FILE COPY

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Hand Delivered
May 7, 2003

Mr. James Wentzel, P.E.
Chief Engineering Services Section
Waste Management Program
Pennsylvania Department of Environmental Protection
Southeast Regional Office
Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

Re: Sunoco, Inc. (R&M) Marcus Hook Refinery, Solid Waste Facility RCRA Closure Certification Report, PAD-980550594

Dear Mr. Wentzel:
Attached is one original and three copies of the RCRA Closure Certification Report for the Sunoco, Inc. (R&M) Marcus Hook Refinery Solid Waste Facility PAD-980550594. This report certifies and details the closure activities completed under the Solid Waste Facility Closure Plan of the 2001 Marcus Hook Refinery RCRA Permit (PAD-980550594). Sunoco is only closing the Solid Waste Facility and will continue to utilize the RCRA permitted Hazardous Waste Storage Pad.

If you have any questions please call me at (610) 859-5925 or Judy Brackin at (215) 977-3856.

Sincerely,
Sunoco Inc. (R&M)

Stephen C. Martini

Stephen C. Martini, P.E.
Environmental Supervisor

Cc: Judy Brackin

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SOUTHEAST REGION

MAY 12 2003

Bcc: Ray Toto, w/o attachment
Kevin Robles, w/o attachment
Lisa Messer, w/ attachment
File: RCRA Solid Waste Closure, w/ attachment

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CLOSURE CERTIFICATION REPORT

SOLID WASTE FACILITY
SUNOCO INC. (R&M) MARCUS HOOK REFINERY
MARCUS HOOK, DELAWARE COUNTY, PENNSYLVANIA
MID-ATLANTIC PROJECT No. 02P-545-01
PERMIT No. PAD 980550594

May 2, 2003

Prepared For:

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Sunoco, Inc.
1801 Market Street
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Prepared By:

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Genia Schenke
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SOLID WASTE FACILITY CLOSURE
SUNOCO MARCUS HOOK REFINERY

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1.0 INTRODUCTION

Mid-Atlantic Associates, Inc. (Mid-Atlantic) has been retained by Sunoco, Inc. (R&M) (Sunoco) to certify the closure of the Sunoco Marcus Hook Refinery Solid Waste Facility (SWF). The SWF is located in Sunoco's Marcus Hook Refinery in Marcus Hook, Delaware County, Pennsylvania (Drawing 1.1). The SWF was permitted under the Pennsylvania Department of Environmental Protection (PADEP) Permit No. PAD 980550594, initially issued in 1990 and renewed on July 10, 2001 in accordance with PA Act 97, the Pennsylvania Solid Waste Management Act. Section IV.A of this Solid Waste Permit requires the SWF be closed in accordance with the approved SWF Closure Scope of Work (Scope of Work) (Appendix A). This Scope of Work was included in Section 7 of the permit application and in the June 11, 2001 permit renewal application supplement addressing the SWF closure. Closure activities were completed by Sunoco's Operations Group. Mid-Atlantic presents this report to document and certify the closure activities of the SWF based on the review of the documentation, notes, analytical results and verbal reports provided by Sunoco.

The SWF was operated continuously by Sunoco from its construction in 1979-1980 until the year 2000. Drawing 1.2 provides a plan view of the SWF. Sunoco evaluated the continued use of the SWF operation and determined that the unit should be closed. Sunoco submitted notification of its intent to close the SWF to the PADEP as part of the January 4, 2000 renewal of the refinery's Part B Permit (Appendix B).

1.1 Project Objective

Closure, as described in Sunoco's Closure Plan and the Pennsylvania hazardous waste regulations, is defined as the removal of hazardous wastes, hazardous waste residues, and the decontamination and cleaning of the equipment. The removal of waste residues from the facility eliminates any need for further maintenance and the potential for post-closure releases of hazardous waste or constituents.

Mid-Atlantic reviewed the documentation provided by Sunoco, including analytical data, available field notes, and waste disposal documentation. Mid-Atlantic also toured the facility and conducted interviews with Ms. Judy S. Brackin, Senior Central Environmental Resource, who oversaw the closure activities for Sunoco.

This report will certify that the closure activities were completed in accordance with the Scope of Work unless otherwise noted. When closure activities deviated from those specified in the approved Scope of Work, the requirement is given along with the alternative activities performed by Sunoco.

1.2 Facility Description

The SWF was operated by the refinery's Oil Transfer and Shipping Department. The facility was designed to treat a variety of hazardous and non-hazardous waste sludges, including API separator sludge, slop oil emulsion solids, tank bottoms and spent filter clay. Non-hazardous catalyst fines were used as precoat material. Water and oil were treated and/or recycled through various refinery processes. The dried filter cake from the filter press was transported to off-site disposal facilities.

The SWF accomplished two major tasks. First, it decreased the volume of refinery wastes and made the waste suitable for transport and disposal off-site. Second, using pressure filtration, approximately 6,000,000 pounds of oil were recovered per year.

The SWF operated as follows: (1) Wastes were trucked to the facility and off-loaded into their respective receptacles. (2) Wastes were thickened in a decanting operation. Entering sludges with approximately 5 to 10 percent solids were decanted to approximately 25 to 30 percent solid sludges. This was accomplished using three receiving tanks, one decanting tank, and one storage tank. (3) Sludges were conditioned and processed in the filter press. Lime slurry was used to condition the sludge for the production filter press mix. Catalyst fines were used as a precoat agent. Equipment used in these operations consisted of the filter press, sludge conditioning, and filtrate handling equipment. Due to the configuration of the filter press, the SWF was a batch process operation. Drawings 1.3 and 1.4 provide floor plans for the SWF, showing the general equipment layout.

1.3 Equipment and Process Description

Sludge processing at the SWF consisted of two major phases of operation: (1) the sludge receiving and thickening operation and (2) the sludge conditioning and filter press operation. The following two sections provide a description of the processes involved in the SWF operation. Drawing 1.5 provides a simplified process diagram of the SWF operation. Table 1.1 lists the tanks and equipment included in the SWF Closure Plan.

1.3.1 Phase I: Sludge Receiving and Thickening Operation

Solid wastes were trucked to the facility sludge reception area and off-loaded into the sludge reception basin, equipped with bar screen and a comminutor. The only exception to this was the catalyst fines, a non-hazardous waste, which entered the plant via separate facilities.

Debris was removed from the sludge before entering receiving tanks TK-1, TK-2 and TK-3 (Drawing 1.5). Each receiving tank had a capacity of 500 barrels (bbl).

Once in the receiving tanks, the sludge was continuously mixed with sludge mixers M-1, M-2 and M-3. Water/oil mixture was removed from the receiving tanks through sample taps and collected in the 50-bbl collection and transfer tank TK-6. The sludges were transferred via transfer pumps P-1, P-2, P-3 and P-4 to the 4,000-bbl sludge decanting tank TK-5 or directly to the 10,000-bbl storage tank TK-4, bypassing TK-5.

The insulated carbon steel sludge decanting tank TK-5 was equipped with a horizontal rake mechanism, a water/oil weir, a fixed roof, and a conical bottom. Overflow of the water/oil mixture from TK-5 went to collection and transfer tank TK-6. Thickened sludge was batch transferred from the bottom of decanting tank TK-5 to sludge storage tank TK-4.

Sludge storage tank TK-4, a 10,000-bbl insulated carbon steel tank, was equipped with a rake mechanism, a fixed roof, and a conical bottom. Overflow of the water/oil mixture from TK-4 went to collection and transfer tank TK-6. Thickened sludge was transferred from TK-4 to mix tank TK-51, a 135 bbl concrete tank.

The water/oil mixture from receiving tanks TK-1, TK-2 and TK-3, decanting tank TK-5, and sludge storage tank TK-4 was collected in collection and transfer tank TK-6, which was equipped with an internal overflow to sump S-1. From TK-6 the water/oil mixture was transferred to the refinery oil recovery system (V-29), where the oil was recovered and reprocessed through the refinery and the water was treated via the refinery process wastewater system.

1.3.2 Phase II: Sludge Conditioning and Dewatering Operation

Separate facilities were provided for the receiving and handling of catalyst fines and lime, both classified as non-hazardous material. Catalyst fines were used as a precoat material for the filter press, in either mix tank TK-51 or precoat tank TK-54 (Drawing 1.5). Lime was used as a sludge conditioner in lime slurry tank TK-50, where it was mixed with refinery wastewater. The lime slurry was transferred to mix tank TK-51 via lime slurry pumps P-50A and/or P-50B. The conditioned sludge from mix tank TK-51 flowed to contact tank TK-52 and was then transferred to the filter press via filter feed pumps P-51A, P-51B and P-51C.

The filterpress cycle included filtering, hot water filter washing, and filter cake disposal. At the start of a filtering cycle, precoat was sent from precoat tank TK-54 to the pressure filter via precoat pumps P-52A and P-52B. Then the pressure filter was filled with conditioned sludge. Filtrate from the press flowed to weir tank TK-58 and was collected in filtrate tank TK-56. Overflow from TK-56 flowed to TK-6 or to hot water wash tank TK-55. The filter cake was dropped from the press into containers in the filter cake drop area on the ground floor and was transported to off-site disposal.

2.0 FACILITY CLOSURE

2.1 Decontamination Process

Decontamination and closure activities were completed by Sunoco under the direction of the Sunoco Operations Group's Supervisor, Mr. Frank Kulp. Sunoco retained HydroChem to complete the closure activities as outlined in the approved Scope of Work. Sunoco conducted closure activities from December 2001 to August 2002. To document that the closure activities were performed in accordance with the Scope of Work, Sunoco personnel reviewed the daily work permits and compiled the dates specific pieces of equipment were cleaned (Appendix C). As an alternative to the approved Scope of Work, Sunoco personnel monitored the cleaning operations and provided corresponding documentation to Mid-Atlantic Associates. The following description of the required decontamination process was compiled from notes and work permits provided by Sunoco and interviews with Ms. Brackin.

Prior to the decontamination process, the components of the SWF were emptied by processing remaining pumpable wastes until the storage facilities were at minimum operating levels and no further filter press cycles were possible. Any recoverable oil was pumped to the refinery oil recovery system (V-29) and the residuals were drained into the refinery wastewater system.

Standing water inside the tanks and pumps was removed. Water was pumped directly into a temporary storage tank. At Sunoco's direction, these waters were discharged to the refinery's wastewater treatment plant for processing.

Basins, Tanks and Associated Areas

The interior of basins and tanks and their associated areas were pressure-washed using a 10,000 pounds per square inch (psi) pressure washer. HydroChem used detergents with surfactants and cleaning agents to remove residues. Decontamination water and associated residues were pumped directly into a temporary storage tank. At Sunoco's direction, these waters were discharged to the refinery's wastewater treatment plant for processing.

As an alternative to the Scope of Work, which requires the tank and basin interiors to be visually inspected for residues by an independent professional engineer, Sunoco personnel performed the visual inspections.

The Scope of Work requires sampling of the final rinsate of the tanks and basins. As an alternative to the Scope of Work, Sunoco personnel visually inspected the rinsate for residuals, due to the difficulty in collecting discrete samples.

Piping and Valves

In order to remove the hazardous waste residues from carbon steel surfaces of the piping and valves, HydroChem flushed the piping and valves with surfactants and cleaning agents. HydroChem connected facility piping into 11 separate piping loops (Drawings 2.1, 2.2 and 2.3). The cleaning solution was circulated in the piping loops for several hours to several days, depending on the severity of the waste deposits. The piping loops were then flushed with water to remove the wash solution and the rinsate was visually inspected for residuals. When visual inspections indicated that no residuals were present in the rinsate, a sample was collected from each piping loop. Since the pumps were no longer operational, HydroChem used their own pumps to circulate the rinsate through the piping. Piping which was not incorporated into a piping loop was manually cleaned using the same rinsing procedure. As an alternative to the Scope of Work requirement to sample the final rinsate, the piping not in a loop was cleaned until visual inspections indicated no residuals. The pipes were then dismantled and scrapped.

Pumps and Equipment

The pumps, strainers and several of the tank mixers were dismantled and pressure-washed. Sunoco personnel visually inspected the equipment and the final decontamination water for residuals. Decontamination water and associated residues were pumped directly into a temporary storage tank. At Sunoco's direction, these waters were discharged to the refinery's wastewater treatment plant for processing. Decontaminated pumps, strainers and mixers were scrapped after cleaning.

HydroChem used the following cleaning agents in its decontamination process: 220 gallons of biodegradable soap, 440 gallons of EZE Clear, 55 gallons of F057 surfactant (HydroChem proprietary formulation), 110 gallons of F058 surfactant (HydroChem proprietary formulation), and 15 gallons of M045 antifoam (HydroChem proprietary formulation).

The decontamination processes described below were conducted according to the above outlined procedures. The following two sections detail the phases of SWF operation and discuss the decontamination with the associated equipment, tanks and piping.

2.1.1 Phase I: Sludge Receiving and Thickening Operation

The sludge reception area, which includes the entry ramp, sludge reception basin, bar screen and comminutor was decontaminated by removing wastes and oily residue and pressure-washing the basin, trough, equipment, and receiving area (Drawing 1.5). Receiving tanks TK-1, TK-2 and TK-3 were pressure-washed using a 10,000 psi pressure washer to remove oily residue. The piping between the reception area and receiving tanks TK-1, TK-2 and TK-3 and between the receiving tanks and sludge transfer pumps P-1, P-2, P-3 and P-4 were flushed with HydroChem's cleaning solution, as described in Section 2.1.

Decanting tank TK-5 was cleaned for Sunoco by Landry Service Company (Lansco) in November of 1996. Approximately 1,000 bbls of waste oil, sludge and soil were processed using a centrifuge. Waste oil was sent to the refinery's oil recovery system (V-29) and the solids were disposed off-site. Disposal documentation is provided in Appendix D. During facility closure TK-5 was pressure rinsed. Sludge storage tank TK-4 was dismantled in 1994 and is no longer at the facility.

Collection and transfer tank TK-6 was opened and pressure-washed to remove oily residues. Piping between collection and transfer tank TK-6 and the sludge transfer pumps (P-1, P-2, P-3 and P-4) were flushed with HydroChem's cleaning solution, as described in Section 2.1.

The sludge transfer pumps (P-1, P-2, P-3 and P-4) had been exposed to flooding conditions due to a backed-up stormwater sewer and were not operational. Therefore, these pumps were disconnected from the piping loop illustrated in Drawings 2.1, 2.2 and 2.3, dismantled and cleaned separately. The pumps were manually cleaned with a detergent solution and rinsed until visually clean. Following the decontamination of the above-mentioned equipment, the containment pit was pressure-washed until visually clean.

2.1.2 Phase II: Sludge Conditioning and Dewatering Operation

Mix tank TK-51, which was charged with sludge via sludge transfer pumps P-1 through P-4, and the contact tank TK-52 were pressure-washed to remove oily waste residues until visually clean (Drawing 1.5). The piping from the transfer pumps was flushed with HydroChem's cleaning solution in accordance with the procedure described in Section 2.1.

The filter feed pumps with surge tanks and the associated pump room were decontaminated. The surge tanks were pressure-washed to remove oily residues. Since filter feed pumps P-51A and P-51B were no longer operational, they were disconnected from the decontamination piping loop, dismantled and manually cleaned. The associated piping was flushed with HydroChem's cleaning solution

until visually clean. Following decontamination of the tanks and pumps, the room containing the filter feed pumps and surge tanks was cleaned by pressure-washing until visually clean.

Closure activities of the filter press and associated areas included pressure-washing the filter press and plates, precoat tank TK-54, precoat pumps P-52A and P-52B, weir tank TK-58, equalization tank TK-57, filtrate tank TK-56, hot water wash tank TK-55, the plate washer station, the filter press room and the filter cake drop area (Drawing 1.5). The tanks were emptied and pressure-washed to remove oily residues. The piping, appurtenances, and equipment that were in contact with hazardous waste during SWF operations were also pressure-washed until visually clean. Once the equipment cleaning was complete, the filter cake drop area and the filter press room were pressure-washed until visually clean.

2.2 Sampling and Analyses

2.2.1. Rinsate Sampling and Analyses

The Scope of Work required that rinsate samples from tanks and pipes be collected and analyzed. As stated in the previous section, piping that could be fashioned into complete piping loops was cleaned and the final rinsate sampled and analyzed. As an alternative to the Scope of Work, piping that could not be included in a piping loop was manually cleaned and rinsed until the piping and rinse water were visually clean. That piping was then scrapped. The approved Scope of Work requires the collection of final rinsate samples from tanks and basins. As an alternative to the Scope of Work, Sunoco personnel visually inspected the rinsate from tanks and basins.

Following the final rinse of the 11 piping loops established for the piping decontamination process, Mr. Kulp collected rinsate samples, SWF-001 through SWF-013, for laboratory analysis. Drawings 2.1, 2.2 and 2.3 present schematics of the piping loops and the associated rinsate sample ID numbers. One rinsate sample was collected from each piping loop after the rinse waters were visually clean. Sample SWF-001 contained city water collected at the main feed. For QA/QC purposes, Sunoco also collected one duplicate sample SWF-002/SWF-003. Rinsate samples were transported to The Washington Group Environmental Services Laboratory of Boothwyn, Pennsylvania for analysis. The following table presents the rinsate sample analytical parameters, associated clearance levels and analytical methods specified in the Scope of Work. These analytical requirements are based on the treatment standards for RCRA listed hazardous waste codes KO49 through KO52 (40 CFR 268.40), which were processed through the SWF. Due to a laboratory oversight, the samples were not analyzed for o-cresol.

Analytical Parameters for
Piping Loop Rinsate Samples
Scope of Work
Solid Waste Facility Closure

Parameter	Clearance Level in Approved Closure Plan	Analytical Method
Anthracene	59 ug/l	8270
Benzene	140 ug/l	8260
Benzo(a)pyrene	61 ug/l	8270
Benz(a)anthracene	59 ug/l	8270
Bis(2-ethylhexyl) phthalate	280 ug/l	8270
Chrysene	59 ug/l	8270
Ethylbenzene	57 ug/l	8260
Naphthalene	59 ug/l	8270
Phenol	39 ug/l	8270
Pyrene	67 ug/l	8270
Toluene	80 ug/l	8260
Xylenes	320 ug/l	8260
Cyanide - total	1,200 ug/l	9012
Chromium - total	2,770 ug/l	6010
m-Cresol	770 ug/l	8270
p-Cresol	110 ug/l	8270
o-Cresol	77 ug/l	8270
Lead	690 ug/l	6010
2,4-Dimethylphenol	36 ug/l	8270
Fluorene	59 ug/l	8270
Acenaphthene	59 ug/l	8270
Carbon Disulfide	3,800 ug/l	8260
Di-n-butyl phthalate	57 ug/l	8270
Phenathrene	59 ug/l	8270

Laboratory analytical results of samples SWF-001 through SWF-013 indicate that concentrations are below the clearance levels of the approved Scope of Work, except for two constituents in sample SWF-010. Ethylbenzene was identified in SWF-010 at a concentration of 77 µg/l, which exceeds the clearance level of 57 µg/l. Total xylenes were identified in SWF-010 at a concentration of 481 µg/l, which exceeds the approved clearance level of 320 µg/l. Laboratory analytical results for SWF-001 through SWF-013 are summarized in Table 2.1. Only those parameters and samples with detected concentrations are presented. Analytical data sheets and a table summarizing the complete data are provided in Appendix E.

2.2.2. Soil Sampling and Analyses

Background soil samples were collected and analyzed as part of the original RCRA Part B Permit Application for the SWF. Sunoco had retained Environmental Resources Management (ERM) to complete the background soil sampling activities. On May 27, 1986, ERM collected 14 composite background soil samples from 7

locations within the secondary containment berm surrounding tanks TK-4 and TK-5 (Drawing 2.4). Soil samples 1A through 7A were collected from a depth interval of 0 feet to 2 feet below grade (bg). Soil samples 1B through 7B were collected from a depth interval of 2 feet bg to 4 feet bg. The soil samples were shipped to Lancaster Laboratories of Lancaster, Pennsylvania for total and Toxicity Characteristic Leachate Procedure (TCLP) analyses of cadmium, chromium, and lead. Results of these analyses were used as background data for the diked area of the SWF. A summary of the analytical results for soil samples 1A through 7B is provided in Table 2.2 and the laboratory analytical data sheets are provided in Appendix F.

The approved Scope of Work requires the collection of composite post-closure soil samples from depth intervals 0 feet to 2 feet bg and the 2 feet to 4 feet bg in 7 locations within the secondary containment berm surrounding tank TK-5 and the former tank TK-4. As an alternative to the approved Scope of Work, Sunoco personnel collected composite post-closure soil samples from 5 locations (Drawing 2.5). The area west of TK-5 in the bermed area was capped as part of the Middle Creek Abatement Project in 1995 and could not be sampled. Additionally, soil samples could not be collected along the southern edge of the bermed area due to standing water within the containment area.

On July 18, 2002, Sunoco collected 10 composite post-closure soil samples from 5 locations within the secondary containment berm surrounding former tank TK-4 and tank TK-5 (Drawing 2.5). Soil Samples SWC-S1A through SWC-S5A were collected from a depth interval of 0 feet to 2 feet bg. Soil samples SWC-S1B through SWC-S5B were collected from a depth interval of 2 feet to 4 feet bg. Soil samples SWC-S1A through SWC-S5B were shipped to The Washington Group Environmental Services Laboratory of Boothwyn, Pennsylvania for total and TCLP analyses of cadmium, chromium, and lead using USEPA Method 200.1. A summary of the analytical results for post-closure soil samples SWC-S1A through SWC-S5B is provided in Table 2.3 and the laboratory analytical data sheets are provided in Appendix F.

Analytical results from 2002 post-closure soil samples were compared to the maximum concentration of contaminants for the toxicity characteristics from 40CFR §261.24, Pennsylvania (PA) Act 2 Non-Residential Statewide Health Standards Medium Specific Concentration (MSC), and to the background soil sample data collected in 1986. Table 2.4 presents the regulatory concentrations associated with the soil-sampling program. The post-closure and background soil sample analytical results were below the TCLP maximum concentration for cadmium, chromium and lead.

Post-closure soil sampling results were compared to PA Act 2 Non-Residential MSCs, as required by the Scope of Work. Cadmium concentrations are below soil-to-groundwater and direct contact limits. Total chromium concentrations are below soil-to-groundwater and direct contact limits for chromium III and chromium IV. Lead concentrations are below the direct contact limit of 1,000 mg/kg. However, soil samples SWC-S3A (780 mg/kg) and SWC-S5A (460 mg/kg) exceeded the PA Act 2 non-residential soil-to-groundwater limit of 450 mg/kg for lead.

Laboratory analytical results of the background soil samples were compared with the post-closure soil samples. A comparison of high concentration samples and average concentrations from similar depths indicate the concentrations have generally decreased. As illustrated in Table 2.5, the highest concentrations for cadmium, chromium and lead detected in both the 0 feet to 2 feet bg and 2 feet to 4 feet bg depth intervals have decreased from the 1986 background sample results to the 2002 post-closure sample results. When the average concentration of each parameter is compared, the concentrations have generally decreased.

3.0 CLOSURE CERTIFICATIONS

The professional engineer and owner/operator Certification of Closure forms as required by PADEP 25 Code Chapter 264a.166 and the Scope of Work follow this section.

OWNER OR OPERATOR CERTIFICATION OF CLOSURE

The undersigned, Elric C. Gerner, a representative of Sunoco, Incorporated (R&M) under the laws of the State of Pennsylvania and licensed to do business in the State of Pennsylvania, with it's principal place of business at 1801 Market Street, Philadelphia, PA 19103-1699, which owns and operated a Part B Permit PAD 980550594 Solid Waste Facility located at the Sunoco Marcus Hook Refinery in Marcus Hook, Pennsylvania, has completed the closure of the Solid Waste Facility in accordance with the Pennsylvania Department of Environmental Protection (PADEP) approved Solid Waste Facility Closure Scope of Work (Scope of Work) contained in the July 10, 2001 Solid Waste Permit, Section 7 of the permit application, and the June 11 2001 supplement addressing the Solid Waste Facility Closure, and Appendix A of the Closure Report; and the rules and regulations of the PADEP codified at 25 Code Chapter 264a.166, except where noted in this Closure Plan.

NOW, THEREFORE, I, Elric C. Gerner, hereby swear and affirm that the above named Solid Waste Facility has been closed as a Part B Permitted Facility.

Elric C Gerner — 5/6/03

Signature — Date

VICE PRESIDENT AND ASSISTANT SECRETARY

Title

1801 MARKET STREET PHILADELPHIA, PA 19103

Business Address

Taken, sworn and subscribed before me, this

6th day of May A.D. 2003

Jean M Jones

Notary

Notarial Seal
Jean M. Jones, Notary Public
City of Philadelphia, Philadelphia County
My Commission Expires Aug. 13, 2005
Member, Pennsylvania Association of Notaries

Seal

MID-ATLANTIC ASSOCIATES, P.A.
Engineering & Environmental Solutions

PROFESSIONAL ENGINEER CERTIFICATION OF CLOSURE

I, Thomas M. Gresko, a Professional Engineer registered pursuant to the Professional Engineers Registration Law, 63, P.S. §§ 148 et seq., hereby certify that I have reviewed the Closure Plan for Sunoco Marcus Hook Refinery, Solid Waste Facility (SWF) located in Marcus Hook, PA. and that I am familiar with the rules and regulations of the Pennsylvania Department of Environmental Protection (PADEP) pertaining to closure of this facility. I, and/or my representatives have reviewed the documents and verbal reports supplied by Sunoco, Inc. (Sunoco) pertaining to the closure of the SWF (PAD 980550594). I certify that based on my, or my representative's, review of the provided documentation and interviews with Sunoco personnel, aside from the exceptions and alternatives noted in this Closure Report, the closure of the SWF meets the requirements of the rules of the PADEP codified at 25 Code Chapter 264a.166 and the PADEP approved SWF Closure Scope of Work contained in the July 10, 2001 Solid Waste Permit, PAD 980550594, Section 7 of the permit application, and the June 11 2001 permit application supplement addressing the SWF Closure, and Appendix A of this Closure Report.

Thomas M Gresko
Signature

5/2/03
Date

30537-E
Professional Engineering License Number

2951 ADVANCE LANE
Business Address

610/935-1021
Telephone Number

Seal

MID-ATLANTIC ASSOCIATES, P.A.
Engineering & Environmental Solutions

TABLES

TABLE 1.1
Tanks and Equipment Included in Solid Waste Facility Closure Plan Sunoco Marcus Hook Refinery

Tanks	Equipment	Other
Receiving Tank TK-1	Sludge Transfer Pump P-1	Entry Ramp
Receiving Tank TK-2	Sludge Transfer Pump P-2	Sludge Reception Basin
Receiving Tank TK-3	Sludge Transfer Pump P-3	Bar Screen
Storage Tank TK-4	Sludge Transfer Pump P-4	Comminutor
Decanting Tank TK-5	Sludge Mixer M-1	Sump S-1
Transfer Tank TK-6	Sludge Mixer M-2	Containment Pit Area
Lime Slurry Tank TK-50	Sludge Mixer M-3	Pump Room
Mix Tank TK-51	Lime Slurry Pump P-50A	Plate Washer Station
Contact Tank TK-52	Lime Slurry Pump P-50B	Filter Press Room
Surge Tanks TK-53 A,B,C	Filter Feed Pump P-51A	Filter Cake Drop Area/Room
Precoat Tank TK-54	Filter Feed Pump P-51B	Spent Cat. & Clay Bins
H.W. Wash Tank TK-55	Filter Feed Pump P-51C	
Filtrate Tank TK-56	Filter Press	
Equalization Tank TK-57	Press Plate J-53	
Weir Tank TK-58	Precoat Pump P-52A	
	Precoat Pump P-52B	

TABLE 2.1
Summary of Detected Concentrations in Piping Loop Rinsate Analyses
Solid Waste Facility Closure
Sunoco Marcus Hook Refinery

Parameter	Cearance Level in Approved Closure Plan (ug/l)	SWC-001 (ug/l)	SWC-002 (ug/l)	SWC-003 (ug/l)	SWC-004 (ug/l)	SWC-005 (ug/l)	SWC-006 (ug/l)	SWC-007 (ug/l)	SWC-008 (ug/l)	SWC-009 (ug/l)	SWC-010 (ug/l)	SWC-011 (ug/l)	SWC-012 (ug/l)	SWC-013 (ug/l)
Benzene	**140**	<5	9	9	<5	<25	6	10	8	4*	130	12	10	17
Ethylbenzene	**57**	<5	<5	<5	<5	<25	5	11	11	5*	**77**	7	6	10
Naphthalene	**59**	<10	<10	<10	<10	5*	14	13	10	9*	27	7*	8*	12
Toluene	**80**	<5	22	22	4*	18*	<5*	<5*	<5*	<5*	18	3*	3*	4*
Total Xylenes**	**320**	<5	30	29	14*	29*	117	125	114*	80*	**481**	49	43	137
m-Cresol {3-Methylphenol}	**770**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenathrene	**59**	<10	<10	<10	<10	7*	7*	7*	<10	<11	<10	<10	<10	<10

Source: Washington Group Environmental Services Laboratory Analytical Report August 2, 2002; See Appendix E

* Result is estimated. Usually this qualifier indicates the reported concentration is below laboratory's reporting limit

** Meta & para xylenes and ortho xylene were added for comparison to total xylene clearance levels

NA - not analyzed

Bolded results indicate analyzed concentration exceeds the Scope of Work Clearance Level

TABLE 2.2
1986 Background Soil Sample Analyses
Solid Waste Facility Part B Permit
Sunoco Marcus Hook Refinery

Sample ID	Sample Location	Sample Depth (feet)	Total Cadmium (mg/kg)	TCLP Cadmium (mg/kg)	Total Chromium (mg/kg)	TCLP Chromium (mg/kg)	Total Lead (mg/kg)	TCLP Lead (mg/kg)
1A	N area of TK 4&5 Dike	0-2	<0.5	<0.005 I	65	<0.05	65	<0.05
1B	N area of TK 4&5 Dike	2-4	<0.5	<0.005	53	<0.05	38	<0.05
2A	NE area of TK 4&5 Dike	0-2	1.1	0.008	97	<0.05	289	<0.05
2B	NE area of TK 4&5 Dike	2-4	1.6	0.012	73	<0.05	988	0.28
3A	SE area of TK 4&5 Dike	0-2	1.3	0.006	373	<0.05	452	<0.05
3B	SE area of TK 4&5 Dike	2-4	<0.5	0.006	157	<0.05	144	<0.05
4A	Far NE area TK 4&5 Dike	0-2	1	0.009	415	<0.05	375	0.13
4B	Far NE area TK 4&5 Dike	2-4	<0.5	0.006	86	<0.05	208	<0.05
5A	Far E area TK 4&5 Dike	0-2	9.4	0.022	1120	<0.05	1010	<0.05
5B	Far E area TK 4&5 Dike	2-4	1	0.012	336	<0.05	402	<0.05
6A	S area TK 4&5 Dike	0-2	0.5	0.014	98	<0.05	227	<0.05
6B	S area TK 4&5 Dike	2-4	<0.5	0.011	80	<0.05	189	<0.05
7A	SW area TK 4&5 Dike	0-2	<0.5	0.006	145	<0.05	140	<0.05
7B	SW area TK 4&5 Dike	2-4	<0.5	0.005	70	<0.05	252	<0.05

Source: Lancaster Laboratories Analytical Reports June 18, 1986; See Appendix F

TABLE 2.3
2002 Post-Closure Soil Sample Analyses
Solid Waste Facility Closure
Sunoco Arcus Hook Refinery

Sample ID	Sample Location	Sample Depth (feet)	Total Cadmium (mg/kg)	TCLP Cadmium (mg/kg)	Total Chromium (mg/kg)	TCLP Chromium (mg/kg)	Total Lead (mg/kg)	TCLP Lead (mg/kg)
SWC-S1A	SW area of Tk 4& 5 Dike	0-2	<0.78	<0.025	82.4	<0.050	79.3	0.04
SWC-S1B	SW area of Tk 4& 5 Dike	2-4	<0.71	<0.025	42.5	<0.050	65.2	0.034
SWC-S2A	W area of TK 4 & 5 Dike	0-2	<3.7	<0.025	50.5	<0.050	150	0.085
SWC-S2B	W area of TK 4 & 5 Dike	2-4	<3.7	<0.025	48.9	<0.050	220	0.13
SWC-S3A	N area of TK 4 & 5 Dike	0-2	1.321	<0.025	43.1	<0.050	460	0.14
SWC-S3B	N area of TK 4 & 5 Dike	2-4	<0.76	<0.025	53.4	<0.050	240	0.038
SWC-S4A	NE area of TK 4 & 5 Dike	0-2	<0.65	<0.025	49.3	<0.050	210	0.95
SWC-S4B	NE area of TK 4 & 5 Dike	2-4	<3.5	<0.025	23.9	<0.050	54.8	1.3
SWC-S5A	E area of TK 4 & 5 Dike	0-2	1.88	<0.025	74	<0.050	780	3.5
SWC-S5B	E area of TK 4 & 5 Dike	2-4	0.89	<0.025	51.8	<0.050	440	0.94

Source: Washington Group Environmental Services Laboratory Analytical Report July 31, 2002; See Appendix F

TABLE 2.4
Summary of Regulatory Concentrations
for Soil Samples
Solid Waste Facility Closure
Sunoco Marcus Hook Refinery

Parameter	TCLP (mg/l)	Non-Residential Statewide MSCs (mg/kg)		
		Direct Contact		Soil to Groundwater
		0' to 2'	2' to 15'	
Cadmium	1	210	190,000	3.8
Chromium (total)	5	~	~	~
Chromium III	~	190,000	190,000	190,000
Chromium IV	~	420	190,000	190
Lead	5	1,000	190,000	450

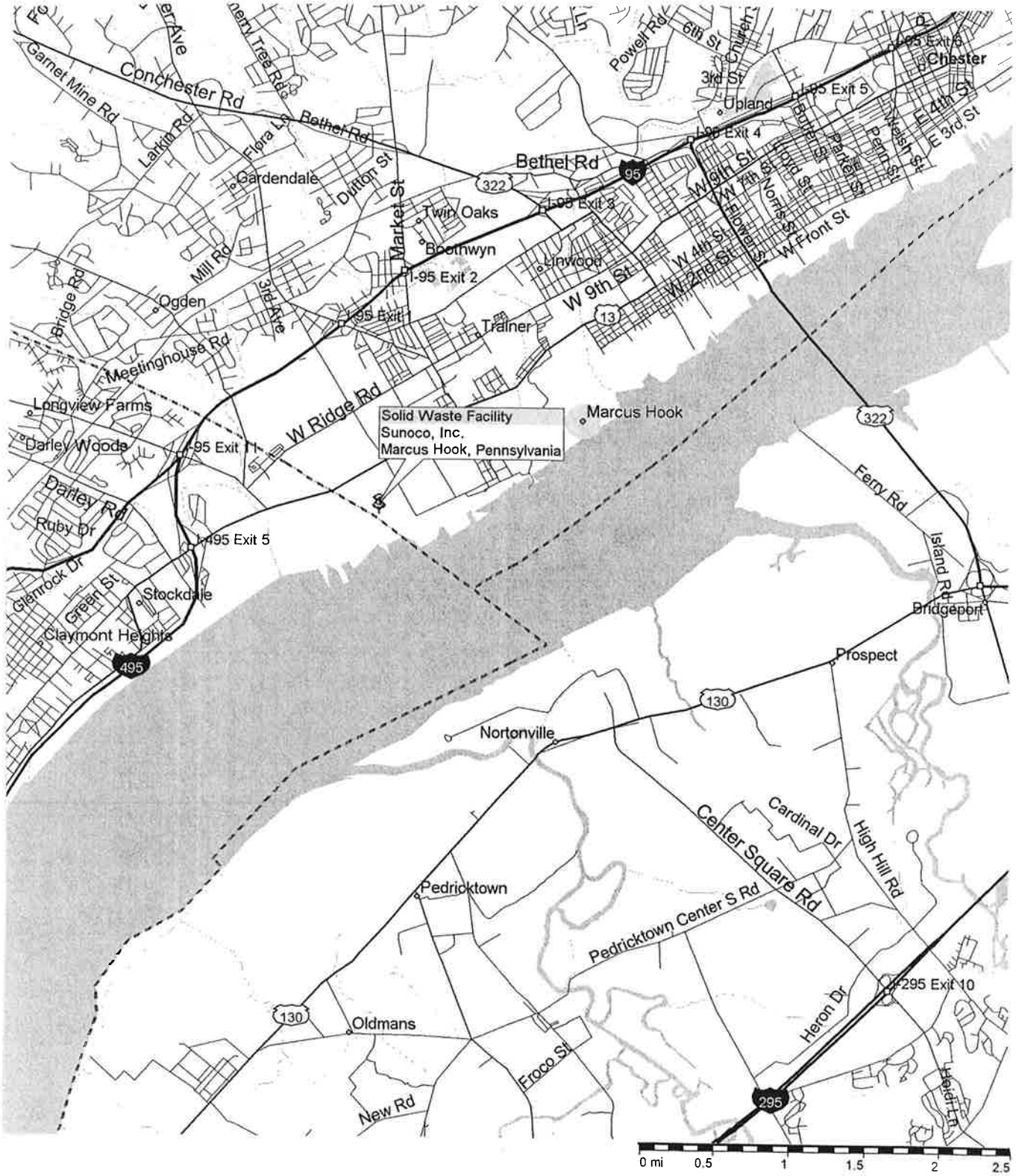
MSCs - Pennsylvania Statewide Health Standards Non-Residential Medium Specific Concentrations
TCLP: 40 CFR §261
~ No Standard

TABLE 2.5
Comparison of Background Soil Concentrations
with Post-Closure Soil Concentrations
Solid Waste Facility Closure
Sunoco Marcus Hook Refinery

	Total Cadmium (mg/kg)		Total Chromium (mg/kg)		Total Lead (mg/kg)	
	1986	2002	1986	2002	1986	2002
Average Concentrations (0 to 2 ft. bg)	0.37	0.64	330	59.8	365	335
Average Concentration (2 to 4 ft. bg)	1.9	0.18	122	44.1	317	204
High Concentration (0 to 2 ft. bg)	9.4	1.8	1,120	82.4	1,010	460
High Concentration (2 to 4 ft. bg)	1.6	0.87	336	53.4	998	780

Source: Washington Group Environmental Services Laboratory Analytical Report July 31, 2002 & Lancaster Laboratories Analytical Reports June 18, 1986; See Appendix F

DRAWINGS

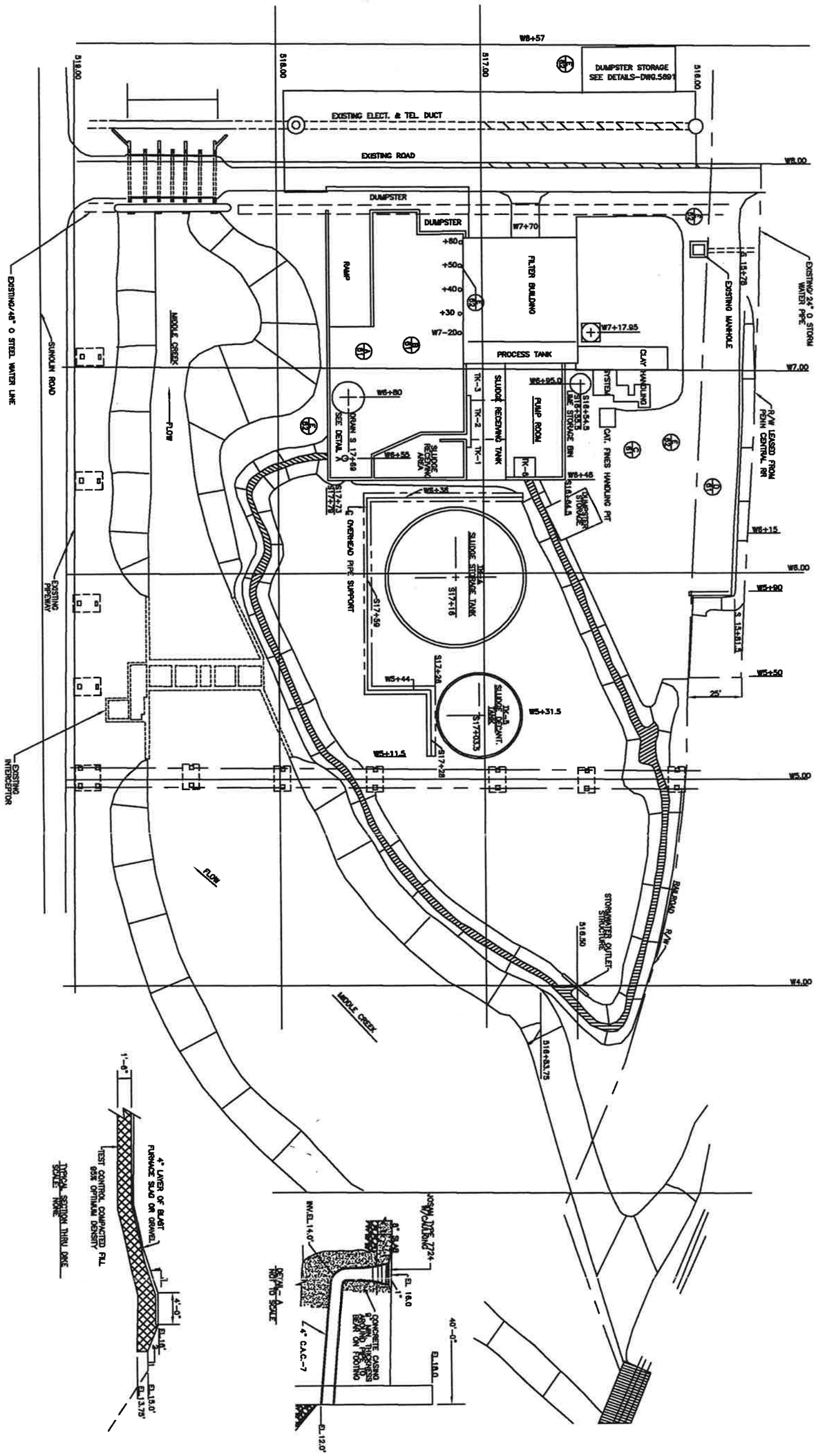


Map copied from Microsoft Expedia **Streets98** / Copyright 1988-1997

MID-ATLANTIC ASSOCIATES, INC. *P.O. Box 1128, North Wales, PA 19454* *Tele. (215) 997-1745 Fax (215) 997-6323*			**Scale:** As shown
Date: March 2003	**Drawn By:** GS	**Approved By:**	**Project No.:** MAA-02P-545-01

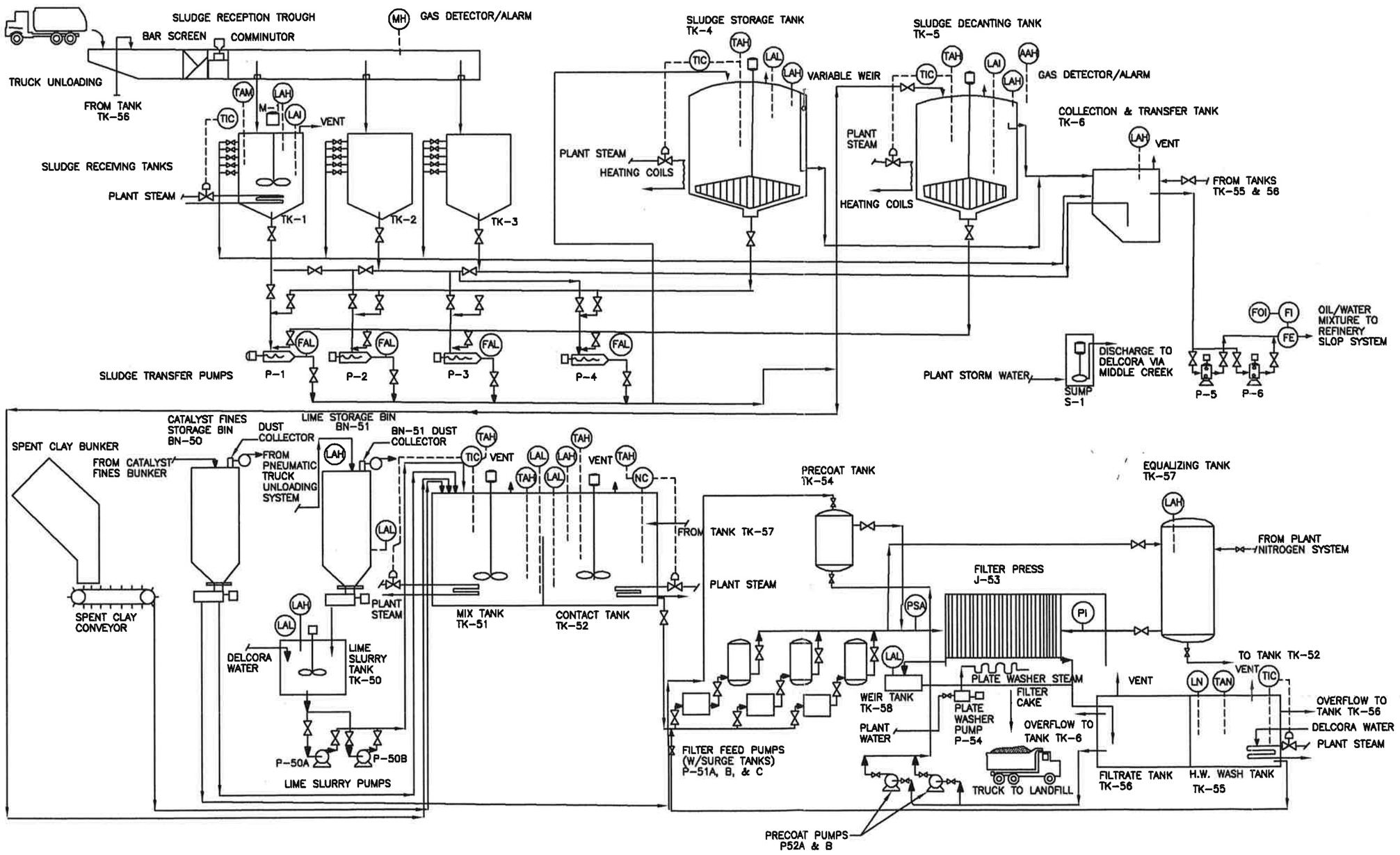
DRAWING 1.1
SITE LOCATION MAP

SUNOCO, INC.
Solid Waste Facility
Marcus Hook, Delaware County
Pennsylvania



MID-ATLANTIC ASSOCIATES, INC. *Engineering & Environmental Solutions*	SOLID WASTE FACILITY–PLAN VIEW SUNOCO MARCUS HOOK REFINERY MARCUS HOOK, PENNSYLVANIA	DRAWN BY:	DATE: APRIL 2003
		DRAFTING CHECK BY:	JOB NO: 0000P545.01
		ENGINEER CHECK BY:	CAD # 03–054501–01
		APPROVED BY:	DWG NO: 1.2

REFERENCE: ERM RCRA PART B PERMIT APPLICATION, FIGURE 3–5 PLAN VIEW.



DATE: APRIL 2003

JOB NO: 0000P545.01

CAD # 03-054506-01

DWG NO: 1.5

DRAWN BY:

DRAFTING CHECK BY:

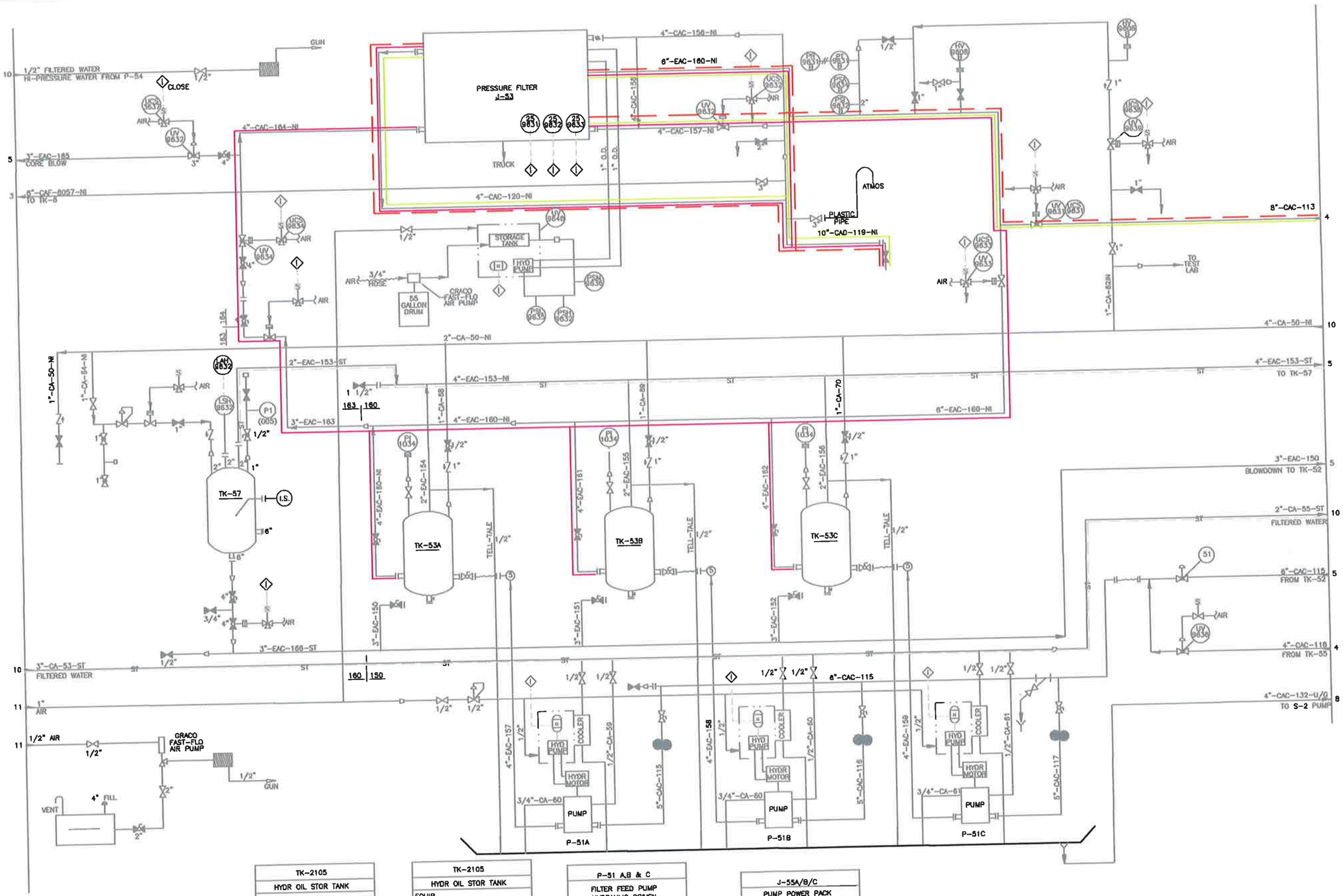
ENGINEER CHECK BY:

APPROVED BY:

SOLID WASTE FACILITY
PROCESS DIAGRAM
SUNOCO
MARCUS HOOK REFINERY
MARCUS HOOK, PENNSYLVANIA

MID-ATLANTIC ASSOCIATES, INC.
Engineering & Environmental Solutions

REFERENCE: ERM, RCRA PART B PERMIT APPLICATION FIGURE 3-3.



TK-2105	
HYDR OIL STOR TANK	
EQUIP.	
DIM. (OD x HGT)	3
WORKING VOL. BBL	1000
HEATED	
DIM. (OD x HGT)	
HEATED	
TYPE	

TK-2105	
HYDR OIL STOR TANK	
EQUIP.	
DIM. (OD x HGT)	6'x18'
WORKING VOL. BBL	2530
HEATED	
DIM. (OD x HGT)	
HEATED	
TYPE	

P-51 A,B & C	
FILTER FEED PUMP HYDRAULIC DRIVEN	
PUMP EQUIP. NO.	3800-18
MOTOR EQUIP. NO.	
PROC TEMP.	
DES FLOW GPW	
SUCT PRESS PSIG	
DISCH PRESS PSIG	

J-55A/B/C	
PUMP POWER PACK	
PUMP EQUIP. NO.	3800-18
MOTOR EQUIP. NO.	
PROC TEMP.	
DES FLOW GPW	
SUCT PRESS PSIG	
DISCH PRESS PSIG	

50HP MOTOR

LEGEND

SAMPLE ID

SWC-002 & SWC-003

SWC-004

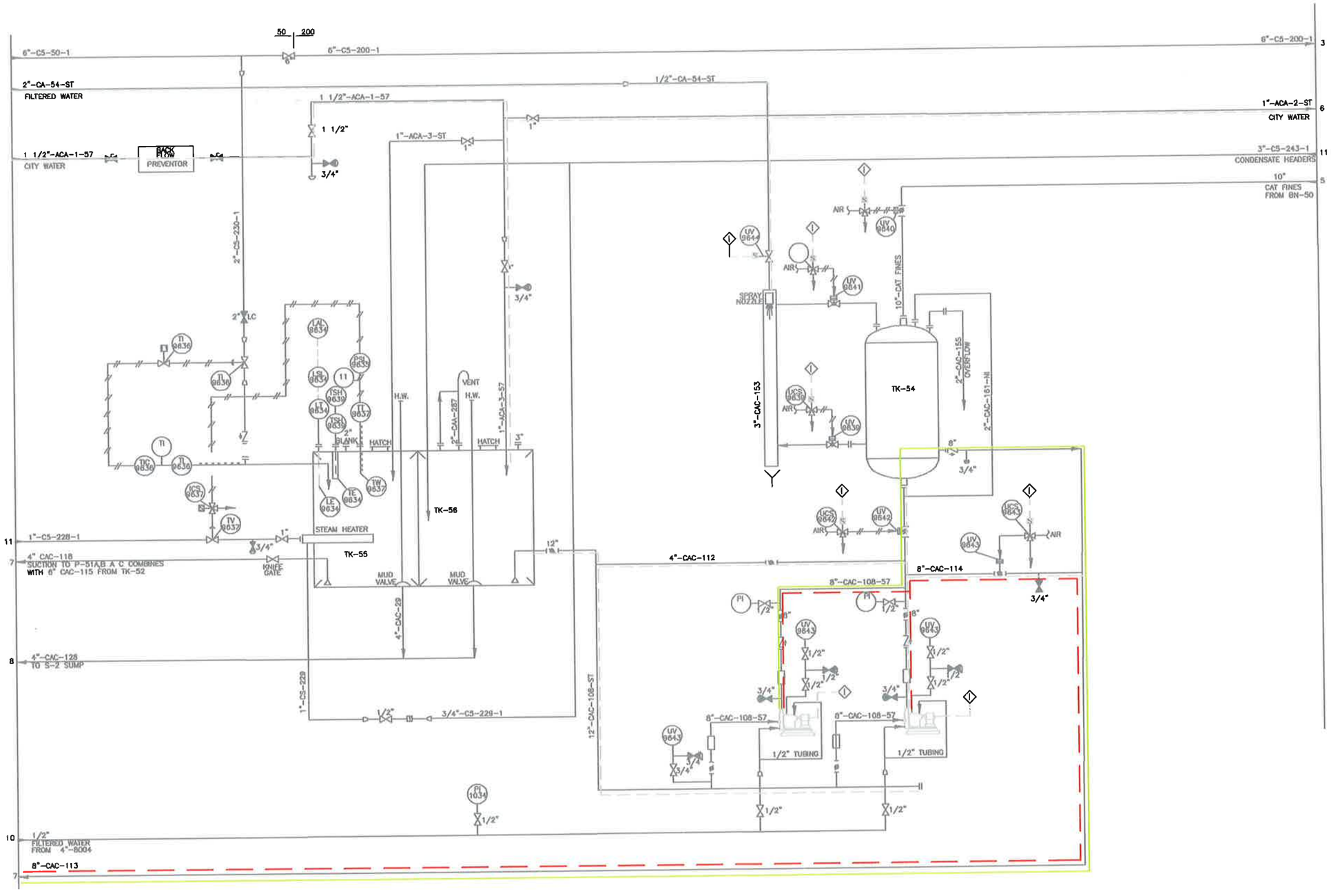
SWC-005

DATE:	APRIL 2003
JOB NO:	0000P545.01
CAD #	03-054507-01
DWG NO:	2.1
DRAWN BY:	
DRAFTING CHECK BY:	
ENGINEER CHECK BY:	
APPROVED BY:	

RINSATE SAMPLE LOCATION MAP
SUNOCO
MARCUS HOOK REFINERY
MARCUS HOOK, PENNSYLVANIA

MID-ATLANTIC ASSOCIATES, INC.
Engineering & Environmental Solutions

REFERENCE: SUN REFINING AND MARKETING CO. MAP 1-D-58 26002A DATED 3/30/02.



TK-55 HOTWATER WASH TANK	
EQUIP.	
DIM. (OD x HGT)	
WORKING VOL. BBL	
HEATED	
CAPACITY GAL.	5385
HEATED	
SIZE	8'x8'x11'8"

TK-56 FILTRATE TANK	
EQUIP.	
DIM. (OD x HGT)	
WORKING VOL. BBL	
HEATED	
CAPACITY GAL.	5625
HEATED	
SIZE	8'x8'x11'8"

P-52 A/B CENTRIFUGAL PUMP	
PUMP EQUIP. NO.	
MOTOR EQUIP. NO.	
PROC. TEMP. F	
DES. FLOW GPM	
SUCT PRESS PSIG	1600
DISCH PRESS PSIG	

125 HP
1750 RPM

TK-54 PRECOAT TANK	
EQUIP.	
DIM. (OD x HGT)	4'x8'x8'
WORKING VOL. BBL	
HEATED	
CAPACITY GAL.	710
HEATED	
SIZE	

LEGEND

SAMPLE ID

SWC-004

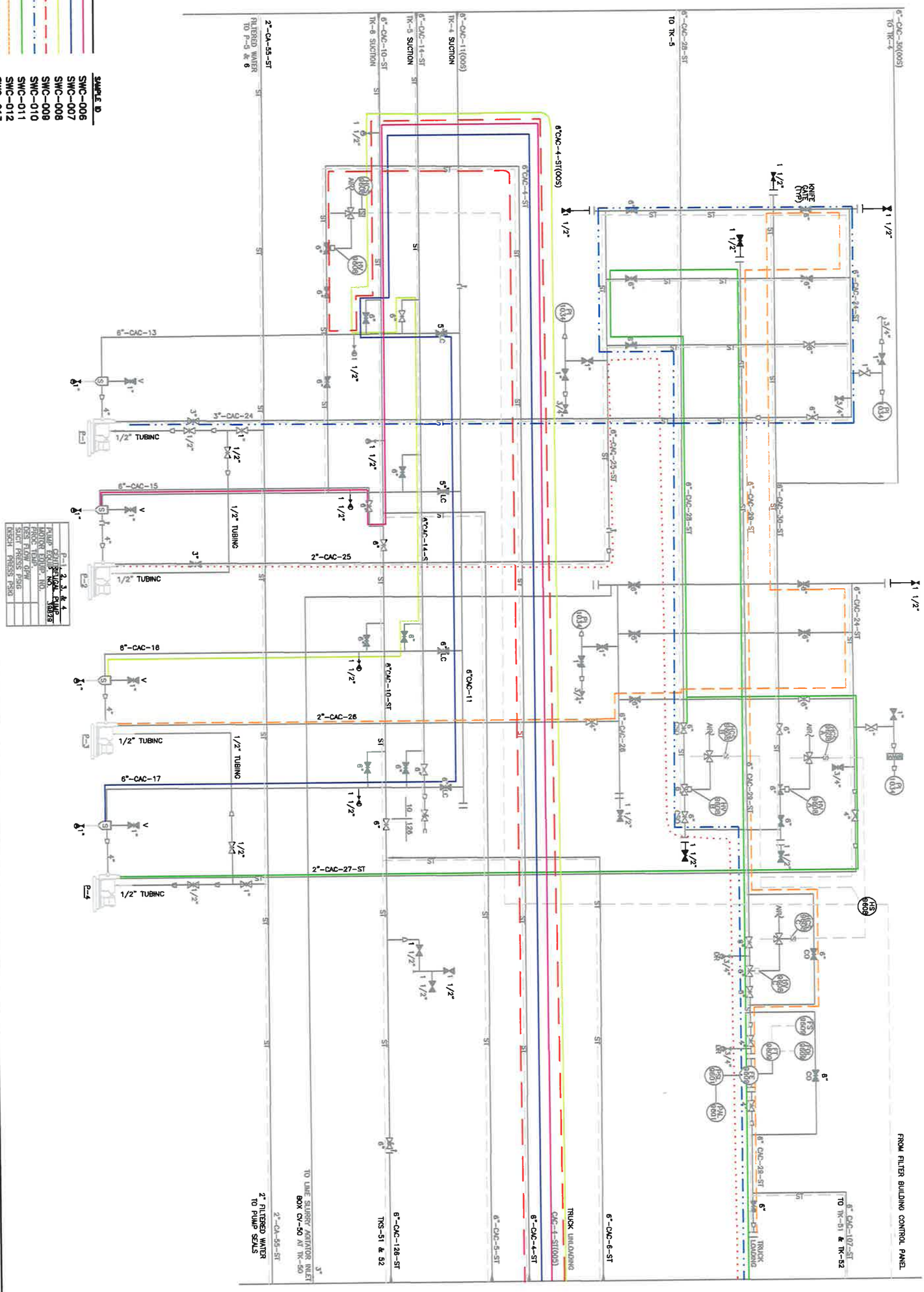
SWC-005

DRAWN BY:	
DRAFTING CHECK BY:	
ENGINEER CHECK BY:	
APPROVED BY:	
DATE:	APRIL 2003
JOB NO:	0000P545.01
CAD #	03-054505-01
DWG NO:	2.2

RINSATE SAMPLING DIAGRAM
SUNOCO
MARCUS HOOK REFINERY
MARCUS HOOK, PENNSYLVANIA

MID-ATLANTIC ASSOCIATES, INC.
Engineering & Environmental Solutions

REFERENCE: SUN REFINING AND MARKETING CO. MAP 1-05B/26002A DATED 3/30/02.

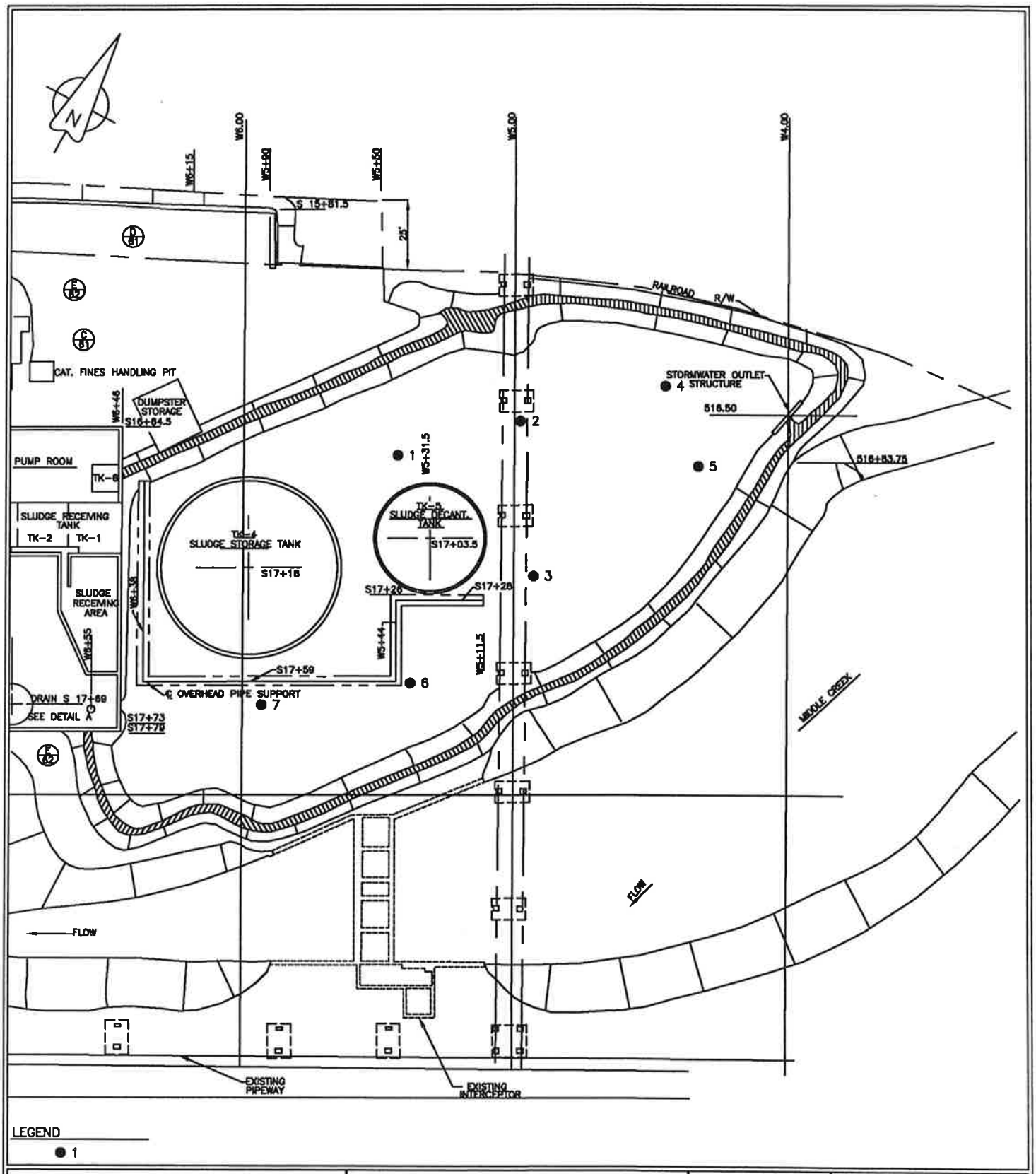


MID-ATLANTIC ASSOCIATES, INC.
Engineering & Environmental Solutions

RINSATE SAMPLING DIAGRAM
SUNOCO
MARCUS HOOK REFINERY
MARCUS HOOK, PENNSYLVANIA

DRAWN BY:	DATE: APRIL 2003
DRAFTING CHECK BY:	JOB NO: 0000P545.01
ENGINEER CHECK BY:	CAD # 03-054503-01
APPROVED BY:	DWG NO: 2.3

REFERENCE: SUN REFINING AND MARKETING CO. MAP 1-05B/26002A, DATED 3/30/02.



LEGEND

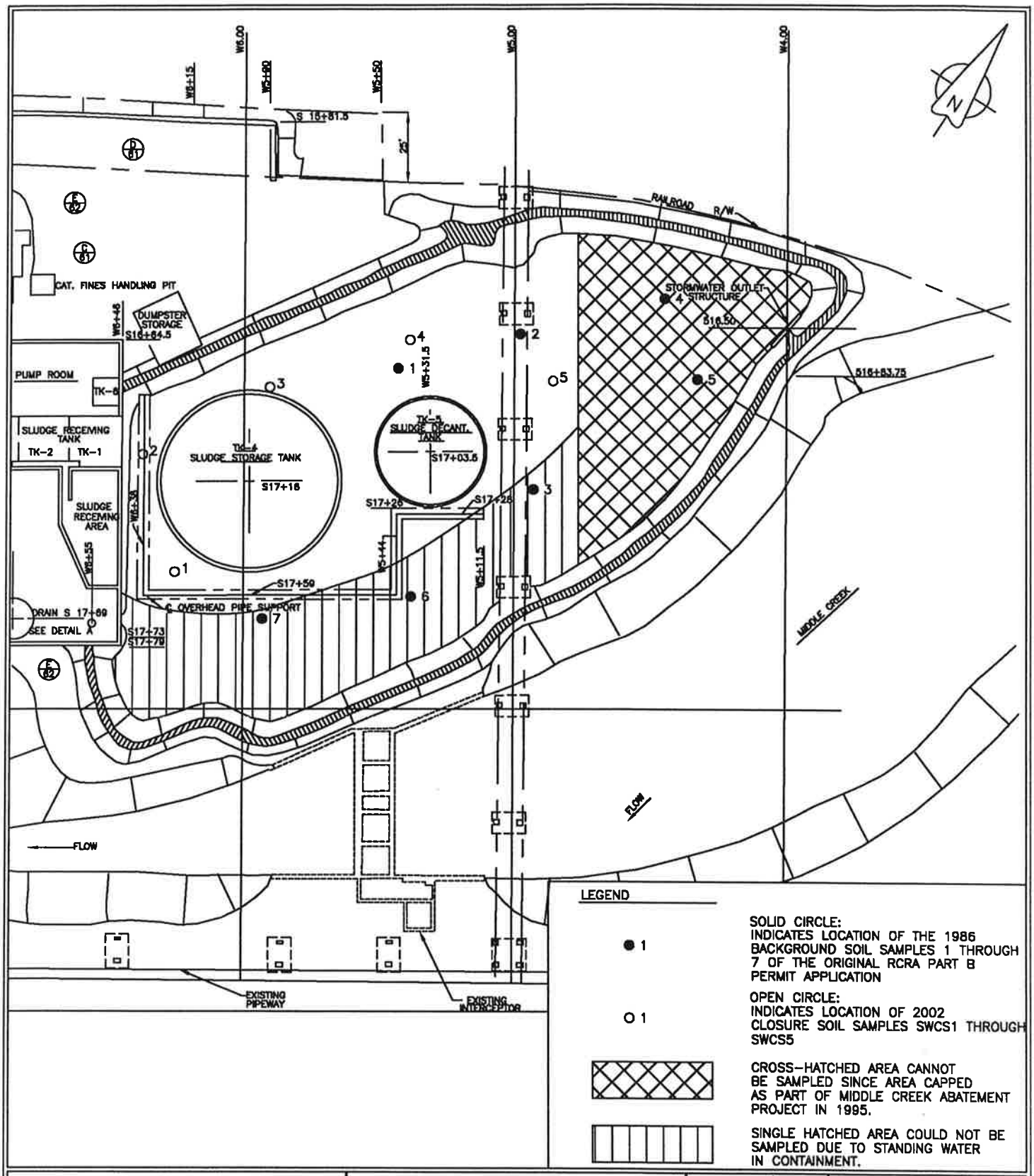
● 1 SOIL SAMPLE LOCATION

MID-ATLANTIC ASSOCIATES, INC.
Engineering & Environmental Solutions

SECONDARY CONTAINMENT AREA BACKGROUND SOIL SAMPLING LOCATION MAP
SUNOCO
MARCUS HOOK REFINERY
MARCUS HOOK, PENNSYLVANIA

DRAWN BY:		DATE:	APRIL 2003
DRAFT CHECK:		JOB NO:	0000P545.01
ENG CHECK:		CAD NO:	03-054508-01
APPROVAL:		DWG NO:	2.4

REFERENCE: ERM RCRA PART B PERMIT APPLICATION.



LEGEND

● 1 — SOLID CIRCLE: INDICATES LOCATION OF THE 1986 BACKGROUND SOIL SAMPLES 1 THROUGH 7 OF THE ORIGINAL RCRA PART B PERMIT APPLICATION

○ 1 — OPEN CIRCLE: INDICATES LOCATION OF 2002 CLOSURE SOIL SAMPLES SWCS1 THROUGH SWCS5

CROSS-HATCHED AREA CANNOT BE SAMPLED SINCE AREA CAPPED AS PART OF MIDDLE CREEK ABATEMENT PROJECT IN 1995.

SINGLE HATCHED AREA COULD NOT BE SAMPLED DUE TO STANDING WATER IN CONTAINMENT.

MID-ATLANTIC ASSOCIATES, INC.
Engineering & Environmental Solutions

SECONDARY CONTAINMENT AREA
SOIL SAMPLING LOCATION MAP
SUNOCO
MARCUS HOOK REFINERY
MARCUS HOOK, PENNSYLVANIA

DRAWN BY:		DATE:	APRIL 2003
DRAFT CHECK:		JOB NO:	0000P545.01
ENG CHECK:		CAD NO:	03-054509-01
APPROVAL:		DWG NO:	2.5

REFERENCE: ERM RCRA PART B PERMIT APPLICATION.

APPENDIX A

SOLID WASTE FACILITY CLOSURE
SCOPE OF WORK

SOLID WASTE FACILITY CLOSURE

SCOPE OF WORK

SUNOCO MARCUS HOOK REFINERY

MARCUS HOOK, PA

PROJECT OBJECTIVE

Close the Solid Waste Facility at Sunoco's Marcus Hook Refinery. Because the solid waste facility is a permitted hazardous waste treatment facility, the closure must be conducted in accordance with Sunoco's permit and Pennsylvania's hazardous waste regulations. Closure in this context means the removal of hazardous wastes and hazardous waste residues from a series of tanks and interconnected piping.

Sunoco is seeking a contractor to remove hazardous waste residues from the trough, tanks, piping and pumps within the solid waste facility and conduct some limited verification sampling of the rinsate and surface soils around the facility.

The Contractor will be overseen by a contracted Professional Engineer (PE) who will verify the work has been conducted in accordance with the scope of work. The PE will also review the analytical results from the verification sampling and issue a brief report documenting field activities and a Professional Engineer Certification of Closure upon completion of the work.

BACKGROUND

The solid waste facility at the Marcus Hook Refinery treated hazardous and non-hazardous waste streams by reducing the water and oil content of the wastes. The main processing unit at the facility is a filter press that dewatered the wastes and made them suitable for transport and disposal off-site. The filter press was designed to treat a variety of hazardous and non-hazardous waste sludges generated by the refinery, including API separator sludge, slop oil emulsion solids, tank bottoms, catalyst fines and spent filter clay. Water and oil were treated and/or recycled through various refinery processes. The dried filter cake from the filter press was transported to off-site disposal facilities. Attachment A to this Scope of Work provides a Simplified P&ID of the Solid Waste Facility operation.

The solid waste facility was constructed in 1979-80. Sunoco evaluated the continued use of the filter press operation and has determined that the unit should be closed. Sunoco submitted notification to the PaDEP of its plans to close the facility as part of renewal of the refinery's Part B permit. All pumpable wastes have been removed from the solid

waste facility. What remains is hazardous waste residues on the walls of the tanks, pipes and pumps of the system.

PROJECT SCOPE

Closure as described in Sunoco's closure plan and the Pennsylvania hazardous waste regulations is defined as the removal of hazardous wastes and hazardous waste residues and decontamination and cleaning of the equipment. All pumpable hazardous wastes have been removed from the units and this project is intended to remove all oily and hazardous waste residues from the tanks, pumps, and pipes of the solid waste facility. Please note that the closure only involves the solid waste facility and not the Hazardous Waste Storage Facility.

There are two major sections or "phases" to the Solid Waste Facility. "Phase I" is the sludge receiving and thickening operation. "Phase 2" is the sludge conditioning and filter press operation. Sunoco is seeking a contractor to clean the basin, tanks, pipes, pumps and other appurtenances which handled hazardous wastes for all of the equipment associated with Phase I, the filter feed system and press described in Phase II, and the cake drop area below the filter press.

The major pieces of equipment which are involved in this scope of work (listed in order of process flow) are:

1. Phase I equipment

a) Sludge reception area - This includes the entry ramp, sludge reception basin, bar screen, and comminutor. Work scope includes removing water and any oily residue, power washing down the basin, trough, equipment, and receiving area.

b) Receiving Tanks - This includes tanks TK-1, TK-2, and TK-3. These tanks are 500 bbl., concrete tanks with mixers and heaters. Tanks should be washed to remove any oily waste residues. Piping between the reception area and receiving tanks, and between receiving tanks and sludge transfer pumps should also be flushed with a detergent or chemical wash solution.

c) Pumps, Sludge Collection and Transfer Tank and Containment Pit Area - This includes sludge transfer pumps P-1 through P-4, tank TK-6 and the Containment Pit Area. Tank TK-6 should be washed to remove any oily waste residues. Piping to and from T-6 and Pumps P-1 through P-4 should be flushed with a detergent or chemical wash solution. Please note however, that the sludge transfer pumps have been exposed to flooding conditions due to a backed up stormwater sewer. Therefore, these pumps are not operational. Contractor will need to determine whether the pumps can remain connected in a rinse loop or whether they need to be disconnected and cleaned separately. Once the

equipment in this area has been cleaned the containment pit should be high pressure washed.

d) TK-5 - This tank has already been cleaned and therefore only a pressure wash rinse needs to be performed.

Note that TK-4 no longer exists.

2. Phase II equipment

a) Lime Slurry Tank (TK 50), Mix Tank (TK-51) and Contact Tank (TK-52)- Two of these three tanks, TK-51 and TK-52 are connected via an overflow weir. They have a capacity of roughly 5600 and 11000 gallons respectively. The lime slurry tank contained a slurry of lime and process wastewater. Pumps P-50A and P-50B pumped the lime slurry to the mix tank. The mix tank is charged from sludge transfer pumps P-1 through P-4. These tanks should be washed to remove any oily waste residue. The piping from the above transfer pumps should be flushed with a detergent or chemical wash solution.

b) Filter Feed Pumps /w Surge Tanks and Pump Room - This includes P-51 A, B, C and the suction and discharge piping. This activity includes the listed equipment plus the associated piping. These pumps were also submerged and may no longer be operational. Contractor will need to determine whether these pumps can serve as a flow through, or whether they need to be disconnected and cleaned separately. These tanks should be washed to remove any oily residues and the pumps and associated piping should be flushed with detergent or chemical. This area also includes the room containing these pumps and tanks. Once the tanks and pumps are cleaned this room should be high pressure washed.

c) Filter Press and Plates (J-53), Precoat Tank (TK-54), Precoat Pumps (52 A&B), Weir Tank (TK-58), Equalization Tank (TK-57), Filtrate Tank (TK-56), H.W. Wash Tank (TK-55), Plate Washer Station, Filter Press Room, Filter Cake Drop Area/Room -

The closure activities includes the equipment described above plus all related piping, appurtenances, and other integral equipment that were in contact with hazardous waste during solid waste facility operations. Additionally the general area around the solid waste facility, including the sludge receiving area and the filter cake discharge area are included. Tanks and associated equipment and piping should be emptied and washed to remove any oily residues. The filter press and plates should be high pressure washed. Once equipment cleaning is complete, the filter cake drop area/room as well as appropriate areas of the filter press room should also be high pressure washed.

For all equipment it is expected that the contractor will perform the following services:

1) Remove any standing water inside the tanks and sumps. Water will be pumped directly into a temporary storage container/tank supplied by the Contractor for short-term storage. At Sunoco's direction, the waters will be discharged to the refinery's treatment plant for processing.

2) For the basin and tanks, pressure wash (>8000 psi) the interior using existing tank openings. Given the relatively small size of the tanks, it is not expected that any manned entry will be conducted. Contractor should indicate if this is not the case. All decontamination water and associated residues will be collected using a vacuum truck or other appropriate equipment. Decontamination water will be pumped directly into a temporary storage container/tank for short-term storage. At Sunoco's direction, the waters will be discharged to the facility's treatment plant for processing.

Decontamination water will be removed from the unit and for those vessels that are accessible, the interior will be visually inspected by an independent professional engineer. If the visual inspection indicates that no residuals remain, the Contractor will be directed to conduct a final clean water rinse of the vessels. Sampling of the rinsate will be performed as outlined below.

3) Pumps, piping, and valves will be flushed with a detergent and/or caustic solution capable of removing hazardous waste residues from carbon steel surfaces. The cleaning solution will be circulated for a sufficient period of time to remove oily residues. After this procedure, the pipes will be flushed with water to remove any wash solution and the rinsate will be sampled as described below.

As described above, the sludge and filter feed pumps may not be operational. This will require the Contractor to use his own pumps for circulating through the piping. In addition, if the pumps do not turn, the contractor may need to reroute piping, using temporary hose connections and will need to clean the pumps separately. The pipe material used for any temporary connections shall be suited for the intended use. It is the contractor's responsibility for determining the appropriate loops and routing for the pipe flushing. Contractor will be responsible for blanking all necessary lines within the solid waste facility from the sludge reception trough to the filter press. Sunoco will be responsible for blanking all lines outside of these battery limits. Contractor will need to provide a blanking list for review by Sunoco prior to initiating any work.

4) Sampling -

a) Rinsate samples from tanks and pipes will be analyzed for the constituents identified in Table 1, in accordance with USEPA methods specified in the table for each constituent. These analytical requirements are based on the treatment standards for RCRA listed hazardous waste codes KO49 through KO52 (reference 40 CFR 268.40), which were processed through the solid waste facility.

b) Composite soil samples from the zero to two and two to four foot depth intervals need to be collected from seven locations within the secondary containment berm surrounding Tank 5 and previously existing Tank 4 as shown on Figure 2. The samples will be analyzed for the constituents identified in the Closure Plan, i.e., total and TCLP leachate analysis for cadmium, chromium, and lead. These analysis will be compared to the previously obtained background levels and the Pennsylvania Act 2 standards for nonresidential surface soil.

CONTRACTOR PROVIDES

Blanking List
Pipe Spool List
Health & Safety Plan
Confined Space Entry Plan
MSDS for any chemicals used, including aquatic toxicity data
All pumps, hoses, connections for circulating through piping.
All chemicals to clean pipes and tanks
All manpower to conduct the above
Containers and/or Frac Tanks for wash water/rinsate
Certification of Closure

SUNOCO PROVIDES

Lock out/ tag out
Waste disposal
Inspection and verification of work
Utilities (water, air, steam)
Roll-offs for solid wastes

Receiving wash water at wastewater

Work Permits
Technical Liaison
Forklift operator during mob/demob

TABLE 1

Rinsate Sample Analytical Parameters

Constituent	Clearance Level (mg/l)	Analytical Method
Anthracene	0.059	8270
Benzene	0.14	8260
Benzo(a) pyrene	0.061	826~~0~~70
Benzo(a)anthracene	0.059	8270
Bis(2-ethylhexyl)phthalate	0.28	8270
Chrysene	0.059	8270
Ethylbenzene	0.057	8260
Napthalene	0.059	8270
Phenol	0.039	8270
Pyrene	0.067	8270
Toluene	0.08	8260
Xylene	0.32	8260
Cyanide (total)	1.20	9012
Chromium (total)	2.77	6010
Cresol (m)	0.77	8270
Cresol (p)	0.77	8270
Cresol (o)	0.11	8270
Lead	0.69	6010
2,4 -Dimethylphenol	0.036	8270
Fluorene	0.059	8270
Acenapthene	0.059	8270
Carbon Disulfide	3.80	8260
Di-n-butyl phthalate	0.057	8270
Phenanthrene	0.059	8270

APPENDIX B

NOTIFICATION OF INTENT TO CLOSE SOLID WASTE FACILITY

January 5, 2000

Sun Company, Inc.
PO Box 426
Marcus Hook PA 19061-042
610 859 1000

DEP-RECEIVED
SOUTHEAST REGION

JAN 06 2000

January 4, 2000

Mr. James Wentzel PE
Chief Engineering Services Section
Waste Management Program
Pennsylvania Department of Environmental Protection
Southeast Regional Office
Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

Re: Sunoco Inc. (R&M) Marcus Hook Refinery
Part B Permit Renewal Application
PAD980550594

Dear Mr. Wentzel:

Attached is the Part B Permit Renewal Application for the Sunoco Inc. (R&M) Marcus Hook Refinery PAD980550594. This permit is for storage of hazardous wastes in containers. The previously permitted solid waste facility is not included in this application since it has recently been decided to close the facility under the closure plan. A copy of the notification of Sunoco's intent to close the solid waste facility is attached for your information.

Public notices of this permit renewal application have been submitted to Marcus Hook Borough, Delaware County, and have been submitted to two local newspapers, the *Delaware County Times* and the *Philadelphia Inquirer*. The notice will be published in both newspapers once a week for two consecutive weeks. Proof of receipt by the municipalities and newspaper publication will be forwarded to you upon our receiving certifications from the municipalities and both newspapers.

The application fee of $14,000 is attached as a check payable to the Commonwealth of Pennsylvania. Two additional copies of the permit application are also included for your use. If you have any questions or need additional information please call me at (610) 859-6297.

Sincerely,
Sunoco Inc. (R&M)

Roseann Keatley

Roseann I. Keatley
Environmental Specialist

Sun Company, Inc.
PO Box 426
Marcus Hook PA 19061-0
610 859 1000

January 5, 2000

Mr. Ronald Furlan – Region I
Pennsylvania Department of Environmental Protection
Bureau of Solid Waste Management
Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

RE: Closure of Solid Waste Facility – PAD980550594

Dear Mr. Furlan:

Sunoco, Inc. (R&M) has determined that it will no longer be using the Solid Waste Facility at its Marcus Hook Facility. Therefore in accordance with Pennsylvania regulation Title 25, Subpart J, Chapter 264.197, and consistent with the approved closure plan for this facility, Sunoco is initiating closure of the Solid Waste Facility.

Sunoco intends to implement the closure activities within 90 days from the date of this letter, sometime in the second quarter of 2000. All closure activities are expected to be completed within 180 days from the date of this letter. A certification of closure will be provided at that time.

If you have any questions or require any additional information, please contact me at 610-859-6297.

Sincerely,

Roseann Keatley

Roseann Keatley
Environmental Specialist

cc: File – Hazardous Waste Permit

APPENDIX C

SOLID WASTE FACILITY CLOSURE CLEANING ACTIVITIES

Solid Waste Facility Closure Cleaning Activities

Equipment ID	Work or cleaning dates
Entry Ramp	
Sludge Reception Basin	12/20/01; 12/18/01; 4/11/02-12/2/02; 4/15/02; 7/10/02-7/12/02; 7/30/02; 8/02/02
Bar Screen	12/18/01; 7/26/02
Comminutor	12/18/01; 7/10/02-7/12/02
Receiving Tank TK-1	1/14/02-1/15/02; 1/22/02; 1/24/02; 2/4/02; 4/23/02-4/26/02; 5/10/02; 5/14/02; 5/15/02; 6/11/02; 6/12/02; 6/14/02; 7/10/02; 7/16/02-7/19/02; 7/22/02; 7/24/02; 7/26/02; 7/29/02
Receiving Tank TK-2	1/14/02; 1/15/02; 1/18/02; 1/24/02; 4/23/02-4/26/02; 5/10/02; 5/14/02; 5/15/02; 5/23/02; 6/11/02; 6/12/02; 6/14/02; 7/10/02; 7/16/02-7/19/02; 7/22/02; 7/24/02; 7/26/02; 7/29/02
Receiving Tank TK-3	1/14/02; 1/15/02; 1/22/02-1/24/02; 4/23/02-4/26/02; 5/10/02; 5/14/02; 5/15/02; 5/23/02; 6/11/02; 6/12/02; 6/14/02; 7/10/02; 7/16/02-7/19/02; 7/22/02; 7/24/02; 7/26/02; 7/29/02
Piping between Reception Area and Receiving Tanks	4/15/02; 4/23/02; 5/2/02; 5/3/02
Piping to Sludge Transfer Pumps	5/2/02; 5/3/02
Containment Pit Area	12/7/01; 12/10/01; 12/11/01; 12/13/01; 12/14/01; 12/17/01; 12/19/01; 6/5/02; 6/12/02; 6/26/02; 7/2/02; 7/3/02; 7/12/02; 7/24/02
Sludge Transfer Pump P-1	4/9/02; 6/11/02; 6/12/02
Sludge Transfer Pump P-2	4/9/02; 6/11/02; 6/12/02
Sludge Transfer Pump P-3	4/9/02; 6/11/02; 6/12/02; 7/29/02
Sludge Transfer Pump P-4	4/9/02; 4/16/02; 6/11/02; 6/12/02; 7/23/02
Transfer Tank TK-6	2/11/02-2/15/02; 4/17/02; 4/22/02; 4/26/02; 6/5/02; 6/12/02; 7/16/02
Piping from TK-6 and Transfer Pumps	6/25/02; 7/17/02
Storage Tank TK-4	
Decanting Tank TK-5	7/11/2002
Lime Slurry Tank TK-50	7/26/02; 7/29/02; 7/30/02; 8/2/02
Mix Tank TK-51	5/23/02; 7/23/02
Contact Tank TK-52	7/19/02; 7/26/02
Lime Slurry Pump P-50A	7/8/02; 7/9/02
Lime Slurry Pump P-50B	7/8/02; 7/9/02
Piping from Transfer Pumps to Mix Tanks	5/6/02; 5/8/02; 5/31/02; 6/6/02; 7/16/02
Pump Room	6/10/02; 7/1/02; 8/2/02
Pump P-51A	5/15/02
Pump P-51B	5/15/02
Pump P-51C	5/15/02
Pump Suction Discharge Piping	5/9/02
Surge Tanks (TK-53 A,B,C)	5/8/02; 5/13/02; 6/12/02; 7/10/02
Filter Press	1/23/02; 5/3/02; 6/14/02; 7/11/02
Press Plate J-53	1/23/02; 5/3/02; 6/14/02; 7/11/02
Precoat Tank TK-54	6/11/02; 6/25/02; 6/26/02; 7/8/02
Precoat Pump P-52A	6/25/02
Precoat Pump P-52B	6/25/02
Weit Tank TK-55	2/11/02-2/15/02; 5/16/02; 7/3/02; 7/23/02
Plate Washer Station	7/8/02; 7/9/02; 7/11/02
Filter Press Room	7/8/02; 7/9/02; 7/11/02
Filter Cake Drop Area/Room	7/16/02; 7/17/02; 8/2/02
Filtrate Tank TK-56	5/14/02; 7/11/02; 7/12/02; 7/17/02
Tank TK-57	6/10/02-6/12/02; 6/14/02; 6/25/02; 6/26/02; 7/1/02; 7/17/02; 7/24/02
Spent Cat. & Clay Bins	7/12/02; 7/26/02; 7/29/02; 7/30/02

Source: Sunoco Work Permits Compiled by Sunoco Personnel (02/2003)

APPENDIX D

DISPOSAL DOCUMENTATION
TK-5

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES
Bureau of Waste Management
P.O. Box 8550
Harrisburg, PA 17105-8550
OFFICIAL PENNSYLVANIA MANIFEST FORM

ER-WM-51 REV. 10/94

Form approved.
OMB No. 2050-0039
Expires 9-30-96

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: PAD980550594
Manifest Document No.: 63550

2. Page 1 of 1

Information within the blue border is not required by Federal law but may be required by State law.

A. State Manifest Document Number: PAE 5163550

B. State Gen. ID: PAD980550594

C. State Trans. ID: PA-AH 0523

D. Transporter's Phone ( ) 519-864-1201

E. State Trans. ID: PA-AH

F. Transporter's Phone ( )

G. State Facility"s ID: MIT270019904

H. Facility's Phone ( ) 519-864-1021

Generator's Name and Mailing Address:
SUN COMPANY, INC. (R & M) - MARCUS HOOK REFINERY
DELAWARE AVENUE & GREEN STREET, MARCUS HOOK, PA 19
610-859-1178 ATTN: DAVE KISTLER

5. Transporter 1 Company Name: LAIDLAW ENV. SERVICES LTD.
6. US EPA ID Number: MIT270019904

7. Transporter 2 Company Name:
8. US EPA ID Number:

9. Designated Facility Name and Site Address:
LAIDLAW ENVIRONMENTAL SERVICES (SARNIA) LTD.
R.R. #1, 4090 TELFER ROAD
CORUNNA, ON N0N 1G0
10. US EPA ID Number: MIT270019904

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ. WASTE ENVIRONMENTALLY HAZARDOUS SUBSTANCES SOLID, NOS. (BENZENE), 9; UN3077; PG: III	001	DT	39,980	P	K051
b.					
c.					
d.					

Additional Descriptions for Materials Listed Above

	Lab Pack	Physical State		Lab Pack	Physical State
a.		S	c.		
b.			d.		

K. Handling Codes for Wastes Listed Above

a.	c.
b.	d.

15. Special Handling Instructions and Additional Information

ADDITIONAL CODES: F037, F038, D018.
WASTE CODES: 'G' ERG #171 ATTACHED
POINT OF DEPARTURE: BUFFALO, NY. - DATE: 01/24/97 TK #5 0245AM
NAME: [signature]
IN CASE OF EMERGENCY CONTACT LAIDLAW ENVIRONMENTAL SERVICES LTD.
24 HOURS AT - 1-800-265-7549 OR 1519-864-1201/1021.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.
CONFORMS TO THE TERMS OF THE ATTACHED EPA ACKNOWLEDGEMENT OF CONSENT

Printed/Typed Name	Signature	MONTH	DAY	YEAR
DAVID J KISTLER	[signature]	01	23	97

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	MONTH	DAY	YEAR
ALLAN ZAVITZ	[signature]	01	23	97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	MONTH	DAY	YEAR

19. Discrepancy Indication Space

20. Facility owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	MONTH	DAY	YEAR
Randy Wauns	Randy Wauns	01	27	97

GENERATOR

TRANSPORTER

FACILITY

In case of an emergency or spill immediately call the National Response Center (800) 424-8802 and the PA DER (717) 787-4343

PAE 5163550

EPA Form 8700-22 (Rev. 9/88) Previous editions are obsolete

5

Copy 5 - TSD Facility: Mail to Generator

Copy 8 - Generator: Retain This Copy

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES
Bureau of Waste Management
P.O. Box 8550
Harrisburg, PA 17105-8550
OFFICIAL PENNSYLVANIA MANIFEST FORM

ER-WM-51 REV. 10/94

Form approved, OMB No. 2050-0039 Expires 9-30-96

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. PAD980503594 Manifest Document No. 03686

2. Page 1 of 1

Information within the blue border is not required by Federal law but may be required by State law.

Generator's Name and Mailing Address
SUN COMPANY, INC. (R & M) - MARCUS HOOK REFINERY
DELAWARE AVENUE & GREEN STREET, MARCUS HOOK, PA 19061
610-859-1175 ATTN. DAVE KISTLER

A. State Manifest Document Number PAE 5163686

B. State Gen. ID PAD980503594

5. Transporter 1 Company Name LAIDLAW ENV. SERVICES LTD. 6. US EPA ID Number MIT270019904

C. State Trans. ID PA-AH - 0527 519-864-1201

7. Transporter 2 Company Name 8. US EPA ID Number

D. Transporter's Phone ( )

E. State Trans. ID PA-AH

9. Designated Facility Name and Site Address
LAIDLAW ENVIRONMENTAL SERVICES (SARNIA) LTD.
R.R. #1, 4090 TELFER ROAD
CORUNNA, ON N0N 1G0
10. US EPA ID Number MIT270019904

F. Transporter's Phone ( ) MIT270019904

G. State Facility's ID 519-864-1021

H. Facility's Phone ( )

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ, WASTE ENVIRONMENTALLY HAZARDOUS SUBSTANCES SOLID, NOS. (BENZENE), 9, UN3077, PG III	001	DT	38060	P	K051
b.					
c.					
d.					

Additional Descriptions for Materials Listed Above

	Lab Pack	Physical State		Lab Pack	Physical State
a.			c.		
b.			d.		

K. Handling Codes for Wastes Listed Above
a. c.
b. d.

15. Special Handling Instructions and Additional Information
ADDITIONAL CODES: FOUT, MOSR, DMLR.
WASTE CODES: G ERG #171 ATTACHED
POINT OF DEPARTURE: BUFFALO, NY. - DATE: 2/26/97 1 TON #5 TK
NAME: Tom Raymer REMAINDER 51 TK
IN CASE OF EMERGENCY CONTACT LAIDLAW ENVIRONMENTAL SERVICES LTD.
24 HOURS AT - 1-800-263-7649 OR 1519-864-1201/1021. #NO MINIMUM CHARGE PER DRIVER

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford. SUBJECT TO THE TERMS OF THE ATTACHED EPA ACKNOWLEDGEMENT OF CONSENT.

Printed/Typed Name: DAVID J. KISTLER Signature: [signature] Month 02 Day 26 Year 97

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: T. Raymer Signature: [signature] Month 02 Day 26 Year 97

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: Signature: Month Day Year

19. Discrepancy Indication Space

20. Facility owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name: Dan Kimball Signature: [signature] Month 02 Day 28 Year 97

GENERATOR
TRANSPORTER
FACILITY

PAE 5163686

EPA Form 8700-22 (Rev. 9/88) Previous editions are obsolete

5

Copy 5 - TSD Facility: Mail to Generator

Copy 8 - Generator: Retain This Copy

Contact your State Hazardous Waste Agency or Spill Hotline Center (800) 424-8802 and the PA DEH (717) 787-4343

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES
Bureau of Waste Management
P.O. Box 8550
Harrisburg, PA 17105-8550
OFFICIAL PENNSYLVANIA MANIFEST FORM

ER-WM-51 REV. 10/94

Form approved.
OMB No. 2050-0039
Expires 9-30-96

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: PA0980550594 — Manifest Document No.: 63572

2. Page 1 of

Information within the blue border is not required by Federal law but may be required by State law.

Generator's Name and Mailing Address
SUN COMPANY, INC. (R & M) - MARCUS HOOK REFINERY
DELAWARE AVENUE & GREEN STREET, MARCUS HOOK, PA 19061
610-859-1178 ATTN: DAVE KISTLER

A. State Manifest Document Number: PAE 5163572

B. State Gen. ID: PAD980550594

5. Transporter 1 Company Name: LAIDLAW ENV. SERVICES LTD.
6. US EPA ID Number: MIT270019904

C. State Trans. ID: PA-AH - 0523

7. Transporter 2 Company Name:
8. US EPA ID Number:

D. Transporter's Phone (519-864-1201

E. State Trans. ID: PA-AH

9. Designated Facility Name and Site Address
LAIDLAW ENVIRONMENTAL SERVICES (SARNIA) LTD.
R.R. #1, 4090 TELFER ROAD
CORUNNA, ON N0N 1G0
10. US EPA ID Number: MIT270019904

F. Transporter's Phone ( )

G. State Facility"s ID: MIT270019904

H. Facility's Phone (519) 864-1021

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ. WASTE ENVIRONMENTALLY HAZARDOUS SUBSTANCES SOLID, NOS. (BENZENE), 9; UN3077; PG: III	001	DT	40460	P	K051
b.					
c.					
d.					

Additional Descriptions for Materials Listed Above

	Lab Pack	Physical State		Lab Pack	Physical State
a.		S	c.		
b.			d.		

K. Handling Codes for Wastes Listed Above

a.	c.
b.	d.

15. Special Handling Instructions and Additional Information
ADDITIONAL CODES: F037, F038, D018.
WASTE CODES: 'G' ERG #171 ATTACHED
POINT OF DEPARTURE: BUFFALO, NY. - DATE: 01/03/97 #5TK
NAME: Paul Saunders
IN CASE OF EMERGENCY CONTACT LAIDLAW ENVIRONMENTAL SERVICES LTD.
24 HOURS AT - 1-800-265-7549 OR 1519-864-1201/1021.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.
CONFORMS TO THE TERMS OF THE ATTACHED EPA ACKNOWLEDGEMENT OF CONSENT

Printed/Typed Name: DAVID J KISTLER — Signature: [signature] — MONTH DAY YEAR: 01 30 97

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: PAUL SAUNDERS — Signature: [signature] — MONTH DAY YEAR: 01 30 97

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — MONTH DAY YEAR:

19. Discrepancy Indication Space

20. Facility owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name: Dan Kimball — Signature: [signature] — MONTH DAY YEAR: 01 30 97

GENERATOR — TRANSPORTER — FACILITY

In case of an emergency or spill immediately call the National Response Center (800) 424-8802 and the PA DER (717) 787-4343

PAE 5163572

EPA Form 8700-22 (Rev. 9/88) Previous editions are obsolete

Copy 5 - TSD Facility: Mail to Generator

Copy 8 - Generator: Retain This Copy

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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES
Bureau of Waste Management
P.O. Box 8550
Harrisburg, PA 17105-8550
OFFICIAL PENNSYLVANIA MANIFEST FORM

ER-WM-51 REV. 10/94

Form approved. OMB No. 2050-0039 Expires 9-30-96

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. PAD980530994 Manifest Document No. 63690

2. Page 1 of

Information within the blue border is not required by Federal law but may be required by State law.

Generator's Name and Mailing Address
SUN COMPANY, INC. (R & M) - MARCUS HOOK REFINERY
DELAWARE AVENUE & GREEN STREET, MARCUS HOOK, PA 19061
610-859-1178 ATTN: DAVE KISTLER

A. State Manifest Document Number: PAE 5163690

B. State Gen. ID: PAD980530994

5. Transporter 1 Company Name: LAIDLAW ENV. SERVICES LTD.
6. US EPA ID Number: MIT270019904

C. State Trans. ID: PA-AH 0523

7. Transporter 2 Company Name
8. US EPA ID Number

D. Transporter's Phone ( ) 519-864-1291

E. State Trans. ID: PA-AH

9. Designated Facility Name and Site Address
LAIDLAW ENVIRONMENTAL SERVICES (SARNIA) LTD.
R.R. #1, 4090 TELFER ROAD
CORUNNA, ON N0N 1G0
10. US EPA ID Number: MIT270019904

F. Transporter's Phone ( )

G. State Facility's ID: MIT270019904

H. Facility's Phone (519) 864-1021

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ, WASTE ENVIRONMENTALLY HAZARDOUS SUBSTANCES SOLID, NOS, (DIESEL), 9, UNNOTA, PG III	001	DT	40000	P	D019
b.					
c.					
d.					

Additional Descriptions for Materials Listed Above

	Lab Pack	Physical State		Lab Pack	Physical State
a.			c.		
b.			d.		

K. Handling Codes for Wastes Listed Above
a. c.
b. d.

15. Special Handling Instructions and Additional Information
ADDITIONAL CODES:
WASTE CODES: 'G' REG #171 ATTACHED TIME: 0410 AM 51TK.
POINT OF DEPARTURE: BUFFALO, NY. - DATE: MAR 13 97
NAME:
IN CASE OF EMERGENCY CONTACT LAIDLAW ENVIRONMENTAL SERVICES LTD.
24 HOURS AT 1-800-267-7340 OR (519)-864-1291/1021

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: DAVID J. KISTLER
Signature: [illegible]
Month 03 Day 12 Year 97

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: ALLAN ZAVITZ
Signature: [illegible]
Month 03 Day 12 Year 97

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name: KEVIN ADAMSON
Signature: [illegible]
Month 03 Day 13 Year 97

GENERATOR
TRANSPORTER
FACILITY

In case of an emergency or spill immediately call the National Response Center (800) 424-8802 and the PA DER (717) 787-4343

PAE 5163690

EPA Form 8700-22 (Rev. 9/88) Previous editions are obsolete

Copy 5 - TSD Facility: Mail to Generator
Copy 8 - Generator: Retain This Copy

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APPENDIX E

ANALYTICAL RESULTS OF PIPING LOOP RINSATE SAMPLING

TAF E E-1
Piping Loop Rinsate Analyses
Solid Waste Facility Closure
Sunoco Marcus Hook Refinery

Parameter	Clearance Level in Approved Closure Plan (ug/l)	Sample ID SWC-001 (ug/l)	Sample ID SWC-002 (ug/l)	Sample ID SWC-003 (ug.l)	Sample ID SWC-004 (ug/l)	Sample ID SWC-005 (ug/l)
Anthracene	59	<10	<10	<10	<10	<10
Benzene	140	<5	9	9	<5	<25
Benzo(a)pyrene	61	<10	<10	<10	<10	<10
Benz(a)anthracene	59	<10	<10	<10	<10	<10
Bis(2-ethylhexyl) phthalate	280	<10	<10	<10	<10	<10
Chrysene	59	<10	<10	<10	<10	<10
Ethylbenzene	57	<5	<5	<5	<5	<25
Naphthalene	59	<10	<10	<10	<10	5*
Phenol	39	<10	<10	<10	<10	<10
Pyrene	67	<10	<10	<10	<10	<10
Toluene	80	<5	22	22	4*	18*
Xylenes-Meta&Para	320	<5	20	20	9	20*
Xylenes- Ortho	(total xylene)	<5	10	9	5*	9*
Cyanide - Total	1200	<50	<50	<50	<50	<50
Chromium	2770	<10	<10	<10	<10	<10
m-Cresol {3-Methylphenol}	770	NA	NA	NA	NA	NA
o-Cresol {2-Methylphenol}	770	<10	<10	<10	<10	<10
p- Cresol {4-Methylphenol}	110	<10	<10	<10	<10	<10
Lead	690	<5	<5	<5	<5	<5
2,4-Dimethylphenol	36	<10	<10	<10	<10	<10
Fluorene	59	<10	<10	<10	<10	<10
Acenaphthene	59	<10	<10	<10	<10	<10
Carbon Disulfide	3800	<5	<5	<5	<5	<25
Di-n-butyl phthalate	57	<10	<10	<10	<10	<10
Phenathrene	59	<10	<10	<10	<10	7*

TAE ` E-1
Piping Loop Rinsate Analyses
Solid Waste Facility Closure
Sunoco Marcus Hook Refinery

Parameter	Clearance Level in Approved Closure Plan (ug/l)	Sample ID SWC-006 (ug/l)	Sample ID SWC-007 (ug.l)	Sample ID SWC-008 (ug/l)	Sample ID SWC-009 (ug/l)	Sample ID SWC-010 (ug/l)
Anthracene	59	<10	<10	<10	<11	<10
Benzene	140	6	10	8	4*	130
Benzo(a)pyrene	61	<10	<10	<10	<11	<10
Benz(a)anthracene	59	<10	<10	<10	<11	<10
Bis(2-ethylhexyl) phthalate	280	<10	<10	<10	<11	<10
Chrysene	59	<10	<10	<10	<11	<10
Ethylbenzene	57	5	11	11	5*	**77**
Naphthalene	59	14	13	10	9*	27
Phenol	39	<10	<10	<10	<11	<10
Pyrene	67	<10	<10	<10	<11	<10
Toluene	80	<5*	<5*	<5*	<5*	18
Xylenes-Meta&Para	320	110	120	110	77	**390**
Xylenes- Ortho	(total xylene)	7	5	4*	3*	91
Cyanide - Total	1200	<50	<50	<50	<50	<50
Chromium	2770	<10	<10	<10	<10	<10
m-Cresol {3-Methylphenol}	770	NA	NA	NA	NA	NA
o-Cresol {2-Methylphenol}	770	<10	<10	<10	<11	<10
p- Cresol {4-Methylphenol}	110	<10	<10	<10	<11	<10
Lead	690	<5	<5	<5	<5	<5
2,4-Dimethylphenol	36	<10	<10	<10	<11	<10
Fluorene	59	<10	<10	<10	<11	<10
Acenaphthene	59	<10	<10	<10	<11	<10
Carbon Disulfide	3800	<5	<5	<5	<5	<5
Di-n-butyl phthalate	57	<10	<10	<10	<11	<10
Phenathrene	59	7*	7*	<10	<11	<10

TAF ` E-1
Piping Loop Rinsate Analyses
Solid Waste Facility Closure
Sunoco Marcus Hook Refinery

Parameter	Clearance Level in Approved Closure Plan (ug/l)	Sample ID SWC-011 (ug.l)	Sample ID SWC-012 ug/l)	Sample ID SWC-013 (ug/l)
Anthracene	59	<10	<10	<10
Benzene	140	12	10	17
Benzo(a)pyrene	61	<10	<10	<10
Benz(a)anthracene	59	<10	<10	<10
Bis(2-ethylhexyl) phthalate	280	<10	<10	<10
Chrysene	59	<10	<10	<10
Ethylbenzene	57	7	6	10
Naphthalene	59	7*	8*	12
Phenol	39	<10	<10	<10
Pyrene	67	<10	<10	<10
Toluene	80	3*	3*	4*
Xylenes-Meta&Para	320	32	28	110
Xylenes- Ortho	(total xylene)	17	15	27
Cyanide - Total	1200	<50	<50	<50
Chromium	2770	<10	<10	<10
m-Cresol {3-Methylphenol}	770	NA	NA	NA
o-Cresol {2-Methylphenol}	770	<10	<10	<10
p- Cresol {4-Methylphenol}	110	<10	<10	<10
Lead	690	<5	<5	<5
2,4-Dimethylphenol	36	<10	<10	<10
Fluorene	59	<10	<10	<10
Acenaphthene	59	<10	<10	<10
Carbon Disulfide	3800	<5	<5	<5
Di-n-butyl phthalate	57	<10	<10	<10
Phenathrene	59	<10	<10	<10

Source: Washington Group Environmental Services Laboratory Analytical Report August 2, 2002, 2002; See Appendix E

* Result is estimated. Usually this qualifier indicated the reported concentration is below laboratory's reporting limit

NA not analyzed

Bolded results indicate detected concentration exceeds the Scope of Work Clearance Level

THE WASHINGTON GROUP
ENVIRONMENTAL SERVICES LABORATORY

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Report For:

Sunoco, Inc.
Ms. Judy Brackin
P.O. Box 426
Marcus Hook PA 19061

Job Number

75700702

Summary Number

69564

August 02, 2002

Reviewed by 8/14/2 [illegible]
Project Manager Elizabeth Witouski

NJ ID# PA343	EPA ID# PA00078	PA ID# 23-272
CA ID# 02105CA	RI ID# 238	CT ID# PH0687
NY ID# 11345	MD ID# 286	MA ID# M-PA078

Total Pages = 76

Th ashington Group International
Environmental Services Laboratory Data Summary
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Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288671A	SWC-001	757	EXT BNA H2O			COMPLETE	07/18/2002	07/25/2002	07/29/2002	DJN
288671A	SWC-001	G08	1,2,4-Trichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	1,2-Dichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	1,3-Dichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	1,4-Dichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	2,4,5-Trichlorophenol	ND	19	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	2,4,6-Trichlorophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	2,4-Dichlorophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	2,4-Dimethylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	2,4-Dinitrophenol	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	2,4-Dinitrotoluene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	2,6-Dinitrotoluene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	2-Chloronaphthalene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	2-Chlorophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	2-Methylnaphthalene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	2-Methylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	2-Nitroaniline	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	2-Nitrophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	3,3'-Dichlorobenzidine	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	3-Nitroaniline	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	4,6-Dinitro-2-methylphenol	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	4-Bromophenyl phenyl ether	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	4-Chloro-3-methylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	4-Chloroaniline	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	4-Chlorophenyl phenyl ether	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	4-Methylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	4-Nitroaniline	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	4-Nitrophenol	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Acenaphthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Acenaphthylene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Aniline	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Anthracene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB

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Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288671A	SWC-001	G08	Benz(a)anthracene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Benzo(a)pyrene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Benzo(b)fluoranthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Benzo(ghi)perylene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Benzo(k)fluoranthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Benzoic acid	ND	48	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Benzyl alcohol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Bis(2-chloroethoxy)methane	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Bis(2-chloroethyl)ether	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Bis(2-chloroisopropyl) ethe	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Bis(2-ethylhexyl) phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Butyl benzyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Chrysene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Di-n-butyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Di-n-octyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Dibenz(a,h)anthracene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Dibenzofuran	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Diethyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Dimethyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Fluoranthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Fluorene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Hexachlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Hexachlorobutadiene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Hexachlorocyclopentadiene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Hexachloroethane	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Isophorone	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	N-Nitrosodi-n-propylamine	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	N-Nitrosodiphenylamine	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Naphthalene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Nitrobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Pentachlorophenol	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Phenanthrene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Phenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288671A	SWC-001	G08	Pyrene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB

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Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288671B	SWC-001	G18	Benzene	ND	5	ug/L	07/18/2002	07/29/2002	07/29/2002	PSS
288671B	SWC-001	G18	Carbon Disulfide	ND	5	ug/L	07/18/2002	07/29/2002	07/29/2002	PSS
288671B	SWC-001	G18	Ethylbenzene	ND	5	ug/L	07/18/2002	07/29/2002	07/29/2002	PSS
288671B	SWC-001	G18	Toluene	ND	5	ug/L	07/18/2002	07/29/2002	07/29/2002	PSS
288671B	SWC-001	G18	Xylenes-Meta&Para	ND	5	ug/L	07/18/2002	07/29/2002	07/29/2002	PSS
288671B	SWC-001	G18	Xylenes-Ortho	ND	5	ug/L	07/18/2002	07/29/2002	07/29/2002	PSS
288671C	SWC-001	310	Cyanide, Total	ND (0.05)		mg/l	07/18/2002	07/30/2002	08/01/2002	GCW
288671D	SWC-001	200	AA,Digest H2O			COMPLETE	07/18/2002	07/19/2002	07/19/2002	ART
288671D	SWC-001	227IC	Cr Chromium	ND<0.010		mg/l	07/18/2002	07/29/2002	07/29/2002	CAK
288671D	SWC-001	249IC	Pb Lead	ND<0.0050		mg/l	07/18/2002	07/29/2002	07/29/2002	CAK
288672A	SWC-002	757	EXT BNA H2O			COMPLETE	07/18/2002	07/25/2002	07/29/2002	DJN
288672A	SWC-002	G08	1,2,4-Trichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	1,2-Dichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	1,3-Dichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	1,4-Dichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	2,4,5-Trichlorophenol	ND	19	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	2,4,6-Trichlorophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	2,4-Dichlorophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	2,4-Dimethylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	2,4-Dinitrophenol	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	2,4-Dinitrotoluene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	2,6-Dinitrotoluene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	2-Chloronaphthalene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	2-Chlorophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	2-Methylnaphthalene	14	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	2-Methylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	2-Nitroaniline	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	2-Nitrophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB

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Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288672A	SWC-002	G08	3,3'-Dichlorobenzidine	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	3-Nitroaniline	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	4,6-Dinitro-2-methylphenol	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	4-Bromophenyl phenyl ether	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	4-Chloro-3-methylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	4-Chloroaniline	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	4-Chlorophenyl phenyl ether	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	4-Methylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	4-Nitroaniline	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	4-Nitrophenol	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Acenaphthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Acenaphthylene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Aniline	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Anthracene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Benz(a)anthracene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Benzo(a)pyrene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Benzo(b)fluoranthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Benzo(ghi)perylene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Benzo(k)fluoranthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Benzoic acid	ND	49	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Benzyl alcohol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Bis(2-chloroethoxy)methane	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Bis(2-chloroethyl)ether	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Bis(2-chloroisopropyl) ethe	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Bis(2-ethylhexyl) phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Butyl benzyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Chrysene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Di-n-butyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Di-n-octyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Dibenz(a,h)anthracene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Dibenzofuran	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Diethyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Dimethyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Fluoranthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Fluorene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69564 Printed - 08/02/02 07:34:53

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288672A	SWC-002	G08	Hexachlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Hexachlorobutadiene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Hexachlorocyclopentadiene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Hexachloroethane	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Isophorone	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	N-Nitrosodi-n-propylamine	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	N-Nitrosodiphenylamine	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Naphthalene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Nitrobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Pentachlorophenol	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Phenanthrene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Phenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672A	SWC-002	G08	Pyrene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288672B	SWC-002	G18	Benzene	9	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288672B	SWC-002	G18	Carbon Disulfide	ND	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288672B	SWC-002	G18	Ethylbenzene	ND	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288672B	SWC-002	G18	Toluene	22	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288672B	SWC-002	G18	Xylenes-Meta&Para	20	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288672B	SWC-002	G18	Xylenes-Ortho	10	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288672C	SWC-002	310	Cyanide, Total	ND (0.05)		mg/l	07/18/2002	07/30/2002	08/01/2002	GCW
288672D	SWC-002	200	AA,Digest H2O			COMPLETE	07/18/2002	07/19/2002	07/19/2002	ART
288672D	SWC-002	227IC	Cr Chromium	ND<0.010		mg/l	07/18/2002	07/29/2002	07/29/2002	CAK
288672D	SWC-002	249IC	Pb Lead	ND<0.0050		mg/l	07/18/2002	07/29/2002	07/29/2002	CAK
288673A	SWC-003	757	EXT BNA H2O			COMPLETE	07/18/2002	07/25/2002	07/29/2002	DJN
288673A	SWC-003	G08	1,2,4-Trichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	1,2-Dichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69564 Printed - 08/02/02 07:34:53

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288673A	SWC-003	G08	1,3-Dichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	1,4-Dichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	2,4,5-Trichlorophenol	ND	19	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	2,4,6-Trichlorophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	2,4-Dichlorophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	2,4-Dimethylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	2,4-Dinitrophenol	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	2,4-Dinitrotoluene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	2,6-Dinitrotoluene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	2-Chloronaphthalene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	2-Chlorophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	2-Methylnaphthalene	15	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	2-Methylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	2-Nitroaniline	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	2-Nitrophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	3,3'-Dichlorobenzidine	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	3-Nitroaniline	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	4,6-Dinitro-2-methylphenol	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	4-Bromophenyl phenyl ether	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	4-Chloro-3-methylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	4-Chloroaniline	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	4-Chlorophenyl phenyl ether	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	4-Methylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	4-Nitroaniline	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	4-Nitrophenol	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Acenaphthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Acenaphthylene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Aniline	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Anthracene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Benz(a)anthracene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Benzo(a)pyrene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Benzo(b)fluoranthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Benzo(ghi)perylene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Benzo(k)fluoranthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Benzoic acid	ND	48	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69564 Printed - 08/02/02 07:34:53

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288673A	SWC-003	G08	Benzyl alcohol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Bis(2-chloroethoxy)methane	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Bis(2-chloroethyl)ether	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Bis(2-chloroisopropyl) ethe	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Bis(2-ethylhexyl) phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Butyl benzyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Chrysene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Di-n-butyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Di-n-octyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Dibenz(a,h)anthracene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Dibenzofuran	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Diethyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Dimethyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Fluoranthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Fluorene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Hexachlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Hexachlorobutadiene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Hexachlorocyclopentadiene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Hexachloroethane	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Isophorone	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	N-Nitrosodi-n-propylamine	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	N-Nitrosodiphenylamine	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Naphthalene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Nitrobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Pentachlorophenol	ND	24	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Phenanthrene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Phenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673A	SWC-003	G08	Pyrene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288673B	SWC-003	G18	Benzene	9	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288673B	SWC-003	G18	Carbon Disulfide	ND	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288673B	SWC-003	G18	Ethylbenzene	ND	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288673B	SWC-003	G18	Toluene	22	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288673B	SWC-003	G18	Xylenes-Meta&Para	20	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69564 Printed - 08/02/02 07:34:53

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288673B	SWC-003	G18	Xylenes-Ortho	9	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288673C	SWC-003	310	Cyanide, Total	ND (0.05)		mg/l	07/18/2002	07/30/2002	08/01/2002	GCW
288673D	SWC-003	200	AA,Digest H2O			COMPLETE	07/18/2002	07/19/2002	07/19/2002	ART
288673D	SWC-003	227IC	Cr Chromium	ND<0.010		mg/l	07/18/2002	07/29/2002	07/29/2002	CAK
288673D	SWC-003	249IC	Pb Lead	ND<0.0050		mg/l	07/18/2002	07/29/2002	07/29/2002	CAK

Approved by: _____

Report Prep: _____

THE WASHINGTON GROUP
ENVIRONMENTAL LABORATORY

Methods Used for Summary# 69564:

Code	Description
200	Total Metals, Aqueous/FLAA,GFAA,ICP/SW846/EPA 200 Series
227IC	Chromium by ICP/EPA 200.7/SW846 6010
249IC	Lead by ICP/EPA 200.7/SW846 6010
310	Total Cyanide/spectrophotometric,automated 335.4 /dist+335.3
757	Extraction Procedure B/N and Acids (H2O) SW-846 Method 3520C
G08	Base/Neutral and Acid Extractable/SW-846 Meth 8270C TCL List
G18	GC/MS VOA (TCL List)/SW-846 Method 5035/8260B

DATA QUALIFIERS

The following list shows data qualifiers that may appear in this report, and the meaning of each.

Qualifier	Meaning
B	Compound was detected in the associated blank.
D	Result was obtained from a different dilution than other analytes.
E	Result is estimated. Usually, this qualifier indeicates that the result is above the calibrated range of the instrument
J	Result is estimated. Usually this qualifier indicates the reported concentration is below the laboratory's reporting limit.
N	Indicates a Tentatively Identified Compound.
ND	Analyte was not detected.
U	Analyte was not detected (U and ND qualifiers are interchangable).

ABBREVIATIONS

The following list shows abbreviations that commonly occur in analytical reports.

Abbreviation	Meaning
DL	Dilution
LCS	Laboratory Control Sample
LCSS	Laboratory Control Sample (soil)
LCSW	Laboratory Control Sample (water)
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NR	No Recovery
PB	Preparation Blank
PS	Post-Digestion Spike
RE	Reanalysis
RPD	Relative Percent Difference
SR	Serial Dilution

Quote No:

Washington Laboratory Chain Of Custody

Ship To:

Lab Job No: 75700702

Washington Group Laboratory
301 Chelsea Parkway
Boothwyn, PA 19061
Phone: 610-497-8000
Fax: 610-497-8005

Client/Office: Sunoco - Marcus Hook Ref Phone: 215-977-3856

Address: Delaware Ave + Green Street, Marcus Hook PA

Send report to: Judy Brackin Fax: 215-977-6549

Project Description: Solid Waste Closure

Send invoice to: Judy Brackin

Address: Sunoco Inc 1801 Market St Phila, PA 19103

P.O. No:

TAT (for data): Identify number of working days below);...or Date-->:

☐ Rush 1 2 3 4 5 days ☐ Firm(6-12) ☒ Std.(-12) ____ ☐ Other ____

Lab Staffer confirming Rush/Firm: ____ Hardcopy TAT Date?: ____

Report Type: ☐ Results only ☒ Data +QC ☐ Reduced Deliv. ☐ Other: ____
☐ Regulatory Format (CLP like) ☐ Electronic/disk->(Format?) ____

Regulatory Samples? ☒ YES ☐ NO

If YES?: ☐ Act II ☐ UST ☒ RCRA ☐ NPDES ☐ Phase I/II ☐ ISRA ☐ Other: ____

Analytical Protocol: ☒ SW846 ☐ EPA600 ☐ Drinking H2O ☐ ASTM ☐ Other: ____

Analysis Required

Lab Use Only
rev. 10/12/99
Due Date:
Cooler Tmp 7 deg C
custody seal yes ___ no ✓
No.:
Summary No. 69564
Lab Log No:

Sample Data (NJ HAZITE disk deliverable limits sample ID to 7 Characters)

ID (NJ limit=7 characters)	date	time	matrix	grab	comp	Container Data type	no.	preservative	pH	SVOA 8270	VOA 8260	Total CN	Pb & Total Cr	Lab Log No.
SWC-001	7/18	0945	H_2O	X		A/G	2	—		X				288671 A-1,2
			H_2O	X		VOA	2	HCl			X			B-1,2
			H_2O	X		P250	1	NaOH	>12			X		C
			H_2O	X		P500	1	HNO_3	<2				X	D
SWC-002	7/18	0945	H_2O	X		A/G	2			X				288672 A-1,2
			H_2O	X		VOA	2	HCl			X			B-1,2
			H_2O	X		P250	1	NaOH	>12			X		C
			H_2O	X		P500	1	HNO_3	<2				X	D
SWC-003	7/18	0950	H_2O	X		A/G	2			X				288673 A-1,2
			H_2O	X		VOA	2	HCl			X			B-1,2
			H_2O	X		P250	1	NaOH	>12			X		C
			H_2O	X		P500	1	HNO_3	<2				X	D

Comments/Special Handling/Storage/Disposal-->: Note: must have detection limits at or below clearance levels in Attched Table 1

Sampled by: Kulp + Brackin

Phone no: 215-977-3856

Relinquished By:		Received By:		Method of Shipment
Name: Judy Brackin	Date: 7/18/02	Name: Debbie Hoag	Date: 7/18/02	Airbill No.
Organization: Sunoco	Time: 10:45	Organization: TO GINT	Time: 1045	
Name:	Date:	Name:	Date:	
Organization:	Time:	Organization:	Time:	
Name:	Date:	Name:	Date:	
Organization:	Time:	Organization:	Time:	

Washington
Environmental Laboratory

SAMPLE RECEIVING CHECKLIST

Client/Site: Sun Refining Assigned Summary # 69564

Section 1. Laboratory Courier (omit if samples received directly from client or 3rd party)

1.1 Samples taken by lab personnel?	☐ Yes	☐ No	
Preserved in field?	☐ Yes	☐ No	☐ Not Req.
Stored on ice?	☐ Yes	☐ No	☐ Not Req.
Date/time last sample placed in cooler: _____			
1.2 Samples taken by customer or 3rd party?	☐ Yes	☐ No	
Received under refrigeration?	☐ Yes (cooler)	☐ Yes (refrig.)	☐ No
If yes, in Cooler sealed?	☐ Yes	☐ No	
If no, ice present?	☐ Yes	☐ No	
Ice added?	☐ Yes	☐ No	
If refrig. placed in cooler/iced	☐ Yes	☐ No	

Section 2. Laboratory

2.1 Delivered by	☒ Client	☐ Lab Pers	☐ Parcel Svc
2.2 Packaging	☒ Cooler	☐ Other/none	
Custody Seals	☐ Present	☒ Absent	☐ Broken
Ice	☒ Present	☐ Absent	☐ Melted
Temperature	7 °C		
2.3 Documentation			
Airbill Present	☐ Yes, #_____		☒ No
COC	☒ Rec'd		☐ Prpd by Lab
2.4 Sample Containers			
Appropriate for specified analyses?	☒ Yes	☐ No*	
Intact?	☒ Yes	☐ No*	
Labeled, and labels legible?	☒ Yes	☐ No*	
Labels agree with COC?	☒ Yes	☐ No*	
2.5 Preservation (water samples only)			
Metals pH<2	☒ Yes	☐ No*	☐ NA
Cyanides pH >12	☒ Yes	☐ No*	☐ NA
Sulfides pH >9	☐ Yes	☐ No*	☒ NA
BNA, Pest, PCB, CN, Phenols, NO_3 Cl_2 absent	☒ Yes	☐ No*	☐ NA
TOC, COD, Oil/Grease, Phenols, TPH pH<2	☐ Yes	☐ No*	☒ NA
TOX, TKN, NH3, Tot. P. pH<2	☐ Yes	☐ No*	☒ NA
Were preservatives added at lab?	☐ Yes*	☒ No	☐ N/A

Comments (note: any response marked "*" requires detailed explanation identify specific samples, what was wrong, and what was done)

Initials: KW Date: 7/18/02

admin3/QA/IList/SR Checlist rev10/01

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: The Washington Group International

Lab Sample ID

288684C	288684CSR
288684CPS	288685C
288686C	288615D
288616D	288617D
288618D	288619D
288620D	288671D
288672D	288673D
288613B	288614B
288678	288680B
288681	288682
288709	

Were ICP interelement corrections applied? Yes/No

Were ICP background corrections applied? Yes/No

If Yes - were raw data generated before application of background corrections Yes/No

Comments:

Batch ID: 567 Analysis Start Time: 959

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Laboratory Manager's designee, as verified by the following signature.

Signature: Candia Knauls Name: Candia Knauls

Date: 7292 Title:

Data File: bjul29.

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Initial/Continuing Calibration Source :_____

Concentration Units: mg/l

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R *	CCV-1 True	CCV-1 Found	CCV-1 %R	CCV-2 Found	CCV-2 %R	CCV-3 Found	CCV-3 %R
Aluminum	2.00	2.07	103.5	2.00	1.96	98.0	1.95	97.5	1.93	96.5
Antimony	0.50	0.50	100.9	0.50	0.51	101.4	0.50	100.1	0.49	98.9
Arsenic	0.50	0.48	96.7	0.50	0.50	99.4	0.49	98.2	0.49	97.3
Barium	2.00	1.96	98.0	2.00	1.98	99.0	1.96	98.0	1.93	96.5
Beryllium	0.05	0.05	97.6	0.05	0.05	98.0	0.05	96.8	0.05	95.6
Cadmium	0.25	0.25	98.6	0.25	0.25	99.1	0.24	97.7	0.24	96.5
Calcium	5.00	5.01	100.2	5.00	5.00	100.0	5.00	100.0	5.01	100.2
Chromium	0.20	0.20	99.0	0.20	0.20	99.0	0.20	98.0	0.19	96.5
Cobalt	0.50	0.49	98.2	0.50	0.49	98.8	0.49	97.4	0.48	96.4
Copper	0.25	0.25	99.2	0.25	0.25	98.8	0.25	98.0	0.24	96.8
Iron	1.00	0.97	97.3	1.00	0.96	96.4	0.96	95.7	0.95	94.9
Lead	0.50	0.49	98.4	0.50	0.50	100.1	0.49	98.6	0.49	97.6
Magnesium	5.00	4.91	98.2	5.00	4.96	99.2	4.90	98.0	4.84	96.8
Manganese	0.50	0.50	99.2	0.50	0.49	98.6	0.49	97.8	0.48	96.6
Molybdenum	0.50	0.48	96.8	0.50	0.50	99.2	0.49	97.8	0.48	96.6
Nickel	0.50	0.49	98.4	0.50	0.50	99.2	0.49	97.4	0.48	96.4
Selenium	0.50	0.48	97.0	0.50	0.50	99.2	0.49	97.3	0.49	97.6
Titanium	0.50	0.49	98.2	0.50	0.49	98.6	0.49	97.4	0.48	96.4
Silver	0.25	0.25	98.4	0.25	0.25	98.4	0.24	97.2	0.24	96.4
Sodium	5.00	4.89	97.8	5.00	4.91	98.2	4.85	97.0	4.73	94.6
Thallium	0.50	0.51	102.4	0.50	0.49	98.0	0.49	97.3	0.48	96.3
Vanadium	0.50	0.50	99.2	0.50	0.49	98.4	0.49	97.4	0.48	96.2
Zinc	0.50	0.49	97.2	0.50	0.49	98.4	0.48	96.8	0.48	96.0

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

bjul29.

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Initial Calibration Source :_____

Continuing Calibration Source:_____

Analyte	True	CCV-4 Found	%R	CCV-5 Found	%R	CCV-6 Found	%R
Aluminum	2.00	1.98	99.0	1.97	98.5	1.90	95.0
Antimony	0.50	0.50	100.2	0.50	99.7	0.49	98.9
Arsenic	0.50	0.49	98.3	0.49	97.1	0.48	96.9
Barium	2.00	1.98	99.0	1.96	98.0	1.92	96.0
Beryllium	0.05	0.05	97.8	0.05	96.8	0.05	95.0
Cadmium	0.25	0.25	99.0	0.24	97.5	0.24	95.2
Calcium	5.00	5.02	100.4	5.00	100.0	4.89	97.8
Chromium	0.20	0.20	98.0	0.19	97.5	0.19	97.0
Cobalt	0.50	0.49	98.2	0.49	97.6	0.47	95.0
Copper	0.25	0.25	99.6	0.25	98.4	0.24	95.6
Iron	1.00	0.96	96.5	0.96	95.6	0.94	94.4
Lead	0.50	0.49	98.6	0.49	97.8	0.49	97.5
Magnesium	5.00	4.95	99.0	4.90	98.0	4.81	96.2
Manganese	0.50	0.49	98.8	0.49	98.0	0.48	96.2
Molybdenum	0.50	0.49	98.0	0.48	96.8	0.48	96.6
Nickel	0.50	0.49	98.6	0.49	97.4	0.47	94.8
Selenium	0.50	0.49	98.3	0.48	96.9	0.49	97.0
Titanium	0.50	0.49	98.8	0.49	97.4	0.48	95.4
Silver	0.25	0.25	98.8	0.25	98.0	0.24	96.0
Sodium	5.00	4.92	98.4	4.89	97.8	4.85	97.0
Thallium	0.50	0.49	98.1	0.49	97.1	0.47	94.1
Vanadium	0.50	0.49	98.4	0.49	97.6	0.48	95.8
Zinc	0.50	0.49	98.4	0.49	97.0	0.47	94.6

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Initial Calibration Source : _____

Continuing Calibration Source: _____

Analyte		CCV-7		CCV-8		CCV-9	
	True	Found	%R	Found	%R	Found	%R
Aluminum	2.00	1.97	98.5	1.91	95.5	1.89	94.5
Antimony	0.50	0.49	98.2	0.49	98.9	0.49	97.7
Arsenic	0.50	0.48	96.8	0.48	97.0	0.48	95.5
Barium	2.00	1.97	98.5	1.93	96.5	1.93	96.5
Beryllium	0.05	0.05	97.6	0.05	95.2	0.05	94.8
Cadmium	0.25	0.24	97.7	0.24	96.0	0.24	95.3
Calcium	5.00	4.94	98.8	4.90	98.0	4.88	97.6
Chromium	0.20	0.19	97.0	0.19	97.5	0.19	96.5
Cobalt	0.50	0.49	97.8	0.48	95.6	0.48	95.2
Copper	0.25	0.25	98.4	0.24	96.0	0.24	95.2
Iron	1.00	0.95	95.5	0.94	93.7	0.94	93.8
Lead	0.50	0.49	97.2	0.49	97.8	0.48	96.4
Magnesium	5.00	4.95	99.0	4.84	96.8	4.83	96.6
Manganese	0.50	0.49	98.6	0.48	96.8	0.48	96.4
Molybdenum	0.50	0.48	96.2	0.49	97.0	0.48	95.8
Nickel	0.50	0.49	97.8	0.48	95.8	0.48	95.4
Selenium	0.50	0.48	96.6	0.48	96.8	0.48	95.3
Titanium	0.50	0.49	98.0	0.48	95.8	0.48	95.2
Silver	0.25	0.25	98.8	0.24	96.4	0.24	96.0
Sodium	5.00	4.93	98.6	4.83	96.6	4.69	93.8
Thallium	0.50	0.48	95.7	0.48	96.5	0.48	95.1
Vanadium	0.50	0.49	98.4	0.48	96.6	0.48	96.4
Zinc	0.50	0.49	97.4	0.48	95.6	0.47	94.6

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

bjul29.

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Preparation Blank Matrix (soil/water) :Water

Preparation Blank Concentration Units (mg/L or mg/Kg) :mg/L

Analyte	Initial Calib. Blank	Continuing Calibration 1	2	3	
Aluminum	ND	ND	ND	ND	
Antimony	ND	0.0080	0.0063	0.0074	
Arsenic	ND	ND	ND	ND	
Barium	ND	ND	ND	ND	
Beryllium	ND	ND	ND	ND	
Cadmium	ND	ND	ND	ND	
Calcium	ND	ND	ND	ND	
Chromium	ND	ND	ND	ND	
Cobalt	ND	ND	ND	ND	
Copper	ND	ND	ND	ND	
Iron	ND	ND	ND	ND	
Lead	ND	ND	ND	ND	
Magnesium	ND	ND	ND	ND	
Manganese	ND	ND	ND	ND	
Molybdenum	ND	ND	ND	ND	
Nickel	ND	ND	ND	ND	
Selenium	ND	ND	ND	ND	
Titanium	ND	ND	ND	ND	
Silver	ND	ND	ND	ND	
Sodium	ND	ND	ND	ND	
Thallium	ND	ND	ND	ND	
Vanadium	ND	ND	ND	ND	
Zinc	ND	ND	ND	ND	

bjul29

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Preparation Blank Matrix (soil/water) :Water

Preparation Blank Concentration Units (mg/L or mg/Kg) :mg/L

Analyte	Continuing Calibration 4	5	6	
Aluminum	ND	ND	ND	
Antimony	ND	ND	ND	
Arsenic	ND	ND	ND	
Barium	ND	ND	ND	
Beryllium	ND	ND	ND	
Cadmium	ND	ND	ND	
Calcium	ND	ND	ND	
Chromium	ND	ND	ND	
Cobalt	ND	ND	ND	
Copper	ND	ND	ND	
Iron	ND	ND	ND	
Lead	ND	ND	ND	
Magnesium	ND	ND	ND	
Manganese	ND	ND	ND	
Molybdenum	ND	ND	ND	
Nickel	ND	ND	ND	
Selenium	ND	ND	ND	
Titanium	ND	ND	ND	
Silver	ND	ND	ND	
Sodium	ND	ND	ND	
Thallium	ND	ND	ND	
Vanadium	ND	ND	ND	
Zinc	ND	ND	ND	

9.

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Preparation Blank Matrix (soil/water) : Water

Preparation Blank Concentration Units (mg/L or mg/Kg) : mg/L

Analyte	Continuing Calibration 7	8	9	
Aluminum	ND	ND	ND	
Antimony	ND	0.0082	ND	
Arsenic	ND	ND	ND	
Barium	ND	ND	ND	
Beryllium	ND	ND	ND	
Cadmium	ND	ND	ND	
Calcium	ND	ND	ND	
Chromium	ND	ND	ND	
Cobalt	ND	ND	ND	
Copper	ND	ND	ND	
Iron	ND	ND	ND	
Lead	ND	ND	ND	
Magnesium	ND	ND	ND	
Manganese	ND	ND	ND	
Molybdenum	ND	ND	ND	
Nickel	ND	ND	ND	
Selenium	ND	ND	ND	
Titanium	ND	ND	ND	
Silver	ND	ND	ND	
Sodium	ND	ND	ND	
Thallium	ND	ND	ND	
Vanadium	ND	ND	ND	
Zinc	ND	ND	ND	

PREPARATION BLANK (Batch 567)

Lab Name: Washington Group Contract: _____

Matrix (soil/water): water

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Result
Aluminum	ND<0.2000
Antimony	ND<0.0060
Arsenic	ND<0.0080
Barium	ND<0.2000
Beryllium	ND<0.0020
Cadmium	ND<0.0050
Calcium	ND<1.0000
Chromium	ND<0.0100
Cobalt	ND<0.0100
Copper	ND<0.0200
Iron	ND<0.1000
Lead	ND<0.0050
Magnesium	ND<1.0000
Manganese	ND<0.0150
Molybdenum	ND<0.0100
Nickel	ND<0.0200
Selenium	ND<0.0200
Silver	ND<0.0100
Sodium	ND<1.0000
Thallium	ND<0.0100
Titanium	ND<0.0200
Vanadium	ND<0.0100
Zinc	ND<0.0200

US EPA - CLP
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

ICP ID Number:_____

Concentration Units: mg/l

Analyte	Solution A	Solution AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500	500	468	468	93.6			
Antimony		0.6		0.61	101.5			
Arsenic		0.1		0.09	94.7			
Barium		0.5		0.52	104.0			
Beryllium		0.5		0.50	99.5			
Cadmium		1.0		0.98	97.9			
Calcium	500	500	463	461	92.2			
Chromium		0.5		0.49	98.2			
Cobalt		0.5		0.50	99.8			
Copper		0.5		0.54	107.4			
Iron	200	200	188	188	94.0			
Lead		0.05		0.06	118.0			
Magnesium	500	500	492	491	98.2			
Manganese		0.5		0.51	102.8			
Molybdenum								
Nickel		1.0		0.97	96.7			
Selenium		0.05		0.04	88.2			
Titanium								
Silver		0.2		0.22	107.5			
Sodium								
Thallium		0.1		0.09	93.1			
Vanadium		0.5		0.50	99.2			
Zinc		1.0		1.06	106.0			

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288684C

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		0.251	0.000	0.25	100.40
Aluminum		2.000	0.000	2.00	100.00
Arsenic		0.503	0.000	0.50	100.68
Barium		2.060	0.000	2.00	103.00
Beryllium		0.051	0.000	0.05	101.20
Calcium		15.100	11.000	5.00	82.00
Cadmium		0.252	0.000	0.25	100.64
Cobalt		0.503	0.000	0.50	100.60
Chromium		0.205	0.000	0.20	102.50
Copper		0.586	0.340	0.25	98.40
Iron		1.270	0.270	1.00	100.00
Magnesium		7.670	2.800	5.00	97.40
Manganese		0.505	0.000	0.50	101.00
Molybdenum		0.511	0.000	0.50	102.20
Sodium		71.900	68.000	5.00	78.00
Nickel		0.500	0.000	0.50	100.00
Lead		0.512	0.000	0.50	102.46
Antimony		0.525	0.009	0.50	103.16
Selenium		0.511	0.000	0.50	102.18
Titanium		0.504	0.000	0.50	100.80
Thallium		0.491	0.000	0.50	98.10
Vanadium		0.505	0.000	0.50	101.00
Zinc		0.622	0.130	0.50	98.40

Comments:

NR = No Recovery

288684CMS Batch - 567
bjul29.567

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288684C

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		0.255	0.000	0.25	102.00
Aluminum		2.030	0.000	2.00	101.50
Arsenic		0.501	0.000	0.50	100.12
Barium		2.090	0.000	2.00	104.50
Beryllium		0.051	0.000	0.05	102.60
Calcium		15.600	11.000	5.00	92.00
Cadmium		0.255	0.000	0.25	102.04
Cobalt		0.510	0.000	0.50	102.00
Chromium		0.205	0.000	0.20	102.50
Copper		0.601	0.340	0.25	104.40
Iron		1.470	0.270	1.00	120.00
Magnesium		7.840	2.800	5.00	100.80
Manganese		0.513	0.000	0.50	102.60
Molybdenum		0.512	0.000	0.50	102.40
Sodium		74.500	68.000	5.00	130.00
Nickel		0.505	0.000	0.50	101.00
Lead		0.513	0.000	0.50	102.68
Antimony		0.530	0.009	0.50	104.20
Selenium		0.508	0.000	0.50	101.54
Titanium		0.509	0.000	0.50	101.80
Thallium		0.488	0.000	0.50	97.68
Vanadium		0.513	0.000	0.50	102.60
Zinc		0.634	0.130	0.50	100.80

Comments:

NR = No Recovery

288684CMSD Batch - 567
bjul29.567

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288684C

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		0.240	0.000	0.25	96.00
Aluminum		1.900	0.000	2.00	95.00
Arsenic		0.480	0.000	0.50	96.00
Barium		2.000	0.000	2.00	100.00
Beryllium		0.048	0.000	0.05	96.00
Calcium		15.000	11.000	5.00	80.00
Cadmium		0.240	0.000	0.25	96.00
Cobalt		0.480	0.000	0.50	96.00
Chromium		0.190	0.000	0.20	95.00
Copper		0.570	0.340	0.25	92.00
Iron		1.200	0.270	1.00	93.00
Magnesium		7.400	2.800	5.00	92.00
Manganese		0.490	0.000	0.50	98.00
Molybdenum		0.490	0.000	0.50	98.00
Sodium		71.000	68.000	5.00	60.00
Nickel		0.480	0.000	0.50	96.00
Lead		0.490	0.000	0.50	98.00
Antimony		0.490	0.009	0.50	96.26
Selenium		0.480	0.000	0.50	96.00
Titanium		0.480	0.000	0.50	96.00
Thallium		0.500	0.000	0.50	100.00
Vanadium		0.490	0.000	0.50	98.00
Zinc		0.600	0.130	0.50	94.00

Comments:

NR = No Recovery

288684CPS Batch - 567
bjul29.567

BATCH
DUPLICATE SAMPLE REPORT

LAB SAMPLE NO

288684CMS

Lab Name: The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Sample Result	Duplicate Result	% RPD
Silver	0.251	0.255	1.58
Aluminum	2.000	2.030	1.49
Arsenic	0.503	0.501	0.56
Barium	2.060	2.090	1.45
Beryllium	0.051	0.051	1.37
Calcium	15.100	15.600	3.26
Cadmium	0.252	0.255	1.38
Cobalt	0.503	0.510	1.38
Chromium	0.205	0.205	0.00
Copper	0.586	0.601	2.53
Iron	1.270	1.470	14.60
Magnesium	7.670	7.840	2.19
Manganese	0.505	0.513	1.57
Molybdenum	0.511	0.512	0.20
Sodium	71.900	74.500	3.55
Nickel	0.500	0.505	1.00
Lead	0.512	0.513	0.21
Antimony	0.525	0.530	0.99
Selenium	0.511	0.508	0.63
	0.504	0.509	0.99
Thallium	0.491	0.488	0.43
Vanadium	0.505	0.513	1.57
Zinc	0.622	0.634	1.91

Comments:

bjul29.

ICP SERIAL DILUTIONS

LAB SAMPLE NO

288684CSR

Lab Name: Raytheon Engineers Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Initial Result	Serial Dil. Result	% RPD
Silver	0.000	0.000	-----
Aluminum	0.000	0.000	-----
Arsenic	0.000	0.000	-----
Barium	0.000	0.000	-----
Beryllium	0.000	0.000	-----
Calcium	11.000	12.000	8.70
Cadmium	0.000	0.000	-----
Cobalt	0.000	0.000	-----
Chromium	0.000	0.000	-----
Copper	0.340	0.360	5.71
Iron	0.270	0.000	200.00
Magnesium	2.800	0.000	200.00
Manganese	0.000	0.000	-----
Molybdenum	0.000	0.000	-----
Sodium	68.000	68.000	0.00
Nickel	0.000	0.000	-----
Lead	0.000	0.000	-----
Antimony	0.009	0.046	136.38
Selenium	0.000	0.000	-----
Titanium	0.000	0.000	-----
Thallium	0.000	0.000	-----
Vanadium	0.000	0.000	-----
Zinc	0.130	0.140	7.41

Comments:

Batch 567

US EPA - CLP
7
LABORATORY CONTROL SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Solid LCS Source : _____

Aqueous LCS Source: _____

Analyte	Aqueous (mg/L) True	Found	%R
Aluminum	2.00	2.10	105.0
Antimony	0.50	0.53	105.5
Arsenic	0.50	0.50	100.2
Barium	2.00	2.06	103.0
Beryllium	0.05	0.05	101.6
Cadmium	0.25	0.26	102.7
Calcium	5.00	5.22	104.4
Chromium	0.20	0.21	103.5
Cobalt	0.50	0.51	103.0
Copper	0.25	0.26	103.6
Iron	1.00	1.03	103.0
Lead	0.50	0.52	103.0
Magnesium	5.00	5.08	101.6
Manganese	0.50	0.51	101.4
Molybdenum	0.50	0.51	102.0
Nickel	0.50	0.51	102.0
Selenium	0.50	0.51	102.3
Titanium	0.50	0.51	102.0
Silver	0.25	0.25	102.0
Sodium	5.00	5.03	100.6
Thallium	0.50	0.50	99.0
Vanadium	0.50	0.51	102.6
Zinc	0.50	0.51	101.4

µ129.567 Batch- 567

VOLATILE ORGANIC COMPOUNDS DATA SHEET

Washington Environmental Laboratory

69564

B SAMPLE # : 288671B
MATRIX : WATER
CLIENT ID : SWC-001
Sample wt/vol : 5ML

ANALYSIS DATE : 07/29/2002
RECVD DATE : 07/18/2002
ID FILE : g18sun3.id
DATA FILE : R2072930

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	ND	5
108-88-3	Toluene	ND	5
100-41-4	Ethylbenzene	ND	5
330-20-7	m&p-Xylenes	ND	5
95-47-6	o-Xylene	ND	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69564

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072930.D
Acq On : 29 Jul 2002 22:35
Sample : 288671B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 07:47:53 2002

Vial: 5
Operator: NRT
Inst : 5973R
Multiplr: 1.00
Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.81	168	283309	50.00 ug/l	0.01
26) 1,4-Difluorobenzene	13.13	114	364967	50.00 ug/l	0.00
40) Chlorobenzene-d5	17.79	117	287712	50.00 ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.27	152	144556	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	11.14	113	117467	56.83 ug/l	0.00
Spiked Amount 50.000			Recovery =	113.66%	
41) Toluene-d8	15.78	98	384031	47.13 ug/l	0.00
Spiked Amount 50.000			Recovery =	94.26%	
55) Bromofluorobenzene	19.45	94	20915	56.19 ug/l	0.00
Spiked Amount 50.000			Recovery =	112.38%	
Target Compounds					Qvalue
16) Methylene Chloride	8.05	84	4728	~~Below Cal~~ JRP 7/31/02	88
21) Chloroform	10.94	83	375407	82.89 ug/l	100
35) Bromodichloromethane	13.81	83	35045	12.60 ug/l	99

JRP 7/31/02

RSS 7/30

(#) = qualifier out of range (m) = manual integration

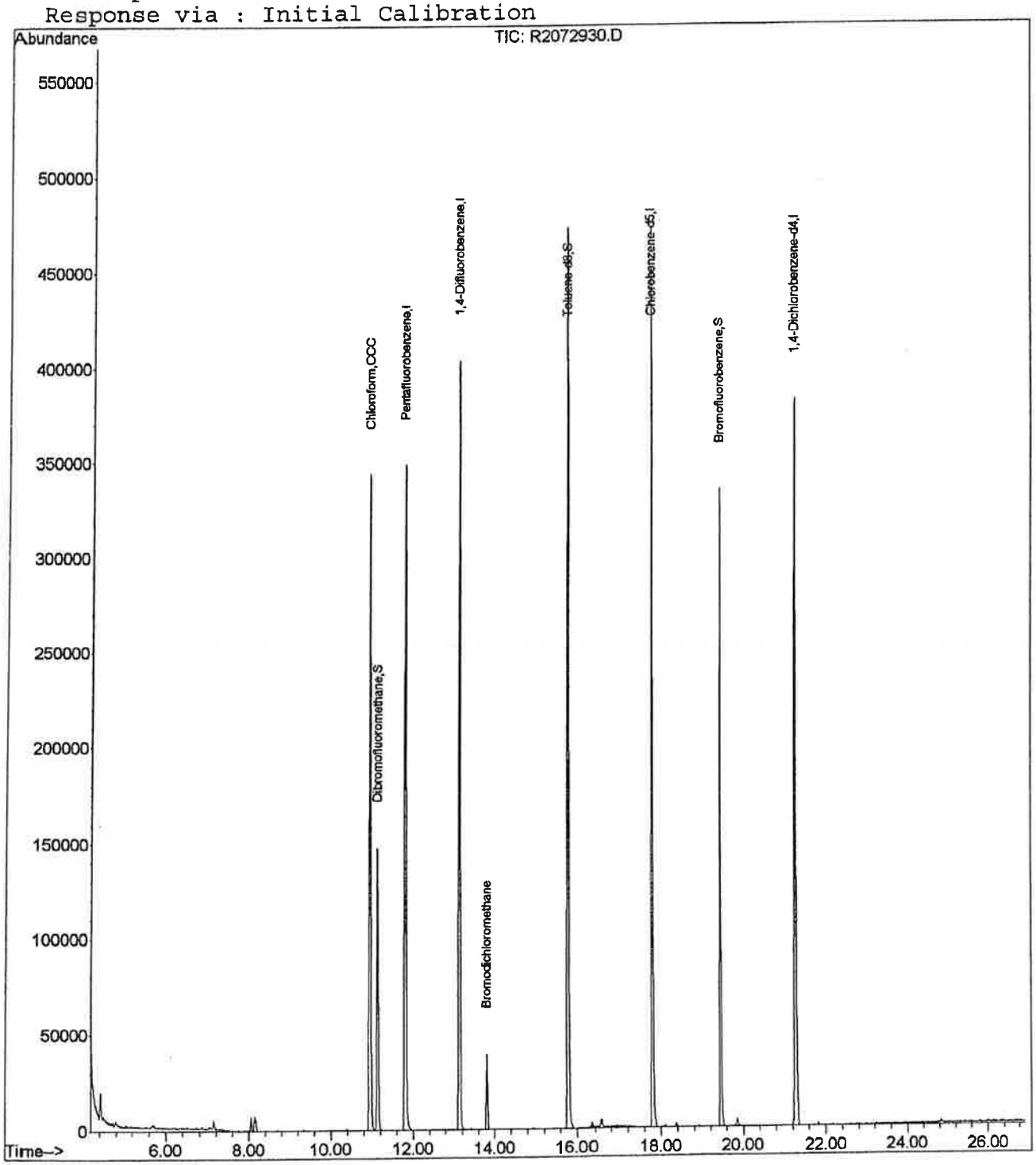
Quantitation Report (QT Reviewed)

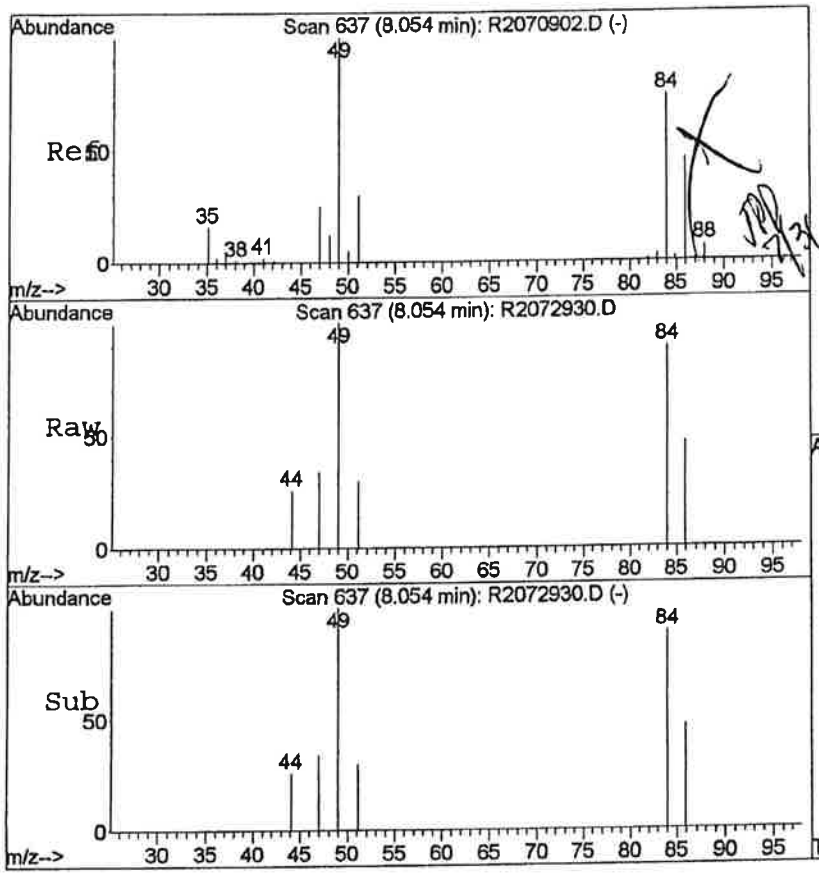
Data File : C:\MSDCHEM\1\DATA\072902R4\R2072930.D
Acq On : 29 Jul 2002 22:35
Sample : 288671B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 8:27 2002

Vial: 5
Operator: NRT
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration

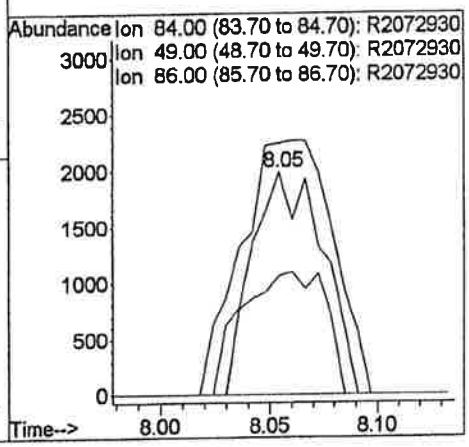


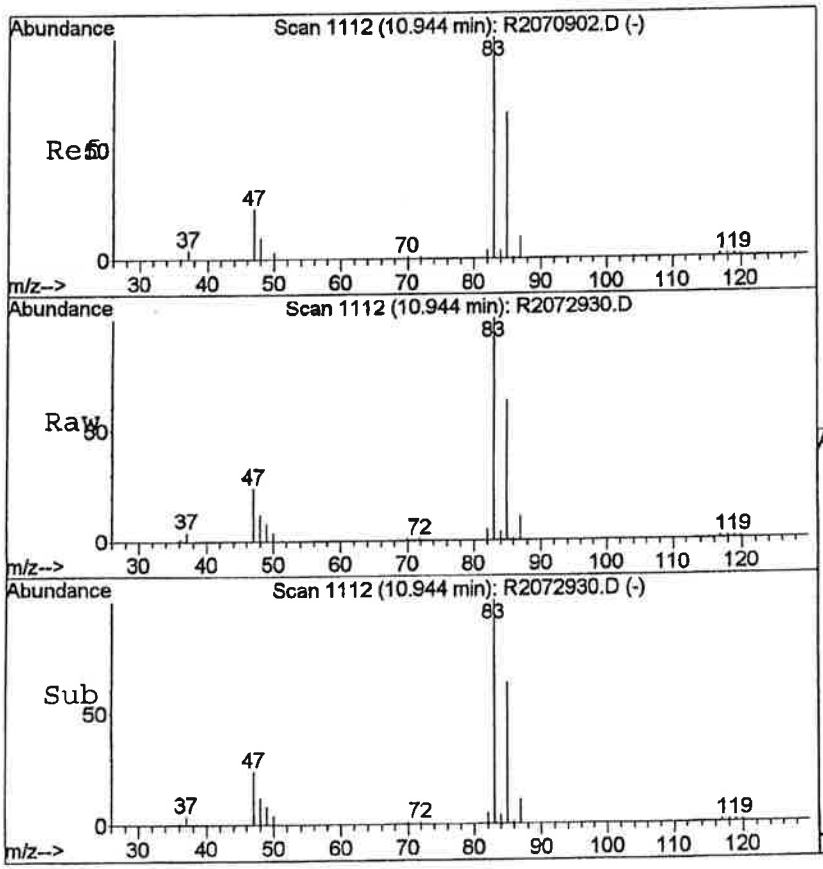


#16
Methylene Chloride
Concen: Below Cal
RT: 8.05 min Scan# 637
Delta R.T. 0.01 min
Lab File: R2072930.D
Acq: 29 Jul 2002 22:35

Tgt Ion: 84 Resp: 4728

Ion	Ratio	Lower	Upper
84	100		
49	140.8	103.7	143.7
86	57.3	41.7	81.7

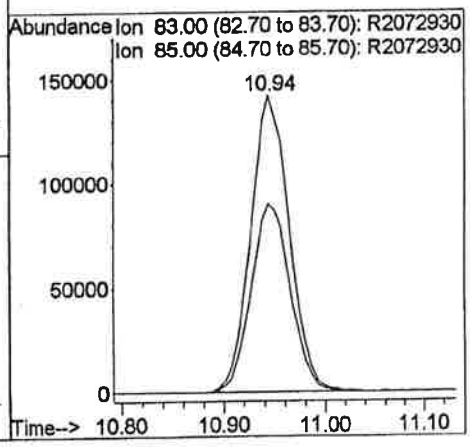


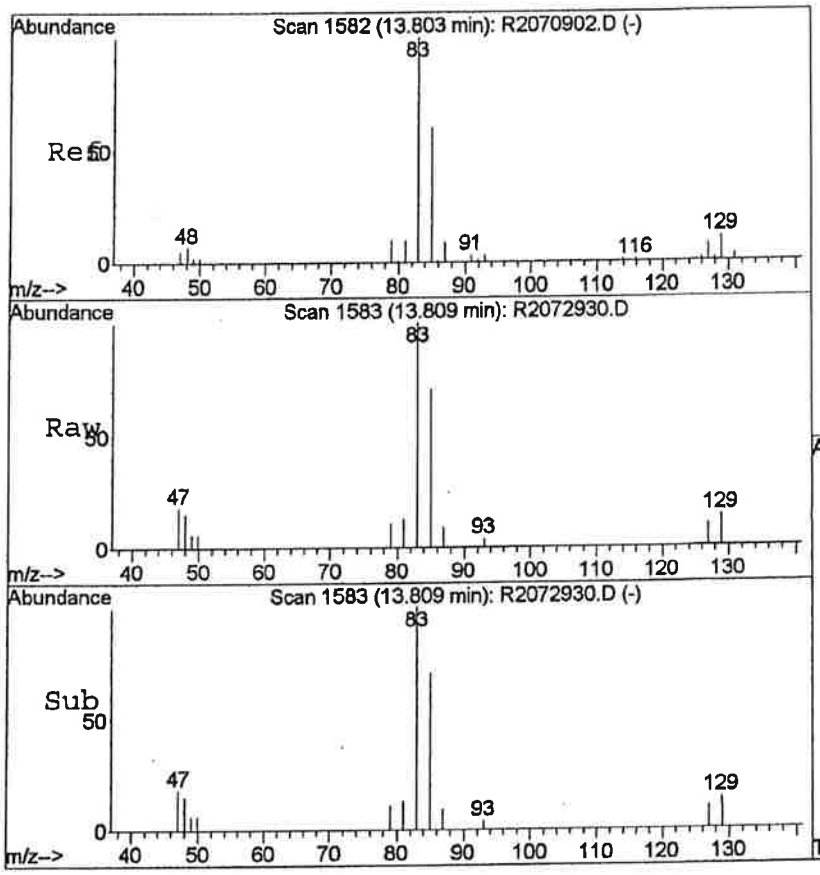


#21
Chloroform
Concen: 82.89 ug/l
RT: 10.94 min Scan# 1112
Delta R.T. 0.01 min
Lab File: R2072930.D
Acq: 29 Jul 2002 22:35

Tgt Ion: 83 Resp: 375407

Ion	Ratio	Lower	Upper
83	100		
85	64.3	44.1	84.1

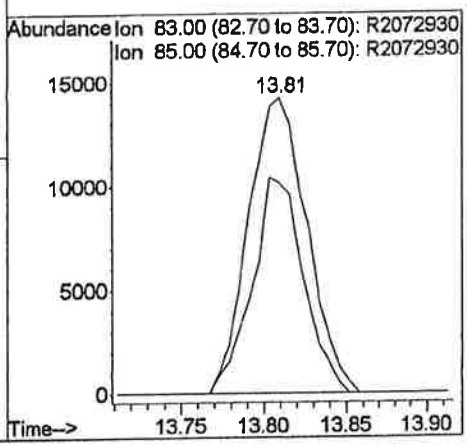




#35
Bromodichloromethane
Concen: 12.60 ug/l
RT: 13.81 min Scan# 1583
Delta R.T. 0.01 min
Lab File: R2072930.D
Acq: 29 Jul 2002 22:35

Tgt Ion: 83 Resp: 35045

Ion	Ratio	Lower	Upper
83	100		
85	64.1	45.0	85.0



Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

.B SAMPLE # : 288672B
MATRIX : WATER
CLIENT ID : SWC-002
Sample wt/vol : 5ML

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/18/2002
ID FILE : g18sun3.id
DATA FILE : R2073007

69564

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	9	5
108-88-3	Toluene	22	5
100-41-4	Ethylbenzene	ND	5
330-20-7	m&p-Xylenes	20	5
95-47-6	o-Xylene	10	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69564

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\073002R1\R2073007.D
Acq On : 30 Jul 2002 13:48
Sample : 288672B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 15:00:10 2002

Vial: 6
Operator: PSS
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.81	168	515226	50.00 ug/l	0.01
26) 1,4-Difluorobenzene	13.13	114	623927	50.00 ug/l	0.00
40) Chlorobenzene-d5	17.79	117	485812	50.00 ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.26	152	253839	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	11.14	113	174669	46.47 ug/l	0.00
Spiked Amount 50.000			Recovery =	92.94%	
41) Toluene-d8	15.78	98	631211	45.88 ug/l	0.00
Spiked Amount 50.000			Recovery =	91.76%	
55) Bromofluorobenzene	19.45	94	28758	45.76 ug/l	0.00
Spiked Amount 50.000			Recovery =	91.52%	
Target Compounds					Qvalue
21) Chloroform	10.94	83	501159	60.84 ug/l	99
30) Benzene	12.77	78	124376	8.59 ug/l	100
35) Bromodichloromethane	13.81	83	42829	9.01 ug/l	99
44) Toluene	15.88	92	223755	21.78 ug/l	98
51) m&p-Xylenes	18.36	106	166381	20.05 ug/l	93
52) o-Xylene	18.91	106	72905	9.69 ug/l	90
77) Naphthalene	24.84	128	41151	8.46 ug/l	100

7/30/02

RP 7/31/02

(#) = qualifier out of range (m) = manual integration
R2073007.D R0729STCL.M Tue Jul 30 19:32:57 2002

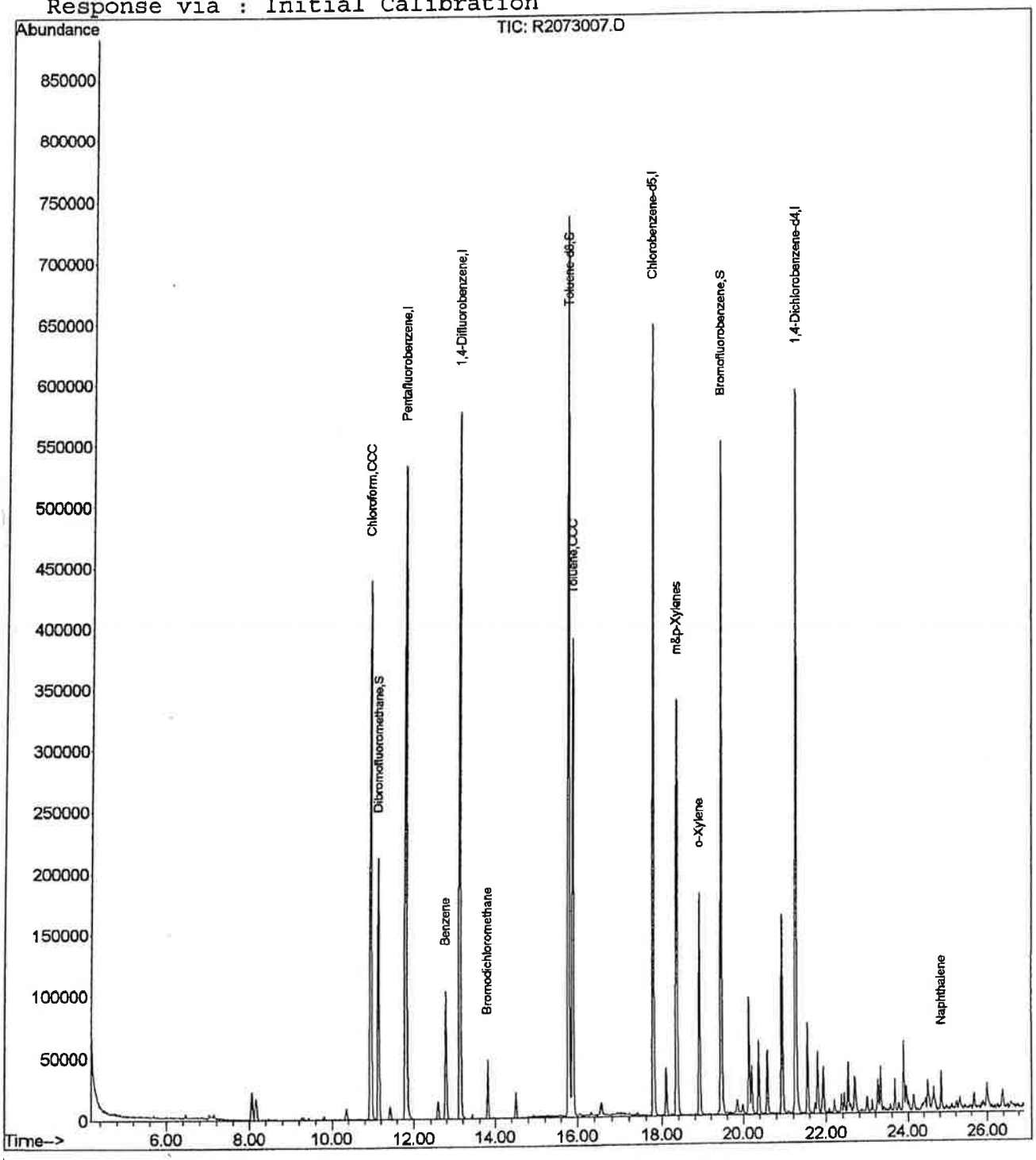
Quantitation Report (QT Reviewed)

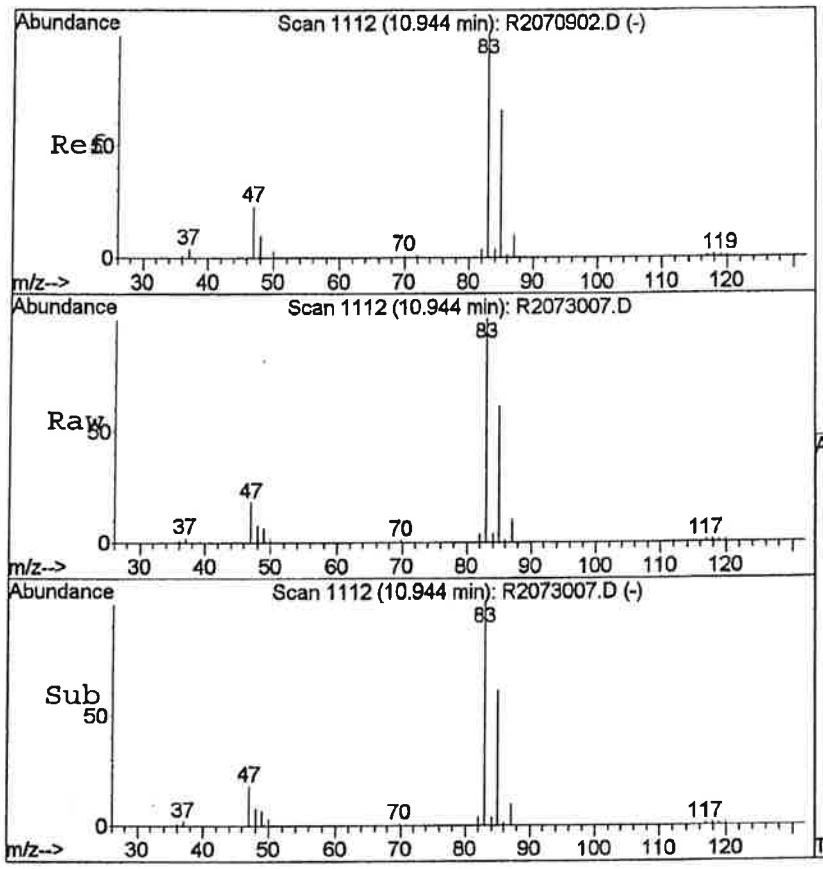
Data File : C:\MSDCHEM\1\DATA\073002R1\R2073007.D
Acq On : 30 Jul 2002 13:48
Sample : 288672B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 19:32 2002

Vial: 6
Operator: PSS
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration

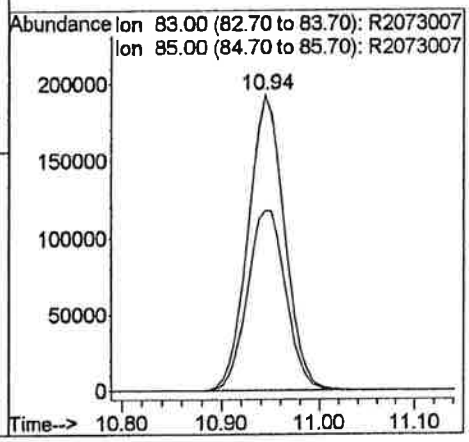


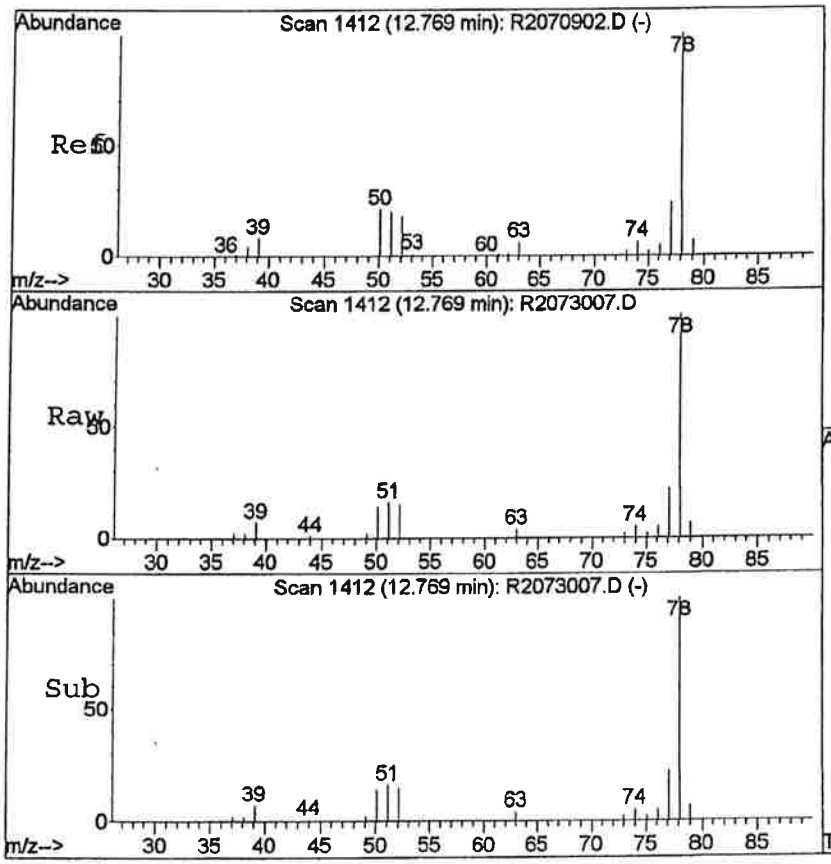


#21
Chloroform
Concen: 60.84 ug/l
RT: 10.94 min Scan# 1112
Delta R.T. 0.01 min
Lab File: R2073007.D
Acq: 30 Jul 2002 13:48

Tgt Ion: 83 Resp: 501159

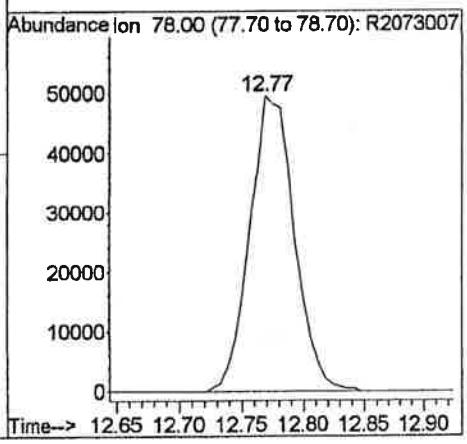
Ion	Ratio	Lower	Upper
83	100		
85	64.6	44.1	84.1

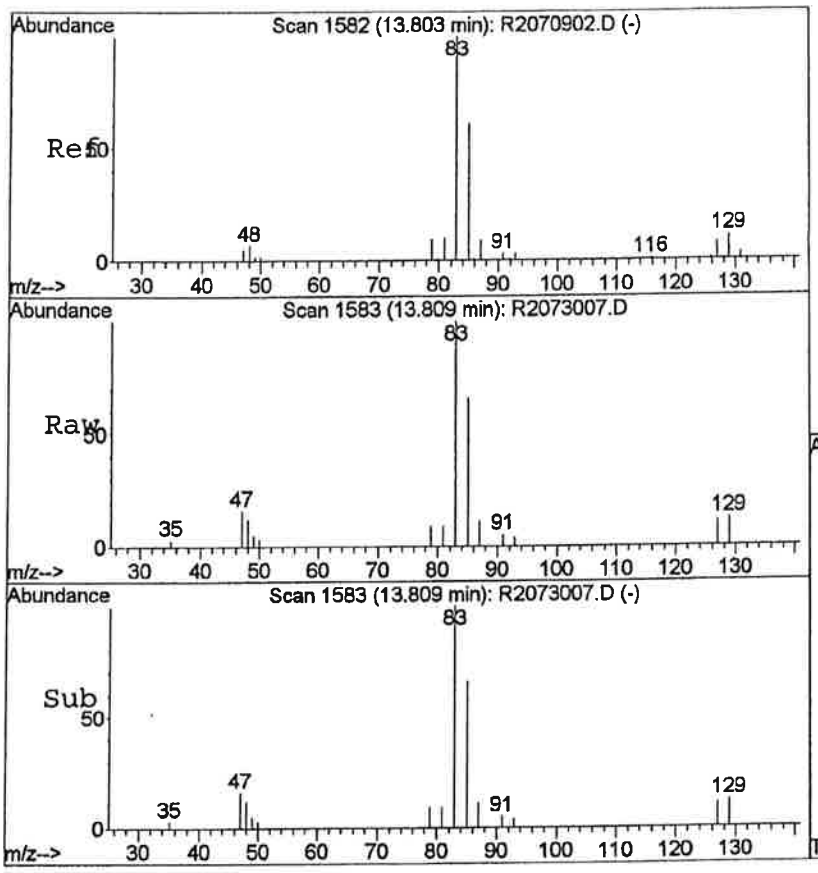




#30
Benzene
Concen: 8.59 ug/l
RT: 12.77 min Scan# 1412
Delta R.T. 0.00 min
Lab File: R2073007.D
Acq: 30 Jul 2002 13:48

Tgt Ion: 78 Resp: 124376

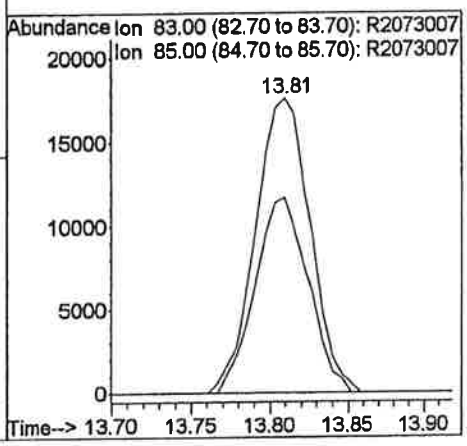


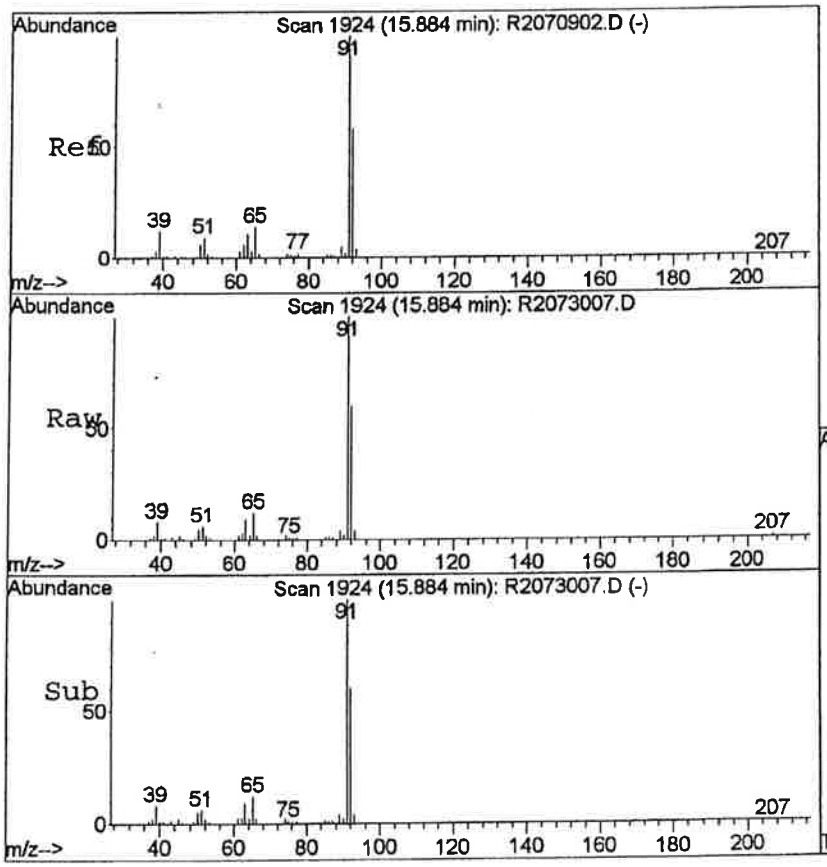


#35
Bromodichloromethane
Concen: 9.01 ug/l
RT: 13.81 min Scan# 1583
Delta R.T. 0.01 min
Lab File: R2073007.D
Acq: 30 Jul 2002 13:48

Tgt Ion: 83 Resp: 42829

Ion	Ratio	Lower	Upper
83	100		
85	64.4	45.0	85.0

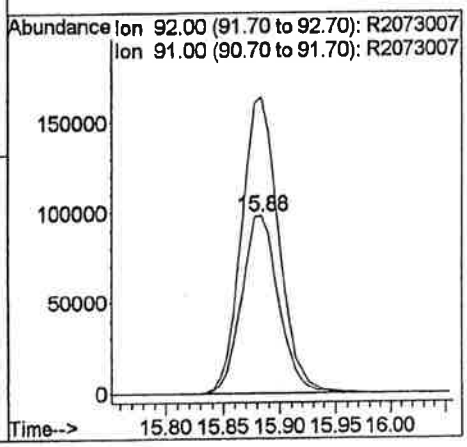


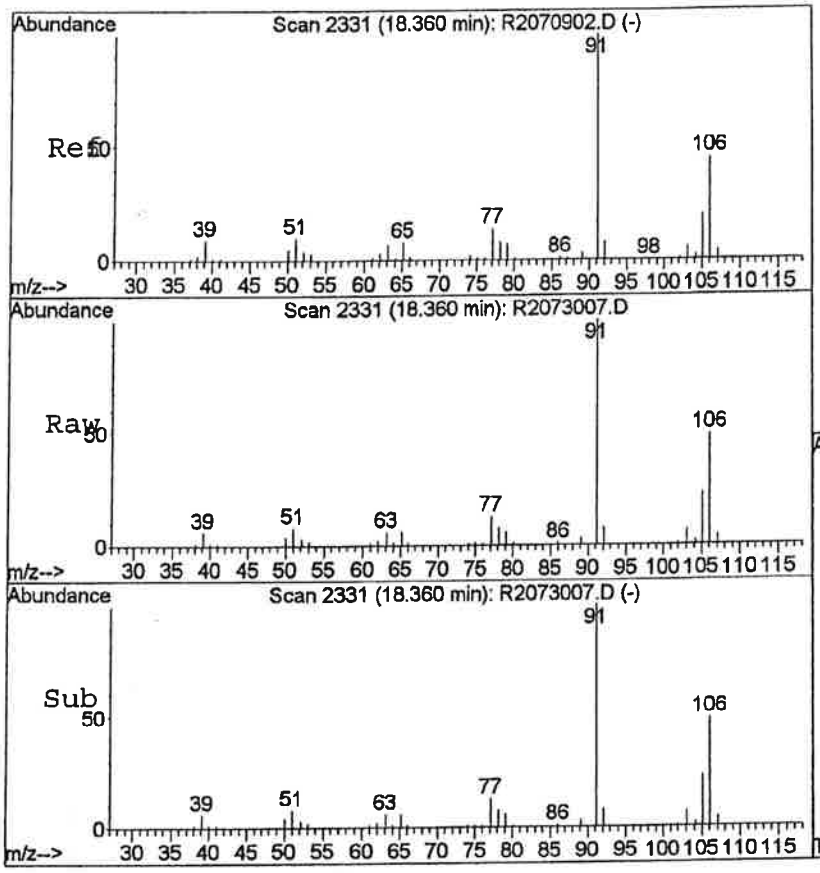


#44
Toluene
Concen: 21.78 ug/l
RT: 15.88 min Scan# 1924
Delta R.T. 0.01 min
Lab File: R2073007.D
Acq: 30 Jul 2002 13:48

Tgt Ion: 92 Resp: 223755

Ion	Ratio	Lower	Upper
92	100		
91	167.6	149.8	189.8

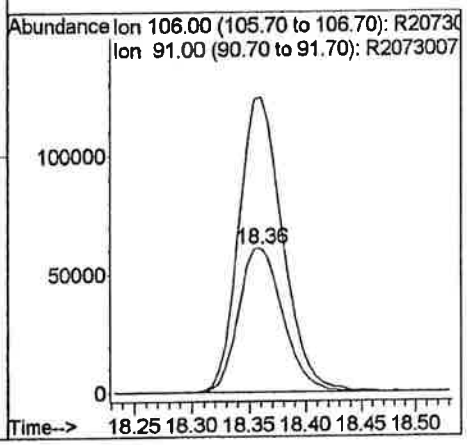


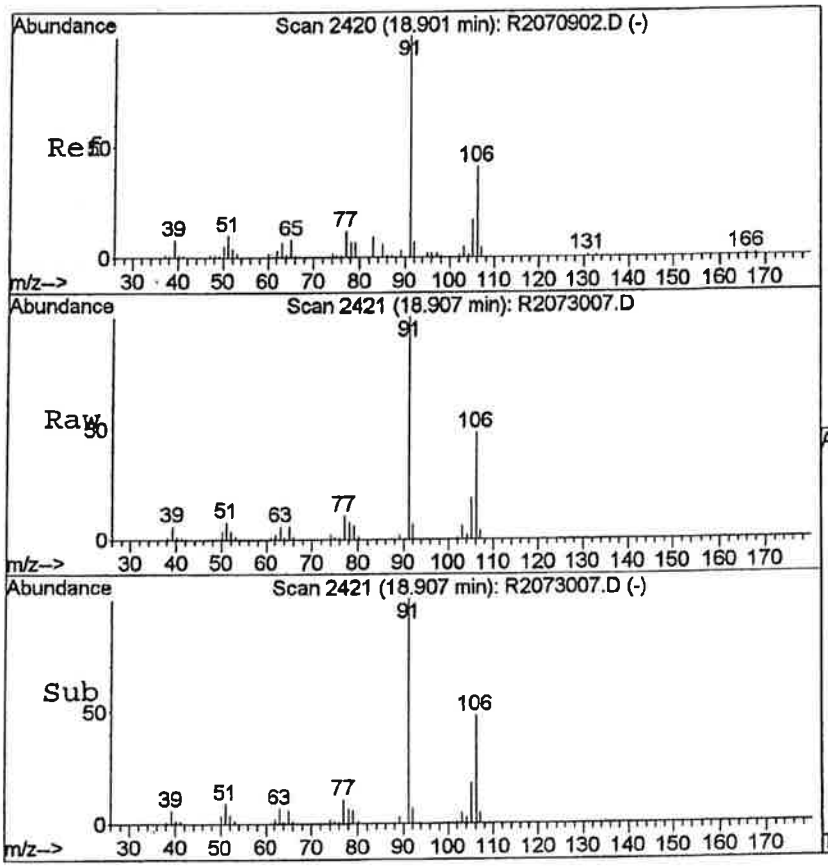


#51
m&p-Xylenes
Concen: 20.05 ug/l
RT: 18.36 min Scan# 2331
Delta R.T. -0.01 min
Lab File: R2073007.D
Acq: 30 Jul 2002 13:48

Tgt Ion:106 Resp: 166381

Ion	Ratio	Lower	Upper
106	100		
91	201.2	169.8	254.6

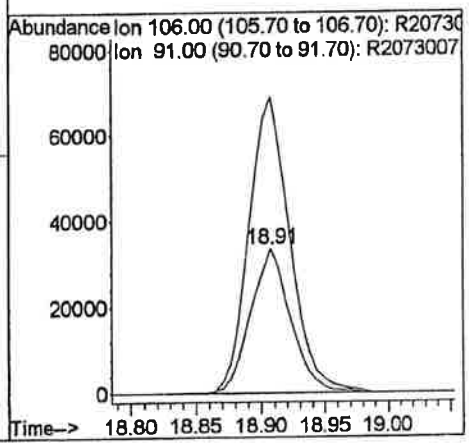


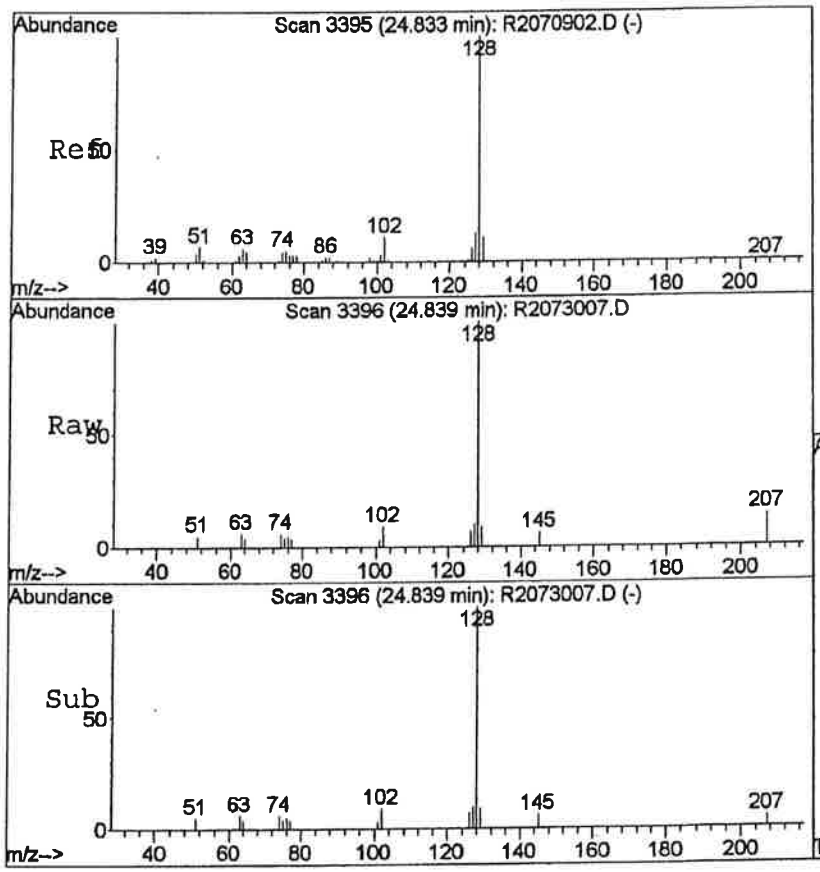


#52
o-Xylene
Concen: 9.69 ug/l
RT: 18.91 min Scan# 2421
Delta R.T. 0.00 min
Lab File: R2073007.D
Acq: 30 Jul 2002 13:48

Tgt Ion:106 Resp: 72905

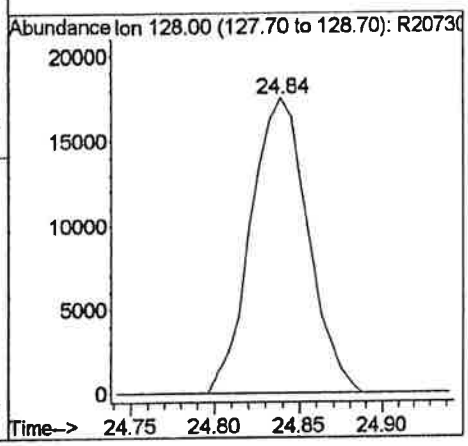
Ion	Ratio	Lower	Upper
106	100		
91	209.5	181.0	271.4





#77
Naphthalene
Concen: 8.46 ug/l
RT: 24.84 min Scan# 3396
Delta R.T. 0.00 min
Lab File: R2073007.D
Acq: 30 Jul 2002 13:48

Tgt Ion:128 Resp: 41151



Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

B SAMPLE # : 288673B
MATRIX : WATER
CLIENT ID : SWC-003
Sample wt/vol : 5ML

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/18/2002
ID FILE : g18sun3.id
DATA FILE : R2073008

69564

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	9	5
108-88-3	Toluene	22	5
100-41-4	Ethylbenzene	ND	5
330-20-7	m&p-Xylenes	20	5
95-47-6	o-Xylene	9	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69564

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\073002R1\R2073008.D
Acq On : 30 Jul 2002 14:21
Sample : 288673B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 15:00:14 2002

Vial: 7
Operator: PSS
Inst : 5973R
Multiplr: 1.00
Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.81	168	518323	50.00 ug/l	0.01
26) 1,4-Difluorobenzene	13.13	114	631818	50.00 ug/l	0.00
40) Chlorobenzene-d5	17.79	117	497604	50.00 ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.27	152	240191	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	11.14	113	176966	46.80 ug/l	0.00
Spiked Amount 50.000			Recovery =	93.60%	
41) Toluene-d8	15.78	98	646840	45.90 ug/l	0.00
Spiked Amount 50.000			Recovery =	91.80%	
55) Bromofluorobenzene	19.45	94	29118	45.23 ug/l	0.00
Spiked Amount 50.000			Recovery =	90.46%	
Target Compounds					Qvalue
13) Acetone	7.03	58	1434	8.19 ug/l #	66
21) Chloroform	10.94	83	544839	65.75 ug/l	99
30) Benzene	12.78	78	131390	8.96 ug/l	100
35) Bromodichloromethane	13.80	83	46726	9.70 ug/l	99
44) Toluene	15.88	92	232103	22.05 ug/l	98
51) m&p-Xylenes	18.35	106	168712	19.85 ug/l	96
52) o-Xylene	18.90	106	71675	9.30 ug/l	96
77) Naphthalene	24.84	128	36739	7.99 ug/l	100

7/30/02

7/31/02

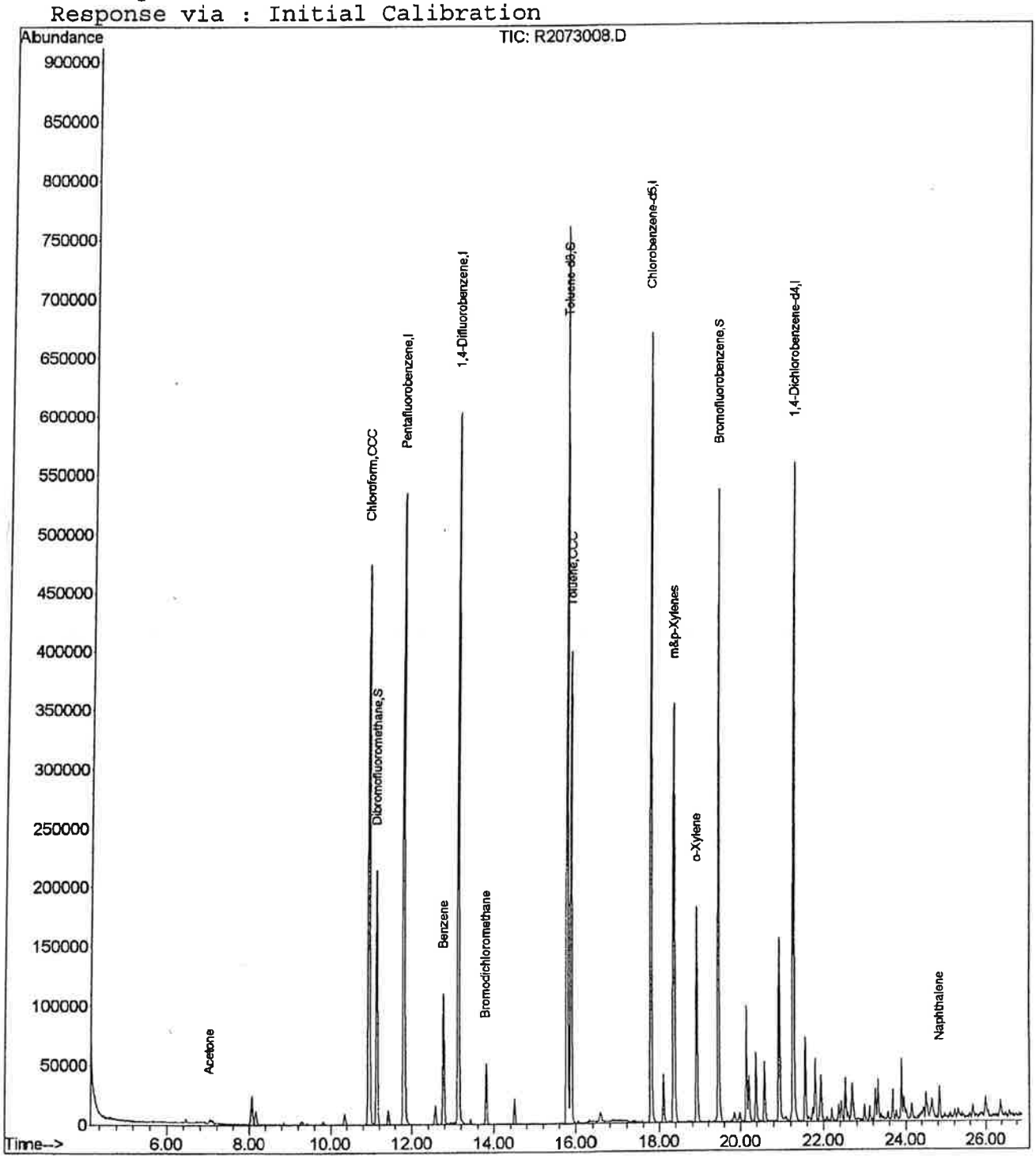
(#) = qualifier out of range (m) = manual integration

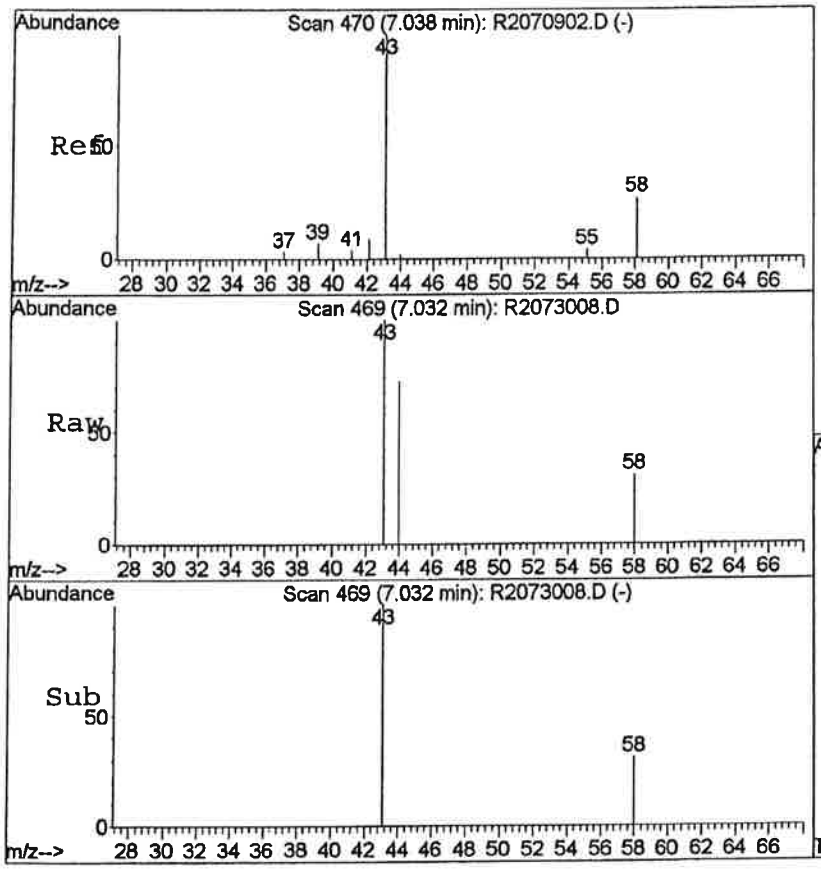
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\073002R1\R2073008.D
Acq On : 30 Jul 2002 14:21
Sample : 288673B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 20:08 2002

Vial: 7
Operator: PSS
Inst : 5973R
Multiplr: 1.00
Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration

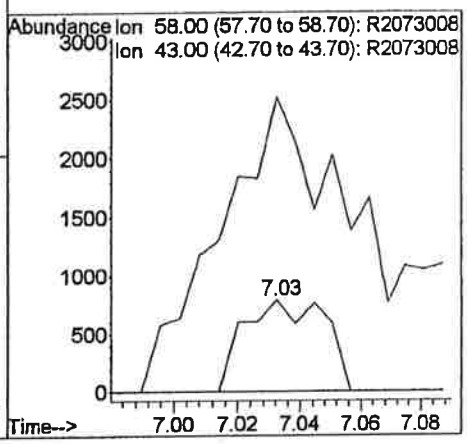


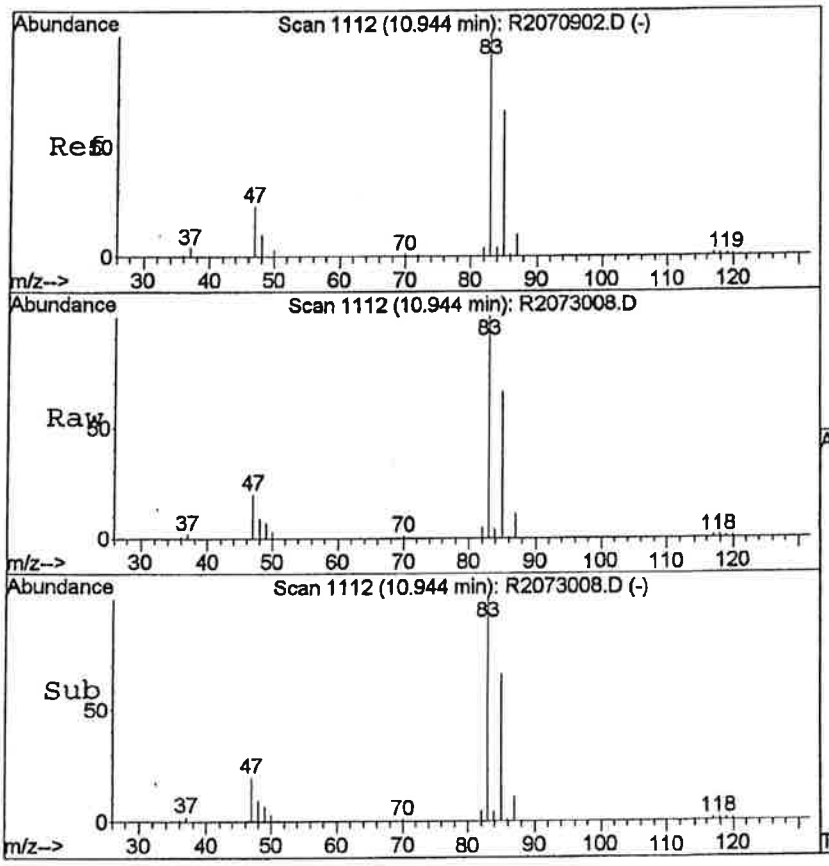


#13
Acetone
Concen: 8.19 ug/l
RT: 7.03 min Scan# 469
Delta R.T. 0.01 min
Lab File: R2073008.D
Acq: 30 Jul 2002 14:21

Tgt Ion: 58 Resp: 1434

Ion	Ratio	Lower	Upper
58	100		
43	548.5	411.0	511.0#

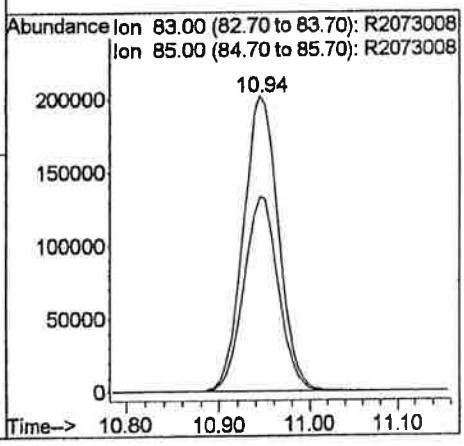


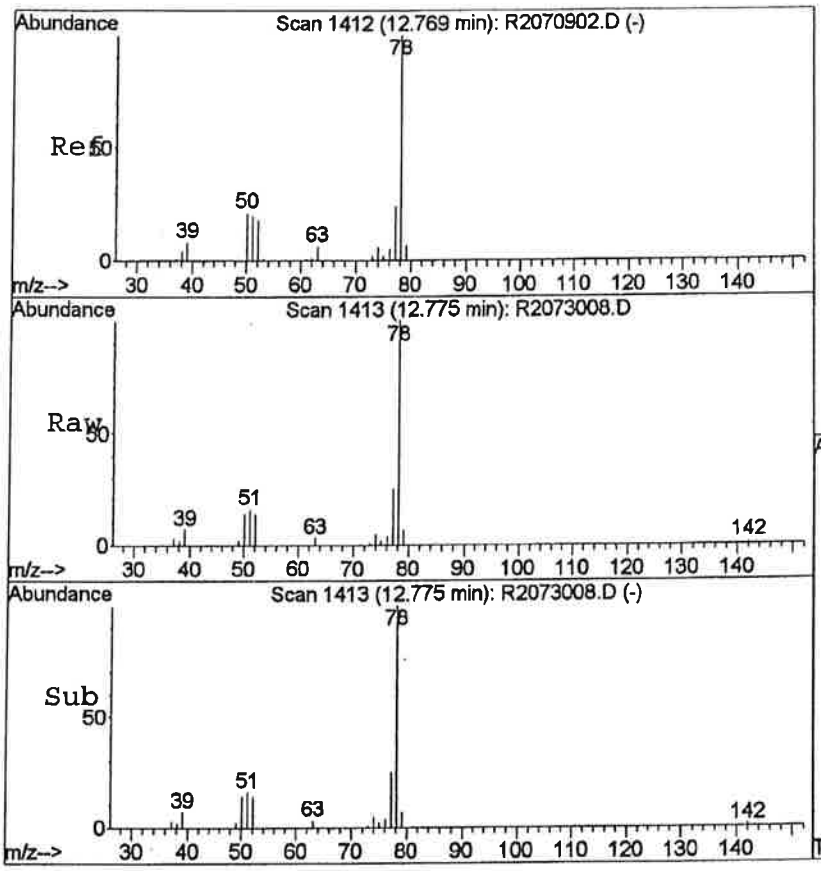


#21
Chloroform
Concen: 65.75 ug/l
RT: 10.94 min Scan# 1112
Delta R.T. 0.01 min
Lab File: R2073008.D
Acq: 30 Jul 2002 14:21

Tgt Ion: 83 Resp: 544839

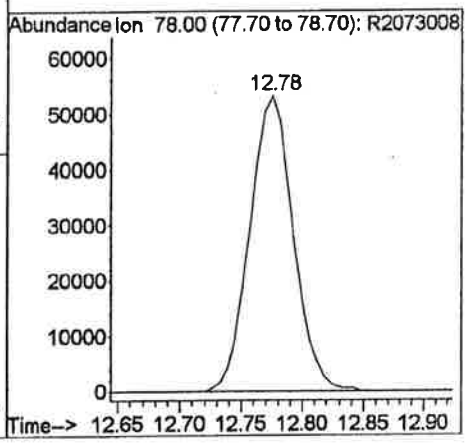
Ion	Ratio	Lower	Upper
83	100		
85	64.8	44.1	84.1

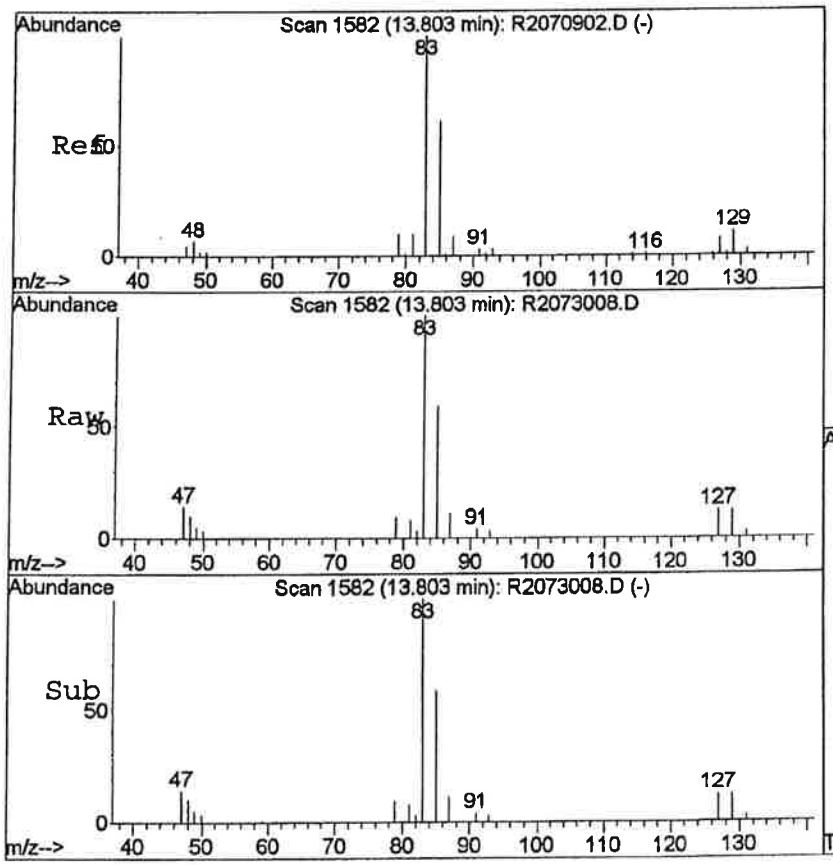




#30
Benzene
Concen: 8.96 ug/l
RT: 12.78 min Scan# 1413
Delta R.T. 0.01 min
Lab File: R2073008.D
Acq: 30 Jul 2002 14:21

Tgt Ion: 78 Resp: 131390

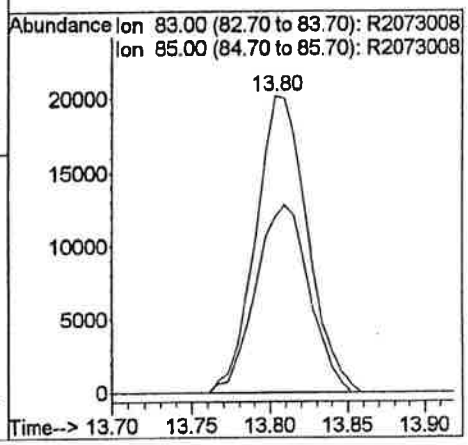


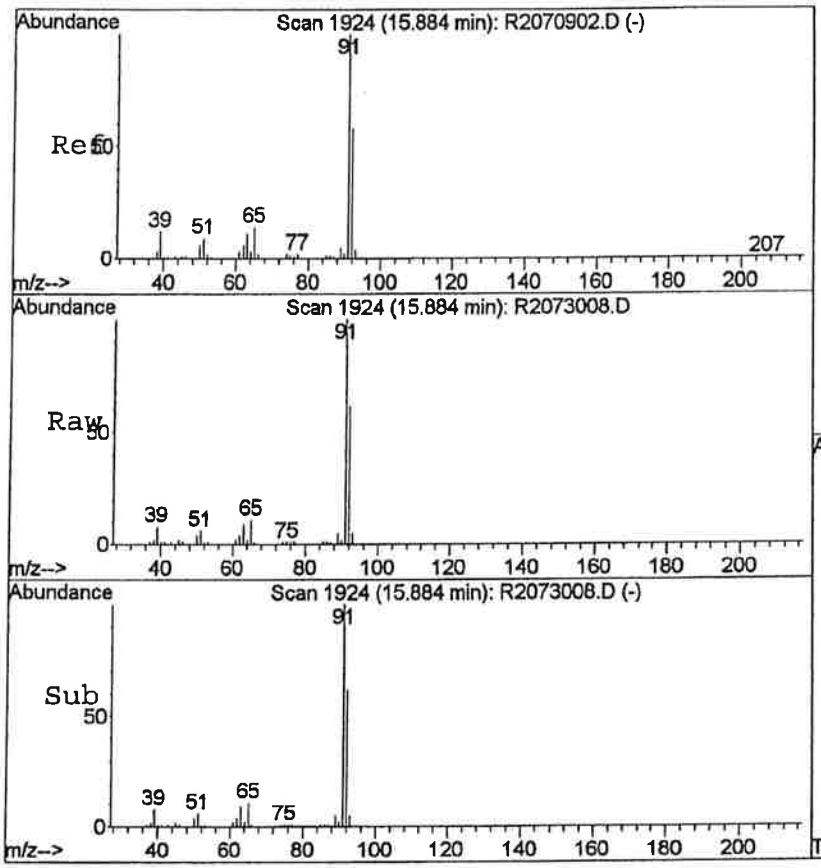


#35
Bromodichloromethane
Concen: 9.70 ug/l
RT: 13.80 min Scan# 1582
Delta R.T. 0.00 min
Lab File: R2073008.D
Acq: 30 Jul 2002 14:21

Tgt Ion: 83 Resp: 46726

Ion	Ratio	Lower	Upper
83	100		
85	65.6	45.0	85.0

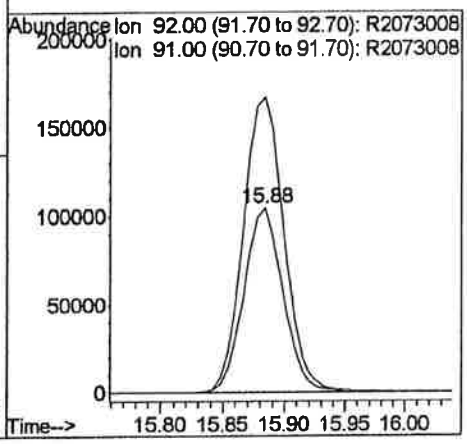


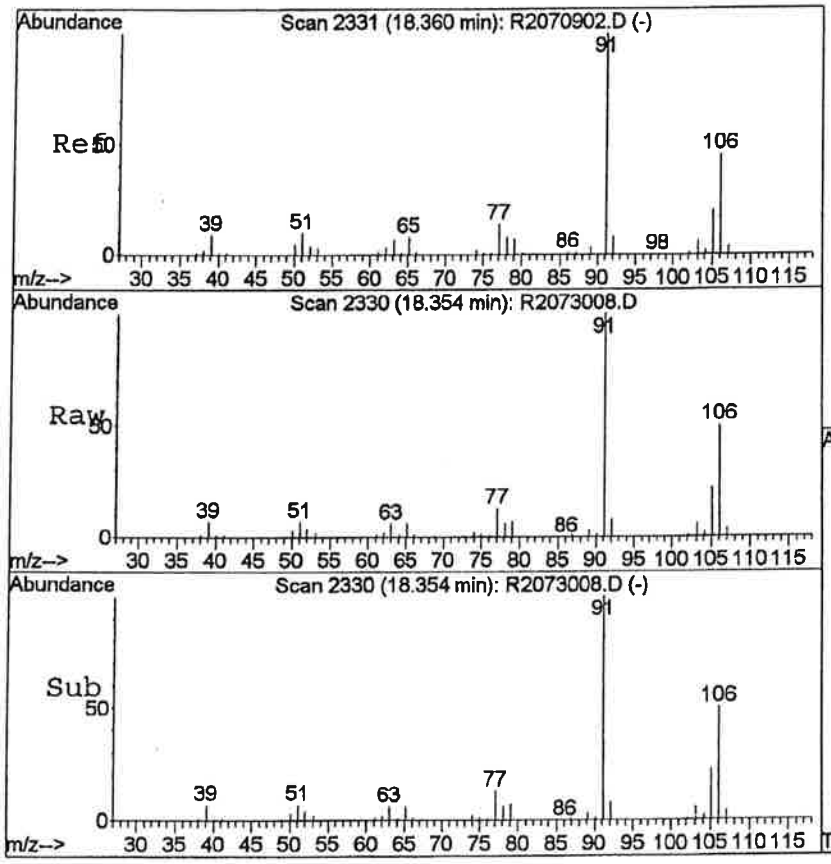


#44
Toluene
Concen: 22.05 ug/l
RT: 15.88 min Scan# 1924
Delta R.T. 0.01 min
Lab File: R2073008.D
Acq: 30 Jul 2002 14:21

Tgt Ion: 92 Resp: 232103

Ion	Ratio	Lower	Upper
92	100		
91	167.0	149.8	189.8

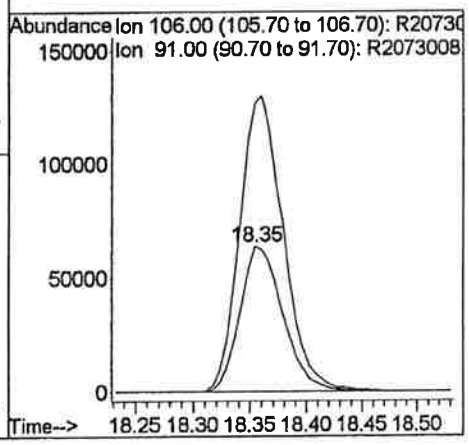


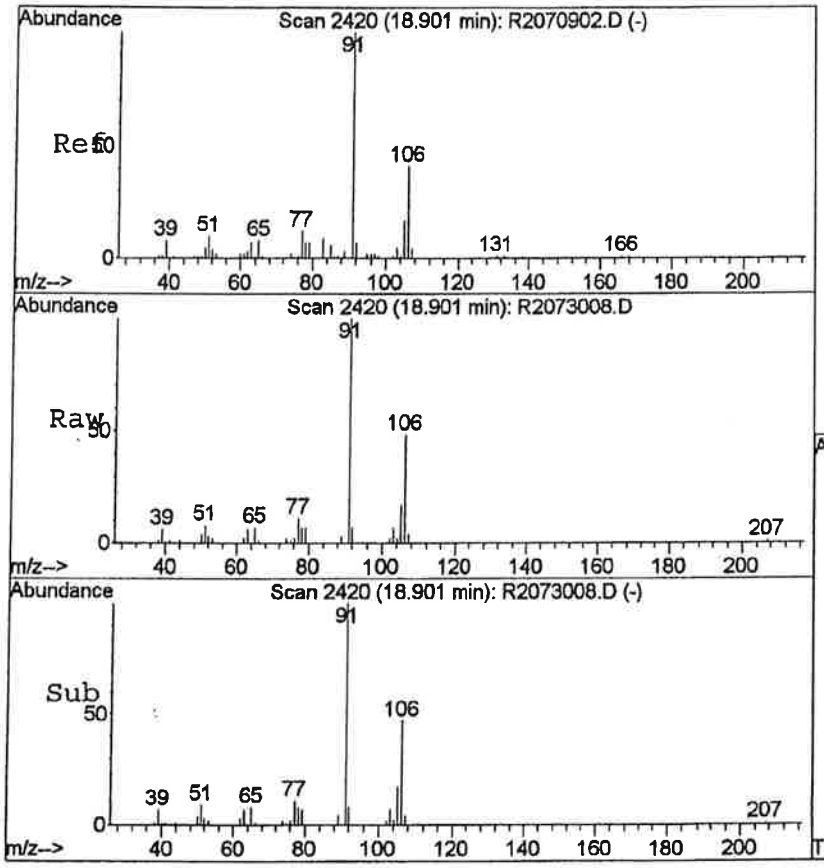


#51
m&p-Xylenes
Concen: 19.85 ug/l
RT: 18.35 min Scan# 2330
Delta R.T. -0.01 min
Lab File: R2073008.D
Acq: 30 Jul 2002 14:21

Tgt Ion:106 Resp: 168712

Ion	Ratio	Lower	Upper
106	100		
91	206.3	169.8	254.6

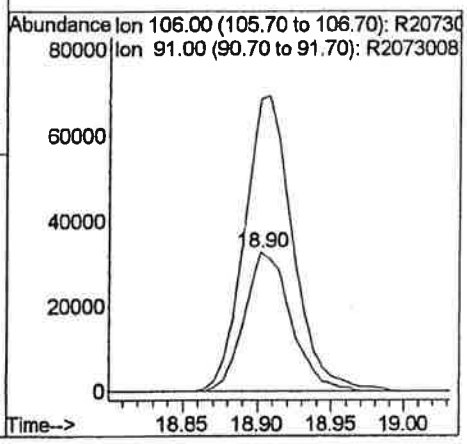


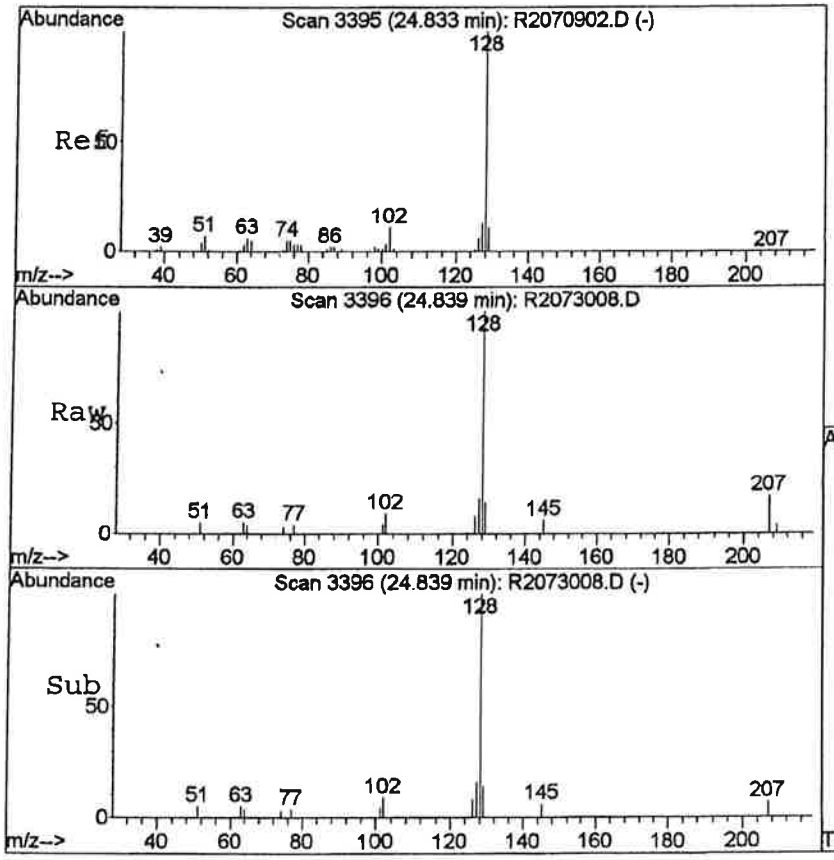


#52
o-Xylene
Concen: 9.30 ug/l
RT: 18.90 min Scan# 2420
Delta R.T. -0.01 min
Lab File: R2073008.D
Acq: 30 Jul 2002 14:21

Tgt Ion:106 Resp: 71675

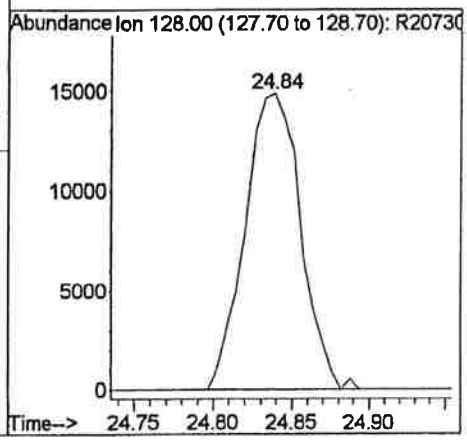
Ion	Ratio	Lower	Upper
106	100		
91	219.6	181.0	271.4





#77
Naphthalene
Concen: 7.99 ug/l
RT: 24.84 min Scan# 3396
Delta R.T. 0.00 min
Lab File: R2073008.D
Acq: 30 Jul 2002 14:21

Tgt Ion:128 Resp: 36739



2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Washington Environmental Lab. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

	EPA SAMPLE NO.	SMC1 DFM #	SMC2 TOL8 #	SMC3 BFB #	TOT OUT
01	VBLK 072902	107	95	110	0
02	288671B	114	94	112	0
03	288810B	116	93	112	0
04	289001B	112	93	109	0
05	289002B	111	92	108	0
06	289081B	97	92	97	0
07	289082B	95	92	89	0

QC LIMITS

SMC1	DFM	=	Dibromofluoromethane	(86-118)
SMC2	TOL8	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(86-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Washington Environmental Lab. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

	EPA SAMPLE NO.	SMC1 DFM #	SMC2 TOL8 #	SMC3 BFB #	TOT OUT
01	VBLK 073002R	89	92	94	0
02	288672B	93	92	92	0
03	288673B	94	92	90	0
04	289000B	94	90	94	0
05	288811B	95	90	100	0

QC LIMITS

SMC1	DFM	=	Dibromofluoromethane	(86-118)
SMC2	TOL8	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(86-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

4A

EPA SAMPLE NO.

VOLATILE METHOD BLANK SUMMARY

VBLK 072902

Lab Name: Washington Environmental Lab. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

Lab File ID: R2072927.D Lab Sample ID: METHOD_BLANK

Date Analyzed: 7/29/2002 Time Analyzed: 20:59

GC Column: DB-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5973R

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	288671B	288671B	R2072930.D	22:35
02	288810B	288810B	R2072933.D	0:12
03	289001B	289001B	R2072936.D	1:48
04	289002B	289002B	R2072937.D	2:21
05	289081B	289081B	R2072938.D	2:53
06	289082B	289082B	R2072939.D	3:25
07	289920AMSD	288920AMSD	R2072941.D	4:33
08	289920A	288920A	R2072942.D	5:10
09	288921A	288921A	R2072943.D	5:47
10	288922A	288922A	R2072944.D	6:23
11	288923A	288923A	R2072945.D	7:00

COMMENTS

Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

B SAMPLE # : METHOD_BLANK
MATRIX : WATER
CLIENT ID :
Sample wt/vol : 5ML

ANALYSIS DATE : 07/29/2002
RECVD DATE :
ID FILE : g18sun3.id
DATA FILE : R2072927

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	ND	5
108-88-3	Toluene	ND	5
100-41-4	Ethylbenzene	ND	5
330-20-7	m&p-Xylenes	ND	5
95-47-6	o-Xylene	ND	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072927.D Vial: 2
Acq On : 29 Jul 2002 20:59 Operator: NRT
Sample : METHOD_BLANK 072902R4 Inst : 5973R
Misc : 5ML Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 21:50:01 2002 Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.80	168	318703	50.00 ug/l	0.00
26) 1,4-Difluorobenzene	13.13	114	400395	50.00 ug/l	0.00
40) Chlorobenzene-d5	17.79	117	317627	50.00 ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.27	152	153715	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	11.14	113	124541	53.56 ug/l	0.00
Spiked Amount 50.000			Recovery	= 107.12%	
41) Toluene-d8	15.78	98	427798	47.56 ug/l	0.00
Spiked Amount 50.000			Recovery	= 95.12%	
55) Bromofluorobenzene	19.44	94	22649	55.12 ug/l	0.00
Spiked Amount 50.000			Recovery	= 110.24%	

Target Compounds Qvalue

7/30

(#) = qualifier out of range (m) = manual integration
R2072927.D R0729STCL.M Tue Jul 30 12:25:01 2002 Page 1

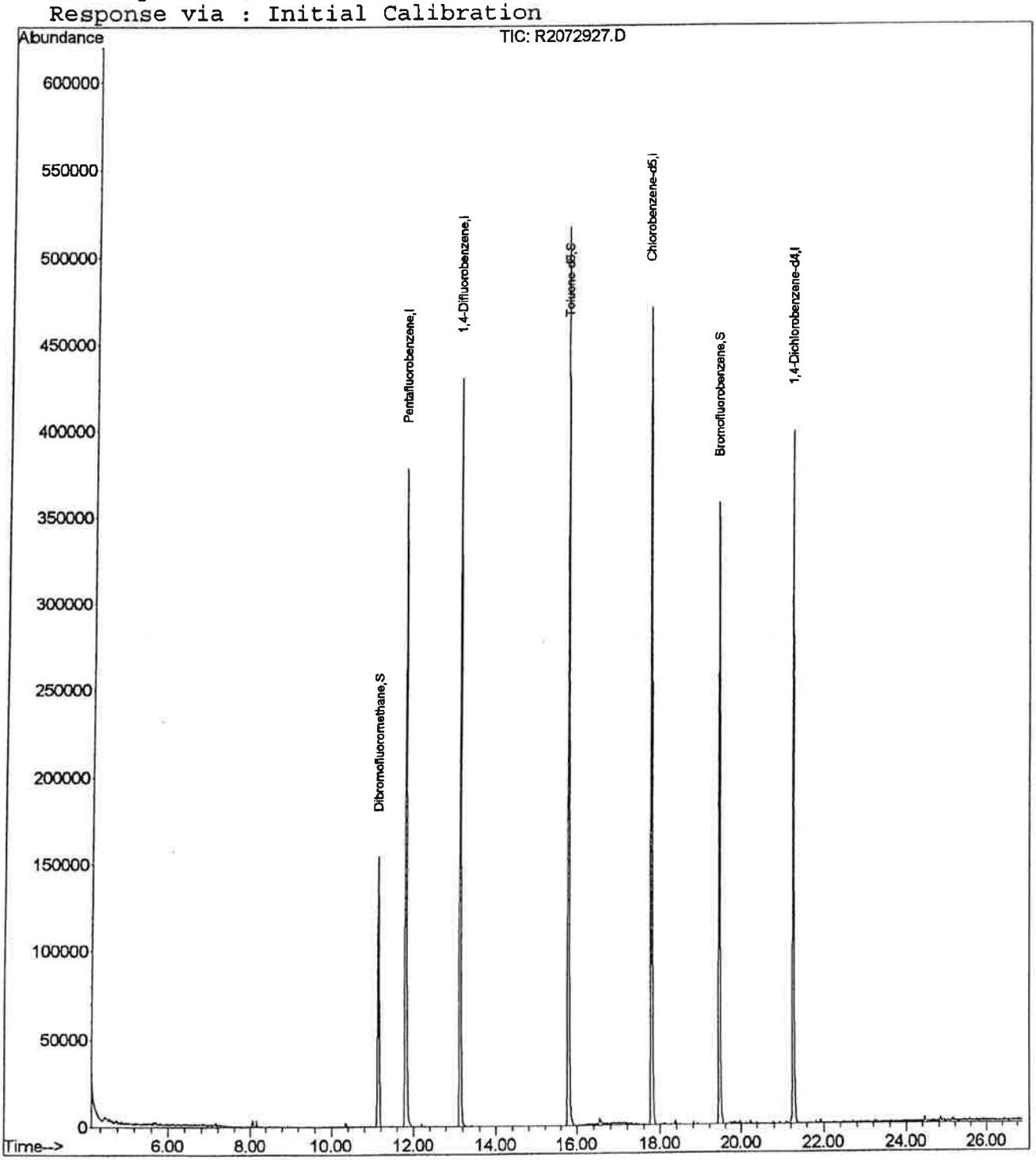
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072927.D
Acq On : 29 Jul 2002 20:59
Sample : METHOD_BLANK 072902R4
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 29 21:50 2002

Vial: 2
Operator: NRT
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration



4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK 073002R1

Lab Name: Washington Environmental Lab. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

Lab File ID: R2073006.D Lab Sample ID: METHOD_BLANK

Date Analyzed: 7/30/2002 Time Analyzed: 13:03

GC Column: DB-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5973R

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	288672B	288672B	R2073007.D	13:48
02	288673B	288673B	R2073008.D	14:21
03	289000B	289000B	R2073009.D	14:53
04	288811B	288811B	R2073010.D	15:25
05	LCS	LCS	R2073011.D	15:57
06	288920AMS	288920AMS	R2073012.D	16:29

COMMENTS

Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

SAMPLE # : METHOD_BLANK
MATRIX : WATER
CLIENT ID :
Sample wt/vol : 5ML

ANALYSIS DATE : 07/30/2002
RECVD DATE :
ID FILE : g18sun3.id
DATA FILE : R2073006

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	ND	5
108-88-3	Toluene	ND	5
100-41-4	Ethylbenzene	ND	5
330-20-7	m&p-Xylenes	ND	5
95-47-6	o-Xylene	ND	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\073002R1\R2073006.D
Acq On : 30 Jul 2002 13:03
Sample : METHOD_BLANK 073002R1
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 13:32:50 2002

Vial: 5
Operator: PSS
Inst : 5973R
Multiplr: 1.00
Quant Results File: R0729STCL.RES

Page 0056

69564

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.81	168	581115	50.00 ug/l	0.01
26) 1,4-Difluorobenzene	13.13	114	706060	50.00 ug/l	0.00
40) Chlorobenzene-d5	17.79	117	546319	50.00 ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.27	152	265905	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	11.14	113	188053	44.35 ug/l	0.00
Spiked Amount 50.000			Recovery =	88.70%	
41) Toluene-d8	15.78	98	711682	46.00 ug/l	0.00
Spiked Amount 50.000			Recovery =	92.00%	
55) Bromofluorobenzene	19.45	94	33125	46.87 ug/l	0.00
Spiked Amount 50.000			Recovery =	93.74%	

Target Compounds Qvalue

7/31/02

355
7/30

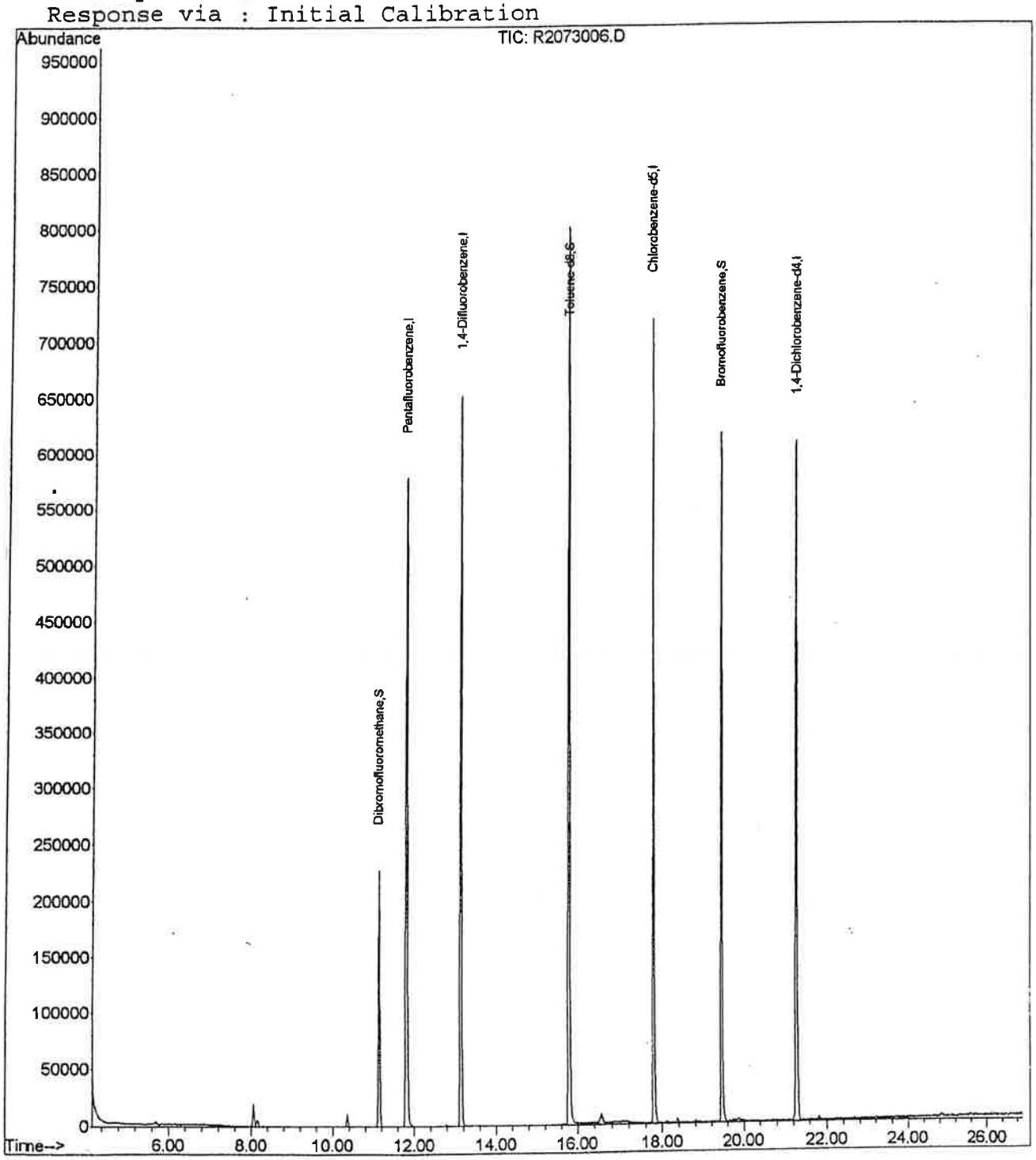
(#) = qualifier out of range (m) = manual integration
R2073006.D R0729STCL.M Tue Jul 30 13:33:21 2002 Page 1

Data File : C:\MSDCHEM\1\DATA\073002R1\R2073006.D
Acq On : 30 Jul 2002 13:03
Sample : METHOD_BLANK 073002R1
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 13:33 2002

Vial: 5
Operator: PSS
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration



Washington
Environmental Laboratory

69564

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 288671A
MATRIX : WATER
CLIENT ID : SWC-001
Sample wt/vol : 1040

ANALYSIS DATE : 07/29/2002
RECVD DATE : 07/18/2002
ID FILE : g08.id
DATA FILE : U2072907

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
[illegible]-95-3	Nitrobenzene	U	10
[illegible]59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	48
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	U	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	U	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	19
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	24
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

69564

LAB SAMPLE # : 288671A
MATRIX : WATER
CLIENT ID : SWC-001
Sample wt/vol: 1040

ANALYSIS DATE : 07/29/2002
RECVD DATE : 07/18/2002
ID FILE : g08.id
DATA FILE : U2072907

Compound		Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	24
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	24
100-02-7	4-Nitrophenol	U	24
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	24
100-01-6	4-Nitroaniline	U	24
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
118-74-1	Hexachlorobenzene	U	10
[illegible]-86-5	Pentachlorophenol	U	24
[illegible]01-8	Phenanthrene	U	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69564

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072907.D
Acq On : 29 Jul 2002 9:02 pm
Sample : 288671A SWC-001
Misc : 1040/1ML QC757LL.012 B17
MS Integration Params: RTEINT.P
Quant Time: Jul 29 21:39:47 2002

Vial: 8
Operator: SHERREE
Inst : Instrumen
Multiplr: 1.00

Quant Results File: UBNA0722.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0722

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.02	152	117070	40.00	ul/l	0.09
19) Naphthalene-d8	12.95	136	472751	40.00	ul/l	0.09
34) Acenaphthene-d10	17.24	164	290082	40.00	ul/l	0.09
54) Phenanthrene-d10	20.85	188	430652	40.00	ul/l	0.10
67) Chrysene-d12	27.37	240	280699	40.00	ul/l	0.10
76) Perylene-d12	31.07	264	175598	40.00	ul/l	0.17
System Monitoring Compounds						
4) 2-Fluorophenol	7.41	112	326224	81.57	ul/l	0.08
Spiked Amount 200.000			Recovery = 40.78%			
6) Phenol-d6	9.26	99	470788	92.21	ul/l	0.07
Spiked Amount 200.000			Recovery = 46.10%			
20) Nitrobenzene-d5	11.30	82	273200	53.72	ul/l	0.08
Spiked Amount 100.000			Recovery = 53.72%			
38) 2-Fluorobiphenyl	15.58	172	469149	51.52	ul/l	0.09
Spiked Amount 100.000			Recovery = 51.52%			
58) 2,4,6-Tribromophenol	19.20	330	140795	148.22	ul/l	0.10
Spiked Amount 200.000			Recovery = 74.11%			
70) Terphenyl-d14	24.80	244	808608	114.77	ul/l	0.12
Spiked Amount 100.000			Recovery = 114.77%			

Target Compounds Qvalue

DLB 7/30/02
KMM 7/30/02

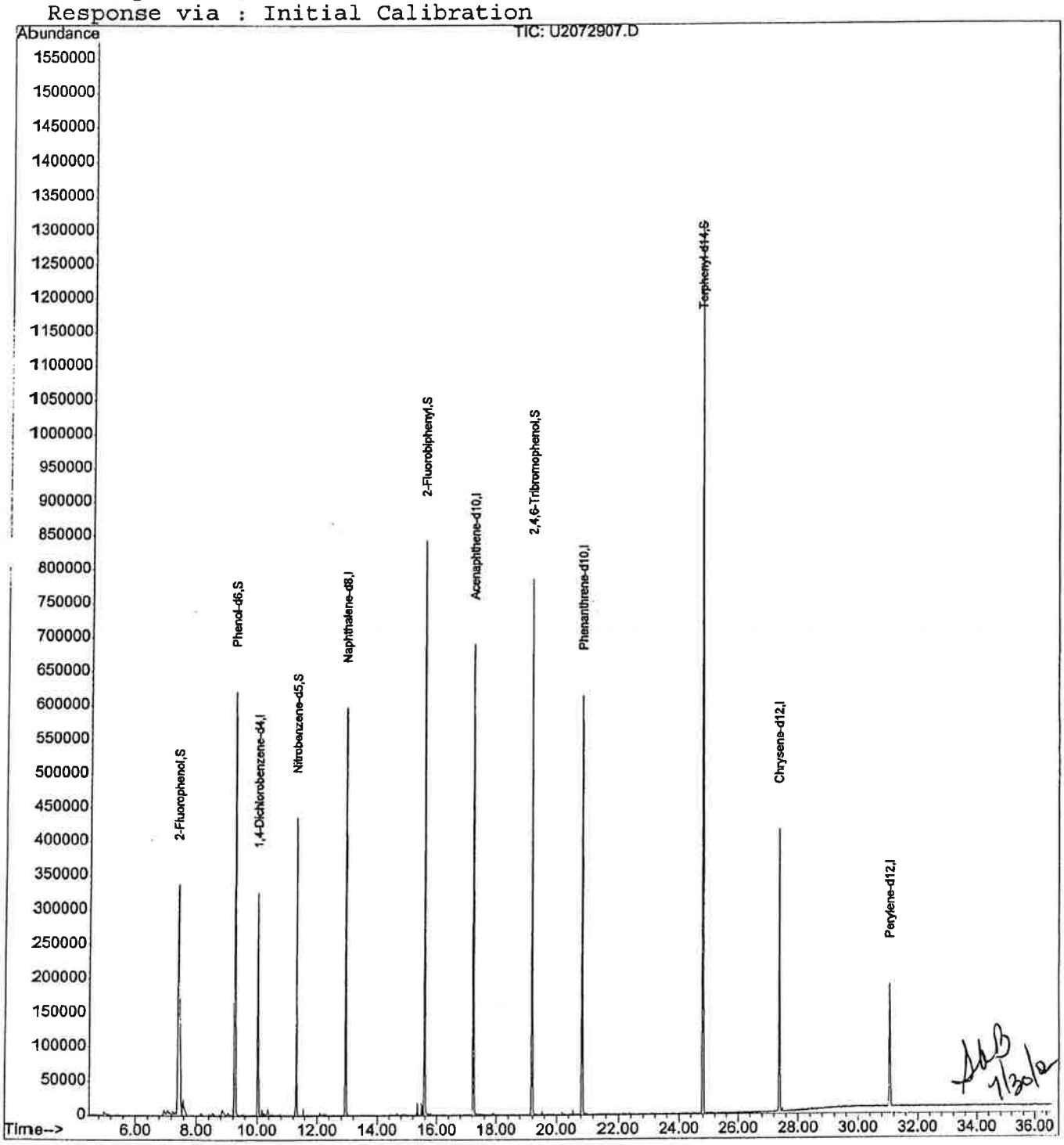
(#) = qualifier out of range (m) = manual integration
U2072907.D UBNA0722.M Tue Jul 30 07:12:41 2002

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072907.D
Acq On : 29 Jul 2002 9:02 pm
Sample : 288671A SWC-001
Misc : 1040/1ML QC757LL.012 B17
MS Integration Params: RTEINT.P
Quant Time: Jul 29 21:39 2002

Vial: 8
Operator: SHERREE
Inst : Instrumen
Multiplr: 1.00
Quant Results File: UBNA0722.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration



Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 288672A
MATRIX : WATER
CLIENT ID : SWC-002
Sample wt/vol : 1030

ANALYSIS DATE : 07/29/2002
RECVD DATE : 07/18/2002
ID FILE : g08.id
DATA FILE : U2072908

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
[illegible]95-3	Nitrobenzene	U	10
[illegible]59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	49
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	U	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	14	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	19
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	24
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

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Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

69564

LAB SAMPLE # : 288672A
MATRIX : WATER
CLIENT ID : SWC-002
Sample wt/vol: 1030

ANALYSIS DATE : 07/29/2002
RECVD DATE : 07/18/2002
ID FILE : g08.id
DATA FILE : U2072908

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	24
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	24
100-02-7	4-Nitrophenol	U	24
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	24
100-01-6	4-Nitroaniline	U	24
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
118-74-1	Hexachlorobenzene	U	10
87-86-5	Pentachlorophenol	U	24
85-01-8	Phenanthrene	U	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69564

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072908.D Vial: 9
Acq On : 29 Jul 2002 9:48 pm Operator: SHERREE
Sample : 288672A SWC-002 Inst : Instrumen
Misc : 1030/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 29 22:24:58 2002 Quant Results File: UBNA0722.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0722

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.02	152	126324	40.00	ul/l	0.09
19) Naphthalene-d8	12.95	136	510527	40.00	ul/l	0.09
34) Acenaphthene-d10	17.25	164	321264	40.00	ul/l	0.10
54) Phenanthrene-d10	20.85	188	491705	40.00	ul/l	0.11
67) Chrysene-d12	27.38	240	343512	40.00	ul/l	0.11
76) Perylene-d12	31.07	264	217332	40.00	ul/l	0.17
System Monitoring Compounds						
4) 2-Fluorophenol	7.42	112	379867	88.02	ul/l	0.09
Spiked Amount 200.000			Recovery = 44.01%			
6) Phenol-d6	9.26	99	561531	101.92	ul/l	0.07
Spiked Amount 200.000			Recovery = 50.96%			
20) Nitrobenzene-d5	11.31	82	290979	52.98	ul/l	0.08
Spiked Amount 100.000			Recovery = 52.98%			
38) 2-Fluorobiphenyl	15.59	172	476521	47.25	ul/l	0.09
Spiked Amount 100.000			Recovery = 47.25%			
58) 2,4,6-Tribromophenol	19.20	330	181470	167.32	ul/l	0.11
Spiked Amount 200.000			Recovery = 83.66%			
70) Terphenyl-d14	24.80	244	864705	100.29	ul/l	0.12
Spiked Amount 100.000			Recovery = 100.29%			
Target Compounds						Qvalue
33) 2-Methylnaphthalene	14.65	142	116418	13.98	ul/l	98

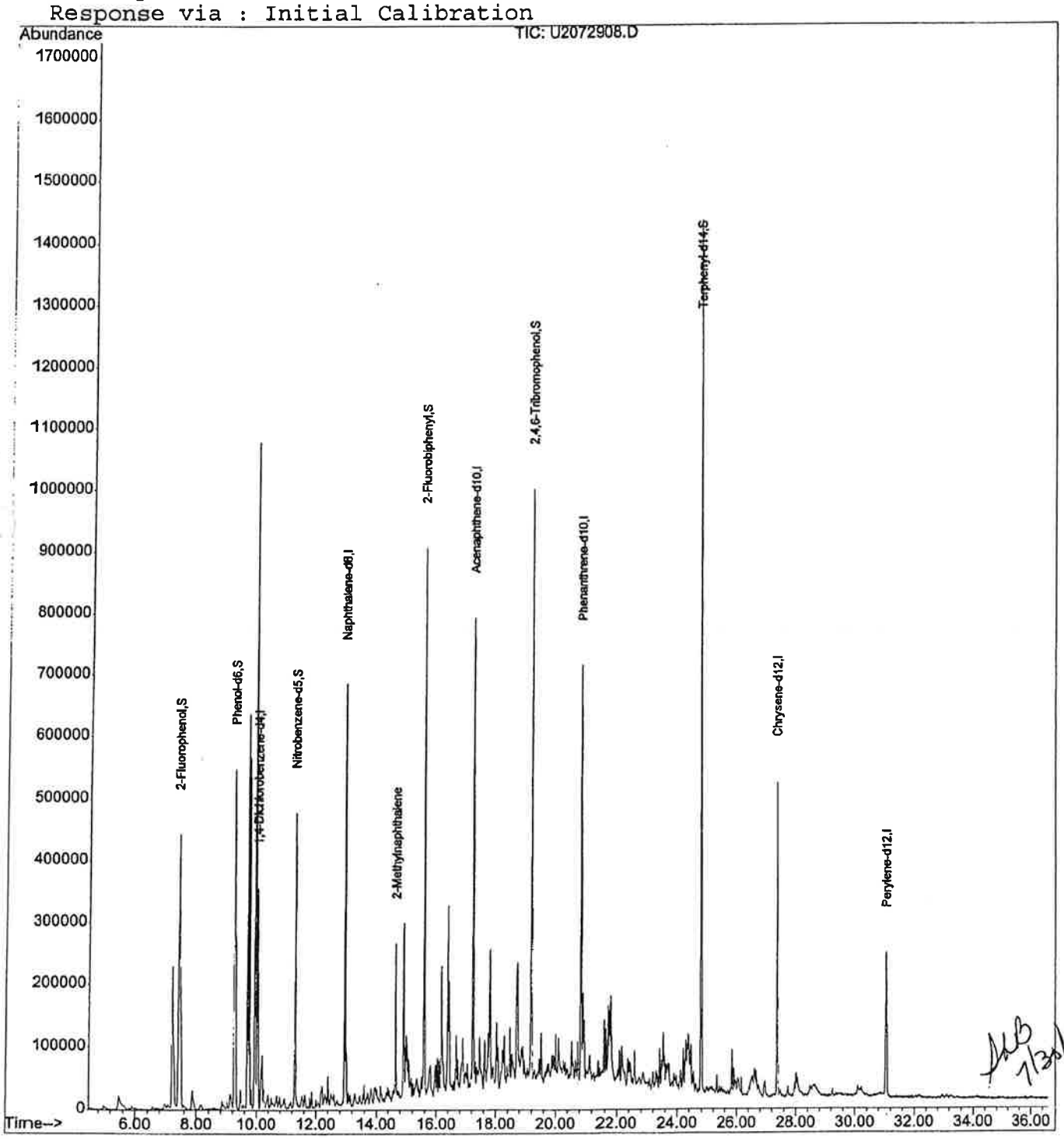
7/30/02 7/30/02

(#) = qualifier out of range (m) = manual integration

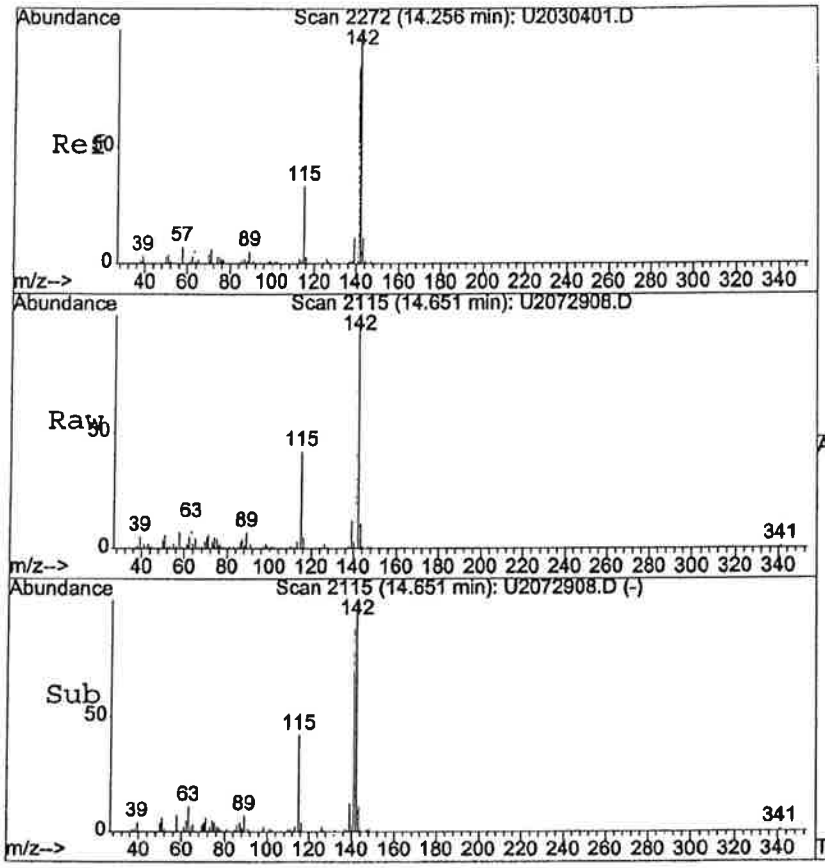
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072908.D Vial: 9
Acq On : 29 Jul 2002 9:48 pm Operator: SHERREE
Sample : 288672A SWC-002 Inst : Instrumen
Misc : 1030/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 7:13 2002 Quant Results File: UBNA0722.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration



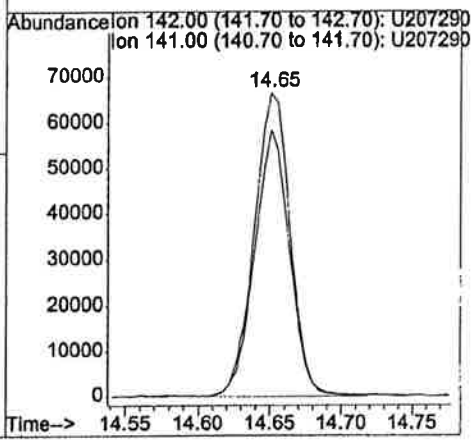
AMB 7/30/02



#33
2-Methylnaphthalene
Concen: 13.98 ul/l
RT: 14.65 min Scan# 2115
Delta R.T. 0.09 min
Lab File: U2072908.D
Acq: 29 Jul 2002 9:48 pm

Tgt Ion:142 Resp: 116418

Ion	Ratio	Lower	Upper
142	100		
141	87.9	68.9	103.3



Washington
Environmental Laboratory

69564

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 288673A
MATRIX : WATER
CLIENT ID : SWC-003
Sample wt/vol : 1050

ANALYSIS DATE : 07/29/2002
RECVD DATE : 07/18/2002
ID FILE : g08.id
DATA FILE : U2072909

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
98-95-3	Nitrobenzene	U	10
59-1	Isophorone	U	10
-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	48
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	U	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	15	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	19
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	24
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

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SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

69564

LAB SAMPLE # : 288673A
MATRIX : WATER
CLIENT ID : SWC-003
Sample wt/vol: 1050

ANALYSIS DATE : 07/29/2002
RECVD DATE : 07/18/2002
ID FILE : g08.id
DATA FILE : U2072909

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	24
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	24
100-02-7	4-Nitrophenol	U	24
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	24
100-01-6	4-Nitroaniline	U	24
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
118-74-1	Hexachlorobenzene	U	10
87-86-5	Pentachlorophenol	U	24
01-8	Phenanthrene	U	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69564

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072909.D Vial: 10
Acq On : 29 Jul 2002 10:33 pm Operator: SHERREE
Sample : 288673A SWC-003 Inst : Instrumen
Misc : 1050/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 29 23:10:03 2002 Quant Results File: UBNA0722.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0722

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.02	152	121903	40.00	ul/l	0.09
19) Naphthalene-d8	12.95	136	491522	40.00	ul/l	0.09
34) Acenaphthene-d10	17.25	164	307331	40.00	ul/l	0.10
54) Phenanthrene-d10	20.85	188	471802	40.00	ul/l	0.10
67) Chrysene-d12	27.38	240	313571	40.00	ul/l	0.11
76) Perylene-d12	31.07	264	197428	40.00	ul/l	0.17
System Monitoring Compounds						
4) 2-Fluorophenol	7.41	112	396997	95.33	ul/l	0.08
Spiked Amount 200.000			Recovery = 47.66%			
6) Phenol-d6	9.26	99	587261	110.46	ul/l	0.07
Spiked Amount 200.000			Recovery = 55.23%			
20) Nitrobenzene-d5	11.31	82	307895	58.23	ul/l	0.08
Spiked Amount 100.000			Recovery = 58.23%			
38) 2-Fluorobiphenyl	15.59	172	494176	51.23	ul/l	0.09
Spiked Amount 100.000			Recovery = 51.23%			
58) 2,4,6-Tribromophenol	19.20	330	187944	180.60	ul/l	0.11
Spiked Amount 200.000			Recovery = 90.30%			
70) Terphenyl-d14	24.80	244	887446	112.76	ul/l	0.12
Spiked Amount 100.000			Recovery = 112.76%			
Target Compounds						Qvalue
33) 2-Methylnaphthalene	14.65	142	124671	15.55	ul/l	100

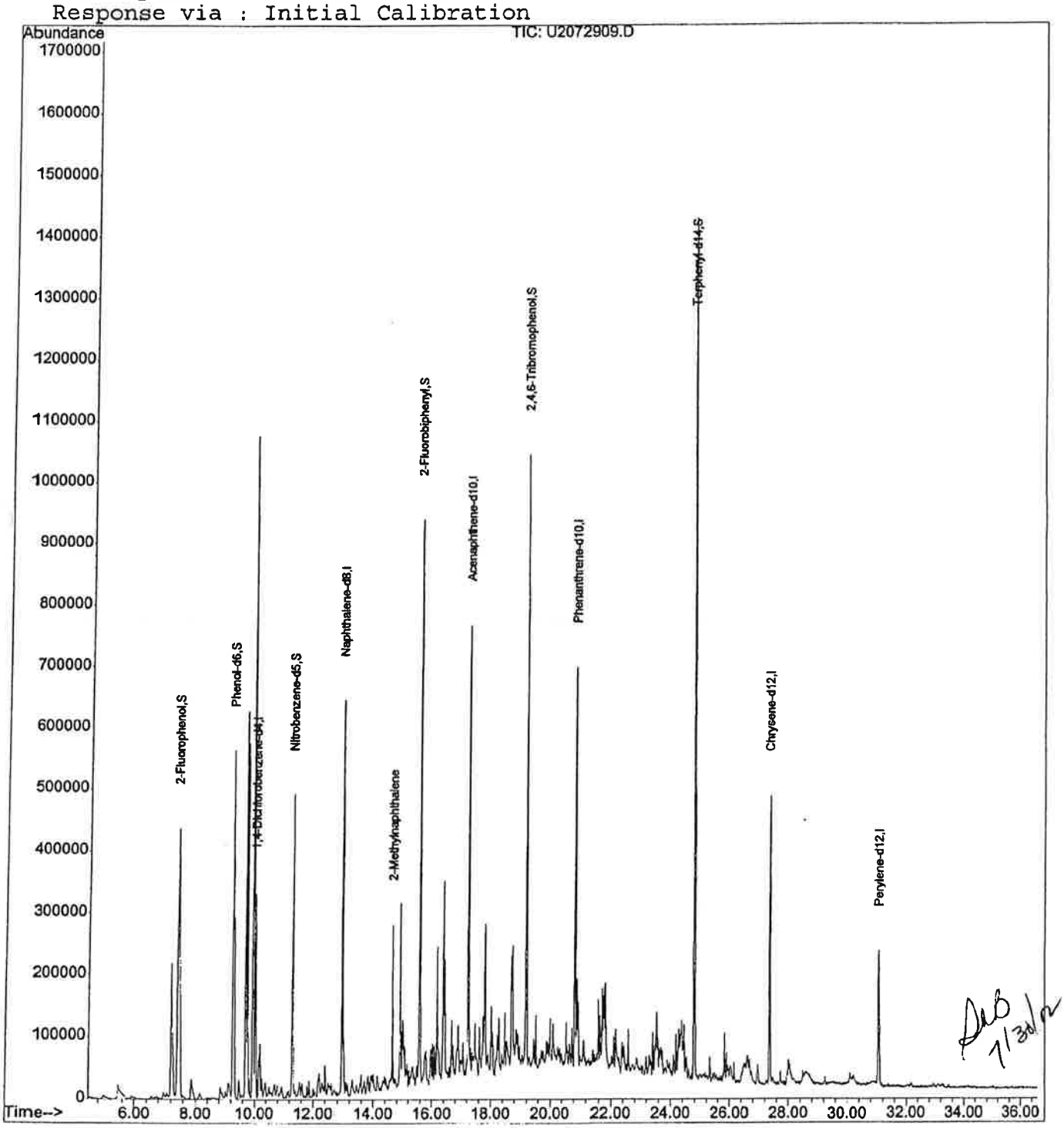
7/30/02
7/30/02

(#) = qualifier out of range (m) = manual integration
U2072909.D UBNA0722.M Tue Jul 30 07:14:35 2002

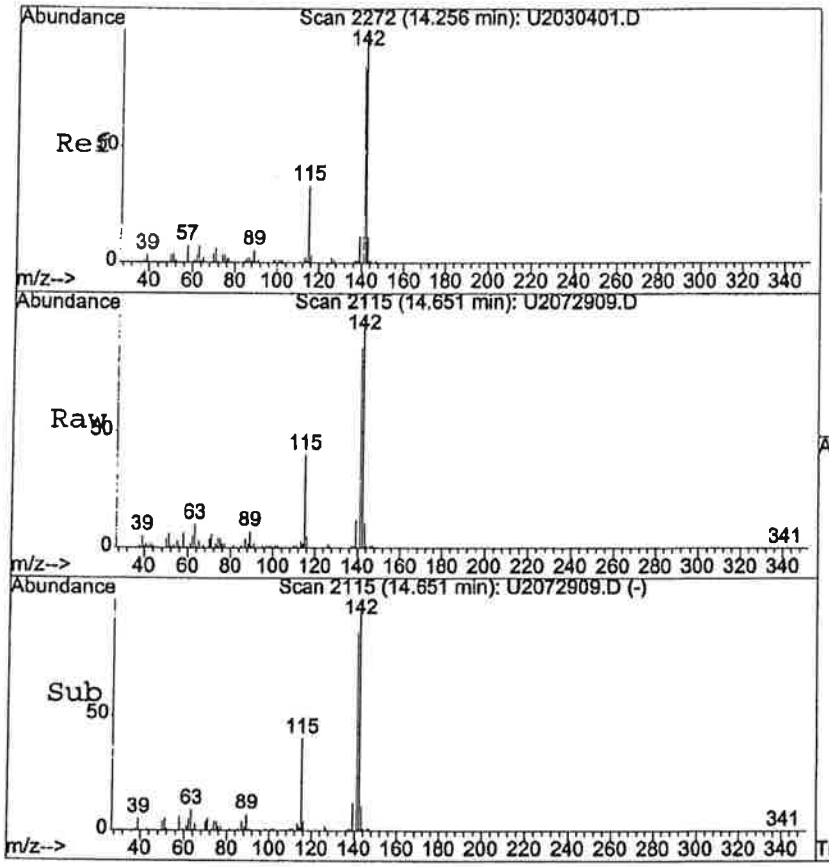
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072909.D Vial: 10
Acq On : 29 Jul 2002 10:33 pm Operator: SHERREE
Sample : 288673A SWC-003 Inst : Instrumen
Misc : 1050/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 7:14 2002 Quant Results File: UBNA0722.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration



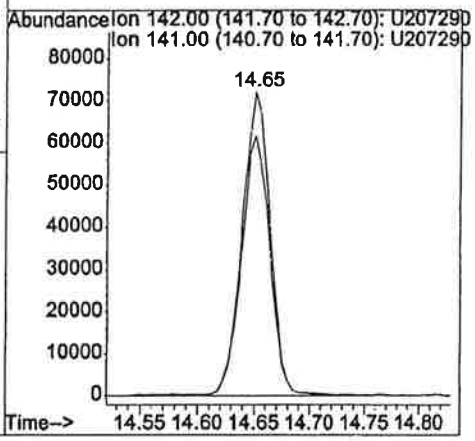
DLB 7/30/02



#33
2-Methylnaphthalene
Concen: 15.55 ul/l
RT: 14.65 min Scan# 2115
Delta R.T. 0.09 min
Lab File: U2072909.D
Acq: 29 Jul 2002 10:33 pm

Tgt Ion:142 Resp: 124671

Ion	Ratio	Lower	Upper
142	100		
141	85.7	68.9	103.3



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2C
WATER SEMIVOLATILE SURROGATE RECOVERY

EPA SAMPLE NUMBER	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	OTHER	TOT OUT
BLK757LL.012_B17	65	63	108	57	51	77		0
LCS757LL.012	60	58	103	54	47	83		0
288865B	68	60	114	45	32	53		0
288865B_MS	61	57	112	48	33	68		0
288865B_MSD	56	50	102	43	31	62		0
288671A	54	52	115	46	41	74		0
288672A	53	47	100	51	44	84		0
288673A	58	51	113	55	48	90		0
288810A	57	51	104	53	46	88		0
288811A	48	41 *	100	44	39	73		1
289000A	55	49	109	49	43	79		0
289001A	48	44	102	43	39	74		0
289002A	47	44	99	42	37	65		0
289081A	55	51	112	49	43	70		0
289082A	54	48	101	50	44	77		0

	QC LIMITS
S1 (NBZ) = Nitrobenzene-d5	(35-114)
S2 (FBP) = 2-Fluorobiphenyl	(43-116)
S3 (TPH) = Terphenyl-d14	(33-141)
S4 (PHL) = Phenol-d6	(10-110)
S5 (2FP) = 2-Fluorophenol	(21-110)
S6 (TBP) = 2,4,6-Tribomophenol	(10-123)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

FORM II SV-1

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : BLK757LL.012_B17
MATRIX : WATER
CLIENT ID :
Sample wt/vol : 1000

ANALYSIS DATE : 07/29/2002
RECVD DATE :
ID FILE : g08.id
DATA FILE : U2072902

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
[illegible]95-3	Nitrobenzene	U	10
[illegible]59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	50
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	U	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	U	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	20
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	25
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : BLK757LL.012_B17
MATRIX : WATER
CLIENT ID :
Sample wt/vol: 1000

ANALYSIS DATE : 07/29/2002
RECVD DATE :
ID FILE : g08.id
DATA FILE : U2072902

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	25
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	25
100-02-7	4-Nitrophenol	U	25
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	25
100-01-6	4-Nitroaniline	U	25
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
118-74-1	Hexachlorobenzene	U	10
87-86-5	Pentachlorophenol	U	25
-01-8	Phenanthrene	U	10
0-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072902.D Vial: 3
Acq On : 29 Jul 2002 5:15 pm Operator: SHERREE
Sample : BLK757LL.012_B17 Inst : Instrumen
Misc : 1000/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 29 17:52:36 2002 Quant Results File: UBNA0722.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0722

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.03	152	111118	40.00 ul/l	0.09
19) Naphthalene-d8	12.95	136	446097	40.00 ul/l	0.09
34) Acenaphthene-d10	17.24	164	273619	40.00 ul/l	0.09
54) Phenanthrene-d10	20.85	188	404247	40.00 ul/l	0.10
67) Chrysene-d12	27.37	240	266425	40.00 ul/l	0.10
76) Perylene-d12	31.06	264	174245	40.00 ul/l	0.16
System Monitoring Compounds					
4) 2-Fluorophenol	7.41	112	383887	101.13 ul/l	0.08
Spiked Amount 200.000			Recovery =	50.56%	
6) Phenol-d6	9.27	99	555254	114.58 ul/l	0.07
Spiked Amount 200.000			Recovery =	57.29%	
20) Nitrobenzene-d5	11.31	82	313659	65.36 ul/l	0.08
Spiked Amount 100.000			Recovery =	65.36%	
38) 2-Fluorobiphenyl	15.59	172	540309	62.91 ul/l	0.09
Spiked Amount 100.000			Recovery =	62.91%	
58) 2,4,6-Tribromophenol	19.20	330	137532	154.25 ul/l	0.10
Spiked Amount 200.000			Recovery =	77.13%	
70) Terphenyl-d14	24.80	244	721442	107.89 ul/l	0.12
Spiked Amount 100.000			Recovery =	107.89%	

Target Compounds Qvalue

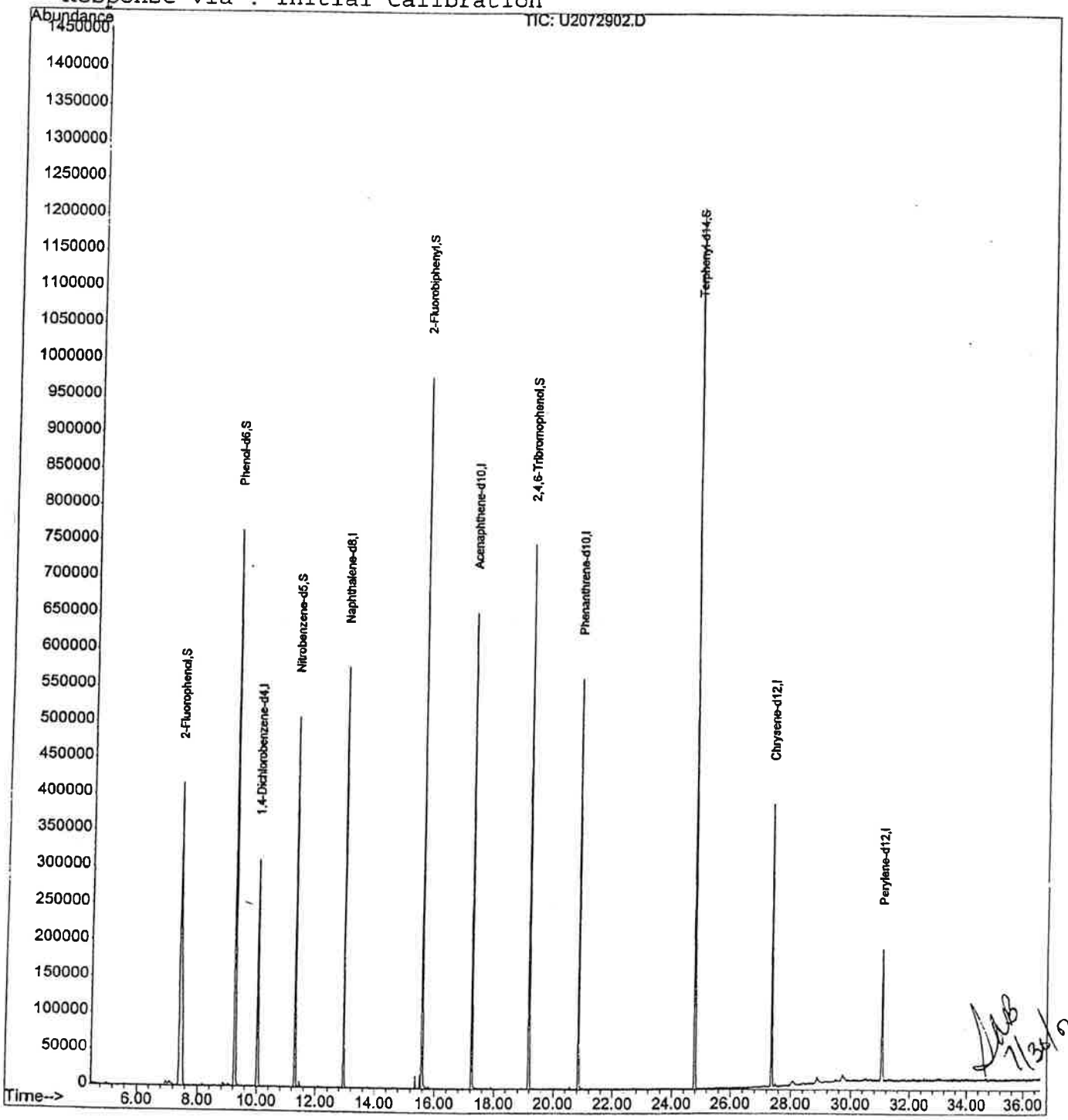
JWB 7/30/02
KMM 7/30/02

(#) = qualifier out of range (m) = manual integration
U2072902.D UBNA0722.M Tue Jul 30 07:06:44 2002 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072902.D Vial: 3
Acq On : 29 Jul 2002 5:15 pm Operator: SHERREE
Sample : BLK757LL.012_B17 Inst : Instrumen
Misc : 1000/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 7:06 2002 Quant Results File: UBNA0722.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration



THE WASHINGTON GROUP
ENVIRONMENTAL SERVICES LABORATORY

301 Chelsea Parkway
Boothwyn, Pa. 19061
(610) 497-8000

Report For:

Sunoco, Inc.
Ms. Judy Brackin
P.O. Box 426
Marcus Hook PA 19061

Job Number

75700702

Summary Number

69596

August 02, 2002

Reviewed by _____ 8/8/2
Project Manager Elizabeth Witouski

NJ ID# PA343	EPA ID# PA00078	PA ID# 23-272
CA ID# 02105CA	RI ID# 238	CT ID# PH0687
NY ID# 11345	MD ID# 286	MA ID# M-PA078

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Environmental Services Laboratory Data Summary
Summary # 69596 Printed - 08/02/02 07:35:01

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288810A	SWC-005	757	EXT BNA H2O			COMPLETE	07/18/2002	07/25/2002	07/29/2002	DJN
288810A	SWC-005	G08	1,2,4-Trichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	1,2-Dichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	1,3-Dichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	1,4-Dichlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	2,4,5-Trichlorophenol	ND	20	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	2,4,6-Trichlorophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	2,4-Dichlorophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	2,4-Dimethylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	2,4-Dinitrophenol	ND	25	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	2,4-Dinitrotoluene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	2,6-Dinitrotoluene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	2-Chloronaphthalene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	2-Chlorophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	2-Methylnaphthalene	23	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	2-Methylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	2-Nitroaniline	ND	25	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	2-Nitrophenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	3,3'-Dichlorobenzidine	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	3-Nitroaniline	ND	25	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	4,6-Dinitro-2-methylphenol	ND	25	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	4-Bromophenyl phenyl ether	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	4-Chloro-3-methylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	4-Chloroaniline	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	4-Chlorophenyl phenyl ether	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	4-Methylphenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	4-Nitroaniline	ND	25	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	4-Nitrophenol	ND	25	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Acenaphthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Acenaphthylene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Aniline	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Anthracene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69596 Printed - 08/02/02 07:35:01

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288810A	SWC-005	G08	Benz(a)anthracene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Benzo(a)pyrene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Benzo(b)fluoranthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Benzo(ghi)perylene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Benzo(k)fluoranthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Benzoic acid	ND	50	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Benzyl alcohol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Bis(2-chloroethoxy)methane	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Bis(2-chloroethyl)ether	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Bis(2-chloroisopropyl) ethe	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Bis(2-ethylhexyl) phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Butyl benzyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Chrysene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Di-n-butyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Di-n-octyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Dibenz(a,h)anthracene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Dibenzofuran	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Diethyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Dimethyl phthalate	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Fluoranthene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Fluorene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Hexachlorobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Hexachlorobutadiene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Hexachlorocyclopentadiene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Hexachloroethane	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Isophorone	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	N-Nitrosodi-n-propylamine	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	N-Nitrosodiphenylamine	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Naphthalene	5 J	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Nitrobenzene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Pentachlorophenol	ND	25	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Phenanthrene	7 J	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Phenol	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB
288810A	SWC-005	G08	Pyrene	ND	10	ug/L	07/18/2002	07/29/2002	07/29/2002	SAB

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Environmental Services Laboratory Data Summary
Summary # 69596 Printed - 08/02/02 07:35:01

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288810B	SWC-005	G18	Benzene	ND	25	ug/L	07/18/2002	07/30/2002	07/30/2002	PSS
288810B	SWC-005	G18	Carbon Disulfide	ND	25	ug/L	07/18/2002	07/30/2002	07/30/2002	PSS
288810B	SWC-005	G18	Ethylbenzene	ND	25	ug/L	07/18/2002	07/30/2002	07/30/2002	PSS
288810B	SWC-005	G18	Toluene	18 J	25	ug/L	07/18/2002	07/30/2002	07/30/2002	PSS
288810B	SWC-005	G18	Xylenes-Meta&Para	20 J	25	ug/L	07/18/2002	07/30/2002	07/30/2002	PSS
288810B	SWC-005	G18	Xylenes-Ortho	9 J	25	ug/L	07/18/2002	07/30/2002	07/30/2002	PSS
288810C	SWC-005	310	Cyanide, Total	ND (0.05)		mg/l	07/18/2002	07/30/2002	08/01/2002	GCW
288810D	SWC-005	200	AA,Digest H2O			COMPLETE	07/18/2002	07/19/2002	07/19/2002	ART
288810D	SWC-005	227IC	Cr Chromium	ND<0.010		mg/l	07/18/2002	07/29/2002	07/29/2002	CAK
288810D	SWC-005	249IC	Pb Lead	ND<0.0050		mg/l	07/18/2002	07/29/2002	07/29/2002	CAK
288811A	SWC-004	757	EXT BNA H2O			COMPLETE	07/18/2002	07/25/2002	07/29/2002	DJN
288811A	SWC-004	G08	1,2,4-Trichlorobenzene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	1,2-Dichlorobenzene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	1,3-Dichlorobenzene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	1,4-Dichlorobenzene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	2,4,5-Trichlorophenol	ND	19	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	2,4,6-Trichlorophenol	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	2,4-Dichlorophenol	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	2,4-Dimethylphenol	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	2,4-Dinitrophenol	ND	24	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	2,4-Dinitrotoluene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	2,6-Dinitrotoluene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	2-Chloronaphthalene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	2-Chlorophenol	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	2-Methylnaphthalene	8 J	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	2-Methylphenol	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	2-Nitroaniline	ND	24	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	2-Nitrophenol	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69596 Printed - 08/02/02 07:35:01

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288811A	SWC-004	G08	3,3'-Dichlorobenzidine	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	3-Nitroaniline	ND	24	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	4,6-Dinitro-2-methylphenol	ND	24	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	4-Bromophenyl phenyl ether	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	4-Chloro-3-methylphenol	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	4-Chloroaniline	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	4-Chlorophenyl phenyl ether	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	4-Methylphenol	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	4-Nitroaniline	ND	24	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	4-Nitrophenol	ND	24	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Acenaphthene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Acenaphthylene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Aniline	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Anthracene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Benz(a)anthracene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Benzo(a)pyrene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Benzo(b)fluoranthene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Benzo(ghi)perylene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Benzo(k)fluoranthene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Benzoic acid	ND	49	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Benzyl alcohol	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Bis(2-chloroethoxy)methane	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Bis(2-chloroethyl)ether	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Bis(2-chloroisopropyl) ethe	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Bis(2-ethylhexyl) phthalate	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Butyl benzyl phthalate	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Chrysene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Di-n-butyl phthalate	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Di-n-octyl phthalate	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Dibenz(a,h)anthracene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Dibenzofuran	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Diethyl phthalate	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Dimethyl phthalate	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Fluoranthene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Fluorene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB

The ..ashington Group International
Environmental Services Laboratory Data Summary
Summary # 69596 Printed - 08/02/02 07:35:01

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288811A	SWC-004	G08	Hexachlorobenzene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Hexachlorobutadiene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Hexachlorocyclopentadiene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Hexachloroethane	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Isophorone	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	N-Nitrosodi-n-propylamine	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	N-Nitrosodiphenylamine	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Naphthalene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Nitrobenzene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Pentachlorophenol	ND	24	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Phenanthrene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Phenol	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811A	SWC-004	G08	Pyrene	ND	10	ug/L	07/18/2002	07/30/2002	07/30/2002	SAB
288811B	SWC-004	G18	Benzene	ND	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288811B	SWC-004	G18	Carbon Disulfide	ND	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288811B	SWC-004	G18	Ethylbenzene	ND	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288811B	SWC-004	G18	Toluene	4 J	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288811B	SWC-004	G18	Xylenes-Meta&Para	9	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288811B	SWC-004	G18	Xylenes-Ortho	5 J	5	ug/L	07/18/2002	07/30/2002	07/30/2002	NRT
288811C	SWC-004	310	Cyanide, Total	ND (0.05)		mg/l	07/18/2002	07/30/2002	08/01/2002	GCW
288811D	SWC-004	200	AA,Digest H20			COMPLETE	07/18/2002	07/19/2002	07/19/2002	ART
288811D	SWC-004	227IC	Cr Chromium	ND<0.010		mg/l	07/18/2002	07/29/2002	07/29/2002	CAK
288811D	SWC-004	249IC	Pb Lead	ND<0.0050		mg/l	07/18/2002	07/29/2002	07/29/2002	CAK

Approved by: [signature]

Report Prep: M. Hamalak

THE WASHINGTON GROUP
ENVIRONMENTAL LABORATORY

Methods Used for Summary# 69596:

Code	Description
200	Total Metals, Aqueous/FLAA,GFAA,ICP/SW846/EPA 200 Series
227IC	Chromium by ICP/EPA 200.7/SW846 6010
249IC	Lead by ICP/EPA 200.7/SW846 6010
310	Total Cyanide/spectrophotometric,automated 335.4 /dist+335.3
757	Extraction Procedure B/N and Acids (H2O) SW-846 Method 3520C
G08	Base/Neutral and Acid Extractable/SW-846 Meth 8270C TCL List
G18	GC/MS VOA (TCL List)/SW-846 Method 5035/8260B

The Washington Group
Environmental Laboratory

DATA QUALIFIERS

The following list shows data qualifiers that may appear in this report, and the meaning of each.

Qualifier	Meaning
B	Compound was detected in the associated blank.
D	Result was obtained from a different dilution than other analytes.
E	Result is estimated. Usually, this qualifier indeicates that the result is above the calibrated range of the instrument
J	Result is estimated. Usually this qualifier indicates the reported concentration is below the laboratory's reporting limit.
N	Indicates a Tentatively Identified Compound.
ND	Analyte was not detected.
U	Analyte was not detected (U and ND qualifiers are interchangable).

ABBREVIATIONS

The following list shows abbreviations that commonly occur in analytical reports.

Abbreviation	Meaning
DL	Dilution
LCS	Laboratory Control Sample
LCSS	Laboratory Control Sample (soil)
LCSW	Laboratory Control Sample (water)
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NR	No Recovery
PB	Preparation Blank
PS	Post-Digestion Spike
RE	Reanalysis
RPD	Relative Percent Difference
SR	Serial Dilution

Washington — **Laboratory Chain Of Custody**

Quote No:

Ship To:

Lab Job No: 75700702

Washington Group Laboratory
301 Chelsea Parkway
Boothwyn, PA 19061
Phone: 610-497-8000
Fax: 610-497-8005

Client/Office: Sunoco - Marcus Hook Ref Phone: 215-977-3856
Address: Delaware Ave + Green St, Marcus Hook, PA 19061
Send report to: Judy Brackin Fax: 215-977-6549
Project Description: Solid Waste Closure

Send invoice to: Judy Brackin
Address: Sunoco Inc., 1801 Market St Phila, PA 19103
P.O. No:

TAT (for data): Identify number of working days below);...or Date-->:
☐ Rush 1 2 3 4 5 days ☐ Firm(6-12) ☒ Std.(~12) ☐ Other
Lab Staffer confirming Rush/Firm: Hardcopy TAT Date?:

Report Type: ☐ Results only ☒ Data +QC ☐ Reduced Deliv. ☐ Other:
☐ Regulatory Format (CLP like) ☐ Electronic/disk->(Format?)

Regulatory Samples? ☒ YES ☐ NO
If YES?: ☐ Act II ☐ UST ☒ RCRA ☐ NPDES ☐ Phase I/II ☐ ISRA ☐ Other:

Analytical Protocol: ☒ SW846 ☐ EPA600 ☐ Drinking H2O ☐ ASTM ☐ Other:

Analysis Required: SVOA 8270, VOA 8260, TOTAL CN, PD + TOTAL Cr

Lab Use Only
rev. 10/12/99
Due Date:
Cooler Tmp 0 deg C
custody seal yes ___ no ✓
No.:
Summary No. 69596

Sample Data (NJ HAZITE disk deliverable limits sample ID to 7 Characters) — **Container Data**

ID (NJ limit=7 characters)	date	time	matrix	grab	comp	type	no.	preservative	pH	SVOA 8270	VOA 8260	TOTAL CN	PD + TOTAL Cr	Lab Log No:	
SWC-005	7-18-02	1350	H_2O	X	100	A/G	2			X				288810	A-1,2
*			H_2O	X		VOA	2	HCl	(DAY) 7/18/02		X				B ⊥
			H_2O	X	250	P	1	NaOH	>12			X			C
			H_2O	X	500	P	1	HNO_3	<2				X		D
SWC-004	7-18-02	1420	H_2O	X		A/G	2			X				288811	A-1,2
			H_2O	X		VOA	2	HCl			X				B ⊥
			H_2O	X		P	1	NaOH	>12			X			C
			H_2O	X		P	1	HNO_3	<2				X		D
			~~H_2O~~	~~X~~		~~A/G~~	~~2~~			X					
			~~H_2O~~	~~X~~		~~VOA~~	~~2~~	~~HCl~~			X				
			~~H_2O~~	~~X~~		~~P~~	~~1~~	~~NaOH~~	~~>12~~			X			
			~~H_2O~~	~~X~~		~~P~~	~~1~~	~~HNO_3~~	~~<2~~				X		

Comments/Special Handling/Storage/Disposal--->: Note: must have detection limits at or below clearance levels in Attached Table 1
* Both vials have head space (DAY) 7/18/02

Sampled by: Kulp
Phone no: 215 977 3856

Relinquished By:		Received By:		Method of Shipment
Name: Frank Kulp	Date: 7-18-02	Name: Judy V Brackin	Date: 7/18/02	Airbill No.
Organization:	Time: 1425	Organization:	Time: 1425	
Name: Judy Brackin	Date: 7-18-02	Name: R. Wu	Date: 7/18/02	HAND
Organization:	Time: 1525	Organization: TWGINT	Time: 1525	
Name:	Date:	Name:	Date:	
Organization:	Time:	Organization:	Time:	

Washington
Environmental Laboratory

SAMPLE RECEIVING CHECKLIST

Client/Site: SUNOCO

Assigned Summary # 69596

Section 1. Laboratory Courier (omit if samples received directly from client or 3rd party)

1.1 Samples taken by lab personnel?	☐ Yes	☐ No	
Preserved in field?	☐ Yes	☐ No	☐ Not Req.
Stored on ice?	☐ Yes	☐ No	☐ Not Req.
Date/time last sample placed in cooler: _____			
1.2 Samples taken by customer or 3rd party?	☐ Yes	☐ No	
Received under refrigeration?	☐ Yes (cooler)	☐ Yes (refrig.)	☐ No
If yes, in Cooler sealed?	☐ Yes	☐ No	
If no, ice present?	☐ Yes	☐ No	
Ice added?	☐ Yes	☐ No	
If refrig. placed in cooler/iced	☐ Yes	☐ No	

Section 2. Laboratory

2.1 Delivered by	☒ Client	☐ Lab Pers	☐ Parcel Svc
2.2 Packaging	☒ Cooler	☐ Other/none	
Custody Seals	☐ Present	☒ Absent	☐ Broken
Ice	☒ Present	☐ Absent	☐ Melted
Temperature	0 °C		
2.3 Documentation			
Airbill Present	☐ Yes, # N/A		☐ No
COC	☒ Rec'd		☐ Prpd by Lab
2.4 Sample Containers			
Appropriate for specified analyses?	☒ Yes	☐ No*	
Intact?	☒ Yes	☐ No*	
Labeled, and labels legible?	☒ Yes	☐ No*	
Labels agree with COC?	☒ Yes	☐ No*	

2.5 Preservation (water samples only)				
Metals	pH<2	☒ Yes	☐ No*	☐ NA
Cyanides	pH >12	☒ Yes	☐ No*	☐ NA
Sulfides	pH >9	☐ Yes	☐ No*	☒ NA
BNA, Pest, PCB, CN, Phenols, NO_3	Cl_2 absent	☒ Yes	☐ No*	☐ NA
TOC, COD, Oil/Grease, Phenols, TPH	pH<2	☐ Yes	☐ No*	☒ NA
TOX, TKN, NH3, Tot. P.	pH<2	☐ Yes	☐ No*	☒ NA
Were preservatives added at lab?		☐ Yes*	☒ No	☐ N/A

Comments (note: any response marked "*" requires detailed explanation identify specific samples, what was wrong, and what was done)

Initials: DAG Date: 7/18/02

admin3/QA/lList/SR Checlist rev10/01

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: The Washington Group International

Lab Sample ID

288759C	288759CSR
288759CPS	288760
288761C	288762
288763C	288764
288765C	288766
288767C	288768
288769C	288770
288771C	288772
288773C	288774
288775C	288810D
288811D	288761C
288763C	

Were ICP interelement corrections applied? Yes/No

Were ICP background corrections applied? Yes/No

If Yes - were raw data generated before application of background corrections Yes/No

Comments:

ch ID: 573 Analysis Start Time: 959

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Laboratory Manager's designee, as verified by the following signature.

Signature: [signature] Name: Candia Knowles

Date: 7 29 01 Title:

Data File: bjul29.

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Initial/Continuing Calibration Source : _____

Concentration Units: mg/l

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R *	CCV-1 True	CCV-1 Found	CCV-1 %R	CCV-2 Found	CCV-2 %R	CCV-3 Found	CCV-3 %R
Aluminum	2.00	2.07	103.5	2.00	1.96	98.0	1.95	97.5	1.93	96.5
Antimony	0.50	0.50	100.9	0.50	0.51	101.4	0.50	100.1	0.49	98.9
Arsenic	0.50	0.48	96.7	0.50	0.50	99.4	0.49	98.2	0.49	97.3
Barium	2.00	1.96	98.0	2.00	1.98	99.0	1.96	98.0	1.93	96.5
Beryllium	0.05	0.05	97.6	0.05	0.05	98.0	0.05	96.8	0.05	95.6
Cadmium	0.25	0.25	98.6	0.25	0.25	99.1	0.24	97.7	0.24	96.5
Calcium	5.00	5.01	100.2	5.00	5.00	100.0	5.00	100.0	5.01	100.2
Chromium	0.20	0.20	99.0	0.20	0.20	99.0	0.20	98.0	0.19	96.5
Cobalt	0.50	0.49	98.2	0.50	0.49	98.8	0.49	97.4	0.48	96.4
Copper	0.25	0.25	99.2	0.25	0.25	98.8	0.25	98.0	0.24	96.8
Iron	1.00	0.97	97.3	1.00	0.96	96.4	0.96	95.7	0.95	94.9
Lead	0.50	0.49	98.4	0.50	0.50	100.1	0.49	98.6	0.49	97.6
Magnesium	5.00	4.91	98.2	5.00	4.96	99.2	4.90	98.0	4.84	96.8
Manganese	0.50	0.50	99.2	0.50	0.49	98.6	0.49	97.8	0.48	96.6
Molybdenum	0.50	0.48	96.8	0.50	0.50	99.2	0.49	97.8	0.48	96.6
Nickel	0.50	0.49	98.4	0.50	0.50	99.2	0.49	97.4	0.48	96.4
Selenium	0.50	0.48	97.0	0.50	0.50	99.2	0.49	97.3	0.49	97.6
Titanium	0.50	0.49	98.2	0.50	0.49	98.6	0.49	97.4	0.48	96.4
Silver	0.25	0.25	98.4	0.25	0.25	98.4	0.24	97.2	0.24	96.4
Sodium	5.00	4.89	97.8	5.00	4.91	98.2	4.85	97.0	4.73	94.6
Thallium	0.50	0.51	102.4	0.50	0.49	98.0	0.49	97.3	0.48	96.3
Vanadium	0.50	0.50	99.2	0.50	0.49	98.4	0.49	97.4	0.48	96.2
Zinc	0.50	0.49	97.2	0.50	0.49	98.4	0.48	96.8	0.48	96.0

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

bjul29.

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Initial Calibration Source :_____

Continuing Calibration Source:_____

Analyte	True	CCV-4 Found	%R	CCV-5 Found	%R	CCV-6 Found	%R
Aluminum	2.00	1.98	99.0	1.97	98.5	1.90	95.0
Antimony	0.50	0.50	100.2	0.50	99.7	0.49	98.9
Arsenic	0.50	0.49	98.3	0.49	97.1	0.48	96.9
Barium	2.00	1.98	99.0	1.96	98.0	1.92	96.0
Beryllium	0.05	0.05	97.8	0.05	96.8	0.05	95.0
Cadmium	0.25	0.25	99.0	0.24	97.5	0.24	95.2
Calcium	5.00	5.02	100.4	5.00	100.0	4.89	97.8
Chromium	0.20	0.20	98.0	0.19	97.5	0.19	97.0
Cobalt	0.50	0.49	98.2	0.49	97.6	0.47	95.0
Copper	0.25	0.25	99.6	0.25	98.4	0.24	95.6
Iron	1.00	0.96	96.5	0.96	95.6	0.94	94.4
Lead	0.50	0.49	98.6	0.49	97.8	0.49	97.5
Magnesium	5.00	4.95	99.0	4.90	98.0	4.81	96.2
Manganese	0.50	0.49	98.8	0.49	98.0	0.48	96.2
Molybdenum	0.50	0.49	98.0	0.48	96.8	0.48	96.6
Nickel	0.50	0.49	98.6	0.49	97.4	0.47	94.8
Selenium	0.50	0.49	98.3	0.48	96.9	0.49	97.0
Titanium	0.50	0.49	98.8	0.49	97.4	0.48	95.4
Silver	0.25	0.25	98.8	0.25	98.0	0.24	96.0
Sodium	5.00	4.92	98.4	4.89	97.8	4.85	97.0
Thallium	0.50	0.49	98.1	0.49	97.1	0.47	94.1
Vanadium	0.50	0.49	98.4	0.49	97.6	0.48	95.8
Zinc	0.50	0.49	98.4	0.49	97.0	0.47	94.6

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

bjul29.

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Initial Calibration Source :_____

Continuing Calibration Source:_____

Analyte	True	CCV-7 Found	%R	CCV-8 Found	%R	CCV-9 Found	%R
Aluminum	2.00	1.97	98.5	1.91	95.5	1.89	94.5
Antimony	0.50	0.49	98.2	0.49	98.9	0.49	97.7
Arsenic	0.50	0.48	96.8	0.48	97.0	0.48	95.5
Barium	2.00	1.97	98.5	1.93	96.5	1.93	96.5
Beryllium	0.05	0.05	97.6	0.05	95.2	0.05	94.8
Cadmium	0.25	0.24	97.7	0.24	96.0	0.24	95.3
Calcium	5.00	4.94	98.8	4.90	98.0	4.88	97.6
Chromium	0.20	0.19	97.0	0.19	97.5	0.19	96.5
Cobalt	0.50	0.49	97.8	0.48	95.6	0.48	95.2
Copper	0.25	0.25	98.4	0.24	96.0	0.24	95.2
Iron	1.00	0.95	95.5	0.94	93.7	0.94	93.8
Lead	0.50	0.49	97.2	0.49	97.8	0.48	96.4
Magnesium	5.00	4.95	99.0	4.84	96.8	4.83	96.6
Manganese	0.50	0.49	98.6	0.48	96.8	0.48	96.4
Molybdenum	0.50	0.48	96.2	0.49	97.0	0.48	95.8
Nickel	0.50	0.49	97.8	0.48	95.8	0.48	95.4
Selenium	0.50	0.48	96.6	0.48	96.8	0.48	95.3
Titanium	0.50	0.49	98.0	0.48	95.8	0.48	95.2
Silver	0.25	0.25	98.8	0.24	96.4	0.24	96.0
Sodium	5.00	4.93	98.6	4.83	96.6	4.69	93.8
Thallium	0.50	0.48	95.7	0.48	96.5	0.48	95.1
Vanadium	0.50	0.49	98.4	0.48	96.6	0.48	96.4
Zinc	0.50	0.49	97.4	0.48	95.6	0.47	94.6

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

bjul29

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Preparation Blank Matrix (soil/water) :Water

Preparation Blank Concentration Units (mg/L or mg/Kg) :mg/L

Analyte	Initial Calib. Blank	Continuing Calibration 1	2	3	
Aluminum	ND	ND	ND	ND	
Antimony	ND	0.0080	0.0063	0.0074	
Arsenic	ND	ND	ND	ND	
Barium	ND	ND	ND	ND	
Beryllium	ND	ND	ND	ND	
Cadmium	ND	ND	ND	ND	
Calcium	ND	ND	ND	ND	
Chromium	ND	ND	ND	ND	
Cobalt	ND	ND	ND	ND	
Copper	ND	ND	ND	ND	
Iron	ND	ND	ND	ND	
Lead	ND	ND	ND	ND	
Magnesium	ND	ND	ND	ND	
Manganese	ND	ND	ND	ND	
Molybdenum	ND	ND	ND	ND	
Nickel	ND	ND	ND	ND	
Selenium	ND	ND	ND	ND	
Titanium	ND	ND	ND	ND	
Silver	ND	ND	ND	ND	
Sodium	ND	ND	ND	ND	
Thallium	ND	ND	ND	ND	
Vanadium	ND	ND	ND	ND	
Zinc	ND	ND	ND	ND	

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Preparation Blank Matrix (soil/water) :Water

Preparation Blank Concentration Units (mg/L or mg/Kg) :mg/L

Analyte	Continuing Calibration 4	5	6	
Aluminum	ND	ND	ND	
Antimony	ND	ND	ND	
Arsenic	ND	ND	ND	
Barium	ND	ND	ND	
Beryllium	ND	ND	ND	
Cadmium	ND	ND	ND	
Calcium	ND	ND	ND	
Chromium	ND	ND	ND	
Cobalt	ND	ND	ND	
Copper	ND	ND	ND	
Iron	ND	ND	ND	
Lead	ND	ND	ND	
Magnesium	ND	ND	ND	
Manganese	ND	ND	ND	
Molybdenum	ND	ND	ND	
Nickel	ND	ND	ND	
Selenium	ND	ND	ND	
Titanium	ND	ND	ND	
Silver	ND	ND	ND	
Sodium	ND	ND	ND	
Thallium	ND	ND	ND	
Vanadium	ND	ND	ND	
Zinc	ND	ND	ND	

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Preparation Blank Matrix (soil/water) :Water

Preparation Blank Concentration Units (mg/L or mg/Kg) :mg/L

Analyte	Continuing Calibration 7	8	9	
Aluminum	ND	ND	ND	
Antimony	ND	0.0082	ND	
Arsenic	ND	ND	ND	
Barium	ND	ND	ND	
Beryllium	ND	ND	ND	
Cadmium	ND	ND	ND	
Calcium	ND	ND	ND	
Chromium	ND	ND	ND	
Cobalt	ND	ND	ND	
Copper	ND	ND	ND	
Iron	ND	ND	ND	
Lead	ND	ND	ND	
Magnesium	ND	ND	ND	
Manganese	ND	ND	ND	
Molybdenum	ND	ND	ND	
Nickel	ND	ND	ND	
Selenium	ND	ND	ND	
Titanium	ND	ND	ND	
Silver	ND	ND	ND	
Sodium	ND	ND	ND	
Thallium	ND	ND	ND	
Vanadium	ND	ND	ND	
Zinc	ND	ND	ND	

9.

PREPARATION BLANK (Batch 573)

Lab Name: Washington Group Contract: _____

Matrix (soil/water): water

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Result
Aluminum	ND<0.2000
Antimony	ND<0.0060
Arsenic	ND<0.0080
Barium	ND<0.2000
Beryllium	ND<0.0020
Cadmium	ND<0.0050
Calcium	ND<1.0000
Chromium	ND<0.0100
Cobalt	ND<0.0100
Copper	ND<0.0200
Iron	ND<0.1000
Lead	ND<0.0050
Magnesium	ND<1.0000
Manganese	ND<0.0150
Molybdenum	ND<0.0100
Nickel	ND<0.0200
Selenium	ND<0.0200
Silver	ND<0.0100
Sodium	ND<1.0000
Thallium	ND<0.0100
Titanium	ND<0.0200
Vanadium	ND<0.0100
Zinc	ND<0.0200

US EPA - CLP
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

ICP ID Number: _____

Concentration Units: mg/l

Analyte	Solution A	Solution AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500	500	468	468	93.6			
Antimony		0.6		0.61	101.5			
Arsenic		0.1		0.09	94.7			
Barium		0.5		0.52	104.0			
Beryllium		0.5		0.50	99.5			
Cadmium		1.0		0.98	97.9			
Calcium	500	500	463	461	92.2			
Chromium		0.5		0.49	98.2			
Cobalt		0.5		0.50	99.8			
Copper		0.5		0.54	107.4			
Iron	200	200	188	188	94.0			
Lead		0.05		0.06	118.0			
Magnesium	500	500	492	491	98.2			
Manganese		0.5		0.51	102.8			
Molybdenum								
Nickel		1.0		0.97	96.7			
Selenium		0.05		0.04	88.2			
Titanium								
Silver		0.2		0.22	107.5			
Sodium								
Thallium		0.1		0.09	93.1			
Vanadium		0.5		0.50	99.2			
Zinc		1.0		1.06	106.0			

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288759C

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		0.259	0.000	0.25	103.60
Aluminum		2.090	0.000	2.00	104.50
Arsenic		0.506	0.000	0.50	101.14
Barium		2.160	0.000	2.00	108.00
Beryllium		0.052	0.000	0.05	103.20
Calcium		23.700	19.000	5.00	94.00
Cadmium		0.256	0.000	0.25	102.40
Cobalt		0.516	0.000	0.50	103.20
Chromium		0.211	0.000	0.20	105.50
Copper		0.264	0.000	0.25	105.60
Iron		1.140	0.000	1.00	114.00
Magnesium		12.800	7.700	5.00	102.00
Manganese		0.513	0.000	0.50	102.60
Molybdenum		0.519	0.000	0.50	103.80
Sodium		10.200	4.900	5.00	106.00
Nickel		0.514	0.000	0.50	102.80
Lead		0.521	0.000	0.50	104.22
Antimony		0.535	0.008	0.50	105.32
Selenium		0.516	0.000	0.50	103.24
Titanium		0.514	0.000	0.50	102.80
Thallium		0.505	0.000	0.50	101.00
Vanadium		0.515	0.000	0.50	103.00
Zinc		0.514	0.000	0.50	102.80

Comments:

NR = No Recovery

288759CMS Batch - 573
bjul29.573

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288759C

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		0.255	0.000	0.25	102.00
Aluminum		2.070	0.000	2.00	103.50
Arsenic		0.495	0.000	0.50	98.94
Barium		2.130	0.000	2.00	106.50
Beryllium		0.051	0.000	0.05	102.20
Calcium		23.100	19.000	5.00	82.00
Cadmium		0.254	0.000	0.25	101.48
Cobalt		0.511	0.000	0.50	102.20
Chromium		0.207	0.000	0.20	103.50
Copper		0.262	0.000	0.25	104.80
Iron		1.060	0.000	1.00	106.00
Magnesium		12.500	7.700	5.00	96.00
Manganese		0.508	0.000	0.50	101.60
Molybdenum		0.510	0.000	0.50	102.00
Sodium		10.000	4.900	5.00	102.00
Nickel		0.509	0.000	0.50	101.80
Lead		0.511	0.000	0.50	102.22
Antimony		0.523	0.008	0.50	103.02
Selenium		0.507	0.000	0.50	101.40
Titanium		0.509	0.000	0.50	101.80
Thallium		0.491	0.000	0.50	98.12
Vanadium		0.510	0.000	0.50	102.00
Zinc		0.509	0.000	0.50	101.80

Comments:

NR = No Recovery

288759CMSD Batch - 573
bjul29.573

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288759C

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		0.250	0.000	0.25	100.00
Aluminum		2.000	0.000	2.00	100.00
Arsenic		0.490	0.000	0.50	98.00
Barium		2.100	0.000	2.00	105.00
Beryllium		0.050	0.000	0.05	100.00
Calcium		23.000	19.000	5.00	80.00
Cadmium		0.250	0.000	0.25	100.00
Cobalt		0.500	0.000	0.50	100.00
Chromium		0.200	0.000	0.20	100.00
Copper		0.260	0.000	0.25	104.00
Iron		1.000	0.000	1.00	100.00
Magnesium		12.000	7.700	5.00	86.00
Manganese		0.500	0.000	0.50	100.00
Molybdenum		0.500	0.000	0.50	100.00
Sodium		10.000	4.900	5.00	102.00
Nickel		0.500	0.000	0.50	100.00
Lead		0.500	0.000	0.50	100.00
Antimony		0.510	0.008	0.50	100.40
Selenium		0.500	0.000	0.50	100.00
Titanium		0.500	0.000	0.50	100.00
Thallium		0.520	0.000	0.50	104.00
Vanadium		0.500	0.000	0.50	100.00
Zinc		0.500	0.000	0.50	100.00

Comments:

NR = No Recovery

288759CPS Batch - 573
bjul29.573

BATCH
DUPLICATE SAMPLE REPORT

LAB SAMPLE NO

288759CMS

Lab Name: The_Washington_Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Sample Result	Duplicate Result	% RPD
Silver	0.259	0.255	1.56
Aluminum	2.090	2.070	0.96
Arsenic	0.506	0.495	2.20
Barium	2.160	2.130	1.40
Beryllium	0.052	0.051	0.97
Calcium	23.700	23.100	2.56
Cadmium	0.256	0.254	0.90
Cobalt	0.516	0.511	0.97
Chromium	0.211	0.207	1.91
Copper	0.264	0.262	0.76
Iron	1.140	1.060	7.27
Magnesium	12.800	12.500	2.37
Manganese	0.513	0.508	0.98
Molybdenum	0.519	0.510	1.75
Sodium	10.200	10.000	1.98
Nickel	0.514	0.509	0.98
Lead	0.521	0.511	1.94
Antimony	0.535	0.523	2.17
Selenium	0.516	0.507	1.80
	0.514	0.509	0.98
Thallium	0.505	0.491	2.89
Vanadium	0.515	0.510	0.98
Zinc	0.514	0.509	0.98

Comments:

bjul29.

ICP SERIAL DILUTIONS

LAB SAMPLE NO

288759CSR

Lab Name: Raytheon Engineers Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Initial Result	Serial Dil. Result	% RPD
Silver	0.000	0.000	-----
Aluminum	0.000	0.000	-----
Arsenic	0.000	0.000	-----
Barium	0.000	0.000	-----
Beryllium	0.000	0.000	-----
Calcium	19.000	19.000	0.00
Cadmium	0.000	0.000	-----
Cobalt	0.000	0.000	-----
Chromium	0.000	0.000	-----
Copper	0.000	0.000	-----
Iron	0.000	0.000	-----
Magnesium	7.700	7.900	2.56
Manganese	0.000	0.000	-----
Molybdenum	0.000	0.000	-----
Sodium	4.900	0.000	200.00
Nickel	0.000	0.000	-----
Lead	0.000	0.000	-----
Antimony	0.008	0.032	120.00
Selenium	0.000	0.000	-----
Titanium	0.000	0.000	-----
Thallium	0.000	0.000	-----
Vanadium	0.000	0.000	-----
Zinc	0.000	0.000	-----

Comments:

Batch 573

US EPA - CLP
7
LABORATORY CONTROL SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Solid LCS Source :_____

Aqueous LCS Source:_____

Analyte	Aqueous (mg/L) True	Found	%R
Aluminum	2.00	2.09	104.5
Antimony	0.50	0.52	104.6
Arsenic	0.50	0.50	99.6
Barium	2.00	2.05	102.5
Beryllium	0.05	0.05	101.0
Cadmium	0.25	0.25	101.8
Calcium	5.00	5.26	105.2
Chromium	0.20	0.21	103.0
Cobalt	0.50	0.51	102.2
Copper	0.25	0.26	103.2
Iron	1.00	1.03	103.0
Lead	0.50	0.51	102.4
Magnesium	5.00	5.05	101.0
Manganese	0.50	0.50	100.8
Molybdenum	0.50	0.51	101.4
Nickel	0.50	0.51	101.4
Selenium	0.50	0.51	102.2
Titanium	0.50	0.51	101.4
Silver	0.25	0.25	101.6
Sodium	5.00	5.01	100.2
Thallium	0.50	0.49	98.9
Vanadium	0.50	0.51	101.8
Zinc	0.50	0.50	100.8

ul29.567 Batch- 573

69596

Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 288810B
MATRIX : WATER
CLIENT ID : SWC-005
Sample wt/vol : 1ML

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/19/2002
ID FILE : g18sun3.id
DATA FILE : R2072933

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	25
71-43-2	Benzene	ND	25
108-88-3	Toluene	18 J	25
100-41-4	Ethylbenzene	ND	25
330-20-7	m&p-Xylenes	20 J	25
95-47-6	o-Xylene	9 J	25

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

5.0 SUMMARY 69596

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072933.D
Acq On : 30 Jul 2002 00:12
Sample : 288810B
Misc : 1ML
MS Integration Params: rteint.p
Quant Time: Jul 30 07:48:07 2002

Vial: 8
Operator: NRT
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.81	168	261347	50.00 ug/l	0.01
26) 1,4-Difluorobenzene	13.13	114	339374	50.00 ug/l	0.00
40) Chlorobenzene-d5	17.79	117	272378	50.00 ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.27	152	146191	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	11.14	113	110532	57.97 ug/l	0.00
Spiked Amount 50.000			Recovery	= 115.94%	
41) Toluene-d8	15.78	98	360519	46.74 ug/l	0.00
Spiked Amount 50.000			Recovery	= 93.48%	
55) Bromofluorobenzene	19.45	94	19731	55.99 ug/l	0.00
Spiked Amount 50.000			Recovery	= 111.98%	
Target Compounds					Qvalue
21) Chloroform	10.94	83	69874	16.72 ug/l	99
44) Toluene	15.88	92	21362	3.71 ug/l	94
51) m&p-Xylenes	18.36	106	18432	3.96 ug/l	93
52) o-Xylene	18.91	106	7457	1.77 ug/l	92

PSS 7/30

JP 7/31/02

69596 Page 0027

(#) = qualifier out of range (m) = manual integration

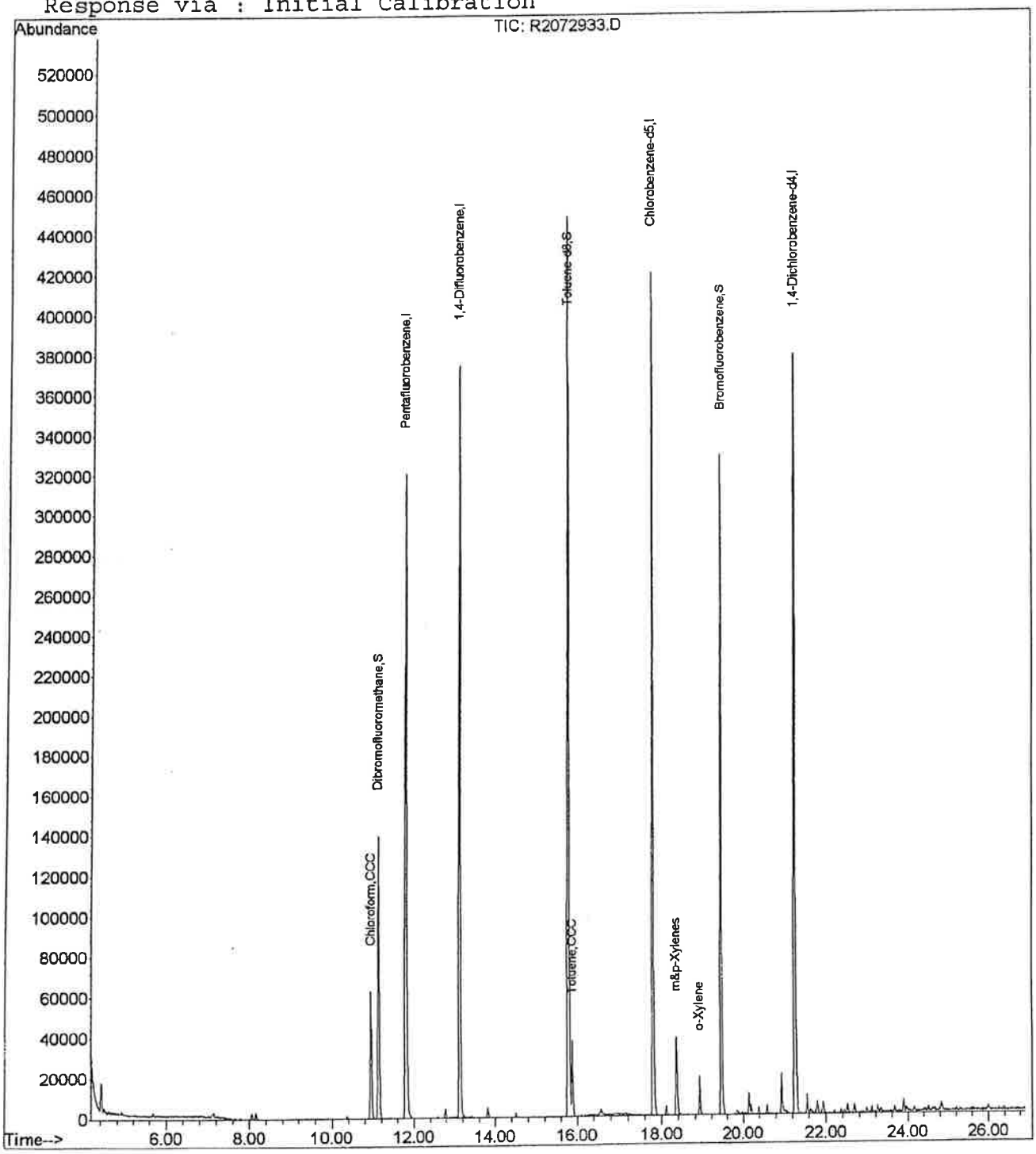
Quantitation Report (QT Reviewed)

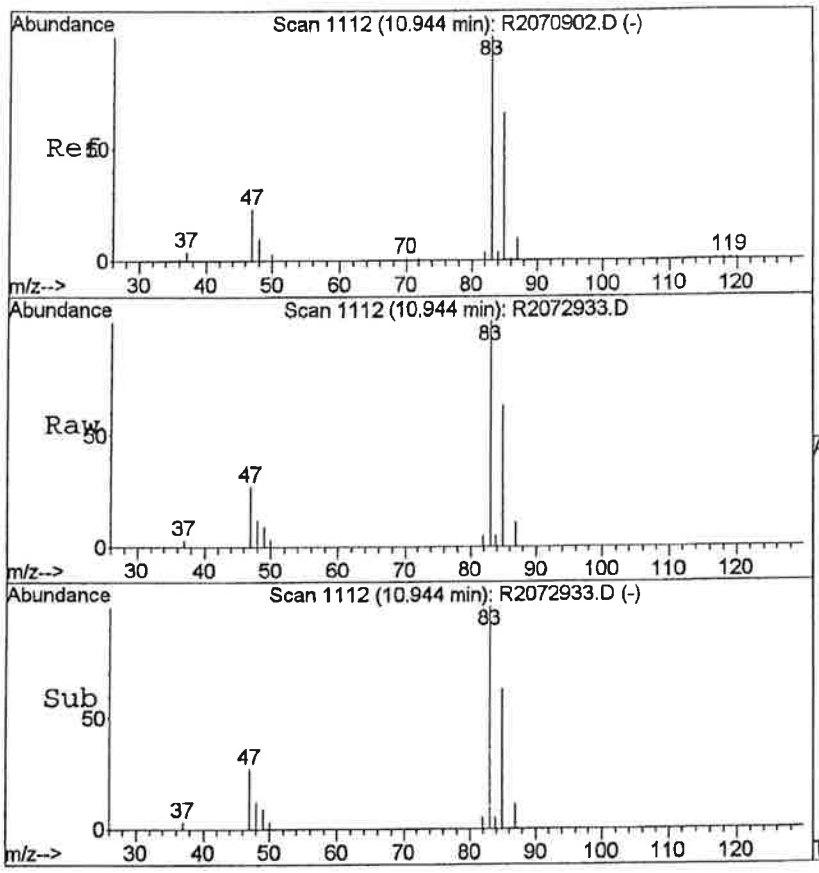
Data File : C:\MSDCHEM\1\DATA\072902R4\R2072933.D
Acq On : 30 Jul 2002 00:12
Sample : 288810B
Misc : 1ML
MS Integration Params: rteint.p
Quant Time: Jul 30 8:30 2002

Vial: 8
Operator: NRT
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration

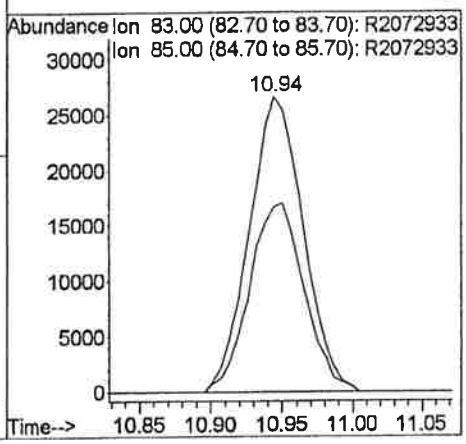


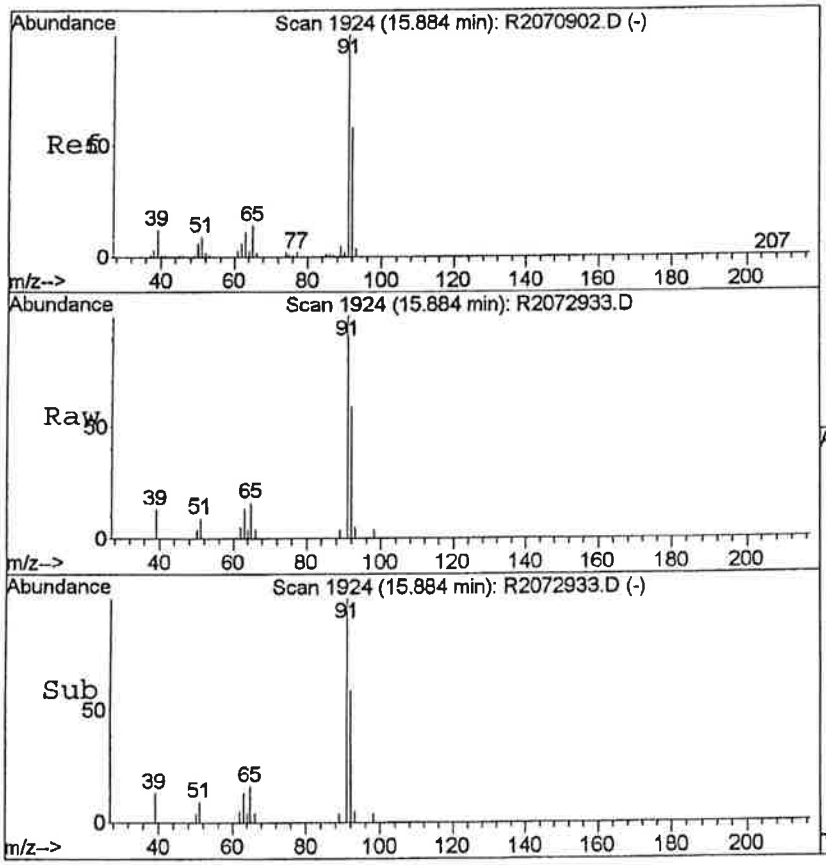


#21
Chloroform
Concen: 16.72 ug/l
RT: 10.94 min Scan# 1112
Delta R.T. 0.01 min
Lab File: R2072933.D
Acq: 30 Jul 2002 00:12

Tgt Ion: 83 Resp: 69874

Ion	Ratio	Lower	Upper
83	100		
85	64.7	44.1	84.1

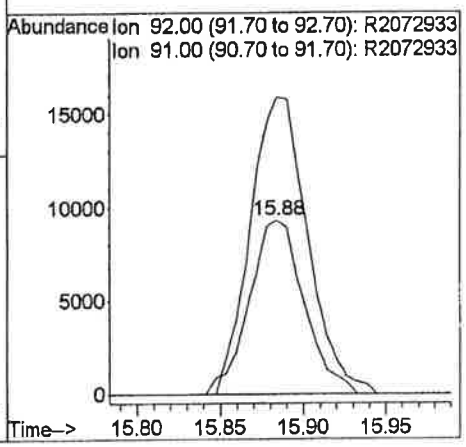


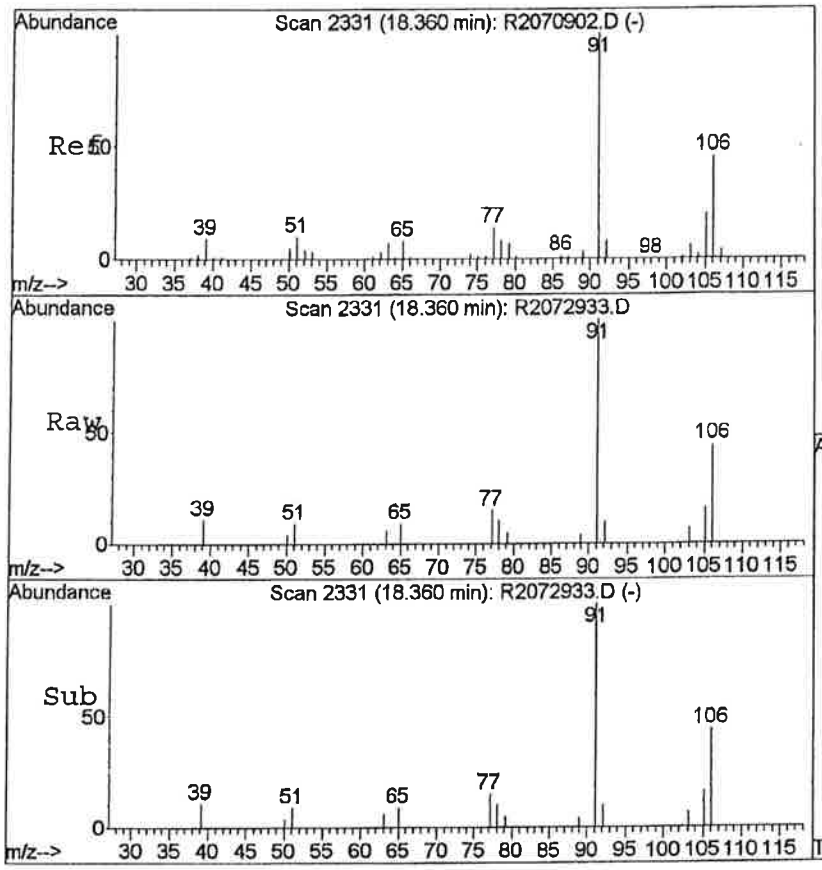


#44
Toluene
Concen: 3.71 ug/l
RT: 15.88 min Scan# 1924
Delta R.T. 0.01 min
Lab File: R2072933.D
Acq: 30 Jul 2002 00:12

Tgt Ion: 92 Resp: 21362

Ion	Ratio	Lower	Upper
92	100		
91	178.7	149.8	189.8

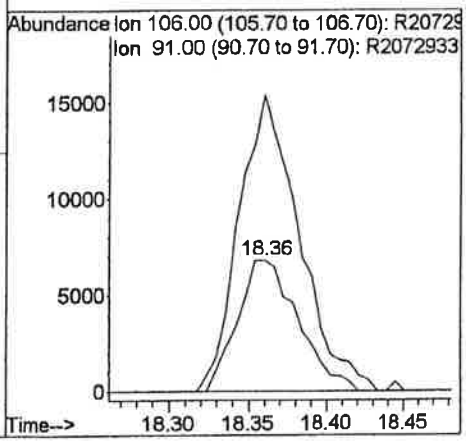


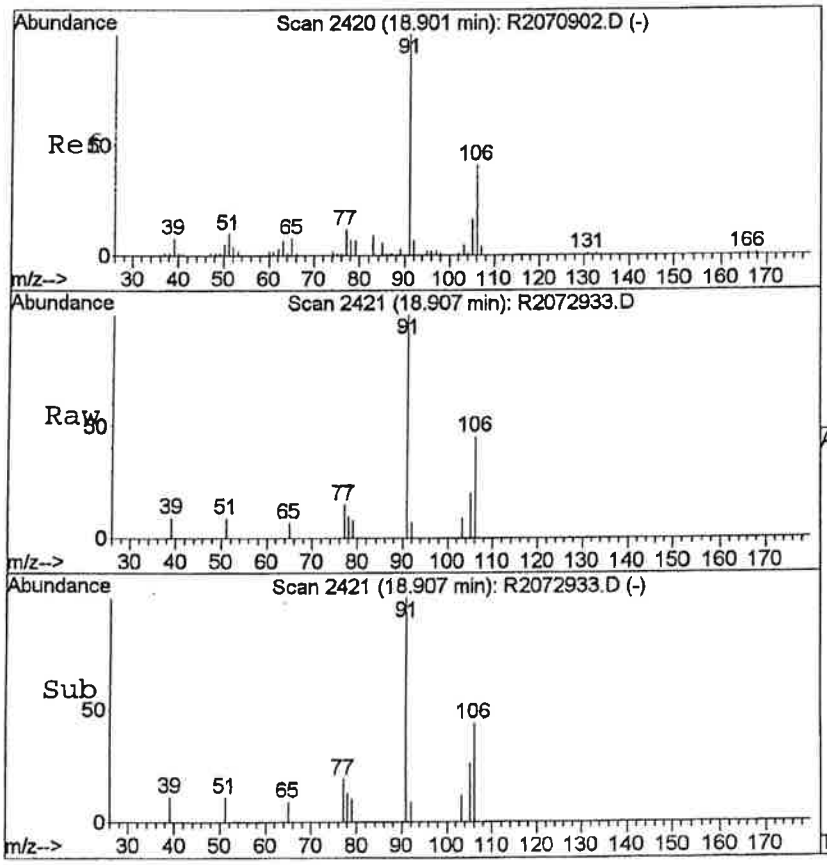


#51
m&p-Xylenes
Concen: 3.96 ug/l
RT: 18.36 min Scan# 2331
Delta R.T. -0.01 min
Lab File: R2072933.D
Acq: 30 Jul 2002 00:12

Tgt Ion:106 Resp: 18432

Ion	Ratio	Lower	Upper
106	100		
91	223.4	169.8	254.6

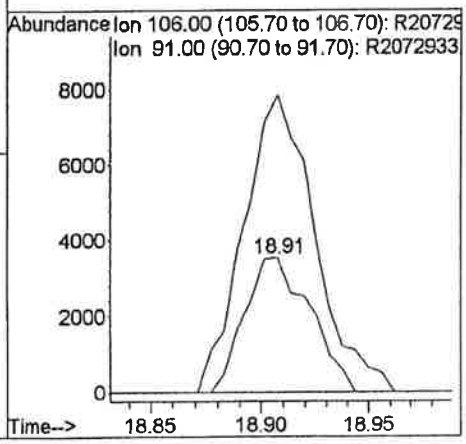




#52
o-Xylene
Concen: 1.77 ug/l
RT: 18.91 min Scan# 2421
Delta R.T. 0.00 min
Lab File: R2072933.D
Acq: 30 Jul 2002 00:12

Tgt Ion:106 Resp: 7457

Ion	Ratio	Lower	Upper
106	100		
91	240.1	181.0	271.4



Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

69596

B SAMPLE # : 288811B
MATRIX : WATER
CLIENT ID : SWC-004
Sample wt/vol : 5ML

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/19/2002
ID FILE : g18sun3.id
DATA FILE : R2073010

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	ND	5
108-88-3	Toluene	4 J	5
100-41-4	Ethylbenzene	ND	5
330-20-7	m&p-Xylenes	9	5
95-47-6	o-Xylene	5 J	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69596

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\073002R1\R2073010.D
Acq On : 30 Jul 2002 15:25
Sample : 288811B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 15:53:56 2002

Vial: 7
Operator: PSS
Inst : 5973R
Multiplr: 1.00
Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.81	168	511019	50.00 ug/l	0.01
26) 1,4-Difluorobenzene	13.13	114	643578	50.00 ug/l	0.00
40) Chlorobenzene-d5	17.79	117	506996	50.00 ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.26	152	267317	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	11.14	113	177066	47.49 ug/l	0.00
Spiked Amount 50.000			Recovery	= 94.98%	
41) Toluene-d8	15.78	98	648249	45.15 ug/l	0.00
Spiked Amount 50.000			Recovery	= 90.30%	
55) Bromofluorobenzene	19.45	94	32909	50.17 ug/l	0.00
Spiked Amount 50.000			Recovery	= 100.34%	
Target Compounds					Qvalue
21) Chloroform	10.94	83	547276	66.99 ug/l	99
35) Bromodichloromethane	13.81	83	48560	9.90 ug/l	98
44) Toluene	15.88	92	43668	4.07 ug/l	96
51) m&p-Xylenes	18.35	106	75471	8.72 ug/l	94
52) o-Xylene	18.91	106	36849	4.69 ug/l	95
77) Naphthalene	24.84	128	29124	5.69 ug/l	100

7/30/02

JR 7/31/02

(#) = qualifier out of range (m) = manual integration

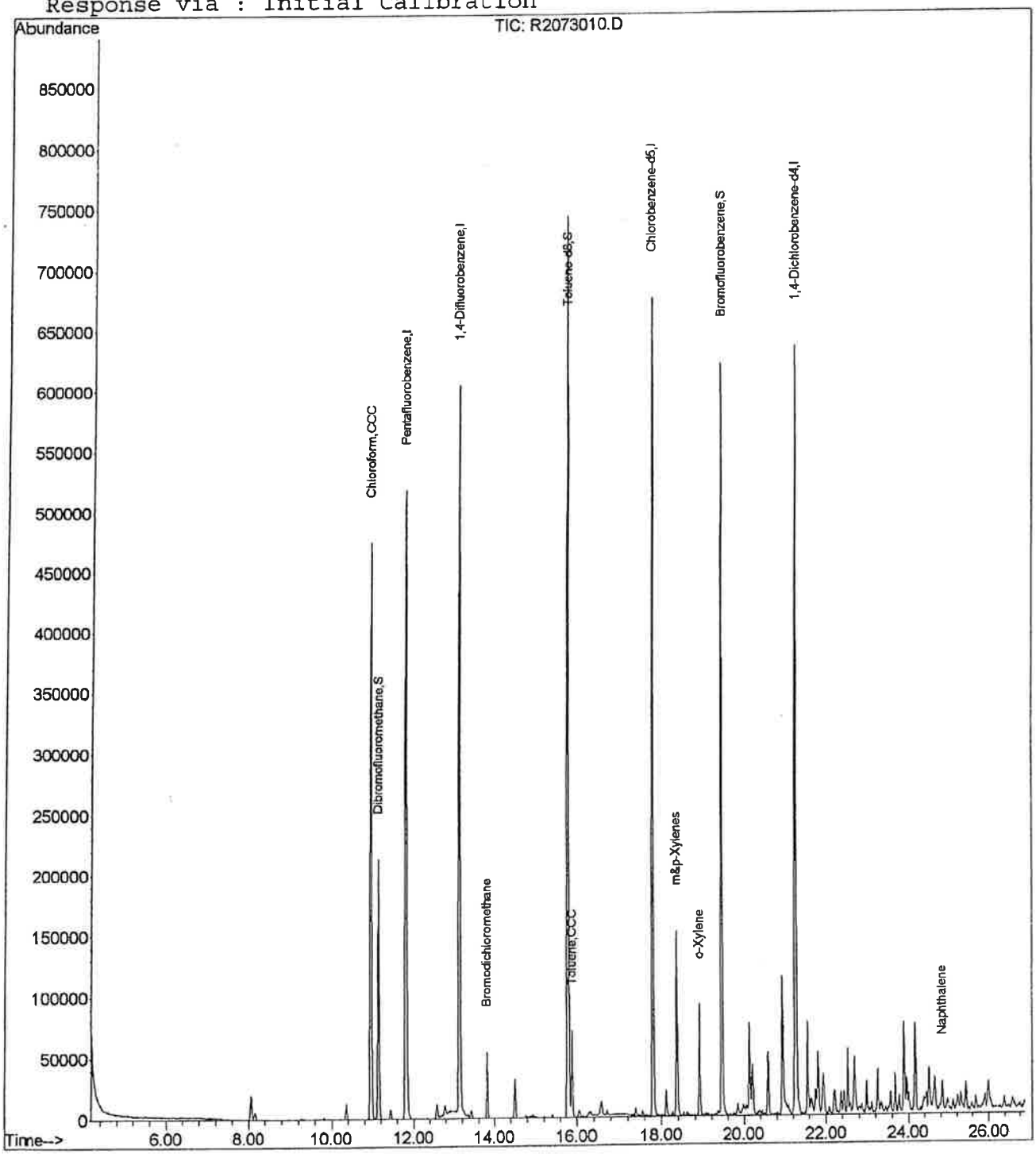
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\073002R1\R2073010.D
Acq On : 30 Jul 2002 15:25
Sample : 288811B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 20:10 2002

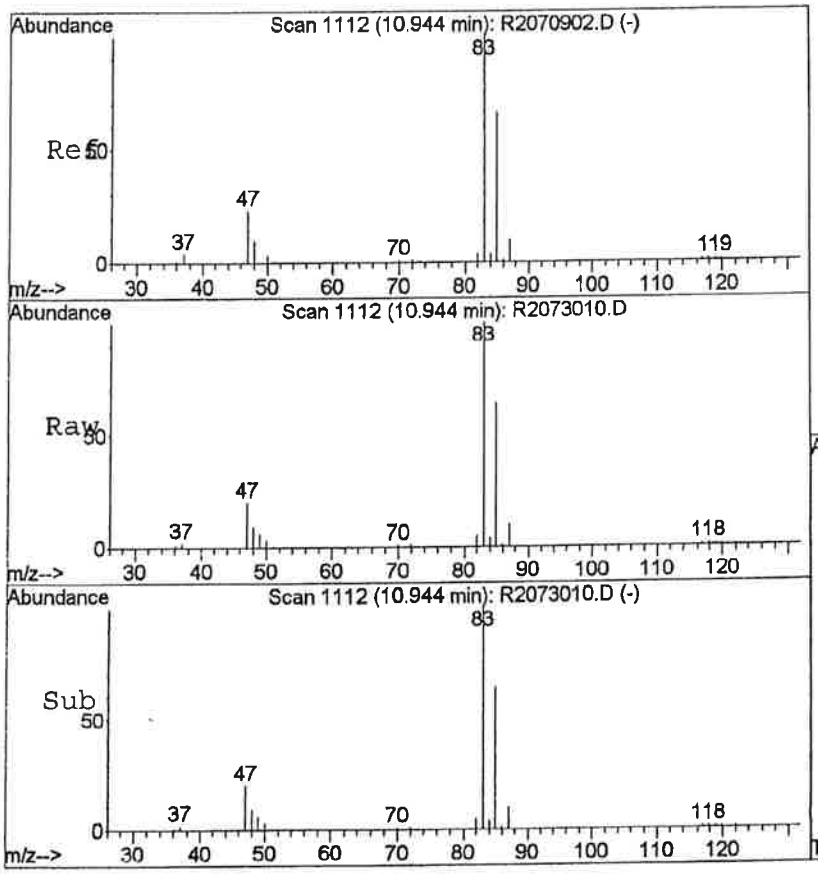
Vial: 7
Operator: PSS
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration



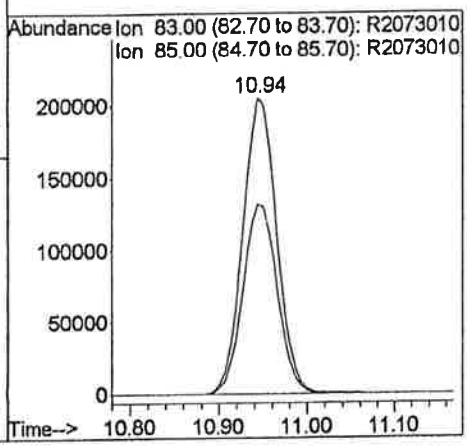
69596 Page 0033

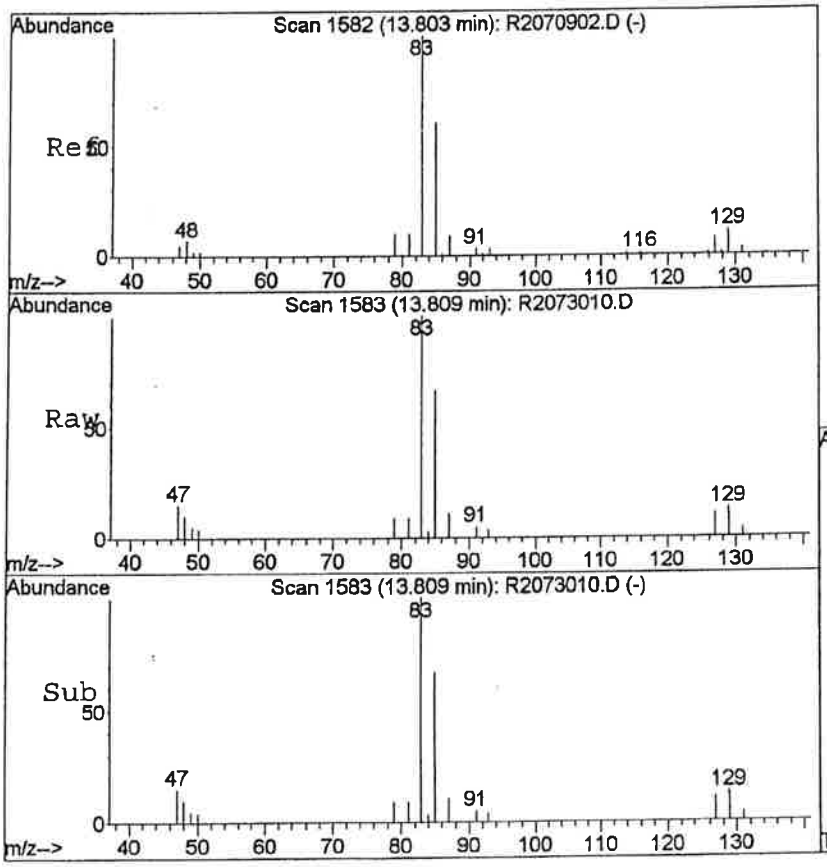


#21
Chloroform
Concen: 66.99 ug/l
RT: 10.94 min Scan# 1112
Delta R.T. 0.01 min
Lab File: R2073010.D
Acq: 30 Jul 2002 15:25

Tgt Ion: 83 Resp: 547276

Ion	Ratio	Lower	Upper
83	100		
85	65.0	44.1	84.1

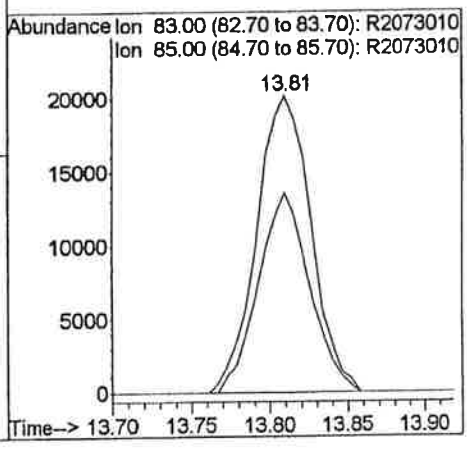


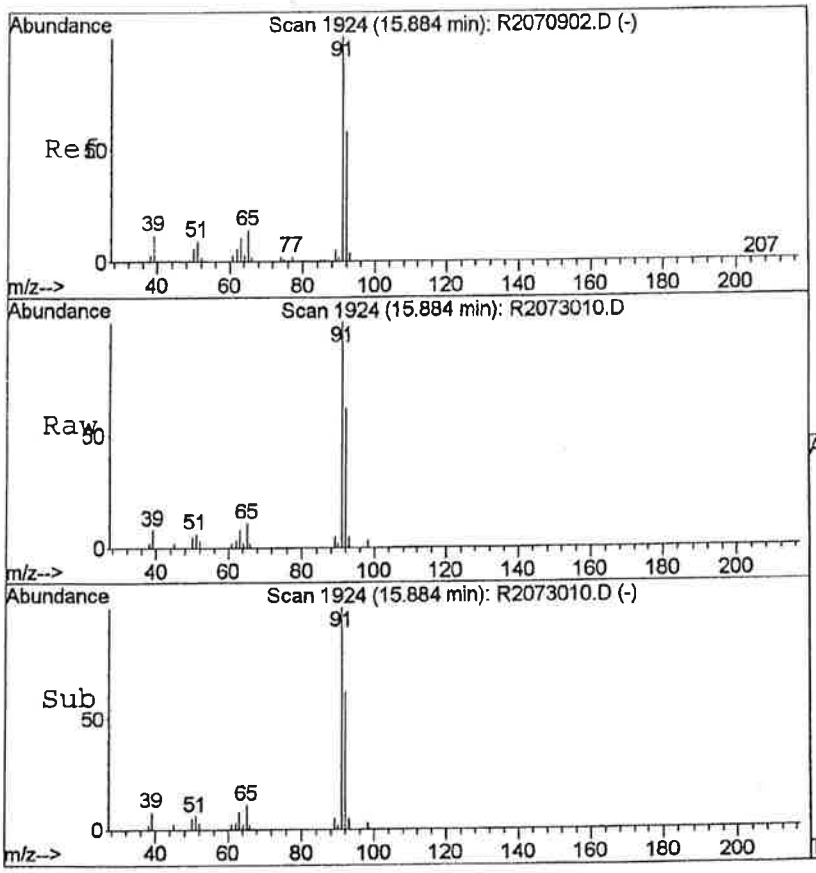


#35
Bromodichloromethane
Concen: 9.90 ug/l
RT: 13.81 min Scan# 1583
Delta R.T. 0.01 min
Lab File: R2073010.D
Acq: 30 Jul 2002 15:25

Tgt Ion: 83 Resp: 48560

Ion	Ratio	Lower	Upper
83	100		
85	63.5	45.0	85.0

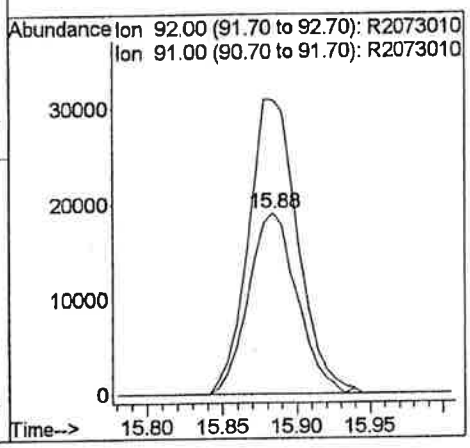


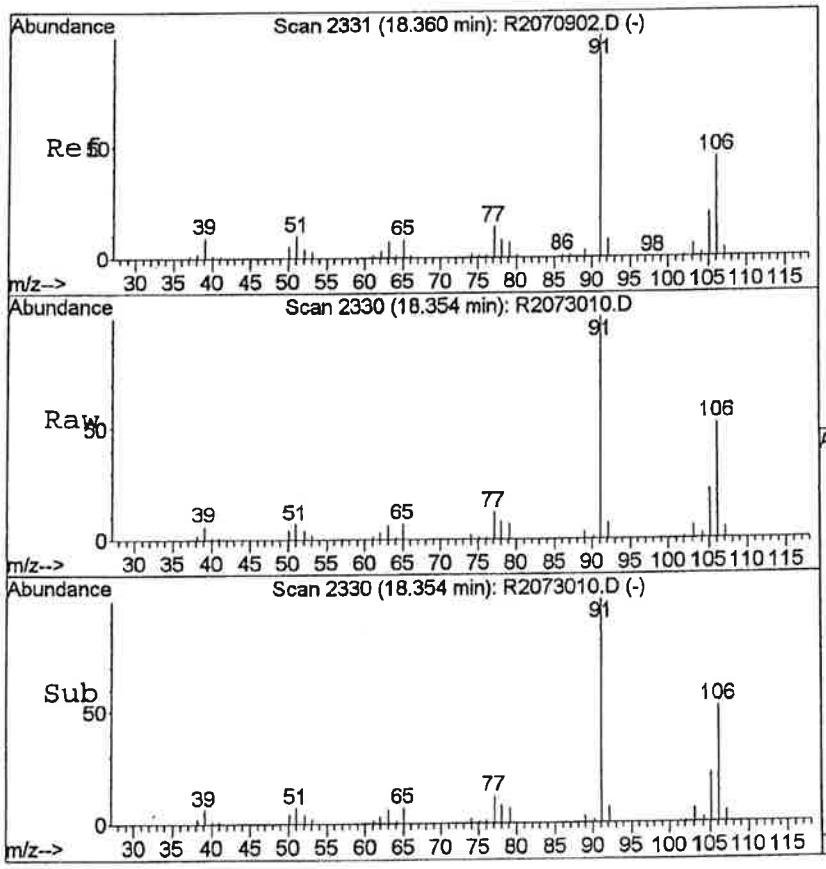


#44
Toluene
Concen: 4.07 ug/l
RT: 15.88 min Scan# 1924
Delta R.T. 0.01 min
Lab File: R2073010.D
Acq: 30 Jul 2002 15:25

Tgt Ion: 92 Resp: 43668

Ion	Ratio	Lower	Upper
92	100		
91	164.6	149.8	189.8

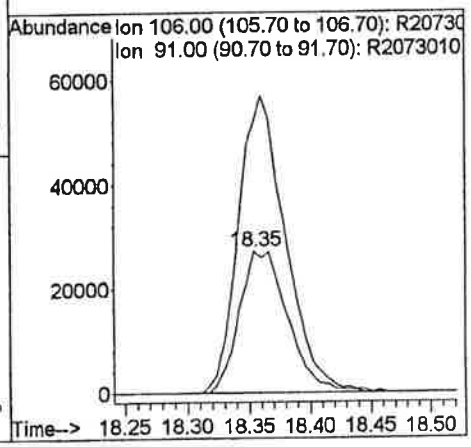


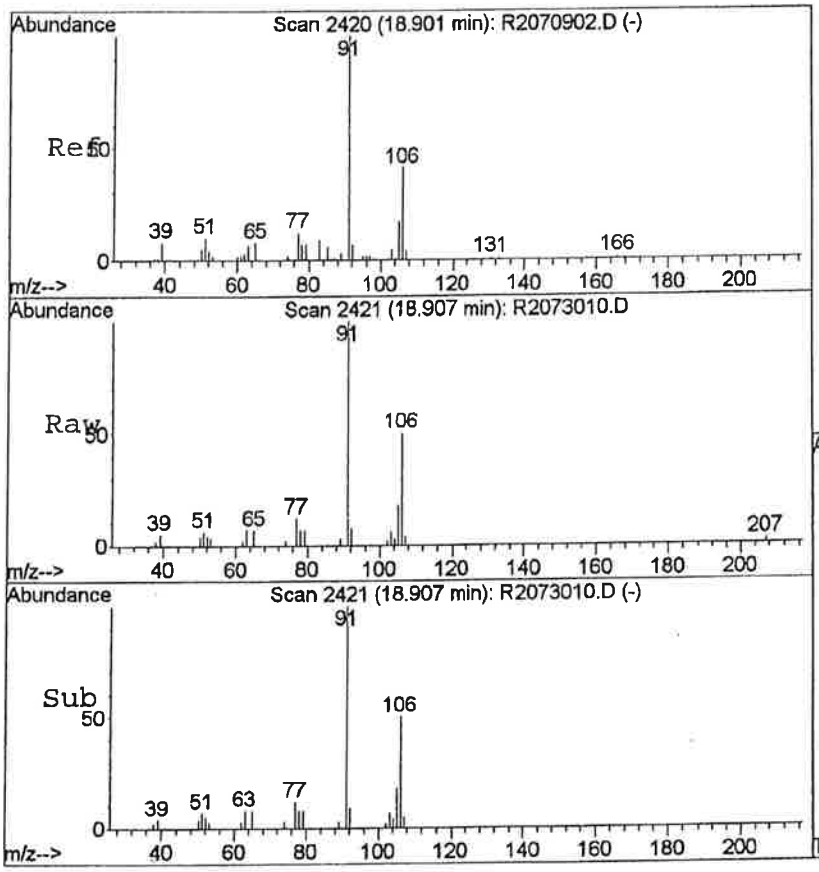


#51
m&p-Xylenes
Concen: 8.72 ug/l
RT: 18.35 min Scan# 2330
Delta R.T. -0.01 min
Lab File: R2073010.D
Acq: 30 Jul 2002 15:25

Tgt Ion:106 Resp: 75471

Ion	Ratio	Lower	Upper
106	100		
91	203.3	169.8	254.6

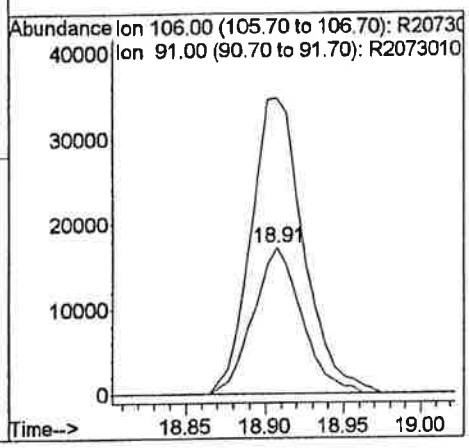


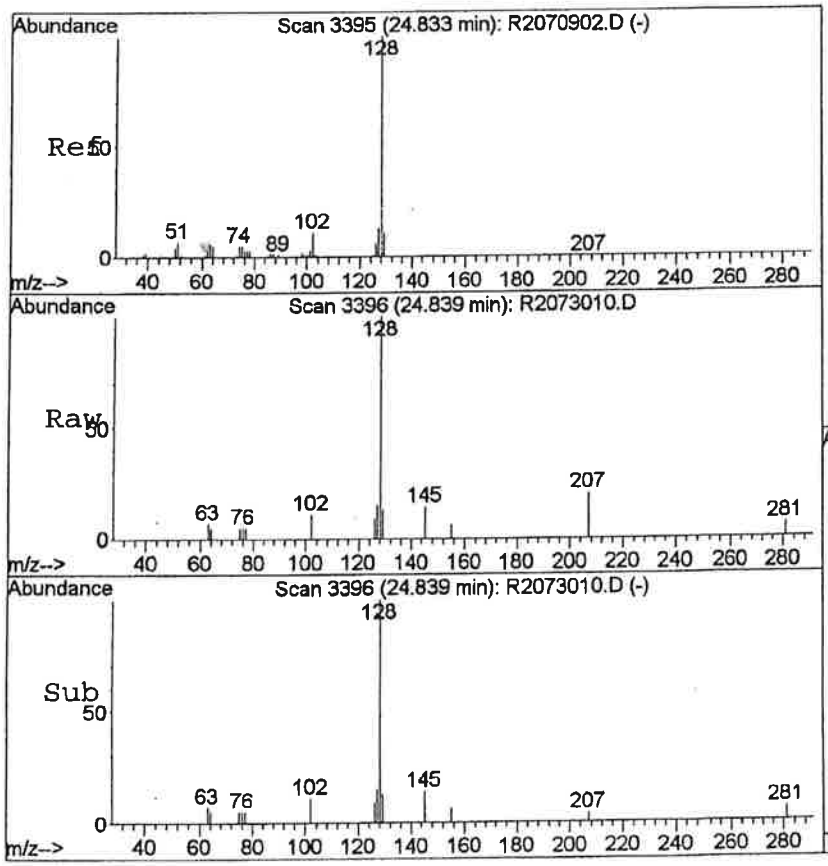


#52
o-Xylene
Concen: 4.69 ug/l
RT: 18.91 min Scan# 2421
Delta R.T. 0.00 min
Lab File: R2073010.D
Acq: 30 Jul 2002 15:25

Tgt Ion:106 Resp: 36849

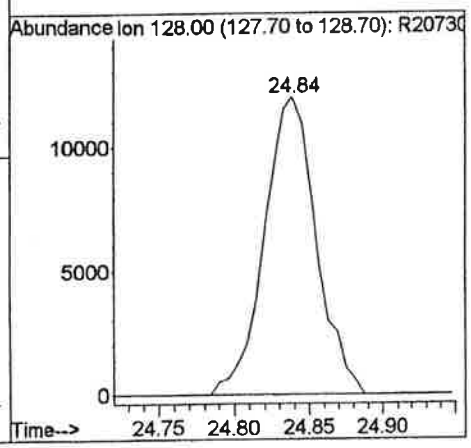
Ion	Ratio	Lower	Upper
106	100		
91	218.2	181.0	271.4





#77
Naphthalene
Concen: 5.69 ug/l
RT: 24.84 min Scan# 3396
Delta R.T. 0.00 min
Lab File: R2073010.D
Acq: 30 Jul 2002 15:25

Tgt Ion:128 Resp: 29124



2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Washington Environmental Lab. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

	EPA SAMPLE NO.	SMC1 DFM #	SMC2 TOL8 #	SMC3 BFB #	TOT OUT
01	VBLK 072902	107	95	110	0
02	288671B	114	94	112	0
03	288810B	116	93	112	0
04	289001B	112	93	109	0
05	289002B	111	92	108	0
06	289081B	97	92	97	0
07	289082B	95	92	89	0

QC LIMITS

SMC1	DFM	=	Dibromofluoromethane	(86-118)
SMC2	TOL8	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(86-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Washington Environmental Lab. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

	EPA SAMPLE NO.	SMC1 DFM #	SMC2 TOL8 #	SMC3 BFB #	TOT OUT
01	VBLK 073002R	89	92	94	0
02	288672B	93	92	92	0
03	288673B	94	92	90	0
04	289000B	94	90	94	0
05	288811B	95	90	100	0

QC LIMITS

SMC1	DFM	=	Dibromofluoromethane	(86-118)
SMC2	TOL8	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(86-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK 072902

Lab Name: Washington Environmental Lab. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

Lab File ID: R2072927.D Lab Sample ID: METHOD_BLANK

Date Analyzed: 7/29/2002 Time Analyzed: 20:59

GC Column: DB-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5973R

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	288671B	288671B	R2072930.D	22:35
02	288810B	288810B	R2072933.D	0:12
03	289001B	289001B	R2072936.D	1:48
04	289002B	289002B	R2072937.D	2:21
05	289081B	289081B	R2072938.D	2:53
06	289082B	289082B	R2072939.D	3:25
07	289920AMSD	288920AMSD	R2072941.D	4:33
08	289920A	288920A	R2072942.D	5:10
09	288921A	288921A	R2072943.D	5:47
10	288922A	288922A	R2072944.D	6:23
11	288923A	288923A	R2072945.D	7:00

COMMENTS

Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

.B SAMPLE # : METHOD_BLANK
MATRIX : WATER
CLIENT ID :
Sample wt/vol : 5ML

ANALYSIS DATE : 07/29/2002
RECVD DATE :
ID FILE : g18sun3.id
DATA FILE : R2072927

69596

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	ND	5
108-88-3	Toluene	ND	5
100-41-4	Ethylbenzene	ND	5
330-20-7	m&p-Xylenes	ND	5
95-47-6	o-Xylene	ND	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072927.D
Acq On : 29 Jul 2002 20:59
Sample : METHOD_BLANK 072902R4
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 29 21:50:01 2002

Vial: 2
Operator: NRT
Inst : 5973R
Multiplr: 1.00
Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	11.80	168	318703	50.00	ug/l	0.00
26) 1,4-Difluorobenzene	13.13	114	400395	50.00	ug/l	0.00
40) Chlorobenzene-d5	17.79	117	317627	50.00	ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.27	152	153715	50.00	ug/l	0.00
System Monitoring Compounds						
22) Dibromofluoromethane	11.14	113	124541	53.56	ug/l	0.00
Spiked Amount 50.000			Recovery	=	107.12%	
41) Toluene-d8	15.78	98	427798	47.56	ug/l	0.00
Spiked Amount 50.000			Recovery	=	95.12%	
55) Bromofluorobenzene	19.44	94	22649	55.12	ug/l	0.00
Spiked Amount 50.000			Recovery	=	110.24%	

Target Compounds Qvalue

BS 7/30

TM 7/31/02

(#) = qualifier out of range (m) = manual integration
R2072927.D R0729STCL.M Tue Jul 30 12:25:04 2002

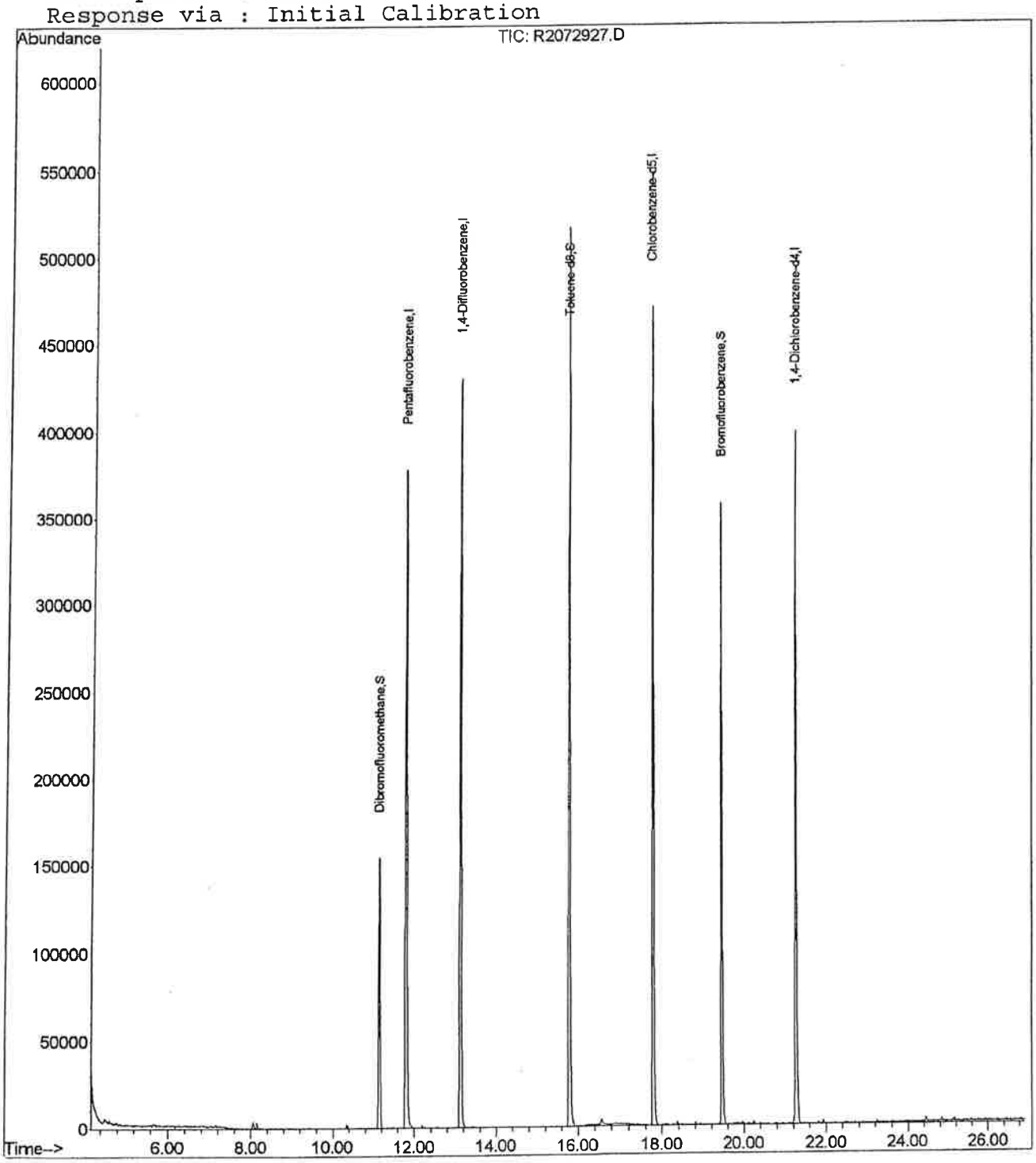
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072927.D
Acq On : 29 Jul 2002 20:59
Sample : METHOD_BLANK 072902R4
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 29 21:50 2002

Vial: 2
Operator: NRT
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration



4A

EPA SAMPLE NO.

VOLATILE METHOD BLANK SUMMARY

VBLK 073002R1

Lab Name: Washington Environmental Lab. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

Lab File ID: R2073006.D Lab Sample ID: METHOD_BLANK

Date Analyzed: 7/30/2002 Time Analyzed: 13:03

GC Column: DB-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5973R

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	288672B	288672B	R2073007.D	13:48
02	288673B	288673B	R2073008.D	14:21
03	289000B	289000B	R2073009.D	14:53
04	288811B	288811B	R2073010.D	15:25
05	LCS	LCS	R2073011.D	15:57
06	288920AMS	288920AMS	R2073012.D	16:29

COMMENTS

VOLATILE ORGANIC COMPOUNDS DATA SHEET

Washington Environmental Laboratory

69596

.B SAMPLE # : METHOD_BLANK
ATRIX : WATER
CLIENT ID :
Sample wt/vol : 5ML

ANALYSIS DATE : 07/30/2002
RECVD DATE :
ID FILE : g18sun3.id
DATA FILE : R2073006

Compound		Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	ND	5
108-88-3	Toluene	ND	5
100-41-4	Ethylbenzene	ND	5
330-20-7	m&p-Xylenes	ND	5
95-47-6	o-Xylene	ND	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\073002R1\R2073006.D
Acq On : 30 Jul 2002 13:03
Sample : METHOD_BLANK 073002R1
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 13:32:50 2002

Vial: 5
Operator: PSS
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.81	168	581115	50.00 ug/l	0.01
26) 1,4-Difluorobenzene	13.13	114	706060	50.00 ug/l	0.00
40) Chlorobenzene-d5	17.79	117	546319	50.00 ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.27	152	265905	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	11.14	113	188053	44.35 ug/l	0.00
Spiked Amount 50.000			Recovery =	88.70%	
41) Toluene-d8	15.78	98	711682	46.00 ug/l	0.00
Spiked Amount 50.000			Recovery =	92.00%	
55) Bromofluorobenzene	19.45	94	33125	46.87 ug/l	0.00
Spiked Amount 50.000			Recovery =	93.74%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

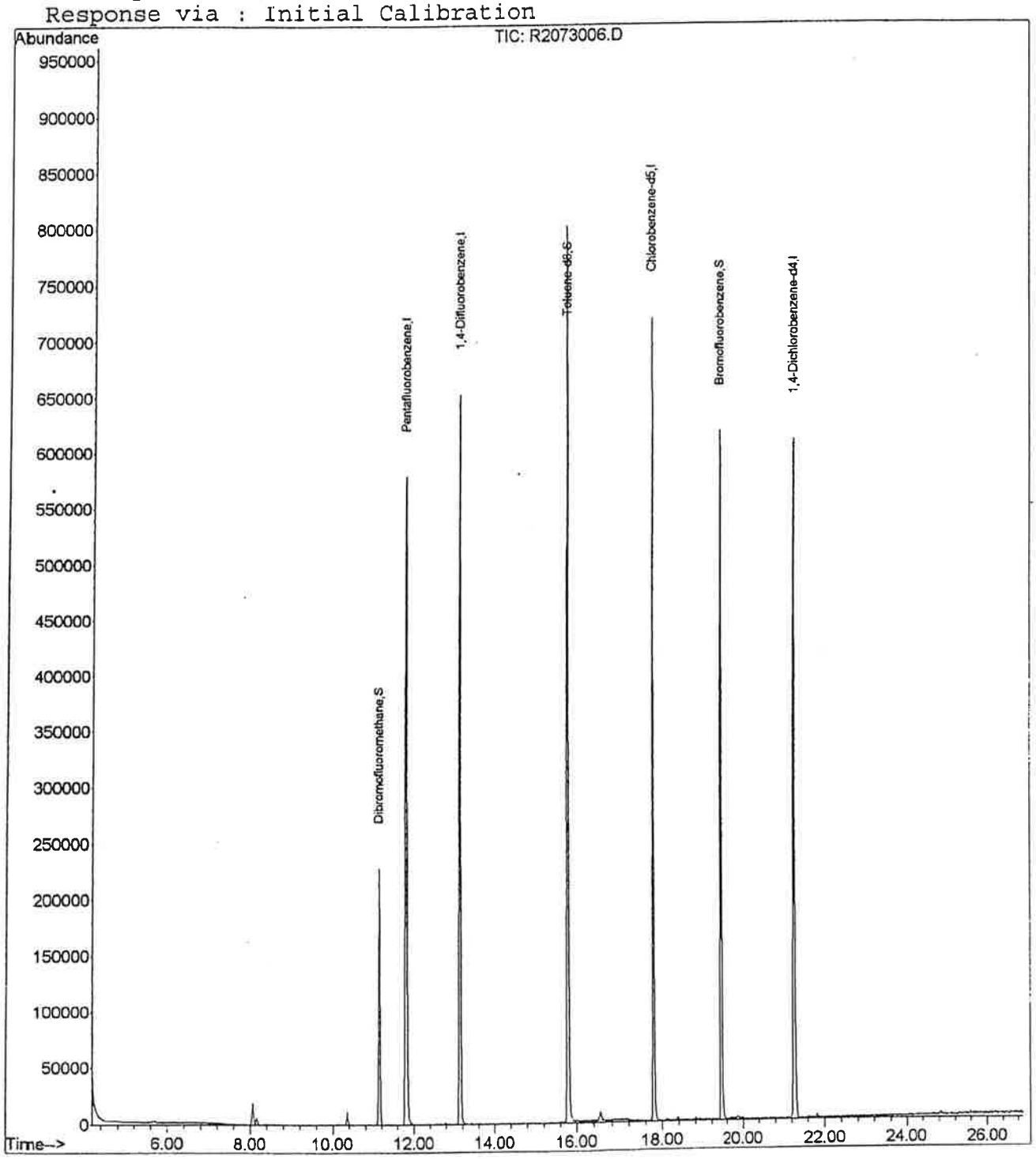
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\073002R1\R2073006.D
Acq On : 30 Jul 2002 13:03
Sample : METHOD_BLANK 073002R1
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 13:33 2002

Vial: 5
Operator: PSS
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration



Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 288810A
MATRIX : WATER
CLIENT ID : SWC-005
Sample wt/vol : 1000

ANALYSIS DATE : 07/29/2002
RECVD DATE : 07/19/2002
ID FILE : g08.id
DATA FILE : U2072910

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
[illegible]-95-3	Nitrobenzene	U	10
[illegible]-59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	50
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	5 J	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	23	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	20
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	25
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 288810A
MATRIX : WATER
CLIENT ID : SWC-005
Sample wt/vol: 1000

ANALYSIS DATE : 07/29/2002
RECVD DATE : 07/19/2002
ID FILE : g08.id
DATA FILE : U2072910

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	25
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	25
100-02-7	4-Nitrophenol	U	25
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	25
100-01-6	4-Nitroaniline	U	25
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
118-74-1	Hexachlorobenzene	U	10
86-5	Pentachlorophenol	U	25
-01-8	Phenanthrene	7 J	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69596

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072910.D
Vial: 11
Acq On : 29 Jul 2002 11:18 pm
Operator: SHERREE
Sample : 288810A SWC-005
Inst : Instrumen
Misc : 1000/1ML QC757LL.012 B17
Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 29 23:55:14 2002
Quant Results File: UBNA0722.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0722

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.02	152	127801	40.00	ul/l	0.09
19) Naphthalene-d8	12.95	136	512860	40.00	ul/l	0.09
34) Acenaphthene-d10	17.25	164	318252	40.00	ul/l	0.10
54) Phenanthrene-d10	20.85	188	488090	40.00	ul/l	0.11
67) Chrysene-d12	27.38	240	345196	40.00	ul/l	0.11
76) Perylene-d12	31.08	264	234802	40.00	ul/l	0.17
System Monitoring Compounds						
4) 2-Fluorophenol	7.41	112	406028	93.00	ul/l	0.08
Spiked Amount 200.000			Recovery = 46.50%			
6) Phenol-d6	9.27	99	588775	105.63	ul/l	0.07
Spiked Amount 200.000			Recovery = 52.81%			
20) Nitrobenzene-d5	11.31	82	313056	56.74	ul/l	0.08
Spiked Amount 100.000			Recovery = 56.74%			
38) 2-Fluorobiphenyl	15.59	172	507697	50.82	ul/l	0.09
Spiked Amount 100.000			Recovery = 50.82%			
58) 2,4,6-Tribromophenol	19.21	330	188866	175.43	ul/l	0.11
Spiked Amount 200.000			Recovery = 87.72%			
70) Terphenyl-d14	24.81	244	900963	103.99	ul/l	0.13
Spiked Amount 100.000			Recovery = 103.99%			
Target Compounds						Qvalue
29) Naphthalene	13.00	128	69612	5.21	ul/l #	97
33) 2-Methylnaphthalene	14.65	142	189212	22.62	ul/l	99
62) Phenanthrene	20.90	178	92157	7.29	ul/l	98

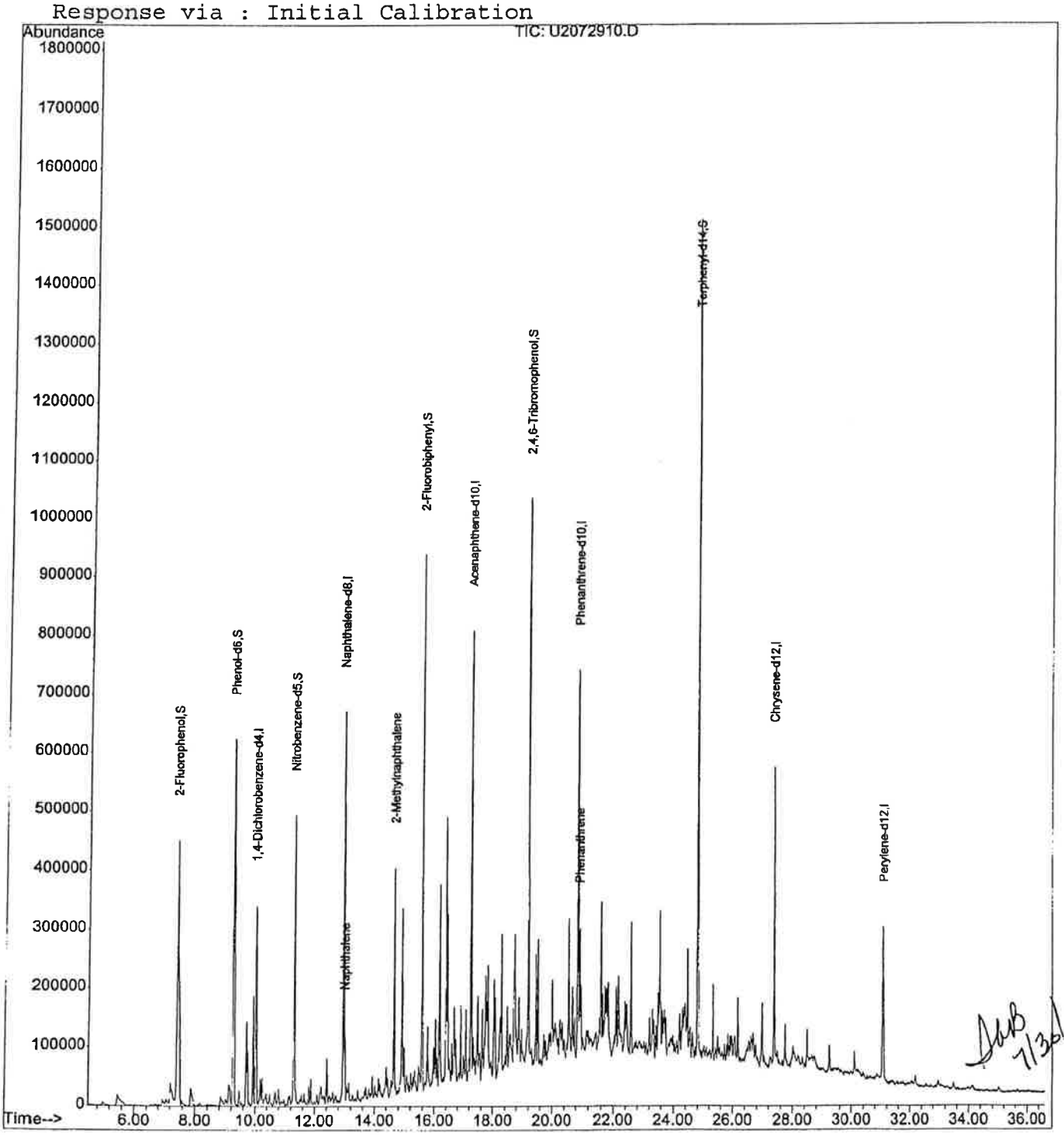
DLB 7/30/02
KMM 7/30/02

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

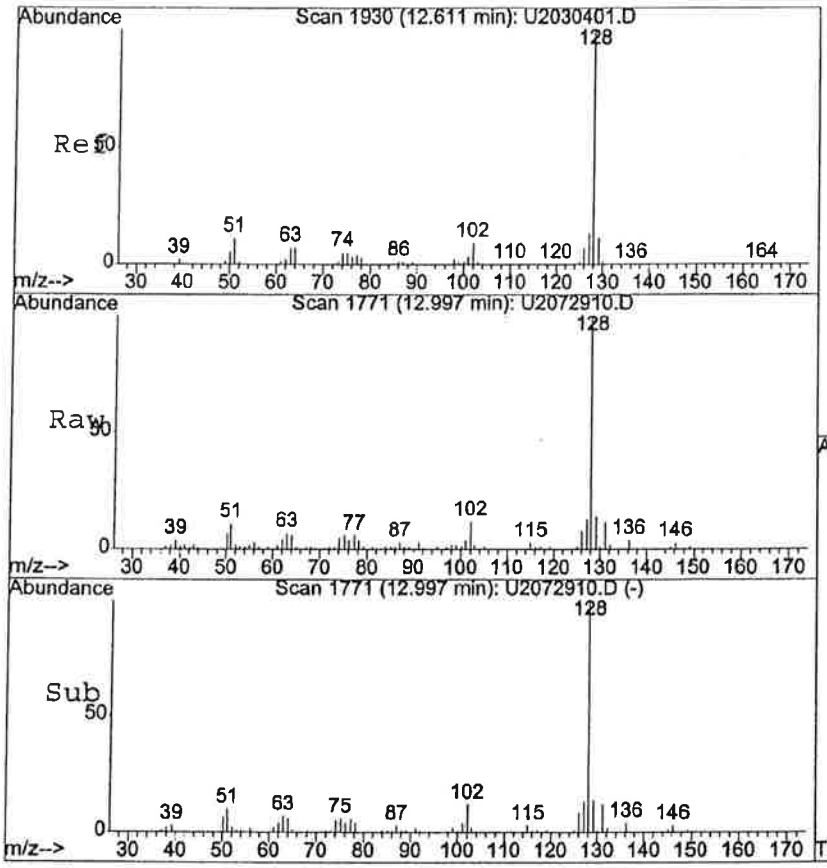
Data File : C:\MSDCHEM\1\DATA\U2072900\U2072910.D Vial: 11
Acq On : 29 Jul 2002 11:18 pm Operator: SHERREE
Sample : 288810A SWC-005 Inst : Instrumen
Misc : 1000/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 7:15 2002 Quant Results File: UBNA0722.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration



DJB 7/30/02

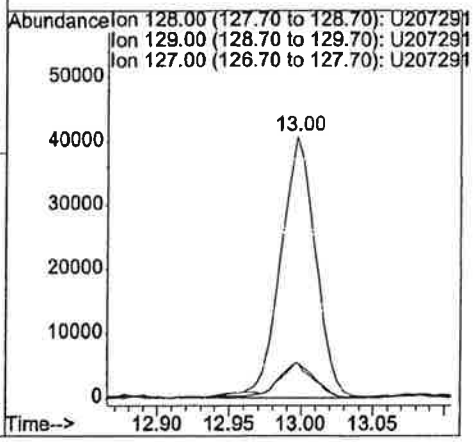
69596 Page 0050

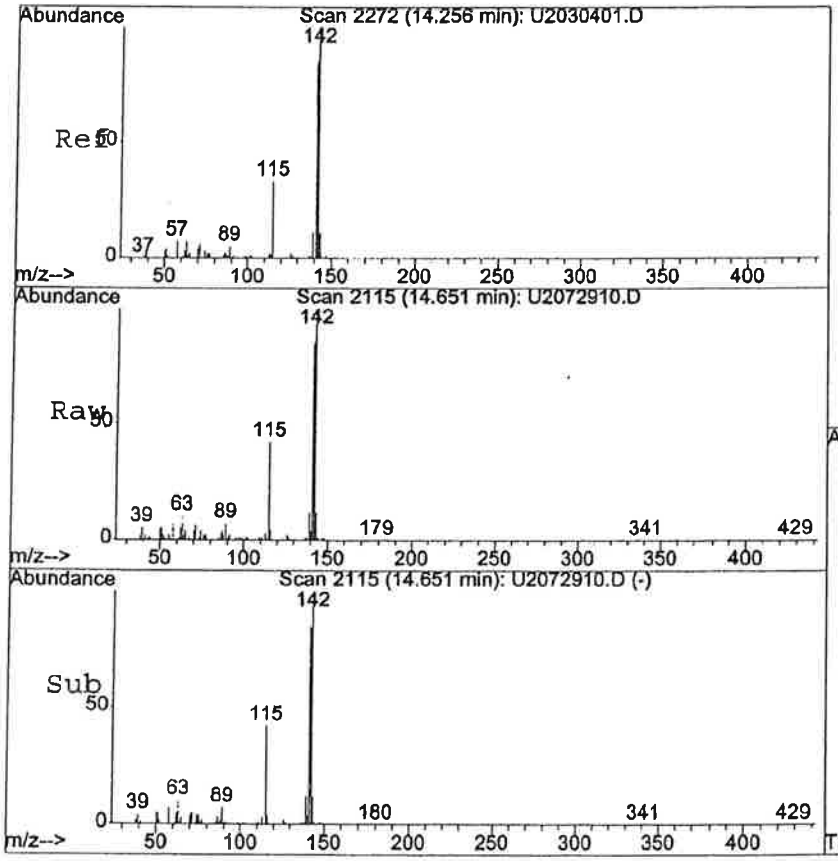


#29
Naphthalene
Concen: 5.21 ul/l
RT: 13.00 min Scan# 1771
Delta R.T. 0.08 min
Lab File: U2072910.D
Acq: 29 Jul 2002 11:18 pm

Tgt Ion:128 Resp: 69612

Ion	Ratio	Lower	Upper
128	100		
129	13.7	8.6	13.0#
127	13.4	10.7	16.1

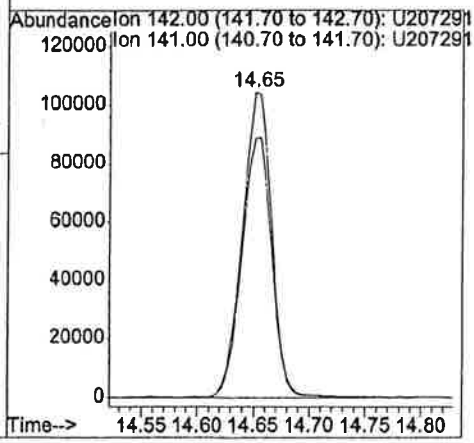


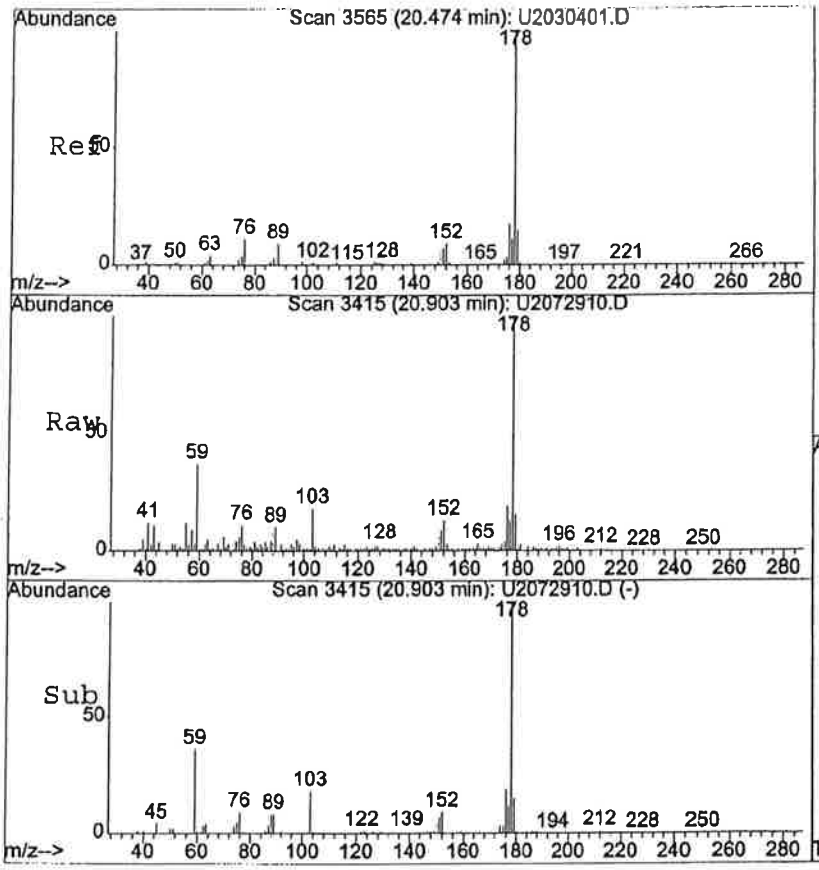


#33
2-Methylnaphthalene
Concen: 22.62 ul/l
RT: 14.65 min Scan# 2115
Delta R.T. 0.09 min
Lab File: U2072910.D
Acq: 29 Jul 2002 11:18 pm

Tgt Ion:142 Resp: 189212

Ion	Ratio	Lower	Upper
142	100		
141	84.9	68.9	103.3

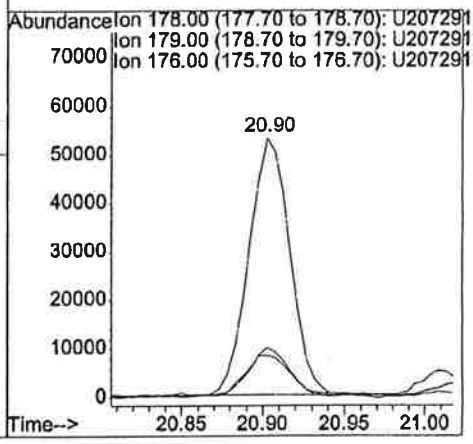




#62
Phenanthrene
Concen: 7.29 ul/l
RT: 20.90 min Scan# 3415
Delta R.T. 0.09 min
Lab File: U2072910.D
Acq: 29 Jul 2002 11:18 pm

Tgt Ion:178 Resp: 92157

Ion	Ratio	Lower	Upper
178	100		
179	16.0	12.0	18.0
176	19.2	15.0	22.6



Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 288811A
MATRIX : WATER
CLIENT ID : SWC-004
Sample wt/vol : 1030

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/19/2002
ID FILE : g08.id
DATA FILE : U2072911

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
95-3	Nitrobenzene	U	10
-59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	49
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	U	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	8 J	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	19
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	24
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 288811A
MATRIX : WATER
CLIENT ID : SWC-004
Sample wt/vol: 1030

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/19/2002
ID FILE : g08.id
DATA FILE : U2072911

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	24
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	24
100-02-7	4-Nitrophenol	U	24
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	24
100-01-6	4-Nitroaniline	U	24
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
118-74-1	Hexachlorobenzene	U	10
·86-5	Pentachlorophenol	U	24
·01-8	Phenanthrene	U	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69596

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072911.D Vial: 12
Acq On : 30 Jul 2002 12:03 am Operator: SHERREE
Sample : 288811A SWC-004 Inst : Instrumen
Misc : 1030/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 00:40:18 2002 Quant Results File: UBNA0722.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0722

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.02	152	118773	40.00	ul/l	0.09
19) Naphthalene-d8	12.95	136	478990	40.00	ul/l	0.08
34) Acenaphthene-d10	17.24	164	298649	40.00	ul/l	0.09
54) Phenanthrene-d10	20.85	188	460735	40.00	ul/l	0.10
67) Chrysene-d12	27.38	240	328813	40.00	ul/l	0.11
76) Perylene-d12	31.07	264	217738	40.00	ul/l	0.17
System Monitoring Compounds						
4) 2-Fluorophenol	7.41	112	318878	78.59	ul/l	0.08
Spiked Amount 200.000			Recovery = 39.30%			
6) Phenol-d6	9.26	99	458331	88.48	ul/l	0.07
Spiked Amount 200.000			Recovery = 44.24%			
20) Nitrobenzene-d5	11.30	82	248951	48.31	ul/l	0.08
Spiked Amount 100.000			Recovery = 48.31%			
38) 2-Fluorobiphenyl	15.58	172	382862	40.84	ul/l	0.09
Spiked Amount 100.000			Recovery = 40.84%			
58) 2,4,6-Tribromophenol	19.20	330	149058	146.68	ul/l	0.10
Spiked Amount 200.000			Recovery = 73.34%			
70) Terphenyl-d14	24.80	244	823483	99.78	ul/l	0.12
Spiked Amount 100.000			Recovery = 99.78%			
Target Compounds						Qvalue
33) 2-Methylnaphthalene	14.65	142	64693	8.28	ul/l	99

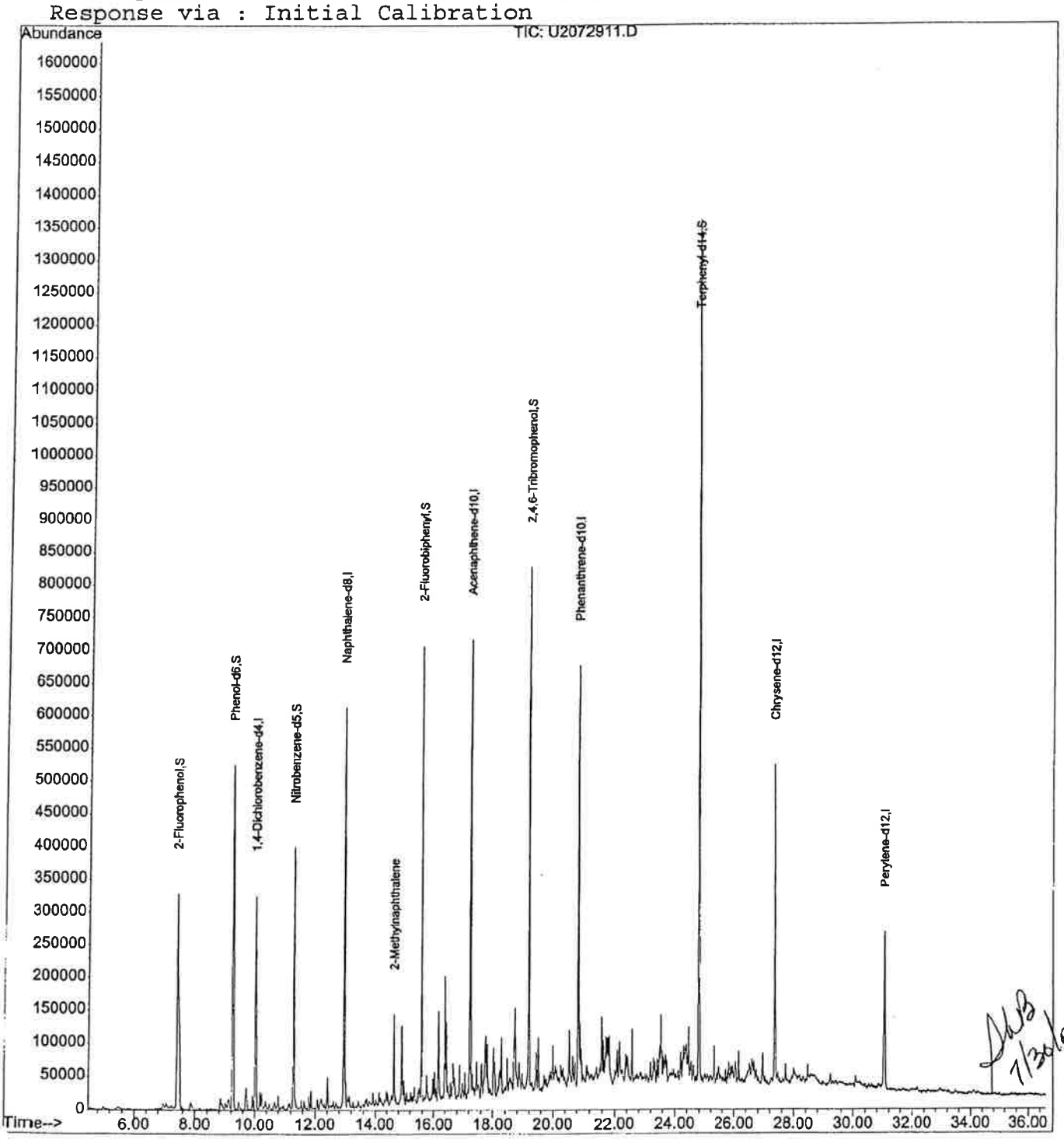
7/30/02
KMM 7/30/02

(#) = qualifier out of range (m) = manual integration

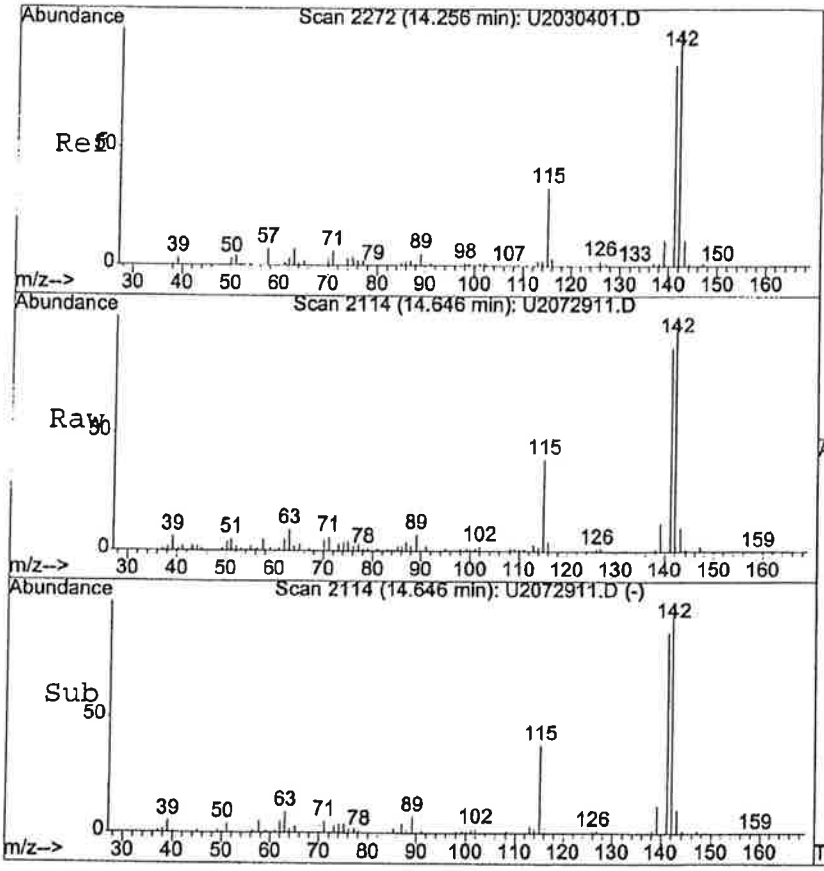
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072911.D Vial: 12
Acq On : 30 Jul 2002 12:03 am Operator: SHERREE
Sample : 288811A SWC-004 Inst : Instrumen
Misc : 1030/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 7:17 2002 Quant Results File: UBNA0722.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration



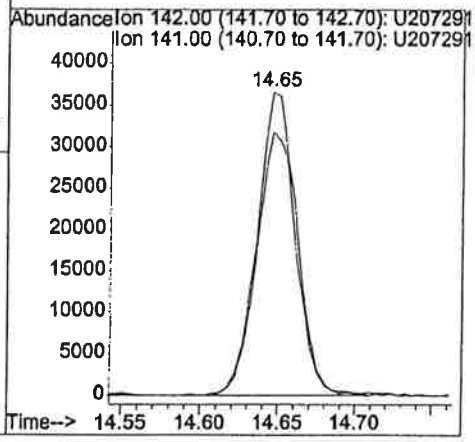
DWB 7/30/02



#33
2-Methylnaphthalene
Concen: 8.28 ul/l
RT: 14.65 min Scan# 2114
Delta R.T. 0.08 min
Lab File: U2072911.D
Acq: 30 Jul 2002 12:03 am

Tgt Ion:142 Resp: 64693

Ion	Ratio	Lower	Upper
142	100		
141	87.0	68.9	103.3



Washington
Environmental Laboratory

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

EPA SAMPLE NUMBER	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	OTHER	TOT OUT
BLK757LL.012_B17	65	63	108	57	51	77		0
LCS757LL.012	60	58	103	54	47	83		0
288865B	68	60	114	45	32	53		0
288865B_MS	61	57	112	48	33	68		0
288865B_MSD	56	50	102	43	31	62		0
288671A	54	52	115	46	41	74		0
288672A	53	47	100	51	44	84		0
288673A	58	51	113	55	48	90		0
288810A	57	51	104	53	46	88		0
288811A	48	41 *	100	44	39	73		1
289000A	55	49	109	49	43	79		0
289001A	48	44	102	43	39	74		0
289002A	47	44	99	42	37	65		0
289081A	55	51	112	49	43	70		0
289082A	54	48	101	50	44	77		0

	QC LIMITS
S1 (NBZ) = Nitrobenzene-d5	(35-114)
S2 (FBP) = 2-Fluorobiphenyl	(43-116)
S3 (TPH) = Terphenyl-d14	(33-141)
S4 (PHL) = Phenol-d6	(10-110)
S5 (2FP) = 2-Fluorophenol	(21-110)
S6 (TBP) = 2,4,6-Tribomophenol	(10-123)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

FORM II SV-1

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : BLK757LL.012_B17
MATRIX : WATER
CLIENT ID :
Sample wt/vol : 1000

ANALYSIS DATE : 07/29/2002
RECVD DATE :
ID FILE : g08.id
DATA FILE : U2072902

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
-95-3	Nitrobenzene	U	10
-59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	50
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	U	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	U	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	20
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	25
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : BLK757LL.012_B17
MATRIX : WATER
CLIENT ID :
Sample wt/vol: 1000

ANALYSIS DATE : 07/29/2002
RECVD DATE :
ID FILE : g08.id
DATA FILE : U2072902

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	25
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	25
100-02-7	4-Nitrophenol	U	25
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	25
100-01-6	4-Nitroaniline	U	25
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
118-74-1	Hexachlorobenzene	U	10
87-86-5	Pentachlorophenol	U	25
-01-8	Phenanthrene	U	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072902.D
Acq On : 29 Jul 2002 5:15 pm
Sample : BLK757LL.012_B17
Misc : 1000/1ML QC757LL.012 B17
MS Integration Params: RTEINT.P
Quant Time: Jul 29 17:52:36 2002

Vial: 3
Operator: SHERREE
Inst : Instrumen
Multiplr: 1.00

Quant Results File: UBNA0722.RES

69596 Page 0061

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0722

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.03	152	111118	40.00 ul/l	0.09
19) Naphthalene-d8	12.95	136	446097	40.00 ul/l	0.09
34) Acenaphthene-d10	17.24	164	273619	40.00 ul/l	0.09
54) Phenanthrene-d10	20.85	188	404247	40.00 ul/l	0.10
67) Chrysene-d12	27.37	240	266425	40.00 ul/l	0.10
76) Perylene-d12	31.06	264	174245	40.00 ul/l	0.16
System Monitoring Compounds					
4) 2-Fluorophenol	7.41	112	383887	101.13 ul/l	0.08
Spiked Amount 200.000			Recovery =	50.56%	
6) Phenol-d6	9.27	99	555254	114.58 ul/l	0.07
Spiked Amount 200.000			Recovery =	57.29%	
20) Nitrobenzene-d5	11.31	82	313659	65.36 ul/l	0.08
Spiked Amount 100.000			Recovery =	65.36%	
38) 2-Fluorobiphenyl	15.59	172	540309	62.91 ul/l	0.09
Spiked Amount 100.000			Recovery =	62.91%	
58) 2,4,6-Tribromophenol	19.20	330	137532	154.25 ul/l	0.10
Spiked Amount 200.000			Recovery =	77.13%	
70) Terphenyl-d14	24.80	244	721442	107.89 ul/l	0.12
Spiked Amount 100.000			Recovery =	107.89%	

Target Compounds

Qvalue

JWB 7/30/02

KMM 7/30/02

(#) = qualifier out of range (m) = manual integration
2072902.D UBNA0722.M Tue Jul 30 07:06:44 2002

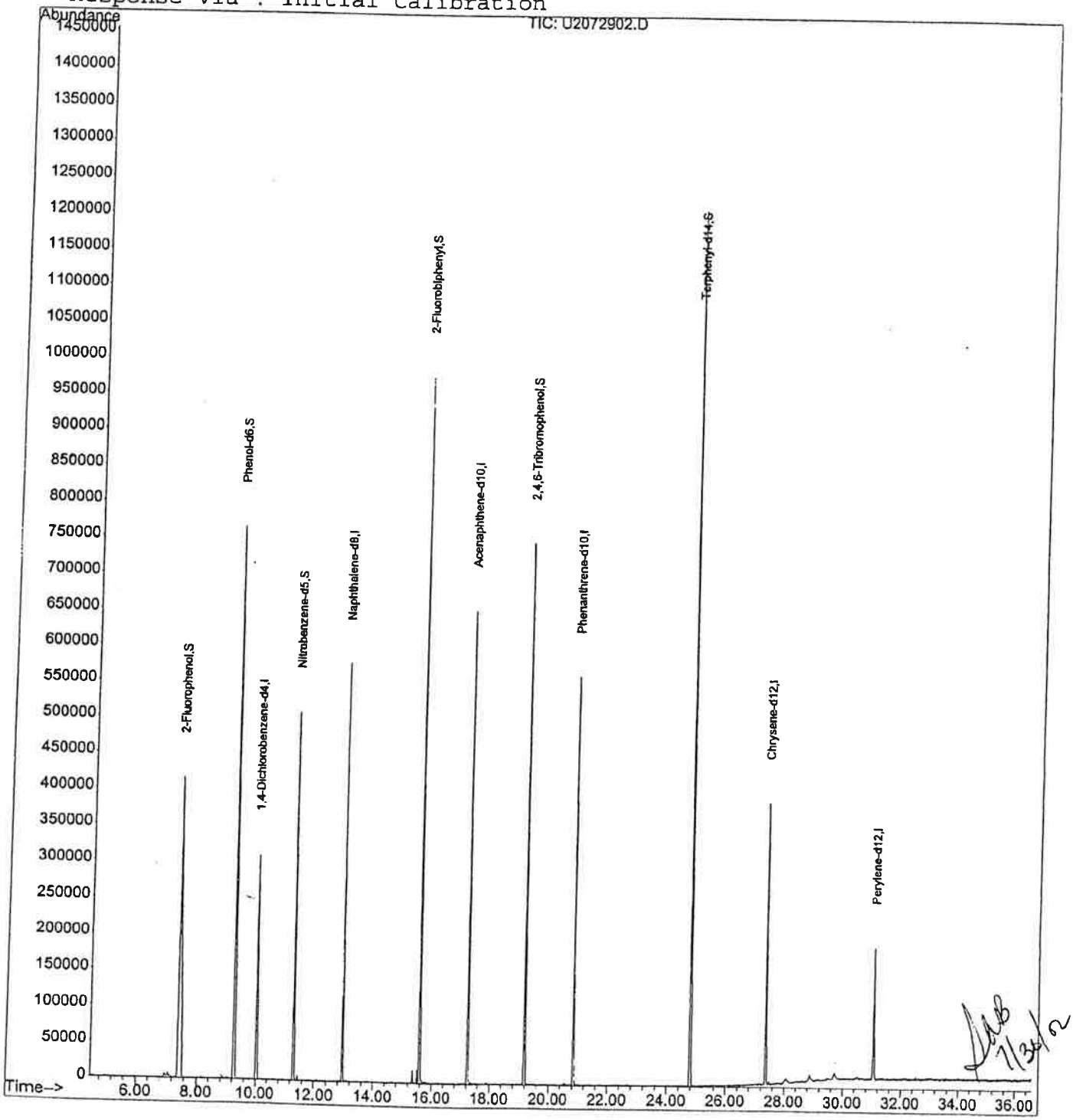
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072902.D
Acq On : 29 Jul 2002 5:15 pm
Sample : BLK757LL.012_B17
Misc : 1000/1ML QC757LL.012 B17
MS Integration Params: RTEINT.P
Quant Time: Jul 30 7:06 2002

Vial: 3
Operator: SHERREE
Inst : Instrumen
Multiplr: 1.00

Quant Results File: UBNA0722.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration



THE WASHINGTON GROUP
ENVIRONMENTAL SERVICES LABORATORY

301 Chelsea Parkway
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(610) 497-8000

Report For:

Sunoco, Inc.
Ms. Judy Brackin
P.O. Box 426
Marcus Hook PA 19061

Job Number

75700702

Summary Number

69641

August 02, 2002

Reviewed by
Project Manager Elizabeth Witouski

NJ ID# PA343	EPA ID# PA00078	PA ID# 23-272
CA ID# 02105CA	RI ID# 238	CT ID# PH0687
NY ID# 11345	MD ID# 286	MA ID# M-PA078

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Environmental Services Laboratory Data Summary
Summary # 69641 Printed - 08/02/02 07:35:08

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289000A	SWC-006	757	EXT BNA H2O			COMPLETE	07/22/2002	07/25/2002	07/29/2002	DJN
289000A	SWC-006	G08	1,2,4-Trichlorobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	1,2-Dichlorobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	1,3-Dichlorobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	1,4-Dichlorobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	2,4,5-Trichlorophenol	ND	19	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	2,4,6-Trichlorophenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	2,4-Dichlorophenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	2,4-Dimethylphenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	2,4-Dinitrophenol	ND	24	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	2,4-Dinitrotoluene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	2,6-Dinitrotoluene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	2-Chloronaphthalene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	2-Chlorophenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	2-Methylnaphthalene	46	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	2-Methylphenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	2-Nitroaniline	ND	24	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	2-Nitrophenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	3,3'-Dichlorobenzidine	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	3-Nitroaniline	ND	24	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	4,6-Dinitro-2-methylphenol	ND	24	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	4-Bromophenyl phenyl ether	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	4-Chloro-3-methylphenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	4-Chloroaniline	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	4-Chlorophenyl phenyl ether	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	4-Methylphenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	4-Nitroaniline	ND	24	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	4-Nitrophenol	ND	24	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Acenaphthene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Acenaphthylene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Aniline	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Anthracene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB

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Environmental Services Laboratory Data Summary
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Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289000A	SWC-006	G08	Benz(a)anthracene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Benzo(a)pyrene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Benzo(b)fluoranthene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Benzo(ghi)perylene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Benzo(k)fluoranthene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Benzoic acid	ND	49	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Benzyl alcohol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Bis(2-chloroethoxy)methane	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Bis(2-chloroethyl)ether	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Bis(2-chloroisopropyl) ethe	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Bis(2-ethylhexyl) phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Butyl benzyl phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Chrysene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Di-n-butyl phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Di-n-octyl phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Dibenz(a,h)anthracene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Dibenzofuran	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Diethyl phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Dimethyl phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Fluoranthene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Fluorene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Hexachlorobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Hexachlorobutadiene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Hexachlorocyclopentadiene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Hexachloroethane	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Isophorone	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	N-Nitrosodi-n-propylamine	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	N-Nitrosodiphenylamine	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Naphthalene	14	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Nitrobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Pentachlorophenol	ND	24	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Phenanthrene	7 J	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Phenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289000A	SWC-006	G08	Pyrene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB

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Environmental Services Laboratory Data Summary
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Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289000B	SWC-006	G18	Benzene	6	5	ug/L	07/22/2002	07/30/2002	07/30/2002	NRT
289000B	SWC-006	G18	Carbon Disulfide	ND	5	ug/L	07/22/2002	07/30/2002	07/30/2002	NRT
289000B	SWC-006	G18	Ethylbenzene	5	5	ug/L	07/22/2002	07/30/2002	07/30/2002	NRT
289000B	SWC-006	G18	Toluene	ND	5	ug/L	07/22/2002	07/30/2002	07/30/2002	NRT
289000B	SWC-006	G18	Xylenes-Meta&Para	110	5	ug/L	07/22/2002	07/30/2002	07/30/2002	NRT
289000B	SWC-006	G18	Xylenes-Ortho	7	5	ug/L	07/22/2002	07/30/2002	07/30/2002	NRT
289000C	SWC-006	310	Cyanide, Total	ND (0.05)		mg/l	07/22/2002	07/30/2002	08/01/2002	GCW
289000D	SWC-006	200	AA,Digest H2O			COMPLETE	07/22/2002	07/23/2002	07/23/2002	ART
289000D	SWC-006	227IC	Cr Chromium	ND<0.010		mg/l	07/22/2002	07/24/2002	07/24/2002	CAK
289000D	SWC-006	249IC	Pb Lead	ND<0.0050		mg/l	07/22/2002	07/24/2002	07/24/2002	CAK
289001A	SWC-007	757	EXT BNA H2O			COMPLETE	07/22/2002	07/25/2002	07/29/2002	DJN
289001A	SWC-007	G08	1,2,4-Trichlorobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	1,2-Dichlorobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	1,3-Dichlorobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	1,4-Dichlorobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	2,4,5-Trichlorophenol	ND	19	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	2,4,6-Trichlorophenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	2,4-Dichlorophenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	2,4-Dimethylphenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	2,4-Dinitrophenol	ND	24	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	2,4-Dinitrotoluene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	2,6-Dinitrotoluene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	2-Chloronaphthalene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	2-Chlorophenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	2-Methylnaphthalene	37	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	2-Methylphenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	2-Nitroaniline	ND	24	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	2-Nitrophenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB

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Environmental Services Laboratory Data Summary
Summary # 69641 Printed - 08/02/02 07:35:08

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289001A	SWC-007	G08	3,3'-Dichlorobenzidine	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	3-Nitroaniline	ND	24	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	4,6-Dinitro-2-methylphenol	ND	24	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	4-Bromophenyl phenyl ether	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	4-Chloro-3-methylphenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	4-Chloroaniline	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	4-Chlorophenyl phenyl ether	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	4-Methylphenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	4-Nitroaniline	ND	24	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	4-Nitrophenol	ND	24	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Acenaphthene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Acenaphthylene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Aniline	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Anthracene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Benz(a)anthracene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Benzo(a)pyrene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Benzo(b)fluoranthene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Benzo(ghi)perylene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Benzo(k)fluoranthene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Benzoic acid	ND	48	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Benzyl alcohol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Bis(2-chloroethoxy)methane	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Bis(2-chloroethyl)ether	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Bis(2-chloroisopropyl) ethe	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Bis(2-ethylhexyl) phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Butyl benzyl phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Chrysene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Di-n-butyl phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Di-n-octyl phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Dibenz(a,h)anthracene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Dibenzofuran	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Diethyl phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Dimethyl phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Fluoranthene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Fluorene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB

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Environmental Services Laboratory Data Summary
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Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289001A	SWC-007	G08	Hexachlorobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Hexachlorobutadiene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Hexachlorocyclopentadiene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Hexachloroethane	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Isophorone	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	N-Nitrosodi-n-propylamine	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	N-Nitrosodiphenylamine	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Naphthalene	13	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Nitrobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Pentachlorophenol	ND	24	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Phenanthrene	7 J	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Phenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001A	SWC-007	G08	Pyrene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289001B	SWC-007	G18	Benzene	10	5	ug/L	07/22/2002	07/30/2002	07/30/2002	PSS
289001B	SWC-007	G18	Carbon Disulfide	ND	5	ug/L	07/22/2002	07/30/2002	07/30/2002	PSS
289001B	SWC-007	G18	Ethylbenzene	11	5	ug/L	07/22/2002	07/30/2002	07/30/2002	PSS
289001B	SWC-007	G18	Toluene	ND	5	ug/L	07/22/2002	07/30/2002	07/30/2002	PSS
289001B	SWC-007	G18	Xylenes-Meta&Para	120	5	ug/L	07/22/2002	07/30/2002	07/30/2002	PSS
289001B	SWC-007	G18	Xylenes-Ortho	5	5	ug/L	07/22/2002	07/30/2002	07/30/2002	PSS
289001C	SWC-007	310	Cyanide, Total	ND (0.05)		mg/l	07/22/2002	07/30/2002	08/01/2002	GCW
289001D	SWC-007	200	AA,Digest H2O			COMPLETE	07/22/2002	07/23/2002	07/23/2002	ART
289001D	SWC-007	227IC	Cr Chromium	ND<0.010		mg/l	07/22/2002	07/24/2002	07/24/2002	CAK
289001D	SWC-007	249IC	Pb Lead	ND<0.0050		mg/l	07/22/2002	07/24/2002	07/24/2002	CAK
289002A	SWC-008	757	EXT BNA H2O			COMPLETE	07/22/2002	07/25/2002	07/29/2002	DJN
289002A	SWC-008	G08	1,2,4-Trichlorobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	1,2-Dichlorobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB

The Washington Group International
Environmental Services Laboratory Data Summary
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Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289002A	SWC-008	G08	1,3-Dichlorobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	1,4-Dichlorobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	2,4,5-Trichlorophenol	ND	20	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	2,4,6-Trichlorophenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	2,4-Dichlorophenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	2,4-Dimethylphenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	2,4-Dinitrophenol	ND	25	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	2,4-Dinitrotoluene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	2,6-Dinitrotoluene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	2-Chloronaphthalene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	2-Chlorophenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	2-Methylnaphthalene	28	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	2-Methylphenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	2-Nitroaniline	ND	25	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	2-Nitrophenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	3,3'-Dichlorobenzidine	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	3-Nitroaniline	ND	25	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	4,6-Dinitro-2-methylphenol	ND	25	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	4-Bromophenyl phenyl ether	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	4-Chloro-3-methylphenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	4-Chloroaniline	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	4-Chlorophenyl phenyl ether	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	4-Methylphenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	4-Nitroaniline	ND	25	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	4-Nitrophenol	ND	25	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Acenaphthene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Acenaphthylene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Aniline	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Anthracene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Benz(a)anthracene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Benzo(a)pyrene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Benzo(b)fluoranthene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Benzo(ghi)perylene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Benzo(k)fluoranthene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Benzoic acid	ND	49	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB

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Environmental Services Laboratory Data Summary
Summary # 69641 Printed - 08/02/02 07:35:08

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289002A	SWC-008	G08	Benzyl alcohol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Bis(2-chloroethoxy)methane	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Bis(2-chloroethyl)ether	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Bis(2-chloroisopropyl) ethe	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Bis(2-ethylhexyl) phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Butyl benzyl phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Chrysene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Di-n-butyl phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Di-n-octyl phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Dibenz(a,h)anthracene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Dibenzofuran	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Diethyl phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Dimethyl phthalate	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Fluoranthene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Fluorene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Hexachlorobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Hexachlorobutadiene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Hexachlorocyclopentadiene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Hexachloroethane	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Isophorone	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	N-Nitrosodi-n-propylamine	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	N-Nitrosodiphenylamine	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Naphthalene	10	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Nitrobenzene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Pentachlorophenol	ND	25	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Phenanthrene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Phenol	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002A	SWC-008	G08	Pyrene	ND	10	ug/L	07/22/2002	07/30/2002	07/30/2002	SAB
289002B	SWC-008	G18	Benzene	8	5	ug/L	07/22/2002	07/30/2002	07/30/2002	PSS
289002B	SWC-008	G18	Carbon Disulfide	ND	5	ug/L	07/22/2002	07/30/2002	07/30/2002	PSS
289002B	SWC-008	G18	Ethylbenzene	11	5	ug/L	07/22/2002	07/30/2002	07/30/2002	PSS
289002B	SWC-008	G18	Toluene	ND	5	ug/L	07/22/2002	07/30/2002	07/30/2002	PSS
289002B	SWC-008	G18	Xylenes-Meta&Para	110	5	ug/L	07/22/2002	07/30/2002	07/30/2002	PSS

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69641 Printed - 08/02/02 07:35:08

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289002B	SWC-008	G18	Xylenes-Ortho	4 J	5	ug/L	07/22/2002	07/30/2002	07/30/2002	PSS
289002C	SWC-008	310	Cyanide, Total	ND (0.05)		mg/l	07/22/2002	07/30/2002	08/01/2002	GCW
289002D	SWC-008	200	AA,Digest H2O			COMPLETE	07/22/2002	07/23/2002	07/23/2002	ART
289002D	SWC-008	227IC	Cr Chromium	ND<0.010		mg/l	07/22/2002	07/24/2002	07/24/2002	CAK
289002D	SWC-008	249IC	Pb Lead	ND<0.0050		mg/l	07/22/2002	07/24/2002	07/24/2002	CAK

Approved by: [signature]

Report Prep: M. Hamatak

THE WASHINGTON GROUP
ENVIRONMENTAL LABORATORY

Methods Used for Summary# 69641:

Code	Description
200	Total Metals, Aqueous/FLAA,GFAA,ICP/SW846/EPA 200 Series
227IC	Chromium by ICP/EPA 200.7/SW846 6010
249IC	Lead by ICP/EPA 200.7/SW846 6010
310	Total Cyanide/spectrophotometric,automated 335.4 /dist+335.3
757	Extraction Procedure B/N and Acids (H2O) SW-846 Method 3520C
G08	Base/Neutral and Acid Extractable/SW-846 Meth 8270C TCL List
G18	GC/MS VOA (TCL List)/SW-846 Method 5035/8260B

DATA QUALIFIERS

The following list shows data qualifiers that may appear in this report, and the meaning of each.

Qualifier	Meaning
B	Compound was detected in the associated blank.
D	Result was obtained from a different dilution than other analytes.
E	Result is estimated. Usually, this qualifier indeicates that the result is above the calibrated range of the instrument
J	Result is estimated. Usually this qualifier indicates the reported concentration is below the laboratory's reporting limit.
N	Indicates a Tentatively Identified Compound.
ND	Analyte was not detected.
U	Analyte was not detected (U and ND qualifiers are interchangable).

ABBREVIATIONS

The following list shows abbreviations that commonly occur in analytical reports.

Abbreviation	Meaning
DL	Dilution
LCS	Laboratory Control Sample
LCSS	Laboratory Control Sample (soil)
LCSW	Laboratory Control Sample (water)
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NR	No Recovery
PB	Preparation Blank
PS	Post-Digestion Spike
RE	Reanalysis
RPD	Relative Percent Difference
SR	Serial Dilution

Washington — Laboratory Chain Of Custody

Washington Group Laboratory
301 Chelsea Parkway
Boothwyn, PA 19061
Phone: 610-497-8000
Fax: 610-497-8005

Quote No:
Ship To:
Lab Job No:

Client/Office: Sunoco - Marcus Hook Ref Phone: 215-977-3856
Address: Delaware Ave + Green St, Marcus Hook, PA
Send report to: Judy Brackin Fax: 215-977-6549
Project Description: Sotin Waste Closure

Send invoice to: Judy Brackin
Address: Sunoco Inc, 1801 Market St Phila, PA 19103
P.O. No:

TAT (for data): Identify number of working days below);...or Date-->:
☐ Rush 1 2 3 4 5 days ☐ Firm(6-12) ☒ Std.(~12) ☐ Other
Lab Staffer confirming Rush/Firm: Hardcopy TAT Date?:

Report Type: ☐ Results only ☒ Data +QC ☐ Reduced Deliv. ☐ Other:
☐ Regulatory Format (CLP like) ☐ Electronic/disk->(Format?)

Regulatory Samples? ☒ YES ☐ NO
If YES?: ☐ Act II ☐ Phase I/II ☐ UST ☐ ISRA ☒ RCRA ☐ Other: ☐ NPDES

Analytical Protocol: ☐ Drinking H2O ☒ SW846 ☐ ASTM ☐ EPA600 ☐ Other:

Analysis Required: SVOA 8270 | VOA 8260 | Total CN | Pb & Total Cr

Lab Use Only — rev. 10/12/99
Due Date:
Cooler Tmp 3 deg C
custody seal yes__ no ✓
No.:
Summary No. 69641

	ID (NJ limit=7 characters)	date	time	matrix	grab	comp	type	no.	preservative	pH	SVOA 8270	VOA 8260	Total CN	Pb & Total Cr	Lab Log No:	
	SWC-006	7-22-02	0815	H2O	X		1L A/G	2	NONE		X				289000	A-1,2
*	⊥	⊥	⊥	H2O	X		VOA	2	HCl			X			⊥	B ⊥
	⊥	⊥	⊥	H2O	X		250P	1	NaOH	>12			X		⊥	C
	⊥	⊥	⊥	H2O	X		500P	1	HNO3	<2				X	⊥	D
	SWC-007	7-22-02	11:30	H2O	X		1L A/G	2			X				289001 (DAG 7/22/02)	A-1,2
*	⊥	⊥	⊥	H2O	X		VOA	2	HCl			X			⊥	B ⊥
	⊥	⊥	⊥	H2O	X		250P	1	NaOH	>12			X		⊥	C
	⊥	⊥	⊥	H2O	X		500P	1	HNO3	<2				X	⊥	D
	SWC-008	7-22-02	1300	H2O	X		1L A/G	2			X				289002	A-1,2
	⊥	⊥	⊥	H2O	X		VOA	2	HCl			X			⊥	B ⊥
	⊥	⊥	⊥	H2O	X		25P	1	NaOH	>12			X		⊥	C
	⊥	⊥	⊥	H2O	X		500P	1	HNO3	<2				X	⊥	D

Comments/Special Handling/Storage/Disposal-->: Note: must have detection limits at or below clearance levels in attached Table!
* One vial has small head space (DAG) 7/22/02

Sampled by: Frank Kulp
Phone no: (610) 859 1451 - (215) 977-3856

Relinquished By: Name	Organization	Date	Time	Received By: Name	Organization	Date	Time
Frank Kulp	Sunoco	7-22-02	1345	Judy A Brackin	Sunoco	7/22/02	1345
Judy A Brackin	Sunoco	7/22/02	2:35	A White	WGINT	7/22/02	1435

Method of Shipment
Airbill No.

Washington
Environmental Laboratory

SAMPLE RECEIVING CHECKLIST

Client/Site: Sunoco- Marcus Hook Assigned Summary # 69641

Section 1. Laboratory Courier (omit if samples received directly from client or 3rd party)

1.1 Samples taken by lab personnel?	☐ Yes	☐ No	
Preserved in field?	☐ Yes	☐ No	☐ Not Req.
Stored on ice?	☐ Yes	☐ No	☐ Not Req.
Date/time last sample placed in cooler: _____			
1.2 Samples taken by customer or 3rd party?	☐ Yes	☐ No	
Received under refrigeration?	☐ Yes (cooler)	☐ Yes (refrig.)	☐ No
If yes, in Cooler sealed?	☐ Yes	☐ No	
If no, ice present?	☐ Yes	☐ No	
Ice added?	☐ Yes	☐ No	
If refrig. placed in cooler/iced	☐ Yes	☐ No	

Section 2. Laboratory

2.1 Delivered by	☒ Client	☐ Lab Pers	☐ Parcel Svc
2.2 Packaging	☒ Cooler	☐ Other/none	
Custody Seals	☐ Present	☒ Absent	☐ Broken
Ice	☒ Present	☐ Absent	☐ Melted
Temperature	3 °C		
2.3 Documentation			
Airbill Present	☐ Yes, # N/A		☐ No
COC	☒ Rec'd		☐ Prpd by Lab
2.4 Sample Containers			
Appropriate for specified analyses?	☒ Yes	☐ No*	
Intact?	☒ Yes	☐ No*	
Labeled, and labels legible?	☒ Yes	☐ No*	
Labels agree with COC?	☒ Yes	☐ No*	
2.5 Preservation (water samples only)			
Metals pH<2	☒ Yes	☐ No*	☐ NA
Cyanides pH >12	☒ Yes	☐ No*	☐ NA
Sulfides pH >9	☐ Yes	☐ No*	☐ NA
BNA, Pest, PCB, CN, Phenols, NO_3 Cl_2 absent	☒ Yes	☐ No*	☐ NA
TOC, COD, Oil/Grease, Phenols, TPH pH<2	☐ Yes	☐ No*	☒ NA
TOX, TKN, NH3, Tot. P. pH<2	☐ Yes	☐ No*	☒ NA
Were preservatives added at lab?	☐ Yes*	☒ No	☐ N/A

Comments (note: any response marked "*" requires detailed explanation identify specific samples, what was wrong, and what was done)

Initials: DAG Date: 7/22/02

admin3/QA/lList/SR Checklist rev10/01

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: The Washington Group International

Lab Sample ID

288961	288961SR
288961PS	288962
288985A	288986A
289000D	289001D
289002D	

Were ICP interelement corrections applied? Yes/No

Were ICP background corrections applied? Yes/No

If Yes - were raw data generated before application of background corrections Yes/No

Comments:

Batch ID: 580 Analysis Start Time: 1705

:ertify that this data package is in compliance with the terms and ıditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Laboratory Manager's designee, as verified by the following signature.

Signature: [signature] Name: Candia Knowles

Date: 7 25 02 Title:

Data File: bjul24d.

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Initial/Continuing Calibration Source : _____

Concentration Units: mg/l

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R *	CCV-1 True	CCV-1 Found	CCV-1 %R	CCV-2 Found	CCV-2 %R	CCV-3 Found	CCV-3 %R
Aluminum	2.00	2.07	103.5	2.00	1.94	97.0	1.96	98.0	1.94	97.0
Antimony	0.50	0.50	100.1	0.50	0.49	98.8	0.49	98.1	0.49	97.2
Arsenic	0.50	0.48	95.8	0.50	0.49	97.8	0.48	96.0	0.48	96.0
Barium	2.00	1.97	98.5	2.00	1.98	99.0	1.98	99.0	1.97	98.5
Beryllium	0.05	0.05	97.2	0.05	0.05	96.6	0.05	97.6	0.05	97.0
Cadmium	0.25	0.25	99.0	0.25	0.25	98.1	0.25	99.4	0.25	98.8
Calcium	5.00	4.98	99.6	5.00	4.90	98.0	4.86	97.2	4.86	97.2
Chromium	0.20	0.20	98.0	0.20	0.20	98.5	0.20	98.0	0.19	97.5
Cobalt	0.50	0.49	98.2	0.50	0.49	98.0	0.49	98.6	0.49	98.2
Copper	0.25	0.25	98.4	0.25	0.24	97.2	0.25	98.0	0.24	97.2
Iron	1.00	0.97	97.1	1.00	0.94	94.4	0.95	95.4	0.95	94.8
Lead	0.50	0.49	98.1	0.50	0.50	99.4	0.49	98.7	0.49	97.9
Magnesium	5.00	4.88	97.6	5.00	4.90	98.0	4.96	99.2	4.92	98.4
Manganese	0.50	0.50	99.2	0.50	0.49	98.2	0.50	99.2	0.49	98.6
Molybdenum	0.50	0.48	96.4	0.50	0.49	98.6	0.49	97.6	0.49	97.0
Nickel	0.50	0.49	98.2	0.50	0.49	98.2	0.50	99.2	0.49	98.6
Potassium	5.00	4.77	95.4	5.00	4.80	96.0	4.79	95.8	4.77	95.4
Selenium	0.50	0.48	97.0	0.50	0.49	98.6	0.48	96.9	0.48	97.0
Titanium	0.50	0.49	97.4	0.50	0.49	97.0	0.49	98.0	0.49	97.4
Silver	0.25	0.24	97.6	0.25	0.24	97.6	0.25	98.4	0.25	96.0
Sodium	5.00	4.85	97.0	5.00	4.83	96.6	4.85	97.0	4.74	94.8
Thallium	0.50	0.49	97.5	0.50	0.49	98.5	0.49	97.5	0.49	97.1
Vanadium	0.50	0.49	98.8	0.50	0.49	98.0	0.50	99.0	0.49	98.4
Zinc	0.50	0.49	97.4	0.50	0.48	96.6	0.49	97.4	0.48	96.6

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Initial Calibration Source : _____

Continuing Calibration Source: _____

Analyte	True	CCV-4 Found	%R	CCV-5 Found	%R	CCV-6 Found	%R
Aluminum	2.00	1.91	95.5				
Antimony	0.50	0.48	96.7				
Arsenic	0.50	0.48	95.7				
Barium	2.00	1.96	98.0				
Beryllium	0.05	0.05	95.8				
Cadmium	0.25	0.24	97.3				
Calcium	5.00	4.84	96.8				
Chromium	0.20	0.19	96.0				
Cobalt	0.50	0.49	97.0				
Copper	0.25	0.24	95.6				
Iron	1.00	0.94	93.5				
Lead	0.50	0.49	97.3				
Magnesium	5.00	4.86	97.2				
Manganese	0.50	0.49	97.4				
Molybdenum	0.50	0.48	96.6				
Nickel	0.50	0.49	97.4				
Potassium	5.00	4.69	93.8				
Selenium	0.50	0.48	95.8				
Titanium	0.50	0.48	96.2				
Silver	0.25	0.24	96.4				
Sodium	5.00	4.77	95.4				
Thallium	0.50	0.48	96.1				
Vanadium	0.50	0.49	97.0				
Zinc	0.50	0.48	95.8				

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Preparation Blank Matrix (soil/water) : Water

Preparation Blank Concentration Units (mg/L or mg/Kg) : mg/L

Analyte	Initial Calib. Blank	Continuing Calibration 1	2	3	
Aluminum	ND	ND	ND	ND	
Antimony	ND	ND	ND	ND	
Arsenic	ND	ND	ND	ND	
Barium	ND	ND	ND	ND	
Beryllium	ND	ND	ND	ND	
Cadmium	ND	ND	ND	ND	
Calcium	ND	ND	ND	ND	
Chromium	ND	ND	ND	ND	
Cobalt	ND	ND	ND	ND	
Copper	ND	ND	ND	ND	
Iron	ND	ND	ND	ND	
Lead	ND	ND	ND	ND	
Magnesium	ND	ND	ND	ND	
Manganese	ND	ND	ND	ND	
Molybdenum	ND	ND	ND	ND	
Nickel	ND	ND	ND	ND	
Potassium	ND	ND	ND	ND	
Selenium	ND	ND	ND	ND	
Titanium	ND	ND	ND	ND	
Silver	ND	ND	ND	ND	
Sodium	ND	ND	ND	ND	
Thallium	ND	ND	ND	ND	
Vanadium	ND	ND	ND	ND	
Zinc	ND	ND	ND	ND	

4d.

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Preparation Blank Matrix (soil/water) : Water

Preparation Blank Concentration Units (mg/L or mg/Kg) : mg/L

Analyte	Continuing Calibration 4	5	6	
Aluminum	ND			
Antimony	ND			
Arsenic	ND			
Barium	ND			
Beryllium	ND			
Cadmium	ND			
Calcium	ND			
Chromium	ND			
Cobalt	ND			
Copper	ND			
Iron	ND			
Lead	ND			
Magnesium	ND			
Manganese	ND			
Molybdenum	ND			
Nickel	ND			
Potassium	ND			
Selenium	ND			
Titanium	ND			
Silver	ND			
Sodium	ND			
Thallium	ND			
Vanadium	ND			
Zinc	ND			

.4d.

PREPARATION BLANK (Batch 580)

Lab Name: Washington Group Contract: _____

Matrix (soil/water): water

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Result
Aluminum	ND<0.2000
Antimony	ND<0.0060
Arsenic	ND<0.0080
Barium	ND<0.2000
Beryllium	ND<0.0020
Cadmium	ND<0.0050
Calcium	ND<1.0000
Chromium	ND<0.0100
Cobalt	ND<0.0100
Copper	ND<0.0200
Iron	ND<0.1000
Lead	ND<0.0050
Magnesium	ND<1.0000
Manganese	ND<0.0150
Molybdenum	ND<0.0100
Nickel	ND<0.0200
Potassium	ND<1.0000
Selenium	ND<0.0200
Silver	ND<0.0100
Sodium	ND<1.0000
Thallium	ND<0.0100
Titanium	ND<0.0200
Vanadium	ND<0.0100
Zinc	ND<0.0200

US EPA - CLP
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

ICP ID Number: _____

Concentration Units: mg/l

Analyte	Solution A	Solution AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500	500	455	458	91.6			
Antimony		0.6		0.61	101.3			
Arsenic		0.1		0.09	94.2			
Barium		0.5		0.51	102.4			
Beryllium		0.5		0.51	101.5			
Cadmium		1.0		0.98	97.8			
Calcium	500	500	504	508	101.6			
Chromium		0.5		0.49	97.4			
Cobalt		0.5		0.49	97.6			
Copper		0.5		0.55	109.0			
Iron	200	200	191	196	98.0			
Lead		0.05		0.06	119.6			
Magnesium	500	500	496	500	100.0			
Manganese		0.5		0.52	103.2			
Molybdenum								
Nickel		1.0		0.97	96.6			
Potassium								
Selenium		0.05		0.04	87.4			
Titanium								
Silver		0.2		0.22	109.0			
Sodium								
Thallium		0.1		0.08	81.3			
Vanadium		0.5		0.51	101.6			
Zinc		1.0		1.07	107.0			

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288961

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		0.249	0.000	0.25	99.60
Aluminum		2.160	0.000	2.00	108.00
Arsenic		0.484	0.000	0.50	96.88
Barium		2.020	0.000	2.00	101.00
Beryllium		0.050	0.000	0.05	99.20
Calcium		19.700	15.000	5.00	94.00
Cadmium		0.249	0.000	0.25	99.64
Cobalt		0.496	0.000	0.50	99.20
Chromium		0.200	0.000	0.20	100.00
Copper		0.261	0.000	0.25	104.40
Iron		1.460	0.320	1.00	114.00
Potassium		7.890	2.600	5.00	105.80
Magnesium		10.100	5.200	5.00	98.00
Manganese		0.582	0.042	0.50	108.00
Molybdenum		0.501	0.000	0.50	100.20
Sodium		21.100	16.000	5.00	102.00
Nickel		0.496	0.000	0.50	99.20
Lead		0.493	0.000	0.50	98.62
Antimony		0.510	0.006	0.50	100.84
Selenium		0.495	0.000	0.50	99.00
Titanium		0.497	0.000	0.50	99.40
Thallium		0.475	0.000	0.50	94.98
Vanadium		0.501	0.000	0.50	100.20
Zinc		0.544	0.052	0.50	98.40

Comments:

NR = No Recovery

288961MS Batch - 580
bjul24d.580

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288961

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		0.254	0.000	0.25	101.60
Aluminum		2.190	0.000	2.00	109.50
Arsenic		0.482	0.000	0.50	96.34
Barium		2.050	0.000	2.00	102.50
Beryllium		0.051	0.000	0.05	101.00
Calcium		19.500	15.000	5.00	90.00
Cadmium		0.249	0.000	0.25	99.76
Cobalt		0.506	0.000	0.50	101.20
Chromium		0.202	0.000	0.20	101.00
Copper		0.267	0.000	0.25	106.80
Iron		1.300	0.320	1.00	98.00
Potassium		7.810	2.600	5.00	104.20
Magnesium		10.300	5.200	5.00	102.00
Manganese		0.537	0.042	0.50	99.00
Molybdenum		0.503	0.000	0.50	100.60
Sodium		21.500	16.000	5.00	110.00
Nickel		0.497	0.000	0.50	99.40
Lead		0.495	0.000	0.50	99.06
Antimony		0.506	0.006	0.50	100.04
Selenium		0.491	0.000	0.50	98.14
Titanium		0.508	0.000	0.50	101.60
Thallium		0.474	0.000	0.50	94.74
Vanadium		0.511	0.000	0.50	102.20
Zinc		0.554	0.052	0.50	100.40

Comments:

NR = No Recovery

288961MSD Batch - 580
bi1124d.580

BATCH
DUPLICATE SAMPLE REPORT

LAB SAMPLE NO

288961MS

Lab Name: The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Sample Result	Duplicate Result	% RPD
Silver	0.249	0.254	1.99
Aluminum	2.160	2.190	1.38
Arsenic	0.484	0.482	0.56
Barium	2.020	2.050	1.47
Beryllium	0.050	0.051	1.80
Calcium	19.700	19.500	1.02
Cadmium	0.249	0.249	0.12
Cobalt	0.496	0.506	2.00
Chromium	0.200	0.202	1.00
Copper	0.261	0.267	2.27
Iron	1.460	1.300	11.59
Potassium	7.890	7.810	1.02
Magnesium	10.100	10.300	1.96
Manganese	0.582	0.537	8.04
Molybdenum	0.501	0.503	0.40
Sodium	21.100	21.500	1.88
Nickel	0.496	0.497	0.20
Lead	0.493	0.495	0.45
Antimony	0.510	0.506	0.79
Selenium	0.495	0.491	0.87
	0.497	0.508	2.19
Thallium	0.475	0.474	0.25
Vanadium	0.501	0.511	1.98
Zinc	0.544	0.554	1.82

Comments:

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288961

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		0.240	0.000	0.25	96.00
Aluminum		2.100	0.000	2.00	105.00
Arsenic		0.470	0.000	0.50	94.00
Barium		2.000	0.000	2.00	100.00
Beryllium		0.048	0.000	0.05	96.00
Calcium		20.000	15.000	5.00	100.00
Cadmium		0.240	0.000	0.25	96.00
Cobalt		0.480	0.000	0.50	96.00
Chromium		0.190	0.000	0.20	95.00
Copper		0.250	0.000	0.25	100.00
Iron		1.300	0.320	1.00	98.00
Potassium		7.700	2.600	5.00	102.00
Magnesium		9.900	5.200	5.00	94.00
Manganese		0.510	0.042	0.50	93.60
Molybdenum		0.480	0.000	0.50	96.00
Sodium		21.000	16.000	5.00	100.00
Nickel		0.480	0.000	0.50	96.00
Lead		0.480	0.000	0.50	96.00
Antimony		0.480	0.006	0.50	94.76
Selenium		0.480	0.000	0.50	96.00
Titanium		0.480	0.000	0.50	96.00
Thallium		0.500	0.000	0.50	100.00
Vanadium		0.490	0.000	0.50	98.00
Zinc		0.530	0.052	0.50	95.60

Comments:

NR = No Recovery

2 961PS Batch - 580
124d.580

ICP SERIAL DILUTIONS

LAB SAMPLE NO

288961SR

Lab Name: Raytheon Engineers Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Initial Result	Serial Dil. Result	% RPD
Silver	0.000	0.000	-----
Aluminum	0.000	0.000	-----
Arsenic	0.000	0.000	-----
Barium	0.000	0.000	-----
Beryllium	0.000	0.000	-----
Calcium	15.000	15.000	0.00
Cadmium	0.000	0.000	-----
Cobalt	0.000	0.000	-----
Chromium	0.000	0.000	-----
Copper	0.000	0.000	-----
Iron	0.320	0.000	200.00
Potassium	2.600	0.000	200.00
Magnesium	5.200	5.400	3.77
Manganese	0.042	0.000	200.00
Molybdenum	0.000	0.000	-----
Sodium	16.000	16.000	0.00
Nickel	0.000	0.000	-----
Lead	0.000	0.000	-----
Antimony	0.006	0.000	200.00
Selenium	0.000	0.000	-----
Titanium	0.000	0.000	-----
Thallium	0.000	0.000	-----
Vanadium	0.000	0.000	-----
Zinc	0.052	0.000	200.00

Comments:

US EPA - CLP
7
LABORATORY CONTROL SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Solid LCS Source :_____

Aqueous LCS Source:_____

Analyte	Aqueous (mg/L) True	Found	%R
Aluminum	2.00	2.09	104.5
Antimony	0.50	0.50	100.9
Arsenic	0.50	0.48	96.5
Barium	2.00	2.05	102.5
Beryllium	0.05	0.05	99.6
Cadmium	0.25	0.25	101.6
Calcium	5.00	5.11	102.2
Chromium	0.20	0.20	100.5
Cobalt	0.50	0.50	101.0
Copper	0.25	0.25	101.2
Iron	1.00	1.01	101.0
Lead	0.50	0.50	100.2
Magnesium	5.00	4.99	99.8
Manganese	0.50	0.50	100.0
Molybdenum	0.50	0.50	99.6
Nickel	0.50	0.50	100.6
Potassium	5.00	4.86	97.2
Selenium	0.50	0.49	98.3
Titanium	0.50	0.50	99.6
Silver	0.25	0.25	100.0
Sodium	5.00	4.93	98.6
Thallium	0.50	0.48	96.1
Vanadium	0.50	0.50	101.0
Zinc	0.50	0.50	99.6

Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289000B
MATRIX : WATER
CLIENT ID : SWC-006
Sample wt/vol : 5ML

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/22/2002
ID FILE : g18sun3.id
DATA FILE : R2073009

69641

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	6	5
108-88-3	Toluene	ND	5
100-41-4	Ethylbenzene	5	5
330-20-7	m&p-Xylenes	110	5
95-47-6	o-Xylene	7	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69641

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\073002R1\R2073009.D
Acq On : 30 Jul 2002 14:53
Sample : 289000B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 15:53:52 2002

Vial: 8
Operator: PSS
Inst : 5973R
Multiplr: 1.00
Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	11.80	168	538470	50.00	ug/l	0.00
26) 1,4-Difluorobenzene	13.13	114	669790	50.00	ug/l	0.00
40) Chlorobenzene-d5	17.79	117	526980	50.00	ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.26	152	281856	50.00	ug/l	0.00
System Monitoring Compounds						
22) Dibromofluoromethane	11.14	113	183911	46.81	ug/l	0.00
Spiked Amount 50.000			Recovery =	93.62%		
41) Toluene-d8	15.78	98	672526	45.06	ug/l	0.00
Spiked Amount 50.000			Recovery =	90.12%		
55) Bromofluorobenzene	19.45	94	31962	46.88	ug/l	0.00
Spiked Amount 50.000			Recovery =	93.76%		
Target Compounds						Qvalue
14) Methyl-t-butyl Ether	9.43	73	40666	6.71	ug/l	96
21) Chloroform	10.94	83	555853	64.57	ug/l	99
30) Benzene	12.78	78	97806	6.29	ug/l	100
35) Bromodichloromethane	13.80	83	49183	9.63	ug/l	98
50) Ethylbenzene	18.10	91	127043	5.40	ug/l	98
51) m&p-Xylenes	18.36	106	1000249	111.13	ug/l	94
52) o-Xylene	18.91	106	58136	7.13	ug/l	88
77) Naphthalene	24.84	128	169040	31.31	ug/l	100

7/30/02

7/31/02

(#) = qualifier out of range (m) = manual integration

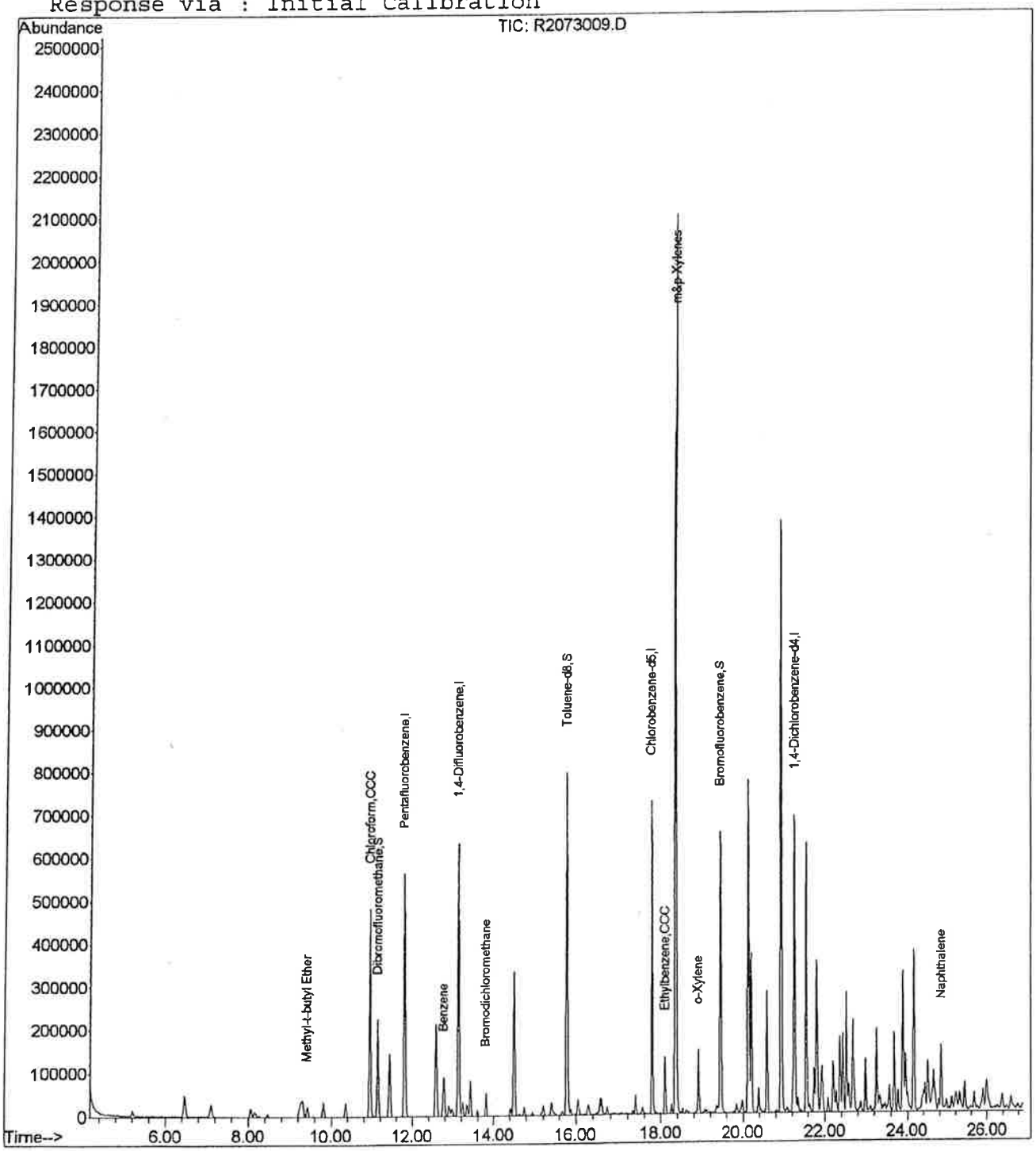
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\073002R1\R2073009.D
Acq On : 30 Jul 2002 14:53
Sample : 289000B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 20:09 2002

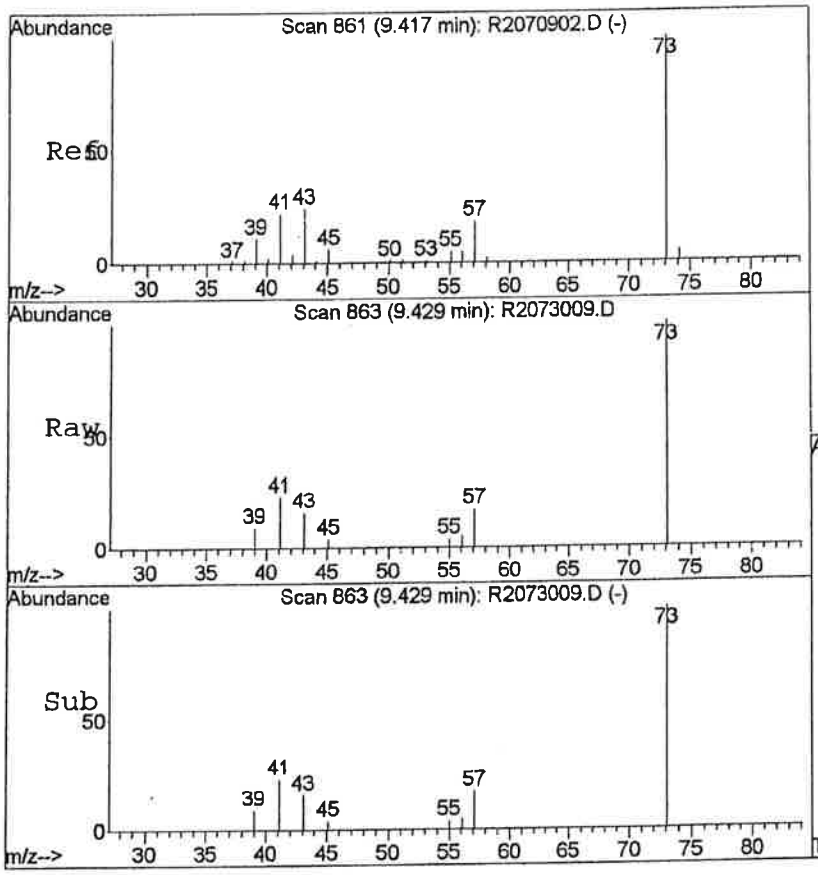
Vial: 8
Operator: PSS
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration



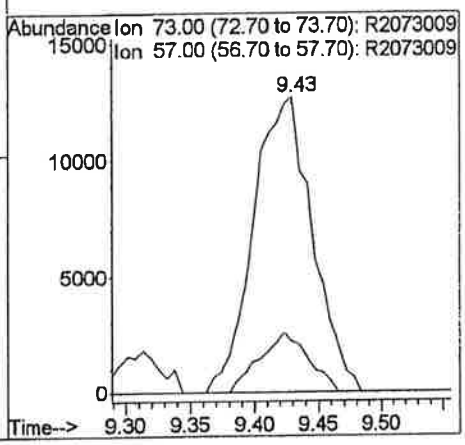
69641 Page 0029

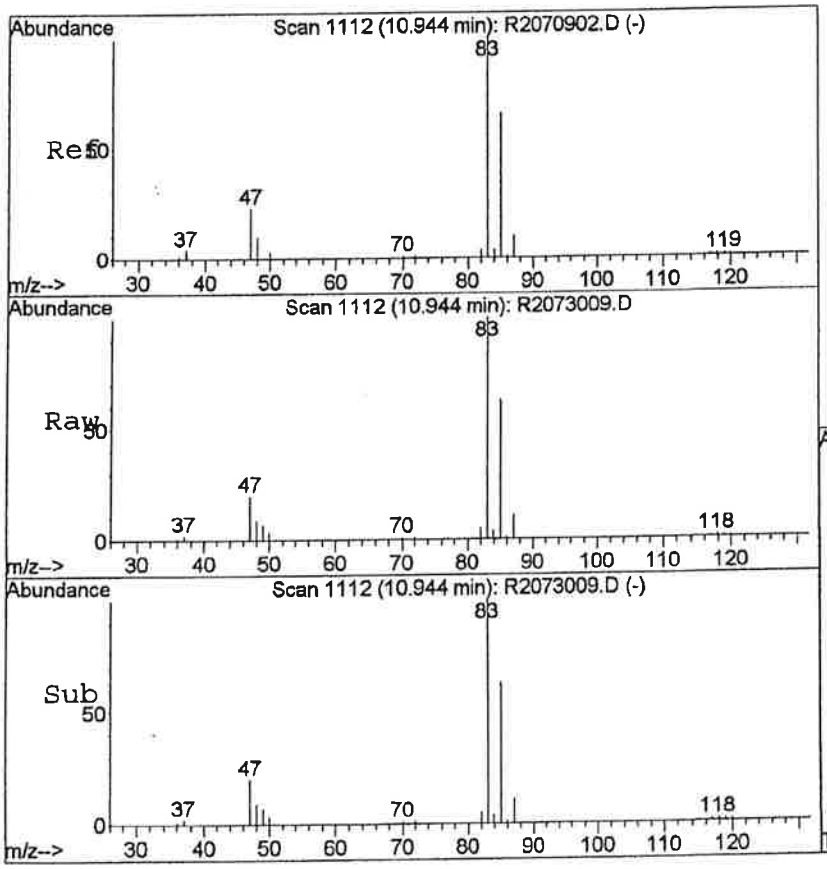


#14
Methyl-t-butyl Ether
Concen: 6.71 ug/l
RT: 9.43 min Scan# 863
Delta R.T. 0.01 min
Lab File: R2073009.D
Acq: 30 Jul 2002 14:53

Tgt Ion: 73 Resp: 40666

Ion	Ratio	Lower	Upper
73	100		
57	16.7	14.6	22.0

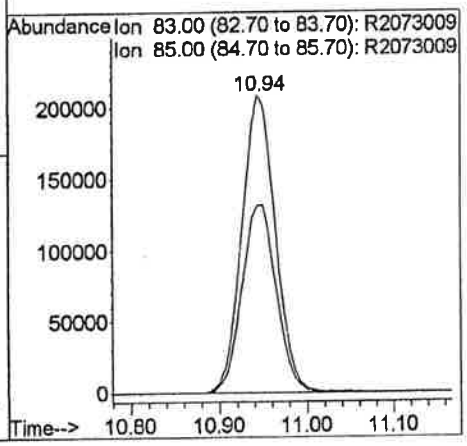


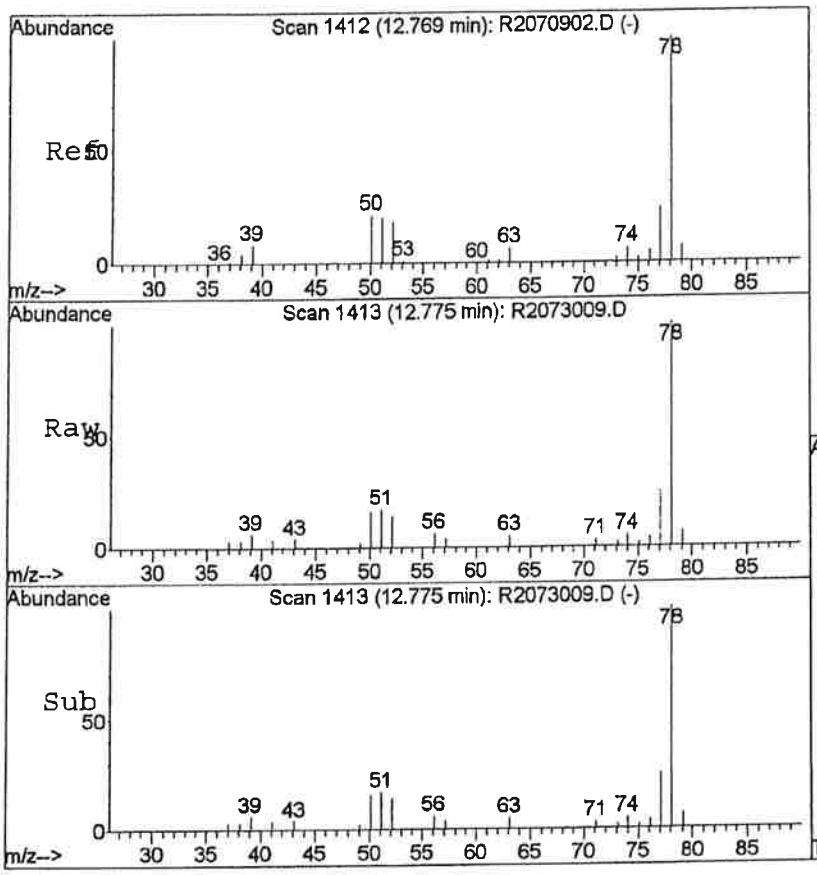


#21
Chloroform
Concen: 64.57 ug/l
RT: 10.94 min Scan# 1112
Delta R.T. 0.01 min
Lab File: R2073009.D
Acq: 30 Jul 2002 14:53

Tgt Ion: 83 Resp: 555853

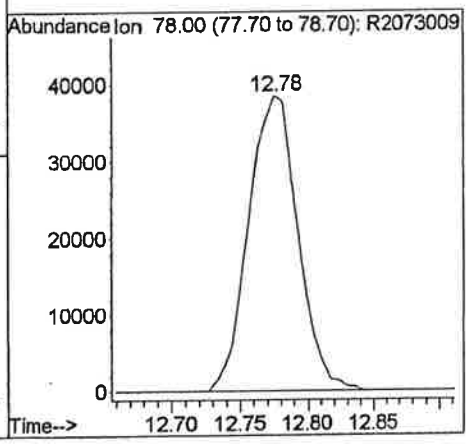
Ion	Ratio	Lower	Upper
83	100		
85	65.0	44.1	84.1

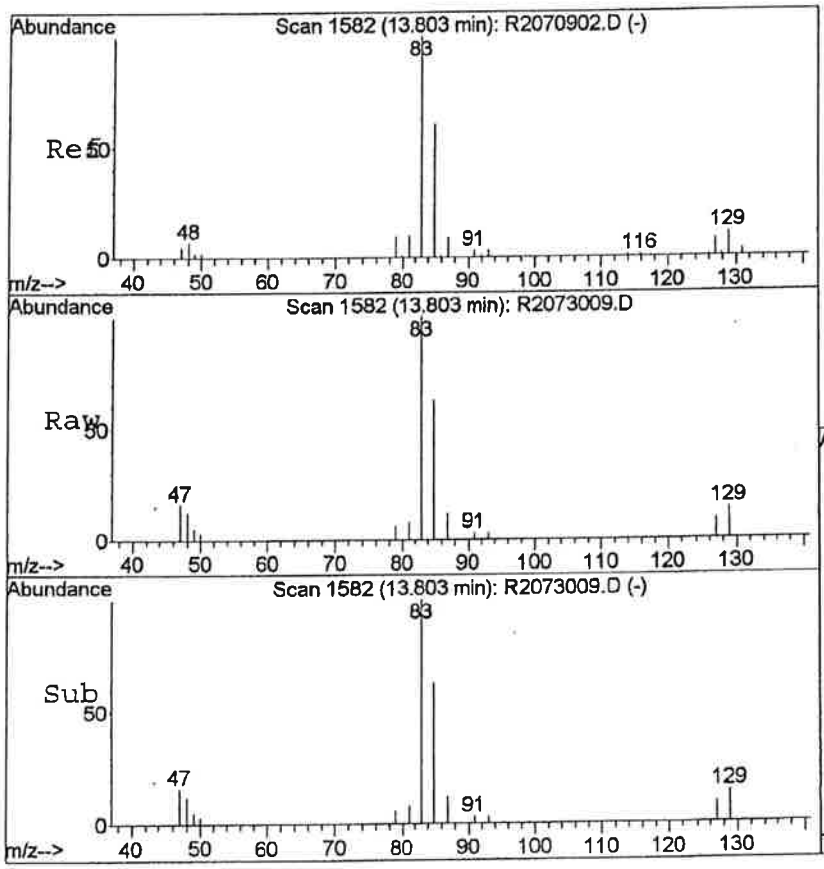




#30
Benzene
Concen: 6.29 ug/l
RT: 12.78 min Scan# 1413
Delta R.T. 0.01 min
Lab File: R2073009.D
Acq: 30 Jul 2002 14:53

Tgt Ion: 78 Resp: 97806

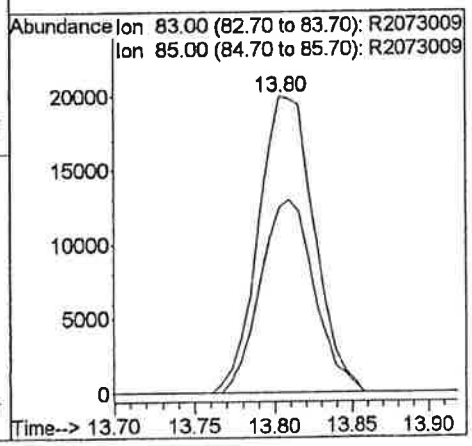


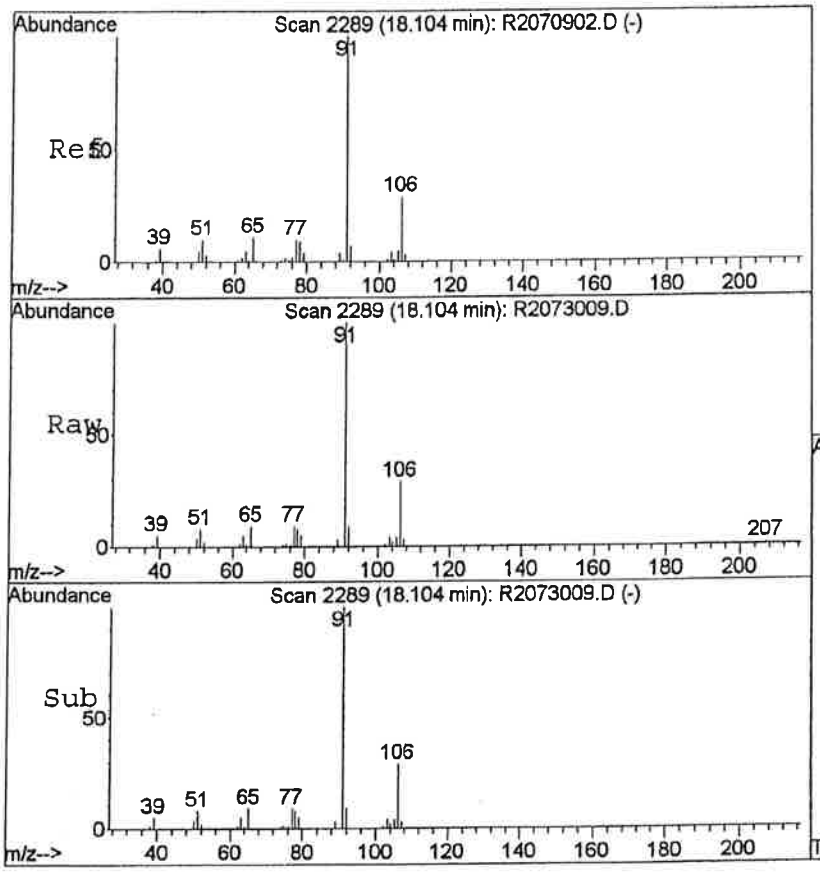


#35
Bromodichloromethane
Concen: 9.63 ug/l
RT: 13.80 min Scan# 1582
Delta R.T. 0.00 min
Lab File: R2073009.D
Acq: 30 Jul 2002 14:53

Tgt Ion: 83 Resp: 49183

Ion	Ratio	Lower	Upper
83	100		
85	63.2	45.0	85.0

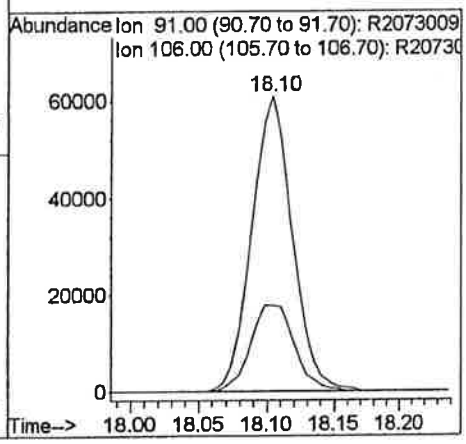


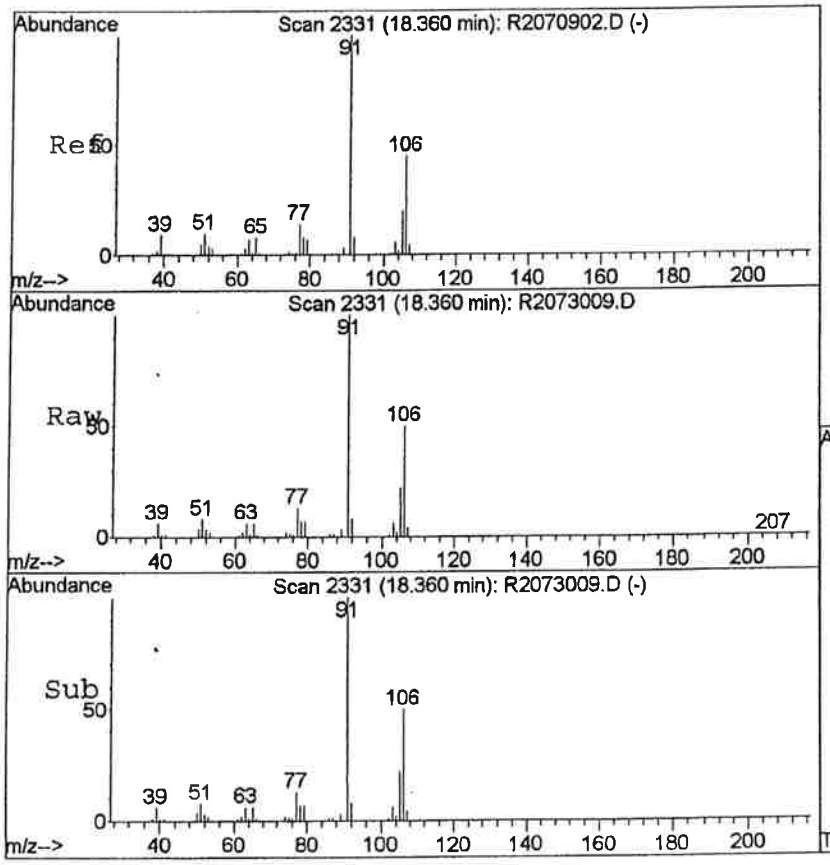


#50
Ethylbenzene
Concen: 5.40 ug/l
RT: 18.10 min Scan# 2289
Delta R.T. 0.00 min
Lab File: R2073009.D
Acq: 30 Jul 2002 14:53

Tgt Ion: 91 Resp: 127043

Ion	Ratio	Lower	Upper
91	100		
106	31.7	10.5	50.5

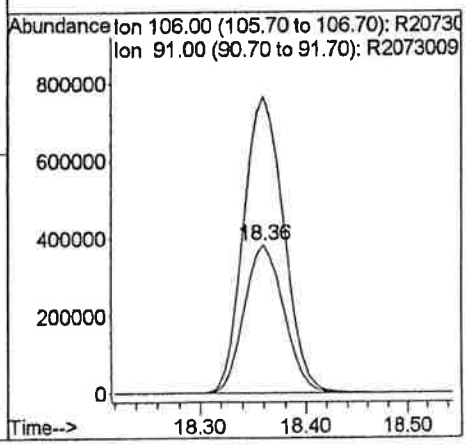


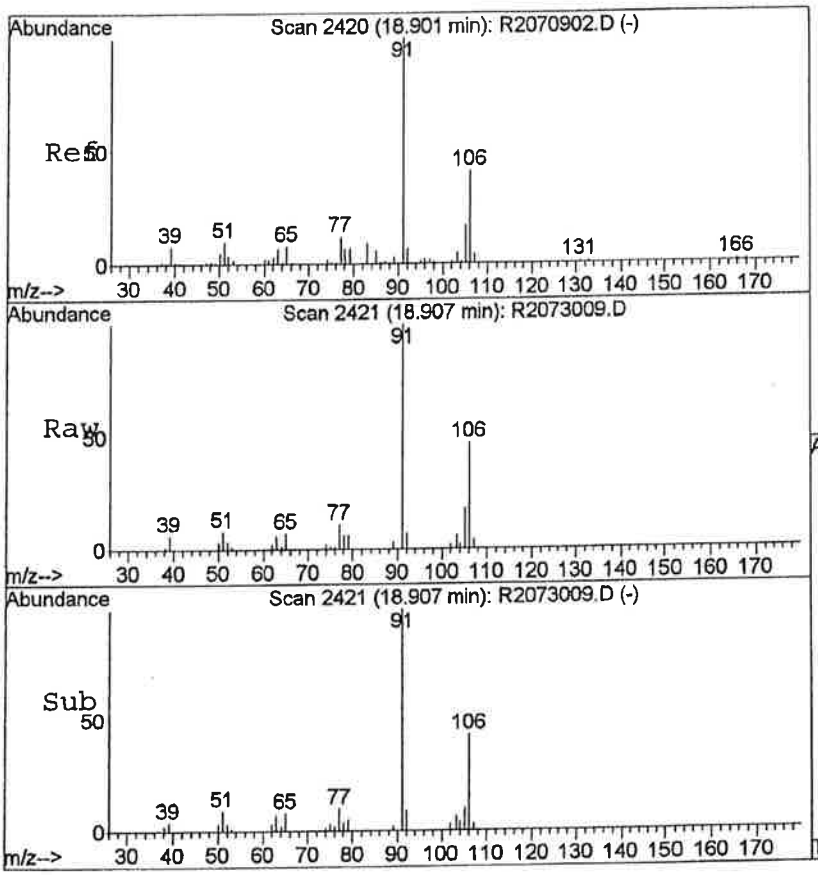


#51
m&p-Xylenes
Concen: 111.13 ug/l
RT: 18.36 min Scan# 2331
Delta R.T. -0.01 min
Lab File: R2073009.D
Acq: 30 Jul 2002 14:53

Tgt Ion:106 Resp: 1000249

Ion	Ratio	Lower	Upper
106	100		
91	203.1	169.8	254.6

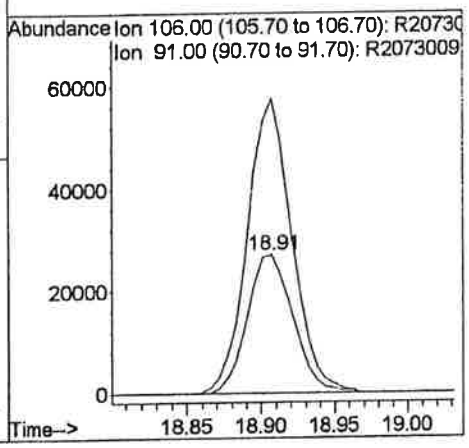


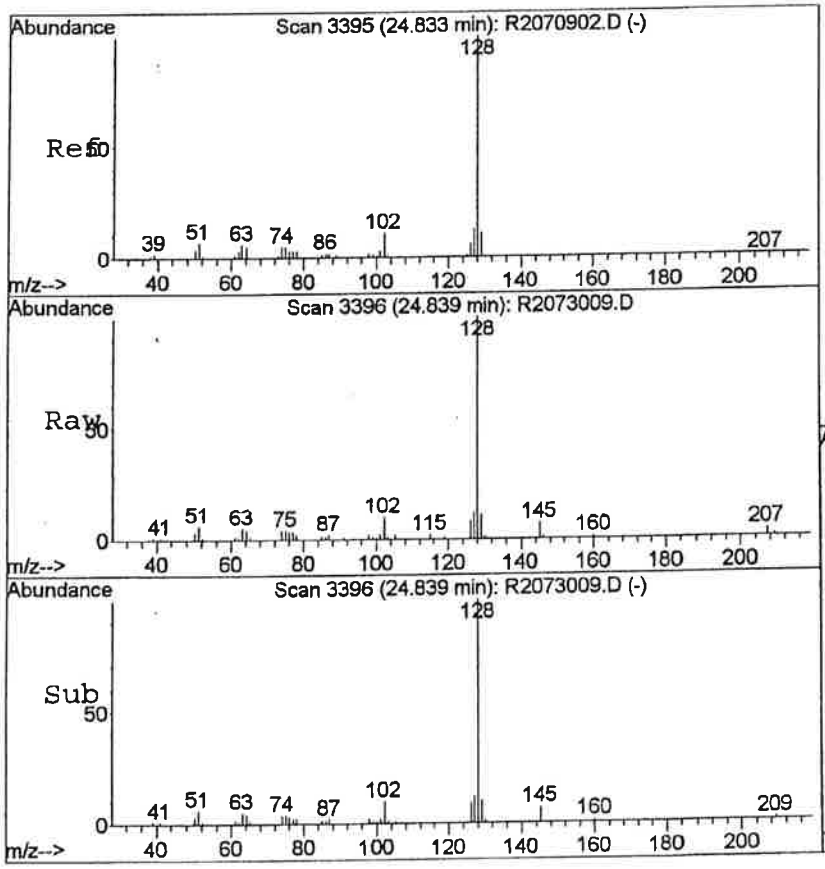


#52
o-Xylene
Concen: 7.13 ug/l
RT: 18.91 min Scan# 2421
Delta R.T. 0.00 min
Lab File: R2073009.D
Acq: 30 Jul 2002 14:53

Tgt Ion:106 Resp: 58136

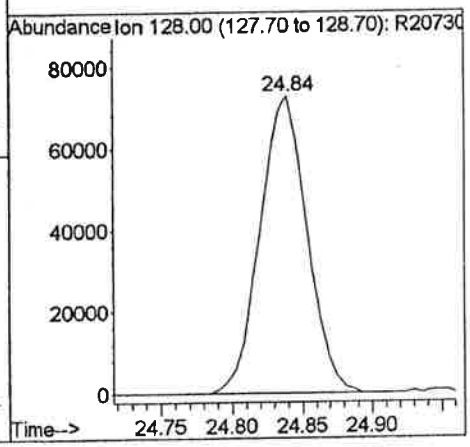
Ion	Ratio	Lower	Upper
106	100		
91	206.9	181.0	271.4





#77
Naphthalene
Concen: 31.31 ug/l
RT: 24.84 min Scan# 3396
Delta R.T. 0.00 min
Lab File: R2073009.D
Acq: 30 Jul 2002 14:53

Tgt Ion:128 Resp: 169040



Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

69641

.B SAMPLE # : 289001B
MATRIX : WATER
CLIENT ID : SWC-007
Sample wt/vol : 5ML

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/22/2002
ID FILE : g18sun3.id
DATA FILE : R2072936

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	10	5
108-88-3	Toluene	ND	5
100-41-4	Ethylbenzene	11	5
330-20-7	m&p-Xylenes	120	5
95-47-6	o-Xylene	5	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69641

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072936.D
Acq On : 30 Jul 2002 1:48
Sample : 289001B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 07:48:20 2002

Vial: 11
Operator: NRT
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.81	168	291428	50.00 ug/l	0.01
26) 1,4-Difluorobenzene	13.13	114	378487	50.00 ug/l	0.00
40) Chlorobenzene-d5	17.79	117	308981	50.00 ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.27	152	178772	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	11.14	113	118993	55.96 ug/l	0.00
Spiked Amount 50.000			Recovery	= 111.92%	
41) Toluene-d8	15.78	98	404744	46.26 ug/l	0.00
Spiked Amount 50.000			Recovery	= 92.52%	
55) Bromofluorobenzene	19.44	94	21784	54.50 ug/l	0.00
Spiked Amount 50.000			Recovery	= 109.00%	

Target Compounds					Qvalue
14) Methyl-t-butyl Ether	9.42	73	13389	4.08 ug/l #	87
16) Methylene Chloride	8.05	84	1787	~~Below Cal #~~	65
21) Chloroform	10.94	83	405128	86.96 ug/l	99
30) Benzene	12.77	78	87016	9.91 ug/l	100
35) Bromodichloromethane	13.80	83	39140	13.57 ug/l	100
50) Ethylbenzene	18.10	91	152645	11.07 ug/l	99
51) m&p-Xylenes	18.36	106	641463	121.55 ug/l	96
52) o-Xylene	18.90	106	24744	5.17 ug/l	98
77) Naphthalene	24.84	128	130374	38.08 ug/l	100

JCP 7/31/02

RSS 7/30

(#) = qualifier out of range (m) = manual integration
R2072936.D R0729STCL.M Tue Jul 30 08:33:52 2002

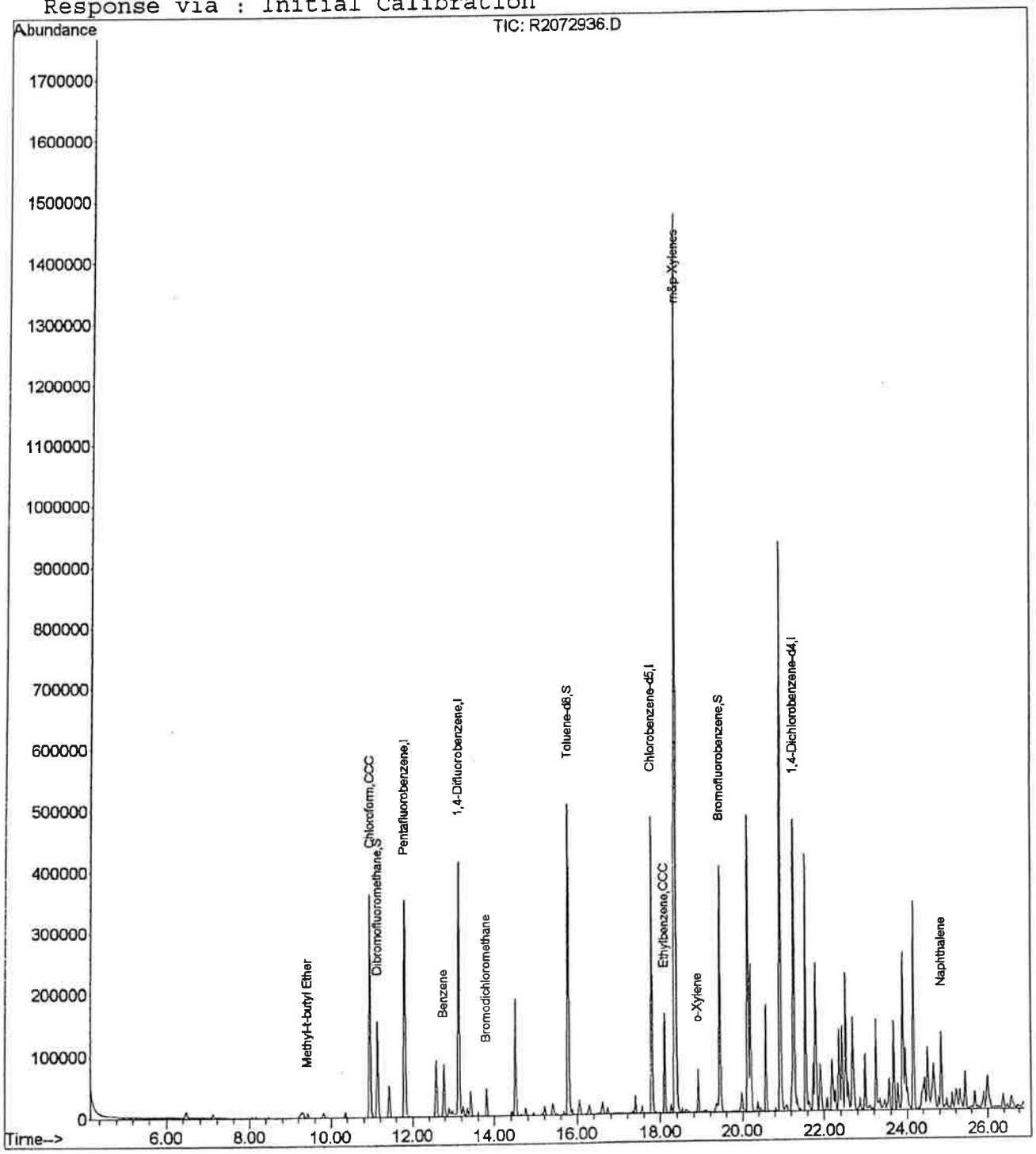
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072936.D
Acq On : 30 Jul 2002 1:48
Sample : 289001B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 8:33 2002

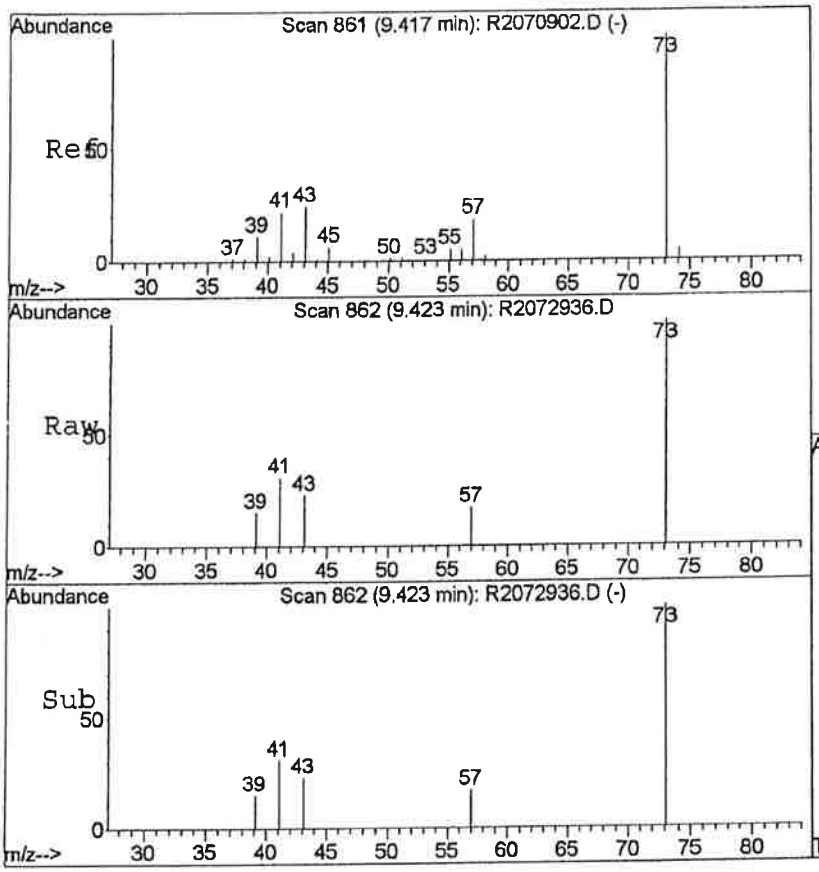
Vial: 11
Operator: NRT
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration



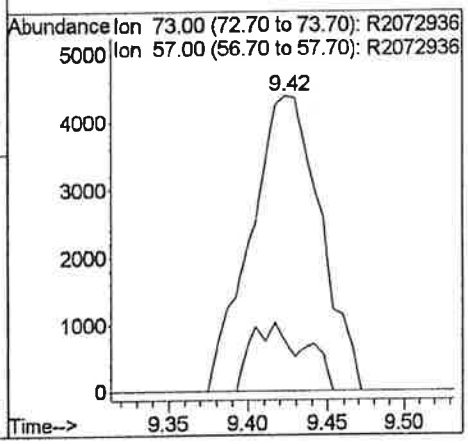
69641 Page 0036

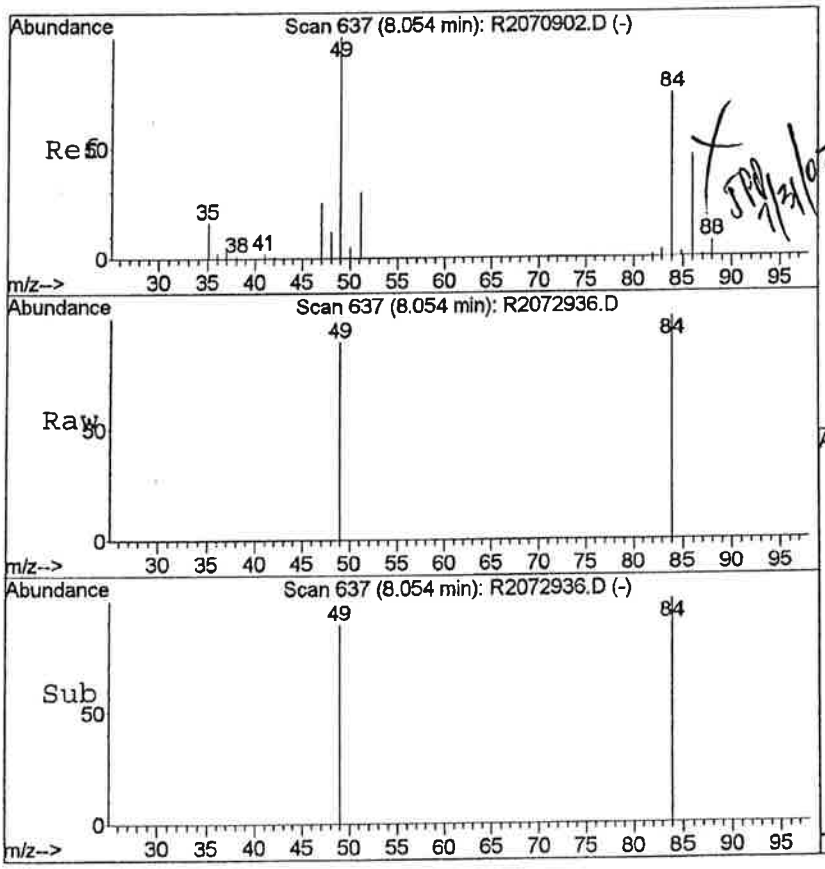


#14
Methyl-t-butyl Ether
Concen: 4.08 ug/l
RT: 9.42 min Scan# 862
Delta R.T. 0.01 min
Lab File: R2072936.D
Acq: 30 Jul 2002 1:48

Tgt Ion: 73 Resp: 13389

Ion	Ratio	Lower	Upper
73	100		
57	12.6	14.6	22.0#

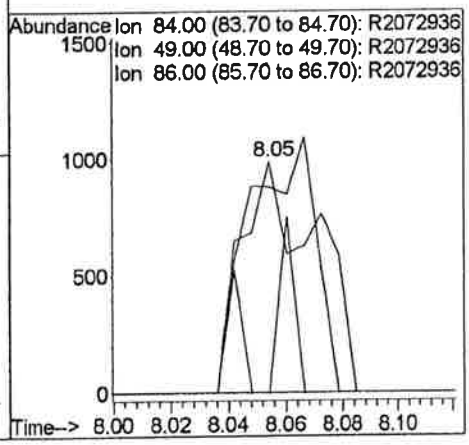


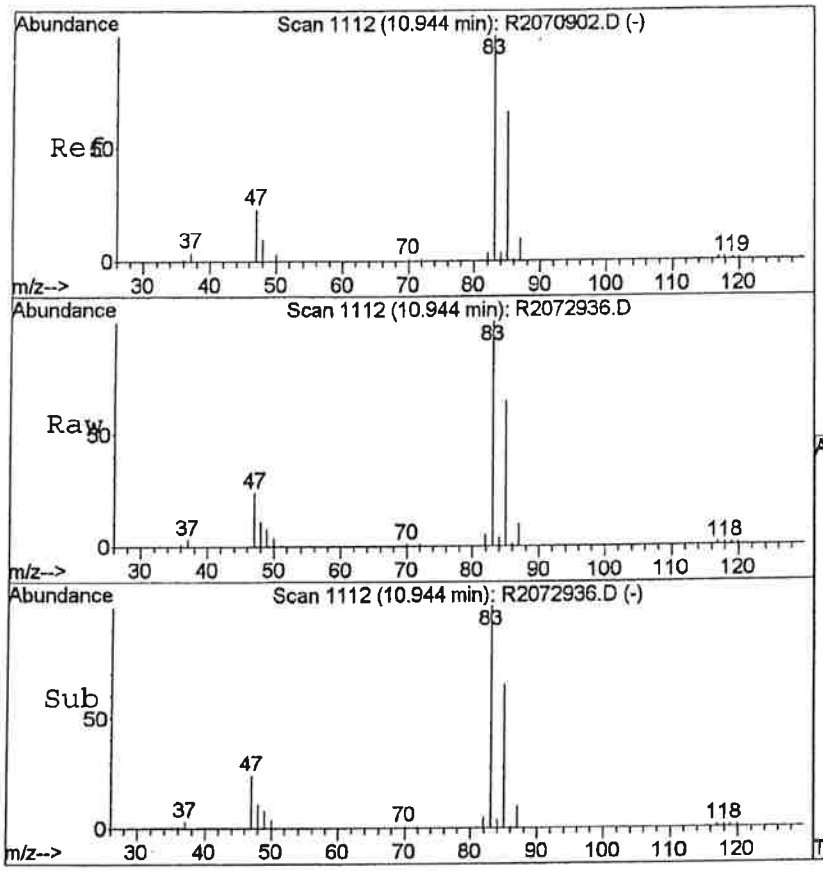


#16
Methylene Chloride
Concen: Below Cal
RT: 8.05 min Scan# 637
Delta R.T. 0.01 min
Lab File: R2072936.D
Acq: 30 Jul 2002 1:48

Tgt Ion: 84 Resp: 1787

Ion	Ratio	Lower	Upper
84	100		
49	97.9	103.7	143.7#
86	15.3	41.7	81.7#

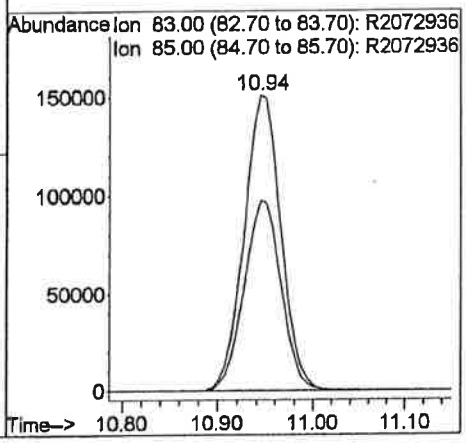


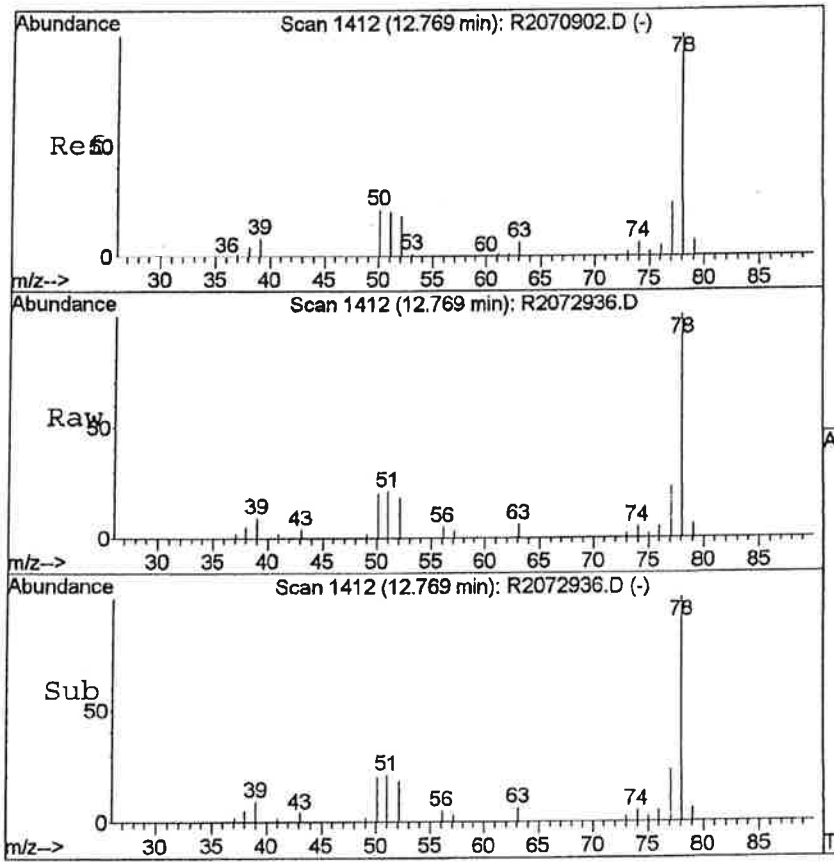


#21
Chloroform
Concen: 86.96 ug/l
RT: 10.94 min Scan# 1112
Delta R.T. 0.01 min
Lab File: R2072936.D
Acq: 30 Jul 2002 1:48

Tgt Ion: 83 Resp: 405128

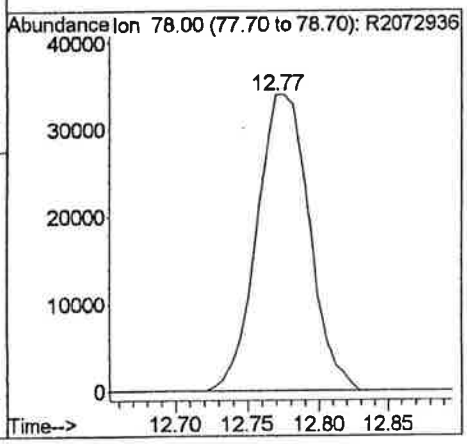
Ion	Ratio	Lower	Upper
83	100		
85	64.8	44.1	84.1

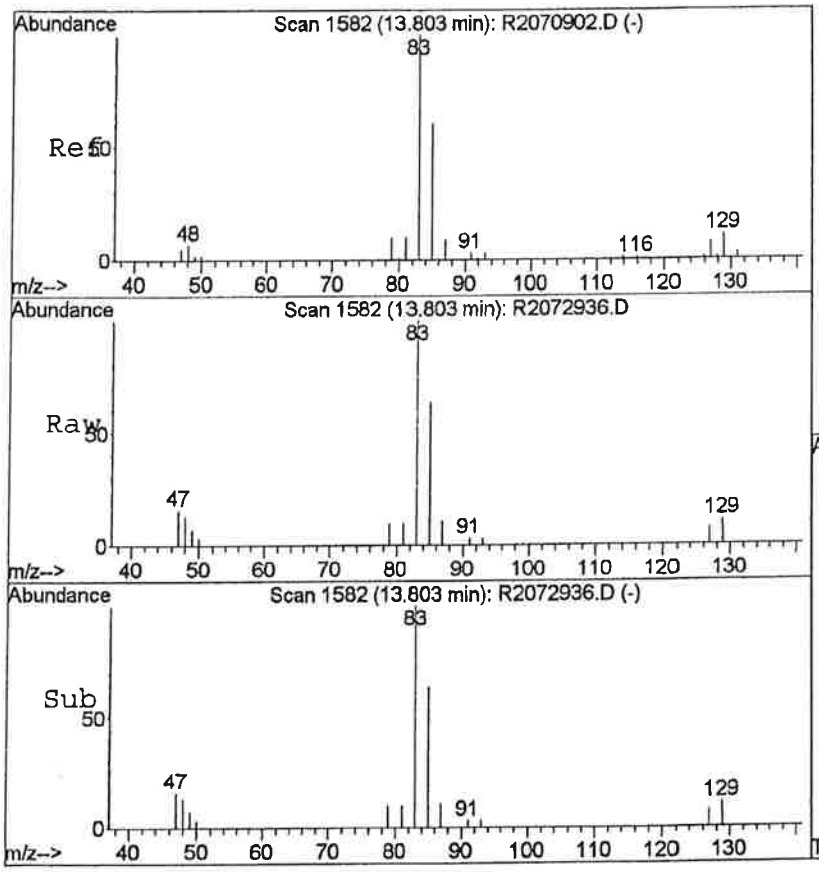




#30
Benzene
Concen: 9.91 ug/l
RT: 12.77 min Scan# 1412
Delta R.T. 0.00 min
Lab File: R2072936.D
Acq: 30 Jul 2002 1:48

Tgt Ion: 78 Resp: 87016

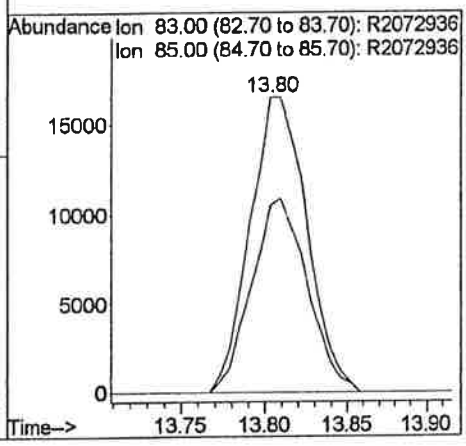


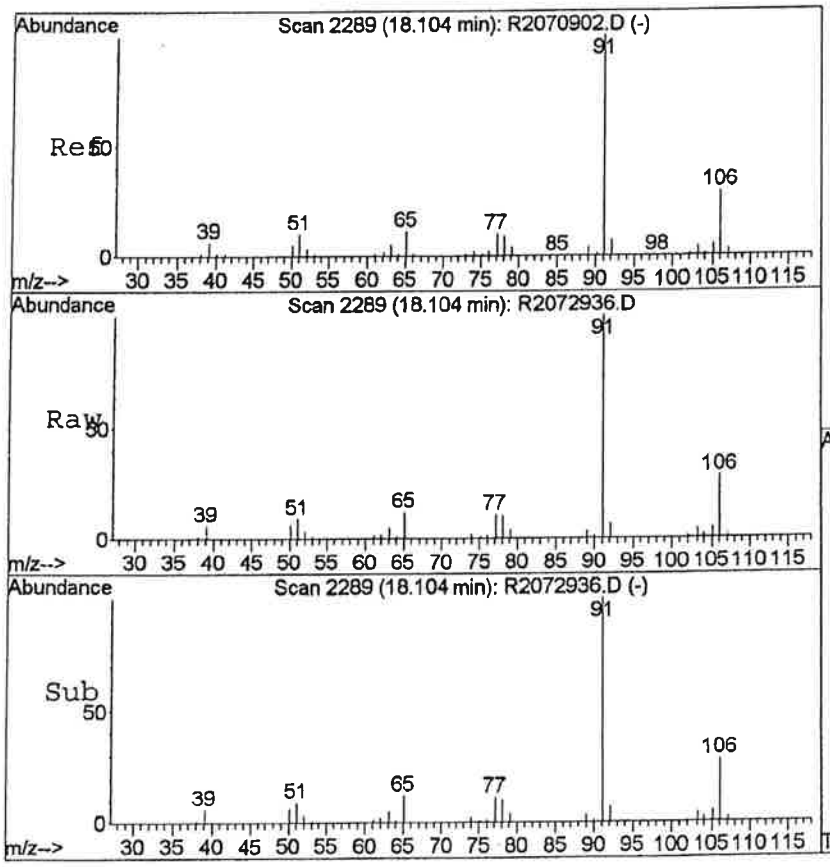


#35
Bromodichloromethane
Concen: 13.57 ug/l
RT: 13.80 min Scan# 1582
Delta R.T. 0.00 min
Lab File: R2072936.D
Acq: 30 Jul 2002 1:48

Tgt Ion: 83 Resp: 39140

Ion	Ratio	Lower	Upper
83	100		
85	64.7	45.0	85.0

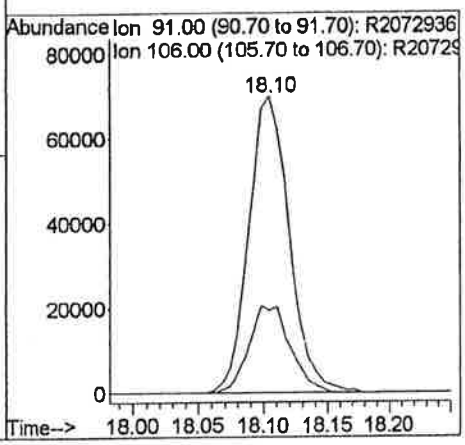


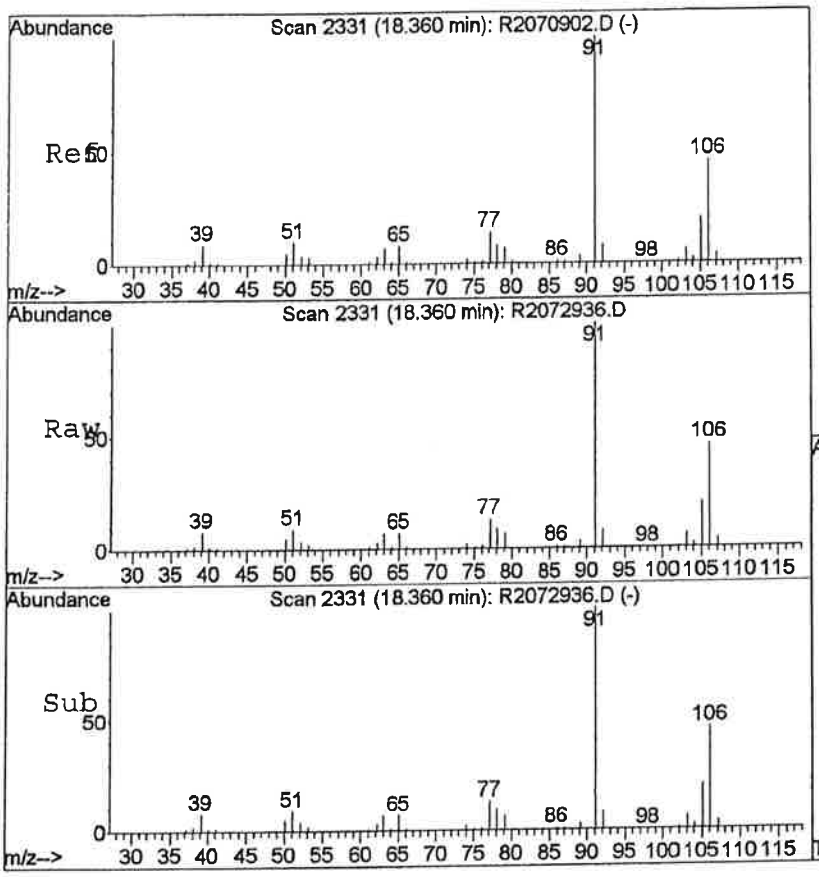


#50
Ethylbenzene
Concen: 11.07 ug/l
RT: 18.10 min Scan# 2289
Delta R.T. 0.00 min
Lab File: R2072936.D
Acq: 30 Jul 2002 1:48

Tgt Ion: 91 Resp: 152645

Ion	Ratio	Lower	Upper
91	100		
106	30.0	10.5	50.5

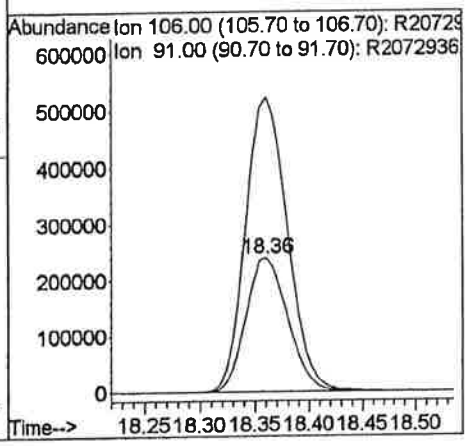


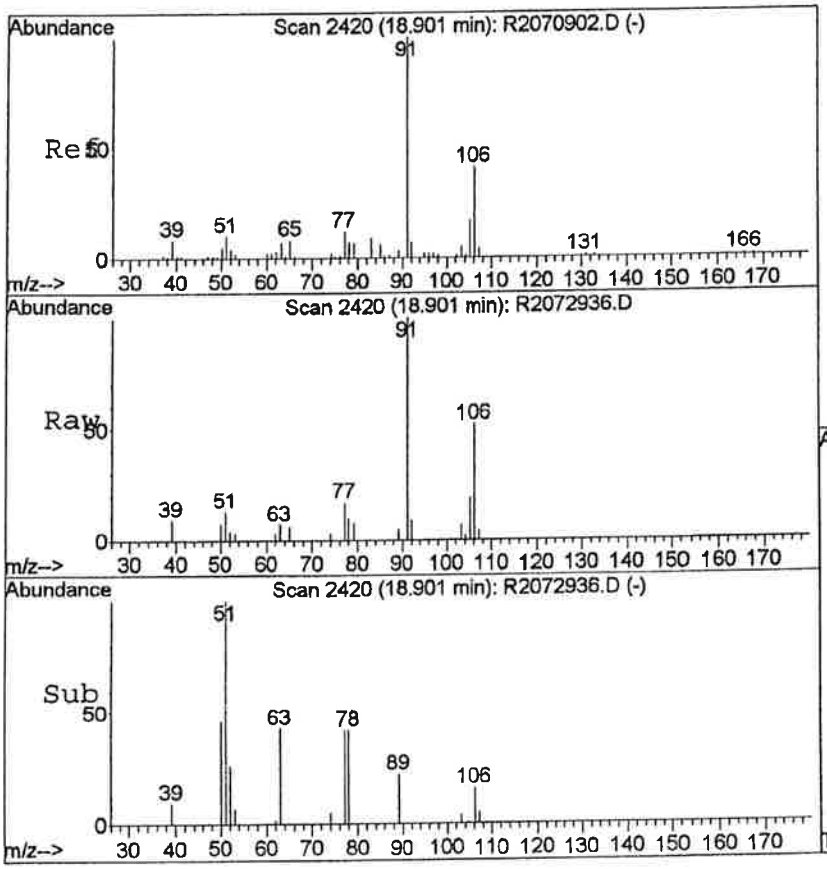


#51
m&p-Xylenes
Concen: 121.55 ug/l
RT: 18.36 min Scan# 2331
Delta R.T. -0.01 min
Lab File: R2072936.D
Acq: 30 Jul 2002 1:48

Tgt Ion:106 Resp: 641463

Ion	Ratio	Lower	Upper
106	100		
91	219.1	169.8	254.6

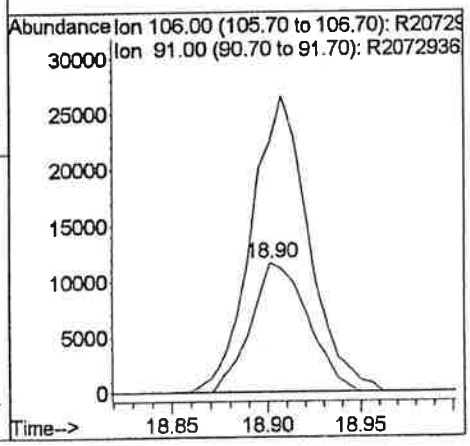


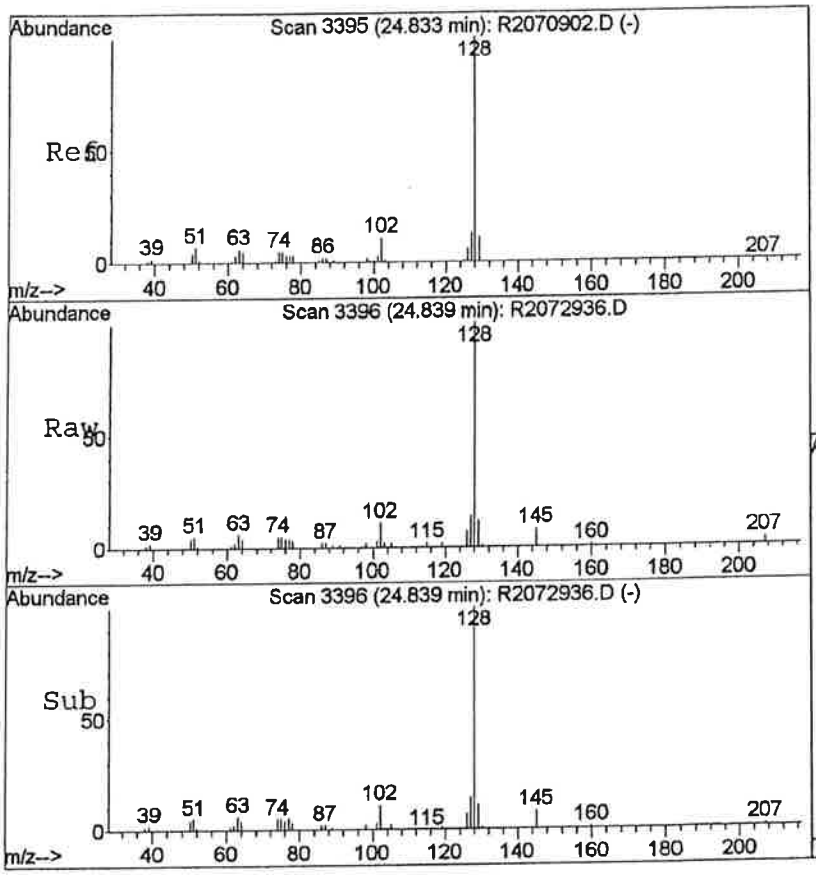


#52
o-Xylene
Concen: 5.17 ug/l
RT: 18.90 min Scan# 2420
Delta R.T. -0.01 min
Lab File: R2072936.D
Acq: 30 Jul 2002 1:48

Tgt Ion:106 Resp: 24744

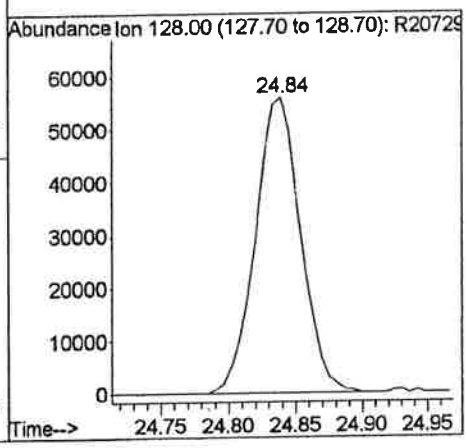
Ion	Ratio	Lower	Upper
106	100		
91	228.9	181.0	271.4





#77
Naphthalene
Concen: 38.08 ug/l
RT: 24.84 min Scan# 3396
Delta R.T. 0.00 min
Lab File: R2072936.D
Acq: 30 Jul 2002 1:48

Tgt Ion:128 Resp: 130374



Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

.B SAMPLE # : 289002B
MATRIX : WATER
CLIENT ID : SWC-008
Sample wt/vol : 5ML

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/22/2002
ID FILE : g18sun3.id
DATA FILE : R2072937

69641

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	8	5
108-88-3	Toluene	ND	5
100-41-4	Ethylbenzene	11	5
330-20-7	m&p-Xylenes	110	5
95-47-6	o-Xylene	4 J	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69641

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072937.D
Acq On : 30 Jul 2002 2:21
Sample : 289002B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 07:48:25 2002

Vial: 12
Operator: NRT
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.80	168	328892	50.00 ug/l	0.00
26) 1,4-Difluorobenzene	13.13	114	431539	50.00 ug/l	0.00
40) Chlorobenzene-d5	17.79	117	349023	50.00 ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.26	152	187588	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	11.14	113	132984	55.42 ug/l	0.00
Spiked Amount 50.000			Recovery =	110.84%	
41) Toluene-d8	15.78	98	454858	46.02 ug/l	0.00
Spiked Amount 50.000			Recovery =	92.04%	
55) Bromofluorobenzene	19.45	94	24303	53.82 ug/l	0.00
Spiked Amount 50.000			Recovery =	107.64%	
Target Compounds					Qvalue
14) Methyl-t-butyl Ether	9.42	73	10434	2.82 ug/l #	83
16) Methylene Chloride	8.05	84	1141	~~Below Cal~~	38
21) Chloroform	10.94	83	447272	85.07 ug/l	99
30) Benzene	12.77	78	76901	7.68 ug/l	100
35) Bromodichloromethane	13.81	83	40975	12.46 ug/l	99
50) Ethylbenzene	18.10	91	172423	11.07 ug/l	98
51) m&p-Xylenes	18.36	106	630077	105.69 ug/l	98
52) o-Xylene	18.91	106	21269	3.94 ug/l	87
77) Naphthalene	24.84	128	126087	35.10 ug/l	100

RSS 7/30

JPP 7/31/02

(#) = qualifier out of range (m) = manual integration

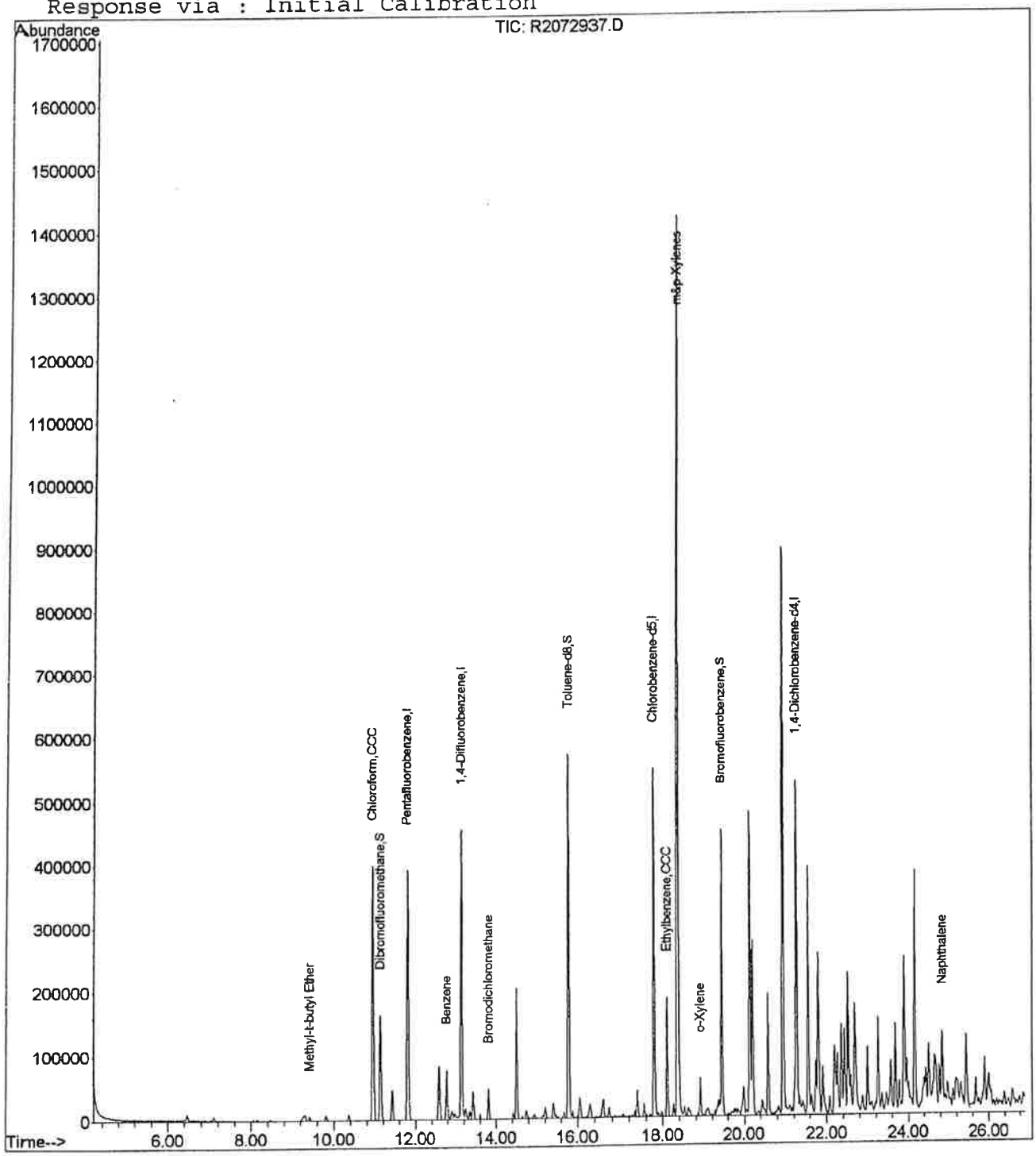
Quantitation Report (QT Reviewed)

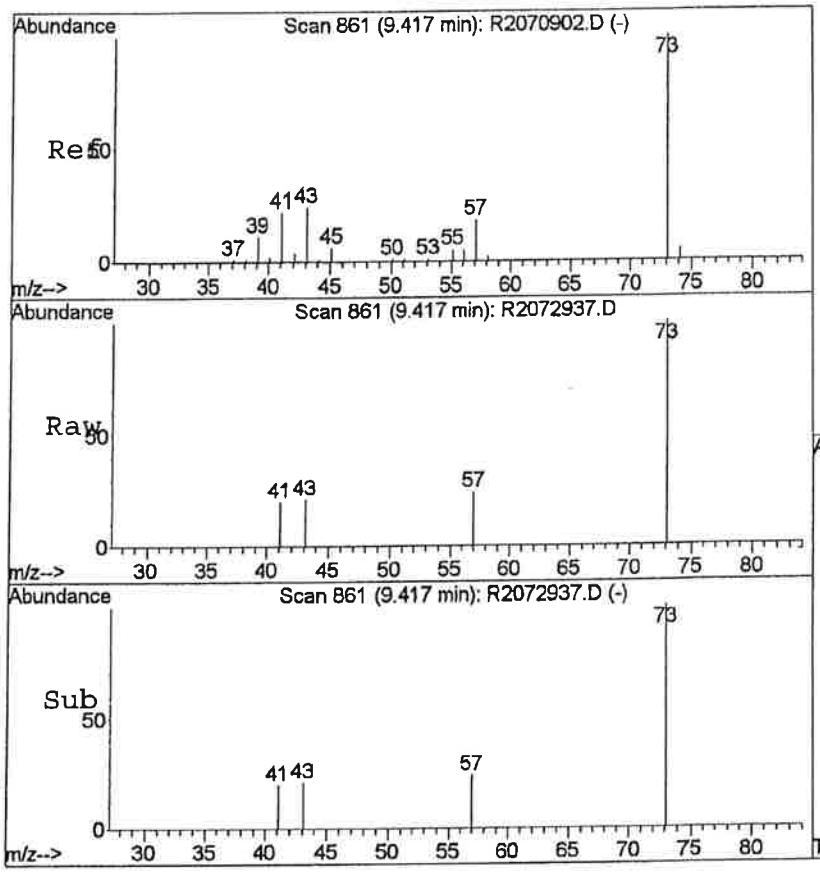
Data File : C:\MSDCHEM\1\DATA\072902R4\R2072937.D
Acq On : 30 Jul 2002 2:21
Sample : 289002B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 8:34 2002

Vial: 12
Operator: NRT
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration

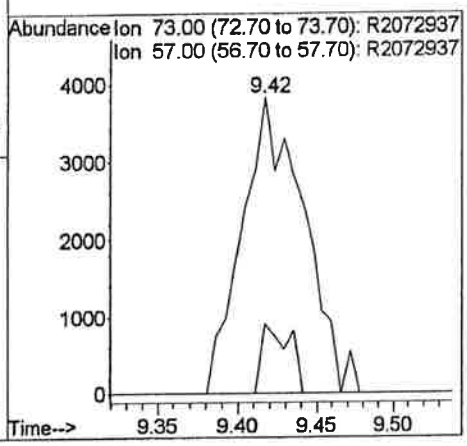


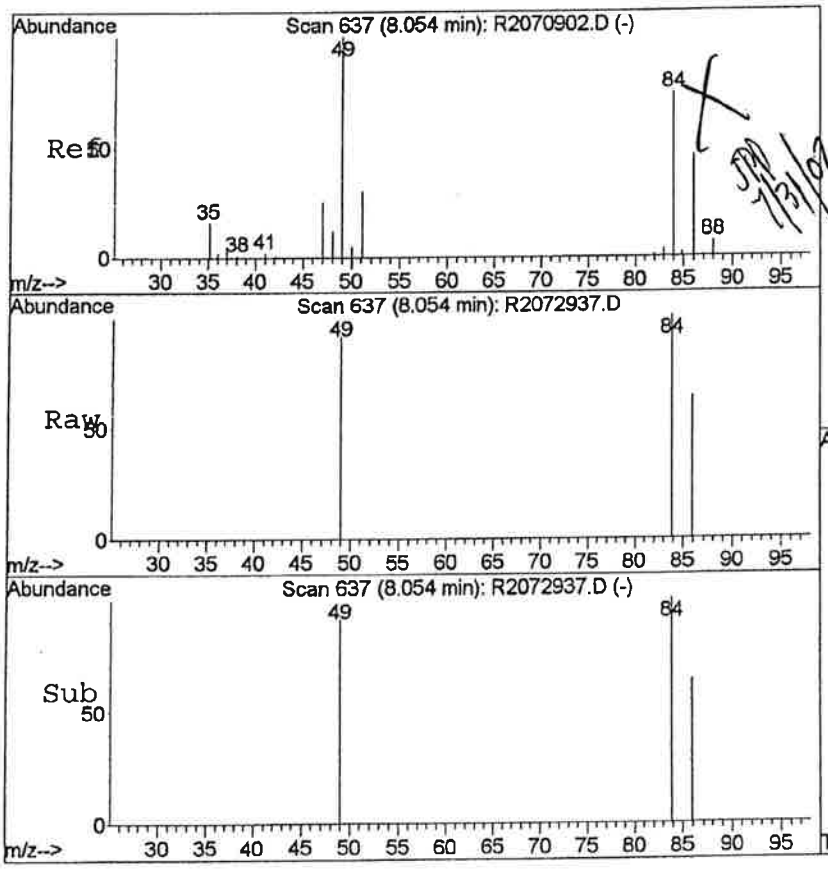


#14
Methyl-t-butyl Ether
Concen: 2.82 ug/l
RT: 9.42 min Scan# 861
Delta R.T. 0.00 min
Lab File: R2072937.D
Acq: 30 Jul 2002 2:21

Tgt Ion: 73 Resp: 10434

Ion	Ratio	Lower	Upper
73	100		
57	10.8	14.6	22.0#

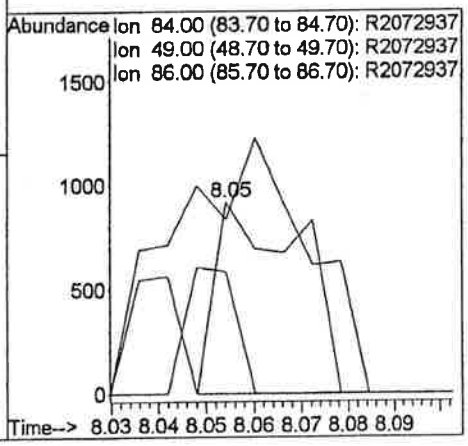


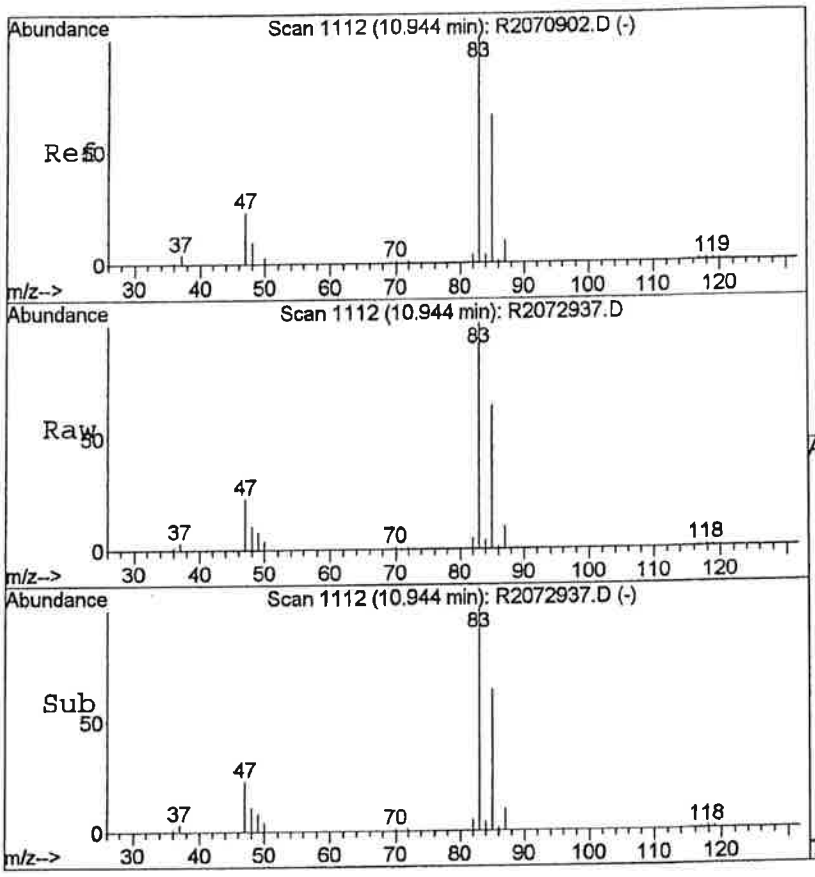


#16
Methylene Chloride
Concen: Below Cal
RT: 8.05 min Scan# 637
Delta R.T. 0.01 min
Lab File: R2072937.D
Acq: 30 Jul 2002 2:21

Tgt Ion: 84 Resp: 1141

Ion	Ratio	Lower	Upper
84	100		
49	212.1	103.7	143.7#
86	38.1	41.7	81.7#

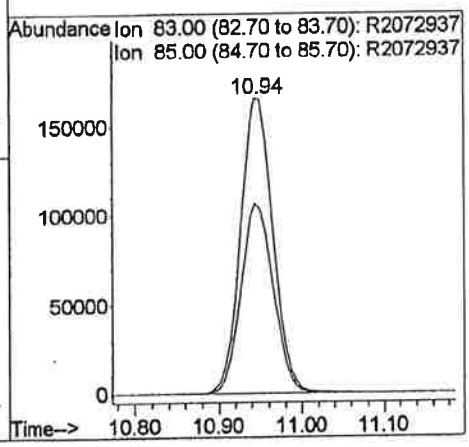


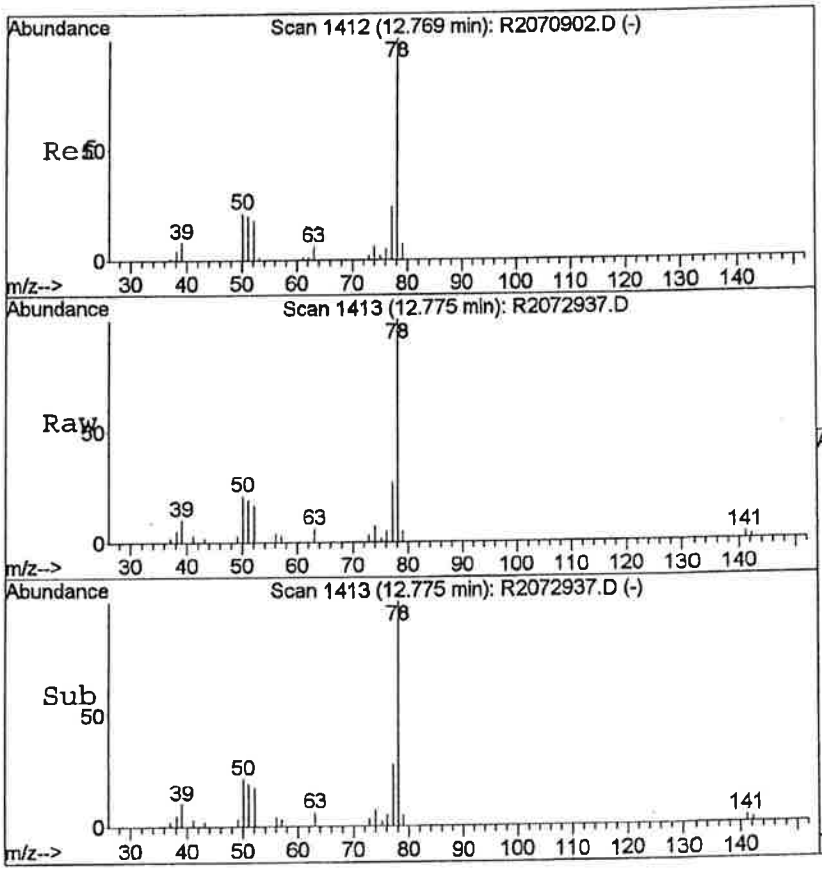


#21
Chloroform
Concen: 85.07 ug/l
RT: 10.94 min Scan# 1112
Delta R.T. 0.01 min
Lab File: R2072937.D
Acq: 30 Jul 2002 2:21

Tgt Ion: 83 Resp: 447272

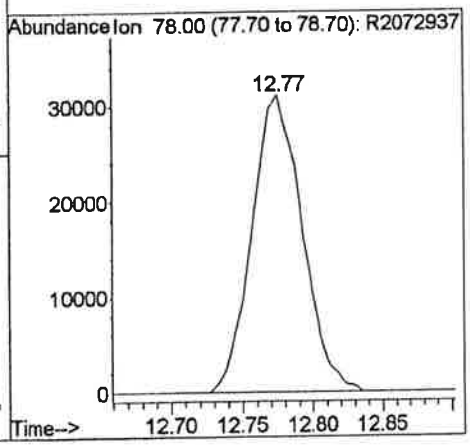
Ion	Ratio	Lower	Upper
83	100		
85	64.5	44.1	84.1

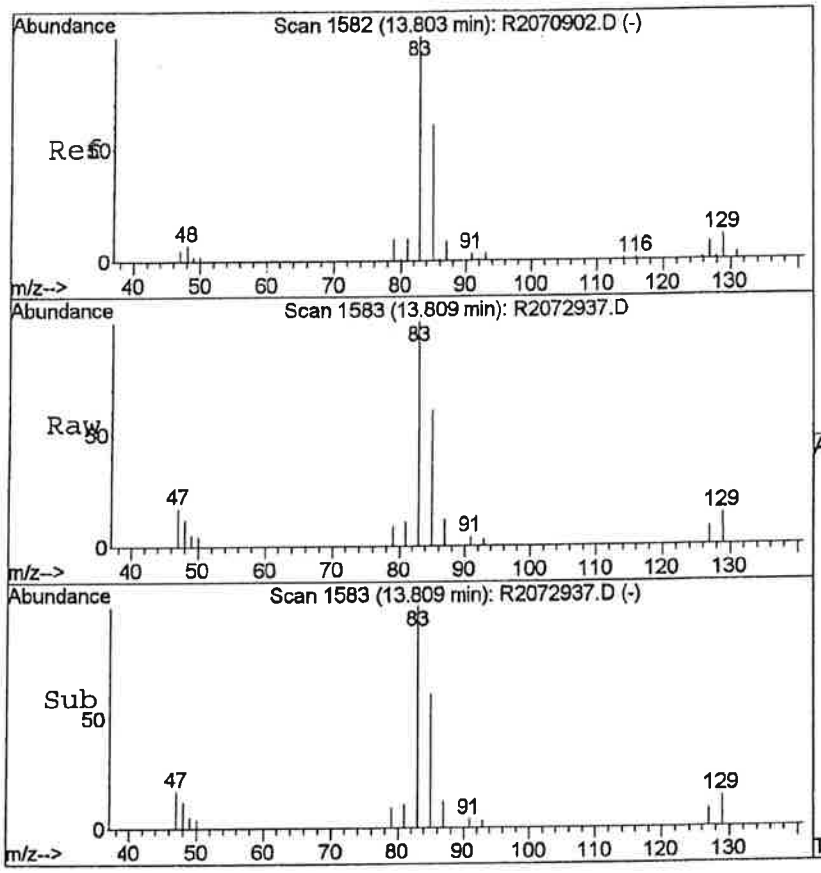




#30
Benzene
Concen: 7.68 ug/l
RT: 12.77 min Scan# 1413
Delta R.T. 0.01 min
Lab File: R2072937.D
Acq: 30 Jul 2002 2:21

Tgt Ion: 78 Resp: 76901

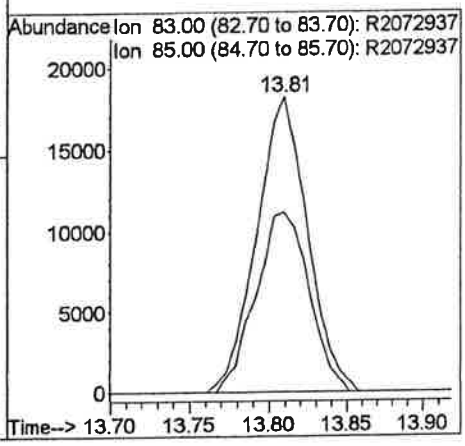


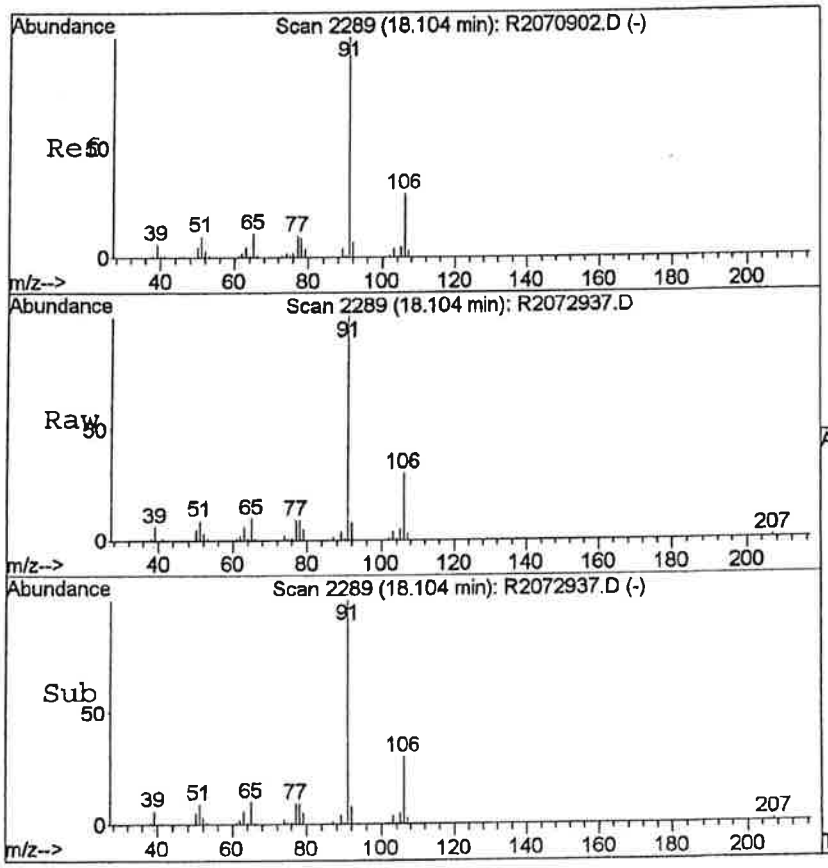


#35
Bromodichloromethane
Concen: 12.46 ug/l
RT: 13.81 min Scan# 1583
Delta R.T. 0.01 min
Lab File: R2072937.D
Acq: 30 Jul 2002 2:21

Tgt Ion: 83 Resp: 40975

Ion	Ratio	Lower	Upper
83	100		
85	64.2	45.0	85.0

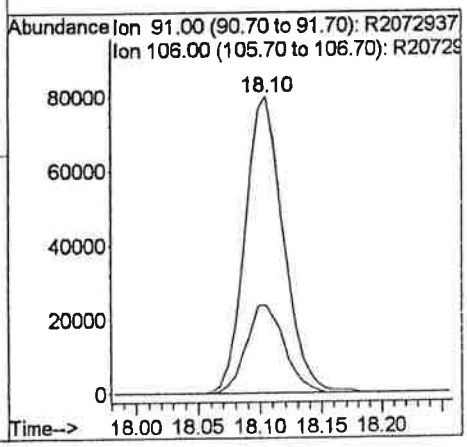


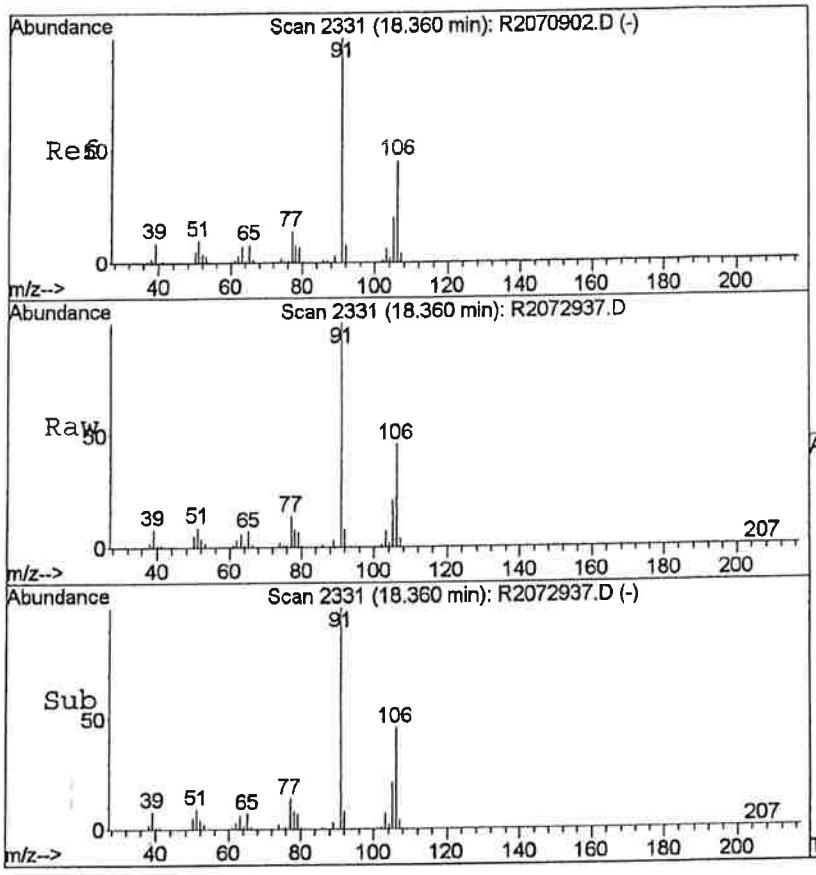


#50
Ethylbenzene
Concen: 11.07 ug/l
RT: 18.10 min Scan# 2289
Delta R.T. 0.00 min
Lab File: R2072937.D
Acq: 30 Jul 2002 2:21

Tgt Ion: 91 Resp: 172423

Ion	Ratio	Lower	Upper
91	100		
106	29.6	10.5	50.5

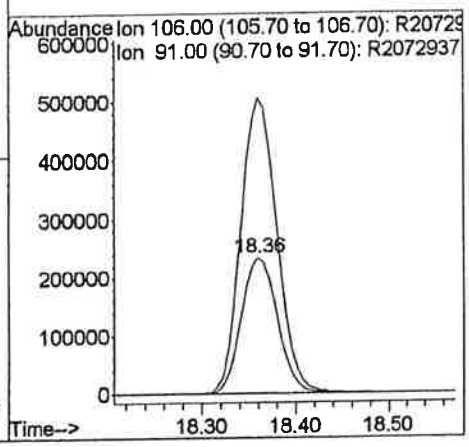


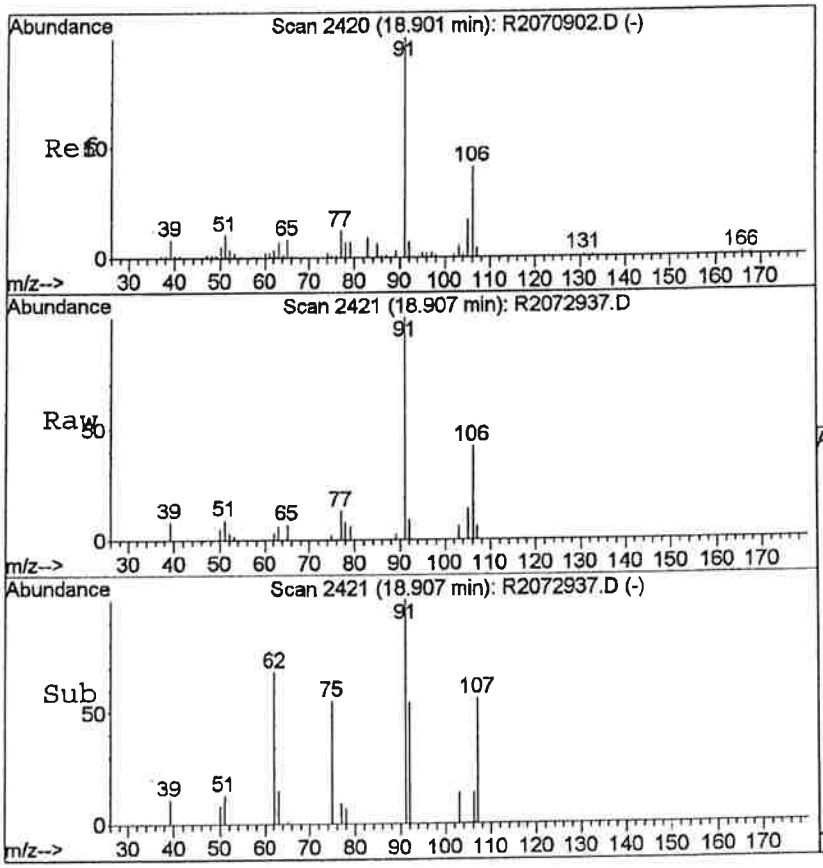


#51
m&p-Xylenes
Concen: 105.69 ug/l
RT: 18.36 min Scan# 2331
Delta R.T. -0.01 min
Lab File: R2072937.D
Acq: 30 Jul 2002 2:21

Tgt Ion:106 Resp: 630077

Ion	Ratio	Lower	Upper
106	100		
91	216.1	169.8	254.6

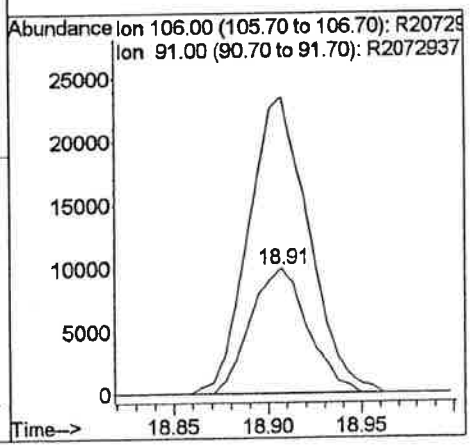


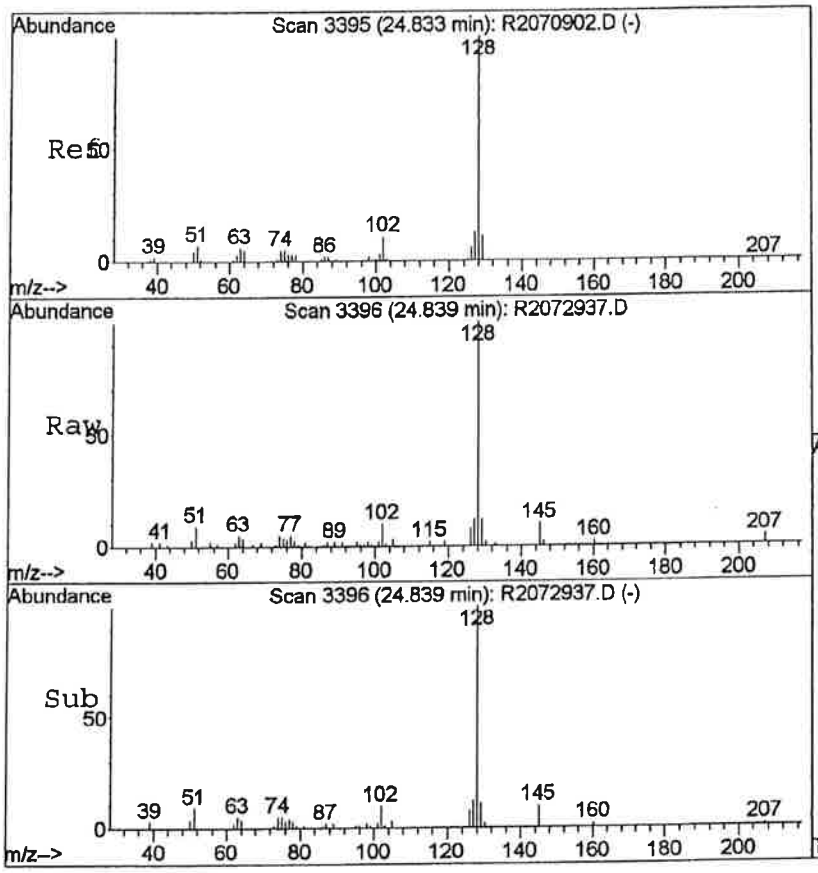


#52
o-Xylene
Concen: 3.94 ug/l
RT: 18.91 min Scan# 2421
Delta R.T. 0.00 min
Lab File: R2072937.D
Acq: 30 Jul 2002 2:21

Tgt Ion:106 Resp: 21269

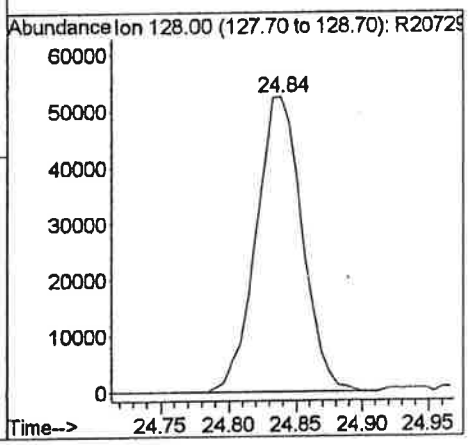
Ion	Ratio	Lower	Upper
106	100		
91	247.5	181.0	271.4





#77
Naphthalene
Concen: 35.10 ug/l
RT: 24.84 min Scan# 3396
Delta R.T. 0.00 min
Lab File: R2072937.D
Acq: 30 Jul 2002 2:21

Tgt Ion:128 Resp: 126087



2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Washington Environmental Lab. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

	EPA SAMPLE NO.	SMC1 DFM #	SMC2 TOL8 #	SMC3 BFB #	TOT OUT
01	VBLK 073002R	89	92	94	0
02	288672B	93	92	92	0
03	288673B	94	92	90	0
04	289000B	94	90	94	0
05	288811B	95	90	100	0

QC LIMITS

SMC1	DFM	=	Dibromofluoromethane	(86-118)
SMC2	TOL8	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(86-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Washington Environmental Lab. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

	EPA SAMPLE NO.	SMC1 DFM #	SMC2 TOL8 #	SMC3 BFB #	TOT OUT
01	VBLK 072902	107	95	110	0
02	288671B	114	94	112	0
03	288810B	116	93	112	0
04	289001B	112	93	109	0
05	289002B	111	92	108	0
06	289081B	97	92	97	0
07	289082B	95	92	89	0

QC LIMITS

SMC1	DFM	=	Dibromofluoromethane	(86-118)
SMC2	TOL8	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(86-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK 072902

Lab Name: Washington Environmental Lab. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

Lab File ID: R2072927.D Lab Sample ID: METHOD_BLANK

Date Analyzed: 7/29/2002 Time Analyzed: 20:59

GC Column: DB-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5973R

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	288671B	288671B	R2072930.D	22:35
02	288810B	288810B	R2072933.D	0:12
03	289001B	289001B	R2072936.D	1:48
04	289002B	289002B	R2072937.D	2:21
05	289081B	289081B	R2072938.D	2:53
06	289082B	289082B	R2072939.D	3:25
07	289920AMSD	288920AMSD	R2072941.D	4:33
08	289920A	288920A	R2072942.D	5:10
09	288921A	288921A	R2072943.D	5:47
10	288922A	288922A	R2072944.D	6:23
11	288923A	288923A	R2072945.D	7:00

COMMENTS

Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

B SAMPLE # : METHOD_BLANK
MATRIX : WATER
CLIENT ID :
Sample wt/vol : 5ML

ANALYSIS DATE : 07/29/2002
RECVD DATE :
ID FILE : g18sun3.id
DATA FILE : R2072927

Compound		Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	ND	5
108-88-3	Toluene	ND	5
100-41-4	Ethylbenzene	ND	5
330-20-7	m&p-Xylenes	ND	5
95-47-6	o-Xylene	ND	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072927.D
Acq On : 29 Jul 2002 20:59
Sample : METHOD_BLANK 072902R4
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 29 21:50:01 2002

Vial: 2
Operator: NRT
Inst : 5973R
Multiplr: 1.00
Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	11.80	168	318703	50.00	ug/l	0.00
26) 1,4-Difluorobenzene	13.13	114	400395	50.00	ug/l	0.00
40) Chlorobenzene-d5	17.79	117	317627	50.00	ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.27	152	153715	50.00	ug/l	0.00
System Monitoring Compounds						
22) Dibromofluoromethane	11.14	113	124541	53.56	ug/l	0.00
Spiked Amount 50.000			Recovery	=	107.12%	
41) Toluene-d8	15.78	98	427798	47.56	ug/l	0.00
Spiked Amount 50.000			Recovery	=	95.12%	
55) Bromofluorobenzene	19.44	94	22649	55.12	ug/l	0.00
Spiked Amount 50.000			Recovery	=	110.24%	

Target Compounds Qvalue

JM 7/31/02

PSS 7/30

(#) = qualifier out of range (m) = manual integration
R2072927.D R0729STCL.M Tue Jul 30 08:56:49 2002

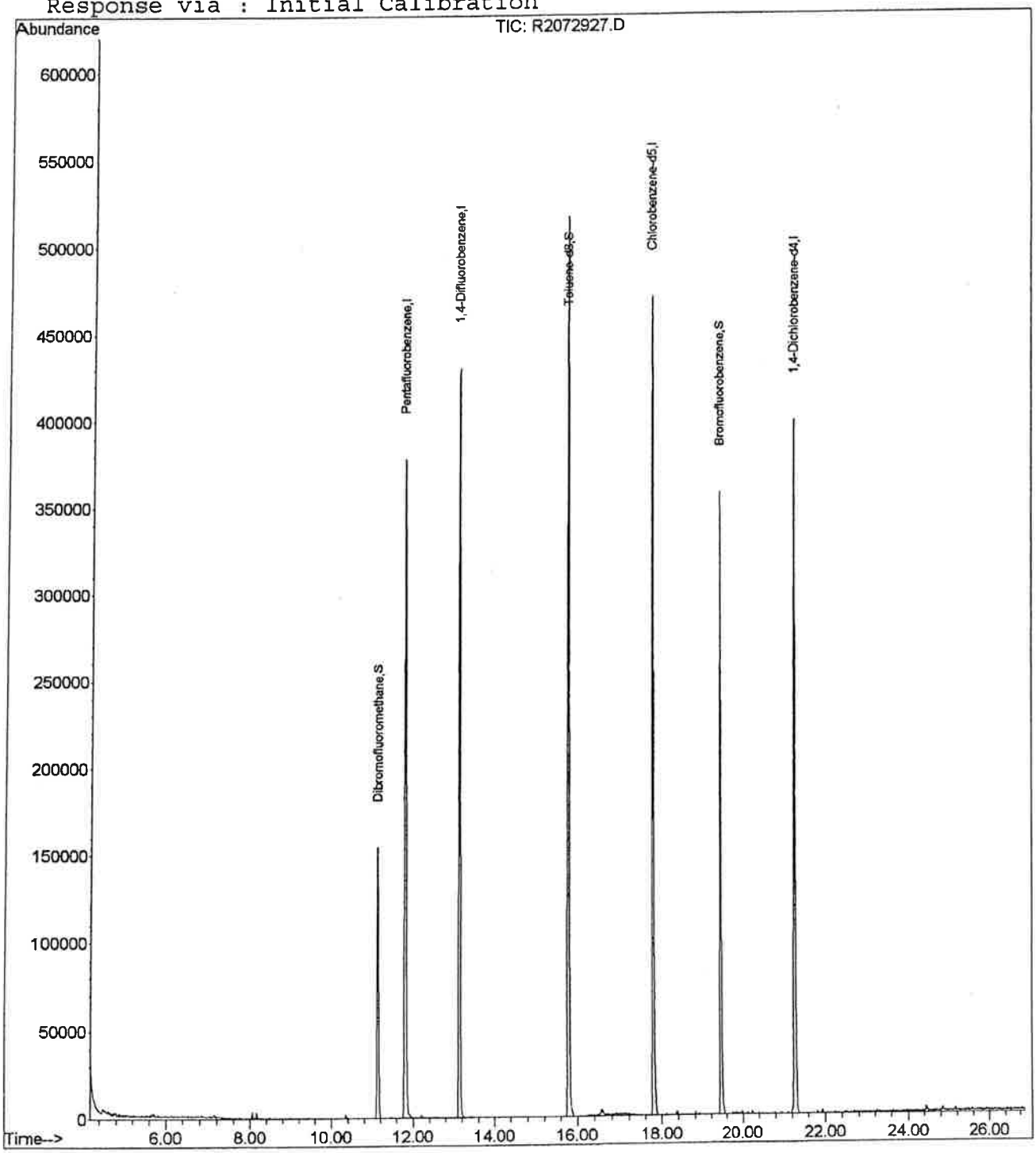
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072927.D
Acq On : 29 Jul 2002 20:59
Sample : METHOD_BLANK 072902R4
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 29 21:50 2002

Vial: 2
Operator: NRT
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration



4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK 073002R1

Lab Name: Washington Environmental Lab. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

Lab File ID: R2073006.D Lab Sample ID: METHOD_BLANK

Date Analyzed: 7/30/2002 Time Analyzed: 13:03

GC Column: DB-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5973R

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	288672B	288672B	R2073007.D	13:48
02	288673B	288673B	R2073008.D	14:21
03	289000B	289000B	R2073009.D	14:53
04	288811B	288811B	R2073010.D	15:25
05	LCS	LCS	R2073011.D	15:57
06	288920AMS	288920AMS	R2073012.D	16:29

COMMENTS

Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

LB SAMPLE # : METHOD_BLANK
MATRIX : WATER
CLIENT ID :
Sample wt/vol : 5ML

ANALYSIS DATE : 07/30/2002
RECVD DATE :
ID FILE : g18sun3.id
DATA FILE : R2073006

69641

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	ND	5
108-88-3	Toluene	ND	5
100-41-4	Ethylbenzene	ND	5
330-20-7	m&p-Xylenes	ND	5
95-47-6	o-Xylene	ND	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\073002R1\R2073006.D
Acq On : 30 Jul 2002 13:03
Sample : METHOD_BLANK 073002R1
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 13:32:50 2002

Vial: 5
Operator: PSS
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.81	168	581115	50.00 ug/l	0.01
26) 1,4-Difluorobenzene	13.13	114	706060	50.00 ug/l	0.00
40) Chlorobenzene-d5	17.79	117	546319	50.00 ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.27	152	265905	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	11.14	113	188053	44.35 ug/l	0.00
Spiked Amount 50.000			Recovery =	88.70%	
41) Toluene-d8	15.78	98	711682	46.00 ug/l	0.00
Spiked Amount 50.000			Recovery =	92.00%	
55) Bromofluorobenzene	19.45	94	33125	46.87 ug/l	0.00
Spiked Amount 50.000			Recovery =	93.74%	

Target Compounds Qvalue

JM 7/31/02

JSS 7/30

(#) = qualifier out of range (m) = manual integration
R2073006.D R0729STCL.M Tue Jul 30 13:33:21 2002

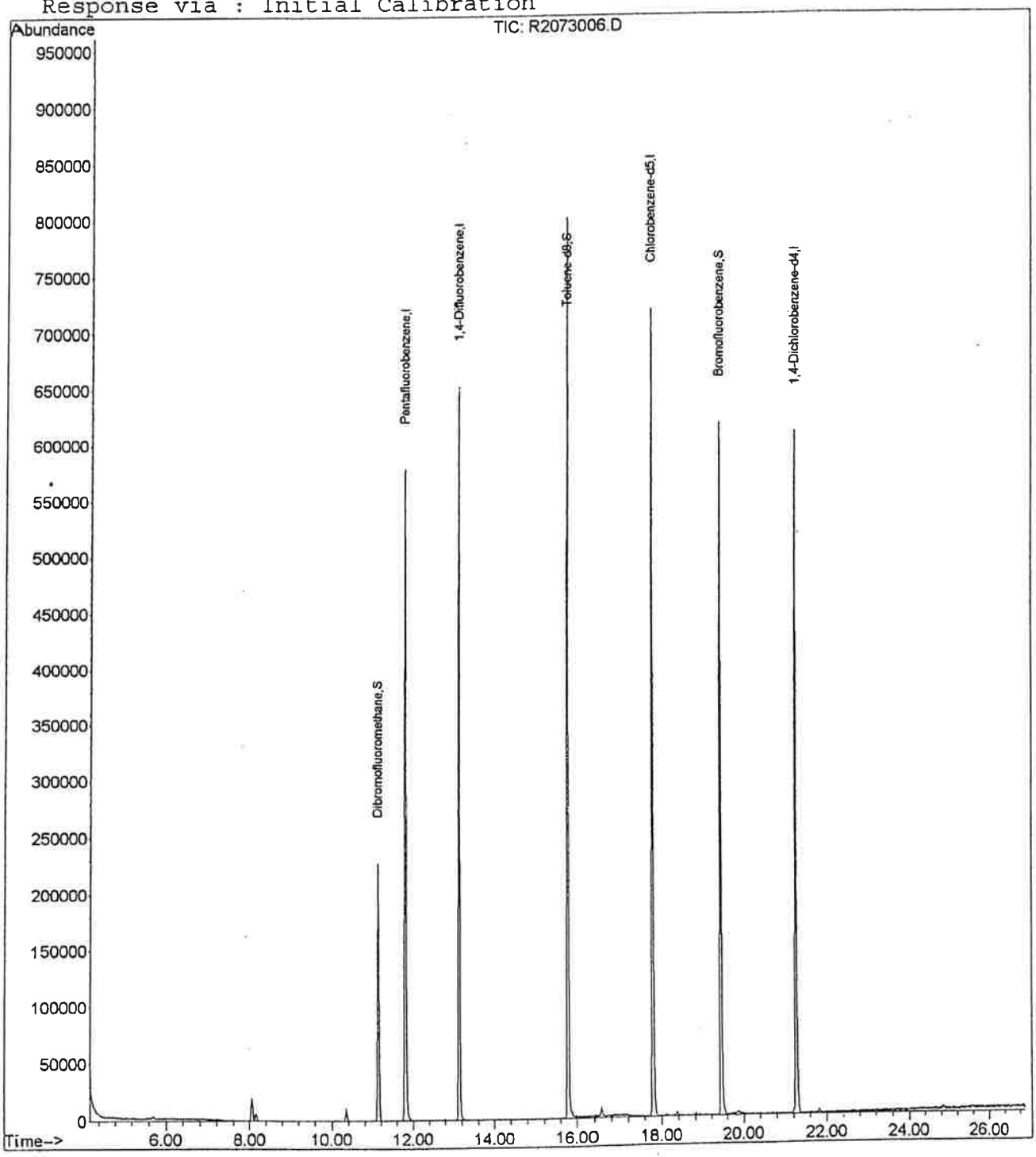
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\073002R1\R2073006.D
Acq On : 30 Jul 2002 13:03
Sample : METHOD_BLANK 073002R1
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 13:33 2002

Vial: 5
Operator: PSS
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration



Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289000A
MATRIX : WATER
CLIENT ID : SWC-006
Sample wt/vol : 1030

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/22/2002
ID FILE : g08.id
DATA FILE : U2072912

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
-95-3	Nitrobenzene	U	10
-59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	49
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	14	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	46	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	19
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	24
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289000A
MATRIX : WATER
CLIENT ID : SWC-006
Sample wt/vol: 1030

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/22/2002
ID FILE : g08.id
DATA FILE : U2072912

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	24
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	24
100-02-7	4-Nitrophenol	U	24
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	24
100-01-6	4-Nitroaniline	U	24
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
118-74-1	Hexachlorobenzene	U	10
86-5	Pentachlorophenol	U	24
01-8	Phenanthrene	7 J	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69641

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072912.D
Acq On : 30 Jul 2002 12:48 am
Sample : 289000A SWC-006
Misc : 1030/1ML QC757LL.012 B17
MS Integration Params: RTEINT.P
Quant Time: Jul 30 01:25:30 2002

Vial: 13
Operator: SHERREE
Inst : Instrumen
Multiplr: 1.00
Quant Results File: UBNA0722.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0722

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.02	152	114568	40.00	ul/l	0.09
19) Naphthalene-d8	12.95	136	457675	40.00	ul/l	0.09
34) Acenaphthene-d10	17.24	164	288397	40.00	ul/l	0.09
54) Phenanthrene-d10	20.85	188	442427	40.00	ul/l	0.10
67) Chrysene-d12	27.38	240	308523	40.00	ul/l	0.11
76) Perylene-d12	31.07	264	209053	40.00	ul/l	0.17
System Monitoring Compounds						
4) 2-Fluorophenol	7.41	112	338268	86.43	ul/l	0.08
Spiked Amount 200.000			Recovery = 43.22%			
6) Phenol-d6	9.27	99	493805	98.83	ul/l	0.07
Spiked Amount 200.000			Recovery = 49.41%			
20) Nitrobenzene-d5	11.30	82	271629	55.17	ul/l	0.08
Spiked Amount 100.000			Recovery = 55.17%			
38) 2-Fluorobiphenyl	15.58	172	441194	48.74	ul/l	0.09
Spiked Amount 100.000			Recovery = 48.74%			
58) 2,4,6-Tribromophenol	19.20	330	154560	158.39	ul/l	0.10
Spiked Amount 200.000			Recovery = 79.19%			
70) Terphenyl-d14	24.80	244	846812	109.36	ul/l	0.12
Spiked Amount 100.000			Recovery = 109.36%			
Target Compounds						Qvalue
29) Naphthalene	13.00	128	170991	14.35	ul/l	96
33) 2-Methylnaphthalene	14.66	142	353554	47.36	ul/l	98
62) Phenanthrene	20.90	178	77754	6.78	ul/l	94

AKB 7/30/02
KMM 7/30/02

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

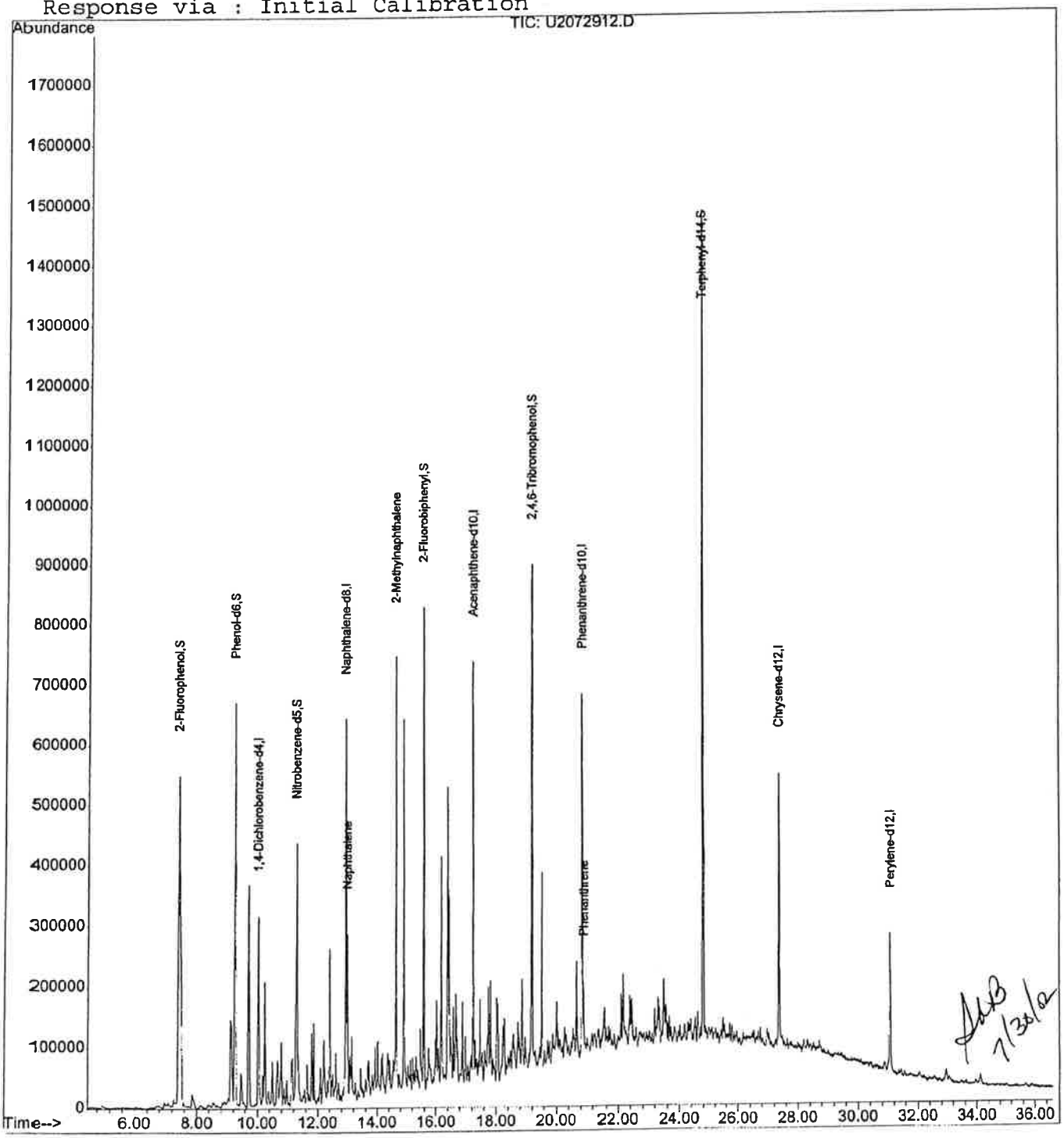
Data File : C:\MSDCHEM\1\DATA\U2072900\U2072912.D
Acq On : 30 Jul 2002 12:48 am
Sample : 289000A SWC-006
Misc : 1030/1ML QC757LL.012 B17
MS Integration Params: RTEINT.P
Quant Time: Jul 30 7:18 2002

Vial: 13
Operator: SHERREE
Inst : Instrumen
Multiplr: 1.00

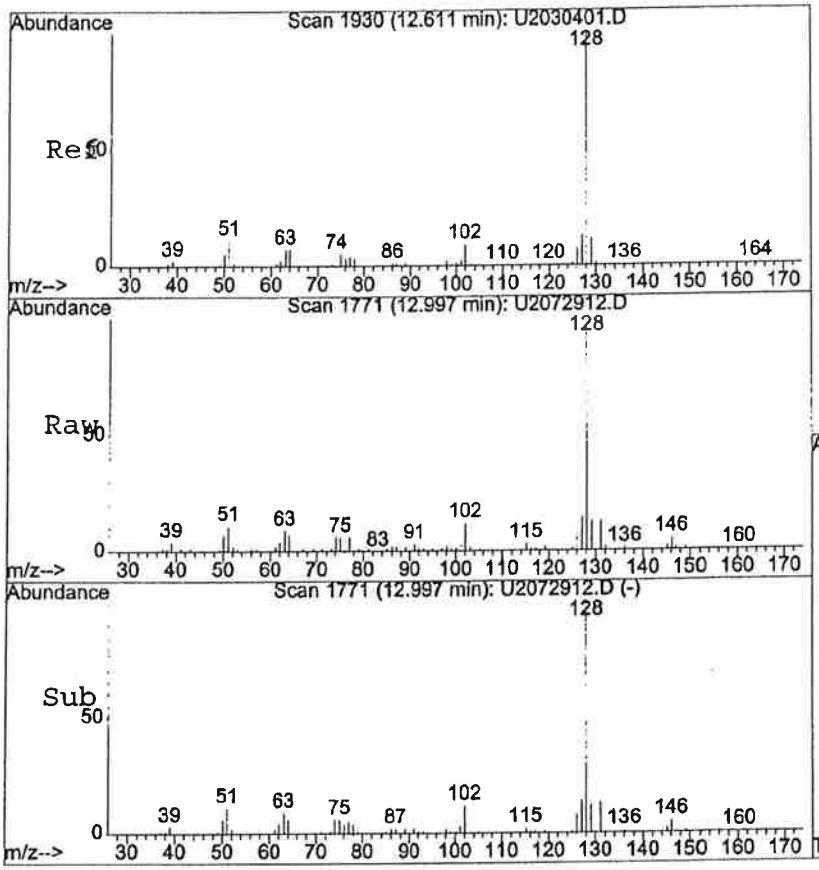
Quant Results File: UBNA0722.RES

69641 Page 0063

Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration



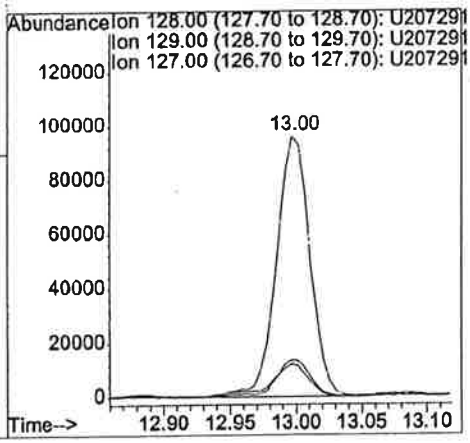
7/30/02

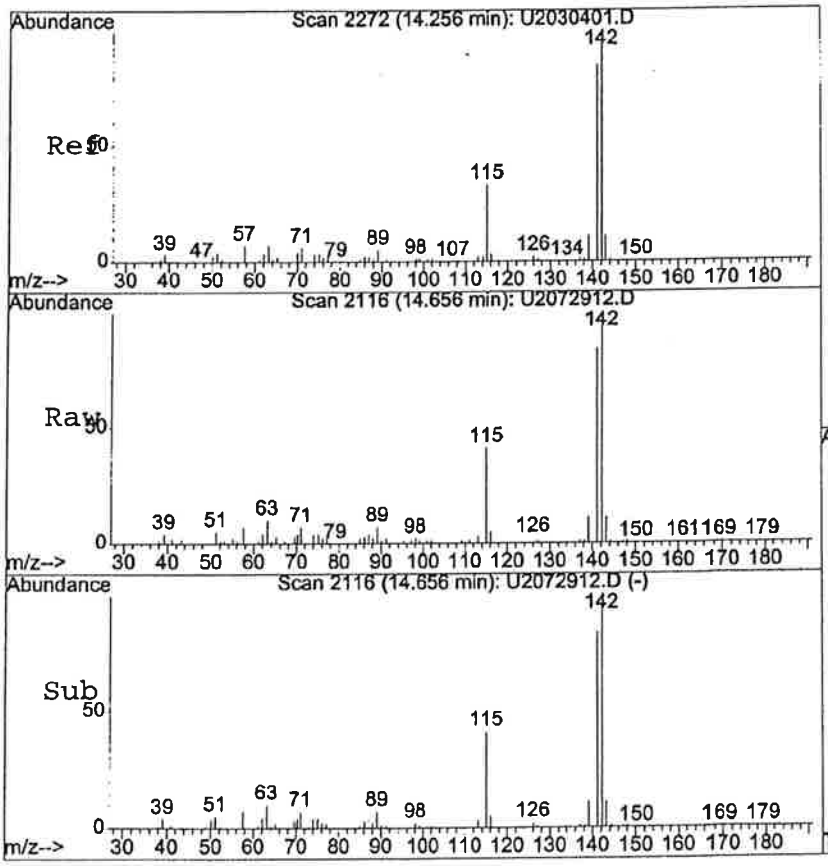


#29
Naphthalene
Concen: 14.35 ul/l
RT: 13.00 min Scan# 1771
Delta R.T. 0.08 min
Lab File: U2072912.D
Acq: 30 Jul 2002 12:48 am

Tgt Ion:128 Resp: 170991

Ion	Ratio	Lower	Upper
128	100		
129	12.6	8.6	13.0
127	14.4	10.7	16.1

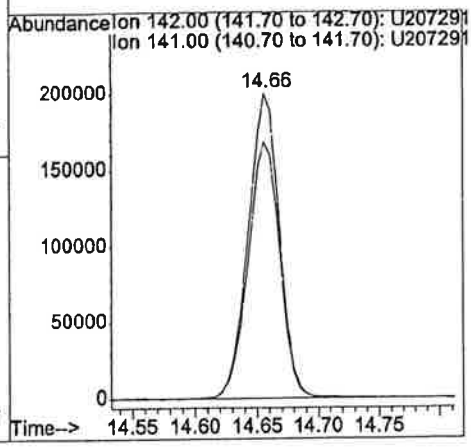


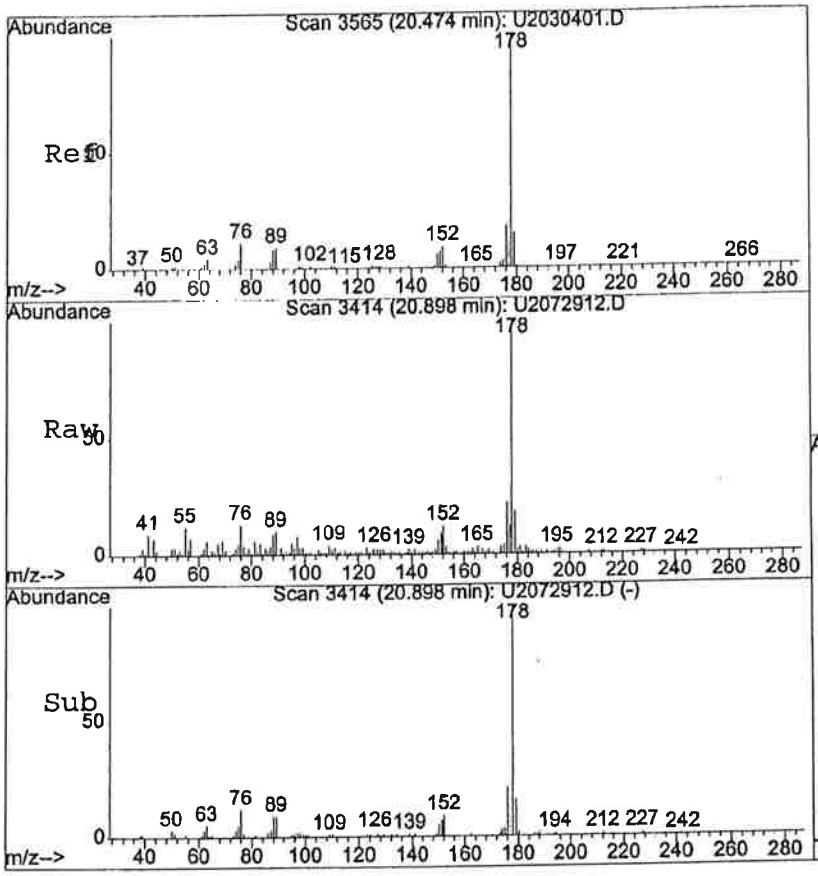


#33
2-Methylnaphthalene
Concen: 47.36 ul/l
RT: 14.66 min Scan# 2116
Delta R.T. 0.09 min
Lab File: U2072912.D
Acq: 30 Jul 2002 12:48 am

Tgt Ion:142 Resp: 353554

Ion	Ratio	Lower	Upper
142	100		
141	84.1	68.9	103.3

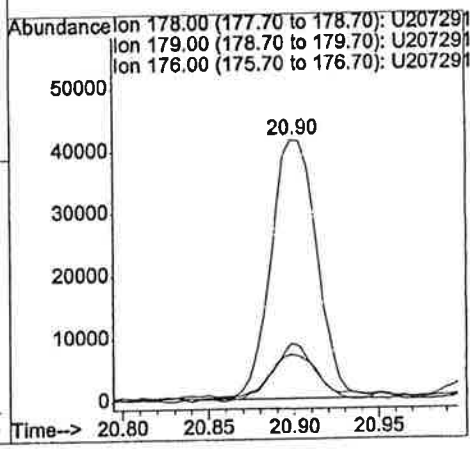




#62
Phenanthrene
Concen: 6.78 ul/l
RT: 20.90 min Scan# 3414
Delta R.T. 0.09 min
Lab File: U2072912.D
Acq: 30 Jul 2002 12:48 am

Tgt Ion:178 Resp: 77754

Ion	Ratio	Lower	Upper
178	100		
179	17.6	12.0	18.0
176	21.7	15.0	22.6



Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289001A
MATRIX : WATER
CLIENT ID : SWC-007
Sample wt/vol : 1040

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/22/2002
ID FILE : g08.id
DATA FILE : U2072913

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
95-3	Nitrobenzene	U	10
·59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	48
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	13	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	37	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	19
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	24
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289001A
MATRIX : WATER
CLIENT ID : SWC-007
Sample wt/vol: 1040

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/22/2002
ID FILE : g08.id
DATA FILE : U2072913

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	24
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	24
100-02-7	4-Nitrophenol	U	24
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	24
100-01-6	4-Nitroaniline	U	24
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
118-74-1	Hexachlorobenzene	U	10
86-5	Pentachlorophenol	U	24
-01-8	Phenanthrene	7 J	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072913.D
Acq On : 30 Jul 2002 1:33 am
Sample : 289001A SWC-007
Misc : 1040/1ML QC757LL.012 B17
MS Integration Params: RTEINT.P
Quant Time: Jul 30 02:10:32 2002

Vial: 14
Operator: SHERREE
Inst : Instrumen
Multiplr: 1.00
Quant Results File: UBNA0722.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0722

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.02	152	117396	40.00	ul/l	0.08
19) Naphthalene-d8	12.95	136	474834	40.00	ul/l	0.09
34) Acenaphthene-d10	17.24	164	293889	40.00	ul/l	0.09
54) Phenanthrene-d10	20.85	188	458439	40.00	ul/l	0.10
67) Chrysene-d12	27.38	240	320341	40.00	ul/l	0.11
76) Perylene-d12	31.07	264	214030	40.00	ul/l	0.17
System Monitoring Compounds						
4) 2-Fluorophenol	7.41	112	310380	77.39	ul/l	0.08
Spiked Amount 200.000			Recovery = 38.70%			
6) Phenol-d6	9.26	99	438434	85.63	ul/l	0.07
Spiked Amount 200.000			Recovery = 42.81%			
20) Nitrobenzene-d5	11.30	82	243682	47.70	ul/l	0.08
Spiked Amount 100.000			Recovery = 47.70%			
38) 2-Fluorobiphenyl	15.58	172	404081	43.80	ul/l	0.09
Spiked Amount 100.000			Recovery = 43.80%			
58) 2,4,6-Tribromophenol	19.20	330	150140	148.48	ul/l	0.10
Spiked Amount 200.000			Recovery = 74.24%			
70) Terphenyl-d14	24.80	244	823431	102.41	ul/l	0.12
Spiked Amount 100.000			Recovery = 102.41%			
Target Compounds						Qvalue
29) Naphthalene	13.00	128	163706	13.24	ul/l	97
33) 2-Methylnaphthalene	14.66	142	295295	38.12	ul/l	98
62) Phenanthrene	20.90	178	86110	7.25	ul/l	97

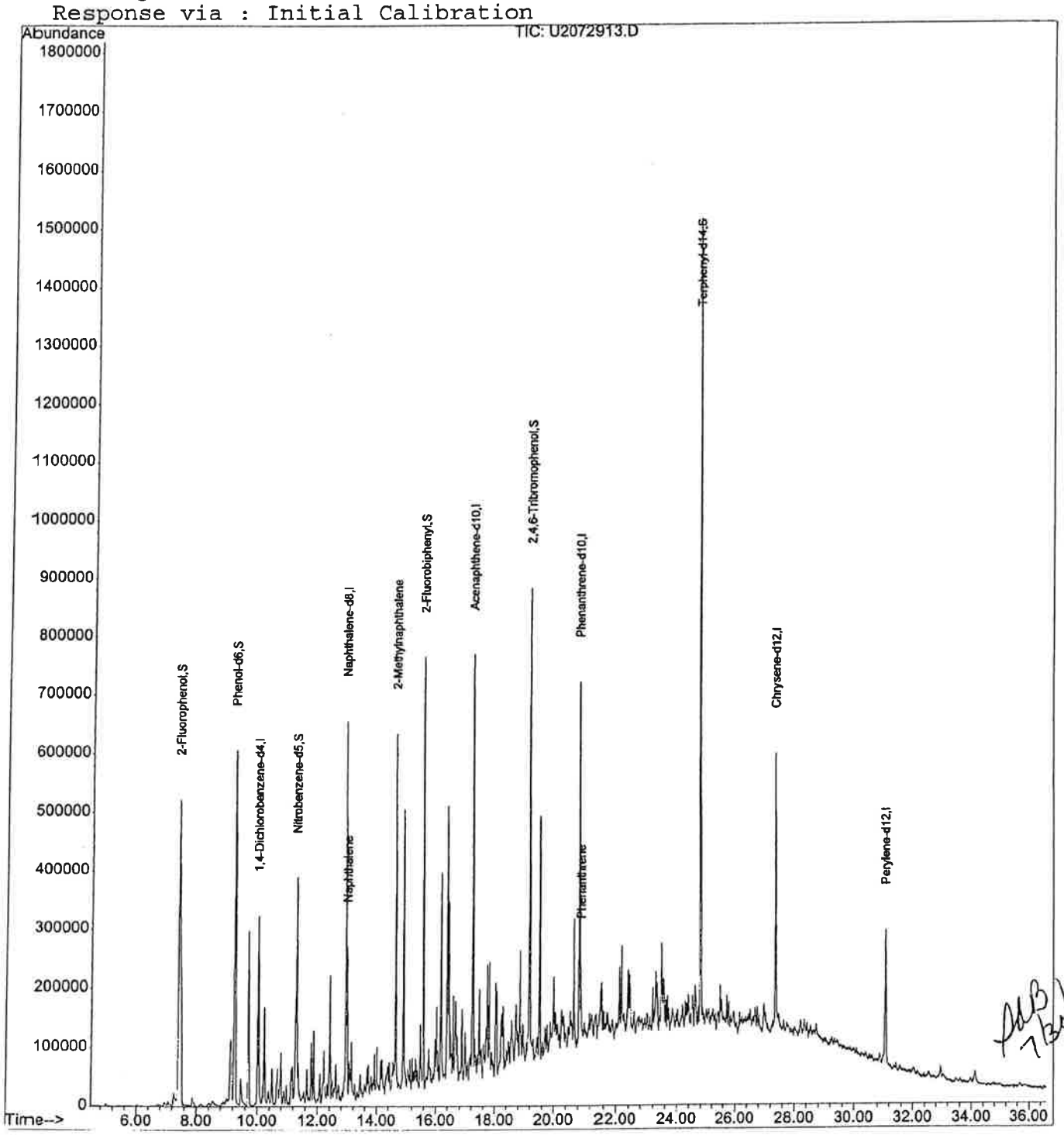
DWB 7/30/02
KMM 7/30/02

(#) = qualifier out of range (m) = manual integration

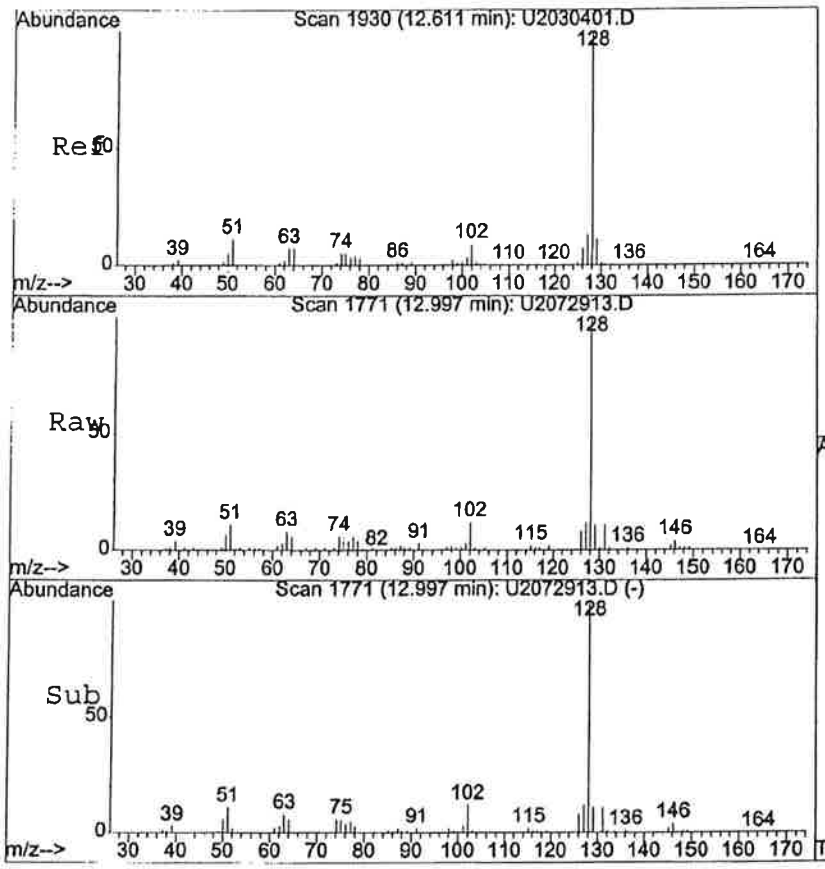
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072913.D Vial: 14
Acq On : 30 Jul 2002 1:33 am Operator: SHERREE
Sample : 289001A SWC-007 Inst : Instrumen
Misc : 1040/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 7:19 2002 Quant Results File: UBNA0722.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration



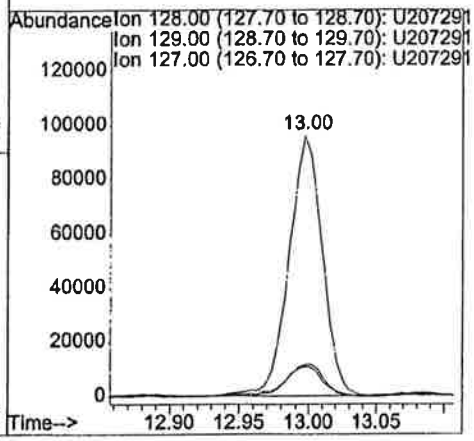
DLB 7/30/02

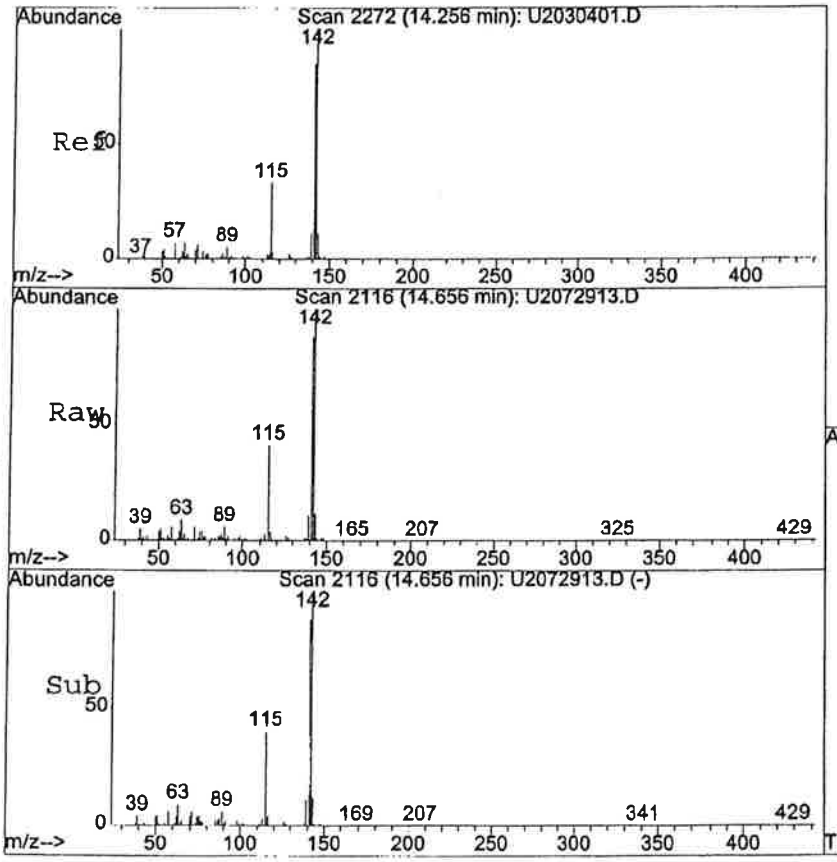


#29
Naphthalene
Concen: 13.24 ul/l
RT: 13.00 min Scan# 1771
Delta R.T. 0.08 min
Lab File: U2072913.D
Acq: 30 Jul 2002 1:33 am

Tgt Ion:128 Resp: 163706

Ion	Ratio	Lower	Upper
128	100		
129	11.5	8.6	13.0
127	12.1	10.7	16.1

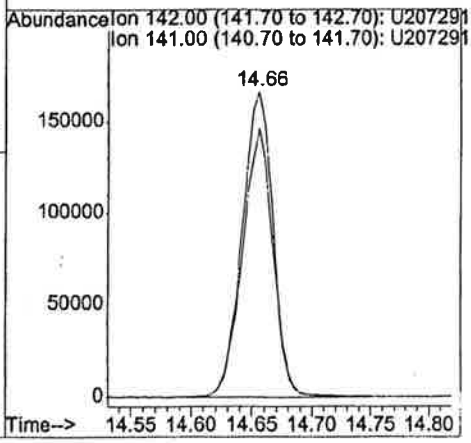


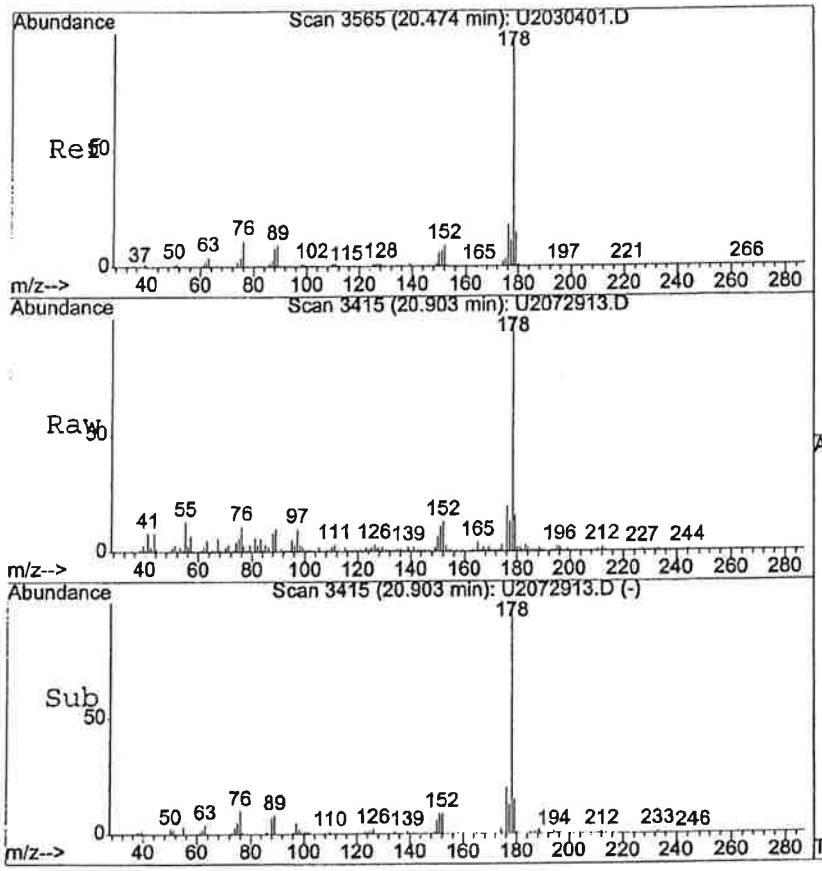


#33
2-Methylnaphthalene
Concen: 38.12 ul/l
RT: 14.66 min Scan# 2116
Delta R.T. 0.09 min
Lab File: U2072913.D
Acq: 30 Jul 2002 1:33 am

Tgt Ion:142 Resp: 295295

Ion	Ratio	Lower	Upper
142	100		
141	87.8	68.9	103.3

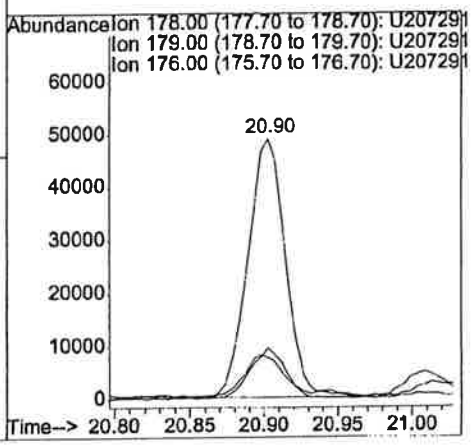




#62
Phenanthrene
Concen: 7.25 ul/l
RT: 20.90 min Scan# 3415
Delta R.T. 0.09 min
Lab File: U2072913.D
Acq: 30 Jul 2002 1:33 am

Tgt Ion:178 Resp: 86110

Ion	Ratio	Lower	Upper
178	100		
179	16.2	12.0	18.0
176	19.9	15.0	22.6



Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289002A
MATRIX : WATER
CLIENT ID : SWC-008
Sample wt/vol : 1020

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/22/2002
ID FILE : g08.id
DATA FILE : U2072914

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
95-3	Nitrobenzene	U	10
-59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	49
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	10	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	28	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	20
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	25
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289002A
MATRIX : WATER
CLIENT ID : SWC-008
Sample wt/vol: 1020

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/22/2002
ID FILE : g08.id
DATA FILE : U2072914

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	25
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	25
100-02-7	4-Nitrophenol	U	25
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	25
100-01-6	4-Nitroaniline	U	25
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
118-74-1	Hexachlorobenzene	U	10
86-5	Pentachlorophenol	U	25
01-8	Phenanthrene	U	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69641

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072914.D Vial: 15
Acq On : 30 Jul 2002 2:19 am Operator: SHERREE
Sample : 289002A SWC-007 Inst : Instrumen
Misc : 1020/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 02:56:04 2002 Quant Results File: UBNA0722.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0722

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.02	152	113380	40.00	ul/l	0.09
19) Naphthalene-d8	12.95	136	458777	40.00	ul/l	0.08
34) Acenaphthene-d10	17.24	164	283641	40.00	ul/l	0.09
54) Phenanthrene-d10	20.85	188	437849	40.00	ul/l	0.10
67) Chrysene-d12	27.38	240	295274	40.00	ul/l	0.11
76) Perylene-d12	31.07	264	186464	40.00	ul/l	0.17
System Monitoring Compounds						
4) 2-Fluorophenol	7.41	112	287522	74.23	ul/l	0.08
Spiked Amount 200.000			Recovery = 37.12%			
6) Phenol-d6	9.26	99	413580	83.64	ul/l	0.07
Spiked Amount 200.000			Recovery = 41.82%			
20) Nitrobenzene-d5	11.30	82	233063	47.22	ul/l	0.08
Spiked Amount 100.000			Recovery = 47.22%			
38) 2-Fluorobiphenyl	15.58	172	388838	43.67	ul/l	0.09
Spiked Amount 100.000			Recovery = 43.67%			
58) 2,4,6-Tribromophenol	19.19	330	124677	129.10	ul/l	0.10
Spiked Amount 200.000			Recovery = 64.55%			
70) Terphenyl-d14	24.80	244	734515	99.11	ul/l	0.12
Spiked Amount 100.000			Recovery = 99.11%			
Target Compounds						Qvalue
29) Naphthalene	13.00	128	125986	10.55	ul/l	98
33) 2-Methylnaphthalene	14.66	142	216108	28.88	ul/l	98

7/30/02
KMM 7/30/02

(#) = qualifier out of range (m) = manual integration

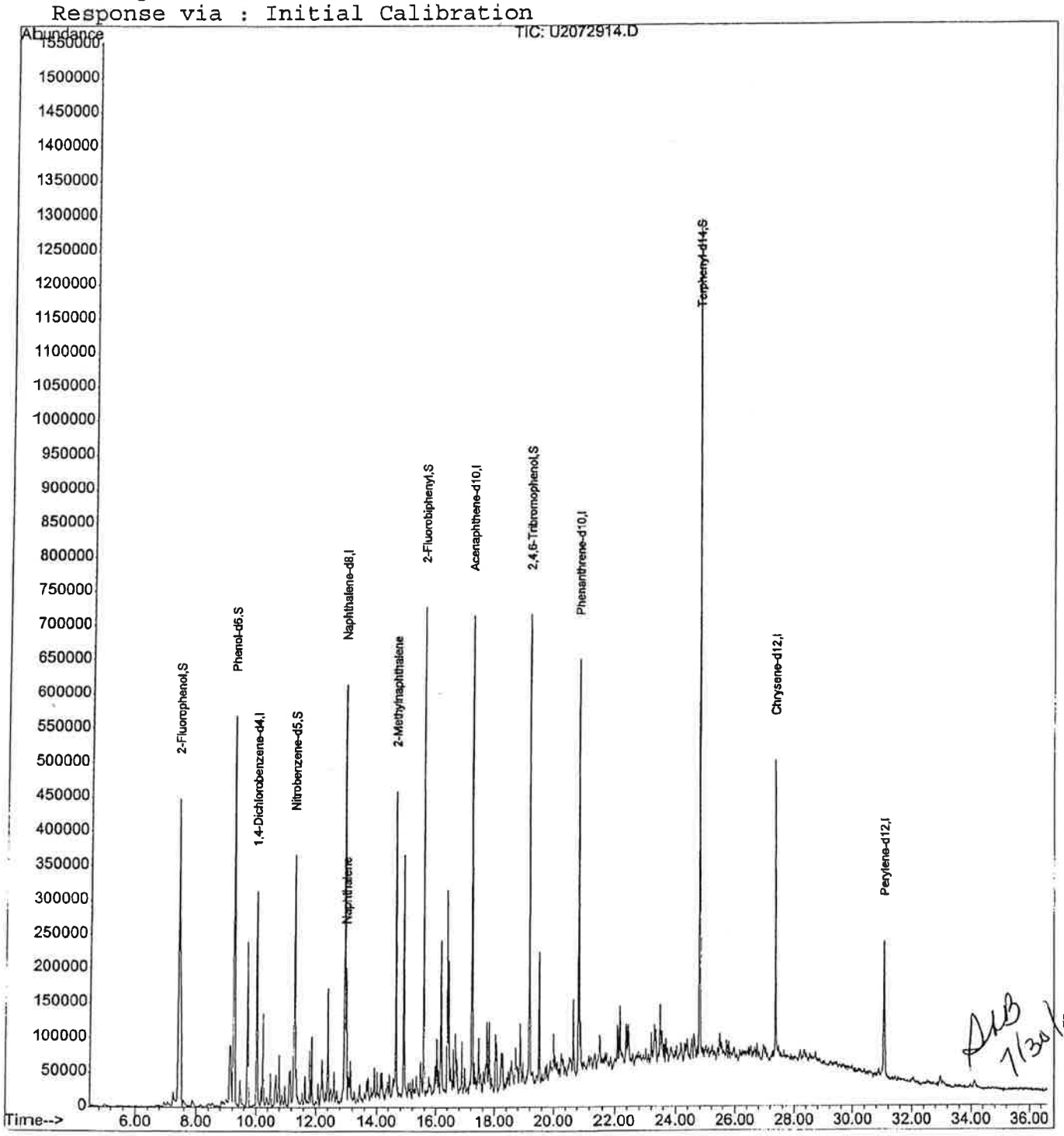
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072914.D
Acq On : 30 Jul 2002 2:19 am
Sample : 289002A SWC-007
Misc : 1020/1ML QC757LL.012 B17
MS Integration Params: RTEINT.P
Quant Time: Jul 30 7:20 2002

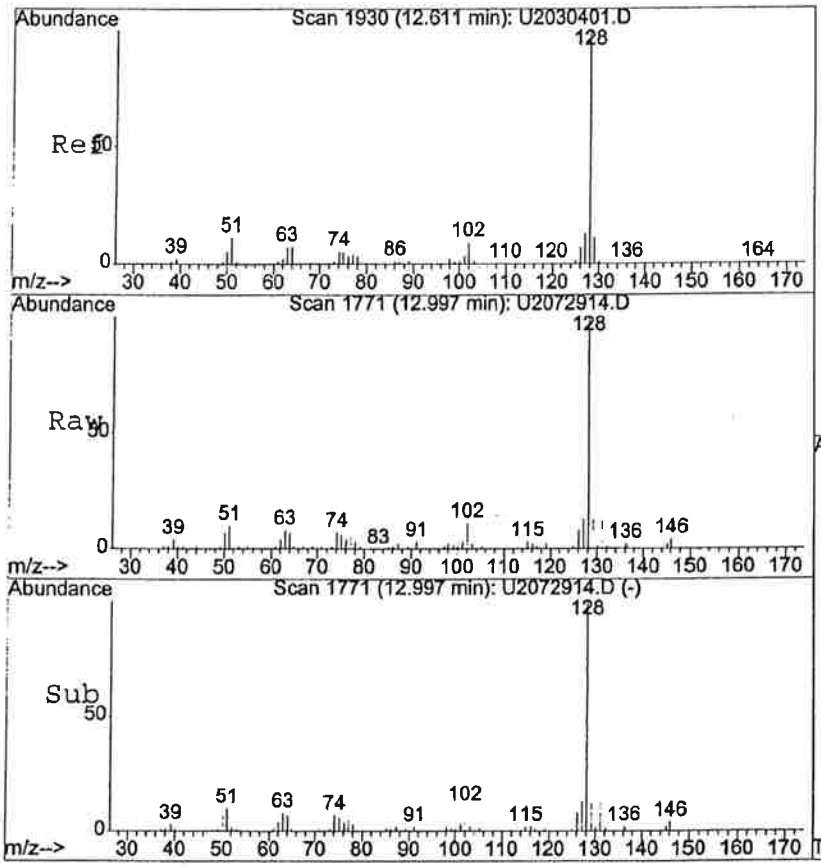
Vial: 15
Operator: SHERREE
Inst : Instrumen
Multiplr: 1.00
Quant Results File: UBNA0722.RES

69641 Page 0075

Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration



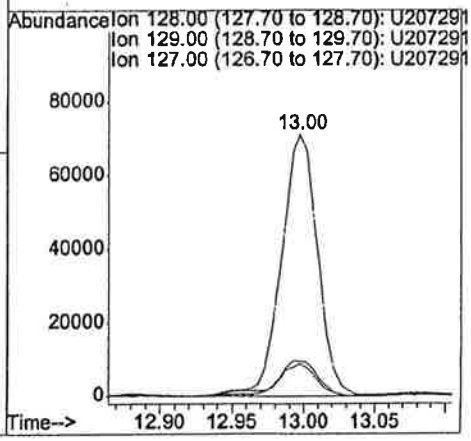
AHB 7/30/02

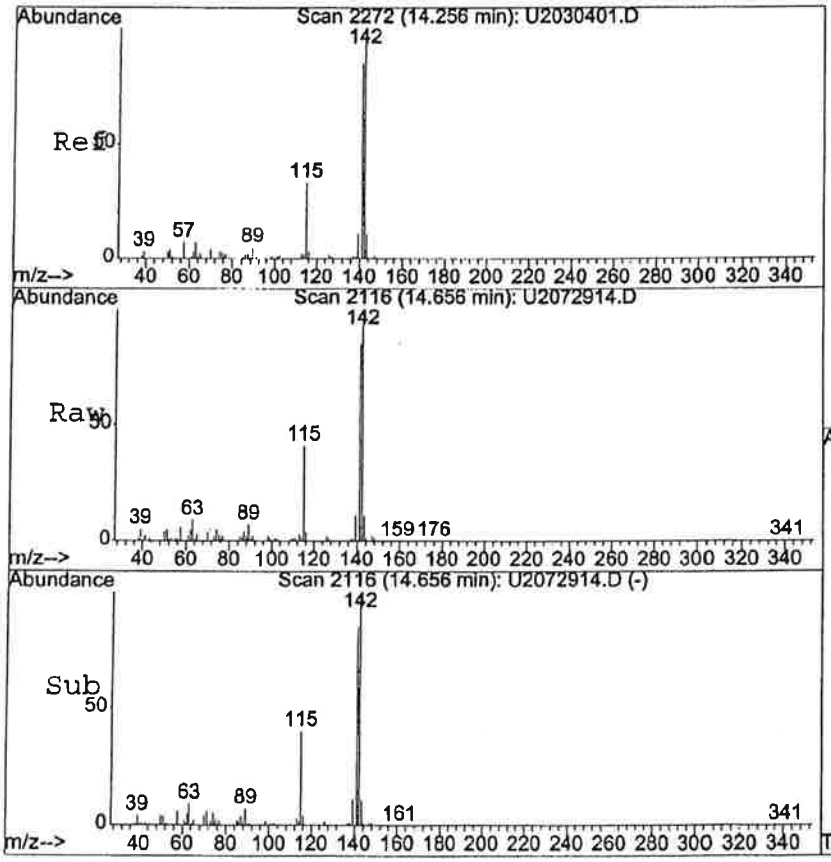


#29
Naphthalene
Concen: 10.55 ul/l
RT: 13.00 min Scan# 1771
Delta R.T. 0.08 min
Lab File: U2072914.D
Acq: 30 Jul 2002 2:19 am

Tgt Ion:128 Resp: 125986

Ion	Ratio	Lower	Upper
128	100		
129	12.5	8.6	13.0
127	13.4	10.7	16.1

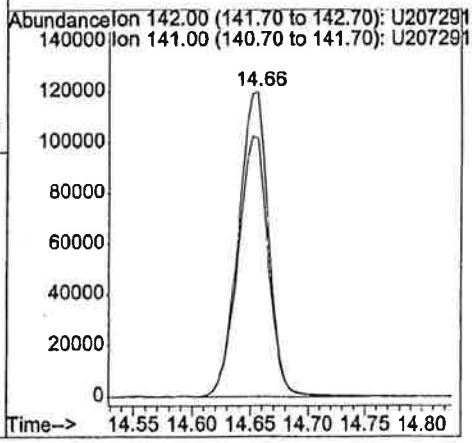




#33
2-Methylnaphthalene
Concen: 28.88 ul/l
RT: 14.66 min Scan# 2116
Delta R.T. 0.09 min
Lab File: U2072914.D
Acq: 30 Jul 2002 2:19 am

Tgt Ion:142 Resp: 216108

Ion	Ratio	Lower	Upper
142	100		
141	84.5	68.9	103.3



Washington
Environmental Laboratory

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

EPA SAMPLE NUMBER	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	OTHER	TOT OUT
BLK757LL.012_B17	65	63	108	57	51	77		0
LCS757LL.012	60	58	103	54	47	83		0
288865B	68	60	114	45	32	53		0
288865B_MS	61	57	112	48	33	68		0
288865B_MSD	56	50	102	43	31	62		0
288671A	54	52	115	46	41	74		0
288672A	53	47	100	51	44	84		0
288673A	58	51	113	55	48	90		0
288810A	57	51	104	53	46	88		0
288811A	48	41 *	100	44	39	73		1
289000A	55	49	109	49	43	79		0
289001A	48	44	102	43	39	74		0
289002A	47	44	99	42	37	65		0
289081A	55	51	112	49	43	70		0
289082A	54	48	101	50	44	77		0

	QC LIMITS
S1 (NBZ) = Nitrobenzene-d5	(35-114)
S2 (FBP) = 2-Fluorobiphenyl	(43-116)
S3 (TPH) = Terphenyl-d14	(33-141)
S4 (PHL) = Phenol-d6	(10-110)
S5 (2FP) = 2-Fluorophenol	(21-110)
S6 (TBP) = 2,4,6-Tribomophenol	(10-123)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

FORM II SV-1

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : BLK757LL.012_B17
MATRIX : WATER
CLIENT ID :
Sample wt/vol : 1000

ANALYSIS DATE : 07/29/2002
RECVD DATE :
ID FILE : g08.id
DATA FILE : U2072902

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
95-3	Nitrobenzene	U	10
59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	50
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	U	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	U	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	20
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	25
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : BLK757LL.012_B17
MATRIX : WATER
CLIENT ID :
Sample wt/vol: 1000

ANALYSIS DATE : 07/29/2002
RECVD DATE :
ID FILE : g08.id
DATA FILE : U2072902

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	25
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	25
100-02-7	4-Nitrophenol	U	25
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	25
100-01-6	4-Nitroaniline	U	25
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
118-74-1	Hexachlorobenzene	U	10
-86-5	Pentachlorophenol	U	25
-01-8	Phenanthrene	U	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072902.D Vial: 3
Acq On : 29 Jul 2002 5:15 pm Operator: SHERREE
Sample : BLK757LL.012_B17 Inst : Instrumen
Misc : 1000/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 29 17:52:36 2002 Quant Results File: UBNA0722.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0722

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.03	152	111118	40.00	ul/l	0.09
19) Naphthalene-d8	12.95	136	446097	40.00	ul/l	0.09
34) Acenaphthene-d10	17.24	164	273619	40.00	ul/l	0.09
54) Phenanthrene-d10	20.85	188	404247	40.00	ul/l	0.10
67) Chrysene-d12	27.37	240	266425	40.00	ul/l	0.10
76) Perylene-d12	31.06	264	174245	40.00	ul/l	0.16
System Monitoring Compounds						
4) 2-Fluorophenol	7.41	112	383887	101.13	ul/l	0.08
Spiked Amount 200.000			Recovery = 50.56%			
6) Phenol-d6	9.27	99	555254	114.58	ul/l	0.07
Spiked Amount 200.000			Recovery = 57.29%			
20) Nitrobenzene-d5	11.31	82	313659	65.36	ul/l	0.08
Spiked Amount 100.000			Recovery = 65.36%			
38) 2-Fluorobiphenyl	15.59	172	540309	62.91	ul/l	0.09
Spiked Amount 100.000			Recovery = 62.91%			
58) 2,4,6-Tribromophenol	19.20	330	137532	154.25	ul/l	0.10
Spiked Amount 200.000			Recovery = 77.13%			
70) Terphenyl-d14	24.80	244	721442	107.89	ul/l	0.12
Spiked Amount 100.000			Recovery = 107.89%			

Target Compounds Qvalue

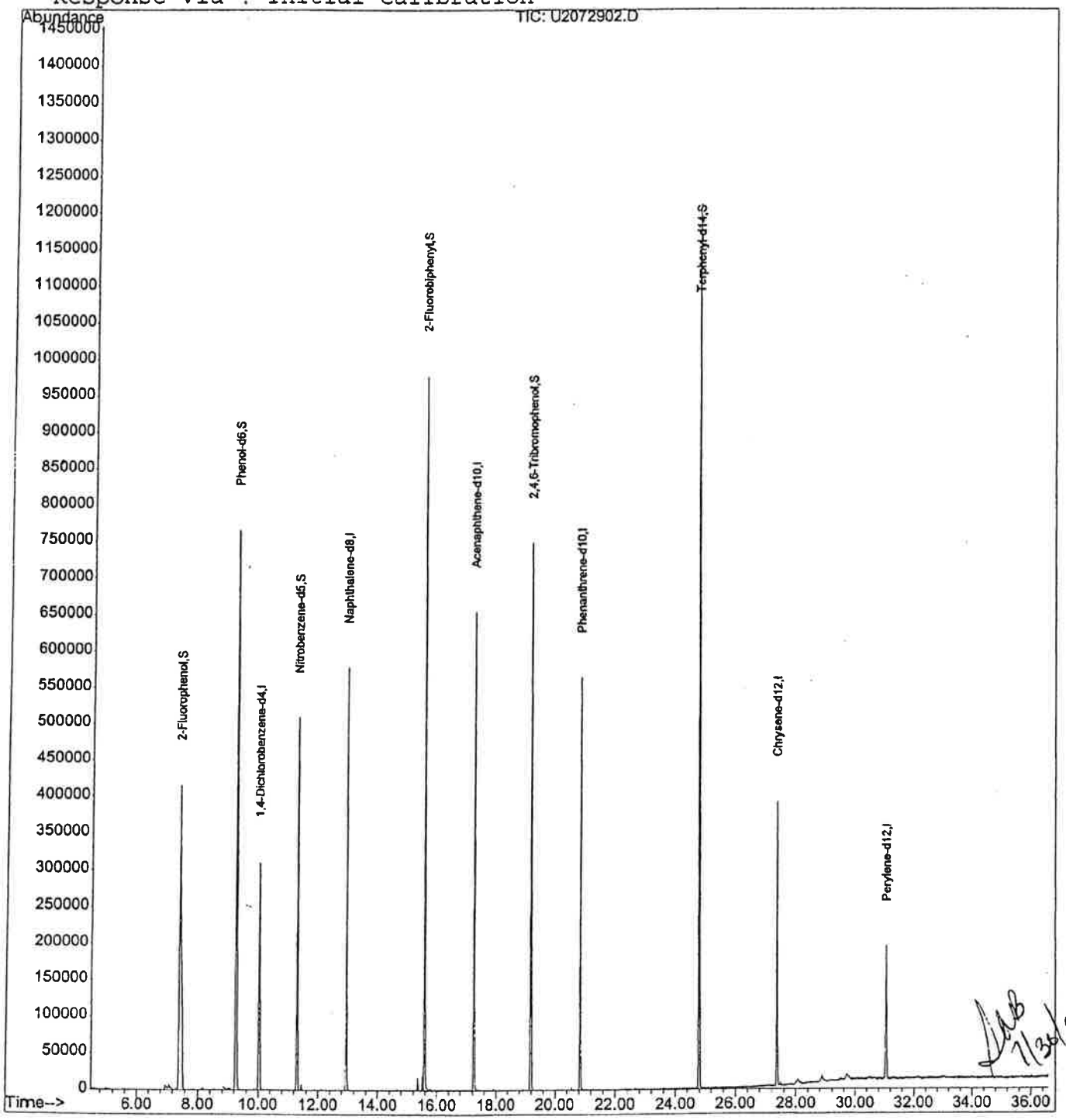
MLB 7/30/02
KMM 7/30/02

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072902.D Vial: 3
Acq On : 29 Jul 2002 5:15 pm Operator: SHERREE
Sample : BLK757LL.012_B17 Inst : Instrumen
Misc : 1000/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 7:06 2002 Quant Results File: UBNA0722.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration



7/30/02

THE WASHINGTON GROUP
ENVIRONMENTAL SERVICES LABORATORY

301 Chelsea Parkway
Boothwyn, Pa. 19061
(610) 497-8000

Report For:

Sunoco, Inc.
Ms. Judy Brackin
P.O. Box 426
Marcus Hook PA 19061

Job Number

75700702

Summary Number

69672

August 07, 2002

Reviewed by _____ 8/8/2 for
Project Manager Elizabeth Witouski

NJ ID# PA343	EPA ID# PA00078	PA ID# 23-272
CA ID# 02105CA	RI ID# 238	CT ID# PH0687
NY ID# 11345	MD ID# 286	MA ID# M-PA078

The . ington Group International
Environmental Services Laboratory Data Summary
Summary # 69672 Printed - 08/07/02 07:17:38

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289081A	SWC-009	757	EXT BNA H2O			COMPLETE	07/23/2002	07/25/2002	07/29/2002	DJN
289081A	SWC-009	G08	1,2,4-Trichlorobenzene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	1,2-Dichlorobenzene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	1,3-Dichlorobenzene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	1,4-Dichlorobenzene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	2,4,5-Trichlorophenol	ND	22	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	2,4,6-Trichlorophenol	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	2,4-Dichlorophenol	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	2,4-Dimethylphenol	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	2,4-Dinitrophenol	ND	27	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	2,4-Dinitrotoluene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	2,6-Dinitrotoluene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	2-Chloronaphthalene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	2-Chlorophenol	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	2-Methylnaphthalene	26	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	2-Methylphenol	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	2-Nitroaniline	ND	27	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	2-Nitrophenol	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	3,3'-Dichlorobenzidine	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	3-Nitroaniline	ND	27	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	4,6-Dinitro-2-methylphenol	ND	27	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	4-Bromophenyl phenyl ether	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	4-Chloro-3-methylphenol	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	4-Chloroaniline	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	4-Chlorophenyl phenyl ether	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	4-Methylphenol	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	4-Nitroaniline	ND	27	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	4-Nitrophenol	ND	27	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Acenaphthene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Acenaphthylene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Aniline	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Anthracene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB

The \ .ington Group International
Environmental Services Laboratory Data Summary
Summary # 69672 Printed - 08/07/02 07:17:38

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289081A	SWC-009	G08	Benz(a)anthracene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Benzo(a)pyrene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Benzo(b)fluoranthene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Benzo(ghi)perylene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Benzo(k)fluoranthene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Benzoic acid	ND	54	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Benzyl alcohol	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Bis(2-chloroethoxy)methane	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Bis(2-chloroethyl)ether	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Bis(2-chloroisopropyl) ethe	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Bis(2-ethylhexyl) phthalate	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Butyl benzyl phthalate	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Chrysene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Di-n-butyl phthalate	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Di-n-octyl phthalate	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Dibenz(a,h)anthracene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Dibenzofuran	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Diethyl phthalate	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Dimethyl phthalate	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Fluoranthene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Fluorene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Hexachlorobenzene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Hexachlorobutadiene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Hexachlorocyclopentadiene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Hexachloroethane	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Indeno(1,2,3-cd)pyrene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Isophorone	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	N-Nitrosodi-n-propylamine	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	N-Nitrosodiphenylamine	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Naphthalene	9 J	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Nitrobenzene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Pentachlorophenol	ND	27	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Phenanthrene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Phenol	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289081A	SWC-009	G08	Pyrene	ND	11	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB

The hington Group International
Environmental Services Laboratory Data Summary
Summary # 69672 Printed - 08/07/02 07:17:38

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289081B	SWC-009	G18	Benzene	4 J	5	ug/L	07/23/2002	07/30/2002	07/30/2002	PSS
289081B	SWC-009	G18	Carbon Disulfide	ND	5	ug/L	07/23/2002	07/30/2002	07/30/2002	PSS
289081B	SWC-009	G18	Ethylbenzene	5 J	5	ug/L	07/23/2002	07/30/2002	07/30/2002	PSS
289081B	SWC-009	G18	Toluene	ND	5	ug/L	07/23/2002	07/30/2002	07/30/2002	PSS
289081B	SWC-009	G18	Xylenes-Meta&Para	77	5	ug/L	07/23/2002	07/30/2002	07/30/2002	PSS
289081B	SWC-009	G18	Xylenes-Ortho	3 J	5	ug/L	07/23/2002	07/30/2002	07/30/2002	PSS
289081C	SWC-009	310	Cyanide, Total	ND (0.05)		mg/l	07/23/2002	08/05/2002	08/06/2002	GCW
289081D	SWC-009	200	AA,Digest H2O			COMPLETE	07/23/2002	07/25/2002	07/25/2002	ART
289081D	SWC-009	227IC	Cr Chromium	ND<0.010		mg/l	07/23/2002	07/31/2002	07/31/2002	CAK
289081D	SWC-009	249IC	Pb Lead	ND<0.0050		mg/l	07/23/2002	07/31/2002	07/31/2002	CAK
289082A	SWC-010	757	EXT BNA H2O			COMPLETE	07/23/2002	07/25/2002	07/29/2002	DJN
289082A	SWC-010	G08	1,2,4-Trichlorobenzene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	1,2-Dichlorobenzene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	1,3-Dichlorobenzene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	1,4-Dichlorobenzene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	2,4,5-Trichlorophenol	ND	19	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	2,4,6-Trichlorophenol	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	2,4-Dichlorophenol	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	2,4-Dimethylphenol	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	2,4-Dinitrophenol	ND	24	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	2,4-Dinitrotoluene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	2,6-Dinitrotoluene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	2-Chloronaphthalene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	2-Chlorophenol	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	2-Methylnaphthalene	36	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	2-Methylphenol	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	2-Nitroaniline	ND	24	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	2-Nitrophenol	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB

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Environmental Services Laboratory Data Summary
Summary # 69672 Printed - 08/07/02 07:17:38

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289082A	SWC-010	G08	3,3'-Dichlorobenzidine	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	3-Nitroaniline	ND	24	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	4,6-Dinitro-2-methylphenol	ND	24	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	4-Bromophenyl phenyl ether	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	4-Chloro-3-methylphenol	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	4-Chloroaniline	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	4-Chlorophenyl phenyl ether	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	4-Methylphenol	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	4-Nitroaniline	ND	24	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	4-Nitrophenol	ND	24	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Acenaphthene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Acenaphthylene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Aniline	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Anthracene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Benz(a)anthracene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Benzo(a)pyrene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Benzo(b)fluoranthene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Benzo(ghi)perylene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Benzo(k)fluoranthene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Benzoic acid	ND	48	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Benzyl alcohol	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Bis(2-chloroethoxy)methane	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Bis(2-chloroethyl)ether	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Bis(2-chloroisopropyl) ethe	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Bis(2-ethylhexyl) phthalate	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Butyl benzyl phthalate	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Chrysene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Di-n-butyl phthalate	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Di-n-octyl phthalate	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Dibenz(a,h)anthracene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Dibenzofuran	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Diethyl phthalate	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Dimethyl phthalate	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Fluoranthene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Fluorene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB

The W. nington Group International
Environmental Services Laboratory Data Summary
Summary # 69672 Printed - 08/07/02 07:17:38

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289082A	SWC-010	G08	Hexachlorobenzene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Hexachlorobutadiene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Hexachlorocyclopentadiene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Hexachloroethane	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Isophorone	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	N-Nitrosodi-n-propylamine	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	N-Nitrosodiphenylamine	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Naphthalene	27	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Nitrobenzene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Pentachlorophenol	ND	24	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Phenanthrene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Phenol	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082A	SWC-010	G08	Pyrene	ND	10	ug/L	07/23/2002	07/30/2002	07/30/2002	SAB
289082B	SWC-010	G18	Benzene	130	5	ug/L	07/23/2002	07/30/2002	07/30/2002	PSS
289082B	SWC-010	G18	Carbon Disulfide	ND	5	ug/L	07/23/2002	07/30/2002	07/30/2002	PSS
289082B	SWC-010	G18	Ethylbenzene	77	5	ug/L	07/23/2002	07/30/2002	07/30/2002	PSS
289082B	SWC-010	G18	Toluene	18	5	ug/L	07/23/2002	07/30/2002	07/30/2002	PSS
289082B	SWC-010	G18	Xylenes-Meta&Para	390	5	ug/L	07/23/2002	07/30/2002	07/30/2002	PSS
289082B	SWC-010	G18	Xylenes-Ortho	91	5	ug/L	07/23/2002	07/30/2002	07/30/2002	PSS
289082C	SWC-010	310	Cyanide, Total	ND (0.05)		mg/l	07/23/2002	08/05/2002	08/06/2002	GCW
289082D	SWC-010	200	AA,Digest H2O			COMPLETE	07/23/2002	07/25/2002	07/25/2002	ART
289082D	SWC-010	227IC	Cr Chromium	ND<0.010		mg/l	07/23/2002	07/31/2002	07/31/2002	CAK
289082D	SWC-010	249IC	Pb Lead	ND<0.0050		mg/l	07/23/2002	07/31/2002	07/31/2002	CAK

Approved by: [signature]

Report Prep: K. Keeler

THE WASHINGTON GROUP
ENVIRONMENTAL LABORATORY

Methods Used for Summary# 69672:

Code	Description
200	Total Metals, Aqueous/FLAA,GFAA,ICP/SW846/EPA 200 Series
227IC	Chromium by ICP/EPA 200.7/SW846 6010
249IC	Lead by ICP/EPA 200.7/SW846 6010
310	Total Cyanide/spectrophotometric,automated 335.4 /dist+335.3
757	Extraction Procedure B/N and Acids (H2O) SW-846 Method 3520C
G08	Base/Neutral and Acid Extractable/SW-846 Meth 8270C TCL List
G18	GC/MS VOA (TCL List)/SW-846 Method 5035/8260B

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Environmental Laboratory

DATA QUALIFIERS

The following list shows data qualifiers that may appear in this report, and the meaning of each.

Qualifier	Meaning
B	Compound was detected in the associated blank.
D	Result was obtained from a different dilution than other analytes.
E	Result is estimated. Usually, this qualifier indeicates that the result is above the calibrated range of the instrument
J	Result is estimated. Usually this qualifier indicates the reported concentration is below the laboratory's reporting limit.
N	Indicates a Tentatively Identified Compound.
ND	Analyte was not detected.
U	Analyte was not detected (U and ND qualifiers are interchangable).

ABBREVIATIONS

The following list shows abbreviations that commonly occur in analytical reports.

Abbreviation	Meaning
DL	Dilution
LCS	Laboratory Control Sample
LCSS	Laboratory Control Sample (soil)
LCSW	Laboratory Control Sample (water)
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NR	No Recovery
PB	Preparation Blank
PS	Post-Digestion Spike
RE	Reanalysis
RPD	Relative Percent Difference
SR	Serial Dilution

Washington — **Laboratory Chain Of Custody**

Quote No:

Client/Office: Sunoco - Marcus Hook Phone: 215-977-3856

Address: Delaware Ave + Green St, Marcus Hook PA

Send report to: Judy Brackin Fax:

Project Description: Solid Waste Closure

TAT (for data): Identify number of working days below);...or Date-->:

☐ Rush 1 2 3 4 5 days ☐ Firm(6-12) ____ ☒ Std.(-12) ____ ☐ Other ____

Lab Staffer confirming Rush/Firm: ____ Hardcopy TAT Date?: ____

Report Type: ☐ Results only ☒ Data +QC ☐ Reduced Deliv. ☐ Other: ____
☐ Regulatory Format (CLP like) ☐ Electronic/disk->(Format?)

Regulatory Samples? ☒ YES ☐ NO — If YES?: ☐ Act II ☐ UST ☒ RCRA ☐ NPDES ☐ Phase I/II ☐ ISRA ☐ Other: ____

Analytical Protocol: ☒ SW846 ☐ EPA600 ☐ Drinking H2O ☐ ASTM ☐ Other: ____

Ship To:

Lab Job No: 75700702

Send invoice to: Judy Brackin

Address: Sunoco Inc, 1801 Market St Phila, PA 19103 P.O. No:

Washington Group Laboratory
301 Chelsea Parkway
Boothwyn, PA 19061
Phone: 610-497-8000
Fax: 610-497-8005

Lab Use Only — rev. 10/12/99 — Due Date: — Cooler Tmp 1 deg C — custody seal yes ___ no ✓ No.: — Summary No. 69672 — Lab Log No:

Sample Data (NJ HAZITE disk deliverable limits sample ID to 7 Characters)						Container Data					Analysis Required: SVOA 8270	VOA 8260	Total CN	Pb + Total Cr	Lab Log No.	
ID (NJ limit=7 characters)	date	time	matrix	grab	comp	type	no.	preservative	pH							
SWC-009	7-23-02	0930	H_2O	X		40 A/G	2	NONE			X				289081	A-1,2
*			H_2O	X		VOA	2	HCl				X				B 1
			H_2O	X		250 P	1	NaOH	>12				X			C
			H_2O	X		500 P	1	HNO_3	<2					X		D
SWC-010	7-23-02	1330	H_2O	X		40 A/G	2	NONE			X				289082	A-1,2
			H_2O	X		VOA	2	HCl				X				B 1
			H_2O	X		250 P	1	NaOH	>12				X			C
			H_2O	X		500 P	1	HNO_3	<2					X		D
			H_2O	X		A/G	2				X					
			H_2O	X		VOA	2	HCl				X				
			H_2O	X		P	1	NaOH					X			
			H_2O	X		P	1	HNO_3						X		

Comments/Special Handling/Storage/Disposal--->: Note: must have detection limits at or below clearance levels in attached Table!

Sampled by: Frank Kulp

Phone no: 215 977-3856

* Both vials have small headspace

Relinquished By:		Received By:		Method of Shipment
Name: Frank Kulp	Date: 7-23-02	Name: Ron Messer	Date: 7-23-02	Airbill No.
Organization: Sunoco	Time: 1415	Organization: Sunoco	Time: 15:35	
Name: Lisa Messer	Date: 7-23-02	Name: R. White	Date: 7/23/02	
Organization: Sunoco	Time: 3:55	Organization: TWGINC	Time: 1535	
Name:	Date:	Name:	Date:	
Organization:	Time:	Organization:	Time:	

TABLE 1

Rinsate Sample Analytical Parameters

Constituent	Clearance Level (mg/l)	Analytical Method
Anthracene	0.059	8270
Benzene	0.14	8260
Benzo(a) pyrene	0.061	8270
Benzo(a)anthracene	0.059	8270
Bis(2-ethylhexyl)phthalate	0.28	8270
Chrysene	0.059	8270
Ethylbenzene	0.057	8260
Napthalene	0.059	8270
Phenol	0.039	8270
Pyrene	0.067	8270
Toluene	0.08	8260
Xylene	0.32	8260
Cyanide (total)	1.20	9012
Chromium (total)	2.77	6010
Cresol (m)	0.77	8270
Cresol (p)	0.77	8270
Cresol (o)	0.11	8270
Lead	0.69	6010
2,4-Dimethylphenol	0.036	8270
Fluorene	0.059	8270
Acenapthene	0.059	8270
Carbon Disulfide	3.80	8260
Di-n-butyl phthalate	0.057	8270
Phenanthrene	0.059	8270

Washington
Environmental Laboratory

SAMPLE RECEIVING CHECKLIST

Client/Site: SUNOCO Assigned Summary # 69672

Section 1. Laboratory Courier (omit if samples received directly from client or 3rd party)

1.1 Samples taken by lab personnel?	☐ Yes	☐ No	
Preserved in field?	☐ Yes	☐ No	☐ Not Req.
Stored on ice?	☐ Yes	☐ No	☐ Not Req.
Date/time last sample placed in cooler: _____			
1.2 Samples taken by customer or 3rd party?	☐ Yes	☐ No	
Received under refrigeration?	☐ Yes (cooler)	☐ Yes (refrig.)	☐ No
If yes, in Cooler sealed?	☐ Yes	☐ No	
If no, ice present?	☐ Yes	☐ No	
Ice added?	☐ Yes	☐ No	
If refrig. placed in cooler/iced	☐ Yes	☐ No	

Section 2. Laboratory

2.1 Delivered by	☒ Client	☐ Lab Pers	☐ Parcel Svc
2.2 Packaging	☒ Cooler	☐ Other/none	
Custody Seals	☐ Present	☒ Absent	☐ Broken
Ice	☒ Present	☐ Absent	☐ Melted
Temperature	1 °C		
2.3 Documentation			
Airbill Present	☐ Yes, # N/A		☐ No
COC	☒ Rec'd		☐ Prpd by Lab
2.4 Sample Containers			
Appropriate for specified analyses?	☒ Yes	☐ No*	
Intact?	☒ Yes	☐ No*	
Labeled, and labels legible?	☒ Yes	☐ No*	
Labels agree with COC?	☒ Yes	☐ No*	

2.5 Preservation (water samples only)

Metals	pH<2	☒ Yes	☐ No*	☐ NA
Cyanides	pH >12	☒ Yes	☐ No*	☐ NA
Sulfides	pH >9	☐ Yes	☐ No*	☒ NA
BNA, Pest, PCB, CN, Phenols, NO_3	Cl_2 absent	☒ Yes	☐ No*	☐ NA
TOC, COD, Oil/Grease, Phenols, TPH	pH<2	☐ Yes	☐ No*	☒ NA
TOX, TKN, NH3, Tot. P.	pH<2	☐ Yes	☐ No*	☒ NA
Were preservatives added at lab?		☐ Yes*	☒ No	☐ N/A

Comments (note: any response marked "*" requires detailed explanation identify specific samples, what was wrong, and what was done)

Initials: DAO Date: 7/23/02

admin3/QA/IList/SR Checlist rev10/01

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: The Washington Group International

Lab Sample ID

288283D	288283DSR
288283DPS	289228E
289081D	289082D
289177C	

Were ICP interelement corrections applied? Yes/No

Were ICP background corrections applied? Yes/No

If Yes - were raw data generated before application of background corrections Yes/No

Comments:

Batch ID: 587 Analysis Start Time: 1527

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Laboratory Manager's designee, as verified by the following signature.

Signature: [illegible] Name: Candia Knowles

Date: 8/02 Title:

Data File: bjul31.

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Initial/Continuing Calibration Source : _____

Concentration Units: mg/l

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R *	CCV-1 True	CCV-1 Found	CCV-1 %R	CCV-2 Found	CCV-2 %R	CCV-3 Found	CCV-3 %R
Aluminum	2.00	2.05	102.5	2.00	1.97	98.5	1.95	97.5	1.94	97.0
Antimony	0.50	0.51	101.1	0.50	0.49	98.5	0.50	100.0	0.49	98.4
Arsenic	0.50	0.48	96.1	0.50	0.49	97.9	0.50	99.4	0.48	96.6
Barium	2.00	1.97	98.5	2.00	1.99	99.5	2.00	100.0	1.98	99.0
Beryllium	0.05	0.05	95.8	0.05	0.05	98.2	0.05	97.2	0.05	97.4
Cadmium	0.25	0.24	96.6	0.25	0.25	98.5	0.24	97.6	0.24	97.2
Calcium	5.00	5.01	100.2	5.00	4.95	99.0	4.96	99.2	4.83	96.6
Chromium	0.20	0.20	98.5	0.20	0.20	98.0	0.20	99.0	0.20	98.0
Cobalt	0.50	0.49	97.0	0.50	0.50	99.0	0.49	98.4	0.49	98.0
Copper	0.25	0.24	97.2	0.25	0.25	98.8	0.24	97.6	0.24	97.6
Iron	1.00	0.96	96.1	1.00	0.97	96.8	0.95	94.7	0.95	94.7
Lead	0.50	0.49	98.2	0.50	0.49	98.8	0.50	99.6	0.49	98.0
Magnesium	5.00	4.83	96.6	5.00	4.98	99.6	4.95	99.0	4.96	99.2
Manganese	0.50	0.49	97.8	0.50	0.50	99.6	0.49	98.8	0.49	98.6
Molybdenum	0.50	0.49	97.2	0.50	0.49	97.6	0.49	98.6	0.49	97.2
Nickel	0.50	0.49	97.2	0.50	0.50	99.6	0.49	98.8	0.49	98.4
Potassium	5.00	4.79	95.8	5.00	4.81	96.2	4.85	97.0	4.81	96.2
Selenium	0.50	0.49	97.9	0.50	0.49	97.8	0.50	99.5	0.49	97.4
Titanium	0.50	0.48	96.2	0.50	0.49	98.6	0.49	97.6	0.49	97.4
Silver	0.25	0.25	98.0	0.25	0.24	97.6	0.24	97.2	0.25	98.0
Sodium	5.00	4.82	96.4	5.00	4.88	97.6	4.90	98.0	4.89	97.8
Thallium	0.50	0.49	97.7	0.50	0.49	98.7	0.50	100.4	0.49	98.7
Vanadium	0.50	0.49	97.6	0.50	0.50	99.4	0.49	98.6	0.49	98.6
Zinc	0.50	0.48	95.8	0.50	0.49	98.8	0.49	97.8	0.49	97.2

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Initial Calibration Source : _____

Continuing Calibration Source: _____

Analyte	True	CCV-4 Found	%R	CCV-5 Found	%R	CCV-6 Found	%R
Aluminum	2.00	1.91	95.5				
Antimony	0.50	0.49	98.8				
Arsenic	0.50	0.49	97.2				
Barium	2.00	2.00	100.0				
Beryllium	0.05	0.05	95.8				
Cadmium	0.25	0.24	96.6				
Calcium	5.00	4.91	98.2				
Chromium	0.20	0.20	98.0				
Cobalt	0.50	0.48	96.8				
Copper	0.25	0.24	96.0				
Iron	1.00	0.94	93.5				
Lead	0.50	0.49	98.5				
Magnesium	5.00	4.90	98.0				
Manganese	0.50	0.49	97.8				
Molybdenum	0.50	0.49	97.0				
Nickel	0.50	0.49	97.6				
Potassium	5.00	4.80	96.0				
Selenium	0.50	0.48	96.7				
Titanium	0.50	0.48	96.0				
Silver	0.25	0.24	96.4				
Sodium	5.00	4.78	95.6				
Thallium	0.50	0.49	98.4				
Vanadium	0.50	0.49	97.4				
Zinc	0.50	0.48	96.4				

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

bjul31.

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Preparation Blank Matrix (soil/water) : Water

Preparation Blank Concentration Units (mg/L or mg/Kg) : mg/L

Analyte	Initial Calib. Blank	Continuing Calibration 1	2	3	
Aluminum	ND	ND	ND	ND	
Antimony	ND	ND	ND	ND	
Arsenic	ND	ND	ND	ND	
Barium	ND	ND	ND	ND	
Beryllium	ND	ND	ND	ND	
Cadmium	ND	ND	ND	ND	
Calcium	ND	ND	ND	ND	
Chromium	ND	ND	ND	ND	
Cobalt	ND	ND	ND	ND	
Copper	ND	ND	ND	ND	
Iron	ND	ND	ND	ND	
Lead	ND	ND	ND	ND	
Magnesium	ND	ND	ND	ND	
Manganese	ND	ND	ND	ND	
Molybdenum	ND	ND	ND	ND	
Nickel	ND	ND	ND	ND	
Potassium	ND	ND	ND	ND	
Selenium	ND	ND	ND	ND	
Titanium	ND	ND	ND	ND	
Silver	ND	ND	ND	ND	
Sodium	ND	ND	ND	ND	
Thallium	ND	ND	ND	ND	
Vanadium	ND	ND	ND	ND	
Zinc	ND	ND	ND	ND	

bjul31.

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Preparation Blank Matrix (soil/water) : Water

Preparation Blank Concentration Units (mg/L or mg/Kg) : mg/L

Analyte	Continuing Calibration 4	5	6	
Aluminum	ND			
Antimony	0.0064			
Arsenic	ND			
Barium	ND			
Beryllium	ND			
Cadmium	ND			
Calcium	ND			
Chromium	ND			
Cobalt	ND			
Copper	ND			
Iron	ND			
Lead	ND			
Magnesium	ND			
Manganese	ND			
Molybdenum	ND			
Nickel	ND			
Potassium	ND			
Selenium	ND			
Titanium	ND			
Silver	ND			
Sodium	ND			
Thallium	ND			
Vanadium	ND			
Zinc	ND			

bjul31.

PREPARATION BLANK (Batch 587)

Lab Name: Washington Group Contract: _____

Matrix (soil/water): water

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Result
Aluminum	ND<0.2000
Antimony	ND<0.0060
Arsenic	ND<0.0080
Barium	ND<0.2000
Beryllium	ND<0.0020
Cadmium	ND<0.0050
Calcium	ND<1.0000
Chromium	ND<0.0100
Cobalt	ND<0.0100
Copper	ND<0.0200
Iron	ND<0.1000
Lead	ND<0.0050
Magnesium	ND<1.0000
Manganese	ND<0.0150
Molybdenum	ND<0.0100
Nickel	ND<0.0200
Potassium	ND<1.0000
Selenium	ND<0.0200
Silver	ND<0.0100
Sodium	ND<1.0000
Thallium	ND<0.0100
Titanium	ND<0.0200
Vanadium	ND<0.0100
Zinc	ND<0.0200

US EPA - CLP
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

ICP ID Number:_____

Concentration Units: mg/l

Analyte	Solution A	Solution AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500	500	457	449	89.8			
Antimony		0.6		0.61	101.6			
Arsenic		0.1		0.10	96.6			
Barium		0.5		0.51	103.0			
Beryllium		0.5		0.51	101.3			
Cadmium		1.0		0.99	98.6			
Calcium	500	500	499	490	98.0			
Chromium		0.5		0.50	99.0			
Cobalt		0.5		0.50	99.6			
Copper		0.5		0.54	108.0			
Iron	200	200	191	192	96.0			
Lead		0.05		0.06	116.0			
Magnesium	500	500	494	485	97.0			
Manganese		0.5		0.51	102.8			
Molybdenum								
Nickel		1.0		0.98	98.4			
Potassium								
Selenium		0.05		0.04	88.4			
Titanium								
Silver		0.2		0.22	111.5			
Sodium								
Thallium		0.1		0.09	87.8			
Vanadium		0.5		0.51	102.0			
Zinc		1.0		1.08	108.0			

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288283D

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		0.257	0.000	0.25	102.80
Aluminum		1.960	0.000	2.00	98.00
Arsenic		0.481	0.000	0.50	96.28
Barium		2.300	0.280	2.00	101.00
Beryllium		0.051	0.000	0.05	101.40
Calcium		56.500	52.000	5.00	90.00
Cadmium		0.247	0.000	0.25	98.96
Cobalt		0.502	0.000	0.50	100.40
Chromium		0.199	0.000	0.20	99.50
Copper		0.268	0.000	0.25	107.20
Iron		1.000	0.000	1.00	100.00
Potassium		6.540	1.100	5.00	108.80
Magnesium		23.800	19.000	5.00	96.00
Manganese		0.498	0.000	0.50	99.60
Molybdenum		0.507	0.000	0.50	101.40
Sodium		17.700	12.000	5.00	114.00
Nickel		0.496	0.000	0.50	99.20
Lead		0.495	0.000	0.50	99.06
Antimony		0.518	0.014	0.50	100.72
Selenium		0.498	0.000	0.50	99.66
Titanium		0.499	0.000	0.50	99.80
Thallium		0.441	0.000	0.50	88.18
Vanadium		0.510	0.000	0.50	102.00
Zinc		0.545	0.046	0.50	99.80

Comments:

NR = No Recovery

2 183DMS Batch - 587
bjul31.587

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288283D

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		0.251	0.000	0.25	100.40
Aluminum		1.910	0.000	2.00	95.50
Arsenic		0.479	0.000	0.50	95.86
Barium		2.240	0.280	2.00	98.00
Beryllium		0.049	0.000	0.05	99.00
Calcium		55.100	52.000	5.00	62.00
Cadmium		0.245	0.000	0.25	97.88
Cobalt		0.491	0.000	0.50	98.20
Chromium		0.197	0.000	0.20	98.50
Copper		0.260	0.000	0.25	104.00
Iron		0.977	0.000	1.00	97.70
Potassium		6.420	1.100	5.00	106.40
Magnesium		23.100	19.000	5.00	82.00
Manganese		0.486	0.000	0.50	97.20
Molybdenum		0.502	0.000	0.50	100.40
Sodium		17.300	12.000	5.00	106.00
Nickel		0.490	0.000	0.50	98.00
Lead		0.489	0.000	0.50	97.90
Antimony		0.514	0.014	0.50	100.06
Selenium		0.491	0.000	0.50	98.24
Titanium		0.486	0.000	0.50	97.20
Thallium		0.439	0.000	0.50	87.78
Vanadium		0.497	0.000	0.50	99.40
Zinc		0.530	0.046	0.50	96.80

Comments:

NR = No Recovery

288283DMSD Batch - 587
131.587

BATCH
DUPLICATE SAMPLE REPORT

LAB SAMPLE NO

288283DMS

Lab Name: The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Sample Result	Duplicate Result	% RPD
Silver	0.257	0.251	2.36
Aluminum	1.960	1.910	2.58
Arsenic	0.481	0.479	0.44
Barium	2.300	2.240	2.64
Beryllium	0.051	0.049	2.40
Calcium	56.500	55.100	2.51
Cadmium	0.247	0.245	1.10
Cobalt	0.502	0.491	2.22
Chromium	0.199	0.197	1.01
Copper	0.268	0.260	3.03
Iron	1.000	0.977	2.33
Potassium	6.540	6.420	1.85
Magnesium	23.800	23.100	2.99
Manganese	0.498	0.486	2.44
Molybdenum	0.507	0.502	0.99
Sodium	17.700	17.300	2.29
Nickel	0.496	0.490	1.22
Lead	0.495	0.489	1.18
Antimony	0.518	0.514	0.64
Selenium	0.498	0.491	1.44
	0.499	0.486	2.64
Thallium	0.441	0.439	0.45
Vanadium	0.510	0.497	2.58
Zinc	0.545	0.530	2.79

Comments:

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288283D

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		0.250	0.000	0.25	100.00
Aluminum		1.900	0.000	2.00	95.00
Arsenic		0.470	0.000	0.50	94.00
Barium		2.200	0.280	2.00	96.00
Beryllium		0.049	0.000	0.05	98.00
Calcium		56.000	52.000	5.00	80.00
Cadmium		0.240	0.000	0.25	96.00
Cobalt		0.490	0.000	0.50	98.00
Chromium		0.200	0.000	0.20	100.00
Copper		0.260	0.000	0.25	104.00
Iron		0.980	0.000	1.00	98.00
Potassium		6.300	1.100	5.00	104.00
Magnesium		23.000	19.000	5.00	80.00
Manganese		0.480	0.000	0.50	96.00
Molybdenum		0.500	0.000	0.50	100.00
Sodium		17.000	12.000	5.00	100.00
Nickel		0.490	0.000	0.50	98.00
Lead		0.490	0.000	0.50	98.00
Antimony		0.500	0.014	0.50	97.20
Selenium		0.490	0.000	0.50	98.00
Titanium		0.480	0.000	0.50	96.00
Thallium		0.490	0.000	0.50	98.00
Vanadium		0.490	0.000	0.50	98.00
Zinc		0.530	0.046	0.50	96.80

Comments:

NR = No Recovery

288283DPS Batch - 587
b. 31.587

ICP SERIAL DILUTIONS

LAB SAMPLE NO

288283DSR

Lab Name: Raytheon Engineers Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Initial Result	Serial Dil. Result	% RPD
Silver	0.000	0.000	-----
Aluminum	0.000	0.000	-----
Arsenic	0.000	0.000	-----
Barium	0.280	0.000	200.00
Beryllium	0.000	0.000	-----
Calcium	52.000	52.000	0.00
Cadmium	0.000	0.000	-----
Cobalt	0.000	0.000	-----
Chromium	0.000	0.000	-----
Copper	0.000	0.000	-----
Iron	0.000	0.000	-----
Potassium	1.100	0.000	200.00
Magnesium	19.000	19.000	0.00
Manganese	0.000	0.000	-----
Molybdenum	0.000	0.000	-----
Sodium	12.000	13.000	8.00
Nickel	0.000	0.000	-----
Lead	0.000	0.000	-----
Antimony	0.014	0.000	200.00
Selenium	0.000	0.000	-----
Titanium	0.000	0.000	-----
Thallium	0.000	0.000	-----
Vanadium	0.000	0.000	-----
Zinc	0.046	0.000	200.00

Comments:

US EPA - CLP
7
LABORATORY CONTROL SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Solid LCS Source :_____

Aqueous LCS Source:_____

Analyte	Aqueous (mg/L) True	Found	%R
Aluminum	2.00	2.04	102.0
Antimony	0.50	0.51	101.7
Arsenic	0.50	0.48	96.4
Barium	2.00	2.02	101.0
Beryllium	0.05	0.05	98.8
Cadmium	0.25	0.25	99.8
Calcium	5.00	4.98	99.6
Chromium	0.20	0.20	100.0
Cobalt	0.50	0.50	99.6
Copper	0.25	0.25	99.6
Iron	1.00	1.00	99.7
Lead	0.50	0.50	99.4
Magnesium	5.00	4.93	98.6
Manganese	0.50	0.49	98.8
Molybdenum	0.50	0.50	99.2
Nickel	0.50	0.50	99.4
Potassium	5.00	4.82	96.4
Selenium	0.50	0.49	98.9
Titanium	0.50	0.49	98.2
Silver	0.25	0.25	100.8
Sodium	5.00	4.86	97.2
Thallium	0.50	0.44	87.5
Vanadium	0.50	0.50	100.2
Zinc	0.50	0.50	99.0

b- ·131.574 Batch- 587

Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

69672

LAB SAMPLE # : 289081B
MATRIX : WATER
CLIENT ID : SWC-009
Sample wt/vol : 5ML

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/23/2002
ID FILE : g18sun3.id
DATA FILE : R2072938

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	4 J	5
108-88-3	Toluene	ND	5
100-41-4	Ethylbenzene	5 J	5
330-20-7	m&p-Xylenes	77	5
95-47-6	o-Xylene	3 J	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69672

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072938.D Vial: 13
Acq On : 30 Jul 2002 2:53 Operator: NRT
Sample : 289081B Inst : 5973R
Misc : 5ML Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 07:48:29 2002 Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.81	168	463900	50.00 ug/l	0.01
26) 1,4-Difluorobenzene	13.13	114	588703	50.00 ug/l	0.00
40) Chlorobenzene-d5	17.79	117	480590	50.00 ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.26	152	271340	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	11.14	113	164119	48.49 ug/l	0.00
Spiked Amount 50.000			Recovery =	96.98%	
41) Toluene-d8	15.78	98	622696	45.75 ug/l	0.00
Spiked Amount 50.000			Recovery =	91.50%	
55) Bromofluorobenzene	19.45	94	30283	48.71 ug/l	0.00
Spiked Amount 50.000			Recovery =	97.42%	
Target Compounds					Qvalue
21) Chloroform	10.94	83	493219	66.51 ug/l	100
30) Benzene	12.78	78	58680	4.29 ug/l	100
35) Bromodichloromethane	13.81	83	47327	10.55 ug/l	96
50) Ethylbenzene	18.10	91	108102	5.04 ug/l	100
51) m&p-Xylenes	18.36	106	633909	77.22 ug/l	98
52) o-Xylene	18.91	106	24238	3.26 ug/l	99
77) Naphthalene	24.84	128	134293	25.84 ug/l	100

JPP 7/31/02

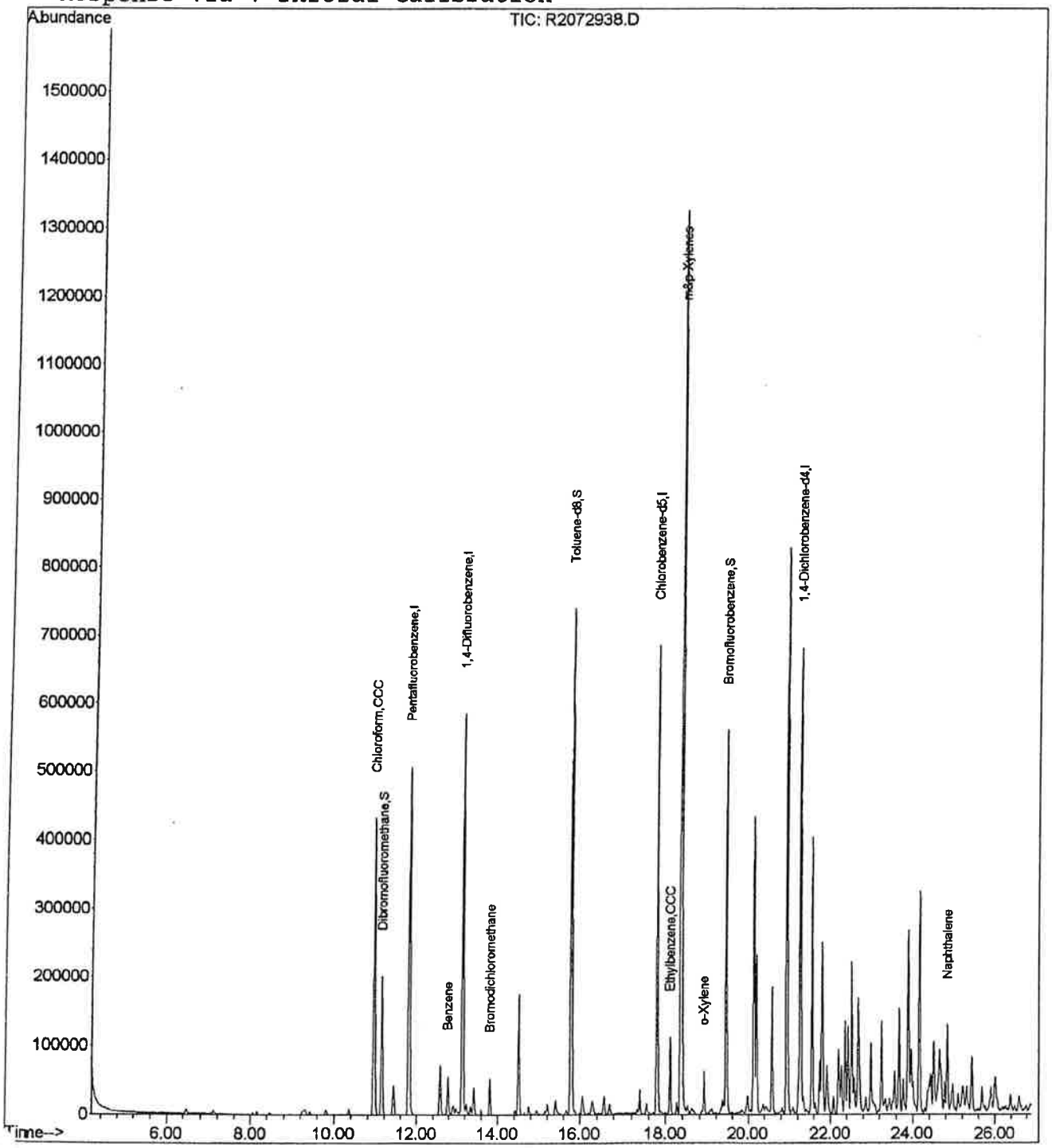
PSS 7/30

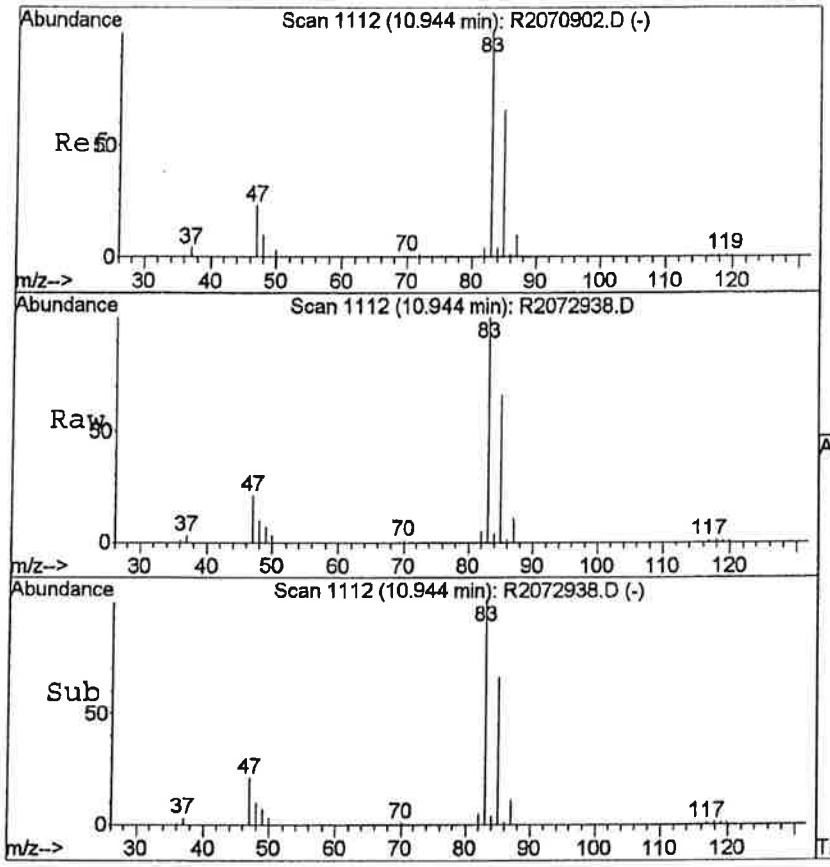
(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072938.D Vial: 13
Acq On : 30 Jul 2002 2:53 Operator: NRT
Sample : 289081B Inst : 5973R
Misc : 5ML Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 30 8:35 2002 Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration

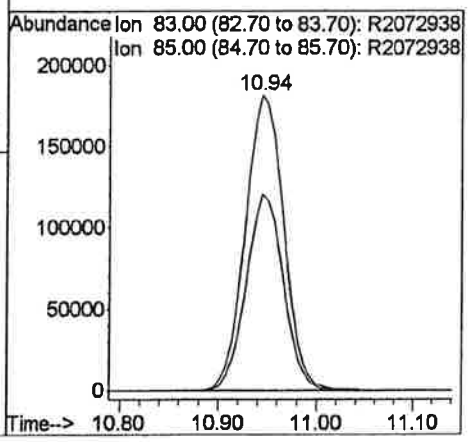


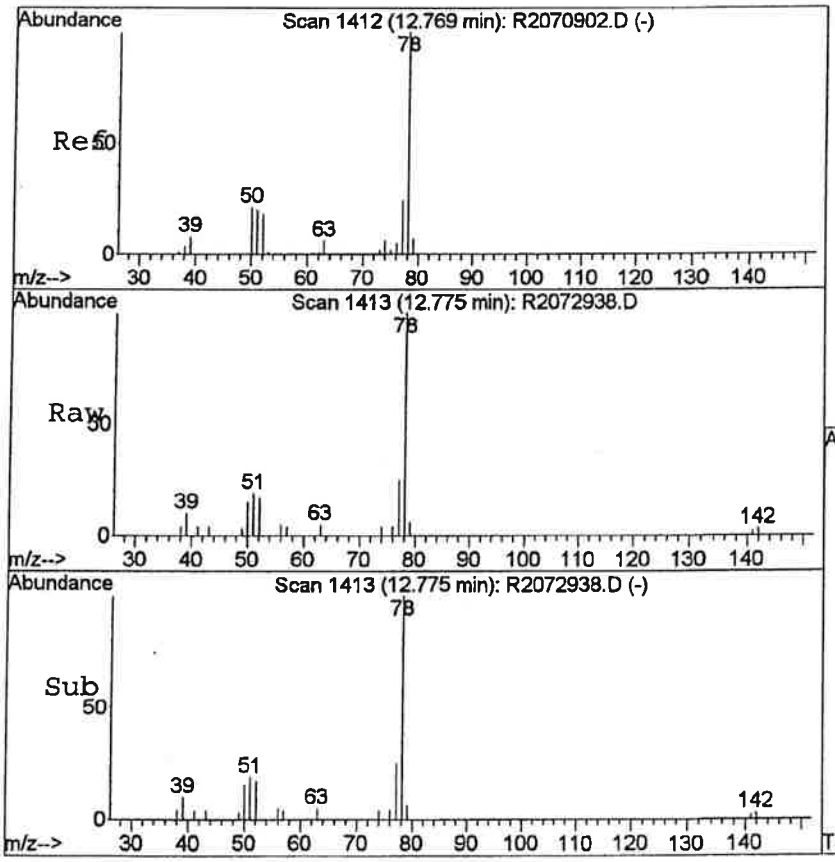


#21
Chloroform
Concen: 66.51 ug/l
RT: 10.94 min Scan# 1112
Delta R.T. 0.01 min
Lab File: R2072938.D
Acq: 30 Jul 2002 2:53

Tgt Ion: 83 Resp: 493219

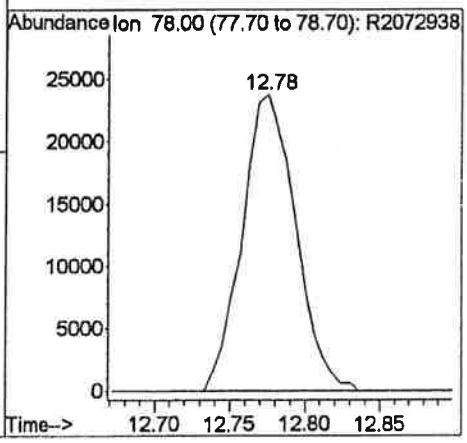
Ion	Ratio	Lower	Upper
83	100		
85	64.4	44.1	84.1

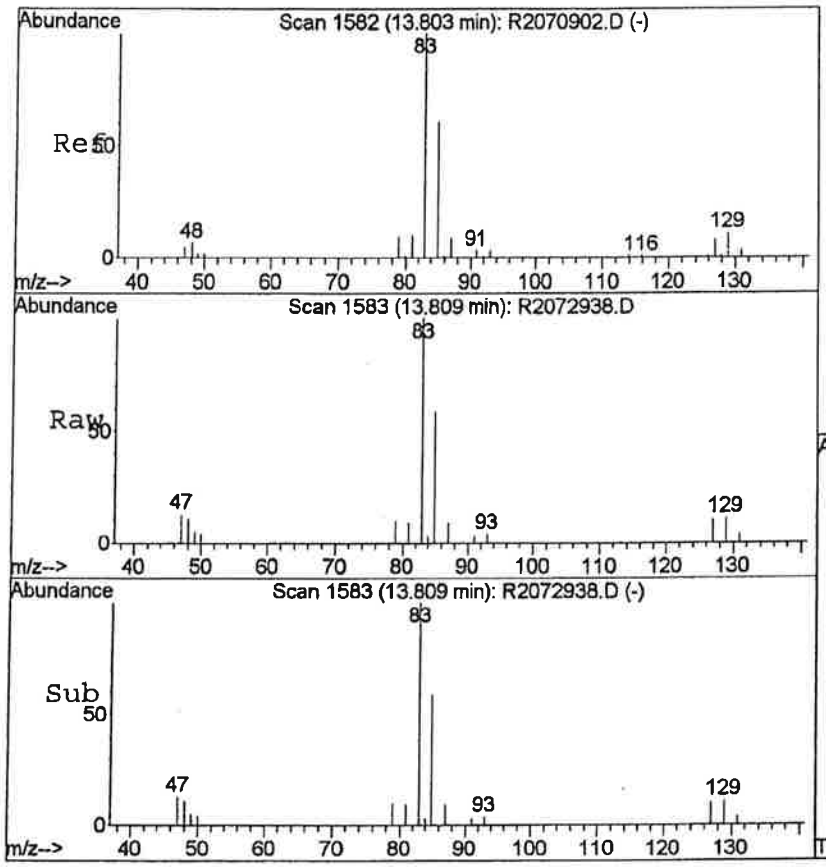




#30
Benzene
Concen: 4.29 ug/l
RT: 12.78 min Scan# 1413
Delta R.T. 0.01 min
Lab File: R2072938.D
Acq: 30 Jul 2002 2:53

Tgt Ion: 78 Resp: 58680

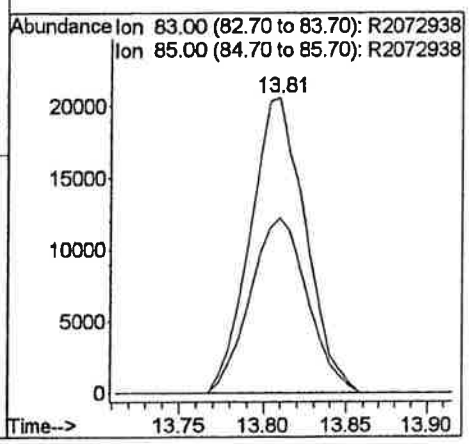


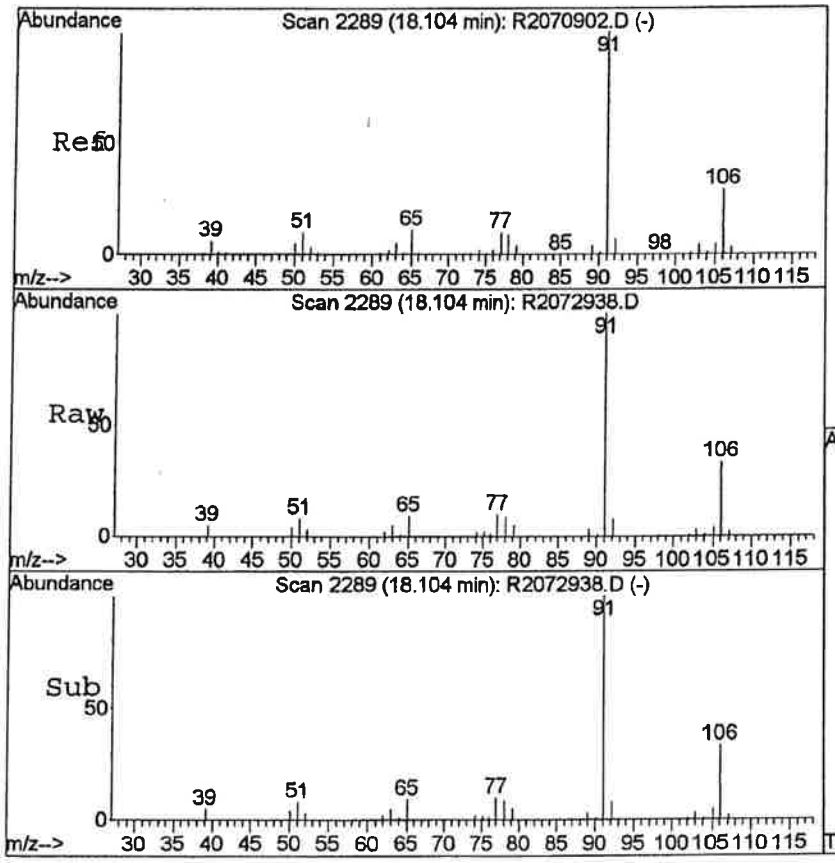


#35
Bromodichloromethane
Concen: 10.55 ug/l
RT: 13.81 min Scan# 1583
Delta R.T. 0.01 min
Lab File: R2072938.D
Acq: 30 Jul 2002 2:53

Tgt Ion: 83 Resp: 47327

Ion	Ratio	Lower	Upper
83	100		
85	61.9	45.0	85.0

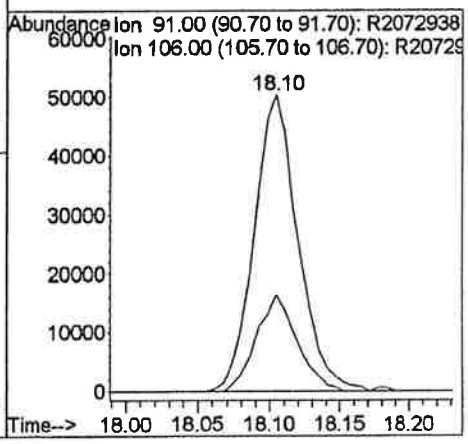


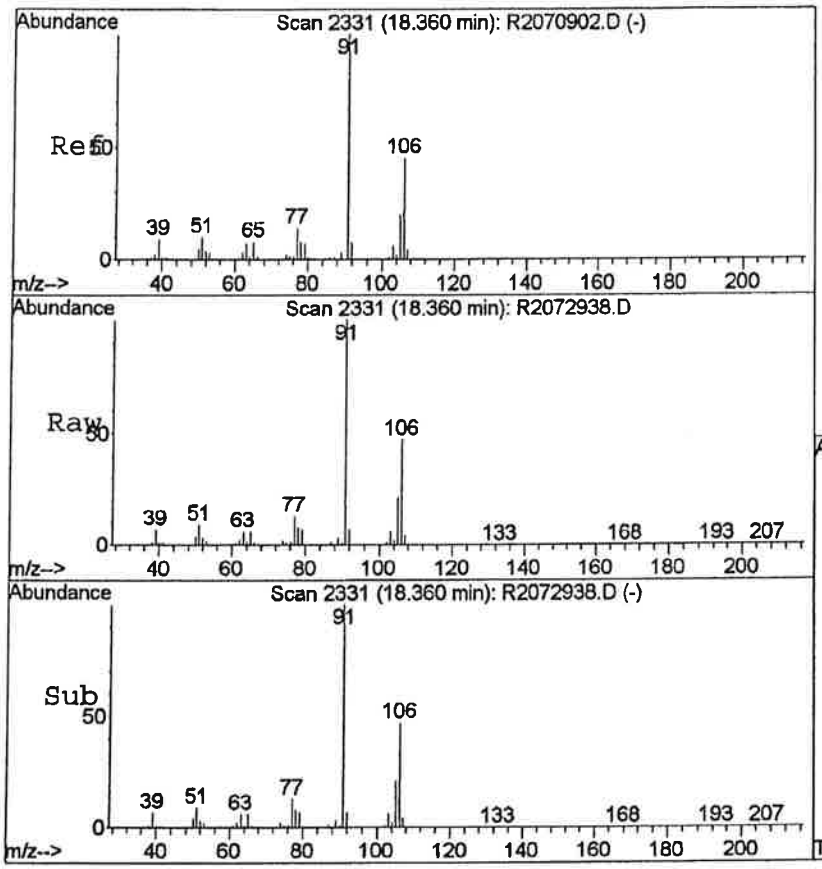


#50
Ethylbenzene
Concen: 5.04 ug/l
RT: 18.10 min Scan# 2289
Delta R.T. 0.00 min
Lab File: R2072938.D
Acq: 30 Jul 2002 2:53

Tgt Ion: 91 Resp: 108102

Ion	Ratio	Lower	Upper
91	100		
106	30.3	10.5	50.5

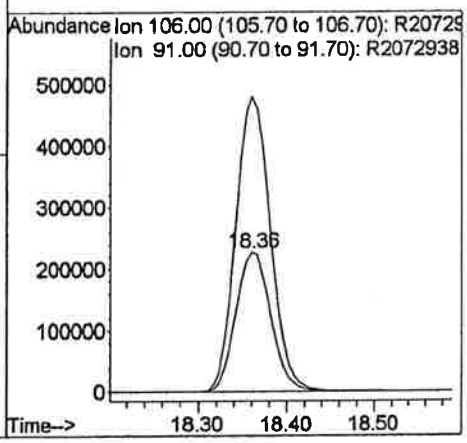


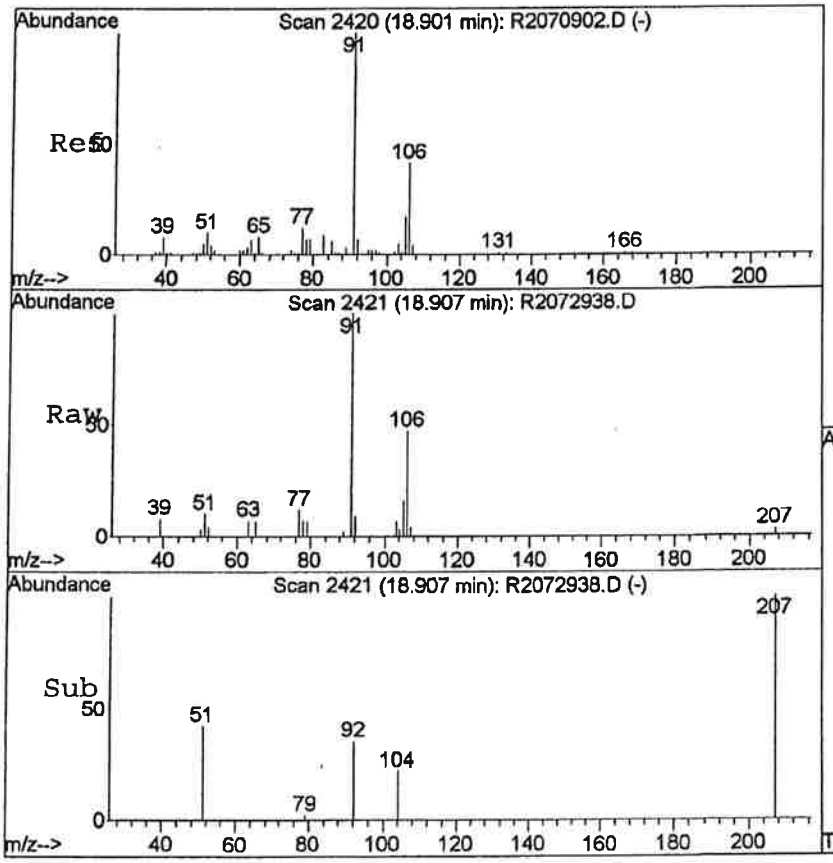


#51
m&p-Xylenes
Concen: 77.22 ug/l
RT: 18.36 min Scan# 2331
Delta R.T. -0.01 min
Lab File: R2072938.D
Acq: 30 Jul 2002 2:53

Tgt Ion:106 Resp: 633909

Ion	Ratio	Lower	Upper
106	100		
91	209.1	169.8	254.6

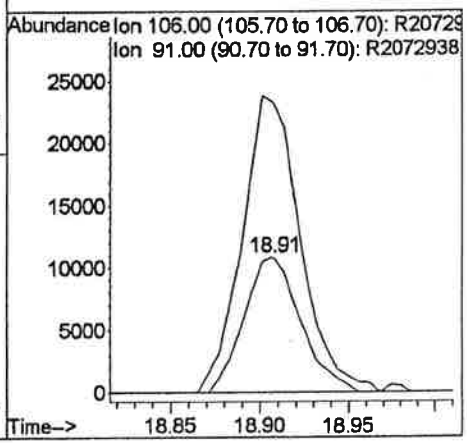


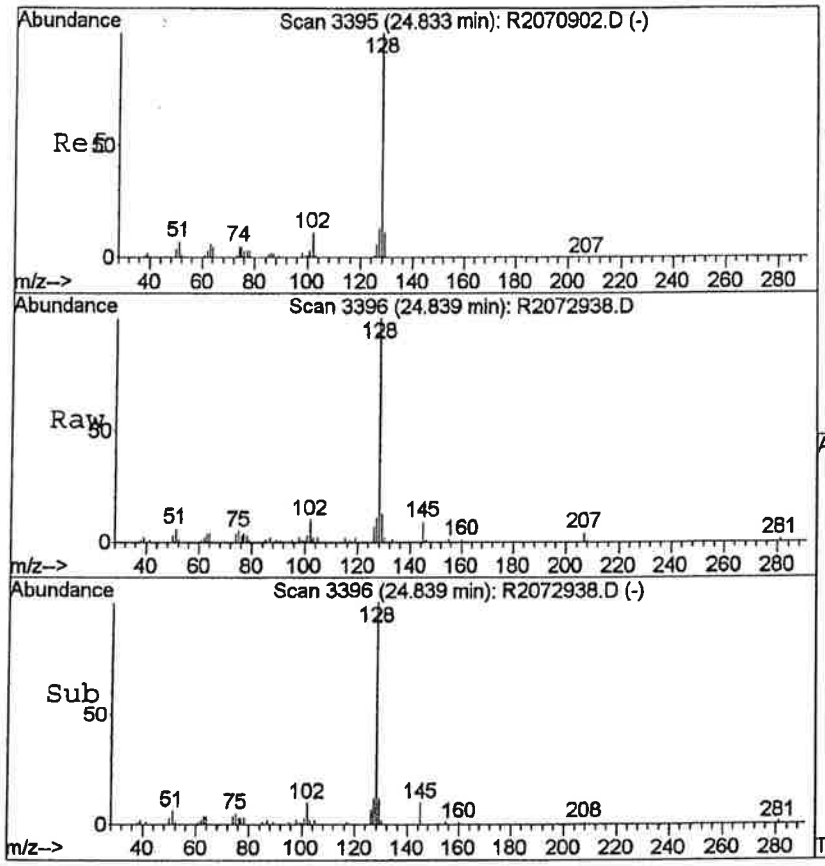


#52
o-Xylene
Concen: 3.26 ug/l
RT: 18.91 min Scan# 2421
Delta R.T. 0.00 min
Lab File: R2072938.D
Acq: 30 Jul 2002 2:53

Tgt Ion:106 Resp: 24238

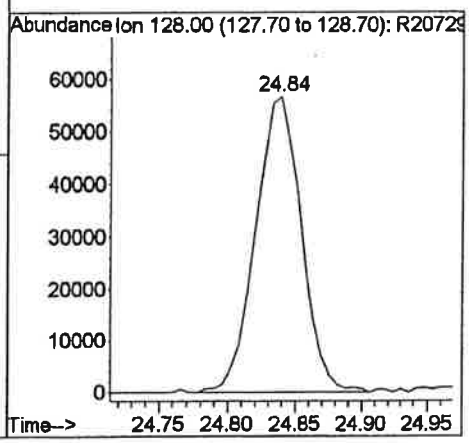
Ion	Ratio	Lower	Upper
106	100		
91	223.9	181.0	271.4





#77
Naphthalene
Concen: 25.84 ug/l
RT: 24.84 min Scan# 3396
Delta R.T. 0.00 min
Lab File: R2072938.D
Acq: 30 Jul 2002 2:53

Tgt Ion:128 Resp: 134293



Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289082B
MATRIX : WATER
CLIENT ID : SWC-010
Sample wt/vol : 5ML

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/23/2002
ID FILE : g18sun3.id
DATA FILE : R2072939

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	130	5
108-88-3	Toluene	18	5
100-41-4	Ethylbenzene	77	5
330-20-7	m&p-Xylenes	390	5
95-47-6	o-Xylene	91	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69672

Quantitation Report (QT Reviewed)

Page 0033

696

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072939.D
Acq On : 30 Jul 2002 3:25
Sample : 289082B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 07:48:34 2002

Vial: 14
Operator: NRT
Inst : 5973R
Multiplr: 1.00
Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.81	168	536643	50.00 ug/l	0.01
26) 1,4-Difluorobenzene	13.13	114	680073	50.00 ug/l	0.00
40) Chlorobenzene-d5	17.79	117	541916	50.00 ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.26	152	297768	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	11.14	113	186424	47.61 ug/l	0.00
Spiked Amount 50.000			Recovery =	95.22%	
41) Toluene-d8	15.78	98	705714	45.98 ug/l	0.00
Spiked Amount 50.000			Recovery =	91.96%	
55) Bromofluorobenzene	19.44	94	31220	44.53 ug/l	0.00
Spiked Amount 50.000			Recovery =	89.06%	
Target Compounds					Qvalue
14) Methyl-t-butyl Ether	9.42	73	299685	49.61 ug/l	100
16) Methylene Chloride	8.05	84	2635	~~Below Cal #~~	~~85~~ JPP 7/31
21) Chloroform	10.94	83	539488	62.88 ug/l	100
30) Benzene	12.78	78	2088786	132.34 ug/l	100
35) Bromodichloromethane	13.81	83	49645	9.58 ug/l	97
44) Toluene	15.88	92	208946	18.23 ug/l	96
50) Ethylbenzene	18.10	91	1864892	77.08 ug/l	97
51) m&p-Xylenes	18.36	106	3646265	393.93 ug/l	97
52) o-Xylene	18.91	106	766263	91.33 ug/l	93
56) Isopropyl Benzene	19.39	105	151511	5.52 ug/l	97
77) Naphthalene	24.84	128	379253	66.50 ug/l	100

PSS 7/30

JPP 7/31/02

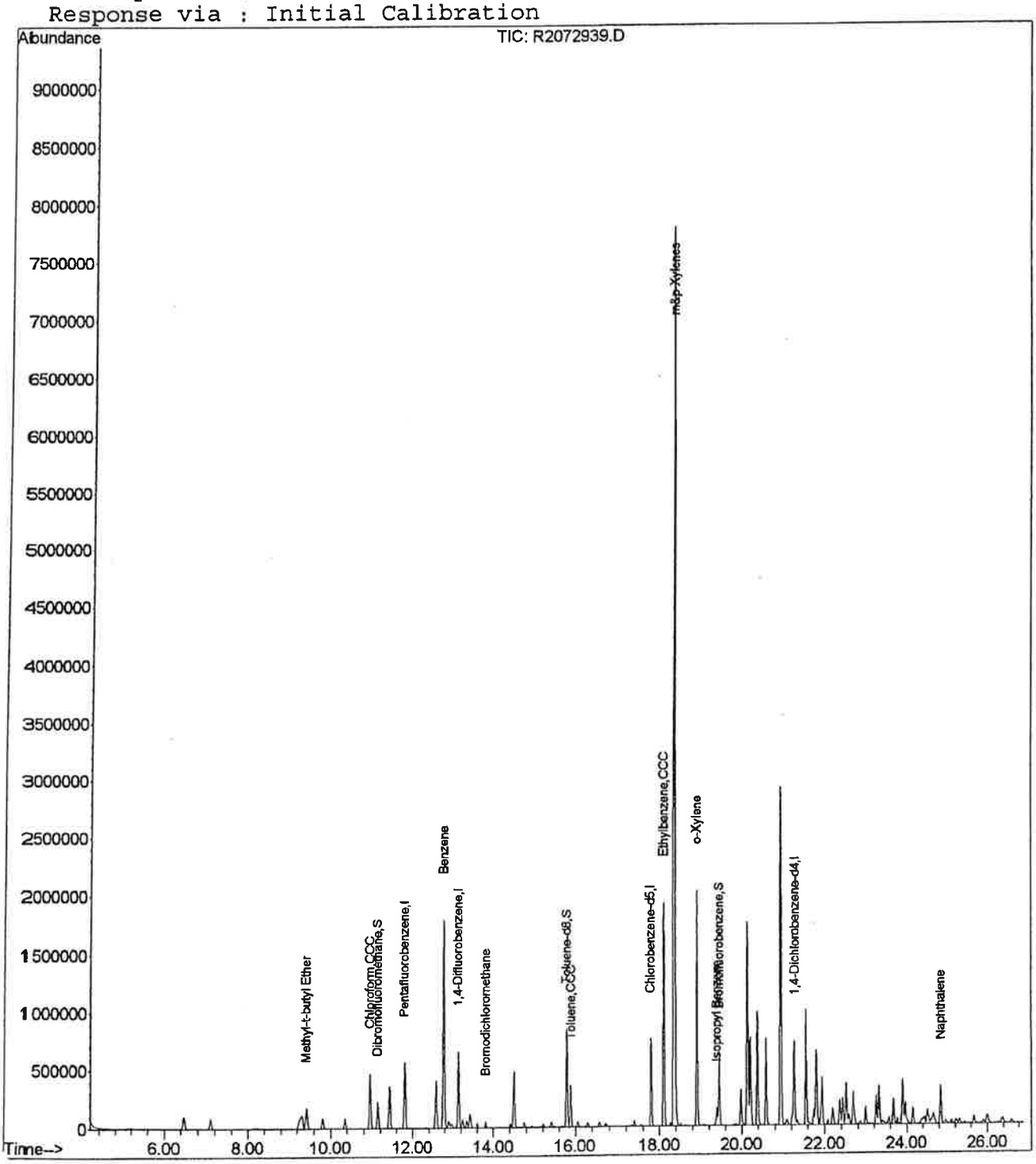
(#) = qualifier out of range (m) = manual integration

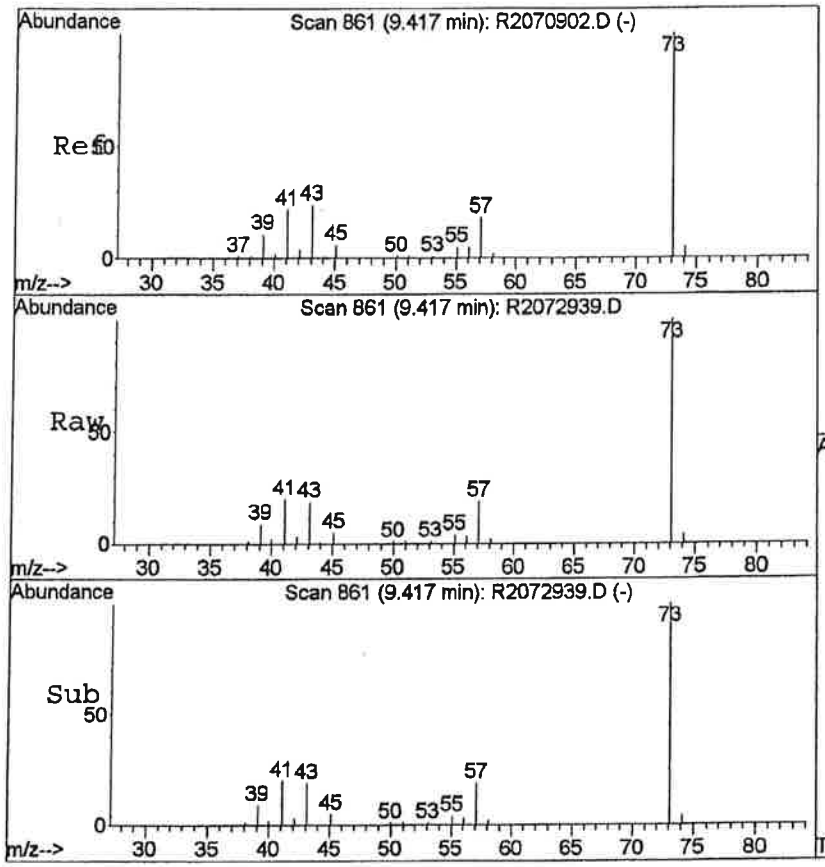
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072939.D
Acq On : 30 Jul 2002 3:25
Sample : 289082B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 30 8:37 2002

Vial: 14
Operator: NRT
Inst : 5973R
Multiplr: 1.00
Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration

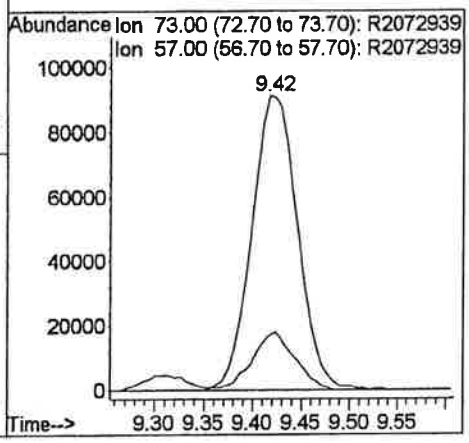


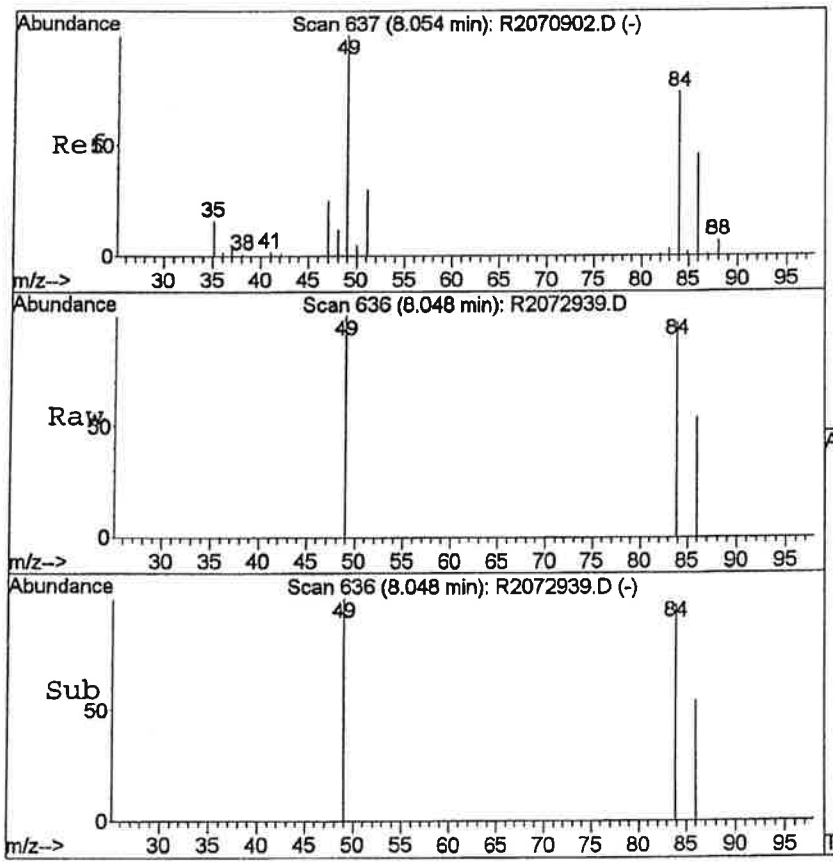


#14
Methyl-t-butyl Ether
Concen: 49.61 ug/l
RT: 9.42 min Scan# 861
Delta R.T. 0.00 min
Lab File: R2072939.D
Acq: 30 Jul 2002 3:25

Tgt Ion: 73 Resp: 299685

Ion	Ratio	Lower	Upper
73	100		
57	18.3	14.6	22.0

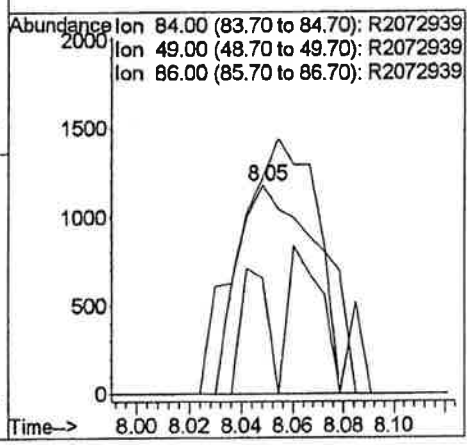


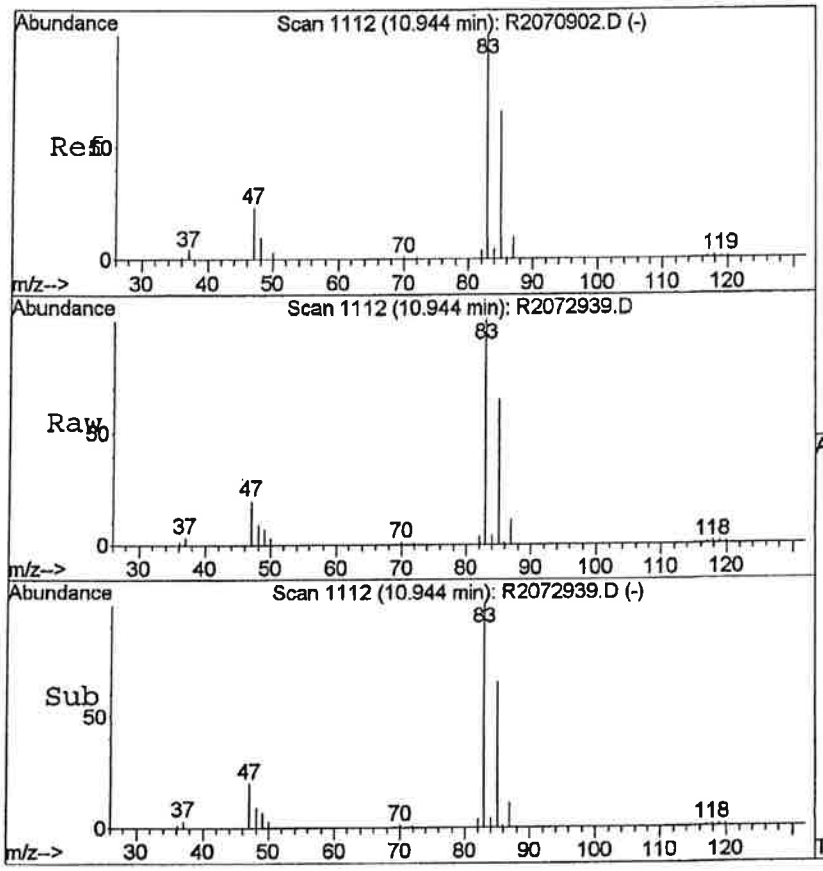


#16
Methylene Chloride
Concen: Below Cal
RT: 8.05 min Scan# 636
Delta R.T. 0.00 min
Lab File: R2072939.D
Acq: 30 Jul 2002 3:25

Tgt Ion: 84 Resp: 2635

Ion	Ratio	Lower	Upper
84	100		
49	122.8	103.7	143.7
86	28.8	41.7	81.7#

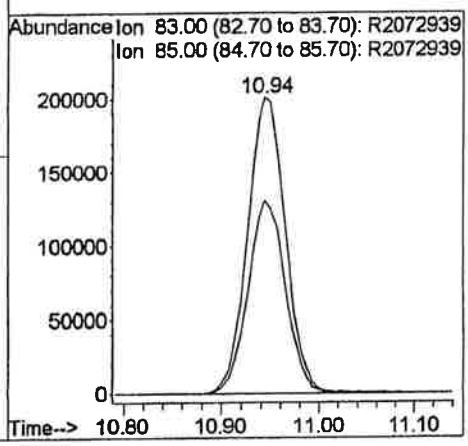


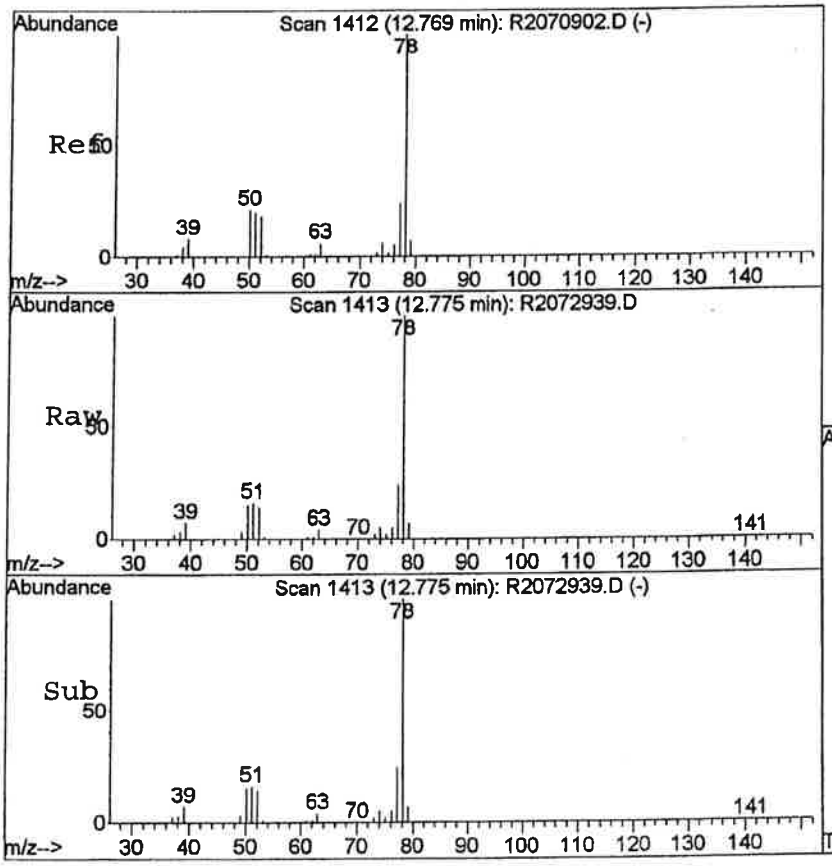


#21
Chloroform
Concen: 62.88 ug/l
RT: 10.94 min Scan# 1112
Delta R.T. 0.01 min
Lab File: R2072939.D
Acq: 30 Jul 2002 3:25

Tgt Ion: 83 Resp: 539488

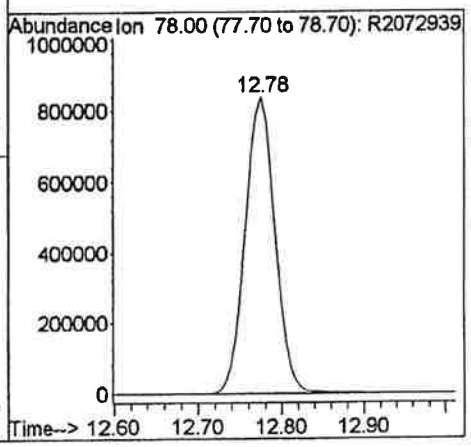
Ion	Ratio	Lower	Upper
83	100		
85	64.5	44.1	84.1

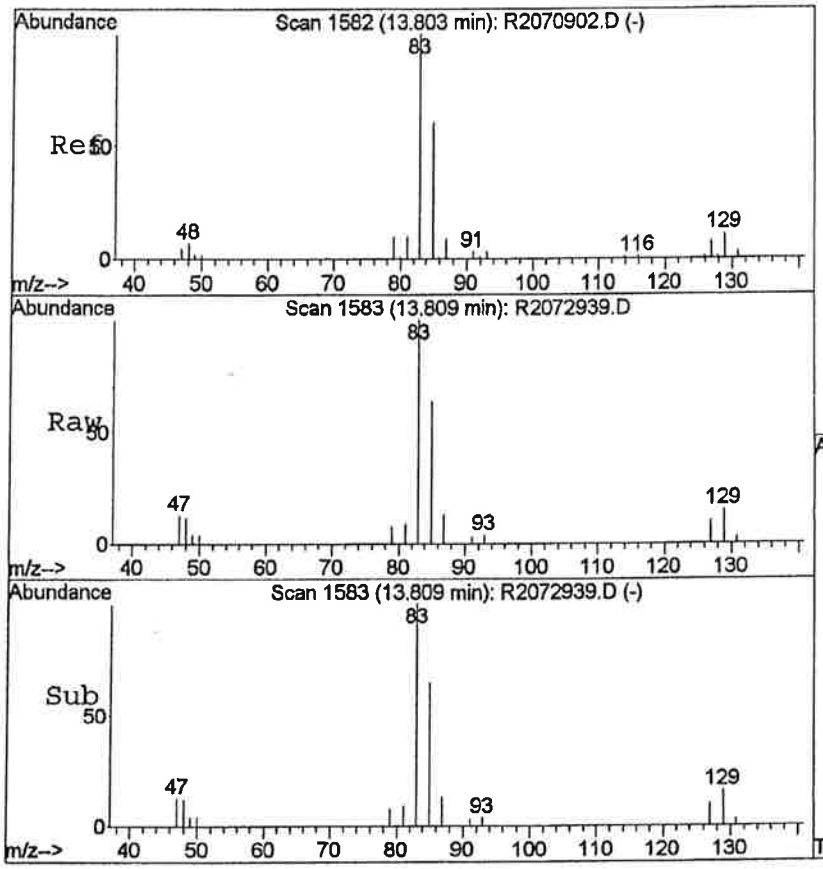




#30
Benzene
Concen: 132.34 ug/l
RT: 12.78 min Scan# 1413
Delta R.T. 0.01 min
Lab File: R2072939.D
Acq: 30 Jul 2002 3:25

Tgt Ion: 78 Resp: 2088786

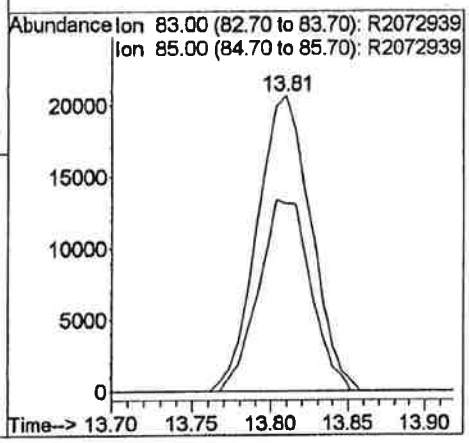


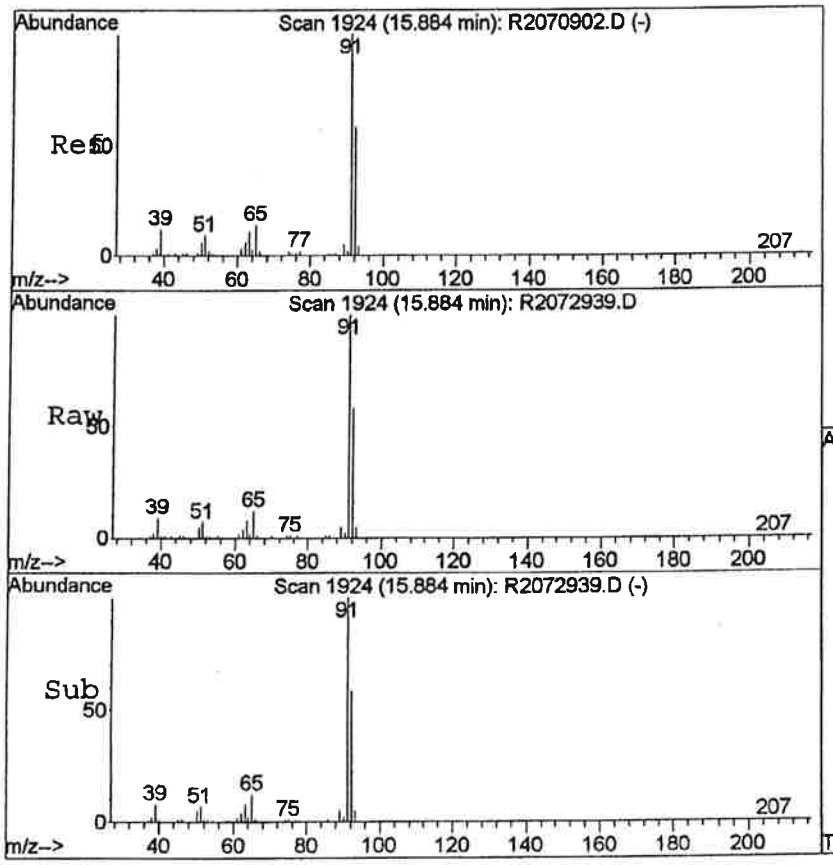


#35
Bromodichloromethane
Concen: 9.58 ug/l
RT: 13.81 min Scan# 1583
Delta R.T. 0.01 min
Lab File: R2072939.D
Acq: 30 Jul 2002 3:25

Tgt Ion: 83 Resp: 49645

Ion	Ratio	Lower	Upper
83	100		
85	62.9	45.0	85.0

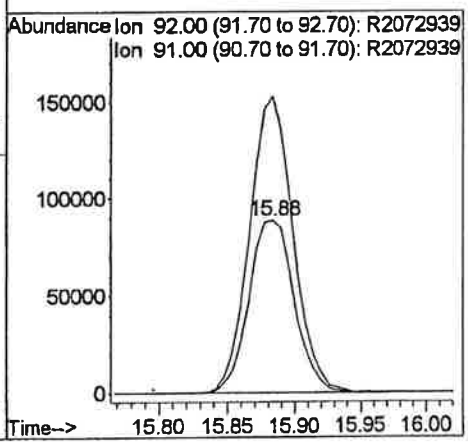


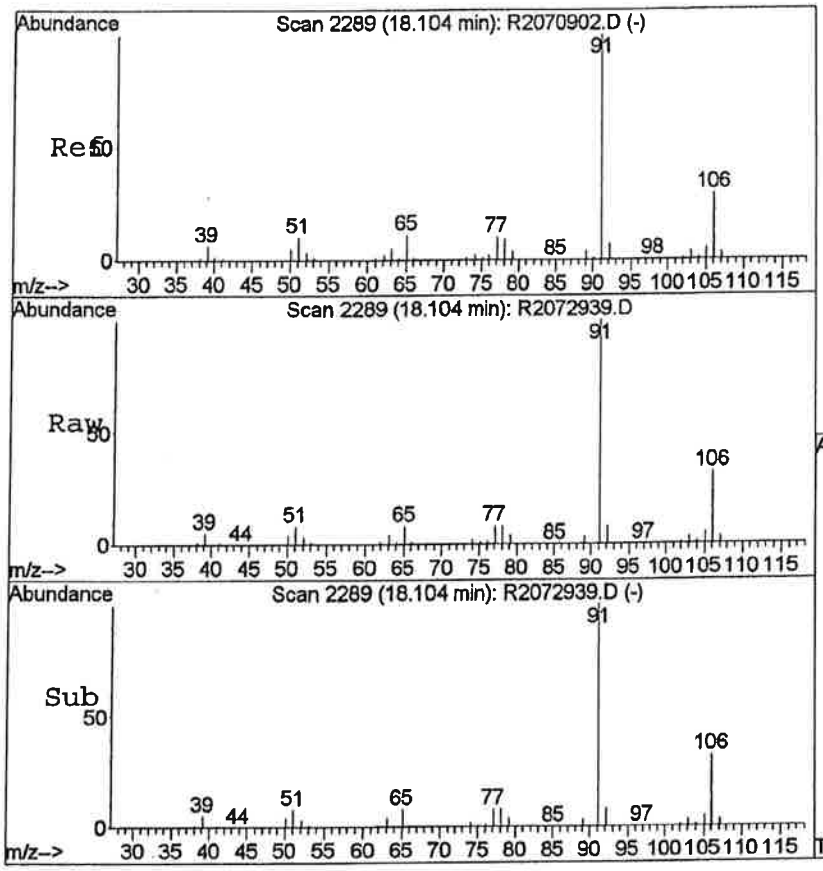


#44
Toluene
Concen: 18.23 ug/l
RT: 15.88 min Scan# 1924
Delta R.T. 0.01 min
Lab File: R2072939.D
Acq: 30 Jul 2002 3:25

Tgt Ion: 92 Resp: 208946

Ion	Ratio	Lower	Upper
92	100		
91	165.0	149.8	189.8

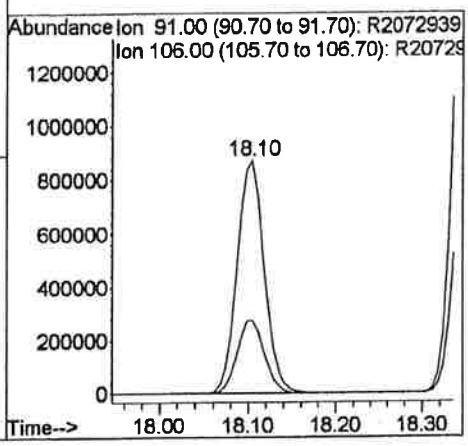


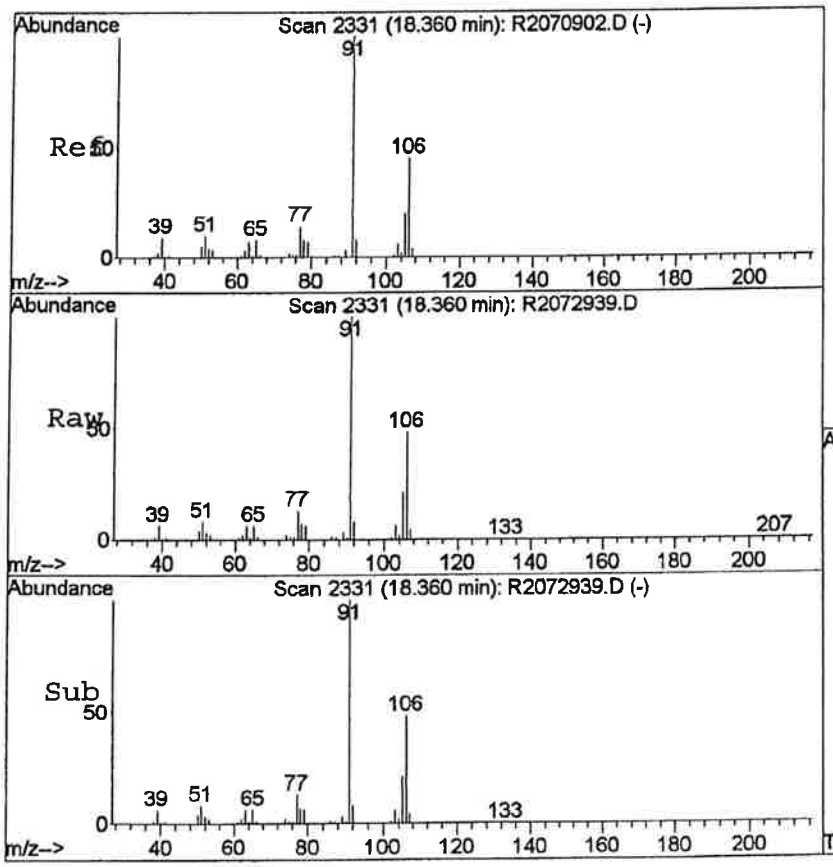


#50
Ethylbenzene
Concen: 77.08 ug/l
RT: 18.10 min Scan# 2289
Delta R.T. 0.00 min
Lab File: R2072939.D
Acq: 30 Jul 2002 3:25

Tgt Ion: 91 Resp: 1864892

Ion	Ratio	Lower	Upper
91	100		
106	32.0	10.5	50.5

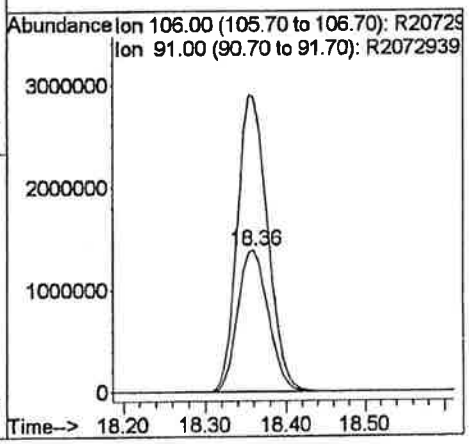


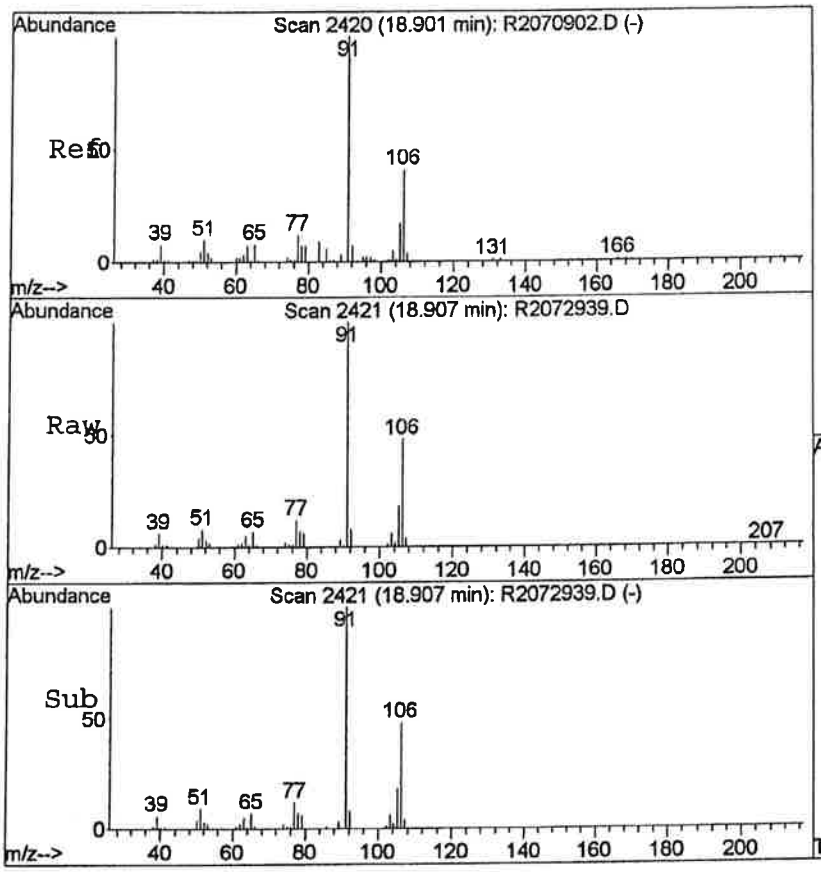


#51
m&p-Xylenes
Concen: 393.93 ug/l
RT: 18.36 min Scan# 2331
Delta R.T. -0.01 min
Lab File: R2072939.D
Acq: 30 Jul 2002 3:25

Tgt Ion:106 Resp: 3646265

Ion	Ratio	Lower	Upper
106	100		
91	206.9	169.8	254.6

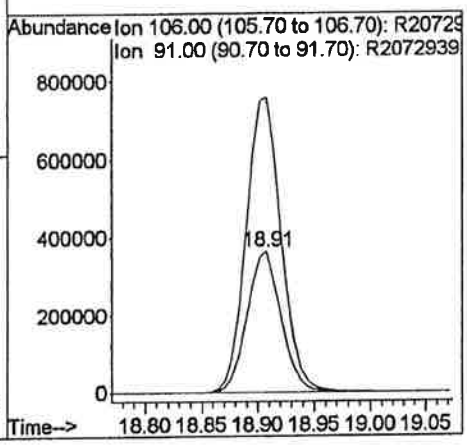


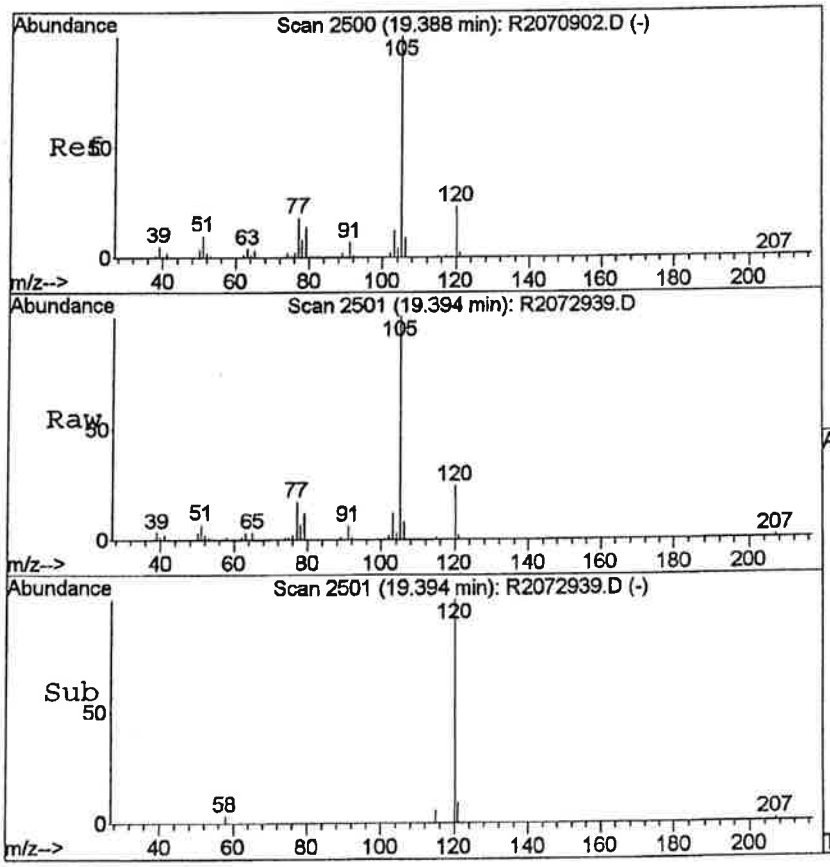


#52
o-Xylene
Concen: 91.33 ug/l
RT: 18.91 min Scan# 2421
Delta R.T. 0.00 min
Lab File: R2072939.D
Acq: 30 Jul 2002 3:25

Tgt Ion:106 Resp: 766263

Ion	Ratio	Lower	Upper
106	100		
91	214.6	181.0	271.4

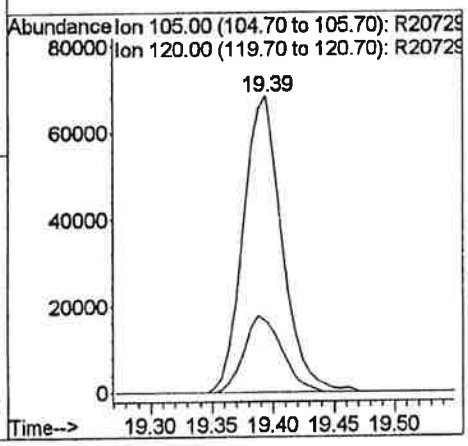


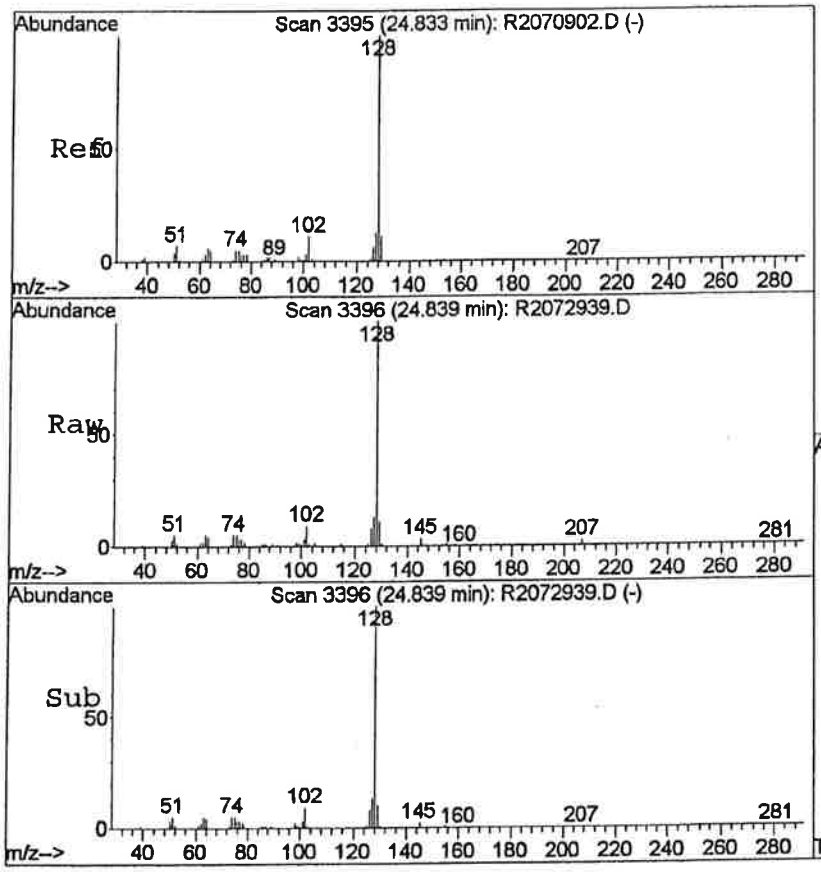


#56
Isopropyl Benzene
Concen: 5.52 ug/l
RT: 19.39 min Scan# 2501
Delta R.T. 0.00 min
Lab File: R2072939.D
Acq: 30 Jul 2002 3:25

Tgt Ion:105 Resp: 151511

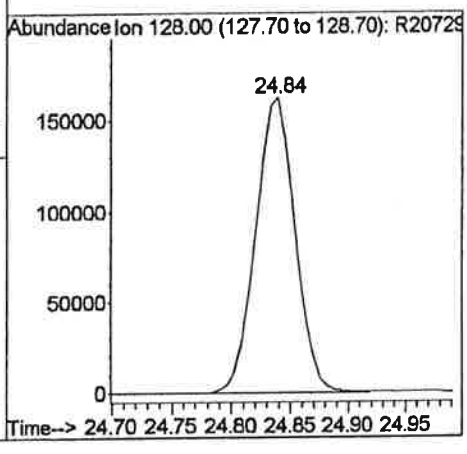
Ion	Ratio	Lower	Upper
105	100		
120	25.3	3.7	43.7





#77
Naphthalene
Concen: 66.50 ug/l
RT: 24.84 min Scan# 3396
Delta R.T. 0.00 min
Lab File: R2072939.D
Acq: 30 Jul 2002 3:25

Tgt Ion:128 Resp: 379253



2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Washington Environmental Lab. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

	EPA SAMPLE NO.	SMC1 DFM #	SMC2 TOL8 #	SMC3 BFB #	TOT OUT
01	VBLK 072902	107	95	110	0
02	288671B	114	94	112	0
03	288810B	116	93	112	0
04	289001B	112	93	109	0
05	289002B	111	92	108	0
06	289081B	97	92	97	0
07	289082B	95	92	89	0

QC LIMITS

SMC1	DFM	=	Dibromofluoromethane	(86-118)
SMC2	TOL8	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(86-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK 072902

Lab Name: Washington Environmental Lab. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

Lab File ID: R2072927.D Lab Sample ID: METHOD_BLANK

Date Analyzed: 7/29/2002 Time Analyzed: 20:59

GC Column: DB-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5973R

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	288671B	288671B	R2072930.D	22:35
02	288810B	288810B	R2072933.D	0:12
03	289001B	289001B	R2072936.D	1:48
04	289002B	289002B	R2072937.D	2:21
05	289081B	289081B	R2072938.D	2:53
06	289082B	289082B	R2072939.D	3:25
07	289920AMSD	288920AMSD	R2072941.D	4:33
08	289920A	288920A	R2072942.D	5:10
09	288921A	288921A	R2072943.D	5:47
10	288922A	288922A	R2072944.D	6:23
11	288923A	288923A	R2072945.D	7:00

COMMENTS

Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : METHOD_BLANK
MATRIX : WATER
CLIENT ID :
Sample wt/vol : 5ML

ANALYSIS DATE : 07/29/2002
RECVD DATE :
ID FILE : g18sun3.id
DATA FILE : R2072927

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	ND	5
108-88-3	Toluene	ND	5
100-41-4	Ethylbenzene	ND	5
330-20-7	m&p-Xylenes	ND	5
95-47-6	o-Xylene	ND	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY

Quantitation Report (QT Reviewed)

Page 0044

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072927.D
Acq On : 29 Jul 2002 20:59
Sample : METHOD_BLANK 072902R4
Misc : 5ML
IS Integration Params: rteint.p
Quant Time: Jul 29 21:50:01 2002

Vial: 2
Operator: NRT
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.80	168	318703	50.00 ug/l	0.00
26) 1,4-Difluorobenzene	13.13	114	400395	50.00 ug/l	0.00
40) Chlorobenzene-d5	17.79	117	317627	50.00 ug/l	0.00
58) 1,4-Dichlorobenzene-d4	21.27	152	153715	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	11.14	113	124541	53.56 ug/l	0.00
Spiked Amount 50.000			Recovery	= 107.12%	
41) Toluene-d8	15.78	98	427798	47.56 ug/l	0.00
Spiked Amount 50.000			Recovery	= 95.12%	
55) Bromofluorobenzene	19.44	94	22649	55.12 ug/l	0.00
Spiked Amount 50.000			Recovery	= 110.24%	

Target Compounds Qvalue

JMP 7/31/02

RSS 7/30

(#) = qualifier out of range (m) = manual integration

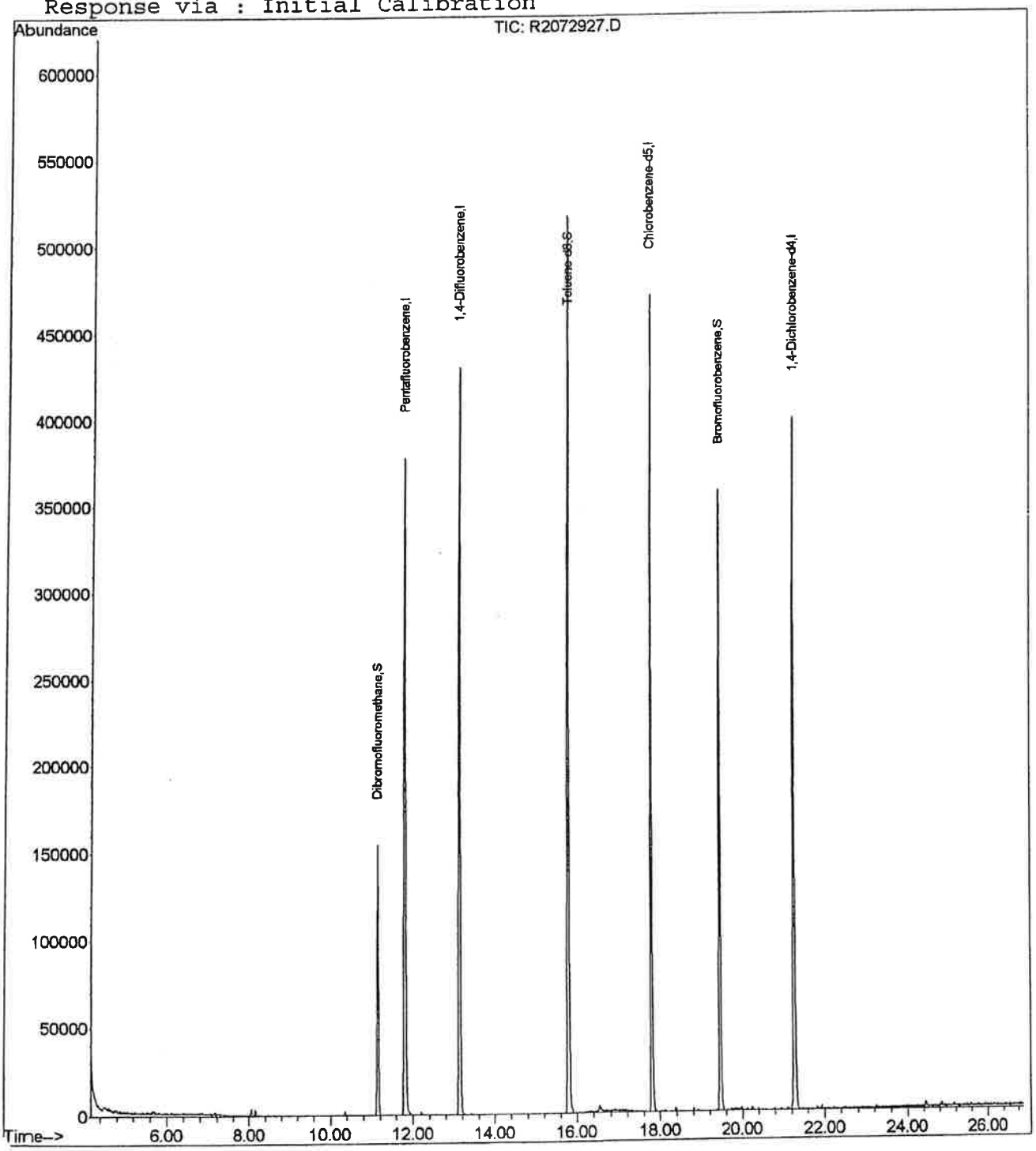
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\072902R4\R2072927.D
Acq On : 29 Jul 2002 20:59
Sample : METHOD_BLANK 072902R4
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Jul 29 21:50 2002

Vial: 2
Operator: NRT
Inst : 5973R
Multiplr: 1.00

Quant Results File: R0729STCL.

Method : C:\MSDCHEM\1\METHODS\R0729STCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Mon Jul 29 19:01:21 2002
Response via : Initial Calibration



Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289081A
MATRIX : WATER
CLIENT ID : SWC-009
Sample wt/vol : 930

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/23/2002
ID FILE : g08.id
DATA FILE : U2072915

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	11
62-53-3	Aniline	U	11
111-44-4	Bis(2-chloroethyl)ether	U	11
95-57-8	2-Chlorophenol	U	11
541-73-1	1,3-Dichlorobenzene	U	11
106-46-7	1,4-Dichlorobenzene	U	11
100-51-6	Benzyl alcohol	U	11
95-50-1	1,2-Dichlorobenzene	U	11
95-48-7	2-Methylphenol	U	11
108-60-1	Bis(2-chloroisopropyl) ether	U	11
106-44-5	4-Methylphenol	U	11
621-64-7	N-Nitrosodi-n-propylamine	U	11
67-72-1	Hexachloroethane	U	11
98-95-3	Nitrobenzene	U	11
78-59-1	Isophorone	U	11
88-75-5	2-Nitrophenol	U	11
105-67-9	2,4-Dimethylphenol	U	11
65-85-0	Benzoic acid	U	54
111-91-1	Bis(2-chloroethoxy)methane	U	11
120-83-2	2,4-Dichlorophenol	U	11
120-82-1	1,2,4-Trichlorobenzene	U	11
91-20-3	Naphthalene	9 J	11
106-47-8	4-Chloroaniline	U	11
87-68-3	Hexachlorobutadiene	U	11
59-50-7	4-Chloro-3-methylphenol	U	11
91-57-6	2-Methylnaphthalene	26	11
77-47-4	Hexachlorocyclopentadiene	U	11
88-06-2	2,4,6-Trichlorophenol	U	11
95-95-4	2,4,5-Trichlorophenol	U	22
91-58-7	2-Chloronaphthalene	U	11
88-74-4	2-Nitroaniline	U	27
131-11-3	Dimethyl phthalate	U	11
208-96-8	Acenaphthylene	U	11
606-20-2	2,6-Dinitrotoluene	U	11

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289081A
MATRIX : WATER
CLIENT ID : SWC-009
Sample wt/vol: 930

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/23/2002
ID FILE : g08.id
DATA FILE : U2072915

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	27
83-32-9	Acenaphthene	U	11
51-28-5	2,4-Dinitrophenol	U	27
100-02-7	4-Nitrophenol	U	27
132-64-9	Dibenzofuran	U	11
121-14-2	2,4-Dinitrotoluene	U	11
84-66-2	Diethyl phthalate	U	11
7005-72-3	4-Chlorophenyl phenyl ether	U	11
86-73-7	Fluorene	U	11
534-52-1	4,6-Dinitro-2-methylphenol	U	27
100-01-6	4-Nitroaniline	U	27
86-30-6	N-Nitrosodiphenylamine	U	11
101-55-3	4-Bromophenyl phenyl ether	U	11
118-74-1	Hexachlorobenzene	U	11
8 86-5	Pentachlorophenol	U	27
85-01-8	Phenanthrene	U	11
120-12-7	Anthracene	U	11
84-74-2	Di-n-butyl phthalate	U	11
206-44-0	Fluoranthene	U	11
129-00-0	Pyrene	U	11
85-68-7	Butyl benzyl phthalate	U	11
91-94-1	3,3'-Dichlorobenzidine	U	11
56-55-3	Benz(a)anthracene	U	11
218-01-9	Chrysene	U	11
117-81-7	Bis(2-ethylhexyl) phthalate	U	11
117-84-0	Di-n-octyl phthalate	U	11
205-99-2	Benzo(b)fluoranthene	U	11
207-08-9	Benzo(k)fluoranthene	U	11
50-32-8	Benzo(a)pyrene	U	11
193-39-5	Indeno(1,2,3-cd)pyrene	U	11
53-70-3	Dibenz(a,h)anthracene	U	11
191-24-2	Benzo(ghi)perylene	U	11

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1 1 SUMMARY 69672

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072915.D Vial: 16
Acq On : 30 Jul 2002 3:04 am Operator: SHERREE
Sample : 289081A SWC-009 Inst : Instrumen
Misc : 930/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 03:41:23 2002 Quant Results File: UBNA0722.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0722

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.02	152	117309	40.00 ul/l	0.09
19) Naphthalene-d8	12.95	136	477845	40.00 ul/l	0.09
34) Acenaphthene-d10	17.24	164	292803	40.00 ul/l	0.09
54) Phenanthrene-d10	20.84	188	450062	40.00 ul/l	0.10
67) Chrysene-d12	27.38	240	296129	40.00 ul/l	0.11
76) Perylene-d12	31.06	264	189859	40.00 ul/l	0.16
System Monitoring Compounds					
4) 2-Fluorophenol	7.41	112	345674	86.26 ul/l	0.08
Spiked Amount 200.000			Recovery =	43.13%	
6) Phenol-d6	9.27	99	505690	98.84 ul/l	0.07
Spiked Amount 200.000			Recovery =	49.42%	
20) Nitrobenzene-d5	11.30	82	284829	55.41 ul/l	0.08
Spiked Amount 100.000			Recovery =	55.41%	
38) 2-Fluorobiphenyl	15.58	172	466748	50.78 ul/l	0.09
Spiked Amount 100.000			Recovery =	50.78%	
58) 2,4,6-Tribromophenol	19.20	330	138528	139.55 ul/l	0.10
Spiked Amount 200.000			Recovery =	69.78%	
70) Terphenyl-d14	24.80	244	832243	111.97 ul/l	0.12
Spiked Amount 100.000			Recovery =	111.97%	
Target Compounds					Qvalue
29) Naphthalene	13.00	128	99893	8.03 ul/l #	96
33) 2-Methylnaphthalene	14.65	142	188857	24.23 ul/l	98

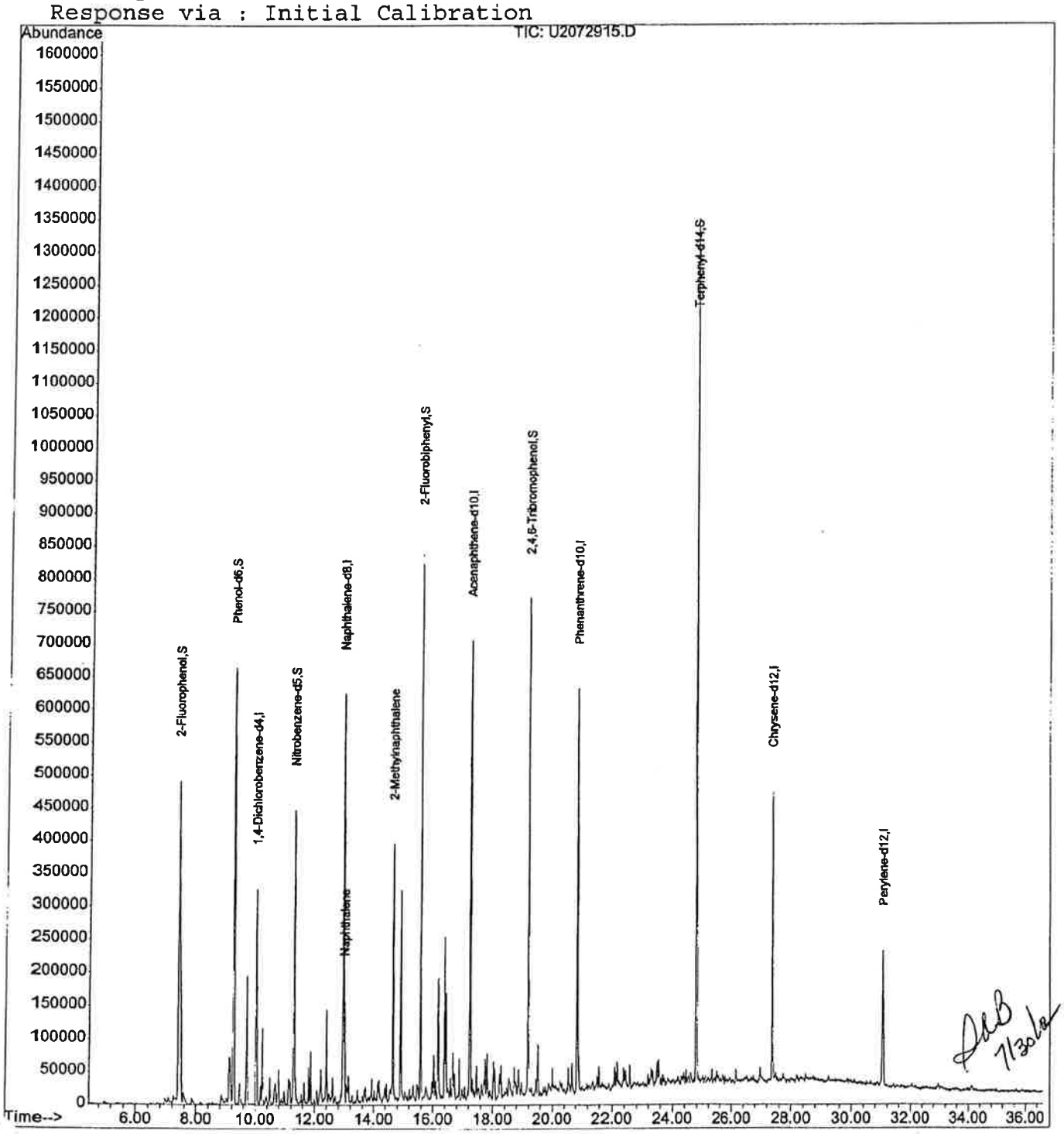
AHB 7/30/02
KMM 7/30/02

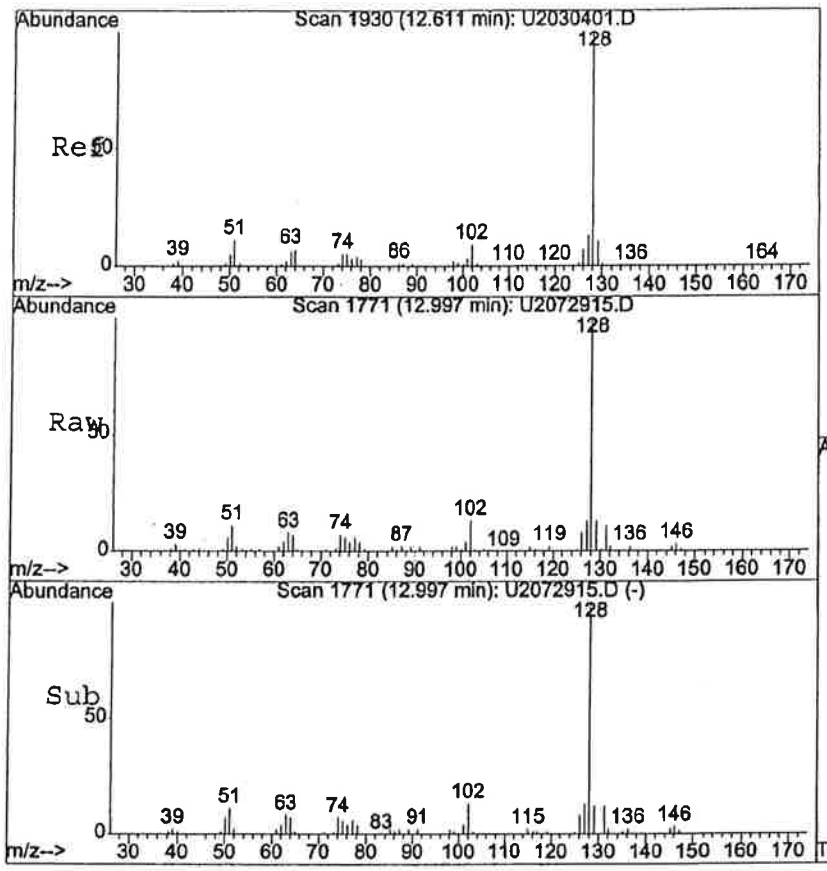
(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072915.D Vial: 16
Acq On : 30 Jul 2002 3:04 am Operator: SHERREE
Sample : 289081A SWC-009 Inst : Instrumen
Misc : 930/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 7:21 2002 Quant Results File: UBNA0722.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration

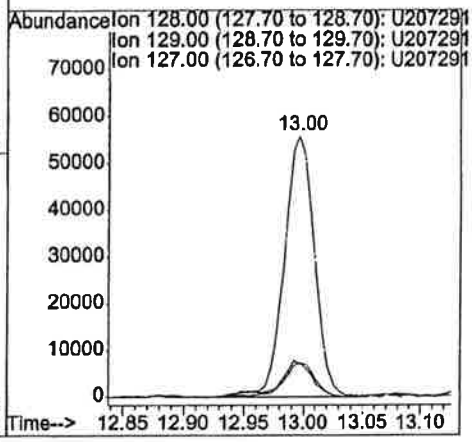


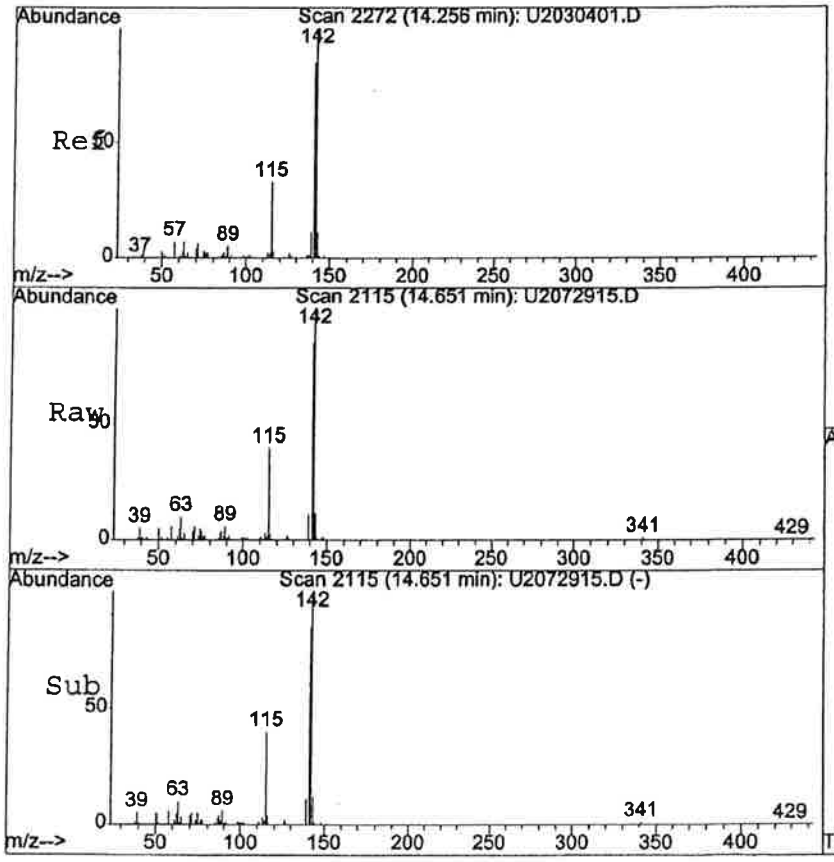


#29
Naphthalene
Concen: 8.03 ul/l
RT: 13.00 min Scan# 1771
Delta R.T. 0.08 min
Lab File: U2072915.D
Acq: 30 Jul 2002 3:04 am

Tgt Ion:128 Resp: 99893

Ion	Ratio	Lower	Upper
128	100		
129	13.3	8.6	13.0#
127	13.0	10.7	16.1

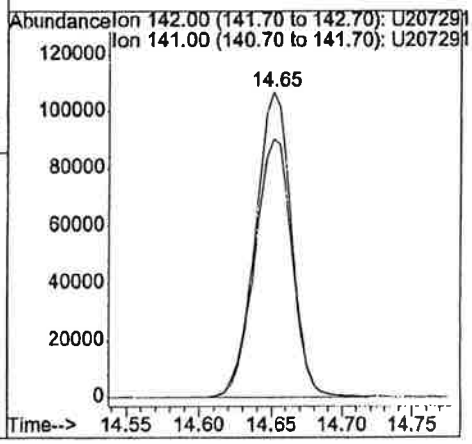




#33
2-Methylnaphthalene
Concen: 24.23 ul/l
RT: 14.65 min Scan# 2115
Delta R.T. 0.09 min
Lab File: U2072915.D
Acq: 30 Jul 2002 3:04 am

Tgt Ion:142 Resp: 188857

Ion	Ratio	Lower	Upper
142	100		
141	84.7	68.9	103.3



Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289082A
MATRIX : WATER
CLIENT ID : SWC-010
Sample wt/vol : 1040

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/23/2002
ID FILE : g08.id
DATA FILE : U2072916

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
[illegible]95-3	Nitrobenzene	U	10
7[illegible]-59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	48
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	27	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	36	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	19
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	24
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289082A
MATRIX : WATER
CLIENT ID : SWC-010
Sample wt/vol: 1040

ANALYSIS DATE : 07/30/2002
RECVD DATE : 07/23/2002
ID FILE : g08.id
DATA FILE : U2072916

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	24
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	24
100-02-7	4-Nitrophenol	U	24
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	24
100-01-6	4-Nitroaniline	U	24
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
118-74-1	Hexachlorobenzene	U	10
8[illegible]86-5	Pentachlorophenol	U	24
8[illegible]01-8	Phenanthrene	U	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69672

Quantitation Report (QT Reviewed)

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Data File : C:\MSDCHEM\1\DATA\U2072900\U2072916.D Vial: 17
Acq On : 30 Jul 2002 3:49 am Operator: SHERREE
Sample : 289082A SWC-010 Inst : Instrumen
Misc : 1040/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 04:26:17 2002 Quant Results File: UBNA0722.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0722

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.02	152	137916	40.00	ul/l	0.09
19) Naphthalene-d8	12.95	136	553482	40.00	ul/l	0.09
34) Acenaphthene-d10	17.25	164	344307	40.00	ul/l	0.10
54) Phenanthrene-d10	20.85	188	538311	40.00	ul/l	0.10
67) Chrysene-d12	27.38	240	361675	40.00	ul/l	0.11
76) Perylene-d12	31.07	264	246115	40.00	ul/l	0.17
System Monitoring Compounds						
4) 2-Fluorophenol	7.41	112	411408	87.32	ul/l	0.08
Spiked Amount 200.000			Recovery = 43.66%			
6) Phenol-d6	9.27	99	600473	99.83	ul/l	0.08
Spiked Amount 200.000			Recovery = 49.91%			
20) Nitrobenzene-d5	11.31	82	319865	53.72	ul/l	0.08
Spiked Amount 100.000			Recovery = 53.72%			
38) 2-Fluorobiphenyl	15.59	172	514285	47.59	ul/l	0.09
Spiked Amount 100.000			Recovery = 47.59%			
58) 2,4,6-Tribromophenol	19.20	330	182349	153.58	ul/l	0.10
Spiked Amount 200.000			Recovery = 76.79%			
70) Terphenyl-d14	24.80	244	914804	100.78	ul/l	0.12
Spiked Amount 100.000			Recovery = 100.78%			
Target Compounds						Qvalue
29) Naphthalene	13.00	128	407349	28.26	ul/l	100
33) 2-Methylnaphthalene	14.66	142	340314	37.69	ul/l	96

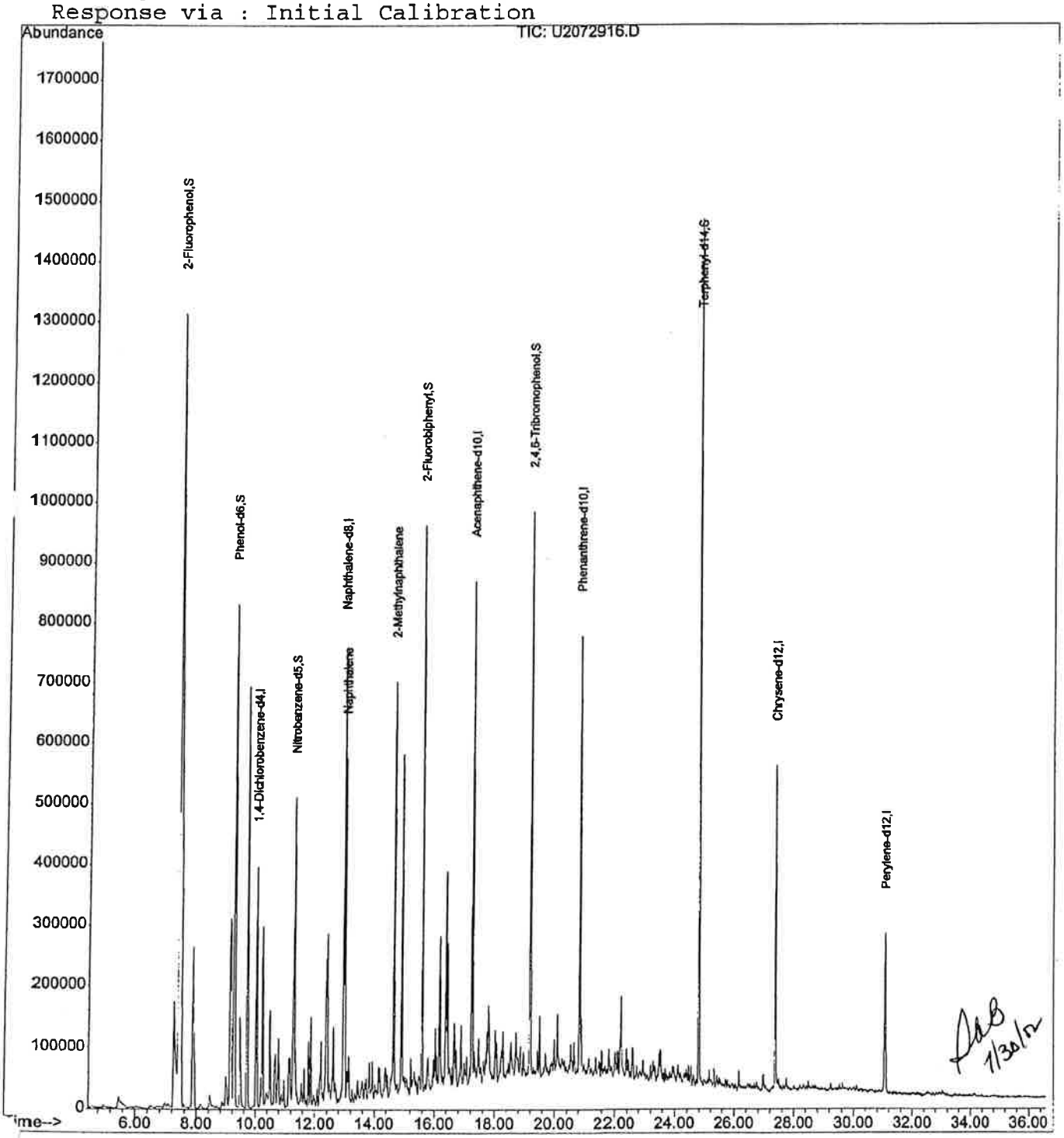
7/30/02
KMM 7/30/02

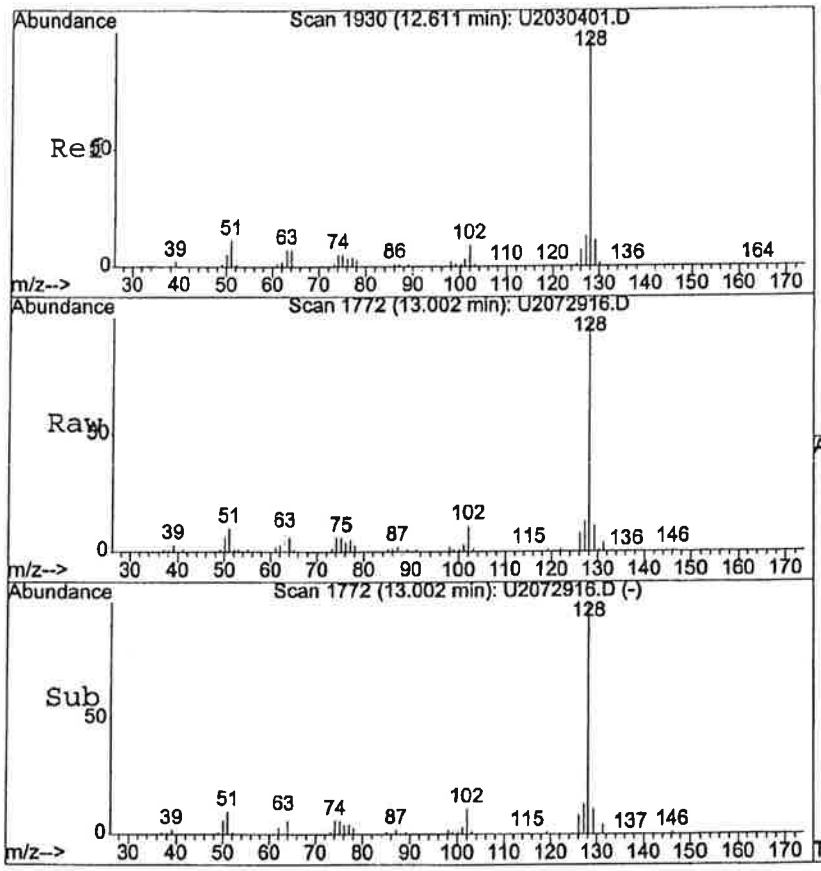
(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072916.D Vial: 17
Acq On : 30 Jul 2002 3:49 am Operator: SHERREE
Sample : 289082A SWC-010 Inst : Instrumen
Misc : 1040/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 7:21 2002 Quant Results File: UBNA0722.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration

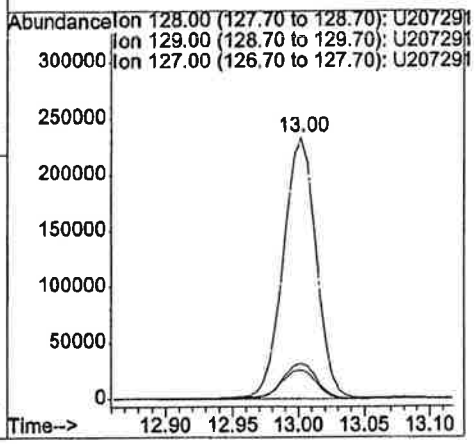


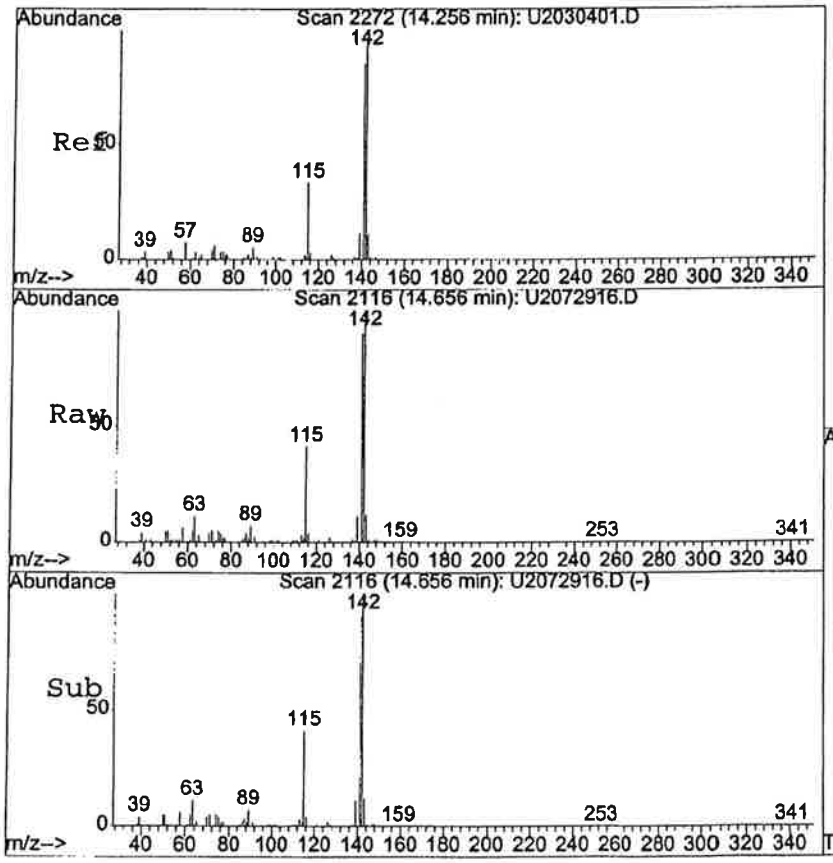


#29
Naphthalene
Concen: 28.26 ul/l
RT: 13.00 min Scan# 1772
Delta R.T. 0.09 min
Lab File: U2072916.D
Acq: 30 Jul 2002 3:49 am

Tgt Ion:128 Resp: 407349

Ion	Ratio	Lower	Upper
128	100		
129	11.1	8.6	13.0
127	13.4	10.7	16.1

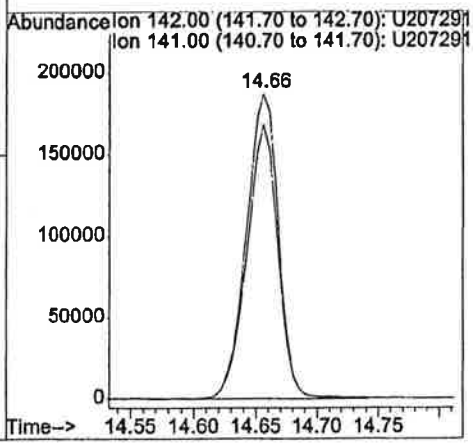




#33
2-Methylnaphthalene
Concen: 37.69 ul/l
RT: 14.66 min Scan# 2116
Delta R.T. 0.09 min
Lab File: U2072916.D
Acq: 30 Jul 2002 3:49 am

Tgt Ion:142 Resp: 340314

Ion	Ratio	Lower	Upper
142	100		
141	90.0	68.9	103.3



Washington
Environmental Laboratory

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

EPA SAMPLE NUMBER	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	OTHER	TOT OUT
BLK757LL.012_B17	65	63	108	57	51	77		0
LCS757LL.012	60	58	103	54	47	83		0
288865B	68	60	114	45	32	53		0
288865B_MS	61	57	112	48	33	68		0
288865B_MSD	56	50	102	43	31	62		0
288671A	54	52	115	46	41	74		0
288672A	53	47	100	51	44	84		0
288673A	58	51	113	55	48	90		0
288810A	57	51	104	53	46	88		0
288811A	48	41 *	100	44	39	73		1
289000A	55	49	109	49	43	79		0
289001A	48	44	102	43	39	74		0
289002A	47	44	99	42	37	65		0
289081A	55	51	112	49	43	70		0
289082A	54	48	101	50	44	77		0

	QC LIMITS
S1 (NBZ) = Nitrobenzene-d5	(35-114)
S2 (FBP) = 2-Fluorobiphenyl	(43-116)
S3 (TPH) = Terphenyl-d14	(33-141)
S4 (PHL) = Phenol-d6	(10-110)
S5 (2FP) = 2-Fluorophenol	(21-110)
S6 (TBP) = 2,4,6-Tribomophenol	(10-123)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

FORM II SV-1

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : BLK757LL.012_B17
MATRIX : WATER
CLIENT ID :
Sample wt/vol : 1000

ANALYSIS DATE : 07/29/2002
RECVD DATE :
ID FILE : g08.id
DATA FILE : U2072902

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
98-95-3	Nitrobenzene	U	10
78-59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	50
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	U	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	U	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	20
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	25
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : BLK757LL.012_B17
MATRIX : WATER
CLIENT ID :
Sample wt/vol: 1000

ANALYSIS DATE : 07/29/2002
RECVD DATE :
ID FILE : g08.id
DATA FILE : U2072902

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	25
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	25
100-02-7	4-Nitrophenol	U	25
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	25
100-01-6	4-Nitroaniline	U	25
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
118-74-1	Hexachlorobenzene	U	10
[illegible]-86-5	Pentachlorophenol	U	25
[illegible]01-8	Phenanthrene	U	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072902.D Vial: 3
Acq On : 29 Jul 2002 5:15 pm Operator: SHERREE
Sample : BLK757LL.012_B17 Inst : Instrumen
Misc : 1000/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 29 17:52:36 2002 Quant Results File: UBNA0722.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0722

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.03	152	111118	40.00	ul/l	0.09
19) Naphthalene-d8	12.95	136	446097	40.00	ul/l	0.09
34) Acenaphthene-d10	17.24	164	273619	40.00	ul/l	0.09
54) Phenanthrene-d10	20.85	188	404247	40.00	ul/l	0.10
67) Chrysene-d12	27.37	240	266425	40.00	ul/l	0.10
76) Perylene-d12	31.06	264	174245	40.00	ul/l	0.16
System Monitoring Compounds						
4) 2-Fluorophenol	7.41	112	383887	101.13	ul/l	0.08
Spiked Amount 200.000			Recovery = 50.56%			
6) Phenol-d6	9.27	99	555254	114.58	ul/l	0.07
Spiked Amount 200.000			Recovery = 57.29%			
20) Nitrobenzene-d5	11.31	82	313659	65.36	ul/l	0.08
Spiked Amount 100.000			Recovery = 65.36%			
38) 2-Fluorobiphenyl	15.59	172	540309	62.91	ul/l	0.09
Spiked Amount 100.000			Recovery = 62.91%			
58) 2,4,6-Tribromophenol	19.20	330	137532	154.25	ul/l	0.10
Spiked Amount 200.000			Recovery = 77.13%			
70) Terphenyl-d14	24.80	244	721442	107.89	ul/l	0.12
Spiked Amount 100.000			Recovery = 107.89%			

Target Compounds Qvalue

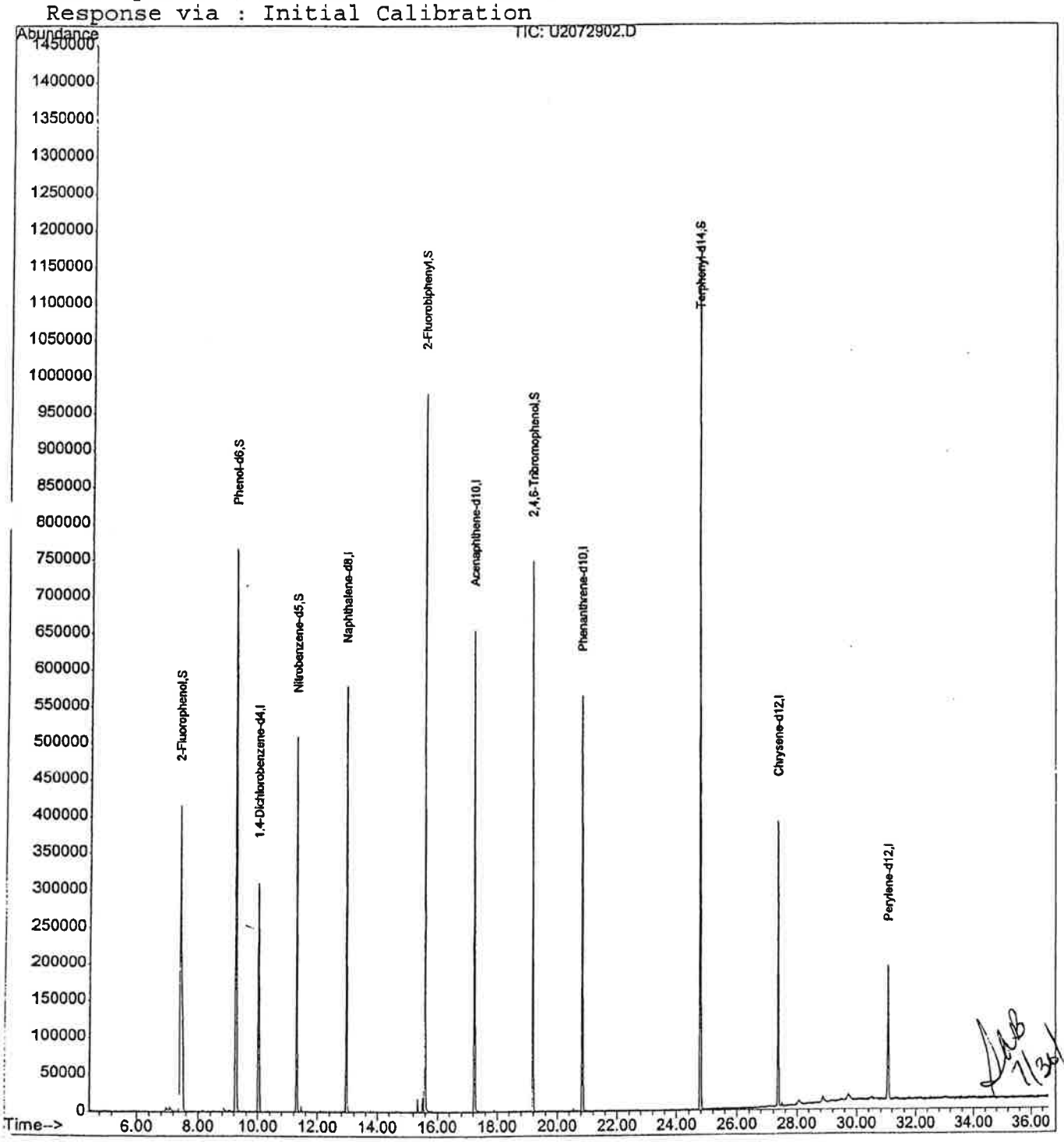
JWB 7/30/02
KMM 7/30/02

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2072900\U2072902.D Vial: 3
Acq On : 29 Jul 2002 5:15 pm Operator: SHERREE
Sample : BLK757LL.012_B17 Inst : Instrumen
Misc : 1000/1ML QC757LL.012 B17 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 30 7:06 2002 Quant Results File: UBNA0722.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0722.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Sat Jul 27 13:44:25 2002
Response via : Initial Calibration



THE WASHINGTON GROUP
ENVIRONMENTAL SERVICES LABORATORY

301 Chelsea Parkway
Boothwyn, Pa. 19061
(610) 497-8000

Report For:

Sunoco, Inc.
Ms. Judy Brackin
P.O. Box 426
Marcus Hook PA 19061

Job Number

75700702

Summary Number

69759

August 07, 2002

Reviewed by _____ 8/12/02
Project Manager Elizabeth Witouski

NJ ID# PA343	EPA ID# PA00078	PA ID# 23-272
CA ID# 02105CA	RI ID# 238	CT ID# PH0687
NY ID# 11345	MD ID# 286	MA ID# M-PA078

The . shington Group International
Environmental Services Laboratory Data Summary
Summary # 69759 Printed - 08/07/02 07:17:51

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289411A	SWC-011	757	EXT BNA H2O			COMPLETE	07/26/2002	07/29/2002	07/31/2002	DJN
289411A	SWC-011	G08	1,2,4-Trichlorobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	1,2-Dichlorobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	1,3-Dichlorobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	1,4-Dichlorobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	2,4,5-Trichlorophenol	ND	20	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	2,4,6-Trichlorophenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	2,4-Dichlorophenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	2,4-Dimethylphenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	2,4-Dinitrophenol	ND	25	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	2,4-Dinitrotoluene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	2,6-Dinitrotoluene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	2-Chloronaphthalene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	2-Chlorophenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	2-Methylnaphthalene	14	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	2-Methylphenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	2-Nitroaniline	ND	25	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	2-Nitrophenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	3,3'-Dichlorobenzidine	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	3-Nitroaniline	ND	25	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	4,6-Dinitro-2-methylphenol	ND	25	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	4-Bromophenyl phenyl ether	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	4-Chloro-3-methylphenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	4-Chloroaniline	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	4-Chlorophenyl phenyl ether	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	4-Methylphenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	4-Nitroaniline	ND	25	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	4-Nitrophenol	ND	25	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Acenaphthene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Acenaphthylene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Aniline	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Anthracene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69759 Printed - 08/07/02 07:17:51

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289411A	SWC-011	G08	Benz(a)anthracene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Benzo(a)pyrene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Benzo(b)fluoranthene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Benzo(ghi)perylene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Benzo(k)fluoranthene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Benzoic acid	ND	49	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Benzyl alcohol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Bis(2-chloroethoxy)methane	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Bis(2-chloroethyl)ether	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Bis(2-chloroisopropyl) ethe	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Bis(2-ethylhexyl) phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Butyl benzyl phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Chrysene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Di-n-butyl phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Di-n-octyl phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Dibenz(a,h)anthracene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Dibenzofuran	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Diethyl phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Dimethyl phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Fluoranthene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Fluorene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Hexachlorobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Hexachlorobutadiene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Hexachlorocyclopentadiene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Hexachloroethane	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Isophorone	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	N-Nitrosodi-n-propylamine	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	N-Nitrosodiphenylamine	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Naphthalene	7 J	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Nitrobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Pentachlorophenol	ND	25	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Phenanthrene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Phenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289411A	SWC-011	G08	Pyrene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB

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289411B	SWC-011	G18	Benzene	12	5	ug/L	07/26/2002	08/05/2002	08/05/2002	PSS
289411B	SWC-011	G18	Carbon Disulfide	ND	5	ug/L	07/26/2002	08/05/2002	08/05/2002	PSS
289411B	SWC-011	G18	Ethylbenzene	7	5	ug/L	07/26/2002	08/05/2002	08/05/2002	PSS
289411B	SWC-011	G18	Toluene	3 J	5	ug/L	07/26/2002	08/05/2002	08/05/2002	PSS
289411B	SWC-011	G18	Xylenes-Meta&Para	32	5	ug/L	07/26/2002	08/05/2002	08/05/2002	PSS
289411B	SWC-011	G18	Xylenes-Ortho	17	5	ug/L	07/26/2002	08/05/2002	08/05/2002	PSS
289411C	SWC-011	310	Cyanide, Total	ND (0.05)		mg/l	07/26/2002	08/05/2002	08/06/2002	GCW
289411D	SWC-011	200	AA,Digest H2O			COMPLETE	07/26/2002	07/29/2002	07/29/2002	ART
289411D	SWC-011	227IC	Cr Chromium	ND<0.010		mg/l	07/26/2002	07/29/2002	07/29/2002	CAK
289411D	SWC-011	249IC	Pb Lead	ND<0.0050		mg/l	07/26/2002	07/29/2002	07/29/2002	CAK
289412A	SWC-012	757	EXT BNA H2O			COMPLETE	07/26/2002	07/29/2002	07/31/2002	DJN
289412A	SWC-012	G08	1,2,4-Trichlorobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	1,2-Dichlorobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	1,3-Dichlorobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	1,4-Dichlorobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	2,4,5-Trichlorophenol	ND	20	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	2,4,6-Trichlorophenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	2,4-Dichlorophenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	2,4-Dimethylphenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	2,4-Dinitrophenol	ND	25	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	2,4-Dinitrotoluene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	2,6-Dinitrotoluene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	2-Chloronaphthalene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	2-Chlorophenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	2-Methylnaphthalene	15	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	2-Methylphenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	2-Nitroaniline	ND	25	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	2-Nitrophenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB

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289412A	SWC-012	G08	3,3'-Dichlorobenzidine	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	3-Nitroaniline	ND	25	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	4,6-Dinitro-2-methylphenol	ND	25	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	4-Bromophenyl phenyl ether	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	4-Chloro-3-methylphenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	4-Chloroaniline	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	4-Chlorophenyl phenyl ether	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	4-Methylphenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	4-Nitroaniline	ND	25	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	4-Nitrophenol	ND	25	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Acenaphthene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Acenaphthylene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Aniline	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Anthracene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Benz(a)anthracene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Benzo(a)pyrene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Benzo(b)fluoranthene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Benzo(ghi)perylene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Benzo(k)fluoranthene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Benzoic acid	ND	50	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Benzyl alcohol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Bis(2-chloroethoxy)methane	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Bis(2-chloroethyl)ether	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Bis(2-chloroisopropyl) ethe	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Bis(2-ethylhexyl) phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Butyl benzyl phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Chrysene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Di-n-butyl phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Di-n-octyl phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Dibenz(a,h)anthracene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Dibenzofuran	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Diethyl phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Dimethyl phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Fluoranthene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Fluorene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB

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289412A	SWC-012	G08	Hexachlorobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Hexachlorobutadiene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Hexachlorocyclopentadiene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Hexachloroethane	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Isophorone	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	N-Nitrosodi-n-propylamine	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	N-Nitrosodiphenylamine	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Naphthalene	8 J	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Nitrobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Pentachlorophenol	ND	25	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Phenanthrene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Phenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412A	SWC-012	G08	Pyrene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289412B	SWC-012	G18	Benzene	10	5	ug/L	07/26/2002	08/05/2002	08/05/2002	PSS
289412B	SWC-012	G18	Carbon Disulfide	ND	5	ug/L	07/26/2002	08/05/2002	08/05/2002	PSS
289412B	SWC-012	G18	Ethylbenzene	6	5	ug/L	07/26/2002	08/05/2002	08/05/2002	PSS
289412B	SWC-012	G18	Toluene	3 J	5	ug/L	07/26/2002	08/05/2002	08/05/2002	PSS
289412B	SWC-012	G18	Xylenes-Meta&Para	28	5	ug/L	07/26/2002	08/05/2002	08/05/2002	PSS
289412B	SWC-012	G18	Xylenes-Ortho	15	5	ug/L	07/26/2002	08/05/2002	08/05/2002	PSS
289412C	SWC-012	310	Cyanide, Total	ND (0.05)		mg/l	07/26/2002	08/05/2002	08/06/2002	GCW
289412D	SWC-012	200	AA,Digest H2O			COMPLETE	07/26/2002	07/29/2002	07/29/2002	ART
289412D	SWC-012	227IC	Cr Chromium	ND<0.010		mg/l	07/26/2002	07/29/2002	07/29/2002	CAK
289412D	SWC-012	249IC	Pb Lead	ND<0.0050		mg/l	07/26/2002	07/29/2002	07/29/2002	CAK
289413A	SWC-013	757	EXT BNA H2O			COMPLETE	07/26/2002	07/29/2002	07/31/2002	DJN
289413A	SWC-013	G08	1,2,4-Trichlorobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	1,2-Dichlorobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB

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289413A	SWC-013	G08	1,3-Dichlorobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	1,4-Dichlorobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	2,4,5-Trichlorophenol	ND	19	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	2,4,6-Trichlorophenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	2,4-Dichlorophenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	2,4-Dimethylphenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	2,4-Dinitrophenol	ND	24	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	2,4-Dinitrotoluene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	2,6-Dinitrotoluene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	2-Chloronaphthalene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	2-Chlorophenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	2-Methylnaphthalene	21	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	2-Methylphenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	2-Nitroaniline	ND	24	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	2-Nitrophenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	3,3'-Dichlorobenzidine	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	3-Nitroaniline	ND	24	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	4,6-Dinitro-2-methylphenol	ND	24	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	4-Bromophenyl phenyl ether	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	4-Chloro-3-methylphenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	4-Chloroaniline	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	4-Chlorophenyl phenyl ether	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	4-Methylphenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	4-Nitroaniline	ND	24	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	4-Nitrophenol	ND	24	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Acenaphthene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Acenaphthylene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Aniline	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Anthracene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Benz(a)anthracene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Benzo(a)pyrene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Benzo(b)fluoranthene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Benzo(ghi)perylene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Benzo(k)fluoranthene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Benzoic acid	ND	49	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB

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289413A	SWC-013	G08	Benzyl alcohol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Bis(2-chloroethoxy)methane	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Bis(2-chloroethyl)ether	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Bis(2-chloroisopropyl) ethe	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Bis(2-ethylhexyl) phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Butyl benzyl phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Chrysene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Di-n-butyl phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Di-n-octyl phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Dibenz(a,h)anthracene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Dibenzofuran	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Diethyl phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Dimethyl phthalate	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Fluoranthene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Fluorene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Hexachlorobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Hexachlorobutadiene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Hexachlorocyclopentadiene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Hexachloroethane	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Isophorone	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	N-Nitrosodi-n-propylamine	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	N-Nitrosodiphenylamine	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Naphthalene	12	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Nitrobenzene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Pentachlorophenol	ND	24	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Phenanthrene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Phenol	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413A	SWC-013	G08	Pyrene	ND	10	ug/L	07/26/2002	08/05/2002	08/05/2002	SAB
289413B	SWC-013	G18	Benzene	17	5	ug/L	07/26/2002	08/06/2002	08/06/2002	PSS
289413B	SWC-013	G18	Carbon Disulfide	ND	5	ug/L	07/26/2002	08/06/2002	08/06/2002	PSS
289413B	SWC-013	G18	Ethylbenzene	10	5	ug/L	07/26/2002	08/06/2002	08/06/2002	PSS
289413B	SWC-013	G18	Toluene	4 J	5	ug/L	07/26/2002	08/06/2002	08/06/2002	PSS
289413B	SWC-013	G18	Xylenes-Meta&Para	110	5	ug/L	07/26/2002	08/06/2002	08/06/2002	PSS

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69759 Printed - 08/07/02 07:17:51

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
289413B	SWC-013	G18	Xylenes-Ortho	27	5	ug/L	07/26/2002	08/06/2002	08/06/2002	PSS
289413C	SWC-013	310	Cyanide, Total	ND (0.05)		mg/l	07/26/2002	08/05/2002	08/06/2002	GCW
289413D	SWC-013	200	AA,Digest H20			COMPLETE	07/26/2002	07/29/2002	07/29/2002	ART
289413D	SWC-013	227IC	Cr Chromium	ND<0.010		mg/l	07/26/2002	07/29/2002	07/29/2002	CAK
289413D	SWC-013	249IC	Pb Lead	ND<0.0050		mg/l	07/26/2002	07/29/2002	07/29/2002	CAK

Approved by: [signature]

Report Prep: M. Hamacek

THE WASHINGTON GROUP
ENVIRONMENTAL LABORATORY

Methods Used for Summary# 69759:

Code	Description
200	Total Metals, Aqueous/FLAA,GFAA,ICP/SW846/EPA 200 Series
227IC	Chromium by ICP/EPA 200.7/SW846 6010
249IC	Lead by ICP/EPA 200.7/SW846 6010
310	Total Cyanide/spectrophotometric,automated 335.4 /dist+335.3
757	Extraction Procedure B/N and Acids (H2O) SW-846 Method 3520C
G08	Base/Neutral and Acid Extractable/SW-846 Meth 8270C TCL List
G18	GC/MS VOA (TCL List)/SW-846 Method 5035/8260B

The Washington Group
Environmental Laboratory

DATA QUALIFIERS

The following list shows data qualifiers that may appear in this report, and the meaning of each.

Qualifier	Meaning
B	Compound was detected in the associated blank.
D	Result was obtained from a different dilution than other analytes.
E	Result is estimated. Usually, this qualifier indeicates that the result is above the calibrated range of the instrument
J	Result is estimated. Usually this qualifier indicates the reported concentration is below the laboratory's reporting limit.
N	Indicates a Tentatively Identified Compound.
ND	Analyte was not detected.
U	Analyte was not detected (U and ND qualifiers are interchangable).

ABBREVIATIONS

The following list shows abbreviations that commonly occur in analytical reports.

Abbreviation	Meaning
DL	Dilution
LCS	Laboratory Control Sample
LCSS	Laboratory Control Sample (soil)
LCSW	Laboratory Control Sample (water)
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NR	No Recovery
PB	Preparation Blank
PS	Post-Digestion Spike
RE	Reanalysis
RPD	Relative Percent Difference
SR	Serial Dilution

Washington Laboratory Chain Of Custody

Quote No:

Ship To:

Lab Job No:

Washington Group Laboratory
301 Chelsea Parkway
Boothwyn, PA 19061
Phone: 610-497-8000
Fax: 610-497-8005

Client/Office: Sunoco - Marcus Hook Ref Phone: 215-977-3856
Address: Delaware Ave & Green St, Marcus Hook, PA 19061
Send report to: Judy Brackin Fax: 215-977-6549
Project Description: Solid Waste Closure

Send invoice to: Judy Brackin
Address: Sunoco Inc, 1801 Market St Phila, PA 19103
P.O. No:

TAT (for data): Identify number of working days below);...or Date-->:
☐ Rush 1 2 3 4 5 days ☐ Firm(6-12) ☒ Std.(~12) ☐ Other
Lab Staffer confirming Rush/Firm: Hardcopy TAT Date?:

Report Type: ☐ Results only ☒ Data +QC ☐ Reduced Deliv. ☐ Other:
☐ Regulatory Format (CLP like) ☐ Electronic/disk->(Format?)

Regulatory Samples? ☒ YES ☐ NO
If YES?: ☐ Act II ☐ UST ☒ RCRA ☐ NPDES ☐ Phase I/II ☐ ISRA ☐ Other:

Analytical Protocol: ☒ SW846 ☐ EPA600 ☐ Drinking H2O ☐ ASTM ☐ Other:

Analysis Required

Lab Use Only
rev. 10/12/99
Due Date:
Cooler Tmp 3 deg C
custody seal yes no No.:
Summary No. 69759

Sample Data (NJ HAZITE disk deliverable limits sample ID to 7 Characters) ID (NJ limit=7 characters)	date	time	matrix	grab	comp	Container Data type	no.	preservative	pH	SVOA 8270	VOA 8260	Total CN	Pb & Total Cr	Lab Log No.
SWC-011	7-26-02	1000	H_2O	X		A/G	2			X				289411 A- 1,2
			H_2O	X		VOA	2	HCl			X			B- 1,2,3
			H_2O	X		P	1	NaOH	>12			X		C
			H_2O	X		P	1	HNO_3	<2				X	D
SWC-012	7-26-02	1115	H_2O	X		A/G	2			X				289412 A- 1,2
			H_2O	X		VOA	2	HCl			X			B- 1,2,3
			H_2O	X		P	1	NaOH	>12			X		C
			H_2O	X		P	1	HNO_3	<2				X	D
SWC-013	7-26-02	1245	H_2O	X		A/G	2			X				289413 A- 1,2
			H_2O	X		VOA	2	HCl			X			B- 1,2,3
			H_2O	X		P	1	NaOH	>12			X		C
			H_2O	X		P	1	HNO_3	<2				X	D

Comments/Special Handling/Storage/Disposal-->: Note: must have detection limits at or below clearance levels in attached Table 1

Sampled by: Frank Kulp
Phone no: 215 977-3856

Relinquished By:		Received By:		Method of Shipment
Name: Frank Kulp	Date: 7-26-02	Name: [illegible]	Date: 7/26/02	Airbill No.
Organization: SUNOCO	Time: 1400	Organization: TWGINT	Time: 1520	
Name:	Date:	Name:	Date:	
Organization:	Time:	Organization:	Time:	
Name:	Date:	Name:	Date:	
Organization:	Time:	Organization:	Time:	

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: The Washington Group International

Lab Sample ID

289394D	289394DSR
289394DPS	289346C
289386C	289359B
289393C	289411D
289412D	289413D

Were ICP interelement corrections applied? Yes/No

Were ICP background corrections applied? Yes/No

If Yes - were raw data generated before application of background corrections Yes/No

Comments:

Batch ID: 598 Analysis Start Time: 959

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Laboratory Manager's designee, as verified by the following signature.

Signature: [illegible] Name: Candia Knowles

Date: 7 29 02 Title:

Data File: bjul29.

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Initial/Continuing Calibration Source : _____

Concentration Units: mg/l

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R *	CCV-1 True	CCV-1 Found	CCV-1 %R	CCV-2 Found	CCV-2 %R	CCV-3 Found	CCV-3 %R
Aluminum	2.00	2.07	103.5	2.00	1.96	98.0	1.95	97.5	1.93	96.5
Antimony	0.50	0.50	100.9	0.50	0.51	101.4	0.50	100.1	0.49	98.9
Arsenic	0.50	0.48	96.7	0.50	0.50	99.4	0.49	98.2	0.49	97.3
Barium	2.00	1.96	98.0	2.00	1.98	99.0	1.96	98.0	1.93	96.5
Beryllium	0.05	0.05	97.6	0.05	0.05	98.0	0.05	96.8	0.05	95.6
Cadmium	0.25	0.25	98.6	0.25	0.25	99.1	0.24	97.7	0.24	96.5
Calcium	5.00	5.01	100.2	5.00	5.00	100.0	5.00	100.0	5.01	100.2
Chromium	0.20	0.20	99.0	0.20	0.20	99.0	0.20	98.0	0.19	96.5
Cobalt	0.50	0.49	98.2	0.50	0.49	98.8	0.49	97.4	0.48	96.4
Copper	0.25	0.25	99.2	0.25	0.25	98.8	0.25	98.0	0.24	96.8
Iron	1.00	0.97	97.3	1.00	0.96	96.4	0.96	95.7	0.95	94.9
Lead	0.50	0.49	98.4	0.50	0.50	100.1	0.49	98.6	0.49	97.6
Magnesium	5.00	4.91	98.2	5.00	4.96	99.2	4.90	98.0	4.84	96.8
Manganese	0.50	0.50	99.2	0.50	0.49	98.6	0.49	97.8	0.48	96.6
Molybdenum	0.50	0.48	96.8	0.50	0.50	99.2	0.49	97.8	0.48	96.6
Nickel	0.50	0.49	98.4	0.50	0.50	99.2	0.49	97.4	0.48	96.4
Selenium	0.50	0.48	97.0	0.50	0.50	99.2	0.49	97.3	0.49	97.6
Titanium	0.50	0.49	98.2	0.50	0.49	98.6	0.49	97.4	0.48	96.4
Silver	0.25	0.25	98.4	0.25	0.25	98.4	0.24	97.2	0.24	96.4
Sodium	5.00	4.89	97.8	5.00	4.91	98.2	4.85	97.0	4.73	94.6
Thallium	0.50	0.51	102.4	0.50	0.49	98.0	0.49	97.3	0.48	96.3
Vanadium	0.50	0.50	99.2	0.50	0.49	98.4	0.49	97.4	0.48	96.2
Zinc	0.50	0.49	97.2	0.50	0.49	98.4	0.48	96.8	0.48	96.0

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Initial Calibration Source :_____

Continuing Calibration Source:_____

Analyte	True	CCV-4 Found	%R	CCV-5 Found	%R	CCV-6 Found	%R
Aluminum	2.00	1.98	99.0	1.97	98.5	1.90	95.0
Antimony	0.50	0.50	100.2	0.50	99.7	0.49	98.9
Arsenic	0.50	0.49	98.3	0.49	97.1	0.48	96.9
Barium	2.00	1.98	99.0	1.96	98.0	1.92	96.0
Beryllium	0.05	0.05	97.8	0.05	96.8	0.05	95.0
Cadmium	0.25	0.25	99.0	0.24	97.5	0.24	95.2
Calcium	5.00	5.02	100.4	5.00	100.0	4.89	97.8
Chromium	0.20	0.20	98.0	0.19	97.5	0.19	97.0
Cobalt	0.50	0.49	98.2	0.49	97.6	0.47	95.0
Copper	0.25	0.25	99.6	0.25	98.4	0.24	95.6
Iron	1.00	0.96	96.5	0.96	95.6	0.94	94.4
Lead	0.50	0.49	98.6	0.49	97.8	0.49	97.5
Magnesium	5.00	4.95	99.0	4.90	98.0	4.81	96.2
Manganese	0.50	0.49	98.8	0.49	98.0	0.48	96.2
Molybdenum	0.50	0.49	98.0	0.48	96.8	0.48	96.6
Nickel	0.50	0.49	98.6	0.49	97.4	0.47	94.8
Selenium	0.50	0.49	98.3	0.48	96.9	0.49	97.0
Titanium	0.50	0.49	98.8	0.49	97.4	0.48	95.4
Silver	0.25	0.25	98.8	0.25	98.0	0.24	96.0
Sodium	5.00	4.92	98.4	4.89	97.8	4.85	97.0
Thallium	0.50	0.49	98.1	0.49	97.1	0.47	94.1
Vanadium	0.50	0.49	98.4	0.49	97.6	0.48	95.8
Zinc	0.50	0.49	98.4	0.49	97.0	0.47	94.6

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Initial Calibration Source : _____

Continuing Calibration Source: _____

Analyte		CCV-7		CCV-8		CCV-9	
	True	Found	%R	Found	%R	Found	%R
Aluminum	2.00	1.97	98.5	1.91	95.5	1.89	94.5
Antimony	0.50	0.49	98.2	0.49	98.9	0.49	97.7
Arsenic	0.50	0.48	96.8	0.48	97.0	0.48	95.5
Barium	2.00	1.97	98.5	1.93	96.5	1.93	96.5
Beryllium	0.05	0.05	97.6	0.05	95.2	0.05	94.8
Cadmium	0.25	0.24	97.7	0.24	96.0	0.24	95.3
Calcium	5.00	4.94	98.8	4.90	98.0	4.88	97.6
Chromium	0.20	0.19	97.0	0.19	97.5	0.19	96.5
Cobalt	0.50	0.49	97.8	0.48	95.6	0.48	95.2
Copper	0.25	0.25	98.4	0.24	96.0	0.24	95.2
Iron	1.00	0.95	95.5	0.94	93.7	0.94	93.8
Lead	0.50	0.49	97.2	0.49	97.8	0.48	96.4
Magnesium	5.00	4.95	99.0	4.84	96.8	4.83	96.6
Manganese	0.50	0.49	98.6	0.48	96.8	0.48	96.4
Molybdenum	0.50	0.48	96.2	0.49	97.0	0.48	95.8
Nickel	0.50	0.49	97.8	0.48	95.8	0.48	95.4
Selenium	0.50	0.48	96.6	0.48	96.8	0.48	95.3
Titanium	0.50	0.49	98.0	0.48	95.8	0.48	95.2
Silver	0.25	0.25	98.8	0.24	96.4	0.24	96.0
Sodium	5.00	4.93	98.6	4.83	96.6	4.69	93.8
Thallium	0.50	0.48	95.7	0.48	96.5	0.48	95.1
Vanadium	0.50	0.49	98.4	0.48	96.6	0.48	96.4
Zinc	0.50	0.49	97.4	0.48	95.6	0.47	94.6

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Preparation Blank Matrix (soil/water) :Water

Preparation Blank Concentration Units (mg/L or mg/Kg) :mg/L

Analyte	Initial Calib. Blank	Continuing Calibration 1	2	3	
Aluminum	ND	ND	ND	ND	
Antimony	ND	0.0080	0.0063	0.0074	
Arsenic	ND	ND	ND	ND	
Barium	ND	ND	ND	ND	
Beryllium	ND	ND	ND	ND	
Cadmium	ND	ND	ND	ND	
Calcium	ND	ND	ND	ND	
Chromium	ND	ND	ND	ND	
Cobalt	ND	ND	ND	ND	
Copper	ND	ND	ND	ND	
Iron	ND	ND	ND	ND	
Lead	ND	ND	ND	ND	
Magnesium	ND	ND	ND	ND	
Manganese	ND	ND	ND	ND	
Molybdenum	ND	ND	ND	ND	
Nickel	ND	ND	ND	ND	
Selenium	ND	ND	ND	ND	
Titanium	ND	ND	ND	ND	
Silver	ND	ND	ND	ND	
Sodium	ND	ND	ND	ND	
Thallium	ND	ND	ND	ND	
Vanadium	ND	ND	ND	ND	
Zinc	ND	ND	ND	ND	

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US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Preparation Blank Matrix (soil/water) :Water

Preparation Blank Concentration Units (mg/L or mg/Kg) :mg/L

Analyte	Continuing Calibration 4	5	6	
Aluminum	ND	ND	ND	
Antimony	ND	ND	ND	
Arsenic	ND	ND	ND	
Barium	ND	ND	ND	
Beryllium	ND	ND	ND	
Cadmium	ND	ND	ND	
Calcium	ND	ND	ND	
Chromium	ND	ND	ND	
Cobalt	ND	ND	ND	
Copper	ND	ND	ND	
Iron	ND	ND	ND	
Lead	ND	ND	ND	
Magnesium	ND	ND	ND	
Manganese	ND	ND	ND	
Molybdenum	ND	ND	ND	
Nickel	ND	ND	ND	
Selenium	ND	ND	ND	
Titanium	ND	ND	ND	
Silver	ND	ND	ND	
Sodium	ND	ND	ND	
Thallium	ND	ND	ND	
Vanadium	ND	ND	ND	
Zinc	ND	ND	ND	

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US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Preparation Blank Matrix (soil/water) :Water

Preparation Blank Concentration Units (mg/L or mg/Kg) :mg/L

Analyte	Continuing Calibration 7	8	9	
Aluminum	ND	ND	ND	
Antimony	ND	0.0082	ND	
Arsenic	ND	ND	ND	
Barium	ND	ND	ND	
Beryllium	ND	ND	ND	
Cadmium	ND	ND	ND	
Calcium	ND	ND	ND	
Chromium	ND	ND	ND	
Cobalt	ND	ND	ND	
Copper	ND	ND	ND	
Iron	ND	ND	ND	
Lead	ND	ND	ND	
Magnesium	ND	ND	ND	
Manganese	ND	ND	ND	
Molybdenum	ND	ND	ND	
Nickel	ND	ND	ND	
Selenium	ND	ND	ND	
Titanium	ND	ND	ND	
Silver	ND	ND	ND	
Sodium	ND	ND	ND	
Thallium	ND	ND	ND	
Vanadium	ND	ND	ND	
Zinc	ND	ND	ND	

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PREPARATION BLANK (Batch 598)

Lab Name: Washington Group Contract: _____

Matrix (soil/water): water

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Result
Aluminum	ND<0.2000
Antimony	ND<0.0060
Arsenic	ND<0.0080
Barium	ND<0.2000
Beryllium	ND<0.0020
Cadmium	ND<0.0050
Calcium	ND<1.0000
Chromium	ND<0.0100
Cobalt	ND<0.0100
Copper	ND<0.0200
Iron	ND<0.1000
Lead	ND<0.0050
Magnesium	ND<1.0000
Manganese	ND<0.0150
Molybdenum	ND<0.0100
Nickel	ND<0.0200
Selenium	ND<0.0200
Silver	ND<0.0100
Sodium	ND<1.0000
Thallium	ND<0.0100
Titanium	ND<0.0200
Vanadium	ND<0.0100
Zinc	ND<0.0200

US EPA - CLP
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

ICP ID Number: _____

Concentration Units: mg/l

Analyte	Solution A	Solution AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500	500	468	468	93.6			
Antimony		0.6		0.61	101.5			
Arsenic		0.1		0.09	94.7			
Barium		0.5		0.52	104.0			
Beryllium		0.5		0.50	99.5			
Cadmium		1.0		0.98	97.9			
Calcium	500	500	463	461	92.2			
Chromium		0.5		0.49	98.2			
Cobalt		0.5		0.50	99.8			
Copper		0.5		0.54	107.4			
Iron	200	200	188	188	94.0			
Lead		0.05		0.06	118.0			
Magnesium	500	500	492	491	98.2			
Manganese		0.5		0.51	102.8			
Molybdenum								
Nickel		1.0		0.97	96.7			
Selenium		0.05		0.04	88.2			
Titanium								
Silver		0.2		0.22	107.5			
Sodium								
Thallium		0.1		0.09	93.1			
Vanadium		0.5		0.50	99.2			
Zinc		1.0		1.06	106.0			

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

289394D

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		0.261	0.000	0.25	104.40
Aluminum		4.560	2.800	2.00	88.00
Arsenic		0.517	0.010	0.50	101.46
Barium		2.020	0.000	2.00	101.00
Beryllium		0.051	0.000	0.05	102.00
Calcium		4.280	0.000	5.00	85.60
Cadmium		0.248	0.000	0.25	99.24
Cobalt		0.499	0.000	0.50	99.80
Chromium		0.236	0.034	0.20	101.00
Copper		2.700	2.500	0.25	80.00
Iron		5.820	4.800	1.00	102.00
Magnesium		4.840	0.000	5.00	96.80
Manganese		0.512	0.000	0.50	102.40
Molybdenum		0.541	0.039	0.50	100.40
Sodium		1480.000	1500.000	5.00	NR
Nickel		0.496	0.000	0.50	99.20
Lead		0.659	0.170	0.50	97.78
Antimony		0.529	0.008	0.50	104.32
Selenium		0.530	0.000	0.50	105.92
Titanium		0.502	0.000	0.50	100.40
Thallium		0.437	0.011	0.50	85.10
Vanadium		0.517	0.000	0.50	103.40
Zinc		0.523	0.021	0.50	100.40

Comments:

NR = No Recovery

289394DMS Batch - 598
b[illegible]129.598

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

289394D

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		0.262	0.000	0.25	104.80
Aluminum		4.540	2.800	2.00	87.00
Arsenic		0.513	0.010	0.50	100.66
Barium		2.020	0.000	2.00	101.00
Beryllium		0.051	0.000	0.05	102.20
Calcium		4.370	0.000	5.00	87.40
Cadmium		0.248	0.000	0.25	99.08
Cobalt		0.498	0.000	0.50	99.60
Chromium		0.234	0.034	0.20	100.00
Copper		2.720	2.500	0.25	88.00
Iron		5.770	4.800	1.00	97.00
Magnesium		4.830	0.000	5.00	96.60
Manganese		0.513	0.000	0.50	102.60
Molybdenum		0.535	0.039	0.50	99.20
Sodium		1480.000	1500.000	5.00	NR
Nickel		0.495	0.000	0.50	99.00
Lead		0.654	0.170	0.50	96.72
Antimony		0.521	0.008	0.50	102.68
Selenium		0.519	0.000	0.50	103.80
Titanium		0.501	0.000	0.50	100.20
Thallium		0.439	0.011	0.50	85.52
Vanadium		0.515	0.000	0.50	103.00
Zinc		0.536	0.021	0.50	103.00

Comments:

NR = No Recovery

289394DMSD Batch - 598
bjul29.598

BATCH
DUPLICATE SAMPLE REPORT

LAB SAMPLE NO

289394DMS

Lab Name: The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Sample Result	Duplicate Result	% RPD
Silver	0.261	0.262	0.38
Aluminum	4.560	4.540	0.44
Arsenic	0.517	0.513	0.78
Barium	2.020	2.020	0.00
Beryllium	0.051	0.051	0.20
Calcium	4.280	4.370	2.08
Cadmium	0.248	0.248	0.16
Cobalt	0.499	0.498	0.20
Chromium	0.236	0.234	0.85
Copper	2.700	2.720	0.74
Iron	5.820	5.770	0.86
Magnesium	4.840	4.830	0.21
Manganese	0.512	0.513	0.20
Molybdenum	0.541	0.535	1.12
Sodium	1480.000	1480.000	0.00
Nickel	0.496	0.495	0.20
Lead	0.659	0.654	0.81
Antimony	0.529	0.521	1.56
Selenium	0.530	0.519	2.02
	0.502	0.501	0.20
Thallium	0.437	0.439	0.48
Vanadium	0.517	0.515	0.39
Zinc	0.523	0.536	2.46

Comments:

b' 129.

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

289394D

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		0.250	0.000	0.25	100.00
Aluminum		4.500	2.800	2.00	85.00
Arsenic		0.490	0.010	0.50	96.00
Barium		1.900	0.000	2.00	95.00
Beryllium		0.049	0.000	0.05	98.00
Calcium		4.200	0.000	5.00	84.00
Cadmium		0.240	0.000	0.25	96.00
balt		0.480	0.000	0.50	96.00
..romium		0.220	0.034	0.20	93.00
Copper		2.700	2.500	0.25	80.00
Iron		5.700	4.800	1.00	90.00
Magnesium		4.600	0.000	5.00	92.00
Manganese		0.490	0.000	0.50	98.00
Molybdenum		0.510	0.039	0.50	94.20
Sodium		1500.000	1500.000	5.00	NR
Nickel		0.470	0.000	0.50	94.00
Lead		0.630	0.170	0.50	92.00
Antimony		0.500	0.008	0.50	98.46
Selenium		0.500	0.000	0.50	100.00
Titanium		0.480	0.000	0.50	96.00
Thallium		0.470	0.011	0.50	91.80
Vanadium		0.490	0.000	0.50	98.00
Zinc		0.500	0.021	0.50	95.80

Comments:

NR = No Recovery

289394DPS Batch - 598
bjul29.598

ICP SERIAL DILUTIONS

LAB SAMPLE NO

289394DSR

Lab Name: Raytheon Engineers Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Initial Result	Serial Dil. Result	% RPD
Silver	0.000	0.000	-----
Aluminum	2.800	3.100	10.17
Arsenic	0.010	0.000	200.00
Barium	0.000	0.000	-----
Beryllium	0.000	0.000	-----
Calcium	0.000	0.000	-----
Cadmium	0.000	0.000	-----
Cobalt	0.000	0.000	-----
Chromium	0.034	0.000	200.00
Copper	2.500	2.500	0.00
Iron	4.800	4.900	2.06
Magnesium	0.000	0.000	-----
Manganese	0.000	0.000	-----
Molybdenum	0.039	0.000	200.00
Sodium	1500.000	1600.000	6.45
Nickel	0.000	0.000	-----
Lead	0.170	0.180	5.71
Antimony	0.008	0.038	132.60
Selenium	0.000	0.000	-----
Titanium	0.000	0.000	-----
Thallium	0.011	0.000	200.00
Vanadium	0.000	0.000	-----
Zinc	0.021	0.000	200.00

Comments:

Batch 598

US EPA - CLP
7
LABORATORY CONTROL SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Solid LCS Source :_____

Aqueous LCS Source:_____

Analyte	Aqueous (mg/L) True	Found	%R
Aluminum	2.00	2.10	105.0
Antimony	0.50	0.51	102.3
Arsenic	0.50	0.49	98.3
Barium	2.00	2.03	101.5
Beryllium	0.05	0.05	100.4
Cadmium	0.25	0.25	100.8
Calcium	5.00	5.15	103.0
Chromium	0.20	0.20	100.5
Cobalt	0.50	0.51	101.2
Copper	0.25	0.26	103.2
Iron	1.00	1.02	102.0
Lead	0.50	0.50	100.0
Magnesium	5.00	5.01	100.2
Manganese	0.50	0.50	100.4
Molybdenum	0.50	0.50	99.8
Nickel	0.50	0.50	100.0
Selenium	0.50	0.50	99.9
Titanium	0.50	0.50	100.8
Silver	0.25	0.25	101.6
Sodium	5.00	5.08	101.6
Thallium	0.50	0.49	97.1
Vanadium	0.50	0.51	101.6
Zinc	0.50	0.50	100.2

1 .129.567 Batch- 598

Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289411B
MATRIX : WATER
CLIENT ID : SWC-011
Sample wt/vol : 5ML

ANALYSIS DATE : 08/05/2002
RECVD DATE : 07/26/2002
ID FILE : g18sun3.id
DATA FILE : K2080529

69759

Compound		Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	12	5
108-88-3	Toluene	3 J	5
100-41-4	Ethylbenzene	7	5
330-20-7	m&p-Xylenes	32	5
95-47-6	o-Xylene	17	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69759

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\080502K2\K2080529.D
Acq On : 5 Aug 2002 23:16
Sample : 289411B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Aug 6 10:18 2002

Vial: 8
Operator: NRT
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: K0725TCL.RES

Quant Method : C:\HPCHEM\1\METHODS\K0725TCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu Jul 25 14:07:59 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.56	168	361318	50.00 ug/l	0.00
25) 1,4-Difluorobenzene	12.89	114	594266	50.00 ug/l	0.00
41) Chlorobenzene-d5	17.56	117	503406	50.00 ug/l	0.00
59) 1,4-Dichlorobenzene-d4	21.02	152	262183	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	10.89	113	192030	47.47 ug/l	0.00
Spiked Amount 50.000			Recovery =	94.94%	
42) Toluene-d8	15.54	98	586383	46.76 ug/l	0.00
Spiked Amount 50.000			Recovery =	93.52%	
56) Bromofluorobenzene	19.22	94	28028	45.53 ug/l	0.00
Spiked Amount 50.000			Recovery =	91.06%	
Target Compounds					Qvalue
14) Methyl-t-butyl Ether	9.17	73	39193	3.81 ug/l	96
21) Chloroform	10.69	83	399436	57.61 ug/l	99
29) Benzene	12.52	78	172114	11.57 ug/l	100
35) Bromodichloromethane	13.56	83	49697	9.68 ug/l	99
45) Toluene	15.65	92	28827	3.06 ug/l	93
51) Ethylbenzene	17.87	91	118895	6.74 ug/l	97
52) m&p-Xylenes	18.14	106	226184	31.50 ug/l	92
53) o-Xylene	18.68	106	121901	17.19 ug/l	93
78) Naphthalene	24.59	128	110710	13.52 ug/l	100

08.06.02

Quantitation Report

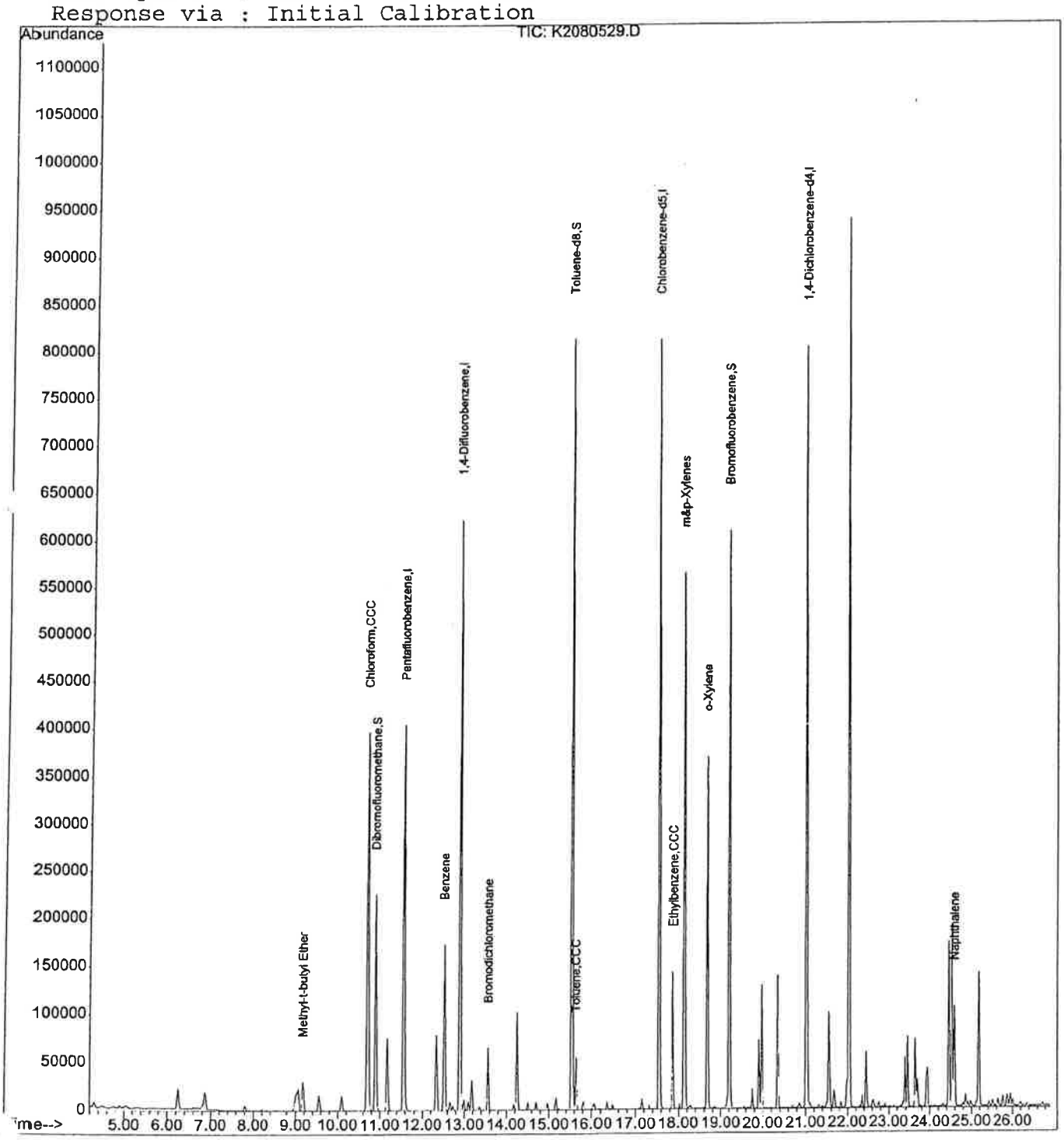
Data File : C:\HPCHEM\1\DATA\080502K2\K2080529.D
Acq On : 5 Aug 2002 23:16
Sample : 289411B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Aug 6 10:18 2002

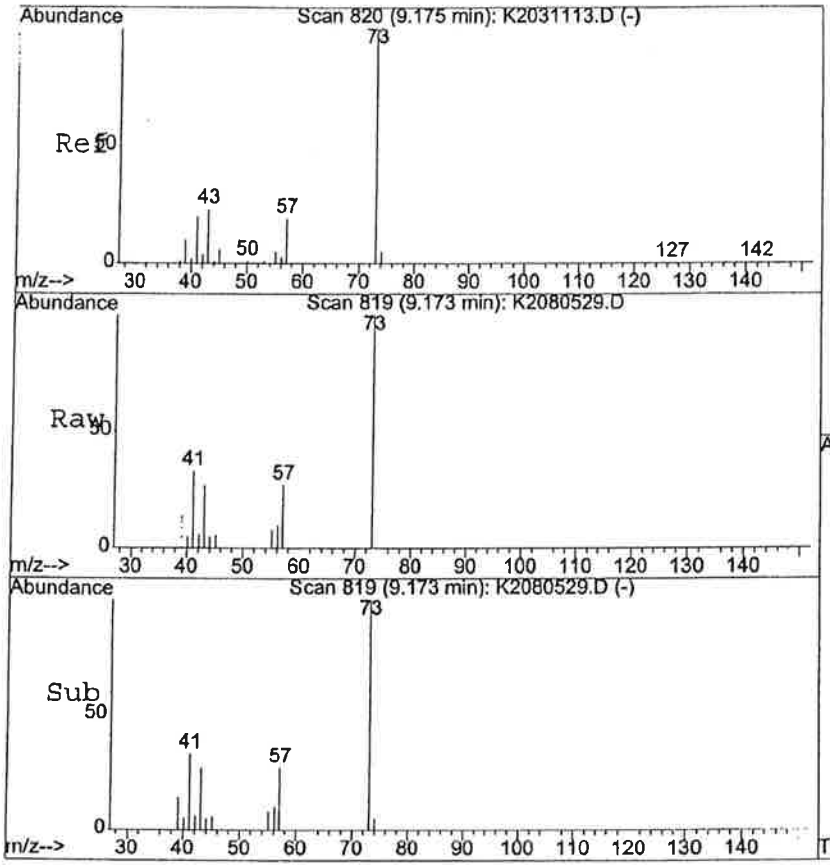
Vial: 8
Operator: NRT
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: K0725TCL.RES

69759 Page 0031

Method : C:\HPCHEM\1\METHODS\K0725TCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu Jul 25 14:07:59 2002
Response via : Initial Calibration

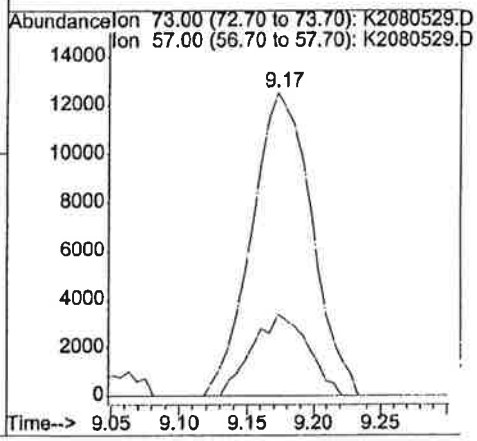


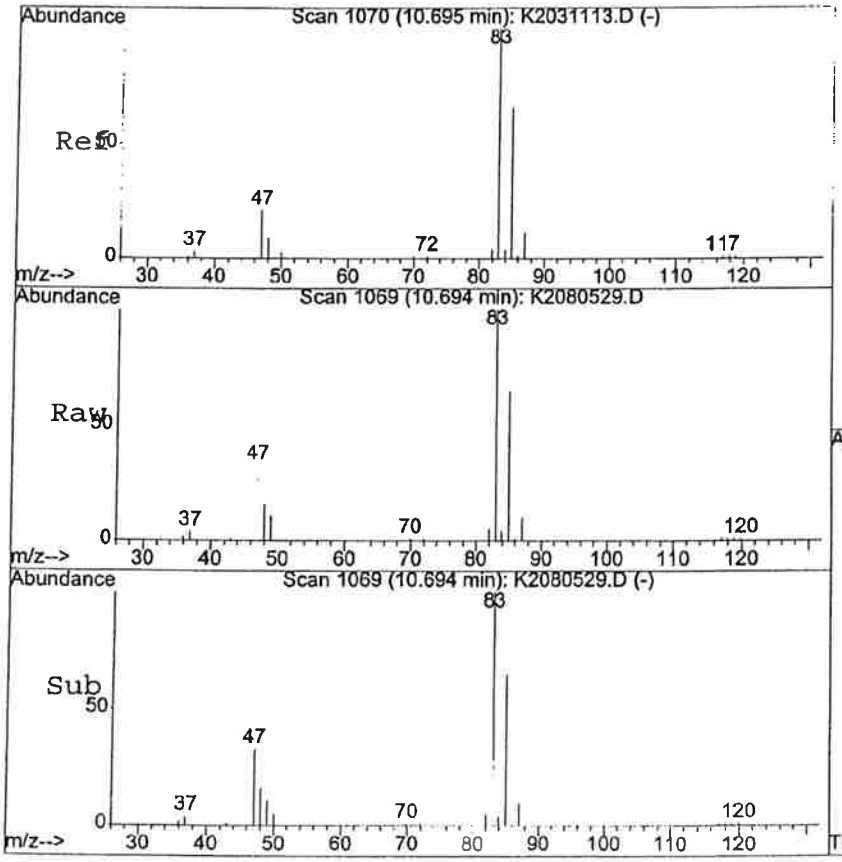


#14
Methyl-t-butyl Ether
Concen: 3.81 ug/l
RT: 9.17 min Scan# 819
Delta R.T. 0.00 min
Lab File: K2080529.D
Acq: 5 Aug 2002 23:16

Tgt Ion: 73 Resp: 39193

Ion	Ratio	Lower	Upper
73	100		
57	25.0	21.8	32.8

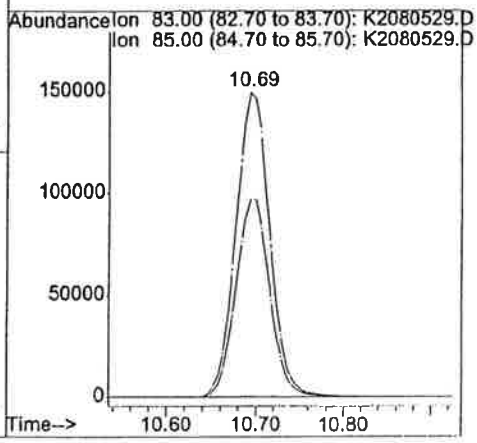


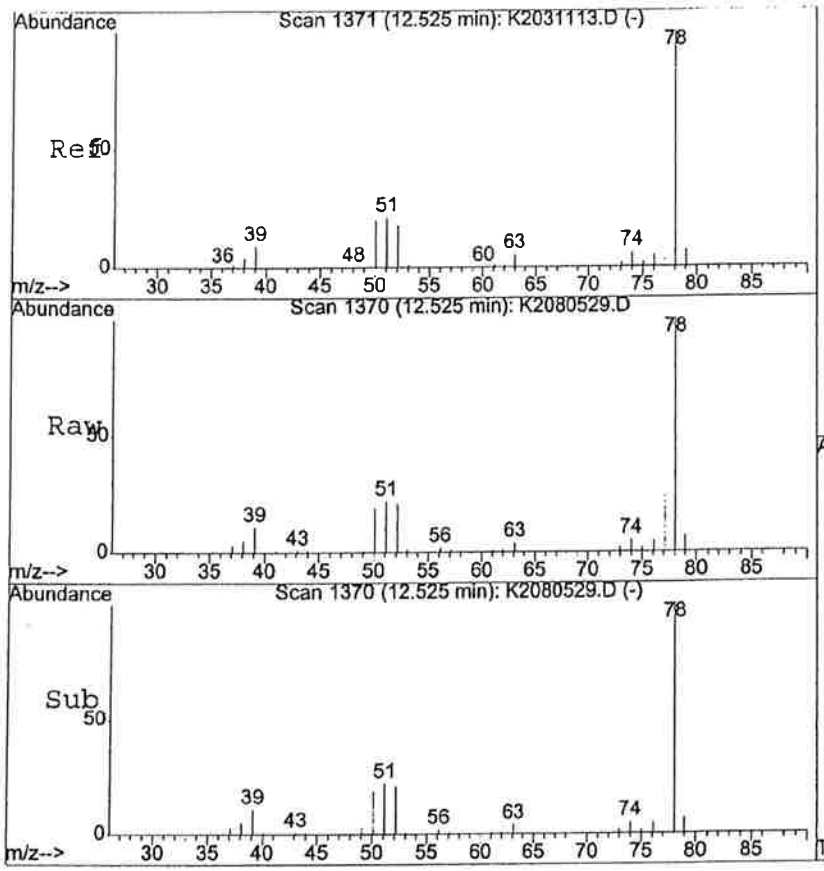


#21
Chloroform
Concen: 57.61 ug/l
RT: 10.69 min Scan# 1069
Delta R.T. -0.00 min
Lab File: K2080529.D
Acq: 5 Aug 2002 23:16

Tgt Ion: 83 Resp: 399436

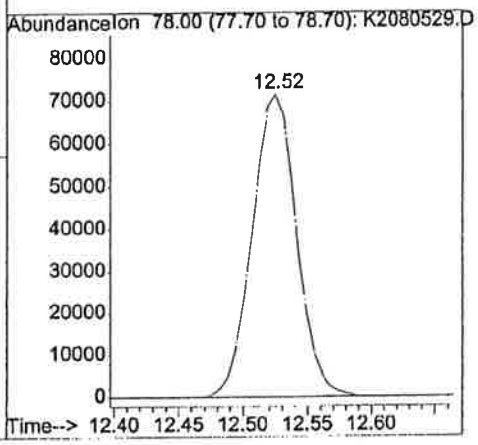
Ion	Ratio	Lower	Upper
83	100		
85	64.9	45.5	85.5

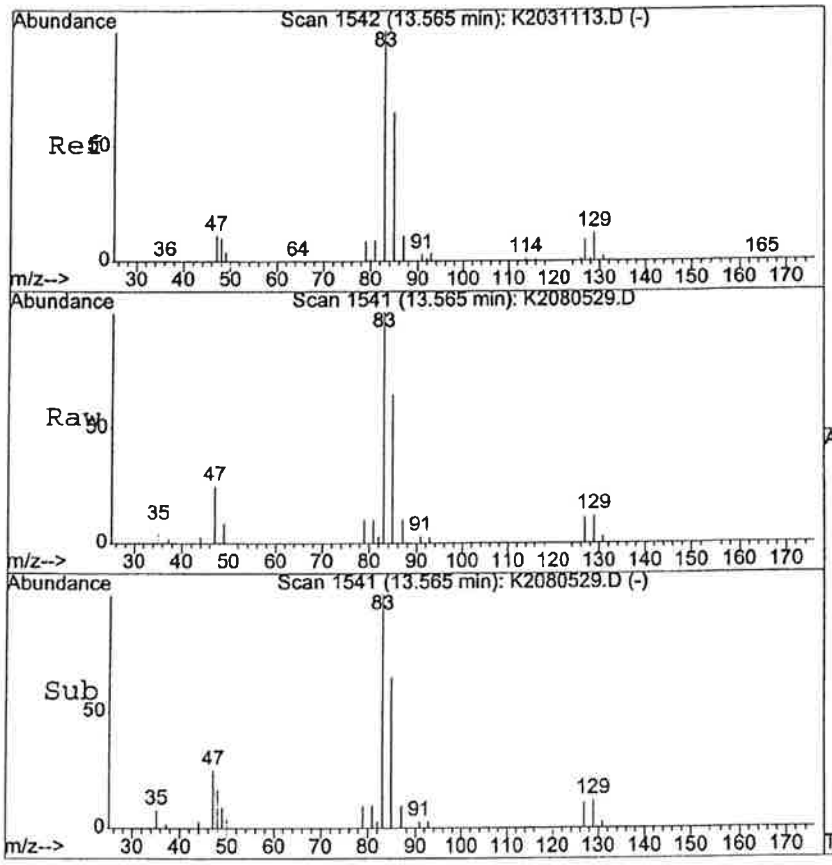




#29
Benzene
Concen: 11.57 ug/l
RT: 12.52 min Scan# 1370
Delta R.T. 0.00 min
Lab File: K2080529.D
Acq: 5 Aug 2002 23:16

Tgt Ion: 78 Resp: 172114

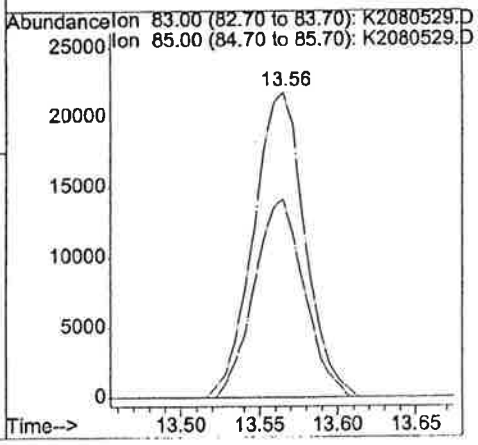


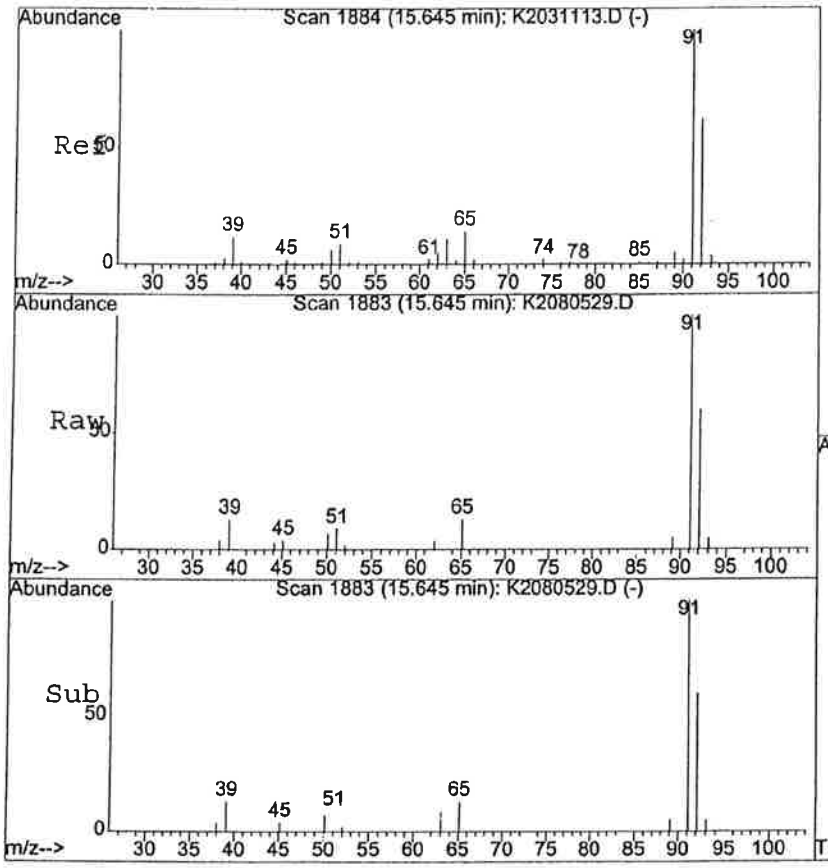


#35
Bromodichloromethane
Concen: 9.68 ug/l
RT: 13.56 min Scan# 1541
Delta R.T. 0.00 min
Lab File: K2080529.D
Acq: 5 Aug 2002 23:16

Tgt Ion: 83 Resp: 49697

Ion	Ratio	Lower	Upper
83	100		
85	63.4	44.4	84.4

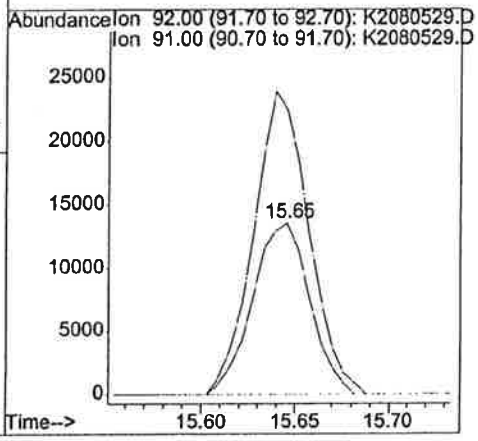


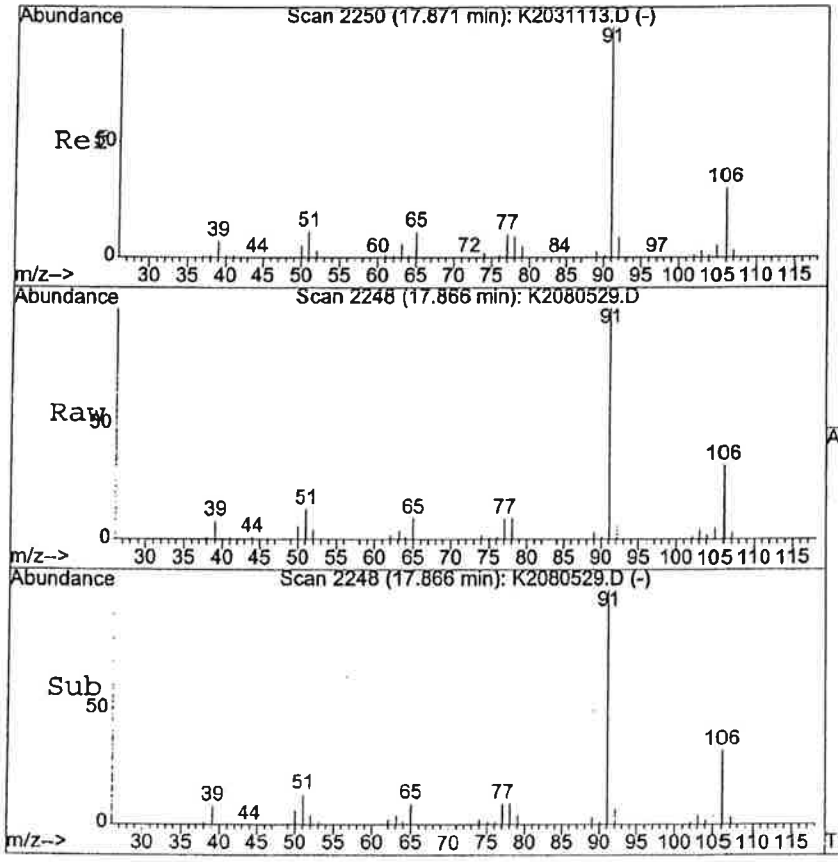


#45
Toluene
Concen: 3.06 ug/l
RT: 15.65 min Scan# 1883
Delta R.T. 0.00 min
Lab File: K2080529.D
Acq: 5 Aug 2002 23:16

Tgt Ion: 92 Resp: 28827

Ion	Ratio	Lower	Upper
92	100		
91	170.9	141.1	181.1

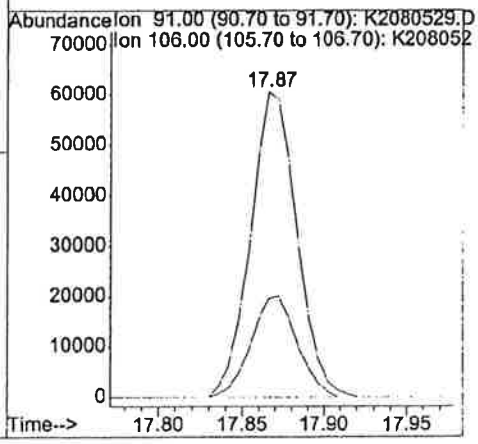


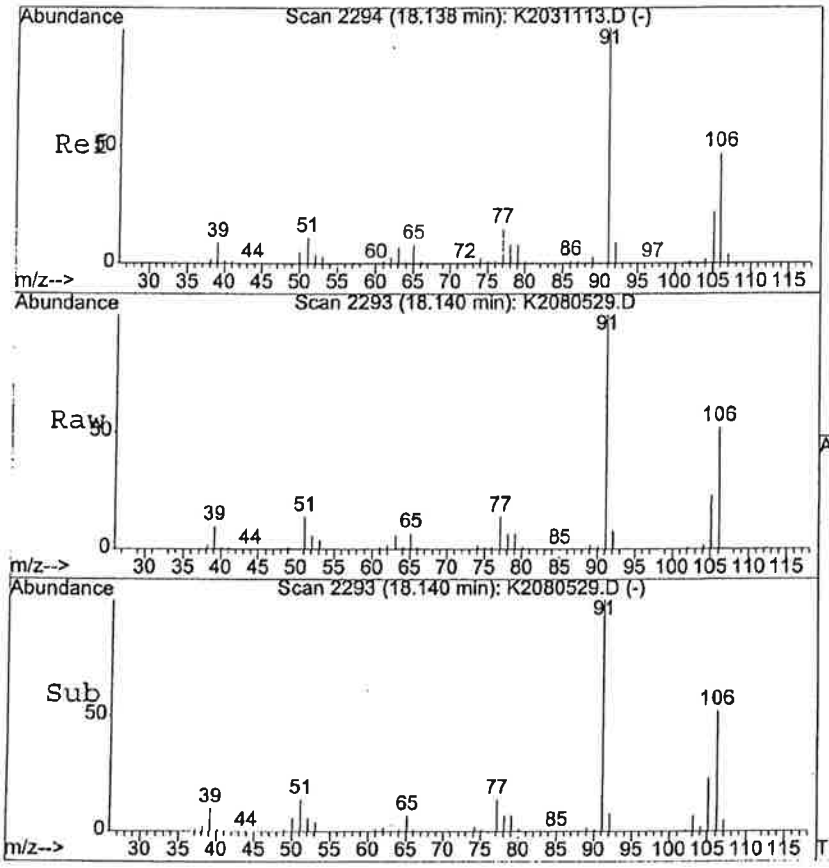


#51
Ethylbenzene
Concen: 6.74 ug/l
RT: 17.87 min Scan# 2248
Delta R.T. -0.00 min
Lab File: K2080529.D
Acq: 5 Aug 2002 23:16

Tgt Ion: 91 Resp: 118895

Ion	Ratio	Lower	Upper
91	100		
106	33.0	14.6	54.6

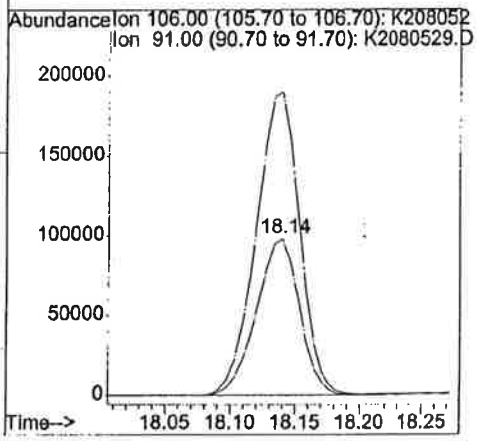


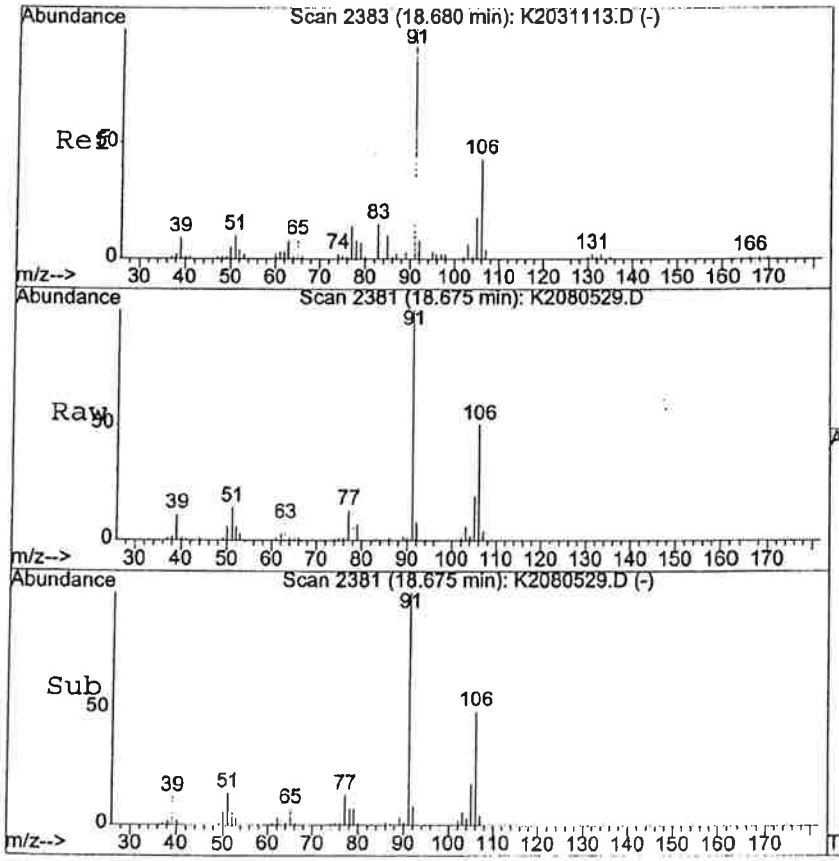


#52
m&p-Xylenes
Concen: 31.50 ug/l
RT: 18.14 min Scan# 2293
Delta R.T. 0.01 min
Lab File: K2080529.D
Acq: 5 Aug 2002 23:16

Tgt Ion:106 Resp: 226184

Ion	Ratio	Lower	Upper
106	100		
91	195.7	146.8	220.2

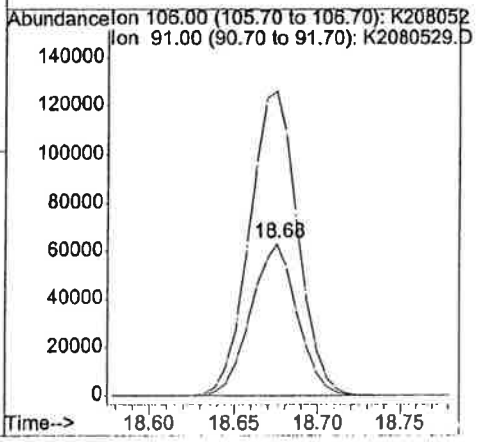


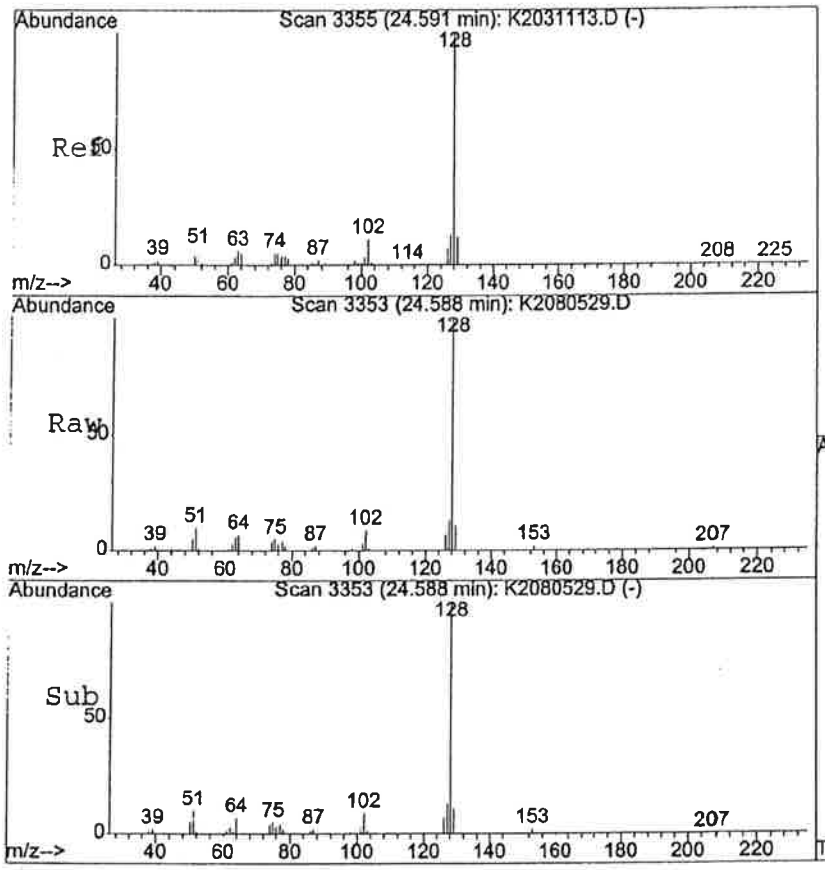


#53
o-Xylene
Concen: 17.19 ug/l
RT: 18.68 min Scan# 2381
Delta R.T. 0.00 min
Lab File: K2080529.D
Acq: 5 Aug 2002 23:16

Tgt Ion:106 Resp: 121901

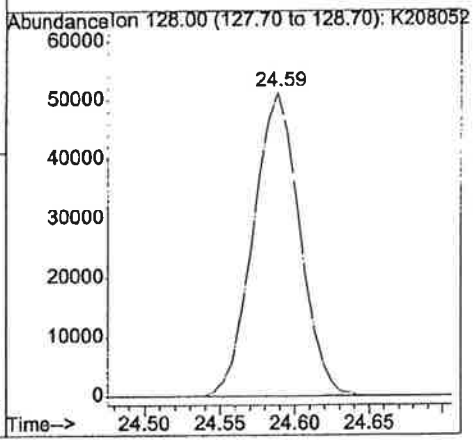
Ion	Ratio	Lower	Upper
106	100		
91	207.6	157.8	236.6





#78
Naphthalene
Concen: 13.52 ug/l
RT: 24.59 min Scan# 3353
Delta R.T. 0.00 min
Lab File: K2080529.D
Acq: 5 Aug 2002 23:16

Tgt Ion:128 Resp: 110710



Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289412B
MATRIX : WATER
CLIENT ID : SWC-012
Sample wt/vol : 5ML

ANALYSIS DATE : 08/05/2002
RECVD DATE : 07/26/2002
ID FILE : g18sun3.id
DATA FILE : K2080530

69759

Compound		Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	10	5
108-88-3	Toluene	3 J	5
100-41-4	Ethylbenzene	6	5
330-20-7	m&p-Xylenes	28	5
95-47-6	o-Xylene	15	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY 69759

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\080502K2\K2080530.D
Acq On : 5 Aug 2002 23:48
Sample : 289412B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Aug 6 10:20 2002

Vial: 9
Operator: NRT
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: K0725TCL.RES

Quant Method : C:\HPCHEM\1\METHODS\K0725TCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu Jul 25 14:07:59 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.57	168	389483	50.00 ug/l	0.00
25) 1,4-Difluorobenzene	12.89	114	635965	50.00 ug/l	0.00
41) Chlorobenzene-d5	17.55	117	549215	50.00 ug/l	0.00
59) 1,4-Dichlorobenzene-d4	21.03	152	287835	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	10.89	113	200790	45.93 ug/l	0.00
Spiked Amount 50.000			Recovery =	91.86%	
42) Toluene-d8	15.54	98	642310	46.95 ug/l	0.00
Spiked Amount 50.000			Recovery =	93.90%	
56) Bromofluorobenzene	19.21	94	30975	46.12 ug/l	0.00
Spiked Amount 50.000			Recovery =	92.24%	
Target Compounds					Qvalue
14) Methyl-t-butyl Ether	9.18	73	40891	3.69 ug/l	94
21) Chloroform	10.69	83	393888	52.70 ug/l	98
29) Benzene	12.52	78	165813	10.42 ug/l	100
35) Bromodichloromethane	13.56	83	49371	8.98 ug/l	97
45) Toluene	15.64	92	27508	2.68 ug/l	89
51) Ethylbenzene	17.87	91	115383	6.00 ug/l	95
52) m&p-Xylenes	18.14	106	215735	27.54 ug/l	92
53) o-Xylene	18.67	106	117463	15.18 ug/l	92
78) Naphthalene	24.59	128	105630	12.24 ug/l	100

08.06.02

(#) = qualifier out of range (m) = manual integration

69759 Page 0038

Quantitation Report

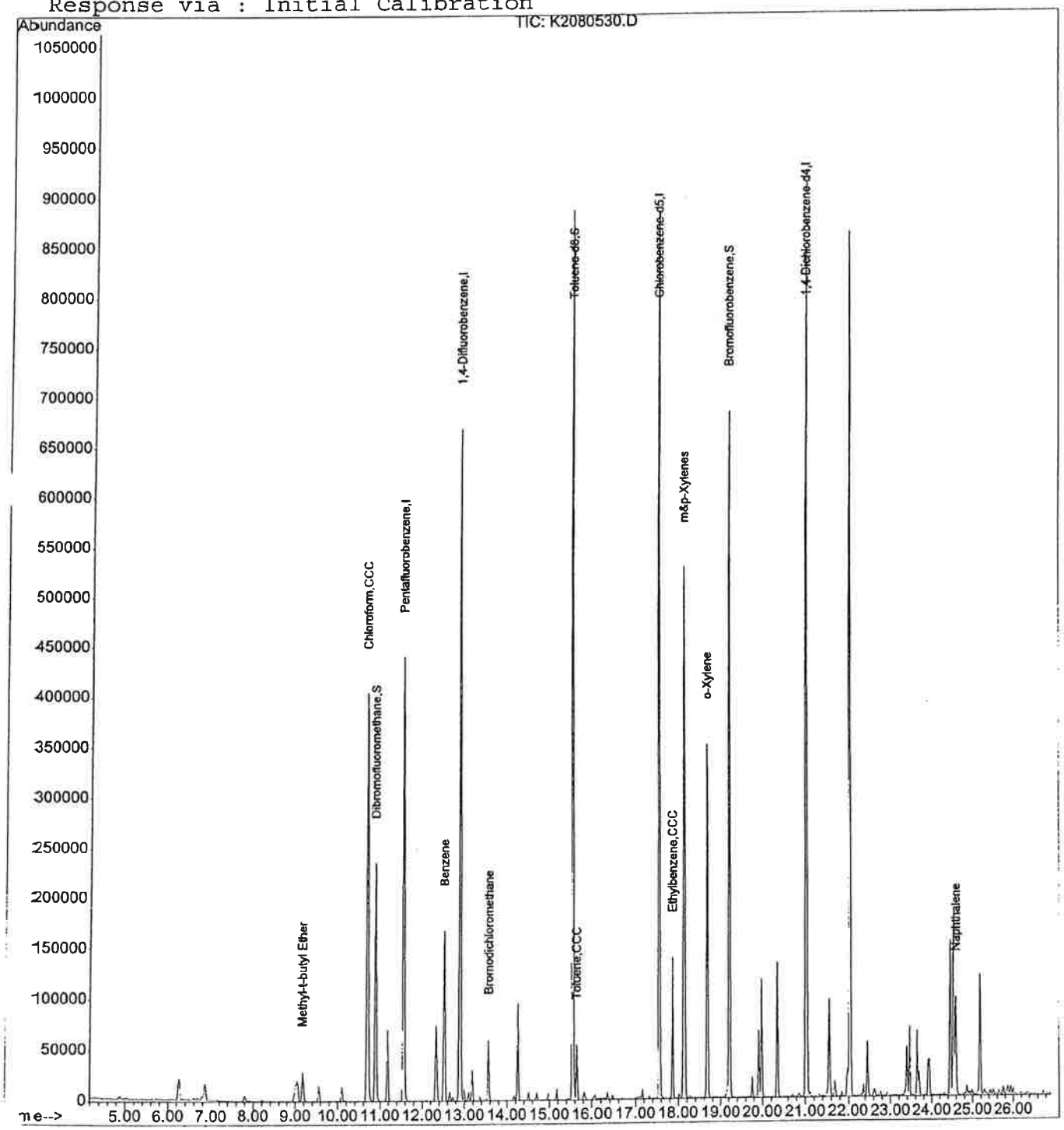
Data File : C:\HPCHEM\1\DATA\080502K2\K2080530.D
Acq On : 5 Aug 2002 23:48
Sample : 289412B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Aug 6 10:20 2002

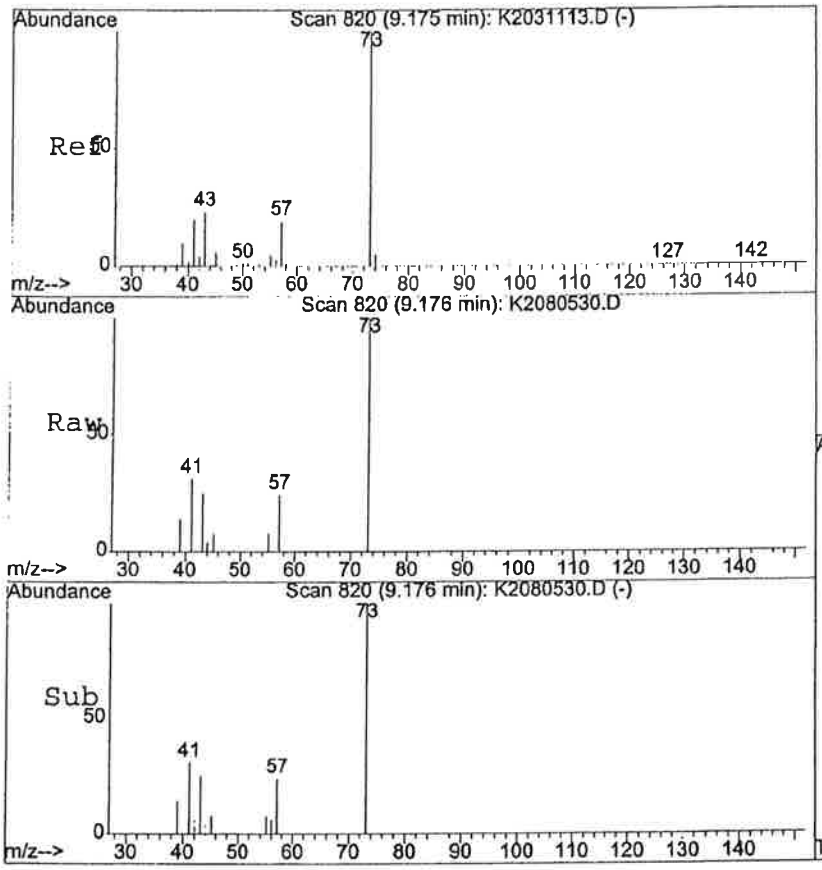
Vial: 9
Operator: NRT
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: K0725TCL.RES

Method : C:\HPCHEM\1\METHODS\K0725TCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu Jul 25 14:07:59 2002
Response via : Initial Calibration

69759 Page 0039

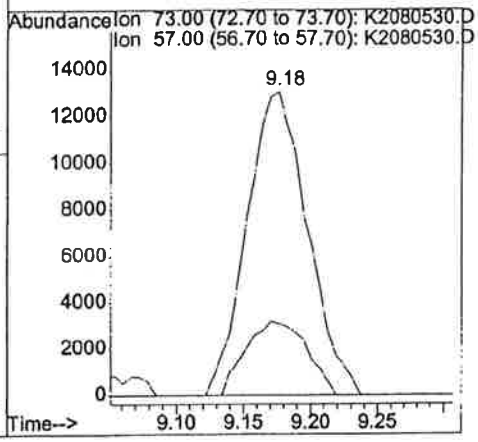


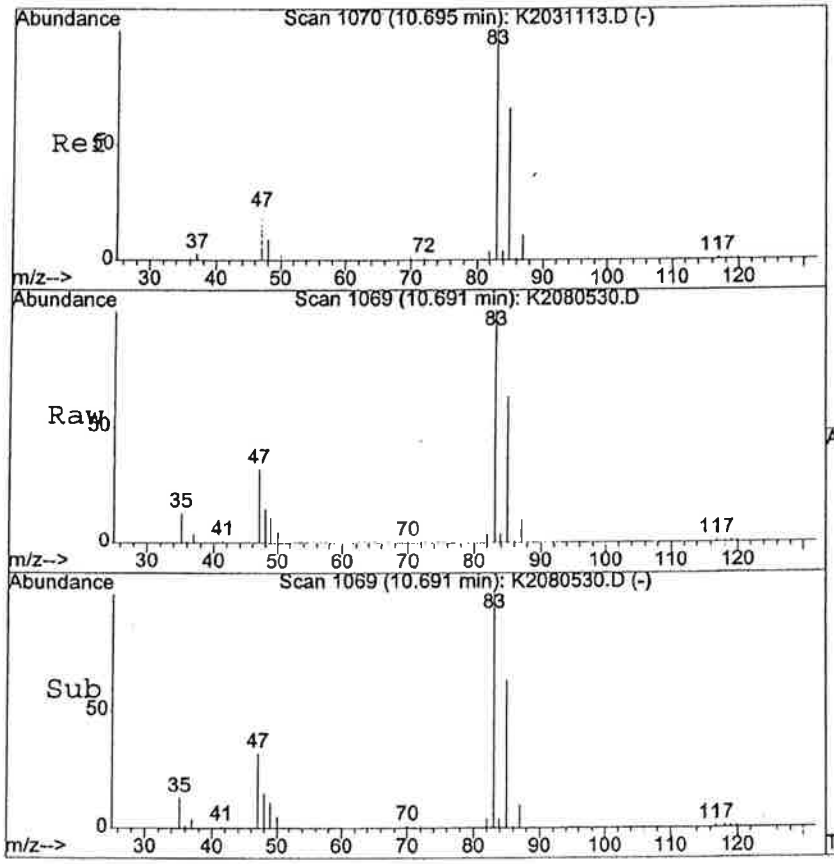


#14
Methyl-t-butyl Ether
Concen: 3.69 ug/l
RT: 9.18 min Scan# 820
Delta R.T. 0.01 min
Lab File: K2080530.D
Acq: 5 Aug 2002 23:48

Tgt Ion: 73 Resp: 40891

Ion	Ratio	Lower	Upper
73	100		
57	24.3	21.8	32.8

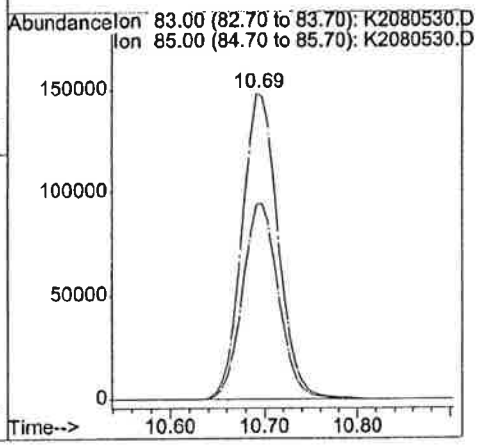


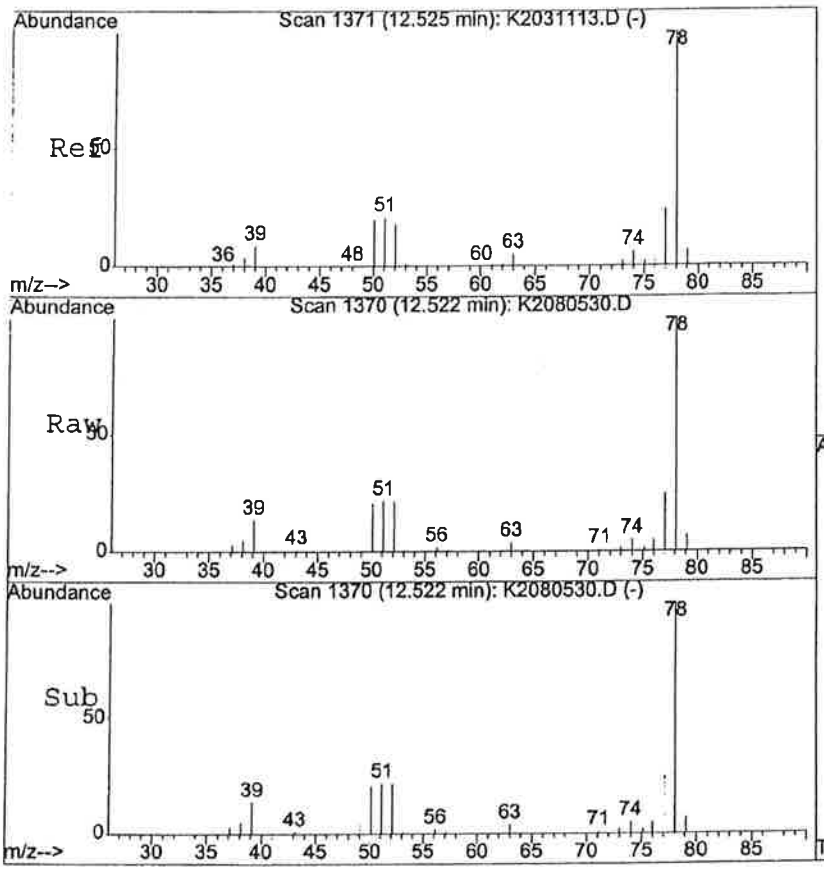


#21
Chloroform
Concen: 52.70 ug/l
RT: 10.69 min Scan# 1069
Delta R.T. -0.01 min
Lab File: K2080530.D
Acq: 5 Aug 2002 23:48

Tgt Ion: 83 Resp: 393888

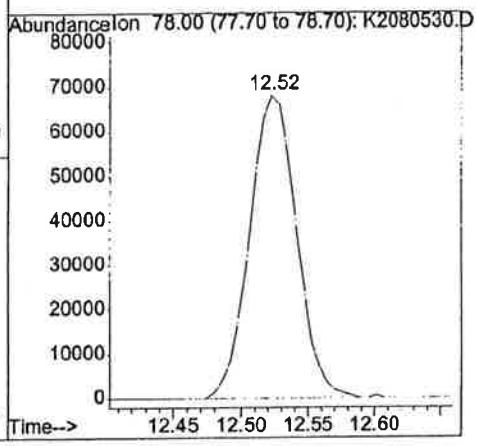
Ion	Ratio	Lower	Upper
83	100		
85	63.9	45.5	85.5

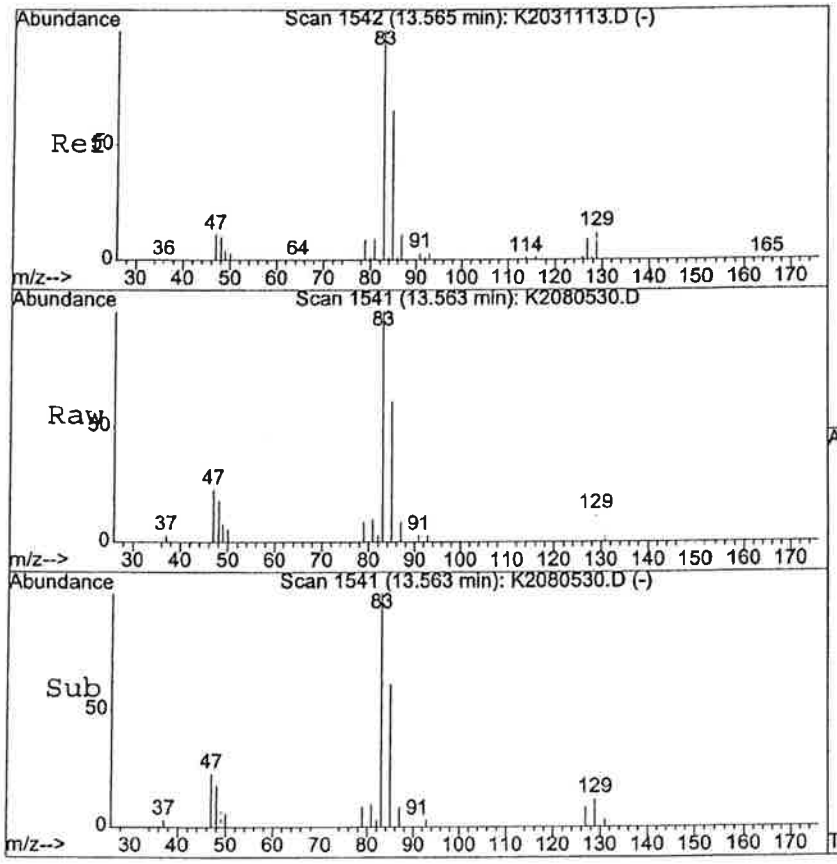




#29
Benzene
Concen: 10.42 ug/l
RT: 12.52 min Scan# 1370
Delta R.T. 0.00 min
Lab File: K2080530.D
Acq: 5 Aug 2002 23:48

Tgt Ion: 78 Resp: 165813

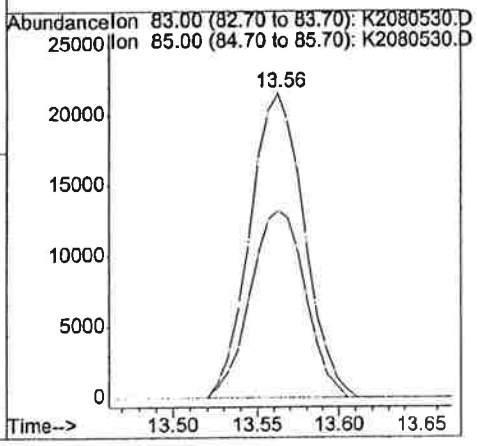


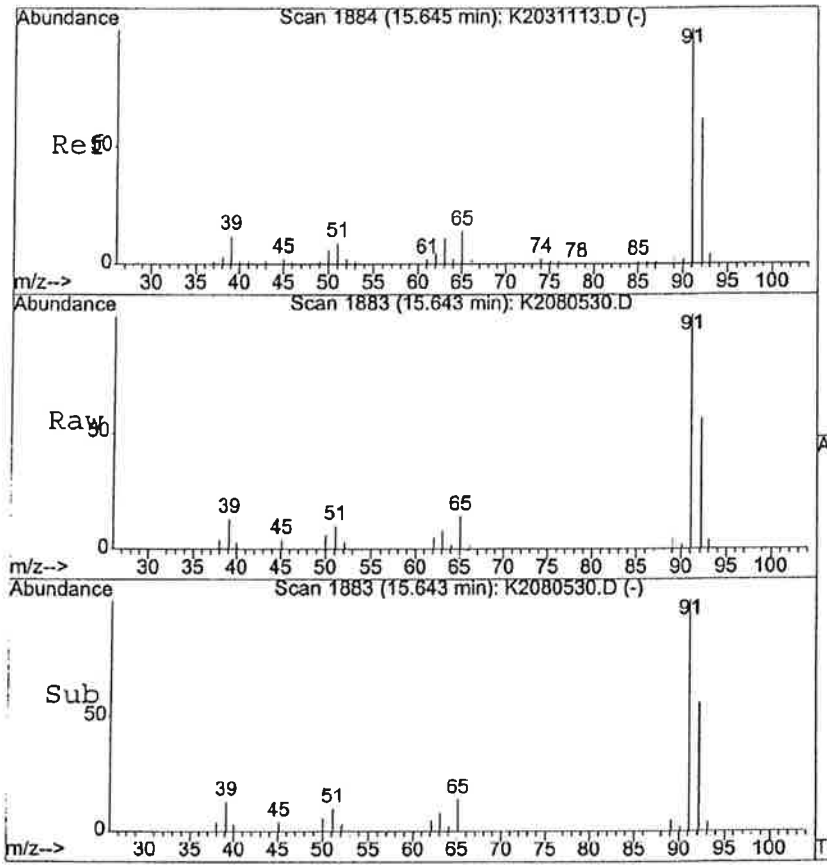


#35
Bromodichloromethane
Concen: 8.98 ug/l
RT: 13.56 min Scan# 1541
Delta R.T. 0.00 min
Lab File: K2080530.D
Acq: 5 Aug 2002 23:48

Tgt Ion: 83 Resp: 49371

Ion	Ratio	Lower	Upper
83	100		
85	62.2	44.4	84.4

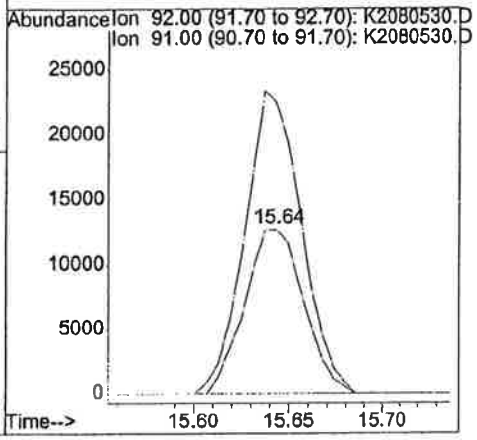


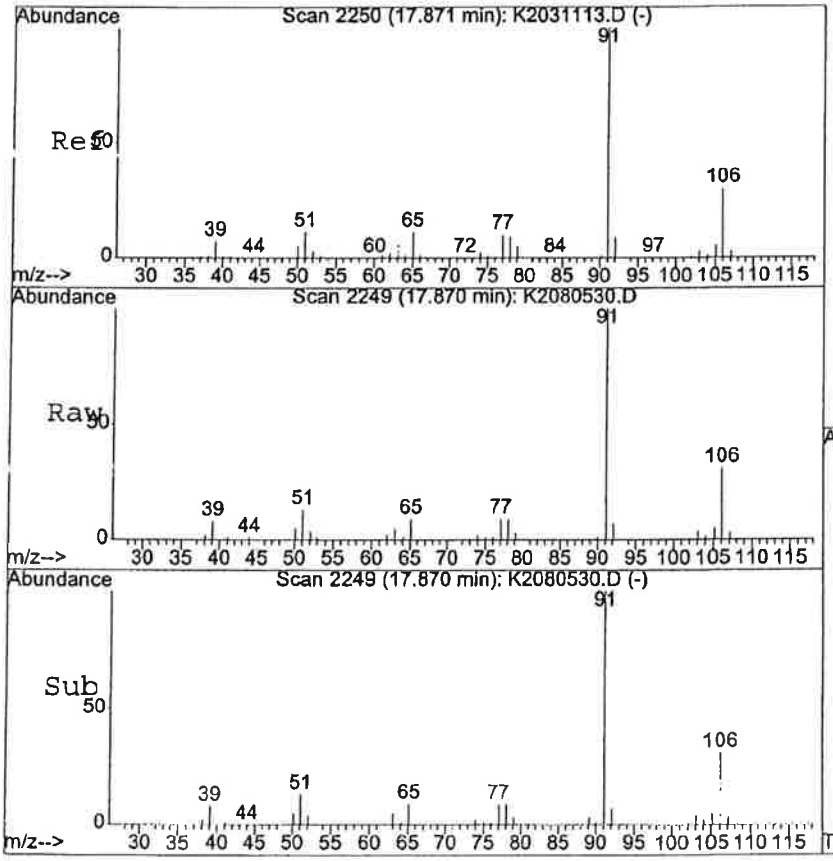


#45
Toluene
Concen: 2.68 ug/l
RT: 15.64 min Scan# 1883
Delta R.T. 0.00 min
Lab File: K2080530.D
Acq: 5 Aug 2002 23:48

Tgt Ion: 92 Resp: 27508

Ion	Ratio	Lower	Upper
92	100		
91	175.4	141.1	181.1

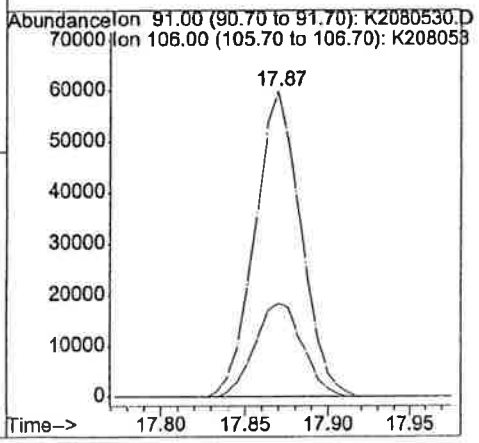


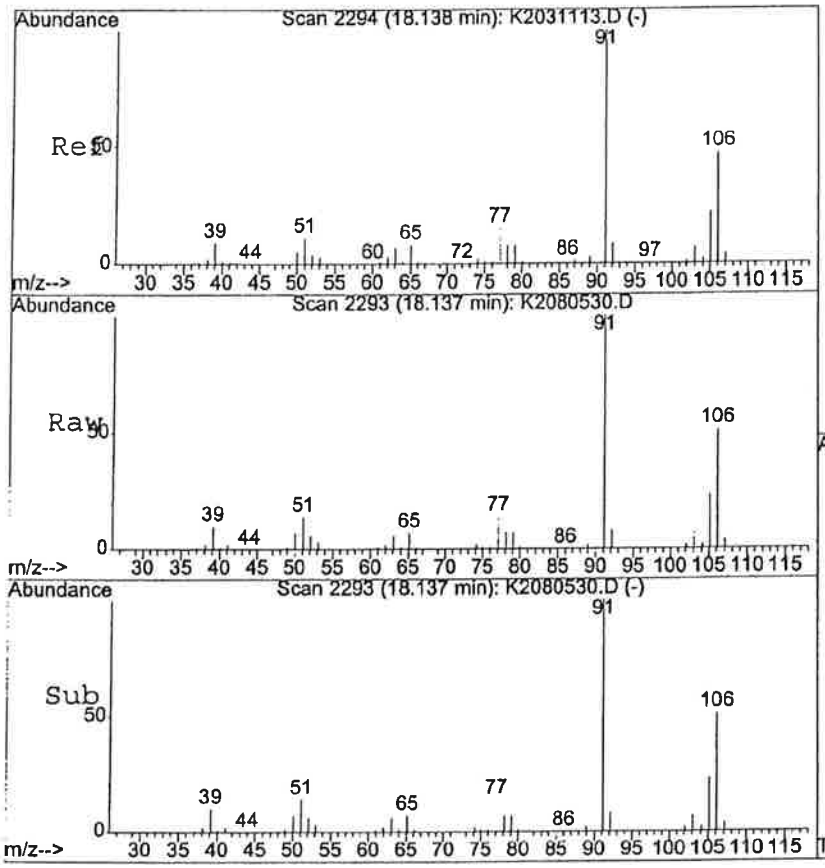


#51
Ethylbenzene
Concen: 6.00 ug/l
RT: 17.87 min Scan# 2249
Delta R.T. 0.00 min
Lab File: K2080530.D
Acq: 5 Aug 2002 23:48

Tgt Ion: 91 Resp: 115383

Ion	Ratio	Lower	Upper
91	100		
106	31.9	14.6	54.6

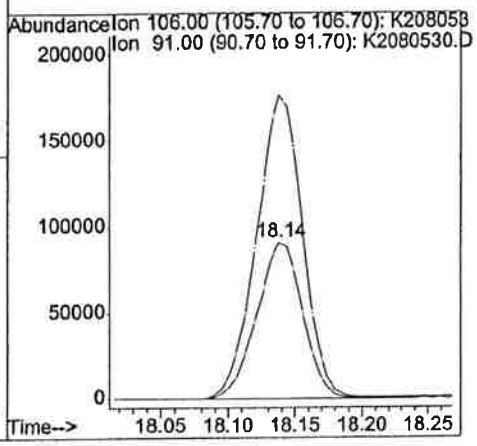


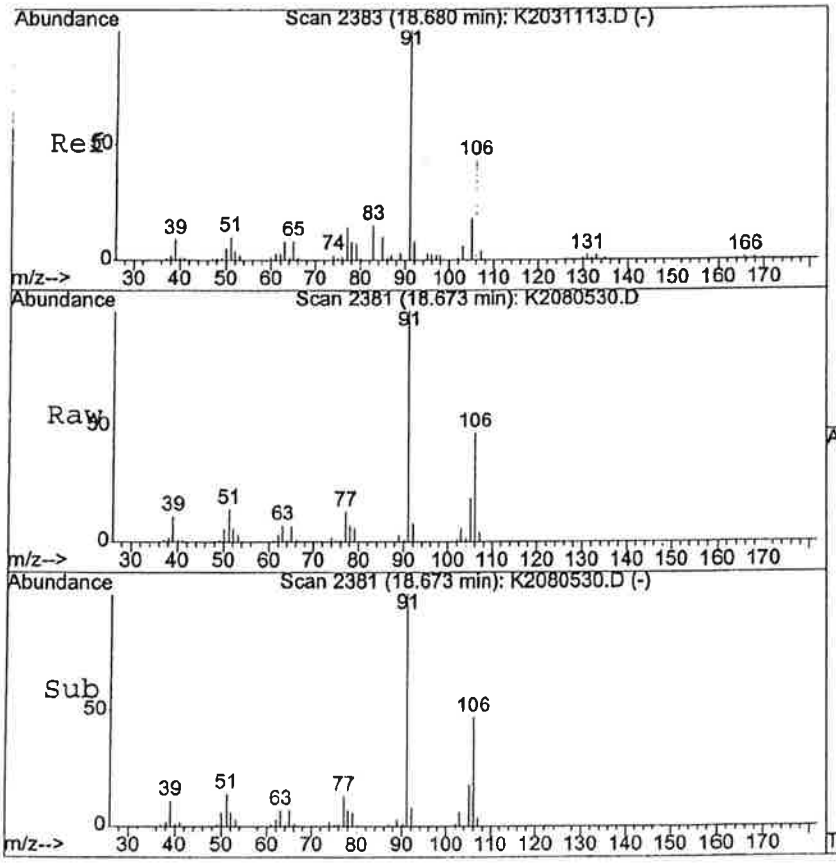


#52
m&p-Xylenes
Concen: 27.54 ug/l
RT: 18.14 min Scan# 2293
Delta R.T. 0.01 min
Lab File: K2080530.D
Acq: 5 Aug 2002 23:48

Tgt Ion:106 Resp: 215735

Ion	Ratio	Lower	Upper
106	100		
91	195.5	146.8	220.2

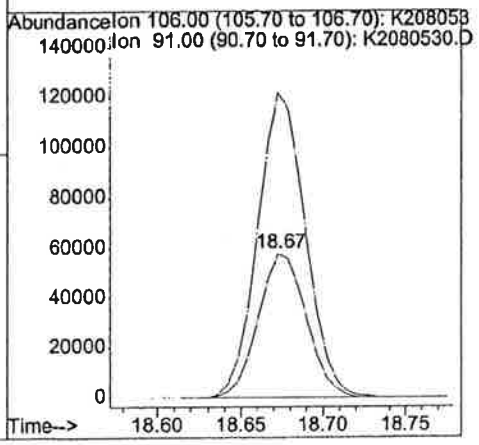


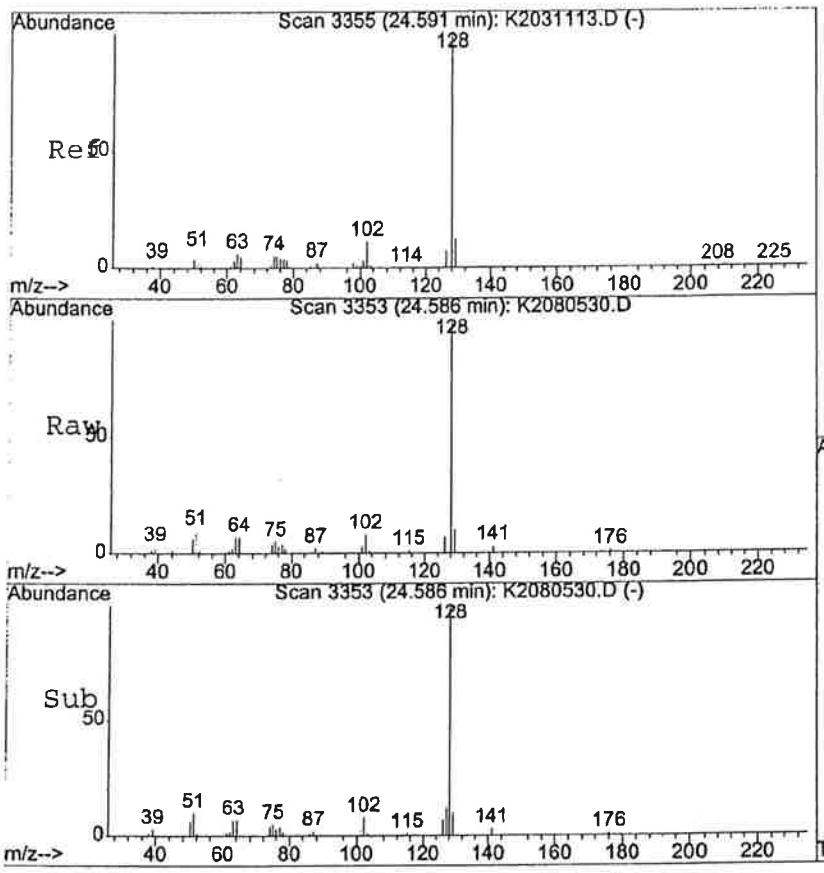


#53
o-Xylene
Concen: 15.18 ug/l
RT: 18.67 min Scan# 2381
Delta R.T. 0.00 min
Lab File: K2080530.D
Acq: 5 Aug 2002 23:48

Tgt Ion:106 Resp: 117463

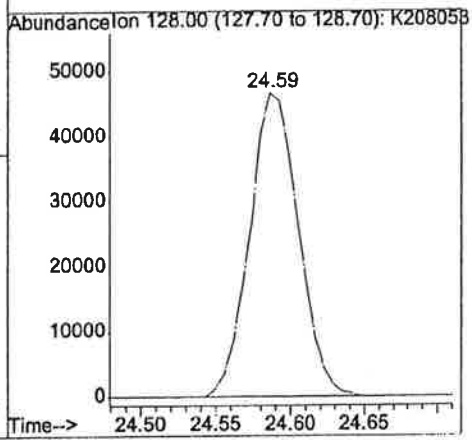
Ion	Ratio	Lower	Upper
106	100		
91	209.6	157.8	236.6





#78
Naphthalene
Concen: 12.24 ug/l
RT: 24.59 min Scan# 3353
Delta R.T. 0.00 min
Lab File: K2080530.D
Acq: 5 Aug 2002 23:48

Tgt Ion:128 Resp: 105630



Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

69759

LAB SAMPLE # : 289413B
MATRIX : WATER
CLIENT ID : SWC-013
Sample wt/vol : 5ML

ANALYSIS DATE : 08/06/2002
RECVD DATE : 07/26/2002
ID FILE : g18sun3.id
DATA FILE : K2080531

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	17	5
108-88-3	Toluene	4 J	5
100-41-4	Ethylbenzene	10	5
330-20-7	m&p-Xylenes	110	5
95-47-6	o-Xylene	27	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 'SUMMARY 69759

Quantitation Report (QT Reviewed)

69759 Page 0046

Data File : C:\HPCHEM\1\DATA\080502K2\K2080531.D
Acq On : 6 Aug 2002 00:20
Sample : 289413B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Aug 6 10:21 2002

Vial: 10
Operator: NRT
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: K0725TCL.RES

Quant Method : C:\HPCHEM\1\METHODS\K0725TCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu Jul 25 14:07:59 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.57	168	313657	50.00 ug/l	0.00
25) 1,4-Difluorobenzene	12.89	114	517516	50.00 ug/l	0.00
41) Chlorobenzene-d5	17.56	117	445681	50.00 ug/l	0.00
59) 1,4-Dichlorobenzene-d4	21.02	152	239016	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	10.89	113	170384	48.61 ug/l	0.00
Spiked Amount 50.000			Recovery	= 97.22%	
42) Toluene-d8	15.54	98	514677	46.36 ug/l	0.00
Spiked Amount 50.000			Recovery	= 92.72%	
56) Bromofluorobenzene	19.21	94	25100	46.06 ug/l	0.00
Spiked Amount 50.000			Recovery	= 92.12%	
Target Compounds					Qvalue
14) Methyl-t-butyl Ether	9.18	73	131553	14.73 ug/l	97
21) Chloroform	10.70	83	345885	57.47 ug/l	99
29) Benzene	12.52	78	214752	16.58 ug/l	100
35) Bromodichloromethane	13.56	83	43420	9.71 ug/l	99
45) Toluene	15.64	92	30990	3.72 ug/l	95
51) Ethylbenzene	17.87	91	162825	10.43 ug/l	95
52) m&p-Xylenes	18.12	106	715240	112.50 ug/l	92
53) o-Xylene	18.67	106	171088	27.25 ug/l	94
78) Naphthalene	24.58	128	243059	27.37 ug/l	100

08.06.02WD

PSS 8/12

(#) = qualifier out of range (m) = manual integration

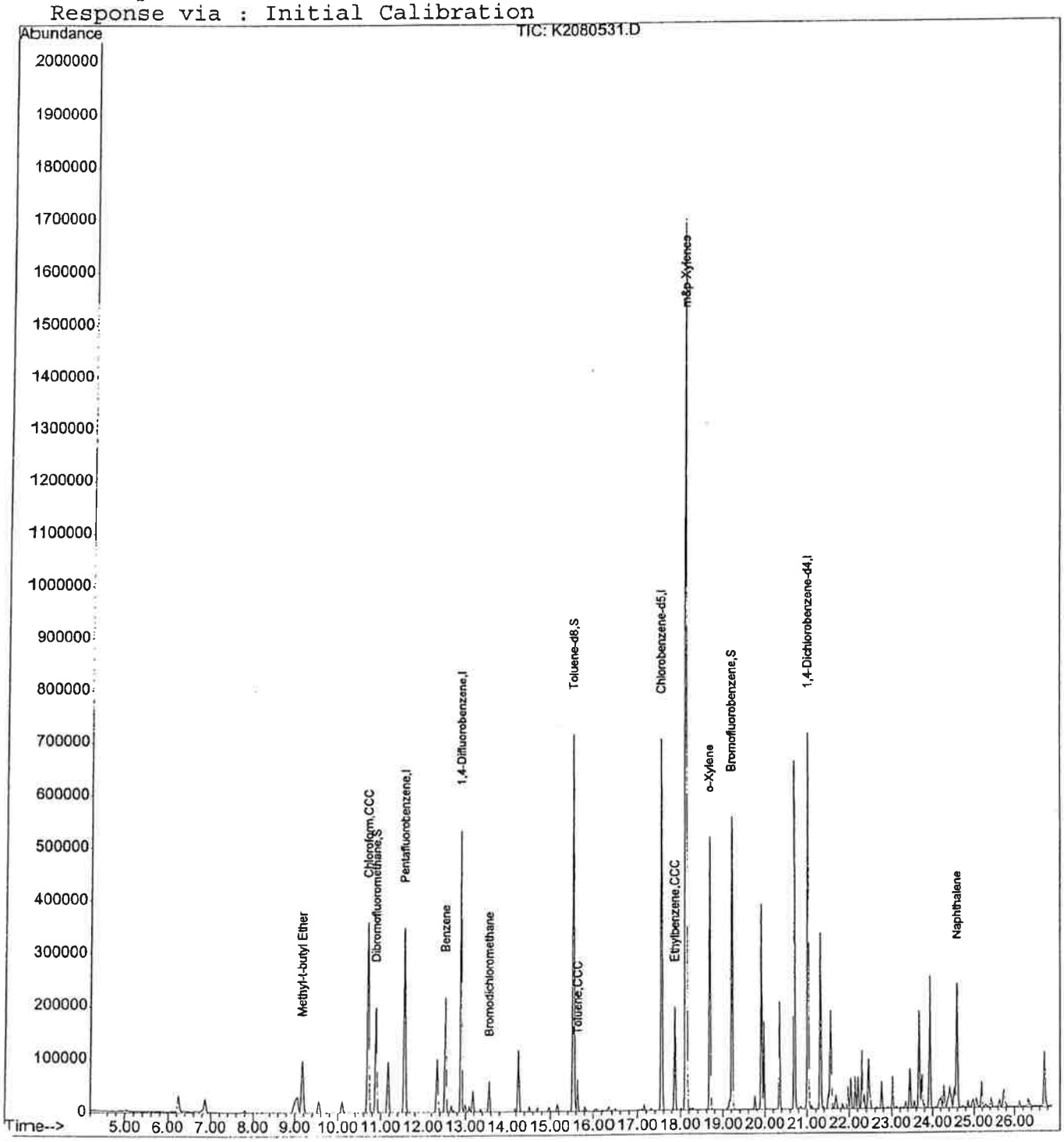
Quantitation Report

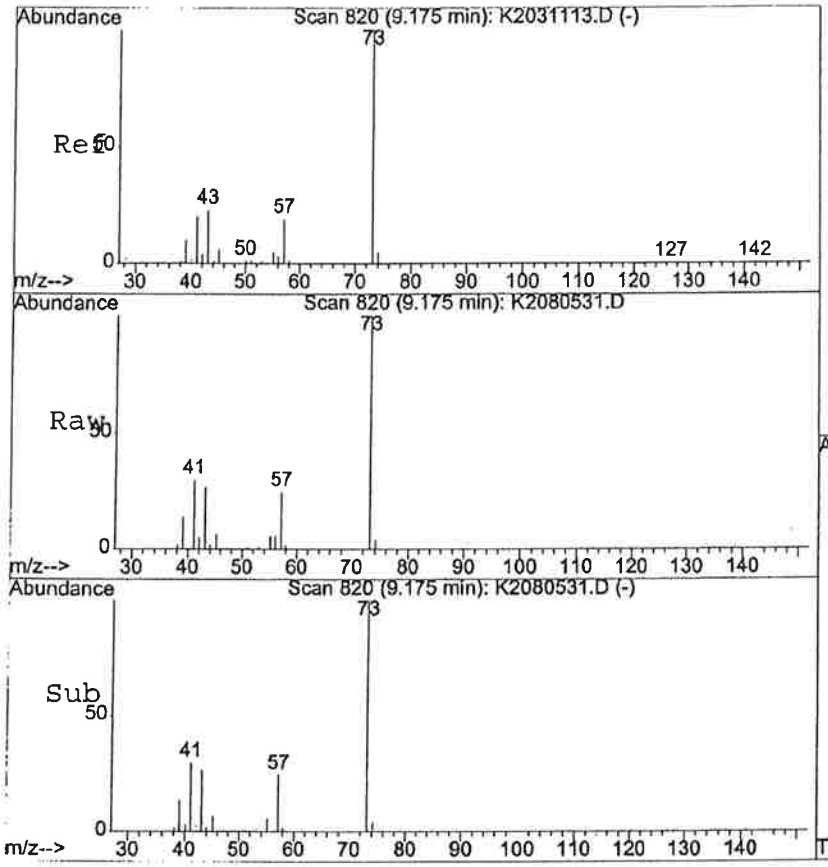
Data File : C:\HPCHEM\1\DATA\080502K2\K2080531.D
Acq On : 6 Aug 2002 00:20
Sample : 289413B
Misc : 5ML
MS Integration Params: rteint.p
Quant Time: Aug 6 10:21 2002

Vial: 10
Operator: NRT
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: K0725TCL.RES

Method : C:\HPCHEM\1\METHODS\K0725TCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu Jul 25 14:07:59 2002
Response via : Initial Calibration

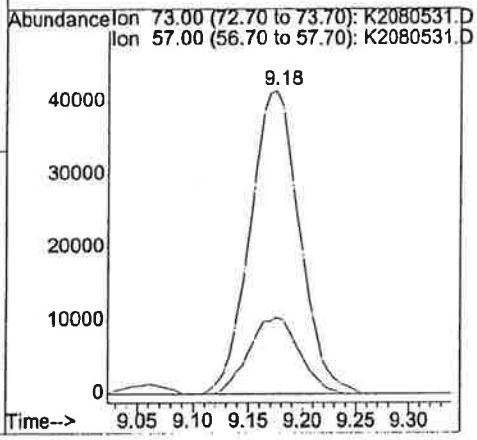


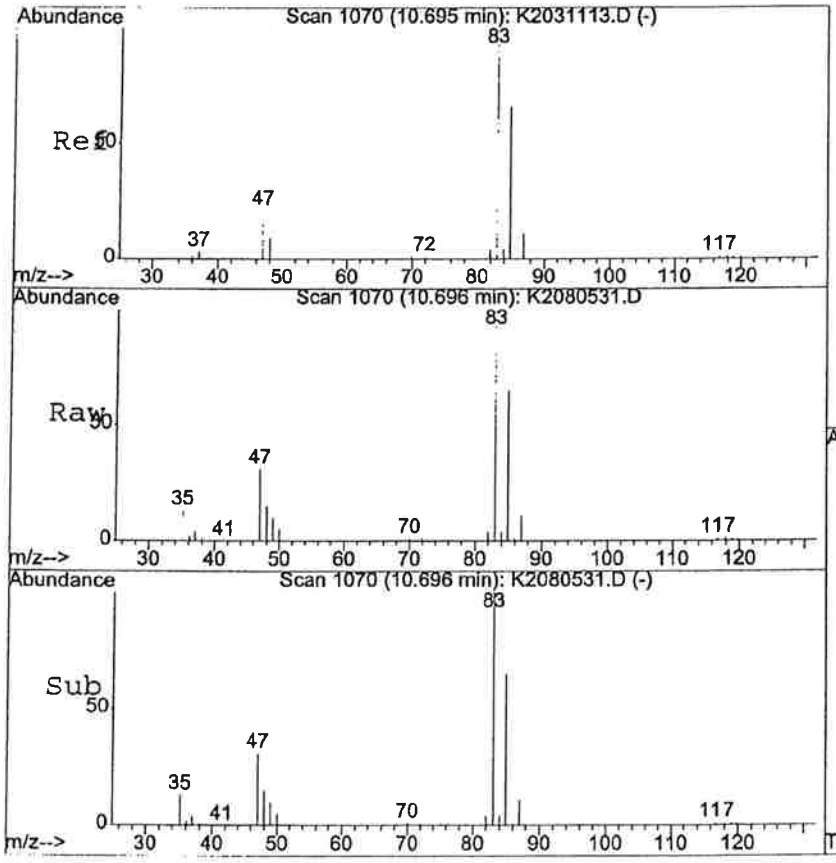


#14
Methyl-t-butyl Ether
Concen: 14.73 ug/l
RT: 9.18 min Scan# 820
Delta R.T. 0.01 min
Lab File: K2080531.D
Acq: 6 Aug 2002 00:20

Tgt Ion: 73 Resp: 131553

Ion	Ratio	Lower	Upper
73	100		
57	25.8	21.8	32.8

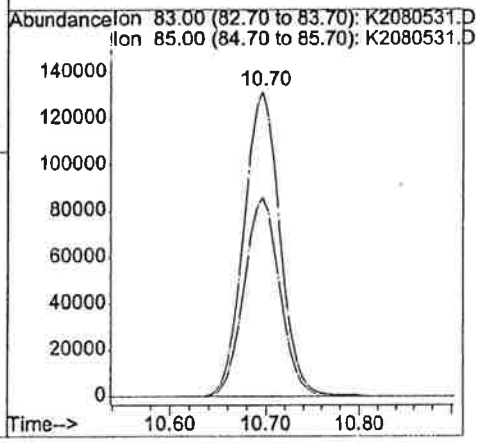


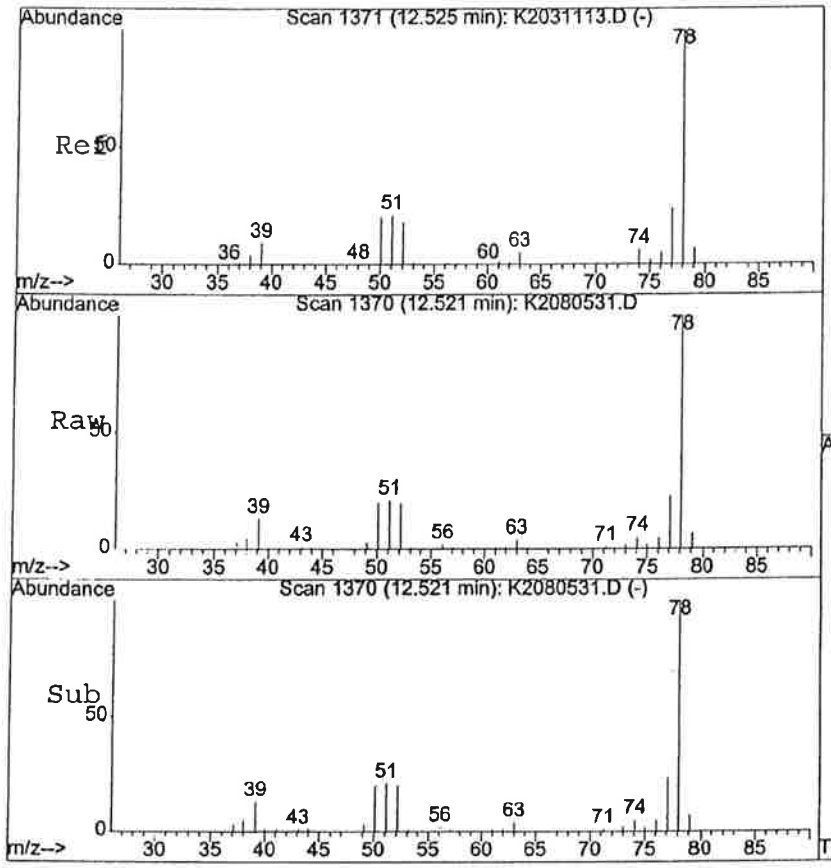


#21
Chloroform
Concen: 57.47 ug/l
RT: 10.70 min Scan# 1070
Delta R.T. 0.00 min
Lab File: K2080531.D
Acq: 6 Aug 2002 00:20

Tgt Ion: 83 Resp: 345885

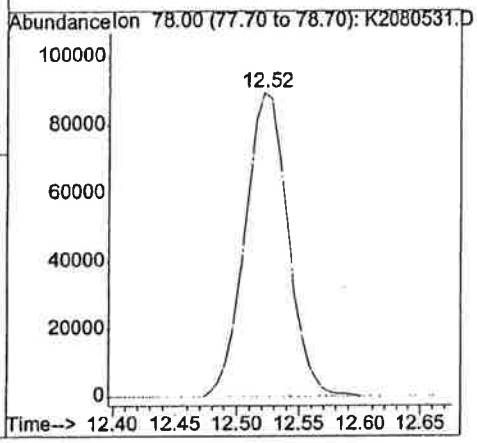
Ion	Ratio	Lower	Upper
83	100		
85	64.9	45.5	85.5

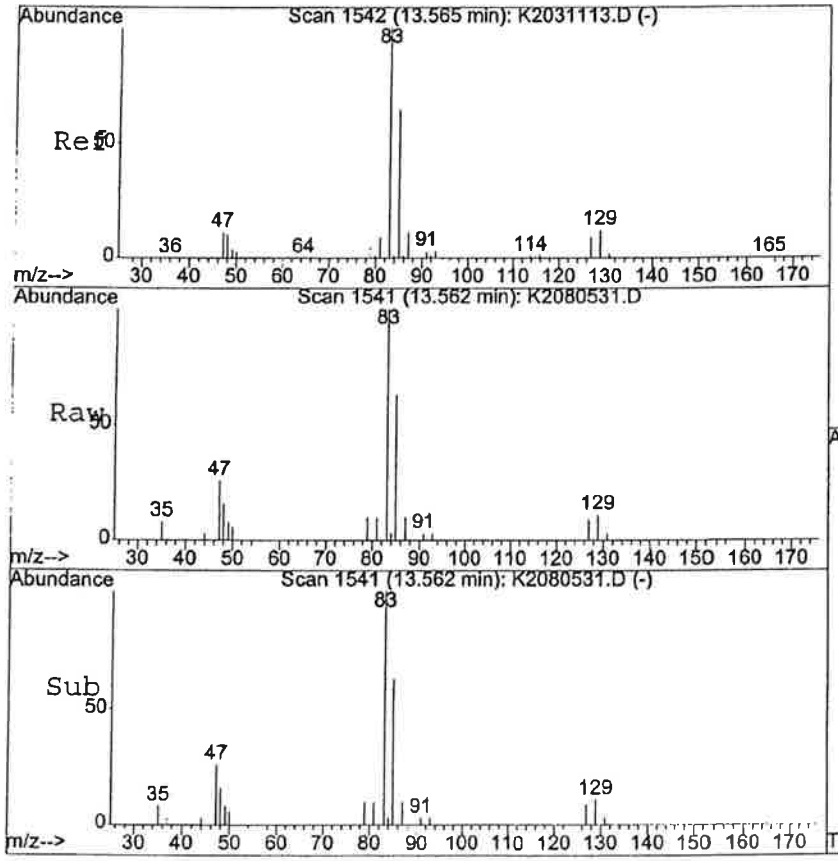




#29
Benzene
Concen: 16.58 ug/l
RT: 12.52 min Scan# 1370
Delta R.T. 0.00 min
Lab File: K2080531.D
Acq: 6 Aug 2002 00:20

Tgt Ion: 78 Resp: 214752

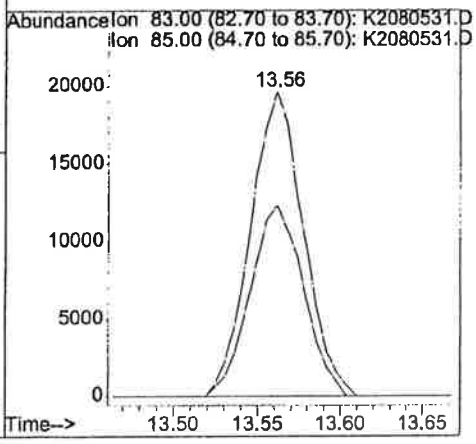


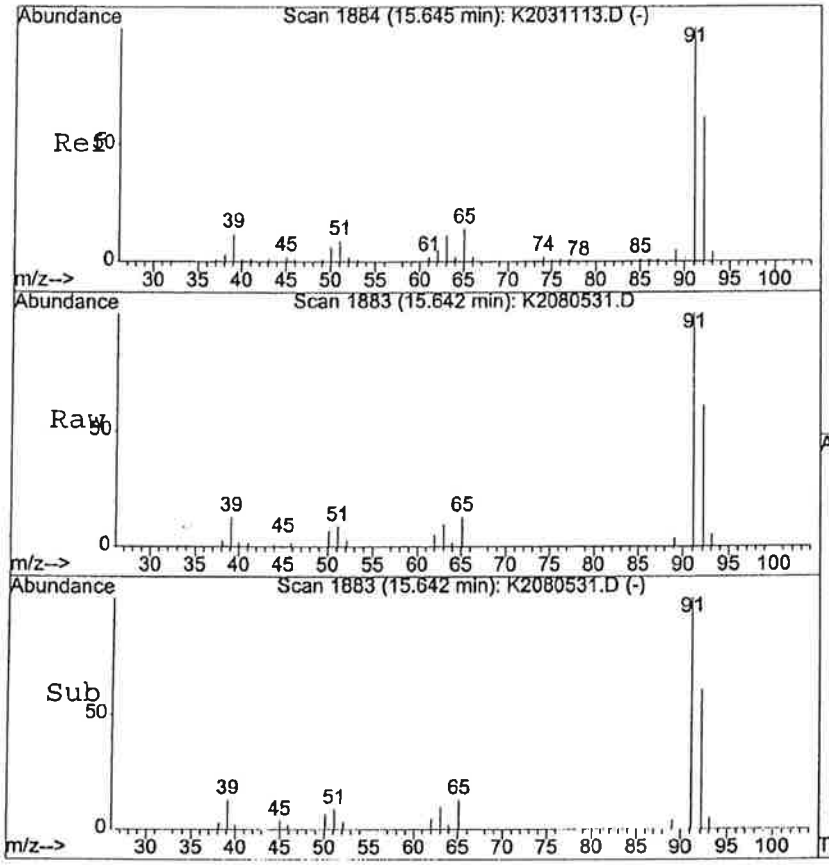


#35
Bromodichloromethane
Concen: 9.71 ug/l
RT: 13.56 min Scan# 1541
Delta R.T. 0.00 min
Lab File: K2080531.D
Acq: 6 Aug 2002 00:20

Tgt Ion: 83 Resp: 43420

Ion	Ratio	Lower	Upper
83	100		
85	63.3	44.4	84.4

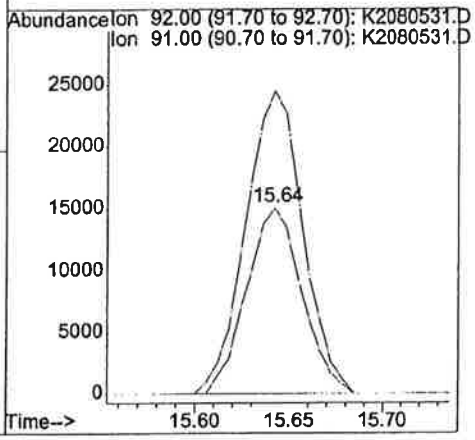


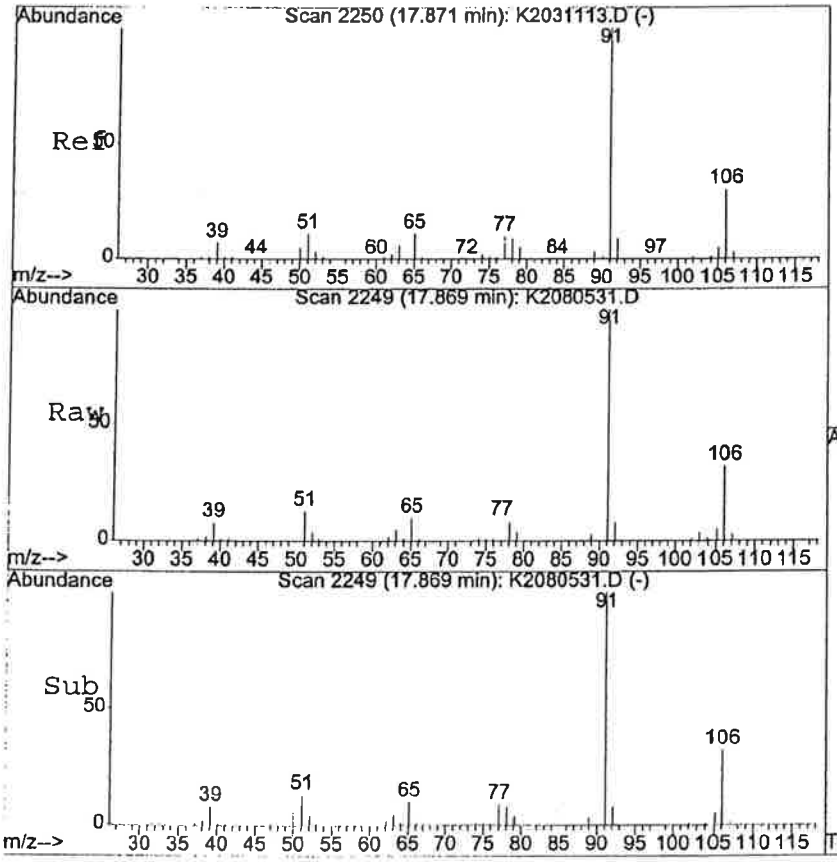


#45
Toluene
Concen: 3.72 ug/l
RT: 15.64 min Scan# 1883
Delta R.T. 0.00 min
Lab File: K2080531.D
Acq: 6 Aug 2002 00:20

Tgt Ion: 92 Resp: 30990

Ion	Ratio	Lower	Upper
92	100		
91	167.1	141.1	181.1

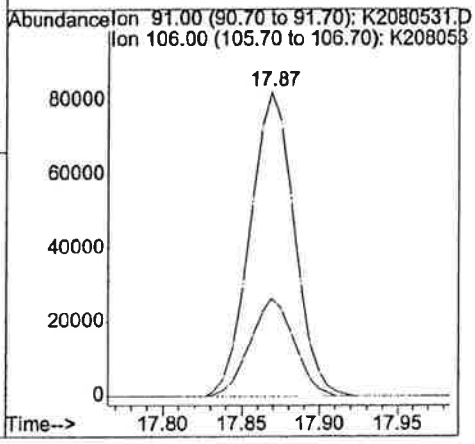


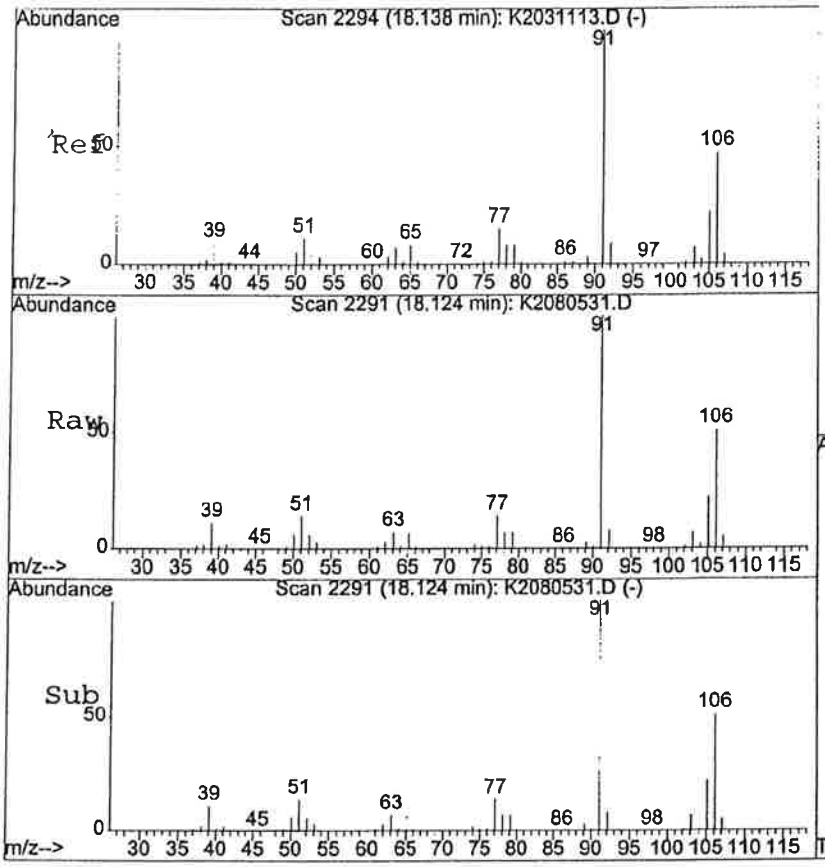


#51
Ethylbenzene
Concen: 10.43 ug/l
RT: 17.87 min Scan# 2249
Delta R.T. 0.00 min
Lab File: K2080531.D
Acq: 6 Aug 2002 00:20

Tgt Ion: 91 Resp: 162825

Ion	Ratio	Lower	Upper
91	100		
106	31.8	14.6	54.6

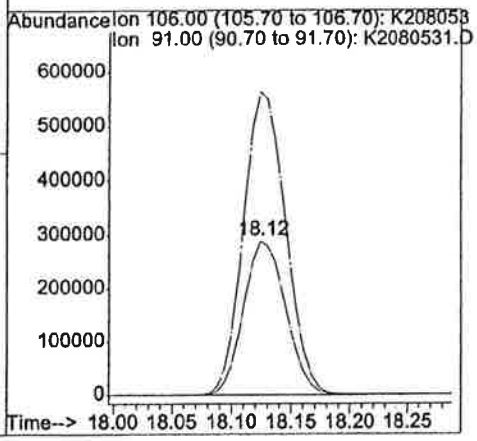


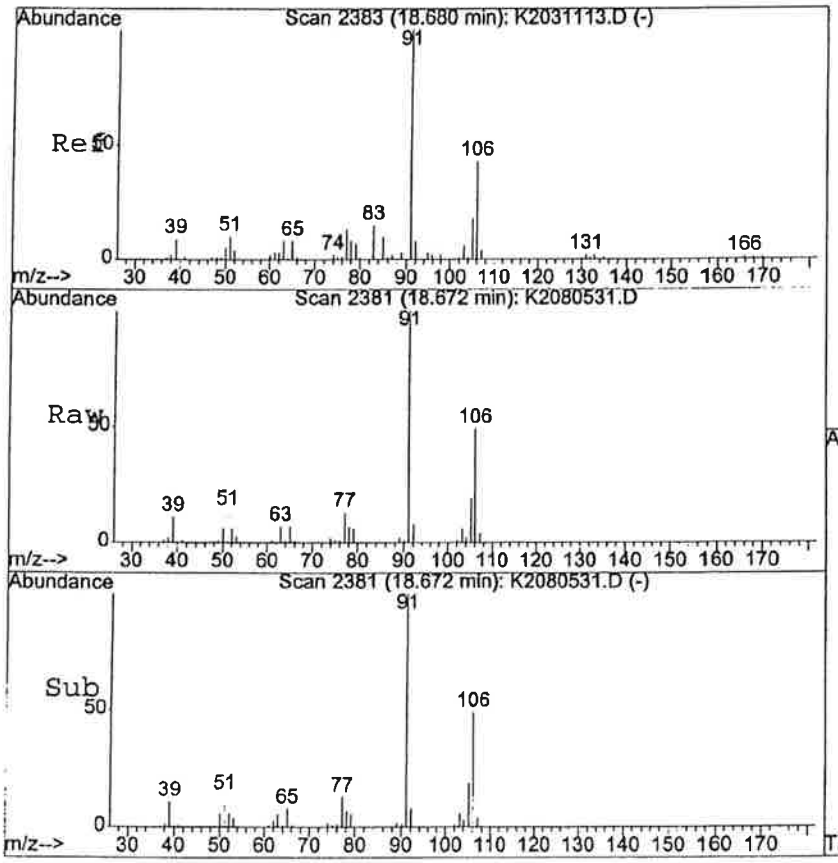


#52
m&p-Xylenes
Concen: 112.50 ug/l
RT: 18.12 min Scan# 2291
Delta R.T. -0.01 min
Lab File: K2080531.D
Acq: 6 Aug 2002 00:20

Tgt Ion:106 Resp: 715240

Ion	Ratio	Lower	Upper
106	100		
91	195.6	146.8	220.2

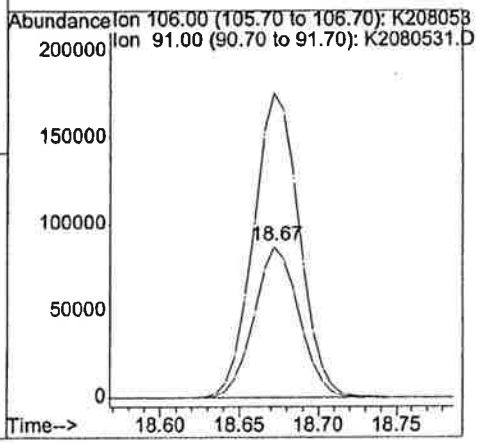


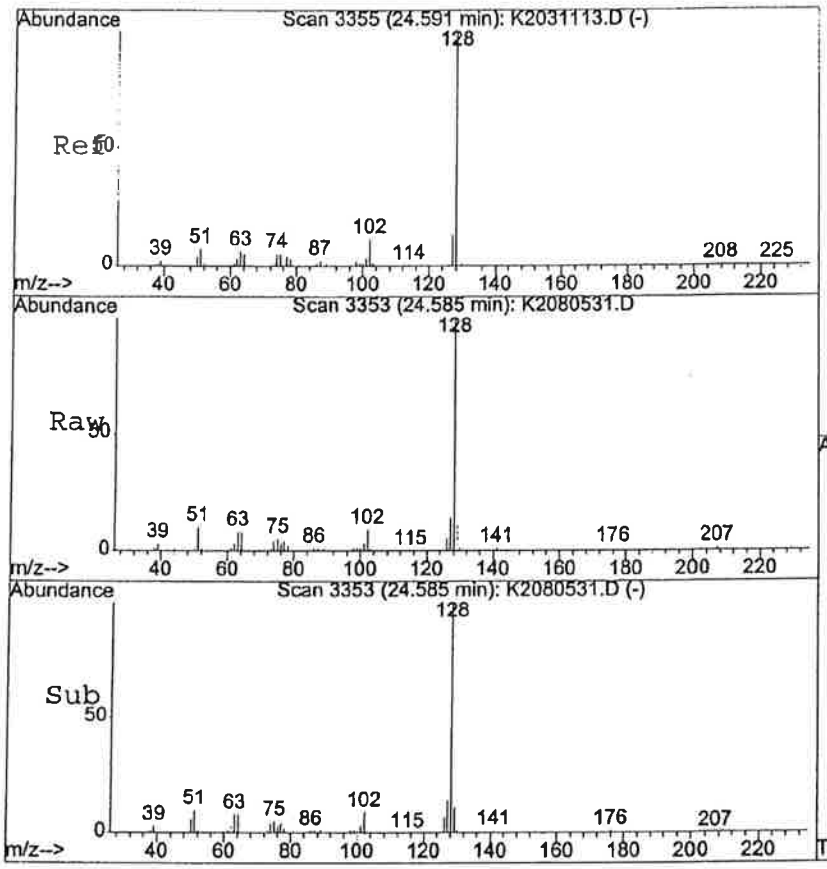


#53
o-Xylene
Concen: 27.25 ug/l
RT: 18.67 min Scan# 2381
Delta R.T. 0.00 min
Lab File: K2080531.D
Acq: 6 Aug 2002 00:20

Tgt Ion:106 Resp: 171088

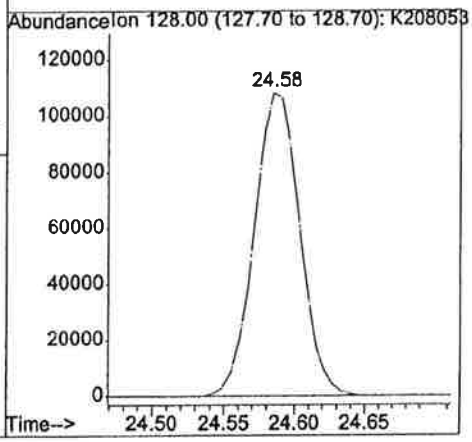
Ion	Ratio	Lower	Upper
106	100		
91	206.9	157.8	236.6





#78
Naphthalene
Concen: 27.37 ug/l
RT: 24.58 min Scan# 3353
Delta R.T. 0.00 min
Lab File: K2080531.D
Acq: 6 Aug 2002 00:20

Tgt Ion:128 Resp: 243059



2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Washington Environmental Lab Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

	EPA SAMPLE NO.	SMC1 (DFM) #	SMC2 (TOL) #	SMC3 (BFB) #	TOT OUT
01	VBLK080502K2	94	94	94	0
02	289061A	94	94	94	0
03	289290A	95	95	93	0
04	289065ADL	94	93	93	0
05	289411B	95	94	91	0
06	289412B	92	94	92	0
07	289413B	97	93	92	0
08	289139	92	93	93	0
09	289584	94	91	93	0
10	289221ADL	96	94	90	0

QC LIMITS

SMC1	(DFM)	=	Dibromofluoromethane	(86-118)
SMC2	(TOL)	=	Toluene-d8	(88-110)
SMC3	(BFB)	=	Bromofluorobenzene	(86-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK080502K2

Lab Name: Washington Environmental Lab Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: N/A

Lab File ID: K2080524.D Lab Sample ID: METHOD_BLANK

Date Analyzed: 8/5/2002 Time Analyzed: 20:36

GC Column: DB-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5973K

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	289061A	289061A	K2080525.D	21:08
02	289290A	289290A	K2080527.D	22:12
03	289065ADL	289065ADL	K2080528.D	22:44
04	289411B	289411B	K2080529.D	23:16
05	289412B	289412B	K2080530.D	23:48
06	289413B	289413B	K2080531.D	0:20
07	289139	289139	K2080532.D	0:52
08	289584	289584	K2080533.D	1:24
09	289221ADL	289221ADL	K2080536.D	3:01
10	289582A	289582A	K2080539.D	4:40
11	289580A	289580A	K2080540.D	5:15
12	289579A	289579A	K2080542.D	6:25

COMMENTS

Washington Environmental Laboratory

VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : METHOD_BLANK
MATRIX : WATER
CLIENT ID :
Sample wt/vol : 5ML

ANALYSIS DATE : 08/05/2002
RECVD DATE :
ID FILE : g18sun3.id
DATA FILE : K2080524

	Compound	Result (ug/L)	Detection Limit (ug/L)
75-15-0	Carbon Disulfide	ND	5
71-43-2	Benzene	ND	5
108-88-3	Toluene	ND	5
100-41-4	Ethylbenzene	ND	5
330-20-7	m&p-Xylenes	ND	5
95-47-6	o-Xylene	ND	5

ND - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

1.0 SUMMARY

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\080502K2\K2080524.D
Acq On : 5 Aug 2002 20:36
Sample : METHOD BLANK 080502K2
Misc : 5ML 8260CCL
MS Integration Params: rteint.p
Quant Time: Aug 5 21:42 2002

Vial: 3
Operator: NRT
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: K0725TCL.RES

Quant Method : C:\HPCHEM\1\METHODS\K0725TCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu Jul 25 14:07:59 2002
Response via : Initial Calibration
DataAcq Meth : TCLVOW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene	11.56	168	328902	50.00 ug/l	0.00
25) 1,4-Difluorobenzene	12.89	114	542449	50.00 ug/l	0.00
41) Chlorobenzene-d5	17.55	117	458252	50.00 ug/l	0.00
59) 1,4-Dichlorobenzene-d4	21.02	152	234377	50.00 ug/l	0.00
System Monitoring Compounds					
22) Dibromofluoromethane	10.89	113	173789	47.17 ug/l	0.00
Spiked Amount 50.000			Recovery =	94.34%	
42) Toluene-d8	15.54	98	534321	46.80 ug/l	0.00
Spiked Amount 50.000			Recovery =	93.60%	
56) Bromofluorobenzene	19.21	94	26431	47.17 ug/l	0.00
Spiked Amount 50.000			Recovery =	94.34%	
Target Compounds					Qvalue
16) Methylene Chloride	7.80	84	10076	2.92 ug/l	92

8/5/02

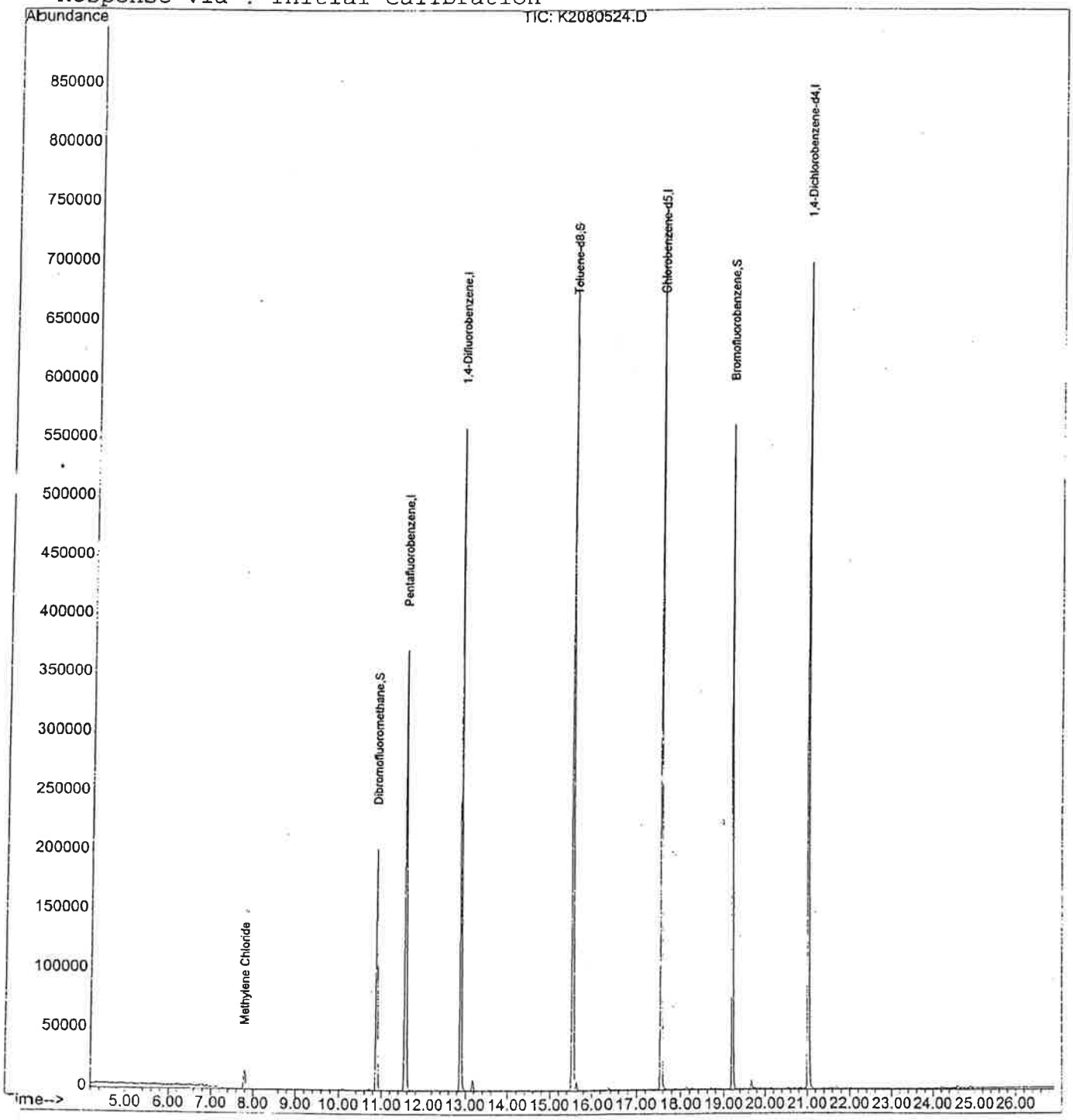
PSS 8/12

#) = qualifier out of range (m) = manual integration

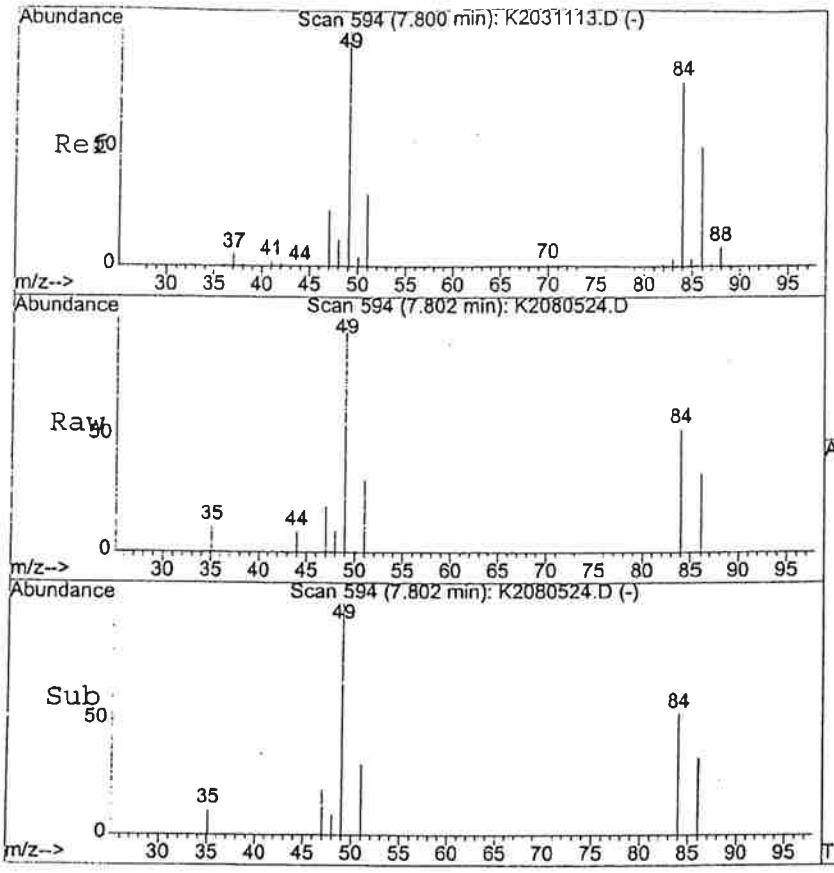
Quantitation Report

Data File : C:\HPCHEM\1\DATA\080502K2\K2080524.D Vial: 3
Acq On : 5 Aug 2002 20:36 Operator: NRT
Sample : METHOD BLANK 080502K2 Inst : GC/MS Ins
Misc : 5ML 8260CCL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 5 21:42 2002 Quant Results File: K0725TCL.RE

Method : C:\HPCHEM\1\METHODS\K0725TCL.M (RTE Integrator)
Title : VOA Standards for 5 point calibration
Last Update : Thu Jul 25 14:07:59 2002
Response via : Initial Calibration



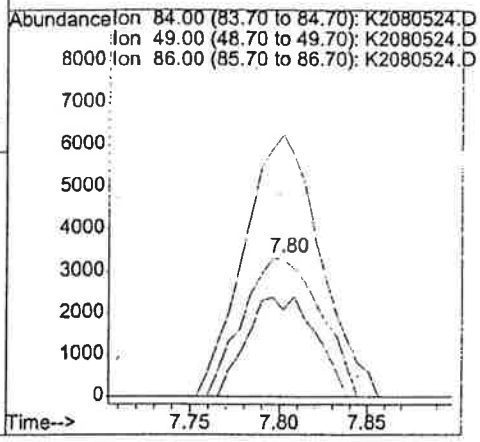
69759 Page 0057



#16
Methylene Chloride
Concen: 2.92 ug/l
RT: 7.80 min Scan# 594
Delta R.T. 0.00 min
Lab File: K2080524.D
Acq: 5 Aug 2002 20:36

Tgt Ion: 84 Resp: 10076

Ion	Ratio	Lower	Upper
84	100		
49	184.7	149.1	189.1
86	63.5	43.9	83.9



Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289411A
MATRIX : WATER
CLIENT ID : SWC-011
Sample wt/vol : 1020ML

ANALYSIS DATE : 08/05/2002
RECVD DATE : 07/26/2002
ID FILE : g08.id
DATA FILE : U2080502

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
98-95-3	Nitrobenzene	U	10
78-59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	49
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	7 J	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	14	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	20
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	25
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289411A
MATRIX : WATER
CLIENT ID : SWC-011
Sample wt/vol: 1020ML

ANALYSIS DATE : 08/05/2002
RECVD DATE : 07/26/2002
ID FILE : g08.id
DATA FILE : U2080502

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	25
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	25
100-02-7	4-Nitrophenol	U	25
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	25
100-01-6	4-Nitroaniline	U	25
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
[illegible]-74-1	Hexachlorobenzene	U	10
[illegible]86-5	Pentachlorophenol	U	25
85-01-8	Phenanthrene	U	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

SUMMARY 69759

Quantitation Report (QT Reviewed)

69759 Page 0061

Data File : C:\MSDCHEM\1\DATA\U2080500\U2080502.D Vial: 3
Acq On : 5 Aug 2002 2:36 pm Operator: SHERREE
Sample : 289411A SWC-011 Inst : Instrumen
Misc : 1020ML/1ML QC757LL.013 B18 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 05 15:12:59 2002 Quant Results File: UBNA0730.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0730.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Tue Jul 30 13:34:52 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0730

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.96	152	97408	40.00	ul/l	0.00
19) Naphthalene-d8	12.90	136	390480	40.00	ul/l	0.00
34) Acenaphthene-d10	17.19	164	237718	40.00	ul/l	0.00
54) Phenanthrene-d10	20.79	188	351353	40.00	ul/l	0.00
67) Chrysene-d12	27.31	240	299905	40.00	ul/l	0.00
76) Perylene-d12	30.98	264	230946	40.00	ul/l	-0.01
System Monitoring Compounds						
4) 2-Fluorophenol	7.35	112	288750	89.07	ul/l	0.00
Spiked Amount 200.000			Recovery = 44.53%			
6) Phenol-d6	9.20	99	393137	91.95	ul/l	0.00
Spiked Amount 200.000			Recovery = 45.98%			
20) Nitrobenzene-d5	11.25	82	220627	49.90	ul/l	0.00
Spiked Amount 100.000			Recovery = 49.90%			
38) 2-Fluorobiphenyl	15.53	172	371491	49.26	ul/l	0.00
Spiked Amount 100.000			Recovery = 49.26%			
58) 2,4,6-Tribromophenol	19.13	330	125270	154.08	ul/l	0.00
Spiked Amount 200.000			Recovery = 77.04%			
70) Terphenyl-d14	24.74	244	682539	92.14	ul/l	0.00
Spiked Amount 100.000			Recovery = 92.14%			
Target Compounds						Qvalue
29) Naphthalene	12.94	128	74738	7.34	ul/l #	97
33) 2-Methylnaphthalene	14.59	142	92834	14.23	ul/l	94

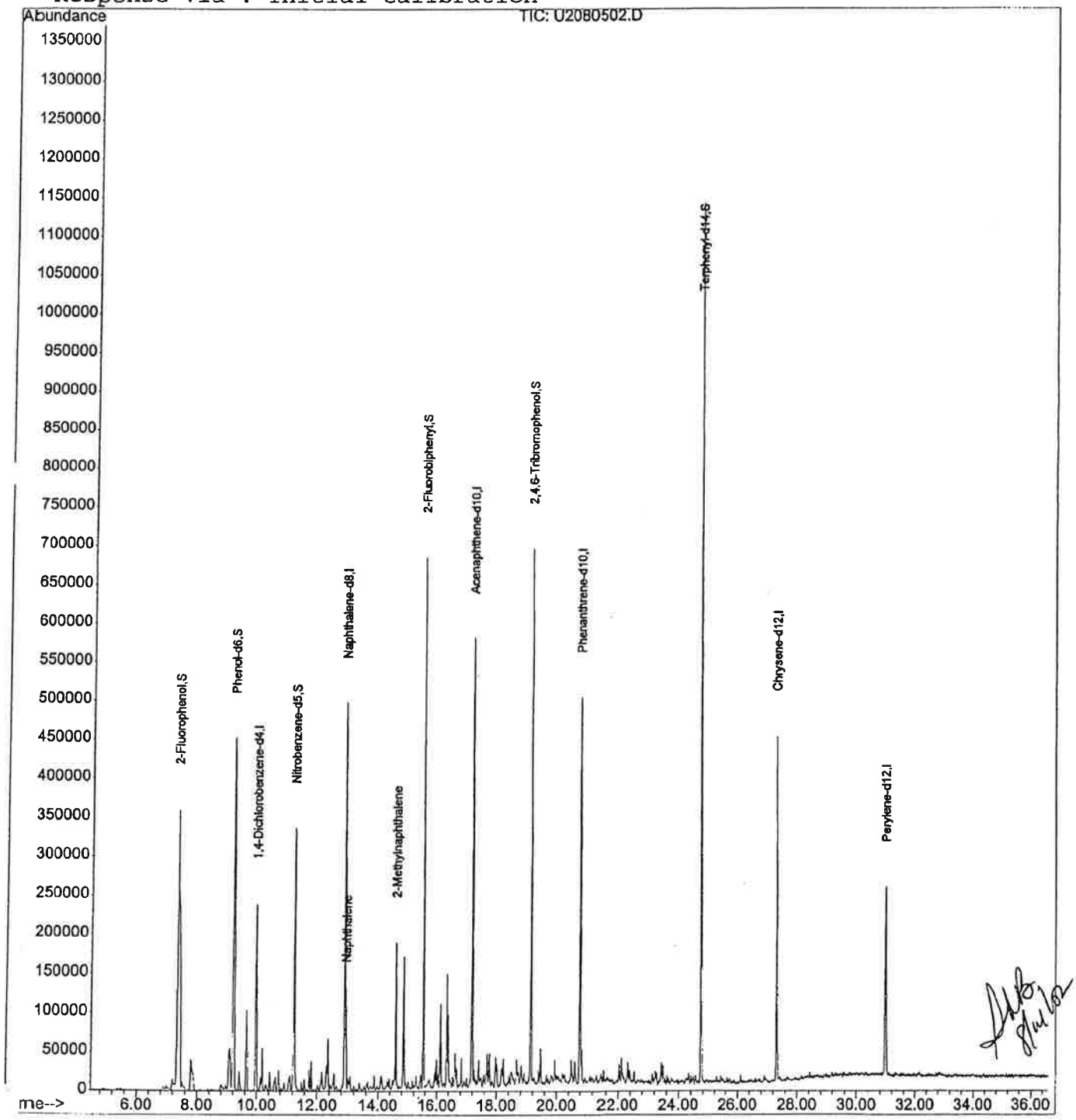
8/14/02
KMM 8/14/02

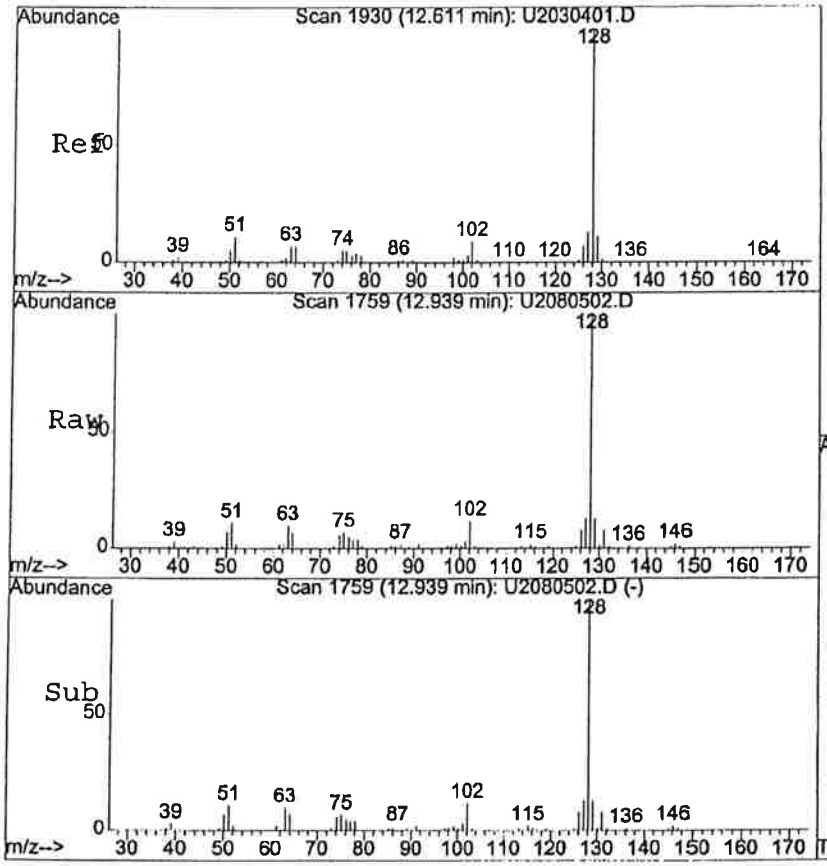
(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2080500\U2080502.D Vial: 3
Acq On : 5 Aug 2002 2:36 pm Operator: SHERREE
Sample : 289411A SWC-011 Inst : Instrumen
Misc : 1020ML/1ML QC757LL.013 B18 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 6 10:28 2002 Quant Results File: UBNA0730.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0730.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Tue Jul 30 13:34:52 2002
Response via : Initial Calibration

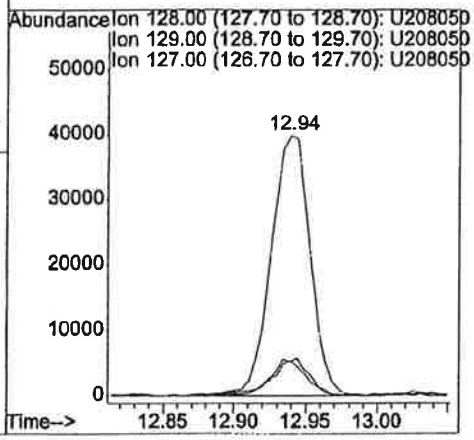


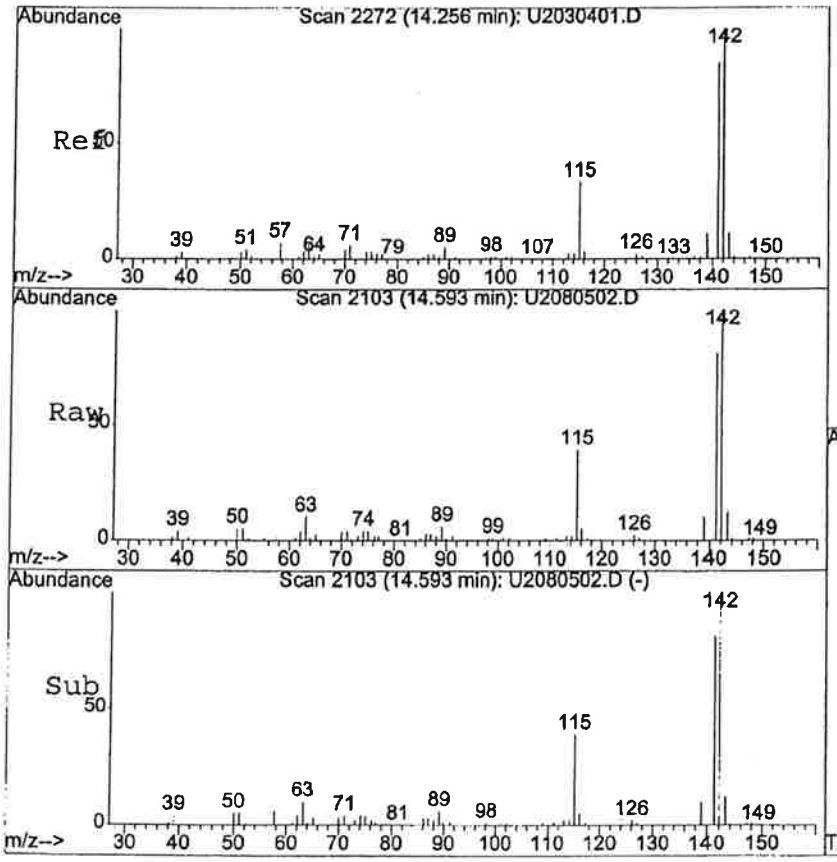


#29
Naphthalene
Concen: 7.34 ul/l
RT: 12.94 min Scan# 1759
Delta R.T. -0.00 min
Lab File: U2080502.D
Acq: 5 Aug 2002 2:36 pm

Tgt Ion:128 Resp: 74738

Ion	Ratio	Lower	Upper
128	100		
129	13.5	8.6	13.0#
127	13.2	10.7	16.1

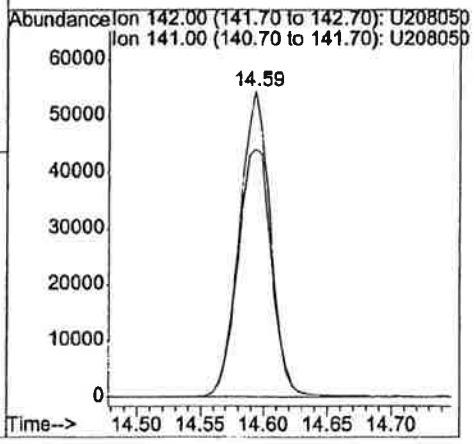




#33
2-Methylnaphthalene
Concen: 14.23 ul/l
RT: 14.59 min Scan# 2103
Delta R.T. 0.00 min
Lab File: U2080502.D
Acq: 5 Aug 2002 2:36 pm

Tgt Ion:142 Resp: 92834

Ion	Ratio	Lower	Upper
142	100		
141	81.0	68.9	103.3



Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289412A
MATRIX : WATER
CLIENT ID : SWC-012
Sample wt/vol : 1010ML

ANALYSIS DATE : 08/05/2002
RECVD DATE : 07/26/2002
ID FILE : g08.id
DATA FILE : U2080503

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
6[illegible]72-1	Hexachloroethane	U	10
9[illegible]95-3	Nitrobenzene	U	10
78-59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	50
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	8 J	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	15	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	20
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	25
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289412A
MATRIX : WATER
CLIENT ID : SWC-012
Sample wt/vol: 1010ML

ANALYSIS DATE : 08/05/2002
RECVD DATE : 07/26/2002
ID FILE : g08.id
DATA FILE : U2080503

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	25
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	25
100-02-7	4-Nitrophenol	U	25
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	25
100-01-6	4-Nitroaniline	U	25
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
1[illegible]-74-1	Hexachlorobenzene	U	10
8[illegible]36-5	Pentachlorophenol	U	25
85-01-8	Phenanthrene	U	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

Quantitation Report (QT Reviewed)

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Data File : C:\MSDCHEM\1\DATA\U2080500\U2080503.D Vial: 4
Acq On : 5 Aug 2002 3:21 pm Operator: SHERREE
Sample : 289412A SWC-012 Inst : Instrumen
Misc : 1010ML/1ML QC757LL.013 B18 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 05 15:58:08 2002 Quant Results File: UBNA0730.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0730.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Tue Jul 30 13:34:52 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0730

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.95	152	114439	40.00	ul/l	-0.01
19) Naphthalene-d8	12.89	136	454686	40.00	ul/l	0.00
34) Acenaphthene-d10	17.19	164	281668	40.00	ul/l	0.00
54) Phenanthrene-d10	20.79	188	412348	40.00	ul/l	0.00
67) Chrysene-d12	27.31	240	319319	40.00	ul/l	-0.01
76) Perylene-d12	30.98	264	237343	40.00	ul/l	-0.01
System Monitoring Compounds						
4) 2-Fluorophenol	7.35	112	357250	93.80	ul/l	0.00
Spiked Amount 200.000			Recovery = 46.90%			
6) Phenol-d6	9.21	99	502269	99.99	ul/l	0.00
Spiked Amount 200.000			Recovery = 49.99%			
20) Nitrobenzene-d5	11.25	82	278322	54.06	ul/l	0.00
Spiked Amount 100.000			Recovery = 54.06%			
38) 2-Fluorobiphenyl	15.53	172	456317	51.07	ul/l	0.00
Spiked Amount 100.000			Recovery = 51.07%			
58) 2,4,6-Tribromophenol	19.14	330	151020	158.28	ul/l	0.00
Spiked Amount 200.000			Recovery = 79.14%			
70) Terphenyl-d14	24.74	244	792529	100.48	ul/l	0.01
Spiked Amount 100.000			Recovery = 100.48%			
Target Compounds						Qvalue
29) Naphthalene	12.94	128	92430	7.79	ul/l	98
33) 2-Methylnaphthalene	14.59	142	114877	15.12	ul/l	100

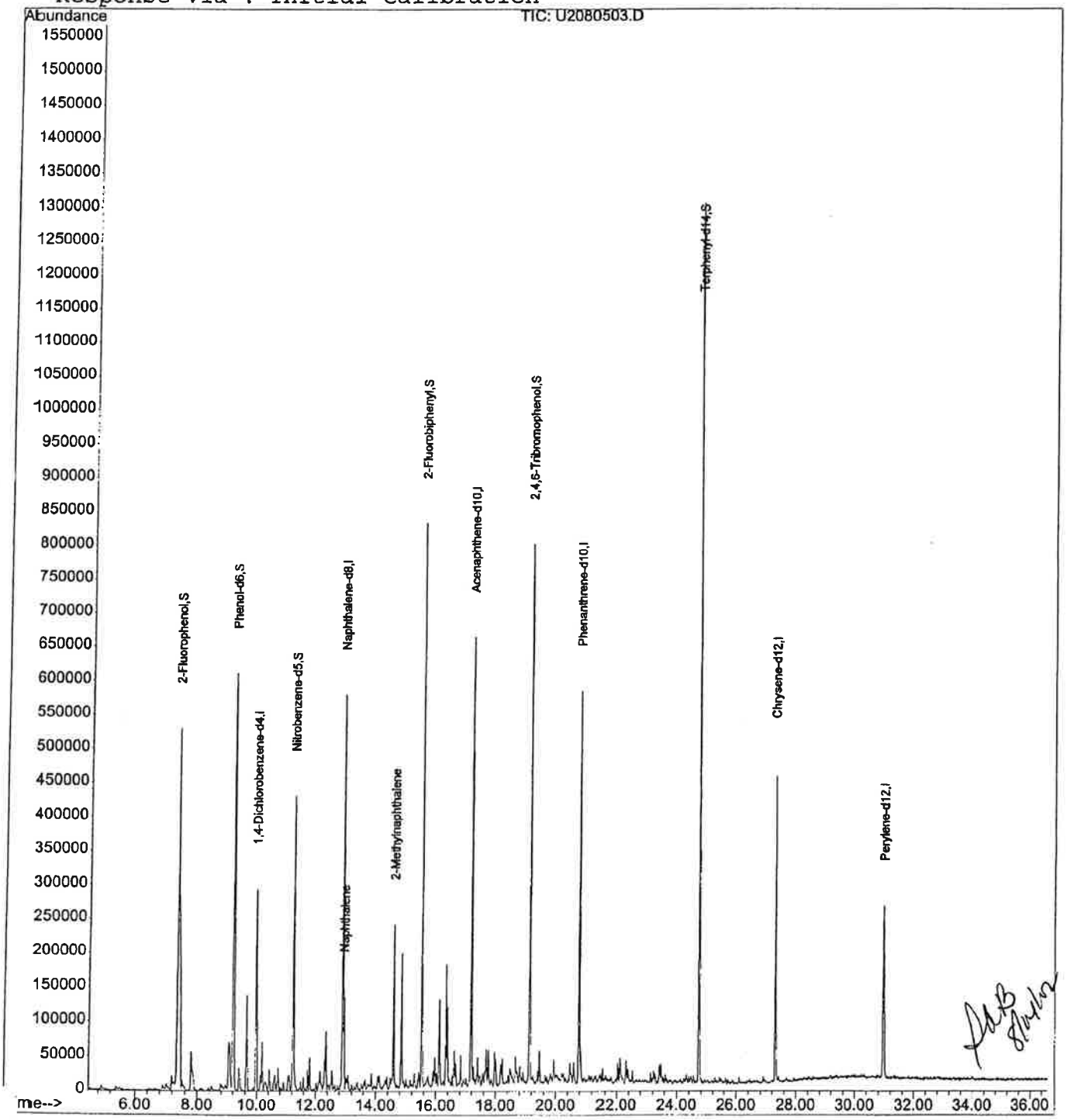
8/14/02
KMM 8/14/02

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2080500\U2080503.D Vial: 4
Acq On : 5 Aug 2002 3:21 pm Operator: SHERREE
Sample : 289412A SWC-012 Inst : Instrumen
Misc : 1010ML/1ML QC757LL.013 B18 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 6 10:29 2002 Quant Results File: UBNA0730.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0730.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Tue Jul 30 13:34:52 2002
Response via : Initial Calibration



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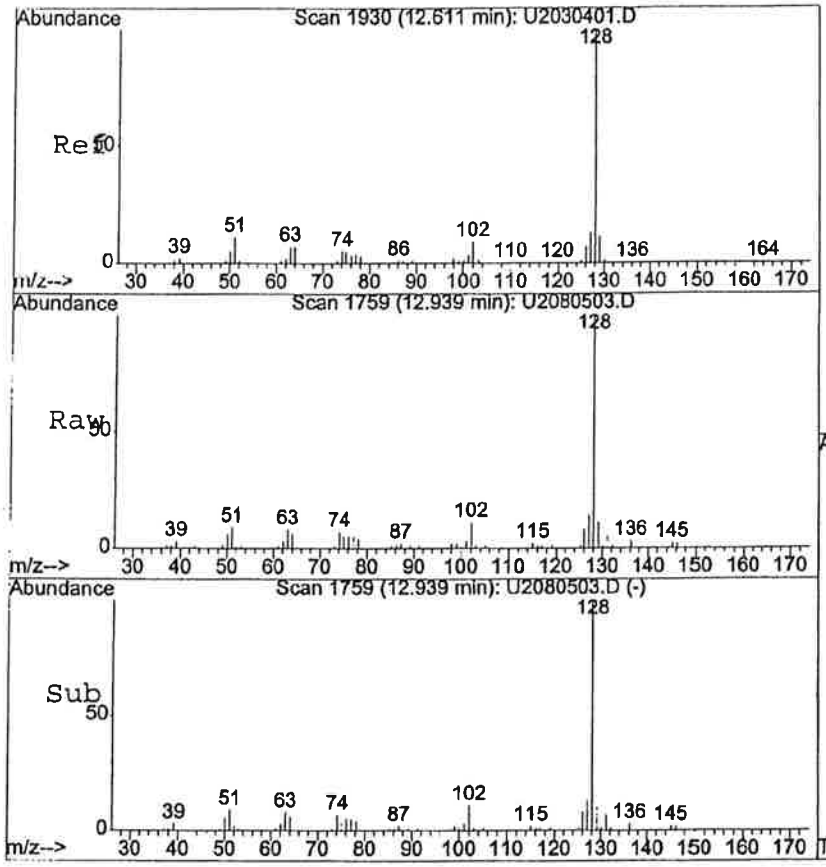
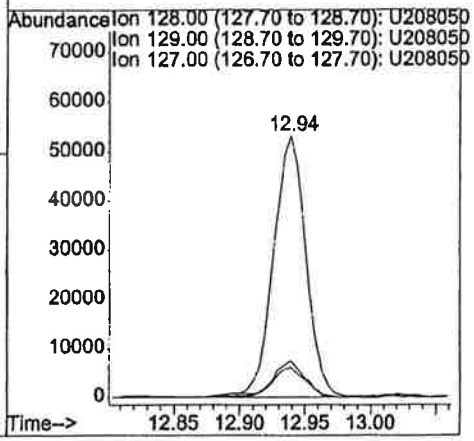
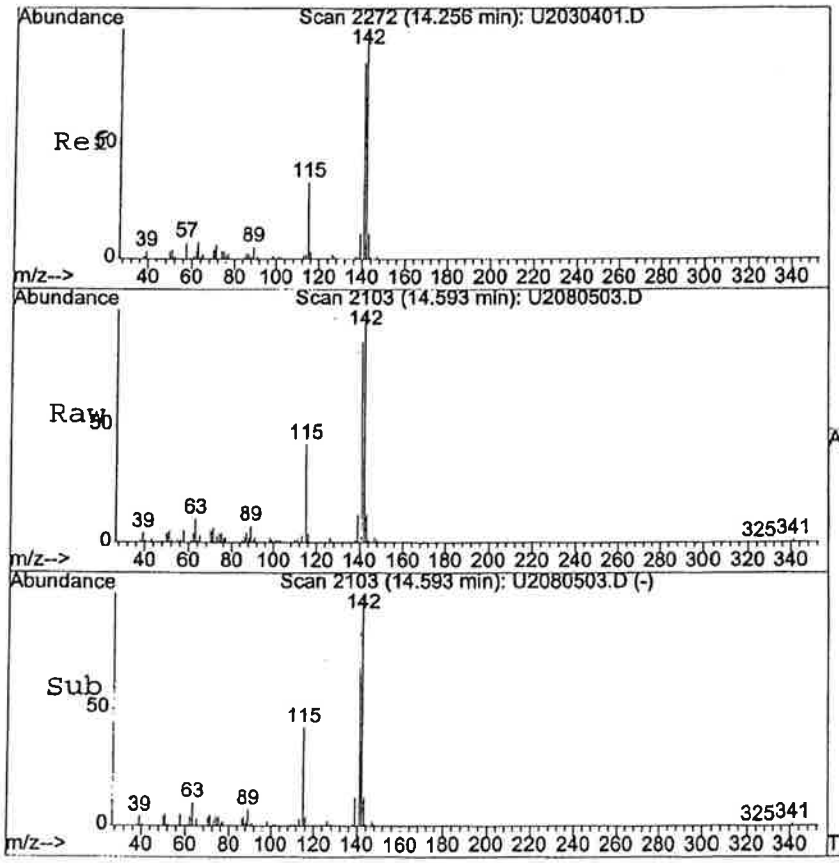


#29
Naphthalene
Concen: 7.79 ul/l
RT: 12.94 min Scan# 1759
Delta R.T. -0.00 min
Lab File: U2080503.D
Acq: 5 Aug 2002 3:21 pm

Tgt Ion:128 Resp: 92430

Ion	Ratio	Lower	Upper
128	100		
129	11.4	8.6	13.0
127	13.9	10.7	16.1

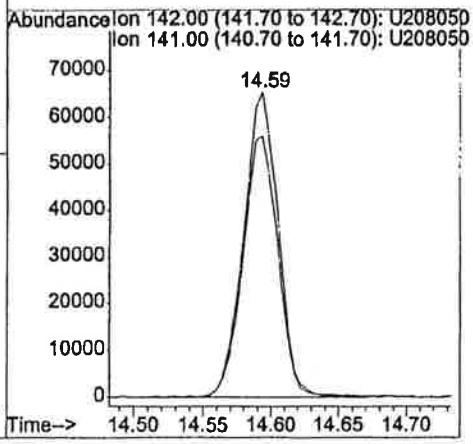




#33
2-Methylnaphthalene
Concen: 15.12 ul/l
RT: 14.59 min Scan# 2103
Delta R.T. -0.00 min
Lab File: U2080503.D
Acq: 5 Aug 2002 3:21 pm

Tgt Ion:142 Resp: 114877

Ion	Ratio	Lower	Upper
142	100		
141	85.8	68.9	103.3



Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289413A
MATRIX : WATER
CLIENT ID : SWC-013
Sample wt/vol : 1030ML

ANALYSIS DATE : 08/05/2002
RECVD DATE : 07/26/2002
ID FILE : g08.id
DATA FILE : U2080504

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
98-95-3	Nitrobenzene	U	10
78-59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	49
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	12	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	21	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	19
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	24
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : 289413A
MATRIX : WATER
CLIENT ID : SWC-013
Sample wt/vol: 1030ML

ANALYSIS DATE : 08/05/2002
RECVD DATE : 07/26/2002
ID FILE : g08.id
DATA FILE : U2080504

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	24
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	24
100-02-7	4-Nitrophenol	U	24
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	24
100-01-6	4-Nitroaniline	U	24
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
118-74-1	Hexachlorobenzene	U	10
8[illegible]36-5	Pentachlorophenol	U	24
85-01-8	Phenanthrene	U	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2080500\U2080504.D Vial: 5
Acq On : 5 Aug 2002 4:06 pm Operator: SHERREE
Sample : 289413A SWC-013 Inst : Instrumen
Misc : 1030ML/1ML QC757LL.013 B18 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 05 16:43:24 2002 Quant Results File: UBNA0730.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0730.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Tue Jul 30 13:34:52 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0730

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.96	152	100883	40.00 ul/l	0.00
19) Naphthalene-d8	12.90	136	397387	40.00 ul/l	0.00
34) Acenaphthene-d10	17.19	164	239411	40.00 ul/l	0.00
54) Phenanthrene-d10	20.79	188	358830	40.00 ul/l	0.00
67) Chrysene-d12	27.31	240	310568	40.00 ul/l	0.00
76) Perylene-d12	30.99	264	242564	40.00 ul/l	0.00
System Monitoring Compounds					
4) 2-Fluorophenol	7.35	112	357896	106.60 ul/l	0.00
Spiked Amount 200.000			Recovery = 53.30%		
6) Phenol-d6	9.21	99	496256	112.07 ul/l	0.00
Spiked Amount 200.000			Recovery = 56.04%		
20) Nitrobenzene-d5	11.25	82	265831	59.08 ul/l	0.00
Spiked Amount 100.000			Recovery = 59.08%		
38) 2-Fluorobiphenyl	15.53	172	433155	57.03 ul/l	0.00
Spiked Amount 100.000			Recovery = 57.03%		
58) 2,4,6-Tribromophenol	19.14	330	134645	162.16 ul/l	0.00
Spiked Amount 200.000			Recovery = 81.08%		
70) Terphenyl-d14	24.74	244	698468	91.05 ul/l	0.01
Spiked Amount 100.000			Recovery = 91.05%		
Target Compounds					Qvalue
29) Naphthalene	12.94	128	124716	12.03 ul/l	98
33) 2-Methylnaphthalene	14.60	142	142511	21.47 ul/l	100

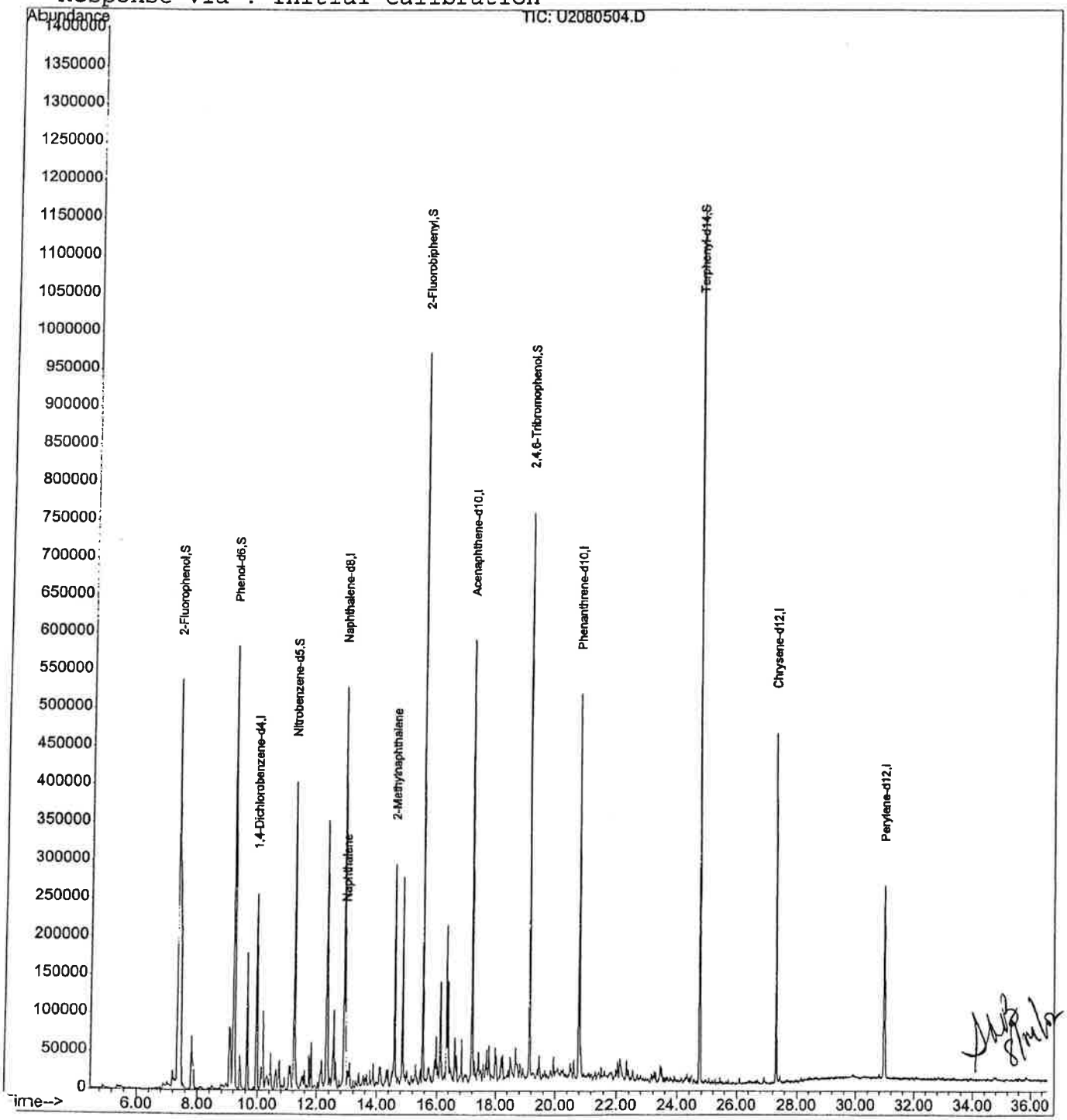
8/14/02
KMM 8/14/02

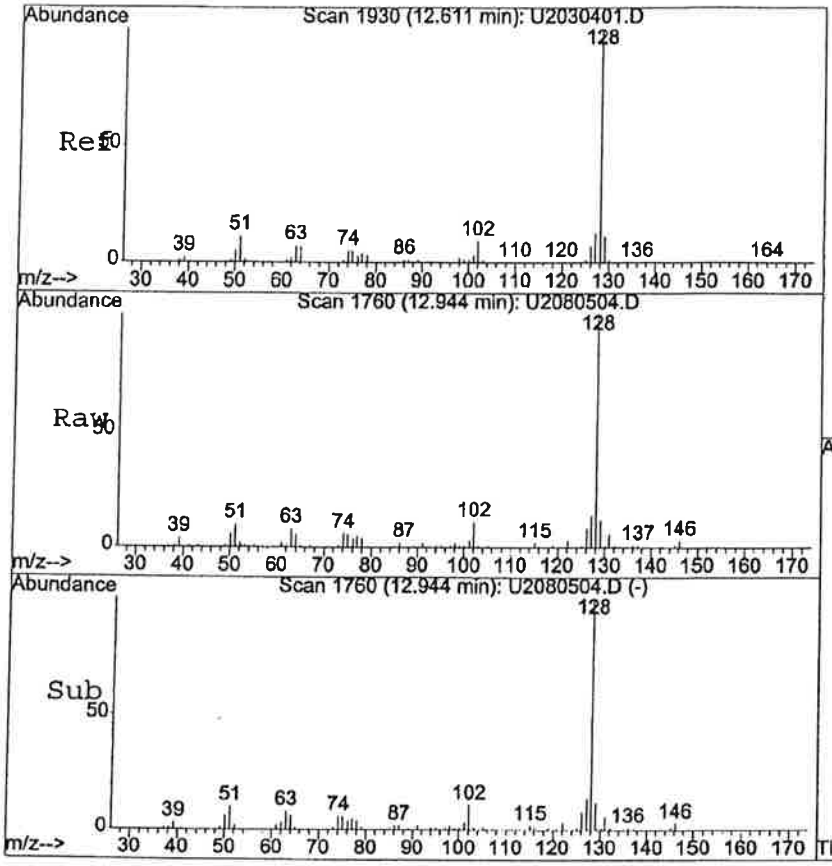
(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2080500\U2080504.D Vial: 5
Acq On : 5 Aug 2002 4:06 pm Operator: SHERREE
Sample : 289413A SWC-013 Inst : Instrumen
Misc : 1030ML/1ML QC757LL.013 B18 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 6 10:30 2002 Quant Results File: UBNA0730.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0730.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Tue Jul 30 13:34:52 2002
Response via : Initial Calibration

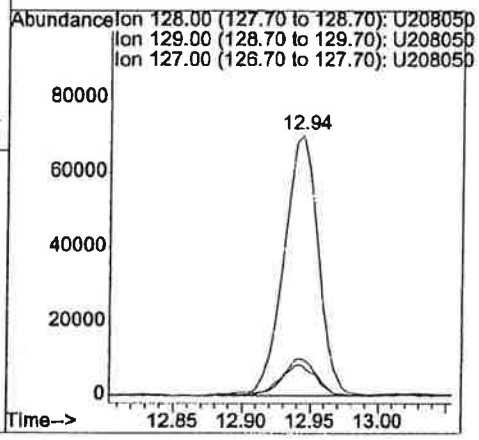


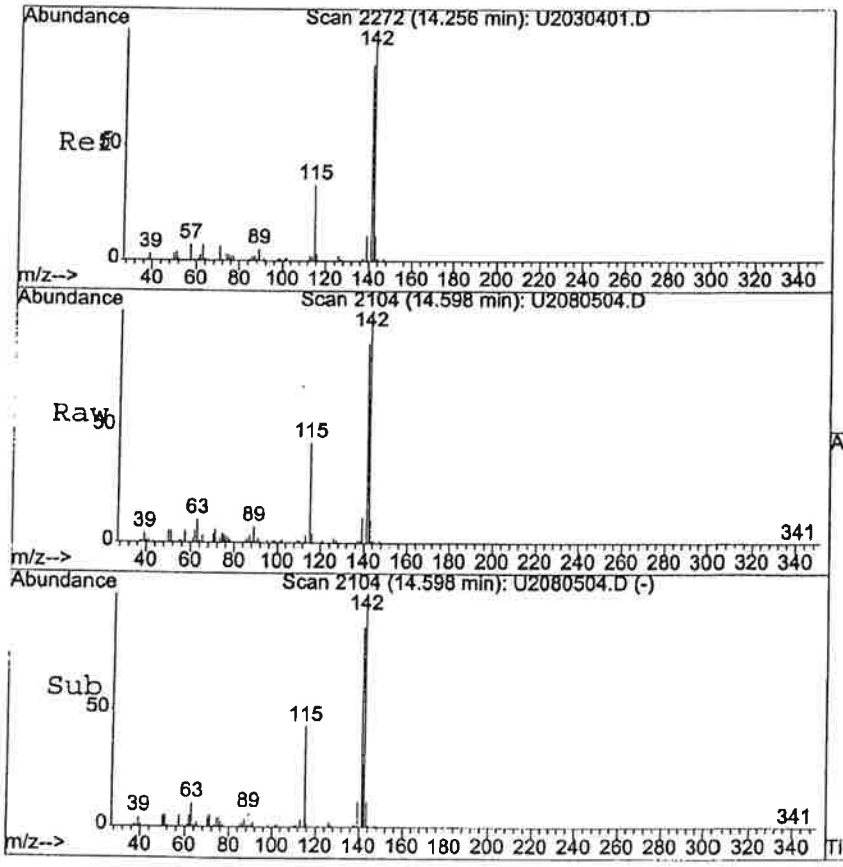


#29
Naphthalene
Concen: 12.03 ul/l
RT: 12.94 min Scan# 1760
Delta R.T. -0.00 min
Lab File: U2080504.D
Acq: 5 Aug 2002 4:06 pm

Tgt Ion:128 Resp: 124716

Ion	Ratio	Lower	Upper
128	100		
129	11.8	8.6	13.0
127	14.3	10.7	16.1

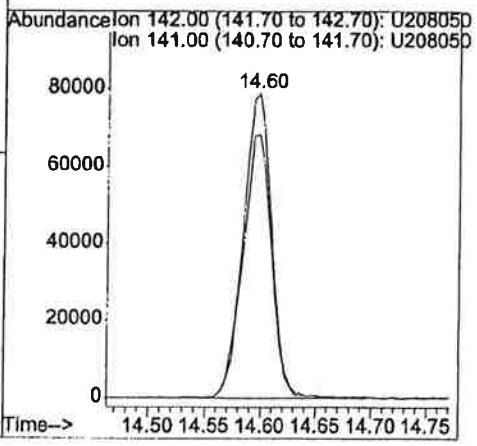




#33
2-Methylnaphthalene
Concen: 21.47 ul/l
RT: 14.60 min Scan# 2104
Delta R.T. 0.00 min
Lab File: U2080504.D
Acq: 5 Aug 2002 4:06 pm

Tgt Ion:142 Resp: 142511

Ion	Ratio	Lower	Upper
142	100		
141	86.4	68.9	103.3



Washington
Environmental Laboratory

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

EPA SAMPLE NUMBER	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	OTHER	TOT OUT
BLK757LL.013_B18	59	60	87	57	54	73		0
289411A	50	49	92	46	45	77		0
289412A	54	51	100	50	47	79		0
289413A	59	57	91	56	53	81		0
289386A	62	68	97	58	51	75		0

	QC LIMITS
S1 (NBZ) = Nitrobenzene-d5	(35-114)
S2 (FBP) = 2-Fluorobiphenyl	(43-116)
S3 (TPH) = Terphenyl-d14	(33-141)
S4 (PHL) = Phenol-d6	(10-110)
S5 (2FP) = 2-Fluorophenol	(21-110)
S6 (TBP) = 2,4,6-Tribomophenol	(10-123)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

FORM II SV-1

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : BLK757LL.013_B18
MATRIX : WATER
CLIENT ID :
Sample wt/vol : 1000ML

ANALYSIS DATE : 08/01/2002
RECVD DATE :
ID FILE : g08.id
DATA FILE : U2080102

	Compound	Result (ug/L)	Detection Limit (ug/L)
108-95-2	Phenol	U	10
62-53-3	Aniline	U	10
111-44-4	Bis(2-chloroethyl)ether	U	10
95-57-8	2-Chlorophenol	U	10
541-73-1	1,3-Dichlorobenzene	U	10
106-46-7	1,4-Dichlorobenzene	U	10
100-51-6	Benzyl alcohol	U	10
95-50-1	1,2-Dichlorobenzene	U	10
95-48-7	2-Methylphenol	U	10
108-60-1	Bis(2-chloroisopropyl) ether	U	10
106-44-5	4-Methylphenol	U	10
621-64-7	N-Nitrosodi-n-propylamine	U	10
67-72-1	Hexachloroethane	U	10
98-95-3	Nitrobenzene	U	10
78-59-1	Isophorone	U	10
88-75-5	2-Nitrophenol	U	10
105-67-9	2,4-Dimethylphenol	U	10
65-85-0	Benzoic acid	U	50
111-91-1	Bis(2-chloroethoxy)methane	U	10
120-83-2	2,4-Dichlorophenol	U	10
120-82-1	1,2,4-Trichlorobenzene	U	10
91-20-3	Naphthalene	U	10
106-47-8	4-Chloroaniline	U	10
87-68-3	Hexachlorobutadiene	U	10
59-50-7	4-Chloro-3-methylphenol	U	10
91-57-6	2-Methylnaphthalene	U	10
77-47-4	Hexachlorocyclopentadiene	U	10
88-06-2	2,4,6-Trichlorophenol	U	10
95-95-4	2,4,5-Trichlorophenol	U	20
91-58-7	2-Chloronaphthalene	U	10
88-74-4	2-Nitroaniline	U	25
131-11-3	Dimethyl phthalate	U	10
208-96-8	Acenaphthylene	U	10
606-20-2	2,6-Dinitrotoluene	U	10

Washington
Environmental Laboratory

SEMI-VOLATILE ORGANIC COMPOUNDS DATA SHEET

LAB SAMPLE # : BLK757LL.013_B18
MATRIX : WATER
CLIENT ID :
Sample wt/vol: 1000ML

ANALYSIS DATE : 08/01/2002
RECVD DATE :
ID FILE : g08.id
DATA FILE : U2080102

	Compound	Result (ug/L)	Detection Limit (ug/L)
99-09-2	3-Nitroaniline	U	25
83-32-9	Acenaphthene	U	10
51-28-5	2,4-Dinitrophenol	U	25
100-02-7	4-Nitrophenol	U	25
132-64-9	Dibenzofuran	U	10
121-14-2	2,4-Dinitrotoluene	U	10
84-66-2	Diethyl phthalate	U	10
7005-72-3	4-Chlorophenyl phenyl ether	U	10
86-73-7	Fluorene	U	10
534-52-1	4,6-Dinitro-2-methylphenol	U	25
100-01-6	4-Nitroaniline	U	25
86-30-6	N-Nitrosodiphenylamine	U	10
101-55-3	4-Bromophenyl phenyl ether	U	10
118-74-1	Hexachlorobenzene	U	10
87-86-5	Pentachlorophenol	U	25
85-01-8	Phenanthrene	U	10
120-12-7	Anthracene	U	10
84-74-2	Di-n-butyl phthalate	U	10
206-44-0	Fluoranthene	U	10
129-00-0	Pyrene	U	10
85-68-7	Butyl benzyl phthalate	U	10
91-94-1	3,3'-Dichlorobenzidine	U	10
56-55-3	Benz(a)anthracene	U	10
218-01-9	Chrysene	U	10
117-81-7	Bis(2-ethylhexyl) phthalate	U	10
117-84-0	Di-n-octyl phthalate	U	10
205-99-2	Benzo(b)fluoranthene	U	10
207-08-9	Benzo(k)fluoranthene	U	10
50-32-8	Benzo(a)pyrene	U	10
193-39-5	Indeno(1,2,3-cd)pyrene	U	10
53-70-3	Dibenz(a,h)anthracene	U	10
191-24-2	Benzo(ghi)perylene	U	10

U - Not Detected
J - Indicates an Estimated Value below MDL
B - Analyte Also Found in blank
D - Diluted
E - Estimated

10 SUMMARY

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2080100\U2080102.D Vial: 3
Acq On : 1 Aug 2002 8:57 am Operator: KRISTEN
Sample : BLK757LL.013_B18 Inst : Instrumen
Misc : 1000ML/1ML QC757LL.013 B18 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 01 09:34:05 2002 Quant Results File: UBNA0730.RES

Quant Method : C:\MSDCHEM\1\METHODS\UBNA0730.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Tue Jul 30 13:34:52 2002
Response via : Initial Calibration
DataAcq Meth : UBNA0730

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Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.96	152	82119	40.00	ul/l	0.00
19) Naphthalene-d8	12.89	136	324254	40.00	ul/l	0.00
34) Acenaphthene-d10	17.19	164	199511	40.00	ul/l	0.00
54) Phenanthrene-d10	20.79	188	291922	40.00	ul/l	0.00
67) Chrysene-d12	27.31	240	273181	40.00	ul/l	0.00
76) Perylene-d12	30.99	264	214046	40.00	ul/l	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	7.35	112	292668	107.09	ul/l	0.00
Spiked Amount 200.000			Recovery = 53.55%			
6) Phenol-d6	9.21	99	407712	113.11	ul/l	0.00
Spiked Amount 200.000			Recovery = 56.56%			
20) Nitrobenzene-d5	11.25	82	217426	59.22	ul/l	0.00
Spiked Amount 100.000			Recovery = 59.22%			
38) 2-Fluorobiphenyl	15.53	172	379173	59.91	ul/l	0.00
Spiked Amount 100.000			Recovery = 59.91%			
58) 2,4,6-Tribromophenol	19.13	330	98744	146.18	ul/l	0.00
Spiked Amount 200.000			Recovery = 73.09%			
70) Terphenyl-d14	24.74	244	588602	87.23	ul/l	0.00
Spiked Amount 100.000			Recovery = 87.23%			

Target Compounds Qvalue

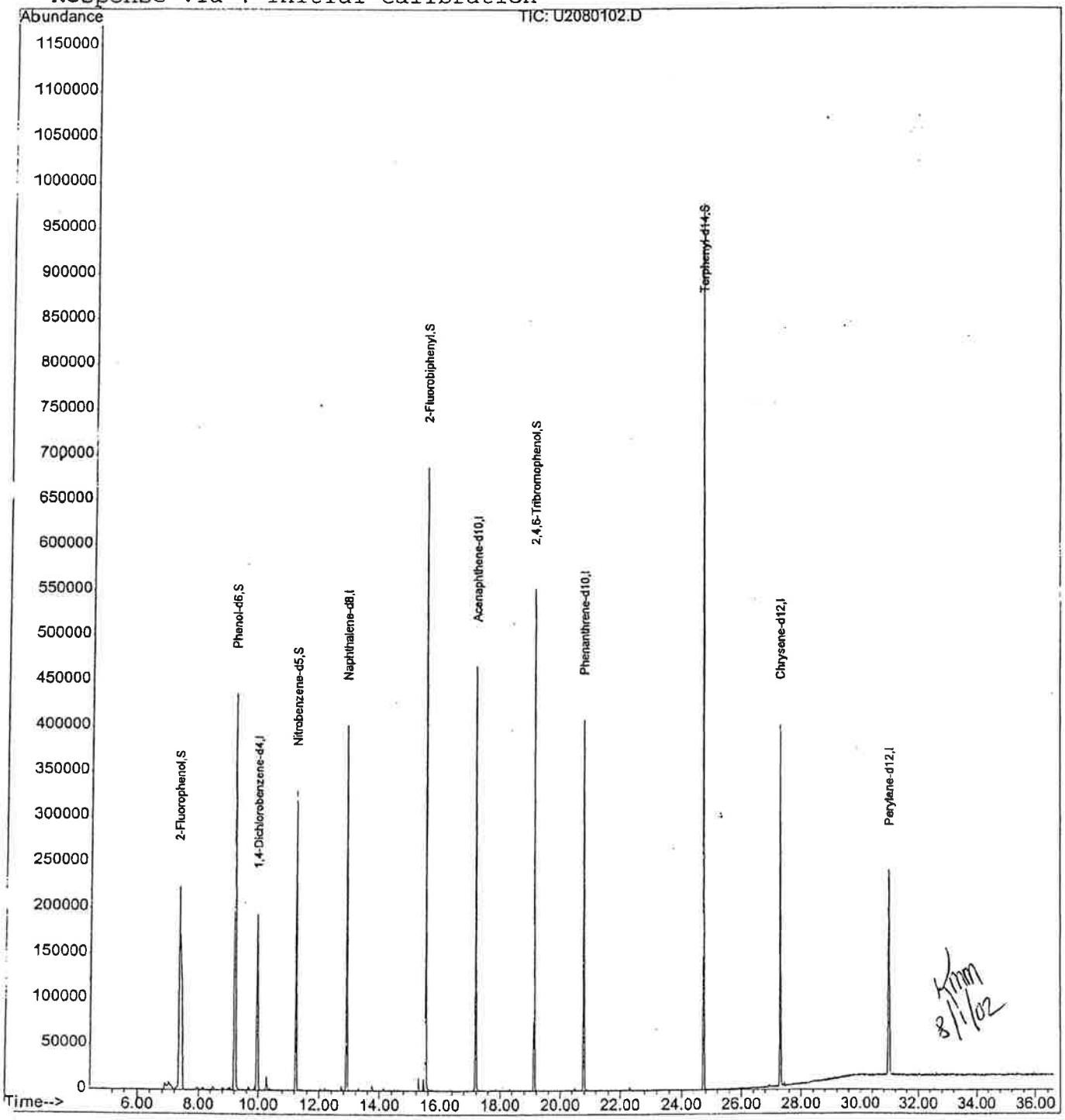
Kmm 8/1/02 JLB 8/5/02

#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\U2080100\U2080102.D Vial: 3
Acq On : 1 Aug 2002 8:57 am Operator: KRISTEN
Sample : BLK757LL.013_B18 Inst : Instrumen
Misc : 1000ML/1ML QC757LL.013 B18 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 1 10:03 2002 Quant Results File: UBNA0730.RES

Method : C:\MSDCHEM\1\METHODS\UBNA0730.M (RTE Integrator)
Title : 8270 BNA Calibration
Last Update : Tue Jul 30 13:34:52 2002
Response via : Initial Calibration



KMM 8/1/02

APPENDIX F

ANALYTICAL RESULTS OF SOIL SAMPLING

ANALYSIS REPORT

Lancaster Laboratories
INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601
(717) 656-2301

Environ. Resources Management
999 West Chester Pike
P. O. Box 357
West Chester, PA 19380

1A (0-2') Composite Soil Sample
Collected 05/27/86 by ML
Project #19235

Date Reported 6/18/86
Date Submitted 6/ 2/86
Discard Date 7/19/86
Collected by C
P.O. 19235
Rel.

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	N.D.	ppm	0.5	014901200
Chromium	65.	ppm	2.	015101200
Lead	65.	ppm	2.	015501200

2 COPIES TO Environmental Resources Mgmt. ATTN: David R. Blye

00767 20.00 005600

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Lee A. Seats, B.S. Group Ldr.
Inorganic Analysis

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INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601

Environ. Resources Management
999 West Chester Pike
P. O. Box 357
West Chester, PA 19380

Date Reported 6/18/86
Date Submitted 6/ 2/86
Discard Date 7/19/86
Collected by C
P.O. 19235
Rel.

1B (2-4') Composite Soil Sample
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	N.D.	ppm	0.5	014901200
Chromium	53.	ppm	2.	015101200
Lead	38.	ppm	2.	015501200

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999 West Chester Pike
P. O. Box 357
West Chester, PA 19380

Date Reported 6/18/86
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P.O. 19235
Rel.

2A (0-2') Composite Soil Sample
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	1.1	ppm	0.5	014901200
Chromium	97.	ppm	2.	015101200
Lead	289.	ppm	2.	015501200

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2B (2-4') Composite Soil Sample
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	1.6	ppm	0.5	014901200
Chromium	73.	ppm	2.	015101200
Lead	988.	ppm	2.	015501200

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West Chester, PA 19380

Date Reported 6/18/86
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3A (0-2') Composite Soil Sample
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	1.3	ppm	0.5	014901200
Chromium	373.	ppm	2.	015101200
Lead	452.	ppm	2.	015501200

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3B (2-4') Composite Soil Sample
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	N.D.	ppm	0.5	014901200
Chromium	157.	ppm	2.	015101200
Lead	144.	ppm	2.	015501200

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West Chester, PA 19380

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P.O. 19235
Rel.

4A (0-2') Composite Soil Sample
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	1.0	ppm	0.5	014901200
Chromium	415.	ppm	2.	015101200
Lead	375.	ppm	2.	015501200

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West Chester, PA 19380

4B (2-4') Composite Soil Sample
Collected 05/27/86 by ML
Project #19235

Date Reported 6/18/86
Date Submitted 6/ 2/86
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Collected by C
P.O. 19235
Rel.

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	N.D.	ppm	0.5	014901200
Chromium	86.	ppm	2.	015101200
Lead	208.	ppm	2.	015501200

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West Chester, PA 19380
5A (0-2') Composite Soil Sample
Collected 05/27/86 by ML
Project #19235

Date Reported 6/18/86
Date Submitted 6/ 2/86
Discard Date 7/19/86
Collected by C
P.O. 19235
Rel.

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	9.4	ppm	0.5	014901200
Chromium	1,120.	ppm	2.	015101200
Lead	1,010.	ppm	2.	015501200

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ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	1.0	ppm	0.5	014901200
Chromium	336.	ppm	2.	015101200
Lead	402.	ppm	2.	015501200

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West Chester, PA 19380
6A (0-2') Composite Soil Sample
Collected 05/27/86 by ML
Project #19235

Date Reported 6/18/86
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ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	0.5	ppm	0.5	014901200
Chromium	98.	ppm	2.	015101200
Lead	227.	ppm	2.	015501200

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West Chester, PA 19380

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6B (2-4') Composite Soil Sample
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	N.D.	ppm	0.5	014901200
Chromium	80.	ppm	2.	015101200
Lead	189.	ppm	2.	015501200

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Environ. Resources Management
999 West Chester Pike
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West Chester, PA 19380

7A (0-2') Composite Soil Sample
Collected 05/27/86 by ML
Project #19235

Date Reported 6/18/86
Date Submitted 6/ 2/86
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P.O. 19235
Rel.

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	N.D.	ppm	0.5	014901200
Chromium	145.	ppm	2.	015101200
Lead	140.	ppm	2.	015501200

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Reviewed and Approved by:

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Inorganic Analysis

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West Chester, PA 19380

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7B (2-4') Composite Soil Sample
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	N.D.	ppm	0.5	014901200
Chromium	70.	ppm	2.	015101200
Lead	252.	ppm	2.	015501200

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Date Reported 6/18/86
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EP Toxicity Leachate of 1A (0-2') Composite Soil
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	N.D.	mg/l	0.005	024901200
Chromium	N.D.	mg/l	0.05	025101200
Lead	N.D.	mg/l	0.05	025501200

The above analyses were performed on an EP Toxicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19 1980 p. 33127.
Leachate Preparation:
12. grams waste / 192 ml distilled water
Initial pH = 9.02 1 ml of 0.5 N Acetic Acid was used to maintain the pH at 5.0 Final volume was 240 ml.
The characteristic of EP Toxicity is determined by whether any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima (100 X's Primary Drinking Water Standards): Arsenic 5.0; Barium 100.0; Cadmium 1.0; Chromium 5.0; Lead 5.0 ; Mercury 0.2; Selenium 1.0; Silver 5.0; Endrin 0.02; Lindane 0.4; Methoxychlor 10.0 Toxaphene 0.5; 2,4-D 10.0; 2,4,5-TP 1.0
Based on the analyses performed the submitted sample DOES NOT exhibit the characteristic of EP Toxicity as defined in Section 261.24 Federal Register 1980 p. 33122.

2 COPIES TO Environmental Resources Mgmt. ATTN: David R. Blye

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

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Environ. Resources Management
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West Chester, PA 19380

Date Reported 6/18/86
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Rel.

EP Toxicity Leachate of 1B (2-4') Composite Soil
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	N.D.	mg/l	0.005	024901200
Chromium	N.D.	mg/l	0.05	025101200
Lead	N.D.	mg/l	0.05	025501200

The above analyses were performed on an EP Toxicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19 1980 p. 33127.
Leachate Preparation:
12. grams waste / 192 ml distilled water
Initial pH = 5.34 1.8 ml of 0.5 N Acetic Acid were used to maintain the pH at 5.0 Final volume was 240 ml.
The characteristic of EP Toxicity is determined by whether any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima (100 X's Primary Drinking Water Standards): Arsenic 5.0; Barium 100.0; Cadmium 1.0; Chromium 5.0; Lead 5.0 ; Mercury 0.2; Selenium 1.0; Silver 5.0; Endrin 0.02; Lindane 0.4; Methoxychlor 10.0 Toxaphene 0.5; 2,4-D 10.0; 2,4,5-TP 1.0
Based on the analyses performed the submitted sample DOES NOT exhibit the characteristic of EP Toxicity as defined in Section 261.24 Federal Register 1980 p. 33122.

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Reviewed and Approved by:

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Date Reported 6/18/86
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P.O. 19235
Rel.

EP Toxicity Leachate of 2A (0-2') Composite Soil
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	0.008	mg/l	0.005	024901200
Chromium	N.D.	mg/l	0.05	025101200
Lead	N.D.	mg/l	0.05	025501200

The above analyses were performed on an EP Toxicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19 1980 p. 33127.
Leachate Preparation:
12. grams waste / 192 ml distilled water
Initial pH = 5.01 1.4 ml of 0.5 N Acetic Acid were used to maintain the pH at 5.0 Final volume was 240 ml.
The characteristic of EP Toxicity is determined by whether any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima (100 X's Primary Drinking Water Standards): Arsenic 5.0; Barium 100.0; Cadmium 1.0; Chromium 5.0; Lead 5.0 ; Mercury 0.2; Selenium 1.0; Silver 5.0; Endrin 0.02; Lindane 0.4; Methoxychlor 10.0 Toxaphene 0.5; 2,4-D 10.0; 2,4,5-TP 1.0
Based on the analyses performed the submitted sample DOES NOT exhibit the characteristic of EP Toxicity as defined in Section 261.24 Federal Register 1980 p. 33122.

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Respectfully Submitted
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Reviewed and Approved by:

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EP Toxicity Leachate of 2B (2-4') Composite Soil
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	0.012	mg/l	0.005	024901200
Chromium	N.D.	mg/l	0.05	025101200
Lead	0.28	mg/l	0.05	025501200

The above analyses were performed on an EP Toxicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19 1980 p. 33127.
Leachate Preparation:
12. grams waste / 192 ml distilled water
Initial pH = 5.16 0.9 ml of 0.5 N Acetic Acid was used to maintain the pH at 5.0 Final volume was 240 ml.
The characteristic of EP Toxicity is determined by whether any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima (100 X's Primary Drinking Water Standards): Arsenic 5.0; Barium 100.0; Cadmium 1.0; Chromium 5.0; Lead 5.0 ; Mercury 0.2; Selenium 1.0; Silver 5.0; Endrin 0.02; Lindane 0.4; Methoxychlor 10.0 Toxaphene 0.5; 2,4-D 10.0; 2,4,5-TP 1.0
Based on the analyses performed the submitted sample DOES NOT exhibit the characteristic of EP Toxicity as defined in Section 261.24 Federal Register 1980 p. 33122.

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Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

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Date Submitted 6/ 2/86
Discard Date 7/19/86
Collected by C
P.O. 19235
Rel.

EP Toxicity Leachate of 3A (0-2') Composite Soil
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	0.006	mg/l	0.005	024901200
Chromium	N.D.	mg/l	0.05	025101200
Lead	N.D.	mg/l	0.05	025501200

The above analyses were performed on an EP Toxicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19 1980 p. 33127.
Leachate Preparation:
12. grams waste / 192 ml distilled water
Initial pH = 5.29 1.8 ml of 0.5 N Acetic Acid were used to maintain the pH at 5.0 Final volume was 240 ml.
The characteristic of EP Toxicity is determined by whether any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima (100 X's Primary Drinking Water Standards): Arsenic 5.0; Barium 100.0; Cadmium 1.0; Chromium 5.0; Lead 5.0 ; Mercury 0.2; Selenium 1.0; Silver 5.0; Endrin 0.02; Lindane 0.4; Methoxychlor 10.0 Toxaphene 0.5; 2,4-D 10.0; 2,4,5-TP 1.0
Based on the analyses performed the submitted sample DOES NOT exhibit the characteristic of EP Toxicity as defined in Section 261.24 Federal Register 1980 p. 33122.

2 COPIES TO Environmental Resources Mgmt. ATTN: David R. Blye

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Lee A. Seats, B.S. Group Ldr.
Inorganic Analysis

The American Association for Laboratory Accreditation
Chemical & Biological fields of testing
ember American Council of dependent Laboratories, Inc

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ANALYSIS REPORT

Lancaster Laboratories
INCORPORATED
2425 NEW HOLLAND PIKE, LANCASTER, PA 17601
(717) 656-23

Environ. Resources Management
999 West Chester Pike
P. O. Box 357
West Chester, PA 19380

Date Reported 6/18/86
Date Submitted 6/ 2/86
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P.O. 19235
Rel.

EP Toxicity Leachate of 3B (2-4') Composite Soil
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	0.006	mg/l	0.005	024901200
Chromium	N.D.	mg/l	0.05	025101200
Lead	N.D.	mg/l	0.05	025501200

The above analyses were performed on an EP Toxicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19 1980 p. 33127.
Leachate Preparation:
12. grams waste / 192 ml distilled water
Initial pH = 5.26 1.6 ml of 0.5 N Acetic Acid were used to maintain the pH at 5.0 Final volume was 240 ml.
The characteristic of EP Toxicity is determined by whether any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima (100 X's Primary Drinking Water Standards): Arsenic 5.0; Barium 100.0; Cadmium 1.0; Chromium 5.0; Lead 5.0 ; Mercury 0.2; Selenium 1.0; Silver 5.0; Endrin 0.02; Lindane 0.4; Methoxychlor 10.0 Toxaphene 0.5; 2,4-D 10.0; 2,4,5-TP 1.0
The above analyses indicate that the submitted sample DOES NOT exhibit the characteristic of EP Toxicity as defined in Section 261.24 Federal Register 1980 p. 33122.

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Date Reported 6/18/86
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Rel.

EP Toxicity Leachate of 4A (0-2') Composite Soil
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	0.009	mg/l	0.005	024901200
Chromium	N.D.	mg/l	0.05	025101200
Lead	0.13	mg/l	0.05	025501200

The above analyses were performed on an EP Toxicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19 1980 p. 33127.
Leachate Preparation:
12. grams waste / 192 ml distilled water
Initial pH = 7.79 1.4 ml of 0.5 N Acetic Acid were used to maintain the pH at 5.0 Final volume was 240 ml.
The characteristic of EP Toxicity is determined by whether any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima (100 X's Primary Drinking Water Standards): Arsenic 5.0; Barium 100.0; Cadmium 1.0; Chromium 5.0; Lead 5.0 ; Mercury 0.2; Selenium 1.0; Silver 5.0; Endrin 0.02; Lindane 0.4; Methoxychlor 10.0 Toxaphene 0.5; 2,4-D 10.0; 2,4,5-TP 1.0
Based on the analyses performed the submitted sample DOES NOT exhibit the characteristic of EP Toxicity as defined in Section 261.24 Federal Register 1980 p. 33122.

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EP Toxicity Leachate of 4B (2-4') Composite Soil
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	0.006	mg/l	0.005	024901200
Chromium	N.D.	mg/l	0.05	025101200
Lead	N.D.	mg/l	0.05	025501200

The above analyses were performed on an EP Toxicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19 1980 p. 33127.
Leachate Preparation:
12. grams waste / 192 ml distilled water
Initial pH = 5.17 1.6 ml of 0.5 N Acetic Acid were used to maintain the pH at 5.0 Final volume was 240 ml.
The characteristic of EP Toxicity is determined by whether any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima (100 X's Primary Drinking Water Standards): Arsenic 5.0; Barium 100.0; Cadmium 1.0; Chromium 5.0; Lead 5.0 ; Mercury 0.2; Selenium 1.0; Silver 5.0; Endrin 0.02; Lindane 0.4; Methoxychlor 10.0 Toxaphene 0.5; 2,4-D 10.0; 2,4,5-TP 1.0
Based on the analyses performed the submitted sample DOES NOT exhibit the characteristic of EP Toxicity as defined in Section 261.24 Federal Register 1980 p. 33122.

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Rel.

EP Toxicity Leachate of 5A (0-2') Composite Soil
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	0.022	mg/l	0.005	024901200
Chromium	N.D.	mg/l	0.05	025101200
Lead	0.08	mg/l	0.05	025501200

The above analyses were performed on an EP Toxicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19 1980 p. 33127.
Leachate Preparation:
12. grams waste / 192 ml distilled water
Initial pH = 5.39 4 ml of 0.5 N Acetic Acid were used to maintain the pH at 5.0 Final volume was 240 ml.
The characteristic of EP Toxicity is determined by whether any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima (100 X's Primary Drinking Water Standards): Arsenic 5.0; Barium 100.0; Cadmium 1.0; Chromium 5.0; Lead 5.0 ; Mercury 0.2; Selenium 1.0; Silver 5.0; Endrin 0.02; Lindane 0.4; Methoxychlor 10.0 Toxaphene 0.5; 2,4-D 10.0; 2,4,5-TP 1.0
Based on the analyses performed the submitted sample DOES NOT exhibit the characteristic of EP Toxicity as defined in Section 261.24 Federal Register 1980 p. 33122.

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EP Toxicity Leachate of 5B (2-4') Composite Soil
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	0.012	mg/l	0.005	024901200
Chromium	N.D.	mg/l	0.05	025101200
Lead	N.D.	mg/l	0.05	025501200

The above analyses were performed on an EP Toxicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19 1980 p. 33127.
Leachate Preparation:
12. grams waste / 192 ml distilled water
Initial pH = 5.50 3 ml of 0.5 N Acetic Acid were used to maintain the pH at 5.0 Final volume was 240 ml.
The characteristic of EP Toxicity is determined by whether any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima (100 X's Primary Drinking Water Standards): Arsenic 5.0; Barium 100.0; Cadmium 1.0; Chromium 5.0; Lead 5.0 ; Mercury 0.2; Selenium 1.0; Silver 5.0; Endrin 0.02; Lindane 0.4; Methoxychlor 10.0 Toxaphene 0.5; 2,4-D 10.0; 2,4,5-TP 1.0
Based on the analyses performed the submitted sample DOES NOT exhibit the characteristic of EP Toxicity as defined in Section 261.24 Federal Register 1980 p. 33122.

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Date Reported 6/18/86
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P.O. 19235
Rel.

EP Toxicity Leachate of 6A (0-2') Composite Soil
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	0.014	mg/l	0.005	024901200
Chromium	N.D.	mg/l	0.05	025101200
Lead	N.D.	mg/l	0.05	025501200

The above analyses were performed on an EP Toxicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19 1980 p. 33127.
Leachate Preparation:
12. grams waste / 192 ml distilled water
Initial pH = 5.08 4.3 ml of 0.5 N Acetic Acid were used to maintain the pH at 5.0 Final volume was 240 ml.
The characteristic of EP Toxicity is determined by whether any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima (100 X's Primary Drinking Water Standards): Arsenic 5.0; Barium 100.0; Cadmium 1.0; Chromium 5.0; Lead 5.0 ; Mercury 0.2; Selenium 1.0; Silver 5.0; Endrin 0.02; Lindane 0.4; Methoxychlor 10.0 Toxaphene 0.5; 2,4-D 10.0; 2,4,5-TP 1.0
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EP Toxicity Leachate of 6B (2-4') Composite Soil
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	0.011	mg/l	0.005	024901200
Chromium	N.D.	mg/l	0.05	025101200
Lead	N.D.	mg/l	0.05	025501200

The above analyses were performed on an EP Toxicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19 1980 p. 33127.
Leachate Preparation:
12. grams waste / 192 ml distilled water
Initial pH = 5.40 6.6 ml of 0.5 N Acetic Acid were used to maintain the pH at 5.0 Final volume was 240 ml.
The characteristic of EP Toxicity is determined by whether any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima (100 X's Primary Drinking Water Standards): Arsenic 5.0; Barium 100.0; Cadmium 1.0; Chromium 5.0; Lead 5.0 ; Mercury 0.2; Selenium 1.0; Silver 5.0; Endrin 0.02; Lindane 0.4; Methoxychlor 10.0 Toxaphene 0.5; 2,4-D 10.0; 2,4,5-TP 1.0
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Reviewed and Approved by:

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Inorganic Analysis

ANALYSIS REPORT

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West Chester, PA 19380

Date Reported 6/18/86
Date Submitted 6/ 2/86
Discard Date 7/19/86
Collected by C
P.O. 19235
Rel.

EP Toxicity Leachate of 7A (0-2') Composite Soil
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	0.006	mg/l	0.005	024901200
Chromium	N.D.	mg/l	0.05	025101200
Lead	N.D.	mg/l	0.05	025501200

The above analyses were performed on an EP Toxicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19 1980 p. 33127.
Leachate Preparation:
12. grams waste / 192 ml distilled water
Initial pH = 5.73 2 ml of 0.5 N Acetic Acid were used to maintain the pH at 5.0 Final volume was 240 ml.
The characteristic of EP Toxicity is determined by whether any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima (100 X's Primary Drinking Water Standards): Arsenic 5.0; Barium 100.0; Cadmium 1.0; Chromium 5.0; Lead 5.0 ; Mercury 0.2; Selenium 1.0; Silver 5.0; Endrin 0.02; Lindane 0.4; Methoxychlor 10.0 Toxaphene 0.5; 2,4-D 10.0; 2,4,5-TP 1.0
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EP Toxicity Leachate of 7B (2-4') Composite Soil
Collected 05/27/86 by ML
Project #19235

ANALYSIS	RESULT AS RECEIVED		LIMIT OF DETECTION	LAB CODE
Cadmium	0.005	mg/l	0.005	024901200
Chromium	N.D.	mg/l	0.05	025101200
Lead	N.D.	mg/l	0.05	025501200

The above analyses were performed on an EP Toxicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19 1980 p. 33127.
Leachate Preparation:
12. grams waste / 192 ml distilled water
Initial pH = 5.57 2.8 ml of 0.5 N Acetic Acid were used to maintain the pH at 5.0 Final volume was 240 ml.
The characteristic of EP Toxicity is determined by whether any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima (100 X's Primary Drinking Water Standards): Arsenic 5.0; Barium 100.0; Cadmium 1.0; Chromium 5.0; Lead 5.0 ; Mercury 0.2; Selenium 1.0; Silver 5.0; Endrin 0.02; Lindane 0.4; Methoxychlor 10.0 Toxaphene 0.5; 2,4-D 10.0; 2,4,5-TP 1.0
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THE WASHINGTON GROUP
ENVIRONMENTAL SERVICES LABORATORY

301 Chelsea Parkway
Boothwyn, Pa. 19061
(610) 497-8000

Report For:

Sunoco, Inc.
Ms. Judy Brackin
P.O. Box 426
Marcus Hook PA 19061

Job Number

75700702

Summary Number

69597

July 31, 2002

Reviewed by _____ 8/4/02
Project Manager Elizabeth Witouski

NJ ID# PA343	EPA ID# PA00078	PA ID# 23-272
CA ID# 02105CA	RI ID# 238	CT ID# PH0687
NY ID# 11345	MD ID# 286	MA ID# M-PA078

Total Pages = 46

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69597 Printed - 07/31/02 07:31:49

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288812	SWC-S1A	202	AA,Digest Solid			COMPLETE	07/18/2002	07/23/2002	07/23/2002	ART
288812	SWC-S1A	222IC	Cd Cadmium	ND<0.78		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288812	SWC-S1A	227IC	Cr Chromium	82.4		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288812	SWC-S1A	249IC	Pb Lead	79.3		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288812	SWC-S1A	877	TCLP Leachate			Complete	07/18/2002	07/22/2002	07/23/2002	SMP
288812	SWC-S1A	S06	WATER BY EVAP	35.7		% as received	07/18/2002	07/23/2002	07/23/2002	MCH
288813	SWC-S1B	202	AA,Digest Solid			COMPLETE	07/18/2002	07/23/2002	07/23/2002	ART
288813	SWC-S1B	222IC	Cd Cadmium	ND<0.71		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288813	SWC-S1B	227IC	Cr Chromium	42.5		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288813	SWC-S1B	249IC	Pb Lead	65.2		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288813	SWC-S1B	877	TCLP Leachate			Complete	07/18/2002	07/22/2002	07/23/2002	SMP
288813	SWC-S1B	S06	WATER BY EVAP	29.4		% as received	07/18/2002	07/23/2002	07/23/2002	MCH
288814	SWC-S2A	202	AA,Digest Solid			COMPLETE	07/18/2002	07/23/2002	07/23/2002	ART
288814	SWC-S2A	222IC	Cd Cadmium	ND<3.7		mg/kg-dry	07/18/2002	07/26/2002	07/26/2002	CAK
288814	SWC-S2A	227IC	Cr Chromium	50.5		mg/kg-dry	07/18/2002	07/26/2002	07/26/2002	CAK
288814	SWC-S2A	249IC	Pb Lead	150.0		mg/kg-dry	07/18/2002	07/26/2002	07/26/2002	CAK

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69597 Printed - 07/31/02 07:31:49

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288814	SWC-S2A	877	TCLP Leachate			Complete	07/18/2002	07/22/2002	07/23/2002	SMP
288814	SWC-S2A	S06	WATER BY EVAP	32.7		% as received	07/18/2002	07/23/2002	07/23/2002	MCH
288815	SWC-S2B	202	AA,Digest Solid			COMPLETE	07/18/2002	07/23/2002	07/23/2002	ART
288815	SWC-S2B	222IC	Cd Cadmium	ND<3.7		mg/kg-dry	07/18/2002	07/26/2002	07/26/2002	CAK
288815	SWC-S2B	227IC	Cr Chromium	48.9		mg/kg-dry	07/18/2002	07/26/2002	07/26/2002	CAK
288815	SWC-S2B	249IC	Pb Lead	220.0		mg/kg-dry	07/18/2002	07/26/2002	07/26/2002	CAK
288815	SWC-S2B	877	TCLP Leachate			Complete	07/18/2002	07/22/2002	07/23/2002	SMP
288815	SWC-S2B	S06	WATER BY EVAP	32.5		% as received	07/18/2002	07/23/2002	07/23/2002	MCH
288816	SWC-S3A	202	AA,Digest Solid			COMPLETE	07/18/2002	07/23/2002	07/23/2002	ART
288816	SWC-S3A	222IC	Cd Cadmium	1.321		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288816	SWC-S3A	227IC	Cr Chromium	43.1		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288816	SWC-S3A	249IC	Pb Lead	460.0		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288816	SWC-S3A	877	TCLP Leachate			Complete	07/18/2002	07/22/2002	07/23/2002	SMP
288816	SWC-S3A	S06	WATER BY EVAP	25.8		% as received	07/18/2002	07/23/2002	07/23/2002	MCH
288817	SWC-S3B	202	AA,Digest Solid			COMPLETE	07/18/2002	07/23/2002	07/23/2002	ART
288817	SWC-S3B	222IC	Cd Cadmium	ND<0.76		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288817	SWC-S3B	227IC	Cr Chromium	53.4		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69597 Printed - 07/31/02 07:31:49

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288817	SWC-S3B	249IC	Pb Lead	240.0		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288817	SWC-S3B	877	TCLP Leachate			Complete	07/18/2002	07/22/2002	07/23/2002	SMP
288817	SWC-S3B	S06	WATER BY EVAP	34.4		% as received	07/18/2002	07/23/2002	07/23/2002	MCH
288818	SWC-S4A	202	AA,Digest Solid			COMPLETE	07/18/2002	07/23/2002	07/23/2002	ART
288818	SWC-S4A	222IC	Cd Cadmium	ND<0.65		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288818	SWC-S4A	227IC	Cr Chromium	49.3		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288818	SWC-S4A	249IC	Pb Lead	210.0		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288818	SWC-S4A	877	TCLP Leachate			Complete	07/18/2002	07/22/2002	07/23/2002	SMP
288818	SWC-S4A	S06	WATER BY EVAP	22.9		% as received	07/18/2002	07/23/2002	07/23/2002	MCH
288819	SWC-S4B	202	AA,Digest Solid			COMPLETE	07/18/2002	07/23/2002	07/23/2002	ART
288819	SWC-S4B	222IC	Cd Cadmium	ND<3.5		mg/kg-dry	07/18/2002	07/26/2002	07/26/2002	CAK
288819	SWC-S4B	227IC	Cr Chromium	23.9		mg/kg-dry	07/18/2002	07/26/2002	07/26/2002	CAK
288819	SWC-S4B	249IC	Pb Lead	54.8		mg/kg-dry	07/18/2002	07/26/2002	07/26/2002	CAK
288819	SWC-S4B	877	TCLP Leachate			Complete	07/18/2002	07/22/2002	07/23/2002	SMP
288819	SWC-S4B	S06	WATER BY EVAP	28.8		% as received	07/18/2002	07/24/2002	07/24/2002	MCH
288820	SWC-S5A	202	AA,Digest Solid			COMPLETE	07/18/2002	07/23/2002	07/23/2002	ART

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69597 Printed - 07/31/02 07:31:49

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288820	SWC-S5A	222IC	Cd Cadmium	1.88		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288820	SWC-S5A	227IC	Cr Chromium	74.0		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288820	SWC-S5A	249IC	Pb Lead	780.0		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288820	SWC-S5A	877	TCLP Leachate			Complete	07/18/2002	07/22/2002	07/23/2002	SMP
288820	SWC-S5A	S06	WATER BY EVAP	25.7		% as received	07/18/2002	07/23/2002	07/23/2002	MCH
288821	SWC-S5B	202	AA,Digest Solid			COMPLETE	07/18/2002	07/23/2002	07/23/2002	ART
288821	SWC-S5B	222IC	Cd Cadmium	0.890		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288821	SWC-S5B	227IC	Cr Chromium	51.8		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288821	SWC-S5B	249IC	Pb Lead	440.0		mg/kg-dry	07/18/2002	07/25/2002	07/25/2002	CAK
288821	SWC-S5B	877	TCLP Leachate			Complete	07/18/2002	07/22/2002	07/23/2002	SMP
288821	SWC-S5B	S06	WATER BY EVAP	38.2		% as received	07/18/2002	07/23/2002	07/23/2002	MCH
288822	Tclp/#288812	204	AA,Digest DISS			COMPLETE	07/23/2002	07/24/2002	07/24/2002	ART
288822	Tclp/#288812	222IC	Cd Cadmium	ND<0.025		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288822	Tclp/#288812	227IC	Cr Chromium	ND<0.050		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288822	Tclp/#288812	249IC	Pb Lead	0.040		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288823	Tclp/#288813	204	AA,Digest DISS			COMPLETE	07/23/2002	07/24/2002	07/24/2002	ART

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69597 Printed - 07/31/02 07:31:49

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288823	Tclp/#288813	222IC	Cd Cadmium	ND<0.025		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288823	Tclp/#288813	227IC	Cr Chromium	ND<0.050		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288823	Tclp/#288813	249IC	Pb Lead	0.034		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288824	Tclp/#288814	204	AA,Digest DISS			COMPLETE	07/23/2002	07/24/2002	07/24/2002	ART
288824	Tclp/#288814	222IC	Cd Cadmium	ND<0.025		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288824	Tclp/#288814	227IC	Cr Chromium	ND<0.050		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288824	Tclp/#288814	249IC	Pb Lead	0.085		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288825	Tclp/#288815	204	AA,Digest DISS			COMPLETE	07/23/2002	07/24/2002	07/24/2002	ART
288825	Tclp/#288815	222IC	Cd Cadmium	ND<0.025		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288825	Tclp/#288815	227IC	Cr Chromium	ND<0.050		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288825	Tclp/#288815	249IC	Pb Lead	0.13		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288826	Tclp/#288816	204	AA,Digest DISS			COMPLETE	07/23/2002	07/24/2002	07/24/2002	ART
288826	Tclp/#288816	222IC	Cd Cadmium	ND<0.025		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288826	Tclp/#288816	227IC	Cr Chromium	ND<0.050		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288826	Tclp/#288816	249IC	Pb Lead	0.14		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288827	Tclp/#288817	204	AA,Digest DISS			COMPLETE	07/23/2002	07/24/2002	07/24/2002	ART

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69597 Printed - 07/31/02 07:31:49

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288827	Tclp/#288817	222IC	Cd Cadmium	ND<0.025		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288827	Tclp/#288817	227IC	Cr Chromium	ND<0.050		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288827	Tclp/#288817	249IC	Pb Lead	0.038		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288828	Tclp/#288818	204	AA,Digest DISS			COMPLETE	07/23/2002	07/24/2002	07/24/2002	ART
288828	Tclp/#288818	222IC	Cd Cadmium	ND<0.025		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288828	Tclp/#288818	227IC	Cr Chromium	ND<0.050		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288828	Tclp/#288818	249IC	Pb Lead	0.95		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288829	Tclp/#288819	204	AA,Digest DISS			COMPLETE	07/23/2002	07/24/2002	07/24/2002	ART
288829	Tclp/#288819	222IC	Cd Cadmium	ND<0.025		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288829	Tclp/#288819	227IC	Cr Chromium	ND<0.050		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288829	Tclp/#288819	249IC	Pb Lead	1.3		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288830	Tclp/#288820	204	AA,Digest DISS			COMPLETE	07/23/2002	07/24/2002	07/24/2002	ART
288830	Tclp/#288820	222IC	Cd Cadmium	ND<0.025		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288830	Tclp/#288820	227IC	Cr Chromium	ND<0.050		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288830	Tclp/#288820	249IC	Pb Lead	3.5		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288831	Tclp/#288821	204	AA,Digest DISS			COMPLETE	07/23/2002	07/24/2002	07/24/2002	ART

The Washington Group International
Environmental Services Laboratory Data Summary
Summary # 69597 Printed - 07/31/02 07:31:49

Log	Description	Code	Parameter	Result	Limit	Units	Sampled	Started	Complete	Analyst
288831	Tclp/#288821	222IC	Cd Cadmium	ND<0.025		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288831	Tclp/#288821	227IC	Cr Chromium	ND<0.050		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK
288831	Tclp/#288821	249IC	Pb Lead	0.94		mg/l	07/23/2002	07/29/2002	07/29/2002	CAK

Approved by: _____

Report Prep: M. Hamalak

THE WASHINGTON GROUP
ENVIRONMENTAL LABORATORY

Methods Used for Summary# 69597:

Code	Description
202	Total Metals, Solids/FLAA,GFAA,ICP/SW846 3050B(Mod)
204	Metals, Dissolved/EPA600 4-79-020/SW846 3005A
222IC	Cadmium by ICP/EPA 200.7/SW846 6010
227IC	Chromium by ICP/EPA 200.7/SW846 6010
249IC	Lead by ICP/EPA 200.7/SW846 6010
877	TCLP Leachate/leachate procedure/SW846 1311
S06	Water by evaporation/ EPA-600 Mtd 160.3

DATA QUALIFIERS

The following list shows data qualifiers that may appear in this report, and the meaning of each.

Qualifier	Meaning
B	Compound was detected in the associated blank.
D	Result was obtained from a different dilution than other analytes.
E	Result is estimated. Usually, this qualifier indeicates that the result is above the calibrated range of the instrument
J	Result is estimated. Usually this qualifier indicates the reported concentration is below the laboratory's reporting limit.
N	Indicates a Tentatively Identified Compound.
ND	Analyte was not detected.
U	Analyte was not detected (U and ND qualifiers are interchangable).

ABBREVIATIONS

The following list shows abbreviations that commonly occur in analytical reports.

Abbreviation	Meaning
DL	Dilution
LCS	Laboratory Control Sample
LCSS	Laboratory Control Sample (soil)
LCSW	Laboratory Control Sample (water)
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NR	No Recovery
PB	Preparation Blank
PS	Post-Digestion Spike
RE	Reanalysis
RPD	Relative Percent Difference
SR	Serial Dilution

Washington — Laboratory Chain Of Custody

Washington Group Laboratory
301 Chelsea Parkway
Boothwyn, PA 19061
Phone: 610-497-8000
Fax: 610-497-8005

Quote No:
Ship To:
Lab Job No: 75700702

Client/Office: Sunoco-Marcus Hook Ref. Phone: 215-977-3856
Address: Delaware Ave & Green St, Marcus Hook, PA
Send report to: Judy Brackin Fax: 215-977-6549
Project Description: Solid Waste Closure

Send invoice to: Judy Brackin
Address: Sunoco Inc. 1801 Market St Phila, PA 19103
P.O. No:

TAT (for data): Identify number of working days below);...or Date-->:
☐ Rush 1 2 3 4 5 days ☐ Firm(6-12) ☒ Std.(-12) ☐ Other
Lab Staffer confirming Rush/Firm: Hardcopy TAT Date?:

Report Type: ☐ Results only ☒ Data +QC ☐ Reduced Deliv. ☐ Other:
☐ Regulatory Format (CLP like) ☐ Electronic/disk->(Format?)

Regulatory Samples? ☒ YES ☐ NO
If YES?: ☐ Act II ☐ UST ☒ RCRA ☐ NPDES ☐ Phase I/II ☐ ISRA ☐ Other:

Analytical Protocol: ☒ SW846 ☐ EPA600 ☐ Drinking H2O ☐ ASTM ☐ Other:

Analysis Required: Total Cd, Cr, Pb | TCLP Cd, Cr, Pb | Cd Cr Pb - Tclp

Lab Use Only (rev. 10/12/99)
Due Date:
Cooler Tmp: 0 deg C
custody seal: yes__ no
No.:
Summary No.: 69597

Sample Data (NJ HAZITE disk deliverable limits sample ID to 7 Characters) / Container Data

ID (NJ limit=7 characters)	date	time	matrix	grab	comp	type	no.	preservative	pH	Total Cd, Cr, Pb	TCLP Cd, Cr, Pb	Cd Cr Pb - Tclp	Lab Log No.
SWC-S1A	7/18	1305	Soil		X	G	1	NONE		X	X		288812
SWC-S1B	7/18	1308	Soil		X	G	1			X	X		288813
SWC-S2A	7/18	1312	Soil		X	G	1			X	X		288814
SWC-S2B	7/18	1315	Soil		X	G	1			X	X		288815
SWC-S3A	7/18	1318	Soil		X	G	1			X	X		288816
~~SWC-S4A 7/~~													
SWC-S3B	7/18	1320	Soil		X	G	1			X	X		288817
SWC-S4A	7/18	1324	Soil		X	G	1			X	X		288818
SWC-S4B	7/18	1328	Soil		X	G	1			X	X		288819
SWC-S5A	7/18	1333	Soil		X	G	1			X	X		288820
SWC-S5B	7/18	1335	Soil		X	G	1			X	X		288821
TCLP #288812	7/23		Leach			250P	1	HNO3	<2			X	288822
288813												X	288823
288814												X	288824
288815												X	288825

Comments/Special Handling/Storage/Disposal-->:

Sampled by: J.S. Brackin
Phone no: 215-977-3856

Relinquished By		Received By		Method of Shipment
Name: Judy A Brackin	Date: 7/18/02	Name: K. White	Date: 7/18/02	Airbill No. HAND
Organization:	Time: 1530	Organization: TWGTNT	Time: 1530	
Name:	Date:	Name:	Date:	
Organization:	Time:	Organization:	Time:	
Name:	Date:	Name:	Date:	
Organization:	Time:	Organization:	Time:	

Washington — **Laboratory Chain Of Custody**

Quote No:

Client/Office: SUNOCO-MARCUS HOOK Phone:

Address:

Send report to: Judy BRACKIN Fax:

Project Description:

TAT (for data): Identify number of working days below);...or Date-->:

☐ Rush 1 2 3 4 5 days ☐ Firm(6-12) ____ ☐ Std.(~12) ____ ☐ Other ____

Lab Staffer confirming Rush/Firm: ____ Hardcopy TAT Date?: ____

Report Type: ☐ Results only ☐ Data +QC ☐ Reduced Deliv. ☐ Other: ____
☐ Regulatory Format (CLP like) ☐ Electronic/disk->(Format?)

Regulatory Samples? ☐ YES ☐ NO — If YES?: ☐ Act II ☐ UST ☐ RCRA ☐ NPDES ☐ Phase I/II ☐ ISRA ☐ Other: ____

Analytical Protocol: ☐ SW846 ☐ EPA600 ☐ Drinking H2O ☐ ASTM ☐ Other:

Ship To:

Lab Job No:

Send invoice to:

Address:

P.O. No:

Washington Group Laboratory
301 Chelsea Parkway
Boothwyn, PA 19061
Phone: 610-497-8000
Fax: 610-497-8005

Lab Use Only
rev. 10/12/99
Due Date:
Cooler Tmp: 0 deg C
custody seal yes ___ no ✓
No.:
Summary No. 69597
Lab Log No:

Analysis Required: CdCrPb-Tclp

Sample Data (NJ HAZITE disk deliverable limits sample ID to 7 Characters)

ID (NJ limit=7 characters)	date	time	matrix	grab	comp	Container Data: type	no.	preservative	pH	CdCrPb-Tclp	Lab Log No.
Tclp 288816	7/23		Leach			250	1	HNO_3	<2	X	288826
288817							1			X	288827
288818							1			X	288828
288819							1			X	288829
288820							1			X	288830
288821							1			X	288831

Comments/Special Handling/Storage/Disposal—>:

Sampled by:

Phone no:

Relinquished By:		Received By:		Method of Shipment
Name:	Date:	Name: [signature]	Date: 7/18/02	Airbill No.
Organization:	Time:	Organization: TW & INT	Time: 1530	
Name:	Date:	Name:	Date:	
Organization:	Time:	Organization:	Time:	
Name:	Date:	Name:	Date:	
Organization:	Time:	Organization:	Time:	

Washington
Environmental Laboratory

SAMPLE RECEIVING CHECKLIST

Client/Site: SUNOCO

Assigned Summary # 69597

Section 1. Laboratory Courier (omit if samples received directly from client or 3rd party)

1.1 Samples taken by lab personnel?	☐ Yes	☐ No	
Preserved in field?	☐ Yes	☐ No	☐ Not Req.
Stored on ice?	☐ Yes	☐ No	☐ Not Req.
Date/time last sample placed in cooler: _____			
1.2 Samples taken by customer or 3rd party?	☐ Yes	☐ No	
Received under refrigeration?	☐ Yes (cooler)	☐ Yes (refrig.)	☐ No
If yes, in Cooler sealed?	☐ Yes	☐ No	
If no, ice present?	☐ Yes	☐ No	
Ice added?	☐ Yes	☐ No	
If refrig. placed in cooler/iced	☐ Yes	☐ No	

Section 2. Laboratory

2.1 Delivered by	☒ Client	☐ Lab Pers	☐ Parcel Svc
2.2 Packaging	☒ Cooler	☐ Other/none	
Custody Seals	☐ Present	☒ Absent	☐ Broken
Ice	☒ Present	☐ Absent	☐ Melted
Temperature	0 °C		
2.3 Documentation			
Airbill Present	☐ Yes, # N/A		☐ No
COC	☒ Rec'd		☐ Prpd by Lab
2.4 Sample Containers			
Appropriate for specified analyses?	☒ Yes	☐ No*	
Intact?	☒ Yes	☐ No*	
Labeled, and labels legible?	☒ Yes	☐ No*	
Labels agree with COC?	☒ Yes	☐ No*	

2.5 Preservation (water samples only)				
Metals	pH<2	☐ Yes	☐ No*	☒ NA
Cyanides	pH >12	☐ Yes	☐ No*	☒ NA
Sulfides	pH >9	☐ Yes	☐ No*	☒ NA
BNA, Pest, PCB, CN, Phenols, NO_3	Cl_2 absent	☐ Yes	☐ No*	☒ NA
TOC, COD, Oil/Grease, Phenols, TPH	pH<2	☐ Yes	☐ No*	☒ NA
TOX, TKN, NH3, Tot. P.	pH<2	☐ Yes	☐ No*	☒ NA
Were preservatives added at lab?		☐ Yes*	☐ No	☒ N/A

Comments (note: any response marked "*" requires detailed explanation identify specific samples, what was wrong, and what was done)

Initials: DAG Date: 7/18/02

admin3/QA/IList/SR Checlist rev10/01

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: The Washington Group International

Lab Sample ID

288812	288812SR
288813	288816
288817	288818
288820	288821

Were ICP interelement corrections applied? Yes/No

Were ICP background corrections applied? Yes/No

If Yes - were raw data generated before application of background corrections Yes/No

Comments:

Batch ID: 0576 Analysis Start Time: 1534

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Laboratory Manager's designee, as verified by the following signature.

Signature: Candia Knowls Name: Candia Knowls

Date: 7 26 02 Title:

Data File: cjul25a.

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Initial/Continuing Calibration Source :_____

Concentration Units: mg/l

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R *	CCV-1 True	CCV-1 Found	CCV-1 %R	CCV-2 Found	CCV-2 %R	CCV-3 Found	CCV-3 %R
Antimony	0.50	0.47	94.1	0.50	0.48	96.6	0.48	95.5		
Arsenic	0.50	0.47	93.4	0.50	0.47	93.5	0.47	93.4		
Barium	2.00	2.06	103.1	2.00	2.09	104.3	2.07	103.4		
Beryllium	0.05	0.05	95.0	0.05	0.05	92.8	0.05	93.4		
Cadmium	0.25	0.24	97.1	0.25	0.24	96.2	0.24	96.5		
Calcium	5.00	4.74	94.8	5.00	4.68	93.6	4.83	96.7		
Chromium	0.20	0.19	96.6	0.20	0.19	96.4	0.19	96.9		
Cobalt	0.50	0.48	96.8	0.50	0.49	97.1	0.49	97.5		
Copper	0.25	0.24	97.3	0.25	0.25	98.7	0.24	97.0		
Iron	1.00	0.94	94.2	1.00	0.96	95.7	0.96	95.7		
Lead	0.50	0.48	95.5	0.50	0.48	95.3	0.48	95.6		
Magnesium	5.00	4.70	94.1	5.00	4.70	94.0	4.73	94.7		
Manganese	0.50	0.49	98.3	0.50	0.49	98.0	0.49	98.1		
Molybdenum	0.50	0.48	96.0	0.50	0.48	96.1	0.48	96.7		
Nickel	0.50	0.48	96.5	0.50	0.48	96.6	0.48	96.5		
Potassium	5.00	5.05	101.1	5.00	5.24	104.8	5.15	102.9		
Selenium	0.50	0.45	90.2	0.50	0.45	90.3	0.45	90.6		
Titanium	0.50	0.49	97.6	0.50	0.49	97.2	0.48	96.6		
Silver	0.25	0.24	95.6	0.25	0.24	97.3	0.24	96.2		
Sodium	5.00	5.24	104.7	5.00	5.48	109.7	5.42	108.5		
Thallium	0.50	0.48	95.0	0.50	0.47	94.2	0.47	94.6		
Vanadium	0.50	0.49	97.4	0.50	0.49	98.0	0.49	98.1		
Zinc	0.50	0.48	96.6	0.50	0.47	94.1	0.47	94.8		

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Preparation Blank Matrix (soil/water) :Water

Preparation Blank Concentration Units (mg/L or mg/Kg) :mg/L

Analyte	Initial Calib. Blank	Continuing Calibration 1	2	3	
Antimony	ND	ND	ND		
Arsenic	ND	ND	ND		
Barium	ND	ND	ND		
Beryllium	ND	ND	ND		
Cadmium	ND	ND	ND		
Calcium	ND	ND	ND		
Chromium	ND	ND	ND		
Cobalt	ND	ND	ND		
Copper	ND	ND	ND		
Iron	ND	ND	ND		
Lead	ND	ND	ND		
Magnesium	ND	ND	ND		
Manganese	ND	ND	ND		
Molybdenum	ND	ND	ND		
Nickel	ND	ND	ND		
Potassium	ND	ND	ND		
Selenium	ND	ND	ND		
Titanium	ND	ND	ND		
Silver	ND	ND	ND		
Sodium	ND	ND	ND		
Thallium	ND	ND	ND		
Vanadium	ND	ND	ND		
Zinc	ND	ND	ND		

5a.

PREPARATION BLANK (Batch 0576)

Lab Name: Washington Group Contract: _____

Matrix (soil/water): soil

Concentration Units (mg/L or mg/kg as received): mg/kg

Analyte	Result
Antimony	ND<0.0060
Arsenic	ND<0.0080
Barium	ND<0.2000
Beryllium	ND<0.0020
Cadmium	ND<0.0050
Calcium	ND<1.0000
Chromium	ND<0.0100
Cobalt	ND<0.0100
Copper	ND<0.0200
Iron	ND<0.1000
Lead	ND<0.0050
Magnesium	ND<1.0000
Manganese	ND<0.0150
Molybdenum	ND<0.0100
Nickel	ND<0.0200
Potassium	ND<1.0000
Selenium	ND<0.0200
Silver	ND<0.0100
Sodium	ND<1.0000
Thallium	ND<0.0100
Titanium	ND<0.0200
Vanadium	ND<0.0100
Zinc	ND<0.0200

US EPA - CLP
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

ICP ID Number: _____

Concentration Units: mg/l

Analyte	Solution A	Solution AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Antimony		0.6		0.61	101.4			
Arsenic		0.1		0.10	102.7			
Barium		0.5		0.56	113.0			
Beryllium		0.5		0.48	96.7			
Cadmium		1.0		0.96	95.8			
Calcium	500	500	464	460	92.1			
Chromium		0.5		0.50	99.5			
Cobalt		0.5		0.50	99.6			
Copper		0.5		0.55	109.3			
Iron	200	200	204	203	101.7			
Lead		0.05		0.04	85.6			
Magnesium	500	500	526	522	104.4			
Manganese		0.5		0.52	104.3			
Molybdenum								
Nickel		1.0		0.96	95.8			
Potassium								
Selenium		0.05		0.05	106.0			
Titanium								
Silver		0.2		0.21	105.3			
Sodium								
Thallium		0.1		0.10	96.0			
Vanadium		0.5		0.51	101.0			
Zinc		1.0		0.97	97.2			

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288812

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): soil

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/kg

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		24.937	0.000	25.00	99.75
Arsenic		51.408	4.800	50.00	93.22
Barium		262.495	50.000	200.00	106.25
Beryllium		5.054	0.380	5.00	93.48
Calcium		8062.478	9600.000	500.00	NR
Cadmium		24.134	0.000	25.00	96.54
Cobalt		52.769	4.700	50.00	96.14
Chromium		46.828	53.000	20.00	NR
Copper		54.349	50.000	25.00	17.40
Iron		11179.780	13000.000	100.00	NR
Potassium		1730.471	1000.000	500.00	146.09
Magnesium		8367.257	8700.000	500.00	NR
Manganese		239.819	270.000	50.00	NR
Molybdenum		39.798	0.000	50.00	79.60
Sodium		546.037	0.000	500.00	109.21
Nickel		58.437	11.000	50.00	94.87
Lead		81.531	51.000	50.00	61.06
Selenium		48.568	0.000	50.00	97.14
Antimony		10.948	0.000	50.00	21.90
Titanium		287.034	270.000	50.00	34.07
Thallium		48.490	0.000	50.00	96.98
Vanadium		75.926	32.000	50.00	87.85
Zinc		107.615	80.000	50.00	55.23

Comments:

NR = No Recovery

288812MS Batch - 0576
cjul25a.0576

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288812

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): soil

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/kg

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		24.967	0.000	25.00	99.87
Arsenic		51.025	4.800	50.00	92.45
Barium		257.171	50.000	200.00	103.59
Beryllium		5.040	0.380	5.00	93.20
Calcium		7534.113	9600.000	500.00	NR
Cadmium		24.014	0.000	25.00	96.06
Cobalt		52.986	4.700	50.00	96.57
Chromium		45.880	53.000	20.00	NR
Copper		56.842	50.000	25.00	27.37
Iron		10702.451	13000.000	100.00	NR
Potassium		1713.593	1000.000	500.00	142.72
Magnesium		8071.983	8700.000	500.00	NR
Manganese		223.836	270.000	50.00	NR
Molybdenum		40.645	0.000	50.00	81.29
Sodium		590.262	0.000	500.00	118.05
Nickel		57.321	11.000	50.00	92.64
Lead		83.666	51.000	50.00	65.33
Selenium		48.120	0.000	50.00	96.24
Antimony		13.071	0.000	50.00	26.14
Titanium		272.105	270.000	50.00	4.21
Thallium		48.074	0.000	50.00	96.15
Vanadium		73.928	32.000	50.00	83.86
Zinc		112.828	80.000	50.00	65.66

Comments:

NR = No Recovery

288812MSD Batch - 0576
cjul25a.0576

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288812

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): soil

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/kg

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		24.212	0.000	25.00	96.85
Arsenic		51.095	4.800	50.00	92.59
Barium		257.380	50.000	200.00	103.69
Beryllium		4.931	0.380	5.00	91.03
Calcium		9745.239	9600.000	500.00	29.05
Cadmium		23.456	0.000	25.00	93.82
Cobalt		52.132	4.700	50.00	94.86
Chromium		70.775	53.000	20.00	88.87
pper		73.858	50.000	25.00	95.43
on		13110.249	13000.000	100.00	110.25
otassium		1593.598	1000.000	500.00	118.72
Magnesium		8968.365	8700.000	500.00	53.67
Manganese		304.748	270.000	50.00	69.50
Molybdenum		47.766	0.000	50.00	95.53
Sodium		520.567	0.000	500.00	104.11
Nickel		57.581	11.000	50.00	93.16
Lead		96.696	51.000	50.00	91.39
Selenium		47.842	0.000	50.00	95.68
Antimony		47.086	0.000	50.00	94.17
Titanium		314.506	270.000	50.00	89.01
Thallium		47.030	0.000	50.00	94.06
Vanadium		79.001	32.000	50.00	94.00
Zinc		123.040	80.000	50.00	86.08

Comments:

NR = No Recovery

288812PS Batch - 0576
cjul25a.0576

BATCH
DUPLICATE SAMPLE REPORT

LAB SAMPLE NO

288812MS

Lab Name: The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): soil

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/kg

Analyte	Sample Result	Duplicate Result	% RPD
Silver	24.937	24.967	0.12
Arsenic	51.408	51.025	0.75
Barium	262.495	257.171	2.05
Beryllium	5.054	5.040	0.27
Calcium	8062.478	7534.113	6.78
Cadmium	24.134	24.014	0.50
Cobalt	52.769	52.986	0.41
Chromium	46.828	45.880	2.05
Copper	54.349	56.842	4.49
Iron	11179.780	10702.451	4.36
Potassium	1730.471	1713.593	0.98
Magnesium	8367.257	8071.983	3.59
Manganese	239.819	223.836	6.89
Molybdenum	39.798	40.645	2.11
Sodium	546.037	590.262	7.78
Nickel	58.437	57.321	1.93
Lead	81.531	83.666	2.58
Selenium	48.568	48.120	0.93
Antimony	10.948	13.071	17.68
	287.034	272.105	5.34
Thallium	48.490	48.074	0.86
Vanadium	75.926	73.928	2.67
Zinc	107.615	112.828	4.73

Comments:

ICP SERIAL DILUTIONS

LAB SAMPLE NO

288812SR

Lab Name: Raytheon Engineers Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): soil

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/kg

Analyte	Initial Result	Serial Dil. Result	% RPD
Silver	0.000	0.000	-----
Arsenic	4.800	5.100	6.06
Barium	50.000	0.000	200.00
Beryllium	0.380	0.000	200.00
Calcium	9600.000	10000.000	4.08
Cadmium	0.000	0.000	-----
Cobalt	4.700	5.500	15.69
Chromium	53.000	56.000	5.50
Copper	50.000	50.000	0.00
Iron	13000.000	14000.000	7.41
Potassium	1000.000	910.000	9.42
Magnesium	8700.000	8700.000	0.00
Manganese	270.000	280.000	3.64
Molybdenum	0.000	0.000	-----
Sodium	0.000	0.000	-----
Nickel	11.000	12.000	8.70
Lead	51.000	53.000	3.85
Selenium	0.000	0.000	-----
Antimony	0.000	0.000	-----
Titanium	270.000	280.000	3.64
Thallium	0.000	0.000	-----
Vanadium	32.000	33.000	3.08
Zinc	80.000	88.000	9.52

Comments:

Batch 05760576

US EPA - CLP
7
LABORATORY CONTROL SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Solid LCS Source :_____

Aqueous LCS Source:_____

Analyte	Aqueous (mg/L) True	Found	%R
Antimony	0.50	0.50	99.6
Arsenic	0.50	0.49	98.7
Barium	2.00	2.15	107.4
Beryllium	0.05	0.05	97.0
Cadmium	0.25	0.25	100.7
Calcium	5.00	4.87	97.4
Chromium	0.20	0.20	99.8
Cobalt	0.50	0.51	102.0
Copper	0.25	0.25	100.5
Iron	1.00	0.98	97.9
Lead	0.50	0.50	100.4
Magnesium	5.00	4.87	97.5
Manganese	0.50	0.50	99.8
Molybdenum	0.50	0.50	100.5
Nickel	0.50	0.50	100.9
Potassium	5.00	5.49	109.8
Selenium	0.50	0.49	98.6
Titanium	0.50	0.50	100.7
Silver	0.25	0.25	99.8
Sodium	5.00	4.43	88.7
Thallium	0.50	0.50	101.0
Vanadium	0.50	0.50	100.9
Zinc	0.50	0.50	99.9

cjul25a.0576LCSWS Batch- 0576

US EPA - CLP
7
LABORATORY CONTROL SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Solid LCS Source : ERA #PPS-46, Lot No. 247

Aqueous LCS Source: _____

Analyte	Solids (mg/kg) True	Found	%R	LCL	UCL
Antimony	90.9	58.0	63.8	25	157
Arsenic	51.1	52.0	101.7	38	64
Barium	264.0	278.7	105.6	203	324
Beryllium	150.0	152.2	101.5	118	184
Cadmium	56.2	60.6	107.9	43	69
Calcium	10500.0	11422.5	108.8	7840	13100
Chromium	31.4	29.5	94.0	25	38
Cobalt	43.1	46.5	107.9	34	52
Copper	133.0	145.6	109.5	109	156
Iron	13000.0	11947.6	91.9	7900	18100
Lead	67.1	67.7	100.9	51	83
Magnesium	2810.0	2875.8	102.3	2270	3350
Manganese	307.0	297.1	96.8	248	365
Molybdenum	110.0	113.5	103.2	84	135
Nickel	99.5	109.9	110.4	78	121
Potassium	3280.0	3770.1	114.9	2560	4000
Selenium	52.7	56.0	106.3	39	66
Titanium	256.0	225.6	88.1	102	410
Silver	54.5	60.9	111.8	41	69
Sodium	779.0	609.9	78.3	528	1030
Thallium	106.0	112.5	106.1	60	151
Vanadium	56.1	53.1	94.6	38	74
Zinc	85.3	89.2	104.6	66	105

125a Batch- 0576

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: The Washington Group International

Lab Sample ID

288814	288815
288819	288926

Were ICP interelement corrections applied? Yes/No

Were ICP background corrections applied? Yes/No

If Yes - were raw data generated before application of background corrections Yes/No

Comments:

Batch ID: 0576 Analysis Start Time: 1520

See file Cjul25a for QC in 726a

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager the Laboratory Manager's designee, as verified by the following signature.

Signature: [signature] Name: Candia Knowles

Date: 729M Title:

Data File: cjul26a.

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Initial/Continuing Calibration Source : _____

Concentration Units: mg/l

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R *	CCV-1 True	CCV-1 Found	CCV-1 %R	CCV-2 Found	CCV-2 %R	CCV-3 Found	CCV-3 %R
Antimony	0.50	0.49	98.0	0.50	0.49	97.8	0.49	98.1	0.49	97.9
Arsenic	0.50	0.49	97.1	0.50	0.48	96.0	0.48	95.1	0.47	94.9
Barium	2.00	2.14	106.8	2.00	2.12	106.2	2.12	105.8	2.10	105.2
Beryllium	0.05	0.05	98.2	0.05	0.05	95.4	0.05	94.2	0.05	93.2
Cadmium	0.25	0.25	100.5	0.25	0.25	99.0	0.25	98.3	0.24	97.9
Calcium	5.00	4.93	98.5	5.00	4.83	96.6	4.84	96.8	4.83	96.6
Chromium	0.20	0.20	100.6	0.20	0.20	99.7	0.20	99.4	0.20	99.2
Cobalt	0.50	0.50	100.4	0.50	0.50	99.4	0.50	99.5	0.50	99.1
Copper	0.25	0.25	100.8	0.25	0.25	98.7	0.24	97.3	0.24	96.5
Iron	1.00	0.99	99.4	1.00	1.01	100.9	1.01	101.0	0.98	97.9
Lead	0.50	0.49	98.6	0.50	0.49	98.0	0.49	97.5	0.49	97.5
Magnesium	5.00	4.88	97.7	5.00	4.83	96.6	4.83	96.6	4.81	96.3
Manganese	0.50	0.51	101.9	0.50	0.51	101.1	0.50	100.5	0.50	100.0
Molybdenum	0.50	0.50	99.8	0.50	0.49	98.9	0.49	98.9	0.49	98.8
Nickel	0.50	0.50	100.2	0.50	0.49	98.9	0.49	98.7	0.49	98.3
Potassium	5.00	5.17	103.4	5.00	5.13	102.5	5.15	102.9	5.09	101.9
Selenium	0.50	0.47	94.0	0.50	0.47	93.4	0.46	92.7	0.46	92.8
Titanium	0.50	0.51	101.1	0.50	0.50	99.5	0.49	98.4	0.49	97.7
Silver	0.25	0.25	98.5	0.25	0.24	97.6	0.24	97.4	0.24	97.0
Thallium	0.50	0.49	98.3	0.50	0.49	97.4	0.48	96.8	0.48	96.5
Vanadium	0.50	0.50	100.8	0.50	0.50	100.5	0.50	100.4	0.50	99.9
Zinc	0.50	0.50	100.4	0.50	0.49	98.8	0.49	98.2	0.49	97.8

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Initial Calibration Source :_____

Continuing Calibration Source:_____

Analyte	True	CCV-4 Found	%R	CCV-5 Found	%R	CCV-6 Found	%R
Antimony	0.50	0.49	97.7				
Arsenic	0.50	0.47	94.9				
Barium	2.00	2.11	105.5				
Beryllium	0.05	0.05	92.6				
Cadmium	0.25	0.24	97.4				
Calcium	5.00	4.82	96.3				
Chromium	0.20	0.20	98.8				
Cobalt	0.50	0.49	98.9				
Copper	0.25	0.24	96.6				
Iron	1.00	0.98	98.5				
Lead	0.50	0.49	97.0				
Magnesium	5.00	4.83	96.5				
Manganese	0.50	0.50	99.9				
Molybdenum	0.50	0.49	98.7				
Nickel	0.50	0.49	98.1				
Potassium	5.00	5.16	103.3				
Selenium	0.50	0.46	92.8				
Titanium	0.50	0.49	97.8				
Silver	0.25	0.24	97.4				
Thallium	0.50	0.48	96.1				
Vanadium	0.50	0.50	99.9				
Zinc	0.50	0.48	97.0				

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Preparation Blank Matrix (soil/water) :Water

Preparation Blank Concentration Units (mg/L or mg/Kg) :mg/L

Analyte	Initial Calib. Blank	Continuing Calibration 1	2	3	
Antimony	ND	ND	ND	ND	
Arsenic	ND	ND	ND	ND	
Barium	ND	ND	ND	ND	
Beryllium	ND	ND	ND	ND	
Cadmium	ND	ND	ND	ND	
Calcium	ND	ND	ND	ND	
Chromium	ND	ND	ND	ND	
Cobalt	ND	ND	ND	ND	
Copper	ND	ND	ND	ND	
Iron	ND	ND	ND	ND	
Lead	ND	ND	ND	ND	
Magnesium	ND	ND	ND	ND	
Manganese	ND	ND	ND	ND	
Molybdenum	ND	ND	ND	ND	
Nickel	ND	ND	ND	ND	
Potassium	ND	ND	ND	ND	
Selenium	ND	ND	ND	ND	
Titanium	ND	ND	ND	ND	
Silver	ND	ND	ND	ND	
Thallium	ND	ND	ND	ND	
Vanadium	ND	ND	ND	ND	
Zinc	ND	ND	ND	ND	

cjul26a

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Preparation Blank Matrix (soil/water) :Water

Preparation Blank Concentration Units (mg/L or mg/Kg) :mg/L

Analyte	Continuing Calibration 4	5	6	
Antimony	ND			
Arsenic	ND			
Barium	ND			
Beryllium	ND			
Cadmium	ND			
Calcium	ND			
Chromium	ND			
Cobalt	ND			
Copper	ND			
Iron	ND			
Lead	ND			
Magnesium	ND			
Manganese	ND			
Molybdenum	ND			
Nickel	ND			
Potassium	ND			
Selenium	ND			
Titanium	ND			
Silver	ND			
Thallium	ND			
Vanadium	ND			
Zinc	ND			

c 6a

US EPA - CLP
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

ICP ID Number: _____

Concentration Units: mg/l

Analyte	Solution A	Solution AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Antimony		0.5		0.61	101.6			
Arsenic		0.1		0.10	101.4			
Barium		0.5		0.57	113.5			
Beryllium		0.5		0.48	97.0			
Cadmium		1.0		0.96	96.2			
Calcium	500	500	465	460	91.9			
Chromium		0.5		0.50	100.0			
Cobalt		0.5		0.50	100.2			
Copper		0.5		0.55	110.1			
Iron	200	200	206	204	102.0			
Lead		0.05		0.04	87.0			
Magnesium	500	500	536	528	105.6			
Manganese		0.5		0.52	104.8			
Molybdenum								
Nickel		1.0		0.97	96.6			
Potassium								
Selenium		0.05		0.05	105.4			
Titanium								
Silver		0.2		0.21	106.1			
Thallium		0.1		0.10	95.4			
Vanadium		0.5		0.51	101.5			
Zinc		1.0		0.98	97.9			

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: The Washington Group International

Lab Sample ID

288822	288822SR
288822PS	288823
288824	288825
288826	288827
288828	288829
288830	288831
288838	288842
288865A	288-61
288-63	

Were ICP interelement corrections applied? Yes/No

Were ICP background corrections applied? Yes/No

If Yes - were raw data generated before application of background corrections Yes/No

Comments:

Batch ID: 584 Analysis Start Time: 959

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Laboratory Manager's designee, as verified by the following signature.

Signature: Candia Rhoads Name: Candia Rhoads

Date: 7292 Title:

Data File: bjul29.

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Initial/Continuing Calibration Source : _____

Concentration Units: mg/l

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R *	CCV-1 True	CCV-1 Found	CCV-1 %R	CCV-2 Found	CCV-2 %R	CCV-3 Found	CCV-3 %R
Aluminum	2.00	2.07	103.5	2.00	1.96	98.0	1.95	97.5	1.93	96.5
Antimony	0.50	0.50	100.9	0.50	0.51	101.4	0.50	100.1	0.49	98.9
Arsenic	0.50	0.48	96.7	0.50	0.50	99.4	0.49	98.2	0.49	97.3
Barium	2.00	1.96	98.0	2.00	1.98	99.0	1.96	98.0	1.93	96.5
Beryllium	0.05	0.05	97.6	0.05	0.05	98.0	0.05	96.8	0.05	95.6
Cadmium	0.25	0.25	98.6	0.25	0.25	99.1	0.24	97.7	0.24	96.5
Calcium	5.00	5.01	100.2	5.00	5.00	100.0	5.00	100.0	5.01	100.2
Chromium	0.20	0.20	99.0	0.20	0.20	99.0	0.20	98.0	0.19	96.5
Cobalt	0.50	0.49	98.2	0.50	0.49	98.8	0.49	97.4	0.48	96.4
Copper	0.25	0.25	99.2	0.25	0.25	98.8	0.25	98.0	0.24	96.8
Iron	1.00	0.97	97.3	1.00	0.96	96.4	0.96	95.7	0.95	94.9
Lead	0.50	0.49	98.4	0.50	0.50	100.1	0.49	98.6	0.49	97.6
Magnesium	5.00	4.91	98.2	5.00	4.96	99.2	4.90	98.0	4.84	96.8
Manganese	0.50	0.50	99.2	0.50	0.49	98.6	0.49	97.8	0.48	96.6
Molybdenum	0.50	0.48	96.8	0.50	0.50	99.2	0.49	97.8	0.48	96.6
Nickel	0.50	0.49	98.4	0.50	0.50	99.2	0.49	97.4	0.48	96.4
Selenium	0.50	0.48	97.0	0.50	0.50	99.2	0.49	97.3	0.49	97.6
Titanium	0.50	0.49	98.2	0.50	0.49	98.6	0.49	97.4	0.48	96.4
Silver	0.25	0.25	98.4	0.25	0.25	98.4	0.24	97.2	0.24	96.4
Sodium	5.00	4.89	97.8	5.00	4.91	98.2	4.85	97.0	4.73	94.6
Thallium	0.50	0.51	102.4	0.50	0.49	98.0	0.49	97.3	0.48	96.3
Vanadium	0.50	0.50	99.2	0.50	0.49	98.4	0.49	97.4	0.48	96.2
Zinc	0.50	0.49	97.2	0.50	0.49	98.4	0.48	96.8	0.48	96.0

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Initial Calibration Source :_____

Continuing Calibration Source:_____

Analyte	True	CCV-4 Found	%R	CCV-5 Found	%R	CCV-6 Found	%R
Aluminum	2.00	1.98	99.0	1.97	98.5	1.90	95.0
Antimony	0.50	0.50	100.2	0.50	99.7	0.49	98.9
Arsenic	0.50	0.49	98.3	0.49	97.1	0.48	96.9
Barium	2.00	1.98	99.0	1.96	98.0	1.92	96.0
Beryllium	0.05	0.05	97.8	0.05	96.8	0.05	95.0
Cadmium	0.25	0.25	99.0	0.24	97.5	0.24	95.2
Calcium	5.00	5.02	100.4	5.00	100.0	4.89	97.8
Chromium	0.20	0.20	98.0	0.19	97.5	0.19	97.0
Cobalt	0.50	0.49	98.2	0.49	97.6	0.47	95.0
Copper	0.25	0.25	99.6	0.25	98.4	0.24	95.6
Iron	1.00	0.96	96.5	0.96	95.6	0.94	94.4
Lead	0.50	0.49	98.6	0.49	97.8	0.49	97.5
Magnesium	5.00	4.95	99.0	4.90	98.0	4.81	96.2
Manganese	0.50	0.49	98.8	0.49	98.0	0.48	96.2
Molybdenum	0.50	0.49	98.0	0.48	96.8	0.48	96.6
Nickel	0.50	0.49	98.6	0.49	97.4	0.47	94.8
Selenium	0.50	0.49	98.3	0.48	96.9	0.49	97.0
Titanium	0.50	0.49	98.8	0.49	97.4	0.48	95.4
Silver	0.25	0.25	98.8	0.25	98.0	0.24	96.0
Sodium	5.00	4.92	98.4	4.89	97.8	4.85	97.0
Thallium	0.50	0.49	98.1	0.49	97.1	0.47	94.1
Vanadium	0.50	0.49	98.4	0.49	97.6	0.48	95.8
Zinc	0.50	0.49	98.4	0.49	97.0	0.47	94.6

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

US EPA - CLP
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Initial Calibration Source : _____

Continuing Calibration Source: _____

Analyte		CCV-7		CCV-8		CCV-9	
	True	Found	%R	Found	%R	Found	%R
Aluminum	2.00	1.97	98.5	1.91	95.5	1.89	94.5
Antimony	0.50	0.49	98.2	0.49	98.9	0.49	97.7
Arsenic	0.50	0.48	96.8	0.48	97.0	0.48	95.5
Barium	2.00	1.97	98.5	1.93	96.5	1.93	96.5
Beryllium	0.05	0.05	97.6	0.05	95.2	0.05	94.8
Cadmium	0.25	0.24	97.7	0.24	96.0	0.24	95.3
Calcium	5.00	4.94	98.8	4.90	98.0	4.88	97.6
Chromium	0.20	0.19	97.0	0.19	97.5	0.19	96.5
Cobalt	0.50	0.49	97.8	0.48	95.6	0.48	95.2
Copper	0.25	0.25	98.4	0.24	96.0	0.24	95.2
Iron	1.00	0.95	95.5	0.94	93.7	0.94	93.8
Lead	0.50	0.49	97.2	0.49	97.8	0.48	96.4
Magnesium	5.00	4.95	99.0	4.84	96.8	4.83	96.6
Manganese	0.50	0.49	98.6	0.48	96.8	0.48	96.4
Molybdenum	0.50	0.48	96.2	0.49	97.0	0.48	95.8
Nickel	0.50	0.49	97.8	0.48	95.8	0.48	95.4
Selenium	0.50	0.48	96.6	0.48	96.8	0.48	95.3
Titanium	0.50	0.49	98.0	0.48	95.8	0.48	95.2
Silver	0.25	0.25	98.8	0.24	96.4	0.24	96.0
Sodium	5.00	4.93	98.6	4.83	96.6	4.69	93.8
Thallium	0.50	0.48	95.7	0.48	96.5	0.48	95.1
Vanadium	0.50	0.49	98.4	0.48	96.6	0.48	96.4
Zinc	0.50	0.49	97.4	0.48	95.6	0.47	94.6

* Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

bjul29

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Preparation Blank Matrix (soil/water) :Water

Preparation Blank Concentration Units (mg/L or mg/Kg) :mg/L

Analyte	Initial Calib. Blank	Continuing Calibration 1	2	3	
Aluminum	ND	ND	ND	ND	
Antimony	ND	0.0080	0.0063	0.0074	
Arsenic	ND	ND	ND	ND	
Barium	ND	ND	ND	ND	
Beryllium	ND	ND	ND	ND	
Cadmium	ND	ND	ND	ND	
Calcium	ND	ND	ND	ND	
Chromium	ND	ND	ND	ND	
Cobalt	ND	ND	ND	ND	
Copper	ND	ND	ND	ND	
Iron	ND	ND	ND	ND	
Lead	ND	ND	ND	ND	
Magnesium	ND	ND	ND	ND	
Manganese	ND	ND	ND	ND	
Molybdenum	ND	ND	ND	ND	
Nickel	ND	ND	ND	ND	
Selenium	ND	ND	ND	ND	
Titanium	ND	ND	ND	ND	
Silver	ND	ND	ND	ND	
Sodium	ND	ND	ND	ND	
Thallium	ND	ND	ND	ND	
Vanadium	ND	ND	ND	ND	
Zinc	ND	ND	ND	ND	

FORM III - IN

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Preparation Blank Matrix (soil/water) :Water

Preparation Blank Concentration Units (mg/L or mg/Kg) :mg/L

Analyte	Continuing Calibration 4	5	6	
Aluminum	ND	ND	ND	
Antimony	ND	ND	ND	
Arsenic	ND	ND	ND	
Barium	ND	ND	ND	
Beryllium	ND	ND	ND	
Cadmium	ND	ND	ND	
Calcium	ND	ND	ND	
Chromium	ND	ND	ND	
Cobalt	ND	ND	ND	
Copper	ND	ND	ND	
Iron	ND	ND	ND	
Lead	ND	ND	ND	
Magnesium	ND	ND	ND	
Manganese	ND	ND	ND	
Molybdenum	ND	ND	ND	
Nickel	ND	ND	ND	
Selenium	ND	ND	ND	
Titanium	ND	ND	ND	
Silver	ND	ND	ND	
Sodium	ND	ND	ND	
Thallium	ND	ND	ND	
Vanadium	ND	ND	ND	
Zinc	ND	ND	ND	

b···129.

US EPA - CLP
3
BLANKS

Lab Name The Washington Group Contract: _____

Lab Code:_____ Case No: _____ SAS No:_____ SDG No: _____

Preparation Blank Matrix (soil/water) :Water

Preparation Blank Concentration Units (mg/L or mg/Kg) :mg/L

Analyte	Continuing Calibration 7	8	9	
Aluminum	ND	ND	ND	
Antimony	ND	0.0082	ND	
Arsenic	ND	ND	ND	
Barium	ND	ND	ND	
Beryllium	ND	ND	ND	
Cadmium	ND	ND	ND	
Calcium	ND	ND	ND	
Chromium	ND	ND	ND	
Cobalt	ND	ND	ND	
Copper	ND	ND	ND	
Iron	ND	ND	ND	
Lead	ND	ND	ND	
Magnesium	ND	ND	ND	
Manganese	ND	ND	ND	
Molybdenum	ND	ND	ND	
Nickel	ND	ND	ND	
Selenium	ND	ND	ND	
Titanium	ND	ND	ND	
Silver	ND	ND	ND	
Sodium	ND	ND	ND	
Thallium	ND	ND	ND	
Vanadium	ND	ND	ND	
Zinc	ND	ND	ND	

PREPARATION BLANK (Batch 584)

Lab Name: Washington Group Contract: _____

Matrix (soil/water): water

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Result
Aluminum	ND<0.2000
Antimony	ND<0.0060
Arsenic	ND<0.0080
Barium	ND<0.2000
Beryllium	ND<0.0020
Cadmium	ND<0.0050
Calcium	ND<1.0000
Chromium	ND<0.0100
Cobalt	ND<0.0100
Copper	ND<0.0200
Iron	ND<0.1000
Lead	ND<0.0050
Magnesium	ND<1.0000
Manganese	ND<0.0150
Molybdenum	ND<0.0100
Nickel	ND<0.0200
Selenium	ND<0.0200
Silver	ND<0.0100
Sodium	ND<1.0000
Thallium	ND<0.0100
Titanium	ND<0.0200
Vanadium	ND<0.0100
Zinc	ND<0.0200

US EPA - CLP
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

ICP ID Number: _____

Concentration Units: mg/l

Analyte	Solution A	Solution AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500	500	468	468	93.6			
Antimony		0.6		0.61	101.5			
Arsenic		0.1		0.09	94.7			
Barium		0.5		0.52	104.0			
Beryllium		0.5		0.50	99.5			
Cadmium		1.0		0.98	97.9			
Calcium	500	500	463	461	92.2			
Chromium		0.5		0.49	98.2			
Cobalt		0.5		0.50	99.8			
Copper		0.5		0.54	107.4			
Iron	200	200	188	188	94.0			
Lead		0.05		0.06	118.0			
Magnesium	500	500	492	491	98.2			
Manganese		0.5		0.51	102.8			
Molybdenum								
Nickel		1.0		0.97	96.7			
Selenium		0.05		0.04	88.2			
Titanium								
Silver		0.2		0.22	107.5			
Sodium								
Thallium		0.1		0.09	93.1			
Vanadium		0.5		0.50	99.2			
Zinc		1.0		1.06	106.0			

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288822

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		1.270	0.000	1.25	101.60
Aluminum		10.050	0.000	10.00	100.50
Arsenic		2.489	0.000	2.50	99.57
Barium		10.850	0.000	10.00	108.50
Beryllium		0.255	0.000	0.25	102.00
Calcium		89.000	66.000	25.00	92.00
Cadmium		1.232	0.000	1.25	98.60
Cobalt		2.510	0.000	2.50	100.40
Chromium		1.000	0.000	1.00	100.00
Copper		1.285	0.000	1.25	102.80
Iron		17.350	12.000	5.00	107.00
Magnesium		59.000	34.000	25.00	100.00
Manganese		4.425	1.900	2.50	101.00
Molybdenum		2.485	0.000	2.50	99.40
Sodium		1605.000	1600.000	25.00	20.00
Nickel		2.505	0.000	2.50	100.20
Lead		2.477	0.040	2.50	97.47
Antimony		2.580	0.000	2.50	103.20
Selenium		2.517	0.000	2.50	100.69
Titanium		2.505	0.000	2.50	100.20
Thallium		2.260	0.000	2.50	90.38
Vanadium		2.575	0.060	2.50	100.60
Zinc		3.620	1.100	2.50	100.80

Comments:

NR = No Recovery

288822MS Batch - 584
bjul29.584

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288822

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		1.255	0.000	1.25	100.40
Aluminum		9.950	0.000	10.00	99.50
Arsenic		2.467	0.000	2.50	98.68
Barium		10.750	0.000	10.00	107.50
Beryllium		0.252	0.000	0.25	100.80
Calcium		86.500	66.000	25.00	82.00
Cadmium		1.229	0.000	1.25	98.28
Cobalt		2.485	0.000	2.50	99.40
Chromium		0.995	0.000	1.00	99.50
Copper		1.265	0.000	1.25	101.20
Iron		16.950	12.000	5.00	99.00
Magnesium		58.000	34.000	25.00	96.00
Manganese		4.340	1.900	2.50	97.60
Molybdenum		2.475	0.000	2.50	99.00
Sodium		1565.000	1600.000	25.00	NR
Nickel		2.485	0.000	2.50	99.40
Lead		2.461	0.040	2.50	96.86
Antimony		2.558	0.000	2.50	102.31
Selenium		2.497	0.000	2.50	99.88
Titanium		2.475	0.000	2.50	99.00
Thallium		2.280	0.000	2.50	91.22
Vanadium		2.535	0.060	2.50	99.00
Zinc		3.565	1.100	2.50	98.60

Comments:

NR = No Recovery

288822MSD Batch - 584
bjul29.584

SPIKE SAMPLE RECOVERY

LAB SAMPLE NO

288822

Lab Name: Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Silver		1.200	0.000	1.25	96.00
Aluminum		9.800	0.000	10.00	98.00
Arsenic		2.400	0.000	2.50	96.00
Barium		10.000	0.000	10.00	100.00
Beryllium		0.250	0.000	0.25	100.00
Calcium		88.000	66.000	25.00	88.00
Cadmium		1.200	0.000	1.25	96.00
Cobalt		2.400	0.000	2.50	96.00
Chromium		0.970	0.000	1.00	97.00
Copper		1.200	0.000	1.25	96.00
Iron		17.000	12.000	5.00	100.00
Magnesium		58.000	34.000	25.00	96.00
Manganese		4.300	1.900	2.50	96.00
Molybdenum		2.400	0.000	2.50	96.00
Sodium		1600.000	1600.000	25.00	NR
Nickel		2.400	0.000	2.50	96.00
Lead		2.400	0.040	2.50	94.40
Antimony		2.500	0.000	2.50	100.00
Selenium		2.500	0.000	2.50	100.00
Titanium		2.400	0.000	2.50	96.00
Thallium		2.400	0.000	2.50	96.00
Vanadium		2.500	0.060	2.50	97.60
Zinc		3.500	1.100	2.50	96.00

Comments:

NR = No Recovery

288822PS Batch - 584
bjul29.584

BATCH
DUPLICATE SAMPLE REPORT

LAB SAMPLE NO

288822MS

Lab Name: The_Washington_Group Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Sample Result	Duplicate Result	% RPD
Silver	1.270	1.255	1.19
Aluminum	10.050	9.950	1.00
Arsenic	2.489	2.467	0.90
Barium	10.850	10.750	0.93
Beryllium	0.255	0.252	1.18
Calcium	89.000	86.500	2.85
Cadmium	1.232	1.229	0.33
Cobalt	2.510	2.485	1.00
Chromium	1.000	0.995	0.50
Copper	1.285	1.265	1.57
Iron	17.350	16.950	2.33
Magnesium	59.000	58.000	1.71
Manganese	4.425	4.340	1.94
Molybdenum	2.485	2.475	0.40
Sodium	1605.000	1565.000	2.52
Nickel	2.505	2.485	0.80
Lead	2.477	2.461	0.62
Antimony	2.580	2.558	0.87
Selenium	2.517	2.497	0.81
	2.505	2.475	1.20
Thallium	2.260	2.280	0.93
Vanadium	2.575	2.535	1.57
Zinc	3.620	3.565	1.53

Comments:

bjul29.

ICP SERIAL DILUTIONS

LAB SAMPLE NO

288822SR

Lab Name: Raytheon Engineers Contract: _____

Lab Code: _____ Case No: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water

% Solids for Sample: _____

Concentration Units (mg/L or mg/kg as received): mg/l

Analyte	Initial Result	Serial Dil. Result	% RPD
Silver	0.000	0.000	-----
Aluminum	0.000	0.000	-----
Arsenic	0.000	0.000	-----
Barium	0.000	0.000	-----
Beryllium	0.000	0.000	-----
Calcium	66.000	76.000	14.08
Cadmium	0.000	0.000	-----
Cobalt	0.000	0.000	-----
Chromium	0.000	0.000	-----
Copper	0.000	0.000	-----
Iron	12.000	14.000	15.38
Magnesium	34.000	38.000	11.11
Manganese	1.900	2.100	10.00
Molybdenum	0.000	0.000	-----
Sodium	1600.000	1600.000	0.00
Nickel	0.000	0.000	-----
Lead	0.040	0.000	200.00
Antimony	0.000	0.170	200.00
Selenium	0.000	0.000	-----
Titanium	0.000	0.000	-----
Thallium	0.000	0.000	-----
Vanadium	0.060	0.000	200.00
Zinc	1.100	1.300	16.67

Comments:

Batch 584

US EPA - CLP

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LABORATORY CONTROL SAMPLE

Lab Name The Washington Group Contract: _____

Lab Code: _____ Case No: _____ SAS No: _____ SDG No: _____

Solid LCS Source : _____

Aqueous LCS Source: _____

Analyte	Aqueous (mg/L) True	Found	%R
Aluminum	2.00	2.02	101.0
Antimony	0.50	0.51	101.4
Arsenic	0.50	0.48	96.0
Barium	2.00	2.01	100.5
Beryllium	0.05	0.05	99.4
Cadmium	0.25	0.25	99.2
Calcium	5.00	5.01	100.2
Chromium	0.20	0.20	99.0
Cobalt	0.50	0.50	99.8
Copper	0.25	0.25	100.8
Iron	1.00	1.01	101.0
Lead	0.50	0.49	99.0
Magnesium	5.00	4.97	99.4
Manganese	0.50	0.50	99.2
Molybdenum	0.50	0.49	98.2
Nickel	0.50	0.50	99.0
Selenium	0.50	0.49	98.5
Titanium	0.50	0.50	99.0
Silver	0.25	0.25	99.6
Sodium	5.00	4.89	97.8
Thallium	0.50	0.46	91.8
Vanadium	0.50	0.50	100.4
Zinc	0.50	0.49	98.4

bjul29.567 Batch- 584