 9.5                   | 9.5                             |
| 47             | 460            | 0.0340                           | 0.177                         | 1.867                    | 0.152                     | 0.049                      | 0.919                    | 0.141                      | 0.049                 | 89.6                   | 13.4                  | 13.4                            |
| 48             | 470            | 0.0540                           | 0.281                         | 2.148                    | 0.246                     | 0.094                      | 1.152                    | 0.233                      | 0.094                 | 170.7                  | 21.4                  | 21.4                            |
| 49             | 480            | 0.0270                           | 0.140                         | 2.288                    | 0.300                     | 0.054                      | 1.271                    | 0.120                      | 0.054                 | 97.1                   | 29.2                  | 29.2                            |
| 50             | 490            | 0.0180                           | 0.094                         | 2.382                    | 0.338                     | 0.038                      | 1.352                    | 0.081                      | 0.038                 | 68.8                   | 32.9                  | 32.9                            |
| 51             | 500            | 0.0130                           | 0.068                         | 2.449                    | 0.366                     | 0.028                      | 1.410                    | 0.059                      | 0.028                 | 51.6                   | 34.8                  | 34.8                            |
| 52             | 510            | 0.0130                           | 0.068                         | 2.517                    | 0.395                     | 0.029                      | 1.469                    | 0.059                      | 0.029                 | 53.1                   | 36.0                  | 36.0                            |
| 53             | 520            | 0.0130                           | 0.068                         | 2.584                    | 0.425                     | 0.030                      | 1.529                    | 0.059                      | 0.030                 | 54.6                   | 37.2                  | 37.2                            |
| 54             | 530            | 0.0090                           | 0.047                         | 2.631                    | 0.447                     | 0.021                      | 1.570                    | 0.041                      | 0.021                 | 38.6                   | 37.8                  | 37.8                            |
| 55             | 540            | 0.0090                           | 0.047                         | 2.678                    | 0.468                     | 0.022                      | 1.611                    | 0.041                      | 0.022                 | 39.3                   | 37.9                  | 37.9                            |
| 56             | 550            | 0.0090                           | 0.047                         | 2.725                    | 0.490                     | 0.022                      | 1.653                    | 0.042                      | 0.022                 | 40.0                   | 38.0                  | 38.0                            |
| 57             | 560            | 0.0090                           | 0.047                         | 2.772                    | 0.513                     | 0.022                      | 1.695                    | 0.042                      | 0.022                 | 40.6                   | 38.2                  | 38.2                            |
| 58             | 570            | 0.0090                           | 0.047                         | 2.818                    | 0.535                     | 0.023                      | 1.736                    | 0.042                      | 0.023                 | 41.2                   | 38.4                  | 38.4                            |
| 59             | 580            | 0.0090                           | 0.047                         | 2.865                    | 0.558                     | 0.023                      | 1.778                    | 0.042                      | 0.023                 | 41.8                   | 38.6                  | 38.6                            |
| 60             | 590            | 0.0090                           | 0.047                         | 2.912                    | 0.582                     | 0.023                      | 1.820                    | 0.042                      | 0.023                 | 42.4                   | 38.8                  | 38.8                            |
| 61             | 600            | 0.0090                           | 0.047                         | 2.959                    | 0.605                     | 0.024                      | 1.863                    | 0.042                      | 0.024                 | 43.0                   | 39.1                  | 39.1                            |
| 62             | 610            | 0.0090                           | 0.047                         | 3.006                    | 0.629                     | 0.024                      | 1.905                    | 0.042                      | 0.024                 | 43.6                   | 39.4                  | 39.4                            |
| 63             | 620            | 0.0090                           | 0.047                         | 3.052                    | 0.654                     | 0.024                      | 1.947                    | 0.042                      | 0.024                 | 44.2                   | 39.7                  | 39.7                            |
| 64             | 630            | 0.0090                           | 0.047                         | 3.099                    | 0.678                     | 0.025                      | 1.990                    | 0.042                      | 0.025                 | 44.7                   | 40.0                  | 40.0                            |
| 65             | 640            | 0.0090                           | 0.047                         | 3.146                    | 0.703                     | 0.025                      | 2.032                    | 0.043                      | 0.025                 | 45.3                   | 40.4                  | 40.4                            |
| 66             | 650            | 0.0090                           | 0.047                         | 3.193                    | 0.729                     | 0.025                      | 2.075                    | 0.043                      | 0.025                 | 45.8                   | 40.7                  | 40.7                            |
| 67             | 660            | 0.0070                           | 0.036                         | 3.229                    | 0.749                     | 0.020                      | 2.108                    | 0.033                      | 0.020                 | 36.0                   | 40.7                  | 40.7                            |
| 68             | 670            | 0.0070                           | 0.036                         | 3.266                    | 0.769                     | 0.020                      | 2.142                    | 0.033                      | 0.020                 | 36.3                   | 40.4                  | 40.4                            |
| 69             | 680            | 0.0070                           | 0.036                         | 3.302                    | 0.789                     | 0.020                      | 2.175                    | 0.033                      | 0.020                 | 36.6                   | 40.2                  | 40.2                            |
| 70             | 690            | 0.0070                           | 0.036                         | 3.338                    | 0.809                     | 0.020                      | 2.208                    | 0.033                      | 0.020                 | 36.9                   | 39.9                  | 39.9                            |
| 71             | 700            | 0.0070                           | 0.036                         | 3.375                    | 0.830                     | 0.021                      | 2.242                    | 0.033                      | 0.021                 | 37.2                   | 39.7                  | 39.7                            |
| 72             | 710            | 0.0070                           | 0.036                         | 3.411                    | 0.850                     | 0.021                      | 2.275                    | 0.034                      | 0.021                 | 37.5                   | 39.6                  | 39.6                            |

|        |       |        |        |       |       |        |       |        |        |      |      |      |
|--------|-------|--------|--------|-------|-------|--------|-------|--------|--------|------|------|------|
| 73     | 720   | 0.0070 | 0.036  | 3.448 | 0.871 | 0.021  | 2.309 | 0.034  | 0.021  | 37.8 | 39.4 | 39.4 |
| 74     | 730   | 0.0070 | 0.036  | 3.484 | 0.892 | 0.021  | 2.342 | 0.034  | 0.021  | 38.1 | 39.3 | 39.3 |
| 75     | 740   | 0.0070 | 0.036  | 3.520 | 0.913 | 0.021  | 2.376 | 0.034  | 0.021  | 38.4 | 39.3 | 39.3 |
| 76     | 750   | 0.0070 | 0.036  | 3.557 | 0.934 | 0.021  | 2.410 | 0.034  | 0.021  | 38.6 | 39.2 | 39.2 |
| 77     | 760   | 0.0070 | 0.036  | 3.593 | 0.956 | 0.021  | 2.443 | 0.034  | 0.021  | 38.9 | 39.2 | 39.2 |
| 78     | 770   | 0.0070 | 0.036  | 3.630 | 0.977 | 0.022  | 2.477 | 0.034  | 0.022  | 39.2 | 39.2 | 39.2 |
| 79     | 780   | 0.0060 | 0.031  | 3.661 | 0.996 | 0.019  | 2.506 | 0.029  | 0.019  | 33.8 | 39.0 | 39.0 |
| 80     | 790   | 0.0060 | 0.031  | 3.692 | 1.015 | 0.019  | 2.535 | 0.029  | 0.019  | 34.0 | 38.6 | 38.6 |
| 81     | 800   | 0.0060 | 0.031  | 3.723 | 1.034 | 0.019  | 2.564 | 0.029  | 0.019  | 34.2 | 38.3 | 38.3 |
| 82     | 810   | 0.0060 | 0.031  | 3.754 | 1.053 | 0.019  | 2.593 | 0.029  | 0.019  | 34.4 | 38.0 | 38.0 |
| 83     | 820   | 0.0060 | 0.031  | 3.786 | 1.072 | 0.019  | 2.622 | 0.029  | 0.019  | 34.5 | 37.8 | 37.8 |
| 84     | 830   | 0.0060 | 0.031  | 3.817 | 1.091 | 0.019  | 2.652 | 0.029  | 0.019  | 34.7 | 37.6 | 37.6 |
| 85     | 840   | 0.0060 | 0.031  | 3.848 | 1.110 | 0.019  | 2.681 | 0.029  | 0.019  | 34.9 | 37.4 | 37.4 |
| 86     | 850   | 0.0060 | 0.031  | 3.879 | 1.129 | 0.019  | 2.710 | 0.029  | 0.019  | 35.1 | 37.2 | 37.2 |
| 87     | 860   | 0.0060 | 0.031  | 3.910 | 1.149 | 0.019  | 2.739 | 0.029  | 0.019  | 35.3 | 37.1 | 37.1 |
| 88     | 870   | 0.0060 | 0.031  | 3.942 | 1.168 | 0.020  | 2.768 | 0.029  | 0.020  | 35.4 | 37.0 | 37.0 |
| 89     | 880   | 0.0060 | 0.031  | 3.973 | 1.188 | 0.020  | 2.798 | 0.029  | 0.020  | 35.6 | 36.9 | 36.9 |
| 90     | 890   | 0.0050 | 0.026  | 3.999 | 1.204 | 0.016  | 2.822 | 0.024  | 0.016  | 29.8 | 36.6 | 36.6 |
| 91     | 900   | 0.0050 | 0.026  | 4.025 | 1.221 | 0.016  | 2.846 | 0.024  | 0.016  | 29.9 | 36.1 | 36.1 |
| 92     | 910   | 0.0050 | 0.026  | 4.051 | 1.237 | 0.017  | 2.871 | 0.024  | 0.017  | 30.0 | 35.7 | 35.7 |
| 93     | 920   | 0.0050 | 0.026  | 4.077 | 1.254 | 0.017  | 2.895 | 0.024  | 0.017  | 30.1 | 35.3 | 35.3 |
| 94     | 930   | 0.0050 | 0.026  | 4.103 | 1.271 | 0.017  | 2.920 | 0.024  | 0.017  | 30.3 | 34.9 | 34.9 |
| 95     | 940   | 0.0050 | 0.026  | 4.129 | 1.287 | 0.017  | 2.944 | 0.024  | 0.017  | 30.4 | 34.6 | 34.6 |
| 96     | 950   | 0.0050 | 0.026  | 4.155 | 1.304 | 0.017  | 2.969 | 0.024  | 0.017  | 30.5 | 34.3 | 34.3 |
| 97     | 960   | 0.0050 | 0.026  | 4.181 | 1.321 | 0.017  | 2.993 | 0.025  | 0.017  | 30.6 | 34.1 | 34.1 |
| 98     | 970   | 0.0050 | 0.026  | 4.207 | 1.338 | 0.017  | 3.018 | 0.025  | 0.017  | 30.7 | 33.8 | 33.8 |
| 99     | 980   | 0.0050 | 0.026  | 4.233 | 1.355 | 0.017  | 3.042 | 0.025  | 0.017  | 30.8 | 33.6 | 33.6 |
| 100    | 990   | 0.0050 | 0.026  | 4.259 | 1.372 | 0.017  | 3.067 | 0.025  | 0.017  | 30.9 | 33.4 | 33.4 |
| 101    | 1,000 | 0.0050 | 0.026  | 4.285 | 1.389 | 0.017  | 3.091 | 0.025  | 0.017  | 31.0 | 33.3 | 33.3 |
| 102    | 1,010 | 0.0040 | 0.021  | 4.306 | 1.403 | 0.014  | 3.111 | 0.020  | 0.014  | 24.9 | 32.9 | 32.9 |
| 103    | 1,020 | 0.0040 | 0.021  | 4.326 | 1.416 | 0.014  | 3.131 | 0.020  | 0.014  | 24.9 | 32.3 | 32.3 |
| 104    | 1,030 | 0.0040 | 0.021  | 4.347 | 1.430 | 0.014  | 3.150 | 0.020  | 0.014  | 25.0 | 31.8 | 31.8 |
| 105    | 1,040 | 0.0040 | 0.021  | 4.368 | 1.444 | 0.014  | 3.170 | 0.020  | 0.014  | 25.1 | 31.4 | 31.4 |
| 106    | 1,050 | 0.0040 | 0.021  | 4.389 | 1.458 | 0.014  | 3.190 | 0.020  | 0.014  | 25.1 | 30.9 | 30.9 |
| 107    | 1,060 | 0.0040 | 0.021  | 4.410 | 1.472 | 0.014  | 3.209 | 0.020  | 0.014  | 25.2 | 30.5 | 30.5 |
| 108    | 1,070 | 0.0040 | 0.021  | 4.430 | 1.486 | 0.014  | 3.229 | 0.020  | 0.014  | 25.3 | 30.2 | 30.2 |
| 109    | 1,080 | 0.0040 | 0.021  | 4.451 | 1.500 | 0.014  | 3.249 | 0.020  | 0.014  | 25.3 | 29.8 | 29.8 |
| 110    | 1,090 | 0.0040 | 0.021  | 4.472 | 1.514 | 0.014  | 3.269 | 0.020  | 0.014  | 25.4 | 29.5 | 29.5 |
| 111    | 1,100 | 0.0040 | 0.021  | 4.493 | 1.528 | 0.014  | 3.288 | 0.020  | 0.014  | 25.5 | 29.2 | 29.2 |
| 112    | 1,110 | 0.0040 | 0.021  | 4.514 | 1.542 | 0.014  | 3.308 | 0.020  | 0.014  | 25.5 | 29.0 | 29.0 |
| 113    | 1,120 | 0.0040 | 0.021  | 4.534 | 1.556 | 0.014  | 3.328 | 0.020  | 0.014  | 25.6 | 28.8 | 28.8 |
| 114    | 1,130 | 0.0040 | 0.021  | 4.555 | 1.570 | 0.014  | 3.348 | 0.020  | 0.014  | 25.6 | 28.5 | 28.5 |
| 115    | 1,140 | 0.0040 | 0.021  | 4.576 | 1.584 | 0.014  | 3.367 | 0.020  | 0.014  | 25.7 | 28.3 | 28.3 |
| 116    | 1,150 | 0.0040 | 0.021  | 4.597 | 1.598 | 0.014  | 3.387 | 0.020  | 0.014  | 25.8 | 28.2 | 28.2 |
| 117    | 1,160 | 0.0040 | 0.021  | 4.618 | 1.612 | 0.014  | 3.407 | 0.020  | 0.014  | 25.8 | 28.0 | 28.0 |
| 118    | 1,170 | 0.0040 | 0.021  | 4.638 | 1.627 | 0.014  | 3.427 | 0.020  | 0.014  | 25.9 | 27.9 | 27.9 |
| 119    | 1,180 | 0.0040 | 0.021  | 4.659 | 1.641 | 0.014  | 3.447 | 0.020  | 0.014  | 25.9 | 27.7 | 27.7 |
| 120    | 1,190 | 0.0040 | 0.021  | 4.680 | 1.655 | 0.014  | 3.466 | 0.020  | 0.014  | 26.0 | 27.6 | 27.6 |
| 121    | 1,200 | 0.0040 | 0.021  | 4.701 | 1.670 | 0.014  | 3.486 | 0.020  | 0.014  | 26.1 | 27.5 | 27.5 |
| 122    | 1,210 | 0.0040 | 0.021  | 4.722 | 1.684 | 0.014  | 3.506 | 0.020  | 0.014  | 26.1 | 27.4 | 27.4 |
| 123    | 1,220 | 0.0040 | 0.021  | 4.742 | 1.698 | 0.014  | 3.526 | 0.020  | 0.014  | 26.2 | 27.3 | 27.3 |
| 124    | 1,230 | 0.0040 | 0.021  | 4.763 | 1.713 | 0.014  | 3.546 | 0.020  | 0.014  | 26.2 | 27.2 | 27.2 |
| 125    | 1,240 | 0.0040 | 0.021  | 4.784 | 1.727 | 0.014  | 3.565 | 0.020  | 0.014  | 26.3 | 27.2 | 27.2 |
| 126    | 1,250 | 0.0040 | 0.021  | 4.805 | 1.742 | 0.015  | 3.585 | 0.020  | 0.015  | 26.3 | 27.1 | 27.1 |
| 127    | 1,260 | 0.0040 | 0.021  | 4.826 | 1.756 | 0.015  | 3.605 | 0.020  | 0.015  | 26.4 | 27.1 | 27.1 |
| 128    | 1,270 | 0.0040 | 0.021  | 4.846 | 1.771 | 0.015  | 3.625 | 0.020  | 0.015  | 26.5 | 27.0 | 27.0 |
| 129    | 1,280 | 0.0040 | 0.021  | 4.867 | 1.786 | 0.015  | 3.645 | 0.020  | 0.015  | 26.5 | 27.0 | 27.0 |
| 130    | 1,290 | 0.0040 | 0.021  | 4.888 | 1.800 | 0.015  | 3.665 | 0.020  | 0.015  | 26.6 | 26.9 | 26.9 |
| 131    | 1,300 | 0.0040 | 0.021  | 4.909 | 1.815 | 0.015  | 3.685 | 0.020  | 0.015  | 26.6 | 26.9 | 26.9 |
| 132    | 1,310 | 0.0040 | 0.021  | 4.930 | 1.830 | 0.015  | 3.705 | 0.020  | 0.015  | 26.7 | 26.9 | 26.9 |
| 133    | 1,320 | 0.0040 | 0.021  | 4.950 | 1.844 | 0.015  | 3.724 | 0.020  | 0.015  | 26.7 | 26.9 | 26.9 |
| 134    | 1,330 | 0.0040 | 0.021  | 4.971 | 1.859 | 0.015  | 3.744 | 0.020  | 0.015  | 26.8 | 26.9 | 26.9 |
| 135    | 1,340 | 0.0040 | 0.021  | 4.992 | 1.874 | 0.015  | 3.764 | 0.020  | 0.015  | 26.8 | 26.9 | 26.9 |
| 136    | 1,350 | 0.0040 | 0.021  | 5.013 | 1.889 | 0.015  | 3.784 | 0.020  | 0.015  | 26.9 | 26.9 | 26.9 |
| 137    | 1,360 | 0.0040 | 0.021  | 5.034 | 1.904 | 0.015  | 3.804 | 0.020  | 0.015  | 26.9 | 26.9 | 26.9 |
| 138    | 1,370 | 0.0040 | 0.021  | 5.054 | 1.918 | 0.015  | 3.824 | 0.020  | 0.015  | 27.0 | 26.9 | 26.9 |
| 139    | 1,380 | 0.0040 | 0.021  | 5.075 | 1.933 | 0.015  | 3.844 | 0.020  | 0.015  | 27.0 | 26.9 | 26.9 |
| 140    | 1,390 | 0.0040 | 0.021  | 5.096 | 1.948 | 0.015  | 3.864 | 0.020  | 0.015  | 27.1 | 26.9 | 26.9 |
| 141    | 1,400 | 0.0040 | 0.021  | 5.117 | 1.963 | 0.015  | 3.884 | 0.020  | 0.015  | 27.1 | 26.9 | 26.9 |
| 142    | 1,410 | 0.0040 | 0.021  | 5.138 | 1.978 | 0.015  | 3.904 | 0.020  | 0.015  | 27.2 | 26.9 | 26.9 |
| 143    | 1,420 | 0.0040 | 0.021  | 5.158 | 1.993 | 0.015  | 3.924 | 0.020  | 0.015  | 27.2 | 26.9 | 26.9 |
| 144    | 1,430 | 0.0040 | 0.021  | 5.179 | 2.008 | 0.015  | 3.944 | 0.020  | 0.015  | 27.3 | 27.0 | 27.0 |
| 145    | 1,440 | 0.0040 | 0.0208 | 5.200 | 2.023 | 0.015  | 3.964 | 0.020  | 0.015  | 27.3 | 27.0 | 27.0 |
| Total: |       | 1.0000 | 5.2000 |       |       | 2.0232 |       | 3.9637 | 2.0232 |      |      |      |

|                                 |               |               |      |
|---------------------------------|---------------|---------------|------|
| Max:                            | 40.7          |               |      |
| Cumulative Runoff at Period 145 | 1.81 inches   | Start Flow    | 27.0 |
| Unaccounted Runoff              | 0.22 inches   | End Flow      | -0.9 |
|                                 | 17,424.51 sec | Flow Dec./per | 0.9  |

|        |  |                     |
|--------|--|---------------------|
| Column | Description  |                     |
| 1      | Time Increment   | 290.41 min          |
| 2      | Time (min)   | 29.04 periods       |
| 3      | Type IA Storm Distribution   | 30 periods          |
| 4      | Column 3 * Precipitation   | 1.8147 Total Runoff |
| 5      | Accumulated Sum of Column 4  |                     |
| 6      | If P<0.2S then 0, else (Column 5 - 0.2 * S)/(Column 5 +0.8 * S)  |                     |
| 7      | Column 6 of the present step - Column 6 of the previous step   |                     |
| 8      | Same as Column 6, except Impervious Area Calculations  |                     |
| 9      | Column 8 of the present step - Column 8 of the previous step   |                     |
| 10     | PerviousArea/TotalArea*Column 7 + ImperviousArea/TotalArea*Column 9  |                     |
| 11     | (60.5 * Column 10 * TotalArea)/Time Increment  |                     |
| 12     | Column 12 of previous step + w * ((Column 11 of previous step + column 11 of present step) - (2 * Column 12 of previous step)) |                     |



100 YEAR PEAK FLOW ESTIMATE

Site: 

Gorst Creek

Rainfall: 

6.17

 in.

Return Period

year

100

Duration

hour

24

Time Increment: 

10

 minutes

w: 0.0344

w = Time increment / ( 2 \* Time of Concentration + Time Increment)

Area

CN

S

0.2 S

Pervious Area: 

300.00

 acres

68

4.71

0.94

Impervious Area: 

0.00

 acres

89

1.24

0.25

Total Area: 300.00 acres

Time of Concentration: 

140.1

 minutes

2.34

 hours

Qmax=

57.5 cfs

| Column         |                |                                  |                               |                          |                           |                            |                          |                            |                       |                        |                       |                                 |
|----------------|----------------|----------------------------------|-------------------------------|--------------------------|---------------------------|----------------------------|--------------------------|----------------------------|-----------------------|------------------------|-----------------------|---------------------------------|
| 1              | 2              | 3                                | 4                             | 5                        | 6                         | 7                          | 8                        | 9                          | 10                    | 11                     | 12                    | 13                              |
|                |                |                                  |                               |                          | PERVIOUS                  |                            | IMPERVIOUS               |                            |                       |                        |                       |                                 |
| Time Increment | Time (minutes) | Rainfall Distribution (fraction) | Incremental Rainfall (inches) | Accum. Rainfall (inches) | Accum. Rainfall (inches ) | Increment. Runoff (inches) | Accum. Rainfall (inches) | Increment. Runoff (inches) | Total Runoff (inches) | Instant Flowrate (cfs) | Design Flowrate (cfs) | Design Flowrate with Tail (cfs) |
| 1              | 0              | 0.0000                           | 0.000                         | 0.000                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 2              | 10             | 0.0040                           | 0.025                         | 0.025                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 3              | 20             | 0.0040                           | 0.025                         | 0.049                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 4              | 30             | 0.0040                           | 0.025                         | 0.074                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 5              | 40             | 0.0040                           | 0.025                         | 0.099                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 6              | 50             | 0.0040                           | 0.025                         | 0.123                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 7              | 60             | 0.0040                           | 0.025                         | 0.148                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 8              | 70             | 0.0040                           | 0.025                         | 0.173                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 9              | 80             | 0.0040                           | 0.025                         | 0.197                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 10             | 90             | 0.0040                           | 0.025                         | 0.222                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 11             | 100            | 0.0040                           | 0.025                         | 0.247                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 12             | 110            | 0.0040                           | 0.025                         | 0.271                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 13             | 120            | 0.0050                           | 0.031                         | 0.302                    | 0.000                     | 0.000                      | 0.002                    | 0.002                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 14             | 130            | 0.0050                           | 0.031                         | 0.333                    | 0.000                     | 0.000                      | 0.006                    | 0.003                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 15             | 140            | 0.0050                           | 0.031                         | 0.364                    | 0.000                     | 0.000                      | 0.010                    | 0.004                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 16             | 150            | 0.0050                           | 0.031                         | 0.395                    | 0.000                     | 0.000                      | 0.016                    | 0.006                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 17             | 160            | 0.0050                           | 0.031                         | 0.426                    | 0.000                     | 0.000                      | 0.023                    | 0.007                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 18             | 170            | 0.0050                           | 0.031                         | 0.457                    | 0.000                     | 0.000                      | 0.030                    | 0.008                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 19             | 180            | 0.0060                           | 0.037                         | 0.494                    | 0.000                     | 0.000                      | 0.041                    | 0.011                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 20             | 190            | 0.0060                           | 0.037                         | 0.531                    | 0.000                     | 0.000                      | 0.053                    | 0.012                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 21             | 200            | 0.0060                           | 0.037                         | 0.568                    | 0.000                     | 0.000                      | 0.066                    | 0.013                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 22             | 210            | 0.0060                           | 0.037                         | 0.605                    | 0.000                     | 0.000                      | 0.080                    | 0.014                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 23             | 220            | 0.0060                           | 0.037                         | 0.642                    | 0.000                     | 0.000                      | 0.095                    | 0.015                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 24             | 230            | 0.0060                           | 0.037                         | 0.679                    | 0.000                     | 0.000                      | 0.112                    | 0.016                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 25             | 240            | 0.0070                           | 0.043                         | 0.722                    | 0.000                     | 0.000                      | 0.132                    | 0.020                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 26             | 250            | 0.0070                           | 0.043                         | 0.765                    | 0.000                     | 0.000                      | 0.153                    | 0.021                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 27             | 260            | 0.0070                           | 0.043                         | 0.808                    | 0.000                     | 0.000                      | 0.175                    | 0.022                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 28             | 270            | 0.0070                           | 0.043                         | 0.851                    | 0.000                     | 0.000                      | 0.198                    | 0.023                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 29             | 280            | 0.0070                           | 0.043                         | 0.895                    | 0.000                     | 0.000                      | 0.223                    | 0.024                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 30             | 290            | 0.0070                           | 0.043                         | 0.938                    | 0.000                     | 0.000                      | 0.248                    | 0.025                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 31             | 300            | 0.0080                           | 0.049                         | 0.987                    | 0.000                     | 0.000                      | 0.277                    | 0.030                      | 0.000                 | 0.8                    | 0.0                   | 0.0                             |
| 32             | 310            | 0.0080                           | 0.049                         | 1.037                    | 0.002                     | 0.001                      | 0.308                    | 0.031                      | 0.001                 | 2.6                    | 0.1                   | 0.1                             |
| 33             | 320            | 0.0080                           | 0.049                         | 1.086                    | 0.004                     | 0.002                      | 0.339                    | 0.031                      | 0.002                 | 4.4                    | 0.4                   | 0.4                             |
| 34             | 330            | 0.0080                           | 0.049                         | 1.135                    | 0.008                     | 0.003                      | 0.371                    | 0.032                      | 0.003                 | 6.1                    | 0.7                   | 0.7                             |
| 35             | 340            | 0.0080                           | 0.049                         | 1.185                    | 0.012                     | 0.004                      | 0.404                    | 0.033                      | 0.004                 | 7.8                    | 1.1                   | 1.1                             |
| 36             | 350            | 0.0080                           | 0.049                         | 1.234                    | 0.017                     | 0.005                      | 0.438                    | 0.034                      | 0.005                 | 9.4                    | 1.7                   | 1.7                             |
| 37             | 360            | 0.0100                           | 0.062                         | 1.296                    | 0.025                     | 0.008                      | 0.481                    | 0.043                      | 0.008                 | 13.9                   | 2.3                   | 2.3                             |
| 38             | 370            | 0.0100                           | 0.062                         | 1.357                    | 0.034                     | 0.009                      | 0.525                    | 0.044                      | 0.009                 | 16.3                   | 3.2                   | 3.2                             |
| 39             | 380            | 0.0100                           | 0.062                         | 1.419                    | 0.044                     | 0.010                      | 0.570                    | 0.045                      | 0.010                 | 18.6                   | 4.2                   | 4.2                             |
| 40             | 390            | 0.0100                           | 0.062                         | 1.481                    | 0.056                     | 0.011                      | 0.616                    | 0.046                      | 0.011                 | 20.8                   | 5.3                   | 5.3                             |
| 41             | 400            | 0.0100                           | 0.062                         | 1.543                    | 0.068                     | 0.013                      | 0.663                    | 0.047                      | 0.013                 | 22.9                   | 6.4                   | 6.4                             |
| 42             | 410            | 0.0130                           | 0.080                         | 1.623                    | 0.086                     | 0.018                      | 0.725                    | 0.062                      | 0.018                 | 32.8                   | 7.9                   | 7.9                             |
| 43             | 420            | 0.0130                           | 0.080                         | 1.703                    | 0.106                     | 0.020                      | 0.787                    | 0.063                      | 0.020                 | 36.1                   | 9.7                   | 9.7                             |
| 44             | 430            | 0.0130                           | 0.080                         | 1.783                    | 0.128                     | 0.022                      | 0.851                    | 0.064                      | 0.022                 | 39.3                   | 11.7                  | 11.7                            |
| 45             | 440            | 0.0180                           | 0.111                         | 1.894                    | 0.160                     | 0.033                      | 0.941                    | 0.090                      | 0.033                 | 59.4                   | 14.2                  | 14.2                            |
| 46             | 450            | 0.0180                           | 0.111                         | 2.005                    | 0.196                     | 0.036                      | 1.032                    | 0.091                      | 0.036                 | 64.9                   | 17.5                  | 17.5                            |
| 47             | 460            | 0.0340                           | 0.210                         | 2.215                    | 0.271                     | 0.075                      | 1.209                    | 0.176                      | 0.075                 | 136.4                  | 23.3                  | 23.3                            |
| 48             | 470            | 0.0540                           | 0.333                         | 2.548                    | 0.409                     | 0.138                      | 1.497                    | 0.288                      | 0.138                 | 250.0                  | 35.0                  | 35.0                            |
| 49             | 480            | 0.0270                           | 0.167                         | 2.715                    | 0.485                     | 0.076                      | 1.644                    | 0.147                      | 0.076                 | 138.7                  | 46.0                  | 46.0                            |
| 50             | 490            | 0.0180                           | 0.111                         | 2.826                    | 0.539                     | 0.053                      | 1.743                    | 0.099                      | 0.053                 | 97.0                   | 50.9                  | 50.9                            |
| 51             | 500            | 0.0130                           | 0.080                         | 2.906                    | 0.579                     | 0.040                      | 1.815                    | 0.072                      | 0.040                 | 72.3                   | 53.2                  | 53.2                            |
| 52             | 510            | 0.0130                           | 0.080                         | 2.986                    | 0.620                     | 0.041                      | 1.887                    | 0.072                      | 0.041                 | 74.0                   | 54.6                  | 54.6                            |
| 53             | 520            | 0.0130                           | 0.080                         | 3.066                    | 0.661                     | 0.042                      | 1.960                    | 0.073                      | 0.042                 | 75.7                   | 56.0                  | 56.0                            |
| 54             | 530            | 0.0090                           | 0.056                         | 3.122                    | 0.691                     | 0.029                      | 2.010                    | 0.050                      | 0.029                 | 53.3                   | 56.6                  | 56.6                            |
| 55             | 540            | 0.0090                           | 0.056                         | 3.178                    | 0.720                     | 0.030                      | 2.061                    | 0.051                      | 0.030                 | 54.1                   | 56.4                  | 56.4                            |
| 56             | 550            | 0.0090                           | 0.056                         | 3.233                    | 0.751                     | 0.030                      | 2.112                    | 0.051                      | 0.030                 | 54.8                   | 56.3                  | 56.3                            |
| 57             | 560            | 0.0090                           | 0.056                         | 3.289                    | 0.781                     | 0.031                      | 2.163                    | 0.051                      | 0.031                 | 55.6                   | 56.2                  | 56.2                            |
| 58             | 570            | 0.0090                           | 0.056                         | 3.344                    | 0.812                     | 0.031                      | 2.214                    | 0.051                      | 0.031                 | 56.3                   | 56.2                  | 56.2                            |
| 59             | 580            | 0.0090                           | 0.056                         | 3.400                    | 0.844                     | 0.031                      | 2.265                    | 0.051                      | 0.031                 | 57.0                   | 56.2                  | 56.2                            |
| 60             | 590            | 0.0090                           | 0.056                         | 3.455                    | 0.875                     | 0.032                      | 2.316                    | 0.051                      | 0.032                 | 57.6                   | 56.3                  | 56.3                            |
| 61             | 600            | 0.0090                           | 0.056                         | 3.511                    | 0.908                     | 0.032                      | 2.367                    | 0.051                      | 0.032                 | 58.3                   | 56.4                  | 56.4                            |
| 62             | 610            | 0.0090                           | 0.056                         | 3.566                    | 0.940                     | 0.032                      | 2.418                    | 0.051                      | 0.032                 | 58.9                   | 56.5                  | 56.5                            |
| 63             | 620            | 0.0090                           | 0.056                         | 3.622                    | 0.973                     | 0.033                      | 2.470                    | 0.051                      | 0.033                 | 59.6                   | 56.7                  | 56.7                            |
| 64             | 630            | 0.0090                           | 0.056                         | 3.677                    | 1.006                     | 0.033                      | 2.522                    | 0.052                      | 0.033                 | 60.2                   | 56.9                  | 56.9                            |
| 65             | 640            | 0.0090                           | 0.056                         | 3.733                    | 1.039                     | 0.033                      | 2.573                    | 0.052                      | 0.033                 | 60.8                   | 57.2                  | 57.2                            |
| 66             | 650            | 0.0090                           | 0.056                         | 3.788                    | 1.073                     | 0.034                      | 2.625                    | 0.052                      | 0.034                 | 61.4                   | 57.5                  | 57.5                            |
| 67             | 660            | 0.0070                           | 0.043                         | 3.832                    | 1.100                     | 0.027                      | 2.665                    | 0.040                      | 0.027                 | 48.1                   | 57.3                  | 57.3                            |
| 68             | 670            | 0.0070                           | 0.043                         | 3.875                    | 1.127                     | 0.027                      | 2.706                    | 0.040                      | 0.027                 | 48.5                   | 56.7                  | 56.7                            |
| 69             | 680            | 0.0070                           | 0.043                         | 3.918                    | 1.153                     | 0.027                      | 2.746                    | 0.040                      | 0.027                 | 48.8                   | 56.1                  | 56.1                            |
| 70             | 690            | 0.0070                           | 0.043                         | 3.961                    | 1.180                     | 0.027                      | 2.787                    | 0.040                      | 0.027                 | 49.1                   | 55.6                  | 55.6                            |
| 71             | 700            | 0.0070                           | 0.043                         | 4.004                    | 1.208                     | 0.027                      | 2.827                    | 0.041                      | 0.027                 | 49.5                   | 55.2                  | 55.2                            |
| 72             | 710            | 0.0070                           | 0.043                         | 4.048                    | 1.235                     | 0.027                      | 2.868                    | 0.041                      | 0.027                 | 49.8                   | 54.8                  | 54.8                            |

|        |       |        |        |       |       |        |       |        |        |      |      |      |
|--------|-------|--------|--------|-------|-------|--------|-------|--------|--------|------|------|------|
| 73     | 720   | 0.0070 | 0.043  | 4.091 | 1.263 | 0.028  | 2.908 | 0.041  | 0.028  | 50.1 | 54.5 | 54.5 |
| 74     | 730   | 0.0070 | 0.043  | 4.134 | 1.291 | 0.028  | 2.949 | 0.041  | 0.028  | 50.4 | 54.2 | 54.2 |
| 75     | 740   | 0.0070 | 0.043  | 4.177 | 1.318 | 0.028  | 2.990 | 0.041  | 0.028  | 50.7 | 53.9 | 53.9 |
| 76     | 750   | 0.0070 | 0.043  | 4.220 | 1.347 | 0.028  | 3.030 | 0.041  | 0.028  | 51.0 | 53.7 | 53.7 |
| 77     | 760   | 0.0070 | 0.043  | 4.263 | 1.375 | 0.028  | 3.071 | 0.041  | 0.028  | 51.3 | 53.5 | 53.5 |
| 78     | 770   | 0.0070 | 0.043  | 4.307 | 1.403 | 0.028  | 3.112 | 0.041  | 0.028  | 51.6 | 53.4 | 53.4 |
| 79     | 780   | 0.0060 | 0.037  | 4.344 | 1.428 | 0.024  | 3.147 | 0.035  | 0.024  | 44.5 | 53.0 | 53.0 |
| 80     | 790   | 0.0060 | 0.037  | 4.381 | 1.452 | 0.025  | 3.182 | 0.035  | 0.025  | 44.7 | 52.4 | 52.4 |
| 81     | 800   | 0.0060 | 0.037  | 4.418 | 1.477 | 0.025  | 3.217 | 0.035  | 0.025  | 44.9 | 51.9 | 51.9 |
| 82     | 810   | 0.0060 | 0.037  | 4.455 | 1.502 | 0.025  | 3.252 | 0.035  | 0.025  | 45.1 | 51.4 | 51.4 |
| 83     | 820   | 0.0060 | 0.037  | 4.492 | 1.527 | 0.025  | 3.287 | 0.035  | 0.025  | 45.3 | 51.0 | 51.0 |
| 84     | 830   | 0.0060 | 0.037  | 4.529 | 1.552 | 0.025  | 3.322 | 0.035  | 0.025  | 45.5 | 50.6 | 50.6 |
| 85     | 840   | 0.0060 | 0.037  | 4.566 | 1.577 | 0.025  | 3.358 | 0.035  | 0.025  | 45.7 | 50.3 | 50.3 |
| 86     | 850   | 0.0060 | 0.037  | 4.603 | 1.602 | 0.025  | 3.393 | 0.035  | 0.025  | 45.8 | 50.0 | 50.0 |
| 87     | 860   | 0.0060 | 0.037  | 4.640 | 1.628 | 0.025  | 3.428 | 0.035  | 0.025  | 46.0 | 49.7 | 49.7 |
| 88     | 870   | 0.0060 | 0.037  | 4.677 | 1.653 | 0.025  | 3.463 | 0.035  | 0.025  | 46.2 | 49.4 | 49.4 |
| 89     | 880   | 0.0060 | 0.037  | 4.714 | 1.679 | 0.026  | 3.499 | 0.035  | 0.026  | 46.4 | 49.2 | 49.2 |
| 90     | 890   | 0.0050 | 0.031  | 4.745 | 1.700 | 0.021  | 3.528 | 0.029  | 0.021  | 38.8 | 48.8 | 48.8 |
| 91     | 900   | 0.0050 | 0.031  | 4.776 | 1.722 | 0.021  | 3.557 | 0.029  | 0.021  | 38.9 | 48.1 | 48.1 |
| 92     | 910   | 0.0050 | 0.031  | 4.806 | 1.743 | 0.022  | 3.587 | 0.029  | 0.022  | 39.1 | 47.5 | 47.5 |
| 93     | 920   | 0.0050 | 0.031  | 4.837 | 1.765 | 0.022  | 3.616 | 0.029  | 0.022  | 39.2 | 46.9 | 46.9 |
| 94     | 930   | 0.0050 | 0.031  | 4.868 | 1.786 | 0.022  | 3.646 | 0.029  | 0.022  | 39.3 | 46.4 | 46.4 |
| 95     | 940   | 0.0050 | 0.031  | 4.899 | 1.808 | 0.022  | 3.675 | 0.029  | 0.022  | 39.4 | 45.9 | 45.9 |
| 96     | 950   | 0.0050 | 0.031  | 4.930 | 1.830 | 0.022  | 3.705 | 0.029  | 0.022  | 39.5 | 45.4 | 45.4 |
| 97     | 960   | 0.0050 | 0.031  | 4.961 | 1.852 | 0.022  | 3.734 | 0.030  | 0.022  | 39.6 | 45.0 | 45.0 |
| 98     | 970   | 0.0050 | 0.031  | 4.992 | 1.874 | 0.022  | 3.764 | 0.030  | 0.022  | 39.8 | 44.7 | 44.7 |
| 99     | 980   | 0.0050 | 0.031  | 5.022 | 1.896 | 0.022  | 3.793 | 0.030  | 0.022  | 39.9 | 44.3 | 44.3 |
| 100    | 990   | 0.0050 | 0.031  | 5.053 | 1.918 | 0.022  | 3.823 | 0.030  | 0.022  | 40.0 | 44.0 | 44.0 |
| 101    | 1,000 | 0.0050 | 0.031  | 5.084 | 1.940 | 0.022  | 3.852 | 0.030  | 0.022  | 40.1 | 43.7 | 43.7 |
| 102    | 1,010 | 0.0040 | 0.025  | 5.109 | 1.957 | 0.018  | 3.876 | 0.024  | 0.018  | 32.2 | 43.2 | 43.2 |
| 103    | 1,020 | 0.0040 | 0.025  | 5.133 | 1.975 | 0.018  | 3.900 | 0.024  | 0.018  | 32.2 | 42.5 | 42.5 |
| 104    | 1,030 | 0.0040 | 0.025  | 5.158 | 1.993 | 0.018  | 3.923 | 0.024  | 0.018  | 32.3 | 41.8 | 41.8 |
| 105    | 1,040 | 0.0040 | 0.025  | 5.183 | 2.011 | 0.018  | 3.947 | 0.024  | 0.018  | 32.4 | 41.1 | 41.1 |
| 106    | 1,050 | 0.0040 | 0.025  | 5.207 | 2.029 | 0.018  | 3.971 | 0.024  | 0.018  | 32.4 | 40.5 | 40.5 |
| 107    | 1,060 | 0.0040 | 0.025  | 5.232 | 2.047 | 0.018  | 3.995 | 0.024  | 0.018  | 32.5 | 40.0 | 40.0 |
| 108    | 1,070 | 0.0040 | 0.025  | 5.257 | 2.064 | 0.018  | 4.018 | 0.024  | 0.018  | 32.6 | 39.4 | 39.4 |
| 109    | 1,080 | 0.0040 | 0.025  | 5.282 | 2.082 | 0.018  | 4.042 | 0.024  | 0.018  | 32.6 | 39.0 | 39.0 |
| 110    | 1,090 | 0.0040 | 0.025  | 5.306 | 2.100 | 0.018  | 4.066 | 0.024  | 0.018  | 32.7 | 38.5 | 38.5 |
| 111    | 1,100 | 0.0040 | 0.025  | 5.331 | 2.119 | 0.018  | 4.089 | 0.024  | 0.018  | 32.8 | 38.1 | 38.1 |
| 112    | 1,110 | 0.0040 | 0.025  | 5.356 | 2.137 | 0.018  | 4.113 | 0.024  | 0.018  | 32.8 | 37.8 | 37.8 |
| 113    | 1,120 | 0.0040 | 0.025  | 5.380 | 2.155 | 0.018  | 4.137 | 0.024  | 0.018  | 32.9 | 37.4 | 37.4 |
| 114    | 1,130 | 0.0040 | 0.025  | 5.405 | 2.173 | 0.018  | 4.161 | 0.024  | 0.018  | 33.0 | 37.1 | 37.1 |
| 115    | 1,140 | 0.0040 | 0.025  | 5.430 | 2.191 | 0.018  | 4.184 | 0.024  | 0.018  | 33.0 | 36.8 | 36.8 |
| 116    | 1,150 | 0.0040 | 0.025  | 5.454 | 2.209 | 0.018  | 4.208 | 0.024  | 0.018  | 33.1 | 36.6 | 36.6 |
| 117    | 1,160 | 0.0040 | 0.025  | 5.479 | 2.228 | 0.018  | 4.232 | 0.024  | 0.018  | 33.2 | 36.3 | 36.3 |
| 118    | 1,170 | 0.0040 | 0.025  | 5.504 | 2.246 | 0.018  | 4.256 | 0.024  | 0.018  | 33.2 | 36.1 | 36.1 |
| 119    | 1,180 | 0.0040 | 0.025  | 5.528 | 2.264 | 0.018  | 4.280 | 0.024  | 0.018  | 33.3 | 35.9 | 35.9 |
| 120    | 1,190 | 0.0040 | 0.025  | 5.553 | 2.283 | 0.018  | 4.303 | 0.024  | 0.018  | 33.3 | 35.7 | 35.7 |
| 121    | 1,200 | 0.0040 | 0.025  | 5.578 | 2.301 | 0.018  | 4.327 | 0.024  | 0.018  | 33.4 | 35.6 | 35.6 |
| 122    | 1,210 | 0.0040 | 0.025  | 5.602 | 2.319 | 0.018  | 4.351 | 0.024  | 0.018  | 33.5 | 35.4 | 35.4 |
| 123    | 1,220 | 0.0040 | 0.025  | 5.627 | 2.338 | 0.018  | 4.375 | 0.024  | 0.018  | 33.5 | 35.3 | 35.3 |
| 124    | 1,230 | 0.0040 | 0.025  | 5.652 | 2.356 | 0.018  | 4.399 | 0.024  | 0.018  | 33.6 | 35.2 | 35.2 |
| 125    | 1,240 | 0.0040 | 0.025  | 5.676 | 2.375 | 0.019  | 4.422 | 0.024  | 0.019  | 33.6 | 35.1 | 35.1 |
| 126    | 1,250 | 0.0040 | 0.025  | 5.701 | 2.394 | 0.019  | 4.446 | 0.024  | 0.019  | 33.7 | 35.0 | 35.0 |
| 127    | 1,260 | 0.0040 | 0.025  | 5.726 | 2.412 | 0.019  | 4.470 | 0.024  | 0.019  | 33.8 | 34.9 | 34.9 |
| 128    | 1,270 | 0.0040 | 0.025  | 5.750 | 2.431 | 0.019  | 4.494 | 0.024  | 0.019  | 33.8 | 34.8 | 34.8 |
| 129    | 1,280 | 0.0040 | 0.025  | 5.775 | 2.449 | 0.019  | 4.518 | 0.024  | 0.019  | 33.9 | 34.7 | 34.7 |
| 130    | 1,290 | 0.0040 | 0.025  | 5.800 | 2.468 | 0.019  | 4.542 | 0.024  | 0.019  | 33.9 | 34.7 | 34.7 |
| 131    | 1,300 | 0.0040 | 0.025  | 5.824 | 2.487 | 0.019  | 4.566 | 0.024  | 0.019  | 34.0 | 34.6 | 34.6 |
| 132    | 1,310 | 0.0040 | 0.025  | 5.849 | 2.506 | 0.019  | 4.589 | 0.024  | 0.019  | 34.0 | 34.6 | 34.6 |
| 133    | 1,320 | 0.0040 | 0.025  | 5.874 | 2.524 | 0.019  | 4.613 | 0.024  | 0.019  | 34.1 | 34.6 | 34.6 |
| 134    | 1,330 | 0.0040 | 0.025  | 5.899 | 2.543 | 0.019  | 4.637 | 0.024  | 0.019  | 34.1 | 34.5 | 34.5 |
| 135    | 1,340 | 0.0040 | 0.025  | 5.923 | 2.562 | 0.019  | 4.661 | 0.024  | 0.019  | 34.2 | 34.5 | 34.5 |
| 136    | 1,350 | 0.0040 | 0.025  | 5.948 | 2.581 | 0.019  | 4.685 | 0.024  | 0.019  | 34.3 | 34.5 | 34.5 |
| 137    | 1,360 | 0.0040 | 0.025  | 5.973 | 2.600 | 0.019  | 4.709 | 0.024  | 0.019  | 34.3 | 34.5 | 34.5 |
| 138    | 1,370 | 0.0040 | 0.025  | 5.997 | 2.619 | 0.019  | 4.733 | 0.024  | 0.019  | 34.4 | 34.5 | 34.5 |
| 139    | 1,380 | 0.0040 | 0.025  | 6.022 | 2.638 | 0.019  | 4.757 | 0.024  | 0.019  | 34.4 | 34.5 | 34.5 |
| 140    | 1,390 | 0.0040 | 0.025  | 6.047 | 2.657 | 0.019  | 4.781 | 0.024  | 0.019  | 34.5 | 34.5 | 34.5 |
| 141    | 1,400 | 0.0040 | 0.025  | 6.071 | 2.676 | 0.019  | 4.805 | 0.024  | 0.019  | 34.5 | 34.5 | 34.5 |
| 142    | 1,410 | 0.0040 | 0.025  | 6.096 | 2.695 | 0.019  | 4.828 | 0.024  | 0.019  | 34.6 | 34.5 | 34.5 |
| 143    | 1,420 | 0.0040 | 0.025  | 6.121 | 2.714 | 0.019  | 4.852 | 0.024  | 0.019  | 34.6 | 34.5 | 34.5 |
| 144    | 1,430 | 0.0040 | 0.025  | 6.145 | 2.733 | 0.019  | 4.876 | 0.024  | 0.019  | 34.7 | 34.5 | 34.5 |
| 145    | 1,440 | 0.0040 | 0.0247 | 6.170 | 2.752 | 0.019  | 4.900 | 0.024  | 0.019  | 34.7 | 34.5 | 34.5 |
| Total: |       | 1.0000 | 6.1700 |       |       | 2.7520 |       | 4.9002 | 2.7520 |      |      |      |

Max: 57.5

Cumulative Runoff at Period 1452.48 inchesStart Flow34.5

Unaccounted Runoff0.28 inchesEnd Flow-1.1

17,420.94 secFlow Dec./per1.2

- ColumnDescription
- 1 Time Increment290.35 min
- 2 Time (min)29.03 periods
- 3 Type IA Storm Distribution30 periods
- 4 Column 3 \* Precipitation2.4856 Total Runoff
- 5 Accumulated Sum of Column 4
- 6 If  $P < 0.2S$  then 0, else  $(\text{Column } 5 - 0.2 * S) / (\text{Column } 5 + 0.8 * S)$
- 7 Column 6 of the present step - Column 6 of the previous step
- 8 Same as Column 6, except Impervious Area Calculations
- 9 Column 8 of the present step - Column 8 of the previous step
- 10  $\text{PerviousArea} / \text{TotalArea} * \text{Column } 7 + \text{ImperviousArea} / \text{TotalArea} * \text{Column } 9$
- 11  $(60.5 * \text{Column } 10 * \text{TotalArea}) / \text{Time Increment}$
- 12 Column 12 of previous step + w \* ((Column 11 of previous step + column 11 of present step) - (2 \* Column 12 of previous step))



500 YEAR PEAK FLOW ESTIMATE

Site: 

Gorst Creek

Rainfall: 

7.28

 in.

Return Period

year

500

Duration

hour

24

Time Increment: 

10

 minutes

w: 0.0344

w = Time increment / ( 2 \* Time of Concentration + Time Increment)

Area

CN

S

0.2 S

Pervious Area: 

300.00

 acres

68

4.71

0.94

Impervious Area: 

0.00

 acres

89

1.24

0.25

Total Area: 300.00 acres

Time of Concentration: 

140.1

 minutes

2.34

 hours

Qmax=

80.2 cfs

| Column         |                |                                  |                               |                          |                           |                            |                          |                            |                       |                        |                       |                                 |
|----------------|----------------|----------------------------------|-------------------------------|--------------------------|---------------------------|----------------------------|--------------------------|----------------------------|-----------------------|------------------------|-----------------------|---------------------------------|
| 1              | 2              | 3                                | 4                             | 5                        | 6                         | 7                          | 8                        | 9                          | 10                    | 11                     | 12                    | 13                              |
|                |                |                                  |                               |                          | PERVIOUS                  |                            | IMPERVIOUS               |                            |                       |                        |                       |                                 |
| Time Increment | Time (minutes) | Rainfall Distribution (fraction) | Incremental Rainfall (inches) | Accum. Rainfall (inches) | Accum. Rainfall (inches ) | Increment. Runoff (inches) | Accum. Rainfall (inches) | Increment. Runoff (inches) | Total Runoff (inches) | Instant Flowrate (cfs) | Design Flowrate (cfs) | Design Flowrate with Tail (cfs) |
| 1              | 0              | 0.0000                           | 0.000                         | 0.000                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 2              | 10             | 0.0040                           | 0.029                         | 0.029                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 3              | 20             | 0.0040                           | 0.029                         | 0.058                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 4              | 30             | 0.0040                           | 0.029                         | 0.087                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 5              | 40             | 0.0040                           | 0.029                         | 0.116                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 6              | 50             | 0.0040                           | 0.029                         | 0.146                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 7              | 60             | 0.0040                           | 0.029                         | 0.175                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 8              | 70             | 0.0040                           | 0.029                         | 0.204                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 9              | 80             | 0.0040                           | 0.029                         | 0.233                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 10             | 90             | 0.0040                           | 0.029                         | 0.262                    | 0.000                     | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 11             | 100            | 0.0040                           | 0.029                         | 0.291                    | 0.000                     | 0.000                      | 0.002                    | 0.001                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 12             | 110            | 0.0040                           | 0.029                         | 0.320                    | 0.000                     | 0.000                      | 0.004                    | 0.003                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 13             | 120            | 0.0050                           | 0.036                         | 0.357                    | 0.000                     | 0.000                      | 0.009                    | 0.005                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 14             | 130            | 0.0050                           | 0.036                         | 0.393                    | 0.000                     | 0.000                      | 0.015                    | 0.006                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 15             | 140            | 0.0050                           | 0.036                         | 0.430                    | 0.000                     | 0.000                      | 0.023                    | 0.008                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 16             | 150            | 0.0050                           | 0.036                         | 0.466                    | 0.000                     | 0.000                      | 0.033                    | 0.009                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 17             | 160            | 0.0050                           | 0.036                         | 0.502                    | 0.000                     | 0.000                      | 0.044                    | 0.011                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 18             | 170            | 0.0050                           | 0.036                         | 0.539                    | 0.000                     | 0.000                      | 0.056                    | 0.012                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 19             | 180            | 0.0060                           | 0.044                         | 0.582                    | 0.000                     | 0.000                      | 0.072                    | 0.016                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 20             | 190            | 0.0060                           | 0.044                         | 0.626                    | 0.000                     | 0.000                      | 0.089                    | 0.017                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 21             | 200            | 0.0060                           | 0.044                         | 0.670                    | 0.000                     | 0.000                      | 0.108                    | 0.019                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 22             | 210            | 0.0060                           | 0.044                         | 0.713                    | 0.000                     | 0.000                      | 0.128                    | 0.020                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 23             | 220            | 0.0060                           | 0.044                         | 0.757                    | 0.000                     | 0.000                      | 0.149                    | 0.021                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 24             | 230            | 0.0060                           | 0.044                         | 0.801                    | 0.000                     | 0.000                      | 0.171                    | 0.022                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 25             | 240            | 0.0070                           | 0.051                         | 0.852                    | 0.000                     | 0.000                      | 0.199                    | 0.027                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 26             | 250            | 0.0070                           | 0.051                         | 0.903                    | 0.000                     | 0.000                      | 0.227                    | 0.029                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 27             | 260            | 0.0070                           | 0.051                         | 0.954                    | 0.000                     | 0.000                      | 0.257                    | 0.030                      | 0.000                 | 0.1                    | 0.0                   | 0.0                             |
| 28             | 270            | 0.0070                           | 0.051                         | 1.005                    | 0.001                     | 0.001                      | 0.288                    | 0.031                      | 0.001                 | 1.5                    | 0.1                   | 0.1                             |
| 29             | 280            | 0.0070                           | 0.051                         | 1.056                    | 0.003                     | 0.002                      | 0.320                    | 0.032                      | 0.002                 | 3.4                    | 0.2                   | 0.2                             |
| 30             | 290            | 0.0070                           | 0.051                         | 1.107                    | 0.006                     | 0.003                      | 0.352                    | 0.033                      | 0.003                 | 5.3                    | 0.5                   | 0.5                             |
| 31             | 300            | 0.0080                           | 0.058                         | 1.165                    | 0.010                     | 0.005                      | 0.391                    | 0.039                      | 0.005                 | 8.2                    | 0.9                   | 0.9                             |
| 32             | 310            | 0.0080                           | 0.058                         | 1.223                    | 0.016                     | 0.006                      | 0.431                    | 0.040                      | 0.006                 | 10.5                   | 1.5                   | 1.5                             |
| 33             | 320            | 0.0080                           | 0.058                         | 1.281                    | 0.023                     | 0.007                      | 0.471                    | 0.041                      | 0.007                 | 12.7                   | 2.2                   | 2.2                             |
| 34             | 330            | 0.0080                           | 0.058                         | 1.340                    | 0.031                     | 0.008                      | 0.512                    | 0.041                      | 0.008                 | 14.8                   | 3.0                   | 3.0                             |
| 35             | 340            | 0.0080                           | 0.058                         | 1.398                    | 0.040                     | 0.009                      | 0.555                    | 0.042                      | 0.009                 | 16.9                   | 3.9                   | 3.9                             |
| 36             | 350            | 0.0080                           | 0.058                         | 1.456                    | 0.051                     | 0.010                      | 0.598                    | 0.043                      | 0.010                 | 18.9                   | 4.9                   | 4.9                             |
| 37             | 360            | 0.0100                           | 0.073                         | 1.529                    | 0.065                     | 0.014                      | 0.652                    | 0.055                      | 0.014                 | 26.3                   | 6.1                   | 6.1                             |
| 38             | 370            | 0.0100                           | 0.073                         | 1.602                    | 0.081                     | 0.016                      | 0.708                    | 0.056                      | 0.016                 | 29.1                   | 7.6                   | 7.6                             |
| 39             | 380            | 0.0100                           | 0.073                         | 1.674                    | 0.099                     | 0.018                      | 0.765                    | 0.057                      | 0.018                 | 31.9                   | 9.1                   | 9.1                             |
| 40             | 390            | 0.0100                           | 0.073                         | 1.747                    | 0.118                     | 0.019                      | 0.822                    | 0.058                      | 0.019                 | 34.5                   | 10.8                  | 10.8                            |
| 41             | 400            | 0.0100                           | 0.073                         | 1.820                    | 0.138                     | 0.020                      | 0.881                    | 0.058                      | 0.020                 | 37.1                   | 12.5                  | 12.5                            |
| 42             | 410            | 0.0130                           | 0.095                         | 1.915                    | 0.167                     | 0.029                      | 0.958                    | 0.077                      | 0.029                 | 51.8                   | 14.7                  | 14.7                            |
| 43             | 420            | 0.0130                           | 0.095                         | 2.009                    | 0.198                     | 0.031                      | 1.036                    | 0.078                      | 0.031                 | 55.8                   | 17.4                  | 17.4                            |
| 44             | 430            | 0.0130                           | 0.095                         | 2.104                    | 0.230                     | 0.033                      | 1.115                    | 0.079                      | 0.033                 | 59.5                   | 20.2                  | 20.2                            |
| 45             | 440            | 0.0180                           | 0.131                         | 2.235                    | 0.279                     | 0.049                      | 1.226                    | 0.111                      | 0.049                 | 88.2                   | 23.9                  | 23.9                            |
| 46             | 450            | 0.0180                           | 0.131                         | 2.366                    | 0.331                     | 0.052                      | 1.338                    | 0.113                      | 0.052                 | 94.6                   | 28.5                  | 28.5                            |
| 47             | 460            | 0.0340                           | 0.248                         | 2.614                    | 0.438                     | 0.107                      | 1.554                    | 0.216                      | 0.107                 | 194.8                  | 36.5                  | 36.5                            |
| 48             | 470            | 0.0540                           | 0.393                         | 3.007                    | 0.630                     | 0.192                      | 1.906                    | 0.351                      | 0.192                 | 347.7                  | 52.7                  | 52.7                            |
| 49             | 480            | 0.0270                           | 0.197                         | 3.203                    | 0.734                     | 0.104                      | 2.084                    | 0.179                      | 0.104                 | 189.3                  | 67.6                  | 67.6                            |
| 50             | 490            | 0.0180                           | 0.131                         | 3.334                    | 0.807                     | 0.072                      | 2.204                    | 0.120                      | 0.072                 | 131.4                  | 74.0                  | 74.0                            |
| 51             | 500            | 0.0130                           | 0.095                         | 3.429                    | 0.860                     | 0.054                      | 2.292                    | 0.087                      | 0.054                 | 97.3                   | 76.8                  | 76.8                            |
| 52             | 510            | 0.0130                           | 0.095                         | 3.524                    | 0.915                     | 0.055                      | 2.379                    | 0.087                      | 0.055                 | 99.2                   | 78.2                  | 78.2                            |
| 53             | 520            | 0.0130                           | 0.095                         | 3.618                    | 0.971                     | 0.056                      | 2.467                    | 0.088                      | 0.056                 | 101.1                  | 79.7                  | 79.7                            |
| 54             | 530            | 0.0090                           | 0.066                         | 3.684                    | 1.010                     | 0.039                      | 2.527                    | 0.061                      | 0.039                 | 71.0                   | 80.2                  | 80.2                            |
| 55             | 540            | 0.0090                           | 0.066                         | 3.749                    | 1.049                     | 0.040                      | 2.588                    | 0.061                      | 0.040                 | 71.9                   | 79.6                  | 79.6                            |
| 56             | 550            | 0.0090                           | 0.066                         | 3.815                    | 1.089                     | 0.040                      | 2.650                    | 0.061                      | 0.040                 | 72.7                   | 79.1                  | 79.1                            |
| 57             | 560            | 0.0090                           | 0.066                         | 3.880                    | 1.130                     | 0.040                      | 2.711                    | 0.061                      | 0.040                 | 73.5                   | 78.7                  | 78.7                            |
| 58             | 570            | 0.0090                           | 0.066                         | 3.946                    | 1.171                     | 0.041                      | 2.772                    | 0.061                      | 0.041                 | 74.2                   | 78.3                  | 78.3                            |
| 59             | 580            | 0.0090                           | 0.066                         | 4.011                    | 1.212                     | 0.041                      | 2.834                    | 0.061                      | 0.041                 | 75.0                   | 78.1                  | 78.1                            |
| 60             | 590            | 0.0090                           | 0.066                         | 4.077                    | 1.254                     | 0.042                      | 2.895                    | 0.062                      | 0.042                 | 75.7                   | 77.9                  | 77.9                            |
| 61             | 600            | 0.0090                           | 0.066                         | 4.142                    | 1.296                     | 0.042                      | 2.957                    | 0.062                      | 0.042                 | 76.4                   | 77.8                  | 77.8                            |
| 62             | 610            | 0.0090                           | 0.066                         | 4.208                    | 1.338                     | 0.043                      | 3.019                    | 0.062                      | 0.043                 | 77.1                   | 77.7                  | 77.7                            |
| 63             | 620            | 0.0090                           | 0.066                         | 4.273                    | 1.381                     | 0.043                      | 3.081                    | 0.062                      | 0.043                 | 77.8                   | 77.7                  | 77.7                            |
| 64             | 630            | 0.0090                           | 0.066                         | 4.339                    | 1.425                     | 0.043                      | 3.142                    | 0.062                      | 0.043                 | 78.5                   | 77.7                  | 77.7                            |
| 65             | 640            | 0.0090                           | 0.066                         | 4.404                    | 1.468                     | 0.044                      | 3.204                    | 0.062                      | 0.044                 | 79.1                   | 77.8                  | 77.8                            |
| 66             | 650            | 0.0090                           | 0.066                         | 4.470                    | 1.512                     | 0.044                      | 3.267                    | 0.062                      | 0.044                 | 79.8                   | 77.9                  | 77.9                            |
| 67             | 660            | 0.0070                           | 0.051                         | 4.521                    | 1.547                     | 0.034                      | 3.315                    | 0.048                      | 0.034                 | 62.5                   | 77.4                  | 77.4                            |
| 68             | 670            | 0.0070                           | 0.051                         | 4.572                    | 1.581                     | 0.035                      | 3.363                    | 0.048                      | 0.035                 | 62.8                   | 76.4                  | 76.4                            |
| 69             | 680            | 0.0070                           | 0.051                         | 4.623                    | 1.616                     | 0.035                      | 3.412                    | 0.048                      | 0.035                 | 63.2                   | 75.5                  | 75.5                            |
| 70             | 690            | 0.0070                           | 0.051                         | 4.674                    | 1.651                     | 0.035                      | 3.460                    | 0.049                      | 0.035                 | 63.6                   | 74.7                  | 74.7                            |
| 71             | 700            | 0.0070                           | 0.051                         | 4.725                    | 1.686                     | 0.035                      | 3.509                    | 0.049                      | 0.035                 | 63.9                   | 73.9                  | 73.9                            |
| 72             | 710            | 0.0070                           | 0.051                         | 4.776                    | 1.722                     | 0.035                      | 3.558                    | 0.049                      | 0.035                 | 64.2                   | 73.2                  | 73.2                            |

|        |       |        |        |       |       |        |       |        |        |      |      |      |
|--------|-------|--------|--------|-------|-------|--------|-------|--------|--------|------|------|------|
| 73     | 720   | 0.0070 | 0.051  | 4.827 | 1.757 | 0.036  | 3.606 | 0.049  | 0.036  | 64.6 | 72.6 | 72.6 |
| 74     | 730   | 0.0070 | 0.051  | 4.878 | 1.793 | 0.036  | 3.655 | 0.049  | 0.036  | 64.9 | 72.1 | 72.1 |
| 75     | 740   | 0.0070 | 0.051  | 4.929 | 1.829 | 0.036  | 3.704 | 0.049  | 0.036  | 65.2 | 71.6 | 71.6 |
| 76     | 750   | 0.0070 | 0.051  | 4.980 | 1.865 | 0.036  | 3.752 | 0.049  | 0.036  | 65.5 | 71.2 | 71.2 |
| 77     | 760   | 0.0070 | 0.051  | 5.030 | 1.901 | 0.036  | 3.801 | 0.049  | 0.036  | 65.9 | 70.8 | 70.8 |
| 78     | 770   | 0.0070 | 0.051  | 5.081 | 1.938 | 0.036  | 3.850 | 0.049  | 0.036  | 66.2 | 70.5 | 70.5 |
| 79     | 780   | 0.0060 | 0.044  | 5.125 | 1.969 | 0.031  | 3.892 | 0.042  | 0.031  | 57.0 | 69.8 | 69.8 |
| 80     | 790   | 0.0060 | 0.044  | 5.169 | 2.001 | 0.031  | 3.934 | 0.042  | 0.031  | 57.2 | 69.0 | 69.0 |
| 81     | 800   | 0.0060 | 0.044  | 5.212 | 2.032 | 0.032  | 3.976 | 0.042  | 0.032  | 57.4 | 68.2 | 68.2 |
| 82     | 810   | 0.0060 | 0.044  | 5.256 | 2.064 | 0.032  | 4.018 | 0.042  | 0.032  | 57.6 | 67.4 | 67.4 |
| 83     | 820   | 0.0060 | 0.044  | 5.300 | 2.096 | 0.032  | 4.060 | 0.042  | 0.032  | 57.8 | 66.8 | 66.8 |
| 84     | 830   | 0.0060 | 0.044  | 5.344 | 2.128 | 0.032  | 4.102 | 0.042  | 0.032  | 58.0 | 66.1 | 66.1 |
| 85     | 840   | 0.0060 | 0.044  | 5.387 | 2.160 | 0.032  | 4.144 | 0.042  | 0.032  | 58.2 | 65.6 | 65.6 |
| 86     | 850   | 0.0060 | 0.044  | 5.431 | 2.192 | 0.032  | 4.186 | 0.042  | 0.032  | 58.4 | 65.1 | 65.1 |
| 87     | 860   | 0.0060 | 0.044  | 5.475 | 2.224 | 0.032  | 4.228 | 0.042  | 0.032  | 58.6 | 64.6 | 64.6 |
| 88     | 870   | 0.0060 | 0.044  | 5.518 | 2.257 | 0.032  | 4.270 | 0.042  | 0.032  | 58.8 | 64.2 | 64.2 |
| 89     | 880   | 0.0060 | 0.044  | 5.562 | 2.289 | 0.033  | 4.312 | 0.042  | 0.033  | 59.0 | 63.9 | 63.9 |
| 90     | 890   | 0.0050 | 0.036  | 5.598 | 2.316 | 0.027  | 4.347 | 0.035  | 0.027  | 49.3 | 63.2 | 63.2 |
| 91     | 900   | 0.0050 | 0.036  | 5.635 | 2.344 | 0.027  | 4.382 | 0.035  | 0.027  | 49.4 | 62.2 | 62.2 |
| 92     | 910   | 0.0050 | 0.036  | 5.671 | 2.371 | 0.027  | 4.417 | 0.035  | 0.027  | 49.6 | 61.4 | 61.4 |
| 93     | 920   | 0.0050 | 0.036  | 5.708 | 2.398 | 0.027  | 4.452 | 0.035  | 0.027  | 49.7 | 60.6 | 60.6 |
| 94     | 930   | 0.0050 | 0.036  | 5.744 | 2.426 | 0.027  | 4.488 | 0.035  | 0.027  | 49.8 | 59.8 | 59.8 |
| 95     | 940   | 0.0050 | 0.036  | 5.780 | 2.453 | 0.028  | 4.523 | 0.035  | 0.028  | 49.9 | 59.1 | 59.1 |
| 96     | 950   | 0.0050 | 0.036  | 5.817 | 2.481 | 0.028  | 4.558 | 0.035  | 0.028  | 50.1 | 58.5 | 58.5 |
| 97     | 960   | 0.0050 | 0.036  | 5.853 | 2.509 | 0.028  | 4.593 | 0.035  | 0.028  | 50.2 | 57.9 | 57.9 |
| 98     | 970   | 0.0050 | 0.036  | 5.890 | 2.536 | 0.028  | 4.628 | 0.035  | 0.028  | 50.3 | 57.4 | 57.4 |
| 99     | 980   | 0.0050 | 0.036  | 5.926 | 2.564 | 0.028  | 4.664 | 0.035  | 0.028  | 50.4 | 56.9 | 56.9 |
| 100    | 990   | 0.0050 | 0.036  | 5.962 | 2.592 | 0.028  | 4.699 | 0.035  | 0.028  | 50.5 | 56.5 | 56.5 |
| 101    | 1,000 | 0.0050 | 0.036  | 5.999 | 2.620 | 0.028  | 4.734 | 0.035  | 0.028  | 50.7 | 56.1 | 56.1 |
| 102    | 1,010 | 0.0040 | 0.029  | 6.028 | 2.642 | 0.022  | 4.762 | 0.028  | 0.022  | 40.6 | 55.3 | 55.3 |
| 103    | 1,020 | 0.0040 | 0.029  | 6.057 | 2.665 | 0.022  | 4.791 | 0.028  | 0.022  | 40.7 | 54.3 | 54.3 |
| 104    | 1,030 | 0.0040 | 0.029  | 6.086 | 2.687 | 0.022  | 4.819 | 0.028  | 0.022  | 40.8 | 53.4 | 53.4 |
| 105    | 1,040 | 0.0040 | 0.029  | 6.115 | 2.710 | 0.022  | 4.847 | 0.028  | 0.022  | 40.8 | 52.5 | 52.5 |
| 106    | 1,050 | 0.0040 | 0.029  | 6.144 | 2.732 | 0.023  | 4.875 | 0.028  | 0.023  | 40.9 | 51.7 | 51.7 |
| 107    | 1,060 | 0.0040 | 0.029  | 6.173 | 2.755 | 0.023  | 4.904 | 0.028  | 0.023  | 41.0 | 51.0 | 51.0 |
| 108    | 1,070 | 0.0040 | 0.029  | 6.203 | 2.777 | 0.023  | 4.932 | 0.028  | 0.023  | 41.0 | 50.3 | 50.3 |
| 109    | 1,080 | 0.0040 | 0.029  | 6.232 | 2.800 | 0.023  | 4.960 | 0.028  | 0.023  | 41.1 | 49.7 | 49.7 |
| 110    | 1,090 | 0.0040 | 0.029  | 6.261 | 2.823 | 0.023  | 4.988 | 0.028  | 0.023  | 41.2 | 49.1 | 49.1 |
| 111    | 1,100 | 0.0040 | 0.029  | 6.290 | 2.845 | 0.023  | 5.017 | 0.028  | 0.023  | 41.2 | 48.5 | 48.5 |
| 112    | 1,110 | 0.0040 | 0.029  | 6.319 | 2.868 | 0.023  | 5.045 | 0.028  | 0.023  | 41.3 | 48.0 | 48.0 |
| 113    | 1,120 | 0.0040 | 0.029  | 6.348 | 2.891 | 0.023  | 5.073 | 0.028  | 0.023  | 41.4 | 47.6 | 47.6 |
| 114    | 1,130 | 0.0040 | 0.029  | 6.377 | 2.914 | 0.023  | 5.102 | 0.028  | 0.023  | 41.4 | 47.1 | 47.1 |
| 115    | 1,140 | 0.0040 | 0.029  | 6.406 | 2.937 | 0.023  | 5.130 | 0.028  | 0.023  | 41.5 | 46.8 | 46.8 |
| 116    | 1,150 | 0.0040 | 0.029  | 6.436 | 2.960 | 0.023  | 5.158 | 0.028  | 0.023  | 41.6 | 46.4 | 46.4 |
| 117    | 1,160 | 0.0040 | 0.029  | 6.465 | 2.982 | 0.023  | 5.186 | 0.028  | 0.023  | 41.6 | 46.1 | 46.1 |
| 118    | 1,170 | 0.0040 | 0.029  | 6.494 | 3.005 | 0.023  | 5.215 | 0.028  | 0.023  | 41.7 | 45.8 | 45.8 |
| 119    | 1,180 | 0.0040 | 0.029  | 6.523 | 3.028 | 0.023  | 5.243 | 0.028  | 0.023  | 41.8 | 45.5 | 45.5 |
| 120    | 1,190 | 0.0040 | 0.029  | 6.552 | 3.051 | 0.023  | 5.271 | 0.028  | 0.023  | 41.8 | 45.2 | 45.2 |
| 121    | 1,200 | 0.0040 | 0.029  | 6.581 | 3.075 | 0.023  | 5.300 | 0.028  | 0.023  | 41.9 | 45.0 | 45.0 |
| 122    | 1,210 | 0.0040 | 0.029  | 6.610 | 3.098 | 0.023  | 5.328 | 0.028  | 0.023  | 41.9 | 44.8 | 44.8 |
| 123    | 1,220 | 0.0040 | 0.029  | 6.639 | 3.121 | 0.023  | 5.356 | 0.028  | 0.023  | 42.0 | 44.6 | 44.6 |
| 124    | 1,230 | 0.0040 | 0.029  | 6.668 | 3.144 | 0.023  | 5.385 | 0.028  | 0.023  | 42.1 | 44.4 | 44.4 |
| 125    | 1,240 | 0.0040 | 0.029  | 6.698 | 3.167 | 0.023  | 5.413 | 0.028  | 0.023  | 42.1 | 44.3 | 44.3 |
| 126    | 1,250 | 0.0040 | 0.029  | 6.727 | 3.190 | 0.023  | 5.442 | 0.028  | 0.023  | 42.2 | 44.1 | 44.1 |
| 127    | 1,260 | 0.0040 | 0.029  | 6.756 | 3.214 | 0.023  | 5.470 | 0.028  | 0.023  | 42.2 | 44.0 | 44.0 |
| 128    | 1,270 | 0.0040 | 0.029  | 6.785 | 3.237 | 0.023  | 5.498 | 0.028  | 0.023  | 42.3 | 43.9 | 43.9 |
| 129    | 1,280 | 0.0040 | 0.029  | 6.814 | 3.260 | 0.023  | 5.527 | 0.028  | 0.023  | 42.4 | 43.8 | 43.8 |
| 130    | 1,290 | 0.0040 | 0.029  | 6.843 | 3.284 | 0.023  | 5.555 | 0.028  | 0.023  | 42.4 | 43.7 | 43.7 |
| 131    | 1,300 | 0.0040 | 0.029  | 6.872 | 3.307 | 0.023  | 5.583 | 0.028  | 0.023  | 42.5 | 43.6 | 43.6 |
| 132    | 1,310 | 0.0040 | 0.029  | 6.901 | 3.331 | 0.023  | 5.612 | 0.028  | 0.023  | 42.5 | 43.5 | 43.5 |
| 133    | 1,320 | 0.0040 | 0.029  | 6.931 | 3.354 | 0.023  | 5.640 | 0.028  | 0.023  | 42.6 | 43.4 | 43.4 |
| 134    | 1,330 | 0.0040 | 0.029  | 6.960 | 3.378 | 0.023  | 5.669 | 0.028  | 0.023  | 42.6 | 43.4 | 43.4 |
| 135    | 1,340 | 0.0040 | 0.029  | 6.989 | 3.401 | 0.024  | 5.697 | 0.028  | 0.024  | 42.7 | 43.3 | 43.3 |
| 136    | 1,350 | 0.0040 | 0.029  | 7.018 | 3.425 | 0.024  | 5.726 | 0.028  | 0.024  | 42.8 | 43.3 | 43.3 |
| 137    | 1,360 | 0.0040 | 0.029  | 7.047 | 3.448 | 0.024  | 5.754 | 0.028  | 0.024  | 42.8 | 43.3 | 43.3 |
| 138    | 1,370 | 0.0040 | 0.029  | 7.076 | 3.472 | 0.024  | 5.782 | 0.028  | 0.024  | 42.9 | 43.2 | 43.2 |
| 139    | 1,380 | 0.0040 | 0.029  | 7.105 | 3.496 | 0.024  | 5.811 | 0.028  | 0.024  | 42.9 | 43.2 | 43.2 |
| 140    | 1,390 | 0.0040 | 0.029  | 7.134 | 3.519 | 0.024  | 5.839 | 0.028  | 0.024  | 43.0 | 43.2 | 43.2 |
| 141    | 1,400 | 0.0040 | 0.029  | 7.164 | 3.543 | 0.024  | 5.868 | 0.028  | 0.024  | 43.0 | 43.2 | 43.2 |
| 142    | 1,410 | 0.0040 | 0.029  | 7.193 | 3.567 | 0.024  | 5.896 | 0.028  | 0.024  | 43.1 | 43.2 | 43.2 |
| 143    | 1,420 | 0.0040 | 0.029  | 7.222 | 3.590 | 0.024  | 5.925 | 0.028  | 0.024  | 43.1 | 43.2 | 43.2 |
| 144    | 1,430 | 0.0040 | 0.029  | 7.251 | 3.614 | 0.024  | 5.953 | 0.028  | 0.024  | 43.2 | 43.2 | 43.2 |
| 145    | 1,440 | 0.0040 | 0.0291 | 7.280 | 3.638 | 0.024  | 5.982 | 0.028  | 0.024  | 43.2 | 43.2 | 43.2 |
| Total: |       | 1.0000 | 7.2800 |       |       | 3.6380 |       | 5.9816 | 3.6380 |      |      |      |

|                                 |               |               |      |
|---------------------------------|---------------|---------------|------|
| Max:                            | 80.2          |               |      |
| Cumulative Runoff at Period 145 | 3.29 inches   | Start Flow    | 43.2 |
| Unaccounted Runoff              | 0.35 inches   | End Flow      | -1.4 |
|                                 | 17,417.99 sec | Flow Dec./per | 1.5  |

|        |  |
|--------|--|
| Column | Description  |
| 1      | Time Increment   |
| 2      | Time (min)   |
| 3      | Type IA Storm Distribution   |
| 4      | Column 3 * Precipitation   |
| 5      | Accumulated Sum of Column 4  |
| 6      | If P<0.2S then 0, else (Column 5 - 0.2 * S)/(Column 5 +0.8 * S)  |
| 7      | Column 6 of the present step - Column 6 of the previous step   |
| 8      | Same as Column 6, except Impervious Area Calculations  |
| 9      | Column 8 of the present step - Column 8 of the previous step   |
| 10     | PerviousArea/TotalArea*Column 7 + ImperviousArea/TotalArea*Column 9  |
| 11     | (60.5 * Column 10 * TotalArea)/Time Increment  |
| 12     | Column 12 of previous step + w * ((Column 11 of previous step + column 11 of present step) - (2 * Column 12 of previous step)) |

100,000 YEAR PEAK FLOW ESTIMATE

Site: 

Gorst Creek

Return  
Period  
year

Duration  
hour

Rainfall: 

10.82

 in. 

100,000

24

Time Increment: 

10

 minutes

w: 0.0344

w = Time increment / ( 2 \* Time of Concentration + Time Increment)

Area

CN

S

0.2 S

Pervious Area: 

300.00

 acres 

68

 4.71 0.94

Impervious Area: 

0.00

 acres 

89

 1.24 0.25

Total Area: 300.00 acres

Time of Concentration: 

140.1

 minutes 

2.34

 hours

Qmax=

165.2 cfs

| Column            |                   |   |  |                                |                                    |                                  |                             |                                  |                          |                           |                             |  |
|-------------------|-------------------|---|--|--------------------------------|------------------------------------|----------------------------------|-----------------------------|----------------------------------|--------------------------|---------------------------|-----------------------------|--|
| 1                 | 2                 | 3   | 4  | 5                              | 6                                  | 7                                | 8                           | 9                                | 10                       | 11                        | 12                          | 13                                       |
|                   |                   |   |  |                                | PERVIOUS                           |                                  | IMPERVIOUS                  |                                  |                          |                           |                             |  |
| Time<br>Increment | Time<br>(minutes) | Rainfall<br>Distribu-<br>tion<br>(fraction) | Incre-<br>mental<br>Rainfall<br>(inches) | Accum.<br>Rainfall<br>(inches) | Accum.<br>Rainfall<br>(inches<br>) | Increment.<br>Runoff<br>(inches) | Accum. Rainfall<br>(inches) | Increment.<br>Runoff<br>(inches) | Total Runoff<br>(inches) | Instant<br>Flowrate (cfs) | Design<br>Flowrate<br>(cfs) | Design<br>Flowrate<br>with Tail<br>(cfs) |
| 1                 | 0                 | 0.0000                                      | 0.000                                    | 0.000                          | 0.000                              | 0.000                            | 0.000                       | 0.000                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 2                 | 10                | 0.0040                                      | 0.043                                    | 0.043                          | 0.000                              | 0.000                            | 0.000                       | 0.000                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 3                 | 20                | 0.0040                                      | 0.043                                    | 0.087                          | 0.000                              | 0.000                            | 0.000                       | 0.000                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 4                 | 30                | 0.0040                                      | 0.043                                    | 0.130                          | 0.000                              | 0.000                            | 0.000                       | 0.000                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 5                 | 40                | 0.0040                                      | 0.043                                    | 0.173                          | 0.000                              | 0.000                            | 0.000                       | 0.000                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 6                 | 50                | 0.0040                                      | 0.043                                    | 0.216                          | 0.000                              | 0.000                            | 0.000                       | 0.000                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 7                 | 60                | 0.0040                                      | 0.043                                    | 0.260                          | 0.000                              | 0.000                            | 0.000                       | 0.000                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 8                 | 70                | 0.0040                                      | 0.043                                    | 0.303                          | 0.000                              | 0.000                            | 0.002                       | 0.002                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 9                 | 80                | 0.0040                                      | 0.043                                    | 0.346                          | 0.000                              | 0.000                            | 0.007                       | 0.005                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 10                | 90                | 0.0040                                      | 0.043                                    | 0.390                          | 0.000                              | 0.000                            | 0.015                       | 0.007                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 11                | 100               | 0.0040                                      | 0.043                                    | 0.433                          | 0.000                              | 0.000                            | 0.024                       | 0.010                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 12                | 110               | 0.0040                                      | 0.043                                    | 0.476                          | 0.000                              | 0.000                            | 0.036                       | 0.012                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 13                | 120               | 0.0050                                      | 0.054                                    | 0.530                          | 0.000                              | 0.000                            | 0.053                       | 0.017                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 14                | 130               | 0.0050                                      | 0.054                                    | 0.584                          | 0.000                              | 0.000                            | 0.072                       | 0.020                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 15                | 140               | 0.0050                                      | 0.054                                    | 0.638                          | 0.000                              | 0.000                            | 0.094                       | 0.022                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 16                | 150               | 0.0050                                      | 0.054                                    | 0.692                          | 0.000                              | 0.000                            | 0.118                       | 0.024                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 17                | 160               | 0.0050                                      | 0.054                                    | 0.747                          | 0.000                              | 0.000                            | 0.144                       | 0.026                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 18                | 170               | 0.0050                                      | 0.054                                    | 0.801                          | 0.000                              | 0.000                            | 0.171                       | 0.027                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 19                | 180               | 0.0060                                      | 0.065                                    | 0.866                          | 0.000                              | 0.000                            | 0.206                       | 0.035                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 20                | 190               | 0.0060                                      | 0.065                                    | 0.931                          | 0.000                              | 0.000                            | 0.243                       | 0.037                            | 0.000                    | 0.0                       | 0.0                         | 0.0                                      |
| 21                | 200               | 0.0060                                      | 0.065                                    | 0.995                          | 0.001                              | 0.001                            | 0.282                       | 0.039                            | 0.001                    | 1.1                       | 0.0                         | 0.0                                      |
| 22                | 210               | 0.0060                                      | 0.065                                    | 1.060                          | 0.003                              | 0.002                            | 0.323                       | 0.041                            | 0.002                    | 4.2                       | 0.2                         | 0.2                                      |
| 23                | 220               | 0.0060                                      | 0.065                                    | 1.125                          | 0.007                              | 0.004                            | 0.365                       | 0.042                            | 0.004                    | 7.2                       | 0.6                         | 0.6                                      |
| 24                | 230               | 0.0060                                      | 0.065                                    | 1.190                          | 0.013                              | 0.006                            | 0.408                       | 0.043                            | 0.006                    | 10.1                      | 1.2                         | 1.2                                      |
| 25                | 240               | 0.0070                                      | 0.076                                    | 1.266                          | 0.021                              | 0.008                            | 0.460                       | 0.052                            | 0.008                    | 15.3                      | 2.0                         | 2.0                                      |
| 26                | 250               | 0.0070                                      | 0.076                                    | 1.342                          | 0.031                              | 0.010                            | 0.514                       | 0.054                            | 0.010                    | 19.0                      | 3.0                         | 3.0                                      |
| 27                | 260               | 0.0070                                      | 0.076                                    | 1.417                          | 0.044                              | 0.012                            | 0.569                       | 0.055                            | 0.012                    | 22.4                      | 4.2                         | 4.2                                      |
| 28                | 270               | 0.0070                                      | 0.076                                    | 1.493                          | 0.058                              | 0.014                            | 0.625                       | 0.056                            | 0.014                    | 25.7                      | 5.6                         | 5.6                                      |
| 29                | 280               | 0.0070                                      | 0.076                                    | 1.569                          | 0.074                              | 0.016                            | 0.683                       | 0.058                            | 0.016                    | 28.9                      | 7.1                         | 7.1                                      |
| 30                | 290               | 0.0070                                      | 0.076                                    | 1.645                          | 0.091                              | 0.018                            | 0.742                       | 0.059                            | 0.018                    | 32.0                      | 8.7                         | 8.7                                      |
| 31                | 300               | 0.0080                                      | 0.087                                    | 1.731                          | 0.114                              | 0.022                            | 0.810                       | 0.068                            | 0.022                    | 40.1                      | 10.6                        | 10.6                                     |
| 32                | 310               | 0.0080                                      | 0.087                                    | 1.818                          | 0.138                              | 0.024                            | 0.879                       | 0.069                            | 0.024                    | 43.7                      | 12.7                        | 12.7                                     |
| 33                | 320               | 0.0080                                      | 0.087                                    | 1.904                          | 0.164                              | 0.026                            | 0.949                       | 0.070                            | 0.026                    | 47.2                      | 15.0                        | 15.0                                     |
| 34                | 330               | 0.0080                                      | 0.087                                    | 1.991                          | 0.191                              | 0.028                            | 1.020                       | 0.071                            | 0.028                    | 50.5                      | 17.3                        | 17.3                                     |
| 35                | 340               | 0.0080                                      | 0.087                                    | 2.077                          | 0.221                              | 0.030                            | 1.092                       | 0.072                            | 0.030                    | 53.6                      | 19.7                        | 19.7                                     |
| 36                | 350               | 0.0080                                      | 0.087                                    | 2.164                          | 0.252                              | 0.031                            | 1.165                       | 0.073                            | 0.031                    | 56.7                      | 22.2                        | 22.2                                     |
| 37                | 360               | 0.0100                                      | 0.108                                    | 2.272                          | 0.293                              | 0.041                            | 1.257                       | 0.092                            | 0.041                    | 74.9                      | 25.2                        | 25.2                                     |
| 38                | 370               | 0.0100                                      | 0.108                                    | 2.380                          | 0.337                              | 0.044                            | 1.351                       | 0.093                            | 0.044                    | 79.2                      | 28.7                        | 28.7                                     |
| 39                | 380               | 0.0100                                      | 0.108                                    | 2.489                          | 0.383                              | 0.046                            | 1.445                       | 0.094                            | 0.046                    | 83.2                      | 32.3                        | 32.3                                     |
| 40                | 390               | 0.0100                                      | 0.108                                    | 2.597                          | 0.431                              | 0.048                            | 1.540                       | 0.095                            | 0.048                    | 87.1                      | 36.0                        | 36.0                                     |
| 41                | 400               | 0.0100                                      | 0.108                                    | 2.705                          | 0.481                              | 0.050                            | 1.635                       | 0.096                            | 0.050                    | 90.7                      | 39.6                        | 39.6                                     |
| 42                | 410               | 0.0130                                      | 0.141                                    | 2.846                          | 0.549                              | 0.068                            | 1.761                       | 0.125                            | 0.068                    | 123.1                     | 44.3                        | 44.3                                     |
| 43                | 420               | 0.0130                                      | 0.141                                    | 2.986                          | 0.620                              | 0.071                            | 1.887                       | 0.127                            | 0.071                    | 128.6                     | 49.9                        | 49.9                                     |
| 44                | 430               | 0.0130                                      | 0.141                                    | 3.127                          | 0.693                              | 0.074                            | 2.015                       | 0.128                            | 0.074                    | 133.8                     | 55.5                        | 55.5                                     |
| 45                | 440               | 0.0180                                      | 0.195                                    | 3.322                          | 0.800                              | 0.106                            | 2.193                       | 0.178                            | 0.106                    | 193.2                     | 62.9                        | 62.9                                     |
| 46                | 450               | 0.0180                                      | 0.195                                    | 3.517                          | 0.911                              | 0.111                            | 2.372                       | 0.179                            | 0.111                    | 201.8                     | 72.2                        | 72.2                                     |
| 47                | 460               | 0.0340                                      | 0.368                                    | 3.884                          | 1.132                              | 0.222                            | 2.715                       | 0.342                            | 0.222                    | 402.2                     | 88.0                        | 88.0                                     |
| 48                | 470               | 0.0540                                      | 0.584                                    | 4.469                          | 1.511                              | 0.379                            | 3.265                       | 0.551                            | 0.379                    | 687.6                     | 119.5                       | 119.5                                    |
| 49                | 480               | 0.0270                                      | 0.292                                    | 4.761                          | 1.711                              | 0.200                            | 3.543                       | 0.278                            | 0.200                    | 363.0                     | 147.5                       | 147.5                                    |
| 50                | 490               | 0.0180                                      | 0.195                                    | 4.956                          | 1.848                              | 0.137                            | 3.729                       | 0.186                            | 0.137                    | 248.2                     | 158.4                       | 158.4                                    |
| 51                | 500               | 0.0130                                      | 0.141                                    | 5.096                          | 1.948                              | 0.100                            | 3.864                       | 0.135                            | 0.100                    | 182.1                     | 162.3                       | 162.3                                    |
| 52                | 510               | 0.0130                                      | 0.141                                    | 5.237                          | 2.050                              | 0.102                            | 3.999                       | 0.135                            | 0.102                    | 184.4                     | 163.7                       | 163.7                                    |
| 53                | 520               | 0.0130                                      | 0.141                                    | 5.378                          | 2.153                              | 0.103                            | 4.134                       | 0.135                            | 0.103                    | 186.6                     | 165.2                       | 165.2                                    |
| 54                | 530               | 0.0090                                      | 0.097                                    | 5.475                          | 2.225                              | 0.072                            | 4.228                       | 0.094                            | 0.072                    | 130.4                     | 164.8                       | 164.8                                    |
| 55                | 540               | 0.0090                                      | 0.097                                    | 5.572                          | 2.297                              | 0.072                            | 4.322                       | 0.094                            | 0.072                    | 131.4                     | 162.4                       | 162.4                                    |
| 56                | 550               | 0.0090                                      | 0.097                                    | 5.670                          | 2.370                              | 0.073                            | 4.416                       | 0.094                            | 0.073                    | 132.3                     | 160.3                       | 160.3                                    |
| 57                | 560               | 0.0090                                      | 0.097                                    | 5.767                          | 2.443                              | 0.073                            | 4.510                       | 0.094                            | 0.073                    | 133.2                     | 158.4                       | 158.4                                    |
| 58                | 570               | 0.0090                                      | 0.097                                    | 5.864                          | 2.517                              | 0.074                            | 4.604                       | 0.094                            | 0.074                    | 134.1                     | 156.7                       | 156.7                                    |
| 59                | 580               | 0.0090                                      | 0.097                                    | 5.962                          | 2.592                              | 0.074                            | 4.698                       | 0.094                            | 0.074                    | 135.0                     | 155.2                       | 155.2                                    |
| 60                | 590               | 0.0090                                      | 0.097                                    | 6.059                          | 2.666                              | 0.075                            | 4.793                       | 0.094                            | 0.075                    | 135.8                     | 153.8                       | 153.8                                    |
| 61                | 600               | 0.0090                                      | 0.097                                    | 6.157                          | 2.742                              | 0.075                            | 4.887                       | 0.094                            | 0.075                    | 136.6                     | 152.6                       | 152.6                                    |
| 62                | 610               | 0.0090                                      | 0.097                                    | 6.254                          | 2.817                              | 0.076                            | 4.982                       | 0.095                            | 0.076                    | 137.4                     | 151.5                       | 151.5                                    |
| 63                | 620               | 0.0090                                      | 0.097                                    | 6.351                          | 2.893                              | 0.076                            | 5.076                       | 0.095                            | 0.076                    | 138.1                     | 150.6                       | 150.6                                    |
| 64                | 630               | 0.0090                                      | 0.097                                    | 6.449                          | 2.970                              | 0.077                            | 5.171                       | 0.095                            | 0.077                    | 138.9                     | 149.7                       | 149.7                                    |
| 65                | 640               | 0.0090                                      | 0.097                                    | 6.546                          | 3.047                              | 0.077                            | 5.266                       | 0.095                            | 0.077                    | 139.6                     | 149.0                       | 149.0                                    |
| 66                | 650               | 0.0090                                      | 0.097                                    | 6.643                          | 3.124                              | 0.077                            | 5.360                       | 0.095                            | 0.077                    | 140.3                     | 148.4                       | 148.4                                    |
| 67                | 660               | 0.0070                                      | 0.076                                    | 6.719                          | 3.184                              | 0.060                            | 5.434                       | 0.074                            | 0.060                    | 109.6                     | 146.8                       | 146.8                                    |
| 68                | 670               | 0.0070                                      | 0.076                                    | 6.795                          | 3.245                              | 0.061                            | 5.508                       | 0.074                            | 0.061                    | 110.0                     | 144.2                       | 144.2                                    |
| 69                | 680               | 0.0070                                      | 0.076                                    | 6.871                          | 3.306                              | 0.061                            | 5.582                       | 0.074                            | 0.061                    | 110.4                     | 141.9                       | 141.9                                    |
| 70                | 690               | 0.0070                                      | 0.076                                    | 6.946                          | 3.367                              | 0.061                            | 5.656                       | 0.074                            | 0.061                    | 110.7                     | 139.7                       | 139.7                                    |
| 71                | 700               | 0.0070                                      | 0.076                                    | 7.022                          | 3.428                              | 0.061                            | 5.730                       | 0.074                            | 0.061                    | 111.1                     | 137.7                       | 137.7                                    |
| 72                | 710               | 0.0070                                      | 0.076                                    | 7.098                          | 3.490                              | 0.061                            | 5.804                       | 0.074                            | 0.061                    | 111.5                     | 135.9                       | 135.9                                    |

|        |       |        |         |        |       |        |       |        |        |       |       |       |
|--------|-------|--------|---------|--------|-------|--------|-------|--------|--------|-------|-------|-------|
| 73     | 720   | 0.0070 | 0.076   | 7.174  | 3.551 | 0.062  | 5.878 | 0.074  | 0.062  | 111.8 | 134.2 | 134.2 |
| 74     | 730   | 0.0070 | 0.076   | 7.249  | 3.613 | 0.062  | 5.952 | 0.074  | 0.062  | 112.2 | 132.7 | 132.7 |
| 75     | 740   | 0.0070 | 0.076   | 7.325  | 3.675 | 0.062  | 6.026 | 0.074  | 0.062  | 112.5 | 131.3 | 131.3 |
| 76     | 750   | 0.0070 | 0.076   | 7.401  | 3.737 | 0.062  | 6.100 | 0.074  | 0.062  | 112.9 | 130.0 | 130.0 |
| 77     | 760   | 0.0070 | 0.076   | 7.477  | 3.800 | 0.062  | 6.174 | 0.074  | 0.062  | 113.2 | 128.9 | 128.9 |
| 78     | 770   | 0.0070 | 0.076   | 7.552  | 3.862 | 0.063  | 6.248 | 0.074  | 0.063  | 113.5 | 127.8 | 127.8 |
| 79     | 780   | 0.0060 | 0.065   | 7.617  | 3.916 | 0.054  | 6.312 | 0.064  | 0.054  | 97.6  | 126.3 | 126.3 |
| 80     | 790   | 0.0060 | 0.065   | 7.682  | 3.970 | 0.054  | 6.375 | 0.064  | 0.054  | 97.8  | 124.3 | 124.3 |
| 81     | 800   | 0.0060 | 0.065   | 7.747  | 4.024 | 0.054  | 6.439 | 0.064  | 0.054  | 98.0  | 122.5 | 122.5 |
| 82     | 810   | 0.0060 | 0.065   | 7.812  | 4.078 | 0.054  | 6.502 | 0.064  | 0.054  | 98.3  | 120.8 | 120.8 |
| 83     | 820   | 0.0060 | 0.065   | 7.877  | 4.132 | 0.054  | 6.566 | 0.064  | 0.054  | 98.5  | 119.3 | 119.3 |
| 84     | 830   | 0.0060 | 0.065   | 7.942  | 4.187 | 0.054  | 6.630 | 0.064  | 0.054  | 98.7  | 117.8 | 117.8 |
| 85     | 840   | 0.0060 | 0.065   | 8.007  | 4.241 | 0.054  | 6.693 | 0.064  | 0.054  | 98.9  | 116.5 | 116.5 |
| 86     | 850   | 0.0060 | 0.065   | 8.072  | 4.296 | 0.055  | 6.757 | 0.064  | 0.055  | 99.1  | 115.3 | 115.3 |
| 87     | 860   | 0.0060 | 0.065   | 8.137  | 4.350 | 0.055  | 6.821 | 0.064  | 0.055  | 99.3  | 114.2 | 114.2 |
| 88     | 870   | 0.0060 | 0.065   | 8.202  | 4.405 | 0.055  | 6.885 | 0.064  | 0.055  | 99.5  | 113.2 | 113.2 |
| 89     | 880   | 0.0060 | 0.065   | 8.266  | 4.460 | 0.055  | 6.948 | 0.064  | 0.055  | 99.7  | 112.2 | 112.2 |
| 90     | 890   | 0.0050 | 0.054   | 8.321  | 4.506 | 0.046  | 7.002 | 0.053  | 0.046  | 83.2  | 110.8 | 110.8 |
| 91     | 900   | 0.0050 | 0.054   | 8.375  | 4.552 | 0.046  | 7.055 | 0.053  | 0.046  | 83.4  | 108.9 | 108.9 |
| 92     | 910   | 0.0050 | 0.054   | 8.429  | 4.598 | 0.046  | 7.108 | 0.053  | 0.046  | 83.5  | 107.2 | 107.2 |
| 93     | 920   | 0.0050 | 0.054   | 8.483  | 4.644 | 0.046  | 7.161 | 0.053  | 0.046  | 83.6  | 105.5 | 105.5 |
| 94     | 930   | 0.0050 | 0.054   | 8.537  | 4.690 | 0.046  | 7.214 | 0.053  | 0.046  | 83.8  | 104.0 | 104.0 |
| 95     | 940   | 0.0050 | 0.054   | 8.591  | 4.736 | 0.046  | 7.267 | 0.053  | 0.046  | 83.9  | 102.6 | 102.6 |
| 96     | 950   | 0.0050 | 0.054   | 8.645  | 4.783 | 0.046  | 7.321 | 0.053  | 0.046  | 84.0  | 101.4 | 101.4 |
| 97     | 960   | 0.0050 | 0.054   | 8.699  | 4.829 | 0.046  | 7.374 | 0.053  | 0.046  | 84.1  | 100.2 | 100.2 |
| 98     | 970   | 0.0050 | 0.054   | 8.753  | 4.875 | 0.046  | 7.427 | 0.053  | 0.046  | 84.3  | 99.1  | 99.1  |
| 99     | 980   | 0.0050 | 0.054   | 8.807  | 4.922 | 0.046  | 7.480 | 0.053  | 0.046  | 84.4  | 98.0  | 98.0  |
| 100    | 990   | 0.0050 | 0.054   | 8.862  | 4.968 | 0.047  | 7.534 | 0.053  | 0.047  | 84.5  | 97.1  | 97.1  |
| 101    | 1,000 | 0.0050 | 0.054   | 8.916  | 5.015 | 0.047  | 7.587 | 0.053  | 0.047  | 84.6  | 96.2  | 96.2  |
| 102    | 1,010 | 0.0040 | 0.043   | 8.959  | 5.052 | 0.037  | 7.629 | 0.043  | 0.037  | 67.8  | 94.9  | 94.9  |
| 103    | 1,020 | 0.0040 | 0.043   | 9.002  | 5.090 | 0.037  | 7.672 | 0.043  | 0.037  | 67.8  | 93.0  | 93.0  |
| 104    | 1,030 | 0.0040 | 0.043   | 9.046  | 5.127 | 0.037  | 7.715 | 0.043  | 0.037  | 67.9  | 91.3  | 91.3  |
| 105    | 1,040 | 0.0040 | 0.043   | 9.089  | 5.165 | 0.037  | 7.757 | 0.043  | 0.037  | 68.0  | 89.7  | 89.7  |
| 106    | 1,050 | 0.0040 | 0.043   | 9.132  | 5.202 | 0.037  | 7.800 | 0.043  | 0.037  | 68.1  | 88.2  | 88.2  |
| 107    | 1,060 | 0.0040 | 0.043   | 9.175  | 5.240 | 0.038  | 7.843 | 0.043  | 0.038  | 68.1  | 86.8  | 86.8  |
| 108    | 1,070 | 0.0040 | 0.043   | 9.219  | 5.277 | 0.038  | 7.885 | 0.043  | 0.038  | 68.2  | 85.5  | 85.5  |
| 109    | 1,080 | 0.0040 | 0.043   | 9.262  | 5.315 | 0.038  | 7.928 | 0.043  | 0.038  | 68.3  | 84.3  | 84.3  |
| 110    | 1,090 | 0.0040 | 0.043   | 9.305  | 5.353 | 0.038  | 7.970 | 0.043  | 0.038  | 68.3  | 83.2  | 83.2  |
| 111    | 1,100 | 0.0040 | 0.043   | 9.348  | 5.390 | 0.038  | 8.013 | 0.043  | 0.038  | 68.4  | 82.2  | 82.2  |
| 112    | 1,110 | 0.0040 | 0.043   | 9.392  | 5.428 | 0.038  | 8.056 | 0.043  | 0.038  | 68.5  | 81.2  | 81.2  |
| 113    | 1,120 | 0.0040 | 0.043   | 9.435  | 5.466 | 0.038  | 8.098 | 0.043  | 0.038  | 68.5  | 80.4  | 80.4  |
| 114    | 1,130 | 0.0040 | 0.043   | 9.478  | 5.503 | 0.038  | 8.141 | 0.043  | 0.038  | 68.6  | 79.6  | 79.6  |
| 115    | 1,140 | 0.0040 | 0.043   | 9.522  | 5.541 | 0.038  | 8.184 | 0.043  | 0.038  | 68.7  | 78.8  | 78.8  |
| 116    | 1,150 | 0.0040 | 0.043   | 9.565  | 5.579 | 0.038  | 8.226 | 0.043  | 0.038  | 68.7  | 78.1  | 78.1  |
| 117    | 1,160 | 0.0040 | 0.043   | 9.608  | 5.617 | 0.038  | 8.269 | 0.043  | 0.038  | 68.8  | 77.5  | 77.5  |
| 118    | 1,170 | 0.0040 | 0.043   | 9.651  | 5.655 | 0.038  | 8.312 | 0.043  | 0.038  | 68.9  | 76.9  | 76.9  |
| 119    | 1,180 | 0.0040 | 0.043   | 9.695  | 5.693 | 0.038  | 8.355 | 0.043  | 0.038  | 68.9  | 76.3  | 76.3  |
| 120    | 1,190 | 0.0040 | 0.043   | 9.738  | 5.731 | 0.038  | 8.397 | 0.043  | 0.038  | 69.0  | 75.8  | 75.8  |
| 121    | 1,200 | 0.0040 | 0.043   | 9.781  | 5.769 | 0.038  | 8.440 | 0.043  | 0.038  | 69.0  | 75.3  | 75.3  |
| 122    | 1,210 | 0.0040 | 0.043   | 9.825  | 5.807 | 0.038  | 8.483 | 0.043  | 0.038  | 69.1  | 74.9  | 74.9  |
| 123    | 1,220 | 0.0040 | 0.043   | 9.868  | 5.845 | 0.038  | 8.525 | 0.043  | 0.038  | 69.2  | 74.5  | 74.5  |
| 124    | 1,230 | 0.0040 | 0.043   | 9.911  | 5.883 | 0.038  | 8.568 | 0.043  | 0.038  | 69.2  | 74.1  | 74.1  |
| 125    | 1,240 | 0.0040 | 0.043   | 9.954  | 5.922 | 0.038  | 8.611 | 0.043  | 0.038  | 69.3  | 73.8  | 73.8  |
| 126    | 1,250 | 0.0040 | 0.043   | 9.998  | 5.960 | 0.038  | 8.654 | 0.043  | 0.038  | 69.3  | 73.5  | 73.5  |
| 127    | 1,260 | 0.0040 | 0.043   | 10.041 | 5.998 | 0.038  | 8.696 | 0.043  | 0.038  | 69.4  | 73.2  | 73.2  |
| 128    | 1,270 | 0.0040 | 0.043   | 10.084 | 6.036 | 0.038  | 8.739 | 0.043  | 0.038  | 69.5  | 73.0  | 73.0  |
| 129    | 1,280 | 0.0040 | 0.043   | 10.128 | 6.075 | 0.038  | 8.782 | 0.043  | 0.038  | 69.5  | 72.7  | 72.7  |
| 130    | 1,290 | 0.0040 | 0.043   | 10.171 | 6.113 | 0.038  | 8.825 | 0.043  | 0.038  | 69.6  | 72.5  | 72.5  |
| 131    | 1,300 | 0.0040 | 0.043   | 10.214 | 6.151 | 0.038  | 8.867 | 0.043  | 0.038  | 69.6  | 72.3  | 72.3  |
| 132    | 1,310 | 0.0040 | 0.043   | 10.257 | 6.190 | 0.038  | 8.910 | 0.043  | 0.038  | 69.7  | 72.1  | 72.1  |
| 133    | 1,320 | 0.0040 | 0.043   | 10.301 | 6.228 | 0.038  | 8.953 | 0.043  | 0.038  | 69.7  | 71.9  | 71.9  |
| 134    | 1,330 | 0.0040 | 0.043   | 10.344 | 6.266 | 0.038  | 8.996 | 0.043  | 0.038  | 69.8  | 71.8  | 71.8  |
| 135    | 1,340 | 0.0040 | 0.043   | 10.387 | 6.305 | 0.038  | 9.038 | 0.043  | 0.038  | 69.8  | 71.7  | 71.7  |
| 136    | 1,350 | 0.0040 | 0.043   | 10.430 | 6.343 | 0.039  | 9.081 | 0.043  | 0.039  | 69.9  | 71.5  | 71.5  |
| 137    | 1,360 | 0.0040 | 0.043   | 10.474 | 6.382 | 0.039  | 9.124 | 0.043  | 0.039  | 69.9  | 71.4  | 71.4  |
| 138    | 1,370 | 0.0040 | 0.043   | 10.517 | 6.421 | 0.039  | 9.167 | 0.043  | 0.039  | 70.0  | 71.3  | 71.3  |
| 139    | 1,380 | 0.0040 | 0.043   | 10.560 | 6.459 | 0.039  | 9.209 | 0.043  | 0.039  | 70.1  | 71.2  | 71.2  |
| 140    | 1,390 | 0.0040 | 0.043   | 10.604 | 6.498 | 0.039  | 9.252 | 0.043  | 0.039  | 70.1  | 71.2  | 71.2  |
| 141    | 1,400 | 0.0040 | 0.043   | 10.647 | 6.536 | 0.039  | 9.295 | 0.043  | 0.039  | 70.2  | 71.1  | 71.1  |
| 142    | 1,410 | 0.0040 | 0.043   | 10.690 | 6.575 | 0.039  | 9.338 | 0.043  | 0.039  | 70.2  | 71.0  | 71.0  |
| 143    | 1,420 | 0.0040 | 0.043   | 10.733 | 6.614 | 0.039  | 9.381 | 0.043  | 0.039  | 70.3  | 71.0  | 71.0  |
| 144    | 1,430 | 0.0040 | 0.043   | 10.777 | 6.653 | 0.039  | 9.423 | 0.043  | 0.039  | 70.3  | 70.9  | 70.9  |
| 145    | 1,440 | 0.0040 | 0.0433  | 10.820 | 6.691 | 0.039  | 9.466 | 0.043  | 0.039  | 70.4  | 70.9  | 70.9  |
| Total: |       | 1.0000 | 10.8200 |        |       | 6.6913 |       | 9.4662 | 6.6913 |       |       |       |

Max:165.2

Cumulative Runoff at Period 1456.12 inchesStart Flow70.9

Unaccounted Runoff0.57 inchesEnd Flow-2.3

17,412.60 secFlow Dec./per2.4

- ColumnDescription
- 1 Time Increment290.21 min
- 2 Time (min)29.02 periods
- 3 Type IA Storm Distribution30 periods
- 4 Column 3 \* Precipitation6.1442 Total Runoff
- 5 Accumulated Sum of Column 4
- 6 If P<0.2S then 0, else (Column 5 - 0.2 \* S)/(Column 5 +0.8 \* S)
- 7 Column 6 of the present step - Column 6 of the previous step
- 8 Same as Column 6, except Impervious Area Calculations
- 9 Column 8 of the present step - Column 8 of the previous step
- 10 PerviousArea/TotalArea\*Column 7 + ImperviousArea/TotalArea\*Column 9
- 11 (60.5 \* Column 10 \* TotalArea)/Time Increment
- 12 Column 12 of previous step + w \* ((Column 11 of previous step + column 11 of present step) - (2 \* Column 12 of previous step))

## 1,000,000 YEAR PEAK FLOW ESTIMATE

|       |             |       |     |                          |                  |
|-------|-------------|-------|-----|--------------------------|------------------|
| Site: | Gorst Creek |       |     | Return<br>Period<br>year | Duration<br>hour |
|       | Rainfall:   | 12.31 | in. | 1,000,000                | 24               |

Time Increment:  minutes      w: 0.0344  
w = Time increment / (2 \* Time of Concentration + Time Increment)

|                  | Area   |       | CN | S    | 0.2 S |
|------------------|--------|-------|----|------|-------|
| Pervious Area:   | 300.00 | acres | 68 | 4.71 | 0.94  |
| Impervious Area: | 0.00   | acres | 89 | 1.24 | 0.25  |

Total Area: 300.00 acres

Time of Concentration: 140.1 minutes **Qmax= 203.9 cfs**  
2.34 hours

| Column         |                |                                  |                               |                          |                          |                            |                          |                            |                       |                        |                       |                                 |
|----------------|----------------|----------------------------------|-------------------------------|--------------------------|--------------------------|----------------------------|--------------------------|----------------------------|-----------------------|------------------------|-----------------------|---------------------------------|
| 1              | 2              | 3                                | 4                             | 5                        | 6                        | 7                          | 8                        | 9                          | 10                    | 11                     | 12                    | 13                              |
| Time Increment | Time (minutes) | Rainfall Distribution (fraction) | Incremental Rainfall (inches) | Accum. Rainfall (inches) | PERVIOUS                 |                            | IMPERVIOUS               |                            | Total Runoff (inches) | Instant Flowrate (cfs) | Design Flowrate (cfs) | Design Flowrate with Tail (cfs) |
|                |                |                                  |                               |                          | Accum. Rainfall (inches) | Increment. Runoff (inches) | Accum. Rainfall (inches) | Increment. Runoff (inches) |                       |                        |                       |                                 |
| 1              | 0              | 0.0000                           | 0.000                         | 0.000                    | 0.000                    | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 2              | 10             | 0.0040                           | 0.049                         | 0.049                    | 0.000                    | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 3              | 20             | 0.0040                           | 0.049                         | 0.098                    | 0.000                    | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 4              | 30             | 0.0040                           | 0.049                         | 0.148                    | 0.000                    | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 5              | 40             | 0.0040                           | 0.049                         | 0.197                    | 0.000                    | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 6              | 50             | 0.0040                           | 0.049                         | 0.246                    | 0.000                    | 0.000                      | 0.000                    | 0.000                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 7              | 60             | 0.0040                           | 0.049                         | 0.295                    | 0.000                    | 0.000                      | 0.002                    | 0.002                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 8              | 70             | 0.0040                           | 0.049                         | 0.345                    | 0.000                    | 0.000                      | 0.007                    | 0.005                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 9              | 80             | 0.0040                           | 0.049                         | 0.394                    | 0.000                    | 0.000                      | 0.016                    | 0.008                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 10             | 90             | 0.0040                           | 0.049                         | 0.443                    | 0.000                    | 0.000                      | 0.027                    | 0.011                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 11             | 100            | 0.0040                           | 0.049                         | 0.492                    | 0.000                    | 0.000                      | 0.041                    | 0.014                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 12             | 110            | 0.0040                           | 0.049                         | 0.542                    | 0.000                    | 0.000                      | 0.057                    | 0.016                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 13             | 120            | 0.0050                           | 0.062                         | 0.603                    | 0.000                    | 0.000                      | 0.080                    | 0.023                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 14             | 130            | 0.0050                           | 0.062                         | 0.665                    | 0.000                    | 0.000                      | 0.105                    | 0.026                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 15             | 140            | 0.0050                           | 0.062                         | 0.726                    | 0.000                    | 0.000                      | 0.134                    | 0.028                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 16             | 150            | 0.0050                           | 0.062                         | 0.788                    | 0.000                    | 0.000                      | 0.165                    | 0.031                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 17             | 160            | 0.0050                           | 0.062                         | 0.849                    | 0.000                    | 0.000                      | 0.197                    | 0.033                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 18             | 170            | 0.0050                           | 0.062                         | 0.911                    | 0.000                    | 0.000                      | 0.232                    | 0.035                      | 0.000                 | 0.0                    | 0.0                   | 0.0                             |
| 19             | 180            | 0.0060                           | 0.074                         | 0.985                    | 0.000                    | 0.000                      | 0.276                    | 0.044                      | 0.000                 | 0.7                    | 0.0                   | 0.0                             |
| 20             | 190            | 0.0060                           | 0.074                         | 1.059                    | 0.003                    | 0.002                      | 0.322                    | 0.046                      | 0.002                 | 4.5                    | 0.2                   | 0.2                             |
| 21             | 200            | 0.0060                           | 0.074                         | 1.133                    | 0.007                    | 0.005                      | 0.369                    | 0.048                      | 0.005                 | 8.4                    | 0.6                   | 0.6                             |
| 22             | 210            | 0.0060                           | 0.074                         | 1.206                    | 0.014                    | 0.007                      | 0.419                    | 0.050                      | 0.007                 | 12.1                   | 1.3                   | 1.3                             |
| 23             | 220            | 0.0060                           | 0.074                         | 1.280                    | 0.023                    | 0.009                      | 0.470                    | 0.051                      | 0.009                 | 15.7                   | 2.2                   | 2.2                             |
| 24             | 230            | 0.0060                           | 0.074                         | 1.354                    | 0.033                    | 0.011                      | 0.523                    | 0.053                      | 0.011                 | 19.1                   | 3.2                   | 3.2                             |
| 25             | 240            | 0.0070                           | 0.086                         | 1.440                    | 0.048                    | 0.015                      | 0.586                    | 0.063                      | 0.015                 | 26.4                   | 4.6                   | 4.6                             |
| 26             | 250            | 0.0070                           | 0.086                         | 1.526                    | 0.065                    | 0.017                      | 0.651                    | 0.065                      | 0.017                 | 30.6                   | 6.2                   | 6.2                             |
| 27             | 260            | 0.0070                           | 0.086                         | 1.613                    | 0.084                    | 0.019                      | 0.717                    | 0.066                      | 0.019                 | 34.7                   | 8.0                   | 8.0                             |
| 28             | 270            | 0.0070                           | 0.086                         | 1.699                    | 0.105                    | 0.021                      | 0.784                    | 0.067                      | 0.021                 | 38.5                   | 10.0                  | 10.0                            |
| 29             | 280            | 0.0070                           | 0.086                         | 1.785                    | 0.128                    | 0.023                      | 0.853                    | 0.069                      | 0.023                 | 42.2                   | 12.1                  | 12.1                            |
| 30             | 290            | 0.0070                           | 0.086                         | 1.871                    | 0.153                    | 0.025                      | 0.922                    | 0.070                      | 0.025                 | 45.7                   | 14.3                  | 14.3                            |
| 31             | 300            | 0.0080                           | 0.098                         | 1.970                    | 0.184                    | 0.031                      | 1.003                    | 0.081                      | 0.031                 | 56.3                   | 16.8                  | 16.8                            |
| 32             | 310            | 0.0080                           | 0.098                         | 2.068                    | 0.218                    | 0.033                      | 1.085                    | 0.082                      | 0.033                 | 60.4                   | 19.7                  | 19.7                            |
| 33             | 320            | 0.0080                           | 0.098                         | 2.167                    | 0.253                    | 0.035                      | 1.168                    | 0.083                      | 0.035                 | 64.3                   | 22.6                  | 22.6                            |
| 34             | 330            | 0.0080                           | 0.098                         | 2.265                    | 0.291                    | 0.038                      | 1.251                    | 0.084                      | 0.038                 | 68.1                   | 25.6                  | 25.6                            |
| 35             | 340            | 0.0080                           | 0.098                         | 2.364                    | 0.330                    | 0.039                      | 1.336                    | 0.085                      | 0.039                 | 71.6                   | 28.7                  | 28.7                            |
| 36             | 350            | 0.0080                           | 0.098                         | 2.462                    | 0.371                    | 0.041                      | 1.422                    | 0.085                      | 0.041                 | 75.0                   | 31.7                  | 31.7                            |
| 37             | 360            | 0.0100                           | 0.123                         | 2.585                    | 0.426                    | 0.054                      | 1.529                    | 0.108                      | 0.054                 | 98.3                   | 35.5                  | 35.5                            |
| 38             | 370            | 0.0100                           | 0.123                         | 2.708                    | 0.482                    | 0.057                      | 1.638                    | 0.109                      | 0.057                 | 103.0                  | 40.0                  | 40.0                            |
| 39             | 380            | 0.0100                           | 0.123                         | 2.831                    | 0.542                    | 0.059                      | 1.748                    | 0.110                      | 0.059                 | 107.5                  | 44.5                  | 44.5                            |
| 40             | 390            | 0.0100                           | 0.123                         | 2.954                    | 0.603                    | 0.062                      | 1.859                    | 0.111                      | 0.062                 | 111.8                  | 49.0                  | 49.0                            |
| 41             | 400            | 0.0100                           | 0.123                         | 3.078                    | 0.667                    | 0.064                      | 1.970                    | 0.111                      | 0.064                 | 115.8                  | 53.5                  | 53.5                            |
| 42             | 410            | 0.0130                           | 0.160                         | 3.238                    | 0.753                    | 0.086                      | 2.116                    | 0.146                      | 0.086                 | 156.2                  | 59.1                  | 59.1                            |
| 43             | 420            | 0.0130                           | 0.160                         | 3.398                    | 0.842                    | 0.089                      | 2.263                    | 0.147                      | 0.089                 | 162.2                  | 66.0                  | 66.0                            |
| 44             | 430            | 0.0130                           | 0.160                         | 3.558                    | 0.935                    | 0.092                      | 2.410                    | 0.148                      | 0.092                 | 167.8                  | 72.9                  | 72.9                            |
| 45             | 440            | 0.0180                           | 0.222                         | 3.779                    | 1.068                    | 0.133                      | 2.616                    | 0.206                      | 0.133                 | 240.9                  | 81.9                  | 81.9                            |
| 46             | 450            | 0.0180                           | 0.222                         | 4.001                    | 1.205                    | 0.138                      | 2.824                    | 0.207                      | 0.138                 | 250.1                  | 93.2                  | 93.2                            |
| 47             | 460            | 0.0340                           | 0.419                         | 4.419                    | 1.478                    | 0.273                      | 3.219                    | 0.395                      | 0.273                 | 494.9                  | 112.4                 | 112.4                           |
| 48             | 470            | 0.0540                           | 0.665                         | 5.084                    | 1.940                    | 0.461                      | 3.852                    | 0.634                      | 0.461                 | 837.6                  | 150.6                 | 150.6                           |
| 49             | 480            | 0.0270                           | 0.332                         | 5.416                    | 2.181                    | 0.242                      | 4.172                    | 0.319                      | 0.242                 | 438.8                  | 184.2                 | 184.2                           |
| 50             | 490            | 0.0180                           | 0.222                         | 5.638                    | 2.346                    | 0.165                      | 4.385                    | 0.214                      | 0.165                 | 299.0                  | 196.9                 | 196.9                           |
| 51             | 500            | 0.0130                           | 0.160                         | 5.798                    | 2.467                    | 0.121                      | 4.540                    | 0.155                      | 0.121                 | 218.9                  | 201.2                 | 201.2                           |
| 52             | 510            | 0.0130                           | 0.160                         | 5.958                    | 2.589                    | 0.122                      | 4.695                    | 0.155                      | 0.122                 | 221.3                  | 202.5                 | 202.5                           |
| 53             | 520            | 0.0130                           | 0.160                         | 6.118                    | 2.712                    | 0.123                      | 4.850                    | 0.155                      | 0.123                 | 223.5                  | 203.9                 | 203.9                           |
| 54             | 530            | 0.0090                           | 0.111                         | 6.229                    | 2.798                    | 0.086                      | 4.957                    | 0.107                      | 0.086                 | 156.0                  | 202.9                 | 202.9                           |
| 55             | 540            | 0.0090                           | 0.111                         | 6.340                    | 2.884                    | 0.086                      | 5.065                    | 0.108                      | 0.086                 | 157.0                  | 199.7                 | 199.7                           |
| 56             | 550            | 0.0090                           | 0.111                         | 6.450                    | 2.971                    | 0.087                      | 5.173                    | 0.108                      | 0.087                 | 157.9                  | 196.8                 | 196.8                           |
| 57             | 560            | 0.0090                           | 0.111                         | 6.561                    | 3.059                    | 0.088                      | 5.280                    | 0.108                      | 0.088                 | 158.9                  | 194.1                 | 194.1                           |
| 58             | 570            | 0.0090                           | 0.111                         | 6.672                    | 3.147                    | 0.088                      | 5.388                    | 0.108                      | 0.088                 | 159.8                  | 191.7                 | 191.7                           |
| 59             | 580            | 0.0090                           | 0.111                         | 6.783                    | 3.235                    | 0.089                      | 5.496                    | 0.108                      | 0.089                 | 160.6                  | 189.6                 | 189.6                           |
| 60             | 590            | 0.0090                           | 0.111                         | 6.894                    | 3.324                    | 0.089                      | 5.604                    | 0.108                      | 0.089                 | 161.5                  | 187.6                 | 187.6                           |
| 61             | 600            | 0.0090                           | 0.111                         | 7.004                    | 3.414                    | 0.089                      | 5.712                    | 0.108                      | 0.089                 | 162.3                  | 185.8                 | 185.8                           |
| 62             | 610            | 0.0090                           | 0.111                         | 7.115                    | 3.504                    | 0.090                      | 5.821                    | 0.108                      | 0.090                 | 163.1                  | 184.2                 | 184.2                           |
| 63             | 620            | 0.0090                           | 0.111                         | 7.226                    | 3.594                    | 0.090                      | 5.929                    | 0.108                      | 0.090                 | 163.8                  | 182.8                 | 182.8                           |
| 64             | 630            | 0.0090                           | 0.111                         | 7.337                    | 3.685                    | 0.091                      | 6.037                    | 0.108                      | 0.091                 | 164.6                  | 181.5                 | 181.5                           |
| 65             | 640            | 0.0090                           | 0.111                         | 7.448                    | 3.776                    | 0.091                      | 6.145                    | 0.108                      | 0.091                 | 165.3                  | 180.4                 | 180.4                           |
| 66             | 650            | 0.0090                           | 0.111                         | 7.558                    | 3.867                    | 0.091                      | 6.254                    | 0.108                      | 0.091                 | 166.0                  | 179.4                 | 179.4                           |
| 67             | 660            | 0.0070                           | 0.086                         | 7.645                    | 3.938                    | 0.071                      | 6.338                    | 0.084                      | 0.071                 | 129.6                  | 177.2                 | 177.2                           |
| 68             | 670            | 0.0070                           | 0.086                         | 7.731                    | 4.010                    | 0.072                      | 6.423                    | 0.084                      | 0.072                 | 130.0                  | 173.9                 | 173.9                           |
| 69             | 680            | 0.0070                           | 0.086                         | 7.817                    | 4.082                    | 0.072                      | 6.507                    | 0.084                      | 0.072                 | 130.4                  | 170.9                 | 170.9                           |
| 70             | 690            | 0.0070                           | 0.086                         | 7.903                    | 4.154                    | 0.072                      | 6.592                    | 0.084                      | 0.072                 | 130.8                  | 168.1                 | 168.1                           |
| 71             | 700            | 0.0070                           | 0.086                         | 7.989                    | 4.226                    | 0.072                      | 6.676                    | 0.085                      | 0.072                 | 131.1                  | 165.6                 | 165.6                           |
| 72             | 710            | 0.0070                           | 0.086                         | 8.075                    | 4.299                    | 0.072                      | 6.761                    | 0.085                      | 0.072                 | 131.5                  | 163.2                 | 163.2                           |

|        |       |        |         |        |       |        |        |       |         |       |       |        |
|--------|-------|--------|---------|--------|-------|--------|--------|-------|---------|-------|-------|--------|
| 73     | 720   | 0.0070 | 0.086   | 8.162  | 4.371 | 0.073  | 6.845  | 0.085 | 0.073   | 131.9 | 161.0 | 161.0  |
| 74     | 730   | 0.0070 | 0.086   | 8.248  | 4.444 | 0.073  | 6.930  | 0.085 | 0.073   | 132.2 | 159.0 | 159.0  |
| 75     | 740   | 0.0070 | 0.086   | 8.334  | 4.517 | 0.073  | 7.015  | 0.085 | 0.073   | 132.6 | 157.2 | 157.2  |
| 76     | 750   | 0.0070 | 0.086   | 8.420  | 4.590 | 0.073  | 7.099  | 0.085 | 0.073   | 132.9 | 155.5 | 155.5  |
| 77     | 760   | 0.0070 | 0.086   | 8.506  | 4.664 | 0.073  | 7.184  | 0.085 | 0.073   | 133.2 | 154.0 | 154.0  |
| 78     | 770   | 0.0070 | 0.086   | 8.592  | 4.737 | 0.074  | 7.269  | 0.085 | 0.074   | 133.6 | 152.6 | 152.6  |
| 79     | 780   | 0.0060 | 0.074   | 8.666  | 4.801 | 0.063  | 7.341  | 0.073 | 0.063   | 114.7 | 150.6 | 150.6  |
| 80     | 790   | 0.0060 | 0.074   | 8.740  | 4.864 | 0.063  | 7.414  | 0.073 | 0.063   | 115.0 | 148.1 | 148.1  |
| 81     | 800   | 0.0060 | 0.074   | 8.814  | 4.927 | 0.063  | 7.487  | 0.073 | 0.063   | 115.2 | 145.9 | 145.9  |
| 82     | 810   | 0.0060 | 0.074   | 8.888  | 4.991 | 0.064  | 7.559  | 0.073 | 0.064   | 115.4 | 143.8 | 143.8  |
| 83     | 820   | 0.0060 | 0.074   | 8.962  | 5.055 | 0.064  | 7.632  | 0.073 | 0.064   | 115.6 | 141.8 | 141.8  |
| 84     | 830   | 0.0060 | 0.074   | 9.036  | 5.119 | 0.064  | 7.705  | 0.073 | 0.064   | 115.8 | 140.0 | 140.0  |
| 85     | 840   | 0.0060 | 0.074   | 9.109  | 5.182 | 0.064  | 7.778  | 0.073 | 0.064   | 116.0 | 138.4 | 138.4  |
| 86     | 850   | 0.0060 | 0.074   | 9.183  | 5.247 | 0.064  | 7.850  | 0.073 | 0.064   | 116.2 | 136.8 | 136.8  |
| 87     | 860   | 0.0060 | 0.074   | 9.257  | 5.311 | 0.064  | 7.923  | 0.073 | 0.064   | 116.4 | 135.4 | 135.4  |
| 88     | 870   | 0.0060 | 0.074   | 9.331  | 5.375 | 0.064  | 7.996  | 0.073 | 0.064   | 116.6 | 134.1 | 134.1  |
| 89     | 880   | 0.0060 | 0.074   | 9.405  | 5.439 | 0.064  | 8.069  | 0.073 | 0.064   | 116.8 | 132.9 | 132.9  |
| 90     | 890   | 0.0050 | 0.062   | 9.466  | 5.493 | 0.054  | 8.129  | 0.061 | 0.054   | 97.5  | 131.1 | 131.1  |
| 91     | 900   | 0.0050 | 0.062   | 9.528  | 5.547 | 0.054  | 8.190  | 0.061 | 0.054   | 97.6  | 128.8 | 128.8  |
| 92     | 910   | 0.0050 | 0.062   | 9.589  | 5.601 | 0.054  | 8.251  | 0.061 | 0.054   | 97.8  | 126.7 | 126.7  |
| 93     | 920   | 0.0050 | 0.062   | 9.651  | 5.655 | 0.054  | 8.311  | 0.061 | 0.054   | 97.9  | 124.7 | 124.7  |
| 94     | 930   | 0.0050 | 0.062   | 9.713  | 5.709 | 0.054  | 8.372  | 0.061 | 0.054   | 98.0  | 122.9 | 122.9  |
| 95     | 940   | 0.0050 | 0.062   | 9.774  | 5.763 | 0.054  | 8.433  | 0.061 | 0.054   | 98.2  | 121.1 | 121.1  |
| 96     | 950   | 0.0050 | 0.062   | 9.836  | 5.817 | 0.054  | 8.494  | 0.061 | 0.054   | 98.3  | 119.6 | 119.6  |
| 97     | 960   | 0.0050 | 0.062   | 9.897  | 5.871 | 0.054  | 8.554  | 0.061 | 0.054   | 98.4  | 118.1 | 118.1  |
| 98     | 970   | 0.0050 | 0.062   | 9.959  | 5.925 | 0.054  | 8.615  | 0.061 | 0.054   | 98.5  | 116.8 | 116.8  |
| 99     | 980   | 0.0050 | 0.062   | 10.020 | 5.980 | 0.054  | 8.676  | 0.061 | 0.054   | 98.6  | 115.5 | 115.5  |
| 100    | 990   | 0.0050 | 0.062   | 10.082 | 6.034 | 0.054  | 8.737  | 0.061 | 0.054   | 98.8  | 114.3 | 114.3  |
| 101    | 1,000 | 0.0050 | 0.062   | 10.143 | 6.089 | 0.054  | 8.798  | 0.061 | 0.054   | 98.9  | 113.3 | 113.3  |
| 102    | 1,010 | 0.0040 | 0.049   | 10.193 | 6.132 | 0.044  | 8.846  | 0.049 | 0.044   | 79.2  | 111.6 | 111.6  |
| 103    | 1,020 | 0.0040 | 0.049   | 10.242 | 6.176 | 0.044  | 8.895  | 0.049 | 0.044   | 79.2  | 109.4 | 109.4  |
| 104    | 1,030 | 0.0040 | 0.049   | 10.291 | 6.220 | 0.044  | 8.943  | 0.049 | 0.044   | 79.3  | 107.3 | 107.3  |
| 105    | 1,040 | 0.0040 | 0.049   | 10.340 | 6.263 | 0.044  | 8.992  | 0.049 | 0.044   | 79.4  | 105.4 | 105.4  |
| 106    | 1,050 | 0.0040 | 0.049   | 10.390 | 6.307 | 0.044  | 9.041  | 0.049 | 0.044   | 79.5  | 103.6 | 103.6  |
| 107    | 1,060 | 0.0040 | 0.049   | 10.439 | 6.351 | 0.044  | 9.089  | 0.049 | 0.044   | 79.5  | 101.9 | 101.9  |
| 108    | 1,070 | 0.0040 | 0.049   | 10.488 | 6.395 | 0.044  | 9.138  | 0.049 | 0.044   | 79.6  | 100.4 | 100.4  |
| 109    | 1,080 | 0.0040 | 0.049   | 10.537 | 6.439 | 0.044  | 9.187  | 0.049 | 0.044   | 79.7  | 99.0  | 99.0   |
| 110    | 1,090 | 0.0040 | 0.049   | 10.587 | 6.483 | 0.044  | 9.235  | 0.049 | 0.044   | 79.7  | 97.6  | 97.6   |
| 111    | 1,100 | 0.0040 | 0.049   | 10.636 | 6.527 | 0.044  | 9.284  | 0.049 | 0.044   | 79.8  | 96.4  | 96.4   |
| 112    | 1,110 | 0.0040 | 0.049   | 10.685 | 6.571 | 0.044  | 9.333  | 0.049 | 0.044   | 79.9  | 95.3  | 95.3   |
| 113    | 1,120 | 0.0040 | 0.049   | 10.734 | 6.615 | 0.044  | 9.381  | 0.049 | 0.044   | 79.9  | 94.2  | 94.2   |
| 114    | 1,130 | 0.0040 | 0.049   | 10.784 | 6.659 | 0.044  | 9.430  | 0.049 | 0.044   | 80.0  | 93.2  | 93.2   |
| 115    | 1,140 | 0.0040 | 0.049   | 10.833 | 6.703 | 0.044  | 9.479  | 0.049 | 0.044   | 80.1  | 92.3  | 92.3   |
| 116    | 1,150 | 0.0040 | 0.049   | 10.882 | 6.747 | 0.044  | 9.528  | 0.049 | 0.044   | 80.1  | 91.5  | 91.5   |
| 117    | 1,160 | 0.0040 | 0.049   | 10.931 | 6.791 | 0.044  | 9.576  | 0.049 | 0.044   | 80.2  | 90.7  | 90.7   |
| 118    | 1,170 | 0.0040 | 0.049   | 10.981 | 6.835 | 0.044  | 9.625  | 0.049 | 0.044   | 80.2  | 90.0  | 90.0   |
| 119    | 1,180 | 0.0040 | 0.049   | 11.030 | 6.880 | 0.044  | 9.674  | 0.049 | 0.044   | 80.3  | 89.3  | 89.3   |
| 120    | 1,190 | 0.0040 | 0.049   | 11.079 | 6.924 | 0.044  | 9.722  | 0.049 | 0.044   | 80.4  | 88.7  | 88.7   |
| 121    | 1,200 | 0.0040 | 0.049   | 11.128 | 6.968 | 0.044  | 9.771  | 0.049 | 0.044   | 80.4  | 88.1  | 88.1   |
| 122    | 1,210 | 0.0040 | 0.049   | 11.177 | 7.012 | 0.044  | 9.820  | 0.049 | 0.044   | 80.5  | 87.6  | 87.6   |
| 123    | 1,220 | 0.0040 | 0.049   | 11.227 | 7.057 | 0.044  | 9.869  | 0.049 | 0.044   | 80.5  | 87.1  | 87.1   |
| 124    | 1,230 | 0.0040 | 0.049   | 11.276 | 7.101 | 0.044  | 9.917  | 0.049 | 0.044   | 80.6  | 86.6  | 86.6   |
| 125    | 1,240 | 0.0040 | 0.049   | 11.325 | 7.146 | 0.044  | 9.966  | 0.049 | 0.044   | 80.7  | 86.2  | 86.2   |
| 126    | 1,250 | 0.0040 | 0.049   | 11.374 | 7.190 | 0.044  | 10.015 | 0.049 | 0.044   | 80.7  | 85.8  | 85.8   |
| 127    | 1,260 | 0.0040 | 0.049   | 11.424 | 7.235 | 0.044  | 10.064 | 0.049 | 0.044   | 80.8  | 85.5  | 85.5   |
| 128    | 1,270 | 0.0040 | 0.049   | 11.473 | 7.279 | 0.045  | 10.112 | 0.049 | 0.045   | 80.8  | 85.2  | 85.2   |
| 129    | 1,280 | 0.0040 | 0.049   | 11.522 | 7.324 | 0.045  | 10.161 | 0.049 | 0.045   | 80.9  | 84.9  | 84.9   |
| 130    | 1,290 | 0.0040 | 0.049   | 11.571 | 7.368 | 0.045  | 10.210 | 0.049 | 0.045   | 80.9  | 84.6  | 84.6   |
| 131    | 1,300 | 0.0040 | 0.049   | 11.621 | 7.413 | 0.045  | 10.259 | 0.049 | 0.045   | 81.0  | 84.3  | 84.3   |
| 132    | 1,310 | 0.0040 | 0.049   | 11.670 | 7.458 | 0.045  | 10.307 | 0.049 | 0.045   | 81.0  | 84.1  | 84.1   |
| 133    | 1,320 | 0.0040 | 0.049   | 11.719 | 7.502 | 0.045  | 10.356 | 0.049 | 0.045   | 81.1  | 83.9  | 83.9   |
| 134    | 1,330 | 0.0040 | 0.049   | 11.768 | 7.547 | 0.045  | 10.405 | 0.049 | 0.045   | 81.1  | 83.7  | 83.7   |
| 135    | 1,340 | 0.0040 | 0.049   | 11.818 | 7.592 | 0.045  | 10.454 | 0.049 | 0.045   | 81.2  | 83.5  | 83.5   |
| 136    | 1,350 | 0.0040 | 0.049   | 11.867 | 7.636 | 0.045  | 10.503 | 0.049 | 0.045   | 81.2  | 83.4  | 83.4   |
| 137    | 1,360 | 0.0040 | 0.049   | 11.916 | 7.681 | 0.045  | 10.551 | 0.049 | 0.045   | 81.3  | 83.2  | 83.2   |
| 138    | 1,370 | 0.0040 | 0.049   | 11.965 | 7.726 | 0.045  | 10.600 | 0.049 | 0.045   | 81.3  | 83.1  | 83.1   |
| 139    | 1,380 | 0.0040 | 0.049   | 12.015 | 7.771 | 0.045  | 10.649 | 0.049 | 0.045   | 81.4  | 83.0  | 83.0   |
| 140    | 1,390 | 0.0040 | 0.049   | 12.064 | 7.816 | 0.045  | 10.698 | 0.049 | 0.045   | 81.4  | 82.9  | 82.9   |
| 141    | 1,400 | 0.0040 | 0.049   | 12.113 | 7.861 | 0.045  | 10.746 | 0.049 | 0.045   | 81.5  | 82.8  | 82.8   |
| 142    | 1,410 | 0.0040 | 0.049   | 12.162 | 7.906 | 0.045  | 10.795 | 0.049 | 0.045   | 81.5  | 82.7  | 82.7   |
| 143    | 1,420 | 0.0040 | 0.049   | 12.212 | 7.951 | 0.045  | 10.844 | 0.049 | 0.045   | 81.6  | 82.6  | 82.6   |
| 144    | 1,430 | 0.0040 | 0.049   | 12.261 | 7.996 | 0.045  | 10.893 | 0.049 | 0.045   | 81.6  | 82.5  | 82.5   |
| 145    | 1,440 | 0.0040 | 0.0492  | 12.310 | 8.041 | 0.045  | 10.942 | 0.049 | 0.045   | 81.7  | 82.5  | 82.5   |
| Total: |       | 1.0000 | 12.3100 |        |       | 8.0406 |        |       | 10.9417 |       |       | 8.0406 |

|        |  |                                 |                     |               |      |
|--------|--|---------------------------------|---------------------|---------------|------|
|        |  | Max:                            | 203.9               |               |      |
|        |  | Cumulative Runoff at Period 145 | 7.38 inches         | Start Flow    | 82.5 |
|        |  | Unaccounted Runoff              | 0.66 inches         | End Flow      | -2.7 |
|        |  |                                 | 17,411.27 sec       | Flow Dec./per | 2.8  |
| Column | Description  |                                 | 290.19 min          |               |      |
| 1      | Time Increment   |                                 | 29.02 periods       |               |      |
| 2      | Time (min)   |                                 | 30 periods          |               |      |
| 3      | Type IA Storm Distribution   |                                 | 7.4039 Total Runoff |               |      |
| 4      | Column 3 * Precipitation   |                                 |                     |               |      |
| 5      | Accumulated Sum of Column 4  |                                 |                     |               |      |
| 6      | If P<0.2S then 0, else (Column 5 - 0.2 * S)/(Column 5 +0.8 * S)  |                                 |                     |               |      |
| 7      | Column 6 of the present step - Column 6 of the previous step   |                                 |                     |               |      |
| 8      | Same as Column 6, except Impervious Area Calculations  |                                 |                     |               |      |
| 9      | Column 8 of the present step - Column 8 of the previous step   |                                 |                     |               |      |
| 10     | PerviousArea/TotalArea*Column 7 + ImperviousArea/TotalArea*Column 9  |                                 |                     |               |      |
| 11     | (60.5 * Column 10 * TotalArea)/Time Increment  |                                 |                     |               |      |
| 12     | Column 12 of previous step + w * ((Column 11 of previous step + column 11 of present step) - (2 * Column 12 of previous step)) |                                 |                     |               |      |



## PRECIPITATION DATA

The magnitude of the precipitation depth used in the design storm is dependent upon the design step selected to meet the required design/performance goal for the project. Since there is a high downstream hazard potential and severe water quality degradation potential, a design step of 6 was selected (Design Steps range from 1 to 8). This corresponds to a 1,000,000 year storm. Procedures describes in Technical Note 3, Design Storm Construction were used to calculate the rainfall amount associated with a 1,000,000 year 24 hours storm, and a 100,000 year 6 hour storm. Rainfall amounts were multiplied by a safety factor of 15%. Documents used to perform the calculations include: (1) Dam Safety Guidelines Part IV: Dam Design and Construction; (2) Technical Note 2, Selection of Design/Performance Goals for Critical Project Elements; and (3) Technical Note 3, Design Storm Construction.

Equation 1 (from Technical Note 3)

$$X_i = X_{bar}(1 + K_i C_v)$$

|           |   |
|-----------|---|
| $X_i$     | Precipitation estimate for selected Annual Exceedance Probability (AEP)   |
| $X_{bar}$ | At site mean for duration of interest   |
| $K_i$     | Frequency factor for the KAPPA distribution for the regional value of L-skewness ( $r_3$ ) and the selected AEP |
| $C_v$     | Regional value of the coefficient of variation  |

Equation 2 (from Technical Note 3)

$$X_{bar} = [0.88 * X_{2p}] / [1 + (K_2 * C_v)]$$

|           |  |
|-----------|--|
| $X_{2p}$  | 2 year partial duration value from NOAA 2 for the duration of interest   |
| $X_{bar}$ | At site mean for duration of interest  |
| $K_2$     | Frequency factor for the 2 year event (appendix B Tables B1 and B2)  |
| $C_v$     | Regional value of the coefficient of variation for the geographic location and duration of interest (Figure 5a and 5b) |

Mean Annual Precipitation (MAP) of geographic location = 50 to 60 inches (55 inches)

| Variable  | Values<br>(24 hour) | Values (6<br>hour) | Reference   |
|-----------|---------------------|--------------------|---|
| $X_i$     | 11.27               | 4.44               | Equation 1, Tech Note 3                               |
| $X_{bar}$ | 2.78                | 1.29               | Equation 2, Tech Note 3                               |
| $K_i$     | 10.17               | 9.81               | From Appendix B, Table B1, Tech Note 3, Design Step 6 |
| $C_v$     | 0.30                | 0.25               | From Figure 5a and 5b, Tech Note 3                    |
| $X_{2p}$  | 3.00                | 1.40               | From NOAA Atlas 2                                     |
| $K_2$     | -0.17               | -0.17              | From Appendix B, Table B1, Tech Note 3                |
| $r_3$     | 0.18                | 0.18               | From Figure 6a and 6b, Tech Note 3                    |

24 hour Design Precipitation ( $P_d$ ) =  $X_i$  \* 1.15

$P_d$  12.96 inches

6 hour Design Precipitation ( $P_d$ ) =  $X_i$  \* 1.15

$P_d$  5.10 inches

**Precipitation Depths calculated from WSDOE Technical Note 3 Rainfall Calculator Spreadsheets:**

**24 hour**

| Frequency | 2 YR        | 10 YR       | 25 YR       | 100 YR      | 500 YR      | 1000 YR<br>STEP 2 | STEP 3      | 10000 YR<br>STEP 4 | STEP 5       | 100000 YR<br>STEP 6 | STEP 7       | 1000000 YR<br>STEP 8 | PMP          |
|-----------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------|--------------------|--------------|---------------------|--------------|----------------------|--------------|
| $X_i$     | 2.64        | 3.94        | 4.52        | 5.37        | 6.33        | 6.74              | 7.41        | 8.08               | 8.75         | 9.40                | 10.05        | 10.70                | 20.00        |
| $P_d$     | <b>3.04</b> | <b>4.53</b> | <b>5.20</b> | <b>6.17</b> | <b>7.28</b> | <b>7.75</b>       | <b>8.53</b> | <b>9.29</b>        | <b>10.06</b> | <b>10.82</b>        | <b>11.56</b> | <b>12.31</b>         | <b>23.00</b> |

**6 hour**

|       |      |      |      |      |      |      |      |      |      |      |      |       |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|
| $X_i$ | 1.77 | 2.02 | 2.41 | 2.88 | 3.09 | 3.45 | 3.83 | 4.22 | 4.64 | 5.07 | 5.52 | 11.50 |
| $P_d$ | 2.04 | 2.33 | 2.77 | 3.31 | 3.55 | 3.97 | 4.41 | 4.86 | 5.34 | 5.83 | 6.35 | 13.23 |

**Reference:** Washington State Department of Ecology, Technical Note 3: Design Storm Construction.  
Available online at: [http://www.ecy.wa.gov/programs/wr/dams/GuidanceDocs\\_ne.html](http://www.ecy.wa.gov/programs/wr/dams/GuidanceDocs_ne.html)



### TIME OF CONCENTRATION ESTIMATE

Equations:

Overland Flow

$$T_c = (0.007 * (nL)^{0.8}) / ((P^{24} * 0.5) * (S^{0.4}))$$

max L = 300 based on NRCS TR-55 definitions

Sheet Flow

$$T_c = L / (3600 * K * S^{0.5})$$

where K = 16.13 for unpaved and 20.32 for paved

Waterway Flow

$$T_c = L / (V * 3600)$$

|             |           |           |              |      |  |
|-------------|-----------|-----------|--------------|------|--|
| <b>Tc1=</b> | 1.34 hour | Variables | Value        | Unit | Description                            |
|             |           | n         | 0.8          |      | Woods - Dense Under brush              |
|             |           | L         | 300 feet     |      | Topographic map                        |
|             |           | P24       | 3 inches     |      | 2 year, 24 hour Figure 25 NOAA Atlas 2 |
|             |           | S         | 0.0289 ft/ft |      | 20 feet/693 feet                       |
| <b>Tc2=</b> | 0.17 hour | Variables | Value        | Unit | Description                            |
|             |           | n         | 0.8          |      | Woods - Dense Under brush              |
|             |           | L         | 1393 feet    |      | Topographic map                        |
|             |           | P24       | 3 inches     |      | 2 year, 24 hour Figure 25 NOAA Atlas 2 |
|             |           | S         | 0.02 ft/ft   |      | 20 feet/ 1000 feet                     |

| Elevation  | Length  | Area<br>Ill defined | Slope    | Velocity | Time        |                  |
|--|---------|---------------------|----------|----------|-------------|------------------|
|  |         |                     |          |          | Sec         | Min              |
| 460  | 2832.00 | stream              | 0.007062 | 1.25     | 2266        | 38               |
|  |         | Ill defined         |          |          |             |                  |
| 440  | 612.00  | stream              | 0.03268  | 2.85     | 215         | 4                |
| 420  | 500.00  | stream              | 0.04     | 3.2      | 156         | 3                |
| 400  | 570.00  | stream              | 0.035088 | 3        | 190         | 3                |
| 380  | 465.00  | stream              | 0.043011 | 3.3      | 141         | 2                |
| 360  | 85.00   | stream              | 0.235294 | 5.75     | 15          | 0                |
|  |         |                     |          |          | <b>Tc3=</b> | 50 minutes total |
|  |         |                     |          |          |             | 0.8 hours total  |
| Velocities taken from TR-55 Figure 3-1 (June 1986 Version) |         |                     |          |          |             |                  |
| Elevations and slope determined from GIS database          |         |                     |          |          |             |                  |

**Tctotal**      2.34 hour  
**140.14 minute**

### CURVE NUMBER ESTIMATE

Assumptions:

n = woods - dense underbrush

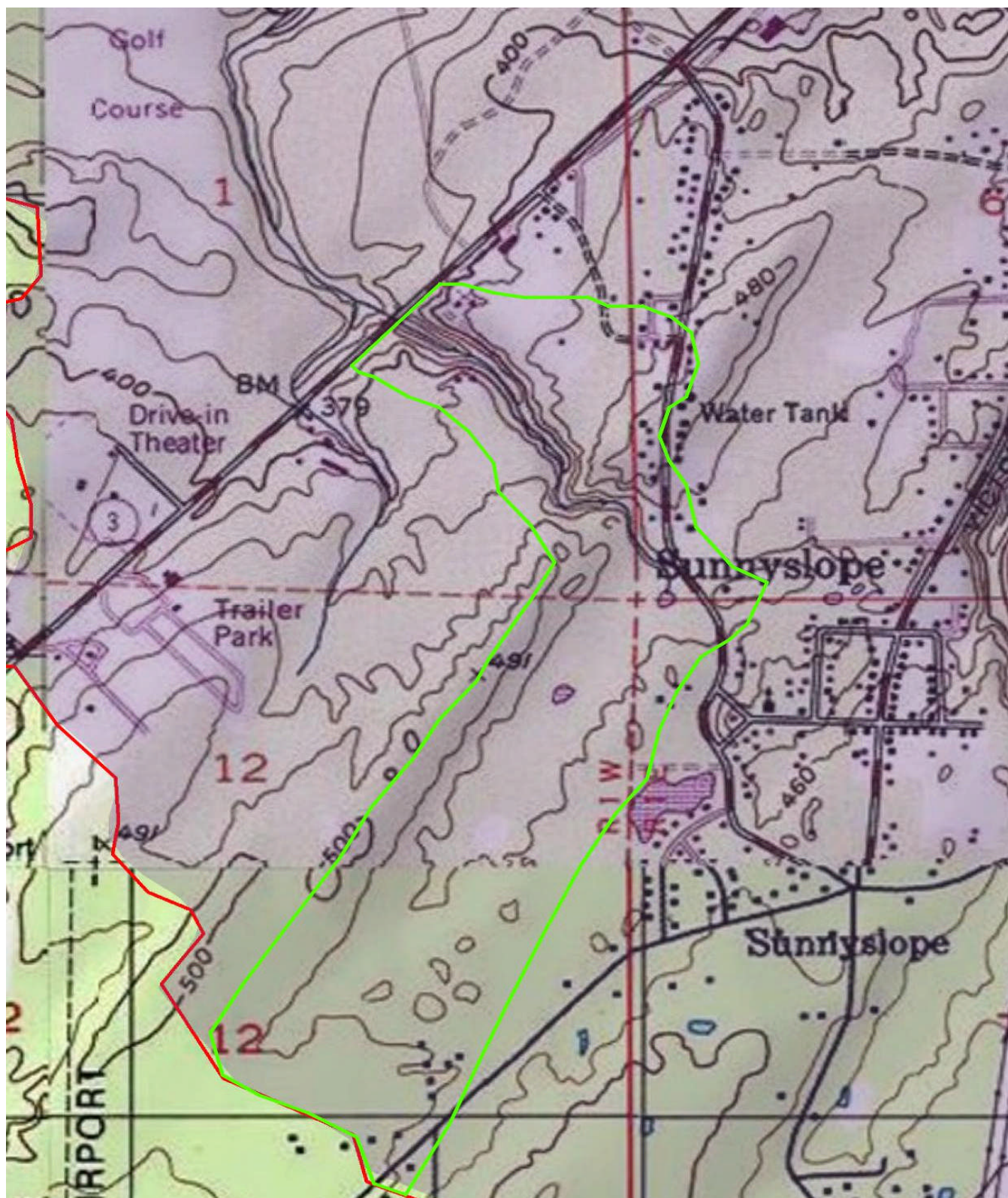
CN = 30 Woods (good condition), soil group A

CN = 70 Woods (good condition), soil group C

Soil Group A = 12.33 acres

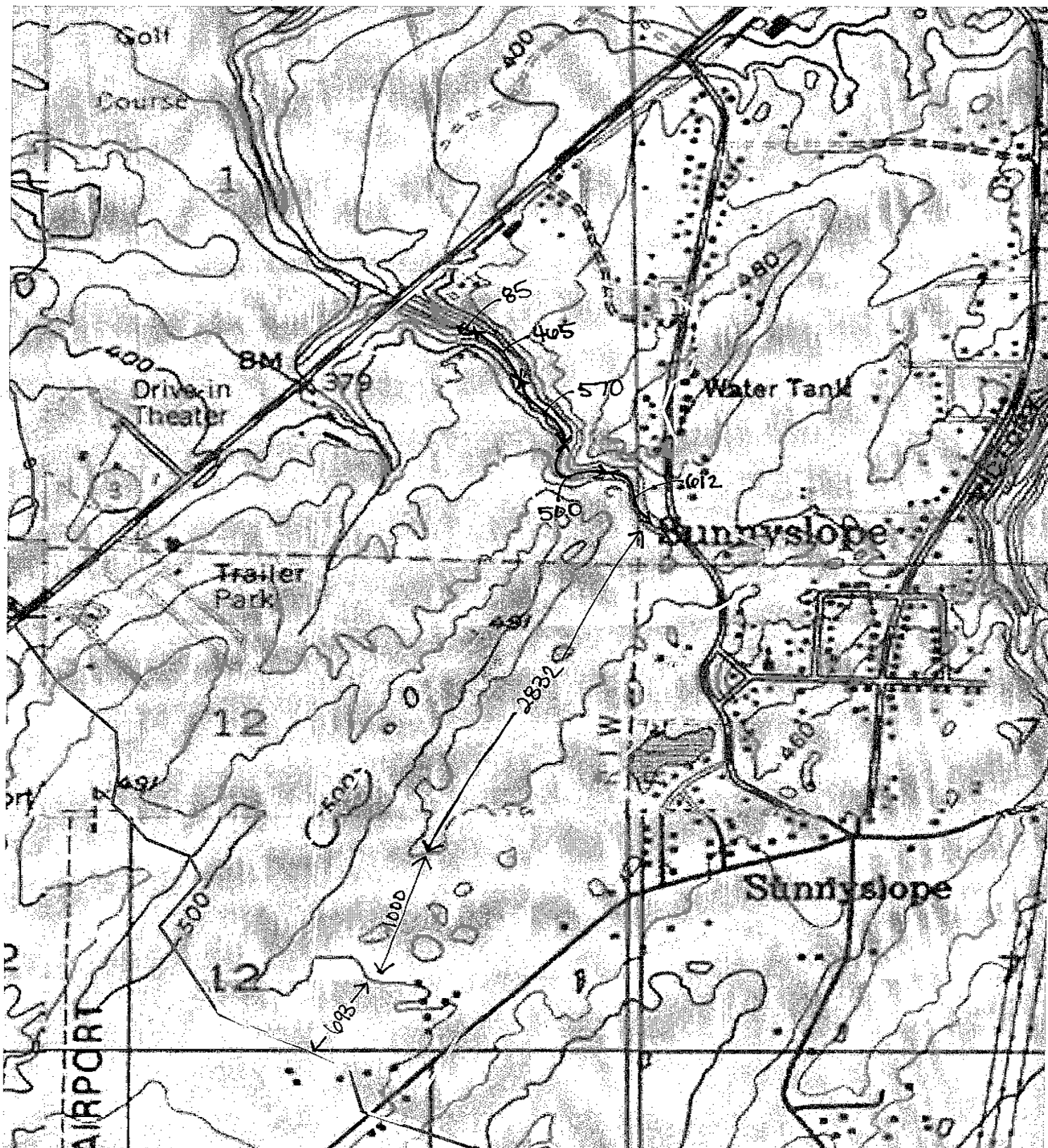
Soil Group C = 196.67 acres

weighted curve number  
68.00



GORST CREEK DRAINAGE BASIN





Time of Concentration Distance Measurements

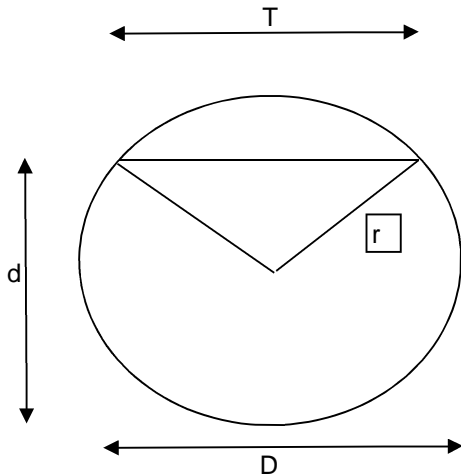
The following worksheets compute normal depth for a circular pipe section

The worksheets use the SOLVER routine in Excel.  
The worksheets are protected to prevent a user from inadvertently changing the underlying formulae. I did not use a password, so a user can go to the tools menu and click protection. After you run either sheet, the protection will be turned on automatically.

Highlighted cells are not protected and are for input.

```
* ***** *
* These worksheets will not work unless you do the following for *
* EACH computer that will run the worksheets. It need be done *
* only once for each computer. *
*      Start Excel *
*      Click the <View> menu *
*      Click the <Toolbars> menu *
*      Click <Visual Basic>, so a check mark is next to it. *
*      A toolbar should appear somewhere on the worksheet *
*      One of the icons on the toolbar looks like a piece of *
*      paper covered by a plumber's helper. When the mouse *
*      cursor passes over this icon, it should say *
*      "Visual Basic Editor". *
*      Click the <Visual Basic Editor> icon. *
*      The Excel window disappears and is replaced by the *
*      editor window. *
*      Click the <Tools> menu *
*      Click the <References> menu *
*      Click the box next to "SOLVER" to put a check mark *
*      in it. *
*      Click OK button *
*      Close the Visual Basic window by clicking the X in *
*      the upper right hand corner. *
*      DONE *
* ***** *
```

# PRELIMINARY PIPE DESIGN



PIPE LOCATION:

1

Number of Culverts = 1 Total Q = 80.20 cfs  
D 32 inches = 2.67 ft  
n 0.014  
Schannel 0.0326 ft/ft

500 Year Peak Flow

Assume concrete pipe

Q target 80.20 cfs  
d 2.27 ft  
T 1.90 ft  
r 1.33 ft

Q crit 46.78 cfs  
d-.01 2.26 0.8\*D 2.13  
0.8\*D-d -0.13

Percent Full  
85.0%

|          |        |       |                  |        |         |       |
|----------|--------|-------|------------------|--------|---------|-------|
| Area     | 5.06   | sq ft | Area at midpoint | 2.79   | sq ft   |       |
| P        | 6.26   | ft    | D-d              | 0.4    | ft      | deg   |
| R        | 0.81   | ft    | alpha            | 1.5908 | radians | 91.15 |
| A*R(2/3) | 4.3919 |       | Area Sector      | 1.41   | sq ft   |       |
| Qactual  | 84.17  | cfs   | Area Triangle    | 0.89   | sq ft   |       |
| Qt - Qa  | -3.97  | cfs   |                  |        |         |       |
| V        | 16.64  | fps   |                  |        |         |       |

Using Manning's Equation the calculations show that the actual flow rate (Qa) for a 32 inch pipe installed at the site is greater than the estimated 500 year peak flow rate indicating that the selected pipe size will contain up to the 500 year peak flow rate at 85% capacity without causing backup behind the dam

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# **G**

## **COST TABLES**

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**Table G-1**  
**Alternative 2 - Gorst Ravine Restoration**  
**Gorst Creek Landfill Engineering Evaluation/Cost Analysis**

| <b>Direct Capital Costs</b>   |                 |             |                  |                     |                       |
|---|-----------------|-------------|------------------|---------------------|-----------------------|
| <b>Item Description</b>   | <b>Quantity</b> | <b>Unit</b> | <b>Cost/Unit</b> | <b>Cost</b>         | <b>Reference [14]</b> |
| Field Overhead and Oversight  | 6               | month       |                  |                     |                       |
| Superintendent  | 24              | week        | \$2,950.00       | \$70,800            | 01 31 13.20 0260      |
| Clerk   | 24              | week        | \$630.00         | \$15,120            | 01 31 13.20 0010      |
| Portable toilet   | 6               | month       | \$177.00         | \$1,062             | 01 54 33.40 6410      |
| Field Office Expenses   | 6               | month       | \$220.00         | \$1,320             | 01 52 13.40 0100      |
| Equipment Mobilization  | 4               | each        | \$425.00         | \$1,700             | 01 54 36.50 0100      |
| Equipment Demobilization  | 4               | each        | \$425.00         | \$1,700             | 01 54 36.50 0100      |
| Dust Control  | 60              | day         | \$1,775.00       | \$106,500           | 31 23 23.20 2510      |
| Air Monitoring Instrument Rental                                      | 6               | month       | \$3,405.00       | \$20,430            | Vendor Quote          |
| Air Sampling - Summa  | 48              | each        | \$275.00         | \$13,200            | Estimate              |
| Clear and Grub Light Vegetation [1]                                   | 5               | acre        | \$6,100.00       | \$29,280            | 31 11 10.10 0160      |
| Excavation [2]  | 150,000         | c.y.        | \$3.37           | \$505,253           | 31 23 16.42 0250      |
| Material Transportation [3]   | 195,000         | c.y.        | \$12.75          | \$2,486,250         | 31 23 23.20 9514      |
| Grading   | 348,480         | s.f.        | \$0.02           | \$8,518             | 31 22 16.10 3310      |
| Waste Disposal [4]  | 180,000         | ton         | \$117.82         | \$21,207,600        | Vendor Quote          |
| Hazardous Waste Disposal [5]  | 18,000          | ton         | \$150.22         | \$2,703,960         | Vendor Quote          |
| Seeding, Mulching, and Fertilizing                                    | 348,480         | s.f.        | \$0.04           | \$15,507            | 32 92 19.14 4600      |
| Haul Road - subgrade preparation                                      | 30,000          | s.f.        | \$0.02           | \$733               | 31 22 16.10 3310      |
| Haul Road - gravel base course  | 30,000          | s.f.        | \$1.16           | \$34,667            | 32 11 23.23 0400      |
| Haul Road Maintenance [6]   | 24              | day         | \$1,125.00       | \$27,000            | 31 23 23.20 2600      |
| Riprap from off-site  | 500             | c.y.        | \$62.50          | \$31,250            | 31 37 13.10 0100      |
| Place Riprap  | 675             | ton         | \$37.00          | \$24,975            | 31 37 13.10 0370      |
| Pump/Discharge System [7]   |                 |             |                  |                     |                       |
| Sump hole construction  | 4,000           | c.f.        | \$2.46           | \$9,840             | 31 23 19.20 1600      |
| 12" pipe  | 1,200           | l.f.        | \$50.00          | \$60,000            | 31 23 19.20 1700      |
| Pump rental   | 6               | month       | \$11,100.00      | \$66,600            | 01 54 33.70 1600      |
| <b>Subtotal Direct Capital Costs [8]</b>                              |                 |             |                  | <b>\$27,443,265</b> |                       |
| Contingency Allowance (20%)   |                 |             |                  | \$5,488,653         |                       |
| <b>Total Direct Capital Costs (rounded to nearest \$10,000)</b>       |                 |             |                  | <b>\$32,930,000</b> |                       |
| <b>Indirect Capital Costs</b>   |                 |             |                  |                     |                       |
| Engineering and Design (1%)   |                 |             |                  | \$329,300           |                       |
| Home Office Administration, Legal Fees, and License/Permit Costs (2%) |                 |             |                  | \$658,600           |                       |
| 3rd Party Construction Oversight (0.5%)                               |                 |             |                  | \$164,650           |                       |
| <b>Total Indirect Capital Costs (rounded to nearest \$10,000)</b>     |                 |             |                  | <b>\$1,150,000</b>  |                       |
| <b>Total Alternative Cost (rounded to nearest \$10,000)</b>           |                 |             |                  | <b>\$34,080,000</b> |                       |

**Table G-2**  
**Cost Analysis, Alternative 3**  
**Gorst Creek Re-Alignment**  
**Draft Engineering Evaluation/Cost Analysis**  
**Gorst Creek Landfill**

| <b>Direct Capital Costs</b>   |                 |             |                  |                    |                            |
|---|-----------------|-------------|------------------|--------------------|----------------------------|
| <b>Item Description</b>   | <b>Quantity</b> | <b>Unit</b> | <b>Cost/Unit</b> | <b>Cost</b>        | <b>Reference [14]</b>      |
| Field Overhead and Oversight  | 9               | month       |                  |                    |                            |
| Superintendent  | 36              | week        | \$2,950.00       | \$106,200          | 01 31 13.20 0260           |
| Clerk   | 36              | week        | \$630.00         | \$22,680           | 01 31 13.20 0010           |
| Portable toilet   | 9               | month       | \$177.00         | \$1,593            | 01 54 33.40 6410           |
| Field Office Expenses   | 9               | month       | \$220.00         | \$1,980            | 01 52 13.40 0100           |
| Equipment Mobilization  | 6               | each        | \$425.00         | \$2,550            | 01 54 36.50 0100           |
| Equipment Demobilization  | 6               | each        | \$425.00         | \$2,550            | 01 54 36.50 0100           |
| Clear and Grub Light Vegetation                                       | 4               | acre        | \$6,100.00       | \$25,986           | 31 11 10.10 0160           |
| Clear Heavy Vegetation [1]  | 10.74           | acre        | \$20,750         | \$222,855          | 31 11 10.10 0260           |
| Excavation of Overburden [9]  | 508,000         | c.y.        | \$2.32           | \$1,180,084        | 31 23 16.42 0250           |
| Material Hauling Onsite[10]   | 1,733           | c.y.        | \$2.39           | \$4,143            | 31 23 23.20 0014           |
| Material Hauling Offsite [11]   | 658,667         | c.y.        | \$7.05           | \$4,643,600        | 31 23 23.20 9068           |
| Seeding, Mulching, and Fertilizing                                    | 511,394         | s.f.        | \$0.04           | \$22,757           | 32 92 19.14 4600           |
| Haul Road - subgrade preparation                                      | 30,000          | s.f.        | \$0.02           | \$733              | 31 22 16.10 3310           |
| Haul Road - gravel base course  | 30,000          | s.f.        | \$1.16           | \$34,667           | 32 11 23.23 0400           |
| Haul Road Maintenance [6]   | 36              | day         | \$1,125.00       | \$40,500           | 31 23 23.20 2600           |
| Riprap from off-site  | 500             | c.y.        | \$62.50          | \$31,250           | 31 37 13.10 0100           |
| Place Riprap  | 675             | ton         | \$37.00          | \$24,975           | 31 37 13.10 0370           |
| General Cap Maintenance   |                 |             |                  |                    |                            |
| Crew/Equipment  | 1               | week        | \$17,412         | \$17,412           | Crew B-3C, 01 54 36.5 0020 |
| Material Hauling Offsite [3]  | 30              | c.y.        | \$12.75          | \$383              | 31 23 23.20 9514           |
| Waste Disposal [4]  | 20              | ton         | \$117.82         | \$2,356            | Vendor Quote               |
| Import Soil for Surface Restoration                                   | 774             | c.y.        | \$12.50          | \$9,675            | Vendor Quote               |
| Material Hauling Onsite [10]  | 774             | c.y.        | \$2.39           | \$1,851            | 31 23 23.20 0014           |
| Seeding, Mulching, and Fertilizing                                    | 52,272          | s.f.        | \$0.04           | \$2,091            | 32 92 19.14 4600           |
| Pump/Discharge System [7]   |                 |             |                  |                    |                            |
| Sump hole construction  | 4,000           | c.f.        | \$2.46           | \$9,840            | 31 23 19.20 1600           |
| 12" pipe  | 1,200           | l.f.        | \$50.00          | \$60,000           | 31 23 19.20 1700           |
| Pump rental   | 9               | month       | \$11,100.00      | \$99,900           | 01 54 33.70 1600           |
|   |                 |             |                  |                    |                            |
|   |                 |             |                  |                    |                            |
| <b>Subtotal Direct Capital Costs [12]</b>                             |                 |             |                  | <b>\$6,572,610</b> |                            |
| Contingency Allowance (20%)   |                 |             |                  | \$1,314,522        |                            |
| <b>Total Direct Capital Costs (rounded to nearest \$10,000)</b>       |                 |             |                  | <b>\$7,890,000</b> |                            |
| <b>Indirect Capital Costs</b>   |                 |             |                  |                    |                            |
| Engineering and Design (4%)   |                 |             |                  | \$315,600          |                            |
| Home Office Administration, Legal Fees, and License/Permit Costs (2%) |                 |             |                  | \$157,800          |                            |
| 3rd Party Construction Oversight (2%)                                 |                 |             |                  | \$157,800          |                            |
| <b>Total Indirect Capital Costs (rounded to nearest \$10,000)</b>     |                 |             |                  | <b>\$630,000</b>   |                            |
| <b>Total Alternative Cost (rounded to nearest \$10,000)</b>           |                 |             |                  | <b>\$8,520,000</b> |                            |

**Table G-3**  
**Alternative 4 - Microtunneling/Pipe Jacking**  
**Gorst Creek Landfill Engineering Evaluation/Cost Analysis**

| <b>Direct Capital Costs</b>   |                 |             |                  |                    |                            |
|---|-----------------|-------------|------------------|--------------------|----------------------------|
| <b>Item Description</b>   | <b>Quantity</b> | <b>Unit</b> | <b>Cost/Unit</b> | <b>Cost</b>        | <b>Reference [14]</b>      |
| Field Overhead and Oversight  | 3               | month       |                  |                    |                            |
| Superintendent  | 12              | week        | \$2,950.00       | \$35,400           | 01 31 13.20 0260           |
| Clerk   | 12              | week        | \$630.00         | \$7,560            | 01 31 13.20 0010           |
| Portable toilet   | 3               | month       | \$177.00         | \$531              | 01 54 33.40 6410           |
| Field Office Expenses   | 3               | month       | \$220.00         | \$660              | 01 52 13.40 0100           |
| Equipment Mobilization  | 1               | each        | \$425.00         | \$425              | 01 54 36.50 0100           |
| Equipment Demobilization  | 1               | each        | \$425.00         | \$425              | 01 54 36.50 0100           |
| Clear and Grub Light Vegetation                                       | 2               | acre        | \$6,100.00       | \$12,200           | 31 11 10.10 0160           |
| Haul Road - subgrade preparation                                      | 30,000          | s.f.        | \$0.02           | \$733              | 31 22 16.10 3310           |
| Haul Road - gravel base course  | 30,000          | s.f.        | \$0.60           | \$18,000           | 32 11 23.23 0370           |
| Staging Pad - Subgrade Preparation                                    | 10,000          | s.f.        | \$0.02           | \$244              | 31 22 16.10 3310           |
| Staging Pad - Gravel Base Course                                      | 10,000          | s.f.        | \$1.16           | \$11,556           | 32 11 23.23 0400           |
| Microtunneling  | 880             | l.f.        | \$1,100          | \$968,000          | 33 05 23.19 0100           |
| Rent Microtunneling Machine   | 1               | mo          | \$97,000         | \$97,000           | 33 05 23.19 1000           |
| Operating Technician  | 20              | day         | \$650            | \$13,000           | 33 05 29.13 1010           |
| Microtunnel Equip. Mobe/Demobe  | 1               | job         | \$241,000        | \$241,000          | 33 05 23.19 1100           |
| Excavate Pit and Creek Channel  | 5,300           | c.y.        | \$5.55           | \$29,415           | 31 23 16.13 1300           |
| Shoring   | 1,600           | s.f.        | \$33             | \$52,800           | 31 41 16.10 1500           |
| 36" Reinforced Concrete Pipe  | 880             | l.f.        | \$119            | \$104,720          | 33 41 13.60 2060           |
| Material Hauling Onsite [10]  | 1,733           | c.y.        | \$2.39           | \$4,143            | 31 23 23.20 0014           |
| Seeding, Mulching, and Fertilizing                                    | 174,240         | s.f.        | \$0.04           | \$7,754            | 32 92 19.14 4600           |
| Riprap from off-site  | 74              | c.y.        | \$62.50          | \$4,630            | 31 37 13.10 0100           |
| Place Riprap  | 100             | ton         | \$37.00          | \$3,700            | 31 37 13.10 0370           |
| General Cap Maintenance   |                 |             |                  |                    |                            |
| Crew/Equipment  | 1               | week        | \$17,412         | \$17,412           | Crew B-3C, 01 54 36.5 0020 |
| Material Hauling Offsite [3]  | 30              | c.y.        | \$12.75          | \$383              | 31 23 23.20 9514           |
| Waste Disposal [4]  | 20              | ton         | \$117.82         | \$2,356            | Vendor Quote               |
| Import Soil for Surface Restoration                                   | 774             | c.y.        | \$12.50          | \$9,675            | Vendor Quote               |
| Material Hauling Onsite [10]  | 774             | c.y.        | \$2.39           | \$1,851            | 31 23 23.20 0014           |
| Seeding, Mulching, and Fertilizing                                    | 52,272          | s.f.        | \$0.04           | \$2,091            | 32 92 19.14 4600           |
| Pump/Discharge System [7]   |                 |             |                  |                    |                            |
| Sump hole construction  | 4,000           | c.f.        | \$2.46           | \$9,840            | 31 23 19.20 1600           |
| 12" pipe  | 1,200           | l.f.        | \$50.00          | \$60,000           | 31 23 19.20 1700           |
| Pump rental   | 3               | month       | \$11,100.00      | \$33,300           | 01 54 33.70 1600           |
| <b>Subtotal Direct Capital Costs [13]</b>                             |                 |             |                  | <b>\$1,750,803</b> |                            |
| Contingency Allowance (20%)   |                 |             |                  | \$350,161          |                            |
| <b>Total Direct Capital Costs (rounded to nearest \$10,000)</b>       |                 |             |                  | <b>\$2,100,000</b> |                            |
| <b>Indirect Capital Costs</b>   |                 |             |                  |                    |                            |
| Engineering and Design (20%)  |                 |             |                  | \$350,161          |                            |
| Home Office Administration, Legal Fees, and License/Permit Costs (2%) |                 |             |                  | \$87,540           |                            |
| 3rd Party Construction Oversight (5%)                                 |                 |             |                  | \$87,540           |                            |
| <b>Total Indirect Capital Costs (rounded to nearest \$10,000)</b>     |                 |             |                  | <b>\$530,000</b>   |                            |
| <b>Total Alternative Cost (rounded to nearest \$10,000)</b>           |                 |             |                  | <b>\$2,630,000</b> |                            |

Key:

- l.s. = Lump sum.
- c.f. = Cubic feet.
- c.y. = Cubic yard.
- l.f. = Linear foot.
- s.f. = Square foot.

Notes:

- [1] Some felled trees from adjacent area will be recovered and saved for erosion control in restored creek channel.
- [2] Hydraulic excavator with 1.5 c.y. bucket loading directly to trucks utilizing Level C protection.
- [3] Using 18 c.y. trucks with 50 mph average, 50 mile cycle, and 25 minute wait at disposal facility. Assumed swell factor of 1.3 for landfill waste.
- [4] Assumed as automobile wrecking waste and some municipal solid waste at 1.2 tons/cy for landfill debris.
- [5] Assumed 10% of total disposal material would be disposed of as hazardous waste. Medical waste may also be potentially encountered.
- [6] Assumed 20% of work days would be needed for haul road maintenance.
- [7] Pump/discharge system will consist of a temporary diversion dam, pumps, and piping to allow the creekflow to bypass the landfill.
- [8] Costs are based on two excavators and 30 on-road trucks with a project length of 6 months.
- [9] Volume of overburden was calculated in AutoCad utilizing July 2011 survey data.
- [10] For landfill surface repairs using 8 c.y. trucks with 15 mph average, 0.5 mile cycle. Assumed swell factor of 1.3 for soil.
- [11] For beneficial use of soil using 18 c.y. trucks with 35 mph average, 20 mile cycle, and 15 minute wait. Assumed swell factor of 1.3 for landfill waste.
- [12] Costs are based on four excavators and 30 on-road trucks with a project length of 9 months.
- [13] Costs are based on one backhoe and one truck with a project length of 3 months.
- [14] References are vendor quotes, estimates based on similar projects, or RS Means 2011 Cost Data. RS Means cost references are expressed in the format XX XX XX.XX XXXX.