CITY OF PORTLAND
ENVIRONMENTAL SERVICES

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April 29, 2004

Mr. Rodney Struck
Department of Environmental Quality
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987

Subject: Outfall 18 Drainage Basin Change

Dear Rod:

The attached Phase 1 report includes inaccuracies related to the basin boundary. In August 2003, inline sampling was conducted in the City Outfall 18 drainage basin. During this sampling, significant differences were noted between the storm sewer piping along NW Yeon shown in the City maps compared with field observations. After further investigation, the City determined that the Oregon Department of Transportation (ODOT) had changed the stormlines along NW Yeon in 1985 but as-builts had not been submitted to the City. The City is currently in the process of updating its mapping for this area.

As a result of these changes, the size of Basin 18 will be reduced. Portions of what was previously believed to be in Basin 18 are actually in Basin 19. This means that the basin boundary and the facilities listed as being in the basin need to be updated once remapping has been completed. The attached report presents the information for Basin 18 based on the basin boundary that was known before the inline sampling. The revised basin boundaries for Outfalls 18 and 19 will be provided in subsequent remedial investigation reports related to these outfalls.

If you have any questions, please call me at 503-823-7263.

Sincerely,

Dawn Sanders
City of Portland Project Manager
Superfund Program

c: Tara Martich/EPA
Rick Applegate/City of Portland
Ken Trotman/CH2M HILL

Report

Phase 1 Data Evaluation Report and Phase 2 Work Planning for City of Portland Outfall 18

Source Control Pilot Project

Prepared for

City of Portland
Bureau of Environmental Services

April 2004

Prepared by

CH2MHILL

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Abbreviations and Acronyms

AWQC	ambient water quality criteria
BES	Bureau of Environmental Services
BNA	base, neutral, acid (extractable)
CAS	Columbia Analytical Services, Inc.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
City	City of Portland
cm	centimeter(s)
COC	chain-of-custody
COI	contaminant of interest
CRL	Confirmed Release Lists
CSO	combined sewer overflow
DEQ	Oregon Department of Environmental Quality
DGPS	Differential Global Positioning System
DQO	data quality objective
ECSI	Environmental Cleanup Site Inventory
EPA	U.S. Environmental Protection Agency
FSP	Field Sampling Plan
gpm	gallons per minute
GPS	Global Positioning System
Hg	mercury
HPAH	high molecular weight PAH
IDEP	Illicit Discharge Elimination Program
LPAH	low molecular weight PAH
LQG	Large Quantity Generator
LUST	leaking underground storage tank
mg/kg	milligram(s) per kilogram
mg/L	milligram(s) per liter
MRL	method reporting limit
MS4	municipal separate storm sewer system
MSO	Marine Safety Office
N/A	not available

NA	not analyzed
NPDES	National Pollutant Discharge Elimination System
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
ppm	parts per million
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
SIC	Standard Industrial Classification
SPCC	Spill Prevention, Control, and Countermeasure Plan
SPCR	Spill Protection and Citizen Response
STL	Severn Trent Laboratories
SWPCP	Stormwater Pollution Control Plan
SVOC	semivolatile organic compound
TOC	total organic carbon
TPH	total petroleum hydrocarbon
TSD	treatment, storage, and disposal
TSS	total suspended solids
USCG	U.S. Coast Guard
UST	underground storage tank

SECTION 1

Introduction

This document presents the findings for Phase 1 of the City of Portland (City) Source Control Pilot Project and recommendations for follow-on Phase 2 source control activities at Outfall 18. The purpose of the Pilot Project is to develop a process for the following activities:

- Evaluate the impacts of discharge from the City stormwater outfalls on sediment quality in the Willamette River
- Identify upland sources of contaminants within the outfall basins
- Guide subsequent source control efforts

Source control is defined as those actions taken to identify and reduce the release of contaminants to Portland Harbor, to the extent needed to be protective of human health and the environment. The driver for this Pilot Project was the December 2000 designation of Portland Harbor as a Superfund site under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Both the City's Bureau of Environmental Services (BES) and the Oregon Department of Environmental Quality (DEQ) have implemented programs to investigate and control sources of contamination to the Willamette River and are working together through this interagency Pilot Project to coordinate efforts.

The Pilot Project consists of two distinct phases, as described in the following subsections.

1.1 Phase 1

Phase 1 of the Pilot Project consisted of collecting sediment samples adjacent to and in the vicinity of two outfalls, and conducting an assessment of potential upland sources of sediment contamination within the two outfall drainage basins. This report provides the Phase 1 results for Outfall 18. Results for Outfall M-1 are provided in *Phase 1 Data Evaluation Report and Phase 2 Work Planning for City of Portland Outfall M-1* (CH2M HILL, April 2003).

The purpose of Phase 1 was to determine whether Outfall 18 is a conduit for current sources of contamination to the river sediments and to identify which chemicals of concern may warrant further evaluation in Phase 2 of the Pilot Project. Additional chemicals of concern may be identified at Outfall 18 as part of the CERCLA remedial investigation/feasibility study (RI/FS) process or as other information becomes available.

The Phase 1 investigation was conducted as outlined in the work plan entitled *Source Control Pilot Project for the City of Portland Outfalls* (CH2M HILL, August 2002). The work plan was approved by DEQ and the U.S. Environmental Protection Agency (EPA) on August 15, 2002. Outlined in the work plan are the Pilot Project objectives, a regulatory framework, the work

approach and decision process, the basin assessment process, a description of sediment sampling and analysis, and reporting procedures.

1.2 Phase 2

The purpose of Phase 2 of the Pilot Project is to develop a process for identifying current upland sources of elevated constituents identified in Phase 1 and to identify source control actions. The general objectives of Phase 2 are as follows:

- Identify upland sites or over-water activities that may be contributing contamination to the public stormwater conveyance system or to the area near Outfall 18 (e.g., adjacent outfalls).
- Identify data gaps (i.e., potential sampling needs) to determine what contamination is present and to locate possible sources of contamination.
- Develop a process for coordinating DEQ and City source control efforts.
- Implement community outreach and technical assistance to facilities within the basin, focusing on source control issues.

Section 5 of this report presents recommendations for conducting Phase 2 source control activities at Outfall 18.

1.3 Organization of This Report

This report is organized as follows:

Section 1—Introduction provides an overview of the Pilot Project.

Section 2—Sediment Sampling at City Outfall 18 summarizes the field investigation and activities performed at Outfall 18.

Section 3—Basin Assessment for Outfall 18 summarizes the basin assessment activities performed at Outfall 18.

Section 4—Evaluation of Results evaluates the Pilot Project sampling results at Outfall 18.

Section 5—Recommendations for Phase 2 Work Planning provides recommended follow-on source control actions at Outfall 18.

Section 6—References lists the references consulted and cited in this report.

Appendixes to this report provide supporting documentation.

SECTION 2

Sediment Sampling at City Outfall 18

This section summarizes the field observations and activities conducted at City Outfall 18 on August 20 and August 21, 2002. Sediment samples were collected in accordance with the work plan. The data quality objectives (DQOs) for the sediment investigation were presented in Table 4-1 of the work plan.

2.1 Field Activities at Outfall 18

Nine surface sediment samples, one field duplicate, and one equipment blank were collected in the vicinity of Outfall 18. Samples were collected from the upper 15 centimeters (cm) of the river bottom. Figure 2-1 shows the sample locations for each sediment sample. As outlined in Section A.3 of the work plan, the sampling grid at Outfall 18 was developed to collect samples within the assumed discharge area and to identify possible chemical gradients. The sampling interval was decreased from 100 feet to 50 feet based on field observations and to be consistent with the sampling interval at City Outfall M-1. Sample locations were adjusted during the field sampling event so that sediment samples were collected from areas that were inundated during low tide.

Sediment grab samples were collected using standard protocols and guidelines for chemical analysis as presented in the EPA document entitled *Methods for Collection, Storage, and Manipulation of Sediments for Chemical and Toxicological Analysis: Technical Manual* (EPA, 2001). Sediment samples were collected in a consistent, repeatable manner using a stainless-steel, 0.025 m^2, van Veen grab sampler or, when necessary by an alternative method (e.g., hand grab). Hand grab samples were collected at station locations that were inaccessible by boat owing to shallow water depth (< 2 feet). Hand grab samples were collocated with a laboratory-supplied sampling jar by wading out from shore. In some instances, more than one grab was necessary to meet the sample volume required for analysis. Therefore, multiple grabs were collected, composited, and homogenized before being placed in containers for analysis.

After the sample was collected, the following physical characteristics were recorded: sediment texture and color; presence, type, and strength of odors; grab penetration depth; degree of leakage or sediment surface disturbance; and any obvious abnormalities, such as wood and shell fragments, debris, or organisms. Field data sheets for each sample are presented in Appendix A.

The sediment sample was then placed into a stainless steel mixing bowl for homogenization. Biological structures and pieces of debris were removed and noted on the sample field data sheet.

Locations were recorded at each sampling point from the sampling vessel using a Garmin 48-Marine Differential Global Positioning System (DGPS). The DGPS positioning accuracy was on the order of ±3 to 10 feet. Post-processing of the DGPS data was completed using Trimble Pathfinder Office® software. Differential correction of the sample positions was

completed using data from the Portland State University Department of Geology base station. Locations were then plotted over an aerial photograph of the outfall location and further refined based on physical measurements collected in the field.

2.2 Field Observations at Outfall 18

2.2.1 Site Observations

During the August sampling, the river was approximately 8 feet lower than during the site reconnaissance visit conducted on June 12, 2002. The 8-foot difference in river elevation and the gradual slope of the southeast riverbank resulted in approximately 50 feet of exposed riverbank between the outfall and the river that was not exposed during the June reconnaissance. Additionally, during the sampling event, water levels in the river fluctuated approximately 3 feet with the tide. This 3-foot change in the water level resulted in a 30-foot lateral difference between the high- and low-tide watermarks. Sample locations were modified so that all sample locations were inundated during low tide.

Flow from the outfall was approximately 1 gallon per minute (gpm). The flow discharged into a pool of water 10 feet wide and 2 feet deep. The pool turned into a small, 50-foot-long channel that extended down to the river (see Appendix B, photographs 1 and 2). It is unknown whether the flow observed from the outfall was from a permitted nonstormwater discharge or another source. Three facilities within the Outfall 18 basin have permitted nonstormwater discharges: Equilon, Owens Corning, and Van Waters and Rogers.

Water was also observed flowing down the side of the riverbank adjacent to the outfall into the pool below the outfall. The source of this water was not identified because of the heavy vegetation along the bank. It was unclear whether the source of the water was a private outfall, a groundwater seep, or surface runoff. Three private outfalls are located within 100 feet of Outfall 18; however, none of these were observed in the field. At low tide, several small sheens were observed in pooled water on the riverbank. The sheens were a rich purple color. They fractured when touched and did not have any odor.

2.2.2 Sample Observations

Table 2-1 summarizes collection methods and field observations for each sample collected at Outfall 18. Field observations for each sample were recorded on the field data sheets, and a summary is presented in the paragraphs below.

Sample PP011801 was collected in the pool of standing water directly beneath Outfall 18, and PP011808 was collected 50 feet from the outfall in the small channel below Outfall 18 at the low-tide mark of the river. Both were a medium-grained sand, with no odor and very little organic or anthropogenic debris. Six samples (PP011802 through PP011807) were collected in the area between the riverbank and the pier. These samples were a silty sand and generally had a faint petroleum odor associated with them.

During the collection of sediment samples in this area, a light to moderate sheen developed on the surface of the river from disturbance of the sediment. In general, there was little organic or anthropogenic debris associated with these sample locations. However, three samples (PP011803, PP011808, and PP011809) contained < 1 percent coarse white sand

grains of unknown origin (see Appendix B, photograph 5). The upstream sample (PP011810) was collected outside of the adjacent pier, near the main flow of the river. This sample was dark gray silt with very fine sand, no odor or sheen, and no organic or anthropogenic debris.

TABLE 2-1
Summary of Field Sample Observations at Outfall 18
Source Control Pilot Project

Sample ID	Sample Method	Soil Type	Organic Matter[1]	Debris[2]/Comments
PP011801	Hand Grab	Sand	None	Piece of aluminum foil
PP011802	Hand Grab	Silty Sand	< 5%	Faint sheen and faint petroleum odor observed
PP011803	Hand Grab	Silty Sand	< 1%	10% gravel, < 1% coarse sand, moderate sheen and faint petroleum odor observed
PP011804D	Hand Grab	Silty Sand	< 1%	Field duplicate collected at PP011803
PP011805	Van Veen	Silty Sand	< 10%	Small pieces of tin foil and plastic, moderate sheen and petroleum odor observed
PP011806	Van Veen	Sandy Silt	< 5%	< 5% 1-inch-diameter gravel, moderate sheen and faint petroleum odor observed
PP011807	Van Veen	Silty Sand	5%	Thin metal shaving, heavy sheen and petroleum odor observed
PP011808	Hand Grab	Sand	< 1%	Small piece of metal removed from sample, < 1% white coarse sand, heavy sheen and petroleum odor observed
PP011809	Van Veen	Silty Sand	None	5% gravel, moderate sheen and faint petroleum odor observed, < 1% white coarse sand[3]
PP011810	Van Veen	Silt	None	< 1% gravel

Notes:

[1]Organic matter includes woody debris, leaves, pine needles, and twigs. All large organic matter was removed from the sample.

[2]Debris includes all anthropogenic debris observed in the sediment sample.

[3]White coarse sand was identified as white flakes in the field. A small sample was collected and observed under a magnifying glass and determined to be coarse white sand.

2.3 Deviations from the Field Sampling Plan

Sampling was done in accordance with the Field Sampling Plan (FSP), with the following exceptions:

- The sampling interval was decreased from 100 feet to 50 feet based on field observations and to be consistent with the sampling interval at City Outfall M-1.
- The sampling grid was modified so that sediment samples were collected from areas that were inundated during low tide. PP011801 was collected in the pool of standing water directly beneath Outfall 18, and PP011808 was collected 50 feet from the outfall in the small channel below Outfall 18 at the low-tide mark of the river.

2.4 Sediment Laboratory Analytical Results

2.4.1 Summary of Laboratory Analytical Results

Nine sediment locations were sampled for laboratory analysis at Outfall 18. Analysis was also conducted on a field duplicate collected from one of the locations and on an equipment blank (a water rinse of the decontaminated sampler). Sediment samples and equipment blanks were analyzed for metals, semivolatile organic compounds (SVOCs), organochlorine pesticides, chlorinated herbicides, total petroleum hydrocarbons (diesel and heavy oil range), PCBs as aroclors, total organic carbon (TOC), and percent total solids. Samples were collected, analyzed, and validated in accordance with the analytical methods identified in the Quality Assurance Project Plan (QAPP), except as stated in Section 2.4.2 of this report. The QAPP is located in Appendix B of the work plan.

A summary of analytical results for samples collected at Outfall 18 is presented in Table 2-2 of this report. Because some benchmarks are expressed in terms of a total group of constituents rather than individual constituents, the total values were computed from the sum of detected constituents. The relevant compound groups and their respective constituents are listed below:

- **Low molecular weight PAHs (LPAHs)**: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, and 2-methylnaphthalene
- **High molecular weight PAHs (HPAHs)**: fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzofluoranthenes, benzo[a]pyrene, indeno[1,2,3-cd]pyrene, dibenzo[a,h]anthracene, and benzo[ghi]perylene
- **PCBs**: all aroclors
- **DDTs**: 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT

Appendix C consists of laboratory reports provided in electronic format on a CD. Appendix D consists of the chain-of-custody (COC) forms maintained for all samples collected. Section 4 provides an evaluation of the analytical results.

2.4.2 Deviations from QAPP

Appendix E consists of the memorandum entitled *Review of Quality Assurance/Quality Control (QA/QC) Data for the Portland Harbor Pilot Project Sediment Sampling*. Materials provided in Appendixes C and E serve as the QA report for sediment sampling at Outfall 18.

TABLE 2-2
Sediment Sampling Data for Outfall 18
Source Control Pilot Project

Analysis Class	Analyte	DEQ Screening Level (High)	DEQ Screening Level (Baseline)	Units	*Sample ID:* *Date Sampled* *Sample Type:*	PP011801 8/20/2002 Normal	PP011802 8/20/2002 Normal	PP011803 8/20/2002 Normal	PP011804D[1] 8/20/2002 Field Dup	PP011805 8/21/2002 Normal	PP011806 8/21/2002 Normal	PP011807 8/21/2002 Normal	PP011808 8/21/2002 Normal	PP011809 8/20/2002 Normal	PP011810 8/20/2002 Normal	PP0118EB01 8/20/2002 Equip Blank*
Semivolatile	1,2,4-Trichlorobenzene	9.2	--	mg/kg		0.015 U	0.0146 U	0.0135 U	0.0142 U	0.0151 U	0.013 U	0.0127 U	0.014 U	0.0132 U	0.0188 U	0.0000283 U
Organics:	1,2-Dichlorobenzene	1.7	--	mg/kg		0.0186 U	0.0182 U	0.0168 U	0.0177 U	0.0187 U	0.0162 U	0.0157 U	0.0173 U	0.0164 U	0.0233 U	0.0000283 U
	1,3-Dichlorobenzene	0.3	--	mg/kg		0.0253 U	0.0247 U	0.0229 U	0.024 U	0.0255 U	0.022 U	0.0214 U	0.0236 U	0.0223 U	0.0317 U	0.00003 U
	1,4-Dichlorobenzene	0.3	--	mg/kg		0.029 U	0.0282 U	0.0261 U	0.0274 U	0.0291 U	0.0251 U	0.0245 U	0.0269 U	0.0255 U	0.0362 U	0.0000265 U
	2,3,4,6-Tetrachlorophenol	--	--	mg/kg		0.0125 U	NA	NA	NA	NA	0.0108 U	0.00963 U	0.0106 U	0.011 U	0.0156 U	0.0000708 U
	2,4,5-Trichlorophenol	--	--	mg/kg		0.0326 U	0.0317 U	0.0294 U	0.0309 U	0.0328 U	0.0283 U	0.0275 U	0.0303 U	0.0287 U	0.0408 U	0.0000194 U
	2,4,6-Trichlorophenol	--	--	mg/kg		0.0241 U	0.0234 U	0.0217 U	0.0228 U	0.0242 U	0.0209 U	0.0203 U	0.0224 U	0.0212 U	0.0301 U	0.0000212 U
	2,4-Dichlorophenol	--	--	mg/kg		0.0199 U	0.0194 U	0.018 U	0.0189 U	0.02 U	0.0173 U	0.0168 U	0.0185 U	0.0176 U	0.0249 U	0.0000265 U
	2,4-Dimethylphenol	--	--	mg/kg		0.0199 U	0.0194 U	0.018 U	0.0189 U	0.02 U	0.0184 J	0.0168 U	0.0185 U	0.0176 U	0.0249 U	0.0000265 U
	2,4-Dinitrophenol	--	--	mg/kg		0.0434 U	0.0423 U	0.0392 U	0.0411 U	0.0437 U	0.0377 U	0.0367 U	0.0404 U	0.0383 U	0.0543 U	0.000053 U
	2,4-Dinitrotoluene	--	--	mg/kg		0.0235 U	0.0229 U	0.0212 U	0.0223 U	0.0237 U	0.0204 U	0.0199 U	0.0219 U	0.0207 U	0.0294 U	0.000023 U
	2,6-Dinitrotoluene	--	--	mg/kg		0.0326 U	0.0317 U	0.0294 U	0.0309 U	0.0328 U	0.0283 U	0.0275 U	0.0303 U	0.0287 U	0.0408 U	0.0000353 U
	2-Chloronaphthalene	--	--	mg/kg		0.00543 U	0.00529 U	0.0049 U	0.00514 U	0.00546 U	0.00472 U	0.00458 U	0.00505 U	0.00479 U	0.00679 U	0.00000265 U
	2-Chlorophenol	--	--	mg/kg		0.0272 U	0.0264 U	0.0245 U	0.0257 U	0.0273 U	0.0236 U	0.0229 U	0.0253 U	0.0239 U	0.034 U	0.00003 U
	2-Methylnaphthalene	0.2	0.15	mg/kg		0.00282 U	0.0333	0.0133 J	0.0129 J	0.124	0.147	0.21	0.0124 J	0.0267	0.00353 U	0.0000265 U
	2-Methylphenol	--	--	mg/kg		0.0217 U	0.0211 U	0.0196 U	0.0206 U	0.0218 U	0.0189 U	0.0183 U	0.0202 U	0.0192 U	0.0272 U	0.0000424 U
	2-Nitroaniline	--	--	mg/kg		0.0235 U	0.0229 U	0.0212 U	0.0223 U	0.0237 U	0.0204 U	0.0199 U	0.0219 U	0.0207 U	0.0294 U	0.0000318 U
	2-Nitrophenol	--	--	mg/kg		0.0253 U	0.0247 U	0.0229 U	0.024 U	0.0255 U	0.022 U	0.0214 U	0.0236 U	0.0223 U	0.0317 U	0.0000389 U
	3,3'-Dichlorobenzidine	--	--	mg/kg		0.0199 U	0.0194 U	0.018 U	0.0189 U	0.02 U	0.0173 U	0.0168 U	0.0185 U	0.0176 U	0.0249 U	0.0000636 UJ
	3-Nitroaniline	--	--	mg/kg		0.0308 U	0.03 U	0.0278 U	0.0291 U	0.0309 U	0.0267 U	0.026 U	0.0286 U	0.0271 U	0.0385 U	0.0000583 U
	4,6-Dinitro-2-Methylphenol	--	--	mg/kg		0.067 U	0.0652 U	0.0604 U	0.0634 U	0.0673 U	0.0582 U	0.0565 U	0.0623 U	0.059 U	0.0838 U	0.0000389 U
	4-Bromophenyl Phenyl Ether	--	--	mg/kg		0.0241 U	0.0234 U	0.0217 U	0.0228 U	0.0242 U	0.0209 U	0.0203 U	0.0224 U	0.0212 U	0.0301 U	0.0000212 U
	4-Chloro-3-Methylphenol	--	--	mg/kg		0.0199 U	0.0194 U	0.018 U	0.0331 J	0.306	0.0173 U	0.0168 U	0.068 J	0.0176 U	0.0249 U	0.000204
	4-Chloroaniline	--	--	mg/kg		0.0168 UJ	0.0164 UJ	0.0152 UJ	0.0159 UJ	0.0169 UJ	0.0146 UJ	0.0142 UJ	0.0157 UJ	0.0148 UJ	0.0211 UJ	0.0000689 UJ
	4-Chlorophenyl Phenyl Ether	--	--	mg/kg		0.0304 U	0.0296 U	0.0274 U	0.0288 U	0.0306 U	0.0264 U	0.0257 U	0.0283 U	0.0268 U	0.038 U	0.0000265 U
	4-Methylphenol	--	0.68	mg/kg		0.0268 U	0.045 J	0.0242 U	0.0254 U	0.0724 J	0.0233 U	0.0226 U	0.0249 U	0.0236 U	0.0693 J	0.0000406 U
	4-Nitroaniline	--	--	mg/kg		0.0308 U	0.03 U	0.0278 U	0.0291 U	0.0309 U	0.0267 U	0.026 U	0.0286 U	0.0271 U	0.0385 U	0.0000371 UJ
	4-Nitrophenol	--	--	mg/kg		0.0344 U	0.0335 U	0.031 U	0.0326 U	0.0346 U	0.0299 U	0.029 U	0.032 U	0.0303 U	0.043 U	0.0000512 U
	Acenaphthene	0.3	0.18	mg/kg		0.00896 U	0.0238	0.00808 U	0.0164 J	0.0658	0.189	0.045	0.0135 J	0.0245	0.0112 U	0.00000283 U
	Acenaphthylene	0.2	0.06	mg/kg		0.00789 U	0.0233	0.00712 U	0.00979 J	0.0512	0.00685 U	0.016	0.0123 J	0.0165	0.00987 U	0.00000265 U
	Aniline	--	--	mg/kg		0.0905 UJ	0.0881 UJ	0.0816 UJ	0.0857 UJ	0.091 UJ	0.0785 UJ	0.0765 UJ	0.084 UJ	0.0798 UJ	0.113 UJ	0.0000495 U
	Anthracene	0.8	0.15	mg/kg		0.0158 J	0.0301	0.0135 J	0.0288	0.0934	0.17	0.0371	0.0143 J	0.0175	0.00571 U	0.00000265 U
	Benzo (a) anthracene	1	0.36	mg/kg		0.0732	0.0108 U	0.00996 U	0.0833	0.265	0.405	0.00932 U	0.0694 U	0.0601	0.0138 U	0.00000777 U
	Benzo (a) pyrene	1.5	0.5	mg/kg		0.0592	0.0103 U	0.00958 U	0.144	0.499	0.254	0.00897 U	0.00989 U	0.00937 U	0.0133 U	0.0000083 U
	Benzo [g,h,i] perylene	0.3	0.25	mg/kg		0.042	0.00291 U	0.00269 U	0.00283 U	0.256	0.00259 U	0.00252 U	0.00278 U	0.00263 U	0.00374 U	0.00000601 U
	Benzofluoranthenes[2]	--		mg/kg		0.11	0.00775 U	0.00718 U	0.141	0.603	0.397	0.00672 U	0.116	0.00702 U	0.00996 U	0.00000671 U
	Benzoic Acid	--	0.2	mg/kg		0.276 J	0.0599 U	0.0555 U	0.0583 U	0.0619 U	0.0534 U	0.052 U	0.0573 U	0.0543 U	0.077 U	0.000166 J
	Benzyl Alcohol	--	0.02	mg/kg		0.038 U	0.037 U	0.0343 U	0.036 U	0.0382 U	0.033 U	0.0321 U	0.0354 U	0.0335 U	0.0476 U	0.0000565 UJ
	Bis(2-Chloroethoxy) Methane	--	--	mg/kg		0.0217 U	0.0211 U	0.0196 U	0.0206 U	0.0218 U	0.0189 U	0.0183 U	0.0202 U	0.0192 U	0.0272 U	0.0000318 U
	Bis(2-Chloroethyl) Ether	--	--	mg/kg		0.0346 UJ	0.0337 UJ	0.0312 UJ	0.0327 UJ	0.0348 UJ	0.03 UJ	0.0292 UJ	0.0322 UJ	0.0305 UJ	0.0432 UJ	0.0000336 U
	Bis(2-Chloroisopropyl) Ether	--	--	mg/kg		0.0471 U	0.0458 U	0.0424 U	0.0446 U	0.0473 U	0.0409 U	0.0397 U	0.0438 U	0.0415 U	0.0589 U	0.0000371 U
	Bis(2-Ethylhexyl) Phthalate	0.8	0.39	mg/kg		0.138 J	2.7	0.39	0.325	1.36	2.65	0.0627 U	0.399	0.477	0.166 J	0.000634
	Butyl Benzyl Phthalate	--	0.02	mg/kg		0.0344 U	0.385	0.031 U	0.148 J	0.0346 U	0.0299 U	0.029 U	0.032 U	0.153 J	0.043 U	0.00033 U
	Carbazole	1.6	0.1	mg/kg		0.0706 U	0.0687 U	0.0637 U	0.0668 U	0.071 U	0.0613 U	0.0596 U	0.0657 U	0.0622 U	0.0883 U	0.00000495 U
	Chrysene	1.3	0.425	mg/kg		0.0514	0.0103 U	0.00958 U	0.106	0.353	0.419	0.00897 U	0.00989 U	0.0832	0.0133 U	0.00000442 U
	Di-n-Butyl Phthalate	0.1	0.02	mg/kg		0.158 U	0.153 U	0.142 U	0.149 U	0.185 J	0.137 U	0.133 U	0.147 U	0.139 U	0.197 U	0.000408 U
	Di-n-Octyl Phthalate	--	0.02	mg/kg		0.0471 U	0.0458 U	0.0424 U	0.0446 U	0.0473 U	0.0409 U	0.19	0.0438 U	0.0415 U	0.0589 U	0.000222
	Dibenzo (a,h) anthracene	1.3	0.125	mg/kg		0.00422 U	0.00411 U	0.0038 U	0.00399 U	0.00424 U	0.00366 U	0.00356 U	0.00392 U	0.00372 U	0.00528 U	0.00000477 U
	Dibenzofuran	5.1	0.1	mg/kg		0.021 U	0.0204 U	0.0189 U	0.0199 U	0.045 J	0.0182 U	0.0177 U	0.0195 U	0.0185 U	0.0263 U	0.0000247 U
	Diethyl Phthalate	0.6	--	mg/kg		0.0308 U	0.03 U	0.0278 U	0.0291 U	0.0309 U	0.0267 U	0.026 U	0.0286 U	0.0271 U	0.0385 U	0.000102 U
	Dimethyl Phthalate	--	0.02	mg/kg		0.0199 U	0.0194 U	0.018 U	0.0189 U	0.02 U	0.0173 U	0.0168 U	0.0185 U	0.0176 U	0.0249 U	0.0000283 U
	Fluoranthene	2.2	0.6	mg/kg		0.155	0.239	0.0959	0.245	0.476	0.737	0.258	0.143	0.101	0.0376	0.00000336 U
	Fluorene	0.6	0.125	mg/kg		0.00902 J	0.0395	0.00762 U	0.008 U	0.122	0.00734 U	0.00714 U	0.00787 U	0.0376	0.0106 U	0.00000247 U
	Hexachlorobenzene	0.1	--	mg/kg		0.0199 U	0.0194 U	0.018 U	0.0189 U	0.02 U	0.0173 U	0.0168 U	0.0185 U	0.0176 U	0.0249 U	0.0000353 U
	Hexachlorobutadiene	0.6	--	mg/kg		0.0163 U	0.0159 U	0.0147 U	0.0154 U	0.0164 U	0.0141 U	0.0138 U	0.0152 U	0.0144 U	0.0204 U	0.0000512 U
	Hexachlorocyclopentadiene	0.4	--	mg/kg		0.0255 U	0.0249 U	0.023 U	0.0242 U	0.0257 U	0.0222 U	0.0215 U	0.0237 U	0.0225 U	0.0319 U	0.0000459 U

TABLE 2-2
Sediment Sampling Data for Outfall 18
Source Control Pilot Project

Analysis Class	Analyte	DEQ Screening Level (High)	DEQ Screening Level (Baseline)	Units	*Sample ID:*	PP011801	PP011802	PP011803	PP011804D[1]	PP011805	PP011806	PP011807	PP011808	PP011809	PP011810	PP0118EB01
					Date Sampled	8/20/2002	8/20/2002	8/20/2002	8/20/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/20/2002	8/20/2002	8/20/2002
					Sample Type:	Normal	Normal	Normal	Field Dup	Normal	Normal	Normal	Normal	Normal	Normal	Equip Blank*
	Hexachloroethane	--	--	mg/kg		0.0344 U	0.0335 U	0.031 U	0.0326 U	0.0346 U	0.0299 U	0.029 U	0.032 U	0.0303 U	0.043 U	0.0000707 U
	Indeno (1,2,3-cd) pyrene	0.1	0.225	mg/kg		0.0525	0.00411 U	0.0038 U	0.00399 U	0.118	0.00366 U	0.00356 U	0.00392 U	0.00372 U	0.00528 U	0.0000053 U
	Isophorone	--	--	mg/kg		0.0253 U	0.0247 U	0.0229 U	0.024 U	0.0255 U	0.022 U	0.0214 U	0.0236 U	0.0223 U	0.0317 U	0.0000318 U
	n-Nitrosodi-n-Propylamine	--	--	mg/kg		0.0199 U	0.0194 U	0.018 U	0.0189 U	0.02 U	0.0173 U	0.0168 U	0.0185 U	0.0176 U	0.0249 U	0.0000371 U
	n-Nitrosodimethylamine	--	--	mg/kg		0.0199 U	0.0194 U	0.018 U	0.0189 U	0.02 U	0.0173 U	0.0168 U	0.0185 U	0.0176 U	0.0249 U	0.0000583 U
	n-Nitrosodiphenylamine	--	--	mg/kg		0.0145 U	0.0141 U	0.0131 U	0.0137 U	0.0146 U	0.0126 U	0.0122 U	0.0135 U	0.0128 U	0.0181 U	0.0000177 U
	Naphthalene	0.6	0.2	mg/kg		0.00893 J	0.0337	0.00764 U	0.0105 J	0.0661	0.132	0.0445	0.00788 U	0.0171	0.0127 J	0.0000709
	Nitrobenzene	--	--	mg/kg		0.0248 UJ	0.0241 UJ	0.0224 UJ	0.0235 UJ	0.0249 UJ	0.0215 UJ	0.0209 UJ	0.0231 UJ	0.0219 UJ	0.031 UJ	0.0000795 U
	Pentachlorophenol	1	0.097	mg/kg		0.038 U	0.037 U	0.0343 U	0.036 U	0.0382 U	0.033 U	0.0321 U	0.0354 U	0.0335 U	0.0476 U	0.00003 U
	Phenanthrene	1.2	0.7	mg/kg		0.0705	0.0223	0.0266	0.145	0.273	0.695	0.168	0.0592	0.0591	0.046	0.00000389 U
	Phenol	0.05	0.02	mg/kg		0.0362 U	0.0352 U	0.0327 U	0.0343 U	0.0364 U	0.0314 U	0.0306 U	0.0337 U	0.0319 U	0.0453 U	0.0000565 UR
	Pyrene	1.5	0.7	mg/kg		0.127	0.255	0.0858	0.245	0.536	0.79	0.247	0.145	0.14	0.0546	0.00000247 U
	Tetrachlorophenols[3]	--	--	mg/kg		0.0342 U	0.0333 U	0.0309 U	0.0324 U	0.0344 U	0.0297 U	0.0289 U	0.0318 U	0.0302 U	0.0428 U	0.0000883 U
	Total LPAHs	0.4	0.7	mg/kg		0.1043	0.2060	0.0534	0.2234	0.7955	1.333	0.5206	0.1117	0.1990	0.0587	NA
	Total HPAHs	1	2.4	mg/kg		0.6703	0.4940	0.1817	0.9643	3.106	3.002	0.5050	0.4734	0.3843	0.0922	NA
Chlorinated Herbicides:	2,4,5-T	--	--	mg/kg		0.000308 U	0.000311 U	0.00028 U	0.000269 U	0.000337 U	0.000328 U	0.000295 U	0.000281 U	0.000276 U	0.000429 U	0.0000479 U
	2,4,5-TP	--	--	mg/kg		0.000252 U	0.000254 U	0.000229 U	0.00022 U	0.000276 U	0.000268 U	0.000241 U	0.000229 U	0.000226 U	0.000351 U	0.0000161 U
	2,4-D	--	0.0033	mg/kg		0.000262 U	0.000264 U	0.000238 U	0.000228 U	0.000286 U	0.000279 U	0.00025 U	0.000238 U	0.000234 U	0.000364 U	0.0000377 U
	2,4-Db	--	0.005	mg/kg		0.000189 U	0.00019 U	0.000172 U	0.000165 U	0.000206 U	0.000201 U	0.00018 U	0.000172 U	0.000169 U	0.000263 U	0.0000434 U
	4-Nitrophenol	--	--	mg/kg		0.00015 U	0.000151 U	0.000136 U	0.000131 U	0.000164 U	0.00016 U	0.000143 U	0.000137 U	0.000134 U	0.000209 U	0.0000373 U
	Dalapon	--	--	mg/kg		0.000151 U	0.000152 U	0.000137 U	0.000132 U	0.000165 U	0.000161 U	0.000144 U	0.000138 U	0.000135 U	0.00021 U	0.0000474 U
	Dicamba	--	--	mg/kg		0.000154 U	0.000156 U	0.00014 U	0.000135 U	0.000169 U	0.000165 U	0.000148 U	0.000141 U	0.000138 U	0.000215 U	0.000039 U
	Dichloroprop	--	--	mg/kg		0.000249 U	0.000251 U	0.000226 U	0.000217 U	0.000272 U	0.000265 U	0.000238 U	0.000227 U	0.000223 U	0.000347 U	0.0000161 U
	Dinoseb	--	--	mg/kg		0.000216 U	0.000218 U	0.000196 U	0.000188 U	0.000236 U	0.00023 U	0.000206 U	0.000197 U	0.000193 U	0.000301 U	0.0000463 U
	Mcpa	--	--	mg/kg		0.000295 U	0.000298 U	0.000268 U	0.000258 U	0.000323 U	0.000314 U	0.000282 U	0.000269 U	0.000264 U	0.000411 U	0.0000221 U
	Mcpp	--	--	mg/kg		0.000132 U	0.000133 U	0.00012 U	0.000115 U	0.000144 U	0.00014 U	0.000126 U	0.00012 U	0.000118 U	0.000183 U	0.0000296 U
	Pentachlorophenol	1	0.097	mg/kg		0.0039	0.000194 U	0.000175 U	0.000168 U	0.000211 U	0.00845	0.00321	0.000176 U	0.00259	0.000269 U	0.0000233 U
General	Total Organic Carbon	--	20000	mg/kg		1540	14500	2530	1590	24500	18200	4130	2960	2150	11300	NA
Chemistry:	Percent Total Solid	--	--	%		--	73.08	76.74	76.9	64.68	67.59	76.13	77.77	NA	NA	NA
Total Metals:	Aluminum	--	42800	mg/kg		7850	7540	5430	8230	6600	8250	5900	5810	5570	14000	0.0181 B1
	Antimony	64	5	mg/kg		1.16 J	1.84 J	2.52 J	1.98 J	2.47 J	6.86	2.6 J	1.1 J	2.17 J	1 J	0.00095 J B2
	Arsenic	33	5	mg/kg		5.65	5.7	6.09	5.77	5.42	9.76	7.41	5.55	5.66	4.36	0.0015 U
	Cadmium	5	0.6	mg/kg		0.0638 J	0.46 J	0.512 J	0.59	0.626 J	0.897	0.664	0.713	0.759	0.077 J	0.0000071 U
	Chromium	111	41	mg/kg		22	34.2	32.6	45.6	44.7	71	23.7	32.6	32.5	35.9	0.00879 B2
	Copper	149	60	mg/kg		41 B2	56 B2	61.1 B2	56.9 B2	66 B2	98.9 B2	79.3 B2	75.7 B2	75.6 B2	48.2 B2	0.00239 B2
	Lead	130	30	mg/kg		60.6 B2	90.2 B2	123 B2	185 B2	79.8 B2	210 B2	97.6 B2	148 B2	168 B2	67.3 B2	0.000368 J B2
	Mercury	1	0.1	mg/kg		0.0103 U	0.189	0.185	0.189	0.204	0.318 J	0.245 J	0.334 J	0.453	0.128	0.000025 J
	Nickel	49	32	mg/kg		16.3 B2	19.8 B2	21 B2	20 B2	20 B2	19.8 B2	18.1 B2	18.5 B2	16.8 B2	23.9 B2	0.00753
	Selenium	5	15	mg/kg		0.491 U	0.508 U	0.421 U	0.417 U	0.533 U	0.614 J	0.459 U	0.457 U	0.421 U	0.658 U	0.000385 U
	Silver	5	1.4	mg/kg		0.0855 J	0.149 J	0.166 J	0.199 J	0.205 J	0.349 J	0.165 J	0.174 J	0.337 J	0.387 J	0.01 U
	Zinc	459	118	mg/kg		199 B2	203 B2	246 B2	284 B2	256 B2	269 B2	245 B2	257 B2	272 B2	119 B2	0.00677 B1,J
PCB Aroclors:	Aroclor-1016	0.53	--	mg/kg		0.00663 U	0.00598 U	0.00604 U	0.00615 U	0.00689 U	0.00682 U	0.00599 U	0.0063 U	0.00594 U	0.00846 U	0.000015 U
	Aroclor-1221	--	--	mg/kg		0.00253 U	0.00228 U	0.0023 U	0.00234 U	0.00262 U	0.0026 U	0.00228 U	0.0024 U	0.00226 U	0.00322 U	0.000015 U
	Aroclor-1232	--	--	mg/kg		0.00429 U	0.00387 U	0.0039 U	0.00398 U	0.00446 U	0.00441 U	0.00387 U	0.00408 U	0.00384 U	0.00547 U	0.000012 U
	Aroclor-1242	--	--	mg/kg		0.00316 U	0.00285 U	0.00288 U	0.00293 U	0.00328 U	0.00325 U	0.00285 U	0.003 U	0.00283 U	0.00403 U	0.000015 U
	Aroclor-1248	1.5	--	mg/kg		0.0326	0.158	0.147	0.131	0.154	0.407	0.316	0.223	0.106	0.0545	0.000016 U
	Aroclor-1254	0.3	--	mg/kg		0.0187	0.115	0.0628	0.0593	0.0832	0.159	0.113	0.0818	0.0384	0.0245	0.0000028 U
	Aroclor-1260	0.2	--	mg/kg		0.0134	0.00321 U	0.0373	0.0365	0.00369 U	0.074	0.0495	0.0521	0.0195	0.0143	0.0000071 U
	Aroclor-1262	--	--	mg/kg		0.0035 U	0.00316 U	0.00319 U	0.00325 U	0.00364 U	0.0036 U	0.00316 U	0.00332 U	0.00314 U	0.00446 U	0.000012 U
	Aroclor-1268	--	--	mg/kg		0.0035 U	0.00316 U	0.00319 U	0.00325 U	0.00364 U	0.0036 U	0.00316 U	0.00332 U	0.00314 U	0.00446 U	0.000012 U
	Total PCBs	0.7	0.18	mg/kg		0.0647	0.2730	0.2471	0.2268	0.2372	0.6400	0.4785	0.3569	0.1639	0.0933	NA
Organochlorine	2,4'-DDD	--	--	mg/kg		0.00538 U	0.00942 C2	0.00607 C2	0.00471 U	0.00881 C2	0.024 C1	0.0175 C2	0.00471 U	0.0123 C2	0.00746 U	0.000016 U
Pesticides:	2,4'-DDE	--	--	mg/kg		0.00538 U	0.00777 C2	0.00516 U	0.00471 U	0.00821 C2	0.00521 U	0.00468 U	0.00471 U	0.00458 U	0.00746 U	0.000016 U
	2,4'-DDT	--	--	mg/kg		0.00538 U	0.00536 U	0.00516 U	0.00471 U	0.00579 U	0.00521 U	0.00468 U	0.00471 U	0.00458 U	0.00746 U	0.000016 U
	4,4'-DDD	0.03	--	mg/kg		0.00713 C1	0.0367 C1	0.0185 C1	0.0172 C1	0.033 C1	0.0545 C1	0.0827 C1	0.0106 C1	0.0455 C1	0.0141 C1	0.00000377 U
	4,4'-DDE	0.03	--	mg/kg		0.013 C1	0.058 C1	0.0329 C1	0.0341 C1	0.0647 C1	0.124 C1	0.0754 C1	0.0279 C1	0.0789 C1	0.0651 C1	0.00000312 U

TABLE 2-2
Sediment Sampling Data for Outfall 18
Source Control Pilot Project

Analysis Class	Analyte	DEQ Screening Level (High)	DEQ Screening Level (Baseline)	Units	*Sample ID:* *Date Sampled* *Sample Type:*	PP011801 8/20/2002 Normal	PP011802 8/20/2002 Normal	PP011803 8/20/2002 Normal	PP011804D[1] 8/20/2002 Field Dup	PP011805 8/21/2002 Normal	PP011806 8/21/2002 Normal	PP011807 8/21/2002 Normal	PP011808 8/21/2002 Normal	PP011809 8/20/2002 Normal	PP011810 8/20/2002 Normal	PP0118EB01 8/20/2002 Equip Blank*
	4,4'-DDT	0.06	--	mg/kg		0.000696 U	0.000694 U	0.000668 U	0.00061 U	0.00075 U	0.000675 U	0.000606 U	0.00061 U	0.000593 U	0.000966 U	0.000004 U
	Total DDTs	--	0.22	mg/kg		0.0201	0.0947	0.0514	0.0513	0.0977	0.1785	0.1581	0.0385	0.1244	0.0792	NA
	4,4'-Methoxychlor	--	--	mg/kg		0.0037 U	0.00369 U	0.00355 U	0.00324 U	0.00399 U	0.00359 U	0.00322 U	0.00324 U	0.00315 U	0.00513 U	0.0000043 U
	Aldrin	0.04	--	mg/kg		0.00116 U	0.00777 C2	0.00587 C2	0.00435 C2	0.0242 C2	0.0286 C2	0.00838 C2	0.00503 C2	0.0136 C2	0.00648 C2	0.000000916 U
	Alpha-BHC	--	--	mg/kg		0.000835 U	0.000832 U	0.000801 U	0.000732 U	0.0009 U	0.00103 J C1	0.000727 U	0.000731 U	0.000711 U	0.00116 U	0.00000294 U
	beta-BHC	--	--	mg/kg		0.00114 U	0.00703 C1	0.00287 C1	0.00237 C1	0.00491 C1	0.00119 J C2	0.00231 J C2	0.00144 J C2	0.00292 C2	0.00158 U	0.00000342 U
	Beta-Chlordane	--	--	mg/kg		0.00346 C2	0.0153 C1	0.00843 C1	0.0143 C2	0.0122 C2	0.0199 C2	0.0253 C2	0.00723 C1	0.0136 C2	0.00443 C2	0.00000383 U
	Chlordane	0.02	--	mg/kg		0.00378 U	0.00377 U	0.00363 U	0.00332 U	0.00408 U	0.00367 U	0.0033 U	0.00331 U	0.00322 U	0.00525 U	0.0000256 U
	cis-Nonachlor	--	--	mg/kg		0.00538 U	0.00688 C1	0.00516 U	0.00471 U	0.00579 U	0.00521 U	0.00468 U	0.00471 U	0.00458 U	0.00746 U	0.000016 U
	delta-BHC	--	--	mg/kg		0.00103 U	0.00103 U	0.00099 U	0.000904 U	0.00111 U	0.000999 U	0.000898 U	0.000903 U	0.000878 U	0.00143 U	0.00000188 U
	Dieldrin	0.06	--	mg/kg		0.000882 U	0.000878 U	0.000846 U	0.000773 U	0.00095 U	0.000854 U	0.000768 U	0.000772 U	0.000751 U	0.00122 U	0.00000241 U
	Endosulfan I	--	--	mg/kg		0.00114 U	0.00114 U	0.0011 U	0.001 U	0.00123 U	0.00495 C2	0.000997 U	0.00138 J C2	0.00391 C1	0.00159 U	0.00000399 U
	Endosulfan II	--	--	mg/kg		0.00104 U	0.00103 U	0.000997 U	0.00091 U	0.00112 U	0.00101 U	0.000905 U	0.00091 U	0.000884 U	0.00144 U	0.00000303 U
	Endosulfan Sulfate	--	--	mg/kg		0.000978 U	0.00374 J C2	0.00206 J C2	0.00172 J C2	0.00105 U	0.000947 U	0.000852 U	0.000856 U	0.00388 J C2	0.00136 U	0.0000043 U
	Endrin	0.2	--	mg/kg		0.00097 U	0.000966 U	0.000931 U	0.00085 U	0.00104 U	0.00094 U	0.000845 U	0.000849 U	0.000826 U	0.00135 U	0.00000248 U
	Endrin Aldehyde	--	--	mg/kg		0.0011 U	0.00109 U	0.00105 U	0.00096 U	0.00118 U	0.00106 U	0.000954 U	0.000959 U	0.000933 U	0.00152 U	0.00000779 U
	Endrin Ketone	--	--	mg/kg		0.000755 U	0.000752 U	0.000725 U	0.000662 U	0.000814 U	0.000732 U	0.000658 U	0.000661 U	0.000643 U	0.00105 U	0.00000276 U
	Heptachlor	0.01	--	mg/kg		0.000925 UJ	0.000922 U	0.000888 U	0.000811 U	0.000997 U	0.000896 U	0.000806 U	0.00081 U	0.000788 UJ	0.00128 UJ	0.00000603 U
	Heptachlor Epoxide	0.02	--	mg/kg		0.000982 U	0.000978 U	0.000942 U	0.00086 U	0.00106 U	0.000951 U	0.000855 U	0.00086 U	0.000836 U	0.00136 U	0.00000299 U
	Hexachlorobenzene	0.1	--	mg/kg		0.00269 U	0.00268 U	0.00258 U	0.00236 U	0.0029 U	0.00544 C2	0.0032 C2	0.00235 U	0.00229 U	0.00373 U	0.000008 U
	Hexachlorobutadiene	0.6	--	mg/kg		0.00269 U	0.00268 U	0.00258 U	0.00236 U	0.0029 U	0.0026 U	0.00234 U	0.00235 U	0.00229 U	0.00373 U	0.000008 U
	Hexachloroethane	--	--	mg/kg		0.00269 U	0.00268 U	0.00258 U	0.00236 U	0.0029 U	0.0026 U	0.00234 U	0.00235 U	0.00229 U	0.00373 U	0.000008 U
	Lindane	0.005	--	mg/kg		0.00103 U	0.00102 U	0.000986 U	0.0009 U	0.00111 U	0.000995 U	0.000895 U	0.000899 U	0.000874 U	0.00142 U	0.00000576 U
	Oxychlordane	--	--	mg/kg		0.00538 U	0.00536 U	0.00516 U	0.00471 U	0.00579 U	0.00521 U	0.00468 U	0.00471 U	0.00458 U	0.00746 U	NA
	Toxaphene	--	--	mg/kg		0.0168 U	0.0168 U	0.0162 U	0.0148 U	0.0181 U	0.0163 U	0.0147 U	0.0147 U	0.0143 U	0.0234 U	0.0000933 U
	Trans-Nonachlor	--	--	mg/kg		0.00538 U	0.0191 C1	0.00974 C1	0.0104 C1	0.0147 C1	0.0153 C1	0.0135 C2	0.00919 C2	0.00864	0.00746 U	0.000016 U
	cis-Chlordane	--	--	mg/kg		0.00239 J C1	0.0184 C2	0.00939 C2	0.0101 C2	0.00927 C1	0.0147 C1	0.0173 C2	0.00166 J C2	0.015 C2	0.00487 C2	0.00000282 U
TPH:	Diesel	--	--	mg/kg		41.9 N	16.2 JN	120 N	77.6 N	369 N	194 JN	265 NJ	166 N	200 N	73.1 N	0.16 JN
	Lube Oil - NWTPH	--	--	mg/kg		149	3.22 U	266	190	734	681 J	261 J	409	414	177	0.17 J

Notes:

* Units for the results of equipment blank analysis are in mg/L.
DEQ baseline and high values are used here for screening purposes only. Additional evaluation is needed to develop site-specific risk and/or cleanup concentrations.
[1] Duplicate sample of PP011803.
[2] Benzo(b)fluoranthene and benzo(k)fluoranthene are not well resolved, and the reported results are for the combined benzofluoranthenes.
[3] The three tetrachlorophenols are not well resolved, and they have been reported as the combined tetrachlorophenols.
DEQ High source = *Guidance for Evaluation of Sediment at State Cleanup Sites, External Review Draft* (DEQ, 2002).
DEQ Baseline source = *DEQ Notification Letters to Portland Harbor Property Owners* (September 1999).

Qualifiers:
B1 = This analyte was detected in the associated method blank. The concentration was determined not to be notably higher than the associated method blank (less than ten times the concentration reported in the blank).
B2 = This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be notably higher than the method blank (greater than ten times the concentration reported in the blank).
C1 = Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be < 40%.
C2 = Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N = Qualifier used to denote result values that fall within diesel carbon range (C12-C24). However, sample peak-pattern does not match diesel standard.
U = The analyte was analyzed for, but the analyte was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Abbreviations:
-- = Not available or applicable.
mg/kg = milligrams per kilogram
NA = Not analyzed

TABLE 2-2
Sediment Sampling Data for Outfall 18
Source Control Pilot Project

Analysis Class	Analyte	DEQ Screening Level (High)	DEQ Screening Level (Baseline)	Units	*Sample ID:*	PP011801	PP011802	PP011803	PP011804D[1]	PP011805	PP011806	PP011807	PP011808	PP011809	PP011810	PP0118EB01
					Date Sampled	8/20/2002	8/20/2002	8/20/2002	8/20/2002	8/21/2002	8/21/2002	8/21/2002	8/21/2002	8/20/2002	8/20/2002	8/20/2002
					Sample Type:	Normal	Normal	Normal	Field Dup	Normal	Normal	Normal	Normal	Normal	Normal	Equip Blank*

2.4.2.1 Deviations in Method Reporting Limits

The method reporting limits (MRLs) achievable for SVOCs and organochlorine pesticides in sediment samples from Portland Harbor were higher than the target MRLs listed in the QAPP. The target MRLs were based on the results obtainable from a clean (sandy–low TOC) sediment matrix. Most of the sediment samples associated with the Pilot Project had total petroleum hydrocarbon (TPH-diesel and TPH-heavy oil) concentrations in the hundreds of parts per million (ppm), milligrams per kilogram (mg/kg) range and TOC concentrations in the thousands of ppm range.

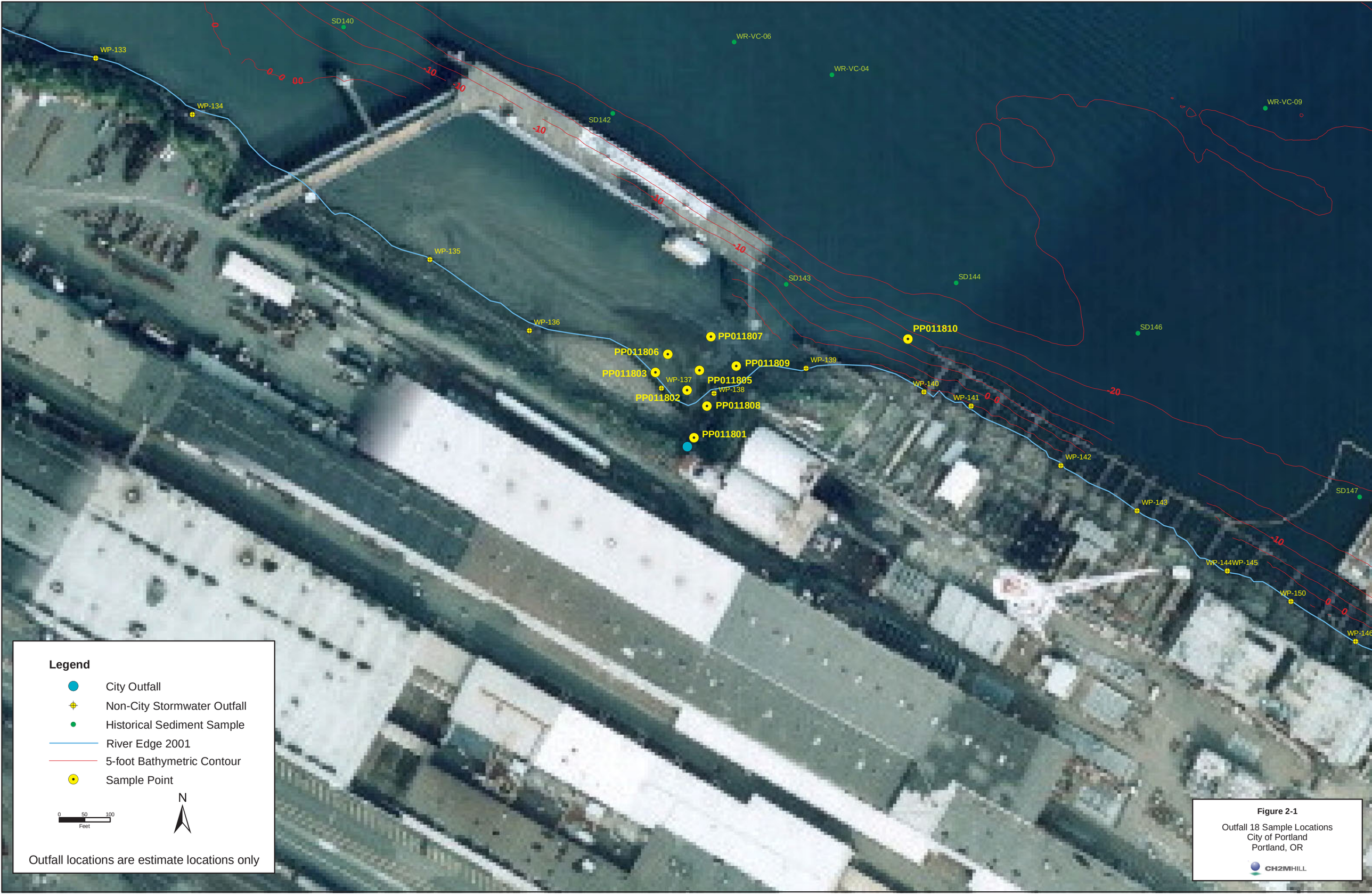
Both TPH and TOC are aggregate measurements in that they combine many organic compounds together and report them as one. The compounds that make up TPH and TOC resulted in a high background in the full-scan, ion-trap GC/MS and GC-ECD analysis of the samples. Gel permeation chromatography (which is the only cleanup technique suitable for the full 8270C SVOC compound list) was shown by the laboratory to be ineffective in removing the interferences encountered. This result is not unexpected because TPH compounds are of the same general molecular size as the SVOC/pesticide analytes of interest, and GPC cleanup is based on molecular size selectivity. The high background required dilution of the sample (which raised the reporting limit) to obtain usable data within the QA/QC requirements for SVOCs. In addition to elevated reporting limits, dilution of the samples due to matrix interference prevented reporting of SVOC surrogate results in five samples. All SVOC results in each of these samples were qualified as estimates (detect = J, nondetect = UJ).

2.4.2.2 Other Deviations

Other deviations from the QAPP are as follows:

- Analyses for SVOCs (SW8270C, ion-trap GC/MS), metals (SW6020, ICP-MS), organochlorine pesticides (SW8081A), chlorinated herbicides (SW8151A), and grain size were performed by Severn Trent Laboratories (STL) in Seattle, Washington, rather than by Columbia Analytical Services, Inc. (CAS).
- All metals (except mercury [Hg]) were analyzed by ICP-MS (SW6020) to obtain improved reporting limits.
- The organochlorine pesticides g-chlordene and a-chlordene were not analyzed because analytical standards were not commercially available.
- SW8270C analysis was performed using ion-trap mass spectrometry. This allowed for low-level analysis of all SVOC compounds, including PAHs, in a single analysis. PAH-SIM analysis was not performed because comparable reporting limits (in a clean matrix) were available for PAHs using SW8270C.
- Laboratory in-house control limits for target compound blank spike and matrix spike recovery accuracy, rather than the limits listed in Table B-3 of the QAPP, were used for data validation.

- The sediment samples were not archived for the 1-year holding time indicated in Table B-5 of the QAPP. The laboratory maintained archive samples until completion of analysis. Neither the laboratories conducting the analysis nor the City's lab had adequate storage space to maintain this volume of samples for a full year. This deviation does not affect the quality of laboratory analytical results.



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SECTION 3

Basin Assessment for Outfall 18

This section summarizes the basin assessment activities performed for Outfall 18. The purpose of the basin assessment was to further characterize the Outfall 18 drainage basin. Information collected as part of the basin assessment was used with sediment data to identify and prioritize potential sources within the Outfall 18 basin and to direct follow-on Phase 2 actions. The assessment consisted of the following activities:

- Preliminary evaluation update
- City data compilation
- National Pollutant Discharge Elimination System (NPDES) data compilation
- DEQ file reviews
- Interviews
- Facility plan reviews
- Map and photograph reviews

In general, activities were performed in accordance with the work plan. Site reconnaissance was the only basin assessment activity identified in the work plan that was not performed.

Table 3-1 summarizes the assessment activities and associated findings, and identifies the location of supporting data in Appendix F of this report. Note that for purposes of consistency and accessibility, tables that are associated with the preliminary evaluation update task have been left numbered as originally presented in the notebook entitled *Preliminary Evaluation of City Outfall—Portland Harbor Study Area* (CH2M HILL, December 2000). All other Appendix F tables are numbered consecutively.

Figure 3-1 shows the boundaries of the Outfall 18 drainage basin and the major facilities (environmental cleanup sites and NPDES permitted sites) located within the basin.

TABLE 3-1
Summary of Basin Assessment Tasks and Findings
Source Control Pilot Project—Outfall 18

Basin Assessment Task	Findings	Location of Data in Appendix F
Preliminary Evaluation Update: Re-query databases, revise tables from the Outfall 18 preliminary evaluation (available sediment data, facilities located within basin, NPDES data, MS4 data, RCRA TSD sites, ECSI sites, CRL sites, LUST sites, and State Fire Marshal hazardous material spills), and update outfall description.	***Available historical sediment data* 1997**: Portland Harbor Investigation, EPA/DEQ (SD140, SD142, SD143, SD144, SD146)	**Table 1**[1]—Historical Sediment Results in the Vicinity of Outfall 18
	Facilities located within basin City assisted in identifying facilities within basin. Types: distribution, manufacturing, fabrication, recycling, waste processing, transportation, storage, office, environmental cleanup, equipment rental and repair, gas station, petroleum terminal, truck washing, painting contractor, photo processor, vehicle repair, and retail. Primarily manufacturing/fabrication/distribution.	**Table 3**[1]—Outfall 18 Facility List
	NPDES stormwater data (1200Z and 1300J) for industrial facilities NPDES data (1200Z and 1300J permits only) collected for ABF Freight Systems, Inc., located at 4285 NW Yeon Ave. (1996 to 2001) and at 3333 NW 35th Ave. (2001 to present); Bay News Inc/FTL, located at 3333 NW 35th Ave. (1996 to 2000); Burlington Northern Railroad, located at 3930 NW Yeon Ave. (1997 to present); Carson Oil Truck Shop, located at 3125 NW 35th Ave. (1998 to present); Christenson Oil, located at 3821 NW St. Helens Rd. (1997 to present); Columbia American Plating, located at 3003 NW 35th Ave. (2002 to present); Container Management Services, located at 3000 NW St. Helens Rd. (formerly Myers Container Corp., 2001 to present);	**Table 4A**[1]—NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18

TABLE 3-1
Summary of Basin Assessment Tasks and Findings
Source Control Pilot Project—Outfall 18

Basin Assessment Task	Findings	Location of Data in Appendix F
Preliminary Evaluation Update (continued)	***NPDES stormwater data (1200Z and 1300J) for industrial facilities (continued)*** Container Recovery Inc., located at 3900 NW Yeon Ave. (2001 to 2002); Equilon Enterprises, LLC, located at 3800 NW St. Helens Rd. (1995 to present); FTL Inc., located at 4285 NW Yeon Ave. (2001 to present) Gunderson Inc., located at 4350 NW Front Ave. (1995 to present); McWhorter Technologies, located at 4155 NW Yeon Ave. (dba Eastman Chemical Company 1995 to 2001); Owens Corning, located at 3750 NW Yeon Ave. (1995 to present); Van Water & Rogers, located at 3950 NW Yeon Ave. (dba Vopak USA Inc., 2000 to 2002, and then Univar 2002 to present); Western Wire Works, located at 4025 NW Express Ave. (1998 to present); Weyerhaeuser Recycling, located at 3136 NW 35th Ave. (1995 to 1996); Wilhelm Trucking Co., located at 3520 NW St. Helens Rd. (1996 to present). McDowell Welding & Pipe Fitting located at 4000 NW St. Helens Rd. also had a 1200L permit at one time. The permit is no longer active. No data is available for this site. Not all facilities were tested for the same analytes. ABF Freight had the highest concentrations of titanium. Bay News/FTL had the highest concentrations of cadmium, chromium, zinc, COD, total phosphorous, TOC, and total suspended solids. Burlington Northern had the highest concentrations of polar and nonpolar oil and grease, Carson Oil had the highest concentrations of lead, Columbia American Plating had the highest concentration of nickel, and Container Management Services had the highest concentrations of copper and total oil and grease. Equilon had the highest concentration of ethanol. Gunderson had the highest concentration of arsenic and mercury.	**Table 4A**[1]—NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18

TABLE 3-1
Summary of Basin Assessment Tasks and Findings
Source Control Pilot Project—Outfall 18

Basin Assessment Task	Findings	Location of Data in Appendix F
Preliminary Evaluation Update (continued)	***MS4 stormwater quality data*** Data collected from 1991-1996 at two locations, I-1 and T-1, were used to characterize industrial (I-1) and transportation (T-1) land use as part of the Part 2 application of the City's NPDES municipal separated storm sewer system (MS4) permit. I-1 and T-1 are both located at NW Yeon Ave. approximately 1,000ft northwest of NW 35th Ave. I-1 represents runoff from a heavy industrialized manufacturing area (but also includes drainage from a portion of NW 35th Ave.). T-1 represents runoff from a high-volume traffic corridor (but also includes some portions of properties along the south side of NW Yeon Ave.). Concentrations of total suspended solids, total dissolved solids, total metals (total cadmium, total chromium, total copper, total lead, total silver, total zinc), and dissolved metals (dissolved cadmium, dissolved chromium, dissolved copper, dissolved iron, dissolved nickel, and dissolved zinc) were consistently greater for the data representing the heavy industrialized manufacturing area (I-1). Whereas concentrations of dissolved lead were consistently greater for the data representing the high-volume traffic corridor. There was no apparent variation in the concentrations of oil and grease or total petroleum hydrocarbon between I-1 and T-1.	**Table 4B**[1]—City of Portland NPDES MS4 Permit
	RCRA treatment, storage, and disposal (TSD) sites Seven sites listed within the Outfall 18 drainage basin. Two sites on the border of the Outfall 18 drainage basin.	**Table 8**[1]— Outfall 18 EPA RCRA Treatment Storage Disposal
	Environmental Cleanup Site Inventory Thirteen sites within the Outfall 18 drainage basin. Five sites on the border of the Outfall 18 drainage basin.	**Table 9**[1]— Outfall 18 DEQ Environmental Cleanup Site Information List DEQ ECSI Summary Data Reports follow Table 9.
	Leaking underground storage tank (LUST) Thirty-two LUSTs within the Outfall 18 drainage basin. Three sites on the border of the Outfall 18 drainage basin.	**Table 10**[1]— Outfall 18 DEQ Leaking Underground Storage Tanks List

TABLE 3-1
Summary of Basin Assessment Tasks and Findings
Source Control Pilot Project—Outfall 18

Basin Assessment Task	Findings	Location of Data in Appendix F
Preliminary Evaluation Update (continued)	***State Fire Marshal hazardous material incidents (spills)*** Twenty-three incidents within the Outfall 18 drainage basin. Two sites on the border of the Outfall 18 drainage basin.	**Table 13**[1]— Outfall 18 State Fire Marshal Hazardous Spills List
	Confirmed Release List Eight sites within the Outfall 18 drainage basin.	**Table 15**[1]— Outfall 18 Confirmed Release List
	Outfall Description Update In the Preliminary Evaluation of City Outfalls; Westshore Stormwater and CSO Outfalls (CH2M HILL, December 2000), the physical description for Outfall 18 stated "At one time, this outfall had CSO diversion overflow." This statement was based on the presence of diversion structures located at NW Yeon. Additional research indicates that there was construction of diversion structures and tide gates just downstream of the diversion structures, with the intent to drain stormwater into the sanitary system in the case of high river water elevations. There was no ability for sanitary flows to be diverted to the river. The two diversions to the interceptor sewer at NW Yeon were plugged in 1990. Therefore, this outfall has never been a CSO outfall.	**Text**—City of Portland Stormwater Outfall 18 Summary of Existing Information

TABLE 3-1
Summary of Basin Assessment Tasks and Findings
Source Control Pilot Project—Outfall 18

Basin Assessment Task	Findings	Location of Data in Appendix F
City Data Compilation: Compile Illicit Discharge Elimination Program (IDEP) and pollution complaint information for Outfall 18.	IDEP sampling has been performed since 1994 during dry-weather conditions to help prevent, search for, detect, and control illicit discharges to the City's stormwater systems. Sampling includes the collection of the following field parameters: pH, temperature, conductivity, residual chlorine, copper, and iron. Fecal coliform is sent to the laboratory for analysis. Additional laboratory analysis is not performed unless field parameters show the need. During a recent sampling event (September 2002), metals and TPH were analyzed in the City laboratory to supplement the existing suite of information. Mercury, cadmium, chromium, and TPH were not detected. Arsenic, copper, lead, nickel, and zinc were detected at low levels. These results were compared with ambient water quality criteria (AWQC). There were no exceedances of AWQC, and these data suggest no significant dry-weather concerns for the analyzed parameters.	**Table F-1**—Illicit Discharge Elimination Program A memorandum discussing the September 2002 sampling event and the corresponding analytical laboratory reports follow Table F-1.
	Pollution complaints reported to the Spill Protection and Citizen Response (SPCR) team associated with Outfall 18 are recorded by the City. A total of 21 pollution complaints have been associated with Outfall 18. No source has been identified for three of these complaints. Three of the complaints involved the sanitary sewer. The City received numerous pollution complaints for three sites (Container Recovery Inc., High Reach Inc., and Special Asphalt) of vehicle/equipment washwater being discharged to the storm sewer. A few reports were also received for facilities (Carson Oil and McDowell Welding & Pipe Fitting, Inc.) discharging potentially contaminated water onto the ground and/or street. Three large spills were reported (660+ gallons of oil at Christenson Oil, 200 to 300 gallons of oil at Container Management Services, and 250 gallons of paint at Gunderson). However, there was no evidence of any of the spills reaching the river. Other complaints involved reports of gasoline odors at Gunderson and an oily discharge to a catch basin located at Western Wire Works.	**Table F-2**—Pollution Complaints

TABLE 3-1
Summary of Basin Assessment Tasks and Findings
Source Control Pilot Project—Outfall 18

Basin Assessment Task	Findings	Location of Data in Appendix F
NPDES Data Compilation: Update NPDES industrial stormwater discharge data maintained by BES. Compile and summarize NPDES point discharge and stormwater data maintained by DEQ.	NPDES Permit types found in the Outfall 18 drainage basin: ABF Freight Systems—1200Z Bay News Inc.—1200Z Burlington Northern Railroad—1200Z Carson Oil Co. Inc.—1200Z Christenson Oil—1200Z Columbia American Plating—1200Z Container Management Services—1200Z Container Recovery Inc.—1200Z Equilon Enterprises, LLC—1200T/1300J/1500A Gunderson Inc. —1200Z McDowell Welding & Pipe Fitting—1200L McWhorter Technologies—1200Z/100J/1500A Owens Corning—1200Z/100J/1300J/1500A/500J Van Waters & Rogers—Individual Western Wire Works—1200Z Wilhelm Trucking Co. —1200Z BES maintains effluent data for 1200Z permits. DEQ also maintains information on these permits, as well as others (for example, 100J permits). Aside from a few additional data points, no new effluent data were found during the DEQ water quality file review. However, details of each permit, including the reason that the permit was issued, requirements of the permit, and permit violations, were found during the DEQ water quality file review.	**Table F-3**—Summary of Information Obtained from the Water Quality File Review of Outfall 18 Facilities with NPDES Permits

TABLE 3-1
Summary of Basin Assessment Tasks and Findings
Source Control Pilot Project—Outfall 18

Basin Assessment Task	Findings	Location of Data in Appendix F
NPDES Data Compilation (continued)	ABF Freight Systems exceeded NPDES benchmarks multiple times for multiple constituents. Bay News exceeded NPDES benchmarks multiple times for multiple constituents. Burlington Northern Railroad exceeded NPDES benchmarks a few times for multiple constituents. Carson Oil exceeded NPDES benchmarks multiple times for multiple constituents. Christenson Oil exceeded NPDES benchmarks a few times for multiple constituents. Columbia American Plating has only two rounds of sampling data available. The oil and grease benchmark was exceeded for one event. Container Recovery Inc. exceeded NPDES benchmarks multiple times for a few constituents. Equilon exceeded NPDES benchmarks a few times for oil and grease. FTL Inc. exceeded NPDES benchmarks multiple times for a few constituents.	**Table F-3**—Summary of Information Obtained from the Water Quality File Review of Outfall 18 Facilities with NPDES Permits
DEQ File Reviews: Review DEQ files for ECSI sites within Outfall 18 drainage basin. Prepare site summaries.	DEQ ECSI files reviewed and summaries prepared for: Gunderson, Texaco Product Pipeline, Burlington Northern Railroad, Texaco Portland Terminal, Christenson Oil, McWhorter, Van Waters & Rogers, Schnitzer Investment, ANRF Holdings, Trumbell Asphalt Plant, Hill Investment Co., Columbia American Plating, and Magnus Co.	Subsection 4 of Appendix F—DEQ ECSI File Reviews for City Outfall 18
Interviews: Conduct interviews with DEQ project managers for ECSI sites within or adjacent to the Outfall 18 drainage basin.	Interviewed DEQ project managers for ANRFS Holdings, Burlington Northern Railroad, Christenson Oil, Gunderson, Texaco Product Pipeline, Texaco Product Terminal, and Trumbell Asphalt. There is no DEQ project manager assigned to: Columbia American Plating, Hill Investment Co., Magnus Co., McWhorter Inc., Van Waters & Rogers, and Schnitzer Investment.	Information has been incorporated into the DEQ ECSI file reviews for City Outfall 18.

TABLE 3-1
Summary of Basin Assessment Tasks and Findings
Source Control Pilot Project—Outfall 18

Basin Assessment Task	Findings	Location of Data in Appendix F
Facility Plans Review: Review available Stormwater Pollution Control Plans (SWPCPs) and Spill Prevention, Control, and Countermeasure Plans (SPCCs) for facilities within or adjacent to the Outfall 18 drainage basin.	Available facility documents in DEQ ECSI files or DEQ water quality files were reviewed. Only Equilon, Owens Corning, and FTL had SWPCPs in DEQ files. An old SPCC plan was found in the McWhorter ECSI file. SWPCPs for the other permitted facilities located in the basin may be available in City files (in the Industrial Stormwater division). However, these were not reviewed for this report. **Equilon Enterprises** Activities of industrial significance: receiving, storing, and distributing petroleum products via pipelines, trucks, and tanker ships; off-loading and storage of equipment and supplies; and vehicle maintenance. Potential stormwater pollutants: gasoline, diesel, ethanol, fuel dyes and additives; oil, grease, and other fluids from vehicles and equipment; and roadway dust. **Owens Corning** Activities of industrial significance: storage of raw materials used in the manufacturing of roofing products; manufacturing of roofing materials; and vehicle maintenance. Potential stormwater pollutants: asphalt, roofing granules, paint, plastic wrappers, release tape, fiberglass mat, solvents, lube oils, sand, talc, BD Oil, air compressor condensate, and waste oil. **FTL** Activities of industrial significance: unloading and loading of newsprint, truck washing, truck fueling, and truck maintenance. Potential stormwater pollutants: No. 2 diesel, motor oil, antifreeze, degreasers, and solvents. This plan does not represent current activities. **McWhorter** This SPCC plan was prepared for McCloskey Varnish.	Collected for use at a later time.

TABLE 3-1
Summary of Basin Assessment Tasks and Findings
Source Control Pilot Project—Outfall 18

Basin Assessment Task	Findings	Location of Data in Appendix F
Map and Photograph Review: Collect facility maps and aerial photographs for the Outfall 18 drainage basin.	Facility maps and photographs were collected during the DEQ ECSI and water quality file reviews. No other maps were collected. These maps were used in the ECSI site summaries. In addition, aerials were collected from the City's aerial photograph collection. No analysis of the aerials was performed.	Collected for use at a later time.
Site Reconnaissance: Conduct as necessary.	Site reconnaissance was not conducted during this phase.	Not applicable.

[1] Table number has been left unchanged to correspond with the document entitled *Preliminary Evaluation of City Outfalls—Portland Harbor Study Area (*Notebook 2, Westshore Stormwater and CSO Outfalls) (CH2M HILL, December 2000).

dba = doing business as

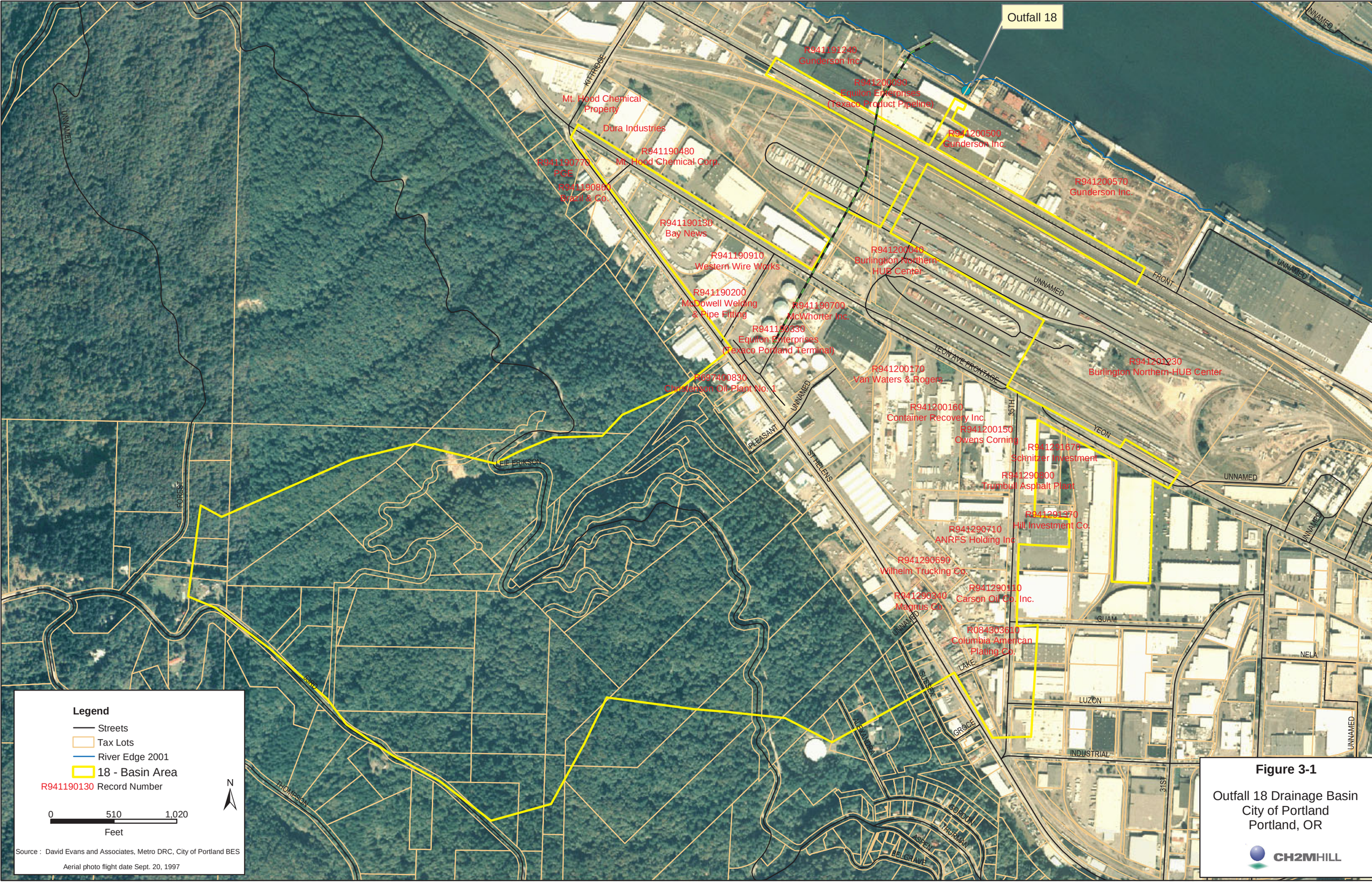


Figure 3-1

Outfall 18 Drainage Basin
City of Portland
Portland, OR

SECTION 4

Evaluation of Results

This section provides an evaluation of the Pilot Project sampling results at Outfall 18. The objectives of this section are to (1) describe the process for identifying the primary chemicals of interest for the data evaluation based on the complete set of sediment data shown in Table 2-2, (2) provide evaluation results for chemicals of interest, with the overall objective of identifying chemicals that warrant investigation as possible source constituents at Outfall 18, and (3) summarize significant findings of the Phase 1 Pilot Project.

4.1 Data Evaluation Process

The data evaluation process consisted of a three-step approach:

1. The measured concentrations were compared with selected sediment benchmark comparison values.
2. The chemicals were prioritized based on the factor of exceedance of benchmark values, and a subset of primary chemicals of interest was identified.
3. Each of the priority chemicals of interest was further analyzed for spatial trends that could indicate Outfall 18 as a possible conduit for sources of contamination.

The specifics of each step are described in the following subsections.

4.1.1 Screening Benchmark Comparison

To determine which of the chemical constituents in sediment are of highest priority, the detected concentrations and detection limits for each of the analytes were compared with two sediment benchmark values: the DEQ High Toxicity Screening Level Values for freshwater receptors presented in the external review draft of the *Guidance for Evaluation of Sediment at State Cleanup Sites* (DEQ, 2002), and the Apparent Portland Harbor Sediment Baseline Maximum Values presented in Table 1 of *DEQ Notification Letters to Portland Harbor Property Owners* (DEQ, September 1999). The DEQ Low Toxicity Screening Level Values were not used because many of these values were well below baseline values, which resulted in an excessive number of exceedances that were unlikely to be related to the outfall.

4.1.2 Chemical Prioritization

For each chemical, the maximum detected value within the group of samples at the outfall was compared with each of the two benchmarks to identify the "factor of exceedance" for that chemical. The chemicals were ranked from high to low based on the maximum factor of exceedance. To help determine whether the maximum from the data set might be an outlier, the number of total samples with concentrations exceeding each benchmark was also identified. For samples that were below MRLs, the MRLs were compared with the benchmark comparison values. In cases where the MRLs exceeded benchmark comparison

values,[1] both the maximum factor of exceedance and the number of samples exceeding were identified.

Chemicals that had the highest exceedance of the DEQ High Screening Level Values or the DEQ Portland Harbor baseline levels at Outfall 18 were selected to be carried on to the spatial distribution analysis.

4.1.3 Spatial Distribution

The spatial distribution analysis was guided by a number of important questions:

- Is there any evidence of a concentration gradient away from the outfall?
- How do the nearshore concentrations compare with data from offshore?
- Is the distribution of organic chemicals measurably influenced by sediment TOC or grain size?
- Do any of the chemicals appear to co-occur (is there spatial correlation between different chemicals)?

Each of these questions was addressed through a detailed graphical analysis, as described in Section 4.2.3.

4.2 Data Evaluation Results

Data evaluation results are summarized in the following subsections.

4.2.1 Benchmark Comparison

Analytes at Outfall 18 that exceeded DEQ High or Baseline Values are summarized in Tables 4-1 and 4-2. The tables also include analytes whose MRLs exceeded the benchmark comparison values. Detected exceedances are highlighted and nondetected exceedances are bolded. The analytes are ranked from high to low by the maximum factor of exceedance.

4.2.2 Chemicals Selected for Detailed Analyses

On the basis of the results of the benchmark comparisons provided in Tables 4-1 and 4-2, it was evident that certain classes of chemicals were more prevalent at levels exceeding benchmarks in sediment. These included:

- Phthalates
- PAHs
- PCBs
- Metabolites of DDT
- Various metals (lead, zinc, mercury, arsenic, and chromium)

[1] Although the analytical methods employed were adequate to meet benchmark levels under ordinary field conditions, the difficult matrix interferences (see Section 2.4.2) associated with these urban sediments resulted in some substantial elevations in MRLs.

TABLE 4-1

Exceedances of DEQ High-Sediment Benchmark Comparison Criteria for Freshwater Receptors

Source Control Pilot Project

Class	Analyte	Units	DEQ Screening Level (high)	PP011801 08/20/2002 Normal		PP011802 08/20/2002 Normal		PP011803 08/20/2002 Normal		PP011804D 08/20/2002 Dupe of 03		PP011805 08/21/2002 Normal		PP011806 08/21/2002 Normal		PP011807 08/21/2002 Normal		PP011808 08/21/2002 Normal		PP011809 08/20/2002 Normal		PP011810 08/20/2002 Normal		DETECTS Max factor of exceedance	DETECTS Number of exceedances	NONDETECTS Max factor of exceedance	NONDETECTS Number of exceedances
PEST-8081A	4,4'-DDE	ug/kg	30	13	C1	58	C1	32.9	C1	34.1	C1	64.7	C1	124	C1	75.4	C1	27.9	C1	78.9	C1	65.1	C1	4.1	8		
BNA	Bis(2-Ethylhexyl) Phthalate	ug/kg	800	138	J	2700		390		325		1360		2650		62.7	U	399		477		166	J	3.4	3		
BNA	Total LPAH	ug/kg	400	104.25		206		53.4		223.39		795.5		1333		520.6		111.7		199		58.7		3.3	3		
BNA	Total HPAH	ug/kg	1000	670.3		494		181.7		964.3		3106		3002		505		473.4		384.3		92.2		3.1	2		
PEST-8081A	4,4'-DDD	ug/kg	30	7.13	C1	36.7	C1	18.5	C1	17.2	C1	33	C1	54.5	C1	82.7	C1	10.6	C1	45.5	C1	14.1	C1	2.8	5		
BNA	Di-n-Butyl Phthalate	ug/kg	100	**158**	**U**	**153**	**U**	**142**	**U**	**149**	**U**	185	J	**137**	**U**	**133**	**U**	**147**	**U**	**139**	**U**	**197**	**U**	1.9	1	2.0	9
M-TOTAL	Lead	mg/kg	130	60.6	B2	90.2	B2	123	B2	185	B2	79.8	B2	210	B2	97.6	B2	148	B2	168	B2	67.3	B2	1.6	4		
BNA	Indeno (1,2,3-cd) pyrene	ug/kg	100	52.5		4.11	U	3.8	U	3.99	U	118		3.66	U	3.56	U	3.92	U	3.72	U	5.28	U	1.2	1		
BNA	2-Methylnaphthalene	ug/kg	200	2.82	U	33.3		13.3	J	12.9	J	124		147		210		12.4	J	26.7		3.53	U	1.1	1		

Notes:

DEQ high values are used here for general comparison purposes only. Additional evaluation is needed to develop site-specific risk and/or cleanup concentrations.

Detected exceedances are highlighted and nondetected exceedances are **bolded**.

Qualifiers:

B2 = This analyte was detected in the associated method blank. The analyte concentration in the sample was determined

C1 = Second column confirmation was performed. The relative percent difference value(RPD) between the results on the two columns was evaluated and determined to be < 40%.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but the analyte was not detected above the reported sample quantitation limit.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Abbreviations:

µg/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

TABLE 4-2

Exceedances of Portland Harbor Baseline Sediment Benchmark Comparison Criteria

Source Control Pilot Project

Class	Analyte	Units	DEQ Baseline Values	PP011801 08/20/2002 Normal		PP011802 08/20/2002 Normal		PP011803 08/20/2002 Normal		PP011804D 08/20/2002 Dupe of 03		PP011805 08/21/2002 Normal		PP011806 08/21/2002 Normal		PP011807 08/21/2002 Normal		PP011808 08/21/2002 Normal		PP011809 08/20/2002 Normal		PP011810 08/20/2002 Normal		DETECTS Max factor of exceedance	DETECTS Number of exceedances	NONDETECTS Max factor of exceedance	NONDETECTS Number of exceedances
BNA	Butyl Benzyl Phthalate	ug/kg	20	**34.4**	**U**	385		**31**	**U**	148	J	**34.6**	**U**	**29.9**	**U**	**29**	**U**	**32**	**U**	153	J	**43**	**U**	19.3	3	2.2	7
BNA	Di-n-Octyl Phthalate	ug/kg	20	**47.1**	**U**	**45.8**	**U**	**42.4**	**U**	**44.6**	**U**	**47.3**	**U**	**40.9**	**U**	190		**43.8**	**U**	**41.5**	**U**	**58.9**	**U**	9.5	1	2.9	9
BNA	Di-n-Butyl Phthalate	ug/kg	20	**158**	**U**	**153**	**U**	**142**	**U**	**149**	**U**	185	J	**137**	**U**	**133**	**U**	**147**	**U**	**139**	**U**	**197**	**U**	9.3	1	9.9	9
M-TOTAL	Lead	mg/kg	30	60.6	B2	90.2	B2	123	B2	185	B2	79.8	B2	210	B2	97.6	B2	148	B2	168	B2	67.3	B2	7.0	10		
BNA	Bis(2-Ethylhexyl) Phthalate	ug/kg	390	138	J	2700		390		325		1360		2650		62.7	U	399		477		166	J	6.9	6		
M-TOTAL	Mercury	mg/kg	0.1	0.0103	U	0.189		0.185		0.189		0.204		0.318		0.245		0.334		0.453		0.128		4.5	9		
PCB-SW8082	Total PCBs	ug/kg	180	64.7		273		247.1		226.8		237.2		640		478.5		356.9		163.9		93.3		3.6	7		
M-TOTAL	Zinc	mg/kg	118	199	B2	203	B2	246	B2	284	B2	256	B2	269	B2	245	B2	257	B2	272	B2	119	B2	2.4	10		
M-TOTAL	Arsenic	mg/kg	5	5.65		5.7		6.09		5.77		5.42		9.76		7.41		5.55		5.66		4.36		2.0	9		
BNA	Total LPAH	ug/kg	700	104.25		206		53.4		223.39		795.5		1333		520.6		111.7		199		58.7		1.9	2		
M-TOTAL	Chromium	mg/kg	41	22		34.2		32.6		45.6		44.7		71		23.7		32.6		32.5		35.9		1.7	3		
M-TOTAL	Copper	mg/kg	60	41	B2	56	B2	61.1	B2	56.9	B2	66	B2	98.9	B2	79.3	B2	75.7	B2	75.6	B2	48.2	B2	1.6	6		
M-TOTAL	Cadmium	mg/kg	0.6	0.0638	J	0.46	J	0.512	J	0.59		0.626	J	0.897		0.664		0.713		0.759		0.077	J	1.5	5		
BNA	2-Methylnaphthalene	ug/kg	150	2.82	U	33.3		13.3	J	12.9	J	124		147		210		12.4	J	26.7		3.53	U	1.4	1		
BNA	Benzoic Acid	ug/kg	200	276	J	59.9	U	55.5	U	58.3	U	61.9	U	53.4	U	52	U	57.3	U	54.3	U	77	U	1.4	1		
M-TOTAL	Antimony	mg/kg	5	1.16	J	1.84	J	2.52	J	1.98	J	2.47	J	6.86		2.6	J	1.1	J	2.17	J	1	J	1.4	1		
BNA	Total HPAH	ug/kg	2400	670.3		494		181.7		964.3		3106		3002		505		473.4		384.3		92.2		1.3	2		
BNA	Fluoranthene	ug/kg	600	155		239		95.9		245		476		737		258		143		101		37.6		1.2	1		
CONV	Total Organic Carbon	mg/kg	20000	1540		14500		2530		1590		24500		18200		4130		2960		2150		11300		1.2	1		
BNA	Anthracene	ug/kg	150	15.8	J	30.1		13.5	J	28.8		93.4		170		37.1		14.3	J	17.5		5.71	U	1.1	1		
BNA	Pyrene	ug/kg	700	127		255		85.8		245		536		790		247		145		140		54.6		1.1	1		
BNA	Benzo (a) anthracene	ug/kg	360	73.2		10.8	U	9.96	U	83.3		265		405		9.32	U	69.4		60.1		13.8	U	1.1	1		
BNA	Acenaphthene	ug/kg	180	8.96	U	23.8		8.08	U	16.4	J	65.8		189		45		13.5	J	24.5		11.2	U	1.1	1		
BNA	Benzo [g,h,i] perylene	ug/kg	250	42		2.91	U	2.69	U	2.83	U	256		2.59	U	2.52	U	2.78	U	2.63	U	3.74	U	1.0	1		
BNA	Benzyl Alcohol	ug/kg	20	**38**	**U**	**37**	**U**	**34.3**	**U**	**36**	**U**	**38.2**	**U**	**33**	**U**	**32.1**	**U**	**35.4**	**U**	**33.5**	**U**	**47.6**	**U**			2.4	10
BNA	Phenol	ug/kg	20	**36.2**	**U**	**35.2**	**U**	**32.7**	**U**	**34.3**	**U**	**36.4**	**U**	**31.4**	**U**	**30.6**	**U**	**33.7**	**U**	**31.9**	**U**	**45.3**	**U**			2.3	10
BNA	Dimethyl Phthalate	ug/kg	20	19.9	U	19.4	U	18	U	18.9	U	**20**	**U**	17.3	U	16.8	U	18.5	U	17.6	U	**24.9**	**U**			1.2	2

Notes:

DEQ baseline values are used here for general comparison purposes only. Additional evaluation is needed to develop site-specific risk and/or cleanup concentrations.

Detected exceedances are highlighted and nondetected exceedances are **bolded**.

Qualifiers:

B2 = This analyte was detected in the associated method blank. The analyte concentration in the sample was determined.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but the analyte was not detected above the reported sample quantitation limit.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Abbreviations:

µg/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

Representative constituents were selected from these groups of chemicals for the more detailed graphical analyses. The most prevalent constituents in each group of chemicals were selected as the representatives. For phthalates, the compound bis(2-ethylhexyl)phthalate was selected to represent all phthalates. For metabolites of DDT, 4,4'-DDE was selected. Table 4-3 lists the constituents selected for the more detailed graphical analyses and identifies whether the DEQ High Screening Level Values and Baseline Values were exceeded at Outfall 18 and Outfall M-1.[2]

TABLE 4-3
Constituent Groups Selected for Detailed Graphical Analyses
Source Control Pilot Project

Compound or Chemical	Exceeds DEQ High near Outfall M-1	Exceeds Baseline near Outfall M-1	Exceeds DEQ High near Outfall 18	Exceeds Baseline near Outfall 18
Phthalates				
Bis(2-Ethylhexyl)Phthalate	X	X	X	X
Polynuclear Aromatic Hydrocarbons				
Total LPAHs	X	X	X	X
Total HPAHs	X	X	X	X
Polychlorinated Biphenyls				
Total Aroclors		X		X
Metals				
Lead		X	X	X
Zinc	X	X		X
Chromium	X	X		X
Mercury		X		X
DDT and Metabolites				
4,4'-DDE		N/A	X	N/A

Notes:
N/A indicates that the benchmark comparison value is not available.
Blank indicates that no exceedance exists.

Benzoic acid and TOC both exceeded baseline benchmark comparison values in one of ten Outfall 18 samples but were not carried forward for further analysis. Benzoic acid occurs naturally in many plants and animals as a natural degradation product produced by metabolic processes. Benzoic acid is a natural constituent in many foods, including milk products, and is generally considered relatively nontoxic (it is used as a food preservative). On the basis of its common natural occurrence, relatively nontoxic characteristics, and presence in conjunction with high TOC levels typically observed in sediment samples, benzoic acid was considered neither a significant risk to human health and the environment,

[2] Although this report focuses on the results from Outfall 18, corresponding results for Outfall M-1 are provided for comparative purposes. Outfall M-1 is addressed in *Phase 1 Data Evaluation Report and Phase 2 Work Planning for City of Portland Outfall M-1* (CH2M HILL, April 2003).

nor a likely contaminant from human activity in the Outfall 18 basin. Therefore, benzoic acid was not carried forward for further investigation.

4.2.3 Graphical Analysis of Results

4.2.3.1 Spatial Distribution

Bar charts of the sample concentrations for bis(2-ethylhexyl)phthalate, total PCBs, total LPAHs, total HPAHs, 4,4'-DDE, zinc, chromium, lead, and mercury are presented as Figures 4-1 through 4-9. The figures were tailored to display a variety of information, such as:

- Visual representation of the different concentrations.
- Rough comparison of nearshore and offshore concentrations and concentrations along the shoreline at increasing distances from the outfall.
- Comparison with the relevant historical sample results.
- Relationship to DEQ High and Baseline Values (DEQ Low Screening Level Values are shown on the figures for information purposes only).
- Side-by-side comparison with the corresponding results for Outfall M-1. (Note: Direct comparisons with Outfall M-1 are outside the scope of this report.)

Figures 4-1 through 4-9 present the Outfall 18 data in five groups based on proximity to the outfall: adjacent to outfall, near shoreline, 75 feet from outfall, 100 feet from outfall, and upstream of outfall. The samples in each group were roughly arranged in order of increasing distance from the outfall (refer to Figure 2-1 for sample locations). The data set was augmented with historical samples from the vicinity of the outfall.

A definitive correlation between proximity to outfall and concentration was not observed, as shown in Figures 4-1 through 4-9. For most constituents, it appeared that the samples located 75 feet from the outfall and 100 feet from the outfall generally had higher concentrations. However, this did not hold true for all chemicals. General observations for Outfall 18 are as follows:

- Phthalates (Figure 4-1): Concentrations of bis(2-ethylhexyl)phthalate were above the DEQ Baseline Value in five of the ten samples collected, and concentrations were above the DEQ High Screening Level Value in three of the ten samples collected. However, based on the spatial analysis, no apparent concentration gradient exists around Outfall 18. The highest concentrations of bis(2-ethylhexyl)phthalate were observed in one of the nearshore samples and in the two downstream samples collected 75 feet from the outfall. Concentrations in the upstream sample and historical samples collected in the main channel, as well as the two samples collected closest to the outfall terminus, were all well below the DEQ High Screening Level Value and generally below the DEQ Baseline Value. This indicates that Outfall 18 is not an apparent conduit for sources of phthalates. The bis(2-ethylhexyl)phthalate concentrations from samples collected at Outfall 18 were significantly lower and more variable than those collected at Outfall M-1.

- PCBs (Figure 4-2): Concentrations of PCBs were above the DEQ Baseline Value in seven of the ten samples collected but were below the DEQ High Screening Level Value in all of the samples. Based on the spatial analysis, no apparent concentration gradient exists around Outfall 18. The highest concentrations of PCBs were observed in samples collected 75 feet and 100 feet from the outfall. Concentrations in the upstream sample and the sample collected closest to the outfall were well below both the DEQ Baseline Value and the DEQ High Screening Level Value. This indicates that Outfall 18 is not an apparent conduit for sources of PCBs. Compared with PCB concentrations observed at Outfall M-1, concentrations at Outfall 18 are generally higher and less variable.
- LPAHs (Figure 4-3): Concentrations of LPAHs were above the DEQ Baseline Value in two of the ten samples and above the DEQ High Screening Level Value in three of the samples. However, based on the spatial analysis, no apparent concentration gradient exists around Outfall 18. Concentrations in the upstream sample, the nearshore samples, and the sample collected closest to the outfall were all well below both the DEQ Baseline Value and the DEQ High Screening Level Value. This indicates that Outfall 18 is not an apparent conduit for sources of LPAHs but that there may be a potential source of LPAHs in the vicinity of the outfall. LPAH concentrations are generally lower than those observed at Outfall M-1, with the exception of the downstream 75-foot sample (PP180106). This sample was significantly higher than the rest of the samples and well above the DEQ Baseline Value and the DEQ High Screening Level Value. Elevated LPAH concentrations in the vicinity of Outfall 18 may be the result of multiple petroleum spills that have occurred at the Texaco (Equilon) Terminal Dock. Appendix F presents a summary of historical releases at the Texaco (Equilon) Terminal Dock.
- HPAHs (Figure 4-4): Concentrations of HPAHs were above the DEQ Baseline Value and the DEQ High Screening Level Value in two of the ten samples. However, based on the spatial analysis, no apparent concentration gradient exists around Outfall 18. The distribution pattern for HPAHs was similar to that of LPAHs, with the highest concentrations observed in the two downstream samples collected 75 feet from the outfall. Concentrations in the other eight samples were significantly low, indicating that Outfall 18 is not an apparent conduit for sources of HPAHs but that there may be a potential source of HPAHs in the vicinity of the outfall. With the exception of the two downstream samples collected 75 feet from the outfall, HPAH concentrations are generally lower than those observed at Outfall M-1. Elevated HPAH concentrations in the vicinity of Outfall 18 may be the result of multiple petroleum spills that have occurred at the Texaco (Equilon) Terminal Dock. Appendix F presents a summary of historical releases at the Texaco (Equilon) Terminal Dock.
- 4,4′-DDE (Figure 4-5): Concentrations of 4,4′-DDE were above the DEQ High Screening Level Value in eight of the ten samples. A DEQ Baseline Value does not exist for 4,4′-DDE, but all of the samples were below the DEQ Baseline Value for total DDT, which is the summation of all the 4,4′-DDT metabolites. Based on the spatial analysis, no apparent concentration gradient exists around Outfall 18. A relatively high concentration was detected in the upstream sample, indicating a possible upstream source. The lowest concentrations were observed in the two samples collected closest to the outfall, indicating that Outfall 18 is not an apparent conduit for sources of 4,4′-DDE.

Concentrations of 4,4'-DDE at all of the samples collected at Outfall 18 were significantly higher than those observed at Outfall M-1.

- Zinc (Figure 4-6): Concentrations of zinc were above the DEQ Baseline Value in nine of the ten samples. No concentrations were above the DEQ High Screening Level Value. Based on the spatial analysis, no apparent concentration gradient exists around Outfall 18. Variability among samples was notably low with the exception of the upstream sample, which was significantly lower than the other nine samples. Concentrations of zinc in the samples collected at Outfall 18 were generally lower than those observed at Outfall M-1 and had significantly less variability among samples.
- Chromium (Figure 4-7): Concentrations of chromium were above the DEQ Baseline Value in three of the ten samples. No concentrations were above the DEQ High Screening Level Value. Based on the spatial analysis, no apparent concentration gradient exists around Outfall 18. The highest concentrations were observed in the downstream sample collected 75 feet from the outfall, while the lowest concentration was observed in the sample collected closest to the outfall. This is an indication that Outfall 18 is not an apparent conduit for sources of chromium but that other sources may be present in the vicinity of the outfall. Concentrations of chromium were generally significantly lower than those observed at Outfall M-1.
- Lead (Figure 4-8): Concentrations of lead were above the DEQ Baseline Value in all ten samples and above the DEQ High Screening Level Value in four of the ten samples. Based on the spatial analysis, no apparent concentration gradient exists around Outfall 18. The lowest concentrations were observed in the upstream sample and in the sample collected closest to the outfall, indicating that Outfall 18 is not an apparent conduit for sources of lead but that other sources may be present in the vicinity of the outfall. Outfall 18 lead concentrations were significantly higher than those observed in samples collected at Outfall M-1, also indicating a potential source of lead in the vicinity of Outfall 18.
- Mercury (Figure 4-9): Concentrations of mercury were above the DEQ Baseline Value in nine of the ten samples, though no concentrations were above the DEQ High Screening Level Value. Based on the spatial analysis, no apparent concentration gradient exists around Outfall 18. The lowest concentrations were observed in the upstream sample and the sample collected closest to the outfall. This indicates that Outfall 18 is not an apparent conduit for sources of mercury but that other sources may be present in the vicinity of the outfall. Concentrations of mercury were significantly higher than those observed in samples collected at Outfall M-1. This also indicates a potential source of mercury in the vicinity of Outfall 18.

The contaminant spatial distribution patterns for most of the chemicals selected for detailed analysis are similar. For bis(2-ethylhexyl)phthalate, PCBs, LPAH, HPAH, lead, and mercury concentrations were lowest in samples collected close to the outfall and in the upstream samples. The concentrations were highest in the downstream offshore samples. This pattern suggests a potential source in the vicinity of the outfall. As presented in Section 3, over-water work, private outfalls, and groundwater discharge from the Texaco (Equilon) Terminal Dock and the Gunderson facility are potential sources of phthalates, PAHs, PCBs, and metals.

The one exception to this general spatial distribution pattern is 4,4′-DDE. While the lowest observed concentration was detected in the sample collected closest to the outfall, the upstream sample had relatively high concentrations, suggesting a possible upstream source.

4.2.3.2 Concentration Gradient Analysis

To provide some insight as to whether the selected constituents originated from Outfall 18, the sediment concentrations within 140 feet of the outfall were plotted against radial distance from the outfalls (computed using the field-measured GPS coordinates). The upstream sample was not included in this analysis. Data from the sample duplicate, which were collected at station 03, were treated as a separate data point because of the large degree of variation observed between the representative sample and the duplicate. The hypothesis behind these analyses was that chemicals originating from the outfall would show generally decreasing concentrations with distance away from the outfall. The concentrations versus radial distance from outfall correlations for bis(2-ethylhexyl)phthalate, total PCBs, total LPAHs, and total HPAHs are shown in Figure 4-10. Figure 4-11 shows the correlations for zinc, chromium, lead, and mercury.

The maximum R^2 at Outfall 18 was 0.43 for zinc. Owing to the general scatter in the data, a meaningful improvement in higher order, nonlinear correlations was not attempted. Most contaminants of interest (COIs) show regressions with positive slopes, indicating that concentrations tend to increase with distance away from the outfall. However, given the relatively low correlation coefficients, the slope of the regression line may not be meaningful.

This analysis provides only a rough estimate of source contribution, because it did not take into account stream hydrodynamics, directionality, or instream chemical sorption characteristics. It is possible that hydrodynamic influences such as eddy currents or flows from nearby private outfalls could confound the spatial distribution of constituents.

4.2.3.3 Influence of TOC and Grain Size

Additional parameters that could influence the distribution of organic constituents include the TOC content and sediment particle size. These two properties were evaluated to see if their potential influence could explain the lack of correlation of concentration with distance away from Outfall 18. The hypothesis behind these analyses is that chemicals originating from the outfall should show generally decreasing concentrations with decreasing TOC or increasing particle size, if indeed these properties measurably influence spatial distribution.

Concentrations of TOC were compared with levels of four organic constituents, as shown in Figure 4-12.. The maximum R^2 at Outfall 18 was 0.62 for total PAHs. However, the correlation for total PAHs was heavily biased by two samples with relatively high concentrations.

The median particle diameter (D_{50}) was plotted on a bar chart, as shown in Figure 4-13. All samples at Outfall 18 were within the typical “fine sand” classification. Within this classification, grain size does not appear to correlate with constituent concentration.

4.2.3.4 Co-occurrence of Different Constituents

The concentrations of selected pairs of constituents were plotted together to evaluate whether certain chemicals were co-occurring at the outfall. The hypothesis behind these analyses is that chemicals originating from the outfall should show general co-occurrence in the vicinity of the outfall.[3]

The plots are presented in Figure 4-14 for organics and Figure 4-15 for metals. Relatively high correlation coefficients were observed between lead and zinc ($R^2 = 0.82$) and total LPAHs and HPAHs ($R^2 = 0.81$) at Outfall 18; slightly lower correlations were observed between lead and mercury ($R^2 = 0.69$), 4,4'-DDE and total LPAHs ($R^2 = 0.62$), and total LPAHs and PCBs ($R^2 = 0.57$).

Although not included in the DEQ High or Baseline Screening Level Value tables owing to lack of benchmark values, petroleum hydrocarbons were also analyzed for co-occurrence (Figure 4-16). An R^2 of 0.67 was observed between diesel and lube oil at Outfall 18.

4.2.3.5 Variability of Constituents

A duplicate sample was collected at Outfall 18 at location 03. Comparison of analyte values showed relatively comparable values for most analyte chemicals and groups. Significant variability existed in the various PAHs; LPAHs and HPAHs varied by about five-fold. The heterogeneous nature of sediment samples may account for the variability observed for these analytes.

4.3 Conclusions

The significant findings of the Phase 1 Pilot Project at Outfall 18 are summarized below:

- Chemicals of interest occur in sediment collected near Outfall 18 at levels that exceed comparison benchmarks. However, there are no significant spatial patterns that indicate Outfall 18 is a conduit for these contaminants.
- Spatial distribution patterns suggest other potential sources for chemicals of interest. Potential sources may include over-water activities, private outfall discharges, sediment shoaling, and groundwater discharge.
- Elevated concentrations of chemicals of interest identified during the sampling and subsequent screening consist of phthalates, PAHs, PCBs, metabolites of DDT, and some metals.
- The spatial distribution of organic and inorganic chemicals is not strongly influenced by TOC and grain size.
- Certain chemicals appear to co-occur at Outfall 18, suggesting a common source of release.

The purpose of Phase 2 of the Source Control Pilot Project will be to develop a process for identifying current upland sources of elevated constituents identified in Phase 1 and to

[3] Co-occurrence does not conclusively indicate common release from the outfall, but it may result from common release from another instream source.

identify source control actions. Objectives include identifying sites that may be contributing contamination to Outfall 18, identifying data gaps, developing a process for coordinating efforts between DEQ and the City, and implementing outreach. Based on the results of the Phase 1 evaluation, it is recommended that Phase 2 of the Pilot Project include further evaluation of potential sources to the City stormwater conveyance system and sources adjacent to Outfall 18 (e.g., over-water activity, private outfalls, groundwater, and overland flow.

Compounds of interest that will require special consideration in identifying and controlling potential sources include:

- Phthalates
- PAHs
- PCBs
- DDTs and metabolites
- Lead
- Mercury

During the RI/FS, additional chemicals may be identified in relation to Outfall 18, and further source investigation/control may need to be reevaluated in the future. Future sampling conducted for the purpose of identifying potential upland sources should include a complete set of metals in the analyte list.

Figure 4-1. Bis(2-Ethylhexyl)Phthalate Concentrations in Sediment

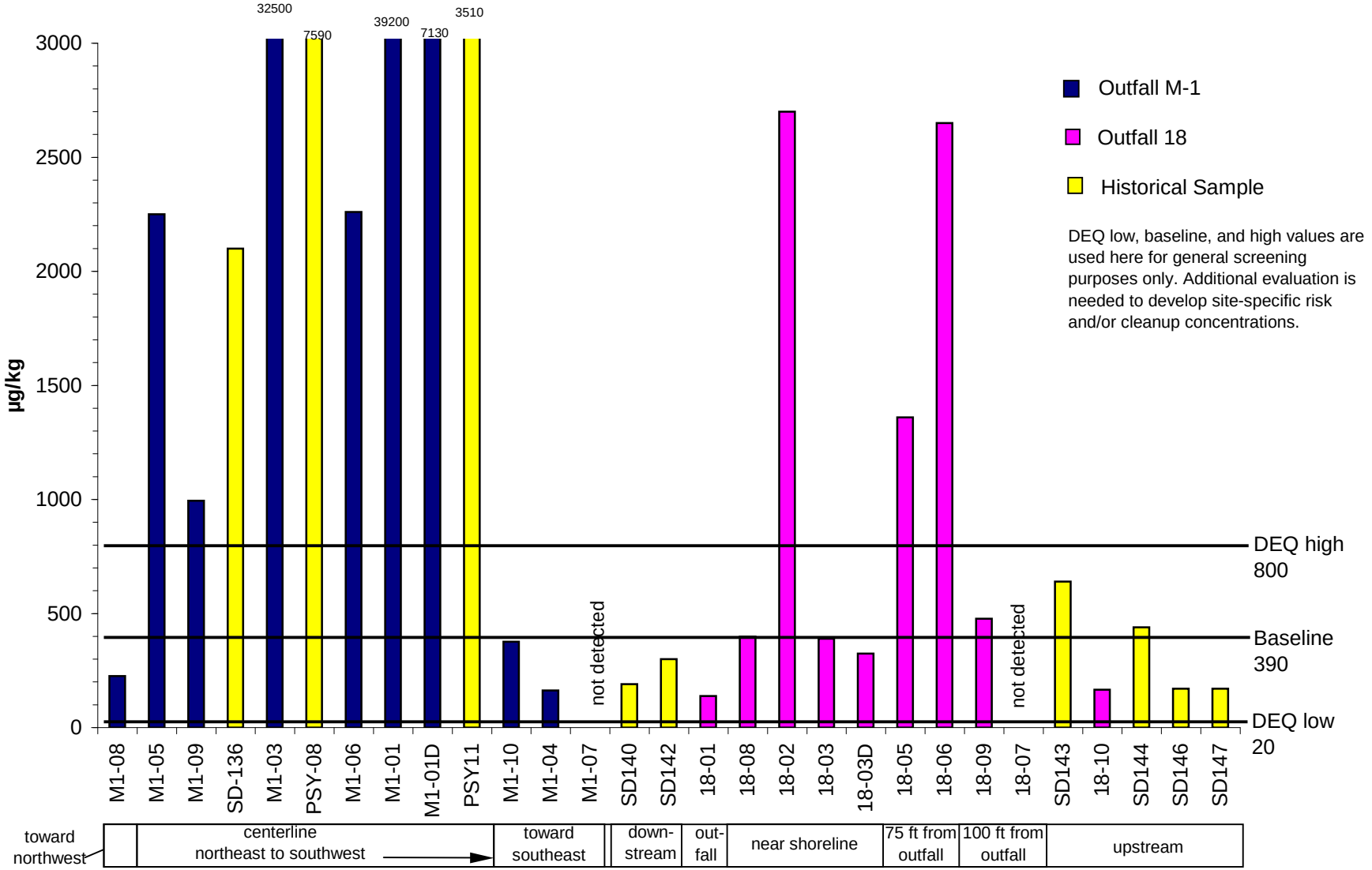
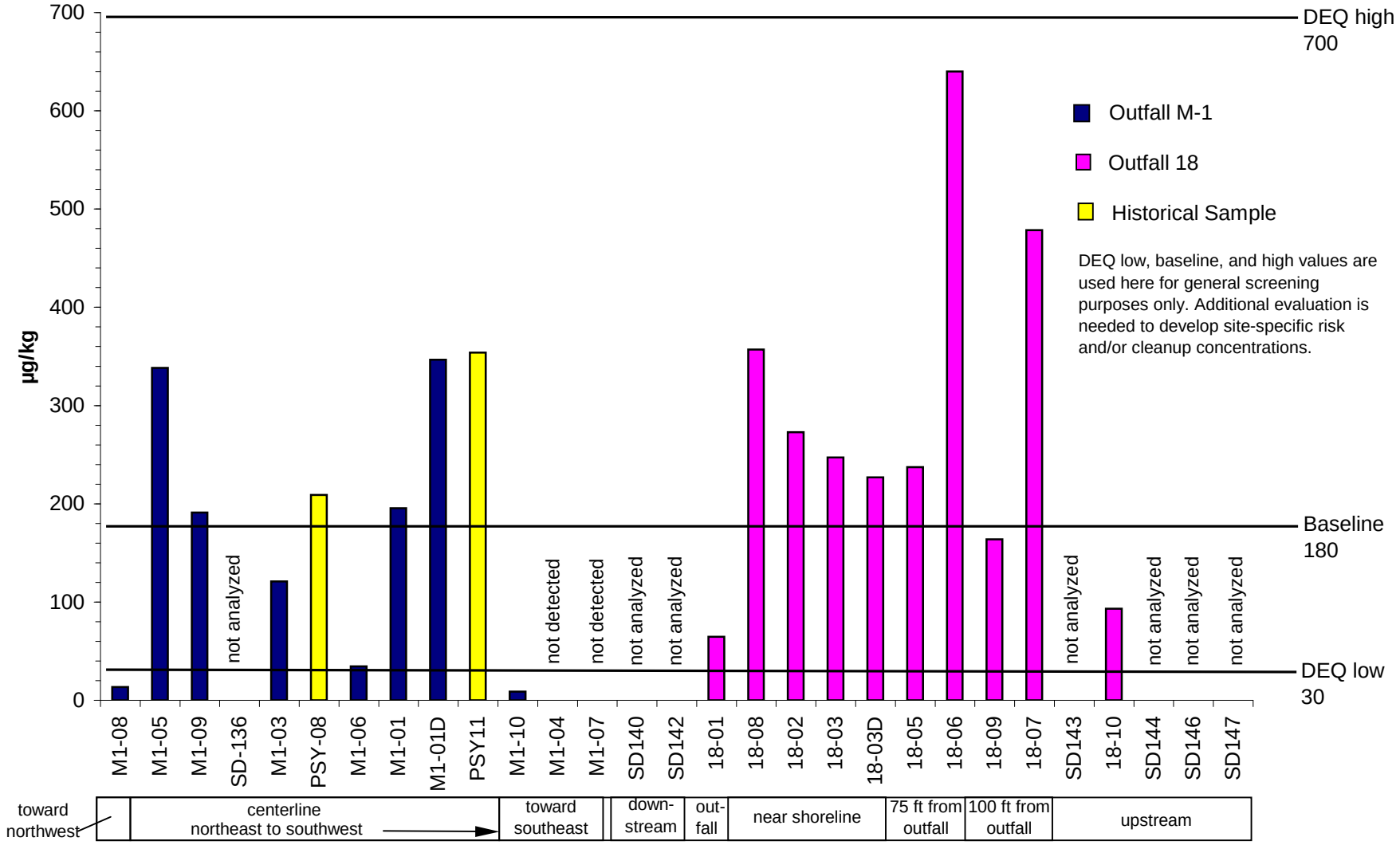
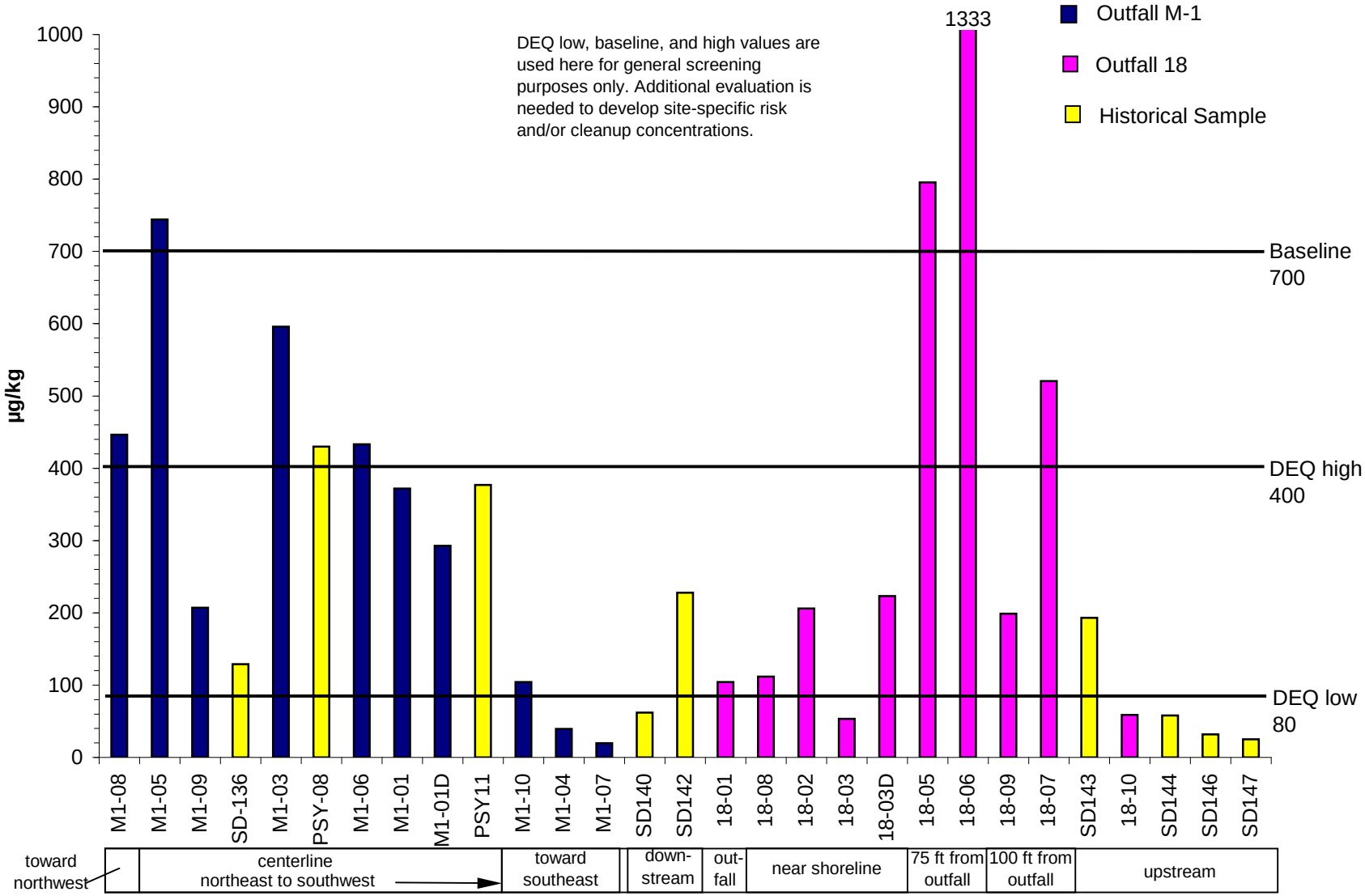


Figure 4-2. Total PCB Concentrations in Sediment



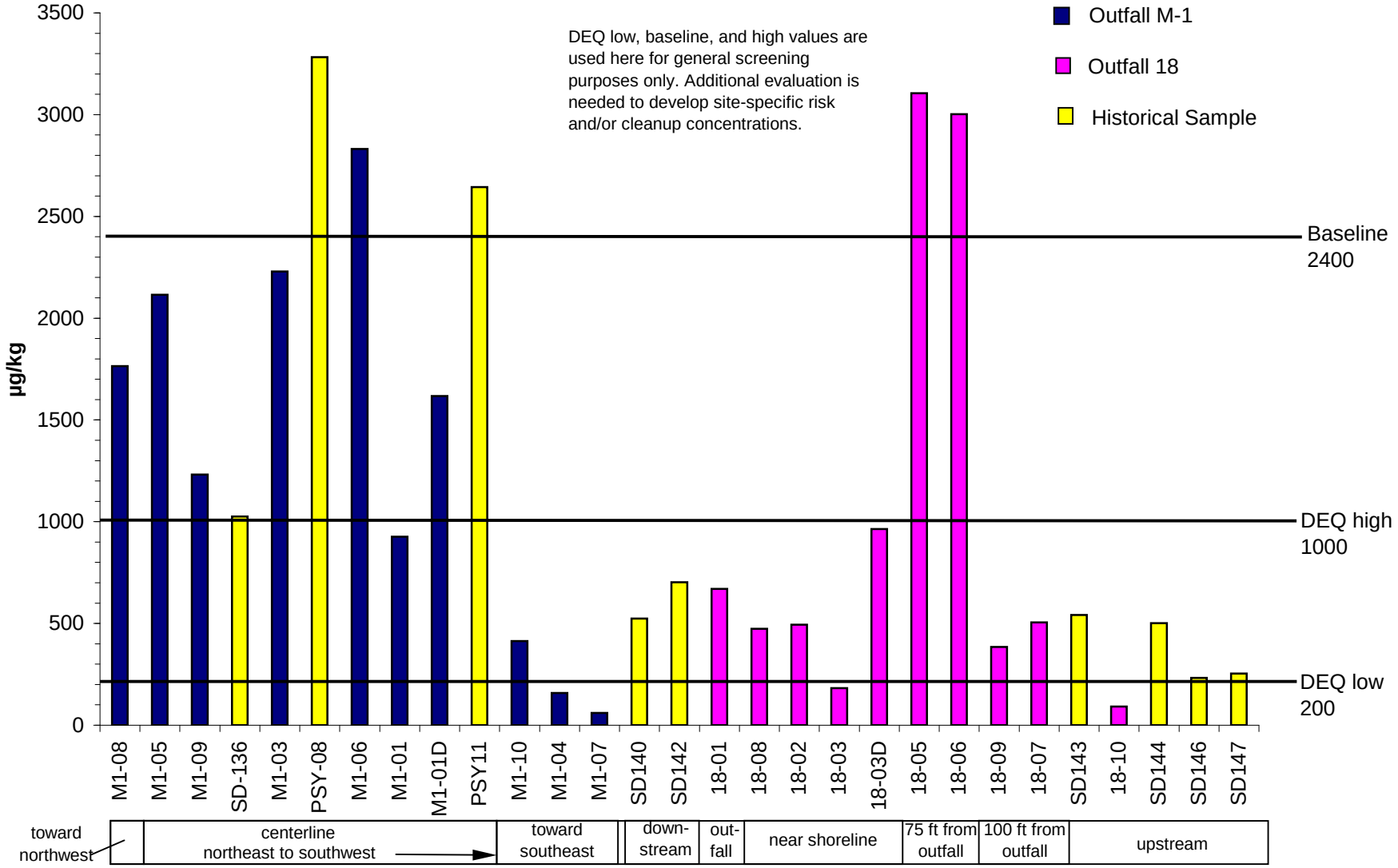
PDX/030430010.XLS

Figure 4-3. Total LPAH Concentrations in Sediment



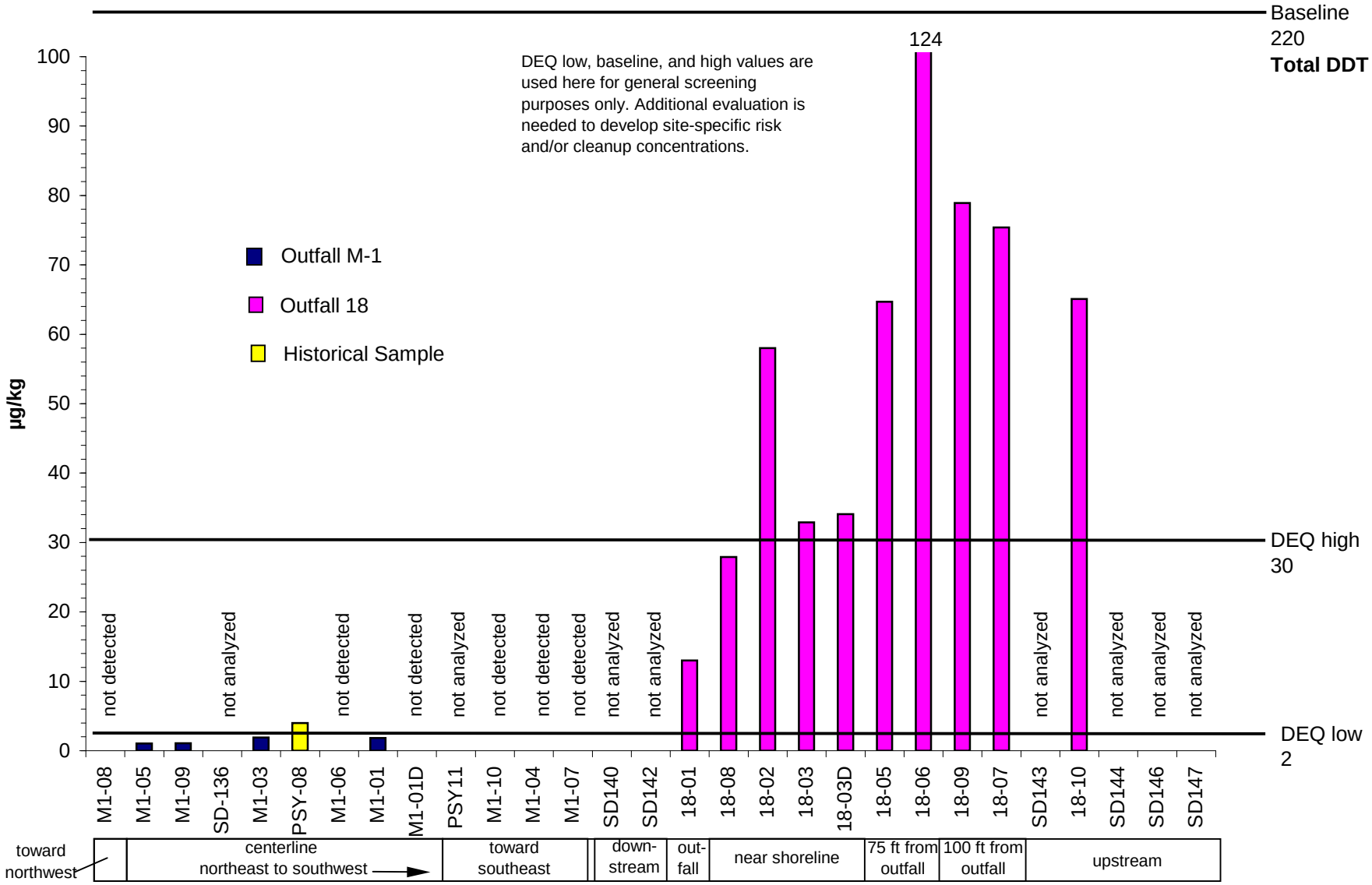
PDX/030430010.XLS

Figure 4-4. Total HPAH Concentrations in Sediment



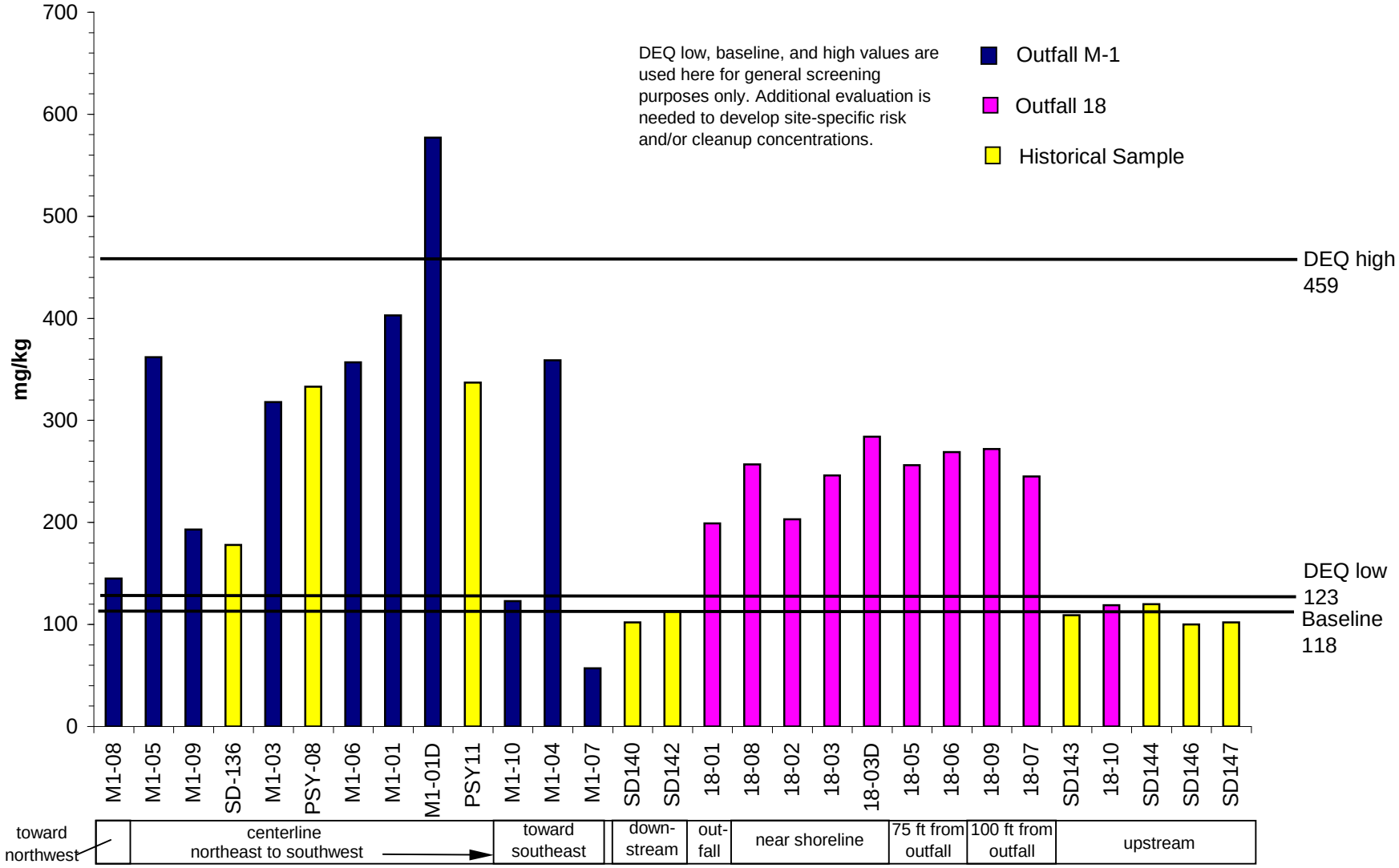
PDX/030430010.XLS

Figure 4-5. 4,4'-DDE Concentrations in Sediment



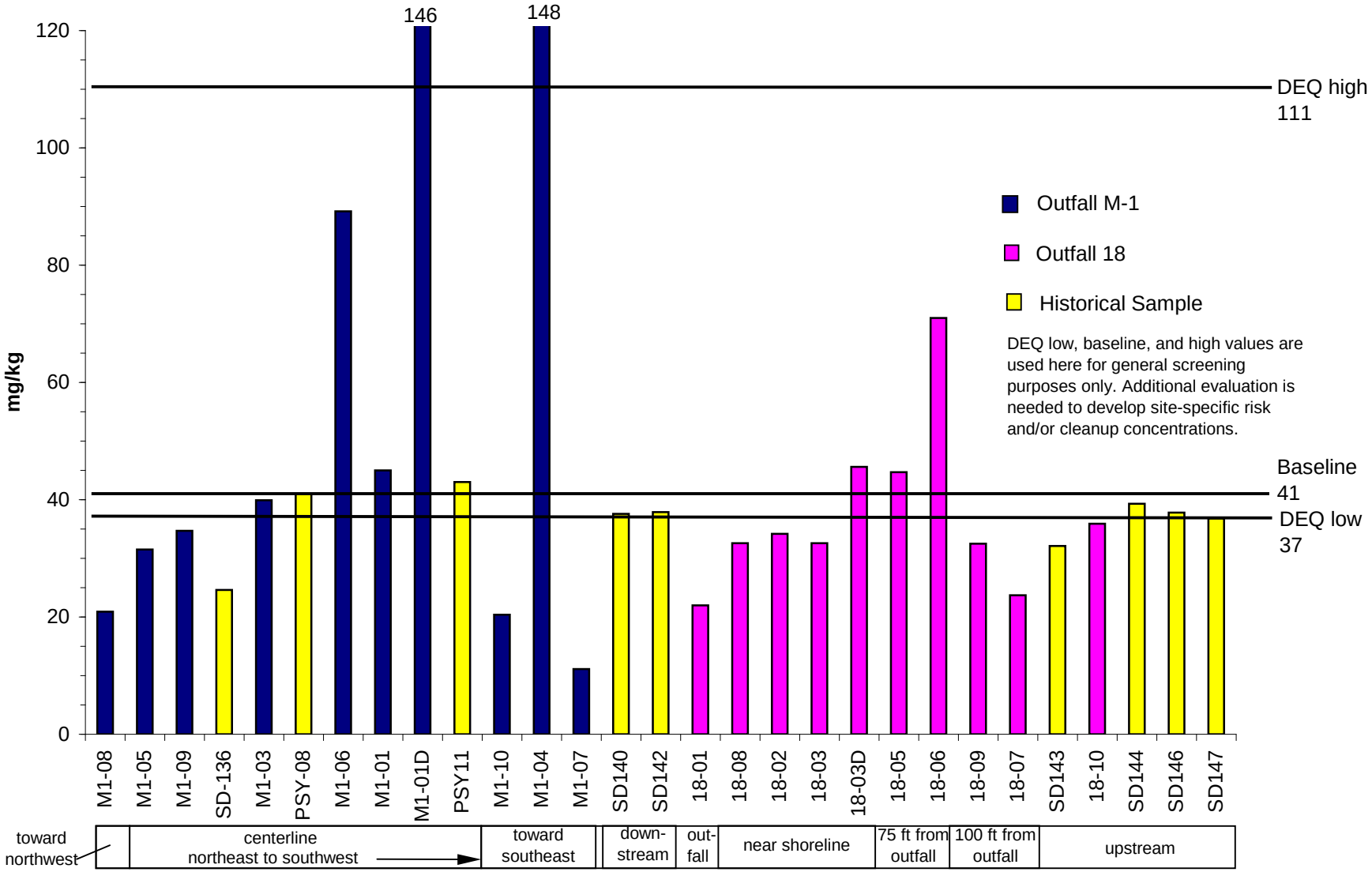
PDX/030430010.XLS

Figure 4-6. Zinc Concentrations in Sediment



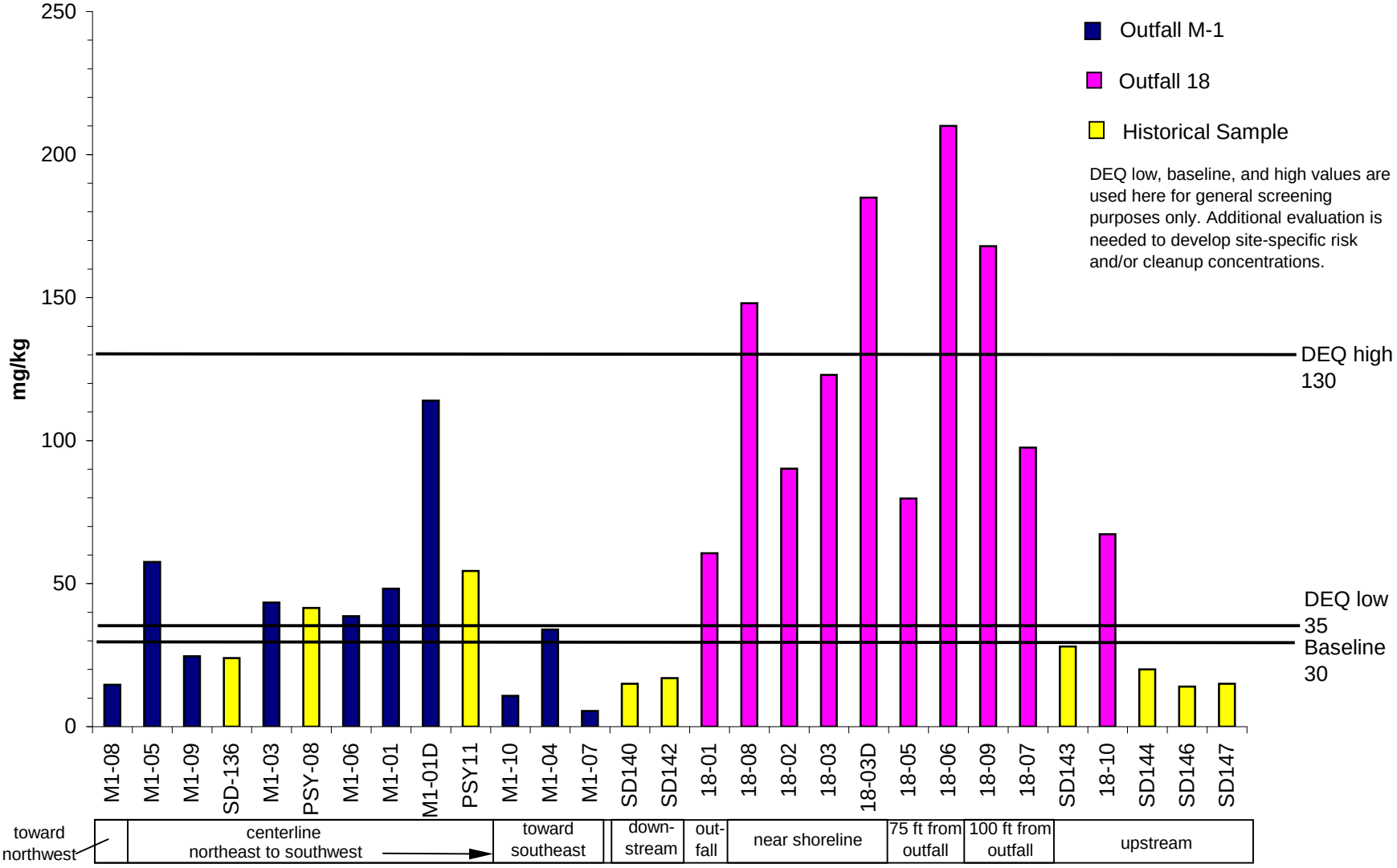
PDX/030430010.XLS

Figure 4-7. Chromium Concentrations in Sediment



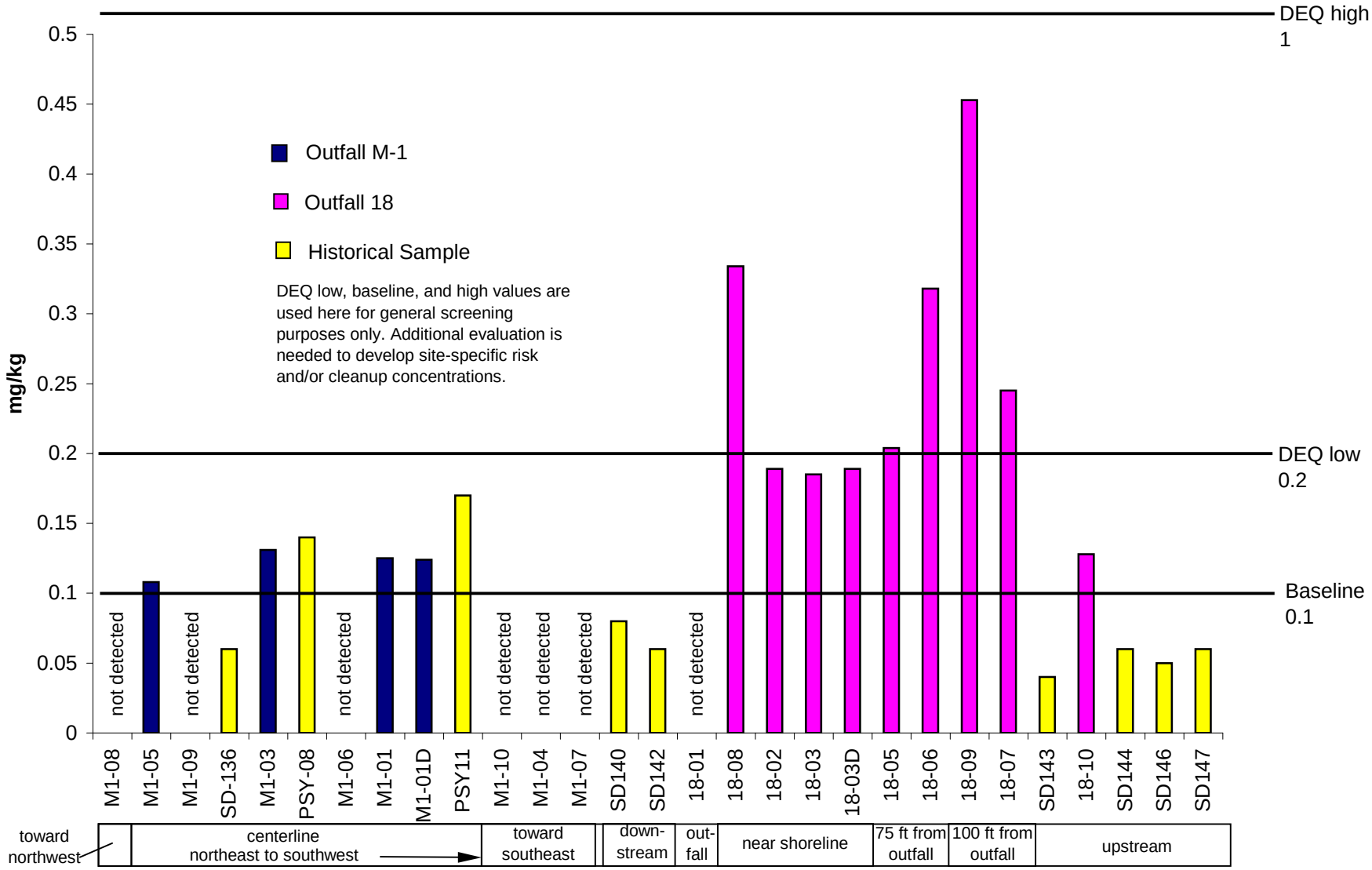
PDX/030430010.XLS

Figure 4-8. Lead Concentrations in Sediment



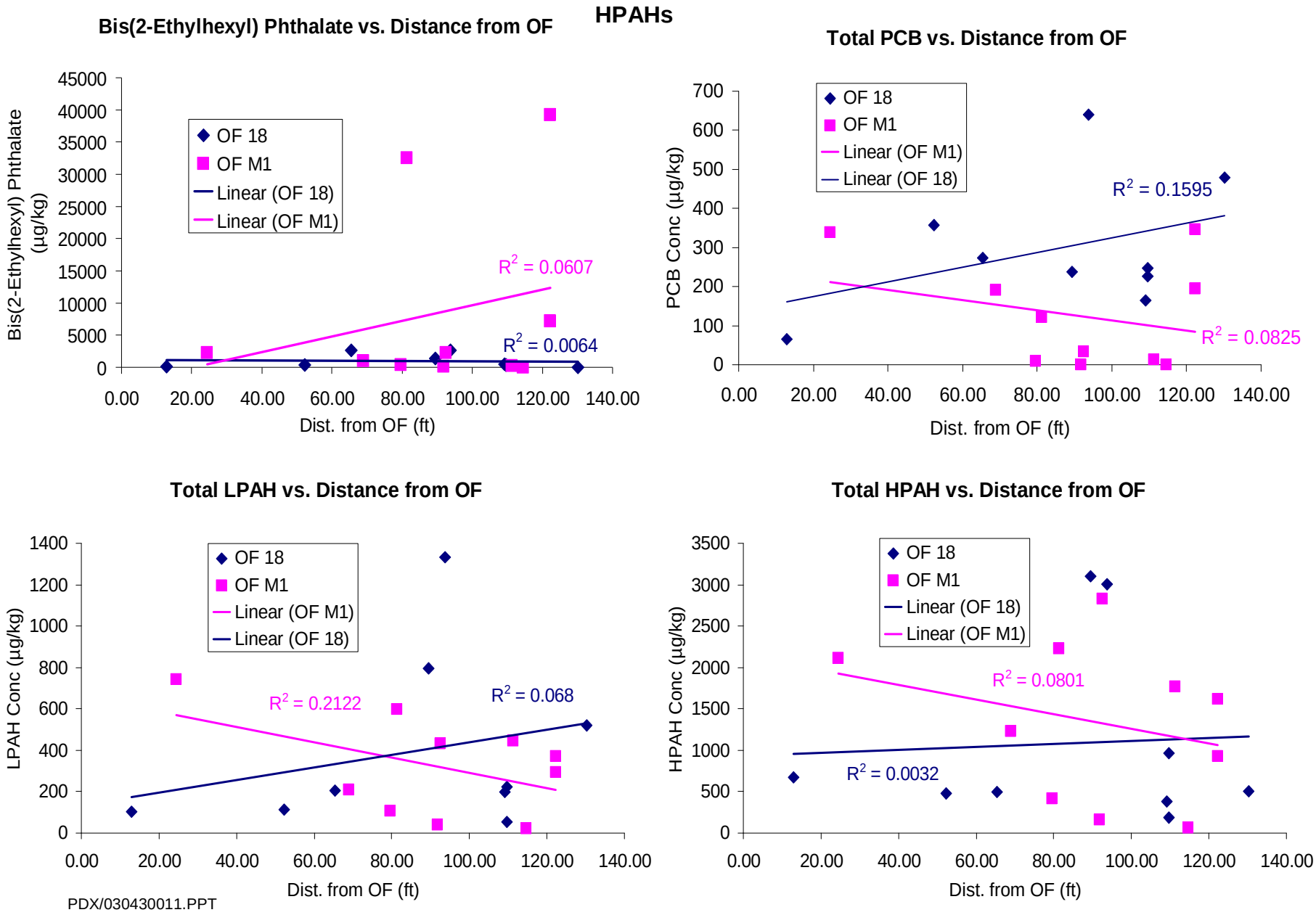
PDX/030430010.XLS

Figure 4-9. Mercury Concentrations in Sediment



PDX/030430010.XLS

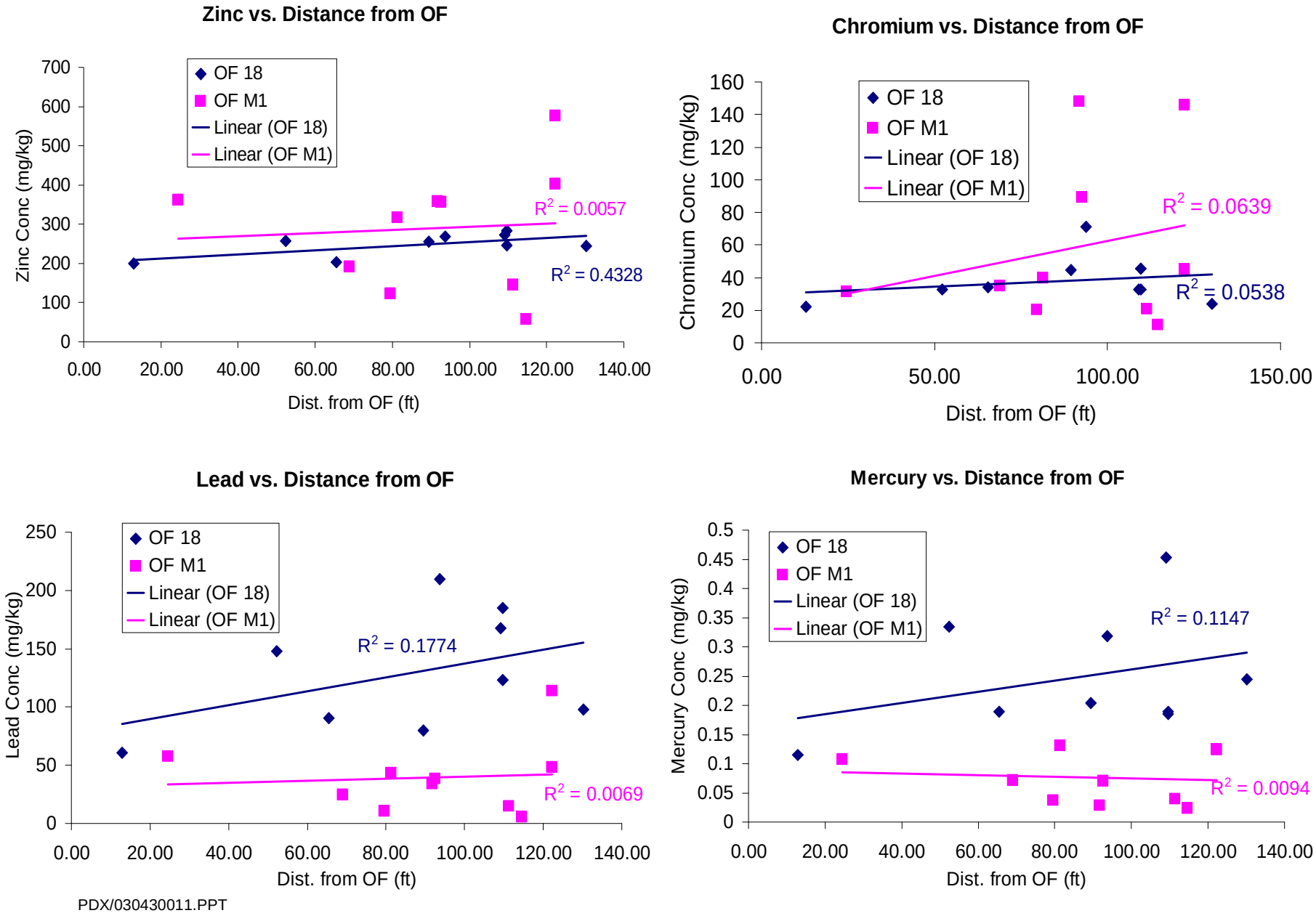
Figure 4-10. Concentrations versus Radial Distance from Outfall Correlations for Bis(2-ethylhexyl) Phthalate, PCBs, LPAHs, and HPAHs



PDX/030430011.PPT

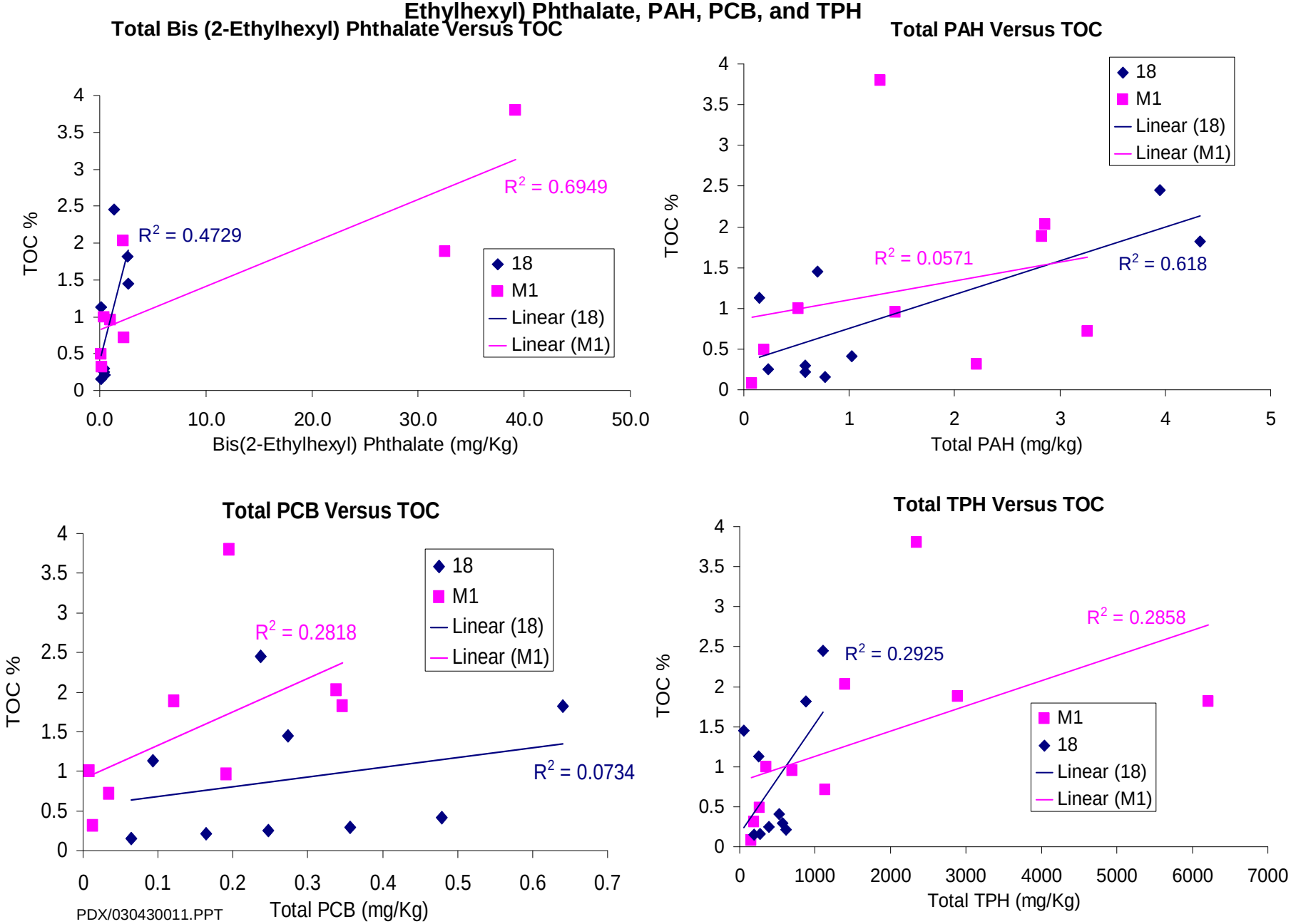
Figure 4-11. Concentrations versus Radial Distance from Outfall

Correlations for Zinc, Chromium, Lead, and Mercury



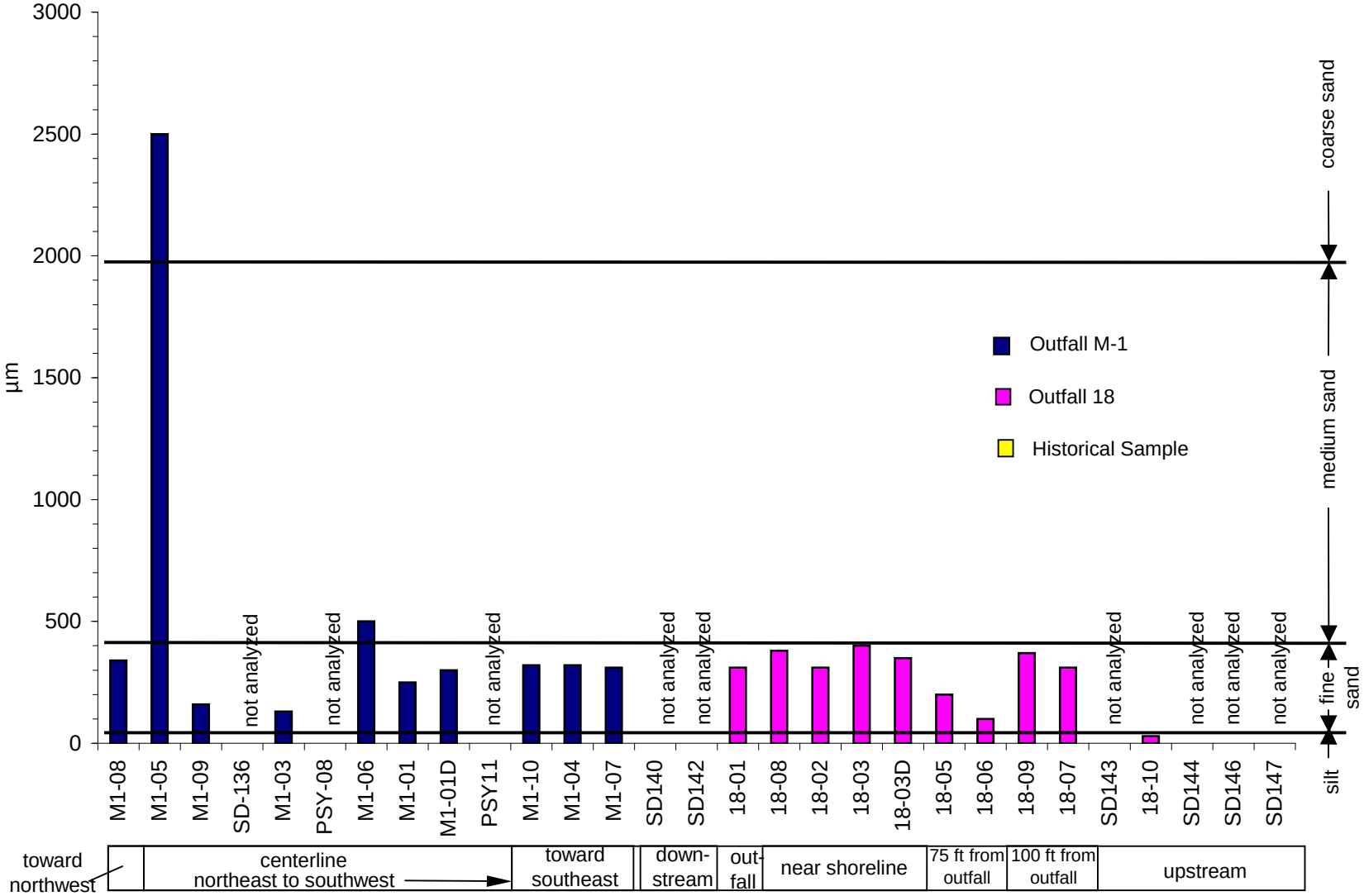
PDX/030430011.PPT

Figure 4-12. Concentrations of TOC Compared with Bis (2-Ethylhexyl) Phthalate, PAH, PCB, and TPH



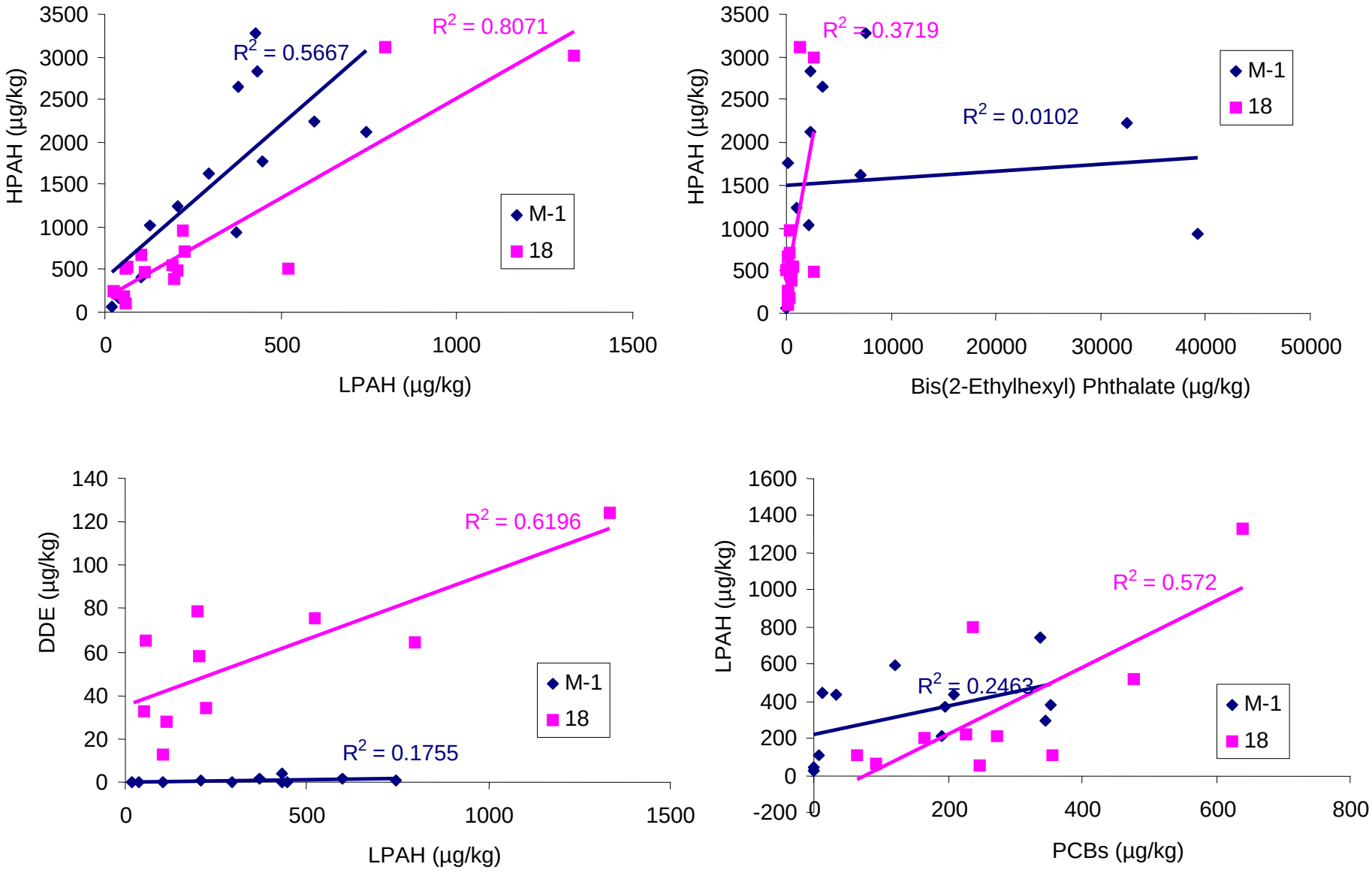
PDX/030430011.PPT

Figure 4-13. Sediment Particle Size (D_{50}) Distributions



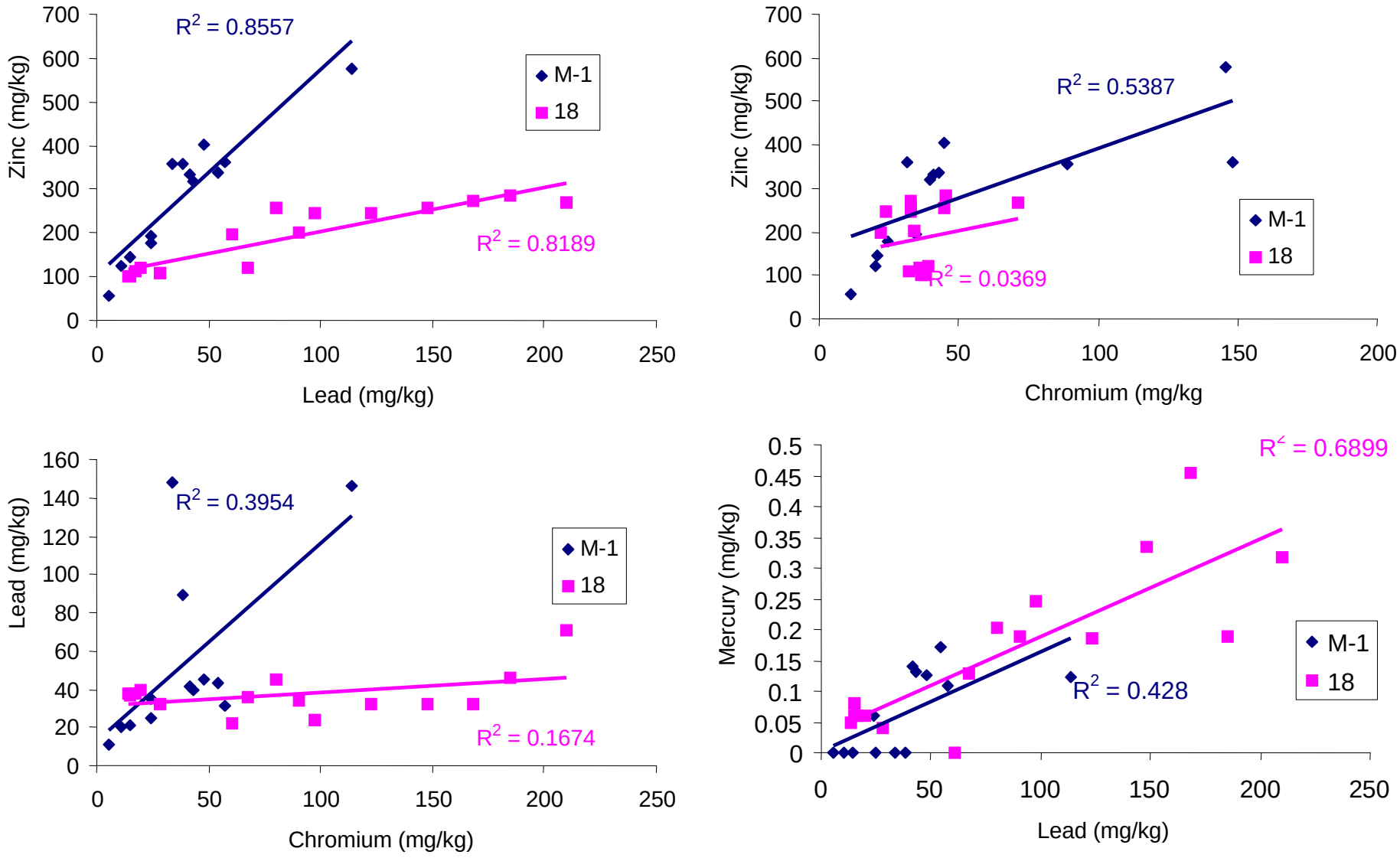
PDX/030430010.XLS

Figure 4-14. Co-Occurrence Plots for Organics



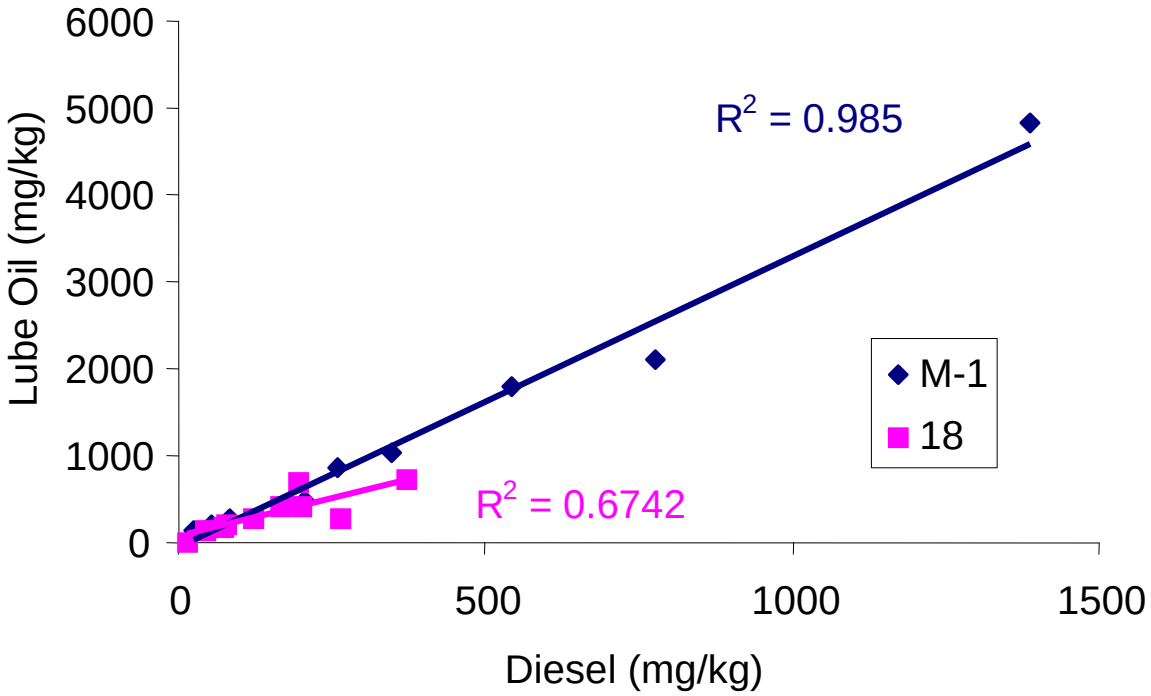
PDX/030430011.PPT

Figure 4-15. Co-Occurrence Plots for Metals



PDX/030430011.PPT

Figure 4-16. Co-Occurrence Plots for Petroleum Hydrocarbons



SECTION 5

Recommendations for Phase 2 Work Planning

This section presents recommendations for Phase 2 work planning actions based on findings from Phase I efforts to identify chemicals of interest and conduct basin assessment activities.

5.1 Summary of Phase 1 Actions

The purpose of the Outfall 18 Source Control Pilot Project is to obtain information regarding sediment quality around Outfall 18 and simultaneously obtain information about land use and ownership within the Outfall 18 basin. This approach is intended to efficiently identify any chemicals of interest in nearshore sediments that may be associated with Outfall 18 while also examining available records, permits, and existing documentation regarding potential releases of chemicals of interest into the basin drainage system.

Basin assessment activities were conducted to further characterize the Outfall 18 drainage area. The assessment consisted of the following activities, which are described in greater detail in Section 3:

- Preliminary evaluation update
- City data compilation
- National Pollutant Discharge Elimination System (NPDES) data compilation
- DEQ file reviews
- Interviews
- Facility plan reviews
- Map and photograph reviews

Chemical data from sediment sampling were compared with DEQ Low and High and Baseline benchmark comparison values, as described in Section 4. The purpose of this comparison was to identify chemicals that may be present at concentrations suggesting historical or ongoing releases to the river. Chemicals near or exceeding DEQ High Screening Level Values were identified for priority investigations. Using this approach, the following priority chemicals and compound groups were identified near Outfall 18:

- Phthalates
- PAHs
- PCBs
- DDTs and metabolites
- Lead
- Mercury

Sediment sampling data are described in detail in Section 4.

Basin assessment information was reviewed along with sediment data to determine potential upland sources for the priority chemicals and compound groups. This review included researching current and past land usage drainage information, storm drainage exposure potential, spills and releases data, historical environmental site data, and available water and sediment data. Facilities were screened for business SIC type, storm drainage exposure, and historical records for the site (records of spills or releases, compliance problems, environmental cleanup, or NPDES permit benchmark or permit limit exceedances). This screening was intended to provide preliminary focus with which to establish priority tasks in the Outfall 18 basin. A summary of upland properties within the Outfall 18 basin and the results of the various screening approaches used to evaluate them are shown in Table 5-1 (highlighted entries are site information that influences whether the site is recommended for additional evaluation in Phase 2).

On the basis of the sediment data collected for Outfall 18, there is no indication that this outfall is a conduit for significant sources of sediment contamination. However, follow-on actions will be conducted as part of the Source Control Pilot Project in order to continue the development of a process that can be used to: evaluate the impacts of discharge from the City stormwater outfalls, identify upland sources of contaminants, and guide subsequent efforts. These follow-on actions will also be conducted to determine more conclusively that Outfall 18 is not a source.

5.2 Recommended Follow-On Actions for Outfall 18

Based on the combined evaluation of basin properties and sediment data, certain properties were identified as requiring additional evaluation in Phase 2. This section identifies the types of actions, evaluation methodologies, and relevant information with which to develop recommendations for a Phase 2 action plan.

Potential follow-on actions may include:

- Conduct additional historical data review, including historical land use/owner searches and interviews with DEQ staff
- Recommend assignment of a DEQ project manager to those active ECSI or LUST sites without a current manager
- Perform DEQ information requests under authority of the Site Discovery/Site Assessment Program, when appropriate
- Review City stormwater inspection reports or report summaries for information on past stormwater issues, improvements, and activities
- Coordinate inspections by City Industrial Stormwater Program staff to determine compliance with existing discharge requirements and best management practices
- Confirm drainage pathway, and inclusion or exclusion from basin drainage, for facilities bordering the basin or for which drain connections have not been confirmed

- Review records from City Maintenance Program for sediment removals and testing, citations from DEQ for illegal discharges, sliplining,[4] backfill grouting, or other actions that may be relevant to potential contaminant pathways to the river
- Sample sediment and stormwater in selected catch basins
- Investigate potential historical releases from electrical equipment.

Table 5-1 summarizes information currently available from efforts to date. The City is reviewing the storm sewer system to identify possible manhole and catch basin locations for follow-on sediment and stormwater sampling. Sediment and stormwater sampling may be performed at specific locations to further delineate potential upland sources. Based on information derived from the existing storm sewer system review, a site-specific work plan will be developed outlining future sampling activities.

5.3 Phase 2 Priorities

As the Outfall 18 Source Control Pilot Project progresses, it will become increasingly important for the City and DEQ to coordinate activities, share timely data, and collaborate on planning and implementation of actions within the basin. These actions should be coordinated with EPA to ensure that all agencies have a complete and working knowledge of current information, strategies, and activities.

Phase 2 activities should include early implementation of all programmatic source control measures, including site inspections, technical assistance visits, and information collection. These and other activities should be planned to allow higher priority sites to be addressed first. Priority sites should include ECSI sites (of which there are currently 13), sites associated with priority compounds of interest, and sites flagged by one or more of the screening tools described in Section 3 and summarized in Table 5-1, or identified by one or more of the follow-on actions listed in Section 5.2.

It will be important for the City and BES to coordinate areas of responsibilities, schedules, and regulatory authorities in planning and executing Phase 2 work. It will also be important to establish mechanisms for ensuring that data and information are shared to the extent practical on a timely basis.

Results of the Phase 2 effort will be used to develop and augment the scopes of work related to the Pilot Project outfalls and other City outfalls.

[4] Sliplining is the insertion of a new pipe inside an existing pipe structure.

TABLE 5-1
Potential Upland Sources for Outfall 18
Source Control Pilot Project
Status as of June 2003

RNO	Business Name	Address	Land Use	SIC Number	SIC TYPE	Business Type	Drainage	Permit Number	Spills/Releases (BES, DEQ, and SFM)[1]	Storm Drainage Exposure[2]	Notes	Chemicals/ Compound Groups	DEQ TA Sites
R941300320	ABCO Sanitation	3333 NW St. Helens Rd.	IND	5521/7699*	Motor Vehicle Dealers (Used Only)/ Repair Services, NEC	Waste processor (once the facility is built)	MS4 - No connections yet			NA	This facility is not built yet. They have building plans submitted but the property is pretty much undeveloped at this time.		No
R941300400	FD Thomas Inc.		IND	1721	Painting and Paper Hanging	Painting Contractor	MS4 - Not verified			Yes	Site has not been inspected.	PAHs, Phthalates, Metals	No
R941300400	Hemphill Oil Co.[3] (No longer at site; new unknown tenant)		IND	1710*/1711*/1730*/5170*/ 5172*/5983*	Plumbing Heating Air Conditioning, Plumbing Heating Air Conditioning, Electrical Work, Petroleum and Petroleum Products, Petroleum and Petroleum Products Wholesalers Except Bulk Stations and Terminals, Fuel Oil Dealers	Oil distributor	MS4			Yes	LUST #26-89-0165 listed for Hemphill, diesel contaminated groundwater, cleanup started 8/4/89, no cleanup end date listed. Inspected in '97. Ackerley Communications of NW & CDT, LLC is the new property owner.	PAHs	Yes
R941290710	ABF Freight Systems	3333 NW 35th Ave.	IND	4213*	Trucking, Except Local	Transportation	MS4	1200Z		Yes	FTL/Bay News occupied this site until Fall of 2000. Prior to that, Pfizer Distributing Company was located at this address. Pfizer was a TRI Facility (EPA ID ORD027747518). This address is also listed as an **active** environmental cleanup site (ANRFS Holdings Inc., **ECSI 1820**, SVOCs are the COI). LUST# 26-91-0063 listed for ANRFS at this address, diesel contaminated soil and groundwater, cleanup ended 9/3/92. Listed as ABF Freight Systems Inc. on DEQ TA List. Between 1996 and 2000 (Bay News) exceeded NPDES benchmarks multiple times for multiple constituents. From 2000 to present (ABF Freight) exceeded NPDES benchmarks multiple times for oil and grease. Inspected annually since 1995. FTL owns the property.	Metals, PAHs	Yes
	IJB Portland Terminal Inc.[3] (No longer at site; new unknown tenant)		IND	4011/4013	Railroads Line-Haul Operating, Railroad Switching and Terminal Establishments	Transportation	MS4			Yes		Metals, PAHs	No
	FTL Freightlines		IND	4214, 5192	Local Trucking with Storage, Books Periodicals and Newspapers	Transportation	MS4			Yes			
	JLE Enterprises[3] (No longer at site; new unknown tenant)		IND	7542	Carwashes	Truck washing	MS4 - Not verified			No		Metals, PAHs	No
	MRP Environmental		IND	4953	Refuse Systems	Environmental Cleanup Commerce	MS4 - Not verified			Yes			No
	Pronto Distribution[3] (No longer at site; new unknown tenant)		IND	4789	Transportation Services, NEC	Transportation/ distribution	MS4 - Not verified			Yes		Metals, PAHs	No
	Trimac/Rentway Truck Leasing[3] (No longer at site; new unknown tenant)		IND	4212/4213/7359/7533	Local Trucking without Storage, Trucking Except Local, Equipment Rental and Leasing NEC, Automotive Exhaust System Repair Shops	Transportation	MS4 - Not verified			Yes		Metals, PAHs	No
R941200160	Ackroyd Photography Inc.	3840 NW Yeon Ave.	IND	7221	Photographic Studios, Portrait	Photo processor	MS4 - Not verified			No	Site has not been inspected.		Yes
R94291400	Active Equipment Co.[3] (No longer at site)	3103 NW St. Helens Rd.	IND	5082	Construction and Mining (Except Petroleum) Machinery and Equipment	Distribution	MS4			No	Same address as O&S Supply Co. Site has not been inspected.		Yes
	O&S Supply Co.		IND	5085*	Industrial Supplies—Wholesale	Distribution	MS4			No	Inspected in 1995 and 1999.		No
R941190361	American Steel Inc.	4033 NW Yeon Ave.	IND	5051*	Metals Service Center/ OFC—Wholesale	Metal fabrication	MS4			Yes	Inspected in 1995. No exposure at the time.	Metals	Yes

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Potential Upland Sources for Outfall 18
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RNO	Business Name	Address	Land Use	SIC Number	SIC TYPE	Business Type	Drainage	Permit Number	Spills/Releases (BES, DEQ, and SFM)[1]	Storm Drainage Exposure[2]	Notes	Chemicals/ Compound Groups	DEQ TA Sites
R941291370	Ashland Chemical Inc.	3322 NW 35th Ave.	IND	4213*/5162*/5169*/2865*	Trucking Except Local, Plastics Materials and Basic Forms and Shapes, Chemicals and Allied Products NEC, Cyclic Organic Crudes and Intermediates and Organic Dyes and Pigments	Chemical distributor	MS4			No	Formerly known as Ashland Distribution Company, TRI Facility, EPA ID ORD115485989. This address also has a ECSI site listed for Hill Investment Co., **ECSI 1076** (no DEQ PM assigned), SVOCs are the COI. LUST #26-89-0280 listed for a Hill Investment/Nabisco Warehouse at this location. Diesel contaminated soil. Cleanup ended 9/18/00. Inspected in 1995 and 2000.	PAHs, Phthalates	No
							Sanitary	400.026					
R941190130	Bay News Inc. (doing business as FTL)	4285 NW Yeon Ave.	IND	4212*/4213*/5192*	Local Trucking without Storage, Trucking Except Local, Books Periodicals and Newspapers	Transportation	MS4	1200Z	SFMHS list 1988 Aluminum chloride.	Yes	LUST# 26-89-0176 listed for Silver Eagle Trucking at this address. No contaminant information available. Cleanup ended 8/6/90. Between 1996 and 2000 (ABF Freight) exceeded NPDES benchmarks multiple times for multiple constituents. From 2000 to present (Bay News/FTL) exceeded NPDES benchmarks multiple times for multiple constituents. Inspected annually since 1995.	Metals, PAHs	Yes
	FTL Inc. aka Bay News		IND	4214	Local Trucking with Storage	Transportation	MS4			Yes		Metals, PAHs	Yes
R697400250	Becker Trucking[3] (No longer at site; McKinney's Son is the new tenant)	3641 NW St. Helens Rd.	IND	4212*/4213*	Local Trucking without Storage, Trucking Except Local	Transportation	MS4		SFMHS list 1991, pigment.	Yes	LUST#26-90-0379 listed for Courtesy Trucking at this location. No contaminant information available. Cleanup ended 12/13/90. Becker Trucking and American Truckline Inc. listed on DEQ TA list at this address. Inspected in 1995, 1999, and 2001. Closed in 2002. Truck Terminals is the new property owner.	Metals, PAHs	Yes
	Pro Lube		IND	7699*	Repair Services, NEC	Vehicle repair	MS4			Yes	LUST# 26-90-0379 listed for Courtesy Trucking at this location. No contaminant information available. Cleanup ended 12/13/90. Inspected in 1995. Recommended BMPs	Metals, PAHs	No
	T W Express Inc.[3](No longer at site; new unknown tenant)		IND	4731	Arrangement of Transportation of Freight and Cargo	Transportation	MS4			Yes	LUST# 26-90-0379 listed for Courtesy Trucking at this location. No contaminant information available. Cleanup ended 12/13/90. Site has not been inspected. Truck Terminal is the property owner.	Metals, PAHs	No
R941291620	B&I Furnishings Inc.	3621 NW Yeon Ave.	IND	5021	Furniture	Distribution	MS4			No	Unable to verify drainage, either Outfall 17 and/or 18. Site has not been inspected.		No
R697400490	Boise Workspaces (Formerly known as Baxter & Flaming Industries)	3717 NW St. Helens Rd.	IND	3442*/3449*	Metal Doors, Sash, Frames, Molding, and Trim Manufacturing/ Metal Doors, Sash, Frames, Molding, and Trim Manufacturing	Manufacturing	MS4	No exposure certification 11/07/00		No	Inspected in 1995 and 2000. Issued a No Exposure Certification in 2000.	Metals	Yes
R941200040 R941201230 R941190010	Burlington Northern Santa Fe (BNSF) Railroad	3930 NW Yeon Ave.	IND	4011*	Railroads, Line-Haul Operating	Transportation	MS4	1200Z	SFMHS list 1989 unknown chemical and pine oil, 1990 phenolic resin, 1997 transmission oil and chromic acid/chromium trioxide, 1998 paint related materials. Oil spill (leak) reported to DEQ 5/11/1997.	Yes	**Active** environmental cleanup site, **ECSI 100**, PAHs are the COI. LUST# 26-91-0441 listed for Portland Railroad Company. Diesel contaminated soil, cleanup ended 8/15/02. Exceeded NPDES benchmarks a few times for multiple constituents. Inspected annually since 1996.	Metals, PAHs	Yes
	Pacific Rail Services		VAC	4789	Transportation Services, NEC	Transportation	MS4 - Not verified			Yes		Metals, PAHs	No

TABLE 5-1
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RNO	Business Name	Address	Land Use	SIC Number	SIC TYPE	Business Type	Drainage	Permit Number	Spills/Releases (BES, DEQ, and SFM)[1]	Storm Drainage Exposure[2]	Notes	Chemicals/ Compound Groups	DEQ TA Sites
R941290570	Calpac Container Northwest	3599 NW Yeon Ave.	IND	5113	Industrial and Personal Service Paper	Distribution	MS4			No	Same address as Tricor Packaging (3501-3599 Address). Drainage to both Outfall 17 and Outfall 18. Site has not been inspected.		No
	Tricor Packaging		IND	5113	Industrial and Personal Service Paper	Distribution	MS4 - Not verified			No	LUST# 26-90-0126 list for Coca Cola of Oregon at this address. No contaminant information. Cleanup ended 9/6/91. Site has not been inspected.		No
R941290110	Carson Oil Co. Inc.	3125 NW 35th Ave.	IND	5983/5171*/7538*	Fuel Oil Dealers/ Petroleum Bulk Stations and Terminals/ General Automotive Repair Shops	Oil distributor	MS4	1200Z	Pollution complaint (records maintained by BES) 4/26/02 rain water that was collected in drums and poured out along with drum residue.	Yes	LUST # 26-91-0235, no contaminant information listed, cleanup started 10/1/98, no cleanup end date listed. LUST #26-97-0451, bunker fuel and diesel contaminated soil, cleanup ended 6/5/00. Exceeded NPDES benchmarks a multiple times for multiple constituents. Cleanout of City storm sewer (April 2001) near property indicated elevated levels of heavy oil range hydrocarbons, PCBs, and lead. Inspected annually since 1995. Prior to 1996(?) all stormwater was discharged to sanitary.	PAHs	Yes
							Sanitary	400.033 - not active					
R941190190	Chapel Steel	4200 NW Yeon Ave.	IND	5051	Metals Service Center/OFC—Wholesale	Distribution	MS4			Yes	Previously occupied by High Reach and Service Steel. High Reach/Service Steel inspected 1996 and 1997. Exposure of activities. Chapel steel has not been inspected.	Metals	Yes
	High Reach Inc.[3] (No longer at site)		IND	7359*	Equipment Rental and Leasing, NEC	Equipment rental	MS4 (partial)		Pollution complaint (records maintained by BES) 10/13/97 regarding equipment washing and runoff to the storm sewer. Pollution complaint (records maintained by BES) 2/9/00 regarding discharge of washwater to storm sewer.	Yes	LUST# 26-93-0149 listed for EGW Machinery, Inc. at this address. Diesel contaminated soil, cleanup ended 9/30/96. Some sheet flow to the street discharges to Outfall 18; otherwise discharges primarily to Outfall 19. High Reach/Service Steel inspected 1996 and 1997. Exposure of activities. American Industries is the property owner.	PAHs	No
	Service Steel Inc.[3] (No longer at site)		IND	3499*/5051*	Fabricated Metal Products NEC, Metals Service Center/OFC—Wholesale	Metal fabrication	MS4			Yes	LUST# 26-93-0149 listed for EGW Machinery, Inc. at this address. Diesel contaminated soil, cleanup ended 9/30/96.	Metals, PAHs	Yes

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R697400830	Christensen Oil	3821 NW St. Helens Rd.	IND	2992*/5170*/5171*	Petroleum Lubricating Oil and Grease Manufacturing/ Petroleum and Petroleum Products/ Petroleum Bulk Stations and Terminals	Oil distributor	MS4	1200Z	Pollution complaint (records maintained by BES) 9/25/98 regarding 660+ gallons of oil released inside a containment area. No impact to sanitary sewer or storm drainage system.	Yes	**Active** environmental cleanup site, **ECSI 2426**, PAHs are the COI. LUST# 26-90-0415, solvent contaminated soil, cleanup ended 11/14/00. Exceeded NPDES benchmarks multiple times for a few constituents. DEQ expecting additional catch basin results soon. Inspected annually since 1995.	PAHs	Yes
	Western Stations[3] (No longer at site)		IND	9999	Nonclassifiable Establishments	?	MS4			No	Only Christenson Oil occupies this property.		No
R084303610	Columbia American Plating[3] (No longer at site)	3003 NW 35th Ave.	IND	3471*	Electroplating, Plating, Polishing, Anodizing, and Coloring	Metal plater	MS4	1200Z	SFMHS list 1991 hydrochloric acid.	Yes	TRI Facility, EPA ID ORD068788926. Environmental cleanup site, **ECSI 29** (no DEQ PM assigned), metals, SVOCs, and acids are the COIs. Exceeded NPDES benchmarks once (limited data available). Inspected annually since 1995. Recently shut down by SFM (5/9/03) for having site conditions that posed a "severe fire and explosion hazard".	Metals, PAHs	No
							Sanitary	413.005					
R084303350	Container Management Services (formerly Myers Container Corp.)	3000 NW St. Helens Rd.	?	3412*/5085*/7699*	Metal Shipping Barrels Drums Kegs and Pails, Industrial Supplies—Wholesale, Repair Services, NEC	Container recycler	MS4	1200Z	Oil/waste oil spill (unknown amount) reported to DEQ 6/19/2002.	Yes	This address is occupied by a TRI Facility, Container Management Services, LLC, EPA ID ORD027750654. Myers Container Corp. is listed in the LUST database, LUST# 26-93-0113. Gasoline contaminated soil. Cleanup ended in September 9/25/96. Exceeded NPDES benchmarks multiple times for multiple constituents. Cleanout of City storm sewer (April 2001) near property indicated elevated levels of heavy oil range hydrocarbons, PCBs, and lead. Inspection (April 2002) conducted by adjoining property found empty 55-gallon drums that had been labeled as having contained corrosive materials also documented reports of strong odor coming from Myers incinerator. Inspected annually since 1998.	Metals, PAHs	No
							Sanitary	414.028					
R941200160	Container Recovery Inc.	3900 NW Yeon Ave.	IND	4200/5093*	Trucking and Warehousing, Scrap and Waste Materials	Container recycler	MS4	1200Z	Pollution complaint (records maintained by BES) 6/10/00 regarding truck washing and discharges to the storm sewer.	Yes	LUST# 26-87-0030 listed for Convoy Corp. at this address. No contaminant information available. Cleanup ended 12/30/88. LUST# 26-89-0203 listed for Convoy Corp. at this address. No contaminant information available. Cleanup ended 5/17/94. Exceeded NPDES benchmarks multiple times for a few constituents. November 1999 City Inspection indicated, "significant stormwater pollution occurring.". Inspected annually since 1995.	Metals, PAHs	Yes
R347601510	Daily Journal of Commerce	2840 NW 35th Ave.	IND	2752	Commercial Printing, Lithographic	Printing & Distribution	MS4			No	Plumbing records indicate storm drainage to OF 18 & 17. Site has not been inspected.		No

TABLE 5-1
Potential Upland Sources for Outfall 18
Source Control Pilot Project
Status as of June 2003

RNO	Business Name	Address	Land Use	SIC Number	SIC TYPE	Business Type	Drainage	Permit Number	Spills/Releases (BES, DEQ, and SFM)[1]	Storm Drainage Exposure[2]	Notes	Chemicals/ Compound Groups	DEQ TA Sites
R941190700	Eastman Chemical (Formerly known as McWhorter Technologies; no longer at site)	4155 NW Yeon Ave.	VAC	2821*/2851*	Plastics Materials, Synthetic Resins, and Nonvulcanizable Elastomers/Paints, Varnishes, Lacquers, Enamels, and Allied Products	Manufacturing	MS4	100J (terminated)/ 1200Z(terminated)/ 1500A (unknown status)	SFMHS list 1986 ethyl acrylate and mineral spirits.	Yes	Formerly a TRI Facility, EPA ID ORD002277085. There is also a cleanup site listed for McWhorter Inc. at this site, **ECSI 135** (no DEQ PM assigned). LUST# 26-90-0288 for Eastman Chemical Co. at this site. No contaminant information available, no cleanup date. LUST# 26-90-0389 for McWhorter, Inc. No contaminant information available, cleanup ended 1/15/91. Exceeded NPDES benchmarks for zinc once. Inspected annually 1995 – 2000.	PAHs, Phthalates, Metals	No
							Sanitary	414.002 - closed					
R347600580	Electrical Pacific Agencies[3] (No longer at site)	2720 NW 35th Ave.	IND	5063	Electrical Apparatus and Equipment Wiring, and Wood Panels	Distribution	MS4			No	No plumbing records available, unable to verify discharge outfall either 17 or 18. Site has not been inspected.		No
R941200090	Equilon Enterprises, LLC	4500 NW Front Ave.	IND				Facility is a dock - overwater activities		Oil/gasoline spill (2 gallons) reported to DEQ 12/10/1996. Oil/diesel spill (25 gallons) reported to DEQ 3/23/1998.	Yes	**Active** environmental cleanup site, **ECSI 2117**, SVOCs are the COI. Site has not been inspected.	PAHs	No
R941190330	Equilon Enterprises, LLC	3800 NW St. Helens Rd.	IND	2911*/5171*/5172*	Petroleum Refining, Petroleum Bulk Stations and Terminals, Petroleum and Petroleum Products Wholesalers Except Bulk Stations and Terminals	Petroleum terminal	MS4	1200T (not active)/ 1300J/ 1500A	SFMHS 1991 gasoline. Oil/gasoline spill (50 gallons) reported to DEQ 8/5/1996. Oil/gasoline spill (82 gallons) reported to DEQ 12/14/1996. Oil/gasoline spill (75 gallons) reported to DEQ 2/4/1997. Oil/diesel spill (175 gallons) reported to DEQ, 6/12/1999.	Yes	TRI Facility, EPA ID ORD000641639. This address is also associated with the **active** Texaco Portland Terminal environmental cleanup site (**ECSI 169**). In addition, there is a site called Texaco Product Pipeline that is connected with this site. The Texaco Product Terminal is an **active** environmental cleanup site (**ECSI 2117**). LUST# 26-89-0323, no contaminant information available, cleanup ended 11/9/90. Exceeded NPDES permit limit a few times for oil and grease. Inspected annually since 1995.	Metals, PAHs	No
							Sanitary						
R941190290	Food Sak	4325 NW Yeon Ave.	IND	5411		Grocery Stores	MS4			No	Unable to verify drainage, either Outfall 18 and/or 19. Site has not been inspected.		No
R941300530	G-S Industrial Services Inc.	3530 NW St. Helens Rd.	IND	5085*	Industrial Supplies—Wholesale	Office/warehouse	MS4			No	Listed as G/S Associates Inc. on DEQ TA list. Inspected in 1995. No exposure.		Yes
R941200500	Gunderson Inc.	4350 NW Front Ave.	IND	3321*/3743*	Gray and Ductile Iron Foundries, Railroad Equipment	Manufacturing	MS4 (partial)	1200Z	Pollution complaint (records maintained by BES) 2/14/97 regarding strong gasoline odor in bathrooms. Pollution complaint (records maintained by BES) 3/9/01 250 gallons of paint spilled approximately 100ft from river. Pollution complaint (records maintained by BES) 11/29/01 another report of strong gasoline smell, this time in a building near outfall 18. Solvent spill (2 gallons) reported to DEQ 2/26/2001. Paint spill (250 gallons) reported to DEQ 3/9/2001.	Yes	TRI Facility, EPA ID 009027368 and ORD131974057. **Active** environmental cleanup site, **ECSI 1155**, SVOCs, metals, catch basins, and TPH are the COIs). LUST# 26-91-0064, no contaminant information available, cleanup ended 8/6/96. Exceeded NPDES benchmarks multiple times for multiple constituents. During a 1997 City stormwater inspection significant site improvements/changes were recommended. DEQ expecting additional catch basin/outfall results soon. Inspected annually since 1995.	PAHs, Phthalates, Metals, PCBs	No
							WP-131 to WP-150	1200Z					

TABLE 5-1
Potential Upland Sources for Outfall 18
Source Control Pilot Project
Status as of June 2003

RNO	Business Name	Address	Land Use	SIC Number	SIC TYPE	Business Type	Drainage	Permit Number	Spills/Releases (BES, DEQ, and SFM)[1]	Storm Drainage Exposure[2]	Notes	Chemicals/ Compound Groups	DEQ TA Sites
R649704660	Hawthorn Inn & Suites	4319 NW Yeon Ave.	IND	5812/7011	Eating Places, Hotels and Motels	Hotel	MS4 - Not verified		SFMHS list 2000, motor oil.	No	Site has not been inspected.	PAHs	No
R941291170	I Harris aka Harris Transportation Co.	3077 NW St. Helens Rd.	IND	4213	Trucking, Except Local	Transportation/ offices	MS4 - Not verified			Yes	Listed as Harris Transportation Co. LLC on DEQ TA list. Site has not been inspected.	Metals, PAHs	Yes
R941290340	Industrial Craters & Packers	3074 NW St. Helens Rd.	IND	4783	Packing and Crating	Manufacturing	MS4		Abandoned 55-gallon drum (labeled 30% H_2O_2) reported to DEQ 1/17/2000.	No	Magnus Co. was formerly located at this address. Magnus was a environmental cleanup site, **ECSI 69** (no DEQ PM assigned), metals are the COI. LUST # 26-97-0599 identified for this address. Heating oil and bunker fuel contaminated soil. Cleanup started 4/14/99. No cleanup end date listed. Site has not been inspected.	Metals	Yes
R941300380	Industrial Export Co.	3340 NW St. Helens Rd.	IND	5051	Metals Service Center/OFC—Wholesale	Distribution	MS4			Yes	LUST# 26-92-0247. Gasoline contaminated soil, cleanup ended 10/30/96. Listed as INDEX on DEQ TA list. Site has not been inspected.	Metals, PAHs	Yes
R697400010	Industrial Valve of Oregon	3615 NW St. Helens Rd.	IND	5085	Industrial Supplies—Wholesale	Sales/repair	MS4			No	Site has not been inspected.		Yes
R941190200	McDowell Welding & Pipe Fitting[3] (No longer at site)	4000 NW St. Helens Rd.	IND	3441*/3559*	Fabricated Structural Metal Products, Special Industry Machinery NEC	Metal fabrication	MS4	1200L (No active permit for this facility)	Pollution complaint (records maintained by BES) 4/12/01 regarding the discharge of water from a catchbasin directly to a street. Sump pump not working.	Yes	LUST# 26-94-0001 Listed for La Grande Steel Corp. at this address. Diesel and gasoline contaminated soil, cleanup ended 12/1/95. No NPDES monitoring data available.	Metals, PAHs	No
	USNR Portland		IND	5085*	Industrial Supplies—Wholesale	Distribution	MS4			No	Site has not been inspected.		No
R941190190	Michelin Tire Corp.	4240 NW Yeon Ave.		5014	Tires and Tubes	Distribution	MS4,Drywell			No	Verified connection to Outfall 19, unable to verify connections to Outfall 18 through plumbing records. Site has not been inspected.		Yes
R941300440	Northwestern Industrial Maintenance	3509 NW St. Helens Rd.	IND	1799	Special Trade Contractors, NEC	Equipment repair	MS4 - Not verified			Yes	Site has not been inspected.	PAHs	No
R084303300	Oregon Handling Equipment Co.	2949 NW St. Helens Rd.	IND	3537*/5046*/5084*	Industrial Trucks, Tractors, Trailers, and Stackers, Commercial Equipment, NEC, Wholesale-Industrial Machinery & Equipment	Offices	MS4			No	Inspected in 1995.		Yes
R941200150	Owens Corning	3750 NW Yeon Ave.	IND	2952*/2992*	Asphalt Felts and Coatings, Petroleum Lubricating Oil and Grease Manufacturing	Manufacturing	MS4/drywells	100J/ 1200Z/ 1300J/ 1500A (terminated)/ 500J		Yes	Exceeded NPDES permit limits a few times for a few constituents. According to the 1999 SWPCP drainage also goes to 3 dry wells. Inspected annually since 1995.	Metals, PAHs	No
							Sanitary	400.092					
R941290800	Owens Corning/Trumbull Division	3605 NW 35th Ave.	IND	2952	Asphalt Felts and Coatings	Distribution	MS4			Yes	Trumbull Asphalt was formerly located at this site. Trumbull Asphalt is also listed as an **active** environmental cleanup site, **ECSI 1160**, PAHs are the COI. This site (3605 NW 35th Ave) is essentially the same site as the main manufacturing plant site (3750 NW Yeon).	Metals, PAHs, TPH	Yes

TABLE 5-1
Potential Upland Sources for Outfall 18
Source Control Pilot Project
Status as of June 2003

RNO	Business Name	Address	Land Use	SIC Number	SIC TYPE	Business Type	Drainage	Permit Number	Spills/Releases (BES, DEQ, and SFM)[1]	Storm Drainage Exposure[2]	Notes	Chemicals/ Compound Groups	DEQ TA Sites
R347601330	Pacific Machinery & Tool Steel	3445 NW Luzan St.	IND	5051	Metals Service Center/OFC—Wholesale	Steel Distribution	Drywells, Possible connection to MS4			Yes	Site identified by record number as partially in basin on basin map. Single building appears on map. This site not identified during City reconnaissance efforts. Other site information currently unavailable. Based on information obtained from City records could have drainage to Outfall 17 or Outfall 18. Site has not been inspected.		No
R941291170	Pacific Pride	3031 NW St. Helens Rd.	IND	5171	Petroleum Bulk Stations and Terminals	Gas station	MS4 - Not verified			Yes	Site has not been inspected.	PAHs	No
R941190190	Pacific Welding Inc.	4166 NW Yeon Ave.	IND	7692	Welding Repair	Metal fabrication	MS4 - Not verified			Yes	Site has not been inspected.	Metals	No
R649704640	Performance Mobility Inc.	4347 NW Yeon Ave.	IND	7352/5047/5013	Medical Equipment Rental and Leasing, Medical Dental and Hospital Equipment and Supplies, Motor Vehicle Supplies and New Parts	Office/ distribution	MS4 - Not verified			No	Site has not been inspected.		Yes
R941290570	Professional Records Center	3587 NW Yeon Ave.	IND	4226*	Special Warehousing and Storage, NEC	Offices	MS4 - Not verified			No	Inspected in 1998.		No
R084303420	Sarico Inc.[3] (No longer at site)	2727 NW 35th Ave.	IND				MS4		SFMHS list 2002, diesel fuel.	No	This address has a LUST listed for Don Thomas Petroleum, LUST # 26-97-0806. Soil was contaminated with gasoline and solvent and cleanup ended 4/13/99. Site has not been inspected. Site is vacant.	PAHs	No
R941291670	Schnitzer Investment Corp.3 (No longer at site; DWA Trade Show & Exposition Services is the new tenant).	3720 NW Yeon Ave	IND				MS4			No	**ECSI 2424** (no DEQ PM assigned). State Expanded Preliminary Assessment Recommended (XPA)		
R347600580	Segot	2710 NW 35th Ave.	IND	5198			MS4			No	No plumbing records available, unable to verify discharge outfall either 17 or 18. Site has not been inspected.		No
R941300350	Special Asphalt Products	3537 NW St. Helens Rd.	IND	2952*/5170*	Asphalt Felts and Coatings, Petroleum and Petroleum Products	Distribution	MS4		Pollution complaint (records maintained by BES) 1/2/01 and 3/21/01 regarding equipment and parking lot washing and cleaning and discharge to the storm sewer.	Yes	LUST# 26-90-0207 listed for Special Asphalt Products, Inc. No contaminant information available. Cleanup ended 10/15/90. Special Asphalt Products and Stat-Oil Co listed on DEQ TA list for this address. Inspected in 1995, 1996, and 2001.	Metals, PAHs	Yes
R084303320	Sprint Equipment Building	2955 NW St. Helens Rd.	IND	4813	Telephone Communications, Except Radiotelephone	Phone center	MS4 - Not verified			No	Listed as 2953 NW St. Helens Rd. o n DEQ TA list. Site has not been inspected.		Yes
R941300390	Terry's Diesel Repair	3345 NW St. Helens Rd.	IND	7538	General Automotive Repair Shops	Vehicle repair	MS4 - Not verified			No	Site has not been inspected.	PAHs	Yes
R941300460	Trad Trucking Co. Inc.	3133 NW St. Helens Rd.	IND	4212*/4214*	Local Trucking without Storage, Local Trucking with Storage	Transportation	MS4			Yes	Inspected in 1995, 1999, and 2001.	Metals, PAHs	Yes
R941200170	Univar (formerly Van Waters & Rogers)	3950 NW Yeon Ave.	IND	5161*/5169*	Wholesale-Chemicals & Allied Products, Chemicals and Allied Products NEC	Chemical manufacturing	MS4 Sanitary	Individual 400.025	SFMHS list 1990, aqueous ammonia and Evap-o-Kleen.	Yes	This address was formerly occupied by a TRI Facility, Vopak USA, Inc., EPA ID ORD009227398. Van Waters & Rogers is listed as an environmental cleanup site, **ECSI 330** (no DEQ PM assigned), SVOCs are the COI. Vopak exceeded NPDES benchmarks a few times for a few constituents. Inspected annually since 1998.	Metals, PAHs	No
R084303330	US Sprint Communications	2955-57 NW St. Helens Rd.	IND	4813	Telephone Communications Except Radiotelephone	Phone center	MS4 - Not verified			No	Site has not been inspected.		No

TABLE 5-1
Potential Upland Sources for Outfall 18
Source Control Pilot Project
Status as of June 2003

RNO	Business Name	Address	Land Use	SIC Number	SIC TYPE	Business Type	Drainage	Permit Number	Spills/Releases (BES, DEQ, and SFM)[1]	Storm Drainage Exposure[2]	Notes	Chemicals/ Compound Groups	DEQ TA Sites
R941190980	Western Pacific Building Materials Inc.	3865 NW St. Helens Rd.	IND	5031	Lumber Plywood Millwork and Wood Panels	Distribution	MS4 - Not verified			No	LUST# 26-87-0041 listed for La Grande Chain Corp. at this address, no contaminant information available, cleanup ended 11/16/92.	Metals	No
R941190910	Western Wire Works	4025 NW Express Ave.	IND	3496*	Miscellaneous Fabricated Wire Products	Metal fabrication	MS4	1200Z	Pollution complaint (records maintained by BES) 9/5/97 regarding discharge of oil water to storm sewer. The oil was from a 2-gallon oil spill.	Yes	Exceeded NPDES benchmarks a few times for a few constituents. Inspected in 1995 and annually since 1998.	Metals	Yes
R941290800	Westport Supply Co.	3536 NW 35th Ave.	IND	5085/5087	Industrial Supplies—Wholesale, Service Establishment Equipment and Supplies	Distribution	MS4 - Not verified			No	Site has not been inspected.		No
R347602940	Weyerhaeuser Recycling	3136 NW 35th Ave.	IND	5051, 5093	Metals Service Center/OFC—Wholesale, Scrap and Waste Materials	Waste recycler	MS4	No exposure certification 05/24/00		Yes	BES records indicate that the yard drains to outfall 17 and the roof drains to outfall 18. Inspected in 1995, 1996, and 2000. No exceedances of benchmarks. No exposure certification issued 2000.	Metals	No
R941290690	Wilhelm Trucking Co.	3250 NW St. Helens Rd.	IND	4212*/4213*/7353*	Local Trucking without Storage, Local Trucking without Storage, Heavy Construction Equipment Rental and Leasing	Transportation	MS4	1200Z		Yes	LUST # 26-89-0230, diesel contaminated soil, cleanup ended 4/16/91. Exceeded NPDES benchmarks multiple times for a few constituents. Report of high sediment load leaving property (October 2000). Cleanout of City storm sewer (April 2001) near property indicated elevated levels of heavy oil range hydrocarbons, PCBs, and lead. Inspected annually since 1995.	Metals, PAHs	Yes
							Sanitary	400.047 - inactive					

Notes:
This table provides a preliminary assessment of facilities located within the outfall 18 drainage basin (Aquarius search 2003). Each facility was screened and potential contaminants of interest were identified. Screening criteria included the following: SIC Number/Business Type, storm drainage exposure, and historical records associated with the site (for example, spills/releases, NPDES permit benchmark exceedance, ECSIs and LUSTS). Contaminants of interest were identified for the site based on site type (metals and PAHs were assigned to transportation sites) and/or historical contaminants.
[1] This is a compilation of data obtained from various sources including: the City of Portland Bureau of Environmental Services (pollution complaints), the Department of Environmental Quality (spills reported to the Oregon Emergency Response System and logged into DEQ's SPIN database), and the State Fire Marshall (hazardous material incidents).
[2] Storm drainage exposure is a qualitative assessment made by City of Portland staff on the potential for NPDES-covered releases to enter the storm drainage system.
[3] Information shown is for the named business. Information for the new tenant is unavailable at this time.
* = SIC number has been verified via site inspection.

Abbreviations:
BES = City of Portland Bureau of Environmental Services
BMP = Best Management Practices
BNSF = Burlington Northern Santa Fe Railroad
COI = contaminant of interest
DEQ = Oregon Department of Environmental Quality
ECSI = Environmental Cleanup Site Inventory
EPA = U.S. Environmental Protection Agency
IND = industrial land use
LUST = leaking underground storage tank
NA = not applicable
NEC = not elsewhere clarified
NPDES = National Pollutant Discharge Elimination System
PAH = polynuclear aromatic hydrocarbon
RNO = tax lot record number
SFM = State Fire Marshal
SFMHS = State Fire Marshal's Hazardous Spill
SIC = Standard Industrial Classification
SVOCs = semivolatile organic compound
SWPCP = Stormwater Pollution Control Plan
TPH = Total Petroleum Hydrocarbon
VAC = Land use is listed as vacant
VCP = DEQ Voluntary Cleanup Program
XPA = Expanded Preliminary Assessment
SWPCP = Stormwater Pollution Control Plan

SECTION 6

References

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Department of Environmental Quality (DEQ). September 1999. *DEQ Notification Letters to Portland Harbor Property Owners*.

Department of Environmental Quality. 2002. External Review Draft: *Guidance for Evaluation of Sediment at State Cleanup Sites*. July 31, 2002.

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APPENDIX A

Field Notes

City of Portland Outfalls (Project No. 164067.A0.05)
Source Control Pilot Project

CH2MHILL

Sediment Sample Characteristics

Date (mm/dd/yy)	Location	Station Name/No.
08/20/02	OUTFALL 18 (GUNDERSON/SHELL) 4 ft IN FRONT OF OUTFALL TERMINUS	PP011801

Coordinates (DGPS)		Water Depth		Elevation			Time	Weather
North	East	Depth	Unit	+	Elev.	Unit		
45° 33.361' N	122° 43.246' W	2	ft				1600	OVERCAST

GARMIN 48 GPS, S/N 34805527 → WAYPOINT #879

Rep.	Equipment	Sample Type	Penetration Depth	Penetration Unit	Recovery Length	Recovery Unit	Photograph Roll #	Photograph Unit	Initials
–	HAND GRAB	SED.	15	CM			1	3	BKP

Surficial Sediment Characteristics: (circle most descriptive)

Texture: Smooth Fine MEDIUM Coarse / Clay Silt Sand Gravel Cobble

Color: Light Dark / Gray Brown Black Other _____

Odor: Normal Sewage Petroleum Chemical H_2S None Other _____

Redox Layer Depth	Unit
NOT OBSERVED	

Presence of:	Yes/No	Percent	Description
Biological structures	NO	–	
Debris	YES	<1%	ALUMINUM FOIL? (DISCARDED FROM SAMPLE)
Oil sheen	NO	–	

Vertical profile characteristics:	Description
Changes in sediment characteristics	NO – SAMPLE VERY HOMOGENEOUS
Presence and depth of redox potential discontinuity layer (rpd)	N/A

Sample quality comments:	Description
Leakage	
Winnowing	N/A (HAND GRAB)
Disturbance	

Sample QC: Field Duplicate Matrix Spike Matrix Spike Duplicate Equipment Blank

Comments: We arrived on site at 1500. The water level has increased 1-2 ft in the last hour (btwn 1500 + 1600).

- Water was running down the side of the bank at ≈ 1 gpm. I could not identify the source due to vegetation, it may have been ground water or surface run off. See picture #2.

Signature: Brady K. Park Date: 8/20/02

PDX/030860010.PDF

City of Portland Outfalls (Project No. 164067.A0.05)
Source Control Pilot Project

CH2MHILL

Sediment Sample Characteristics

Date (mm/dd/yy)	Location	Station Name/No.
08/20/02	PP011802 - Outfall 18 (Gunderson/Shell) 50-ft 330° Magnetic from end of Outfall	PP011802

Coordinates		Water Depth		Elevation			Time	Weather
North	East	Depth	Unit	+	Elev.	Unit		
45° 33.370' N (WAYPOINT #880)	122° 43.248' W	2	ft				~~16:30~~ DL 16:35	Overcast

Rep.	Equipment	Sample Type	Penetration Depth	Penetration Unit	Recovery Length	Recovery Unit	Photograph Roll #	Photograph Unit	Initials
-	Hand Grab	SED.	15	cm			1	4	DJL

Surficial Sediment Characteristics: (circle most descriptive)

Texture: Smooth Fine Coarse / Clay Silt (Sand) Gravel Cobble (Medium) (Sand 20% Silt)

Color: Light (Dark) / (Gray) (Brown) Black Other _____

Odor: Normal Sewage (Petroleum) Chemical H_2S None Other _____

Redox Layer	
Depth	Unit
Not Observed	

Presence of:	Yes/No	Percent	Description
Biological structures	No		
Debris	Yes	>5%	Small Woody Debris, Pine Needles, Leaves, Maple Seed
Oil sheen	Yes		Light sheen after sediment was disturbed

Vertical profile characteristics:	Description
Changes in sediment characteristics	None observed.
Presence and depth of redox potential discontinuity layer (rpd)	

Sample quality comments:	Description
Leakage	NA - Hand Grab
Winnowing	
Disturbance	

Sample QC: Field Duplicate Matrix Spike Matrix Spike Duplicate Equipment Blank

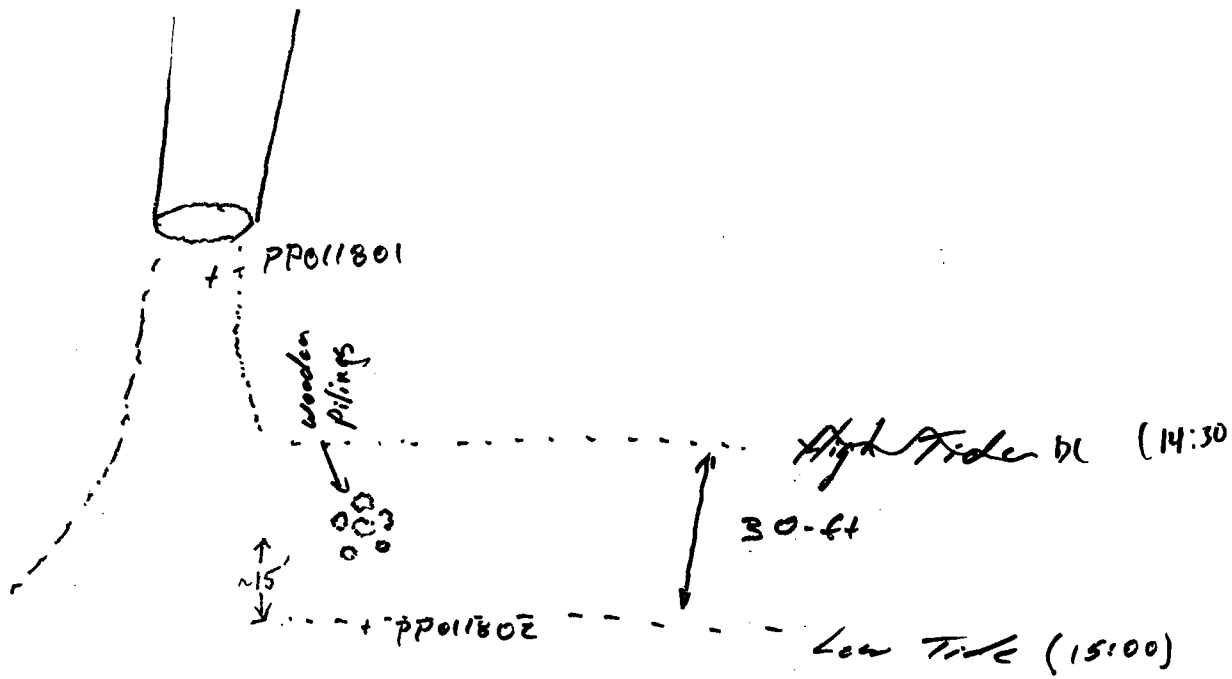
Comments:

- Small (>2") oil sheen developed during collection of sample. Faint petroleum odor observed when the sample was composited

- Sample collected at low tide water level, At low tide approximately 30-ft of shore line was out of the water than a high tide, see map on back

Signature: [signature] Date: 8-20-02

PDX/030860010.PDF



2B

PDX/030860010.PDF

City of Portland Outfalls (Project No. 164067.A0.05)
Source Control Pilot Project

CH2MHILL

Sediment Sample Characteristics

Date (mm/dd/yy)	Location	Station Name/No.
08/20/02	Outfall 18 (Gunderson/Shell) 50-ft North of PP011802	PP011803

Coordinates		Water Depth		Elevation			Time	Weather
North	East	Depth	Unit	+	Elev.	Unit		
45° 33.377' N (WAYPOINT # 881)	122° 43.254' W.	2	ft				1710	Overcast

Rep.	Equipment	Sample Type	Penetration Depth	Penetration Unit	Recovery Length	Recovery Unit	Photograph Roll #	Photograph Unit	Initials
-	Hand Sample	SED	15	cm			1	5	DZL

Surficial Sediment Characteristics: (circle most descriptive)

Texture: Smooth Fine Coarse / Clay Silt (Sand) Gravel Cobble (Medium; SAND WITH 10% SILT)

Color: Light (Dark) / (Gray) Brown Black Other _____

Odor: Normal Sewage (Petroleum) Chemical H_2S None Other _____

Redox Layer Depth	Redox Layer Unit

Presence of:

	Yes/No	Percent	Description
Biological structures	No		
Debris	Yes		>10% Gravel, >1% White flakes (Unknow), Small amount of wood
Oil sheen	Yes		Moderate sheen

Vertical profile characteristics:

	Description
Changes in sediment characteristics	None Observed
Presence and depth of redox potential discontinuity layer (rpd)	

Sample quality comments:

	Description
Leakage	NA- Hand Grab
Winnowing	
Disturbance	

Sample QC: (Field Duplicate) Matrix Spike Matrix Spike Duplicate Equipment Blank

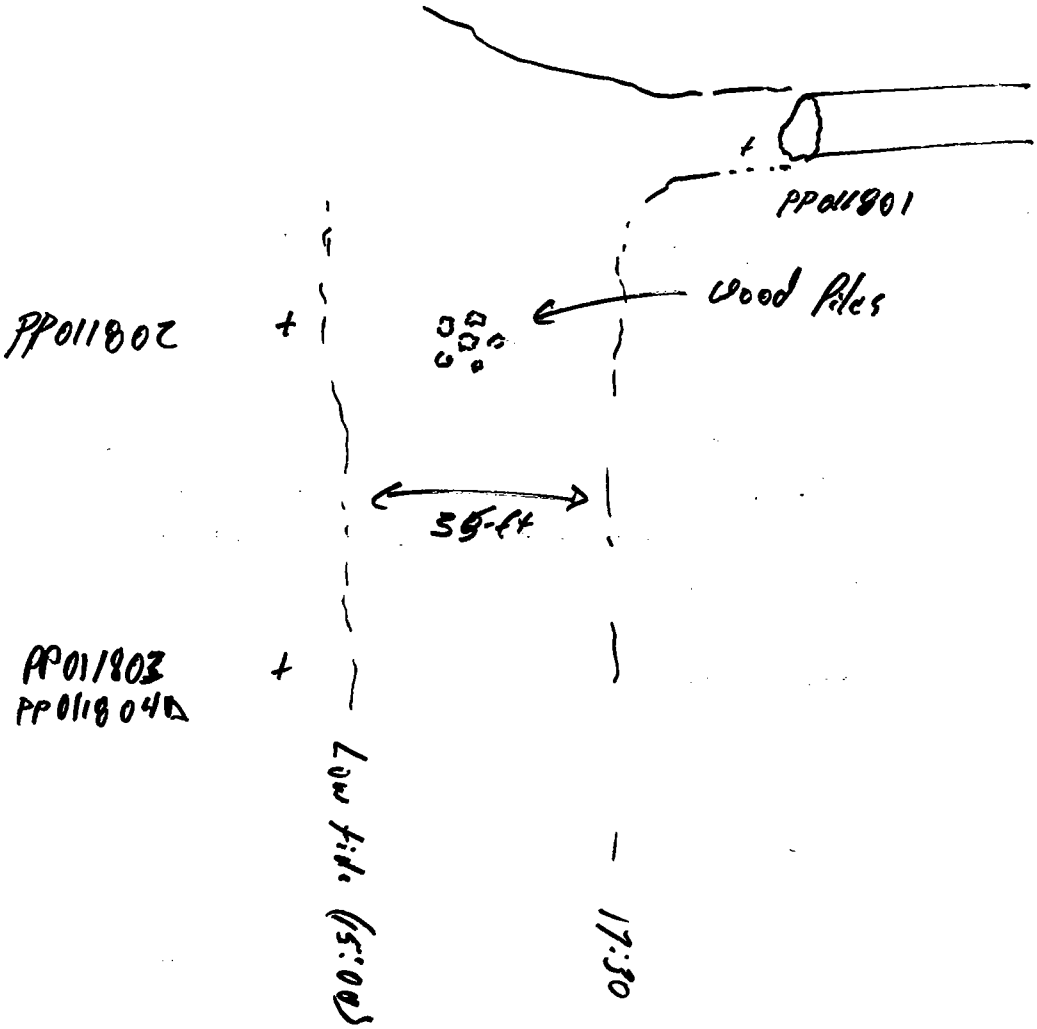
PP018040

Comments:

- Sheen developed on water during sampling and was observed on the sample.
- Faint hydrocarbon odor.
- White flakes of unknown substance (Wood) observed throughout sample.
- Sight was located during low tide. A sheen was observed in pooled water on top of bank. The sheen was a rich purple color and fractured when touched, it did not have any odor.
- Location See Map (Over)

Signature: [signature] Date: 8-20-02

PDX/030860010.PDF



3A
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City of Portland Outfalls (Project No. 164067.A0.05)
Source Control Pilot Project

CH2MHILL

Sediment Sample Characteristics

Date (mm/dd/yy)	Location	Station Name/No.
08/21/02	OUTFALL 18 - (GUNDERSON/SHELL) LOCATED 30 ft DIRECTLY OFF SHORE OF STN. PP011802	PP011805

Coordinates		Water Depth		Elevation			Time	Weather
North	East	Depth	Unit	+	Elev.	Unit		
45° 33.374' N (WAYPOINT #882)	122° 43.245' W	2.5	ft				0945	OVERCAST

Rep.	Equipment	Sample Type	Penetration Depth	Penetration Unit	Recovery Length	Recovery Unit	Photograph Roll #	Photograph Unit	Initials
2	Van Veen	SED	15	cm	1	ft	1	6.7	DJL

Surficial Sediment Characteristics: (circle most descriptive)

Texture: Smooth (Fine) Coarse / Clay (Silt) (Sand) Gravel Cobble 40% Silt

Color: Light (Dark) / Gray Brown (Black) Other _____

Odor: Normal Sewage (Petroleum) Chemical H_2S None Other _____

Redox Layer Depth	Unit
NONE	

Presence of:	Yes/No	Percent	Description
Biological structures	No		
Debris	Yes	>10%	Woody Debris, ~~Leaf~~ Leaves, Tin foil, Plastic, 1-2" Gravel
Oil sheen	Yes		Moderate Sheen

Vertical profile characteristics:	Description
Changes in sediment characteristics	Uniform
Presence and depth of redox potential discontinuity layer (rpd)	

Sample quality comments:	Description
Leakage	1/2 - Some 1/2 - None Full to Door
Winnowing	Light on one side
Disturbance	None

Sample QC: Field Duplicate Matrix Spike Matrix Spike Duplicate Equipment Blank

Comments: - 3 Attempts made prior to collection of sample, discarded due to winnowing and leakage. Sheen developed on river water after droping sampler. Sampler was lowered to sed. top and pushed down by hand.
- One inch plastic tube and half inch piece of plastic bottle cap, both were removed. Small piece of metal foil, removed.
- Petroleum odor observed after mixing.

Signature: [signature] Date: 8-21-02

PDX/030860010.PDF

City of Portland Outfalls (Project No. 164067.A0.05)
Source Control Pilot Project

CH2MHILL

Sediment Sample Characteristics

Date (mm/dd/yy)	Location	Station Name/No.
08/21/02	Outfall 18 (Gunderson/Shell)	PP011806

50-ft From PP011803 between SW ~~corner~~ corner of boathouse

Coordinates		Water Depth		Elevation			Time	Weather
North	~~East~~ DL West	Depth	Unit	+	Elev.	Unit		
4533.373' N	122.43.257'	~~2.5~~ 2.7	Ft				10:30	Overcast 5mph N wind

Waypoint 883

Rep.	Equipment	Sample Type	Penetration Depth	Penetration Unit	Recovery Length	Recovery Unit	Photograph Roll #	Photograph Unit	Initials
1	Van Veen	SED	12	cm	1	ft	1	8	DSL

Surficial Sediment Characteristics: (circle most descriptive)

Texture: Smooth Fine Coarse / Clay ~~Silt~~ Sand Gravel Cobble 40% ~~Silt~~ DL SAND

Color: Light Dark / Gray Brown Black Other

Odor: Normal Sewage Petroleum Chemical H_2S None Other Faint

Redox Layer	
Depth	Unit

Presence of:

	Yes/No	Percent	Description
Biological structures	No		
Debris	Yes	>5%	Woody Debris - Small Branch, 1" Gravel
Oil sheen	Yes		Medium Sheen

Vertical profile characteristics:

	Description
Changes in sediment characteristics	Uniform
Presence and depth of redox potential discontinuity layer (rpd)	None

Sample quality comments:

	Description
Leakage	Yes - Sampler one inch empty
Winnowing	Light on both sides
Disturbance	None

Sample QC: Field Duplicate Matrix Spike Matrix Spike Duplicate Equipment Blank

Comments: - 2-Attements prior to sample collection, discarded due to leakage and ~~willow~~ DL WINNOWING. Sampler depressed with oar.
- Sheen developed on River during sampling, resulted in 5-ft by 1-ft sheen on river.
- Faint ~~hyd~~ DL petroleum odor observed after mixing.
- Alge layer on top
- Picture R1 U8

[signature] 8-21-02

Signature Date

PDX/030860010.PDF

City of Portland Outfalls (Project No. 164067.A0.05)
Source Control Pilot Project

CH2MHILL

Sediment Sample Characteristics

Date (mm/dd/yy)	Location	Station Name/No.
08/21/02	Outfall 18 (Gunderson/Shell)	PP011807

40-ft From Moring Dalphine in line w/ PP011805 & 03 (35' off = ~~shore of~~ PP011805)

Coordinates		Water Depth		Elevation				
North	East	Depth	Unit	+	Elev.	Unit	Time	Weather
45°33.381'N	122°43.242	1.8	Ft				1145	Overcast

Rep.	Equipment	Sample Type	Penetration Depth	Penetration Unit	Recovery Length	Recovery Unit	Photograph Roll #	Photograph Unit	Initials
1	Van Veen	SED.	12	cm	1	ft	1	9	DJL

Surficial Sediment Characteristics: (circle most descriptive)

Texture: Smooth Fine Coarse / Clay Silt Sand Gravel Cobble (Medium; 30% SILT)

Color: Light Dark / Gray Brown Black Other _____

Odor: Normal Sewage Petroleum Chemical H_2S None Other _____

Redox Layer	
Depth	Unit

Presence of:	Yes/No	Percent	Description
Biological structures	No		
Debris	Yes	5	Wood Chips and Twigs. Thin metal shaving 1" x 1/2".
Oil sheen	Yes		

Vertical profile characteristics:	Description
Changes in sediment characteristics	Top 1cm ligher gray to brown silt
Presence and depth of redox potential discontinuity layer (rpd)	None observed

Sample quality comments:	Description
Leakage	Minor
Winnowing	Minor on one side. ~~Thin metal shaving? ≈ 1inch long. DL~~
Disturbance	None

Sample QC: Field Duplicate Matrix Spike Matrix Spike Duplicate Equipment Blank

Comments:
- Five Attempts prior to sampling due to debris caught in sampler jaws.
- Sheen heavyer then at PP011805 or PP011806. Sheen observed on sediment, in addition to river water.
- Wood debris and metal shaving removed from sample.
- Metal shaving appered to be from drilling or meachings. See Picture Roll 1 Unit 10
- ~~Small, thin, fibrous Plant like structures on surface 1cm long.~~ DL

Signature: [signature] Date: 8-21-02

PDX/030860010.PDF

City of Portland Outfalls (Project No. 164067.A0.05)
Source Control Pilot Project

CH2MHILL

Sediment Sample Characteristics

Date (mm/dd/yy)	Location	Station Name/No.
08/21/02	Outfall 18 (Gunderson/Shell) 50 Ft From outfall	PP011808

Coordinates		Water Depth		Elevation			Time	Weather
North	East	Depth	Unit	+	Elev.	Unit		
45° 35.367 N	122° 43.243 W	1	inch				1415	Overcast 10mph NW

Waypoint 886

Rep.	Equipment	Sample Type	Penetration Depth	Penetration Unit	Recovery Length	Recovery Unit	Photograph Roll #	Photograph Unit	Initials
1	Stainless Steel spoon	SED	15	cm	1.5	Ft	1	11	DJL

Surficial Sediment Characteristics: (circle most descriptive)

Texture: Smooth Fine Medium Coarse / Clay Silt (Sand) Gravel Cobble

Color: Light (Dark) / (Gray) Brown Black Other _____

Odor: Normal Sewage (Petroleum) Chemical H_2S None Other Faint

Redox Layer Depth	Redox Layer Unit

Presence of:

	Yes/No	Percent	Description
Biological structures	No		
Debris	Yes	>1%	for Wood. Twigs, leaves, Small Gravel, metal
Oil sheen	Yes		Heavy sheen on SED and water

Vertical profile characteristics:

	Description
Changes in sediment characteristics	Uniform
Presence and depth of redox potential discontinuity layer (rpd)	None Observed

Sample quality comments:

	Description
Leakage	Collected w/ Stainless Steel spoon
Winnowing	
Disturbance	

Sample QC: Field Duplicate Matrix Spike (Matrix Spike Duplicate) Equipment Blank

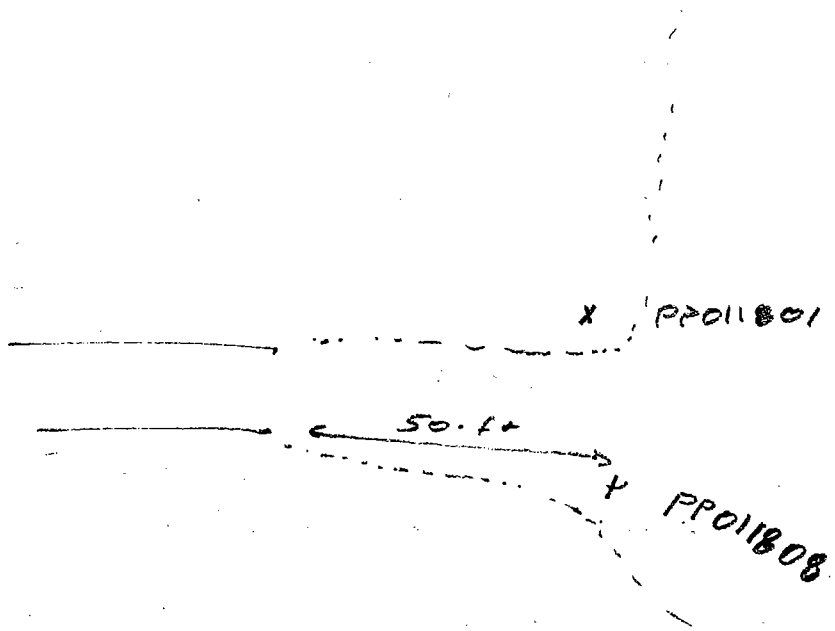
PP011808

Comments:

- Sample collected from point at which water from the outfall entered the river at low tide (14:15). See Map on back
- Small piece of metal (maybe Beer can), removed from ~~sample~~ sample.
- White flakes similar to PP011803
- Heavy sheen on river water during sampling and on sediment

Signature: [signature] Date: 8-21-02

PDX/030860010.PDF


PP011801
50.ft
PP011808

City of Portland Outfalls (Project No. 164067.A0.05)
Source Control Pilot Project

CH2MHILL

Sediment Sample Characteristics

Date (mm/dd/yy)	Location	Station Name/No.
08/21/02	Outfall 18 (Gunderson/Shell) 50' N of PP01808, 10' From Shore	PP01809

Coordinates		Water Depth		Elevation			Time	Weather
North	East	Depth	Unit	+	Elev.	Unit		
45° 33.375 N	122° 43.235 W	1.5	Ft				1500	Over Cast 10 mph N wind

Waypoint 685

Rep.	Equipment	Sample Type	Penetration Depth	Penetration Unit	Recovery Length	Recovery Unit	Photograph Roll #	Photograph Unit	Initials
1	Van Veen	SED	15	cm	1	Ft	1	12	DJL

Surficial Sediment Characteristics: (circle most descriptive)

Texture: Smooth Fine Medium Coarse / Clay Silt Sand 10% SILT Gravel Cobble

Color: Light Dark / Gray Brown Black Other _____

Odor: Normal Sewage Petroleum Chemical H_2S None Other Faint

Redox Layer Depth	Redox Layer Unit
None	Observed

Presence of:

	Yes/No	Percent	Description
Biological structures	No		
Debris	Yes	>5%	2-inch gravel
Oil sheen	Yes		Moderate sheen on the sediment

Vertical profile characteristics:

	Description
Changes in sediment characteristics	None - Uniform
Presence and depth of redox potential discontinuity layer (rpd)	None observed

Sample quality comments:

	Description
Leakage	None
Winnowing	Slight on one side
Disturbance	None

Sample QC: Field Duplicate Matrix Spike Matrix Spike Duplicate Equipment Blank

Comments:
- Moderate petrolem sheen and faint odor.
- Similar to PP01808
- White flakes throughout.
-

Signature: [signature] Date: 8-21-02

City of Portland Outfalls (Project No. 164067.A0.05)
Source Control Pilot Project

CH2MHILL

Sediment Sample Characteristics

Date (mm/dd/yy)	Location	Station Name/No.
08/21/02	Outfall 18 (Gunderson/Shell)	PP011810

Coordinates		Water Depth		Elevation			Time	Weather
North	East	Depth	Unit	+	Elev.	Unit		
45°33.581'N	122°43.189'W	24	ft				1600	Partly Cloudy

Waypoint 887 24 (RHB)

Rep.	Equipment	Sample Type	Penetration Depth	Penetration Unit	Recovery Length	Recovery Unit	Photograph Roll #	Photograph Unit	Initials
1	Van Veen	SED	15	cm	1	ft	1	13	DAL

Surficial Sediment Characteristics: (circle most descriptive) 20% Fine SAND

Texture: Smooth (Fine) Coarse / Clay (Silt) Sand Gravel Cobble

Color: Light (Dark)/(Gray) Brown Black Other _____

Odor: Normal Sewage Petroleum Chemical H_2S (None) Other _____

Redox Layer	
Depth	Unit
None	Observed

Presence of:	Yes/No	Percent	Description
Biological structures	No		
Debris	Yes	>1%	Gravel 2 to ½ inch
Oil sheen	No		

Vertical profile characteristics:	Description
Changes in sediment characteristics	Uniform
Presence and depth of redox potential discontinuity layer (rpd)	None Observed

Sample quality comments:	Description
Leakage	None
Winnowing	None
Disturbance	None

Sample QC: Field Duplicate Matrix Spike Matrix Spike Duplicate Equipment Blank

Comments: One attempt made 10-feet from shore, unsuccessful due to rocks (6"). Moved ≈30-ft from shore. One addition attempt prior to collection of sample, due to woody debris (6" long). No odor or sheen observed on sample.

Signature: [signature] Date: 8-21-02

PDX/030860010.PDF

APPENDIX B

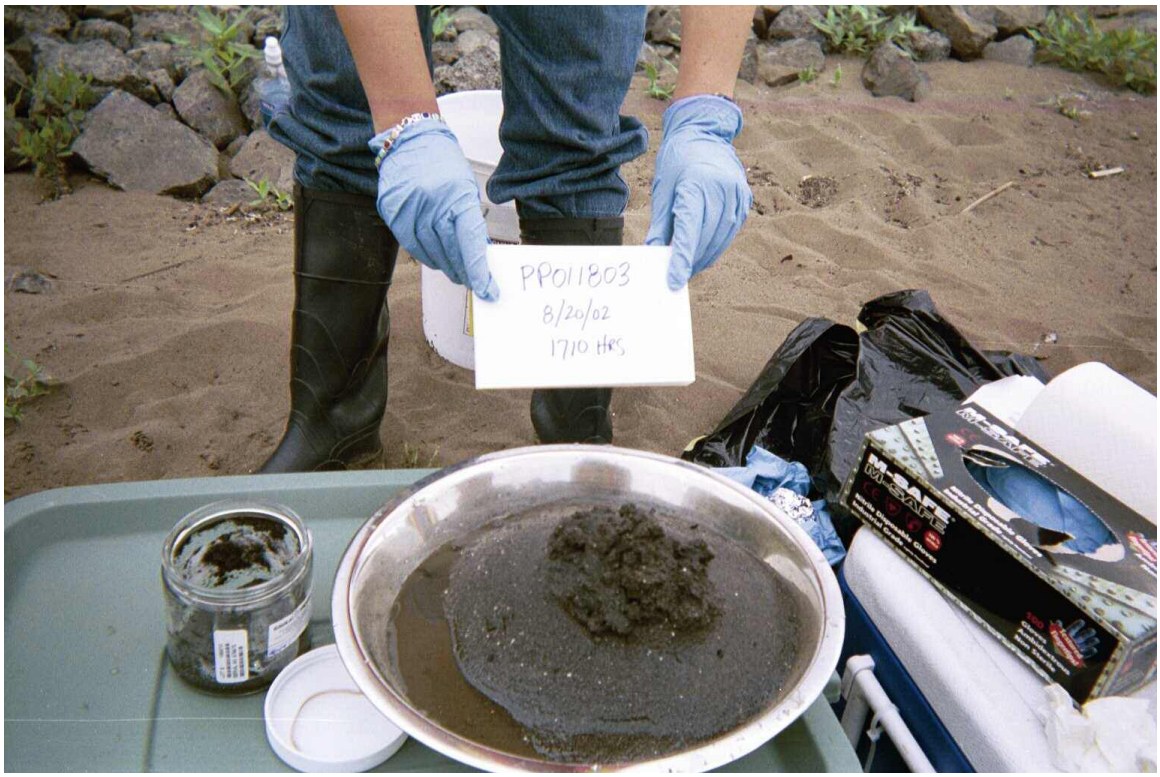
Representative Photographs of Sediment Samples

Photograph 1: Outfall 18 downstream riverbank. Sample PP011801 and PP01808 locations marked with orange stakes.

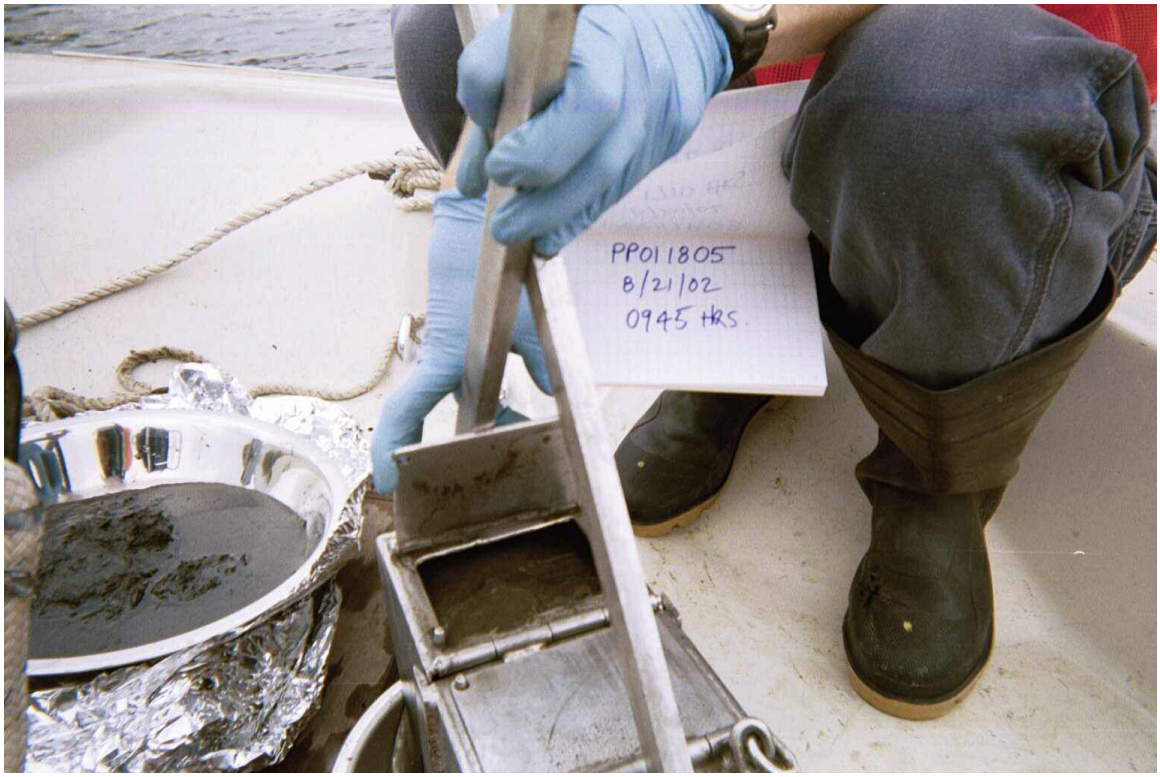
Photograph 2: Outfall 18.

Photograph 3: Outfall 18 upstream riverbank. Sample PP011802 and PP011803 marked with orange stakes, sample PP011805 marked with white float, sample PP011806 marked with yellow float.

Photograph 4: Sample PP011801.



Photograph 5: Sample PP011803.



Photograph 6: Sample PP011805.

Photograph 7: Sample PP011808.

APPENDIX C

Laboratory Results

Laboratory results are provided electronically in CD format.

CH2M HILL
Applied Sciences Group
2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

CH2MHILL
Applied Sciences Group

September 19, 2002

Portland Harbor

164067.A1.02

RE: Laboratory Report for Portland Harbor
Applied Sciences Group Reference No. 8005

Scott Echols/CVO:

On August 22, 2002, CH2M HILL Applied Sciences Group received four samples with a request for analysis of selected parameters. All analyses were performed by CH2M HILL unless otherwise indicated below.

The analytical results and associated quality control data are enclosed. Any unusual difficulties encountered during the analysis of your samples are discussed in the case narrative.

CH2M HILL Applied Sciences Group appreciates your business and looks forward to serving your analytical needs again. If you should have any questions concerning the data, or if you need additional information, please call Ms. Kathy McKinley at (541) 758-0235, extension 3120.

Sincerely,

Ben Thompson
Laboratory Representative

Enclosures

cc:
Tina Rice/PDX

CLIENT SAMPLE CROSS-REFERENCE

CH2M HILL Applied Sciences Group Reference No. 8005

Sample ID	Client Sample ID	Date Collected	Time Collected
800501	PP011802	08/20/2002	16:35
800502	PP011803	08/20/2002	17:10
800503	PP011804D	08/20/2002	23:59
800504	PP011805	08/21/2002	09:45

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CH2M HILL Laboratory Reference No. 8005

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QC Summary 35

Metals Analysis 66
Sample Data Summary 68
QC Summary 74

Total Organic Carbon Analysis by Method ASTM E-777 83
Sample Data Summary 85
QC Summary 90

Chain of Custody/Shipping Documents 99

TOTAL PETROLEUM HYDROCARBONS-DIESEL
BY METHOD TPHNW-Dx

CASE NARRATIVE
TPH-DIESEL BY TPHNW-Dx

Analytical Method: TPHNW-Dx

Batch No.: 8005

Lab Name: CH2M HILL Applied Sciences Lab

Contract #.: 164067.A1.02

Project: Portland Harbor

I. Holding Times:
All holding times were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Spike Duplicate Sample(s):
All acceptance criteria were met.

D. Lab Control Sample(s):
All acceptance criteria were met.

E. Surrogate(s):
Recoveries of O-Terphenyl (33.9%) and Octacosane (25.0%) in sample PP011805DL did not meet acceptance criteria (50-150%); however, surrogate recoveries of the undiluted sample met acceptance criteria. All other acceptance criteria were met.

F. Other:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
"N"-qualifier used to denote result values that fall within diesel carbon range (C12-C24); however sample peak-pattern does not match diesel standard.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: Douglas A. Hardy Date: 9/18/02

Reviewed by: Mike Schmidt Date: 09/18/02

SAMPLE DATA SUMMARY

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011802

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091702L1\005B0501.D
Matrix: Soil
Sample Amt: 10.56 g
% Solid: 77.09
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8005
Lab Sample ID: **800501**
Date Sampled: 08/20/02
Date Extracted: 08/23/02
Date Analyzed: 09/17/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.22	9.47	16.2	JN
LUBEOIL_NW	NW TPH Lube Oil	3.22	18.9	35.8	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	90.5	
630-02-4	Octacosane	50-150%	93.2	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011803

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\013B1301.D
Matrix: Soil
Sample Amt: 10.33 g
% Solid: 77.7
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8005
Lab Sample ID: **800502**
Date Sampled: 08/20/02
Date Extracted: 08/23/02
Date Analyzed: 09/12/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.29	9.68	120	N
LUBEOIL_NW	NW TPH Lube Oil	3.29	19.4	266	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	105	
630-02-4	Octacosane	50-150%	99.8	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011804D

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab Batch No.: 8005
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\015B1501.D
Lab Sample ID: **800503**
Matrix: Soil
Date Sampled: 08/20/02
Sample Amt: 10.34 g
Date Extracted: 08/23/02
% Solid: 75.34
Date Analyzed: 09/13/02
Instrument ID: GC-L
Total Dilution Factor: 1
GC Column: DB-TPH 0.25um x 30 m x 0.32mm
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.29	9.67	77.6	N
LUBEOIL_NW	NW TPH Lube Oil	3.29	19.3	190	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	76.4	
630-02-4	Octacosane	50-150%	76.8	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011805

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\019B1901.D
Matrix: Soil
Sample Amt: 10.31 g
% Solid: 66.09
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8005
Lab Sample ID: **800504**
Date Sampled: 08/21/02
Date Extracted: 08/23/02
Date Analyzed: 09/13/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.30	9.70	369	N
LUBEOIL_NW	NW TPH Lube Oil	3.30	19.4	734	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	66.1	
630-02-4	Octacosane	50-150%	65.4	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011805DL

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab Batch No.: 8005
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\018B1801.D
Lab Sample ID: **800504DL**
Matrix: Soil
Date Sampled: 08/21/02
Sample Amt: 10.31 g
Date Extracted: 08/23/02
% Solid: 66.09
Date Analyzed: 09/13/02
Instrument ID: GC-L
Total Dilution Factor: 5
GC Column: DB-TPH 0.25um x 30 m x 0.32mm
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	16.5	48.5	205	N
LUBEOIL_NW	NW TPH Lube Oil	16.5	97.0	451	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	33.9	*
630-02-4	Octacosane	50-150%	25.0	*

Comments:

QC SUMMARY

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

SB1-0823

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\009B0901.D
Matrix: Soil
Sample Amt: 10 g
% Solid: 100
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8005
Lab Sample ID: **SB1-0823**
Date Sampled: N/A
Date Extracted: 08/23/02
Date Analyzed: 09/12/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.40	10.0	10.0	U
LUBEOIL_NW	NW TPH Lube Oil	3.40	20.0	9.96	J

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	102	
630-02-4	Octacosane	50-150%	88.5	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

BS1S0823

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\010B1001.D
Matrix: Soil
Sample Amt: 10 g
% Solid: 100
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8005
Lab Sample ID: **BS1S0823**
Date Sampled: N/A
Date Extracted: 08/23/02
Date Analyzed: 09/12/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.40	10.0	98.1	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	93.8	
630-02-4	Octacosane	50-150%	70.5	

Comments:

3

ANALYSIS DATA SHEET

LABORATORY CONTROL SAMPLE

Lab Name: CH2M HILL ASL

Lab Code CVO

LCS ID: BS1S0823

Lab Batch No.: 8005

Init.Calib.Date(s): 09/10/02

Init. Calib. Times: 00:01 - 07:54

Concentration Units: mg/Kg

Analyte	Expected	Found	% Recovery	Control Limits	Qualifier
NW TPH Diesel	101	98.1	97.5	50-150%	

Surrogate	% Recovery	Control Limits	Qualifier
O-Terphenyl	93.8	50-150%	
Octacosane	70.5	50-150%	

Comments:

FORM 3LCS

4

ANALYSIS DATA SHEET
METHOD BLANK SUMMARY

EPA SAMPLE NO.

SB1-0823

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\009B0901.D
Matrix: Soil
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8005
Lab Sample ID: SB1-0823
Date Analyzed: 09/12/02
Time Analyzed: 20:20
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	BS1S0823	BS1S0823	C:\HPCHEM\2\DATA\091202L2\010B1001.D	09/12/02
02	PP011802	800501	C:\HPCHEM\2\DATA\091702L1\005B0501.D	09/17/02
03	PP011803	800502	C:\HPCHEM\2\DATA\091202L2\013B1301.D	09/12/02
04	PP011804D	800503	C:\HPCHEM\2\DATA\091202L2\015B1501.D	09/13/02
05	PP011805	800504	C:\HPCHEM\2\DATA\091202L2\019B1901.D	09/13/02
06	PP011805DL	800504DL	C:\HPCHEM\2\DATA\091202L2\018B1801.D	09/13/02
07				
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COMMENTS:

6

ANALYSIS DATA SHEET
INITIAL MULTIPOINT CALIBRATION

Lab Name: CH2M HILL ASL
Lab Code: CVO
Instrument ID: GC-L
Units: mg/L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Project No.: 164067.A1.02
Lab Batch No.: 8005
Calibration Date: 09/10/02
Calibration Times: 00:01 - 07:54
Initial Cal ID: AFCEEV21.M

LAB FILE ID:

LEVEL 1 (DIESEL) C:\HPCHEM\2\DATA\090902L1\010B1001.D
LEVEL 2 (DIESEL) C:\HPCHEM\2\DATA\090902L1\011B1101.D
LEVEL 3 (DIESEL) C:\HPCHEM\2\DATA\090902L1\012B1201.D
LEVEL 4 (DIESEL) C:\HPCHEM\2\DATA\090902L1\013B1301.D
LEVEL 5 (DIESEL) C:\HPCHEM\2\DATA\090902L1\014B1401.D
LEVEL 6 (DIESEL) C:\HPCHEM\2\DATA\090902L1\015B1501.D
LEVEL 1 (OIL) C:\HPCHEM\2\DATA\090902L1\017B1701.D
LEVEL 2 (OIL) C:\HPCHEM\2\DATA\090902L1\018B1801.D
LEVEL 3 (OIL) C:\HPCHEM\2\DATA\090902L1\019B1901.D
LEVEL 4 (OIL) C:\HPCHEM\2\DATA\090902L1\020B2001.D
LEVEL 5 (OIL) C:\HPCHEM\2\DATA\090902L1\021B2101.D
LEVEL 6 (OIL) C:\HPCHEM\2\DATA\090902L1\022B2201.D

Analyte	STD 1	RF 1	STD 2	RF 2	STD 3	RF 3	STD 4	RF 4	STD 5	RF 5			
NW TPH Diesel	10.1	0.000056	40.0	0.000095	201	0.000142	805	0.000142	2012	0.000149			
NW TPH Lube Oil	20.5	0.000020	103	0.000070	205	0.000103	410	0.000122	2050	0.000196			
O-Terphenyl	4.82	0.000121	19.3	0.000105	96.5	0.000124	386	0.000111	965	0.000112			
Octacosane	4.53	0.000219	18.1	0.000146	90.6	0.000175	363	0.000143	906	0.000147			

Analyte	STD 6	RF 6									CURVE FIT	R^2	
NW TPH Diesel	5031	0.000149									Linear	1.0000	
NW TPH Lube Oil	4102	0.000188									Linear	0.9987	
O-Terphenyl	2412	0.000106									Linear	0.9998	
Octacosane	2266	0.000160									Linear	0.9993	

Comments:

7B
ANALYSIS DATA SHEET
INITIAL CALIBRATION VERIFICATION

Lab Name: CH2M HILL ASL
Lab Code: CVO
Instrument ID: GC-L
Initial Cal ID: TPH090902
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8005
Init.Calib.Date(s): 09/10/02
Init. Calib. Times: 00:01 - 07:54
ICV ID: ICV2-0909
Concentration Units: mg/L

ANALYTE	Expected mg/L	Found mg/L	Percent Recovery	Q
NW TPH Diesel	1000	1012	101	
NW TPH Lube Oil	1000	972	97.2	

COMMENTS:
NW TPH Lube Oil reported from ICV3-0909

7B
ANALYSIS DATA SHEET
CALIBRATION VERIFICATION

Lab Name: CH2M HILL ASL
Lab Code: CVO
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8005
Init.Calib.Date(s): 09/10/02
Init. Calib. Times: 00:01 - 07:54
Concentration Units: mg/L
Initial Cal ID: TPH090902

CCV#1 ID: CV1-0912 CCV #2 ID: CV3-0912 CCV #3 ID: CV5-0912

ANALYTE	CCV #1 %D or DRIFT	CCV #2 %D or DRIFT	CCV #3 %D or DRIFT	Q
NW TPH Diesel	-0.1%	-3.2%	-12.0%	
NW TPH Lube Oil	-11.4%	1.6%	-3.5%	
O-Terphenyl	-4.4%	-8.1%	-20.0%	
Octacosane	-12.2%	-9.1%	-16.3%	

COMMENTS:
NW TPH Lube Oil reported from CV2-0912, CV4-0912, CV6-0912

7B
ANALYSIS DATA SHEET
CALIBRATION VERIFICATION

Lab Name: CH2M HILL ASL
Lab Code: CVO
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8005
Init.Calib.Date(s): 09/10/02
Init. Calib. Times: 00:01 - 07:54
Concentration Units: mg/L
Initial Cal ID: TPH090902

CCV#1 ID: CV1-0917 CCV #2 ID: CV3-0917 CCV #3 ID:

ANALYTE	CCV #1 %D or DRIFT	CCV #2 %D or DRIFT	CCV #3 %D or DRIFT	Q
NW TPH Diesel	-11.3%	-10.9%		
NW TPH Lube Oil	-0.4%	-0.4%		
O-Terphenyl	-17.8%	-17.3%		
Octacosane	-3.1%	-30.0%		

COMMENTS:
NW TPH Lube Oil reported from CV2-0917, CV4-0917

ANALYSIS DATA SHEET
ANALYTICAL SEQUENCE

Lab Name: CH2M HILL ASL
Lab Code: CVO
Start Date: 09/10/02 End Date: 09/10/02
Start Time: 00:01 End Time: 12:23

Lab Batch No.: 8005
Instrument ID: GC-L

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LEVEL 1 (DIESEL)	LEVEL 1 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\010B1001.D	00:01
02	LEVEL 2 (DIESEL)	LEVEL 2 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\011B1101.D	00:38
03	LEVEL 3 (DIESEL)	LEVEL 3 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\012B1201.D	01:14
04	LEVEL 4 (DIESEL)	LEVEL 4 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\013B1301.D	01:50
05	LEVEL 5 (DIESEL)	LEVEL 5 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\014B1401.D	02:27
06	LEVEL 6 (DIESEL)	LEVEL 6 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\015B1501.D	03:03
07	ICV2-0909	ICV2-0909	C:\HPCHEM\2\DATA\090902L1\016B1601.D	03:39
08	LEVEL 1 (OIL)	LEVEL 1 (OIL)	C:\HPCHEM\2\DATA\090902L1\017B1701.D	04:52
09	LEVEL 2 (OIL)	LEVEL 2 (OIL)	C:\HPCHEM\2\DATA\090902L1\018B1801.D	05:28
10	LEVEL 3 (OIL)	LEVEL 3 (OIL)	C:\HPCHEM\2\DATA\090902L1\019B1901.D	06:05
11	LEVEL 4 (OIL)	LEVEL 4 (OIL)	C:\HPCHEM\2\DATA\090902L1\020B2001.D	06:41
12	LEVEL 5 (OIL)	LEVEL 5 (OIL)	C:\HPCHEM\2\DATA\090902L1\021B2101.D	07:17
13	LEVEL 6 (OIL)	LEVEL 6 (OIL)	C:\HPCHEM\2\DATA\090902L1\022B2201.D	07:54
14	ICV3-0909	ICV3-0909	C:\HPCHEM\2\DATA\090902L1\023B2301.D	12:23
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COMMENTS:

ANALYSIS DATA SHEET
ANALYTICAL SEQUENCE

Lab Name: CH2M HILL ASL
Lab Code: CVO
Start Date: 09/12/02 End Date: 09/13/02
Start Time: 13:42 End Time: 11:27

Lab Batch No.: 8005
Instrument ID: GC-L

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	CV1-0912	CV1-0912	C:\HPCHEM\2\DATA\091202L2\002B0201.D	13:42
02	CV2-0912	CV2-0912	C:\HPCHEM\2\DATA\091202L2\003B0301.D	16:04
03	SB1-0823	SB1-0823	C:\HPCHEM\2\DATA\091202L2\009B0901.D	20:20
04	BS1S0823	BS1S0823	C:\HPCHEM\2\DATA\091202L2\010B1001.D	21:33
05	PP011803	800502	C:\HPCHEM\2\DATA\091202L2\013B1301.D	23:22
06	PP011804D	800503	C:\HPCHEM\2\DATA\091202L2\015B1501.D	01:10
07	CV3-0912	CV3-0912	C:\HPCHEM\2\DATA\091202L2\016B1601.D	01:47
08	CV4-0912	CV4-0912	C:\HPCHEM\2\DATA\091202L2\017B1702.D	03:36
09	PP011805DL	800504DL	C:\HPCHEM\2\DATA\091202L2\018B1801.D	04:12
10	PP011805	800504	C:\HPCHEM\2\DATA\091202L2\019B1901.D	04:48
11	CV5-0912	CV5-0912	C:\HPCHEM\2\DATA\091202L2\028B2801.D	10:15
12	CV6-0912	CV6-0912	C:\HPCHEM\2\DATA\091202L2\029B2901.D	11:27
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COMMENTS:

8

ANALYSIS DATA SHEET
ANALYTICAL SEQUENCE

Lab Name: CH2M HILL ASL
Lab Code: CVO
Start Date: 09/17/02 End Date: 09/18/02
Start Time: 12:01 End Time: 12:48

Lab Batch No.: 8005
Instrument ID: GC-L

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	CV1-0917	CV1-0917	C:\HPCHEM\2\DATA\091702L1\002B0202.D	12:01
02	CV2-0917	CV2-0917	C:\HPCHEM\2\DATA\091702L1\003B0302.D	13:12
03	PP011802	800501	C:\HPCHEM\2\DATA\091702L1\005B0501.D	14:24
04	CV3-0917	CV3-0917	C:\HPCHEM\2\DATA\091702L1\008B0801.D	16:48
05	CV4-0917	CV4-0917	C:\HPCHEM\2\DATA\091702L1\009B0902.D	12:48
06				
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23				
24				
25				

COMMENTS:

CH2MHILL
Applied Sciences Group

CH2M HILL
Applied Sciences Group
2300 NW Walnut Blvd
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97330-3538
P.O. Box 428
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97339-0428
Tel 541.752.4271
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MDL Replicate Information

Method:	Extraction Method:	Matrix:	Units	Instrument:	MDL Date:	Exp. Date:
TPHNW-DX	METHOD	WATER	MG/L	GCL	05/20/2002	05/19/2003

CAS_NO	PARAMETER	MDL	R1	R2	R3	R4	R5	R6	R7	R8	Mean	Std.Dev.	Spike Lev.
TPHD	TPH-Diesel	0.012	0.02425	0.0299	0.0272	0.030118	0.035816	0.025499	0.027896		0.028669	0.00380769	0.0125

CH2MHILL
Applied Sciences Group

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Tel 541.752.4271
Fax 541.752.0276

MDL Replicate Information

Method:	Extraction Method:	Matrix:	Units	Instrument:	MDL Date:	Exp. Date:
TPHNW-DX	SW3550	SOIL	MG/KG	GCL	08/10/2001	08/09/2002

CAS_NO	PARAMETER	MDL	R1	R2	R3	R4	R5	R6	R7	R8	Mean	Std.Dev.	Spike Lev.
TPHD	TPH-Diesel	3.40	8.2	8	7.7	6.4	6.3	5.9	5.6	5.3	6.675	1.13357840	10

PCB AROCLORS BY METHOD SW8082

CASE NARRATIVE
PCB AROCLORS BY SW8082

Analytical Method: SW8082 Batch No.: 8005

Lab Name: CH2M HILL Applied Sciences Lab Contract #.: 164067.A1.02

Project: Portland Harbor

I. Holding Times:
All holding times were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Spike Duplicate Sample(s):
All acceptance criteria were met.

D. Lab Control Sample(s):
All acceptance criteria were met.

E. Other:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: Date: 9/13/02

Reviewed by: Date: 9/17/02

SAMPLE DATA SUMMARY

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **PP011802**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8005
SAS No.: 8005
SDG No.: 8005
Matrix: SOIL
Lab Sample ID: **800501**
Sample Amt.: 10.19 g
Lab File ID: 014B1401.D
% Moisture: 23
Decanted: Y
Date Received: 08/22/02
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/09/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	5.98	6.36	6.36		U
11104-28-2	PCB-1221	2.28	12.7	12.7		U
11141-16-5	PCB-1232	3.87	6.36	6.36		U
53469-21-9	PCB-1242	2.85	6.36	6.36		U
12672-29-6	PCB-1248	2.11	6.36	158	155	
11097-69-1	PCB-1254	1.82	6.36	115	112	
11096-82-5	PCB-1260	3.21	6.36	6.36		U
37324-23-5	PCB-1262	3.16	6.36	6.36		U
11100-14-4	PCB-1268	3.16	6.36	6.36		U

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	89.0	25-143	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **PP011803**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8005
SAS No.: 8005
SDG No.: 8005
Matrix: SOIL
Lab Sample ID: **800502**
Sample Amt.: 10.02 g
Lab File ID: 015B1501.D
% Moisture: 22
Decanted: Y
Date Received: 08/22/02
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/09/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	6.04	6.42	6.42		U
11104-28-2	PCB-1221	2.3	12.8	12.8		U
11141-16-5	PCB-1232	3.9	6.42	6.42		U
53469-21-9	PCB-1242	2.88	6.42	6.42		U
12672-29-6	PCB-1248	2.13	6.42	147	144	
11097-69-1	PCB-1254	1.84	6.42	62.8	55.4	
11096-82-5	PCB-1260	3.24	6.42	37.3	33.3	
37324-23-5	PCB-1262	3.19	6.42	6.42		U
11100-14-4	PCB-1268	3.19	6.42	6.42		U

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	97.5	25-143	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **PP011804D**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8005
SAS No.: 8005
SDG No.: 8005
Matrix: SOIL
Lab Sample ID: **800503**
Sample Amt.: 10.14 g
Lab File ID: 016B1601.D
% Moisture: 25
Decanted: Y
Date Received: 08/22/02
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/09/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	6.15	6.54	6.54		U
11104-28-2	PCB-1221	2.34	13.1	13.1		U
11141-16-5	PCB-1232	3.98	6.54	6.54		U
53469-21-9	PCB-1242	2.93	6.54	6.54		U
12672-29-6	PCB-1248	2.17	6.54	131	128	
11097-69-1	PCB-1254	1.87	6.54	59.3	51.2	
11096-82-5	PCB-1260	3.3	6.54	36.5	31.2	
37324-23-5	PCB-1262	3.25	6.54	6.54		U
11100-14-4	PCB-1268	3.25	6.54	6.54		U

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	89.0	25-143	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **PP011805**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: **800504**

Sample Amt.: 10.32 g Lab File ID: 017B1701.D

% Moisture: 34 Decanted: Y Date Received: 08/22/02

Extraction: Sonc Date Extracted: 08/28/02

Extract Vol.: 5 ml Date Analyzed: 09/09/02

Injection Vol.: 3.0 ul Dilution Factor: 1

GPC Cleanup: N Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	6.89	7.33	7.33		U
11104-28-2	PCB-1221	2.62	14.7	14.7		U
11141-16-5	PCB-1232	4.46	7.33	7.33		U
53469-21-9	PCB-1242	3.28	7.33	7.33		U
12672-29-6	PCB-1248	2.43	7.33	154	150	
11097-69-1	PCB-1254	2.1	7.33	83.2	82.3	
11096-82-5	PCB-1260	3.69	7.33	7.33		U
37324-23-5	PCB-1262	3.64	7.33	7.33		U
11100-14-4	PCB-1268	3.64	7.33	7.33		U

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	106	25-143	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **SB1-0828**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8005
SAS No.: 8005
SDG No.: 8005
Matrix: SOIL
Lab Sample ID: **SB1-0828**
Sample Amt.: 10 g
Lab File ID: 011B1101.D
% Moisture: 0
Decanted: Y
Date Received: N/A
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/09/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	4.70	5.00	5.00		U
11104-28-2	PCB-1221	1.79	10.0	10.0		U
11141-16-5	PCB-1232	3.04	5.00	5.00		U
53469-21-9	PCB-1242	2.24	5.00	5.00		U
12672-29-6	PCB-1248	1.66	5.00	5.00		U
11097-69-1	PCB-1254	1.43	5.00	5.00		U
11096-82-5	PCB-1260	2.52	5.00	5.00		U
37324-23-5	PCB-1262	2.48	5.00	5.00		U
11100-14-4	PCB-1268	2.48	5.00	5.00		U

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	84.5	25-143	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **BS1S0828**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8005
SAS No.: 8005
SDG No.: 8005
Matrix: SOIL
Lab Sample ID: **BS1S0828**
Sample Amt.: 10 g
Lab File ID: 012B1201.D
% Moisture: 0
Decanted: Y
Date Received: N/A
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/09/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	4.70	5.00	95.9	94.3	
11096-82-5	PCB-1260	2.52	5.00	108	104	

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	94.5	25-143	

Comments:

QC SUMMARY

ORGANICS LABORATORY CONTROL SAMPLE SUMMARY

Analytical Method: SW8082
Lab Name: CH2M HILL ASL
Concentration Units: ug/Kg
LCS ID: BS1S0828

SDG No.: 8005
Contract #: 164067.A1.02
Matrix: SOIL
Initial Calibration ID: PCB090902

Analyte	Expected	Found	% Rec.	QC Limits	Qualifier
PCB-1016	100	95.9	95.9	50-150	
PCB-1260	100	108	108	50-150	

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	94.5	25-143	

Comments:

ORGANICS METHOD BLANK SUMMARY

Field Sample ID: **SB1-0828**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02
Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005
Lab File ID: 011B1101.D Lab Sample ID: **SB1-0828**
Matrix: SOIL Extraction: Sonc
Sulfur Cleanup: N Date Extracted: 08/28/02
GPC Cleanup: N Date Analyzed: 09/09/02
GC Column: DB1701 / DB5MS Time Analyzed: 19:46
Instrument ID: GC-H

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

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed
01	BS1S0828	BS1S0828	C:\HPCHEM\1\DATA\090902H1\012B1201.D	09/09/02
02	PP011802	800501	C:\HPCHEM\1\DATA\090902H1\014B1401.D	09/09/02
03	PP011803	800502	C:\HPCHEM\1\DATA\090902H1\015B1501.D	09/09/02
04	PP011804D	800503	C:\HPCHEM\1\DATA\090902H1\016B1601.D	09/09/02
05	PP011805	800504	C:\HPCHEM\1\DATA\090902H1\017B1701.D	09/09/02
06				
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Comments:

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8005
SAS No.: 8005
Contract #: 164067.A1.02
SDG No.: 8005
Instrument ID: GC-H
Calibration Date(s): 09/09/02
Initial Calibration ID: PCB090902
Calibration Time(s): 13:28 -16:54

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:	LEVEL 1 (9/9)	002B0201.D
Std 2:	LEVEL 2 (9/9)	003B0301.D
Std 3:	LEVEL 3 (9/9)	004B0401.D
Std 4:	LEVEL 4 (9/9)	005B0501.D
Std 5:	LEVEL 5 (9/9)	006B0601.D
Std 6:	LEVEL 6 (9/9)	007B0701.D
Std 7:	LEVEL 7 (9/9)	008B0801.D

Individual PCB Calib.	Lab File ID:

GC Column: DB1701
Concentration Units: ng/ml

Analyte	STD 1	RF 1	STD 2	RF 2	STD 3	RF 3	STD 4	RF 4	STD 5	RF 5	STD 6	RF 6	STD 7	RF 7
PCB-1016 (Peak 1)	5	0.024693	50	0.0490416	100	0.049556	250	0.052443	500	0.05515	750	0.055112	1000	0.059738
PCB-1016 (Peak 2)	5	0.008578	50	0.0214698	100	0.023767	250	0.026791	500	0.029239	750	0.031094	1000	0.033955
PCB-1016 (Peak 3)	5	0.009656	50	0.0190782	100	0.018783	250	0.019156	500	0.019469	750	0.019134	1000	0.020763
PCB-1016 (Peak 4)	5	0.016945	50	0.034089	100	0.035791	250	0.039201	500	0.041372	750	0.040607	1000	0.044554
PCB-1016 (Peak 5)	5	0.006394	50	0.0276028	100	0.036016	250	0.039326	500	0.044641	750	0.044838	1000	0.049074
PCB-1260 (Peak 1)	5	0.009598	50	0.0212004	100	0.022341	250	0.025343	500	0.027653	750	0.028018	1000	0.031043
PCB-1260 (Peak 2)	5	0.009418	50	0.0205007	100	0.021687	250	0.024098	500	0.025895	750	0.026322	1000	0.028765
PCB-1260 (Peak 3)	5	0.009422	50	0.0199003	100	0.020453	250	0.021601	500	0.022402	750	0.022052	1000	0.023944
PCB-1260 (Peak 4)	5	0.008516	50	0.0178795	100	0.018221	250	0.019277	500	0.019749	750	0.0192	1000	0.02112
PCB-1260 (Peak 5)	5	0.014895	50	0.0318947	100	0.031995	250	0.032885	500	0.033795	750	0.031839	1000	0.03459
Decachlorobiphenyl	2.0	0.001621	10.0	0.0017357	20	0.001769	50	0.00187	100	0.001987	150	0.001945	200	2.20E-03

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8005
SAS No.: 8005
Contract #: 164067.A1.02
SDG No.: 8005
Instrument ID: GC-H
Calibration Date(s): 09/09/02
Initial Calibration ID: PCB090902
Calibration Time(s): 13:28 -16:54

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:	LEVEL 1 (9/9)	002B0201.D
Std 2:	LEVEL 2 (9/9)	003B0301.D
Std 3:	LEVEL 3 (9/9)	004B0401.D
Std 4:	LEVEL 4 (9/9)	005B0501.D
Std 5:	LEVEL 5 (9/9)	006B0601.D
Std 6:	LEVEL 6 (9/9)	007B0701.D
Std 7:	LEVEL 7 (9/9)	008B0801.D

Individual PCB Calib.	Lab File ID:

GC Column: DB1701
Concentration Units: ng/ml

Analyte	Curve Fit	Avg. RRF	% RSD	Mean % RSD	R or COD	Q
PCB-1016 (Peak 1)	Quadratic	0.04939	23.3		0.99964	
PCB-1016 (Peak 2)	Quadratic	0.024985	33.6		0.99996	
PCB-1016 (Peak 3)	Quadratic	0.018006	20.8		0.99941	
PCB-1016 (Peak 4)	Quadratic	0.03608	25.3		0.99931	
PCB-1016 (Peak 5)	Quadratic	0.035413	41.2		0.99948	
PCB-1260 (Peak 1)	Quadratic	0.023599	29.9		0.99955	
PCB-1260 (Peak 2)	Quadratic	0.022384	28.5		0.99971	
PCB-1260 (Peak 3)	Quadratic	0.019968	24.2		0.99945	
PCB-1260 (Peak 4)	Quadratic	0.017709	23.7		0.9991	
PCB-1260 (Peak 5)	Quadratic	0.03027	22.7		0.99892	
Decachlorobiphenyl (SS)	Quadratic	0.001875	10.1		0.99889	

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8005
SAS No.: 8005
Contract #: 164067.A1.02
SDG No.: 8005
Instrument ID: GC-H
Calibration Date(s): 09/09/02
Initial Calibration ID: PCB090902
Calibration Time(s): 13:28 -16:54

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:	LEVEL 1 (9/9)	002B0201.D
Std 2:	LEVEL 2 (9/9)	003B0301.D
Std 3:	LEVEL 3 (9/9)	004B0401.D
Std 4:	LEVEL 4 (9/9)	005B0501.D
Std 5:	LEVEL 5 (9/9)	006B0601.D
Std 6:	LEVEL 6 (9/9)	007B0701.D
Std 7:	LEVEL 7 (9/9)	008B0801.D

Individual PCB Calib.	Lab File ID:

GC Column: DB5MS
Concentration Units: ng/ml

Analyte	STD 1	RF 1	STD 2	RF 2	STD 3	RF 3	STD 4	RF 4	STD 5	RF 5	STD 6	RF 6	STD 7	RF 7
PCB-1016 (Peak 1)	5	0.018413	50	0.0373132	100	0.037429	250	0.037749	500	0.038727	750	0.038849	1000	0.042014
PCB-1016 (Peak 2)	5	0.009209	50	0.0208773	100	0.022209	250	0.02453	500	0.026942	750	0.027975	1000	0.030411
PCB-1016 (Peak 3)	5	0.012439	50	0.0266736	100	0.027517	250	0.029164	500	0.030949	750	0.031603	1000	0.034295
PCB-1016 (Peak 4)	5	0.006398	50	0.0132549	100	0.012739	250	0.012458	500	0.012732	750	0.012845	1000	0.013933
PCB-1016 (Peak 5)	5	0.014596	50	0.0306238	100	0.030897	250	0.031489	500	0.033284	750	0.033524	1000	0.036182
PCB-1260 (Peak 1)	5	0.00683	50	0.0147738	100	0.01525	250	0.016854	500	0.018358	750	0.018502	1000	0.020579
PCB-1260 (Peak 2)	5	0.006736	50	0.0139713	100	0.008854	250	0.01842	500	0.01811	750	0.018785	1000	0.019787
PCB-1260 (Peak 3)	5	0.008854	50	0.01842	100	0.01811	250	0.018785	500	0.019787	750	0.019253	1000	0.020909
PCB-1260 (Peak 4)	5	0.0102	50	0.0219144	100	0.022495	250	0.024525	500	0.026724	750	0.026763	1000	0.029553
PCB-1260 (Peak 5)	5	0.005833	50	0.011781	100	0.011468	250	0.012131	500	0.012801	750	0.01237	1000	0.013885
Decachlorobiphenyl	2	0.001049	10	0.0011296	20	0.001162	50	0.001306	100	0.001403	150	0.001404	200	0.001599

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Instrument ID: GC-H
Initial Calibration ID: PCB090902

Case No.: 8005

SAS No.: 8005

Contract #: 164067.A1.02
SDG No.: 8005
Calibration Date(s): 09/09/02
Calibration Time(s): 13:28 -16:54

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:	LEVEL 1 (9/9)	002B0201.D
Std 2:	LEVEL 2 (9/9)	003B0301.D
Std 3:	LEVEL 3 (9/9)	004B0401.D
Std 4:	LEVEL 4 (9/9)	005B0501.D
Std 5:	LEVEL 5 (9/9)	006B0601.D
Std 6:	LEVEL 6 (9/9)	007B0701.D
Std 7:	LEVEL 7 (9/9)	008B0801.D

Individual PCB Calib.	Lab File ID:

GC Column: DB5MS

Concentration Units: ng/ml

Analyte	Curve Fit	Avg. RRF	% RSD	Mean % RSD	R or COD	Q
PCB-1016 (Peak 1)	Quadratic	0.035785	21.9		0.99964	
PCB-1016 (Peak 2)	Quadratic	0.023165	30.2		0.99988	
PCB-1016 (Peak 3)	Quadratic	0.02752	25.9		0.9998	
PCB-1016 (Peak 4)	Quadratic	0.012051	21.1		0.99963	
PCB-1016 (Peak 5)	Quadratic	0.030085	23.6		0.99974	
PCB-1260 (Peak 1)	Quadratic	0.015878	28.1		0.99955	
PCB-1260 (Peak 2)	Quadratic	0.014952	35.2		0.99942	
PCB-1260 (Peak 3)	Quadratic	0.017731	22.7		0.99936	
PCB-1260 (Peak 4)	Quadratic	0.023168	27.2		0.99949	
PCB-1260 (Peak 5)	Quadratic	0.011467	22.7		0.99878	
Decachlorobiphenyl (SS)	Quadratic	0.001293	14.9		0.99907	

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8005
SAS No.: 8005
SDG No.: 8005
Instrument ID: GC-H
Calibration Date(s): 09/02/02
Initial Calibration ID: PCB090902
Calibration Time(s): 18:08 -21:34

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:		
Std 2:		
Std 3:		
Std 4:		
Std 5:		
Std 6:		

	Individual PCB Calib.	Lab File ID:
Std 1:	AROCLOR 1221	048B0901.D
Std 1:	AROCLOR 1232	049B1001.D
Std 1:	AROCLOR 1242	050B1101.D
Std 1:	AROCLOR 1248	051B1201.D
Std 1:	AROCLOR 1254	052B1301.D
Std 1:	AROCLOR 1262	053B1401.D
Std 1:	AROCLOR 1268	054B1501.D

GC Column: DB1701
Concentration Units: ng/ml

Analyte	STD 1	RF 1	STD 2	RF 2	STD 3	RF 3	STD 4	RF 4	STD 5	RF 5	STD 6	RF6	STD 7	RF 7
PCB-1221 (Peak 1)	250	0.057787												
PCB-1221 (Peak 2)	250	0.19804												
PCB-1221 (Peak 3)	250	0.084972												
PCB-1221 (Peak 4)	250	0.106478												
PCB-1221 (Peak 5)	250	0.036091												
PCB-1232 (Peak 1)	250	0.095544												
PCB-1232 (Peak 2)	250	0.045498												
PCB-1232 (Peak 3)	250	0.060841												
PCB-1232 (Peak 4)	250	0.047032												
PCB-1232 (Peak 5)	250	0.086834												
PCB-1242 (Peak 1)	250	0.031732												
PCB-1242 (Peak 2)	250	0.024402												
PCB-1242 (Peak 3)	250	0.049346												
PCB-1242 (Peak 4)	250	0.014681												
PCB-1242 (Peak 5)	250	0.056575												
PCB-1248 (Peak 1)	250	0.034311												
PCB-1248 (Peak 2)	250	0.031335												
PCB-1248 (Peak 3)	250	0.034942												
PCB-1248 (Peak 4)	250	0.0293												
PCB-1248 (Peak 5)	250	0.065982												
PCB-1254 (Peak 1)	250	0.028224												
PCB-1254 (Peak 2)	250	0.027218												
PCB-1254 (Peak 3)	250	0.019919												
PCB-1254 (Peak 4)	250	0.033898												
PCB-1254 (Peak 5)	250	0.026149												
PCB-1262 (Peak 1)	250	0.030122												
PCB-1262 (Peak 2)	250	0.028837												
PCB-1262 (Peak 3)	250	0.014536												
PCB-1262 (Peak 4)	250	0.026817												
PCB-1262 (Peak 5)	250	0.014502												
PCB-1268 (Peak 1)	250	0.050736												
PCB-1268 (Peak 2)	250	0.045931												
PCB-1268 (Peak 3)	250	0.015521												
PCB-1268 (Peak 4)	250	0.016475												
PCB-1268 (Peak 5)	250	0.019135												

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8005
SAS No.: 8005
Contract #: 164067.A1.02
SDG No.: 8005
Instrument ID: GC-H
Calibration Date(s): 09/02/02
Initial Calibration ID: PCB090902
Calibration Time(s): 18:08 -21:34

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:		
Std 2:		
Std 3:		
Std 4:		
Std 5:		
Std 6:		

	Individual PCB Calib.	Lab File ID:
Std 1:	AROCLOR 1221	048B0901.D
Std 1:	AROCLOR 1232	049B1001.D
Std 1:	AROCLOR 1242	050B1101.D
Std 1:	AROCLOR 1248	051B1201.D
Std 1:	AROCLOR 1254	052B1301.D
Std 1:	AROCLOR 1262	053B1401.D
Std 1:	AROCLOR 1268	054B1501.D

GC Column: DB1701
Concentration Units: ng/ml

Analyte	Curve Fit	Avg. RRF	% RSD	Mean % RSD	R or COD	Q
PCB-1221 (Peak 1)	Single Pt	0.057787				
PCB-1221 (Peak 2)	Single Pt	0.19804				
PCB-1221 (Peak 3)	Single Pt	0.084972				
PCB-1221 (Peak 4)	Single Pt	0.106478				
PCB-1221 (Peak 5)	Single Pt	0.036091				
PCB-1232 (Peak 1)	Single Pt	0.095544				
PCB-1232 (Peak 2)	Single Pt	0.045498				
PCB-1232 (Peak 3)	Single Pt	0.060841				
PCB-1232 (Peak 4)	Single Pt	0.047032				
PCB-1232 (Peak 5)	Single Pt	0.086834				
PCB-1242 (Peak 1)	Single Pt	0.031732				
PCB-1242 (Peak 2)	Single Pt	0.024402				
PCB-1242 (Peak 3)	Single Pt	0.049346				
PCB-1242 (Peak 4)	Single Pt	0.014681				
PCB-1242 (Peak 5)	Single Pt	0.056575				
PCB-1248 (Peak 1)	Single Pt	0.034311				
PCB-1248 (Peak 2)	Single Pt	0.031335				
PCB-1248 (Peak 3)	Single Pt	0.034942				
PCB-1248 (Peak 4)	Single Pt	0.0293				
PCB-1248 (Peak 5)	Single Pt	0.065982				
PCB-1254 (Peak 1)	Single Pt	0.028224				
PCB-1254 (Peak 2)	Single Pt	0.027218				
PCB-1254 (Peak 3)	Single Pt	0.019919				
PCB-1254 (Peak 4)	Single Pt	0.033898				
PCB-1254 (Peak 5)	Single Pt	0.026149				
PCB-1262 (Peak 1)	Single Pt	0.030122				
PCB-1262 (Peak 2)	Single Pt	0.028837				
PCB-1262 (Peak 3)	Single Pt	0.014536				
PCB-1262 (Peak 4)	Single Pt	0.026817				
PCB-1262 (Peak 5)	Single Pt	0.014502				
PCB-1268 (Peak 1)	Single Pt	0.050736				
PCB-1268 (Peak 2)	Single Pt	0.045931				
PCB-1268 (Peak 3)	Single Pt	0.015521				
PCB-1268 (Peak 4)	Single Pt	0.016475				
PCB-1268 (Peak 5)	Single Pt	0.019135				

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8005
SAS No.: 8005
SDG No.: 8005
Instrument ID: GC-H
Calibration Date(s): 09/02/02
Initial Calibration ID: PCB090902
Calibration Time(s): 18:08 -21:34

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:		
Std 2:		
Std 3:		
Std 4:		
Std 5:		
Std 6:		

	Individual PCB Calib.	Lab File ID:
Std 1:	AROCLOR 1221	048B0901.D
Std 1:	AROCLOR 1232	049B1001.D
Std 1:	AROCLOR 1242	050B1101.D
Std 1:	AROCLOR 1248	051B1201.D
Std 1:	AROCLOR 1254	052B1301.D
Std 1:	AROCLOR 1262	053B1401.D
Std 1:	AROCLOR 1268	054B1501.D

GC Column: DB5MS
Concentration Units: ng/ml

Analyte	STD 1	RF 1	STD 2	RF 2	STD 3	RF 3	STD 4	RF 4	STD 5	RF 5	STD 6	RF6	STD 7	RF 7
PCB-1221 (Peak 1)	250	0.064794												
PCB-1221 (Peak 2)	250	0.231107												
PCB-1221 (Peak 3)	250	0.058601												
PCB-1221 (Peak 4)	250	0.077234												
PCB-1221 (Peak 5)	250	0.023656												
PCB-1232 (Peak 1)	250	0.030004												
PCB-1232 (Peak 2)	250	0.066833												
PCB-1232 (Peak 3)	250	0.031801												
PCB-1232 (Peak 4)	250	0.059414												
PCB-1232 (Peak 5)	250	0.090458												
PCB-1242 (Peak 1)	250	0.029061												
PCB-1242 (Peak 2)	250	0.014486												
PCB-1242 (Peak 3)	250	0.017849												
PCB-1242 (Peak 4)	250	0.042296												
PCB-1242 (Peak 5)	250	0.060644												
PCB-1248 (Peak 1)	250	0.022734												
PCB-1248 (Peak 2)	250	0.026739												
PCB-1248 (Peak 3)	250	0.027409												
PCB-1248 (Peak 4)	250	0.021195												
PCB-1248 (Peak 5)	250	0.043												
PCB-1254 (Peak 1)	250	0.017498												
PCB-1254 (Peak 2)	250	0.017058												
PCB-1254 (Peak 3)	250	0.012734												
PCB-1254 (Peak 4)	250	0.022093												
PCB-1254 (Peak 5)	250	0.019198												
PCB-1262 (Peak 1)	250	0.019397												
PCB-1262 (Peak 2)	250	0.018043												
PCB-1262 (Peak 3)	250	0.014536												
PCB-1262 (Peak 4)	250	0.016686												
PCB-1262 (Peak 5)	250	0.008701												
PCB-1268 (Peak 1)	250	0.031518												
PCB-1268 (Peak 2)	250	0.029253												
PCB-1268 (Peak 3)	250	0.009785												
PCB-1268 (Peak 4)	250	0.010712												
PCB-1268 (Peak 5)	250	0.011815												

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8005
SAS No.: 8005
SDG No.: 8005
Instrument ID: GC-H
Calibration Date(s): 09/02/02
Initial Calibration ID: PCB090902
Calibration Time(s): 18:08 -21:34

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:		
Std 2:		
Std 3:		
Std 4:		
Std 5:		
Std 6:		

	Individual PCB Calib.	Lab File ID:
Std 1:	AROCLOR 1221	048B0901.D
Std 1:	AROCLOR 1232	049B1001.D
Std 1:	AROCLOR 1242	050B1101.D
Std 1:	AROCLOR 1248	051B1201.D
Std 1:	AROCLOR 1254	052B1301.D
Std 1:	AROCLOR 1262	053B1401.D
Std 1:	AROCLOR 1268	054B1501.D

GC Column: DB5MS
Concentration Units: ng/ml

Analyte	Curve Fit	Avg. RRF	% RSD	Mean % RSD	R or COD	Q
PCB-1221 (Peak 1)	Single Pt	0.064794				
PCB-1221 (Peak 2)	Single Pt	0.231107				
PCB-1221 (Peak 3)	Single Pt	0.058601				
PCB-1221 (Peak 4)	Single Pt	0.077234				
PCB-1221 (Peak 5)	Single Pt	0.023656				
PCB-1232 (Peak 1)	Single Pt	0.030004				
PCB-1232 (Peak 2)	Single Pt	0.066833				
PCB-1232 (Peak 3)	Single Pt	0.031801				
PCB-1232 (Peak 4)	Single Pt	0.059414				
PCB-1232 (Peak 5)	Single Pt	0.090458				
PCB-1242 (Peak 1)	Single Pt	0.029061				
PCB-1242 (Peak 2)	Single Pt	0.014486				
PCB-1242 (Peak 3)	Single Pt	0.017849				
PCB-1242 (Peak 4)	Single Pt	0.042296				
PCB-1242 (Peak 5)	Single Pt	0.060644				
PCB-1248 (Peak 1)	Single Pt	0.022734				
PCB-1248 (Peak 2)	Single Pt	0.026739				
PCB-1248 (Peak 3)	Single Pt	0.027409				
PCB-1248 (Peak 4)	Single Pt	0.021195				
PCB-1248 (Peak 5)	Single Pt	0.043				
PCB-1254 (Peak 1)	Single Pt	0.017498				
PCB-1254 (Peak 2)	Single Pt	0.017058				
PCB-1254 (Peak 3)	Single Pt	0.012734				
PCB-1254 (Peak 4)	Single Pt	0.022093				
PCB-1254 (Peak 5)	Single Pt	0.019198				
PCB-1262 (Peak 1)	Single Pt	0.019397				
PCB-1262 (Peak 2)	Single Pt	0.018043				
PCB-1262 (Peak 3)	Single Pt	0.014536				
PCB-1262 (Peak 4)	Single Pt	0.016686				
PCB-1262 (Peak 5)	Single Pt	0.008701				
PCB-1268 (Peak 1)	Single Pt	0.031518				
PCB-1268 (Peak 2)	Single Pt	0.029253				
PCB-1268 (Peak 3)	Single Pt	0.009785				
PCB-1268 (Peak 4)	Single Pt	0.010712				
PCB-1268 (Peak 5)	Single Pt	0.011815				

7A

ORGANICS CALIBRATION VERIFICATION SUMMARY

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Instrument ID: GC-H Calibration Date(s): 09/09/02

Initial Calibration ID: PCB090902 Calibration Time(s): 13:28 -16:54

ICV ID: ICV-0909 CCV #1 ID: CV2-0909 CCV #2 ID:

GC Column: DB1701 Concentration Units: ng/ml

Analyte	ICV			CCV #1			CCV #2			Q
	Expected	Found	% D	Expected	Found	% D	Expected	Found	% D	
PCB-1016	250	241	-3.5	250	215	-14.0				
PCB-1260	250	262	4.7	250	227	-9.0				
Decachlorobiphenyl	50.0	51.5	3.0	50.0	46.7	-6.7				

GC Column: DB5MS

Analyte	ICV			CCV #1			CCV #2			Q
	Expected	Found	% D	Expected	Found	% D	Expected	Found	% D	
PCB-1016	250	251	0.6	250	228	-8.9				
PCB-1260	250	272	8.7	250	232	-7.2				
Decachlorobiphenyl	50.0	52.8	5.6	50.0	46.7	-6.6				

Comments:

ORGANICS ANALYTICAL SEQUENCE

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8005
SAS No.: 8005
SDG No.: 8005
GC Column: DB1701 / DB5MS
Start Date: 09/05/02
End Date: 09/05/02
Instrument ID: GC-H
Start Time: 18:08
End Time: 21:34

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
01	AROCLOR 1221	AROCLOR 1221	C:\HPCHEM\1\DATA\090502H1\048B0901.D	09/05/02	18:08
02	AROCLOR 1232	AROCLOR 1232	C:\HPCHEM\1\DATA\090502H1\049B1001.D	09/05/02	18:43
03	AROCLOR 1242	AROCLOR 1242	C:\HPCHEM\1\DATA\090502H1\050B1101.D	09/05/02	19:17
04	AROCLOR 1248	AROCLOR 1248	C:\HPCHEM\1\DATA\090502H1\051B1201.D	09/05/02	19:51
05	AROCLOR 1254	AROCLOR 1254	C:\HPCHEM\1\DATA\090502H1\052B1301.D	09/05/02	20:26
06	AROCLOR 1262	AROCLOR 1262	C:\HPCHEM\1\DATA\090502H1\053B1401.D	09/05/02	21:00
07	AROCLOR 1268	AROCLOR 1268	C:\HPCHEM\1\DATA\090502H1\054B1501.D	09/05/02	21:34
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					

Comments:

ORGANICS ANALYTICAL SEQUENCE

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8005
SAS No.: 8005
SDG No.: 8005
GC Column: DB1701 / DB5MS
Start Date: 09/09/02
End Date: 09/10/02
Instrument ID: GC-H
Start Time: 13:28
End Time: 03:12

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
01	LEVEL 1 (9/9)	LEVEL 1 (9/9)	C:\HPCHEM\1\DATA\090902H1\002B0201.D	09/09/02	13:28
02	LEVEL 2 (9/9)	LEVEL 2 (9/9)	C:\HPCHEM\1\DATA\090902H1\003B0301.D	09/09/02	14:03
03	LEVEL 3 (9/9)	LEVEL 3 (9/9)	C:\HPCHEM\1\DATA\090902H1\004B0401.D	09/09/02	14:37
04	LEVEL 4 (9/9)	LEVEL 4 (9/9)	C:\HPCHEM\1\DATA\090902H1\005B0501.D	09/09/02	15:11
05	LEVEL 5 (9/9)	LEVEL 5 (9/9)	C:\HPCHEM\1\DATA\090902H1\006B0601.D	09/09/02	15:46
06	LEVEL 6 (9/9)	LEVEL 6 (9/9)	C:\HPCHEM\1\DATA\090902H1\007B0701.D	09/09/02	16:20
07	LEVEL 7 (9/9)	LEVEL 7 (9/9)	C:\HPCHEM\1\DATA\090902H1\008B0801.D	09/09/02	16:54
08	ICV-0909	ICV-0909	C:\HPCHEM\1\DATA\090902H1\010B1001.D	09/09/02	17:29
09	SB1-0828	SB1-0828	C:\HPCHEM\1\DATA\090902H1\011B1101.D	09/09/02	19:46
10	BS1S0828	BS1S0828	C:\HPCHEM\1\DATA\090902H1\012B1201.D	09/09/02	20:20
11	PP011802	800501	C:\HPCHEM\1\DATA\090902H1\014B1401.D	09/09/02	21:29
12	PP011803	800502	C:\HPCHEM\1\DATA\090902H1\015B1501.D	09/09/02	22:03
13	PP011804D	800503	C:\HPCHEM\1\DATA\090902H1\016B1601.D	09/09/02	22:38
14	PP011805	800504	C:\HPCHEM\1\DATA\090902H1\017B1701.D	09/09/02	23:12
15	CV2-0909	CV2-0909	C:\HPCHEM\1\DATA\090902H1\024B2401.D	09/10/02	03:12
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					

Comments:

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011802**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: **800501**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011802**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: **800501**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248	1	10.22	10.12	10.32	188		
	2	11.65	11.56	11.76	143		
Column 1	3	11.92	11.83	12.03	141	158	
	4	12.75	12.66	12.86	160		
	5						
	1	9.41	9.31	9.51	203		1.9
	2	10.12	10.02	10.22	146		
Column 2	3	10.86	10.76	10.96	122	155	
	4	11.58	11.47	11.67	151		
	5						
PCB-1254	1	12.75	12.63	12.83	154		
	2	13.24	13.14	13.34	89.8		
Column 1	3	14.56	14.47	14.67	95.5	112	
	4	15.29	15.19	15.39	96.1		
	5	16.84	16.74	16.94	127		
	1	11.58	11.49	11.69	124		2.7
	2	12.21	12.11	12.31	84.3		
Column 2	3	13.18	13.08	13.28	169	115	
	4	13.98	13.88	14.08	84.8		
	5	15.42	15.31	15.51	112		
PCB-1260	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1262	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011802**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: **800501**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011803**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: **800502**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011803**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: 800502

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248	1	10.21	10.12	10.32	190		
	2	11.65	11.56	11.76	130		
Column 1	3	11.92	11.83	12.03	131	147	
	4	12.75	12.66	12.86	139		
	5						2.0
	1	9.41	9.31	9.51	196		
	2	10.12	10.02	10.22	131		
Column 2	3	10.86	10.76	10.96	115	144	
	4	11.57	11.47	11.67	134		
	5						
PCB-1254	1						
	2	13.24	13.14	13.34	58.4		
Column 1	3	14.56	14.47	14.67	65.2	62.8	
	4	15.29	15.19	15.39	66.1		
	5	16.84	16.74	16.94	61.4		11.8
	1						
	2	12.22	12.11	12.31	58.9		
Column 2	3					55.4	
	4	13.98	13.88	14.08	55.7		
	5	15.42	15.31	15.51	51.7		
PCB-1260	1	15.05	14.95	15.15	40.8		
	2	15.75	15.64	15.84	34.8		
Column 1	3					37.3	
	4	18.97	18.87	19.07	36.4		
	5						10.7
	1	13.84	13.73	13.93	34.5		
	2	14.60	14.49	14.69	36.2		
Column 2	3					33.3	
	4	15.87	15.76	15.96	32.4		
	5	17.56	17.45	17.65	30.1		
PCB-1262	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011803**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: **800502**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011804D**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: **800503**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011804D**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: **800503**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248	1	10.22	10.12	10.32	161		
	2	11.65	11.56	11.76	119		
Column 1	3	11.92	11.83	12.03	119	131	
	4	12.75	12.66	12.86	123		
	5						2.3
	1	9.41	9.31	9.51	167		
	2	10.12	10.02	10.22	121		
Column 2	3	10.86	10.76	10.96	105	128	
	4	11.57	11.47	11.67	119		
	5						
PCB-1254	1						
	2	13.24	13.14	13.34	53.3		
Column 1	3	14.56	14.47	14.67	64.2	59.3	
	4	15.29	15.19	15.39	60.5		
	5	16.84	16.74	16.94	59.1		13.7
	1						
	2	12.22	12.11	12.31	53.8		
Column 2	3					51.2	
	4	13.98	13.88	14.08	50		
	5	15.42	15.31	15.51	49.8		
PCB-1260	1	15.05	14.95	15.15	41.2		
	2	15.74	15.64	15.84	36.4		
Column 1	3					36.5	
	4	18.97	18.87	19.07	37.1		
	5	20.15	20.05	20.25	31.5		14.5
	1	13.84	13.73	13.93	35.1		
	2	14.60	14.49	14.69	37.3		
Column 2	3					31.2	
	4	15.87	15.76	15.96	25.5		
	5	17.56	17.45	17.65	26.8		
PCB-1262	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011804D**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: **800503**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011805**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: **800504**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011805**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: **800504**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248	1	10.22	10.12	10.32	197		
	2	11.65	11.56	11.76	138		
Column 1	3	11.92	11.83	12.03	136	154	
	4	12.75	12.66	12.86	142		
	5						2.6
	1	9.41	9.31	9.51	212		
	2	10.12	10.02	10.22	137		
Column 2	3	10.86	10.76	10.96	113	150	
	4	11.57	11.47	11.67	139		
	5						
PCB-1254	1	12.75	12.63	12.83	137		
	2	13.24	13.14	13.34	58.9		
Column 1	3	14.56	14.47	14.67	68.9	82.3	
	4	15.29	15.19	15.39	75.6		
	5	16.84	16.74	16.94	71.1		1.1
	1	11.57	11.49	11.69	115		
	2	12.22	12.11	12.31	60		
Column 2	3	13.18	13.08	13.28	133	83.2	
	4	13.98	13.88	14.08	57.8		
	5	15.42	15.31	15.51	51.2		
PCB-1260	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1262	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011805**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: **800504**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **BS1S0828**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: **BS1S0828**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1	8.45	8.34	8.54	93.1		
	2	9.23	9.13	9.33	100		
Column 1	3	10.21	10.11	10.31	92.9	94.3	
	4	10.54	10.43	10.63	91.4		
	5	11.65	11.55	11.75	93.7		1.7
	1	7.78	7.67	7.87	92.5		
	2	8.48	8.37	8.57	96.2		
Column 2	3	8.83	8.73	8.93	94.2	95.9	
	4	9.41	9.31	9.51	100		
	5	10.56	10.46	10.66	95.9		
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **BS1S0828**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: **BS1S0828**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1254	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1260	1	15.05	14.95	15.15	105		
	2	15.74	15.64	15.84	106		
Column 1	3	16.83	16.73	16.93	104	104	
	4	18.97	18.87	19.07	105		
	5	20.15	20.05	20.25	101		3.8
	1	13.83	13.73	13.93	105		
	2	14.60	14.49	14.69	110		
Column 2	3	15.41	15.31	15.51	107	108	
	4	15.86	15.76	15.96	107		
	5	17.55	17.45	17.65	109		
PCB-1262	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **BS1S0828**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: SOIL Lab Sample ID: **BS1S0828**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

CH2M HILL APPLIED SCIENCES SEMI-VOLATILES EXTRACTION LOG

Project Name: Portland Harbor
Date Extracted: 08/28/02
Analyst: [illegible]

Analysis Requested: PCB SW 8082
Matrix / Ext. Method: SOIL SW 3550
Water bath Temp.: 65

	LAB ID #	CLIENTS SAMPLE ID	SAMPLE ALIQUOT	SOLVENT VOLUME	FINAL VOLUME	SS VOL	% H2O	COMMENTS NOTES
1	SB1-0828		10 g	60 ml	5 mL			
2	BS1S0828		10 g	60 ml	5 mL			
3	BD1S0828		10 g	60 ml	5 mL			
4								
5	800501	PP011802	10.19g	60 ml	5 mL			
6	800502	PP011803	10.02g	60 ml	5 mL			
7	800503	PP011804D	10.14g	60 ml	5 mL			
8	800504	PP011805	10.35g	60 ml	5 mL			
9	800601	PP011801	10.12g	60 ml	5 mL			
10	800602	PP011809	10.18g	60 ml	5 mL			
11	800603	PP011810	10.69g	60 ml	5 mL			
12	800801	PP011806	10.29g	60 ml	5 mL			
13	800802	PP011807	10.12g	60 ml	5 mL			
14	800803	PP011808	10.05g	60 ml	5 mL			
15	800804MS	PP011808MS	10.05g	60 ml	5 mL			
16	800805SD	PP011808MSD	10.23g	60 ml	5 mL			
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								

EXTRACTION SOLVENT: MeCl2/ Iso-Octane
LOT # 1-PGC-65-02

DRYING AGENT: Sodium Sulfate
LOT # 1-PGC-55-5

	SPIKING COMPOUNDS	CONCENTRATION	VOLUME	LOT #	
SURROGATE SPIKE:	#1 Surrogate Mix	5 ug/mL	50 uL	5S083-01	50 ppb
	#2				
MATRIX SPIKE:	#1 Arochlor 1016/1260	5 ppm	200 uL	6S-31-02	200 ppb
	#2				

Extracts Placed in Refrigerator by: [illegible] Date/Time: 8/28/02 1246
Refrigerator/Box #: [illegible] Date/Time: ↓
Date/Time: ↓
Extracts Removed from Refrigerator by: Date/Time:
Date/Time:
Extracts Destroyed by: Date/Time:

0064

Method Detection Limit Study

CH2M HILL
Applied Sciences Group

Analysis Method:	SW8082	**Analyst:**	M. Schaadt
Extraction Method:	SW3550	**Instrument:**	GCH
Matrix:	SOIL	**Description:**	
MDL Effective Date:	02/14/2002	**Deptartment:**	GS

Units:
Spike:

#	Compound	CAS No.	Date	MDL		UG/KG	1	2	3	4	5	6	7	8		Mean	Std Dev	Student T
1	Aroclor-1016	12674-11-2	02/13/2002	4.70		5.00	11.8	13.6	11.3	14.1	15.1	15.9	12.7	13.5		13.5	1.57	2.998
2	Aroclor-1260	11096-82-5	02/13/2002	2.52		5.00	4.40	7.2	5.36	4.95	5.07	5.41	4.86	5.09		5.30	0.84	2.998
3	Aroclor-1221	11104-28-2	02/13/2002	1.79		5.00	21.1	22.5	21.5	20.8	21.8	22.5	21.4	21.8		21.7	0.60	2.998
4	Aroclor-1232	11141-16-5	02/13/2002	3.04		5.00	21.4	20.6	20.7	19.9	19.2	18.7	19.2	21.3		20.1	1.02	2.998
5	Aroclor-1242	53469-21-9	02/13/2002	2.24		5.00	11.6	11.4	11.1	11.4	12.5	10.5	9.98	11.6		11.2	0.75	2.998
6	Aroclor-1248	12672-29-6	02/13/2002	1.66		5.00	5.49	6.10	5.35	5.60	5.98	5.15	6.65	4.97		5.66	0.55	2.998
7	Aroclor-1254	11097-69-1	02/13/2002	1.43		5.00	4.95	5.40	4.10	4.20	4.40	4.25	4.15	4.90		4.54	0.48	2.998

MDL Calculation based on initial soil wt of 10 grams and final extract volume of 5 mL

0065

METALS

CASE NARRATIVE
METALS

CLIENT/PROJECT: Portland Harbor

LABORATORY: CH2M HILL Applied Sciences Group PROJECT NO.: 164067.A1.02

LAB CODE: CVO LAB BATCH NO\SDG: 8005

I. Holding Times:
All holding times were met.

II. Digestion Exceptions:
None

III. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. ICP Interference Check Sample:
Not applicable.

D. Spike Sample(s):
Matrix spike recovery for mercury (177%) exceeded acceptance criteria (75-125%)

E. Duplicate Sample(s):
Duplicate RPD (28%) exceeded acceptance criteria (20%).

F. Laboratory Control Sample(s):
All acceptance criteria were met.

G. Serial Dilution:
Not applicable.

H. Other:
None

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Prepared by: Judy Dryden Date: 9-13-02

Reviewed by: [illegible] Date: 16 Sept 2002

SAMPLE DATA SUMMARY

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PP011802

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: (soil/water) SOIL Lab Sample ID: 800501

Level: (low/med) LOW Date Received: 08/22/02

Concentration Units: mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.189			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PP011803

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: (soil/water) SOIL Lab Sample ID: 800502

Level: (low/med) LOW Date Received: 08/22/02

Concentration Units: mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.185			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PP011804D

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: (soil/water) SOIL Lab Sample ID: 800503

Level: (low/med) LOW Date Received: 08/22/02

Concentration Units: mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.189			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PP011805

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: (soil/water) SOIL Lab Sample ID: 800504

Level: (low/med) LOW Date Received: 08/22/02

Concentration Units: mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.204			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB2-0904

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Matrix: (soil/water) SOIL Lab Sample ID: SB2-0904

Level: (low/med) LOW

Concentration Units: mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.00740	J		CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

QC SUMMARY

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Initial Calibration Source: 090902HG

Concentration Units: ug/L

2nd Source/ICV ID: ICV-0909 CCV #1 CV2-0909 CCV #2 CV3-0909 CCV #3

	Initial Calibration			Continuing Calibration							
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Found	%R(1)	M
Mercury	1.00	1.08	108	1.00	1.06	106	1.09	109			CV

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

SW846 Control Limits: Mercury and GFAA 80-120; ICP 90-110; Cyanide 85-115

US EPA - CLP

3-IN

BLANKS

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

ICB ID: ICB-0909 CCB1 ID: CB2-0909 CCB2 ID: CB3-0909 CCB3 ID: _____

Analyte	Method	Initial Calib. Blank	Continuing Calibration Blank			M
			1	2	3	
Mercury	SW7471A	0.0110J	0.00961U	0.0120J		CV

Comments:

AFCEE
INORGANIC ANALYSES DATA SHEET 7
MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLE

Analytical Method: SW-846

Lab Name: CH2M HILL/LAB/CVO Contract #: N/A

Concentration Units (mg/L or mg/kg): mg/Kg %Solids: 77

MS Lab ID: 800501MS MSD Lab ID: 800501MSD

Parent Field Sample ID: PP011802 MS ID: PP011802MS MSD ID: PP011802MSD

Analyte	Method	Parent Sample Result	Spike Added	Spiked Sample Result	%R	Duplicate Spike Sample Result	%R	%RPD	Control Limits %RPD	Control Limits %R	Q
Mercury	SW7471A	0.189	0.26	0.650	178	0.490	116	28.0	25	77-120	*

Comments:

AFCEE FORM I-7

JG020913-16:12-8005-M

US EPA - CLP

7-INORG

LABORATORY CONTROL SAMPLE

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Solid LCS Source: BS2S0904

Aqueous LCS Source:

Analyte	Method	Aqueous (ug/L)			Solid (mg/Kg)			Limits	C
		True	Found	%R	True	Found	%R		
Mercury	SW7471A				0.200	0.204	102	80-120	

Comments:

U.S. EPA - CLP

10
METHOD DETECTION LIMITS

Lab Name: CH2M HILL ASL
Contract: N/A
Lab Code: CVO
Case No.: 8005
SAS No.: 8005
SDG No.: 8005
ICP ID Number: Optima 3000
Furnace AA ID Number: PE4100ZL
Mercury ID Number: Leeman PS200

Analyte	Wavelength (nm)	Background	MRL (mg/Kg)	MDL (mg/Kg)	M
Mercury	254	NA	0.0500	0.00720	CV

Comments

U.S. EPA - CLP

13
PREPARATION LOG

Lab Name: CH2M HILL ASL Contract: N/A
Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005
Method: CV (SW7471A)

EPA SAMPLE NO.	LAB SAMPLE NO.	PREP DATE	WEIGHT (grams)	VOLUME (mL)
PP011802	800501	09/04/02	0.50	100
PP011802MS	800501MS	09/04/02	0.50	100
PP011802MSD	800501MSD	09/04/02	0.50	100
PP011803	800502	09/04/02	0.50	100
PP011804D	800503	09/04/02	0.50	100
PP011805	800504	09/04/02	0.51	100
SB2-0904	SB2-0904	09/04/02	0.50	100
BS2S0904	BS2S0904	09/04/02	0.50	100

ANALYSIS RUN LOG

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8005 SAS No.: 8005 SDG No.: 8005

Instrument Name: PS200 Method: SW7471A

	EPA Sample No.	LAB SAMPLE ID	DF	DATE ANALYZED	TIME ANALYZED
1	CAL BLANK	CAL BLANK	1	09/09/02	1152
2	CAL 1	CAL 1	1	09/09/02	1156
3	CAL 2	CAL 2	1	09/09/02	1201
4	CAL 3	CAL 3	1	09/09/02	1206
5	CAL 4	CAL 4	1	09/09/02	1212
6	CAL 5	CAL 5	1	09/09/02	1218
7	ICV-0909	ICV-0909	1	09/09/02	1227
8	ICB-0909	ICB-0909	1	09/09/02	1233
9	CV2-0909	CV2-0909	1	09/09/02	1430
10	CB2-0909	CB2-0909	1	09/09/02	1436
11	SB2-0904	SB2-0904	1	09/09/02	1441
12	BS2S0904	BS2S0904	1	09/09/02	1445
13	PP011802	800501	1	09/09/02	1451
14	PP011802MS	800501MS	1	09/09/02	1456
15	PP011802MSD	800501MSD	1	09/09/02	1502
16	PP011803	800502	1	09/09/02	1508
17	PP011804D	800503	1	09/09/02	1513
18	PP011805	800504	1	09/09/02	1516
19	CV3-0909	CV3-0909	1	09/09/02	1531
20	CB3-0909	CB3-0909	1	09/09/02	1537
				/ /	
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				/ /	

COMMENTS: _____

FORM XIV

JG020916-13:38-8005-M

CH2MHILL
Applied Sciences Group

CH2M HILL
Applied Sciences Group
2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

MDL Replicate Information

Method:	Extraction Method:	Matrix:	Units	Instrument:	MDL Date:	Exp. Date:
SW7471	METHOD	SOIL	MG/KG	PS200	02/08/2002	02/07/2003

CAS_NO	PARAMETER	MDL	R1	R2	R3	R4	R5	R6	R7	R8	Mean	Std.Dev.	Spike Lev.
7439-97-6	Mercury	0.0072	0.0407	0.0385	0.0395	0.0383	0.038	0.044	0.0425		0.04021428	0.00230248	0.04

TOTAL ORGANIC CARBON
METHOD ASTM E-777

CASE NARRATIVE
TOC

Analytical Method: ASTM E777 Batch No.: 8005

Lab Name: CH2M HILL Applied Sciences Lab Contract #.: 164067.A1.02

Project: Portland Harbor

I. Holding Times:
All holding times were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Spike Duplicate Sample(s):
All acceptance criteria were met.

D. Lab Control Sample(s):
All acceptance criteria were met.

E. Other:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: Date: 9-17-02

Reviewed by: Date: 9/17/02

SAMPLE DATA SUMMARY

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011802

Lab Name: CH2M HILL ASL

Project No.: 164067.A1.02

Lab Code: CVO

Matrix: SOIL

Sample Amt (G): 0.252

% Solid: NA

Instrument ID: TOC S1

Initial Cal ID: TOC090502S1

Lab Batch No.: 8005

Lab Sample ID: 800501

Date Sampled: 08/20/02

Date Analyzed: 09/05/02

Dilution Factor: 1

Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	80.1	397	14500	

Comments:

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011803

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab Batch No.: 8005
Matrix: SOIL
Lab Sample ID: 800502
Sample Amt (G): 0.253
Date Sampled: 08/20/02
% Solid: NA
Date Analyzed: 09/05/02
Instrument ID: TOC S1
Dilution Factor: 1
Initial Cal ID: TOC090502S1
Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	79.7	395	2530	

Comments:

FORM 1

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011804D

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab Batch No.: 8005
Matrix: SOIL
Lab Sample ID: 800503
Sample Amt (G): 0.250
Date Sampled: 08/20/02
% Solid: NA
Date Analyzed: 09/05/02
Instrument ID: TOC S1
Dilution Factor: 1
Initial Cal ID: TOC090502S1
Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	80.7	400	1590	

Comments:

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011805

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab Batch No.: 8005
Matrix: SOIL
Lab Sample ID: 800504
Sample Amt (G): 0.254
Date Sampled: 08/21/02
% Solid: NA
Date Analyzed: 09/05/02
Instrument ID: TOC S1
Dilution Factor: 1
Initial Cal ID: TOC090502S1
Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	79.3	394	24500	

Comments:

QC SUMMARY

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

SB1-0905

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Matrix: SOIL
Sample Amt (G): 1.000
% Solid: NA
Instrument ID: TOC S1
Initial Cal ID: TOC090502S1

Lab Batch No.: 8005
Lab Sample ID: SB1-0905
Date Sampled: N/A
Date Analyzed: 09/05/02
Dilution Factor: 1
Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	20.2	100	100	U

Comments:

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

ICV-0905

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Matrix: SOIL
Sample Amt (G): 0.500
% Solid: NA
Instrument ID: TOC S1
Initial Cal ID: TOC090502S1

Lab Batch No.: 8005
Lab Sample ID: ICV-0905
Date Sampled: N/A
Date Analyzed: 09/05/02
Dilution Factor: 1
Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	40.3	200	3930	

Comments:

2A
ANALYSIS DATA SHEET
INITIAL MULTIPOINT CALIBRATION

Analytical Method: ASTM E777
Lab Name: CH2M HILL ASL
Lab Code: CVO
Initial Calibration Date: 09/05/02

Lab Batch No.: 8005
Instrument ID: TOC S1
Initial Calibration ID: TOC090502S1
Concentration Units: mg/kg

Analyte	STD 1	Area 1	STD 2	Area 2	STD 3	Area 3	STD 4	Area 4	STD 5	Area 5	Curve Fit	R2	Q
Total Organic Carbon	100	1111956	200	1693552	1000	7453226	4000	21942160	8000	47595553	linear	0.9984	

Comments:

2B
ANALYSIS DATA SHEET
CALIBRATION VERIFICATION

Analytical Method: ASTM E777
Lab Name: CH2M HILL ASL
Lab Code CVO
ICV ID: ICV-0905
CCV #1 ID: CV1-0905
Lab Batch No.: 8005
Instrument ID: TOC S1
Initial Calibration ID: TOC090502S1
CCV #2 ID:

Concentration Units: mg/kg

Analyte	ICV			CCV #1			CCV #2			Q
	Expected	Found	%D	Expected	Found	%D	Expected	Found	%D	
Total Organic Carbon	3820	3930	103%	4000	4198	5.0%				

Comments:

3

ANALYSIS DATA SHEET

METHOD BLANK SUMMARY

EPA SAMPLE NO.

SB1-0905

Lab Name: CH2M HILL ASL

Lab Code: CVO

Matrix: Water

Instrument ID: TOC S1

Initial Cal ID: TOC090502S1

Project No.: 164067.A1.02

Lab Batch No.: 8005

Lab Sample ID: SB1-0905

Date Analyzed: 09/05/02

Time Analyzed: 13:44

Concentration Units: mg/Kg

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
01	ICV-0905	ICV-0905	09/05/02	13:55
02	PP011802	800501	09/05/02	14:30
03	PP011803	800502	09/05/02	14:39
04	PP011804D	800503	09/05/02	14:49
05	PP011805	800504	09/05/02	15:00
06				
07				
08				
09				
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17				
18				
19				
20				
21				

COMMENTS:

FORM 3

7

ANALYSIS DATA SHEET

LABORATORY CONTROL SAMPLE

Analytical Method: ASTM E777

Lab Name: CH2M HILL ASL

LCS ID: ICV-0905

Lab Batch No.: 8005

Initial Calibration ID: TOC090502S1

Concentration Units: mg/kg

Analyte	Expected	Found	%R	Control Limits	Qualifier
Total Organic Carbon	3820	3930	103	80-120%	

Comments:

14

ANALYSIS DATA SHEET

ANALYTICAL SEQUENCE

Lab Name: CH2M HILL ASL

Lab Code: CVO

Lab Batch No.: 8005

Instrument ID: TOC S1

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
01	LEVEL 1	LEVEL 1	09/05/02	11:06
02	LEVEL 2	LEVEL 2	09/05/02	11:17
03	LEVEL 3	LEVEL 3	09/05/02	11:24
04	LEVEL 4	LEVEL 4	09/05/02	11:36
05	LEVEL 5	LEVEL 5	09/05/02	11:47
06	ICV-0905	ICV-0905	09/05/02	13:55
07	SB1-0905	SB1-0905	09/05/02	13:44
08	PP011802	800501	09/05/02	14:30
09	PP011803	800502	09/05/02	14:39
10	PP011804D	800503	09/05/02	14:49
11	PP011805	800504	09/05/02	15:00
12	CV1-0905	CV1-0905	09/05/02	16:30
13				
14				
15				
16				
17				
18				
19				
20				

COMMENTS:

CH2MHILL
Applied Sciences Group

CH2M HILL
Applied Sciences Group
2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

MDL Replicate Information

Method:	Extraction Method:	Matrix:	Units	Instrument:	MDL Date:	Exp. Date:
ASTM E-77	NONE	SOIL	MG/KG	TOCSkalar	06/25/2002	06/24/2003

CAS_NO	PARAMETER	MDL	R1	R2	R3	R4	R5	R6	R7	R8	Mean	Std.Dev.	Spike Lev.
TOC	Total Organic Carbon	20.2	28.63	12.23	17.22	18.88	10.21	10.08	8.16	11.82	14.65375	6.72439043	80

CHAIN OF CUSTODY/SHIPPING DOCUMENTS

23420

CH2MHILL Applied Sciences Lab
CHAIN OF CUSTODY RECORD
AND AGREEMENT TO PERFORM SERVICES

CVO 2300 NW Walnut Boulevard
Corvallis, OR 97330-3538
(541) 752-4271 FAX (541) 752-0276

COC # _____

Project # 164067.A1.02

Purchase Order #

Project Name: City of Portland Outfalls - Pilot Project

Company Name: City of Portland

Report to: Dawn Sanders

Phone No: (503) 235-5000

Requested Completion Date: Standard

Sample Disposal: Dispose [X] Return [ ]

THIS AREA FOR LAB USE ONLY: Lab # 8005 Page 1 of 1

EPA Tier QC Level: 1 (Screening) 2 3 4

Sampling Date	Sampling Time	Type COMP	Type GRAB	Matrix WATER	Matrix SOIL	Matrix AIR	Matrix Other	CLIENT SAMPLE ID (8 CHARACTERS)	LAB QC	TOTAL # OF CONTAINERS	Grain Size	Metals	Pesticides	Herbicides	TPH-Dx	Mercury	SVOC/Low level PAH	PCBs	TOC	Alternate Description	Lab ID
											Preservative										
											4°	4°	4°	4°	4°	4°	4°	4°	4°		
8/20/02	1635	X					X	PP01180 2		4	/	/	/	/	/	/	/	/	/		-1
8/20/02	1710	X					X	PP01180 3		4	/	/	/	/	/	/	/	/	/		-2
8/20/02	2400	X					X	PP01180 4D		4	/	/	/	/	/	/	/	/	/		-3
8/21/02	945	X					X	PP01180 5		4	/	/	/	/	/	/	/	/	/		-4

Relinquished By: David Lacey	Date/Time: 8/21/02 1900	Received By	Date/Time
Sampled By and Title: David Lacey (Please sign and print name)	Date/Time: 8/21/02 1900	Relinquished By (Please sign and print name)	Date/Time
Received By: (Please sign and print name)	Date/Time: 8/21/02 10:45	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Shipped Via: UPS Fed-Ex Other _____	Shipping #

Special Instructions:
* Run SW 8270C and SW 8270C-SIM

Instructions and Agreement Provisions on Reverse Side

DISTRIBUTION: Original - LAB, Yellow - LAB, Pink - Client
Rev 2/01 Lab form 340

CH2MHILL
Applied Sciences Group

Sample Receipt Record

Batch Number: 8005 Date/Time Received: 8/22/02

Client/Project Portland Harbor Temperature: 4.8

VERIFICATION OF SAMPLE CONDITIONS (verify all items) * HD = Client Hand delivered Samples

Observation	YES	NO	*HD
Were custody seals intact and on the outside of the cooler?	X		
Was the Chain of Custody inside the cooler?	X		
Was the Chain of Custody properly filled out?	X		
Were the sample containers in good condition?	X		
Was there ice in the cooler?	X		

If the answer to any of the questions above is NO, a Sample Receipt Exceptions Report Must be written.

VERIFICATION OF SAMPLE PRESERVATION (verify all preserved samples except HAAs, HANs and CH)

Sample No	Nutrients pH <2	Metals pH <2	Volatiles pH <2	Cyanides pH >12	TOC pH <2	Phenol pH <2, FAS	Other (specify)	N/A (soils/unpres)
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
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26								
27								
28								
29								
30								

LOGIN AND pH VERIFICATIONS PERFORMED BY

Dayna Kaumann 8/22/02

Date/Time Date/Time

CH2M HILL
Applied Sciences Group

2300 NW Walnut Blvd., Corvallis, OR 97330-3538
P.O. Box 428, Corvallis, OR 97339-0428
Tel 541.752.4271 Fax 541.752.0276

CH2MHILL
Applied Sciences Group

Sample Receipt Exception Report

Sample Batch Number: 8005 **Client/Project** Portland Harbor

The following exceptions were noted:		
		Comments (write number of exception description and the impacted sample numbers)
	1. No custody seal as required by project	
	2. No chain-of-custody provided	
	3. Analysis, description, date of collection not provided	
	4. Samples broken or leaking on reciept.	
	5. Temperature of samples inappropriate for analysis requested	
	6. Container inappropriate for analysis requested	
	7. Inadequate sample volume.	
	8. Preservation inappropriate for analysis requested	
	9. Samples received out of holding time for analysis requrested	
X	10. Discrepancies between COC form and container labels.	COC has sample time of 9:45 for sample PP011805. Sample bottle says 10:45.
X	11. Other.	* TPH-O not requested on COC.

ACTION TAKEN: use 9:45 as time. per Brad.

Originator: DKaumann Date: 8/22/02

Client was notified on: (Date/Time) 8/22/02 10:58 Client Contact: Brad - field team leader

* Per Scott Echols TPH-O should be analyzed
KMckinley 8/22/02

Client Services:

CH2M HILL
Applied Sciences Laboratory

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CH2MHILL
Applied Sciences Group

September 19, 2002

Portland Harbor

164067.A1.02

RE: Laboratory Report for Portland Harbor
Applied Sciences Group Reference No. 8006

Scott Echols/CVO:

On August 22, 2002, CH2M HILL Applied Sciences Group received four samples with a request for analysis of selected parameters. All analyses were performed by CH2M HILL unless otherwise indicated below.

The analytical results and associated quality control data are enclosed. Any unusual difficulties encountered during the analysis of your samples are discussed in the case narrative.

CH2M HILL Applied Sciences Group appreciates your business and looks forward to serving your analytical needs again. If you should have any questions concerning the data, or if you need additional information, please call Ms. Kathy McKinley at (541) 758-0235, extension 3120.

Sincerely,

Ben Thompson
Laboratory Representative

Enclosures

cc:
Tina Rice/PDX

CLIENT SAMPLE CROSS-REFERENCE

CH2M HILL Applied Sciences Group Reference No. 8006

Sample ID	Client Sample ID	Date Collected	Time Collected
800601	PP011801	08/20/2002	16:00
800602	PP011809	08/21/2002	15:00
800603	PP011810	08/21/2002	16:00
800604EB	PP0118EB01	08/21/2002	13:15

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CH2M HILL Laboratory Reference No. 8006

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QC Summary 34

Metals Analysis 75
Sample Data Summary 77
QC Summary 84

Total Organic Carbon Analysis by Method ASTM E-777 99
Sample Data Summary 101
QC Summary 105

Chain of Custody/Shipping Documents 114

TOTAL PETROLEUM HYDROCARBONS-DIESEL
BY METHOD TPHNW-Dx

CASE NARRATIVE
TPH-DIESEL BY TPHNW-Dx

Analytical Method: TPHNW-Dx

Batch No.: 8006

Lab Name: CH2M HILL Applied Sciences Lab

Contract #.: 164067.A1.02

Project: Portland Harbor

I. Holding Times:
All holding times were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Spike Duplicate Sample(s):
All acceptance criteria were met.

D. Lab Control Sample(s):
All acceptance criteria were met.

E. Surrogate(s):
All acceptance criteria were met.

F. Other:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
"N"-qualifier used to denote result values that fall within diesel carbon range (C12-C24); however sample peak-pattern does not match diesel standard.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: Douglas A. Hardy Date: 9/18/02

Reviewed by: Mike Shawdt Date: 09/18/02

SAMPLE DATA SUMMARY

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011801

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\020B2001.D
Matrix: Soil
Sample Amt: 10.11 g
% Solid: 70.04
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8006
Lab Sample ID: **800601**
Date Sampled: 08/20/02
Date Extracted: 08/23/02
Date Analyzed: 09/13/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.36	9.89	41.9	N
LUBEOIL_NW	NW TPH Lube Oil	3.36	19.8	149	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	91.5	
630-02-4	Octacosane	50-150%	92.7	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011809

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\021B2101.D
Matrix: Soil
Sample Amt: 10.91 g
% Solid: 77.68
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8006
Lab Sample ID: **800602**
Date Sampled: 08/21/02
Date Extracted: 08/23/02
Date Analyzed: 09/13/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.12	9.17	200	N
LUBEOIL_NW	NW TPH Lube Oil	3.12	18.3	414	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	104	
630-02-4	Octacosane	50-150%	103	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011810

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\022B2201.D
Matrix: Soil
Sample Amt: 10.45 g
% Solid: 51.03
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8006
Lab Sample ID: **800603**
Date Sampled: 08/21/02
Date Extracted: 08/23/02
Date Analyzed: 09/13/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.25	9.57	73.1	N
LUBEOIL_NW	NW TPH Lube Oil	3.25	19.1	177	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	94.7	
630-02-4	Octacosane	50-150%	92.0	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP0118EB01

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\007B0701.D
Matrix: Water
Sample Amt: 616.4 ml
% Solid: 0
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8006
Lab Sample ID: **800604EB**
Date Sampled: 08/21/02
Date Extracted: 08/27/02
Date Analyzed: 09/12/02
Total Dilution Factor: 1
Concentration Units: mg/L
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	0.019	0.16	0.16	JN
LUBEOIL_NW	NW TPH Lube Oil	0.019	0.32	0.17	J

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	83.2	
630-02-4	Octacosane	50-150%	82.6	

Comments:

QC SUMMARY

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

WB1-0827

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\004B0401.D
Matrix: Water
Sample Amt: 1000 ml
% Solid: 0
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8006
Lab Sample ID: **WB1-0827**
Date Sampled: N/A
Date Extracted: 08/27/02
Date Analyzed: 09/12/02
Total Dilution Factor: 1
Concentration Units: mg/L
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	0.012	0.10	0.040	J
LUBEOIL_NW	NW TPH Lube Oil	0.012	0.20	0.19	J

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	65.4	
630-02-4	Octacosane	50-150%	55.2	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

SB1-0823

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\009B0901.D
Matrix: Soil
Sample Amt: 10 g
% Solid: 100
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8006
Lab Sample ID: **SB1-0823**
Date Sampled: N/A
Date Extracted: 08/23/02
Date Analyzed: 09/12/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.40	10.0	10.0	U
LUBEOIL_NW	NW TPH Lube Oil	3.40	20.0	9.96	J

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	102	
630-02-4	Octacosane	50-150%	88.5	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

BS1W0827

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\005B0501.D
Matrix: Water
Sample Amt: 1000 ml
% Solid: 0
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8006
Lab Sample ID: **BS1W0827**
Date Sampled: N/A
Date Extracted: 08/27/02
Date Analyzed: 09/12/02
Total Dilution Factor: 1
Concentration Units: mg/L
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	0.012	0.10	0.95	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	93.0	
630-02-4	Octacosane	50-150%	102	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

BS1S0823

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\010B1001.D
Matrix: Soil
Sample Amt: 10 g
% Solid: 100
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8006
Lab Sample ID: **BS1S0823**
Date Sampled: N/A
Date Extracted: 08/23/02
Date Analyzed: 09/12/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.40	10.0	98.1	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	93.8	
630-02-4	Octacosane	50-150%	70.5	

Comments:

3

ANALYSIS DATA SHEET

LABORATORY CONTROL SAMPLE

Lab Name: CH2M HILL ASL

Lab Code CVO

LCS ID: BS1S0823

Lab Batch No.: 8006

Init.Calib.Date(s): 09/10/02

Init. Calib. Times: 00:01 - 07:54

Concentration Units: mg/Kg

Analyte	Expected	Found	% Recovery	Control Limits	Qualifier
NW TPH Diesel	101	98.1	97.5	50-150%	

Surrogate	% Recovery	Control Limits	Qualifier
O-Terphenyl	93.8	50-150%	
Octacosane	70.5	50-150%	

Comments:

ANALYSIS DATA SHEET
LABORATORY CONTROL SAMPLE

Lab Name: CH2M HILL ASL
Lab Code CVO
LCS ID: BS1W0827

Lab Batch No.: 8006
Init.Calib.Date(s): 09/10/02
Init. Calib. Times: 00:01 - 07:54
Concentration Units: mg/L

Analyte	Expected	Found	% Recovery	Control Limits	Qualifier
NW TPH Diesel	1.01	0.95	94.5	50-150%	

Surrogate	% Recovery	Control Limits	Qualifier
O-Terphenyl	93.0	50-150%	
Octacosane	102	50-150%	

Comments:

4

ANALYSIS DATA SHEET
METHOD BLANK SUMMARY

EPA SAMPLE NO.

SB1-0823

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\009B0901.D
Matrix: Soil
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8006
Lab Sample ID: SB1-0823
Date Analyzed: 09/12/02
Time Analyzed: 20:20
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	BS1S0823	BS1S0823	C:\HPCHEM\2\DATA\091202L2\010B1001.D	09/12/02
02	PP011801	800601	C:\HPCHEM\2\DATA\091202L2\020B2001.D	09/13/02
03	PP011809	800602	C:\HPCHEM\2\DATA\091202L2\021B2101.D	09/13/02
04	PP011810	800603	C:\HPCHEM\2\DATA\091202L2\022B2201.D	09/13/02
05				
06				
07				
08				
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19				
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21				

COMMENTS:

4

ANALYSIS DATA SHEET
METHOD BLANK SUMMARY

EPA SAMPLE NO.

WB1-0827

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\004B0401.D
Matrix: Water
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8006
Lab Sample ID: WB1-0827
Date Analyzed: 09/12/02
Time Analyzed: 17:19
Concentration Units: mg/L
Initial Cal ID: TPH090902

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	BS1W0827	BS1W0827	C:\HPCHEM\2\DATA\091202L2\005B0501.D	09/12/02
02	PP0118EB01	800604EB	C:\HPCHEM\2\DATA\091202L2\007B0701.D	09/12/02
03				
04				
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21				

COMMENTS:

6

ANALYSIS DATA SHEET

INITIAL MULTIPOINT CALIBRATION

Lab Name: CH2M HILL ASL

Lab Code: CVO

Instrument ID: GC-L

Units: mg/L

GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Project No.: 164067.A1.02

Lab Batch No.: 8006

Calibration Date: 09/10/02

Calibration Times: 00:01 - 07:54

Initial Cal ID: TPH090902

LAB FILE ID:

LEVEL 1 (DIESEL) C:\HPCHEM\2\DATA\090902L1\010B1001.D

LEVEL 2 (DIESEL) C:\HPCHEM\2\DATA\090902L1\011B1101.D

LEVEL 3 (DIESEL) C:\HPCHEM\2\DATA\090902L1\012B1201.D

LEVEL 4 (DIESEL) C:\HPCHEM\2\DATA\090902L1\013B1301.D

LEVEL 5 (DIESEL) C:\HPCHEM\2\DATA\090902L1\014B1401.D

LEVEL 6 (DIESEL) C:\HPCHEM\2\DATA\090902L1\015B1501.D

LEVEL 1 (OIL) C:\HPCHEM\2\DATA\090902L1\017B1701.D

LEVEL 2 (OIL) C:\HPCHEM\2\DATA\090902L1\018B1801.D

LEVEL 3 (OIL) C:\HPCHEM\2\DATA\090902L1\019B1901.D

LEVEL 4 (OIL) C:\HPCHEM\2\DATA\090902L1\020B2001.D

LEVEL 5 (OIL) C:\HPCHEM\2\DATA\090902L1\021B2101.D

LEVEL 6 (OIL) C:\HPCHEM\2\DATA\090902L1\022B2201.D

Analyte	STD 1	RF 1	STD 2	RF 2	STD 3	RF 3	STD 4	RF 4	STD 5	RF 5			
NW TPH Diesel	10.1	0.000056	40.0	0.000095	201	0.000142	805	0.000142	2012	0.000149			
NW TPH Lube Oil	20.5	0.000020	103	0.000070	205	0.000103	410	0.000122	2050	0.000196			
O-Terphenyl	4.82	0.000121	19.3	0.000105	96.5	0.000124	386	0.000111	965	0.000112			
Octacosane	4.53	0.000219	18.1	0.000146	90.6	0.000175	363	0.000143	906	0.000147			

Analyte	STD 6	RF 6									CURVE FIT	R^2	
NW TPH Diesel	5031	0.000149									Linear	1.0000	
NW TPH Lube Oil	4102	0.000188									Linear	0.9987	
O-Terphenyl	2412	0.000106									Linear	0.9998	
Octacosane	2266	0.000160									Linear	0.9993	

Comments:

7B
ANALYSIS DATA SHEET
INITIAL CALIBRATION VERIFICATION

Lab Name: CH2M HILL ASL
Lab Code: CVO
Instrument ID: GC-L
Initial Cal ID: TPH090902
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8006
Init.Calib.Date(s): 09/10/02
Init. Calib. Times: 00:01 - 07:54
ICV ID: ICV2-0909
Concentration Units: mg/L

ANALYTE	Expected mg/L	Found mg/L	Percent Recovery	Q
NW TPH Diesel	1000	1012	101	
NW TPH Lube Oil	1000	972	97.2	

COMMENTS:
NW TPH Lube Oil reported from ICV3-0909

7B
ANALYSIS DATA SHEET
CALIBRATION VERIFICATION

Lab Name: CH2M HILL ASL
Lab Code: CVO
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8006
Init.Calib.Date(s): 09/10/02
Init. Calib. Times: 00:01 - 07:54
Concentration Units: mg/L
Initial Cal ID: TPH090902

CCV#1 ID: CV1-0912 CCV #2 ID: CV3-0912 CCV #3 ID: CV5-0912

ANALYTE	CCV #1 %D or DRIFT	CCV #2 %D or DRIFT	CCV #3 %D or DRIFT	Q
NW TPH Diesel	-0.1%	-3.2%	-12.0%	
NW TPH Lube Oil	-11.4%	1.6%	-3.5%	
O-Terphenyl	-4.4%	-8.1%	-20.0%	
Octacosane	-12.2%	-9.1%	-16.3%	

COMMENTS:
NW TPH Lube Oil reported from CV2-0912, CV4-0912, CV6-0912

ANALYSIS DATA SHEET
ANALYTICAL SEQUENCE

Lab Name: CH2M HILL ASL
Lab Code: CVO
Start Date: 09/10/02 End Date: 09/10/02
Start Time: 00:01 End Time: 12:23

Lab Batch No.: 8006
Instrument ID: GC-L

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LEVEL 1 (DIESEL)	LEVEL 1 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\010B1001.D	00:01
02	LEVEL 2 (DIESEL)	LEVEL 2 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\011B1101.D	00:38
03	LEVEL 3 (DIESEL)	LEVEL 3 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\012B1201.D	01:14
04	LEVEL 4 (DIESEL)	LEVEL 4 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\013B1301.D	01:50
05	LEVEL 5 (DIESEL)	LEVEL 5 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\014B1401.D	02:27
06	LEVEL 6 (DIESEL)	LEVEL 6 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\015B1501.D	03:03
07	ICV2-0909	ICV2-0909	C:\HPCHEM\2\DATA\090902L1\016B1601.D	03:39
08	LEVEL 1 (OIL)	LEVEL 1 (OIL)	C:\HPCHEM\2\DATA\090902L1\017B1701.D	04:52
09	LEVEL 2 (OIL)	LEVEL 2 (OIL)	C:\HPCHEM\2\DATA\090902L1\018B1801.D	05:28
10	LEVEL 3 (OIL)	LEVEL 3 (OIL)	C:\HPCHEM\2\DATA\090902L1\019B1901.D	06:05
11	LEVEL 4 (OIL)	LEVEL 4 (OIL)	C:\HPCHEM\2\DATA\090902L1\020B2001.D	06:41
12	LEVEL 5 (OIL)	LEVEL 5 (OIL)	C:\HPCHEM\2\DATA\090902L1\021B2101.D	07:17
13	LEVEL 6 (OIL)	LEVEL 6 (OIL)	C:\HPCHEM\2\DATA\090902L1\022B2201.D	07:54
14	ICV3-0909	ICV3-0909	C:\HPCHEM\2\DATA\090902L1\023B2301.D	12:23
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

COMMENTS:

ANALYSIS DATA SHEET
ANALYTICAL SEQUENCE

Lab Name: CH2M HILL ASL
Lab Code: CVO
Start Date: 09/12/02 End Date: 09/13/02
Start Time: 13:42 End Time: 11:27

Lab Batch No.: 8006
Instrument ID: GC-L

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	CV1-0912	CV1-0912	C:\HPCHEM\2\DATA\091202L2\002B0201.D	13:42
02	CV2-0912	CV2-0912	C:\HPCHEM\2\DATA\091202L2\003B0301.D	16:04
03	WB1-0827	WB1-0827	C:\HPCHEM\2\DATA\091202L2\004B0401.D	17:19
04	BS1W0827	BS1W0827	C:\HPCHEM\2\DATA\091202L2\005B0501.D	17:55
05	PP0118EB01	800604EB	C:\HPCHEM\2\DATA\091202L2\007B0701.D	19:07
06	SB1-0823	SB1-0823	C:\HPCHEM\2\DATA\091202L2\009B0901.D	20:20
07	BS1S0823	BS1S0823	C:\HPCHEM\2\DATA\091202L2\010B1001.D	21:33
08	CV3-0912	CV3-0912	C:\HPCHEM\2\DATA\091202L2\016B1601.D	01:47
09	CV4-0912	CV4-0912	C:\HPCHEM\2\DATA\091202L2\017B1702.D	03:36
10	PP011801	800601	C:\HPCHEM\2\DATA\091202L2\020B2001.D	05:25
11	PP011809	800602	C:\HPCHEM\2\DATA\091202L2\021B2101.D	06:01
12	PP011810	800603	C:\HPCHEM\2\DATA\091202L2\022B2201.D	06:37
13	CV5-0912	CV5-0912	C:\HPCHEM\2\DATA\091202L2\028B2801.D	10:15
14	CV6-0912	CV6-0912	C:\HPCHEM\2\DATA\091202L2\029B2901.D	11:27
15				
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20				
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22				
23				
24				
25				

COMMENTS:

CH2MHILL
Applied Sciences Group

CH2M HILL
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2300 NW Walnut Blvd
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97339-0428
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MDL Replicate Information

Method:	Extraction Method:	Matrix:	Units	Instrument:	MDL Date:	Exp. Date:
TPHNW-DX	METHOD	WATER	MG/L	GCL	05/20/2002	05/19/2003

CAS_NO	PARAMETER	MDL	R1	R2	R3	R4	R5	R6	R7	R8	Mean	Std.Dev.	Spike Lev.
TPHD	TPH-Diesel	0.012	0.02425	0.0299	0.0272	0.030118	0.035816	0.025499	0.027896		0.028669	0.00380769	0.0125

CH2MHILL
Applied Sciences Group

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MDL Replicate Information

Method:	Extraction Method:	Matrix:	Units	Instrument:	MDL Date:	Exp. Date:
TPHNW-DX	SW3550	SOIL	MG/KG	GCL	08/10/2001	08/09/2002

CAS_NO	PARAMETER	MDL	R1	R2	R3	R4	R5	R6	R7	R8	Mean	Std.Dev.	Spike Lev.
TPHD	TPH-Diesel	3.40	8.2	8	7.7	6.4	6.3	5.9	5.6	5.3	6.675	1.13357840	10

PCB AROCLORS BY METHOD SW8082

CASE NARRATIVE
PCB AROCLORS BY SW8082

Analytical Method: SW8082 Batch No.: 8006

Lab Name: CH2M HILL Applied Sciences Lab Contract #.: 164067.A1.02

Project: Portland Harbor

I. Holding Times:
All holding times were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Spike Duplicate Sample(s):
All acceptance criteria were met.

D. Lab Control Sample(s):
All acceptance criteria were met.

E. Other:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: Doug A. Hardy Date: 9/13/02

Reviewed by: [illegible] Date: 9/17/02

SAMPLE DATA SUMMARY

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **PP011801**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
SDG No.: 8006
Matrix: SOIL
Lab Sample ID: **800601**
Sample Amt.: 10.12 g
Lab File ID: 018B1801.D
% Moisture: 30
Decanted: Y
Date Received: 08/22/02
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/09/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	6.63	7.05	7.05		U
11104-28-2	PCB-1221	2.53	14.1	14.1		U
11141-16-5	PCB-1232	4.29	7.05	7.05		U
53469-21-9	PCB-1242	3.16	7.05	7.05		U
12672-29-6	PCB-1248	2.34	7.05	32.6	29.4	
11097-69-1	PCB-1254	2.02	7.05	18.7	17.6	
11096-82-5	PCB-1260	3.56	7.05	13.4	12.0	
37324-23-5	PCB-1262	3.50	7.05	7.05		U
11100-14-4	PCB-1268	3.50	7.05	7.05		U

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	73.7	25-143	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **PP011809**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
SDG No.: 8006
Matrix: SOIL
Lab Sample ID: **800602**
Sample Amt.: 10.18 g
Lab File ID: 019B1901.D
% Moisture: 22
Decanted: Y
Date Received: 08/22/02
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/10/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	5.94	6.32	6.32		U
11104-28-2	PCB-1221	2.26	12.6	12.6		U
11141-16-5	PCB-1232	3.84	6.32	6.32		U
53469-21-9	PCB-1242	2.83	6.32	6.32		U
12672-29-6	PCB-1248	2.10	6.32	106	105	
11097-69-1	PCB-1254	1.81	6.32	38.4	35.9	
11096-82-5	PCB-1260	3.19	6.32	19.5	18.0	
37324-23-5	PCB-1262	3.14	6.32	6.32		U
11100-14-4	PCB-1268	3.14	6.32	6.32		U

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	60.4	25-143	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **PP011810**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
SDG No.: 8006
Matrix: SOIL
Lab Sample ID: **800603**
Sample Amt.: 10.89 g
Lab File ID: 020B2001.D
% Moisture: 49
Decanted: Y
Date Received: 08/22/02
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/10/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	8.46	9.00	9.00		U
11104-28-2	PCB-1221	3.22	18	18.0		U
11141-16-5	PCB-1232	5.47	9	9.0		U
53469-21-9	PCB-1242	4.03	9	9.0		U
12672-29-6	PCB-1248	2.99	9	54.5	51.6	
11097-69-1	PCB-1254	2.57	9	24.5	23.5	
11096-82-5	PCB-1260	4.53	9	14.3	13.6	
37324-23-5	PCB-1262	4.46	9	9.0		U
11100-14-4	PCB-1268	4.46	9	9.0		U

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	98.6	25-143	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **PP0118EB01**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
SDG No.: 8006
Matrix: WATER
Lab Sample ID: **800604EB**
Sample Amt.: 565 ml
Lab File ID: 007B0701.D
% Moisture: 100
Decanted: N/A
Date Received: 08/22/02
Extraction: SepF
Date Extracted: 08/27/02
Extract Vol.: 1 ml
Date Analyzed: 09/12/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/L

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	0.015	0.088	0.088		U
11104-28-2	PCB-1221	0.015	0.18	0.18		U
11141-16-5	PCB-1232	0.012	0.088	0.088		U
53469-21-9	PCB-1242	0.015	0.088	0.088		U
12672-29-6	PCB-1248	0.016	0.088	0.088		U
11097-69-1	PCB-1254	0.0028	0.088	0.088		U
11096-82-5	PCB-1260	0.0071	0.088	0.088		U
37324-23-5	PCB-1262	0.012	0.088	0.088		U
11100-14-4	PCB-1268	0.012	0.088	0.088		U

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	64.4	25-132	

Comments:

QC SUMMARY

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **WB2-0827**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
SDG No.: 8006
Matrix: WATER
Lab Sample ID: **WB2-0827**
Sample Amt.: 1000 ml
Lab File ID: 004F0401.D
% Moisture: 100
Decanted: N/A
Date Received: N/A
Extraction: SepF
Date Extracted: 08/27/02
Extract Vol.: 1 ml
Date Analyzed: 09/12/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/L

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	0.0086	0.050	0.050		U
11104-28-2	PCB-1221	0.0083	0.10	0.10		U
11141-16-5	PCB-1232	0.0065	0.050	0.050		U
53469-21-9	PCB-1242	0.0087	0.050	0.050		U
12672-29-6	PCB-1248	0.0093	0.050	0.050		U
11097-69-1	PCB-1254	0.0016	0.050	0.050		U
11096-82-5	PCB-1260	0.0040	0.050	0.050		U
37324-23-5	PCB-1262	0.0067	0.050	0.050		U
11100-14-4	PCB-1268	0.0067	0.050	0.050		U

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	26.5	25-132	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **SB1-0828**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
SDG No.: 8006
Matrix: SOIL
Lab Sample ID: **SB1-0828**
Sample Amt.: 10 g
Lab File ID: 011B1101.D
% Moisture: 0
Decanted: Y
Date Received: N/A
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/09/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	4.70	5.00	5.00		U
11104-28-2	PCB-1221	1.79	10.0	10.0		U
11141-16-5	PCB-1232	3.04	5.00	5.00		U
53469-21-9	PCB-1242	2.24	5.00	5.00		U
12672-29-6	PCB-1248	1.66	5.00	5.00		U
11097-69-1	PCB-1254	1.43	5.00	5.00		U
11096-82-5	PCB-1260	2.52	5.00	5.00		U
37324-23-5	PCB-1262	2.48	5.00	5.00		U
11100-14-4	PCB-1268	2.48	5.00	5.00		U

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	84.5	25-143	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **BS2W0827**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
SDG No.: 8006
Matrix: WATER
Lab Sample ID: **BS2W0827**
Sample Amt.: 1000 ml
Lab File ID: 005F0501.D
% Moisture: 100
Decanted: N/A
Date Received: N/A
Extraction: SepF
Date Extracted: 08/27/02
Extract Vol.: 1 ml
Date Analyzed: 09/12/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/L

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	0.0086	0.050	0.20	0.18	
11096-82-5	PCB-1260	0.0040	0.050	0.19	0.19	

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	28.6	25-132	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **BS1S0828**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
SDG No.: 8006
Matrix: SOIL
Lab Sample ID: **BS1S0828**
Sample Amt.: 10 g
Lab File ID: 012B1201.D
% Moisture: 0
Decanted: Y
Date Received: N/A
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/09/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	4.70	5.00	95.9	94.3	
11096-82-5	PCB-1260	2.52	5.00	108	104	

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	94.5	25-143	

Comments:

ORGANICS LABORATORY CONTROL SAMPLE SUMMARY

Analytical Method: SW8082
Lab Name: CH2M HILL ASL
Concentration Units: ug/L
LCS ID: BS2W0827

SDG No.: 8006
Contract #: 164067.A1.02
Matrix: WATER
Initial Calibration ID: PCB090902

Analyte	Expected	Found	% Rec.	QC Limits	Qualifier
PCB-1016	0.25	0.20	80.0	50-150	
PCB-1260	0.25	0.19	76.0	50-150	

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	28.6	25-132	

Comments:

ORGANICS LABORATORY CONTROL SAMPLE SUMMARY

Analytical Method: SW8082
Lab Name: CH2M HILL ASL
Concentration Units: ug/Kg
LCS ID: BS1S0828

SDG No.: 8006
Contract #: 164067.A1.02
Matrix: SOIL
Initial Calibration ID: PCB090902

Analyte	Expected	Found	% Rec.	QC Limits	Qualifier
PCB-1016	100	95.9	95.9	50-150	
PCB-1260	100	108	108	50-150	

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	94.5	25-143	

Comments:

ORGANICS METHOD BLANK SUMMARY

Field Sample ID: **WB2-0827**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
SDG No.: 8006
Lab File ID: 004F0401.D
Lab Sample ID: **WB2-0827**
Matrix: WATER
Extraction: SepF
Sulfur Cleanup: N
Date Extracted: 08/27/02
GPC Cleanup: N
Date Analyzed: 09/12/02
GC Column: DB1701 / DB5MS
Time Analyzed: 13:03
Instrument ID: GC-H

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

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed
01	BS2W0827	BS2W0827	C:\HPCHEM\1\DATA\091202H1\005F0501.D	09/12/02
02	PP0118EB01	800604EB	C:\HPCHEM\1\DATA\091202H1\007B0701.D	09/12/02
03				
04				
05				
06				
07				
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09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

Comments:

ORGANICS METHOD BLANK SUMMARY

Field Sample ID: **SB1-0828**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02
Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006
Lab File ID: 011B1101.D Lab Sample ID: **SB1-0828**
Matrix: SOIL Extraction: Sonc
Sulfur Cleanup: N Date Extracted: 08/28/02
GPC Cleanup: N Date Analyzed: 09/09/02
GC Column: DB1701 / DB5MS Time Analyzed: 19:46
Instrument ID: GC-H

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

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed
01	BS1S0828	BS1S0828	C:\HPCHEM\1\DATA\090902H1\012B1201.D	09/09/02
02	PP011801	800601	C:\HPCHEM\1\DATA\090902H1\018B1801.D	09/09/02
03	PP011809	800602	C:\HPCHEM\1\DATA\090902H1\019B1901.D	09/10/02
04	PP011810	800603	C:\HPCHEM\1\DATA\090902H1\020B2001.D	09/10/02
05				
06				
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09				
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11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

Comments:

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
Instrument ID: GC-H
Initial Calibration ID: PCB090902

Contract #: 164067.A1.02
SDG No.: 8006
Calibration Date(s): 09/09/02
Calibration Time(s): 13:28 -16:54

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:	LEVEL 1 (9/9)	002B0201.D
Std 2:	LEVEL 2 (9/9)	003B0301.D
Std 3:	LEVEL 3 (9/9)	004B0401.D
Std 4:	LEVEL 4 (9/9)	005B0501.D
Std 5:	LEVEL 5 (9/9)	006B0601.D
Std 6:	LEVEL 6 (9/9)	007B0701.D
Std 7:	LEVEL 7 (9/9)	008B0801.D

Individual PCB Calib.	Lab File ID:

GC Column: DB1701
Concentration Units: ng/ml

Analyte	STD 1	RF 1	STD 2	RF 2	STD 3	RF 3	STD 4	RF 4	STD 5	RF 5	STD 6	RF 6	STD 7	RF 7
PCB-1016 (Peak 1)	5	0.024693	50	0.0490416	100	0.049556	250	0.052443	500	0.05515	750	0.055112	1000	0.059738
PCB-1016 (Peak 2)	5	0.008578	50	0.0214698	100	0.023767	250	0.026791	500	0.029239	750	0.031094	1000	0.033955
PCB-1016 (Peak 3)	5	0.009656	50	0.0190782	100	0.018783	250	0.019156	500	0.019469	750	0.019134	1000	0.020763
PCB-1016 (Peak 4)	5	0.016945	50	0.034089	100	0.035791	250	0.039201	500	0.041372	750	0.040607	1000	0.044554
PCB-1016 (Peak 5)	5	0.006394	50	0.0276028	100	0.036016	250	0.039326	500	0.044641	750	0.044838	1000	0.049074
PCB-1260 (Peak 1)	5	0.009598	50	0.0212004	100	0.022341	250	0.025343	500	0.027653	750	0.028018	1000	0.031043
PCB-1260 (Peak 2)	5	0.009418	50	0.0205007	100	0.021687	250	0.024098	500	0.025895	750	0.026322	1000	0.028765
PCB-1260 (Peak 3)	5	0.009422	50	0.0199003	100	0.020453	250	0.021601	500	0.022402	750	0.022052	1000	0.023944
PCB-1260 (Peak 4)	5	0.008516	50	0.0178795	100	0.018221	250	0.019277	500	0.019749	750	0.0192	1000	0.02112
PCB-1260 (Peak 5)	5	0.014895	50	0.0318947	100	0.031995	250	0.032885	500	0.033795	750	0.031839	1000	0.03459
Decachlorobiphenyl	2.0	0.001621	10.0	0.0017357	20	0.001769	50	0.00187	100	0.001987	150	0.001945	200	2.20E-03

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Instrument ID: GC-H
Initial Calibration ID: PCB090902

Case No.: 8006

SAS No.: 8006

Contract #: 164067.A1.02
SDG No.: 8006
Calibration Date(s): 09/09/02
Calibration Time(s): 13:28 -16:54

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:	LEVEL 1 (9/9)	002B0201.D
Std 2:	LEVEL 2 (9/9)	003B0301.D
Std 3:	LEVEL 3 (9/9)	004B0401.D
Std 4:	LEVEL 4 (9/9)	005B0501.D
Std 5:	LEVEL 5 (9/9)	006B0601.D
Std 6:	LEVEL 6 (9/9)	007B0701.D
Std 7:	LEVEL 7 (9/9)	008B0801.D

Individual PCB Calib.	Lab File ID:

GC Column: DB1701

Concentration Units: ng/ml

Analyte	Curve Fit	Avg. RRF	% RSD	Mean % RSD	R or COD	Q
PCB-1016 (Peak 1)	Quadratic	0.04939	23.3		0.99964	
PCB-1016 (Peak 2)	Quadratic	0.024985	33.6		0.99996	
PCB-1016 (Peak 3)	Quadratic	0.018006	20.8		0.99941	
PCB-1016 (Peak 4)	Quadratic	0.03608	25.3		0.99931	
PCB-1016 (Peak 5)	Quadratic	0.035413	41.2		0.99948	
PCB-1260 (Peak 1)	Quadratic	0.023599	29.9		0.99955	
PCB-1260 (Peak 2)	Quadratic	0.022384	28.5		0.99971	
PCB-1260 (Peak 3)	Quadratic	0.019968	24.2		0.99945	
PCB-1260 (Peak 4)	Quadratic	0.017709	23.7		0.9991	
PCB-1260 (Peak 5)	Quadratic	0.03027	22.7		0.99892	
Decachlorobiphenyl (SS)	Quadratic	0.001875	10.1		0.99889	

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
SDG No.: 8006
Instrument ID: GC-H
Calibration Date(s): 09/09/02
Initial Calibration ID: PCB090902
Calibration Time(s): 13:28 -16:54

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:	LEVEL 1 (9/9)	002B0201.D
Std 2:	LEVEL 2 (9/9)	003B0301.D
Std 3:	LEVEL 3 (9/9)	004B0401.D
Std 4:	LEVEL 4 (9/9)	005B0501.D
Std 5:	LEVEL 5 (9/9)	006B0601.D
Std 6:	LEVEL 6 (9/9)	007B0701.D
Std 7:	LEVEL 7 (9/9)	008B0801.D

Individual PCB Calib.	Lab File ID:

GC Column: DB5MS
Concentration Units: ng/ml

Analyte	STD 1	RF 1	STD 2	RF 2	STD 3	RF 3	STD 4	RF 4	STD 5	RF 5	STD 6	RF 6	STD 7	RF 7
PCB-1016 (Peak 1)	5	0.018413	50	0.0373132	100	0.037429	250	0.037749	500	0.038727	750	0.038849	1000	0.042014
PCB-1016 (Peak 2)	5	0.009209	50	0.0208773	100	0.022209	250	0.02453	500	0.026942	750	0.027975	1000	0.030411
PCB-1016 (Peak 3)	5	0.012439	50	0.0266736	100	0.027517	250	0.029164	500	0.030949	750	0.031603	1000	0.034295
PCB-1016 (Peak 4)	5	0.006398	50	0.0132549	100	0.012739	250	0.012458	500	0.012732	750	0.012845	1000	0.013933
PCB-1016 (Peak 5)	5	0.014596	50	0.0306238	100	0.030897	250	0.031489	500	0.033284	750	0.033524	1000	0.036182
PCB-1260 (Peak 1)	5	0.00683	50	0.0147738	100	0.01525	250	0.016854	500	0.018358	750	0.018502	1000	0.020579
PCB-1260 (Peak 2)	5	0.006736	50	0.0139713	100	0.008854	250	0.01842	500	0.01811	750	0.018785	1000	0.019787
PCB-1260 (Peak 3)	5	0.008854	50	0.01842	100	0.01811	250	0.018785	500	0.019787	750	0.019253	1000	0.020909
PCB-1260 (Peak 4)	5	0.0102	50	0.0219144	100	0.022495	250	0.024525	500	0.026724	750	0.026763	1000	0.029553
PCB-1260 (Peak 5)	5	0.005833	50	0.011781	100	0.011468	250	0.012131	500	0.012801	750	0.01237	1000	0.013885
Decachlorobiphenyl	2	0.001049	10	0.0011296	20	0.001162	50	0.001306	100	0.001403	150	0.001404	200	0.001599

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
Contract #: 164067.A1.02
SDG No.: 8006
Instrument ID: GC-H
Calibration Date(s): 09/09/02
Initial Calibration ID: PCB090902
Calibration Time(s): 13:28 -16:54

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:	LEVEL 1 (9/9)	002B0201.D
Std 2:	LEVEL 2 (9/9)	003B0301.D
Std 3:	LEVEL 3 (9/9)	004B0401.D
Std 4:	LEVEL 4 (9/9)	005B0501.D
Std 5:	LEVEL 5 (9/9)	006B0601.D
Std 6:	LEVEL 6 (9/9)	007B0701.D
Std 7:	LEVEL 7 (9/9)	008B0801.D

Individual PCB Calib.	Lab File ID:

GC Column: DB5MS
Concentration Units: ng/ml

Analyte	Curve Fit	Avg. RRF	% RSD	Mean % RSD	R or COD	Q
PCB-1016 (Peak 1)	Quadratic	0.035785	21.9		0.99964	
PCB-1016 (Peak 2)	Quadratic	0.023165	30.2		0.99988	
PCB-1016 (Peak 3)	Quadratic	0.02752	25.9		0.9998	
PCB-1016 (Peak 4)	Quadratic	0.012051	21.1		0.99963	
PCB-1016 (Peak 5)	Quadratic	0.030085	23.6		0.99974	
PCB-1260 (Peak 1)	Quadratic	0.015878	28.1		0.99955	
PCB-1260 (Peak 2)	Quadratic	0.014952	35.2		0.99942	
PCB-1260 (Peak 3)	Quadratic	0.017731	22.7		0.99936	
PCB-1260 (Peak 4)	Quadratic	0.023168	27.2		0.99949	
PCB-1260 (Peak 5)	Quadratic	0.011467	22.7		0.99878	
Decachlorobiphenyl (SS)	Quadratic	0.001293	14.9		0.99907	

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO Case No.: 8006 SAS No.: 8006
Instrument ID: GC-H
Initial Calibration ID: PCB090902

Contract #: 164067.A1.02
SDG No.: 8006
Calibration Date(s): 09/02/02
Calibration Time(s): 18:08 -21:34

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:		
Std 2:		
Std 3:		
Std 4:		
Std 5:		
Std 6:		

	Individual PCB Calib.	Lab File ID:
Std 1:	AROCLOR 1221	048B0901.D
Std 1:	AROCLOR 1232	049B1001.D
Std 1:	AROCLOR 1242	050B1101.D
Std 1:	AROCLOR 1248	051B1201.D
Std 1:	AROCLOR 1254	052B1301.D
Std 1:	AROCLOR 1262	053B1401.D
Std 1:	AROCLOR 1268	054B1501.D

GC Column: DB1701 Concentration Units: ng/ml

Analyte	STD 1	RF 1	STD 2	RF 2	STD 3	RF 3	STD 4	RF 4	STD 5	RF 5	STD 6	RF6	STD 7	RF 7
PCB-1221 (Peak 1)	250	0.057787												
PCB-1221 (Peak 2)	250	0.19804												
PCB-1221 (Peak 3)	250	0.084972												
PCB-1221 (Peak 4)	250	0.106478												
PCB-1221 (Peak 5)	250	0.036091												
PCB-1232 (Peak 1)	250	0.095544												
PCB-1232 (Peak 2)	250	0.045498												
PCB-1232 (Peak 3)	250	0.060841												
PCB-1232 (Peak 4)	250	0.047032												
PCB-1232 (Peak 5)	250	0.086834												
PCB-1242 (Peak 1)	250	0.031732												
PCB-1242 (Peak 2)	250	0.024402												
PCB-1242 (Peak 3)	250	0.049346												
PCB-1242 (Peak 4)	250	0.014681												
PCB-1242 (Peak 5)	250	0.056575												
PCB-1248 (Peak 1)	250	0.034311												
PCB-1248 (Peak 2)	250	0.031335												
PCB-1248 (Peak 3)	250	0.034942												
PCB-1248 (Peak 4)	250	0.0293												
PCB-1248 (Peak 5)	250	0.065982												
PCB-1254 (Peak 1)	250	0.028224												
PCB-1254 (Peak 2)	250	0.027218												
PCB-1254 (Peak 3)	250	0.019919												
PCB-1254 (Peak 4)	250	0.033898												
PCB-1254 (Peak 5)	250	0.026149												
PCB-1262 (Peak 1)	250	0.030122												
PCB-1262 (Peak 2)	250	0.028837												
PCB-1262 (Peak 3)	250	0.014536												
PCB-1262 (Peak 4)	250	0.026817												
PCB-1262 (Peak 5)	250	0.014502												
PCB-1268 (Peak 1)	250	0.050736												
PCB-1268 (Peak 2)	250	0.045931												
PCB-1268 (Peak 3)	250	0.015521												
PCB-1268 (Peak 4)	250	0.016475												
PCB-1268 (Peak 5)	250	0.019135												

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
Contract #: 164067.A1.02
SDG No.: 8006
Instrument ID: GC-H
Calibration Date(s): 09/02/02
Initial Calibration ID: PCB090902
Calibration Time(s): 18:08 -21:34

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:		
Std 2:		
Std 3:		
Std 4:		
Std 5:		
Std 6:		

	Individual PCB Calib.	Lab File ID:
Std 1:	AROCLOR 1221	048B0901.D
Std 1:	AROCLOR 1232	049B1001.D
Std 1:	AROCLOR 1242	050B1101.D
Std 1:	AROCLOR 1248	051B1201.D
Std 1:	AROCLOR 1254	052B1301.D
Std 1:	AROCLOR 1262	053B1401.D
Std 1:	AROCLOR 1268	054B1501.D

GC Column: DB1701
Concentration Units: ng/ml

Analyte	Curve Fit	Avg. RRF	% RSD	Mean % RSD	R or COD	Q
PCB-1221 (Peak 1)	Single Pt	0.057787				
PCB-1221 (Peak 2)	Single Pt	0.19804				
PCB-1221 (Peak 3)	Single Pt	0.084972				
PCB-1221 (Peak 4)	Single Pt	0.106478				
PCB-1221 (Peak 5)	Single Pt	0.036091				
PCB-1232 (Peak 1)	Single Pt	0.095544				
PCB-1232 (Peak 2)	Single Pt	0.045498				
PCB-1232 (Peak 3)	Single Pt	0.060841				
PCB-1232 (Peak 4)	Single Pt	0.047032				
PCB-1232 (Peak 5)	Single Pt	0.086834				
PCB-1242 (Peak 1)	Single Pt	0.031732				
PCB-1242 (Peak 2)	Single Pt	0.024402				
PCB-1242 (Peak 3)	Single Pt	0.049346				
PCB-1242 (Peak 4)	Single Pt	0.014681				
PCB-1242 (Peak 5)	Single Pt	0.056575				
PCB-1248 (Peak 1)	Single Pt	0.034311				
PCB-1248 (Peak 2)	Single Pt	0.031335				
PCB-1248 (Peak 3)	Single Pt	0.034942				
PCB-1248 (Peak 4)	Single Pt	0.0293				
PCB-1248 (Peak 5)	Single Pt	0.065982				
PCB-1254 (Peak 1)	Single Pt	0.028224				
PCB-1254 (Peak 2)	Single Pt	0.027218				
PCB-1254 (Peak 3)	Single Pt	0.019919				
PCB-1254 (Peak 4)	Single Pt	0.033898				
PCB-1254 (Peak 5)	Single Pt	0.026149				
PCB-1262 (Peak 1)	Single Pt	0.030122				
PCB-1262 (Peak 2)	Single Pt	0.028837				
PCB-1262 (Peak 3)	Single Pt	0.014536				
PCB-1262 (Peak 4)	Single Pt	0.026817				
PCB-1262 (Peak 5)	Single Pt	0.014502				
PCB-1268 (Peak 1)	Single Pt	0.050736				
PCB-1268 (Peak 2)	Single Pt	0.045931				
PCB-1268 (Peak 3)	Single Pt	0.015521				
PCB-1268 (Peak 4)	Single Pt	0.016475				
PCB-1268 (Peak 5)	Single Pt	0.019135				

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
Contract #: 164067.A1.02
SDG No.: 8006
Instrument ID: GC-H
Calibration Date(s): 09/02/02
Initial Calibration ID: PCB090902
Calibration Time(s): 18:08 -21:34

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:		
Std 2:		
Std 3:		
Std 4:		
Std 5:		
Std 6:		

	Individual PCB Calib.	Lab File ID:
Std 1:	AROCLOR 1221	048B0901.D
Std 1:	AROCLOR 1232	049B1001.D
Std 1:	AROCLOR 1242	050B1101.D
Std 1:	AROCLOR 1248	051B1201.D
Std 1:	AROCLOR 1254	052B1301.D
Std 1:	AROCLOR 1262	053B1401.D
Std 1:	AROCLOR 1268	054B1501.D

GC Column: DB5MS
Concentration Units: ng/ml

Analyte	STD 1	RF 1	STD 2	RF 2	STD 3	RF 3	STD 4	RF 4	STD 5	RF 5	STD 6	RF6	STD 7	RF 7
PCB-1221 (Peak 1)	250	0.064794												
PCB-1221 (Peak 2)	250	0.231107												
PCB-1221 (Peak 3)	250	0.058601												
PCB-1221 (Peak 4)	250	0.077234												
PCB-1221 (Peak 5)	250	0.023656												
PCB-1232 (Peak 1)	250	0.030004												
PCB-1232 (Peak 2)	250	0.066833												
PCB-1232 (Peak 3)	250	0.031801												
PCB-1232 (Peak 4)	250	0.059414												
PCB-1232 (Peak 5)	250	0.090458												
PCB-1242 (Peak 1)	250	0.029061												
PCB-1242 (Peak 2)	250	0.014486												
PCB-1242 (Peak 3)	250	0.017849												
PCB-1242 (Peak 4)	250	0.042296												
PCB-1242 (Peak 5)	250	0.060644												
PCB-1248 (Peak 1)	250	0.022734												
PCB-1248 (Peak 2)	250	0.026739												
PCB-1248 (Peak 3)	250	0.027409												
PCB-1248 (Peak 4)	250	0.021195												
PCB-1248 (Peak 5)	250	0.043												
PCB-1254 (Peak 1)	250	0.017498												
PCB-1254 (Peak 2)	250	0.017058												
PCB-1254 (Peak 3)	250	0.012734												
PCB-1254 (Peak 4)	250	0.022093												
PCB-1254 (Peak 5)	250	0.019198												
PCB-1262 (Peak 1)	250	0.019397												
PCB-1262 (Peak 2)	250	0.018043												
PCB-1262 (Peak 3)	250	0.014536												
PCB-1262 (Peak 4)	250	0.016686												
PCB-1262 (Peak 5)	250	0.008701												
PCB-1268 (Peak 1)	250	0.031518												
PCB-1268 (Peak 2)	250	0.029253												
PCB-1268 (Peak 3)	250	0.009785												
PCB-1268 (Peak 4)	250	0.010712												
PCB-1268 (Peak 5)	250	0.011815												

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Instrument ID: GC-H
Initial Calibration ID: PCB090902

Case No.: 8006

SAS No.: 8006

Contract #: 164067.A1.02
SDG No.: 8006
Calibration Date(s): 09/02/02
Calibration Time(s): 18:08 -21:34

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:		
Std 2:		
Std 3:		
Std 4:		
Std 5:		
Std 6:		

	Individual PCB Calib.	Lab File ID:
Std 1:	AROCLOR 1221	048B0901.D
Std 1:	AROCLOR 1232	049B1001.D
Std 1:	AROCLOR 1242	050B1101.D
Std 1:	AROCLOR 1248	051B1201.D
Std 1:	AROCLOR 1254	052B1301.D
Std 1:	AROCLOR 1262	053B1401.D
Std 1:	AROCLOR 1268	054B1501.D

GC Column: DB5MS

Concentration Units: ng/ml

Analyte	Curve Fit	Avg. RRF	% RSD	Mean % RSD	R or COD	Q
PCB-1221 (Peak 1)	Single Pt	0.064794				
PCB-1221 (Peak 2)	Single Pt	0.231107				
PCB-1221 (Peak 3)	Single Pt	0.058601				
PCB-1221 (Peak 4)	Single Pt	0.077234				
PCB-1221 (Peak 5)	Single Pt	0.023656				
PCB-1232 (Peak 1)	Single Pt	0.030004				
PCB-1232 (Peak 2)	Single Pt	0.066833				
PCB-1232 (Peak 3)	Single Pt	0.031801				
PCB-1232 (Peak 4)	Single Pt	0.059414				
PCB-1232 (Peak 5)	Single Pt	0.090458				
PCB-1242 (Peak 1)	Single Pt	0.029061				
PCB-1242 (Peak 2)	Single Pt	0.014486				
PCB-1242 (Peak 3)	Single Pt	0.017849				
PCB-1242 (Peak 4)	Single Pt	0.042296				
PCB-1242 (Peak 5)	Single Pt	0.060644				
PCB-1248 (Peak 1)	Single Pt	0.022734				
PCB-1248 (Peak 2)	Single Pt	0.026739				
PCB-1248 (Peak 3)	Single Pt	0.027409				
PCB-1248 (Peak 4)	Single Pt	0.021195				
PCB-1248 (Peak 5)	Single Pt	0.043				
PCB-1254 (Peak 1)	Single Pt	0.017498				
PCB-1254 (Peak 2)	Single Pt	0.017058				
PCB-1254 (Peak 3)	Single Pt	0.012734				
PCB-1254 (Peak 4)	Single Pt	0.022093				
PCB-1254 (Peak 5)	Single Pt	0.019198				
PCB-1262 (Peak 1)	Single Pt	0.019397				
PCB-1262 (Peak 2)	Single Pt	0.018043				
PCB-1262 (Peak 3)	Single Pt	0.014536				
PCB-1262 (Peak 4)	Single Pt	0.016686				
PCB-1262 (Peak 5)	Single Pt	0.008701				
PCB-1268 (Peak 1)	Single Pt	0.031518				
PCB-1268 (Peak 2)	Single Pt	0.029253				
PCB-1268 (Peak 3)	Single Pt	0.009785				
PCB-1268 (Peak 4)	Single Pt	0.010712				
PCB-1268 (Peak 5)	Single Pt	0.011815				

7A

ORGANICS CALIBRATION VERIFICATION SUMMARY

Lab Name: CH2M HILL/LAB/CVO

Contract #: 164067.A1.02

Lab Code: CVO

Case No.: 8006

SAS No.: 8006

SDG No.: 8006

Instrument ID: GC-H

Calibration Date(s): 09/09/02

Initial Calibration ID: PCB090902

Calibration Time(s): 13:28 -16:54

ICV ID: ICV-0909

CCV #1 ID: CV2-0909

CCV #2 ID:

GC Column: DB1701

Concentration Units: ng/ml

Analyte	ICV			CCV #1			CCV #2			Q
	Expected	Found	% D	Expected	Found	% D	Expected	Found	% D	
PCB-1016	250	241	-3.5	250	215	-14.0				
PCB-1260	250	262	4.7	250	227	-9.0				
Decachlorobiphenyl	50.0	51.5	3.0	50.0	46.7	-6.7				

GC Column: DB5MS

Analyte	ICV			CCV #1			CCV #2			Q
	Expected	Found	% D	Expected	Found	% D	Expected	Found	% D	
PCB-1016	250	251	0.6	250	228	-8.9				
PCB-1260	250	272	8.7	250	232	-7.2				
Decachlorobiphenyl	50.0	52.8	5.6	50.0	46.7	-6.6				

Comments:

7A

ORGANICS CALIBRATION VERIFICATION SUMMARY

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
SDG No.: 8006
Instrument ID: GC-H
Calibration Date(s): 09/09/02
Initial Calibration ID: PCB090902
Calibration Time(s): 13:28 -16:54
ICV ID: CV1-0912
CCV #1 ID: CV3-0912
CCV #2 ID:

GC Column: DB1701
Concentration Units: ng/ml

Analyte	ICV			CCV #1			CCV #2			Q
	Expected	Found	% D	Expected	Found	% D	Expected	Found	% D	
PCB-1016	250	235	-5.9	250	243	-3.0				
PCB-1260	250	261	4.6	250	264	5.6				
Decachlorobiphenyl	50.0	48.7	-2.5	50.0	47.5	-5.0				

GC Column: DB5MS

Analyte	ICV			CCV #1			CCV #2			Q
	Expected	Found	% D	Expected	Found	% D	Expected	Found	% D	
PCB-1016	250	239	-4.3	250	249	-0.2				
PCB-1260	250	259	3.6	250	277	11.0				
Decachlorobiphenyl	50.0	48.5	-2.9	50.0	52.5	5.0				

Comments:

ORGANICS ANALYTICAL SEQUENCE

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
SDG No.: 8006
GC Column: DB1701 / DB5MS
Start Date: 09/05/02
End Date: 09/05/02
Instrument ID: GC-H
Start Time: 18:08
End Time: 21:34

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
01	AROCLOR 1221	AROCLOR 1221	C:\HPCHEM\1\DATA\090502H1\048B0901.D	09/05/02	18:08
02	AROCLOR 1232	AROCLOR 1232	C:\HPCHEM\1\DATA\090502H1\049B1001.D	09/05/02	18:43
03	AROCLOR 1242	AROCLOR 1242	C:\HPCHEM\1\DATA\090502H1\050B1101.D	09/05/02	19:17
04	AROCLOR 1248	AROCLOR 1248	C:\HPCHEM\1\DATA\090502H1\051B1201.D	09/05/02	19:51
05	AROCLOR 1254	AROCLOR 1254	C:\HPCHEM\1\DATA\090502H1\052B1301.D	09/05/02	20:26
06	AROCLOR 1262	AROCLOR 1262	C:\HPCHEM\1\DATA\090502H1\053B1401.D	09/05/02	21:00
07	AROCLOR 1268	AROCLOR 1268	C:\HPCHEM\1\DATA\090502H1\054B1501.D	09/05/02	21:34
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					

Comments:

ORGANICS ANALYTICAL SEQUENCE

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
SDG No.: 8006
GC Column: DB1701 / DB5MS
Start Date: 09/09/02
End Date: 09/10/02
Instrument ID: GC-H
Start Time: 13:28
End Time: 03:12

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
01	LEVEL 1 (9/9)	LEVEL 1 (9/9)	C:\HPCHEM\1\DATA\090902H1\002B0201.D	09/09/02	13:28
02	LEVEL 2 (9/9)	LEVEL 2 (9/9)	C:\HPCHEM\1\DATA\090902H1\003B0301.D	09/09/02	14:03
03	LEVEL 3 (9/9)	LEVEL 3 (9/9)	C:\HPCHEM\1\DATA\090902H1\004B0401.D	09/09/02	14:37
04	LEVEL 4 (9/9)	LEVEL 4 (9/9)	C:\HPCHEM\1\DATA\090902H1\005B0501.D	09/09/02	15:11
05	LEVEL 5 (9/9)	LEVEL 5 (9/9)	C:\HPCHEM\1\DATA\090902H1\006B0601.D	09/09/02	15:46
06	LEVEL 6 (9/9)	LEVEL 6 (9/9)	C:\HPCHEM\1\DATA\090902H1\007B0701.D	09/09/02	16:20
07	LEVEL 7 (9/9)	LEVEL 7 (9/9)	C:\HPCHEM\1\DATA\090902H1\008B0801.D	09/09/02	16:54
08	ICV-0909	ICV-0909	C:\HPCHEM\1\DATA\090902H1\010B1001.D	09/09/02	17:29
09	SB1-0828	SB1-0828	C:\HPCHEM\1\DATA\090902H1\011B1101.D	09/09/02	19:46
10	BS1S0828	BS1S0828	C:\HPCHEM\1\DATA\090902H1\012B1201.D	09/09/02	20:20
11	PP011801	800601	C:\HPCHEM\1\DATA\090902H1\018B1801.D	09/09/02	23:46
12	PP011809	800602	C:\HPCHEM\1\DATA\090902H1\019B1901.D	09/10/02	00:21
13	PP011810	800603	C:\HPCHEM\1\DATA\090902H1\020B2001.D	09/10/02	00:55
14	CV2-0909	CV2-0909	C:\HPCHEM\1\DATA\090902H1\024B2401.D	09/10/02	03:12
15					
16					
17					
18					
19					
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22					
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24					
25					
26					
27					
28					
29					
30					
31					
32					
33					

Comments:

ORGANICS ANALYTICAL SEQUENCE

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8006
SAS No.: 8006
SDG No.: 8006
GC Column: DB1701 / DB5MS
Start Date: 09/12/02
End Date: 09/12/02
Instrument ID: GC-H
Start Time: 10:45
End Time: 15:54

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
01	CV1-0912	CV1-0912	C:\HPCHEM\1\DATA\091202H1\001B0102.D	09/12/02	10:45
02	WB2-0827	WB2-0827	C:\HPCHEM\1\DATA\091202H1\004F0401.D	09/12/02	13:03
03	BS2W0827	BS2W0827	C:\HPCHEM\1\DATA\091202H1\005F0501.D	09/12/02	13:37
04	PP0118EB01	800604EB	C:\HPCHEM\1\DATA\091202H1\007B0701.D	09/12/02	14:46
05	CV3-0912	CV3-0912	C:\HPCHEM\1\DATA\091202H1\009B0901.D	09/12/02	15:54
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
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28					
29					
30					
31					
32					
33					

Comments:

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011801**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: SOIL Lab Sample ID: **800601**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011801**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: SOIL Lab Sample ID: **800601**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248	1	10.22	10.12	10.32	25.6		
	2	11.65	11.56	11.76	40.9		
Column 1	3	11.92	11.83	12.03	30.2	32.6	
	4	12.74	12.66	12.86	33.5		
	5						9.8
	1	9.41	9.31	9.51	24.8		
	2	10.11	10.02	10.22	36.7		
Column 2	3	10.86	10.76	10.96	22.3	29.4	
	4	11.59	11.47	11.67	33.8		
	5						
PCB-1254	1						
	2	13.24	13.14	13.34	17.3		
Column 1	3	14.56	14.47	14.67	18.6	18.7	
	4	15.29	15.19	15.39	15.4		
	5	16.83	16.74	16.94	23.4		5.9
	1						
	2	12.21	12.11	12.31	18.4		
Column 2	3					17.6	
	4	13.98	13.88	14.08	14.4		
	5	15.42	15.31	15.51	20.1		
PCB-1260	1	15.05	14.95	15.15	11.7		
	2	15.74	15.64	15.84	10.9		
Column 1	3					13.4	
	4	18.97	18.87	19.07	13.9		
	5	20.15	20.05	20.25	17.2		10.4
	1	13.84	13.73	13.93	12.7		
	2	14.60	14.49	14.69	13.3		
Column 2	3					12.0	
	4	15.86	15.76	15.96	9.9		
	5	17.55	17.45	17.65	12		
PCB-1262	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011801**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: SOIL Lab Sample ID: **800601**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011809**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: SOIL Lab Sample ID: 800602

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011809**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: SOIL Lab Sample ID: **800602**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248	1	10.22	10.12	10.32	146		
	2	11.65	11.56	11.76	91.2		
Column 1	3	11.92	11.83	12.03	93.4	106	
	4	12.75	12.66	12.86	91.7		
	5						0.9
	1	9.41	9.31	9.51	155		
	2	10.12	10.02	10.22	94		
Column 2	3	10.86	10.76	10.96	79.9	105	
	4	11.57	11.47	11.67	91.9		
	5						
PCB-1254	1						
	2	13.24	13.14	13.34	37.4		
Column 1	3	14.56	14.47	14.67	38.2	38.4	
	4	15.29	15.19	15.39	40.5		
	5	16.83	16.74	16.94	37.4		6.5
	1						
	2	12.22	12.11	12.31	39.4		
Column 2	3					35.9	
	4	13.98	13.88	14.08	37.2		
	5	15.42	15.31	15.51	30.9		
PCB-1260	1	15.05	14.95	15.15	22.2		
	2	15.75	15.64	15.84	23.1		
Column 1	3					19.5	
	4	18.97	18.87	19.07	15.6		
	5	20.15	20.05	20.25	17.1		7.7
	1	13.84	13.73	13.93	21.3		
	2	14.60	14.49	14.69	22.7		
Column 2	3					18.0	
	4	15.87	15.76	15.96	12.7		
	5	17.55	17.45	17.65	15.4		
PCB-1262	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011809**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: SOIL Lab Sample ID: **800602**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011810**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: SOIL Lab Sample ID: **800603**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011810**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: SOIL Lab Sample ID: **800603**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248	1	10.21	10.12	10.32	70.4		
	2	11.65	11.56	11.76	50.1		
Column 1	3	11.92	11.83	12.03	40.7	51.6	
	4	12.75	12.66	12.86	45.1		
	5						5.6
	1	9.41	9.31	9.51	76		
	2	10.11	10.02	10.22	56.2		
Column 2	3	10.86	10.76	10.96	37	54.5	
	4	11.58	11.47	11.67	48.6		
	5						
PCB-1254	1						
	2	13.24	13.14	13.34	25.2		
Column 1	3	14.56	14.47	14.67	22.6	24.5	
	4	15.29	15.19	15.39	24.3		
	5	16.83	16.74	16.94	26.1		4.1
	1						
	2	12.22	12.11	12.31	25.2		
Column 2	3					23.5	
	4	13.98	13.88	14.08	22.2		
	5	15.42	15.31	15.51	23.2		
PCB-1260	1	15.05	14.95	15.15	13.8		
	2	15.74	15.64	15.84	14		
Column 1	3					13.6	
	4	18.97	18.87	19.07	12.1		
	5	20.15	20.05	20.25	14.3		5.1
	1	13.84	13.73	13.93	14.6		
	2	14.60	14.49	14.69	16.8		
Column 2	3					14.3	
	4	15.86	15.76	15.96	11.3		
	5	17.55	17.45	17.65	14.3		
PCB-1262	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011810**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: SOIL Lab Sample ID: **800603**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **BS2W0827**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: WATER Lab Sample ID: **BS2W0827**

Instrument ID: GC-H Date Analyzed: 09/12/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/L

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1	8.45	8.34	8.54	0.18		
	2	9.24	9.13	9.33	0.19		
Column 1	3	10.22	10.11	10.31	0.18	0.20	
	4	10.54	10.43	10.63	0.18		
	5	11.65	11.55	11.75	0.28		
							10.0
	1	7.78	7.67	7.87	0.17		
	2	8.48	8.37	8.57	0.18		
Column 2	3	8.84	8.73	8.93	0.18	0.18	
	4	9.42	9.31	9.51	0.19		
	5	10.57	10.46	10.66	0.18		
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **BS2W0827**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: WATER Lab Sample ID: **BS2W0827**

Instrument ID: GC-H Date Analyzed: 09/12/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/L

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248							
Column 1	1						
	2						
	3						
	4						
	5						
Column 2	1						
	2						
	3						
	4						
	5						
PCB-1254							
Column 1	1						
	2						
	3						
	4						
	5						
Column 2	1						
	2						
	3						
	4						
	5						
PCB-1260							
Column 1	1	15.06	14.95	15.15	0.2	0.19	0.0
	2	15.75	15.64	15.84	0.2		
	3	16.84	16.73	16.93	0.19		
	4	18.97	18.87	19.07	0.18		
	5	20.15	20.05	20.25	0.17		
Column 2	1	13.84	13.73	13.93	0.2	0.19	
	2	14.61	14.49	14.69	0.2		
	3	15.42	15.31	15.51	0.2		
	4	15.87	15.76	15.96	0.19		
	5	17.56	17.45	17.65	0.19		
PCB-1262							
Column 1	1						
	2						
	3						
	4						
	5						
Column 2	1						
	2						
	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **BS2W0827**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: WATER Lab Sample ID: **BS2W0827**

Instrument ID: GC-H Date Analyzed: 09/12/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/L

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **BS1S0828**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: SOIL Lab Sample ID: **BS1S0828**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1	8.45	8.34	8.54	93.1		
	2	9.23	9.13	9.33	100		
Column 1	3	10.21	10.11	10.31	92.9	94.3	
	4	10.54	10.43	10.63	91.4		
	5	11.65	11.55	11.75	93.7		
	1	7.78	7.67	7.87	92.5		1.7
	2	8.48	8.37	8.57	96.2		
Column 2	3	8.83	8.73	8.93	94.2	95.9	
	4	9.41	9.31	9.51	100		
	5	10.56	10.46	10.66	95.9		
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **BS1S0828**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: SOIL Lab Sample ID: **BS1S0828**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1254	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1260	1	15.05	14.95	15.15	105		
	2	15.74	15.64	15.84	106		
Column 1	3	16.83	16.73	16.93	104	104	
	4	18.97	18.87	19.07	105		
	5	20.15	20.05	20.25	101		3.8
	1	13.83	13.73	13.93	105		
	2	14.60	14.49	14.69	110		
Column 2	3	15.41	15.31	15.51	107	108	
	4	15.86	15.76	15.96	107		
	5	17.55	17.45	17.65	109		
PCB-1262	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **BS1S0828**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: SOIL Lab Sample ID: **BS1S0828**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

CH2M HILL APPLIED SCIENCES SEMI-VOLATILES EXTRACTION LOG

Project Name: Portland Harbor
Date Extracted: 08/27/02
Analyst: ADA

Analysis Requested: PCB SW 8082
Matrix / Ext. Method: Water SW 3510
Water bath Temp.: 65

	LAB ID #	CLIENTS SAMPLE ID	SAMPLE ALIQUOT	SOLVENT VOLUME	FINAL VOLUME	SS VOL	% H2O	COMMENTS NOTES
1	WB2-0827		1000 mL	180 mL	1 mL			
2	BS2W0827		1000 mL	180 mL	1 mL			
3	BD2W0827		1000 mL	180 mL	1 mL			
4								
5	800604	PP0118EB01	565.1	180 mL	1 mL			
6	801607	PP01M1EB02	525.4	180 mL	1 mL			
7	~~MOL~~							
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								

EXTRACTION SOLVENT: MeCl2/ Iso-Octane
LOT # 1-PGC-65-02C

DRYING AGENT: Sodium Sulfate
LOT # 1-PGC-59-5

	SPIKING COMPOUNDS	CONCENTRATION	VOLUME	LOT #
SURROGATE SPIKE:	#1 Surrogate Mix	5 ug/mL	20 uL	5S083-01
	#2			
	#3			
MATRIX SPIKE:	#1 Arochlor 1016/ 1260	5 ppm	50 uL	6S-31-02
	#2			

Extracts Placed in Refrigerator by: ADA — Date/Time: 8/27
Refrigerator/Box #: RP007, Box #8 PCB — Date/Time: 3:45 pm
Date/Time:
Extracts Removed from Refrigerator by: Date/Time:
Date/Time:
Extracts Destroyed by: Date/Time:

0071

CH2M HILL APPLIED SCIENCES SEMI-VOLATILES EXTRACTION LOG

Project Name: Portland Harbor
Date Extracted: 08/28/02
Analyst: [illegible]

Analysis Requested: PCB SW 8082
Matrix / Ext. Method: SOIL SW 3550
Water bath Temp.: 65

	LAB ID #	CLIENTS SAMPLE ID	SAMPLE ALIQUOT	SOLVENT VOLUME	FINAL VOLUME	SS VOL	% H2O	COMMENTS NOTES
1	SB1-0828		10 g	60 ml	5 mL			
2	BS1S0828		10 g	60 ml	5 mL			
3	BD1S0828		10 g	60 ml	5 mL			
4								
5	800501	PP011802	10.19g	60 ml	5 mL			
6	800502	PP011803	10.02g	60 ml	5 mL			
7	800503	PP011804D	10.14g	60 ml	5 mL			
8	800504	PP011805	10.52g	60 ml	5 mL			
9	800601	PP011801	10.12g	60 ml	5 mL			
10	800602	PP011809	10.18g	60 ml	5 mL			
11	800603	PP011810	10.89g	60 ml	5 mL			
12	800801	PP011806	10.29g	60 ml	5 mL			
13	800802	PP011807	10.12g	60 ml	5 mL			
14	800803	PP011808	10.06g	60 ml	5 mL			
15	800804MS	PP011808MS	10.05g	60 ml	5 mL			
16	800805 SD	PP011808MSD	10.23g	60 ml	5 mL			
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								

EXTRACTION SOLVENT: MeCl2/ Iso-Octane
LOT # 1-PGC-65-02

DRYING AGENT: Sodium Sulfate
LOT # 1-PGC-59-5

	SPIKING COMPOUNDS	CONCENTRATION	VOLUME	LOT #	
SURROGATE SPIKE:	#1 Surrogate Mix	5 ug/mL	50 uL	5S083-01	50 ppb
	#2				
MATRIX SPIKE:	#1 Arochlor 1016/1260	5 ppm	200 uL	6S-31-02	200 ppb
	#2				

Extracts Placed in Refrigerator by: [illegible] Date/Time: 8/28/02 1246
Refrigerator/Box #: [illegible]
Date/Time:
Date/Time:
Extracts Removed from Refrigerator by:
Date/Time:
Date/Time:
Extracts Destroyed by:
Date/Time:

0072

Method Detection Limit Study

CH2M HILL
Applied Sciences Group

Analysis Method:	SW8082	**Analyst:**	M. Schaadt
Extraction Method:	SW3550	**Instrument:**	GCH
Matrix:	SOIL	**Description:**	
MDL Effective Date:	02/14/2002	**Deptartment:**	GS

Units:
Spike:

#	Compound	CAS No.	Date	MDL		Ug/Kg	1	2	3	4	5	6	7	8		Mean	Std Dev.	Student T
1	Aroclor-1016	12674-11-2	02/13/2002	4.70		5.00	11.8	13.6	11.3	14.1	15.1	15.9	12.7	13.5		13.5	1.57	2.998
2	Aroclor-1260	11096-82-5	02/13/2002	2.52		5.00	4.40	7.2	5.36	4.95	5.07	5.41	4.86	5.09		5.30	0.84	2.998
3	Aroclor-1221	11104-28-2	02/13/2002	1.79		5.00	21.1	22.5	21.5	20.8	21.8	22.5	21.4	21.8		21.7	0.60	2.998
4	Aroclor-1232	11141-16-5	02/13/2002	3.04		5.00	21.4	20.6	20.7	19.9	19.2	18.7	19.2	21.3		20.1	1.02	2.998
5	Aroclor-1242	53469-21-9	02/13/2002	2.24		5.00	11.6	11.4	11.1	11.4	12.5	10.5	9.98	11.6		11.2	0.75	2.998
6	Aroclor-1248	12672-29-6	02/13/2002	1.66		5.00	5.49	6.10	5.35	5.60	5.98	5.15	6.65	4.97		5.66	0.55	2.998
7	Aroclor-1254	11097-69-1	02/13/2002	1.43		5.00	4.95	5.40	4.10	4.20	4.40	4.25	4.15	4.90		4.54	0.48	2.998

MDL Calculation based on initial soil wt of 10 grams and final extract volume of 5 mL

0073

Method Detection Limit Study

CH2M HILL
Applied Sciences Group

Analysis Method:	SW8082	**Analyst:**	M. Schaadt
Extraction Method:	SW3510	**Instrument:**	GCH
Matrix:	WATER	**Description:**	
MDL Effective Date:	02/07/02	**Deptartment:**	GS

Units:
Spike:

#	Compound	CAS No	Date	MDL	UCL	1	2	3	4	5	6	7	8	Mean	Std Dev	Student T
1	Aroclor-1016	12674-11-2	02/07/02	0.0086	0.013	0.017	0.021	0.024	0.015	0.015	0.017	0.019	0.018	0.018	0.0029	2.998
2	Aroclor-1260	11096-82-5	02/07/02	0.0040	0.013	0.014	0.017	0.015	0.014	0.013	0.013	0.014	0.014	0.014	0.0013	2.998
3	Aroclor-1221	11104-28-2	02/07/02	0.0083	0.010	0.053	0.051	0.051	0.058	0.053	0.054	0.051	0.049	0.052	0.0028	2.998
4	Aroclor-1232	11141-16-5	02/06/02	0.0065	0.010	0.020	0.023	0.022	0.022	0.023	0.027	0.021	0.020	0.022	0.0022	2.998
5	Aroclor-1242	53469-21-9	02/06/02	0.0087	0.010	0.011	0.014	0.015	0.013	0.014	0.012	0.019	0.019	0.015	0.0029	2.998
6	Aroclor-1248	12672-29-6	02/07/02	0.0093	0.010	0.0083	0.010	0.016	0.016	0.016	0.014	0.017	0.014	0.014	0.0031	2.998
7	Aroclor-1254	11097-69-1	02/07/02	0.0016	0.010	0.0080	0.0083	0.0093	0.0087	0.0096	0.0090	0.0094	0.0087	0.0089	0.00054	2.998

0074

METALS

CASE NARRATIVE
METALS

CLIENT/PROJECT: Portland Harbor

LABORATORY: CH2M HILL Applied Sciences Group PROJECT NO.: 164067.A1.02

LAB CODE: CVO LAB BATCH NO\SDG: 8006

I. Holding Times:
All holding times were met.

II. Digestion Exceptions:
None

III. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. ICP Interference Check Sample:
Not applicable.

D. Spike Sample(s):
Not applicable.

E. Duplicate Sample(s):
Not applicable.

F. Laboratory Control Sample(s):
All acceptance criteria were met.

G. Serial Dilution:
Not applicable.

H. Other:
None

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Prepared by: Judy [signature] Date: 9-13-02

Reviewed by: [signature] Date: 16 Sept 2002

SAMPLE DATA SUMMARY

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PP011801

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: (soil/water) SOIL Lab Sample ID: 800601

Level: (low/med) LOW Date Received: 08/22/02

Concentration Units: mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.115			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PP011809

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: (soil/water) SOIL Lab Sample ID: 800602

Level: (low/med) LOW Date Received: 08/22/02

Concentration Units: mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.453			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PP011810

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: (soil/water) SOIL Lab Sample ID: 800603

Level: (low/med) LOW Date Received: 08/22/02

Concentration Units: mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.128			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PP0118EB01

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: (soil/water) WATER Lab Sample ID: 800604EB

Level: (low/med) LOW Date Received: 08/22/02

Concentration Units: ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.0250	J		CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB1-0904

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: (soil/water) SOIL Lab Sample ID: SB1-0904

Level: (low/med) LOW

Concentration Units: mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.00720	U		CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WB1-0910

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Matrix: (soil/water) WATER Lab Sample ID: WB1-0910

Level: (low/med) LOW

Concentration Units: ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.0160	J		CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

QC SUMMARY

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Initial Calibration Source: 090902HG

Concentration Units: ug/L

2nd Source/ICV ID: ICV-0909 CCV #1 CV1-0909 CCV #2 CV2-0909 CCV #3

Initial Calibration				Continuing Calibration							
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Found	%R(1)	M
Mercury	1.00	1.08	108	1.00	1.08	108	1.06	106			CV

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

SW846 Control Limits: Mercury and GFAA 80-120; ICP 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Initial Calibration Source: 091202HG

Concentration Units: ug/L

2nd Source/ICV ID: ICV-0912 CCV #1 CV1-0912 CCV #2 CCV #3

Initial Calibration				Continuing Calibration							
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Found	%R(1)	M
Mercury	1.00	1.12	112	1.00	1.12	112					CV

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

SW846 Control Limits: Mercury and GFAA 80-120; ICP 90-110; Cyanide 85-115

US EPA - CLP

3-IN

BLANKS

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

ICB ID: ICB-0909 CCB1 ID: CB1-0909 CCB2 ID: CB2-0909 CCB3 ID: _____

Analyte	Method	Initial Calib. Blank	Continuing Calibration Blank			M
			1	2	3	
Mercury	SW7471A	0.0110J	0.00961U	0.00961U		CV

Comments:

US EPA - CLP

3-IN

BLANKS

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

ICB ID: ICB-0912 CCB1 ID: CB1-0912 CCB2 ID: _____ CCB3 ID: _____

Analyte	Method	Initial Calib. Blank	Continuing Calibration Blank			M
			1	2	3	
Mercury	SW7470A	0.00961U	0.00961U			CV

Comments:

US EPA - CLP

7-INORG

LABORATORY CONTROL SAMPLE

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Solid LCS Source: BS1S0904

Aqueous LCS Source:

Analyte	Method	Aqueous (ug/L)			Solid (mg/Kg)			Limits	C
		True	Found	%R	True	Found	%R		
Mercury	SW7471A				0.200	0.214	107	80-120	

Comments:

US EPA - CLP

7-INORG

LABORATORY CONTROL SAMPLE

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Solid LCS Source:

Aqueous LCS Source: BS1W0910

Analyte	Method	Aqueous (ug/L)			Solid (mg/Kg)			Limits	C
		True	Found	%R	True	Found	%R		
Mercury	SW7470A	1.00	1.12	112				80-120	

Comments:

U.S. EPA - CLP

10
METHOD DETECTION LIMITS

Lab Name: CH2M HILL ASL Contract: N/A
Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006
ICP ID Number: Optima 3000
Furnace AA ID Number: PE4100ZL
Mercury ID Number: Leeman PS200

Analyte	Wavelength (nm)	Background	MRL (mg/Kg)	MDL (mg/Kg)	M
Mercury	254	NA	0.0500	0.00720	CV

Comments

U.S. EPA - CLP

10
METHOD DETECTION LIMITS

Lab Name: CH2M HILL ASL Contract: N/A
Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006
ICP ID Number: Optima 3000
Furnace AA ID Number: PE4100ZL
Mercury ID Number: Leeman PS200

Analyte	Wavelength (nm)	Background	MRL (ug/L)	MDL (ug/L)	M
Mercury	254	NA	0.100	0.00961	CV

Comments

U.S. EPA - CLP

13
PREPARATION LOG

Lab Name: CH2M HILL ASL Contract: N/A
Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006
Method: CV (SW7471A)

EPA SAMPLE NO.	LAB SAMPLE NO.	PREP DATE	WEIGHT (grams)	VOLUME (mL)
PP011801	800601	09/04/02	0.50	100
PP011809	800602	09/04/02	0.49	100
PP011810	800603	09/04/02	0.51	100
SB1-0904	SB1-0904	09/04/02	0.51	100
BS1S0904	BS1S0904	09/04/02	0.51	100

U.S. EPA - CLP

13
PREPARATION LOG

Lab Name: CH2M HILL ASL Contract: N/A
Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006
Method: CV (SW7470A)

EPA SAMPLE NO.	LAB SAMPLE NO.	PREP DATE	WEIGHT (grams)	VOLUME (mL)
PP0118EB01	800604EB	09/10/02	NA	50
WB1-0910	WB1-0910	09/10/02	NA	50
BS1W0910	BS1W0910	09/10/02	NA	50

ANALYSIS RUN LOG

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8016 SAS No.: 8016 SDG No.: 8016

Instrument Name: PS200 Method: SW7471A

	EPA Sample No.	LAB SAMPLE ID	DF	DATE ANALYZED	TIME ANALYZED
1	CAL BLANK	CAL BLANK	1	09/09/02	1152
2	CAL 1	CAL 1	1	09/09/02	1156
3	CAL 2	CAL 2	1	09/09/02	1201
4	CAL 3	CAL 3	1	09/09/02	1206
5	CAL 4	CAL 4	1	09/09/02	1212
6	CAL 5	CAL 5	1	09/09/02	1218
7	ICV-0909	ICV-0909	1	09/09/02	1227
8	ICB-0909	ICB-0909	1	09/09/02	1233
9	SB1-0904	SB1-0904	1	09/09/02	1237
10	BS1S0904	BS1S0904	1	09/09/02	1242
11	PP01M105	801601	1	09/09/02	1248
12	PP01M106	801602	1	09/09/02	1252
13	PP01M107	801603	1	09/09/02	1257
14	PP01M108	801604	1	09/09/02	1302
15	PP01M109	801605	1	09/09/02	1306
16	PP01M110	801606	1	09/09/02	1311
17	PP01M101	801608	1	09/09/02	1315
18	PP01M102D	801609	1	09/09/02	1320
19	CV1-0909	CV1-0909	1	09/09/02	1325
20	CB1-0909	CB1-0909	1	09/09/02	1331
21	PP01M103	801610	1	09/09/02	1335
22	PP01M104	801611	1	09/09/02	1340
23	CV2-0909	CV2-0909	1	09/09/02	1430
24	CB2-0909	CB2-0909	1	09/09/02	1436
				/ /	
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COMMENTS: _____

FORM XIV

JG020916-14:03-8016-M

ANALYSIS RUN LOG

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8006 SAS No.: 8006 SDG No.: 8006

Instrument Name: PS200 Method: SW7470A

	EPA Sample No.	LAB SAMPLE ID	DF	DATE ANALYZED	TIME ANALYZED
1	CAL BLANK	CAL BLANK	1	09/12/02	1319
2	CAL 1	CAL 1	1	09/12/02	1323
3	CAL 2	CAL 2	1	09/12/02	1328
4	CAL 3	CAL 3	1	09/12/02	1333
5	CAL 4	CAL 4	1	09/12/02	1338
6	CAL 5	CAL 5	1	09/12/02	1344
7	ICV-0912	ICV-0912	1	09/12/02	1356
8	ICB-0912	ICB-0912	1	09/12/02	1401
9	WB1-0910	WB1-0910	1	09/12/02	1406
10	BS1W0910	BS1W0910	1	09/12/02	1410
11	PP0118EB01	800604EB	1	09/12/02	1426
12	CV1-0912	CV1-0912	1	09/12/02	1444
13	CB1-0912	CB1-0912	1	09/12/02	1450
				/ /	
				/ /	
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COMMENTS: _____

CH2MHILL
Applied Sciences Group

CH2M HILL
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2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

MDL Replicate Information

Method:	Extraction Method:	Matrix:	Units	Instrument:	MDL Date:	Exp. Date:
SW7471	METHOD	SOIL	MG/KG	PS200	02/08/2002	02/07/2003

CAS_NO	PARAMETER	MDL	R1	R2	R3	R4	R5	R6	R7	R8	Mean	Std.Dev.	Spike Lev.
7439-97-6	Mercury	0.0072	0.0407	0.0385	0.0395	0.0383	0.038	0.044	0.0425		0.04021428	0.00230248	0.04

August 19, 2002

CH2MHILL
Applied Sciences Group

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MDL Replicate Information

Method:	Extraction Method:	Matrix:	Units	Instrument:	MDL Date:	Exp. Date:
SW7470	METHOD	WATER	UG/L	PS200	08/01/2002	07/31/2003

CAS_NO	PARAMETER	MDL	R1	R2	R3	R4	R5	R6	R7	R8	Mean	Std.Dev.	Spike Lev.
7439-97-6	Mercury	0.0096	0.1405	0.1355	0.137	0.1365	0.133	0.1345	0.1305	0.139	0.1358125	0.00320643	0.1

0098

TOTAL ORGANIC CARBON
METHOD ASTM E-777

CASE NARRATIVE
TOC

Analytical Method: ASTM E777 Batch No.: 8006

Lab Name: CH2M HILL Applied Sciences Lab Contract #.: 164067.A1.02

Project: Portland Harbor

I. Holding Times:
All holding times were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Spike Duplicate Sample(s):
All acceptance criteria were met.

D. Lab Control Sample(s):
All acceptance criteria were met.

E. Other:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: for Anthony Dalton Date: 9/17/02

Reviewed by: Date: 9/17/02

SAMPLE DATA SUMMARY

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011801

Lab Name: CH2M HILL ASL

Project No.: 164067.A1.02

Lab Code: CVO

Matrix: SOIL

Sample Amt (G): 0.255

% Solid: NA

Instrument ID: TOC S1

Initial Cal ID: TOC090502S1

Lab Batch No.: 8006

Lab Sample ID: 800601

Date Sampled: 08/20/02

Date Analyzed: 09/05/02

Dilution Factor: 1

Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	79.2	393	1540	

Comments:

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011809

Lab Name: CH2M HILL ASL
Lab Code: CVO
Matrix: SOIL
Sample Amt (G): 0.252
% Solid: NA
Instrument ID: TOC S1
Initial Cal ID: TOC090502S1

Project No.: 164067.A1.02

Lab Batch No.: 8006
Lab Sample ID: 800602
Date Sampled: 08/21/02
Date Analyzed: 09/05/02
Dilution Factor: 1
Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	80.0	397	2150	

Comments:

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011810

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab Batch No.: 8006
Matrix: SOIL
Lab Sample ID: 800603
Sample Amt (G): 0.255
Date Sampled: 08/21/02
% Solid: NA
Date Analyzed: 09/05/02
Instrument ID: TOC S1
Dilution Factor: 1
Initial Cal ID: TOC090502S1
Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	79.1	392	11300	

Comments:

QC SUMMARY

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

SB1-0905

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Matrix: SOIL
Sample Amt (G): 1.000
% Solid: NA
Instrument ID: TOC S1
Initial Cal ID: TOC090502S1

Lab Batch No.: 8006
Lab Sample ID: SB1-0905
Date Sampled: N/A
Date Analyzed: 09/05/02
Dilution Factor: 1
Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	20.2	100	100	U

Comments:

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

ICV-0905

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab Batch No.: 8006
Matrix: SOIL
Lab Sample ID: ICV-0905
Sample Amt (G): 0.500
Date Sampled: N/A
% Solid: NA
Date Analyzed: 09/05/02
Instrument ID: TOC S1
Dilution Factor: 1
Initial Cal ID: TOC090502S1
Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	40.3	200	3930	

Comments:

2A
ANALYSIS DATA SHEET
INITIAL MULTIPOINT CALIBRATION

Analytical Method: ASTM E777
Lab Name: CH2M HILL ASL
Lab Code: CVO
Initial Calibration Date: ######

Lab Batch No.: 8006
Instrument ID: TOC S1
Initial Calibration ID: TOC090502S1
Concentration Units: mg/kg

Analyte	STD 1	Area 1	STD 2	Area 2	STD 3	Area 3	STD 4	Area 4	STD 5	Area 5	Curve Fit	R2	Q
Total Organic Carbon	100	1111956	200	1693552	1000	7453226	4000	21942160	8000	47595553	linear	0.9984	

Comments:

2B
ANALYSIS DATA SHEET
CALIBRATION VERIFICATION

Analytical Method: ASTM E777
Lab Name: CH2M HILL ASL
Lab Code CVO
ICV ID: ICV-0905
CCV #1 ID: CV1-0905
Lab Batch No.: 8006
Instrument ID: TOC S1
Initial Calibration ID: TOC090502S1
CCV #2 ID:

Concentration Units: mg/kg

Analyte	ICV			CCV #1			CCV #2			Q
	Expected	Found	%D	Expected	Found	%D	Expected	Found	%D	
Total Organic Carbon	3820	3930	103%	4000	4198	5.0%				

Comments:

3

ANALYSIS DATA SHEET
METHOD BLANK SUMMARY

EPA SAMPLE NO.

SB1-0905

Lab Name: CH2M HILL ASL
Lab Code: CVO
Matrix: Water
Instrument ID: TOC S1
Initial Cal ID: TOC090502S1

Project No.: 164067.A1.02

Lab Batch No.: 8006
Lab Sample ID: SB1-0905
Date Analyzed: 09/05/02
Time Analyzed: 13:44
Concentration Units: mg/Kg

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
01	ICV-0905	ICV-0905	09/05/02	13:55
02	PP011801	800601	09/05/02	15:09
03	PP011809	800602	09/05/02	15:23
04	PP011810	800603	09/05/02	15:34
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
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18				
19				
20				
21				

COMMENTS:

FORM 3

7

ANALYSIS DATA SHEET

LABORATORY CONTROL SAMPLE

Analytical Method: ASTM E777

Lab Name: CH2M HILL ASL

LCS ID: ICV-0905

Lab Batch No.: 8006

Initial Calibration ID: TOC090502S1

Concentration Units: mg/kg

Analyte	Expected	Found	%R	Control Limits	Qualifier
Total Organic Carbon	3820	3930	103	80-120%	

Comments:

14

ANALYSIS DATA SHEET
ANALYTICAL SEQUENCE

Lab Name: CH2M HILL ASL

Lab Code: CVO

Lab Batch No.: 8006

Instrument ID: TOC S1

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
01	LEVEL 1	LEVEL 1	09/05/02	11:06
02	LEVEL 2	LEVEL 2	09/05/02	11:17
03	LEVEL 3	LEVEL 3	09/05/02	11:24
04	LEVEL 4	LEVEL 4	09/05/02	11:36
05	LEVEL 5	LEVEL 5	09/05/02	11:47
06	ICV-0905	ICV-0905	09/05/02	13:55
07	SB1-0905	SB1-0905	09/05/02	13:44
08	PP011801	800601	09/05/02	15:09
09	PP011809	800602	09/05/02	15:23
10	PP011810	800603	09/05/02	15:34
11	CV1-0905	CV1-0905	09/05/02	16:30
12				
13				
14				
15				
16				
17				
18				
19				
20				

COMMENTS:

CH2MHILL
Applied Sciences Group

CH2M HILL
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2300 NW Walnut Blvd
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97330-3538
P.O. Box 428
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97339-0428
Tel 541.752.4271
Fax 541.752.0276

MDL Replicate Information

Method:	Extraction Method:	Matrix:	Units	Instrument:	MDL Date:	Exp. Date:
ASTM E-77	NONE	SOIL	MG/KG	TOCSkalar	06/25/2002	06/24/2003

CAS_NO	PARAMETER	MDL	R1	R2	R3	R4	R5	R6	R7	R8	Mean	Std.Dev.	Spike Lev.
TOC	Total Organic Carbon	20.2	28.63	12.23	17.22	18.88	10.21	10.08	8.16	11.82	14.65375	6.72439043	80

CHAIN OF CUSTODY/SHIPPING DOCUMENTS

1 4 10 ED

CH2MHILL Applied Sciences Lab
CHAIN OF CUSTODY RECORD
AND AGREEMENT TO PERFORM SERVICES

CVO 2300 NW Walnut Boulevard
Corvallis, OR 97330-3538
(541) 752-4271 FAX (541) 752-0276

COC # _____

Project # 164067.A1.02	Purchase Order #
Project Name: City of Portland - Outfalls - Pilot Project	
Company Name: City of Portland	
Report to: Dawn Sanders	Phone No: 503 235-5000
Requested Completion Date: Standard	Sample Disposal: Dispose ☑ Return ☐

THIS AREA FOR LAB USE ONLY: Lab # 8006 Page 1 of 1

EPA Tier QC Level: 1 (Screening) 2 3 4

Sampling Date	Sampling Time	Type COMP	Type GRAB	Matrix WATER	Matrix SOIL	Matrix AIR	Matrix Other	CLIENT SAMPLE ID (8 CHARACTERS)	LAB QC	TOTAL # OF CONTAINERS	Grain Size	Metals	Pesticides	Herbicides	Mercury	* SVOC / Low Level PAH	TPH-Dx	PCB	TOC	Alternate Description	Lab ID
										Preservative											
8/20/02	1600	X					X	PP01180 1		4	/	/	/	/	/	/	/	/	/		-1
8/21/02	1500	X					X	PP01180 9		4	/	/	/	/	/	/	/	/	/		-2
8/21/02	1600	X					X	PP01181 0		4	/	/	/	/	/	/	/	/	/		-3
8/21/02	1315	X		X				PP01181 EB 01		10		/	/	/	/	/	/	/	/		-4

Relinquished By: David Lacey	Date/Time: 8/21/02 1900	Received By	Date/Time
Sampled By and Title: David Lacey (Please sign and print name)	Date/Time: 8/21/02 1900	Relinquished By (Please sign and print name)	Date/Time
Received By: Jennifer Ceil (Please sign and print name)	Date/Time: 8-22 10:00	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Shipped Via: UPS Fed-Ex Other _____	Shipping #

Special Instructions: * Run SW 8270C and SW 8270C-SIM

Instructions and Agreement Provisions on Reverse Side

DISTRIBUTION: Original - LAB, Yellow - LAB, Pink - Client
Rev 2/01 Lab form 340

CH2MHILL
Applied Sciences Group

Sample Receipt Record

Batch Number: 8006

Date/Time Received: 8-22-02 10:00 am

Client/Project: City of Portland

Temperature: 0.6 °

VERIFICATION OF SAMPLE CONDITIONS (verify all items) * HD = Client Hand delivered Samples

Observation	YES	NO	*HD
Were custody seals intact and on the outside of the cooler?			
Was the Chain of Custody inside the cooler?			
Was the Chain of Custody properly filled out?			
Were the sample containers in good condition?	–		
Was there ice in the cooler?			

If the answer to any of the questions above is NO, a Sample Receipt Exceptions Report Must be written.

VERIFICATION OF SAMPLE PRESERVATION (verify all preserved samples except HAAs, HANs and CH)

Sample No	Nutrients pH <2	Metals pH <2	Volatiles pH <2	Cyanides pH >12	TOC pH <2	Phenol pH <2, FAS	Other (specify)	N/A (soils/unpres)
1								N/A -1
2								N/A -2
3								N/A -3
4		<2						-4
5								
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29								
30								

LOGIN AND pH VERIFICATIONS PERFORMED BY

Jennifer Ciel 8-22-02
Date/Time
11:50am

Date/Time

CH2M HILL
Applied Sciences Group

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P.O. Box 428, Corvallis, OR 97339-0428
Tel 541.752.4270 Fax 541.752.0276

CH2MHILL
Applied Sciences Group

Sample Receipt Exception Report

Sample Batch Number: 8006 **Client/Project** Portland Harbor

The following exceptions were noted:		
		Comments (write number of exception description and the impacted sample numbers)
	1. No custody seal as required by project	
	2. No chain-of-custody provided	
	3. Analysis, description, date of collection not provided	
	4. Samples broken or leaking on reciept.	
	5. Temperature of samples inappropriate for analysis requested	
	6. Container inappropriate for analysis requested	
	7. Inadequate sample volume.	
	8. Preservation inappropriate for analysis requested	
	9. Samples received out of holding time for analysis requrested	
	10. Discrepancies between COC form and container labels.	
X	11. Other.	No preserved vials for TOC sample PP0118ZB01 provided

ACTION TAKEN:

Originator: [illegible] Date: 8/22/02

Client was notified on: (Date/Time) Client Contact:

Client Services:

CH2M HILL
Applied Sciences Laboratory

2300 NW Walnut Blvd., Corvallis, OR 97330-3538
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CH2MHILL
Applied Sciences Group

September 19, 2002

Portland Harbor

164067.A1.02

RE: Laboratory Report for Portland Harbor
Applied Sciences Group Reference No. 8008

Scott Echols/CVO:

On August 22, 2002, CH2M HILL Applied Sciences Group received five samples with a request for analysis of selected parameters. All analyses were performed by CH2M HILL unless otherwise indicated below.

The analytical results and associated quality control data are enclosed. Any unusual difficulties encountered during the analysis of your samples are discussed in the case narrative.

CH2M HILL Applied Sciences Group appreciates your business and looks forward to serving your analytical needs again. If you should have any questions concerning the data, or if you need additional information, please call Ms. Kathy McKinley at (541) 758-0235, extension 3120.

Sincerely,

Ben Thompson
Analytical Manager

Enclosures

cc:
Tina Rice/PDX

CLIENT SAMPLE CROSS-REFERENCE

CH2M HILL Applied Sciences Group Reference No. 8008

Sample ID	Client Sample ID	Date Collected	Time Collected
800801	PP011806	08/21/2002	10:30
800802	PP011807	08/21/2002	11:45
800803	PP011808	08/21/2002	14:15
800804MSD	PP011808MSD	08/21/2002	14:15
800805MS	PP011808MS	08/21/2002	14:15

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CH2M HILL Laboratory Reference No. 8008

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QC Summary 14

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Sample Data Summary 31
QC Summary 37

Metals Analysis 74
Sample Data Summary 76
QC Summary 83

Total Organic Carbon Analysis by Method ASTM E-777 92
Sample Data Summary 94
QC Summary 100

Chain of Custody/Shipping Documents 117

TOTAL PETROLEUM HYDROCARBONS-DIESEL
BY METHOD TPHNW-Dx

CASE NARRATIVE
TPH-DIESEL BY TPHNW-Dx

Analytical Method: TPHNW-Dx

Batch No.: 8008

Lab Name: CH2M HILL Applied Sciences Lab

Contract #.: 164067.A1.02

Project: Portland Harbor

I. Holding Times:
All holding times were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Spike Duplicate Sample(s):
Diesel recovery (198%) in the MS exceeded acceptance criteria (50-150%); however diesel recovery (115%) in the MSD met acceptance criteria. RPD (53.2%) for the MS/MSD did not meet acceptance criteria (20%).

D. Lab Control Sample(s):
All acceptance criteria were met.

E. Surrogate(s):
Recoveries of O-Terphenyl (0%) and Octacosane (0%) in samples PP011806DL and PP011807DL did not meet acceptance criteria (50-150%); however, surrogate recoveries of the undiluted samples met acceptance criteria. Insufficient sample extract remained for reanalysis. All other acceptance criteria were met.

F. Other:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
"N"-qualifier used to denote result values that fall within diesel carbon range (C12-C24); however sample peak-pattern does not match diesel standard.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: Joseph A. Hardy

Date: 9/18/02

Reviewed by: Mark Schmidt

Date: 09/18/02

SAMPLE DATA SUMMARY

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011806

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\024B2401.D
Matrix: Soil
Sample Amt: 10.14 g
% Solid: 66.98
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8008
Lab Sample ID: **800801**
Date Sampled: 08/21/02
Date Extracted: 08/23/02
Date Analyzed: 09/13/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.35	9.86	~~795~~ 194	~~EN~~ D SN
LUBEOIL_NW	NW TPH Lube Oil	3.35	19.7	~~1180~~ 681	~~E~~ D

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	70.8	
630-02-4	Octacosane	50-150%	66.3	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011806DL

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\023B2301.D
Matrix: Soil
Sample Amt: 10.14 g
% Solid: 66.98
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8008
Lab Sample ID: **800801DL**
Date Sampled: 08/21/02
Date Extracted: 08/23/02
Date Analyzed: 09/13/02
Total Dilution Factor: 10
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	33.5	98.6	194	JN
LUBEOIL_NW	NW TPH Lube Oil	33.5	197	681	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	0	*
630-02-4	Octacosane	50-150%	0	*

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011807

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\027B2701.D
Matrix: Soil
Sample Amt: 10.62 g
% Solid: 77.55
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8008
Lab Sample ID: **800802**
Date Sampled: 08/21/02
Date Extracted: 08/23/02
Date Analyzed: 09/13/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.20	9.42	265	N
LUBEOIL_NW	NW TPH Lube Oil	3.20	18.8	~~538~~ 261	~~E~~ D

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	100	
630-02-4	Octacosane	50-150%	103	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011807DL

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\026B2601.D
Matrix: Soil
Sample Amt: 10.62 g
% Solid: 77.55
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8008
Lab Sample ID: **800802DL**
Date Sampled: 08/21/02
Date Extracted: 08/23/02
Date Analyzed: 09/13/02
Total Dilution Factor: 2
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	6.40	18.8	100	N
LUBEOIL_NW	NW TPH Lube Oil	6.40	37.7	261	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	0	*
630-02-4	Octacosane	50-150%	0	*

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011808

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091002L1\039B3901.D
Matrix: Soil
Sample Amt: 10.45 g
% Solid: 74.15
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8008
Lab Sample ID: **800803**
Date Sampled: 08/21/02
Date Extracted: 08/23/02
Date Analyzed: 09/11/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.25	9.57	166	N
LUBEOIL_NW	NW TPH Lube Oil	3.25	19.1	409	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	86.3	
630-02-4	Octacosane	50-150%	88.8	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011808MSD

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091002L1\041B4101.D
Matrix: Soil
Sample Amt: 10.73 g
% Solid: 74.15
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8008
Lab Sample ID: **800804MSD**
Date Sampled: 08/21/02
Date Extracted: 08/23/02
Date Analyzed: 09/11/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.17	9.32	311	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	83.8	
630-02-4	Octacosane	50-150%	86.0	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011808MS

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091002L1\043B4301.D
Matrix: Soil
Sample Amt: 10.34 g
% Solid: 74.15
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8008
Lab Sample ID: **800805MS**
Date Sampled: 08/21/02
Date Extracted: 08/23/02
Date Analyzed: 09/11/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.29	9.67	426	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	85.0	
630-02-4	Octacosane	50-150%	86.9	

Comments:

QC SUMMARY

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

SB1-0823

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\009B0901.D
Matrix: Soil
Sample Amt: 10 g
% Solid: 100
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8008
Lab Sample ID: **SB1-0823**
Date Sampled: N/A
Date Extracted: 08/23/02
Date Analyzed: 09/12/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.40	10.0	10.0	U
LUBEOIL_NW	NW TPH Lube Oil	3.40	20.0	10.0	J

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	102	
630-02-4	Octacosane	50-150%	88.5	

Comments:

1A
ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

BS1S0823

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab. File ID: C:\HPCHEM\2\DATA\091202L2\010B1001.D
Matrix: Soil
Sample Amt: 10 g
% Solid: 100
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8008
Lab Sample ID: **BS1S0823**
Date Sampled: N/A
Date Extracted: 08/23/02
Date Analyzed: 09/12/02
Total Dilution Factor: 1
Concentration Units: mg/Kg
Initial Cal ID: TPH090902

CAS	COMPOUND	MDL	RL	RESULT	Q
DIESEL_NW	NW TPH Diesel	3.40	10.0	98.1	

SURROGATE:

CAS	COMPOUND	CONTROL LIMITS	%REC	Q
84-15-1	O-Terphenyl	50-150%	93.8	
630-02-4	Octacosane	50-150%	70.5	

Comments:

ANALYSIS DATA SHEET
LABORATORY CONTROL SAMPLE

Lab Name: CH2M HILL ASL
Lab Code CVO
LCS ID: BS1S0823

Lab Batch No.: 8008
Init.Calib.Date(s): 09/10/02
Init. Calib. Times: 00:01 - 07:54
Concentration Units: mg/Kg

Analyte	Expected	Found	% Recovery	Control Limits	Qualifier
NW TPH Diesel	101	98.1	97.5	50-150%	

Surrogate	% Recovery	Control Limits	Qualifier
O-Terphenyl	93.8	50-150%	
Octacosane	70.5	50-150%	

Comments:

ANALYSIS DATA SHEET
MATRIX SPIKE/SPIKE DUPLICATE SAMPLE RECOVERY

Lab Name: CH2M HILL ASL
Lab Code: CVO
Concentration Units: mg/Kg
GC Column: DB-TPH 0.25um x 30 m x 0.32mm
Parent Sample ID: PP011808

MS ID: PP011808MS

Lab Batch No.: 8008
Init.Calib.Date(s): 09/10/02
Init. Calib. Times: 00:01 - 07:54
Instrument ID: GC-L
MSD ID: PP011808MSD

Analyte	Parent Sample Result	MS Spike Added	MS Sample Result	MS % Rec.	MSD Spike Added	MSD Sample Result	MSD % Rec.	% RPD	QC Limits % Rec.	QC Limits % RPD	Q
NW TPH Diesel	166	131	426	198	126	311	115	53.2	50-150%	20	*

Comments:

4

ANALYSIS DATA SHEET

METHOD BLANK SUMMARY

EPA SAMPLE NO.

SB1-0823

Lab Name: CH2M HILL ASL

Project No.: 164067.A1.02

Lab Code: CVO

Lab. File ID: C:\HPCHEM\2\DATA\091202L2\009B0901.D

Matrix: Soil

Instrument ID: GC-L

GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8008

Lab Sample ID: SB1-0823

Date Analyzed: 09/12/02

Time Analyzed: 20:20

Concentration Units: mg/Kg

Initial Cal ID: TPH090902

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	BS1S0823	BS1S0823	C:\HPCHEM\2\DATA\091202L2\010B1001.D	09/12/02
02	PP011806	800801	C:\HPCHEM\2\DATA\091202L2\024B2401.D	09/13/02
03	PP011806DL	800801DL	C:\HPCHEM\2\DATA\091202L2\023B2301.D	09/13/02
04	PP011807	800802	C:\HPCHEM\2\DATA\091202L2\027B2701.D	09/13/02
05	PP011807DL	800802DL	C:\HPCHEM\2\DATA\091202L2\027B2701.D	09/13/02
06	PP011808	800803	C:\HPCHEM\2\DATA\091002L1\039B3901.D	09/11/02
07	PP011808MSD	800804MSD	C:\HPCHEM\2\DATA\091002L1\041B4101.D	09/11/02
08	PP011808MS	800805MS	C:\HPCHEM\2\DATA\091002L1\043B4301.D	09/11/02
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COMMENTS:

6

ANALYSIS DATA SHEET

INITIAL MULTIPOINT CALIBRATION

Lab Name: CH2M HILL ASL

Lab Code: CVO

Instrument ID: GC-L

Units: mg/L

GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Project No.: 164067.A1.02

Lab Batch No.: 8008

Calibration Date: 09/10/02

Calibration Times: 00:01 - 07:54

Initial Cal ID: AFCEEV21.M

LAB FILE ID:

LEVEL 1 (DIESEL) C:\HPCHEM\2\DATA\090902L1\010B1001.D

LEVEL 2 (DIESEL) C:\HPCHEM\2\DATA\090902L1\011B1101.D

LEVEL 3 (DIESEL) C:\HPCHEM\2\DATA\090902L1\012B1201.D

LEVEL 4 (DIESEL) C:\HPCHEM\2\DATA\090902L1\013B1301.D

LEVEL 5 (DIESEL) C:\HPCHEM\2\DATA\090902L1\014B1401.D

LEVEL 6 (DIESEL) C:\HPCHEM\2\DATA\090902L1\015B1501.D

LEVEL 1 (OIL) C:\HPCHEM\2\DATA\090902L1\017B1701.D

LEVEL 2 (OIL) C:\HPCHEM\2\DATA\090902L1\018B1801.D

LEVEL 3 (OIL) C:\HPCHEM\2\DATA\090902L1\019B1901.D

LEVEL 4 (OIL) C:\HPCHEM\2\DATA\090902L1\020B2001.D

LEVEL 5 (OIL) C:\HPCHEM\2\DATA\090902L1\021B2101.D

LEVEL 6 (OIL) C:\HPCHEM\2\DATA\090902L1\022B2201.D

Analyte	STD 1	RF 1	STD 2	RF 2	STD 3	RF 3	STD 4	RF 4	STD 5	RF 5			
NW TPH Diesel	10.1	0.000056	40.0	0.000095	201	0.000142	805	0.000142	2012	0.000149			
NW TPH Lube Oil	20.5	0.000020	103	0.000070	205	0.000103	410	0.000122	2050	0.000196			
O-Terphenyl	4.82	0.000121	19.3	0.000105	96.5	0.000124	386	0.000111	965	0.000112			
Octacosane	4.53	0.000219	18.1	0.000146	90.6	0.000175	363	0.000143	906	0.000147			

Analyte	STD 6	RF 6									CURVE FIT	R^2	
NW TPH Diesel	5031	0.000149									Linear	1.0000	
NW TPH Lube Oil	4102	0.000188									Linear	0.9987	
O-Terphenyl	2412	0.000106									Linear	0.9998	
Octacosane	2266	0.000160									Linear	0.9993	

Comments:

7B
ANALYSIS DATA SHEET
INITIAL CALIBRATION VERIFICATION

Lab Name: CH2M HILL ASL
Lab Code: CVO
Instrument ID: GC-L
Initial Cal ID: TPH090902
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8008
Init.Calib.Date(s): 09/10/02
Init. Calib. Times: 00:01 - 07:54
ICV ID: ICV2-0909
Concentration Units: mg/L

ANALYTE	Expected mg/L	Found mg/L	Percent Recovery	Q
NW TPH Diesel	1000	1012	101	
NW TPH Lube Oil	1000	972	97.2	

COMMENTS:
NW TPH Lube Oil reported from ICV3-0909

7B
ANALYSIS DATA SHEET
CALIBRATION VERIFICATION

Lab Name: CH2M HILL ASL
Lab Code: CVO
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8008
Init.Calib.Date(s): 09/10/02
Init. Calib. Times: 00:01 - 07:54
Concentration Units: mg/L
Initial Cal ID: TPH090902

CCV#1 ID: CV5-0910 CCV #2 ID: CV7-0910 CCV #3 ID:

ANALYTE	CCV #1 %D or DRIFT	CCV #2 %D or DRIFT	CCV #3 %D or DRIFT	Q
NW TPH Diesel	-10.4%	-14.1%		
NW TPH Lube Oil	-10.2%	-4.9%		
O-Terphenyl	-12.4%	-26.6%		
Octacosane	-11.0%	-23.7%		

COMMENTS:
NW TPH Lube Oil reported from CV6-0910, CV8-0910

7B
ANALYSIS DATA SHEET
CALIBRATION VERIFICATION

Lab Name: CH2M HILL ASL
Lab Code: CVO
Instrument ID: GC-L
GC Column: DB-TPH 0.25um x 30 m x 0.32mm

Lab Batch No.: 8008
Init.Calib.Date(s): 09/10/02
Init. Calib. Times: 00:01 - 07:54
Concentration Units: mg/L
Initial Cal ID: TPH090902

CCV#1 ID: CV1-0912 CCV #2 ID: CV3-0912 CCV #3 ID: CV5-0912

ANALYTE	CCV #1 %D or DRIFT	CCV #2 %D or DRIFT	CCV #3 %D or DRIFT	Q
NW TPH Diesel	-0.1%	-3.2%	-12.0%	
NW TPH Lube Oil	-11.4%	1.6%	-3.5%	
O-Terphenyl	-4.4%	-8.1%	-20.0%	
Octacosane	-12.2%	-9.1%	-16.3%	

COMMENTS:
NW TPH Lube Oil reported from CV2-0912, CV4-0912, CV6-0912

ANALYSIS DATA SHEET
ANALYTICAL SEQUENCE

Lab Name: CH2M HILL ASL
Lab Batch No.: 8008
Lab Code: CVO
Instrument ID: GC-L
Start Date: 09/10/02
End Date: 09/10/02
Start Time: 00:01
End Time: 12:23

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LEVEL 1 (DIESEL)	LEVEL 1 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\010B1001.D	00:01
02	LEVEL 2 (DIESEL)	LEVEL 2 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\011B1101.D	00:38
03	LEVEL 3 (DIESEL)	LEVEL 3 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\012B1201.D	01:14
04	LEVEL 4 (DIESEL)	LEVEL 4 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\013B1301.D	01:50
05	LEVEL 5 (DIESEL)	LEVEL 5 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\014B1401.D	02:27
06	LEVEL 6 (DIESEL)	LEVEL 6 (DIESEL)	C:\HPCHEM\2\DATA\090902L1\015B1501.D	03:03
07	ICV2-0909	ICV2-0909	C:\HPCHEM\2\DATA\090902L1\016B1601.D	03:39
08	LEVEL 1 (OIL)	LEVEL 1 (OIL)	C:\HPCHEM\2\DATA\090902L1\017B1701.D	04:52
09	LEVEL 2 (OIL)	LEVEL 2 (OIL)	C:\HPCHEM\2\DATA\090902L1\018B1801.D	05:28
10	LEVEL 3 (OIL)	LEVEL 3 (OIL)	C:\HPCHEM\2\DATA\090902L1\019B1901.D	06:05
11	LEVEL 4 (OIL)	LEVEL 4 (OIL)	C:\HPCHEM\2\DATA\090902L1\020B2001.D	06:41
12	LEVEL 5 (OIL)	LEVEL 5 (OIL)	C:\HPCHEM\2\DATA\090902L1\021B2101.D	07:17
13	LEVEL 6 (OIL)	LEVEL 6 (OIL)	C:\HPCHEM\2\DATA\090902L1\022B2201.D	07:54
14	ICV3-0909	ICV3-0909	C:\HPCHEM\2\DATA\090902L1\023B2301.D	12:23
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COMMENTS:

ANALYSIS DATA SHEET
ANALYTICAL SEQUENCE

Lab Name: CH2M HILL ASL
Lab Code: CVO
Start Date: 09/11/02 End Date: 09/12/02
Start Time: 17:37 End Time: 02:04

Lab Batch No.: 8008
Instrument ID: GC-L

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	CV5-0910	CV5-0910	C:\HPCHEM\2\DATA\091002L1\036B3602.D	17:37
02	CV6-0910	CV6-0910	C:\HPCHEM\2\DATA\091002L1\037B3701.D	18:13
03	PP011808	800803	C:\HPCHEM\2\DATA\091002L1\039B3901.D	20:02
04	PP011808MSD	800804MSD	C:\HPCHEM\2\DATA\091002L1\041B4101.D	21:14
05	PP011808MS	800805MS	C:\HPCHEM\2\DATA\091002L1\043B4301.D	22:26
06	CV7-0910	CV7-0910	C:\HPCHEM\2\DATA\091002L1\046B4601.D	12:15
07	CV8-0910	CV8-0910	C:\HPCHEM\2\DATA\091002L1\047B4702.D	02:04
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COMMENTS:

ANALYSIS DATA SHEET
ANALYTICAL SEQUENCE

Lab Name: CH2M HILL ASL
Lab Code: CVO
Start Date: 09/12/02 End Date: 09/13/02
Start Time: 13:42 End Time: 11:27

Lab Batch No.: 8008
Instrument ID: GC-L

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	CV1-0912	CV1-0912	C:\HPCHEM\2\DATA\091202L2\002B0201.D	13:42
02	CV2-0912	CV2-0912	C:\HPCHEM\2\DATA\091202L2\003B0301.D	16:04
03	SB1-0823	SB1-0823	C:\HPCHEM\2\DATA\091202L2\009B0901.D	20:20
04	BS1S0823	BS1S0823	C:\HPCHEM\2\DATA\091202L2\010B1001.D	21:33
05	CV3-0912	CV3-0912	C:\HPCHEM\2\DATA\091202L2\016B1601.D	01:47
06	CV4-0912	CV4-0912	C:\HPCHEM\2\DATA\091202L2\017B1702.D	03:36
07	PP011806DL	800801DL	C:\HPCHEM\2\DATA\091202L2\023B2301.D	07:14
08	PP011806	800801	C:\HPCHEM\2\DATA\091202L2\024B2401.D	07:50
09	PP011807DL	800802DL	C:\HPCHEM\2\DATA\091202L2\026B2601.D	09:02
10	PP011807	800802	C:\HPCHEM\2\DATA\091202L2\027B2701.D	09:39
11	CV5-0912	CV5-0912	C:\HPCHEM\2\DATA\091202L2\028B2801.D	10:15
12	CV6-0912	CV6-0912	C:\HPCHEM\2\DATA\091202L2\029B2901.D	11:27
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COMMENTS:

CH2MHILL
Applied Sciences Group

CH2M HILL
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MDL Replicate Information

Method:	Extraction Method:	Matrix:	Units	Instrument:	MDL Date:	Exp. Date:
TPHNW-DX	METHOD	WATER	MG/L	GCL	05/20/2002	05/19/2003

CAS_NO	PARAMETER	MDL	R1	R2	R3	R4	R5	R6	R7	R8	Mean	Std.Dev.	Spike Lev.
TPHD	TPH-Diesel	0.012	0.02425	0.0299	0.0272	0.030118	0.035816	0.025499	0.027896		0.028669	0.00380769	0.0125

CH2MHILL
Applied Sciences Group

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97339-0428
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Fax 541.752.0276

MDL Replicate Information

Method:	Extraction Method:	Matrix:	Units	Instrument:	MDL Date:	Exp. Date:
TPHNW-DX	SW3550	SOIL	MG/KG	GCL	08/10/2001	08/09/2002

CAS_NO	PARAMETER	MDL	R1	R2	R3	R4	R5	R6	R7	R8	Mean	Std.Dev.	Spike Lev.
TPHD	TPH-Diesel	3.40	8.2	8	7.7	6.4	6.3	5.9	5.6	5.3	6.675	1.13357840	10

PCB AROCLORS BY METHOD SW8082

CASE NARRATIVE
PCB AROCLORS BY SW8082

Analytical Method: SW8082

Batch No.: 8008

Lab Name: CH2M HILL Applied Sciences Lab

Contract #.: 164067.A1.02

Project: Portland Harbor

I. Holding Times:
All holding times were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Spike Duplicate Sample(s):
All acceptance criteria were met.

D. Lab Control Sample(s):
All acceptance criteria were met.

E. Other:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: Douglas A. Hardy

Date: 9/13/02

Reviewed by: [illegible]

Date: 9/17/02

SAMPLE DATA SUMMARY

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **PP011806**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
SDG No.: 8008
Matrix: SOIL
Lab Sample ID: **800801**
Sample Amt.: 10.29 g
Lab File ID: 021B2101.D
% Moisture: 33
Decanted: Y
Date Received: 08/22/02
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/10/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	6.82	7.25	7.25		U
11104-28-2	PCB-1221	2.60	14.5	14.5		U
11141-16-5	PCB-1232	4.41	7.25	7.25		U
53469-21-9	PCB-1242	3.25	7.25	7.25		U
12672-29-6	PCB-1248	2.41	7.25	407	405	
11097-69-1	PCB-1254	2.07	7.25	159	146	
11096-82-5	PCB-1260	3.66	7.25	74.0	72.6	
37324-23-5	PCB-1262	3.60	7.25	7.25		U
11100-14-4	PCB-1268	3.60	7.25	7.25		U

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	77.4	25-143	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **PP011807**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
SDG No.: 8008
Matrix: SOIL
Lab Sample ID: **800802**
Sample Amt.: 10.12 g
Lab File ID: 022B2201.D
% Moisture: 22
Decanted: Y
Date Received: 08/22/02
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/10/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	5.99	6.37	6.37		U
11104-28-2	PCB-1221	2.28	12.7	12.7		U
11141-16-5	PCB-1232	3.87	6.37	6.37		U
53469-21-9	PCB-1242	2.85	6.37	6.37		U
12672-29-6	PCB-1248	2.12	6.37	316	302	
11097-69-1	PCB-1254	1.82	6.37	113	102	
11096-82-5	PCB-1260	3.21	6.37	49.5	47.8	
37324-23-5	PCB-1262	3.16	6.37	6.37		U
11100-14-4	PCB-1268	3.16	6.37	6.37		U

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	70.9	25-143	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **PP011808**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
SDG No.: 8008
Matrix: SOIL
Lab Sample ID: **800803**
Sample Amt.: 10.06 g
Lab File ID: 023B2301.D
% Moisture: 26
Decanted: Y
Date Received: 08/22/02
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/10/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	6.30	6.70	6.70		U
11104-28-2	PCB-1221	2.40	13.4	13.4		U
11141-16-5	PCB-1232	4.08	6.7	6.70		U
53469-21-9	PCB-1242	3.00	6.7	6.70		U
12672-29-6	PCB-1248	2.23	6.7	223	208	
11097-69-1	PCB-1254	1.92	6.7	81.8	75.7	
11096-82-5	PCB-1260	3.38	6.7	52.1	50.3	
37324-23-5	PCB-1262	3.32	6.7	6.70		U
11100-14-4	PCB-1268	3.32	6.7	6.70		U

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	80.0	25-143	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **PP011808MSD**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
SDG No.: 8008
Matrix: SOIL
Lab Sample ID: **800804MSD**
Sample Amt.: 10.05 g
Lab File ID: 026B2601.D
% Moisture: 26
Decanted: Y
Date Received: 08/22/02
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/10/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	6.31	6.71	180	160	
11096-82-5	PCB-1260	2.40	6.71	131	131	

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	66.8	25-143	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **PP011808MS**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
SDG No.: 8008
Matrix: SOIL
Lab Sample ID: **800805MS**
Sample Amt.: 10.23 g
Lab File ID: 027B2701.D
% Moisture: 26
Decanted: Y
Date Received: 08/22/02
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/10/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	6.20	6.59	189	171	
11096-82-5	PCB-1260	2.36	6.59	153	148	

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	65.1	25-143	

Comments:

QC SUMMARY

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **SB1-0828**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
SDG No.: 8008
Matrix: SOIL
Lab Sample ID: **SB1-0828**
Sample Amt.: 10 g
Lab File ID: 011B1101.D
% Moisture: 0
Decanted: Y
Date Received: N/A
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/09/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	4.70	5.00	5.00		U
11104-28-2	PCB-1221	1.79	10.0	10.0		U
11141-16-5	PCB-1232	3.04	5.00	5.00		U
53469-21-9	PCB-1242	2.24	5.00	5.00		U
12672-29-6	PCB-1248	1.66	5.00	5.00		U
11097-69-1	PCB-1254	1.43	5.00	5.00		U
11096-82-5	PCB-1260	2.52	5.00	5.00		U
37324-23-5	PCB-1262	2.48	5.00	5.00		U
11100-14-4	PCB-1268	2.48	5.00	5.00		U

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	84.5	25-143	

Comments:

1A

ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **BS1S0828**

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
SDG No.: 8008
Matrix: SOIL
Lab Sample ID: **BS1S0828**
Sample Amt.: 10 g
Lab File ID: 012B1201.D
% Moisture: 0
Decanted: Y
Date Received: N/A
Extraction: Sonc
Date Extracted: 08/28/02
Extract Vol.: 5 ml
Date Analyzed: 09/09/02
Injection Vol.: 3.0 ul
Dilution Factor: 1
GPC Cleanup: N
Sulfur Cleanup: N

Concentration Units: ug/Kg

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	4.70	5.00	95.9	94.3	
11096-82-5	PCB-1260	2.52	5.00	108	104	

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	94.5	25-143	

Comments:

ORGANICS LABORATORY CONTROL SAMPLE SUMMARY

Analytical Method: SW8082
Lab Name: CH2M HILL ASL
Concentration Units: ug/Kg
LCS ID: BS1S0828

SDG No.: 8008
Contract #: 164067.A1.02
Matrix: SOIL
Initial Calibration ID: PCB090902

Analyte	Expected	Found	% Rec.	QC Limits	Qualifier
PCB-1016	100	95.9	95.9	50-150	
PCB-1260	100	108	108	50-150	

Surrogate	% Rec.	QC Limits	Qualifier
Decachlorobiphenyl	94.5	25-143	

Comments:

ORGANICS MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLE SUMMARY

Analytical Method: SW8082
Lab Name: CH2M HILL ASL
Concentration Units: ug/Kg
Parent Field Sample ID: PP011808

Matrix: SOIL
MS ID: PP011808MS

SDG No.: 8008
Contract #: 164067.A1.02
% Moisture: 26
MSD ID: PP011808MSD

Analyte	Parent Sample Result	MS Spike Added	MS Sample Result	MS % Rec.	MSD Spike Added	MSD Sample Result	MSD % Rec.	% RPD	QC Limits % Rec.	QC Limits % RPD	Q
PCB-1016	6.70 U	132	189	143	134	180	134	6.5	50-150	50	
PCB-1260	47.2	132	153	80.2	134	131	62.5	25	50-150	50	

Comments:

ORGANICS METHOD BLANK SUMMARY

Field Sample ID: **SB1-0828**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02
Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008
Lab File ID: 011B1101.D Lab Sample ID: **SB1-0828**
Matrix: SOIL Extraction: Sonc
Sulfur Cleanup: N Date Extracted: 08/28/02
GPC Cleanup: N Date Analyzed: 09/09/02
GC Column: DB1701 / DB5MS Time Analyzed: 19:46
Instrument ID: GC-H

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

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed
01	BS1S0828	BS1S0828	C:\HPCHEM\1\DATA\090902H1\012B1201.D	09/09/02
02	PP011806	800801	C:\HPCHEM\1\DATA\090902H1\021B2101.D	09/10/02
03	PP011807	800802	C:\HPCHEM\1\DATA\090902H1\022B2201.D	09/10/02
04	PP011808	800803	C:\HPCHEM\1\DATA\090902H1\023B2301.D	09/10/02
05	PP011808MSD	800804MSD	C:\HPCHEM\1\DATA\090902H1\026B2601.D	09/10/02
06	PP011808MS	800805MS	C:\HPCHEM\1\DATA\090902H1\027B2701.D	09/10/02
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

Comments:

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
Contract #: 164067.A1.02
SDG No.: 8008
Instrument ID: GC-H
Calibration Date(s): 09/09/02
Initial Calibration ID: PCB090902
Calibration Time(s): 13:28 -16:54

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:	LEVEL 1 (9/9)	002B0201.D
Std 2:	LEVEL 2 (9/9)	003B0301.D
Std 3:	LEVEL 3 (9/9)	004B0401.D
Std 4:	LEVEL 4 (9/9)	005B0501.D
Std 5:	LEVEL 5 (9/9)	006B0601.D
Std 6:	LEVEL 6 (9/9)	007B0701.D
Std 7:	LEVEL 7 (9/9)	008B0801.D

Individual PCB Calib.	Lab File ID:

GC Column: DB1701
Concentration Units: ng/ml

Analyte	STD 1	RF 1	STD 2	RF 2	STD 3	RF 3	STD 4	RF 4	STD 5	RF 5	STD 6	RF 6	STD 7	RF 7
PCB-1016 (Peak 1)	5	0.024693	50	0.0490416	100	0.049556	250	0.052443	500	0.05515	750	0.055112	1000	0.059738
PCB-1016 (Peak 2)	5	0.008578	50	0.0214698	100	0.023767	250	0.026791	500	0.029239	750	0.031094	1000	0.033955
PCB-1016 (Peak 3)	5	0.009656	50	0.0190782	100	0.018783	250	0.019156	500	0.019469	750	0.019134	1000	0.020763
PCB-1016 (Peak 4)	5	0.016945	50	0.034089	100	0.035791	250	0.039201	500	0.041372	750	0.040607	1000	0.044554
PCB-1016 (Peak 5)	5	0.006394	50	0.0276028	100	0.036016	250	0.039326	500	0.044641	750	0.044838	1000	0.049074
PCB-1260 (Peak 1)	5	0.009598	50	0.0212004	100	0.022341	250	0.025343	500	0.027653	750	0.028018	1000	0.031043
PCB-1260 (Peak 2)	5	0.009418	50	0.0205007	100	0.021687	250	0.024098	500	0.025895	750	0.026322	1000	0.028765
PCB-1260 (Peak 3)	5	0.009422	50	0.0199003	100	0.020453	250	0.021601	500	0.022402	750	0.022052	1000	0.023944
PCB-1260 (Peak 4)	5	0.008516	50	0.0178795	100	0.018221	250	0.019277	500	0.019749	750	0.0192	1000	0.02112
PCB-1260 (Peak 5)	5	0.014895	50	0.0318947	100	0.031995	250	0.032885	500	0.033795	750	0.031839	1000	0.03459
Decachlorobiphenyl	2.0	0.001621	10.0	0.0017357	20	0.001769	50	0.00187	100	0.001987	150	0.001945	200	2.20E-03

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
Contract #: 164067.A1.02
SDG No.: 8008
Instrument ID: GC-H
Calibration Date(s): 09/09/02
Initial Calibration ID: PCB090902
Calibration Time(s): 13:28 -16:54

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:	LEVEL 1 (9/9)	002B0201.D
Std 2:	LEVEL 2 (9/9)	003B0301.D
Std 3:	LEVEL 3 (9/9)	004B0401.D
Std 4:	LEVEL 4 (9/9)	005B0501.D
Std 5:	LEVEL 5 (9/9)	006B0601.D
Std 6:	LEVEL 6 (9/9)	007B0701.D
Std 7:	LEVEL 7 (9/9)	008B0801.D

Individual PCB Calib.	Lab File ID:

GC Column: DB1701
Concentration Units: ng/ml

Analyte	Curve Fit	Avg. RRF	% RSD	Mean % RSD	R or COD	Q
PCB-1016 (Peak 1)	Quadratic	0.04939	23.3		0.99964	
PCB-1016 (Peak 2)	Quadratic	0.024985	33.6		0.99996	
PCB-1016 (Peak 3)	Quadratic	0.018006	20.8		0.99941	
PCB-1016 (Peak 4)	Quadratic	0.03608	25.3		0.99931	
PCB-1016 (Peak 5)	Quadratic	0.035413	41.2		0.99948	
PCB-1260 (Peak 1)	Quadratic	0.023599	29.9		0.99955	
PCB-1260 (Peak 2)	Quadratic	0.022384	28.5		0.99971	
PCB-1260 (Peak 3)	Quadratic	0.019968	24.2		0.99945	
PCB-1260 (Peak 4)	Quadratic	0.017709	23.7		0.9991	
PCB-1260 (Peak 5)	Quadratic	0.03027	22.7		0.99892	
Decachlorobiphenyl (SS)	Quadratic	0.001875	10.1		0.99889	

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
Instrument ID: GC-H
Initial Calibration ID: PCB090902

Contract #: 164067.A1.02
SDG No.: 8008
Calibration Date(s): 09/09/02
Calibration Time(s): 13:28 -16:54

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:	LEVEL 1 (9/9)	002B0201.D
Std 2:	LEVEL 2 (9/9)	003B0301.D
Std 3:	LEVEL 3 (9/9)	004B0401.D
Std 4:	LEVEL 4 (9/9)	005B0501.D
Std 5:	LEVEL 5 (9/9)	006B0601.D
Std 6:	LEVEL 6 (9/9)	007B0701.D
Std 7:	LEVEL 7 (9/9)	008B0801.D

Individual PCB Calib.	Lab File ID:

GC Column: DB5MS
Concentration Units: ng/ml

Analyte	STD 1	RF 1	STD 2	RF 2	STD 3	RF 3	STD 4	RF 4	STD 5	RF 5	STD 6	RF 6	STD 7	RF 7
PCB-1016 (Peak 1)	5	0.018413	50	0.0373132	100	0.037429	250	0.037749	500	0.038727	750	0.038849	1000	0.042014
PCB-1016 (Peak 2)	5	0.009209	50	0.0208773	100	0.022209	250	0.02453	500	0.026942	750	0.027975	1000	0.030411
PCB-1016 (Peak 3)	5	0.012439	50	0.0266736	100	0.027517	250	0.029164	500	0.030949	750	0.031603	1000	0.034295
PCB-1016 (Peak 4)	5	0.006398	50	0.0132549	100	0.012739	250	0.012458	500	0.012732	750	0.012845	1000	0.013933
PCB-1016 (Peak 5)	5	0.014596	50	0.0306238	100	0.030897	250	0.031489	500	0.033284	750	0.033524	1000	0.036182
PCB-1260 (Peak 1)	5	0.00683	50	0.0147738	100	0.01525	250	0.016854	500	0.018358	750	0.018502	1000	0.020579
PCB-1260 (Peak 2)	5	0.006736	50	0.0139713	100	0.008854	250	0.01842	500	0.01811	750	0.018785	1000	0.019787
PCB-1260 (Peak 3)	5	0.008854	50	0.01842	100	0.01811	250	0.018785	500	0.019787	750	0.019253	1000	0.020909
PCB-1260 (Peak 4)	5	0.0102	50	0.0219144	100	0.022495	250	0.024525	500	0.026724	750	0.026763	1000	0.029553
PCB-1260 (Peak 5)	5	0.005833	50	0.011781	100	0.011468	250	0.012131	500	0.012801	750	0.01237	1000	0.013885
Decachlorobiphenyl	2	0.001049	10	0.0011296	20	0.001162	50	0.001306	100	0.001403	150	0.001404	200	0.001599

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
Contract #: 164067.A1.02
SDG No.: 8008
Instrument ID: GC-H
Calibration Date(s): 09/09/02
Initial Calibration ID: PCB090902
Calibration Time(s): 13:28 -16:54

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:	LEVEL 1 (9/9)	002B0201.D
Std 2:	LEVEL 2 (9/9)	003B0301.D
Std 3:	LEVEL 3 (9/9)	004B0401.D
Std 4:	LEVEL 4 (9/9)	005B0501.D
Std 5:	LEVEL 5 (9/9)	006B0601.D
Std 6:	LEVEL 6 (9/9)	007B0701.D
Std 7:	LEVEL 7 (9/9)	008B0801.D

Individual PCB Calib.	Lab File ID:

GC Column: DB5MS
Concentration Units: ng/ml

Analyte	Curve Fit	Avg. RRF	% RSD	Mean % RSD	R or COD	Q
PCB-1016 (Peak 1)	Quadratic	0.035785	21.9		0.99964	
PCB-1016 (Peak 2)	Quadratic	0.023165	30.2		0.99988	
PCB-1016 (Peak 3)	Quadratic	0.02752	25.9		0.9998	
PCB-1016 (Peak 4)	Quadratic	0.012051	21.1		0.99963	
PCB-1016 (Peak 5)	Quadratic	0.030085	23.6		0.99974	
PCB-1260 (Peak 1)	Quadratic	0.015878	28.1		0.99955	
PCB-1260 (Peak 2)	Quadratic	0.014952	35.2		0.99942	
PCB-1260 (Peak 3)	Quadratic	0.017731	22.7		0.99936	
PCB-1260 (Peak 4)	Quadratic	0.023168	27.2		0.99949	
PCB-1260 (Peak 5)	Quadratic	0.011467	22.7		0.99878	
Decachlorobiphenyl (SS)	Quadratic	0.001293	14.9		0.99907	

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
Contract #: 164067.A1.02
SDG No.: 8008
Instrument ID: GC-H
Calibration Date(s): 09/02/02
Initial Calibration ID: PCB090902
Calibration Time(s): 18:08 -21:34

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:		
Std 2:		
Std 3:		
Std 4:		
Std 5:		
Std 6:		

	Individual PCB Calib.	Lab File ID:
Std 1:	AROCLOR 1221	048B0901.D
Std 1:	AROCLOR 1232	049B1001.D
Std 1:	AROCLOR 1242	050B1101.D
Std 1:	AROCLOR 1248	051B1201.D
Std 1:	AROCLOR 1254	052B1301.D
Std 1:	AROCLOR 1262	053B1401.D
Std 1:	AROCLOR 1268	054B1501.D

GC Column: DB1701
Concentration Units: ng/ml

Analyte	STD 1	RF 1	STD 2	RF 2	STD 3	RF 3	STD 4	RF 4	STD 5	RF 5	STD 6	RF6	STD 7	RF 7
PCB-1221 (Peak 1)	250	0.057787												
PCB-1221 (Peak 2)	250	0.19804												
PCB-1221 (Peak 3)	250	0.084972												
PCB-1221 (Peak 4)	250	0.106478												
PCB-1221 (Peak 5)	250	0.036091												
PCB-1232 (Peak 1)	250	0.095544												
PCB-1232 (Peak 2)	250	0.045498												
PCB-1232 (Peak 3)	250	0.060841												
PCB-1232 (Peak 4)	250	0.047032												
PCB-1232 (Peak 5)	250	0.086834												
PCB-1242 (Peak 1)	250	0.031732												
PCB-1242 (Peak 2)	250	0.024402												
PCB-1242 (Peak 3)	250	0.049346												
PCB-1242 (Peak 4)	250	0.014681												
PCB-1242 (Peak 5)	250	0.056575												
PCB-1248 (Peak 1)	250	0.034311												
PCB-1248 (Peak 2)	250	0.031335												
PCB-1248 (Peak 3)	250	0.034942												
PCB-1248 (Peak 4)	250	0.0293												
PCB-1248 (Peak 5)	250	0.065982												
PCB-1254 (Peak 1)	250	0.028224												
PCB-1254 (Peak 2)	250	0.027218												
PCB-1254 (Peak 3)	250	0.019919												
PCB-1254 (Peak 4)	250	0.033898												
PCB-1254 (Peak 5)	250	0.026149												
PCB-1262 (Peak 1)	250	0.030122												
PCB-1262 (Peak 2)	250	0.028837												
PCB-1262 (Peak 3)	250	0.014536												
PCB-1262 (Peak 4)	250	0.026817												
PCB-1262 (Peak 5)	250	0.014502												
PCB-1268 (Peak 1)	250	0.050736												
PCB-1268 (Peak 2)	250	0.045931												
PCB-1268 (Peak 3)	250	0.015521												
PCB-1268 (Peak 4)	250	0.016475												
PCB-1268 (Peak 5)	250	0.019135												

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
Contract #: 164067.A1.02
SDG No.: 8008
Instrument ID: GC-H
Calibration Date(s): 09/02/02
Initial Calibration ID: PCB090902
Calibration Time(s): 18:08 -21:34

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:		
Std 2:		
Std 3:		
Std 4:		
Std 5:		
Std 6:		

	Individual PCB Calib.	Lab File ID:
Std 1:	AROCLOR 1221	048B0901.D
Std 1:	AROCLOR 1232	049B1001.D
Std 1:	AROCLOR 1242	050B1101.D
Std 1:	AROCLOR 1248	051B1201.D
Std 1:	AROCLOR 1254	052B1301.D
Std 1:	AROCLOR 1262	053B1401.D
Std 1:	AROCLOR 1268	054B1501.D

GC Column: DB1701
Concentration Units: ng/ml

Analyte	Curve Fit	Avg. RRF	% RSD	Mean % RSD	R or COD	Q
PCB-1221 (Peak 1)	Single Pt	0.057787				
PCB-1221 (Peak 2)	Single Pt	0.19804				
PCB-1221 (Peak 3)	Single Pt	0.084972				
PCB-1221 (Peak 4)	Single Pt	0.106478				
PCB-1221 (Peak 5)	Single Pt	0.036091				
PCB-1232 (Peak 1)	Single Pt	0.095544				
PCB-1232 (Peak 2)	Single Pt	0.045498				
PCB-1232 (Peak 3)	Single Pt	0.060841				
PCB-1232 (Peak 4)	Single Pt	0.047032				
PCB-1232 (Peak 5)	Single Pt	0.086834				
PCB-1242 (Peak 1)	Single Pt	0.031732				
PCB-1242 (Peak 2)	Single Pt	0.024402				
PCB-1242 (Peak 3)	Single Pt	0.049346				
PCB-1242 (Peak 4)	Single Pt	0.014681				
PCB-1242 (Peak 5)	Single Pt	0.056575				
PCB-1248 (Peak 1)	Single Pt	0.034311				
PCB-1248 (Peak 2)	Single Pt	0.031335				
PCB-1248 (Peak 3)	Single Pt	0.034942				
PCB-1248 (Peak 4)	Single Pt	0.0293				
PCB-1248 (Peak 5)	Single Pt	0.065982				
PCB-1254 (Peak 1)	Single Pt	0.028224				
PCB-1254 (Peak 2)	Single Pt	0.027218				
PCB-1254 (Peak 3)	Single Pt	0.019919				
PCB-1254 (Peak 4)	Single Pt	0.033898				
PCB-1254 (Peak 5)	Single Pt	0.026149				
PCB-1262 (Peak 1)	Single Pt	0.030122				
PCB-1262 (Peak 2)	Single Pt	0.028837				
PCB-1262 (Peak 3)	Single Pt	0.014536				
PCB-1262 (Peak 4)	Single Pt	0.026817				
PCB-1262 (Peak 5)	Single Pt	0.014502				
PCB-1268 (Peak 1)	Single Pt	0.050736				
PCB-1268 (Peak 2)	Single Pt	0.045931				
PCB-1268 (Peak 3)	Single Pt	0.015521				
PCB-1268 (Peak 4)	Single Pt	0.016475				
PCB-1268 (Peak 5)	Single Pt	0.019135				

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
Contract #: 164067.A1.02
SDG No.: 8008
Instrument ID: GC-H
Calibration Date(s): 09/02/02
Initial Calibration ID: PCB090902
Calibration Time(s): 18:08 -21:34

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:		
Std 2:		
Std 3:		
Std 4:		
Std 5:		
Std 6:		

	Individual PCB Calib.	Lab File ID:
Std 1:	AROCLOR 1221	048B0901.D
Std 1:	AROCLOR 1232	049B1001.D
Std 1:	AROCLOR 1242	050B1101.D
Std 1:	AROCLOR 1248	051B1201.D
Std 1:	AROCLOR 1254	052B1301.D
Std 1:	AROCLOR 1262	053B1401.D
Std 1:	AROCLOR 1268	054B1501.D

GC Column: DB5MS
Concentration Units: ng/ml

Analyte	STD 1	RF 1	STD 2	RF 2	STD 3	RF 3	STD 4	RF 4	STD 5	RF 5	STD 6	RF6	STD 7	RF 7
PCB-1221 (Peak 1)	250	0.064794												
PCB-1221 (Peak 2)	250	0.231107												
PCB-1221 (Peak 3)	250	0.058601												
PCB-1221 (Peak 4)	250	0.077234												
PCB-1221 (Peak 5)	250	0.023656												
PCB-1232 (Peak 1)	250	0.030004												
PCB-1232 (Peak 2)	250	0.066833												
PCB-1232 (Peak 3)	250	0.031801												
PCB-1232 (Peak 4)	250	0.059414												
PCB-1232 (Peak 5)	250	0.090458												
PCB-1242 (Peak 1)	250	0.029061												
PCB-1242 (Peak 2)	250	0.014486												
PCB-1242 (Peak 3)	250	0.017849												
PCB-1242 (Peak 4)	250	0.042296												
PCB-1242 (Peak 5)	250	0.060644												
PCB-1248 (Peak 1)	250	0.022734												
PCB-1248 (Peak 2)	250	0.026739												
PCB-1248 (Peak 3)	250	0.027409												
PCB-1248 (Peak 4)	250	0.021195												
PCB-1248 (Peak 5)	250	0.043												
PCB-1254 (Peak 1)	250	0.017498												
PCB-1254 (Peak 2)	250	0.017058												
PCB-1254 (Peak 3)	250	0.012734												
PCB-1254 (Peak 4)	250	0.022093												
PCB-1254 (Peak 5)	250	0.019198												
PCB-1262 (Peak 1)	250	0.019397												
PCB-1262 (Peak 2)	250	0.018043												
PCB-1262 (Peak 3)	250	0.014536												
PCB-1262 (Peak 4)	250	0.016686												
PCB-1262 (Peak 5)	250	0.008701												
PCB-1268 (Peak 1)	250	0.031518												
PCB-1268 (Peak 2)	250	0.029253												
PCB-1268 (Peak 3)	250	0.009785												
PCB-1268 (Peak 4)	250	0.010712												
PCB-1268 (Peak 5)	250	0.011815												

ORGANICS INITIAL CALIBRATION

Lab Name: CH2M HILL/LAB/CVO
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
Contract #: 164067.A1.02
SDG No.: 8008
Instrument ID: GC-H
Calibration Date(s): 09/02/02
Initial Calibration ID: PCB090902
Calibration Time(s): 18:08 -21:34

	AR1016/AR1260 Calib.	Lab File ID:
Std 1:		
Std 2:		
Std 3:		
Std 4:		
Std 5:		
Std 6:		

	Individual PCB Calib.	Lab File ID:
Std 1:	AROCLOR 1221	048B0901.D
Std 1:	AROCLOR 1232	049B1001.D
Std 1:	AROCLOR 1242	050B1101.D
Std 1:	AROCLOR 1248	051B1201.D
Std 1:	AROCLOR 1254	052B1301.D
Std 1:	AROCLOR 1262	053B1401.D
Std 1:	AROCLOR 1268	054B1501.D

GC Column: DB5MS
Concentration Units: ng/ml

Analyte	Curve Fit	Avg. RRF	% RSD	Mean % RSD	R or COD	Q
PCB-1221 (Peak 1)	Single Pt	0.064794				
PCB-1221 (Peak 2)	Single Pt	0.231107				
PCB-1221 (Peak 3)	Single Pt	0.058601				
PCB-1221 (Peak 4)	Single Pt	0.077234				
PCB-1221 (Peak 5)	Single Pt	0.023656				
PCB-1232 (Peak 1)	Single Pt	0.030004				
PCB-1232 (Peak 2)	Single Pt	0.066833				
PCB-1232 (Peak 3)	Single Pt	0.031801				
PCB-1232 (Peak 4)	Single Pt	0.059414				
PCB-1232 (Peak 5)	Single Pt	0.090458				
PCB-1242 (Peak 1)	Single Pt	0.029061				
PCB-1242 (Peak 2)	Single Pt	0.014486				
PCB-1242 (Peak 3)	Single Pt	0.017849				
PCB-1242 (Peak 4)	Single Pt	0.042296				
PCB-1242 (Peak 5)	Single Pt	0.060644				
PCB-1248 (Peak 1)	Single Pt	0.022734				
PCB-1248 (Peak 2)	Single Pt	0.026739				
PCB-1248 (Peak 3)	Single Pt	0.027409				
PCB-1248 (Peak 4)	Single Pt	0.021195				
PCB-1248 (Peak 5)	Single Pt	0.043				
PCB-1254 (Peak 1)	Single Pt	0.017498				
PCB-1254 (Peak 2)	Single Pt	0.017058				
PCB-1254 (Peak 3)	Single Pt	0.012734				
PCB-1254 (Peak 4)	Single Pt	0.022093				
PCB-1254 (Peak 5)	Single Pt	0.019198				
PCB-1262 (Peak 1)	Single Pt	0.019397				
PCB-1262 (Peak 2)	Single Pt	0.018043				
PCB-1262 (Peak 3)	Single Pt	0.014536				
PCB-1262 (Peak 4)	Single Pt	0.016686				
PCB-1262 (Peak 5)	Single Pt	0.008701				
PCB-1268 (Peak 1)	Single Pt	0.031518				
PCB-1268 (Peak 2)	Single Pt	0.029253				
PCB-1268 (Peak 3)	Single Pt	0.009785				
PCB-1268 (Peak 4)	Single Pt	0.010712				
PCB-1268 (Peak 5)	Single Pt	0.011815				

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ORGANICS CALIBRATION VERIFICATION SUMMARY

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
SDG No.: 8008
Instrument ID: GC-H
Calibration Date(s): 09/09/02
Initial Calibration ID: PCB090902
Calibration Time(s): 13:28 -16:54
ICV ID: ICV-0909
CCV #1 ID: CV2-0909
CCV #2 ID: CV4-0909

GC Column: DB1701
Concentration Units: ng/ml

Analyte	ICV			CCV #1			CCV #2			Q
	Expected	Found	% D	Expected	Found	% D	Expected	Found	% D	
PCB-1016	250	241	-3.5	250	215	-14.0	250	214	-14.3	
PCB-1260	250	262	4.7	250	227	-9.0	250	229	-8.4	
Decachlorobiphenyl	50.0	51.5	3.0	50.0	46.7	-6.7	50.0	45.6	-8.9	

GC Column: DB5MS

Analyte	ICV			CCV #1			CCV #2			Q
	Expected	Found	% D	Expected	Found	% D	Expected	Found	% D	
PCB-1016	250	251	0.6	250	228	-8.9	250	227	-9.2	
PCB-1260	250	272	8.7	250	232	-7.2	250	228	-8.8	
Decachlorobiphenyl	50.0	52.8	5.6	50.0	46.7	-6.6	50.0	46.4	-7.1	

Comments:

ORGANICS ANALYTICAL SEQUENCE

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
SDG No.: 8008
GC Column: DB1701 / DB5MS
Start Date: 09/05/02
End Date: 09/05/02
Instrument ID: GC-H
Start Time: 18:08
End Time: 21:34

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
01	AROCLOR 1221	AROCLOR 1221	C:\HPCHEM\1\DATA\090502H1\048B0901.D	09/05/02	18:08
02	AROCLOR 1232	AROCLOR 1232	C:\HPCHEM\1\DATA\090502H1\049B1001.D	09/05/02	18:43
03	AROCLOR 1242	AROCLOR 1242	C:\HPCHEM\1\DATA\090502H1\050B1101.D	09/05/02	19:17
04	AROCLOR 1248	AROCLOR 1248	C:\HPCHEM\1\DATA\090502H1\051B1201.D	09/05/02	19:51
05	AROCLOR 1254	AROCLOR 1254	C:\HPCHEM\1\DATA\090502H1\052B1301.D	09/05/02	20:26
06	AROCLOR 1262	AROCLOR 1262	C:\HPCHEM\1\DATA\090502H1\053B1401.D	09/05/02	21:00
07	AROCLOR 1268	AROCLOR 1268	C:\HPCHEM\1\DATA\090502H1\054B1501.D	09/05/02	21:34
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					

Comments:

ORGANICS ANALYTICAL SEQUENCE

Lab Name: CH2M HILL/LAB/CVO
Contract #: 164067.A1.02
Lab Code: CVO
Case No.: 8008
SAS No.: 8008
SDG No.: 8008
GC Column: DB1701 / DB5MS
Start Date: 09/09/02
End Date: 09/10/02
Instrument ID: GC-H
Start Time: 13:28
End Time: 12:55

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
01	LEVEL 1 (9/9)	LEVEL 1 (9/9)	C:\HPCHEM\1\DATA\090902H1\002B0201.D	09/09/02	13:28
02	LEVEL 2 (9/9)	LEVEL 2 (9/9)	C:\HPCHEM\1\DATA\090902H1\003B0301.D	09/09/02	14:03
03	LEVEL 3 (9/9)	LEVEL 3 (9/9)	C:\HPCHEM\1\DATA\090902H1\004B0401.D	09/09/02	14:37
04	LEVEL 4 (9/9)	LEVEL 4 (9/9)	C:\HPCHEM\1\DATA\090902H1\005B0501.D	09/09/02	15:11
05	LEVEL 5 (9/9)	LEVEL 5 (9/9)	C:\HPCHEM\1\DATA\090902H1\006B0601.D	09/09/02	15:46
06	LEVEL 6 (9/9)	LEVEL 6 (9/9)	C:\HPCHEM\1\DATA\090902H1\007B0701.D	09/09/02	16:20
07	LEVEL 7 (9/9)	LEVEL 7 (9/9)	C:\HPCHEM\1\DATA\090902H1\008B0801.D	09/09/02	16:54
08	ICV-0909	ICV-0909	C:\HPCHEM\1\DATA\090902H1\010B1001.D	09/09/02	17:29
09	SB1-0828	SB1-0828	C:\HPCHEM\1\DATA\090902H1\011B1101.D	09/09/02	19:46
10	BS1S0828	BS1S0828	C:\HPCHEM\1\DATA\090902H1\012B1201.D	09/09/02	20:20
11	PP011806	800801	C:\HPCHEM\1\DATA\090902H1\021B2101.D	09/10/02	01:29
12	PP011807	800802	C:\HPCHEM\1\DATA\090902H1\022B2201.D	09/10/02	02:04
13	PP011808	800803	C:\HPCHEM\1\DATA\090902H1\023B2301.D	09/10/02	02:38
14	CV2-0909	CV2-0909	C:\HPCHEM\1\DATA\090902H1\024B2401.D	09/10/02	03:12
15	PP011808MSD	800804MSD	C:\HPCHEM\1\DATA\090902H1\026B2601.D	09/10/02	05:29
16	PP011808MS	800805MS	C:\HPCHEM\1\DATA\090902H1\027B2701.D	09/10/02	06:04
17	CV4-0909	CV4-0909	C:\HPCHEM\1\DATA\090902H1\039B3901.D	09/10/02	12:55
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					

Comments:

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011806**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **800801**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011806**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **800801**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248	1	10.22	10.12	10.32	592		
	2	11.60	11.56	11.76	318		
Column 1	3	11.92	11.83	12.03	342	405	
	4	12.75	12.66	12.86	369		
	5						0.5
	1	9.41	9.31	9.51	627		
	2	10.12	10.02	10.22	328		
Column 2	3	10.86	10.76	10.96	319	407	
	4	11.57	11.47	11.67	354		
	5						
PCB-1254	1						
	2	13.24	13.14	13.34	145		
Column 1	3	14.57	14.47	14.67	166	159	
	4	15.30	15.19	15.39	173		
	5	16.84	16.74	16.94	152		8.2
	1						
	2	12.22	12.11	12.31	148		
Column 2	3					146	
	4	13.99	13.88	14.08	155		
	5	15.43	15.31	15.51	133		
PCB-1260	1						
	2	15.75	15.64	15.84	90.7		
Column 1	3					72.6	
	4	18.98	18.87	19.07	63.3		
	5	20.16	20.05	20.25	63.8		1.9
	1						
	2	14.61	14.49	14.69	95.2		
Column 2	3					74.0	
	4	15.87	15.76	15.96	61.9		
	5	17.57	17.45	17.65	65.1		
PCB-1262	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011806**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **800801**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011807**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: 800802

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011807**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **800802**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248							
Column 1	1	10.22	10.12	10.32	438	302	4.6
	2	11.66	11.56	11.76	238		
	3	11.92	11.83	12.03	255		
	4	12.75	12.66	12.86	279		
	5						
Column 2	1	9.41	9.31	9.51	457	316	
	2	10.12	10.02	10.22	240		
	3	10.86	10.76	10.96	253		
	4						
	5						
PCB-1254							
Column 1	1					113	9.7
	2	13.24	13.14	13.34	102		
	3	14.57	14.47	14.67	121		
	4	15.30	15.19	15.39	126		
	5	16.84	16.74	16.94	101		
Column 2	1					102	
	2	12.22	12.11	12.31	106		
	3						
	4	13.99	13.88	14.08	111		
	5	15.43	15.31	15.51	88.8		
PCB-1260							
Column 1	1					49.5	3.4
	2	15.75	15.64	15.84	58.9		
	3						
	4	18.98	18.87	19.07	42.3		
	5	20.16	20.05	20.25	47.4		
Column 2	1					47.8	
	2	14.61	14.49	14.69	62.2		
	3						
	4	15.87	15.76	15.96	40.2		
	5	17.56	17.45	17.65	41.1		
PCB-1262							
Column 1	1						
	2						
	3						
	4						
	5						
Column 2	1						
	2						
	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011807**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **800802**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011808**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **800803**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011808**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **800803**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248	1	10.22	10.12	10.32	261		
	2	11.65	11.56	11.76	184		
Column 1	3	11.92	11.83	12.03	199	208	
	4	12.75	12.66	12.86	188		
	5						7.2
	1	9.41	9.31	9.51	278		
	2	10.12	10.02	10.22	175		
Column 2	3	10.87	10.76	10.96	188	223	
	4	11.57	11.47	11.67	251		
	5						
PCB-1254	1						
	2	13.24	13.14	13.34	73.7		
Column 1	3	14.57	14.47	14.67	88.4	81.8	
	4	15.29	15.19	15.39	86.4		
	5	16.84	16.74	16.94	78.8		7.5
	1						
	2	12.22	12.11	12.31	77.5		
Column 2	3					75.7	
	4	13.99	13.88	14.08	80.8		
	5	15.42	15.31	15.51	68.8		
PCB-1260	1						
	2	15.75	15.64	15.84	62.0		
Column 1	3					52.1	
	4	18.97	18.87	19.07	44.5		
	5	20.15	20.05	20.25	49.9		3.5
	1						
	2	14.61	14.49	14.69	65.5		
Column 2	3					50.3	
	4	15.87	15.76	15.96	42.2		
	5	17.56	17.45	17.65	43.2		
PCB-1262	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011808**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **800803**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011808MSD**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **800804MSD**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1	8.44	8.34	8.54	106		
	2	9.23	9.13	9.33	155		
Column 1	3	10.21	10.11	10.31	178	160	
	4	10.53	10.43	10.63	140		
	5	11.65	11.55	11.75	221		
	1	7.78	7.67	7.87	114		12.5
	2	8.48	8.37	8.57	148		
Column 2	3	8.83	8.73	8.93	147	180	
	4	9.41	9.31	9.51	193		
	5	10.56	10.46	10.66	296		
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011808MSD**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **800804MSD**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1254	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1260	1	15.06	14.95	15.15	135		
	2	15.74	15.64	15.84	133		
Column 1	3	16.83	16.73	16.93	141	131	
	4	18.97	18.87	19.07	123		
	5	20.15	20.05	20.25	122		0.0
	1	13.84	13.73	13.93	127		
	2	14.60	14.49	14.69	138		
Column 2	3	15.42	15.31	15.51	145	131	
	4	15.87	15.76	15.96	119		
	5	17.56	17.45	17.65	126		
PCB-1262	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011808MSD**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **800804MSD**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011808MS**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **800805MS**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1	8.45	8.34	8.54	106		
	2	9.23	9.13	9.33	157		
Column 1	3	10.22	10.11	10.31	186	171	
	4	10.54	10.43	10.63	150		
	5	11.65	11.55	11.75	257		
							10.5
	1	7.78	7.67	7.87	109		
	2	8.48	8.37	8.57	152		
Column 2	3	8.83	8.73	8.93	150	189	
	4	9.41	9.31	9.51	202		
	5	10.56	10.46	10.66	329		
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011808MS**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **800805MS**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1254	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1260	1	15.06	14.95	15.15	156		
	2	15.75	15.64	15.84	157		
Column 1	3	16.84	16.73	16.93	183	153	
	4	18.97	18.87	19.07	135		
	5	20.15	20.05	20.25	134		3.3
	1	13.84	13.73	13.93	143		
	2	14.60	14.49	14.69	155		
Column 2	3	15.42	15.31	15.51	182	148	
	4	15.87	15.76	15.96	127		
	5	17.56	17.45	17.65	134		
PCB-1262	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **PP011808MS**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **800805MS**

Instrument ID: GC-H Date Analyzed: 09/10/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **BS1S0828**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **BS1S0828**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB 1016	1	8.45	8.34	8.54	93.1		
	2	9.23	9.13	9.33	100		
Column 1	3	10.21	10.11	10.31	92.9	94.3	
	4	10.54	10.43	10.63	91.4		
	5	11.65	11.55	11.75	93.7		
	1	7.78	7.67	7.87	92.5		1.7
	2	8.48	8.37	8.57	96.2		
Column 2	3	8.83	8.73	8.93	94.2	95.9	
	4	9.41	9.31	9.51	100		
	5	10.56	10.46	10.66	95.9		
PCB-1221	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1232	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1242	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **BS1S0828**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **BS1S0828**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1248	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1254	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						
PCB-1260	1	15.05	14.95	15.15	105		
	2	15.74	15.64	15.84	106		
Column 1	3	16.83	16.73	16.93	104	104	
	4	18.97	18.87	19.07	105		
	5	20.15	20.05	20.25	101		3.8
	1	13.83	13.73	13.93	105		
	2	14.60	14.49	14.69	110		
Column 2	3	15.41	15.31	15.51	107	108	
	4	15.86	15.76	15.96	107		
	5	17.55	17.45	17.65	109		
PCB-1262	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

10A

PCB IDENTIFICATION SUMMARY DATA SHEET

Field Sample ID: **BS1S0828**

Lab Name: CH2M HILL/LAB/CVO Contract #: 164067.A1.02

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: SOIL Lab Sample ID: **BS1S0828**

Instrument ID: GC-H Date Analyzed: 09/09/02

GC Column 1: DB1701 ID: 0.25 GC Column 2: DB5MS ID: 0.25

Concentration Units: ug/Kg

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONC.	MEAN CONC.	%D
PCB-1268	1						
	2						
Column 1	3						
	4						
	5						
	1						
	2						
Column 2	3						
	4						
	5						

Comments

CH2M HILL APPLIED SCIENCES SEMI-VOLATILES EXTRACTION LOG

Project Name: Portland Harbor
Date Extracted: 08/28/02
Analyst: JT

Analysis Requested: PCB SW 8082
Matrix / Ext. Method: SOIL SW 3550
Water bath Temp.: 65

	LAB ID #	CLIENTS SAMPLE ID	SAMPLE ALIQUOT	SOLVENT VOLUME	FINAL VOLUME	SS VOL	% H2O	COMMENTS NOTES
1	SB1-0828		10 g	60 ml	5 mL			
2	BS1S0828		10 g	60 ml	5 mL			
3	BD1S0828		10 g	60 ml	5 mL			
4								
5	800501	PP011802	10.19g	60 ml	5 mL			
6	800502	PP011803	10.02g	60 ml	5 mL			
7	800503	PP011804D	10.14g	60 ml	5 mL			
8	800504	PP011805	10.32g	60 ml	5 mL			
9	800601	PP011801	10.12g	60 ml	5 mL			
10	800602	PP011809	10.18g	60 ml	5 mL			
11	800603	PP011810	10.89g	60 ml	5 mL			
12	800801	PP011806	10.29g	60 ml	5 mL			
13	800802	PP011807	10.12g	60 ml	5 mL			
14	800803	PP011808	10.06g	60 ml	5 mL			
15	800804MS	PP011808MS	10.05g	60 ml	5 mL			
16	800805SD	PP011808MSD	10.23g	60 ml	5 mL			
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								

EXTRACTION SOLVENT: MeCl2/ Iso-Octane
LOT # 1-PGC-65-02

DRYING AGENT: Sodium Sulfate
LOT # 1-PGC-55-5

	SPIKING COMPOUNDS	CONCENTRATION	VOLUME	LOT #	
SURROGATE SPIKE:	#1 Surrogate Mix	5 ug/mL	50 uL	5S083-01	50 ppb
	#2				
MATRIX SPIKE:	#1 Arochlor 1016/1260	5 ppm	200 uL	6S-31-02	200 ppb
	#2				

Extracts Placed in Refrigerator by: T — Date/Time: 8/28/02 1246
Refrigerator/Box #: 5E4B — Date/Time: ↓
Date/Time: ↓

Extracts Removed from Refrigerator by: — Date/Time:
Date/Time:

Extracts Destroyed by: — Date/Time:

0072

Method Detection Limit Study

CH2M HILL
Applied Sciences Group

Analysis Method:	SW8082	**Analyst:**	M. Schaadt
Extraction Method:	SW3550	**Instrument:**	GCH
Matrix:	SOIL	**Description:**	
MDL Effective Date:	02/14/2002	**Deptartment:**	GS

Units:
Spike:

#	Compound	CAS No.	Date	MDL	Ug/Kg	1	2	3	4	5	6	7	8	Mean	Std Dev.	Student T
1	Aroclor-1016	12674-11-2	02/13/2002	4.70	5.00	11.8	13.6	11.3	14.1	15.1	15.9	12.7	13.5	13.5	1.57	2.998
2	Aroclor-1260	11096-82-5	02/13/2002	2.52	5.00	4.40	7.2	5.36	4.95	5.07	5.41	4.86	5.09	5.30	0.84	2.998
3	Aroclor-1221	11104-28-2	02/13/2002	1.79	5.00	21.1	22.5	21.5	20.8	21.8	22.5	21.4	21.8	21.7	0.60	2.998
4	Aroclor-1232	11141-16-5	02/13/2002	3.04	5.00	21.4	20.6	20.7	19.9	19.2	18.7	19.2	21.3	20.1	1.02	2.998
5	Aroclor-1242	53469-21-9	02/13/2002	2.24	5.00	11.6	11.4	11.1	11.4	12.5	10.5	9.98	11.6	11.2	0.75	2.998
6	Aroclor-1248	12672-29-6	02/13/2002	1.66	5.00	5.49	6.10	5.35	5.60	5.98	5.15	6.65	4.97	5.66	0.55	2.998
7	Aroclor-1254	11097-69-1	02/13/2002	1.43	5.00	4.95	5.40	4.10	4.20	4.40	4.25	4.15	4.90	4.54	0.48	2.998

MDL Calculation based on initial soil wt of 10 grams and final extract volume of 5 mL

0073

METALS

CASE NARRATIVE
METALS

CLIENT/PROJECT: Portland Harbor

LABORATORY: CH2M HILL Applied Sciences Group PROJECT NO.: 164067.A1.02

LAB CODE: CVO LAB BATCH NO\SDG: 8008

I. Holding Times:
All holding times were met.

II. Digestion Exceptions:
None

III. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. ICP Interference Check Sample:
Not applicable.

D. Spike Sample(s):
Matrix spike duplicate recovery for mercury (52.5%) did not meet acceptance criteria (75-125%).

E. Duplicate Sample(s):
Duplicate RPD (21.7%) exceeded acceptance criteria (20%).

F. Laboratory Control Sample(s):
All acceptance criteria were met.

G. Serial Dilution:
Not applicable.

H. Other:
None

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Prepared by: Judy [illegible] Date: 9-13-02

Reviewed by: [illegible] Date: 16 Sept 2002

SAMPLE DATA SUMMARY

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PP011806

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: (soil/water) SOIL Lab Sample ID: 800801

Level: (low/med) LOW Date Received: 08/22/02

Concentration Units: mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.318			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PP011807

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: (soil/water) SOIL Lab Sample ID: 800802

Level: (low/med) LOW Date Received: 08/22/02

Concentration Units: mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.245			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PP011808

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: (soil/water) SOIL Lab Sample ID: 800803

Level: (low/med) LOW Date Received: 08/22/02

Concentration Units: mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.334			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PP011808MSD

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: (soil/water) SOIL Lab Sample ID: 800804MSD

Level: (low/med) LOW Date Received: 08/22/02

Concentration Units: mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.476			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PP011808MS

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: (soil/water) SOIL Lab Sample ID: 800805MS

Level: (low/med) LOW Date Received: 08/22/02

Concentration Units: mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.592			CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB1-0904

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Matrix: (soil/water) SOIL Lab Sample ID: SB1-0904

Level: (low/med) LOW

Concentration Units: mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.00720	U		CV

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

QC SUMMARY

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Initial Calibration Source: 090902HG

Concentration Units: ug/L

2nd Source/ICV ID: ICV-0909 CCV #1 CV1-0909 CCV #2 CV2-0909 CCV #3

	Initial Calibration			Continuing Calibration							
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Found	%R(1)	M
Mercury	1.00	1.08	108	1.00	1.08	108	1.06	106			CV

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

SW846 Control Limits: Mercury and GFAA 80-120; ICP 90-110; Cyanide 85-115

US EPA - CLP

3-IN

BLANKS

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

ICB ID: ICB-0909 CCB1 ID: CB1-0909 CCB2 ID: CB2-0909 CCB3 ID: _____

Analyte	Method	Initial Calib. Blank	Continuing Calibration Blank			M
			1	2	3	
Mercury	SW7471A	0.0110J	0.00961U	0.00961U		CV

Comments:

US EPA - CLP

5A-INORG

MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLE RECOVERY

EPA SAMPLE NO.

PP011808

Lab Name: CH2M HILL/LAB/CVO Contract: N/A SDG No.: 8008

Lab Code: CVO SAS No.: 8008 Parent Sample ID: PP011808

Matrix: Soil Case No.: 8008 MS Sample ID: PP011808MS

% Solids: 74 Level: LOW MSD Sample ID: PP011808MSD

Concentration Units: mg/Kg

Analyte	Method	Control Limit %R	Spiked Sample (SSR) Result	C	%R	Duplicate Spiked Sample (DSR) Result	C	%R	Sample (SR) Result	C	Spike Added (SA)	%RPD	Q	M
Mercury	SW7471A	75-125	0.592		95.5	0.476		52.5	0.334	=	0.27	21.7		CV

Comments:

Total Metals

US EPA - CLP

7-INORG

LABORATORY CONTROL SAMPLE

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Solid LCS Source: BS1S0904

Aqueous LCS Source:

Analyte	Method	Aqueous (ug/L)			Solid (mg/Kg)			Limits	C
		True	Found	%R	True	Found	%R		
Mercury	SW7471A				0.200	0.214	107	80-120	

Comments:

U.S. EPA - CLP

10
METHOD DETECTION LIMITS

Lab Name: CH2M HILL ASL Contract: N/A
Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008
ICP ID Number: Optima 3000
Furnace AA ID Number: PE4100ZL
Mercury ID Number: Leeman PS200

Analyte	Wavelength (nm)	Background	MRL (mg/Kg)	MDL (mg/Kg)	M
Mercury	254	NA	0.0500	0.00720	CV

Comments

U.S. EPA - CLP

13
PREPARATION LOG

Lab Name: CH2M HILL ASL Contract: N/A
Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008
Method: CV (SW7471A)

EPA SAMPLE NO.	LAB SAMPLE NO.	PREP DATE	WEIGHT (grams)	VOLUME (mL)
PP011806	800801	09/04/02	0.49	100
PP011807	800802	09/04/02	0.51	100
PP011808	800803	09/04/02	0.49	100
PP011808MSD	800804MSD	09/04/02	0.50	100
PP011808MS	800805MS	09/04/02	0.50	100
SB1-0904	SB1-0904	09/04/02	0.51	100
BS1S0904	BS1S0904	09/04/02	0.51	100

ANALYSIS RUN LOG

Lab Name: CH2M HILL/LAB/CVO Contract: N/A

Lab Code: CVO Case No.: 8008 SAS No.: 8008 SDG No.: 8008

Instrument Name: PS200 Method: SW7471A

	EPA Sample No.	LAB SAMPLE ID	DF	DATE ANALYZED	TIME ANALYZED
1	CAL BLANK	CAL BLANK	1	09/09/02	1152
2	CAL 1	CAL 1	1	09/09/02	1156
3	CAL 2	CAL 2	1	09/09/02	1201
4	CAL 3	CAL 3	1	09/09/02	1206
5	CAL 4	CAL 4	1	09/09/02	1212
6	CAL 5	CAL 5	1	09/09/02	1218
7	ICV-0909	ICV-0909	1	09/09/02	1227
8	ICB-0909	ICB-0909	1	09/09/02	1233
9	SB1-0904	SB1-0904	1	09/09/02	1237
10	BS1S0904	BS1S0904	1	09/09/02	1242
11	CV1-0909	CV1-0909	1	09/09/02	1325
12	CB1-0909	CB1-0909	1	09/09/02	1331
13	PP011806	800801	1	09/09/02	1401
14	PP011807	800802	1	09/09/02	1406
15	PP011808	800803	1	09/09/02	1412
16	PP011808MSD	800804MSD	1	09/09/02	1419
17	PP011808MS	800805MS	1	09/09/02	1424
18	CV2-0909	CV2-0909	1	09/09/02	1430
19	CB2-0909	CB2-0909	1	09/09/02	1436
				/ /	
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COMMENTS: _____

CH2MHILL
Applied Sciences Group

CH2M HILL
Applied Sciences Group
2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

MDL Replicate Information

Method:	Extraction Method:	Matrix:	Units	Instrument:	MDL Date:	Exp. Date:
SW7471	METHOD	SOIL	MG/KG	PS200	02/08/2002	02/07/2003

CAS_NO	PARAMETER	MDL	R1	R2	R3	R4	R5	R6	R7	R8	Mean	Std.Dev.	Spike Lev.
7439-97-6	Mercury	0.0072	0.0407	0.0385	0.0395	0.0383	0.038	0.044	0.0425		0.04021428	0.00230248	0.04

TOTAL ORGANIC CARBON
METHOD ASTM E-777

CASE NARRATIVE
TOC

Analytical Method: ASTM E777 Batch No.: 8008

Lab Name: CH2M HILL Applied Sciences Lab Contract #.: 164067.A1.02

Project: Portland Harbor

I. Holding Times:
All holding times were met.

II. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Matrix Spike/Spike Duplicate Sample(s):
All acceptance criteria were met.

D. Lab Control Sample(s):
All acceptance criteria were met.

E. Other:
None.

III. Sampling Equipment:
None.

IV. Documentation Exceptions:
None

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Reported by: _____ Date: 9/17/02

Reviewed by: _____ Date: 9-17-02

SAMPLE DATA SUMMARY

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011806

Lab Name: CH2M HILL ASL

Project No.: 164067.A1.02

Lab Code: CVO

Matrix: SOIL

Sample Amt (G): 0.257

% Solid: NA

Instrument ID: TOC S1

Initial Cal ID: TOC090502S1

Lab Batch No.: 8008

Lab Sample ID: 800801

Date Sampled: 08/21/02

Date Analyzed: 09/05/02

Dilution Factor: 1

Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	78.4	389	18200	

Comments:

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011807

Lab Name: CH2M HILL ASL

Project No.: 164067.A1.02

Lab Code: CVO

Matrix: SOIL

Sample Amt (G): 0.242

% Solid: NA

Instrument ID: TOC S1

Initial Cal ID: TOC090502S1

Lab Batch No.: 8008

Lab Sample ID: 800802

Date Sampled: 08/21/02

Date Analyzed: 09/05/02

Dilution Factor: 1

Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	83.5	414	4130	

Comments:

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011808

Lab Name: CH2M HILL ASL

Project No.: 164067.A1.02

Lab Code: CVO

Matrix: SOIL

Sample Amt (G): 0.309

% Solid: NA

Instrument ID: TOC S1

Initial Cal ID: TOC090502S1

Lab Batch No.: 8008

Lab Sample ID: 800803

Date Sampled: 08/21/02

Date Analyzed: 09/05/02

Dilution Factor: 1

Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	65.2	324	2960	

Comments:

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011808MSD

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab Batch No.: 8008
Matrix: SOIL
Lab Sample ID: 800804MSD
Sample Amt (G): 0.334
Date Sampled: 08/21/02
% Solid: NA
Date Analyzed: 09/11/02
Instrument ID: TOC S1
Dilution Factor: 1
Initial Cal ID: TOC090502S1
Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	60.3	299	16900	

Comments:

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

PP011808MS

Lab Name: CH2M HILL ASL

Project No.: 164067.A1.02

Lab Code: CVO

Matrix: SOIL

Sample Amt (G): 0.318

% Solid: NA

Instrument ID: TOC S1

Initial Cal ID: TOC090502S1

Lab Batch No.: 8008

Lab Sample ID: 800805MS

Date Sampled: 08/21/02

Date Analyzed: 09/11/02

Dilution Factor: 1

Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	63.4	314	16100	

Comments:

QC SUMMARY

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

SB1-0905

Lab Name: CH2M HILL ASL

Project No.: 164067.A1.02

Lab Code: CVO

Matrix: SOIL

Sample Amt (G): 1.000

% Solid: NA

Instrument ID: TOC S1

Initial Cal ID: TOC090502S1

Lab Batch No.: 8008

Lab Sample ID: SB1-0905

Date Sampled: N/A

Date Analyzed: 09/05/02

Dilution Factor: 1

Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	20.2	100	100	U

Comments:

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

SB1-0911

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab Batch No.: 8008
Matrix: SOIL
Lab Sample ID: SB1-0911
Sample Amt (G): 1.000
Date Sampled: N/A
% Solid: NA
Date Analyzed: 09/11/02
Instrument ID: TOC S1
Dilution Factor: 1
Initial Cal ID: TOC090502S1
Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	20.2	100	100	U

Comments:

FORM 1

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

ICV-0905

Lab Name: CH2M HILL ASL
Project No.: 164067.A1.02
Lab Code: CVO
Lab Batch No.: 8008
Matrix: SOIL
Lab Sample ID: ICV-0905
Sample Amt (G): 0.500
Date Sampled: N/A
% Solid: NA
Date Analyzed: 09/05/02
Instrument ID: TOC S1
Dilution Factor: 1
Initial Cal ID: TOC090502S1
Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	40.3	200	3930	

Comments:

ANALYSIS DATA SHEET
RESULTS

EPA SAMPLE NO.

BS1S0911

Lab Name: CH2M HILL ASL
Lab Code: CVO
Matrix: SOIL
Sample Amt (G): 0.500
% Solid: NA
Instrument ID: TOC S1
Initial Cal ID: TOC090502S1

Project No.: 164067.A1.02

Lab Batch No.: 8008
Lab Sample ID: BS1S0911
Date Sampled: N/A
Date Analyzed: 09/11/02
Dilution Factor: 1
Concentration Units: mg/Kg

CAS	COMPOUND	MDL	RL	RESULT	Q
TOC	Total Organic Carbon	40.3	200	3800	

Comments:

2A
ANALYSIS DATA SHEET
INITIAL MULTIPOINT CALIBRATION

Analytical Method: ASTM E777
Lab Name: CH2M HILL ASL
Lab Code: CVO
Initial Calibration Date: 09/05/02

Lab Batch No.: 8008
Instrument ID: TOC S1
Initial Calibration ID: TOC090502S1
Concentration Units: mg/kg

Analyte	STD 1	Area 1	STD 2	Area 2	STD 3	Area 3	STD 4	Area 4	STD 5	Area 5	Curve Fit	R2	Q
Total Organic Carbon	100	1111956	200	1693552	1000	7453226	4000	21942160	8000	47595553	linear	0.9984	

Comments:

2B
ANALYSIS DATA SHEET
CALIBRATION VERIFICATION

Analytical Method: ASTM E777
Lab Name: CH2M HILL ASL
Lab Code CVO
ICV ID: ICV-0905
CCV #1 ID: CV1-0905
Lab Batch No.: 8008
Instrument ID: TOC S1
Initial Calibration ID: TOC090502S1
CCV #2 ID: CV2-0905

Concentration Units: mg/kg

Analyte	ICV			CCV #1			CCV #2			Q
	Expected	Found	%D	Expected	Found	%D	Expected	Found	%D	
Total Organic Carbon	3820	3930	103%	4000	4198	5.0%	4000	4068	1.7%	

Comments:

2B
ANALYSIS DATA SHEET
CALIBRATION VERIFICATION

Analytical Method: ASTM E777
Lab Name: CH2M HILL ASL
Lab Code CVO
CCV #3 ID: CV3-0905
CCV #4 ID:
Lab Batch No.: 8008
Instrument ID: TOC S1
Initial Calibration ID: TOC090502S1
CCV #5 ID:

Concentration Units: mg/L

Analyte	CCV #3			CCV #4			CCV #5			Q
	Expected	Found	%D	Expected	Found	%D	Expected	Found	%D	
Total Organic Carbon	4000	4066	1.7%							

Comments:

2B
ANALYSIS DATA SHEET
CALIBRATION VERIFICATION

Analytical Method: ASTM E777
Lab Name: CH2M HILL ASL
Lab Code CVO
ICV ID: CV1-0911
CCV #1 ID: CV2-0911
Lab Batch No.: 8008
Instrument ID: TOC S1
Initial Calibration ID: TOC090502S1
CCV #2 ID:

Concentration Units: mg/kg

Analyte	ICV			CCV #1			CCV #2			Q
	Expected	Found	%D	Expected	Found	%D	Expected	Found	%D	
Total Organic Carbon	4000	3837	-4.1%	4000	4122	3.1%				

Comments:

3

ANALYSIS DATA SHEET

METHOD BLANK SUMMARY

EPA SAMPLE NO.

SB1-0905

Lab Name: CH2M HILL ASL

Project No.: 164067.A1.02

Lab Code: CVO

Matrix: Water

Instrument ID: TOC S1

Initial Cal ID: TOC090502S1

Lab Batch No.: 8008

Lab Sample ID: SB1-0905

Date Analyzed: 09/05/02

Time Analyzed: 13:44

Concentration Units: mg/Kg

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
01	ICV-0905	ICV-0905	09/05/02	13:55
02	PP011806	800801	09/05/02	15:45
03	PP011807	800802	09/05/02	15:53
04	PP011808	800803	09/05/02	16:02
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				

COMMENTS:

3

ANALYSIS DATA SHEET
METHOD BLANK SUMMARY

EPA SAMPLE NO.

SB1-0911

Lab Name: CH2M HILL ASL
Lab Code: CVO
Matrix: Water
Instrument ID: TOC S1
Initial Cal ID: TOC090502S1

Project No.: 164067.A1.02

Lab Batch No.: 8008
Lab Sample ID: SB1-0911
Date Analyzed: 09/11/02
Time Analyzed: 11:31
Concentration Units: mg/Kg

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
01	BS1S0911	BS1S0911	09/11/02	11:11
02	PP011808MSD	800804MSD	09/11/02	12:03
03	PP011808MS	800805MS	09/11/02	12:19
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				

COMMENTS:

FORM 3

5A
ANALYSIS DATA SHEET
SPIKE SAMPLE RECOVERY

Analytical Method: ASTM E777
Lab Name: CH2M HILL ASL
Concentration Units: mg/kg
Field Sample ID: PP011808

MS ID: PP011808MS

Lab Batch No.: 8008
Initial Calibration ID: TOC090502S1
% Solids: N/A
MSD ID: PP011808MSD

Analyte	Parent Sample	Spike Added	Spiked Sample Result	%R	Duplicate Spiked Sample Result	%R	%RPD	Control Limits %R	Control Limits %RPD	Q
Total Organic Carbon	2960	12600	16100	104	16900	116	4.8%	80-120%	20%	

Comments:
True value for MSD = 12000 mg/kg.

7

ANALYSIS DATA SHEET

LABORATORY CONTROL SAMPLE

Analytical Method: ASTM E777

Lab Name: CH2M HILL ASL

LCS ID: ICV-0905

Lab Batch No.: 8008

Initial Calibration ID: TOC090502S1

Concentration Units: mg/kg

Analyte	Expected	Found	%R	Control Limits	Qualifier
Total Organic Carbon	3820	3930	103	80-120%	

Comments:

7

ANALYSIS DATA SHEET

LABORATORY CONTROL SAMPLE

Analytical Method: ASTM E777

Lab Name: CH2M HILL ASL

LCS ID: BS1S-0911

Lab Batch No.: 8008

Initial Calibration ID: TOC090502S1

Concentration Units: mg/kg

Analyte	Expected	Found	%R	Control Limits	Qualifier
Total Organic Carbon	3820	3798	99.4	80-120%	

Comments:

14

ANALYSIS DATA SHEET

ANALYTICAL SEQUENCE

Lab Name: CH2M HILL ASL

Lab Code: CVO

Lab Batch No.: 8008

Instrument ID: TOC S1

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
01	LEVEL 1	LEVEL 1	09/05/02	11:06
02	LEVEL 2	LEVEL 2	09/05/02	11:17
03	LEVEL 3	LEVEL 3	09/05/02	11:24
04	LEVEL 4	LEVEL 4	09/05/02	11:36
05	LEVEL 5	LEVEL 5	09/05/02	11:47
06	ICV-0905	ICV-0905	09/05/02	13:55
07	SB1-0905	SB1-0905	09/05/02	13:44
08	PP011806	800801	09/05/02	15:45
09	PP011807	800802	09/05/02	15:53
10	PP011808	800803	09/05/02	16:02
11	CV1-0905	CV1-0905	09/05/02	16:30
12				
13				
14				
15				
16				
17				
18				
19				
20				

COMMENTS:

14

ANALYSIS DATA SHEET

ANALYTICAL SEQUENCE

Lab Name: CH2M HILL ASL

Lab Code: CVO

Lab Batch No.: 8008

Instrument ID: TOC S1

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
01	BS1S0911	BS1S0911	09/11/02	11:11
02	SB1-0911	SB1-0911	09/11/02	11:31
03	CV1-0911	CV1-0911	09/11/02	11:53
04	PP011808MSD	800804MSD	09/11/02	12:03
05	PP011808MS	800805MS	09/11/02	12:19
06	CV2-0911	CV2-0911	09/11/02	12:36
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

COMMENTS:

CH2MHILL
Applied Sciences Group

CH2M HILL
Applied Sciences Group
2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

MDL Replicate Information

Method:	Extraction Method:	Matrix:	Units	Instrument:	MDL Date:	Exp. Date:
ASTM E-77	NONE	SOIL	MG/KG	TOCSkalar	06/25/2002	06/24/2003

CAS_NO	PARAMETER	MDL	R1	R2	R3	R4	R5	R6	R7	R8	Mean	Std.Dev.	Spike Lev.
TOC	Total Organic Carbon	20.2	28.63	12.23	17.22	18.88	10.21	10.08	8.16	11.82	14.65375	6.72439043	80

CHAIN OF CUSTODY/SHIPPING DOCUMENTS

6.7.8

CH2MHILL Applied Sciences Lab
CHAIN OF CUSTODY RECORD
AND AGREEMENT TO PERFORM SERVICES

CVO 2300 NW Walnut Boulevard
Corvallis, OR 97330-3538
(541) 752-4271 FAX (541) 752-0276

COC #

Project # 164067.A1.02

Purchase Order #

Project Name Portland City Outfalls - Pilot Project

Company Name City of Portland

Report to: Dawn Sanders

Phone No: 503 235-5000

Requested Completion Date: Standard

Sample Disposal: Dispose ☒ Return ☐

THIS AREA FOR LAB USE ONLY

Lab # 8008 Page 1 of 1

Requested Analytical Method #

Sampling Date	Time	Type COMP	Type GRAB	Matrix WATER	Matrix SOIL	Matrix AIR	Matrix Other	CLIENT SAMPLE ID (8 CHARACTERS)	LAB QC	TOTAL # OF CONTAINERS	Grain Size	Metals	Pesticides	Herbicides	TPH-Dx	Mercury	*SVOC/Low level PAH	PCB	TOC
											Preservative								
											4°	4°	4°	4°	4°	4°	4°	4°	4°
8/21/02	1030	X					X	PP011806		4	/	/	/	/	/	/	/	/	/
8/21/02	1145	X					X	PP011807		4	/	/	/	/	/	/	/	/	/
8/21/02	1415	/					/	PP011808		~~8~~ 4	/	/	/	/	/	/	/	/	/
8/21/02	1415	/					/	PP011808	MSD	3		/	/	/	/	/	/	/	/
"	"	/						PP011808	MS			/	/	/	/	/	/	/	

EPA Tier QC Level 1 (Screening) 2 3 4

Alternate Description	Lab ID
	-1
	-2
	-3
	-4
	-5

Relinquished By: David Lacey [signature]	Date/Time: 8/21/02 1900	Received By	Date/Time
Sampled By and Title (Please sign and print name): David Lacey [signature]	Date/Time: 8/21/02 1900	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name): Dayna Kaumann [signature]	Date/Time: 8/22/02 10:30	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Shipped Via: UPS Fed-Ex Other ____	Shipping #

Special Instructions: * Run SW 8270C and SW 8270C-SIM

Instructions and Agreement Provisions on Reverse Side

DISTRIBUTION: Original - LAB, Yellow - LAB, Pink - Client
Rev 2/01 Lab form 340

0118

CH2MHILL
Applied Sciences Group

Sample Receipt Record

Batch Number: 8008 Date/Time Received: 8/22/02

Client/Project Portland Harbor Temperature: 3.6

VERIFICATION OF SAMPLE CONDITIONS (verify all items) * HD = Client Hand delivered Samples

Observation	YES	NO	*HD
Were custody seals intact and on the outside of the cooler?	✓		
Was the Chain of Custody inside the cooler?	✓		
Was the Chain of Custody properly filled out?	✓		
Were the sample containers in good condition?	✓		
Was there ice in the cooler?	✓		

If the answer to any of the questions above is NO, a Sample Receipt Exceptions Report Must be written.

VERIFICATION OF SAMPLE PRESERVATION (verify all preserved samples except HAAs, HANs and CH)

Sample No	Nutrients pH <2	Metals pH <2	Volatiles pH <2	Cyanides pH >12	TOC pH <2	Phenol pH <2, FAS	Other (specify)	N/A (soils/unpres)
1								✓
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

LOGIN AND pH VERIFICATIONS PERFORMED BY

Dayna Kaumanna 8/22/02

Date/Time Date/Time

CH2M HILL
Applied Sciences Group

2300 NW Walnut Blvd., Corvallis, OR 97330-3538
P.O. Box 428, Corvallis, OR 97339-0428
Tel 541.752.4271 Fax 541.752.0276

CH2MHILL
Applied Sciences Group

Sample Receipt Exception Report

Sample Batch Number: 8008 **Client/Project** Portland Harbor

The following exceptions were noted:		
		Comments (write number of exception description and the impacted sample numbers)
	1. No custody seal as required by project	
	2. No chain-of-custody provided	
	3. Analysis, description, date of collection not provided	
	4. Samples broken or leaking on reciept.	
	5. Temperature of samples inappropriate for analysis requested	
	6. Container inappropriate for analysis requested	
	7. Inadequate sample volume.	
	8. Preservation inappropriate for analysis requested	
	9. Samples received out of holding time for analysis requrested	
	10. Discrepancies between COC form and container labels.	
X	11. Other.	For sample PP011808., MSD requested but no MS. Per project chemist, add MS for all analyses except grain size

ACTION TAKEN:

Originator: Kathy McKinley Date: 8/26/02

Client was notified on: (Date/Time) 8/26/02 Client Contact: Scott Echols/CVO

Also notify SFL- Katie Bounie of addition

8/21/02 1415 PP011808MS 8008-05

Client Services:

CH2M HILL
Applied Sciences Laboratory

2300 NW Walnut Blvd., Corvallis, OR 97330-3538
P.O. Box 428, Corvallis, OR 97339-0428

Tel 541.752.4271
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108160

SEVERN TRENT SERVICES

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

TRANSMITTAL MEMORANDUM

DATE: September 14, 2002

TO: Kathy McKinley
CH2M Hill
2300 NW Walnut Blvd
Corvallis, OR 97330-3538

PROJECT: Portland Harbor 163160.AS.OS

REPORT NUMBER: 108160

TOTAL NUMBER OF PAGES: 469

Enclosed are the test results for four samples received at STL Seattle on August 23, 2002.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Katie Downie
Project Manager

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STL Seattle

Sample Identification:

Lab. No.	Client ID	Date/Time Sampled	Matrix
108160-1	PP011802	08-20-02 16:35	solid
108160-2	PP011803	08-20-02 17:10	solid
108160-3	PP011804D	08-20-02 00:01	solid
108160-4	PP011805	08-21-02 09:45	solid

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SEVERN TRENT SERVICES

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

ANALYTICAL NARRATIVE

Client: CH2M Hill

Date: September 14, 2002

Project: Portland Harbor 163160.AS.OS

Lab No.: 108160

Delivered By: Federal Express

Condition of samples upon receipt: Samples were received in good condition. Chain of custody was in order. A second chain of custody was received on August 26, 2002, adding the semivolatile organic compound analyses to these samples. Both sets of chain of custodies are included in the chain of custody section of the data report.

Sample Identification:

Lab. No.	Client ID	Date Sampled	Matrix
108160-1	PP011802	08-20-02	solid
108160-2	PP011803	08-20-02	solid
108160-3	PP011804D	08-20-02	solid
108160-4	PP011805	08-21-02	solid

SAMPLE EXTRACTION AND ANALYSIS

SEMIVOLATILE ORGANIC COMPOUNDS

Samples 108160-1 through 108160-4 were analyzed for semivolatile organic compounds in accordance with EPA SW-846 Method 8270C. The samples were extracted in accordance with EPA SW-846 Method 3550B on 08-27-02 and analyzed on 09-03-02. The samples were extracted and analyzed within the required holding time.

Benzo(b)fluoranthene and benzo(k)fluoranthene are not well resolved, and the reported results are for the combined benzofluoranthenes. The three tetrachlorophenols are also not well resolved, and have been reported as the combined tetrachlorophenols.

The requested detection limits were not met, due to the high levels of organics in the samples (target analytes and non-target analytes), requiring dilution prior to analysis.

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SEMIVOLATILE ORGANIC COMPOUNDS, cont.
Various analytes were detected in the samples at levels that were above the method detection limit (MDL) but below the practical quantitation limit (PQL). The values should be considered as estimates, and have been flagged "J".

The percent recoveries (%Rs) of N-nitroso-di-n-propylamine, acenaphthene, 2,4-dinitrotoluene and pyrene in the matrix spike (MS) analysis of batch quality control (QC) sample 108160-3 and 4-nitrophenol and 2,4-dinitrophenol in the matrix spike duplicate (MSD) exceeded the QC acceptance. Matrix interference is indicated by the acceptable recoveries for these analytes in the blank spike (BS). The %Rs have been flagged "X7".

The relative percent differences (RPDs) between the batch MS and MSD for 4-nitrophenol and pyrene exceeded the QC acceptance limits, due to the difficulties in recovering these compounds. The RPDs have been flagged "X7".

All other quality control parameters were within the acceptance limits.

No other difficulties were encountered during the semivolatile organic compounds analyses.

ORGANOCHLORINE HERBICIDES
Samples 108160-1 through 108160-4 were analyzed for organochlorine herbicides in accordance with EPA SW-846 Method 8151A GC/MS Modified. The samples were extracted in accordance with EPA SW-846 Method 3550B on 08-28-02 and analyzed on 08-30-02. The samples were extracted and analyzed within the required holding time.

The %Rs for Dalapon in the MS and MSD of batch QC sample 108164-3 exceeded the QC acceptance limits. No corrective action was taken, as the %R for Dalapon was within acceptance limits for the BS, and the %Rs of the other spike analytes were within the QC limits. The %Rs for Dalapon have been flagged "X7".

All other quality control parameters were within the acceptance limits.

No other difficulties were encountered during the organochlorine herbicide analyses.

CHLORINATED PESTICIDES
Samples 108160-1 through 108160-4 were analyzed for chlorinated pesticides in accordance with EPA SW-846 Method 8081. The samples were extracted in accordance with EPA SW-846 Method 3550B on 09-03-02 and analyzed on 09-12-02. The samples were extracted and analyzed within the required holding time.

Results were confirmed using a second column. Results are flagged "C1" or "C2", as appropriate.

Two compounds that were requested, alpha-chlordene and gamma-chlordene, are apparently no longer available. The laboratory contacted four suppliers who had the compounds listed in their catalogs and none of the contacted suppliers have these compounds currently in stock. The requested analyte list also

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CHLORINATED PESTICIDES, cont.
had two compounds listed under synonyms: alpha-chlordane has the same CAS number as cis-chlordane, and gamma-chlordane has the same CAS number as trans-chlordane.

Florisil and sulfur cleanup, in accordance with EPA SW-846 Method 3620B and 3660B, respectively, were used on the extracts to remove some of the non-target analyte interferences, but the samples still required a two-fold dilution.

Various analytes were detected in the samples at levels that were above the MDL but below the PQL. The values should be considered as estimates, and have been flagged "J".

The continuing calibration verification drift values for several analytes exceeded 15%. In these instances, the alternate criteria was used: the average percent drift for all analytes was less than 15%. The end-of-run Endrin breakdown exceeded QC limits, and machine maintenance was performed before additional samples were analyzed.

The %Rs of the surrogate decachlorobiphenyl in samples 108160-1 through 108160-4 exceeded the QC acceptance limits, and the %Rs have been flagged "X9".

The %Rs of Aldrin in the MS and MSD analysis of batch QC sample 108160-3 exceeded the QC acceptance limits. Matrix interference is indicated by the acceptable recoveries of this compound in the BS and BSD. The %Rs have been flagged "X7".

All other quality control parameters were within acceptance limits.

No other difficulties were encountered during the chlorinated pesticide analyses.

METALS
Samples 108160-1 through 108160-4 were analyzed for aluminum in accordance with EPA SW-846 Method 6010B (ICP), antimony, arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, and zinc in accordance with EPA SW-846 Method 6020 (ICP-MS). The samples were digested in accordance with EPA SW-846 Method 3051 on 08-30-02 and analyzed by ICP and ICP-MS on 08-3002. All samples were analyzed within the required holding time.

Copper, lead, nickel and zinc were detected in the ICP-MS method blank at levels that were above the MDL but below the PQL. The sample results have been flagged "B1" or "B2" as appropriate.

Various analytes were detected at levels that were above the MDL but below the PQL. The values should be considered as estimates, and have been flagged "J".

Selenium was not detected in samples 108160-1 through 108160-4. The MDLs for these samples were below the requested reporting limit (RL), although the PQL for each was above the requested RL. The other analytes were detected at or above the requested RLs.

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STL Seattle

ANALYTICAL NARRATIVE

Client: CH2M Hill | Date: September 14, 2002

Project: Portland Harbor 163160.AS.OS | Lab No.: 108160

METALS, cont.
The %R of aluminum in the MS analysis of sample 108164-3 exceeded the QC limits, due to the high concentration of this analyte in the original sample, and the %R has been flagged "X7a". The %R of aluminum in the blank spike and blank spike duplicate were within the QC limits.

All other quality control parameters were within the acceptance limits.

No other difficulties were encountered during the metals analyses.

GRAIN SIZE
Samples 108160-1, 108160-2 and 108160-3 were submitted to STL Burlington for analysis of grain size in accordance with ASTM D422-PSEP. The grain size data package will be submitted separately.

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STL Seattle

Client Name	CH2M Hill
Client ID:	PP011802
Lab ID:	108160-01
Date Received:	8/23/02
Date Prepared:	8/27/02
Date Analyzed:	9/3/02
% Solids	73.08
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
2 - Fluorophenol	66		37	160
Phenol - d5	83		43	157
Nitrobenzene - d5	51.2		42	154
2 - Fluorobiphenyl	53.8		51	142
2,4,6 - Tribromophenol	92		36	159
p - Terphenyl - d14	123		44	144

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Phenol	ND	176	35.2	
bis(2-Chloroethyl)ether	ND	176	33.7	
2-Chlorophenol	ND	176	26.4	
1,3-Dichlorobenzene	ND	176	24.7	
1,4-Dichlorobenzene	ND	176	28.2	
Benzyl Alcohol	ND	176	37	
1,2-Dichlorobenzene	ND	176	18.2	
2-Methylphenol	ND	176	21.1	
bis(2-Chloroisopropyl)ether	ND	176	45.8	
3-&4-Methylphenol	45	352	26.1	J
N-nitroso-di-n-propylamine	ND	176	19.4	
Hexachloroethane	ND	176	33.5	
Nitrobenzene	ND	176	24.1	
Isophorone	ND	176	24.7	
2-Nitrophenol	ND	176	24.7	
2,4-Dimethylphenol	ND	176	19.4	
Benzoic Acid	ND	881	59.9	
bis(2-Chloroethoxy)methane	ND	176	21.1	
2,4-Dichlorophenol	ND	176	19.4	
1,2,4-Trichlorobenzene	ND	176	14.6	
Naphthalene	33.7	17.6	8.25	
4-Chloroaniline	ND	176	16.4	
Hexachlorobutadiene	ND	176	15.9	
4-Chloro-3-methylphenol	ND	176	19.4	
2-Methylnaphthalene	33.3	17.6	2.75	
Hexachlorocyclopentadiene	ND	176	24.9	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 108160-01 continued...

Analyte		Result (ug/kg)	PQL	MDL
2,4,6-Trichlorophenol	ND		441	23.4
2,4,5-Trichlorophenol	ND		176	31.7
2-Chloronaphthalene	ND		17.6	5.29
2-Nitroaniline	ND		176	22.9
Dimethylphthalate	ND		176	19.4
Acenaphthylene		23.3	17.6	7.68
2,6-Dinitrotoluene	ND		176	31.7
3-Nitroaniline	ND		176	30
Acenaphthene		23.8	17.6	8.72
2,4-Dinitrophenol	ND		881	42.3
4-Nitrophenol	ND		881	33.5
Dibenzofuran	ND		176	20.4
2,4-Dinitrotoluene	ND		176	22.9
Diethylphthalate	ND		176	30
4-Chlorophenylphenylether	ND		176	29.6
Fluorene		39.5	17.6	8.23
4-Nitroaniline	ND		176	30
4,6-Dinitro-2-methylphenol	ND		881	65.2
N-Nitrosodiphenylamine	ND		176	14.1
4-Bromophenylphenylether	ND		176	23.4
Hexachlorobenzene	ND		176	19.4
Pentachlorophenol	ND		176	37
Phenanthrene		22.3	17.6	3.75
Anthracene		30.1	17.6	4.44
Di-n-butylphthalate	ND		441	153
Fluoranthene		239	17.6	8.23
Pyrene		255	17.6	5.82
Butylbenzylphthalate		385	176	33.5
3,3'-Dichlorobenzidine	ND		176	19.4
Benzo(a)anthracene	ND		35.2	10.8
Chrysene	ND		35.2	10.3
bis(2-Ethylhexyl)phthalate		2700	176	72.3
Di-n-octylphthalate	ND		176	45.8
Benzofluoranthenes	ND		35.2	7.75
Benzo(a)pyrene	ND		17.6	10.3
Indeno(1,2,3-cd)pyrene	ND		17.6	4.11
Dibenz(a,h)anthracene	ND		17.6	4.11
Benzo(g,h,i)perylene	ND		17.6	2.91
	ND		176	68.7
	ND		881	19.4
	ND		176	0
	ND		176	33.3

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011803
Lab ID:	108160-02
Date Received:	8/23/02
Date Prepared:	8/27/02
Date Analyzed:	9/3/02
% Solids	76.74
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	58.9		37	160
Phenol - d5	73.6		43	157
Nitrobenzene - d5	59.5		42	154
2 - Fluorobiphenyl	58		51	142
2,4,6 - Tribromophenol	85.7		36	159
p - Terphenyl - d14	107		44	144

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	ND	163	32.7	
bis(2-Chloroethyl)ether	ND	163	31.2	
2-Chlorophenol	ND	163	24.5	
1,3-Dichlorobenzene	ND	163	22.9	
1,4-Dichlorobenzene	ND	163	26.1	
Benzyl Alcohol	ND	163	34.3	
1,2-Dichlorobenzene	ND	163	16.8	
2-Methylphenol	ND	163	19.6	
bis(2-Chloroisopropyl)ether	ND	163	42.4	
3-&4-Methylphenol	ND	327	24.2	
N-nitroso-di-n-propylamine	ND	163	18	
Hexachloroethane	ND	163	31	
Nitrobenzene	ND	163	22.4	
Isophorone	ND	163	22.9	
2-Nitrophenol	ND	163	22.9	
2,4-Dimethylphenol	ND	163	18	
Benzoic Acid	ND	816	55.5	
bis(2-Chloroethoxy)methane	ND	163	19.6	
2,4-Dichlorophenol	ND	163	18	
1,2,4-Trichlorobenzene	ND	163	13.5	
Naphthalene	ND	16.3	7.64	
4-Chloroaniline	ND	163	15.2	
Hexachlorobutadiene	ND	163	14.7	
4-Chloro-3-methylphenol	ND	163	18	
2-Methylnaphthalene	13.3	16.3	2.55	J
Hexachlorocyclopentadiene	ND	163	23	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 108160-02 continued...

Analyte	Result (ug/kg)	PQL	MDL	
2,4,6-Trichlorophenol	ND	408	21.7	
2,4,5-Trichlorophenol	ND	163	29.4	
2-Chloronaphthalene	ND	16.3	4.9	
2-Nitroaniline	ND	163	21.2	
Dimethylphthalate	ND	163	18	
Acenaphthylene	ND	16.3	7.12	
2,6-Dinitrotoluene	ND	163	29.4	
3-Nitroaniline	ND	163	27.8	
Acenaphthene	ND	16.3	8.08	
2,4-Dinitrophenol	ND	816	39.2	
4-Nitrophenol	ND	816	31	
Dibenzofuran	ND	163	18.9	
2,4-Dinitrotoluene	ND	163	21.2	
Diethylphthalate	ND	163	27.8	
4-Chlorophenylphenylether	ND	163	27.4	
Fluorene	ND	16.3	7.62	
4-Nitroaniline	ND	163	27.8	
4,6-Dinitro-2-methylphenol	ND	816	60.4	
N-Nitrosodiphenylamine	ND	163	13.1	
4-Bromophenylphenylether	ND	163	21.7	
Hexachlorobenzene	ND	163	18	
Pentachlorophenol	ND	163	34.3	
Phenanthrene	26.6	16.3	3.48	
Anthracene	13.5	16.3	4.11	J
Di-n-butylphthalate	ND	408	142	
Fluoranthene	95.9	16.3	7.62	
Pyrene	85.8	16.3	5.39	
Butylbenzylphthalate	ND	163	31	
3,3'-Dichlorobenzidine	ND	163	18	
Benzo(a)anthracene	ND	32.7	9.96	
Chrysene	ND	32.7	9.58	
bis(2-Ethylhexyl)phthalate	390	163	66.9	
Di-n-octylphthalate	ND	163	42.4	
Benzofluoranthenes	ND	32.7	7.18	
Benzo(a)pyrene	ND	16.3	9.58	
Indeno(1,2,3-cd)pyrene	ND	16.3	3.8	
Dibenz(a,h)anthracene	ND	16.3	3.8	
Benzo(g,h,i)perylene	ND	16.3	2.69	
	ND	163	63.7	
	ND	816	18	
	ND	163	0	
	ND	163	30.9	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011804D
Lab ID:	108160-03
Date Received:	8/23/02
Date Prepared:	8/27/02
Date Analyzed:	9/3/02
% Solids	76.9
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	75		37	160
Phenol - d5	101		43	157
Nitrobenzene - d5	79.5		42	154
2 - Fluorobiphenyl	70.5		51	142
2,4,6 - Tribromophenol	95.1		36	159
p - Terphenyl - d14	104		44	144

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**		**PQL**	**MDL**	**Flags**
Phenol	ND		171	34.3	
bis(2-Chloroethyl)ether	ND		171	32.7	
2-Chlorophenol	ND		171	25.7	
1,3-Dichlorobenzene	ND		171	24	
1,4-Dichlorobenzene	ND		171	27.4	
Benzyl Alcohol	ND		171	36	
1,2-Dichlorobenzene	ND		171	17.7	
2-Methylphenol	ND		171	20.6	
bis(2-Chloroisopropyl)ether	ND		171	44.6	
3-&4-Methylphenol	ND		343	25.4	
N-nitroso-di-n-propylamine	ND		171	18.9	
Hexachloroethane	ND		171	32.6	
Nitrobenzene	ND		171	23.5	
Isophorone	ND		171	24	
2-Nitrophenol	ND		171	24	
2,4-Dimethylphenol	ND		171	18.9	
Benzoic Acid	ND		857	58.3	
bis(2-Chloroethoxy)methane	ND		171	20.6	
2,4-Dichlorophenol	ND		171	18.9	
1,2,4-Trichlorobenzene	ND		171	14.2	
Naphthalene		10.5	17.1	8.02	J
4-Chloroaniline	ND		171	15.9	
Hexachlorobutadiene	ND		171	15.4	
4-Chloro-3-methylphenol		33.1	171	18.9	J
2-Methylnaphthalene		12.9	17.1	2.67	J
Hexachlorocyclopentadiene	ND		171	24.2	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 108160-03 continued...

Analyte		Result (ug/kg)	PQL	MDL	
2,4,6-Trichlorophenol	ND		429	22.8	
2,4,5-Trichlorophenol	ND		171	30.9	
2-Chloronaphthalene	ND		17.1	5.14	
2-Nitroaniline	ND		171	22.3	
Dimethylphthalate	ND		171	18.9	
Acenaphthylene		9.79	17.1	7.47	J
2,6-Dinitrotoluene	ND		171	30.9	
3-Nitroaniline	ND		171	29.1	
Acenaphthene		16.4	17.1	8.48	J
2,4-Dinitrophenol	ND		857	41.1	
4-Nitrophenol	ND		857	32.6	
Dibenzofuran	ND		171	19.9	
2,4-Dinitrotoluene	ND		171	22.3	
Diethylphthalate	ND		171	29.1	
4-Chlorophenylphenylether	ND		171	28.8	
Fluorene	ND		17.1	8	
4-Nitroaniline	ND		171	29.1	
4,6-Dinitro-2-methylphenol	ND		857	63.4	
N-Nitrosodiphenylamine	ND		171	13.7	
4-Bromophenylphenylether	ND		171	22.8	
Hexachlorobenzene	ND		171	18.9	
Pentachlorophenol	ND		171	36	
Phenanthrene		145	17.1	3.65	
Anthracene		28.8	17.1	4.32	
Di-n-butylphthalate	ND		429	149	
Fluoranthene		245	17.1	8	
Pyrene		245	17.1	5.66	
Butylbenzylphthalate		148	171	32.6	J
3,3'-Dichlorobenzidine	ND		171	18.9	
Benzo(a)anthracene		83.3	34.3	10.5	
Chrysene		106	34.3	10.1	
bis(2-Ethylhexyl)phthalate		325	171	70.3	
Di-n-octylphthalate	ND		171	44.6	
Benzofluoranthenes		141	34.3	7.54	
Benzo(a)pyrene		144	17.1	10.1	
Indeno(1,2,3-cd)pyrene	ND		17.1	3.99	
Dibenz(a,h)anthracene	ND		17.1	3.99	
Benzo(g,h,i)perylene	ND		17.1	2.83	
	ND		171	66.8	
	ND		857	18.9	
	ND		171	0	
	ND		171	32.4	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011805
Lab ID:	108160-04
Date Received:	8/23/02
Date Prepared:	8/27/02
Date Analyzed:	9/3/02
% Solids	64.68
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	63.3		37	160
Phenol - d5	83.6		43	157
Nitrobenzene - d5	93.8		42	154
2 - Fluorobiphenyl	69.9		51	142
2,4,6 - Tribromophenol	87.4		36	159
p - Terphenyl - d14	133		44	144

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	ND	182	36.4	
bis(2-Chloroethyl)ether	ND	182	34.8	
2-Chlorophenol	ND	182	27.3	
1,3-Dichlorobenzene	ND	182	25.5	
1,4-Dichlorobenzene	ND	182	29.1	
Benzyl Alcohol	ND	182	38.2	
1,2-Dichlorobenzene	ND	182	18.7	
2-Methylphenol	ND	182	21.8	
bis(2-Chloroisopropyl)ether	ND	182	47.3	
3-&4-Methylphenol	72.4	364	26.9	J
N-nitroso-di-n-propylamine	ND	182	20	
Hexachloroethane	ND	182	34.6	
Nitrobenzene	ND	182	24.9	
Isophorone	ND	182	25.5	
2-Nitrophenol	ND	182	25.5	
2,4-Dimethylphenol	ND	182	20	
Benzoic Acid	ND	910	61.9	
bis(2-Chloroethoxy)methane	ND	182	21.8	
2,4-Dichlorophenol	ND	182	20	
1,2,4-Trichlorobenzene	ND	182	15.1	
Naphthalene	66.1	18.2	8.52	
4-Chloroaniline	ND	182	16.9	
Hexachlorobutadiene	ND	182	16.4	
4-Chloro-3-methylphenol	306	182	20	
2-Methylnaphthalene	124	18.2	2.84	
Hexachlorocyclopentadiene	ND	182	25.7	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 108160-04 continued...

Analyte		Result (ug/kg)	PQL	MDL	
2,4,6-Trichlorophenol	ND		455	24.2	
2,4,5-Trichlorophenol	ND		182	32.8	
2-Chloronaphthalene	ND		18.2	5.46	
2-Nitroaniline	ND		182	23.7	
Dimethylphthalate	ND		182	20	
Acenaphthylene		51.2	18.2	7.94	
2,6-Dinitrotoluene	ND		182	32.8	
3-Nitroaniline	ND		182	30.9	
Acenaphthene		65.8	18.2	9.01	
2,4-Dinitrophenol	ND		910	43.7	
4-Nitrophenol	ND		910	34.6	
Dibenzofuran		45	182	21.1	J
2,4-Dinitrotoluene	ND		182	23.7	
Diethylphthalate	ND		182	30.9	
4-Chlorophenylphenylether	ND		182	30.6	
Fluorene		122	18.2	8.5	
4-Nitroaniline	ND		182	30.9	
4,6-Dinitro-2-methylphenol	ND		910	67.3	
N-Nitrosodiphenylamine	ND		182	14.6	
4-Bromophenylphenylether	ND		182	24.2	
Hexachlorobenzene	ND		182	20	
Pentachlorophenol	ND		182	38.2	
Phenanthrene		273	18.2	3.88	
Anthracene		93.4	18.2	4.59	
Di-n-butylphthalate		185	455	158	J
Fluoranthene		476	18.2	8.5	
Pyrene		536	18.2	6.01	
Butylbenzylphthalate	ND		182	34.6	
3,3'-Dichlorobenzidine	ND		182	20	
Benzo(a)anthracene		265	36.4	11.1	
Chrysene		353	36.4	10.7	
bis(2-Ethylhexyl)phthalate		1360	182	74.6	
Di-n-octylphthalate	ND		182	47.3	
Benzofluoranthenes		603	36.4	8.01	
Benzo(a)pyrene		499	18.2	10.7	
Indeno(1,2,3-cd)pyrene		118	18.2	4.24	
Dibenz(a,h)anthracene	ND		18.2	4.24	
Benzo(g,h,i)perylene		256	18.2	3	
	ND		182	71	
	ND		910	20	
	ND		182	0	
	ND		182	34.4	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011802
Lab ID:	108160-01
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
% Solids	73.08
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2,4-Dichlorophenylacetic acid	65.4		48	128

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Dalapon	ND	0.677	0.152	
4-Nitrophenol	ND	0.677	0.151	
Dicamba	ND	0.677	0.156	
MCPP	ND	0.677	0.133	
MCPA	ND	0.677	0.298	
Dichloroprop	ND	0.677	0.251	
2,4-D	ND	0.677	0.264	
Pentachlorophenol	ND	0.677	0.194	
Silvex (2,4,5-TP)	ND	1.02	0.254	
2,4,5-T	ND	1.02	0.311	
Dinoseb	ND	0.677	0.218	
2,4-DB	ND	0.677	0.19	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011803
Lab ID:	108160-02
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
% Solids	76.74
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2,4-Dichlorophenylacetic acid	67.2		48	128

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dalapon	ND	0.611	0.137	
4-Nitrophenol	ND	0.611	0.136	
Dicamba	ND	0.611	0.14	
MCPP	ND	0.611	0.12	
MCPA	ND	0.611	0.268	
Dichloroprop	ND	0.611	0.226	
2,4-D	ND	0.611	0.238	
Pentachlorophenol	ND	0.611	0.175	
Silvex (2,4,5-TP)	ND	0.917	0.229	
2,4,5-T	ND	0.917	0.28	
Dinoseb	ND	0.611	0.196	
2,4-DB	ND	0.611	0.172	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011804D
Lab ID:	108160-03
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/30/02
% Solids	76.9
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2,4-Dichlorophenylacetic acid	70.1		48	128

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Dalapon	ND	0.586	0.132	
4-Nitrophenol	ND	0.586	0.131	
Dicamba	ND	0.586	0.135	
MCPP	ND	0.586	0.115	
MCPA	ND	0.586	0.258	
Dichloroprop	ND	0.586	0.217	
2,4-D	ND	0.586	0.228	
Pentachlorophenol	ND	0.586	0.168	
Silvex (2,4,5-TP)	ND	0.88	0.22	
2,4,5-T	ND	0.88	0.269	
Dinoseb	ND	0.586	0.188	
2,4-DB	ND	0.586	0.165	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011805
Lab ID:	108160-04
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/30/02
% Solids	64.68
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2,4-Dichlorophenylacetic acid	70.6		48	128

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dalapon	ND	0.735	0.165	
4-Nitrophenol	ND	0.735	0.164	
Dicamba	ND	0.735	0.169	
MCPP	ND	0.735	0.144	
MCPA	ND	0.735	0.323	
Dichloroprop	ND	0.735	0.272	
2,4-D	ND	0.735	0.286	
Pentachlorophenol	ND	0.735	0.211	
Silvex (2,4,5-TP)	ND	1.1	0.276	
2,4,5-T	ND	1.1	0.337	
Dinoseb	ND	0.735	0.236	
2,4-DB	ND	0.735	0.206	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011802
Lab ID:	108160-01
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	73.08
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	104		54	129
Decachlorobiphenyl	156	X9	54	140

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin		7.77	2.68	1.16	C2
alpha-BHC	ND		2.68	0.832	
beta-BHC		7.03	2.68	1.13	C1
delta-BHC	ND		2.68	1.03	
gamma-BHC (Lindane)	ND		2.68	1.02	
Chlordane (technical)	ND		26.8	3.77	
4,4'-DDD		36.7	5.36	0.521	C1
4,4'-DDE		58	5.36	0.616	C1
4,4'-DDT	ND		5.36	0.694	
Dieldrin	ND		5.36	0.878	
Endosulfan I	ND		2.68	1.14	
Endosulfan II	ND		5.36	1.03	
Endosulfan sulfate		3.74	5.36	0.974	J C2
Endrin	ND		5.36	0.966	
Endrin aldehyde	ND		5.36	1.09	
Heptachlor	ND		2.68	0.922	
Heptachlor epoxide	ND		2.68	0.978	
Methoxychlor	ND		26.8	3.69	
Endrin ketone	ND		5.36	0.752	
Toxaphene	ND		268	16.8	
alpha-Chlordane		18.4	2.68	1.06	C2
gamma-Chlordane		15.3	2.68	1.09	C1
Hexachlorobenzene	ND		2.68	2.68	
Hexachlorobutadiene	ND		2.68	2.68	
Hexachloroethane	ND		2.68	2.68	
Oxychlordane	ND		5.36	5.36	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for 108160-01 continued...

Analyte	Result (ug/kg)	PQL	MDL	Flags
cis-Nonachlor	6.88	5.36	5.36	C1
trans-Nonachlor	19.1	5.36	5.36	C1
2,4'-DDE	7.77	5.36	5.36	C2
2,4'-DDD	9.42	5.36	5.36	C2
2,4'-DDT	ND	5.36	5.36	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011803
Lab ID:	108160-02
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	76.74
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	127		54	129
Decachlorobiphenyl	146	X9	54	140

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin		5.87	2.58	1.11	C2
alpha-BHC	ND		2.58	0.801	
beta-BHC		2.87	2.58	1.09	C1
delta-BHC	ND		2.58	0.99	
gamma-BHC (Lindane)	ND		2.58	0.986	
Chlordane (technical)	ND		25.8	3.63	
4,4'-DDD		18.5	5.16	0.501	C1
4,4'-DDE		32.9	5.16	0.594	C1
4,4'-DDT	ND		5.16	0.668	
Dieldrin	ND		5.16	0.846	
Endosulfan I	ND		2.58	1.1	
Endosulfan II	ND		5.16	0.997	
Endosulfan sulfate		2.06	5.16	0.938	J C2
Endrin	ND		5.16	0.931	
Endrin aldehyde	ND		5.16	1.05	
Heptachlor	ND		2.58	0.888	
Heptachlor epoxide	ND		2.58	0.942	
Methoxychlor	ND		25.8	3.55	
Endrin ketone	ND		5.16	0.725	
Toxaphene	ND		258	16.2	
alpha-Chlordane		9.39	2.58	1.03	C2
gamma-Chlordane		8.43	2.58	1.05	C1
Hexachlorobenzene	ND		2.58	2.58	
Hexachlorobutadiene	ND		2.58	2.58	
Hexachloroethane	ND		2.58	2.58	
Oxychlordane	ND		5.16	5.16	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for 108160-02 continued...

Analyte	Result (ug/kg)	PQL	MDL	Flags
cis-Nonachlor	ND	5.16	5.16	
trans-Nonachlor	9.74	5.16	5.16	C1
2,4'-DDE	ND	5.16	5.16	
2,4'-DDD	6.07	5.16	5.16	C2
2,4'-DDT	ND	5.16	5.16	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011804D
Lab ID:	108160-03
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	76.9
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	125		54	129
Decachlorobiphenyl	150	X9	54	140

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin		4.35	2.36	1.02	C2
alpha-BHC	ND		2.36	0.732	
beta-BHC		2.37	2.36	0.997	C1
delta-BHC	ND		2.36	0.904	
gamma-BHC (Lindane)	ND		2.36	0.9	
Chlordane (technical)	ND		23.6	3.32	
4,4'-DDD		17.2	4.71	0.458	C1
4,4'-DDE		34.1	4.71	0.542	C1
4,4'-DDT	ND		4.71	0.61	
Dieldrin	ND		4.71	0.773	
Endosulfan I	ND		2.36	1	
Endosulfan II	ND		4.71	0.91	
Endosulfan sulfate		1.72	4.71	0.857	J C2
Endrin	ND		4.71	0.85	
Endrin aldehyde	ND		4.71	0.96	
Heptachlor	ND		2.36	0.811	
Heptachlor epoxide	ND		2.36	0.86	
Methoxychlor	ND		23.6	3.24	
Endrin ketone	ND		4.71	0.662	
Toxaphene	ND		236	14.8	
alpha-Chlordane		10.1	2.36	0.936	C2
gamma-Chlordane		14.3	2.36	0.956	C2
Hexachlorobenzene	ND		2.36	2.36	
Hexachlorobutadiene	ND		2.36	2.36	
Hexachloroethane	ND		2.36	2.36	
Oxychlordane	ND		4.71	4.71	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for 108160-03 continued...

Analyte	Result (ug/kg)	PQL	MDL	Flags
cis-Nonachlor	ND	4.71	4.71	
trans-Nonachlor	10.4	4.71	4.71	C1
2,4'-DDE	ND	4.71	4.71	
2,4'-DDD	ND	4.71	4.71	
2,4'-DDT	ND	4.71	4.71	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011805
Lab ID:	108160-04
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	64.68
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	98.7		54	129
Decachlorobiphenyl	162	X9	54	140

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin		24.2	2.9	1.25	C2
alpha-BHC	ND		2.9	0.9	
beta-BHC		4.91	2.9	1.23	C1
delta-BHC	ND		2.9	1.11	
gamma-BHC (Lindane)	ND		2.9	1.11	
Chlordane (technical)	ND		29	4.08	
4,4'-DDD		33	5.79	0.563	C1
4,4'-DDE		64.7	5.79	0.667	C1
4,4'-DDT	ND		5.79	0.75	
Dieldrin	ND		5.79	0.95	
Endosulfan I	ND		2.9	1.23	
Endosulfan II	ND		5.79	1.12	
Endosulfan sulfate	ND		5.79	1.05	
Endrin	ND		5.79	1.04	
Endrin aldehyde	ND		5.79	1.18	
Heptachlor	ND		2.9	0.997	
Heptachlor epoxide	ND		2.9	1.06	
Methoxychlor	ND		29	3.99	
Endrin ketone	ND		5.79	0.814	
Toxaphene	ND		290	18.1	
alpha-Chlordane		9.27	2.9	1.15	C1
gamma-Chlordane		12.2	2.9	1.18	C2
Hexachlorobenzene	ND		2.9	2.9	
Hexachlorobutadiene	ND		2.9	2.9	
Hexachloroethane	ND		2.9	2.9	
Oxychlordane	ND		5.79	5.79	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for 108160-04 continued...

Analyte	Result (ug/kg)	PQL	MDL	Flags
cis-Nonachlor	ND	5.79	5.79	
trans-Nonachlor	14.7	5.79	5.79	C1
2,4'-DDE	8.21	5.79	5.79	C2
2,4'-DDD	8.81	5.79	5.79	C2
2,4'-DDT	ND	5.79	5.79	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011802
Lab ID:	108160-01
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1
% Solids	73.08

Metals by ICP - USEPA Method 6010

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Aluminum	7540	26.4	2.38	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011802
Lab ID:	108160-01
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	5
% Solids	73.08

Metals by ICP-MS - USEPA Method 6020

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Arsenic	5.7	1.32	0.144	
Antimony	1.84	3.97	0.0296	J
Cadmium	0.46	0.661	0.00939	J
Chromium	34.2	1.32	0.0468	
Copper	56	1.32	0.019	B2
Lead	90.2	0.661	0.00595	B2
Nickel	19.8	1.32	0.0374	B2
Selenium	ND	3.97	0.508	
Silver	0.149	0.661	0.00793	J
Zinc	203	3.97	0.0432	B2

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011803
Lab ID:	108160-02
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1
% Solids	76.74

Metals by ICP - USEPA Method 6010

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Aluminum	5430	21.9	1.97	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011803
Lab ID:	108160-02
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	5
% Solids	76.74

Metals by ICP-MS - USEPA Method 6020

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Arsenic	6.09	1.09	0.119	
Antimony	2.52	3.28	0.0245	J
Cadmium	0.512	0.547	0.00777	J
Chromium	32.6	1.09	0.0388	
Copper	61.1	1.09	0.0158	B2
Lead	123	0.547	0.00493	B2
Nickel	21	1.09	0.031	B2
Selenium	ND	3.28	0.421	
Silver	0.166	0.547	0.00657	J
Zinc	246	3.28	0.0358	B2

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011804D
Lab ID:	108160-03
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1
% Solids	76.9

Metals by ICP - USEPA Method 6010

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Aluminum	8230	21.7	1.95	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011804D
Lab ID:	108160-03
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	5
% Solids	76.9

Metals by ICP-MS - USEPA Method 6020

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Arsenic	5.77	1.08	0.118	
Antimony	1.98	3.25	0.0243	J
Cadmium	0.59	0.542	0.0077	
Chromium	45.6	1.08	0.0384	
Copper	56.9	1.08	0.0156	B2
Lead	185	0.542	0.00488	B2
Nickel	20	1.08	0.0307	B2
Selenium	ND	3.25	0.417	
Silver	0.199	0.542	0.00651	J
Zinc	284	3.25	0.0355	B2

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011805
Lab ID:	108160-04
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1
% Solids	64.68

Metals by ICP - USEPA Method 6010

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Aluminum	6600	27.7	2.49	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011805
Lab ID:	108160-04
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	5
% Solids	64.68

Metals by ICP-MS - USEPA Method 6020

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Arsenic	5.42	1.39	0.151	
Antimony	2.47	4.16	0.031	J
Cadmium	0.626	0.693	0.00984	J
Chromium	44.7	1.39	0.0491	
Copper	66	1.39	0.02	B2
Lead	79.8	0.693	0.00624	B2
Nickel	20	1.39	0.0392	B2
Selenium	ND	4.16	0.533	
Silver	0.205	0.693	0.00832	J
Zinc	256	4.16	0.0453	B2

STL Seattle

Lab ID:	Method Blank - SP883
Date Received:	-
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Sample results are on an as received basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Aluminum	ND	20	1.8	

STL Seattle

Lab ID:	Method Blank - SS0608
Date Received:	-
Date Prepared:	8/27/02
Date Analyzed:	9/3/02
% Solids	
Dilution Factor	2

Semivolatile Organics by USEPA Method 8270

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2 - Fluorophenol	92.8		37	160
Phenol - d5	85.2		43	157
Nitrobenzene - d5	102		42	154
2 - Fluorobiphenyl	77		51	142
2,4,6 - Tribromophenol	83.9		36	159
p - Terphenyl - d14	89.7		44	144

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Phenol	ND	13.3	2.67	
bis(2-Chloroethyl)ether	ND	13.3	2.55	
2-Chlorophenol	ND	13.3	2	
1,3-Dichlorobenzene	ND	13.3	1.87	
1,4-Dichlorobenzene	ND	13.3	2.13	
Benzyl Alcohol	ND	13.3	2.8	
1,2-Dichlorobenzene	ND	13.3	1.37	
2-Methylphenol	ND	13.3	1.6	
bis(2-Chloroisopropyl)ether	ND	13.3	3.47	
3-&4-Methylphenol	ND	26.7	1.97	
N-nitroso-di-n-propylamine	ND	13.3	1.47	
Hexachloroethane	ND	13.3	2.53	
Nitrobenzene	ND	13.3	1.83	
Isophorone	ND	13.3	1.87	
2-Nitrophenol	ND	13.3	1.87	
2,4-Dimethylphenol	ND	13.3	1.47	
Benzoic Acid	ND	66.7	4.53	
bis(2-Chloroethoxy)methane	ND	13.3	1.6	
2,4-Dichlorophenol	ND	13.3	1.47	
1,2,4-Trichlorobenzene	ND	13.3	1.11	
Naphthalene	ND	1.33	0.624	
4-Chloroaniline	ND	13.3	1.24	
Hexachlorobutadiene	ND	13.3	1.2	
4-Chloro-3-methylphenol	ND	13.3	1.47	
2-Methylnaphthalene	ND	1.33	0.208	
Hexachlorocyclopentadiene	ND	13.3	1.88	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for SS0608 continued...

Analyte	Result (ug/kg)	PQL	MDL
2,4,6-Trichlorophenol	ND	33.3	1.77
2,4,5-Trichlorophenol	ND	13.3	2.4
2-Chloronaphthalene	ND	1.33	0.4
2-Nitroaniline	ND	13.3	1.73
Dimethylphthalate	ND	13.3	1.47
Acenaphthylene	ND	1.33	0.581
2,6-Dinitrotoluene	ND	13.3	2.4
3-Nitroaniline	ND	13.3	2.27
Acenaphthene	ND	1.33	0.66
2,4-Dinitrophenol	ND	66.7	3.2
4-Nitrophenol	ND	66.7	2.53
Dibenzofuran	ND	13.3	1.55
2,4-Dinitrotoluene	ND	13.3	1.73
Diethylphthalate	ND	13.3	2.27
4-Chlorophenylphenylether	ND	13.3	2.24
Fluorene	ND	1.33	0.623
4-Nitroaniline	ND	13.3	2.27
4,6-Dinitro-2-methylphenol	ND	66.7	4.93
N-Nitrosodiphenylamine	ND	13.3	1.07
4-Bromophenylphenylether	ND	13.3	1.77
Hexachlorobenzene	ND	13.3	1.47
Pentachlorophenol	ND	13.3	2.8
Phenanthrene	ND	1.33	0.284
Anthracene	ND	1.33	0.336
Di-n-butylphthalate	ND	33.3	11.6
Fluoranthene	ND	1.33	0.623
Pyrene	ND	1.33	0.44
Butylbenzylphthalate	ND	13.3	2.53
3,3'-Dichlorobenzidine	ND	13.3	1.47
Benzo(a)anthracene	ND	2.67	0.813
Chrysene	ND	2.67	0.783
bis(2-Ethylhexyl)phthalate	ND	13.3	5.47
Di-n-octylphthalate	ND	13.3	3.47
Benzofluoranthenes	ND	2.67	0.587
Benzo(a)pyrene	ND	1.33	0.783
Indeno(1,2,3-cd)pyrene	ND	1.33	0.311
Dibenz(a,h)anthracene	ND	1.33	0.311
Benzo(g,h,i)perylene	ND	1.33	0.22
Carbazole	ND	13.3	5.2
N-nitrosodimethylamine	ND	66.7	1.47
Aniline	ND	13.3	0
Tetrachlorophenols	ND	13.3	2.52

STL Seattle

Blank Spike Report

Lab ID:	SS0608
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
QC Batch ID:	SS0608

Semivolatile Organics by USEPA Method 8270

Compound Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Phenol	0	100	84.3	84.3	
2-Chlorophenol	0	100	86.5	86.5	
1,4-Dichlorobenzene	0	66.7	48.7	73.1	
N-nitroso-di-n-propylamine	0	66.7	56	83.9	
1,2,4-Trichlorobenzene	0	66.7	53.5	80.3	
4-Chloro-3-methylphenol	0	100	85.2	85.2	
Acenaphthene	0	66.7	54.4	81.6	
4-Nitrophenol	0	100	50.9	50.9	
2,4-Dinitrotoluene	0	66.7	66.7	100	
Pentachlorophenol	0	100	33.2	33.2	
Pyrene	0	66.7	58.8	88.3	

STL Seattle

Client Name	CH2M Hill
Client ID:	
Lab ID:	SSS0608
Date Received:	-
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
% Solids	
Dilution Factor	2

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	72.8		37	160
Phenol - d5	74.8		43	157
Nitrobenzene - d5	76.7		42	154
2 - Fluorobiphenyl	65.7		51	142
2,4,6 - Tribromophenol	71.7		36	159
p - Terphenyl - d14	77.4		44	144

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	84.3	13.3	2.67	
2-Chlorophenol	86.5	13.3	2	
1,4-Dichlorobenzene	48.7	13.3	2.13	
N-nitroso-di-n-propylamine	56	13.3	1.47	
1,2,4-Trichlorobenzene	53.5	13.3	1.11	
4-Chloro-3-methylphenol	85.2	13.3	1.47	
Acenaphthene	54.4	1.33	0.66	
4-Nitrophenol	50.9	66.7	2.53	J
2,4-Dinitrotoluene	66.7	13.3	1.73	
Pentachlorophenol	33.2	13.3	2.8	
Pyrene	58.8	1.33	0.44	

STL Seattle

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/27/02
Date Analyzed:	9/3/02
QC Batch ID:	SS0608

Semivolatile Organics by USEPA Method 8270

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Phenol	0	126	159	126	129	101	-22	
2-Chlorophenol	0	126	134	107	127	99.6	-7.2	
1,4-Dichlorobenzene	0	83.8	57.5	68.6	54.5	64	-6.9	
N-nitroso-di-n-propylamine	0	83.8	146	174	102	120	-37	X7
1,2,4-Trichlorobenzene	0	83.8	73.6	87.8	73.2	86	-2.1	
4-Chloro-3-methylphenol	68	126	240	137	178	86	-46	
Acenaphthene	14	83.8	127	135	99.4	101	-29	X7
4-Nitrophenol	0	126	30.5	24.2	0	0	-200	X7
2,4-Dinitrotoluene	0	83.8	144	171	129	152	-12	X7
Pentachlorophenol	0	126	148	117	139	109	-7.1	
Pyrene	150	83.8	306	192	199	62.8	-100	X7

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808
Lab ID:	108164-03
Date Received:	8/23/2002
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
% Solids	77.77
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	54		37	160
Phenol - d5	65		43	157
Nitrobenzene - d5	61.5		42	154
2 - Fluorobiphenyl	60		51	142
2,4,6 - Tribromophenol	90.7		36	159
p - Terphenyl - d14	128		44	144

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	ND	168	33.7	
bis(2-Chloroethyl)ether	ND	168	32.2	
2-Chlorophenol	ND	168	25.3	
1,3-Dichlorobenzene	ND	168	23.6	
1,4-Dichlorobenzene	ND	168	26.9	
Benzyl Alcohol	ND	168	35.4	
1,2-Dichlorobenzene	ND	168	17.3	
2-Methylphenol	ND	168	20.2	
bis(2-Chloroisopropyl)ether	ND	168	43.8	
3-&4-Methylphenol	ND	337	24.9	
N-nitroso-di-n-propylamine	ND	168	18.5	
Hexachloroethane	ND	168	32	
Nitrobenzene	ND	168	23.1	
Isophorone	ND	168	23.6	
2-Nitrophenol	ND	168	23.6	
2,4-Dimethylphenol	ND	168	18.5	
Benzoic Acid	ND	842	57.3	
bis(2-Chloroethoxy)methane	ND	168	20.2	
2,4-Dichlorophenol	ND	168	18.5	
1,2,4-Trichlorobenzene	ND	168	14	
Naphthalene	ND	16.8	7.88	
4-Chloroaniline	ND	168	15.7	
Hexachlorobutadiene	ND	168	15.2	
4-Chloro-3-methylphenol	68	168	18.5	J
2-Methylnaphthalene	12.4	16.8	2.63	J
Hexachlorocyclopentadiene	ND	168	23.7	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 108164-03 continued...

Analyte	Result (ug/kg)	PQL	MDL	
2,4,6-Trichlorophenol	ND	421	22.4	
2,4,5-Trichlorophenol	ND	168	30.3	
2-Chloronaphthalene	ND	16.8	5.05	
2-Nitroaniline	ND	168	21.9	
Dimethylphthalate	ND	168	18.5	
Acenaphthylene	12.3	16.8	7.34	J
2,6-Dinitrotoluene	ND	168	30.3	
3-Nitroaniline	ND	168	28.6	
Acenaphthene	13.5	16.8	8.34	J
2,4-Dinitrophenol	ND	842	40.4	
4-Nitrophenol	ND	842	32	
Dibenzofuran	ND	168	19.5	
2,4-Dinitrotoluene	ND	168	21.9	
Diethylphthalate	ND	168	28.6	
4-Chlorophenylphenylether	ND	168	28.3	
Fluorene	ND	16.8	7.87	
4-Nitroaniline	ND	168	28.6	
4,6-Dinitro-2-methylphenol	ND	842	62.3	
N-Nitrosodiphenylamine	ND	168	13.5	
4-Bromophenylphenylether	ND	168	22.4	
Hexachlorobenzene	ND	168	18.5	
Pentachlorophenol	ND	168	35.4	
Phenanthrene	59.2	16.8	3.59	
Anthracene	14.3	16.8	4.24	J
Di-n-butylphthalate	ND	421	147	
Fluoranthene	143	16.8	7.87	
Pyrene	145	16.8	5.56	
Butylbenzylphthalate	ND	168	32	
3,3'-Dichlorobenzidine	ND	168	18.5	
Benzo(a)anthracene	69.4	33.7	10.3	
Chrysene	ND	33.7	9.89	
bis(2-Ethylhexyl)phthalate	399	168	69.1	
Di-n-octylphthalate	ND	168	43.8	
Benzofluoranthenes	116	33.7	7.41	
Benzo(a)pyrene	ND	16.8	9.89	
Indeno(1,2,3-cd)pyrene	ND	16.8	3.92	
Dibenz(a,h)anthracene	ND	16.8	3.92	
Benzo(g,h,i)perylene	ND	16.8	2.78	
Carbazole	ND	842	65.7	
N-nitrosodimethylamine	ND	842	18.5	
Aniline	ND	168	0	
Tetrachlorophenols	ND	168	31.8	
2,3,4,6-Tetrachlorophenol	ND	168	10.6	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - ms
Lab ID:	108164S03
Date Received:	8/23/2002
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
% Solids	77.77
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	97.6		37	160
Phenol - d5	123		43	157
Nitrobenzene - d5	83.7		42	154
2 - Fluorobiphenyl	95.9		51	142
2,4,6 - Tribromophenol	118		36	159
p - Terphenyl - d14	113		44	144

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	159	168	33.5	J
2-Chlorophenol	134	168	25.2	J
1,4-Dichlorobenzene	57.5	168	26.8	J
N-nitroso-di-n-propylamine	146	168	18.4	J
1,2,4-Trichlorobenzene	73.6	168	13.9	J
4-Chloro-3-methylphenol	240	168	18.4	
Acenaphthene	127	16.8	8.3	
4-Nitrophenol	ND	838	31.9	
2,4-Dinitrotoluene	144	168	21.8	J
Pentachlorophenol	148	168	35.2	J
Pyrene	306	16.8	5.53	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - msd
Lab ID:	108164D03
Date Received:	8/23/2002
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
% Solids	77.77
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	89.9		37	160
Phenol - d5	100		43	157
Nitrobenzene - d5	71.6		42	154
2 - Fluorobiphenyl	74.8		51	142
2,4,6 - Tribromophenol	92.4		36	159
p - Terphenyl - d14	120		44	144

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	129	170	34.1	J
2-Chlorophenol	127	170	25.5	J
1,4-Dichlorobenzene	54.5	170	27.2	J
N-nitroso-di-n-propylamine	102	170	18.7	J
1,2,4-Trichlorobenzene	73.2	170	14.1	J
4-Chloro-3-methylphenol	178	170	18.7	
Acenaphthene	99.4	17	8.43	
4-Nitrophenol	ND	851	32.3	
2,4-Dinitrotoluene	129	170	22.1	J
Pentachlorophenol	139	170	35.8	J
Pyrene	199	17	5.62	

STL Seattle

Lab ID:	Method Blank - HS0176
Date Received:	-
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
% Solids	
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2,4-Dichlorophenylacetic acid	60.4		48	128

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dalapon	ND	0.5	0.112	
4-Nitrophenol	ND	0.5	0.112	
Dicamba	ND	0.5	0.115	
MCPP	ND	0.5	0.0979	
MCPA	ND	0.5	0.22	
Dichloroprop	ND	0.5	0.185	
2,4-D	ND	0.5	0.195	
Pentachlorophenol	ND	0.5	0.144	
Silvex (2,4,5-TP)	ND	0.75	0.187	
2,4,5-T	ND	0.75	0.229	
Dinoseb	ND	0.5	0.161	
2,4-DB	ND	0.5	0.14	

STL Seattle

Blank Spike Report

Lab ID:	HS0176
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
QC Batch ID:	HS0176

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Compound Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Dalapon	0	50	20.6	41.1	
Dicamba	0	50	29	57.9	
MCPP	0	50	43.3	86.5	
2,4-D	0	50	32.3	64.6	
Silvex (2,4,5-TP)	0	50	38.3	76.6	
Dinoseb	0	50	32.5	65	

STL Seattle

Client Name	0
Client ID:	
Lab ID:	SHS0176
Date Received:	-
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
% Solids	
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2,4-Dichlorophenylacetic acid	67.3		48	128

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Dalapon	20.6	0.5	0.112	
Dicamba	29	0.5	0.115	
MCPP	43.3	0.5	0.0979	
2,4-D	32.3	0.5	0.195	
Silvex (2,4,5-TP)	38.3	0.75	0.187	
Dinoseb	32.5	0.5	0.161	

STL Seattle

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
QC Batch ID:	HS0176

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Dalapon	0	60.9	8.59	14.1	9.67	15.6	10	X7
Dicamba	0	60.9	51.1	83.8	52.6	84.9	1.3	
MCPP	0	60.9	59.3	97.3	59.4	95.8	-1.6	
2,4-D	0	60.9	58.4	95.9	62.1	100	4.2	
Silvex (2,4,5-TP)	0	60.9	50.3	82.6	47.8	77.2	-6.8	
Dinoseb	0	60.9	50.8	83.3	54.5	88	5.5	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - ms
Lab ID:	108164S03
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
% Solids	77.77
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2,4-Dichlorophenylacetic acid	92.7		48	128

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Dalapon	8.59	0.609	0.137	
Dicamba	51.1	0.609	0.14	
MCPP	59.3	0.609	0.119	
2,4-D	58.4	0.609	0.237	
Silvex (2,4,5-TP)	50.3	0.914	0.228	
Dinoseb	50.8	0.609	0.196	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - msd
Lab ID:	108164D03
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
% Solids	77.77
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2,4-Dichlorophenylacetic acid	93.1		48	128

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dalapon	9.67	0.62	0.139	
Dicamba	52.6	0.62	0.142	
MCPP	59.4	0.62	0.121	
2,4-D	62.1	0.62	0.241	
Silvex (2,4,5-TP)	47.8	0.93	0.232	
Dinoseb	54.5	0.62	0.199	

STL Seattle

Lab ID:	Method Blank - PE1511
Date Received:	-
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	111		54	129
Decachlorobiphenyl	128		54	140

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND	1	0.431	
alpha-BHC	ND	1	0.311	
beta-BHC	ND	1	0.423	
delta-BHC	ND	1	0.384	
gamma-BHC (Lindane)	ND	1	0.382	
Chlordane (technical)	ND	10	1.41	
4,4'-DDD	ND	2	0.194	
4,4'-DDE	ND	2	0.23	
4,4'-DDT	ND	2	0.259	
Dieldrin	ND	2	0.328	
Endosulfan I	ND	1	0.426	
Endosulfan II	ND	2	0.386	
Endosulfan sulfate	ND	2	0.364	
Endrin	ND	2	0.361	
Endrin aldehyde	ND	2	0.408	
Heptachlor	ND	1	0.344	
Heptachlor epoxide	ND	1	0.365	
Methoxychlor	ND	10	1.38	
Endrin ketone	ND	2	0.281	
Toxaphene	ND	100	6.27	
alpha-Chlordane	ND	1	0.398	
gamma-Chlordane	ND	1	0.406	
Hexachlorobenzene	ND	1	1	
Hexachlorobutadiene	ND	1	1	
Hexachloroethane	ND	1	1	
Oxychlordane	ND	2	2	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for PE1511 continued...

Analyte	Result (ug/kg)	PQL	MDL	Flags
cis-Nonachlor	ND	2	2	
trans-Nonachlor	ND	2	2	
2,4'-DDE	ND	2	2	
2,4'-DDD	ND	2	2	
2,4'-DDT	ND	2	2	

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	PE1511
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
QC Batch ID:	PE1511

Organochlorine Pesticides by USEPA Method 8081A

Compound Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	BSD Result (ug/kg)	BSD % Rec.	RPD	Flag
Aldrin	0	25	21.3	85	21.5	86.1	1.3	
gamma-BHC (Lindane)	0	25	21.2	84.9	21.9	87.5	3	
4,4'-DDT	0	50	42.5	84.9	43.2	86.3	1.6	
Dieldrin	0	50	48.2	96.5	49.1	98.1	1.6	
Endrin	0	50	45.2	90.4	46.1	92.1	1.9	
Heptachlor	0	25	22.4	89.4	22.8	91.2	2	

STL Seattle

Client Name	0
Client ID:	
Lab ID:	SPE1511
Date Received:	-
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	114		54	129
Decachlorobiphenyl	130		54	140

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	21.3	1	0.431	C1
gamma-BHC (Lindane)	21.2	1	0.382	C1
4,4'-DDT	42.5	2	0.259	C1
Dieldrin	48.2	2	0.328	C1
Endrin	45.2	2	0.361	C1
Heptachlor	22.4	1	0.344	C1

STL Seattle

Client Name	0
Client ID:	
Lab ID:	DPE1511
Date Received:	-
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081A

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Tetrachloro-m-xylene	113		54	129
Decachlorobiphenyl	131		54	140

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	21.5	1	0.431	C1
gamma-BHC (Lindane)	21.9	1	0.382	C1
4,4'-DDT	43.2	2	0.259	C1
Dieldrin	49.1	2	0.328	C1
Endrin	46.1	2	0.361	C1
Heptachlor	22.8	1	0.344	C1

STL Seattle

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
QC Batch ID:	PE1511

Organochlorine Pesticides by USEPA Method 8081A

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Aldrin	5	31.5	23.5	58.6	21.7	62.1	5.8	X7
gamma-BHC (Lindane)	0	31.5	20.2	64.2	17.4	64.7	0.78	
4,4'-DDT	0	63	52.5	83.3	41.1	76.5	-8.5	
Dieldrin	0	63	57.8	91.8	49.7	92.6	0.87	
Endrin	0	63	56.9	90.3	47.7	88.9	-1.6	
Heptachlor	0	31.5	27.9	88.6	23.9	89.2	0.67	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808
Lab ID:	108164-03
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	77.77
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	103		54	129
Decachlorobiphenyl	115		54	140

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	5.03	2.35	1.02	C2
alpha-BHC	ND	2.35	0.731	
beta-BHC	1.44	2.35	0.996	J C2
delta-BHC	ND	2.35	0.903	
gamma-BHC (Lindane)	ND	2.35	0.899	
Chlordane (technical)	ND	23.5	3.31	
4,4'-DDD	10.6	4.71	0.458	C1
4,4'-DDE	27.9	4.71	0.542	C1
4,4'-DDT	ND	4.71	0.61	
Dieldrin	ND	4.71	0.772	
Endosulfan I	1.38	2.35	1	J C2
Endosulfan II	ND	4.71	0.91	
Endosulfan sulfate	ND	4.71	0.856	
Endrin	ND	4.71	0.849	
Endrin aldehyde	ND	4.71	0.959	
Heptachlor	ND	2.35	0.81	
Heptachlor epoxide	ND	2.35	0.86	
Methoxychlor	ND	23.5	3.24	
Endrin ketone	ND	4.71	0.661	
Toxaphene	ND	235	14.7	
alpha-Chlordane	1.66	2.35	0.935	J C2
gamma-Chlordane	7.23	2.35	0.955	C1
Hexachlorobenzene	ND	2.35	2.35	
Hexachlorobutadiene	ND	2.35	2.35	
Hexachloroethane	ND	2.35	2.35	
Oxychlordane	ND	4.71	4.71	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for 108164-03 continued...

Analyte	Result (ug/kg)	PQL	MDL	Flags
cis-Nonachlor	ND	4.71	4.71	
trans-Nonachlor	9.19	4.71	4.71	C2
2,4'-DDE	ND	4.71	4.71	
2,4'-DDD	ND	4.71	4.71	
2,4'-DDT	ND	4.71	4.71	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - ms
Lab ID:	108164S03
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	77.77
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	97.7		54	129
Decachlorobiphenyl	140		54	140

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	23.5	2.52	1.09	C1
gamma-BHC (Lindane)	20.2	2.52	0.963	C1
4,4'-DDT	52.5	5.04	0.653	C1
Dieldrin	57.8	5.04	0.826	C1
Endrin	56.9	5.04	0.909	C1
Heptachlor	27.9	2.52	0.867	C2

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - msd
Lab ID:	108164D03
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	77.77
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	98.7		54	129
Decachlorobiphenyl	135		54	140

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	21.7	2.15	0.926	C1
gamma-BHC (Lindane)	17.4	2.15	0.82	C1
4,4'-DDT	41.1	4.29	0.556	C1
Dieldrin	49.7	4.29	0.704	C1
Endrin	47.7	4.29	0.774	C1
Heptachlor	23.9	2.15	0.739	C1

STL Seattle

Lab ID:	Method Blank - SP883
Date Received:	-
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1

Metals by ICP-MS - USEPA Method 6020

Sample results are on an as received basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Arsenic	ND	0.2	0.0217	
Antimony	ND	0.6	0.00448	
Cadmium	ND	0.1	0.00142	
Chromium	ND	0.2	0.00708	
Copper	0.011	0.2	0.00288	J
Lead	0.0064	0.1	0.0009	J
Nickel	0.0072	0.2	0.00566	J
Selenium	ND	0.6	0.0769	
Silver	ND	0.1	0.0012	
Zinc	0.365	0.6	0.00654	J

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	SP883
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP - USEPA Method 6010

Compound Name	Blank Result (mg/kg)	Spike Amount (mg/kg)	BS Result (mg/kg)	BS % Rec.	BSD Result (mg/kg)	BSD % Rec.	RPD	Flag
Aluminum	0	800	693	86.6	764	95.5	9.8	

STL Seattle

Matrix Spike Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	Flag
Aluminum	5800	902	6430	70	X7a

STL Seattle

Matrix Spike Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	Flag
Arsenic	5.55	902	896	99	
Antimony	1.1	676	623	92	
Cadmium	0.71	22.5	23.7	102	
Chromium	33	90.2	123	100	
Copper	76	113	187	99	
Lead	150	225	342	86	
Nickel	18	225	259	107	
Selenium	0	902	833	92	
Silver	0.17	135	143	105	
Zinc	260	225	505	110	

STL Seattle

Duplicate Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD %	Flag
Aluminum	5800	6500	-11.0	

STL Seattle

Duplicate Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD %	Flag
Arsenic	5.6	5.7	-1.8	
Antimony	1.1	1.2	-8.7	
Cadmium	0.71	0.67	5.8	
Chromium	33	34	-3.0	
Copper	76	78	-2.6	
Lead	150	150	0.0	
Nickel	18	19	-5.4	
Selenium	0	0	NC	
Silver	0.17	0.17	0.0	
Zinc	260	270	-3.8	

STL Seattle

Laboratory Control Sample

Lab ID:	RSP883
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/kg)	True Value (mg/kg)	Lower Limit (mg/kg)	Upper Limit (mg/kg)	Flag
Aluminum	4100	7050	2790	11300	Pass

STL Seattle

Laboratory Control Sample

Lab ID:	RSP883
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/kg)	True Value (mg/kg)	Lower Limit (mg/kg)	Upper Limit (mg/kg)	Flag
Arsenic	180	195	155	235	Pass
Antimony	150	138	42.1	234	Pass
Cadmium	66	68.6	55.2	82	Pass
Chromium	84	86.5	63.4	110	Pass
Copper	130	127	92.7	161	Pass
Lead	96	94.5	73	116	Pass
Nickel	86	83.6	65.5	101	Pass
Selenium	110	114	84.4	144	Pass
Silver	160	119	26.1	212	Pass
Zinc	280	265	204	326	Pass

DATA QUALIFIER DEFINITIONS

STL Seattle
5755 8th Street East
Tacoma, WA 98424

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www.stl-inc.com

SEVERN TRENT SERVICES

DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).

B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).

C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be $\leq$ 40%.

C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted.

M: GC/MS confirmation was performed. The result derived from the original analysis was reported.

D: The reported result for this analyte was calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

N: See analytical narrative.

ND: Not Detected

PQL: Practical Quantitation Limit

X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be _____ .

X2: Contaminant does not appear to be "typical" product.

X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.

X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.

X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.

X5: Matrix spike recovery was not determined due to the required dilution.

X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was re-analyzed with similar results.

X7: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.

X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.

X8: Surrogate recovery was not determined due to the required dilution.

X9: Surrogate recovery outside advisory QC limits due to matrix interference.

QC ACCEPTANCE LIMITS

STL Seattle - Method QC Limits

Total Metals by ICP - USEPA Method 6010

Record Number : 537
Analysis Method : 6010
Matrix : Sediment
Preparation Method : TOTREC
Expires: 08/01/2002

Blank Spike Recovery

Aluminum	80 - 120%

Duplicate RPD

Aluminum	=<35% RPD

Matrix Spike Recovery

Aluminum	75 - 125%

Metals by ICP-MS - USEPA Method 6020

Record Number : 540
Analysis Method : 6020
Matrix : Sediment
Preparation Method : 3005
Expires: 08/01/2002

Blank Spike Recovery

Antimony	80 - 120%
Arsenic	80 - 120%
Cadmium	80 - 120%
Chromium	80 - 120%
Copper	80 - 120%
Lead	80 - 120%
Nickel	80 - 120%
Selenium	80 - 120%
Silver	80 - 120%
Zinc	80 - 120%

Duplicate RPD

Antimony	=<35% RPD
Arsenic	=<35% RPD
Cadmium	=<35% RPD
Chromium	=<35% RPD
Copper	=<35% RPD
Lead	=<35% RPD
Nickel	=<35% RPD
Selenium	=<35% RPD
Silver	=<35% RPD
Zinc	=<35% RPD

Matrix Spike Recovery

Antimony	75 - 125%
Arsenic	75 - 125%
Cadmium	75 - 125%
Chromium	75 - 125%
Copper	75 - 125%
Lead	75 - 125%
Selenium	75 - 125%
Silver	75 - 125%
Zinc	75 - 125%

Organochlorine Pesticides by USEPA Method 8081A

Record Number : 566
Analysis Method : 8081A
Matrix : Soil
Preparation Method : 3550C
Expires: 08/01/2002

Blank Spike Recovery

4,4'-DDT	67 - 122%	=<10% RPD
Aldrin	63 - 112%	=<8% RPD
Dieldrin	77 - 119%	=<10% RPD
Endrin	75 - 128%	=<11% RPD
gamma-BHC (Lindane)	60 - 115%	=<8% RPD
Heptachlor	65 - 120%	=<8% RPD

Matrix Spike Recovery

4,4'-DDT	67 - 122%	=<10% RPD
Aldrin	63 - 112%	=<8% RPD
Dieldrin	77 - 119%	=<10% RPD
Endrin	75 - 128%	=<11% RPD
gamma-BHC (Lindane)	60 - 115%	=<8% RPD
Heptachlor	65 - 120%	=<8% RPD

Surrogate Recovery

Decachlorobiphenyl	64 - 130%
TCMX	70 - 122%

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Record Number : 647
Analysis Method : 8151A
Matrix : Soil
Expires: 02/12/2003

Blank Spike Recovery

2,4-Dichlorophenoxyacetic acid	50 - 119%	=<27% RPD
Dalapon	19 - 57%	=<33% RPD
Dicamba	46 - 121%	=<30% RPD
Dinoseb	38 - 146%	=<40% RPD
MCPP	62 - 129%	=<26% RPD
Pentachlorophenol	53 - 134%	=<20% RPD
Silvex (2,4,5-TP)	59 - 127%	=<23% RPD

Surrogate Recovery

2,4-Dichlorophenylacetic acid	48 - 128%

Semivolatile Organics by USEPA Method 8270C

Record Number : 623
Analysis Method : 8270
Matrix : Soil
Preparation Method : 3550B Modified
Expires: 08/01/2002

Blank Spike Recovery

1,2,4-Trichlorobenzene	53 - 139%
1,4-Dichlorobenzene	48 - 133%
2,4-Dinitrotoluene	45 - 140%
2-Chlorophenol	59 - 123%
4-Chloro-3-methylphenol	47 - 149%
4-Nitrophenol	22 - 160%
Acenaphthene	58 - 127%
N-nitroso-di-n-propylamine	38 - 135%
Pentachlorophenol	D - 136%
Phenol	46 - 127%
Pyrene	54 - 136%

Matrix Spike Recovery

1,2,4-Trichlorobenzene	53 - 139%	=<60% RPD
1,4-Dichlorobenzene	48 - 133%	=<60% RPD
2,4-Dinitrotoluene	45 - 140%	=<60% RPD
2-Chlorophenol	59 - 123%	=<60% RPD
4-Chloro-3-methylphenol	47 - 149%	=<60% RPD
4-Nitrophenol	22 - 160%	=<60% RPD
Acenaphthene	58 - 127%	=<60% RPD
N-nitroso-di-n-propylamine	38 - 135%	=<60% RPD
Pentachlorophenol	D - 136%	=<60% RPD
Phenol	46 - 127%	=<60% RPD
Pyrene	54 - 136%	=<60% RPD

Surrogate Recovery

2 - Fluorobiphenyl	51 - 142%
2 - Fluorophenol	37 - 160%
2,4,6 - Tribromophenol	36 - 159%
Nitrobenzene - d5	42 - 154%
p - Terphenyl - d14	44 - 144%
Phenol - d5	43 - 157%

CHAIN OF CUSTODY

Sample Receiving Login

Full Client Name	**CH2M Hill**
Work Order	**108160**
Date Received	**8/23/02**

Individual Sample Information

SAS Lab ID	Sample No.	Client Sample ID	Date Sampled	**% Solid**	Sample+Tin	Final Wt.	Sample Wt.
108160-1	1	PP011802	8/20/02	73.08	10.4427	7.8253	9.7217
108160-2	2	PP011803	8/20/02	76.74	11.1306	8.71	10.4076
108160-3	3	PP011804D	8/20/02	76.90	12.5591	9.8235	11.842
108160-4	4	PP011805	8/20/02	64.68	11.4863	7.6838	10.7655

PERCENT SOLIDS DATA

CH2MHILL
Applied Sciences Group

2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

SUBCONTRACT COST DETAIL

Laboratory Information:
STL
5755 8th ST E
Tacoma, WA 98427
Phone: (253) 922-2374

Sample Batch Information:
Client: Portland Harbor
CH2M HILL Applied Sciences Group Reference: 8005
Invoice: A02-1578
Invoice Date: 08/22/02

Billing Information:
Reference Project Number: 163160.AS.OS

Qty	Description	Trans. Date	Unit Cost	Subtotal
4	ICP-MS (11 metals)-Performed by STL	08/22/2002	$194.00	$776.00
4	Sample Digestion (ICP-MS) Performed by STL	08/22/2002	$10.40	$41.60
4	Pesticides-Performed by STL	08/22/2002	$156.00	$624.00
4	SVOCs--Performed by STL	08/22/2002	$315.00	$1,260.00
4	Chlorinated Herbicides-Performed by STL	08/22/2002	$190.00	$760.00
4	Particle Size--Performed by STL	08/22/2002	$127.00	$508.00

TOTAL SUBCONTRACT AMOUNT: **$3,969.60**

Printed 08/23/2002

CH2MHILL
Applied Sciences Group

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Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

SUBCONTRACT REQUEST

Sample Information

Corvallis Laboratory ID: 800503
Client ID: PP011804D

Sample Matrix: Other
Sample Collection Date: 08/20/2002
Sample Collection Time: 24:00

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
SVOCs	SW 8270	08/27/2002	08/27/2002
chlor-herbicides	SW8151A	09/03/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Sample Information

Corvallis Laboratory ID: 800504
Client ID: PP011805

Sample Matrix: Other
Sample Collection Date: 08/21/2002
Sample Collection Time: 09:45

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
SVOCs	SW 8270	08/27/2002	08/27/2002
chlor-herbicides	SW8151A	09/03/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Relinquished By	Date	Time	Received By	Date	Time
Kathy McKinley	8/23/02	1030	[illegible]	8/26/02	9:[illegible]

CH2MHILL
Applied Sciences Group

2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

New Chain Added 8/26/02

SUBCONTRACT REQUEST

Laboratory Information:
STL
Attn: Sample Receiving
5755 8th ST E
Tacoma, WA 98427
Phone: (253) 922-2374

Sample Batch Information:
Client: Portland Harbor
Batch Code: 8005
Date Received: 08/22/2002
Contact: Kathy McKinley
Hazardous: No

Billing Information:
Reference Project Number: 163160.AS.OS

Report Information:
Reporting Address: CH2M HILL Applied Sciences Group, 2300 NW Walnut Blvd., Corvallis, OR 97330
Attention: Kathy McKinley **Report Due:** 09/03/2002 **QA Level:** 3

Sample Information
Corvallis Laboratory ID: 800501
Client ID: PP011802

Sample Matrix: Other
Sample Collection Date: 08/20/2002
Sample Collection Time: 16:35

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
SVOCs	SW 8270	08/27/2002	08/27/2002
chlor-herbicides	SW8151A	09/03/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Sample Information
Corvallis Laboratory ID: 800502
Client ID: PP011803

Sample Matrix: Other
Sample Collection Date: 08/20/2002
Sample Collection Time: 17:10

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
SVOCs	SW 8270	08/27/2002	08/27/2002
chlor-herbicides	SW8151A	09/03/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Relinquished By	Date	Time	Received By	Date	Time
Kathy McKinley	8/23/02	1035	[illegible]	8/26/02	9AM

CH2MHILL
Applied Sciences Group

2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

SUBCONTRACT COST DETAIL

Laboratory Information:
STL
5755 8th ST E
Tacoma, WA 98427
Phone: (253) 922-2374

Sample Batch Information:
Client: Portland Harbor
CH2M HILL Applied Sciences Group Reference: 8005
Invoice: A02-1578
Invoice Date: 08/22/02

Billing Information:
Reference Project Number: 163160.AS.OS

Qty	Description	Trans. Date	Unit Cost	Subtotal
4	ICP-MS (11 metals)-Performed by STL	08/22/2002	$176.40	$705.60
4	Sample Digestion (ICP-MS) Performed by STL	08/22/2002	$9.45	$37.80
4	Pesticides-Performed by STL	08/22/2002	$141.75	$567.00
4	Chlorinated Herbicides-Performed by STL	08/22/2002	$162.75	$651.00
4	Particle Size--Performed by STL	08/22/2002	$115.50	$462.00

TOTAL SUBCONTRACT AMOUNT: **$2,423.40**

Printed 08/22/2002

CH2MHILL
Applied Sciences Group

2300 NW Walnut Blvd
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97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

SUBCONTRACT REQUEST

Sample Information

Corvallis Laboratory ID: 800503
Client ID: PP011804D

Sample Matrix: Other
Sample Collection Date: 08/21/2002
Sample Collection Time: 24:00

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/03/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Sample Information

Corvallis Laboratory ID: 800504
Client ID: PP011805

Sample Matrix: Other
Sample Collection Date: 08/21/2002
Sample Collection Time: 09:45

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/03/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Relinquished By	Date	Time	Received By	Date	Time
Sayna Kaumann	8/24/02	12:30	K Chesle	8/23	9:37 A

Please [illegible]
Same Control Pilot project.
Please see Katie Dounier or
Tom Bayden.
Report using client ID
5

4.5°C

CH2MHILL
Applied Sciences Group

2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

SUBCONTRACT REQUEST

Laboratory Information:
STL
Attn: Sample Receiving
5755 8th ST E
Tacoma, WA 98427
Phone: (253) 922-2374

Sample Batch Information:
Client: Portland Harbor
Batch Code: 8005
Date Received: 08/22/2002
Contact: Kathy McKinley
Hazardous: No

Billing Information:
Reference Project Number: 163160.AS.OS

Report Information:
Reporting Address: CH2M HILL Applied Sciences Group, 2300 NW Walnut Blvd., Corvallis, OR 97330
Attention: Kathy McKinley **Report Due:** ~~09/03~~/2002 **QA Level:** ~~3~~ 4 + EDD
9/11/02 KM

Sample Information
Corvallis Laboratory ID: 800501
Client ID: PP011802
Sample Matrix: Other
Sample Collection Date: 08/20/2002
Sample Collection Time: 16:35

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/03/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Sample Information
Corvallis Laboratory ID: 800502
Client ID: PP011803
Sample Matrix: Other
Sample Collection Date: 08/20/2002
Sample Collection Time: 17:10

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/03/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Relinquished By	Date	Time	Received By	Date	Time
[illegible]	8/22/02	12:30	[illegible]	8/23	9A

DATA DELIVERABLES

SEMIVOLATILE DATA PACKAGE

SAMPLE DATA

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00453.D Vial: 0
Acq On : 03 Sep 2002 17:46 Operator:
Sample : 108160-1 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 05 07:39:17 2002 Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 07:39:10 2002
Response via : Initial Calibration
DataAcq Meth :

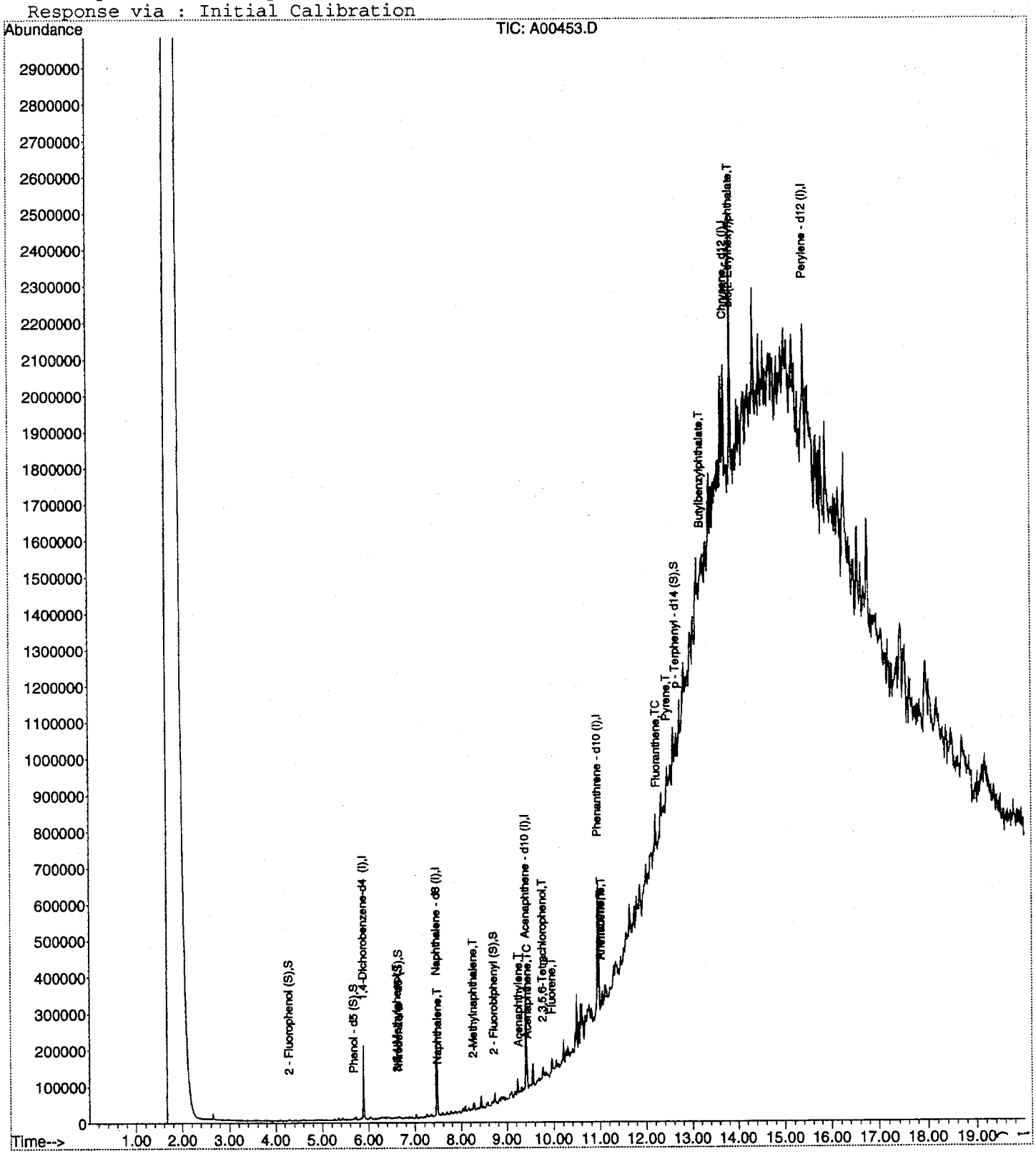
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.89	150	56052	1000.00 ul/l	0.03
22) Naphthalene - d8 (I)	7.47	136	164015	1000.00 ug/L	0.04
38) Acenaphthene - d10 (I)	9.41	162	126146	1000.00 ug/L	0.04
62) Phenanthrene - d10 (I)	10.96	188	221527	1000.00 ug/L	0.05
80) Chrysene - d12 (I)	13.74	240	258206	1000.00 ul/l	0.07
86) Perylene - d12 (I)	15.44	264	277185	1000.00 ug/L	0.10
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.30	112	1375	33.01 ug/L	0.04
7) Phenol - d5 (S)	5.69	99	2072m	41.49 ug/L	0.00
23) Nitrobenzene - d5 (S)	6.66	82	1346	25.61 ug/L	0.03
43) 2 - Fluorobiphenyl (S)	8.72	172	4628	26.91 ug/L	0.04
65) 2,4,6 - Tribromophenol (S)	10.27	330	2273	46.02 ug/L	0.05
79) p - Terphenyl - d14 (S)	12.65	244	15290	61.60 ug/L	0.06
Target Compounds					Qvalue
18) 3-&4-Methylphenol	6.63	108	950m	25.51 ug/L	
32) Naphthalene	7.49	128	3637	19.12 ug/L	41
36) 2-Methylnaphthalene	8.28	141	2443m	18.90 ug/L	
48) Acenaphthylene	9.26	152	3142m	13.20 ug/L	
51) Acenaphthene	9.45	153	2157	13.52 ug/L	95
57) 2,3,5,6-Tetrachlorophenol	9.78	232	391	8.45 ul/l	91
59) Fluorene	9.98	166	3634m	22.41 ug/L	
71) Phenanthrene	11.02	178	3392	12.68 ug/L	82
72) Anthracene	11.02	178	4420	17.09 ug/L	89
76) Fluoranthene	12.23	202	35472	135.50 ug/L	89
77) Pyrene	12.46	202	38140	144.57 ug/L	51
81) Butylbenzylphthalate	13.22	149	48354	218.72 ug/L	81
85) bis(2-Ethylhexyl)phthalate	13.88	149	582328m	1530.19 ug/L	

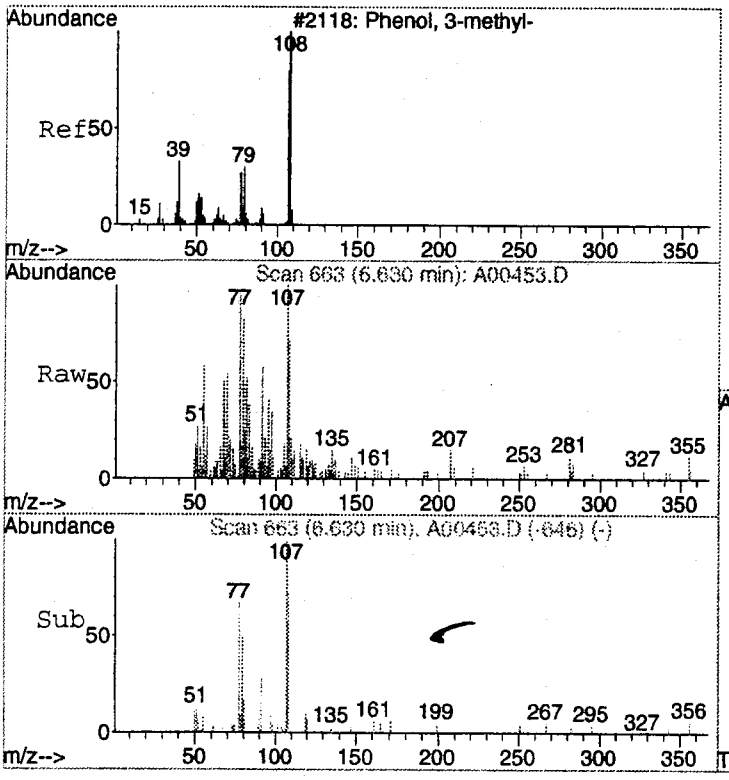
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00453.D Vial: 0
Acq On : 03 Sep 2002 17:46 Operator:
Sample : 108160-1 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 5 7:42 2002 Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 07:39:10 2002
Response via : Initial Calibration

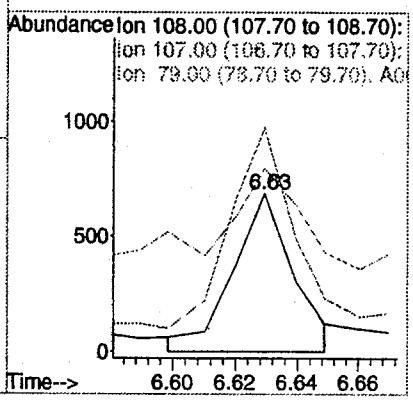


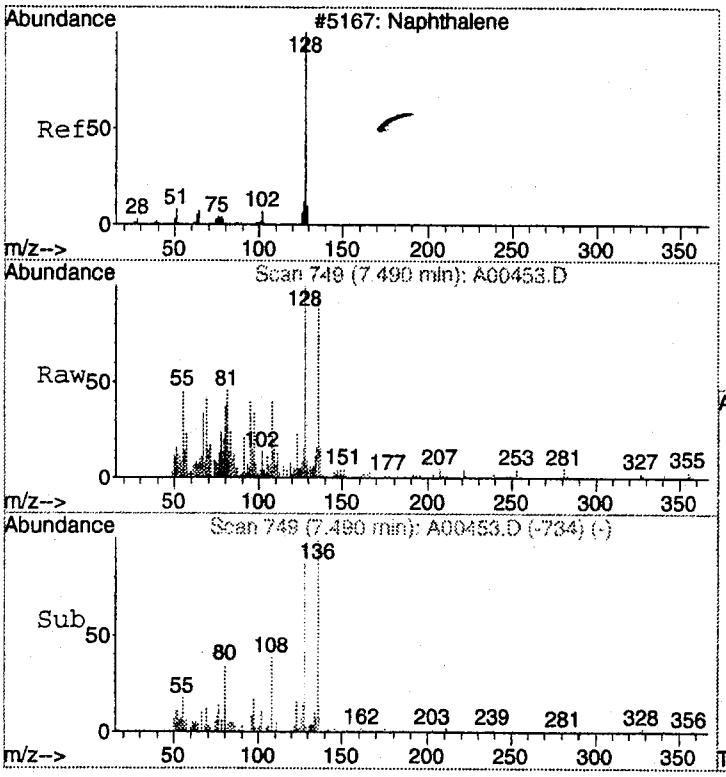


#18
3-&4-Methylphenol
Concen: 25.51 ug/L m
RT: 6.63 min Scan# 663
Delta R.T. 0.07 min
Lab File: A00453.D
Acq: 03 Sep 2002 17:46

Tgt Ion:108 Resp: 950

Ion	Ratio	Lower	Upper
108	100		
107	132.4	85.7	165.7
79	104.5	18.9	98.9#

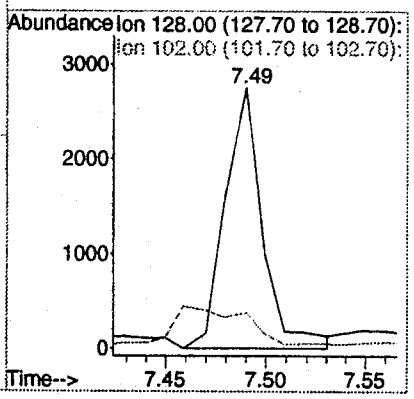


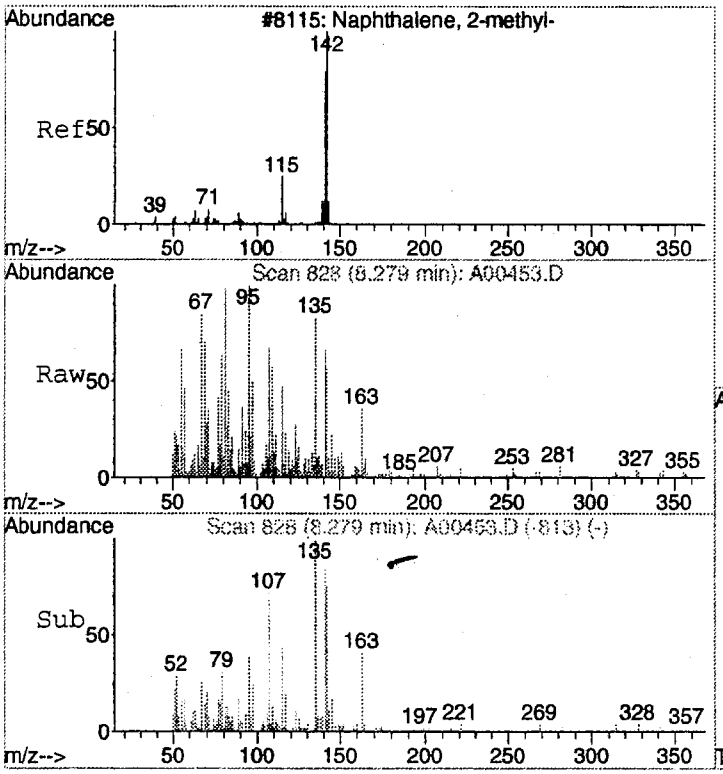


#32
Naphthalene
Concen: 19.12 ug/L
RT: 7.49 min Scan# 749
Delta R.T. 0.05 min
Lab File: A00453.D
Acq: 03 Sep 2002 17:46

Tgt Ion:128 Resp: 3637

Ion	Ratio	Lower	Upper
128	100		
102	27.4	0.0	47.0

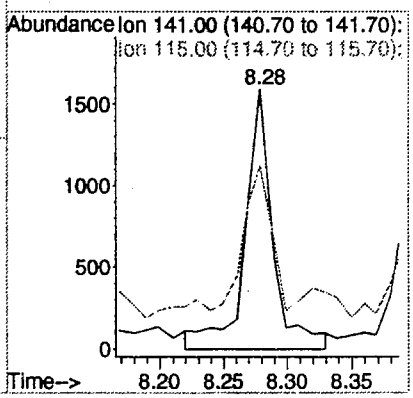


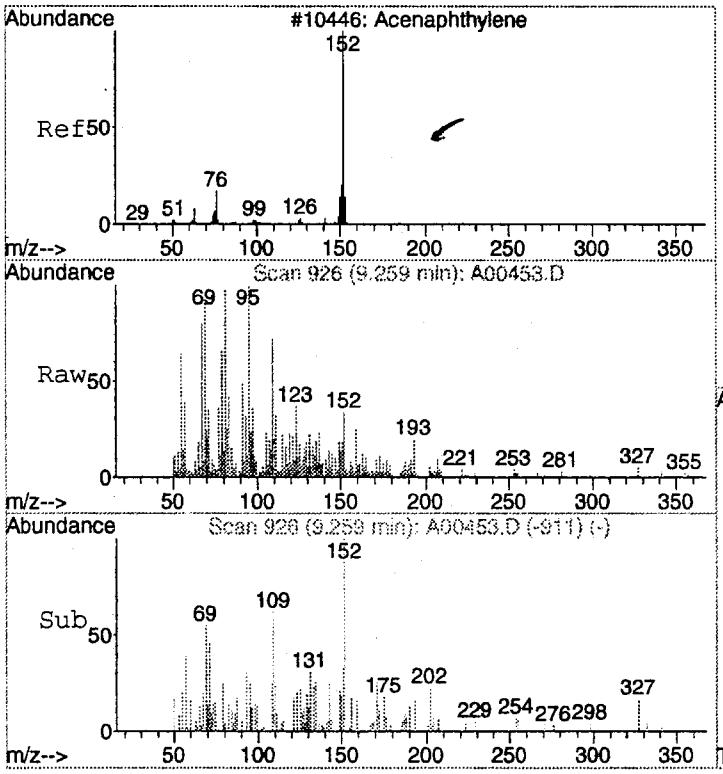


#36
2-Methylnaphthalene
Concen: 18.90 ug/L m
RT: 8.28 min Scan# 828
Delta R.T. 0.05 min
Lab File: A00453.D
Acq: 03 Sep 2002 17:46

Tgt Ion:141 Resp: 2443

Ion	Ratio	Lower	Upper
141	100		
115	79.9	0.0	71.8#

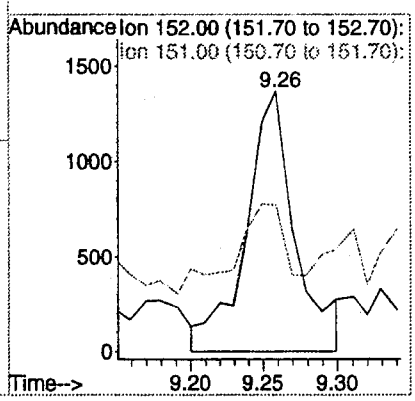


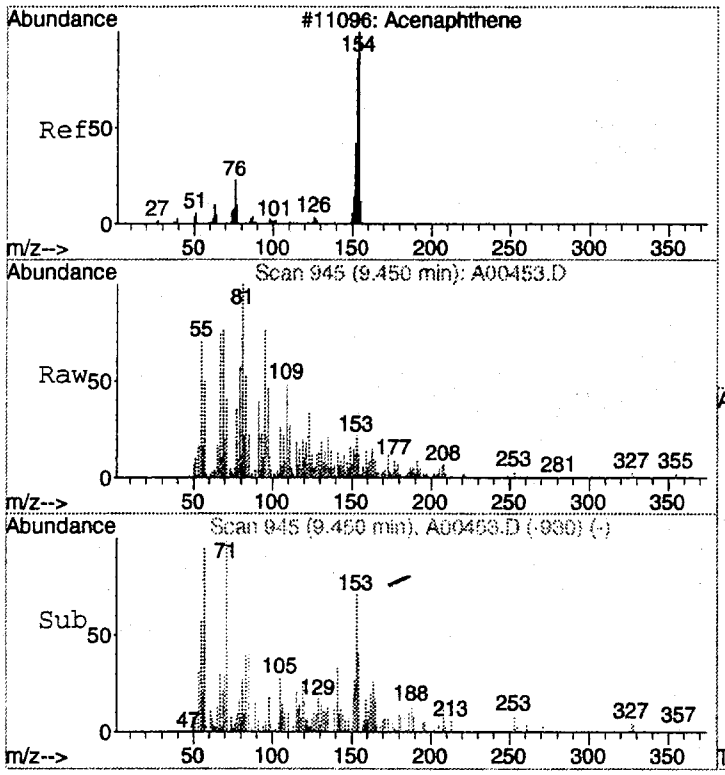


#48
Acenaphthylene
Concen: 13.20 ug/L m
RT: 9.26 min Scan# 926
Delta R.T. 0.05 min
Lab File: A00453.D
Acq: 03 Sep 2002 17:46

Tgt Ion:152 Resp: 3142

Ion	Ratio	Lower	Upper
152	100		
151	44.8	0.0	59.7

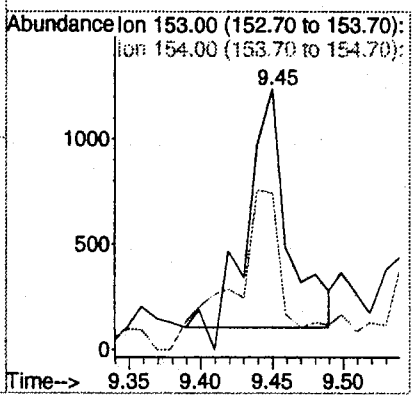


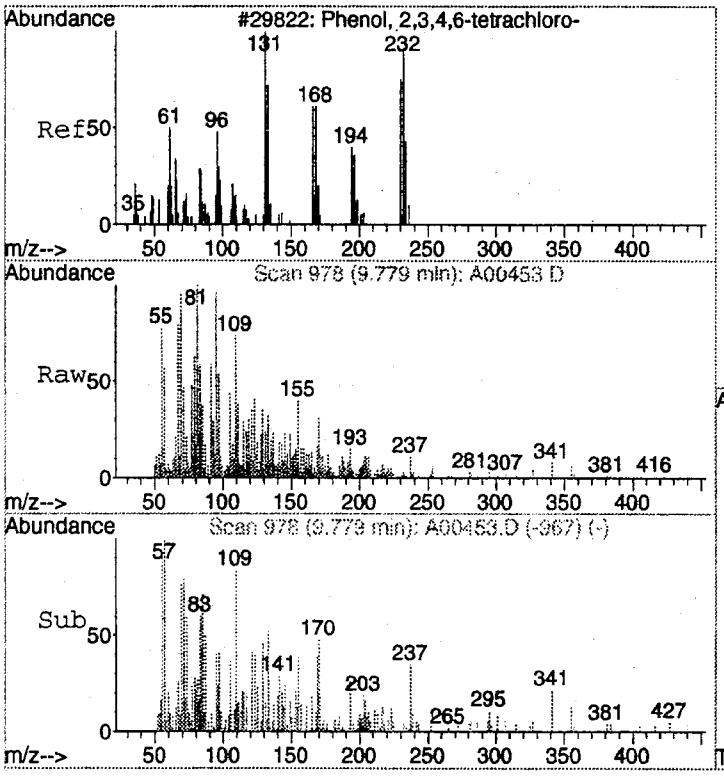


#51
Acenaphthene
Concen: 13.52 ug/L
RT: 9.45 min Scan# 945
Delta R.T. 0.05 min
Lab File: A00453.D
Acq: 03 Sep 2002 17:46

Tgt Ion:153 Resp: 2157

Ion	Ratio	Lower	Upper
153	100		
154	88.1	43.3	123.3

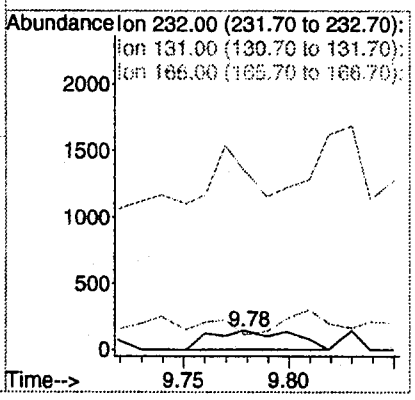


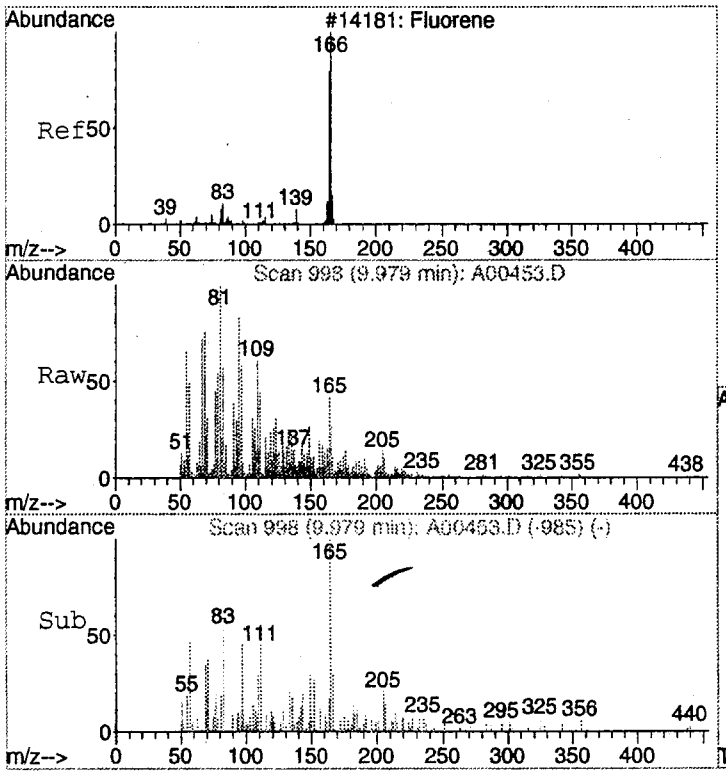


#57
2,3,5,6-Tetrachlorophenol
Concen: 8.45 ul/l
RT: 9.78 min Scan# 978
Delta R.T. 0.01 min
Lab File: A00453.D
Acq: 03 Sep 2002 17:46

Tgt Ion:232 Resp: 391

Ion	Ratio	Lower	Upper
232	100		
131	116.1	69.7	149.7
166	56.0	26.9	106.9

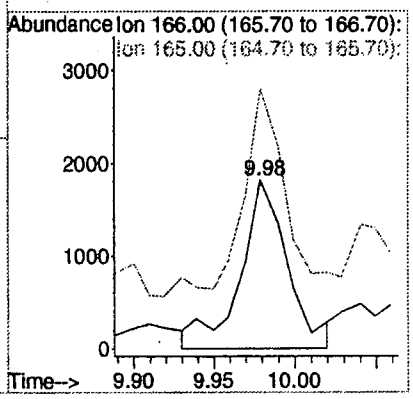


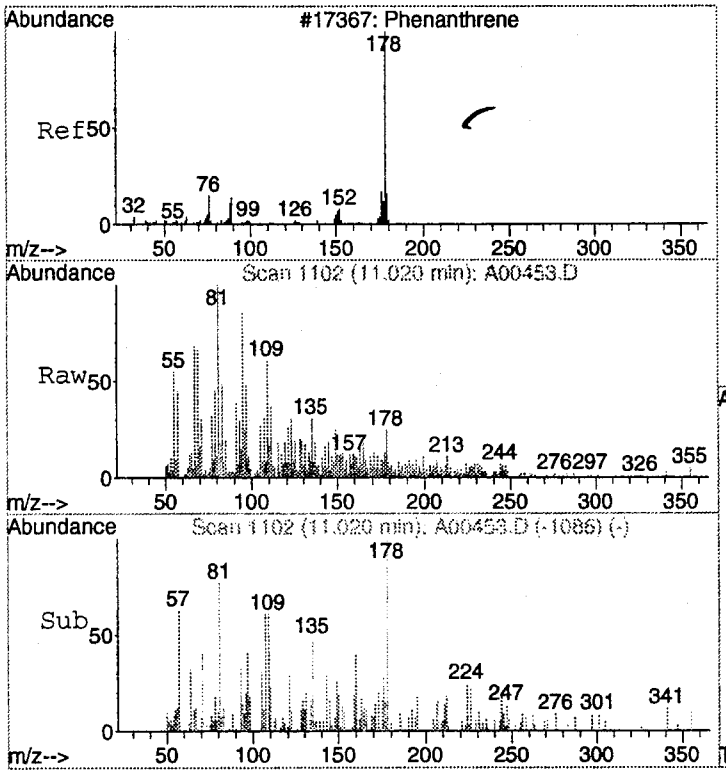


#59
Fluorene
Concen: 22.41 ug/L m
RT: 9.98 min Scan# 998
Delta R.T. 0.03 min
Lab File: A00453.D
Acq: 03 Sep 2002 17:46

Tgt Ion:166 Resp: 3634

Ion	Ratio	Lower	Upper
166	100		
165	143.3	40.4	120.4#

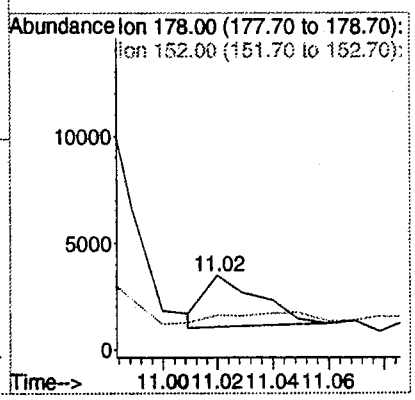


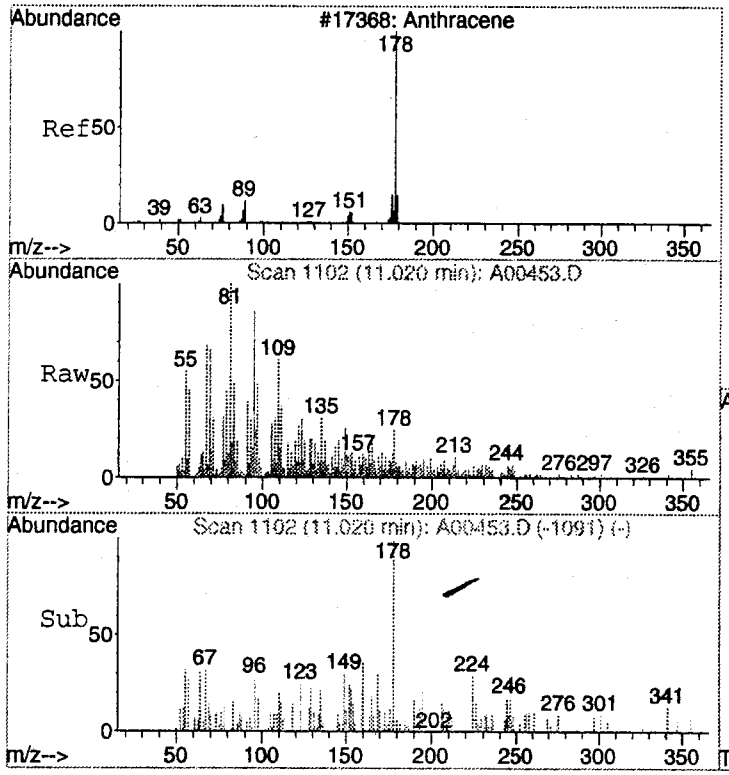


#71
Phenanthrene
Concen: 12.68 ug/L
RT: 11.02 min Scan# 1102
Delta R.T. 0.06 min
Lab File: A00453.D
Acq: 03 Sep 2002 17:46

Tgt Ion:178 Resp: 3392

Ion	Ratio	Lower	Upper
178	100		
152	28.9	0.0	60.6

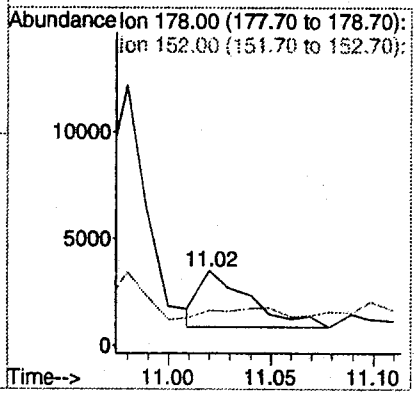


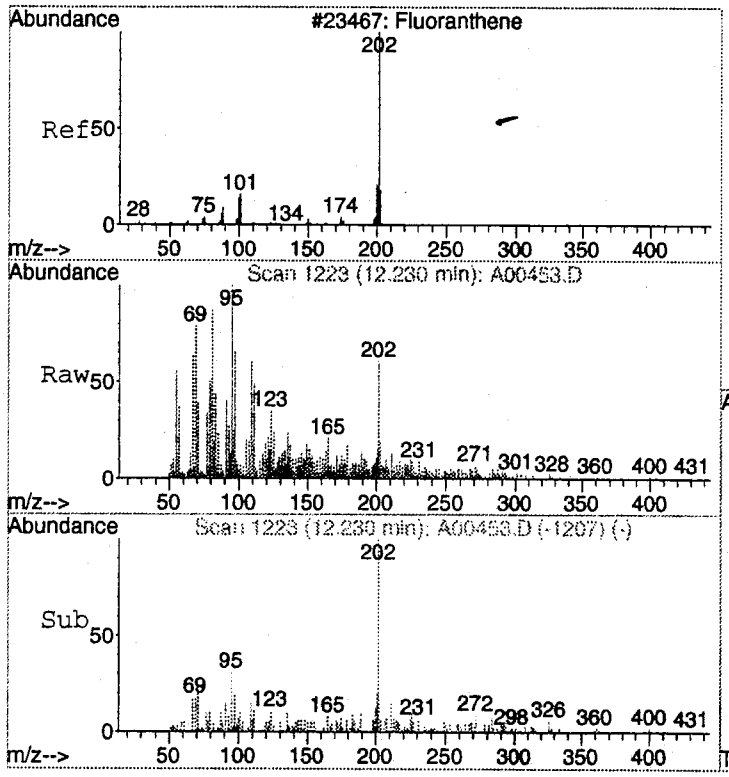


#72
Anthracene
Concen: 17.09 ug/L
RT: 11.02 min Scan# 1102
Delta R.T. 0.01 min
Lab File: A00453.D
Acq: 03 Sep 2002 17:46

Tgt Ion:178 Resp: 4420

Ion	Ratio	Lower	Upper
178	100		
152	23.1	0.0	68.8

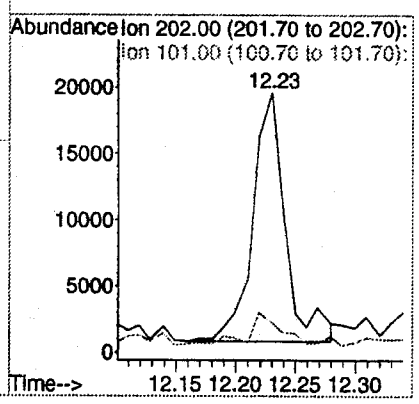


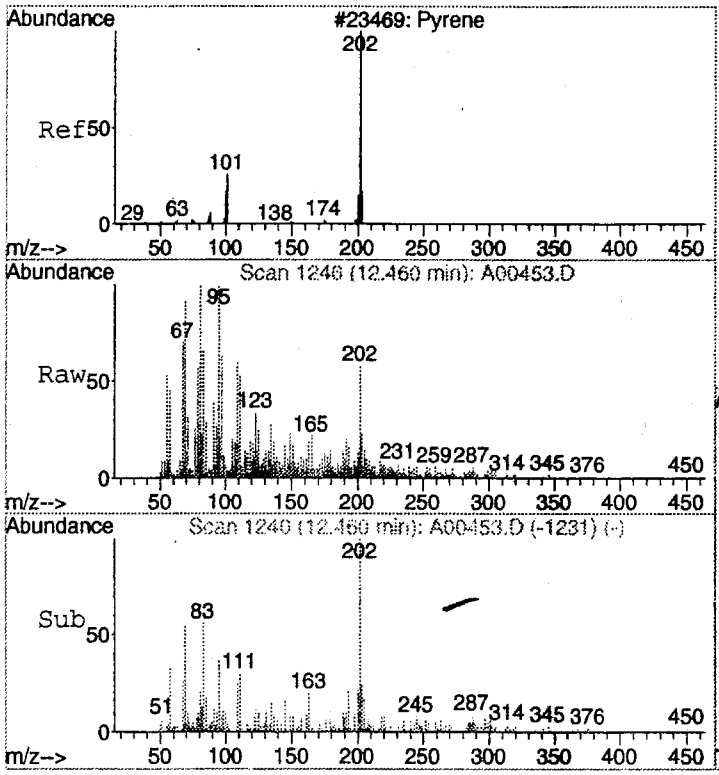


#76
Fluoranthene
Concen: 135.50 ug/L
RT: 12.23 min Scan# 1223
Delta R.T. 0.06 min
Lab File: A00453.D
Acq: 03 Sep 2002 17:46

Tgt Ion:202 Resp: 35472

Ion	Ratio	Lower	Upper
202	100		
101	11.7	0.0	56.4

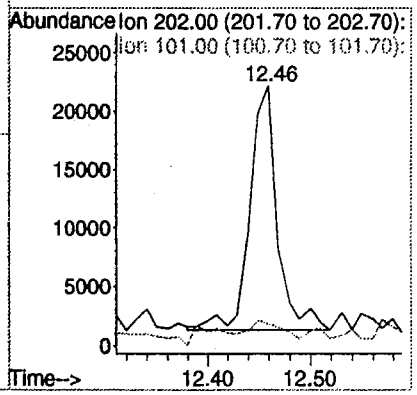


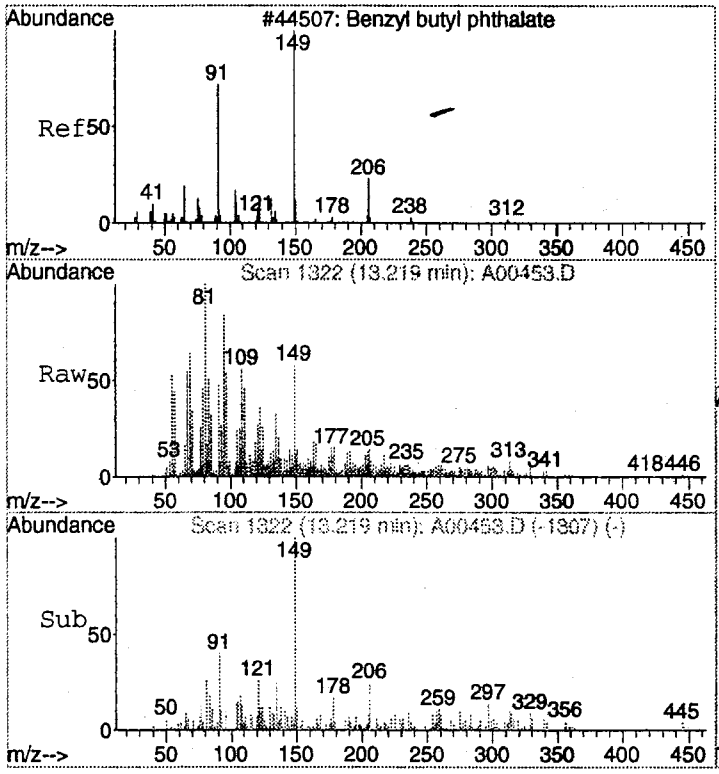


#77
Pyrene
Concen: 144.57 ug/L
RT: 12.46 min Scan# 1246
Delta R.T. 0.05 min
Lab File: A00453.D
Acq: 03 Sep 2002 17:46

Tgt Ion:202 Resp: 38140

Ion	Ratio	Lower	Upper
202	100		
101	29.0	0.0	50.6

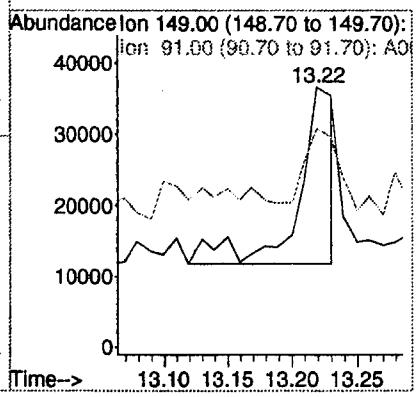


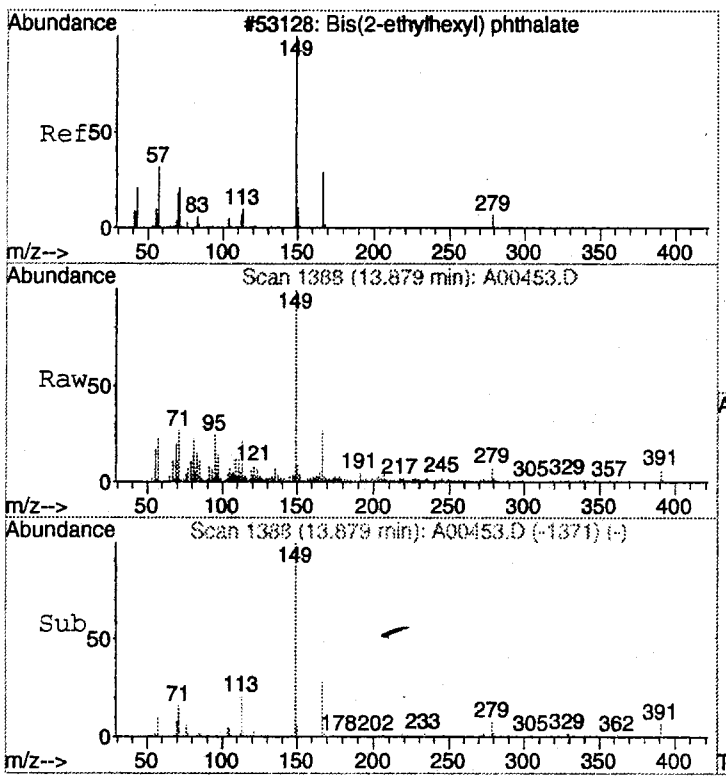


#81
Butylbenzylphthalate
Concen: 218.72 ug/L
RT: 13.22 min Scan# 1322
Delta R.T. 0.05 min
Lab File: A00453.D
Acq: 03 Sep 2002 17:46

Tgt Ion:149 Resp: 48354

Ion	Ratio	Lower	Upper
149	100		
91	88.4	32.2	112.2

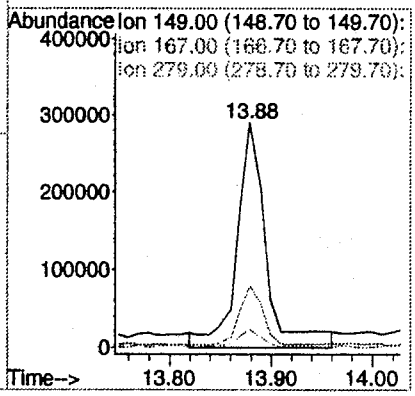




#85
bis(2-Ethylhexyl)phthalate
Concen: 1530.19 ug/L m
RT: 13.88 min Scan# 1388
Delta R.T. 0.07 min
Lab File: A00453.D
Acq: 03 Sep 2002 17:46

Tgt Ion:149 Resp: 582328

Ion	Ratio	Lower	Upper
149	100		
167	0.0	0.0	68.8
279	0.0	0.0	46.8



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00454.D Vial: 0
Acq On : 03 Sep 2002 18:12 Operator:
Sample : 108160-2 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 05 07:44:14 2002 Quant Results File: SV5-082902.RES

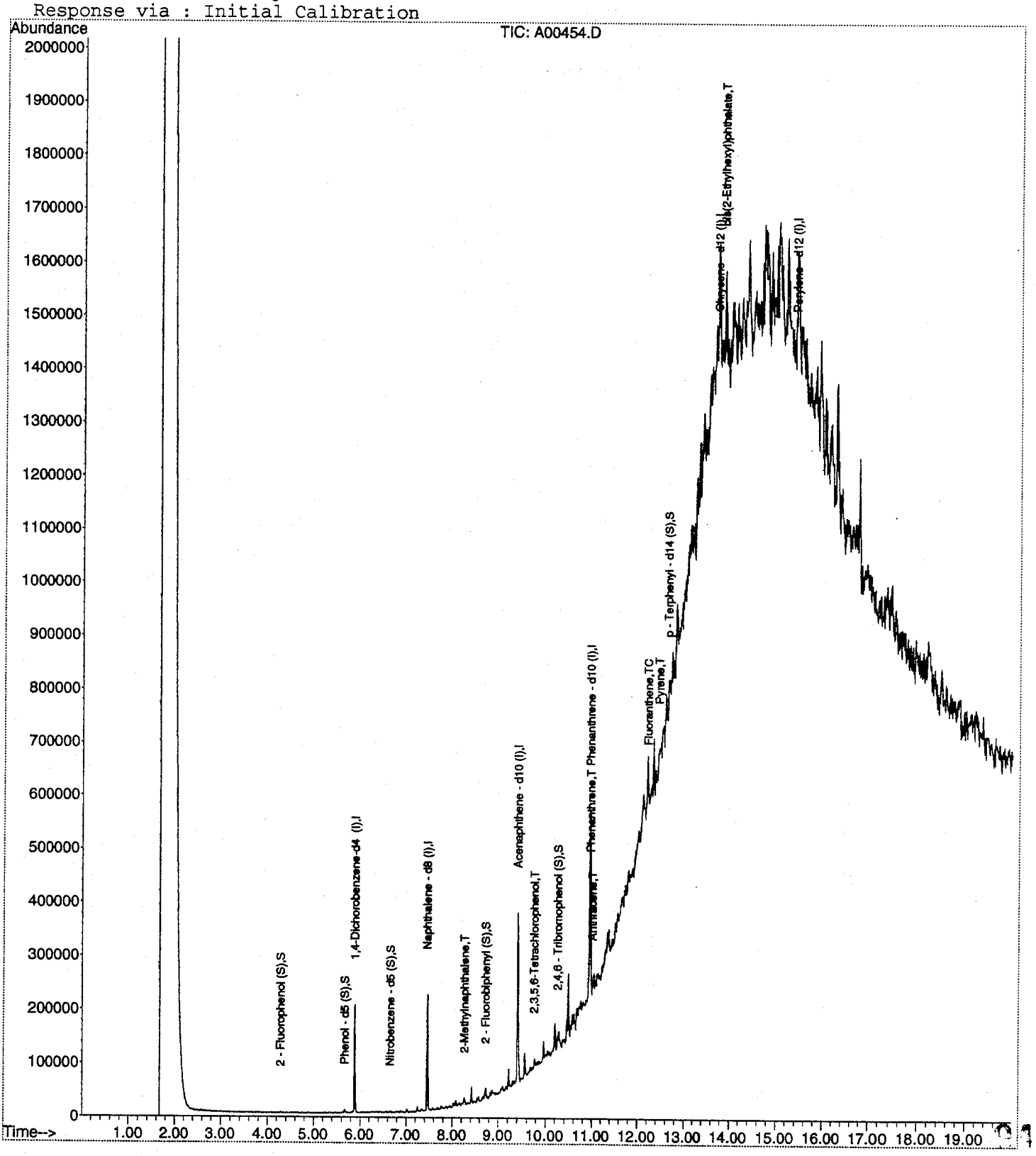
Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 07:44:08 2002
Response via : Initial Calibration
DataAcq Meth :

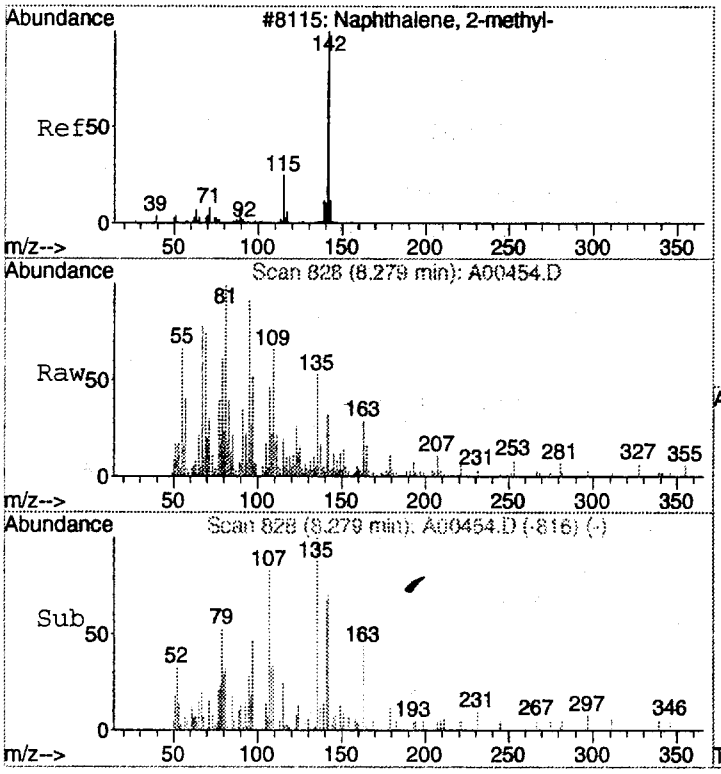
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.89	150	55755	1000.00	ul/l	0.00
22) Naphthalene - d8 (I)	7.46	136	149112	1000.00	ug/L	0.00
38) Acenaphthene - d10 (I)	9.41	162	122381	1000.00	ug/L	0.00
62) Phenanthrene - d10 (I)	10.96	188	221773	1000.00	ug/L	0.00
80) Chrysene - d12 (I)	13.73	240	250269	1000.00	ul/l	0.00
86) Perylene - d12 (I)	15.43	264	306653	1000.00	ug/L	0.00
System Monitoring Compounds						
4) 2 - Fluorophenol (S)	4.29	112	1220	29.44	ug/L	0.00
7) Phenol - d5 (S)	5.68	99	1828	36.80	ug/L	0.00
23) Nitrobenzene - d5 (S)	6.66	82	1421	29.74	ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.72	172	4842	29.02	ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.27	330	2118	42.84	ug/L	0.00
79) p - Terphenyl - d14 (S)	12.65	244	13253	53.34	ug/L	0.00
Target Compounds						Qvalue
36) 2-Methylnaphthalene	8.28	141	961m	8.18	ug/L	
57) 2,3,5,6-Tetrachlorophenol	9.78	232	426	9.49	ul/l	77
71) Phenanthrene	10.98	178	4359m	16.28	ug/L	
72) Anthracene	11.02	178	2135	8.25	ug/L	56
76) Fluoranthene	12.23	202	15399m	58.76	ug/L	
77) Pyrene	12.45	202	13875	52.54	ug/L	40
85) bis(2-Ethylhexyl)phthalate	13.87	149	88013	238.61	ug/L	70

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00454.D Vial: 0
Acq On : 03 Sep 2002 18:12 Operator:
Sample : 108160-2 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 5 7:46 2002 Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 07:44:08 2002
Response via : Initial Calibration

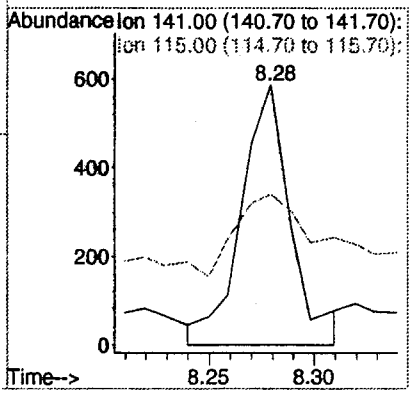


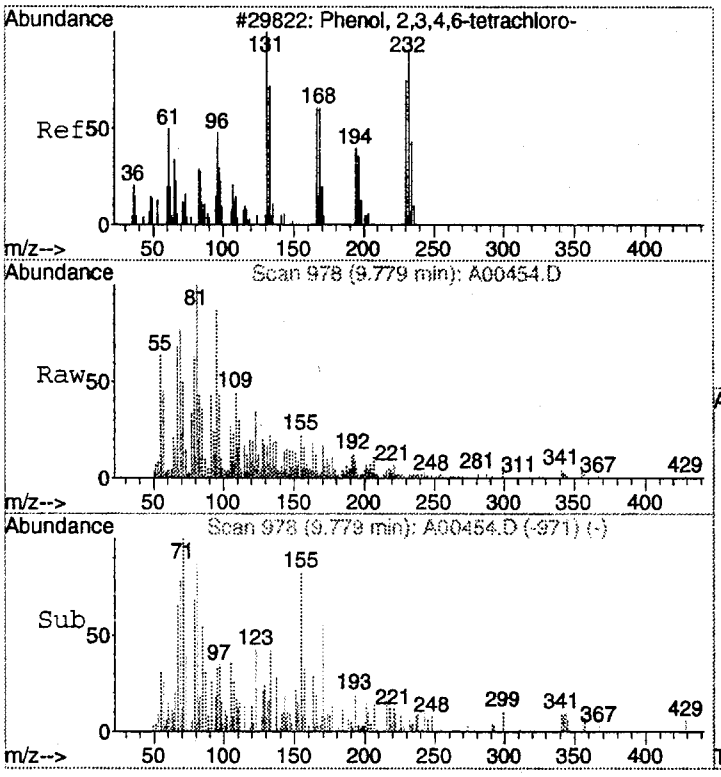


#36
2-Methylnaphthalene
Concen: 8.18 ug/L m
RT: 8.28 min Scan# 828
Delta R.T. 0.02 min
Lab File: A00454.D
Acq: 03 Sep 2002 18:12

Tgt Ion:141 Resp: 961

Ion	Ratio	Lower	Upper
141	100		
115	0.0	0.0	71.8

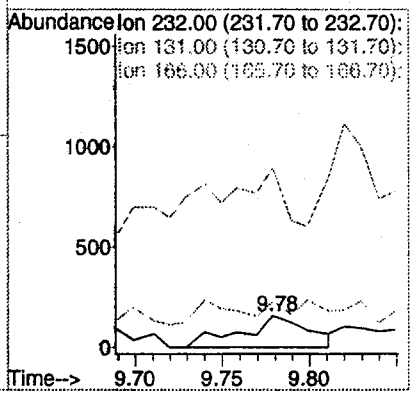


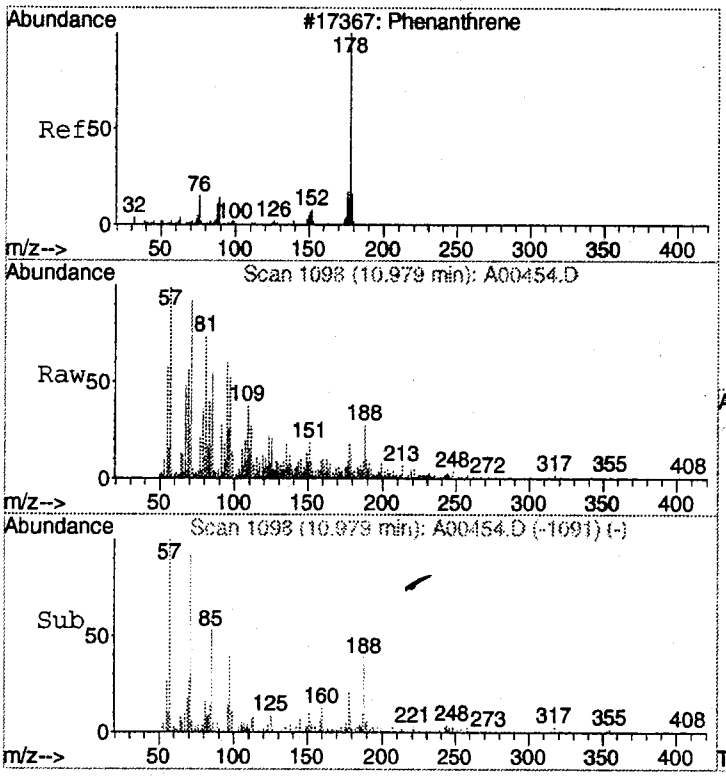


#57
2,3,5,6-Tetrachlorophenol
Concen: 9.49 ul/l
RT: 9.78 min Scan# 978
Delta R.T. -0.03 min
Lab File: A00454.D
Acq: 03 Sep 2002 18:12

Tgt Ion:232 Resp: 426

Ion	Ratio	Lower	Upper
232	100		
131	93.7	69.7	149.7
166	38.0	26.9	106.9

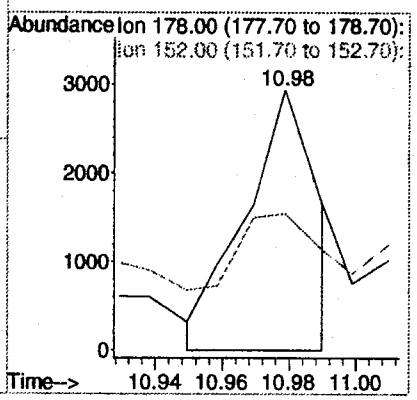


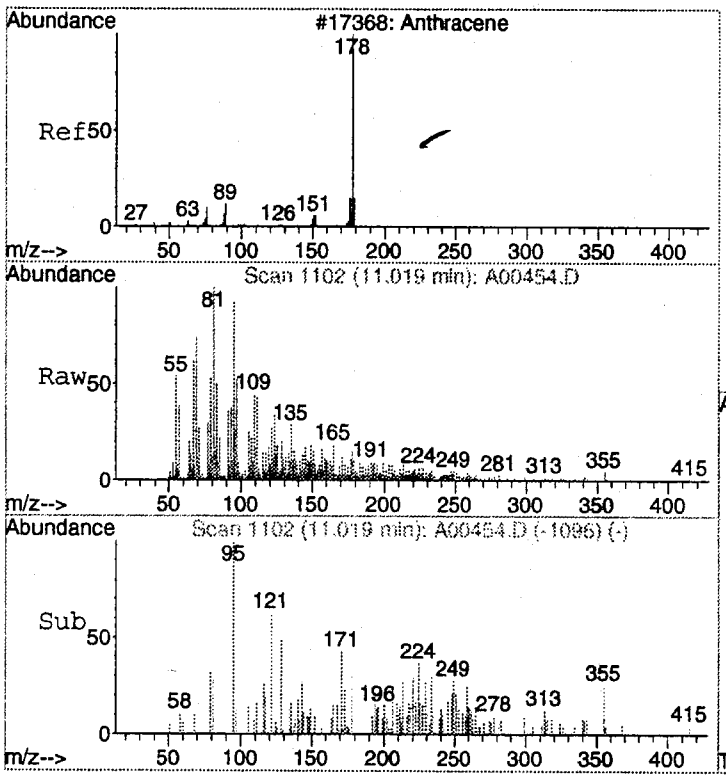


#71
Phenanthrene
Concen: 16.28 ug/L m
RT: 10.98 min Scan# 1098
Delta R.T. -0.03 min
Lab File: A00454.D
Acq: 03 Sep 2002 18:12

Tgt Ion:178 Resp: 4359

Ion	Ratio	Lower	Upper
178	100		
152	28.5	0.0	60.6

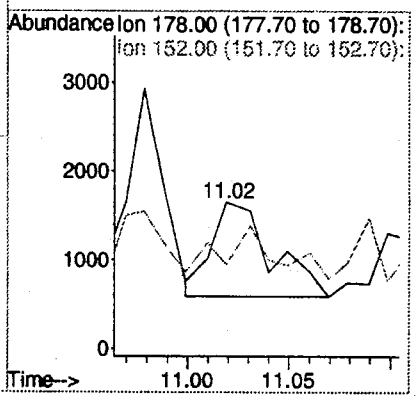


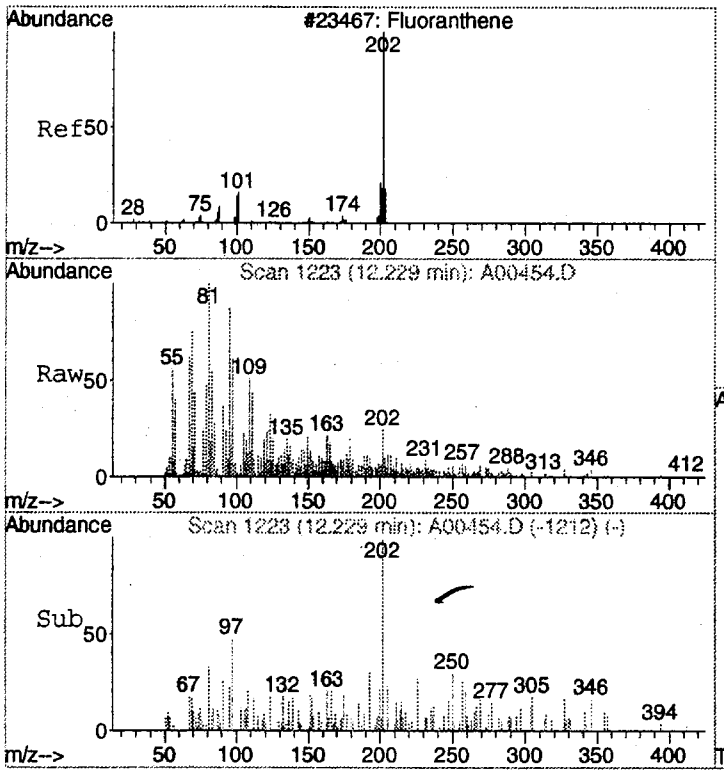


#72
Anthracene
Concen: 8.25 ug/L
RT: 11.02 min Scan# 1102
Delta R.T. -0.04 min
Lab File: A00454.D
Acq: 03 Sep 2002 18:12

Tgt Ion:178 Resp: 2135

Ion	Ratio	Lower	Upper
178	100		
152	52.1	0.0	68.8

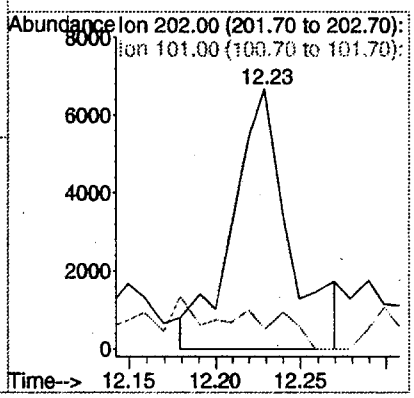


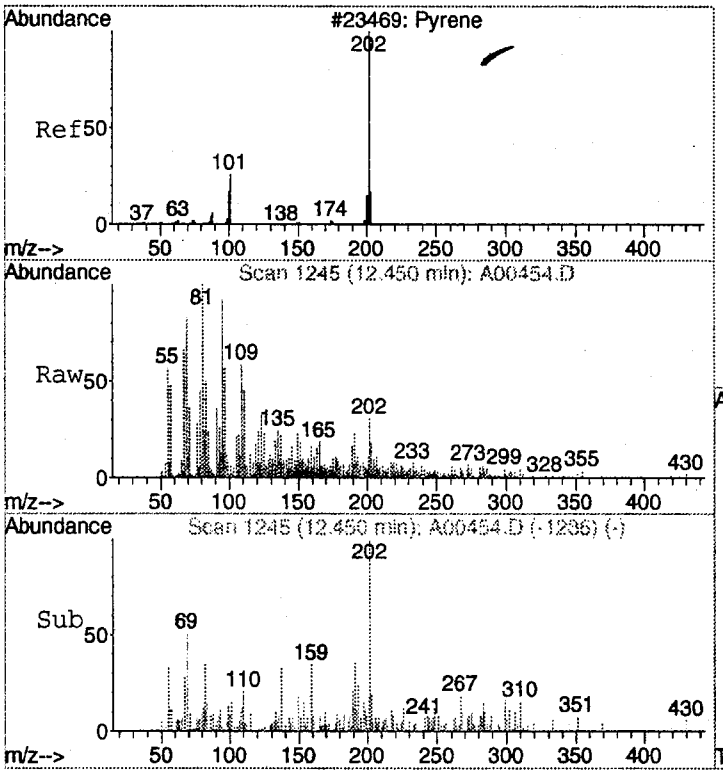


#76
Fluoranthene
Concen: 58.76 ug/L m
RT: 12.23 min Scan# 1223
Delta R.T. 0.01 min
Lab File: A00454.D
Acq: 03 Sep 2002 18:12

Tgt Ion:202 Resp: 15399

Ion	Ratio	Lower	Upper
202	100		
101	0.0	0.0	56.4

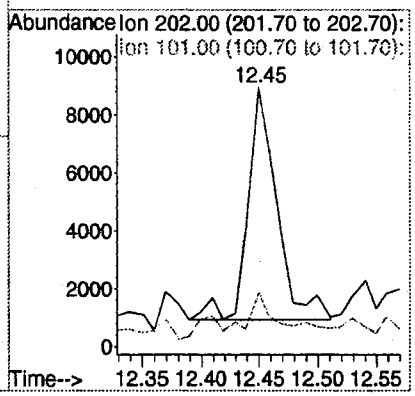


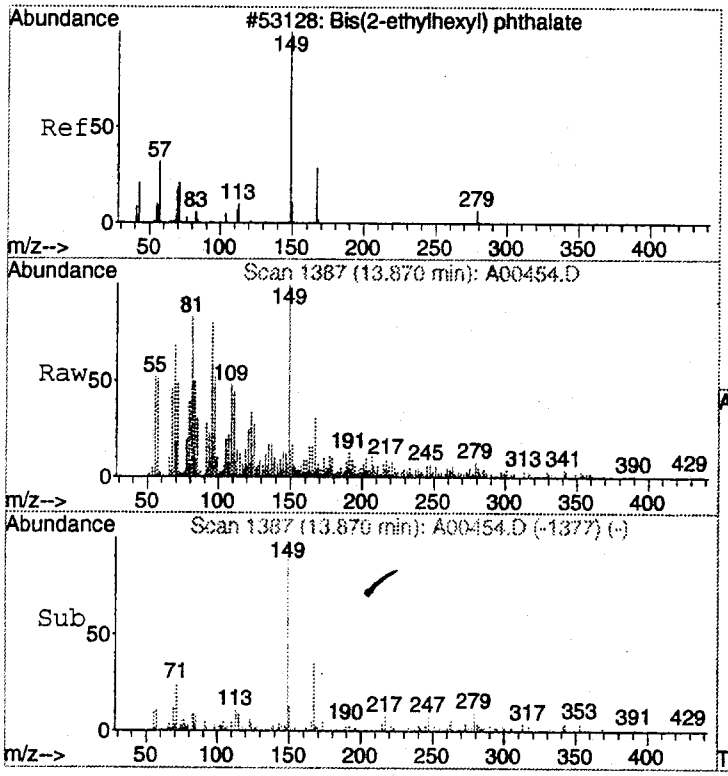


#77
Pyrene
Concen: 52.54 ug/L
RT: 12.45 min Scan# 1245
Delta R.T. -0.01 min
Lab File: A00454.D
Acq: 03 Sep 2002 18:12

Tgt Ion:202 Resp: 13875

Ion	Ratio	Lower	Upper
202	100		
101	33.2	0.0	50.6

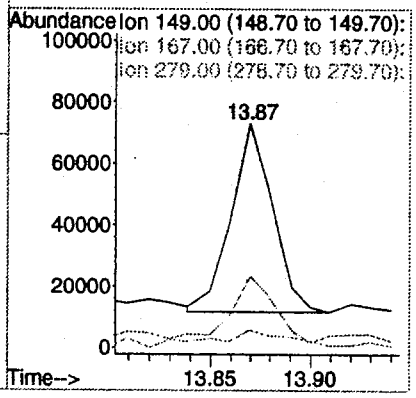




#85
bis(2-Ethylhexyl)phthalate
Concen: 238.61 ug/L
RT: 13.87 min Scan# 1387
Delta R.T. -0.00 min
Lab File: A00454.D
Acq: 03 Sep 2002 18:12

Tgt Ion:149 Resp: 88013

Ion	Ratio	Lower	Upper
149	100		
167	44.1	0.0	68.8
279	18.7	0.0	46.8



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Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00455.D Vial: 0
Acq On : 03 Sep 2002 18:38 Operator:
Sample : 108160-3 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 05 07:47:37 2002 Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 07:44:08 2002
Response via : Initial Calibration
DataAcq Meth :

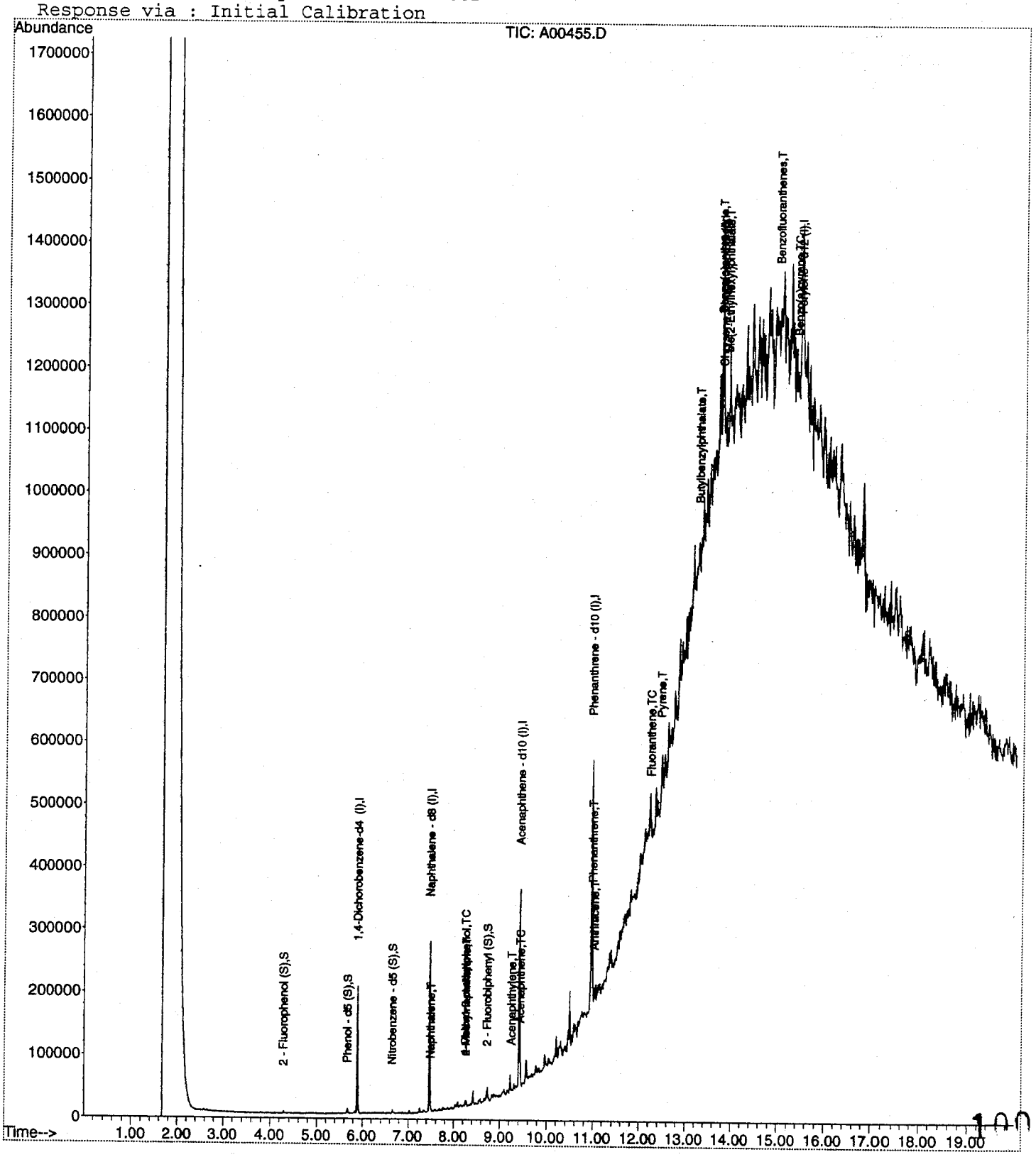
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.89	150	58822	1000.00 ul/l	0.00
22) Naphthalene - d8 (I)	7.47	136	155609	1000.00 ug/L	0.01
38) Acenaphthene - d10 (I)	9.42	162	119959	1000.00 ug/L	0.01
62) Phenanthrene - d10 (I)	10.96	188	228076	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.74	240	253599	1000.00 ul/l	0.01
86) Perylene - d12 (I)	15.44	264	309577	1000.00 ug/L	0.01
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.29	112	1639	37.49 ug/L	0.00
7) Phenol - d5 (S)	5.68	99	2639	50.35 ug/L	0.00
23) Nitrobenzene - d5 (S)	6.66	82	1983	39.77 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.72	172	5762	35.24 ug/L	0.01
65) 2,4,6 - Tribromophenol (S)	10.27	330	2419	47.57 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.66	244	13243	51.82 ug/L	0.00
Target Compounds					Qvalue
32) Naphthalene	7.49	128	1102m	6.11 ug/L	
35) 4-Chloro-3-methylphenol	8.27	107	1308	19.33 ug/L	94
36) 2-Methylnaphthalene	8.28	141	923	7.53 ug/L	37
48) Acenaphthylene	9.26	152	1292	5.71 ug/L	26
51) Acenaphthene	9.45	153	1454	9.58 ug/L	82
71) Phenanthrene	10.98	178	23267m	84.48 ug/L	
72) Anthracene	11.03	178	4481	16.83 ug/L	90
76) Fluoranthene	12.23	202	38463	142.71 ug/L	93
77) Pyrene	12.45	202	38856	143.06 ug/L	84
81) Butylbenzylphthalate	13.25	149	18756	86.38 ug/L	78
82) Benzo(a)anthracene	13.72	228	14531	48.61 ug/L	97
84) Chrysene	13.76	228	17606m	61.97 ug/L	
85) bis(2-Ethylhexyl)phthalate	13.87	149	70786	189.38 ug/L	94
88) Benzofluoranthenes	14.96	252	30664m	81.99 ug/L	
89) Benzo(a)pyrene	15.36	252	29063m	84.28 ug/L	

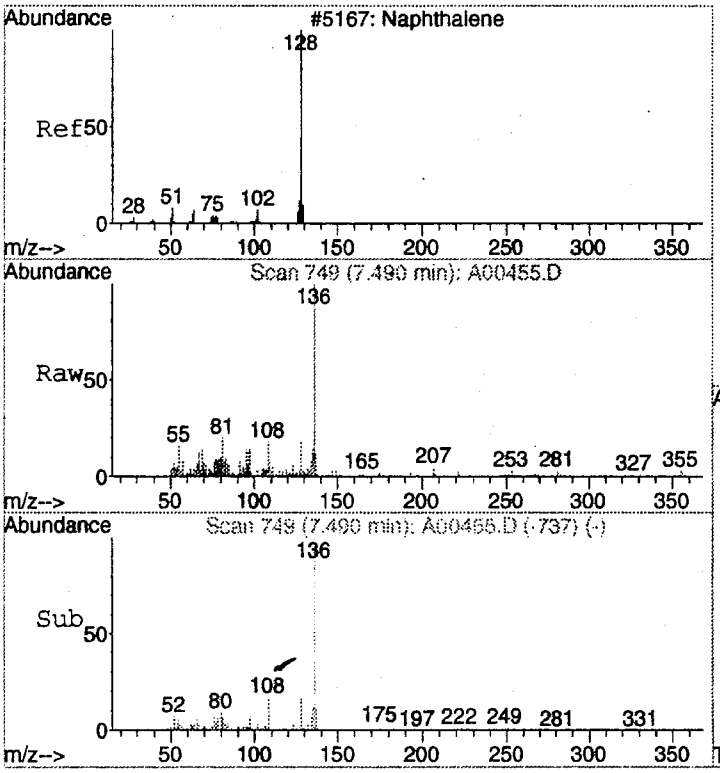
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00455.D Vial: 0
Acq On : 03 Sep 2002 18:38 Operator:
Sample : 108160-3 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 5 7:50 2002 Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 07:44:08 2002
Response via : Initial Calibration

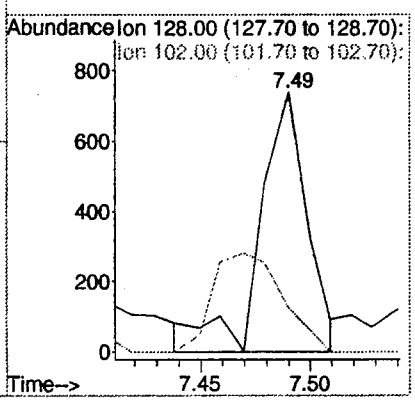


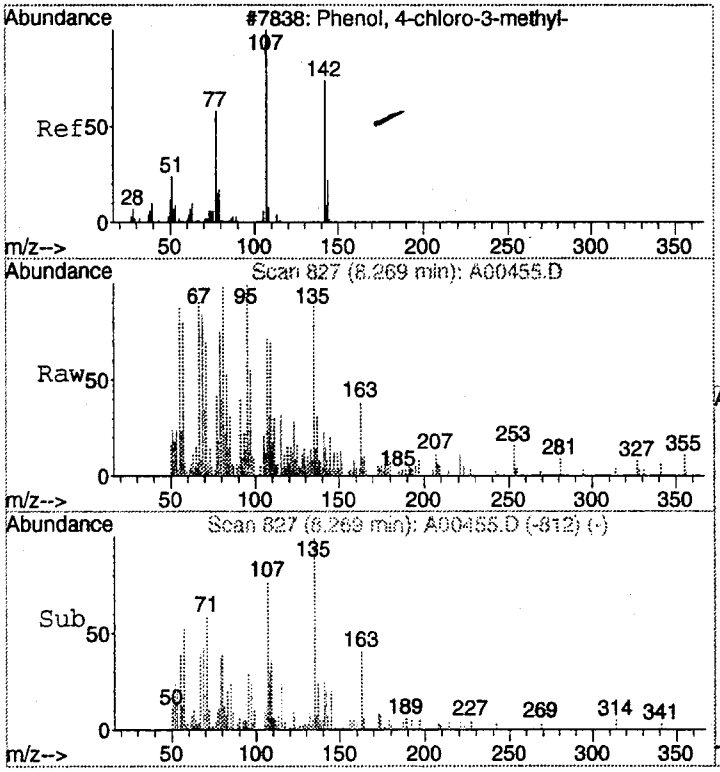


#32
Naphthalene
Concen: 6.11 ug/L m
RT: 7.49 min Scan# 749
Delta R.T. 0.02 min
Lab File: A00455.D
Acq: 03 Sep 2002 18:38

Tgt Ion:128 Resp: 1102

Ion	Ratio	Lower	Upper
128	100		
102	56.7	0.0	47.0#

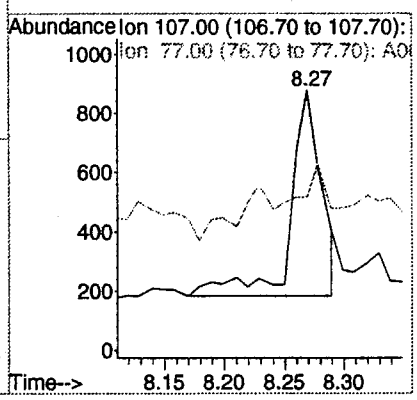


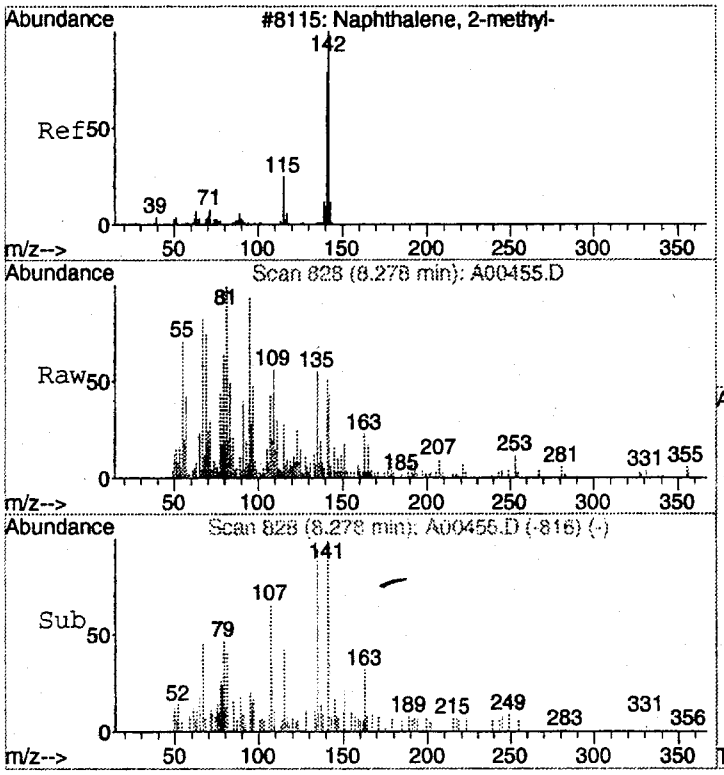


#35
4-Chloro-3-methylphenol
Concen: 19.33 ug/L
RT: 8.27 min Scan# 827
Delta R.T. 0.05 min
Lab File: A00455.D
Acq: 03 Sep 2002 18:38

Tgt Ion:107 Resp: 1308

Ion	Ratio	Lower	Upper
107	100		
77	62.8	18.0	98.0

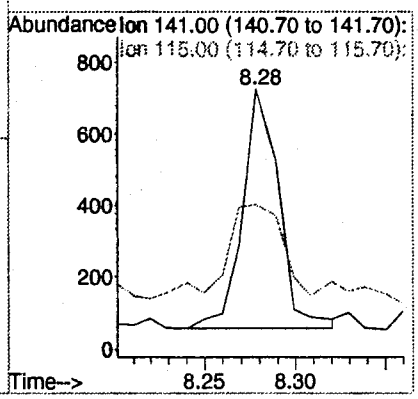


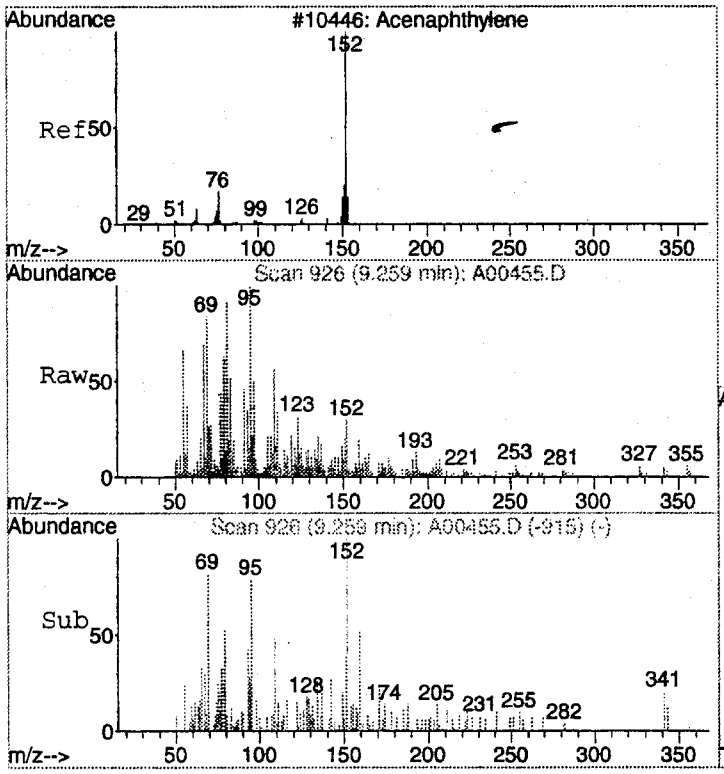


#36
2-Methylnaphthalene
Concen: 7.53 ug/L
RT: 8.28 min Scan# 828
Delta R.T. 0.02 min
Lab File: A00455.D
Acq: 03 Sep 2002 18:38

Tgt Ion:141 Resp: 923

Ion	Ratio	Lower	Upper
141	100		
115	66.8	0.0	71.8

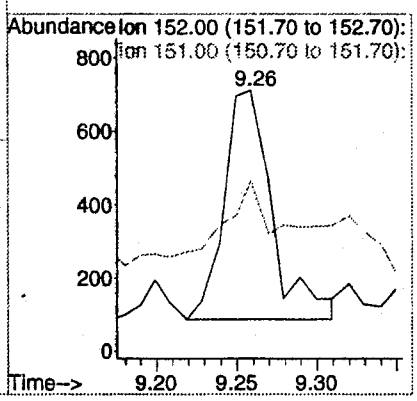


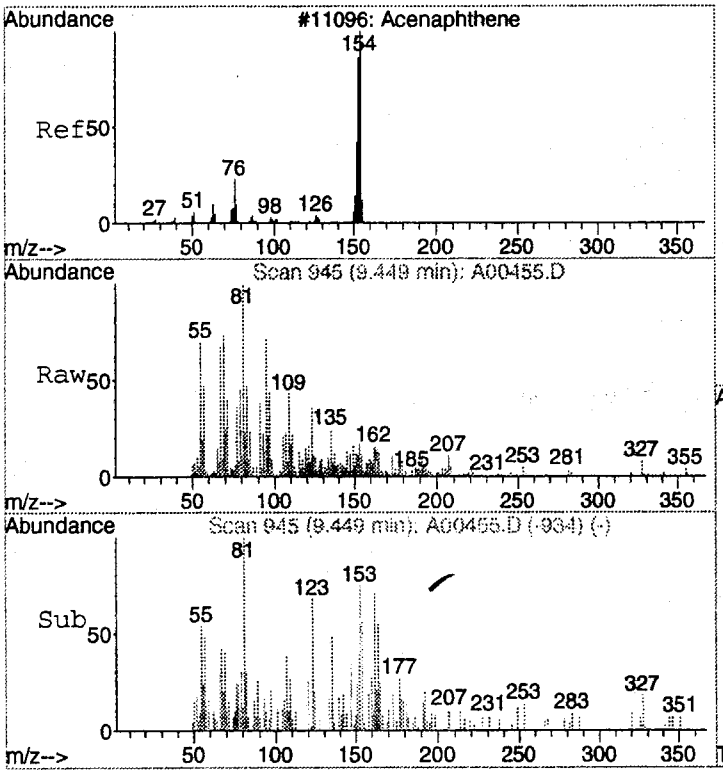


#48
Acenaphthylene
Concen: 5.71 ug/L
RT: 9.26 min Scan# 926
Delta R.T. 0.01 min
Lab File: A00455.D
Acq: 03 Sep 2002 18:38

Tgt Ion:152 Resp: 1292

Ion	Ratio	Lower	Upper
152	100		
151	53.5	0.0	59.7

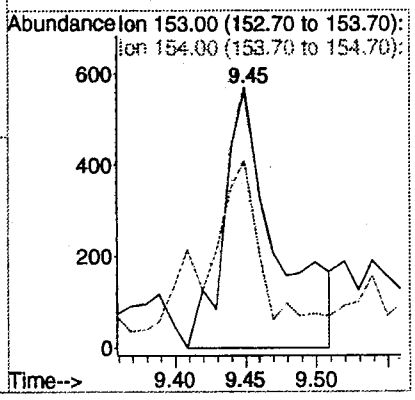


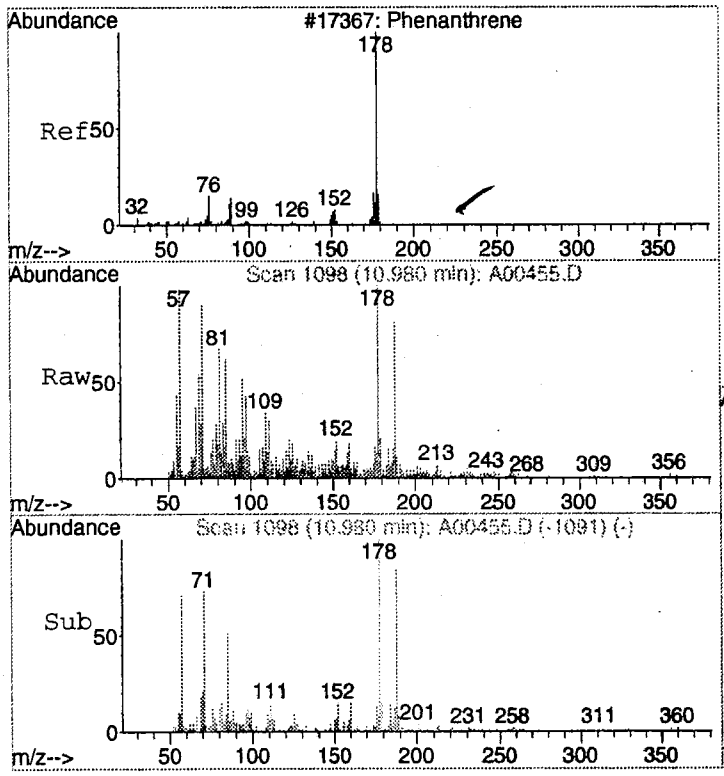


#51
Acenaphthene
Concen: 9.58 ug/L
RT: 9.45 min Scan# 945
Delta R.T. 0.01 min
Lab File: A00455.D
Acq: 03 Sep 2002 18:38

Tgt Ion:153 Resp: 1454

Ion	Ratio	Lower	Upper
153	100		
154	66.7	43.3	123.3

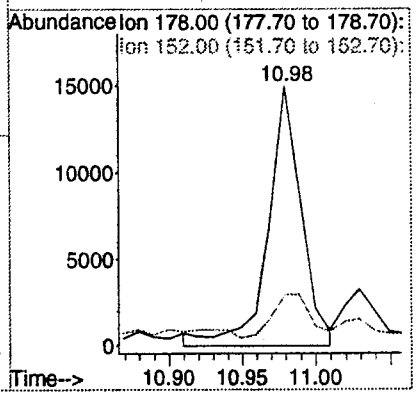


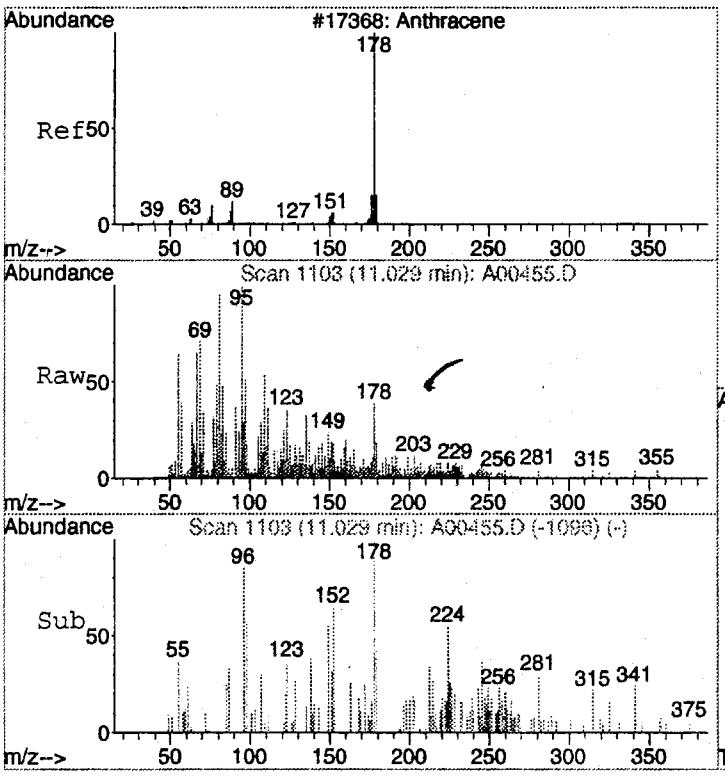


#71
Phenanthrene
Concen: 84.48 ug/L m
RT: 10.98 min Scan# 1098
Delta R.T. -0.03 min
Lab File: A00455.D
Acq: 03 Sep 2002 18:38

Tgt Ion:178 Resp: 23267

Ion	Ratio	Lower	Upper
178	100		
152	5.3	0.0	60.6

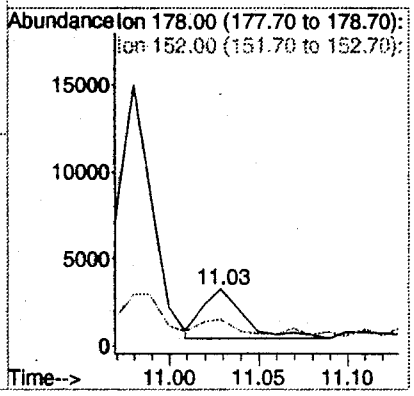


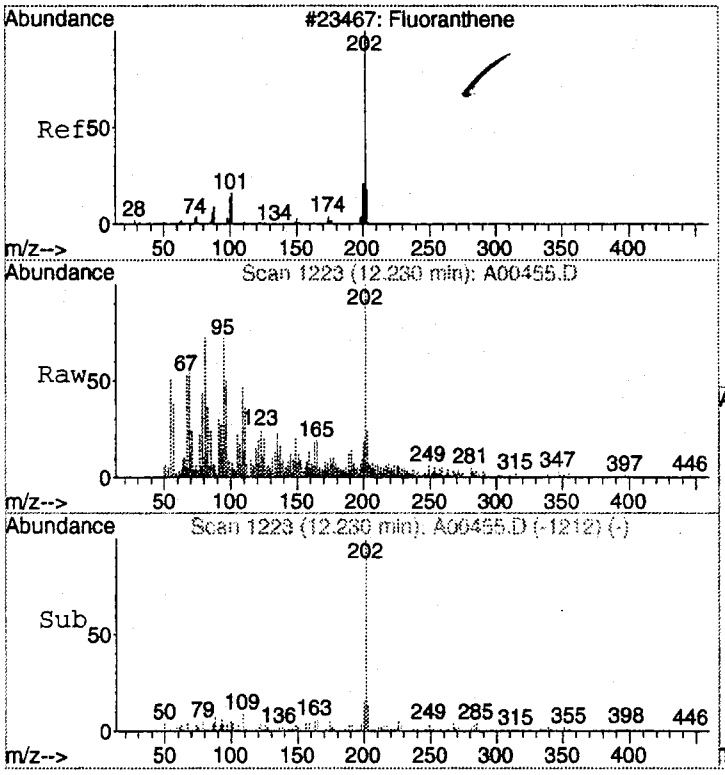


#72
Anthracene
Concen: 16.83 ug/L
RT: 11.03 min Scan# 1103
Delta R.T. -0.03 min
Lab File: A00455.D
Acq: 03 Sep 2002 18:38

Tgt Ion:178 Resp: 4481

Ion	Ratio	Lower	Upper
178	100		
152	23.6	0.0	68.8

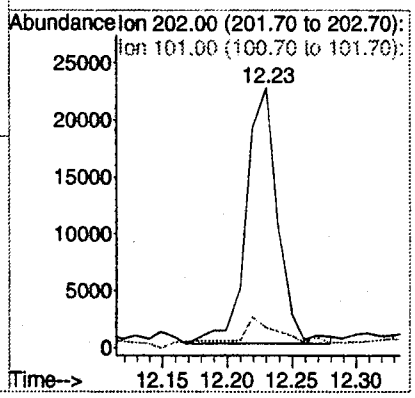


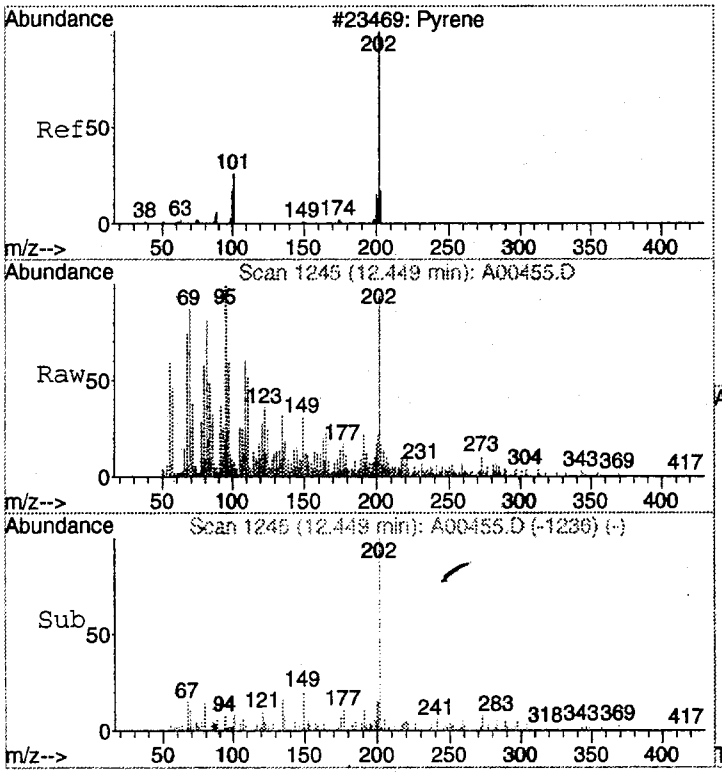


#76
Fluoranthene
Concen: 142.71 ug/L
RT: 12.23 min Scan# 1223
Delta R.T. 0.01 min
Lab File: A00455.D
Acq: 03 Sep 2002 18:38

Tgt Ion:202 Resp: 38463

Ion	Ratio	Lower	Upper
202	100		
101	19.3	0.0	56.4

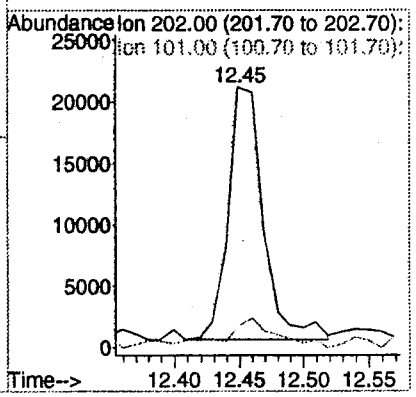


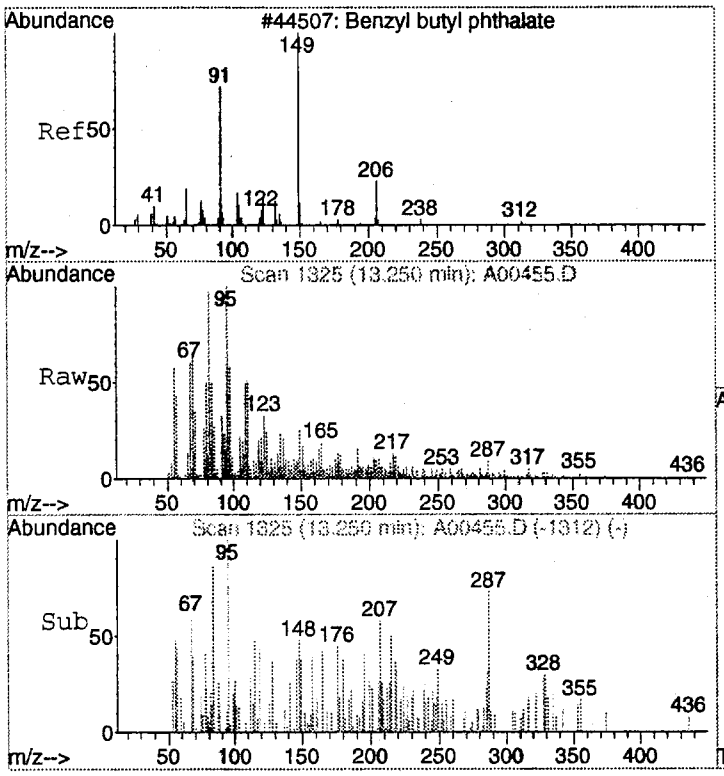


#77
Pyrene
Concen: 143.06 ug/L
RT: 12.45 min Scan# 1245
Delta R.T. -0.01 min
Lab File: A00455.D
Acq: 03 Sep 2002 18:38

Tgt Ion:202 Resp: 38856

Ion	Ratio	Lower	Upper
202	100		
101	16.7	0.0	50.6

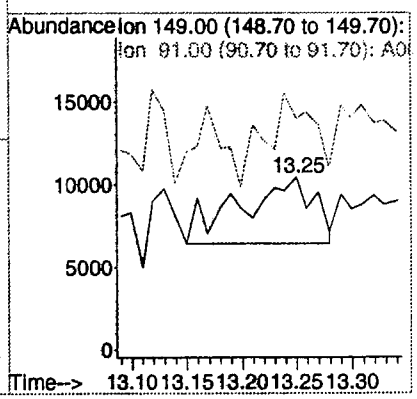


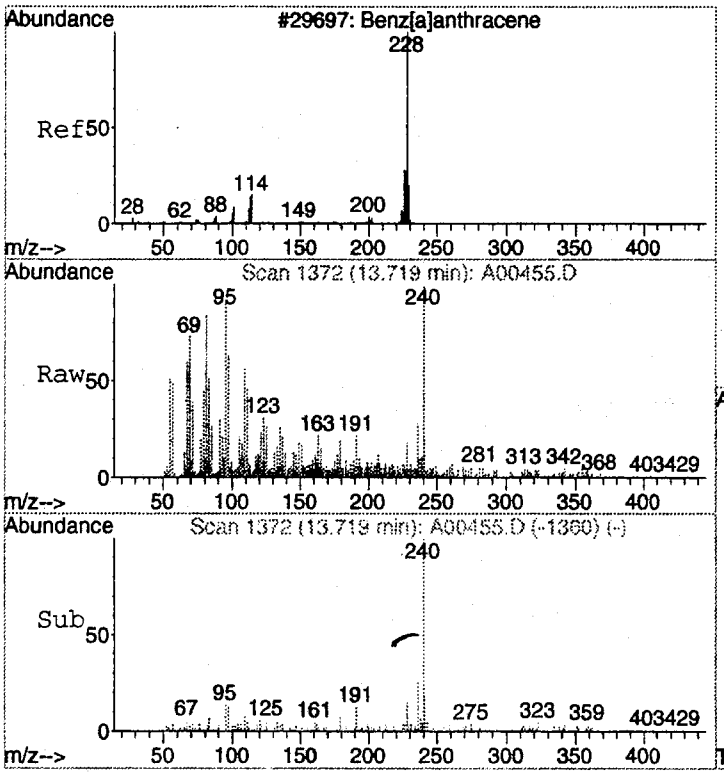


#81
Butylbenzylphthalate
Concen: 86.38 ug/L
RT: 13.25 min Scan# 1325
Delta R.T. 0.03 min
Lab File: A00455.D
Acq: 03 Sep 2002 18:38

Tgt Ion:149 Resp: 18756

Ion	Ratio	Lower	Upper
149	100		
91	90.3	32.2	112.2

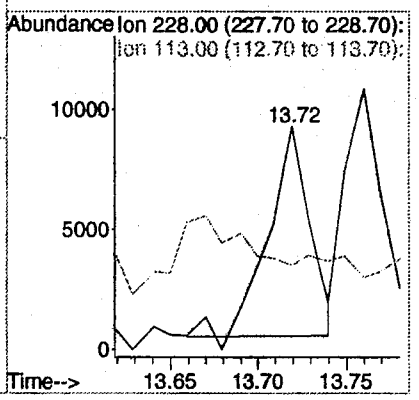


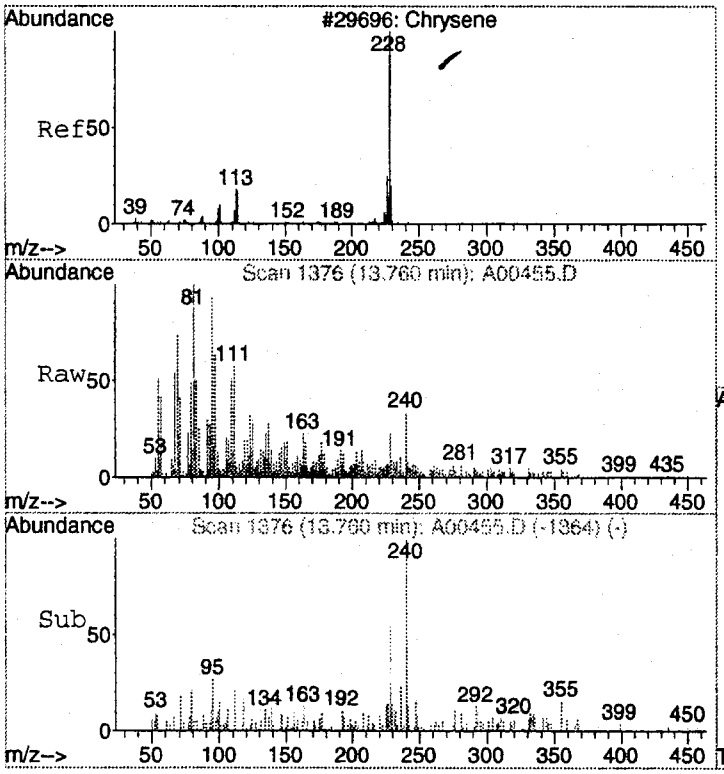


#82
Benzo(a)anthracene
Concen: 48.61 ug/L
RT: 13.72 min Scan# 1372
Delta R.T. 0.02 min
Lab File: A00455.D
Acq: 03 Sep 2002 18:38

Tgt Ion:228 Resp: 14531

Ion	Ratio	Lower	Upper
228	100		
113	12.3	0.0	51.2

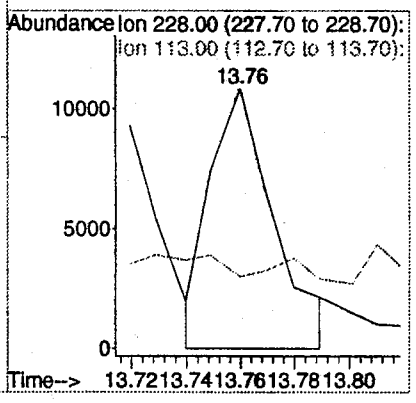


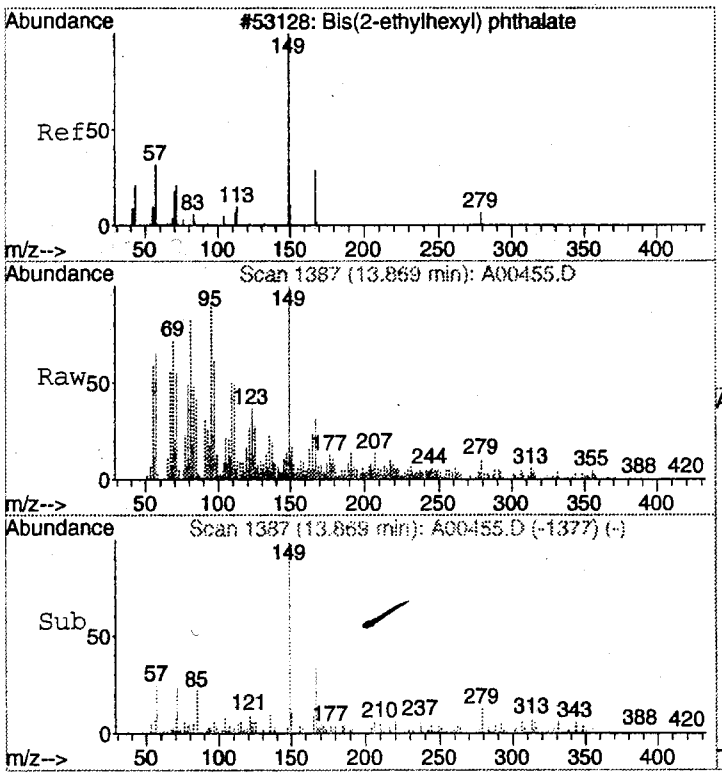


#84
Chrysene
Concen: 61.97 ug/L m
RT: 13.76 min Scan# 1376
Delta R.T. 0.02 min
Lab File: A00455.D
Acq: 03 Sep 2002 18:38

Tgt Ion:228 Resp: 17606

Ion	Ratio	Lower	Upper
228	100		
113	5.2	0.0	56.4

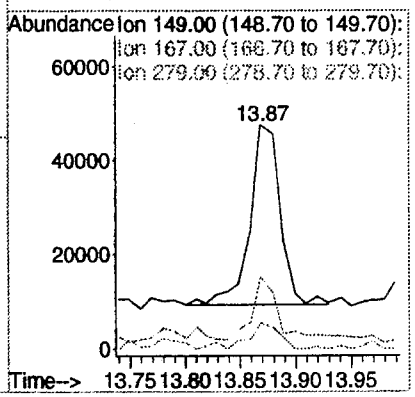


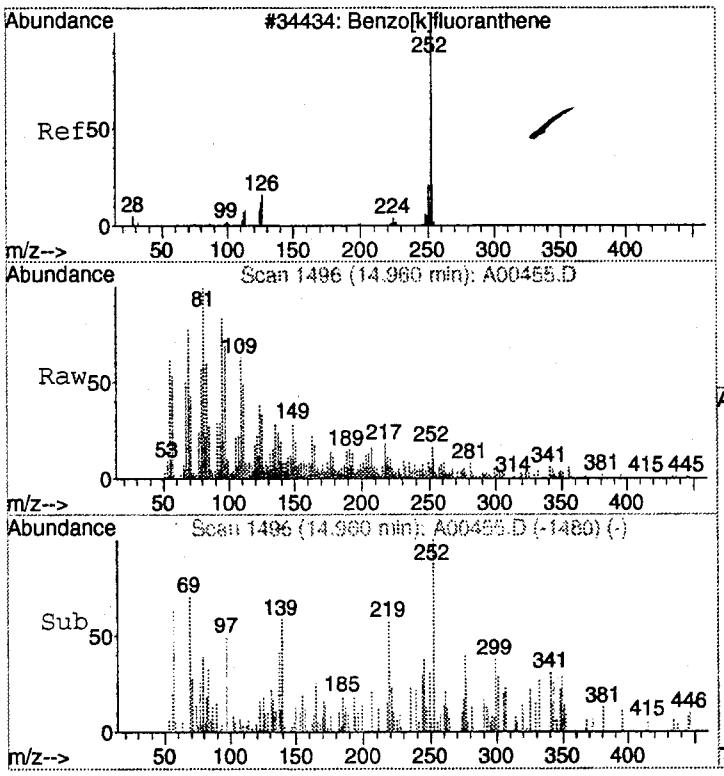


#85
bis(2-Ethylhexyl)phthalate
Concen: 189.38 ug/L
RT: 13.87 min Scan# 1387
Delta R.T. -0.00 min
Lab File: A00455.D
Acq: 03 Sep 2002 18:38

Tgt Ion:149 Resp: 70786

Ion	Ratio	Lower	Upper
149	100		
167	29.3	0.0	68.8
279	15.4	0.0	46.8

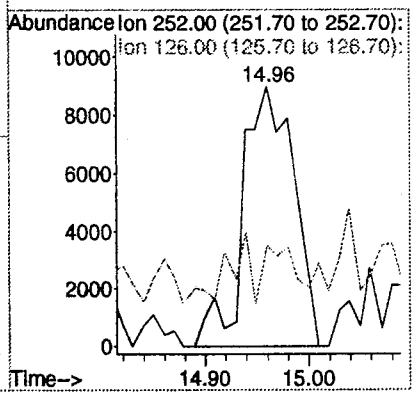


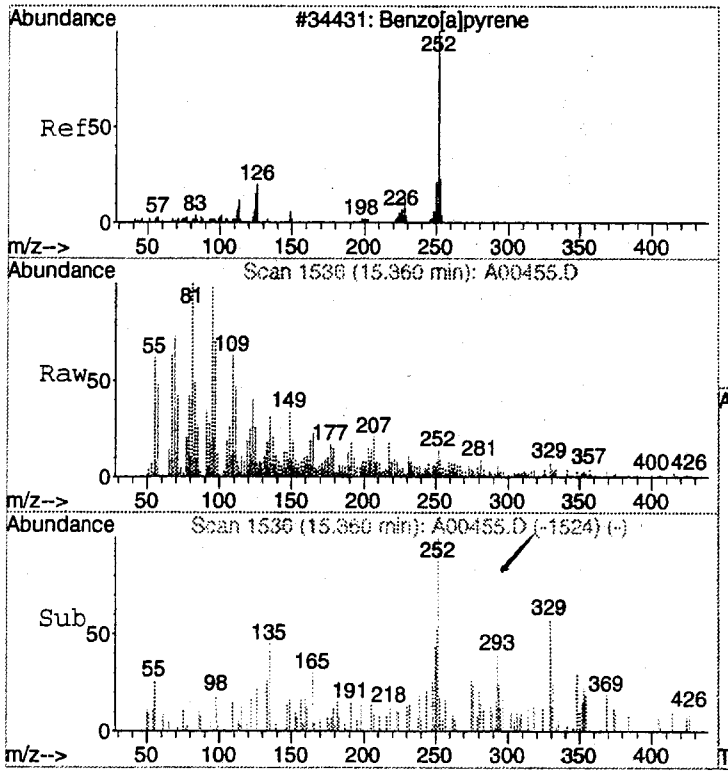


#88
Benzofluoranthenes
Concen: 81.99 ug/L m
RT: 14.96 min Scan# 1496
Delta R.T. -0.02 min
Lab File: A00455.D
Acq: 03 Sep 2002 18:38

Tgt Ion:252 Resp: 30664

Ion	Ratio	Lower	Upper
252	100		
126	103.0	0.0	56.5#

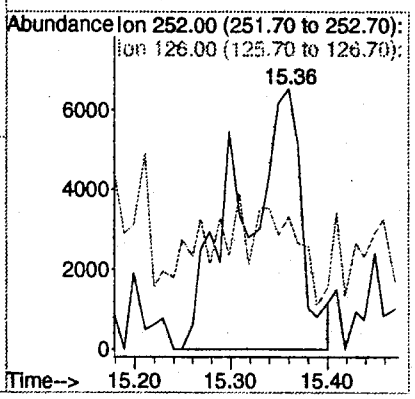




#89
Benzo(a)pyrene
Concen: 84.28 ug/L m
RT: 15.36 min Scan# 1536
Delta R.T. 0.00 min
Lab File: A00455.D
Acq: 03 Sep 2002 18:38

Tgt Ion:252 Resp: 29063

Ion	Ratio	Lower	Upper
252	100		
126	0.0	0.0	59.8



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00456.D Vial: 0
Acq On : 03 Sep 2002 19:04 Operator:
Sample : 108160-4 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 05 07:51:39 2002 Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 07:51:31 2002
Response via : Initial Calibration
DataAcq Meth :

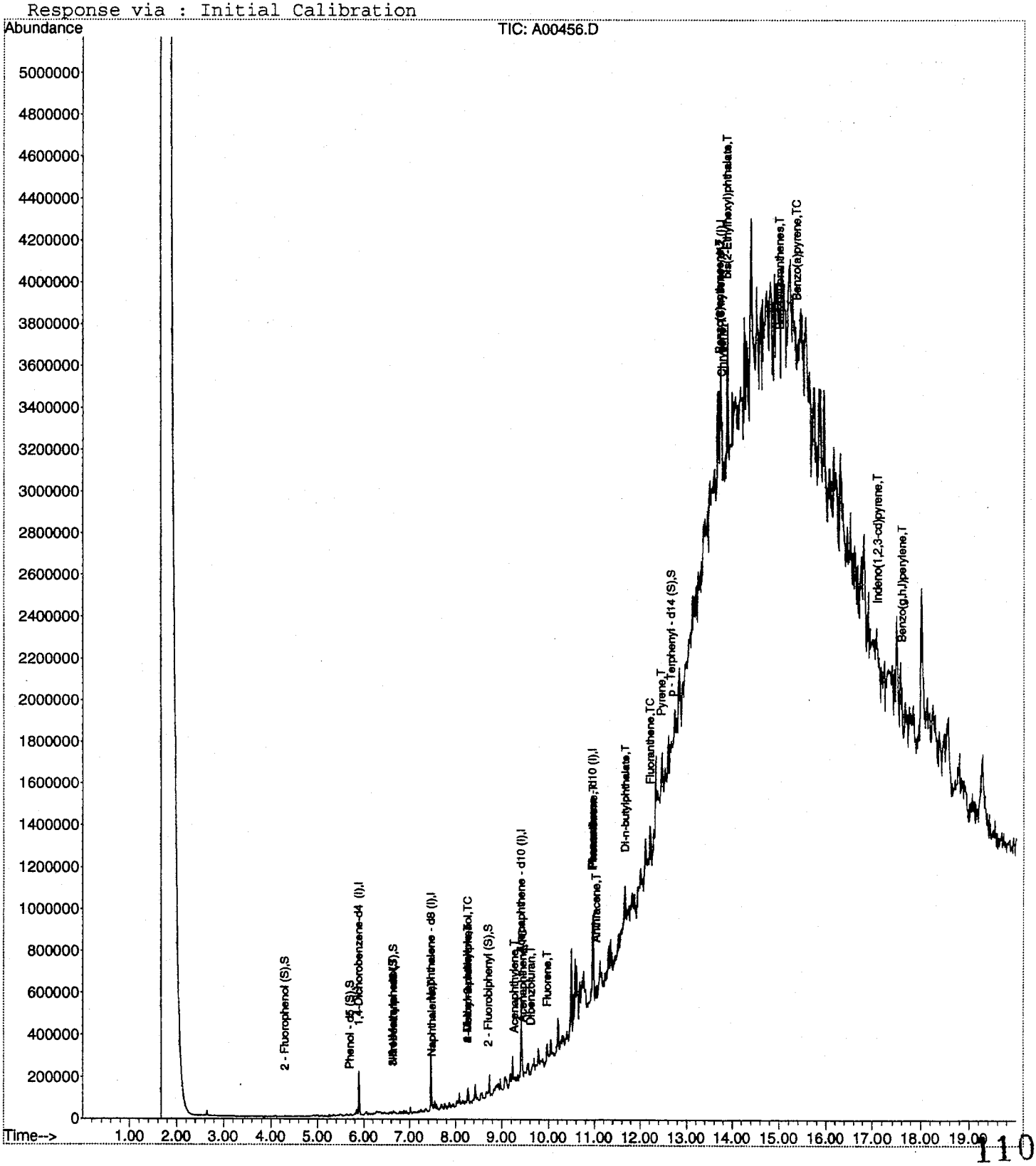
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.89	150	63610	1000.00 ul/l	0.00
22) Naphthalene - d8 (I)	7.47	136	177102	1000.00 ug/L	0.01
38) Acenaphthene - d10 (I)	9.42	162	136026	1000.00 ug/L	0.01
62) Phenanthrene - d10 (I)	10.96	188	257811	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.75	240	296480	1000.00 ul/l	0.02
86) Perylene - d12 (I)	15.47	264	391904	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.30	112	1496	31.65 ug/L	0.02
7) Phenol - d5 (S)	5.70	99	2368	41.78 ug/L	0.02
23) Nitrobenzene - d5 (S)	6.66	82	2662	46.90 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.72	172	6479	34.94 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.27	330	2512	43.70 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.66	244	19171	66.37 ug/L	0.01
Target Compounds					Qvalue
18) 3-&4-Methylphenol	6.64	108	1680	39.75 ug/L	86
32) Naphthalene	7.49	128	7455	36.30 ug/L	60
35) 4-Chloro-3-methylphenol	8.27	107	12954	168.25 ug/L	75
36) 2-Methylnaphthalene	8.28	141	9479	67.91 ug/L	32
48) Acenaphthylene	9.26	152	7223	28.15 ug/L	52
51) Acenaphthene	9.45	153	6224	36.18 ug/L	97
54) Dibenzofuran	9.62	168	6021	24.73 ug/L	47
59) Fluorene	9.99	166	11678m	66.79 ug/L	
71) Phenanthrene	10.98	178	46751	150.16 ug/L	98
72) Anthracene	11.03	178	15441	51.30 ug/L	92
75) Di-n-butylphthalate	11.68	149	40862	101.64 ug/L	17
76) Fluoranthene	12.23	202	79741	261.73 ug/L	93
77) Pyrene	12.46	202	90366	294.33 ug/L	96
82) Benzo(a)anthracene	13.73	228	50875	145.58 ug/L	99
84) Chrysene	13.77	228	64442m	194.03 ug/L	
85) bis(2-Ethylhexyl)phthalate	13.89	149	326915	748.14 ug/L	91
88) Benzofluoranthenes	15.02	252	156847	331.26 ug/L	44
89) Benzo(a)pyrene	15.39	252	119600	273.98 ug/L	79
90) Indeno(1,2,3-cd)pyrene	17.13	276	33365m	64.78 ug/L	
92) Benzo(g,h,i)perylene	17.60	276	63166m	140.49 ug/L	

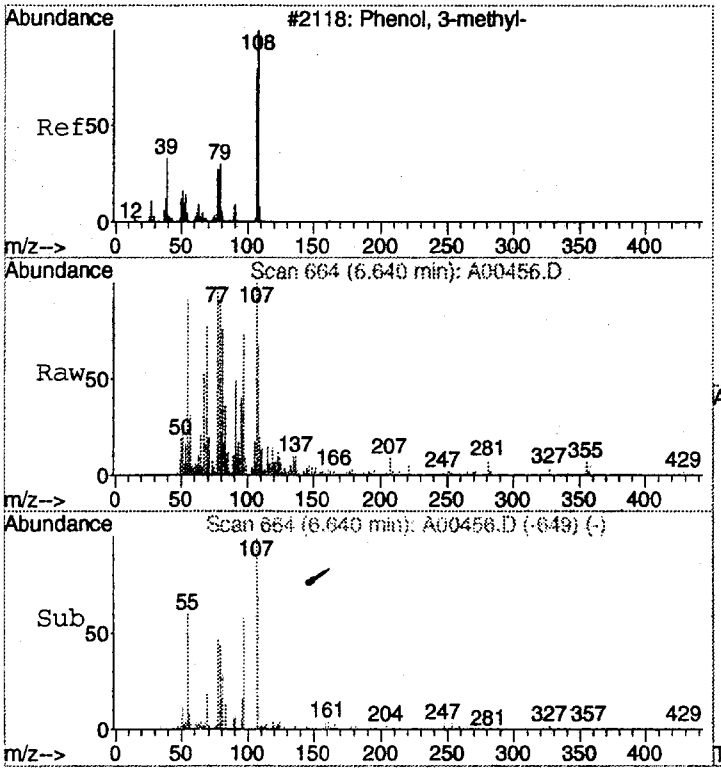
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00456.D Vial: 0
Acq On : 03 Sep 2002 19:04 Operator:
Sample : 108160-4 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 5 7:54 2002 Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 07:51:31 2002
Response via : Initial Calibration

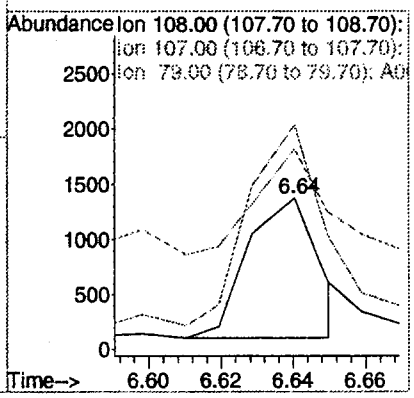


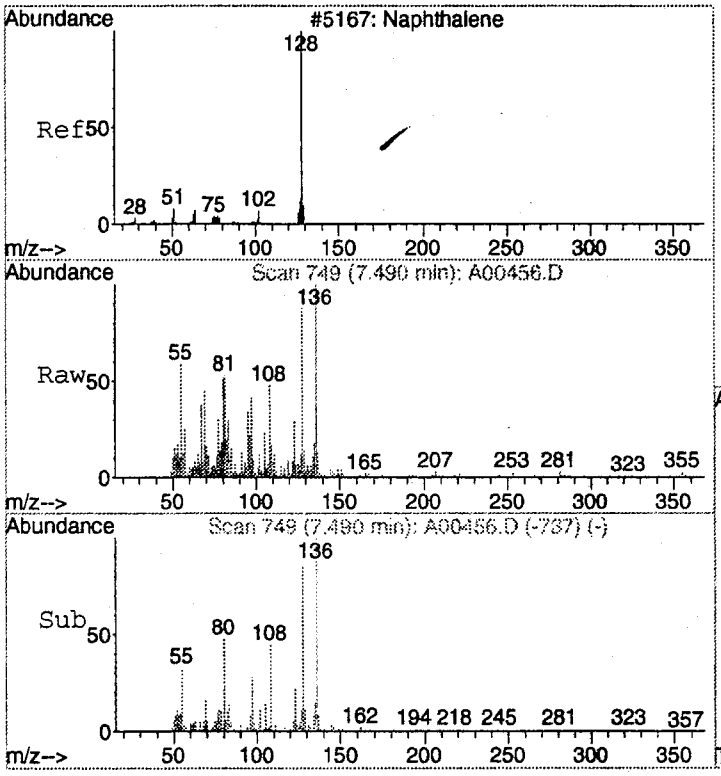


#18
3-&4-Methylphenol
Concen: 39.75 ug/L
RT: 6.64 min Scan# 664
Delta R.T. 0.05 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:108 Resp: 1680

Ion	Ratio	Lower	Upper
108	100		
107	144.4	85.7	165.7
79	65.9	18.9	98.9

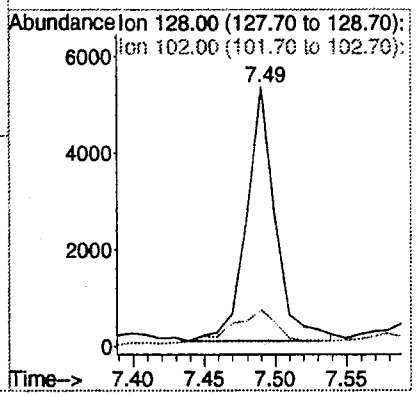


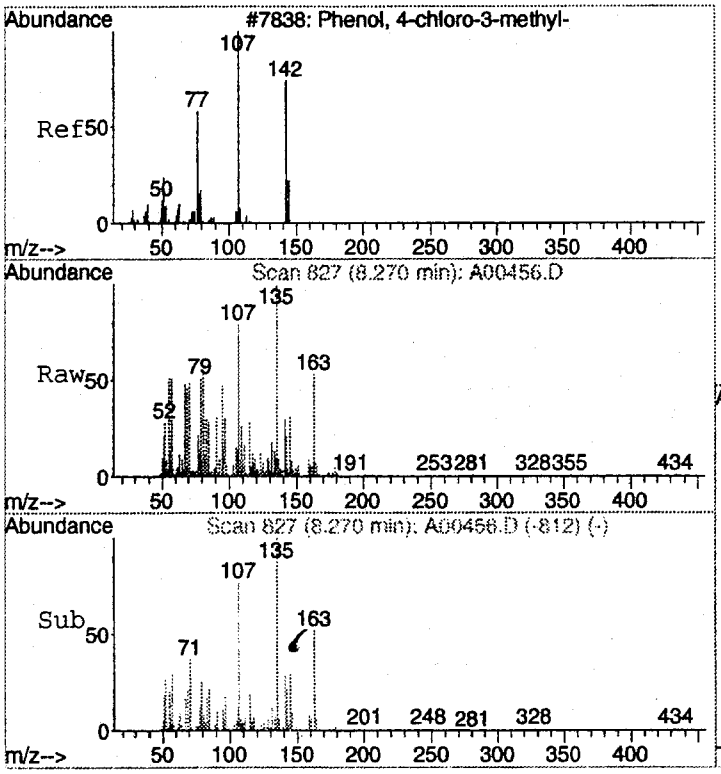


#32
Naphthalene
Concen: 36.30 ug/L
RT: 7.49 min Scan# 749
Delta R.T. 0.02 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:128 Resp: 7455

Ion	Ratio	Lower	Upper
128	100		
102	20.6	0.0	47.0

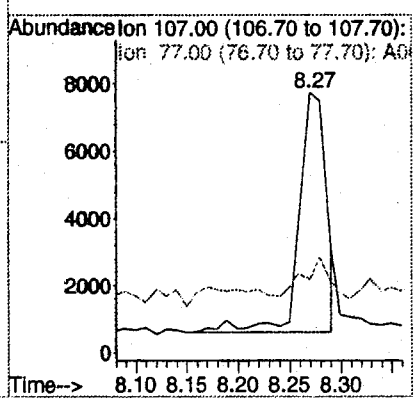


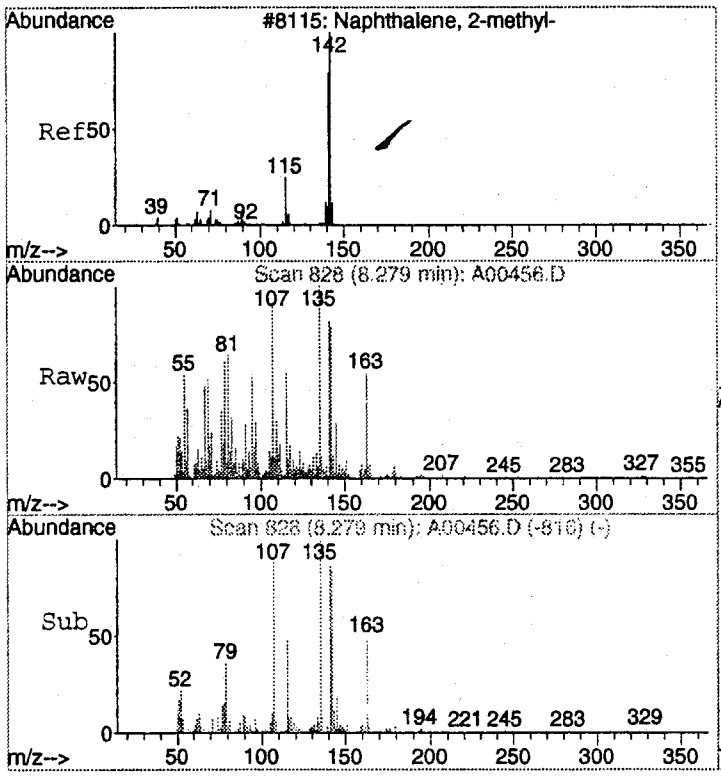


#35
4-Chloro-3-methylphenol
Concen: 168.25 ug/L
RT: 8.27 min Scan# 827
Delta R.T. 0.05 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:107 Resp: 12954

Ion	Ratio	Lower	Upper
107	100		
77	39.1	18.0	98.0

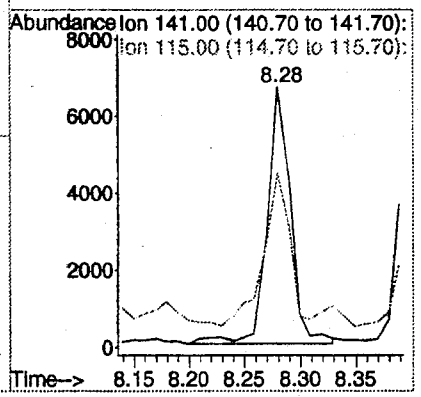


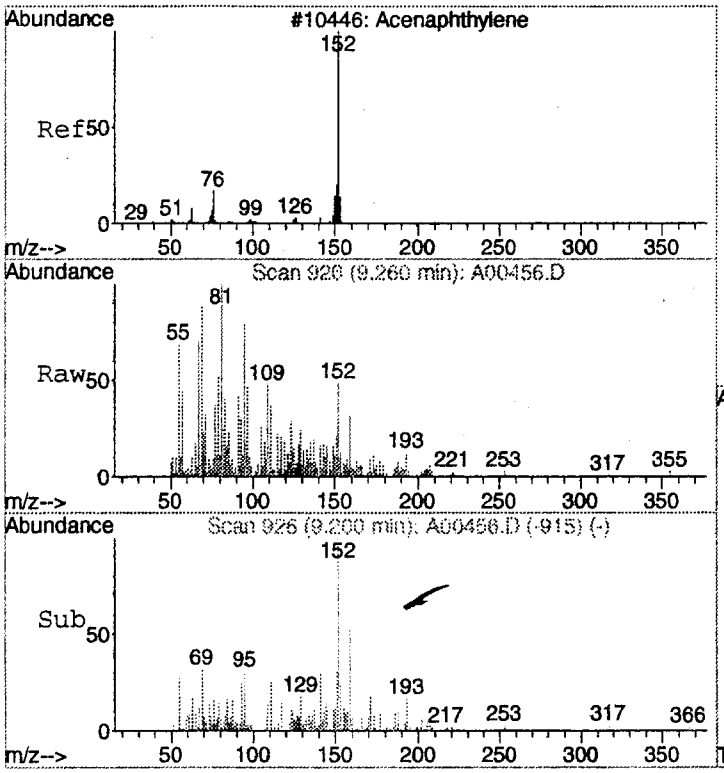


#36
2-Methylnaphthalene
Concen: 67.91 ug/L
RT: 8.28 min Scan# 828
Delta R.T. 0.02 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:141 Resp: 9479

Ion	Ratio	Lower	Upper
141	100		
115	69.8	0.0	71.8

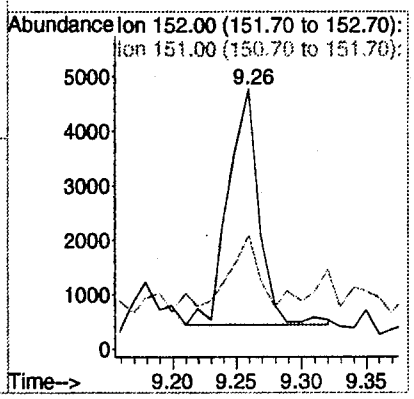


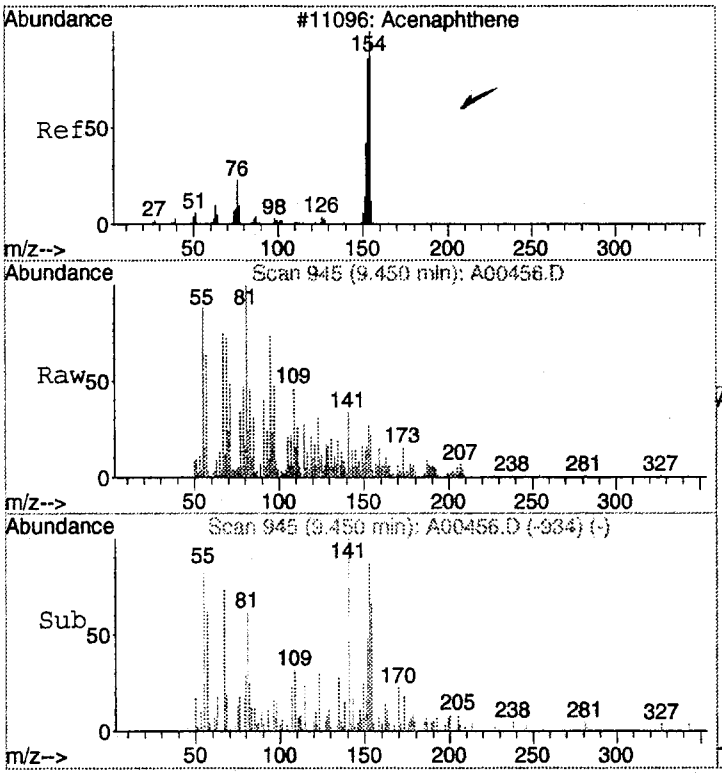


#48
Acenaphthylene
Concen: 28.15 ug/L
RT: 9.26 min Scan# 926
Delta R.T. 0.01 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:152 Resp: 7223

Ion	Ratio	Lower	Upper
152	100		
151	41.6	0.0	59.7

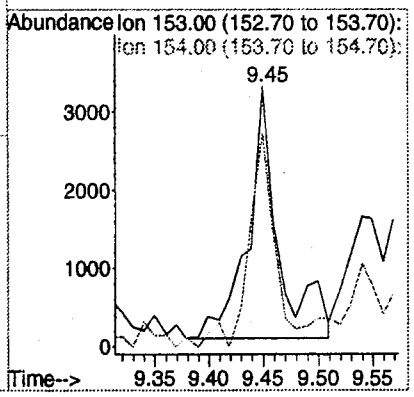


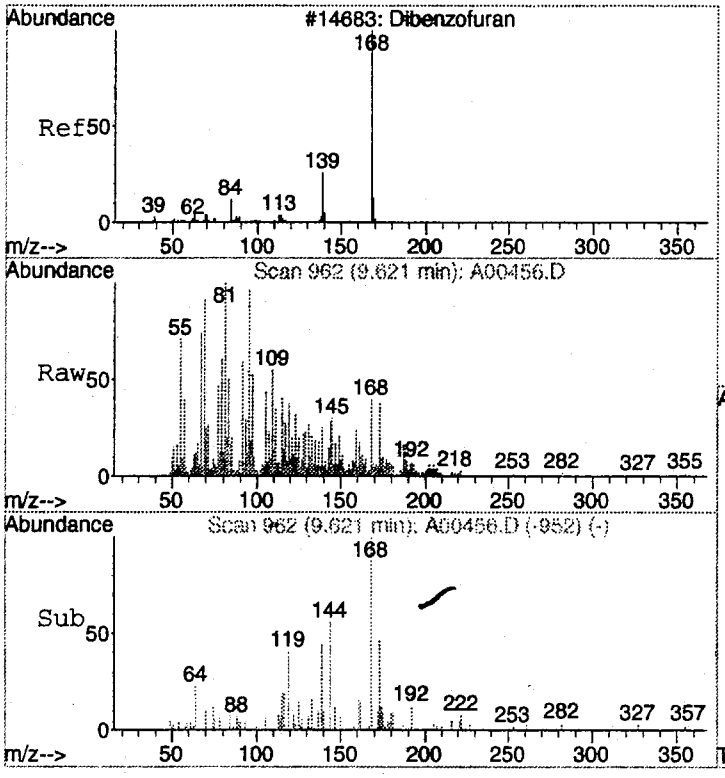


#51
Acenaphthene
Concen: 36.18 ug/L
RT: 9.45 min Scan# 945
Delta R.T. 0.01 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:153 Resp: 6224

Ion	Ratio	Lower	Upper
153	100		
154	80.8	43.3	123.3

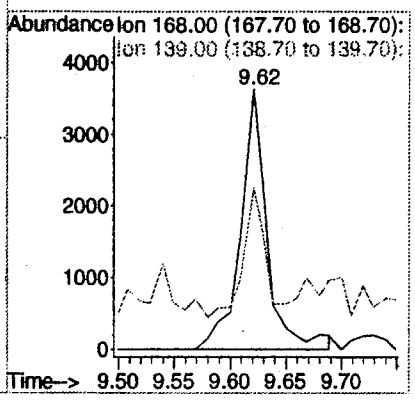


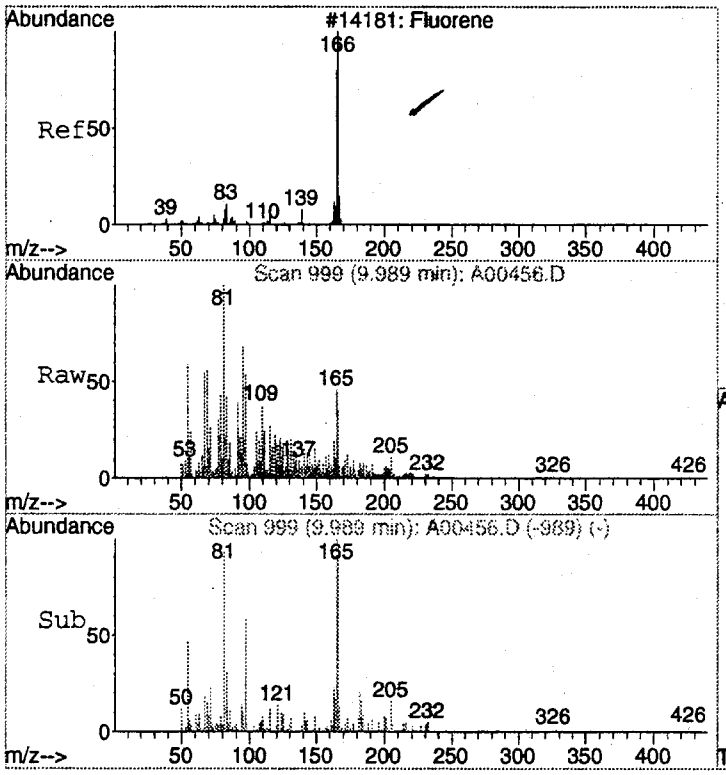


#54
Dibenzofuran
Concen: 24.73 ug/L
RT: 9.62 min Scan# 962
Delta R.T. 0.00 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:168 Resp: 6021

Ion	Ratio	Lower	Upper
168	100		
139	52.5	0.0	65.6

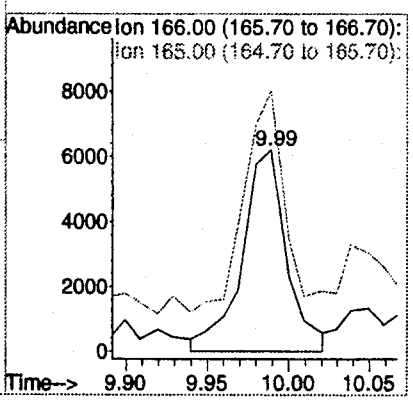


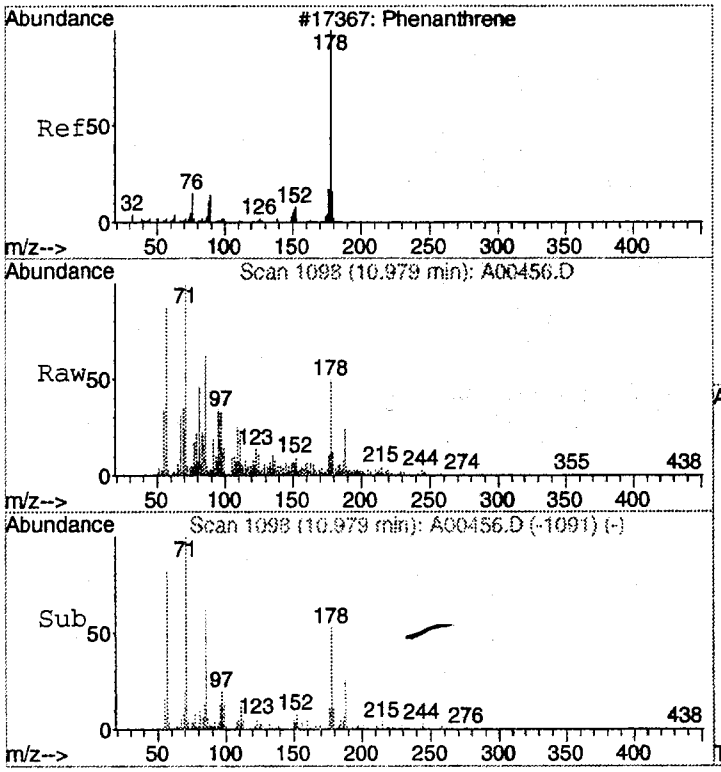


#59
Fluorene
Concen: 66.79 ug/L m
RT: 9.99 min Scan# 999
Delta R.T. 0.00 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:166 Resp: 11678

Ion	Ratio	Lower	Upper
166	100		
165	134.6	40.4	120.4#

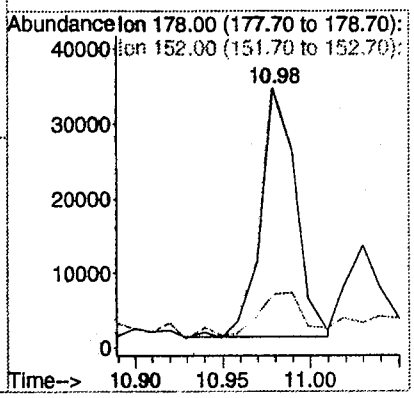


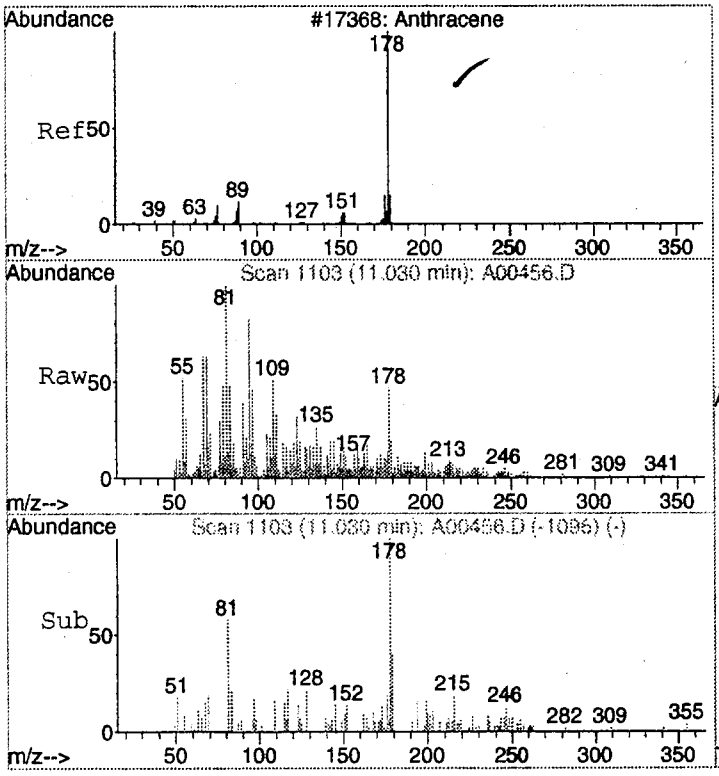


#71
Phenanthrene
Concen: 150.16 ug/L
RT: 10.98 min Scan# 1098
Delta R.T. -0.03 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:178 Resp: 46751

Ion	Ratio	Lower	Upper
178	100		
152	21.6	0.0	60.6

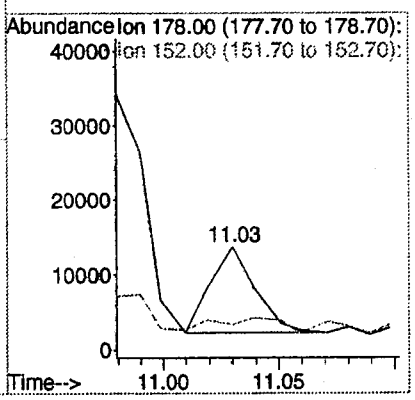


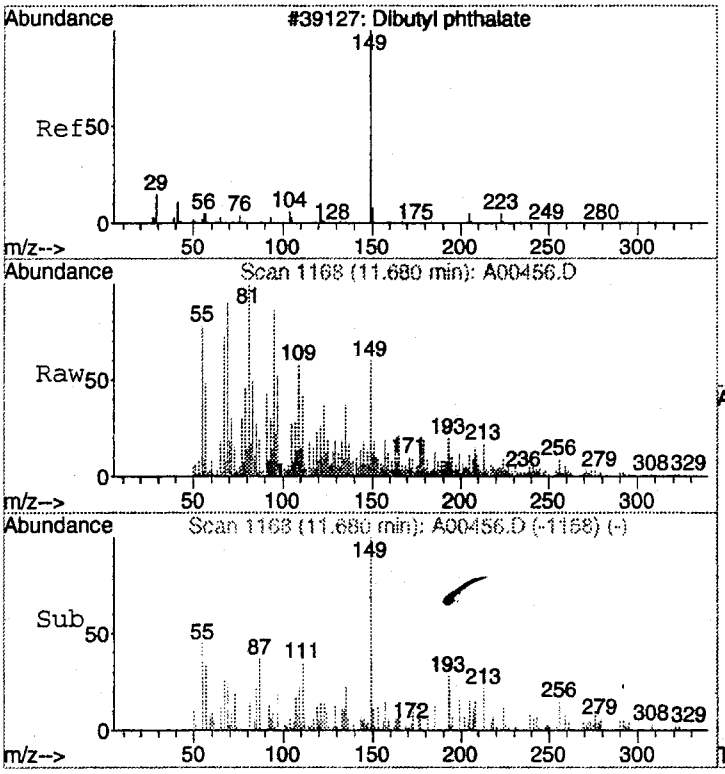


#72
Anthracene
Concen: 51.30 ug/L
RT: 11.03 min Scan# 1103
Delta R.T. -0.03 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:178 Resp: 15441

Ion	Ratio	Lower	Upper
178	100		
152	24.4	0.0	68.8

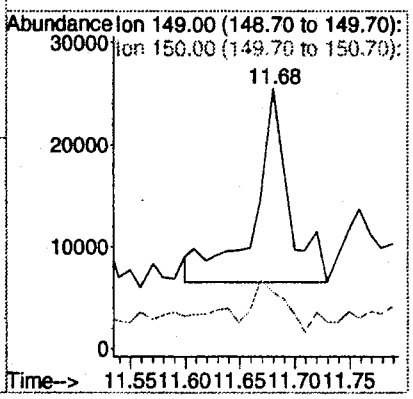


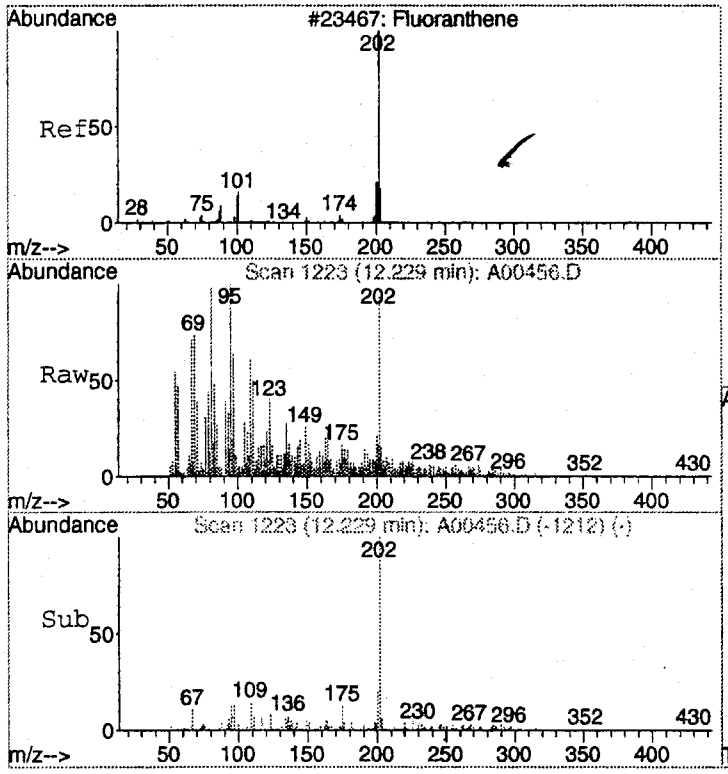


#75
Di-n-butylphthalate
Concen: 101.64 ug/L
RT: 11.68 min Scan# 1168
Delta R.T. -0.00 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:149 Resp: 40862

Ion	Ratio	Lower	Upper
149	100		
150	37.2	0.0	47.9

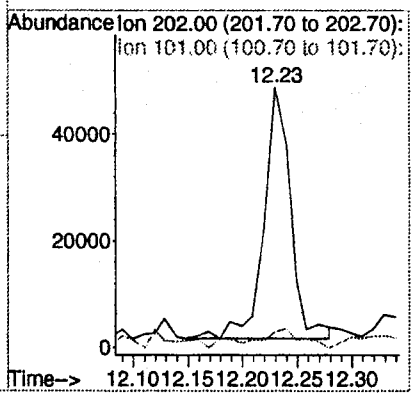


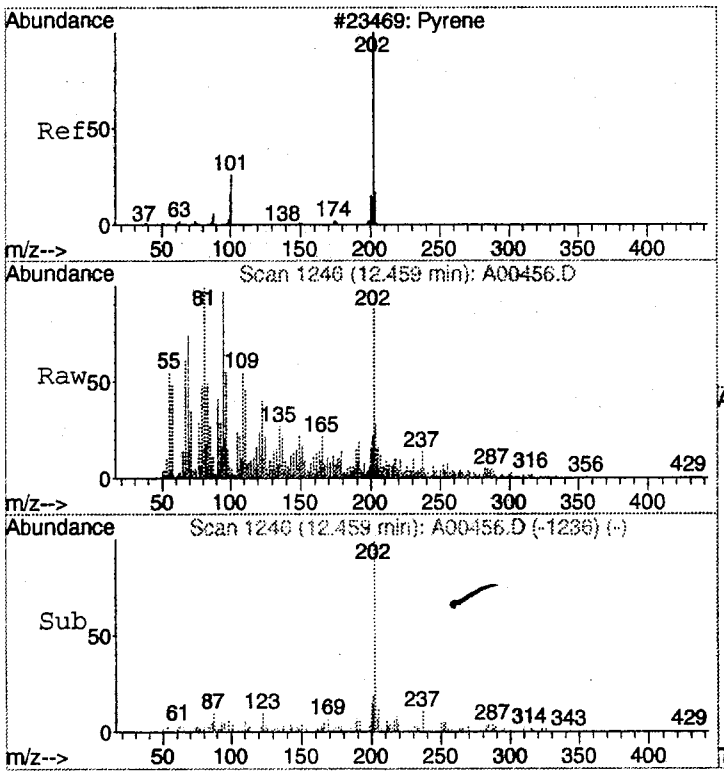


#76
Fluoranthene
Concen: 261.73 ug/L
RT: 12.23 min Scan# 1223
Delta R.T. 0.01 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:202 Resp: 79741

Ion	Ratio	Lower	Upper
202	100		
101	13.3	0.0	56.4

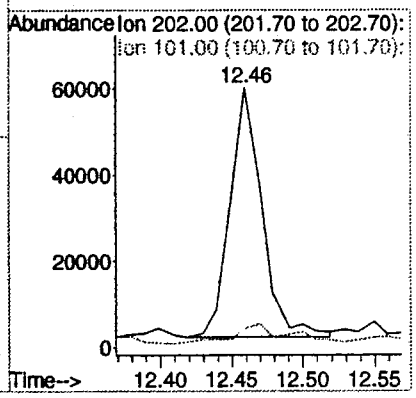


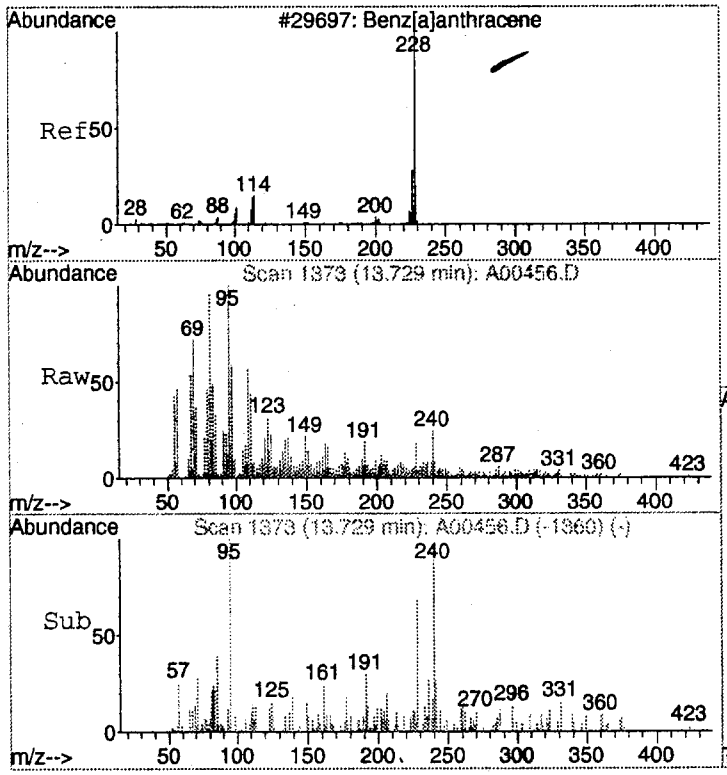


#77
Pyrene
Concen: 294.33 ug/L
RT: 12.46 min Scan# 1246
Delta R.T. -0.00 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:202 Resp: 90366

Ion	Ratio	Lower	Upper
202	100		
101	12.1	0.0	50.6

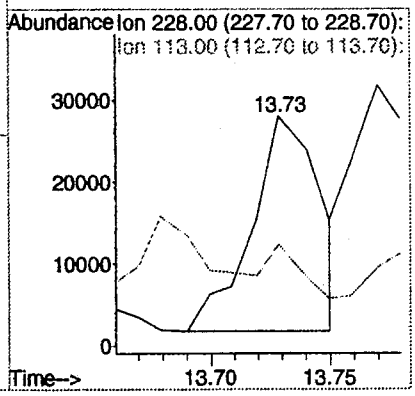


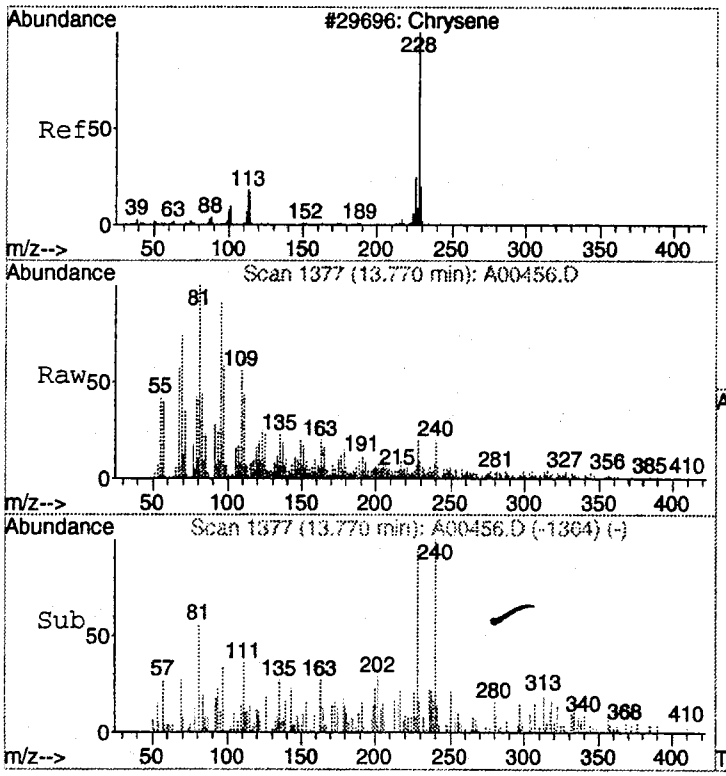


#82
Benzo(a)anthracene
Concen: 145.58 ug/L
RT: 13.73 min Scan# 1373
Delta R.T. 0.03 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:228 Resp: 50875

Ion	Ratio	Lower	Upper
228	100		
113	10.8	0.0	51.2

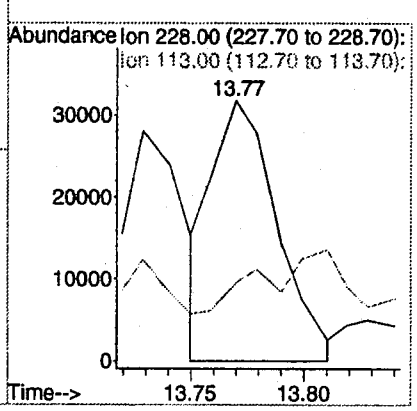


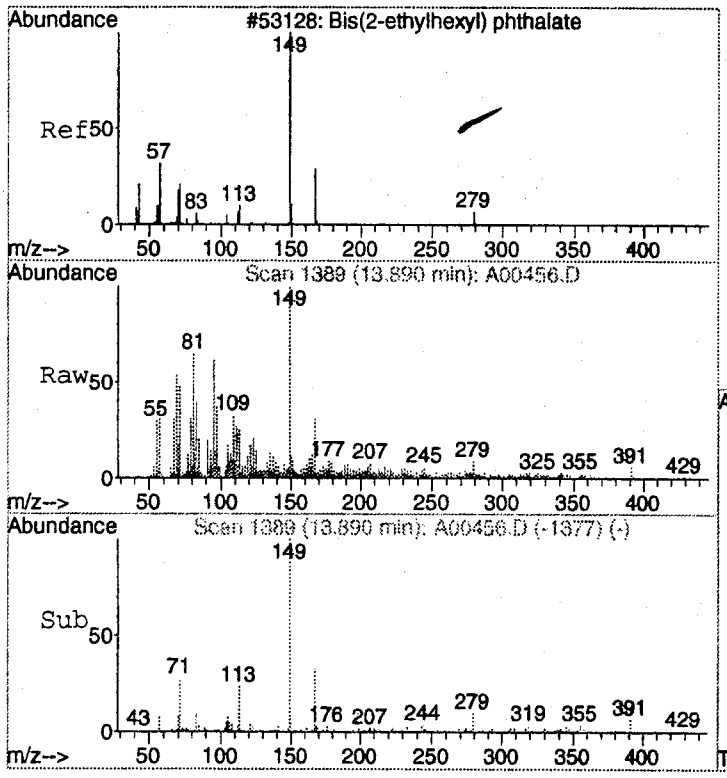


#84
Chrysene
Concen: 194.03 ug/L m
RT: 13.77 min Scan# 1377
Delta R.T. 0.03 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:228 Resp: 64442

Ion	Ratio	Lower	Upper
228	100		
113	8.5	0.0	56.4

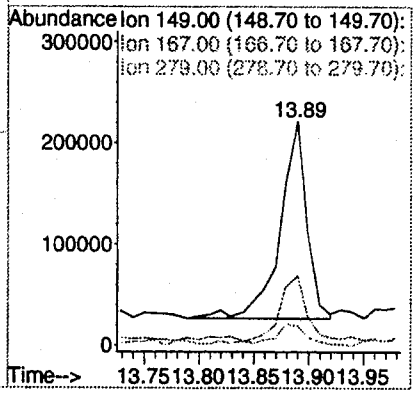


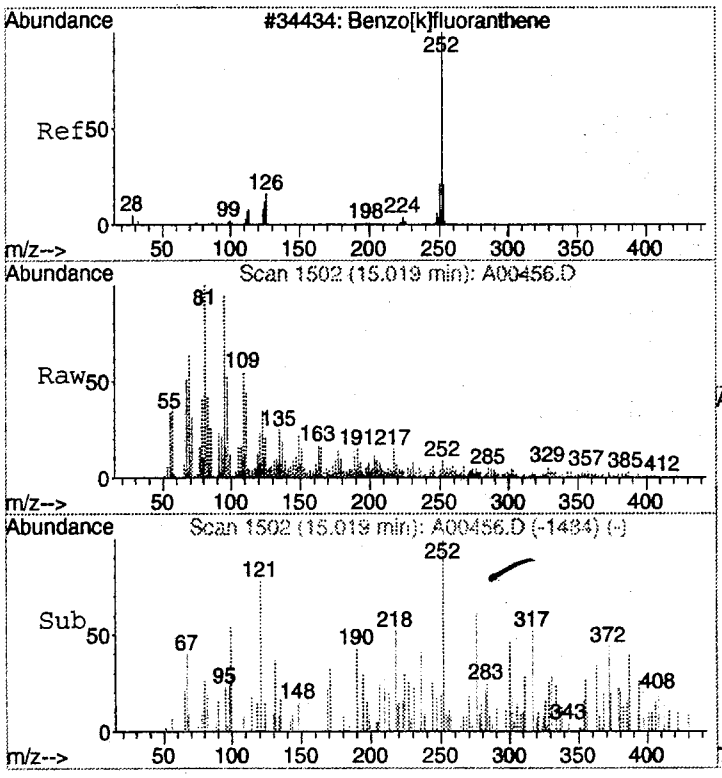


#85
bis(2-Ethylhexyl)phthalate
Concen: 748.14 ug/L
RT: 13.89 min Scan# 1389
Delta R.T. 0.02 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:149 Resp: 326915

Ion	Ratio	Lower	Upper
149	100		
167	33.0	0.0	68.8
279	12.3	0.0	46.8

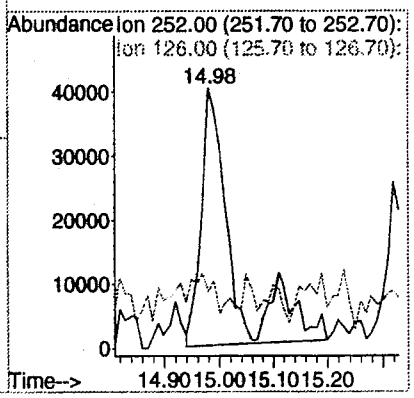


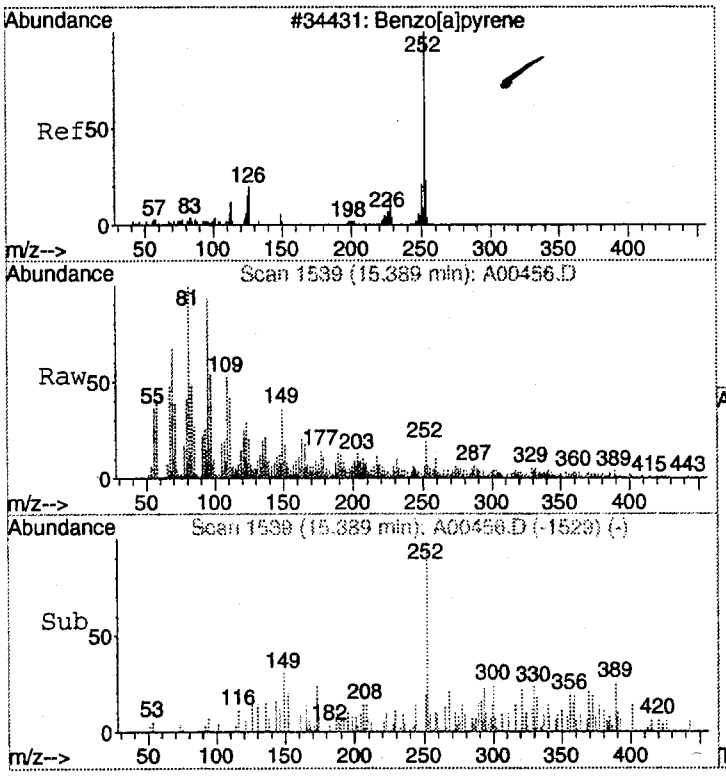


#88
Benzofluoranthenes
Concen: 331.26 ug/L
RT: 15.02 min Scan# 1502
Delta R.T. 0.01 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:252 Resp: 156847

Ion	Ratio	Lower	Upper
252	100		
126	40.5	0.0	56.5

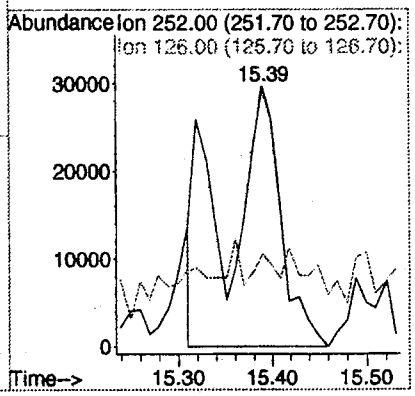


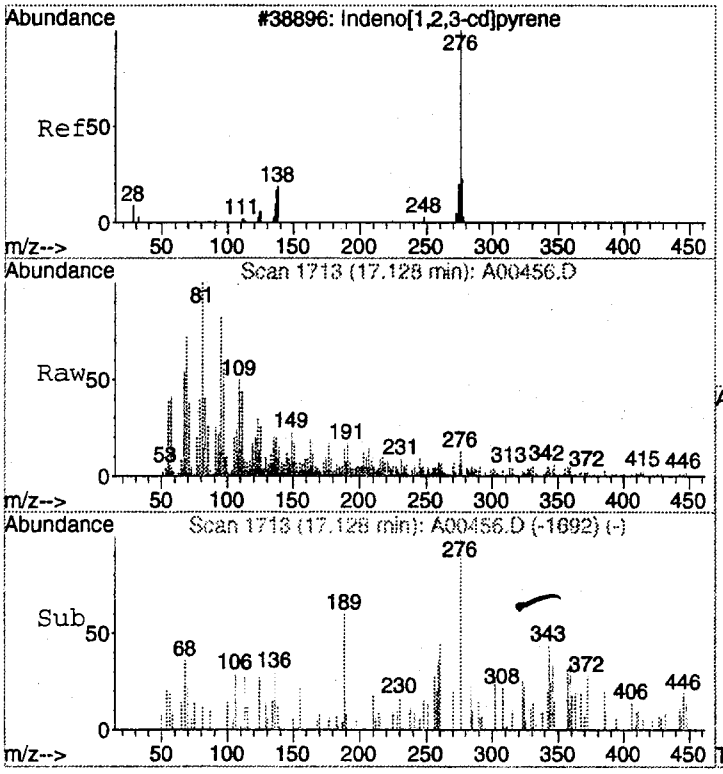


#89
Benzo(a)pyrene
Concen: 273.98 ug/L
RT: 15.39 min Scan# 1539
Delta R.T. -0.01 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:252 Resp: 119600

Ion	Ratio	Lower	Upper
252	100		
126	29.3	0.0	59.8

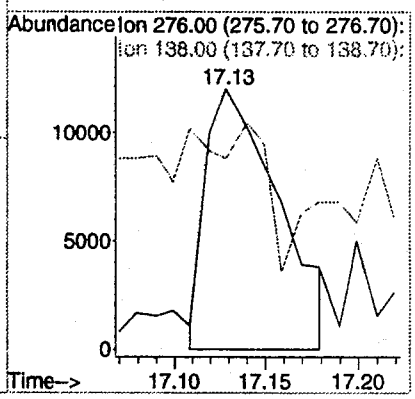


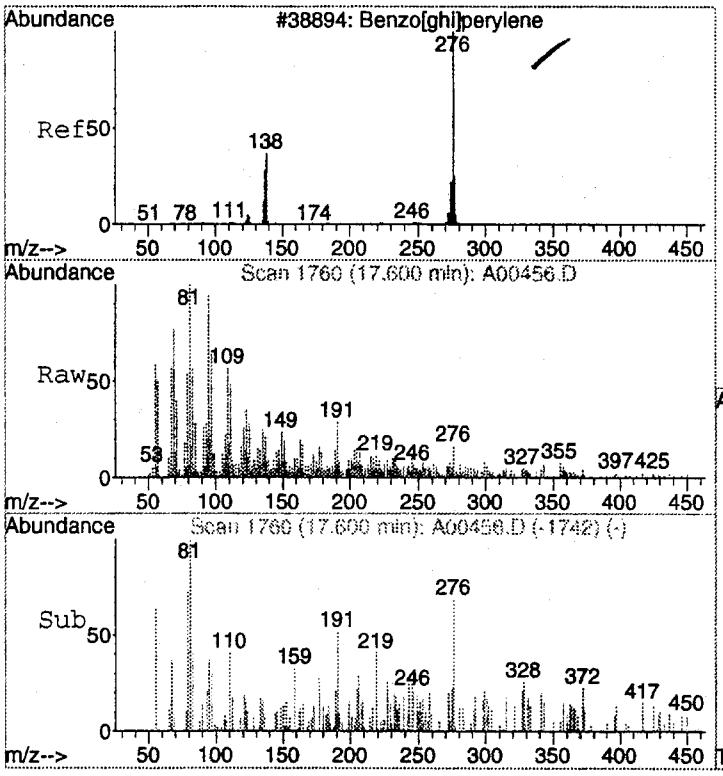


#90
Indeno(1,2,3-cd)pyrene
Concen: 64.78 ug/L m
RT: 17.13 min Scan# 1713
Delta R.T. 0.01 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:276 Resp: 33365

Ion	Ratio	Lower	Upper
276	100		
138	0.0	0.0	59.0

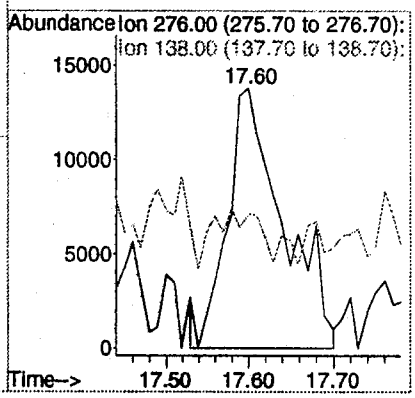




#92
Benzo(g,h,i)perylene
Concen: 140.49 ug/L m
RT: 17.60 min Scan# 1760
Delta R.T. 0.03 min
Lab File: A00456.D
Acq: 03 Sep 2002 19:04

Tgt Ion:276 Resp: 63166

Ion	Ratio	Lower	Upper
276	100		
138	0.0	0.0	52.0



INITIAL CALIBRATION

Response Factor Report

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:23 2002
Response via : Initial Calibration

Calibration Files
100 =A00371.D 10 =A00370.D 250 =A00372.D
500 =A00373.D 1500 =A00375.D 1000 =A00374.D

		Compound	100	10	250	500	1500	1000	Avg	%RSD
1)	I	1,4-Dichlorobenzene-d	ISTD							
2)	T	N-Nitrosodimeth	0.263		0.267	0.194	0.183	0.173	0.23#	20.9
3)	T	Pyridine	0.172		0.543	0.778	0.759	0.587	0.57#	38.1
4)	S	2 - Fluoropheno	0.819		0.806	0.717	0.730	0.755	0.74#	9.1
5)	T	Cyclohexanone	0.208		0.271	0.236	0.234	0.249	0.23#	10.2
6)	T	Aniline	0.148		0.223	0.265	0.374	0.360	0.28#	31.1
7)	S	Phenol - d5 (S)	0.930		0.911	0.892	0.897	0.881	0.89#	3.6
8)	TC	Phenol	0.951		0.980	0.759	0.875	0.881	0.89#	8.6
9)	T	bis(2-Chloroeth	1.122		1.084	0.869	0.936	0.920	0.95#	13.5
10)	T	2-Chlorophenol	0.922		0.896	0.860	0.923	0.821	0.87#	5.4
11)	T	Decane	0.461		0.482	0.389	0.391	0.394	0.41#	12.7
12)	T	1,3-Dichloroben	1.119		1.016	0.980	0.997	0.960	0.99#	8.3
13)	TC	1,4-Dichloroben	1.141		1.094	0.932	0.999	0.979	1.00#	10.0
14)	T	Benzyl alcohol	0.776		0.788	0.774	0.847	0.863	0.80#	5.0
15)	T	1,2-Dichloroben	1.032		1.005	0.919	0.911	0.925	0.94#	6.9
16)	T	2-Methylphenol	0.660		0.597	0.594	0.660	0.623	0.62#	5.0
17)	T	bis(2-chloroiso	0.141		0.129	0.117	0.113	0.133	0.12#	9.5
18)	T	3-&4-Methylphen	0.703		0.677	0.653	0.677	0.653	0.66#	4.2
19)	TP	n-Nitroso-di-n-	0.661		0.589	0.549	0.597	0.559	0.58	9.5
20)	T	Acetophenone	1.610		1.458	1.340	1.362	1.279	1.38#	10.0
21)	T	Hexachloroethan	0.238		0.227	0.213	0.204	0.231	0.22#	7.4
22)	I	Naphthalene - d8 (I)	ISTD							
23)	S	Nitrobenzene -	0.357		0.339	0.345	0.288	0.329	0.32#	11.1
24)	T	Nitrobenzene	0.310		0.314	0.323	0.315	0.309	0.31#	4.4
25)	T	Isophorone	0.560		0.575	0.582	0.556	0.583	0.56#	6.2
26)	TC	2-Nitrophenol	0.173		0.176	0.199	0.191	0.193	0.19#	5.7
27)	T	2,4-Dimethylphe	0.443		0.421	0.434	0.414	0.457	0.43#	3.7
28)	T	bis(2-Chloroeth	0.317		0.317	0.313	0.287	0.302	0.31#	4.0
29)	T	Benzoic Acid	0.045		0.162	0.214	0.191	0.206	0.17#	37.3
30)	TC	2,4-Dichlorophe	0.335		0.326	0.355	0.352	0.360	0.35#	4.0
31)	T	1,2,4-Trichloro	0.407		0.409	0.358	0.379	0.371	0.38#	5.3
32)	T	Naphthalene	1.236	1.152	1.159	1.163	1.135	1.157	1.16#	3.2
33)	T	4-Chloroaniline	0.209		0.213	0.216	0.203	0.214	0.21#	4.1
34)	TC	Hexachlorobutad	0.299		0.282	0.293	0.273	0.282	0.28#	4.9
35)	TC	4-Chloro-3-meth	0.410		0.423	0.445	0.445	0.439	0.43#	3.4
36)	T	2-Methylnaphtha	0.807	0.784	0.780	0.810	0.770	0.791	0.79#	2.0
37)	T	1-Methylnaphtha	0.727	0.759	0.740	0.727	0.721	0.734	0.73#	2.0
38)	I	Acenaphthene - d10 (I	ISTD							
39)	TP	Hexachlorocyclo	0.377		0.374	0.432	0.445	0.438	0.42	8.5
40)	T	2,3-Dichloroani	0.615		0.630	0.689	0.779	0.726	0.71#	12.0
41)	TC	2,4,6-Trichloro	0.300		0.388	0.405	0.408	0.379	0.38#	10.6
42)	T	2,4,5-Trichloro	0.349		0.369	0.427	0.389	0.423	0.37#	14.0
43)	S	2 - Fluorobiphe	1.238	1.266	1.316	1.261	1.465	1.336	1.36#	11.1
44)	T	2-Chloronaphtha	1.217	1.271	1.194	1.217	1.153	1.155	1.18#	6.2
45)	T	Biphenyl	0.999		0.964	1.017	1.116	1.051	1.07#	11.0
46)	T	2-Nitroaniline	0.325		0.353	0.382	0.450	0.422	0.40#	13.3
47)	T	Dimethylphthala	1.824		1.902	1.998	2.171	2.053	2.03	8.0
48)	T	Acenaphthylene	1.898	1.740	1.844	1.815	1.949	1.930	1.89#	5.1
49)	T	2,6-Dinitrotolu	0.338		0.342	0.371	0.389	0.369	0.37#	6.0
50)	T	3-Nitroaniline	0.176		0.219	0.213	0.219	0.235	0.21#	10.1
51)	TC	Acenaphthene	1.260	1.118	1.274	1.303	1.306	1.282	1.26#	5.3
52)	TP	2,4-Dinitrophen	0.107		0.104	0.124	0.208	0.165	0.15	32.6
53)	TP	4-Nitrophenol	0.355		0.399	0.474	0.627	0.578	0.52	26.3

(#) = Out of Range ### Number of calibration levels exceeded format ###

Response Factor Report

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:23 2002
Response via : Initial Calibration

Calibration Files
100 =A00371.D 10 =A00370.D 250 =A00372.D
500 =A00373.D 1500 =A00375.D 1000 =A00374.D

		Compound	100	10	250	500	1500	1000	Avg	%RSD
54)	T	Dibenzofuran	1.724		1.719	1.759	1.812	1.867	1.79#	3.7
55)	T	2,4-Dinitrotolu	0.343		0.346	0.386	0.392	0.375	0.38#	9.2
56)	T	2,3,4,6-Tetrach	0.265		0.303	0.395	0.443	0.453	0.39#	21.7
57)	T	2,3,5,6-Tetrach	0.202		0.334	0.373	0.436	0.420	0.37#	24.6
58)	T	Diethylphthalat	1.699		1.870	1.759	1.495	1.629	1.61#	15.2
59)	T	Fluorene	1.106	1.088	1.254	1.284	1.385	1.342	1.29#	12.3
60)	T	4-Chlorophenylp	0.819		0.824	0.882	0.921	0.842	0.86#	4.8
61)	T	4-Nitroaniline	0.176		0.219	0.213	0.219	0.235	0.21#	10.1
62)	I	Phenanthrene - d10 (I	----------ISTD----------							
63)	T	4,6-Dinitro-2-m	0.154		0.180	0.185	0.220	0.202	0.19#	12.7
64)	T	n-Nitrosodiphen	0.569		0.583	0.632	0.780	0.706	0.71#	21.5
65)	S	2,4,6 - Tribrom	0.148		0.222	0.229	0.244	0.253	0.22#	17.1
66)	T	1,2-Diphenylhyd	0.327		0.319	0.336	0.423	0.381	0.38#	17.8
67)	T	4-Bromophenylph	0.355		0.330	0.341	0.361	0.343	0.35#	3.3
68)	T	Hexachlorobenze	0.345		0.329	0.330	0.326	0.327	0.33#	2.4
69)	T	Atrazine	0.085		0.036	0.046	0.051	0.052	0.05#	30.4
70)	TC	Pentachlorophen	0.132		0.142	0.182	0.203	0.209	0.18#	19.3
71)	T	Phenanthrene	1.168	1.192	1.169	1.233	1.258	1.168	1.21#	3.6
72)	T	Anthracene	1.159	1.151	1.093	1.098	1.234	1.170	1.17#	5.5
73)	T	Octadecane	0.388		0.397	0.379	0.347	0.407	0.38#	7.3
74)	T	Carbazole	1.040		1.006	1.021	1.137	1.076	1.07#	5.1
75)	T	Di-n-butylphtha	1.836		1.728	1.658	1.406	1.601	1.56#	16.4
76)	TC	Fluoranthene	1.139	1.180	1.151	1.164	1.212	1.241	1.18#	3.0
77)	T	Pyrene	1.239	1.125	1.151	1.181	1.195	1.245	1.19#	3.7
78)	T	Benzidine			0.116	0.122	0.228	0.218	0.18#	32.3
79)	S	p - Terphenyl -	1.061	1.353	1.174	1.089	1.052	1.082	1.12#	10.0
80)	I	Chrysene - d12 (I)	----------ISTD----------							
81)	T	Butylbenzylphth	0.975		0.893	0.852	0.811	0.841	0.86#	8.4
82)	T	Benzo(a)anthrac	0.948	0.919	1.083	1.123	1.472	1.238	1.18#	19.2
83)	T	3,3'-Dichlorobe	0.613		0.465	0.578	0.443	0.332	0.50#	21.5
84)	T	Chrysene	0.974	1.042	1.084	1.163	1.108	1.201	1.12#	8.9
85)	T	bis(2-Ethylhexy	1.761		1.613	1.441	1.398	1.389	1.47#	12.5
86)	I	Perylene - d12 (I)	----------ISTD----------							
87)	TC	Di-n-octylphtha	2.331		2.072	2.137	1.971	2.121	2.08	8.3
88)	T	Benzofluoranthe	1.181	1.100	1.130	1.208	1.262	1.256	1.21#	6.4
89)	TC	Benzo(a)pyrene	1.103	0.935	1.014	1.113	1.200	1.176	1.11#	9.9
90)	T	Indeno(1,2,3-cd	1.243	0.996	1.240	1.330	1.435	1.398	1.31#	13.6
91)	T	Dibenz(a,h)anth	1.213	0.888	1.178	1.252	1.273	1.285	1.20#	12.2
92)	T	Benzo(g,h,i)per	1.139	0.970	1.088	1.148	1.207	1.204	1.15#	8.6

(#) = Out of Range ### Number of calibration levels exceeded format ###

Data File : C:\MSDCHEM\1\DATA\A00370.D Vial: 0
Acq On : 29 Aug 2002 9:42 Operator:
Sample : 0.01 NG/UL 8270 ICAL STD NO 0980-53-6 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:38:24 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:38:20 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	51087	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	115923	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.49	162	72538	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.02	188	99214	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.80	240	122975	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.51	264	140602	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	0.00	112	0	0.00 ug/L	
7) Phenol - d5 (S)	0.00	99	0	0.00 ug/L	
23) Nitrobenzene - d5 (S)	6.74	82	558	15.02 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.80	172	918	9.55 ug/L	0.01
65) 2,4,6 - Tribromophenol (S)	0.00	330	0	0.00 ug/L	
79) p - Terphenyl - d14 (S)	12.73	244	1342	13.02 ug/L	0.00
Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.83	74	755	65.50 ug/L #	100
32) Naphthalene	7.56	128	1336	10.42 ug/L #	1
36) 2-Methylnaphthalene	8.35	141	909	10.50 ug/L	58
37) 1-Methylnaphthalene	8.46	141	880	11.11 ul/l #	6
44) 2-Chloronaphthalene	8.87	162	922	11.78 ug/L	92
48) Acenaphthylene	9.32	152	1262	9.78 ug/L #	57
51) Acenaphthene	9.52	153	811	9.28 ug/L	84
53) 4-Nitrophenol	9.72	109	1246+	32.78 ug/L #	26
55) 2,4-Dinitrotoluene	9.48	165	7186	260.74 ug/L #	18
57) 2,3,5,6-Tetrachlorophenol	9.84	232	102	3.83 ul/l #	68
59) Fluorene	10.05	166	789	8.89 ug/L #	54
63) 4,6-Dinitro-2-methylphenol	10.20	198	439	22.98 ug/L #	1
71) Phenanthrene	11.05	178	1183	10.66 ug/L	79
72) Anthracene	11.09	178	1142	10.60 ug/L	65
76) Fluoranthene	12.29	202	1171	10.54 ug/L #	62
77) Pyrene	12.52	202	1116	9.86 ug/L #	49
78) Benzidine	12.47	184	1191	65.42 ug/L	100
82) Benzo(a)anthracene	13.78	228	1130m	7.65 ug/L	
84) Chrysene	13.82	228	1281	9.91 ug/L	61
88) Benzofluoranthenes	15.04	252	3094	18.74 ug/L	84
89) Benzo(a)pyrene	15.43	252	1315	8.25 ug/L #	57
90) Indeno(1,2,3-cd)pyrene	17.16	276	1401	7.91 ug/L	47
91) Dibenz(a,h)anthracene	17.20	278	1248	7.51 ug/L #	48
92) Benzo(g,h,i)perylene	17.62	276	1364	8.83 ug/L #	1

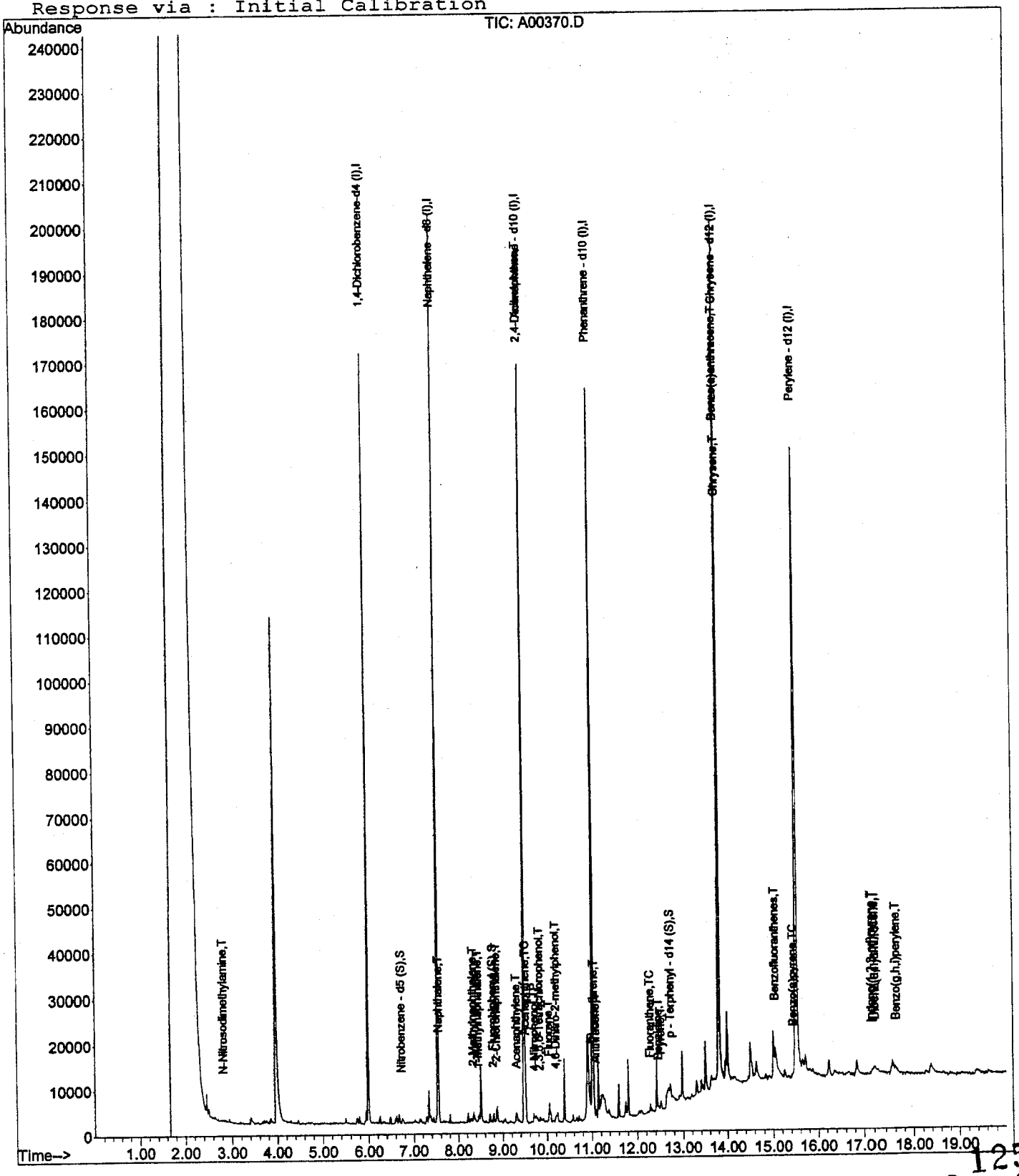
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00370.D
Acq On : 29 Aug 2002 9:42
Sample : 0.01 NG/UL 8270 ICAL STD NO 0980-53-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:38 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00371.D Vial: 0
Acq On : 29 Aug 2002 10:08 Operator:
Sample : 0.1 NG/UL 8270 ICAL STD NO 0980-54-3 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:25:49 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:25:45 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.98	150	55976	1000.00 ug/L	-0.01
22) Naphthalene - d8 (I)	7.53	136	132353	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.47	162	85236	1000.00 ug/L	-0.02
62) Phenanthrene - d10 (I)	11.02	188	134966	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.79	240	151178	1000.00 ul/l	-0.02
86) Perylene - d12 (I)	15.49	264	169585	1000.00 ug/L	-0.02
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.44	112	4582	170.04 ug/L	0.00
7) Phenol - d5 (S)	5.72	99	5207	184.23 ug/L	-0.01
23) Nitrobenzene - d5 (S)	6.73	82	4720	115.13 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.79	172	10549	164.05 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.32	330	2001	119.24 ug/L	-0.02
79) p - Terphenyl - d14 (S)	12.72	244	14315	175.91 ug/L	-0.01

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.78	74	7359	1008.68 ug/L #	100
3) Pyridine	2.70	79	4807m+	225.61 ug/L	
5) Cyclohexanone	4.69	55	1166	158.73 ug/L	92
6) Aniline	5.70	93	830	50.58 ug/L #	85
8) Phenol	5.74	94	5326	183.98 ug/L	71
9) bis(2-Chloroethyl)ether	5.78	63	6278	398.68 ug/L #	37
10) 2-Chlorophenol	5.78	128	5159	210.10 ug/L	69
11) Decane	5.91	57	2579	200.03 ug/L	100
12) 1,3-Dichlorobenzene	5.94	146	6266	191.48 ug/L	69
13) 1,4-Dichlorobenzene	6.00	146	6389	189.01 ug/L #	27
14) Benzyl alcohol	6.29	79	4342	175.51 ug/L	94
15) 1,2-Dichlorobenzene	6.24	146	5777	180.04 ug/L	93
16) 2-Methylphenol	6.46	108	3694	179.14 ug/L	95
17) bis(2-chloroisopropyl)ethe	6.46	121	789+	162.69 ug/L #	1
18) 3-&4-Methylphenol	6.66	108	7875	329.10 ug/L #	31
19) n-Nitroso-di-n-propylamine	6.66	70	3701	190.56 ug/L #	49
20) Acetophenone	6.57	105	9014	192.06 ug/L	99
21) Hexachloroethane	6.61	166	1332	177.70 ug/L	85
24) Nitrobenzene	6.75	77	4106	169.18 ug/L #	74
25) Isophorone	7.09	82	7413	167.26 ug/L	91
26) 2-Nitrophenol	7.14	139	2296	140.71 ug/L	49
27) 2,4-Dimethylphenol	7.27	107	5866	162.35 ug/L	81
28) bis(2-Chloroethoxy)methane	7.36	93	4201	152.35 ug/L	75
29) Benzoic Acid	7.52	105	3001	267.80 ug/L	69
30) 2,4-Dichlorophenol	7.43	162	4436	153.02 ug/L	97
31) 1,2,4-Trichlorobenzene	7.50	180	5389	190.59 ug/L	97
32) Naphthalene	7.55	128	16354	177.08 ug/L	72
33) 4-Chloroaniline	7.70	127	2766	199.13 ug/L #	97
34) Hexachlorobutadiene	7.80	225	3952	172.96 ug/L	90
35) 4-Chloro-3-methylphenol	8.28	107	5430	148.50 ug/L	82
36) 2-Methylnaphthalene	8.34	141	10685	165.77 ug/L	73
37) 1-Methylnaphthalene	8.46	141	9623	161.51 ul/l	56
39) Hexachlorocyclopentadiene	8.61	237	3213	161.25 ug/L	96
40) 2,3-Dichloroaniline	8.70	161	5246	170.19 ug/L	97
41) 2,4,6-Trichlorophenol	8.71	196	2553	142.75 ug/L	94
42) 2,4,5-Trichlorophenol	8.75	196	2977	164.04 ug/L	52
44) 2-Chloronaphthalene	8.86	162	10371	197.51 ug/L	89
45) Biphenyl	9.51	154	8519	122.78 ug/L #	1

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

Data File : C:\MSDCHEM\1\DATA\A00371.D
Acq On : 29 Aug 2002 10:08
Sample : 0.1 NG/UL 8270 ICAL STD NO 0980-54-3
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:25:49 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

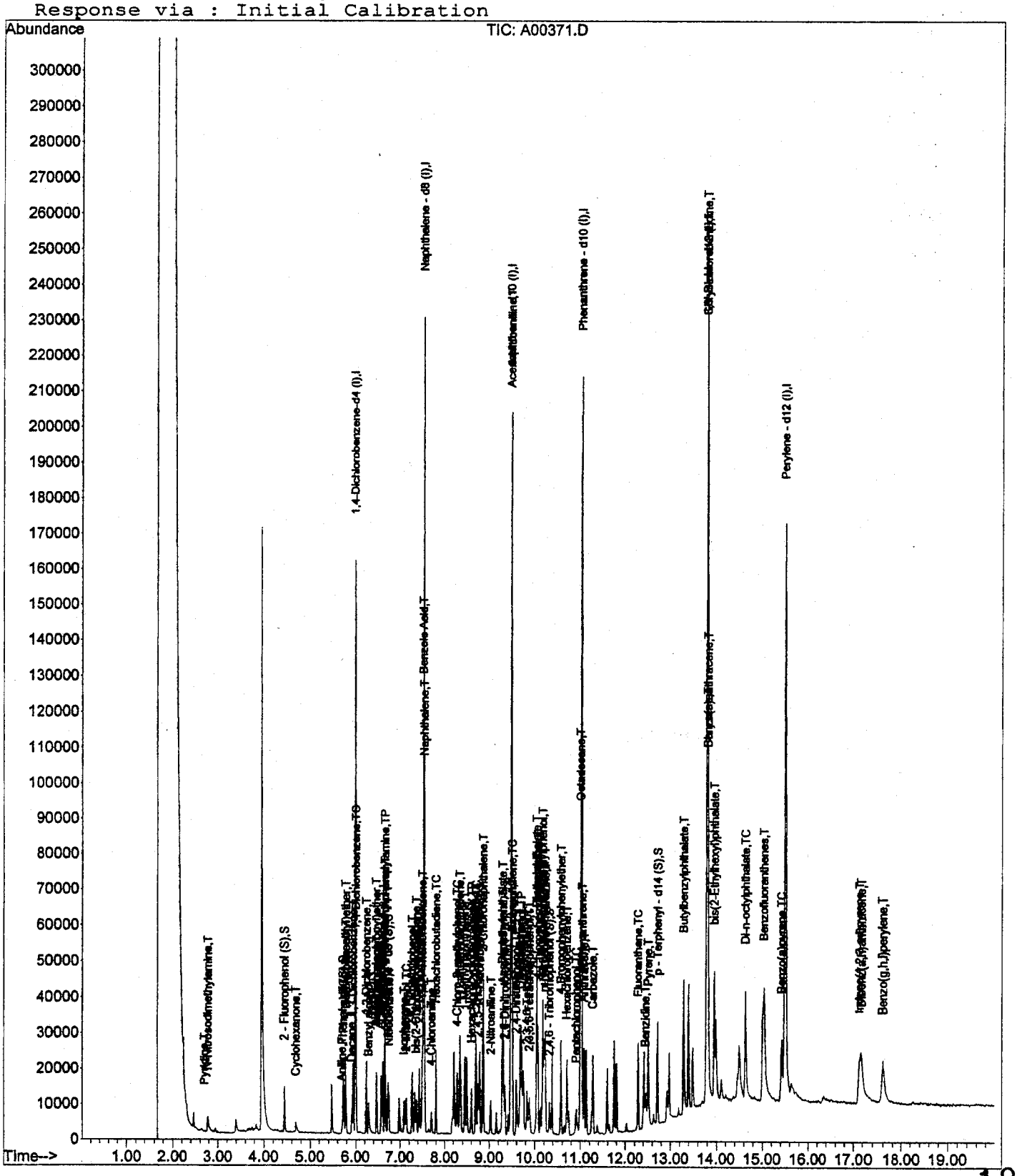
Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:25:45 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	2-Nitroaniline	9.04	138	2769	144.59 ug/L		94
47)	Dimethylphthalate	9.29	163	15543	182.49 ug/L		94
48)	Acenaphthylene	9.31	152	16174	188.76 ug/L		99
49)	2,6-Dinitrotoluene	9.34	165	2882	186.97 ug/L		85
50)	3-Nitroaniline	9.48	138	1504	158.33 ug/L	#	45
51)	Acenaphthene	9.51	153	10737	184.92 ug/L		94
52)	2,4-Dinitrophenol	9.59	184	4544	584.06 ug/L		68
53)	4-Nitrophenol	9.70	109	15137+	689.76 ug/L	#	54
54)	Dibenzofuran	9.68	168	14695	190.95 ug/L	#	1
55)	2,4-Dinitrotoluene	9.34	165	2927	113.27 ug/L		91
56)	2,3,4,6-Tetrachlorophenol	9.83	232	2258	115.21 ug/L	#	52
57)	2,3,5,6-Tetrachlorophenol	9.88	232	1720	108.96 ul/l	#	56
58)	Diethylphthalate	10.04	149	14484	197.16 ug/L		100
59)	Fluorene	10.04	166	9429	156.53 ug/L		59
60)	4-Chlorophenylphenylether	10.07	204	6977	197.05 ug/L		66
61)	4-Nitroaniline	9.48	138	1504	78.53 ug/L	#	1
63)	4,6-Dinitro-2-methylphenol	10.18	198	10387	781.09 ug/L	#	43
64)	n-Nitrosodiphenylamine	10.20	169	7682	136.93 ug/L	#	1
66)	1,2-Diphenylhydrazine	10.23	182	4420	160.03 ug/L	#	1
67)	4-Bromophenylphenylether	10.57	248	4796	197.46 ug/L	#	65
68)	Hexachlorobenzene	10.70	284	4654	194.71 ug/L		87
70)	Pentachlorophenol	10.91	266	1788	140.72 ug/L		89
71)	Phenanthrene	11.04	178	15764	165.37 ug/L		76
72)	Anthracene	11.09	178	15645	215.34 ug/L		74
73)	Octadecane	10.99	57	5241	204.37 ug/L		54
74)	Carbazole	11.27	167	14037	178.54 ug/L		81
76)	Fluoranthene	12.28	202	15368	165.59 ug/L		83
77)	Pyrene	12.51	202	16718	184.37 ug/L		72
78)	Benzidine	12.45	184	9306	669.25 ug/L		100
81)	Butylbenzylphthalate	13.29	149	14744	190.45 ug/L		76
82)	Benzo(a)anthracene	13.82	228	14326	105.28 ug/L		57
83)	3,3'-Dichlorobenzidine	13.78	252	9271+	163.15 ug/L		95
84)	Chrysene	13.82	228	14731	165.86 ug/L		90
85)	bis(2-Ethylhexyl)phthalate	13.95	149	26615	186.35 ug/L		98
87)	Di-n-octylphthalate	14.63	149	39536	168.88 ug/L		92
88)	Benzofluoranthenes	15.03	252	40072	301.69 ug/L		79
89)	Benzo(a)pyrene	15.42	252	18703	139.55 ug/L		87
90)	Indeno(1,2,3-cd)pyrene	17.14	276	21075	143.45 ug/L		92
91)	Dibenz(a,h)anthracene	17.18	278	20568	148.34 ug/L		71
92)	Benzo(g,h,i)perylene	17.60	276	19309	148.03 ug/L		84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00371.D Vial: 0
Acq On : 29 Aug 2002 10:08 Operator:
Sample : 0.1 NG/UL 8270 ICAL STD NO 0980-54-3 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:26 2002 Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00372.D
Acq On : 29 Aug 2002 10:34
Sample : 0.25 NG/UL 8270 ICAL STD NO 0980-54-4
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:30:52 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:30:43 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	53109	1000.00	ug/L		0.00
22) Naphthalene - d8 (I)	7.54	136	125598	1000.00	ug/L		0.00
38) Acenaphthene - d10 (I)	9.48	162	76662	1000.00	ug/L		0.00
62) Phenanthrene - d10 (I)	11.02	188	126765	1000.00	ug/L		-0.01
80) Chrysene - d12 (I)	13.80	240	146131	1000.00	ul/l		0.00
86) Perylene - d12 (I)	15.50	264	170837	1000.00	ug/L		0.00
System Monitoring Compounds							
4) 2 - Fluorophenol (S)	4.44	112	10695	375.47	ug/L		0.00
7) Phenol - d5 (S)	5.72	99	12091	380.92	ug/L		0.00
23) Nitrobenzene - d5 (S)	6.73	82	10632	269.49	ug/L		0.00
43) 2 - Fluorobiphenyl (S)	8.79	172	25219	390.16	ug/L		0.00
65) 2,4,6 - Tribromophenol (S)	10.33	330	7051	422.80	ug/L		0.00
79) p - Terphenyl - d14 (S)	12.72	244	37202	432.30	ug/L		-0.01
Target Compounds							Qvalue
2) N-Nitrosodimethylamine	2.75	74	17739	2228.35	ug/L	#	100
3) Pyridine	2.99	79	36030+	1914.07	ug/L		96
5) Cyclohexanone	4.67	55	3601	469.00	ug/L		96
6) Aniline	5.69	93	2964	198.43	ug/L	#	85
8) Phenol	5.74	94	13015	399.15	ug/L		72
9) bis(2-Chloroethyl)ether	5.78	63	14397	635.08	ug/L	#	38
10) 2-Chlorophenol	5.78	128	11903	428.87	ug/L		69
11) Decane	5.91	57	6402	449.83	ug/L		95
12) 1,3-Dichlorobenzene	5.94	146	13490	378.24	ug/L		67
13) 1,4-Dichlorobenzene	6.01	146	14522	389.22	ug/L		92
14) Benzyl alcohol	6.29	79	10456	375.28	ug/L		99
15) 1,2-Dichlorobenzene	6.24	146	13339	382.45	ug/L		98
16) 2-Methylphenol	6.47	108	7932	350.49	ug/L		98
17) bis(2-chloroisopropyl)ethe	6.47	121	1708+	332.43	ug/L	#	1
18) 3-&4-Methylphenol	6.66	108	17975	687.81	ug/L	#	34
19) n-Nitroso-di-n-propylamine	6.65	70	7816	361.45	ug/L		74
20) Acetophenone	6.57	105	19364	373.05	ug/L		100
21) Hexachloroethane	6.61	166	3019	377.94	ug/L	#	81
24) Nitrobenzene	6.75	77	9866	382.07	ug/L	#	72
25) Isophorone	7.09	82	18060	385.37	ug/L		88
26) 2-Nitrophenol	7.15	139	5538	325.09	ug/L		60
27) 2,4-Dimethylphenol	7.27	107	13208	344.95	ug/L		81
28) bis(2-Chloroethoxy)methane	7.37	93	9947	346.04	ug/L		71
29) Benzoic Acid	7.44	105	25361	2445.89	ug/L		84
30) 2,4-Dichlorophenol	7.44	162	10242	330.12	ug/L		96
31) 1,2,4-Trichlorobenzene	7.50	180	12849	419.53	ug/L		95
32) Naphthalene	7.56	128	36388	371.20	ug/L		79
33) 4-Chloroaniline	7.70	127	6695	424.68	ug/L		98
34) Hexachlorobutadiene	7.81	225	8855	366.01	ug/L		90
35) 4-Chloro-3-methylphenol	8.29	107	13271	349.49	ug/L		81
36) 2-Methylnaphthalene	8.35	141	24490	365.50	ug/L		71
37) 1-Methylnaphthalene	8.46	141	23246	374.91	ul/l		66
39) Hexachlorocyclopentadiene	8.61	237	7167	351.51	ug/L		94
40) 2,3-Dichloroaniline	8.71	161	12079	379.39	ug/L		93
41) 2,4,6-Trichlorophenol	8.71	196	7427	420.72	ug/L		96
42) 2,4,5-Trichlorophenol	8.76	196	7079	382.90	ug/L		50
44) 2-Chloronaphthalene	8.87	162	22875	421.02	ug/L		89
45) Biphenyl	9.52	154	18482	277.03	ug/L	#	1

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

Data File : C:\MSDCHEM\1\DATA\A00372.D Vial: 0
Acq On : 29 Aug 2002 10:34 Operator:
Sample : 0.25 NG/UL 8270 ICAL STD NO 0980-54-4 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:30:52 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:30:43 2002
Response via : Initial Calibration
DataAcq Meth :

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46) 2-Nitroaniline	9.04	138	6775	355.31 ug/L		92
47) Dimethylphthalate	9.30	163	36458	409.36 ug/L		97
48) Acenaphthylene	9.32	152	35343	399.79 ug/L		96
49) 2,6-Dinitrotoluene	9.35	165	6549	404.68 ug/L		91
50) 3-Nitroaniline	9.49	138	4190	432.36 ug/L		87
51) Acenaphthene	9.52	153	24410	408.94 ug/L		93
52) 2,4-Dinitrophenol	9.60	184	9951	1315.28 ug/L	#	61
53) 4-Nitrophenol	9.71	109	38241+	1712.58 ug/L	#	48
54) Dibenzofuran	9.69	168	32951	404.76 ug/L	#	1
55) 2,4-Dinitrotoluene	9.35	165	6625	273.09 ug/L		85
56) 2,3,4,6-Tetrachlorophenol	9.84	232	5811	310.94 ug/L	#	49
57) 2,3,5,6-Tetrachlorophenol	9.89	232	6405	419.39 ul/l	#	54
58) Diethylphthalate	10.05	149	35848	468.93 ug/L		91
59) Fluorene	10.05	166	24027	400.40 ug/L		61
60) 4-Chlorophenylphenylether	10.08	204	15789	420.16 ug/L		69
61) 4-Nitroaniline	9.49	138	4190	244.01 ug/L		46
63) 4,6-Dinitro-2-methylphenol	10.18	198	28580	2054.34 ug/L	#	49
64) n-Nitrosodiphenylamine	10.21	169	18475	317.19 ug/L	#	1
66) 1,2-Diphenylhydrazine	10.24	182	10109	342.50 ug/L	#	1
67) 4-Bromophenylphenylether	10.58	248	10457	390.45 ug/L	#	60
68) Hexachlorobenzene	10.71	284	10412	397.78 ug/L		86
69) Atrazine	10.92	200	1140+	250.09 ug/L		38
70) Pentachlorophenol	10.92	266	4514	339.92 ug/L		88
71) Phenanthrene	11.05	178	37043	374.06 ug/L		76
72) Anthracene	11.09	178	34630	431.69 ug/L		76
73) Octadecane	11.00	57	12566	455.54 ug/L		49
74) Carbazole	11.28	167	31877	379.81 ug/L		81
75) Di-n-butylphthalate	11.75	149	54755	423.07 ug/L		95
76) Fluoranthene	12.29	202	36470	379.04 ug/L		81
77) Pyrene	12.52	202	36466	379.17 ug/L		71
78) Benzidine	12.46	184	18326	1403.19 ug/L		100
81) Butylbenzylphthalate	13.30	149	32611	381.44 ug/L		77
82) Benzo(a)anthracene	13.83	228	39563	296.53 ug/L		53
83) 3,3'-Dichlorobenzidine	13.79	252	16984+	278.35 ug/L		95
84) Chrysene	13.83	228	39602	409.68 ug/L		81
85) bis(2-Ethylhexyl)phthalate	13.95	149	58912	394.10 ug/L		96
87) Di-n-octylphthalate	14.64	149	88488	342.32 ug/L		95
88) Benzofluoranthenes	15.04	252	96546	655.59 ug/L		80
89) Benzo(a)pyrene	15.43	252	43305	296.56 ug/L		81
90) Indeno(1,2,3-cd)pyrene	17.14	276	52961	333.31 ug/L		97
91) Dibenz(a,h)anthracene	17.19	278	50321	333.16 ug/L		71
92) Benzo(g,h,i)perylene	17.61	276	46478	330.45 ug/L		84

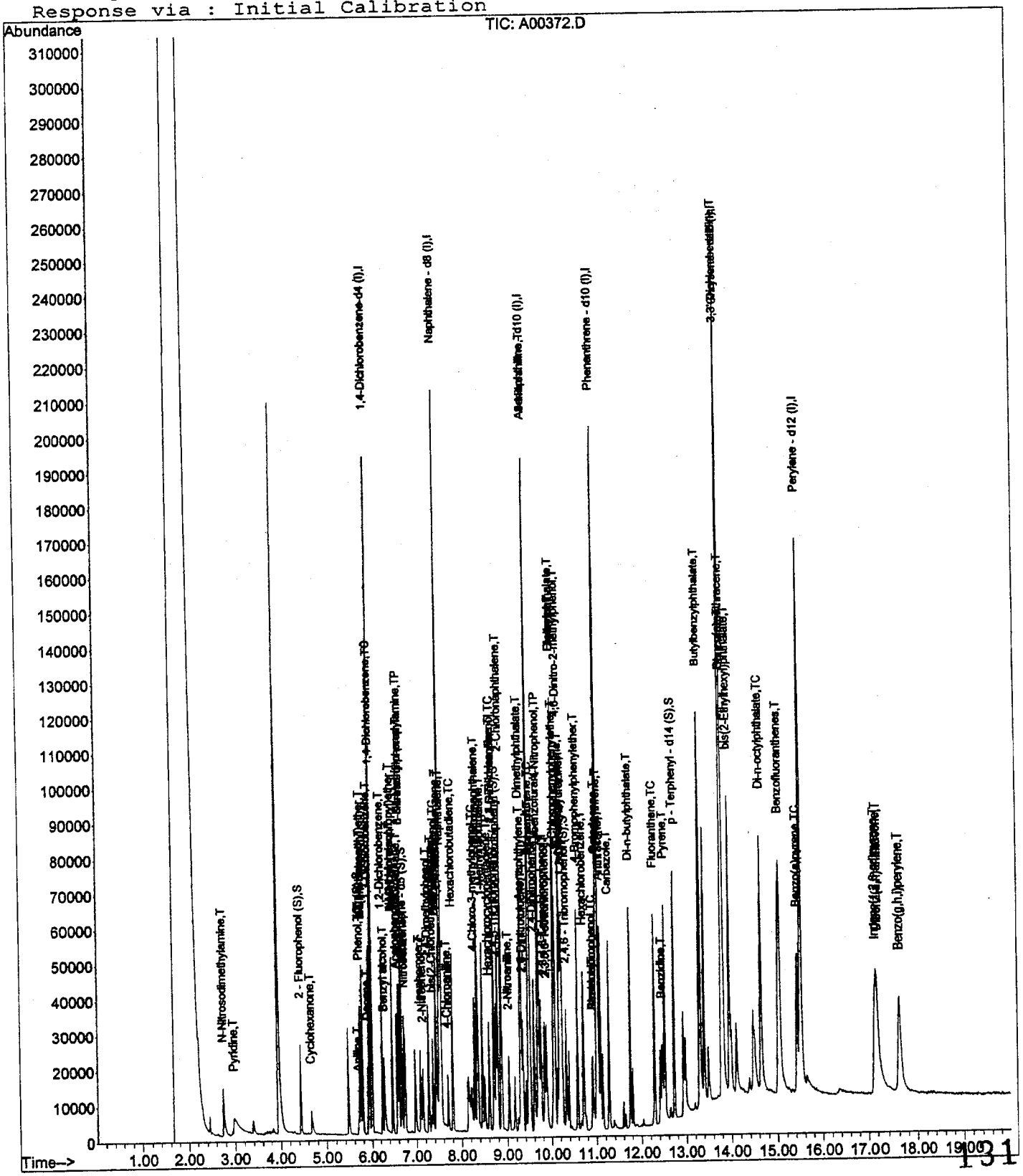
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00372.D
Acq On : 29 Aug 2002 10:34
Sample : 0.25 NG/UL 8270 ICAL STD NO 0980-54-4
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:30 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00373.D
Acq On : 29 Aug 2002 11:56
Sample : 0.5 NG/UL 8270 ICAL STD NO 0980-54-5
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:22:12 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:22:04 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	60002	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	132492	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.49	162	82099	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.03	188	141494	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.81	240	154229	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.51	264	172655	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.44	112	21524	745.18 ug/L	0.00
7) Phenol - d5 (S)	5.73	99	26767	883.49 ug/L	0.00
23) Nitrobenzene - d5 (S)	6.73	82	22839	556.48 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.80	172	51778	835.98 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.33	330	16225	922.21 ug/L	-0.01
79) p - Terphenyl - d14 (S)	12.73	244	77024	902.83 ug/L	0.00

Target Compounds						Qvalue
2) N-Nitrosodimethylamine	2.75	74	29138	3725.89 ug/L	#	100
3) Pyridine	2.85	79	116714+	5110.32 ug/L		97
5) Cyclohexanone	4.66	55	7082	899.38 ug/L		96
6) Aniline	5.69	93	7947	451.79 ug/L	#	85
8) Phenol	5.74	94	22776	733.98 ug/L		98
9) bis(2-Chloroethyl)ether	5.78	63	26064	1544.12 ug/L	#	22
10) 2-Chlorophenol	5.79	128	25799	980.15 ug/L		67
11) Decane	5.91	57	11657	843.48 ug/L		99
12) 1,3-Dichlorobenzene	5.94	146	29408	838.38 ug/L		71
13) 1,4-Dichlorobenzene	6.01	146	27955	771.54 ug/L		96
14) Benzyl alcohol	6.28	79	23224	875.76 ug/L		100
15) 1,2-Dichlorobenzene	6.25	146	27572	801.64 ug/L		98
16) 2-Methylphenol	6.47	108	17827	806.50 ug/L		98
17) bis(2-chloroisopropyl)ethe	6.47	121	3523+	677.68 ug/L	#	1
18) 3-&4-Methylphenol	6.67	108	39152	1526.40 ug/L	#	37
19) n-Nitroso-di-n-propylamine	6.65	70	16473	791.26 ug/L		71
20) Acetophenone	6.57	105	40192	798.90 ug/L		98
21) Hexachloroethane	6.62	166	6396	796.01 ug/L		86
24) Nitrobenzene	6.76	77	21365	879.38 ug/L		72
25) Isophorone	7.08	82	38582	869.61 ug/L		87
26) 2-Nitrophenol	7.15	139	13168	806.14 ug/L		64
27) 2,4-Dimethylphenol	7.28	107	28732	794.35 ug/L		85
28) bis(2-Chloroethoxy)methane	7.37	93	20730	751.01 ug/L		74
29) Benzoic Acid	7.56	105	70751	6306.99 ug/L	#	55
30) 2,4-Dichlorophenol	7.44	162	23485	809.26 ug/L		99
31) 1,2,4-Trichlorobenzene	7.51	180	23738	838.65 ug/L		95
32) Naphthalene	7.56	128	77070	833.63 ug/L		80
33) 4-Chloroaniline	7.70	127	14317	1029.64 ug/L		98
34) Hexachlorobutadiene	7.81	225	19408	848.51 ug/L		88
35) 4-Chloro-3-methylphenol	8.31	107	29457	804.73 ug/L		73
36) 2-Methylnaphthalene	8.35	141	53666	831.73 ug/L		73
37) 1-Methylnaphthalene	8.47	141	48164	807.54 ul/l		63
39) Hexachlorocyclopentadiene	8.62	237	17737	924.15 ug/L		94
40) 2,3-Dichloroaniline	8.71	161	28280	952.54 ug/L		95
41) 2,4,6-Trichlorophenol	8.72	196	16620	964.84 ug/L		99
42) 2,4,5-Trichlorophenol	8.77	196	17526	1002.60 ug/L		51
44) 2-Chloronaphthalene	8.87	162	49960	987.80 ug/L		91
45) Biphenyl	9.52	154	41752	624.75 ug/L	#	1

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

Data File : C:\MSDCHEM\1\DATA\A00373.D
Acq On : 29 Aug 2002 11:56
Sample : 0.5 NG/UL 8270 ICAL STD NO 0980-54-5
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:22:12 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:22:04 2002
Response via : Initial Calibration
DataAcq Meth :

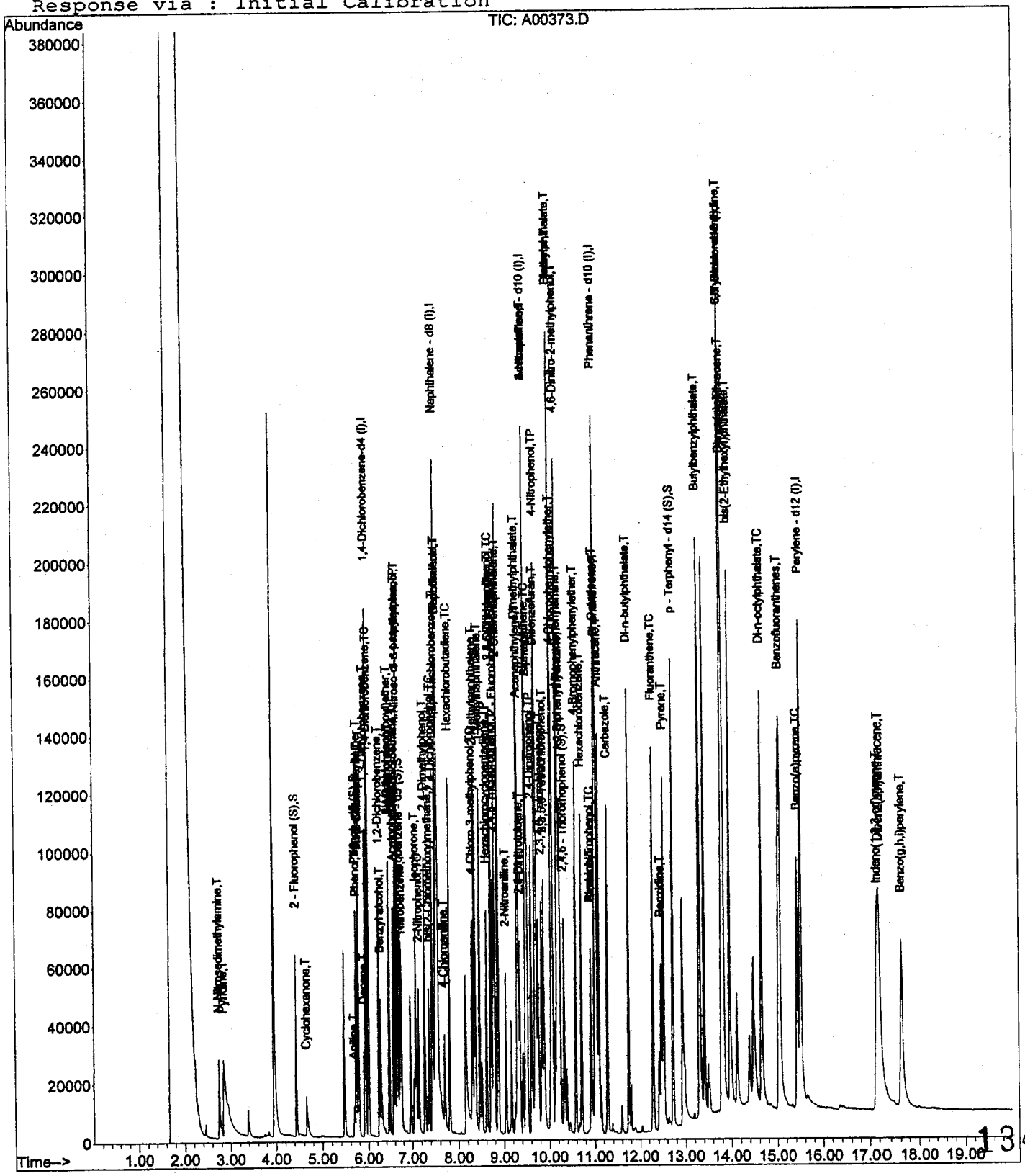
Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46) 2-Nitroaniline	9.05	138	15679	850.00 ug/L		90
47) Dimethylphthalate	9.30	163	82017	999.76 ug/L		100
48) Acenaphthylene	9.32	152	74501	902.70 ug/L		96
49) 2,6-Dinitrotoluene	9.36	165	15238	1026.36 ug/L		86
50) 3-Nitroaniline	9.49	138	8746	955.88 ug/L		84
51) Acenaphthene	9.52	153	53503	956.66 ug/L		94
52) 2,4-Dinitrophenol	9.61	184	25376	3386.30 ug/L	#	68
53) 4-Nitrophenol	9.72	109	97340+	4605.03 ug/L	#	40
54) Dibenzofuran	9.70	168	72197	973.99 ug/L	#	1
55) 2,4-Dinitrotoluene	9.36	165	15830	635.99 ug/L		88
56) 2,3,4,6-Tetrachlorophenol	9.84	232	16215	858.94 ug/L	#	51
57) 2,3,5,6-Tetrachlorophenol	9.89	232	15296	1006.05 ul/l	#	56
58) Diethylphthalate	10.06	149	72222	1020.66 ug/L		74
59) Fluorene	10.06	166	52714	908.51 ug/L		64
60) 4-Chlorophenylphenylether	10.08	204	36223	1062.15 ug/L		73
61) 4-Nitroaniline	9.49	138	8746	474.14 ug/L		59
63) 4,6-Dinitro-2-methylphenol	10.19	198	65509	4698.95 ug/L	#	53
64) n-Nitrosodiphenylamine	10.22	169	44722	760.37 ug/L	#	1
66) 1,2-Diphenylhydrazine	10.25	182	23755	820.41 ug/L	#	1
67) 4-Bromophenylphenylether	10.59	248	24154	948.59 ug/L	#	63
68) Hexachlorobenzene	10.72	284	23334	931.19 ug/L		88
69) Atrazine	10.92	200	3275+	904.98 ug/L		38
70) Pentachlorophenol	10.92	266	12889	967.59 ug/L		88
71) Phenanthrene	11.05	178	87225	872.81 ug/L		75
72) Anthracene	11.10	178	77709	1020.23 ug/L		80
73) Octadecane	11.01	57	26814	997.38 ug/L		49
74) Carbazole	11.29	167	72226	876.26 ug/L		81
75) Di-n-butylphthalate	11.76	149	117267	944.05 ug/L		95
76) Fluoranthene	12.30	202	82354	846.43 ug/L		83
77) Pyrene	12.53	202	83577	879.19 ug/L		72
78) Benzidine	12.47	184	43221	2964.87 ug/L		100
81) Butylbenzylphthalate	13.30	149	65687	831.68 ug/L		77
82) Benzo(a)anthracene	13.83	228	86591	623.78 ug/L		54
83) 3,3'-Dichlorobenzidine	13.80	252	44578+	768.94 ug/L		100
84) Chrysene	13.83	228	89658	989.53 ug/L		82
85) bis(2-Ethylhexyl)phthalate	13.96	149	111120	762.63 ug/L		99
87) Di-n-octylphthalate	14.65	149	184522	774.19 ug/L		95
88) Benzofluoranthenes	15.05	252	208643	1542.88 ug/L		80
89) Benzo(a)pyrene	15.44	252	96112	704.40 ug/L		78
90) Indeno(1,2,3-cd)pyrene	17.16	276	114850	767.83 ug/L		99
91) Dibenz(a,h)anthracene	17.20	278	108083	765.63 ug/L		73
92) Benzo(g,h,i)perylene	17.62	276	99109	746.30 ug/L		86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00373.D
Acq On : 29 Aug 2002 11:56
Sample : 0.5 NG/UL 8270 ICAL STD NO 0980-54-5
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:22 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00374.D
Acq On : 29 Aug 2002 12:22
Sample : 1.0 NG/UL 8270 ICAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:49:53 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:49:41 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	56831	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	127520	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.49	162	79424	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.03	188	137991	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.81	240	152114	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.51	264	169775	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.42	112	42901	1015.76 ug/L	-0.02
7) Phenol - d5 (S)	5.72	99	50090	989.21 ug/L	-0.01
23) Nitrobenzene - d5 (S)	6.73	82	41961	1026.83 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.80	172	106086	979.85 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.34	330	34980	1137.02 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.73	244	149351	965.99 ug/L	0.00

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.71	74	49020	3822.97 ug/L #	100
3) Pyridine	2.76	79	166890+	4733.11 ug/L	98
5) Cyclohexanone	4.63	55	14146	1060.56 ug/L	96
6) Aniline	5.67	93	20457	1264.30 ug/L	100
8) Phenol	5.74	94	50076	992.22 ug/L	74
9) bis(2-Chloroethyl)ether	5.78	63	52312	966.30 ug/L #	20
10) 2-Chlorophenol	5.78	128	46633	939.31 ug/L	65
11) Decane	5.91	57	22379	960.91 ug/L	97
12) 1,3-Dichlorobenzene	5.94	146	54537	969.77 ug/L	74
13) 1,4-Dichlorobenzene	6.01	146	55615	975.91 ug/L	99
14) Benzyl alcohol	6.28	79	49060	1073.18 ug/L	98
15) 1,2-Dichlorobenzene	6.24	146	52597	983.34 ug/L	98
16) 2-Methylphenol	6.47	108	35424	1002.14 ug/L	94
17) bis(2-chloroisopropyl)ethe	6.47	121	7556+	1070.50 ug/L #	1
18) 3-&4-Methylphenol	6.67	108	74276	1681.45 ug/L #	35
19) n-Nitroso-di-n-propylamine	6.65	70	31788	971.84 ug/L	72
20) Acetophenone	6.57	105	72698	927.28 ug/L	99
21) Hexachloroethane	6.62	166	13110	1056.24 ug/L	85
24) Nitrobenzene	6.75	77	39442	1000.95 ug/L	68
25) Isophorone	7.08	82	74320	1044.31 ug/L	86
26) 2-Nitrophenol	7.15	139	24670	1027.02 ug/L	57
27) 2,4-Dimethylphenol	7.28	107	58274	1058.27 ug/L	87
28) bis(2-Chloroethoxy)methane	7.37	93	38555	988.75 ug/L	82
29) Benzoic Acid	7.49	105	131230	6195.95 ug/L #	8
30) 2,4-Dichlorophenol	7.44	162	45920	1035.49 ug/L	97
31) 1,2,4-Trichlorobenzene	7.51	180	47274	967.12 ug/L	94
32) Naphthalene	7.56	128	147600	998.08 ug/L	79
33) 4-Chloroaniline	7.70	127	27328	1029.00 ug/L	95
34) Hexachlorobutadiene	7.81	225	35930	1001.19 ug/L	90
35) 4-Chloro-3-methylphenol	8.31	107	55924	1008.75 ug/L	72
36) 2-Methylnaphthalene	8.35	141	100916	1004.10 ug/L	74
37) 1-Methylnaphthalene	8.47	141	93587	1002.49 ul/l	66
39) Hexachlorocyclopentadiene	8.62	237	34768	1041.72 ug/L	94
40) 2,3-Dichloroaniline	8.71	161	57627	1018.39 ug/L	93
41) 2,4,6-Trichlorophenol	8.73	196	30076	1001.22 ug/L	98
42) 2,4,5-Trichlorophenol	8.78	196	33627	1131.95 ug/L	48
44) 2-Chloronaphthalene	8.87	162	91699	980.19 ug/L	89
45) Biphenyl	9.52	154	83507	979.87 ug/L #	1

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

Data File : C:\MSDCHEM\1\DATA\A00374.D
Acq On : 29 Aug 2002 12:22
Sample : 1.0 NG/UL 8270 ICAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:49:53 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:49:41 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	2-Nitroaniline	9.05	138	33525	1061.41	ug/L		85
47)	Dimethylphthalate	9.31	163	163052	1008.95	ug/L		97
48)	Acenaphthylene	9.32	152	153318	1023.29	ug/L		92
49)	2,6-Dinitrotoluene	9.36	165	29276	1006.78	ug/L		85
50)	3-Nitroaniline	9.50	138	18645	1122.71	ug/L		79
51)	Acenaphthene	9.52	153	101817	1013.52	ug/L		99
52)	2,4-Dinitrophenol	9.61	184	65714	5376.01	ug/L		79
53)	4-Nitrophenol	9.73	109	229361+	5511.43	ug/L	#	28
54)	Dibenzofuran	9.70	168	148319	1043.24	ug/L	#	1
55)	2,4-Dinitrotoluene	9.36	165	29772	986.60	ug/L		90
56)	2,3,4,6-Tetrachlorophenol	9.84	232	35982	1170.11	ug/L	#	48
57)	2,3,5,6-Tetrachlorophenol	9.89	232	33380	1145.83	ul/l	#	54
58)	Diethylphthalate	10.07	149	129385	1014.80	ug/L		48
59)	Fluorene	10.06	166	106602	1044.19	ug/L		66
60)	4-Chlorophenylphenylether	10.08	204	66875	975.38	ug/L		67
61)	4-Nitroaniline	9.50	138	18645	1122.71	ug/L		76
63)	4,6-Dinitro-2-methylphenol	10.19	198	139037	5233.68	ug/L	#	61
64)	n-Nitrosodiphenylamine	10.22	169	97393	998.22	ug/L	#	1
66)	1,2-Diphenylhydrazine	10.25	182	52524	1002.48	ug/L	#	17
67)	4-Bromophenylphenylether	10.59	248	47373	988.12	ug/L	#	62
68)	Hexachlorobenzene	10.72	284	45141	992.23	ug/L		87
69)	Atrazine	10.92	200	7202+	970.49	ug/L		38
70)	Pentachlorophenol	10.92	266	28849	1160.96	ug/L		88
71)	Phenanthrene	11.05	178	161198	967.36	ug/L		78
72)	Anthracene	11.10	178	161516	1002.48	ug/L		83
73)	Octadecane	11.01	57	56128	1081.65	ug/L		50
74)	Carbazole	11.29	167	148475	1008.14	ug/L		83
75)	Di-n-butylphthalate	11.76	149	220891	1026.50	ug/L		97
76)	Fluoranthene	12.30	202	171285	1050.38	ug/L		81
77)	Pyrene	12.53	202	171809	1045.51	ug/L		69
78)	Benzidine	12.47	184	150691	5950.85	ug/L		100
81)	Butylbenzylphthalate	13.30	149	127894	981.97	ug/L		83
82)	Benzo(a)anthracene	13.79	228	188335	1055.16	ug/L		88
83)	3,3'-Dichlorobenzidine	13.80	252	50521+	661.10	ug/L		98
84)	Chrysene	13.84	228	182657	1072.01	ug/L		84
85)	bis(2-Ethylhexyl)phthalate	13.96	149	211271	942.35	ug/L		97
87)	Di-n-octylphthalate	14.65	149	360174	1022.34	ug/L		96
88)	Benzofluoranthenes	15.05	252	426603	2079.81	ug/L		75
89)	Benzo(a)pyrene	15.44	252	199691	1055.96	ug/L		72
90)	Indeno(1,2,3-cd)pyrene	17.16	276	237394	1063.96	ug/L		92
91)	Dibenz(a,h)anthracene	17.20	278	218145	1069.18	ug/L		74
92)	Benzo(g,h,i)perylene	17.63	276	204343	1049.12	ug/L		93

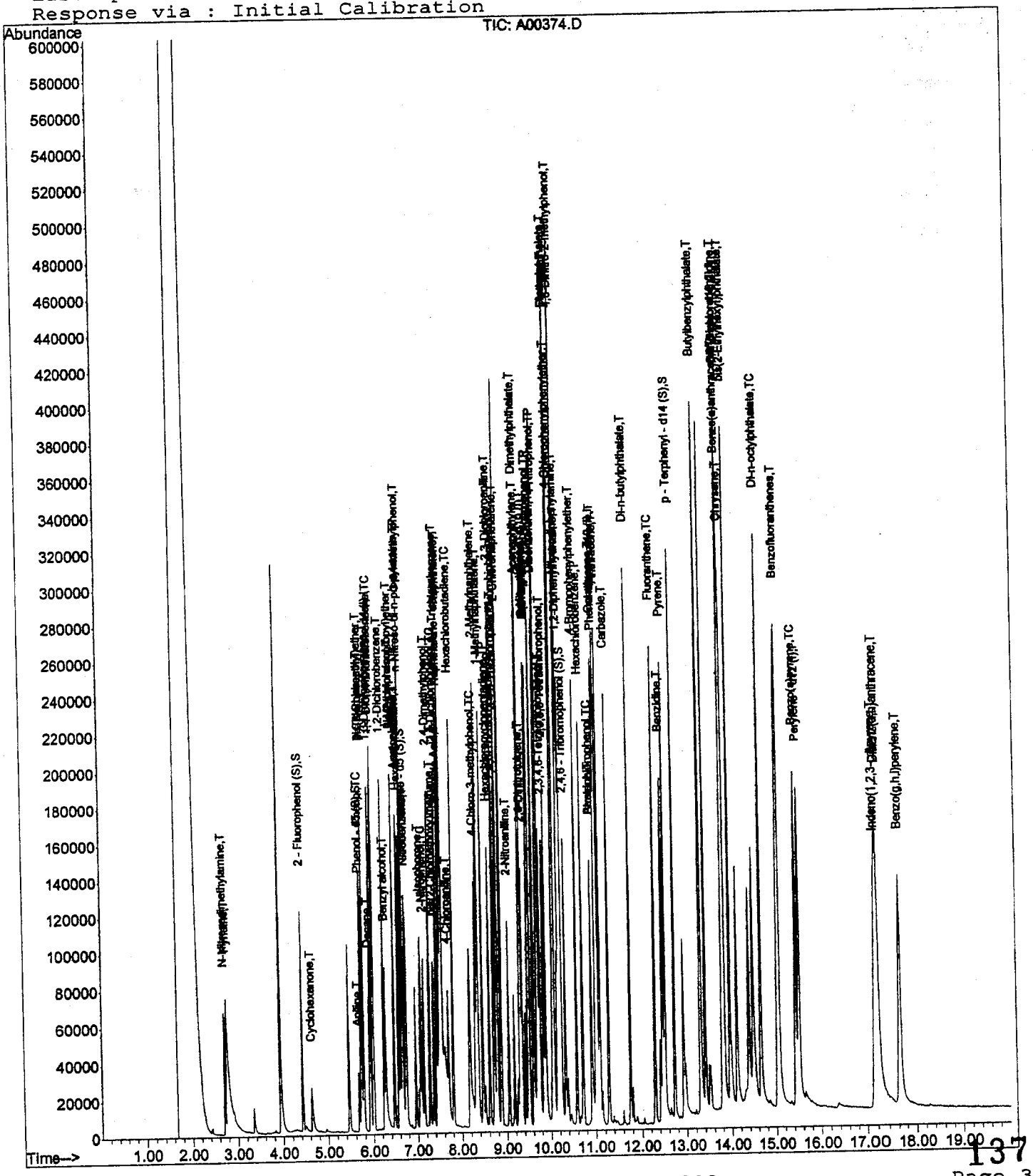
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00374.D
Acq On : 29 Aug 2002 12:22
Sample : 1.0 NG/UL 8270 ICAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:49 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00375.D Vial: 0
Acq On : 29 Aug 2002 12:48 Operator:
Sample : 1.5 NG/UL 8270 ICAL STD NO 0980-54-7 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:46:10 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:46:06 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	52863	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	126294	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.49	162	76717	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.03	188	136704	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.81	240	138673	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.52	264	162054	1000.00 ug/L	0.01
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.42	112	57909	1474.02 ug/L	-0.02
7) Phenol - d5 (S)	5.72	99	71148	1510.54 ug/L	0.00
23) Nitrobenzene - d5 (S)	6.73	82	54466	1345.78 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.80	172	168539	1611.62 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.34	330	50067	1642.75 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.73	244	215652	1407.95 ug/L	0.00

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.72	74	72378	6068.31 ug/L #	100
3) Pyridine	2.74	79	300965+	8866.78 ug/L	97
5) Cyclohexanone	4.63	55	18557	1495.69 ug/L	95
6) Aniline	5.67	93	29682	1972.13 ug/L	99
8) Phenol	5.74	94	69372	1477.73 ug/L	81
9) bis(2-Chloroethyl)ether	5.78	63	74182	1473.13 ug/L #	22
10) 2-Chlorophenol	5.78	128	73207	1585.27 ug/L	61
11) Decane	5.91	57	31021	1431.97 ug/L	94
12) 1,3-Dichlorobenzene	5.94	146	79047	1511.12 ug/L	76
13) 1,4-Dichlorobenzene	6.01	146	79238	1494.80 ug/L	98
14) Benzyl alcohol	6.27	79	67143	1578.99 ug/L	98
15) 1,2-Dichlorobenzene	6.24	146	72222	1451.59 ug/L	98
16) 2-Methylphenol	6.47	108	52366	1592.62 ug/L	93
17) bis(2-chloroisopropyl)ethe	6.46	121	8923+	1359.07 ug/L #	1
18) 3-&4-Methylphenol	6.67	108	107387	2613.49 ug/L #	40
19) n-Nitroso-di-n-propylamine	6.65	70	47325	1555.45 ug/L	70
20) Acetophenone	6.57	105	107964	1480.47 ug/L	95
21) Hexachloroethane	6.61	166	16168	1400.39 ug/L #	84
24) Nitrobenzene	6.75	77	59631	1528.00 ug/L	65
25) Isophorone	7.07	82	105378	1495.10 ug/L	85
26) 2-Nitrophenol	7.14	139	36238	1523.25 ug/L	57
27) 2,4-Dimethylphenol	7.28	107	78356	1436.77 ug/L	88
28) bis(2-Chloroethoxy)methane	7.37	93	54282	1405.58 ug/L	81
29) Benzoic Acid	7.52	105	180949	8626.34 ug/L	81
30) 2,4-Dichlorophenol	7.44	162	66724	1519.22 ug/L	97
31) 1,2,4-Trichlorobenzene	7.51	180	71755	1482.20 ug/L	93
32) Naphthalene	7.56	128	215074	1468.46 ug/L	84
33) 4-Chloroaniline	7.70	127	38507	1464.01 ug/L	98
34) Hexachlorobutadiene	7.81	225	51789	1457.11 ug/L	88
35) 4-Chloro-3-methylphenol	8.32	107	84286	1535.09 ug/L	75
36) 2-Methylnaphthalene	8.35	141	145824	1465.02 ug/L	72
37) 1-Methylnaphthalene	8.47	141	136622	1477.69 ul/l	66
39) Hexachlorocyclopentadiene	8.62	237	51204	1588.31 ug/L	95
40) 2,3-Dichloroaniline	8.71	161	89635	1639.93 ug/L	98
41) 2,4,6-Trichlorophenol	8.73	196	46923	1617.16 ug/L	94
42) 2,4,5-Trichlorophenol	8.78	196	44763	1559.97 ug/L #	34
44) 2-Chloronaphthalene	8.87	162	132682	1468.31 ug/L	96
45) Biphenyl	9.52	154	128458	1560.50 ug/L #	1

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

Data File : C:\MSDCHEM\1\DATA\A00375.D Vial: 0
Acq On : 29 Aug 2002 12:48 Operator:
Sample : 1.5 NG/UL 8270 ICAL STD NO 0980-54-7 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:46:10 2002 Quant Results File: SV5-080902.RES

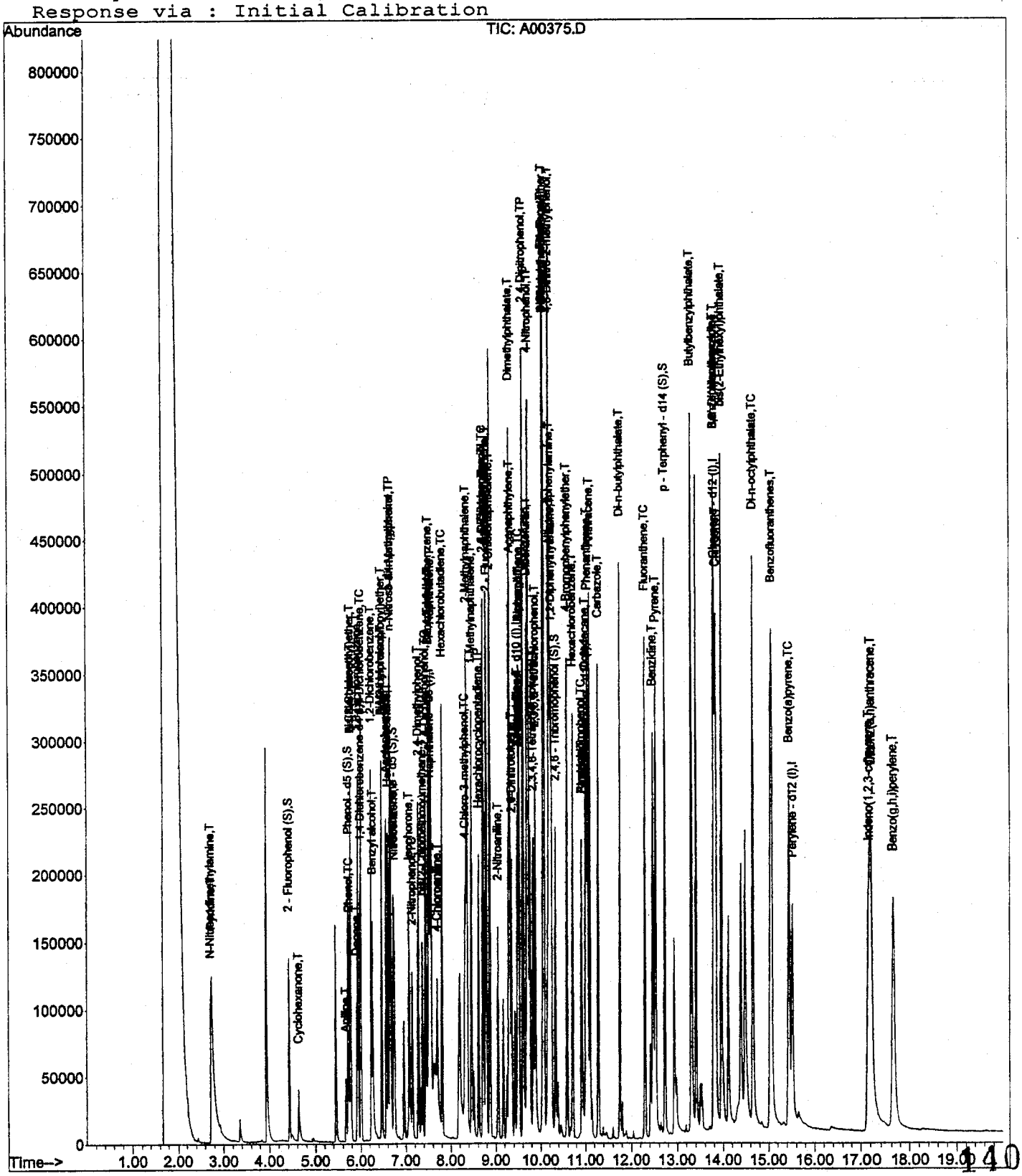
Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:46:06 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	2-Nitroaniline	9.05	138	51786	1697.42 ug/L		80
47)	Dimethylphthalate	9.31	163	249848	1600.58 ug/L		99
48)	Acenaphthylene	9.32	152	224256	1549.57 ug/L		87
49)	2,6-Dinitrotoluene	9.36	165	44779	1594.26 ug/L		86
50)	3-Nitroaniline	9.50	138	25241	1573.52 ug/L		81
51)	Acenaphthene	9.52	153	150310	1549.03 ug/L		99
52)	2,4-Dinitrophenol	9.61	184	119810	10147.41 ug/L		87
53)	4-Nitrophenol	9.73	109	360676+	8972.67 ug/L	#	22
54)	Dibenzofuran	9.70	168	208473	1518.10 ug/L	#	7
55)	2,4-Dinitrotoluene	9.36	165	45143	1548.76 ug/L		91
56)	2,3,4,6-Tetrachlorophenol	9.84	232	50934	1714.79 ug/L	#	49
57)	2,3,5,6-Tetrachlorophenol	9.89	232	50124	1781.31 ul/l	#	54
58)	Diethylphthalate	10.07	149	171998	1396.63 ug/L		16
59)	Fluorene	10.06	166	159428	1616.73 ug/L		72
60)	4-Chlorophenylphenylether	10.08	204	105955	1599.89 ug/L		72
61)	4-Nitroaniline	9.50	138	25241	1573.52 ug/L		69
63)	4,6-Dinitro-2-methylphenol	10.19	198	225050	8551.17 ug/L	#	73
64)	n-Nitrosodiphenylamine	10.22	169	159847	1653.76 ug/L	#	1
66)	1,2-Diphenylhydrazine	10.25	182	86770	1671.70 ug/L	#	40
67)	4-Bromophenylphenylether	10.59	248	74002	1558.09 ug/L	#	67
68)	Hexachlorobenzene	10.72	284	66899	1484.34 ug/L		89
69)	Atrazine	10.92	200	10523+	1431.36 ug/L		38
70)	Pentachlorophenol	10.92	266	41713	1694.45 ug/L		88
71)	Phenanthrene	11.05	178	257976	1562.70 ug/L		86
72)	Anthracene	11.10	178	253005	1585.10 ug/L		87
73)	Octadecane	11.01	57	71107	1383.22 ug/L		45
74)	Carbazole	11.29	167	233135	1597.88 ug/L		87
75)	Di-n-butylphthalate	11.76	149	288370	1352.70 ug/L		97
76)	Fluoranthene	12.30	202	248434	1537.83 ug/L		78
77)	Pyrene	12.53	202	245134	1505.76 ug/L		68
78)	Benzidine	12.47	184	233668	9314.52 ug/L		100
81)	Butylbenzylphthalate	13.30	149	168706	1420.87 ug/L		87
82)	Benzo(a)anthracene	13.79	228	306242	1882.89 ug/L		85
83)	3,3'-Dichlorobenzidine	13.80	252	92065+	1321.50 ug/L		100
84)	Chrysene	13.84	228	230473	1482.92 ug/L		79
85)	bis(2-Ethylhexyl)phthalate	13.96	149	290701	1422.32 ug/L		99
87)	Di-n-octylphthalate	14.65	149	479024	1424.47 ug/L		95
88)	Benzofluoranthenes	15.06	252	613401	3132.99 ug/L		76
89)	Benzo(a)pyrene	15.44	252	291770	1616.38 ug/L		69
90)	Indeno(1,2,3-cd)pyrene	17.17	276	348786	1637.67 ug/L		93
91)	Dibenz(a,h)anthracene	17.21	278	309555	1589.49 ug/L		72
92)	Benzo(g,h,i)perylene	17.64	276	293368	1577.95 ug/L		90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00375.D Vial: 0
Acq On : 29 Aug 2002 12:48 Operator:
Sample : 1.5 NG/UL 8270 ICAL STD NO 0980-54-7 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:46 2002 Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00376.D Vial: 0
Acq On : 29 Aug 2002 13:14 Operator:
Sample : 2.5 NG/UL 8270 ICAL STD NO 0980-55-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:34:22 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:34:16 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	60036	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	131889	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.49	162	82840	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.03	188	150223	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.81	240	133550	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.52	264	161643	1000.00 ug/L	0.01
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.43	112	94909	2235.41 ug/L	-0.01
7) Phenol - d5 (S)	5.73	99	125218	2483.62 ug/L	0.00
23) Nitrobenzene - d5 (S)	6.73	82	87769	2036.54 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.80	172	344083	3477.52 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.34	330	90107	2931.95 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.73	244	387995	2656.60 ug/L	0.00
Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.73	74	205843	17292.35 ug/L #	100
3) Pyridine	2.73	79	457747+	12381.59 ug/L	80
5) Cyclohexanone	4.63	55	31472	2404.97 ug/L	92
6) Aniline	5.67	93	50667	3011.21 ug/L	100
8) Phenol	5.74	94	132290	2624.71 ug/L	98
9) bis(2-Chloroethyl)ether	5.78	63	117798	2245.08 ug/L #	24
10) 2-Chlorophenol	5.78	128	123008	2564.45 ug/L	57
11) Decane	5.91	57	51381	2214.05 ug/L	93
12) 1,3-Dichlorobenzene	5.94	146	129841	2311.04 ug/L	83
13) 1,4-Dichlorobenzene	6.01	146	130840	2290.29 ug/L	95
14) Benzyl alcohol	6.27	79	116927	2580.81 ug/L	94
15) 1,2-Dichlorobenzene	6.24	146	128335	2409.65 ug/L	89
16) 2-Methylphenol	6.47	108	89557	2558.08 ug/L	88
17) bis(2-chloroisopropyl)ethe	6.46	121	16913+	2348.27 ug/L #	1
18) 3-&4-Methylphenol	6.67	108	187040	4832.65 ug/L #	46
19) n-Nitroso-di-n-propylamine	6.65	70	74773	2282.37 ug/L	71
20) Acetophenone	6.57	105	184295	2345.36 ug/L	90
21) Hexachloroethane	6.61	166	29612	2393.23 ug/L	83
24) Nitrobenzene	6.75	77	93315	2525.98 ug/L	59
25) Isophorone	7.07	82	162141	2333.67 ug/L	87
26) 2-Nitrophenol	7.14	139	64904	2778.73 ug/L	63
27) 2,4-Dimethylphenol	7.28	107	139389	2608.32 ug/L	90
28) bis(2-Chloroethoxy)methane	7.37	93	98492	2576.92 ug/L	97
29) Benzoic Acid	7.58	105	295443	14428.50 ug/L #	50
30) 2,4-Dichlorophenol	7.44	162	118165	2720.96 ug/L	92
31) 1,2,4-Trichlorobenzene	7.51	180	123887	2675.37 ug/L	92
32) Naphthalene	7.56	128	367541	2676.30 ug/L	83
33) 4-Chloroaniline	7.70	127	63862	2505.46 ug/L	99
34) Hexachlorobutadiene	7.81	225	85675	2445.86 ug/L	88
35) 4-Chloro-3-methylphenol	8.32	107	147531	2762.99 ug/L	79
36) 2-Methylnaphthalene	8.35	141	255321	2760.24 ug/L	70
37) 1-Methylnaphthalene	8.47	141	236035	2779.55 ul/l	69
39) Hexachlorocyclopentadiene	8.62	237	94358	2947.60 ug/L	92
40) 2,3-Dichloroaniline	8.72	161	173059	3247.68 ug/L	96
41) 2,4,6-Trichlorophenol	8.73	196	80965	2825.75 ug/L	89
42) 2,4,5-Trichlorophenol	8.78	196	59283	1980.32 ug/L #	1
44) 2-Chloronaphthalene	8.87	162	215221	2544.84 ug/L	95
45) Biphenyl	9.52	154	267048	3182.52 ug/L #	1

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

Data File : C:\MSDCHEM\1\DATA\A00376.D Vial: 0
Acq On : 29 Aug 2002 13:14 Operator:
Sample : 2.5 NG/UL 8270 ICAL STD NO 0980-55-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:34:22 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:34:16 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	2-Nitroaniline	9.05	138	93948	3124.59 ug/L	75
47)	Dimethylphthalate	9.31	163	468144	3065.25 ug/L	97
48)	Acenaphthylene	9.32	152	420322	3082.60 ug/L	80
49)	2,6-Dinitrotoluene	9.36	165	80346	2914.67 ug/L	91
50)	3-Nitroaniline	9.50	138	39833	2459.38 ug/L	82
51)	Acenaphthene	9.52	153	271513	2932.10 ug/L	83
52)	2,4-Dinitrophenol	9.62	184	223265	19747.96 ug/L	88
53)	4-Nitrophenol	9.75	109	736129+	19228.73 ug/L #	14
54)	Dibenzofuran	9.70	168	384996	2833.97 ug/L	37
55)	2,4-Dinitrotoluene	9.36	165	90668	3054.93 ug/L	79
56)	2,3,4,6-Tetrachlorophenol	9.85	232	96150	3263.45 ug/L #	45
57)	2,3,5,6-Tetrachlorophenol	9.90	232	90351	3334.28 ul/l #	55
58)	Diethylphthalate	10.08	149	244144	1939.71 ug/L #	1
59)	Fluorene	10.06	166	318601	3408.82 ug/L	80
60)	4-Chlorophenylphenylether	10.08	204	184730	2847.35 ug/L	71
61)	4-Nitroaniline	9.50	138	39833	2206.49 ug/L	72
63)	4,6-Dinitro-2-methylphenol	10.20	198	403002	15426.50 ug/L	74
64)	n-Nitrosodiphenylamine	10.23	169	365308	3774.83 ug/L #	1
66)	1,2-Diphenylhydrazine	10.25	182	184818	3565.92 ug/L	91
67)	4-Bromophenylphenylether	10.59	248	132824	2761.82 ug/L #	65
68)	Hexachlorobenzene	10.72	284	120768	2622.92 ug/L	86
69)	Atrazine	10.92	200	19608+	2631.74 ug/L	38
70)	Pentachlorophenol	10.92	266	79200	3231.38 ug/L	89
71)	Phenanthrene	11.06	178	475000	2999.51 ug/L	90
72)	Anthracene	11.10	178	475998	3218.05 ug/L	96
73)	Octadecane	11.01	57	127280	2432.34 ug/L	46
74)	Carbazole	11.29	167	422131	2858.87 ug/L	89
75)	Di-n-butylphthalate	11.76	149	423659	1894.80 ug/L	97
76)	Fluoranthene	12.30	202	445252	2826.57 ug/L	76
77)	Pyrene	12.53	202	450686	2819.27 ug/L	62
78)	Benzidine	12.47	184	438263	17789.93 ug/L	100
81)	Butylbenzylphthalate	13.30	149	255658	2375.45 ug/L	100
82)	Benzo(a)anthracene	13.80	228	490258m	3256.79 ug/L	
83)	3,3'-Dichlorobenzidine	13.80	252	194764+	3050.28 ug/L	98
84)	Chrysene	13.84	228	424023	3280.56 ug/L	75
85)	bis(2-Ethylhexyl)phthalate	13.96	149	414895	2239.34 ug/L	100
87)	Di-n-octylphthalate	14.65	149	734644	2322.74 ug/L	94
88)	Benzofluoranthenes	15.06	252	1065707	5992.91 ug/L	72
89)	Benzo(a)pyrene	15.45	252	507230	2948.06 ug/L	68
90)	Indeno(1,2,3-cd)pyrene	17.19	276	629149	3334.55 ug/L	83
91)	Dibenz(a,h)anthracene	17.23	278	534756	2974.25 ug/L	69
92)	Benzo(g,h,i)perylene	17.66	276	515343	3102.74 ug/L	99

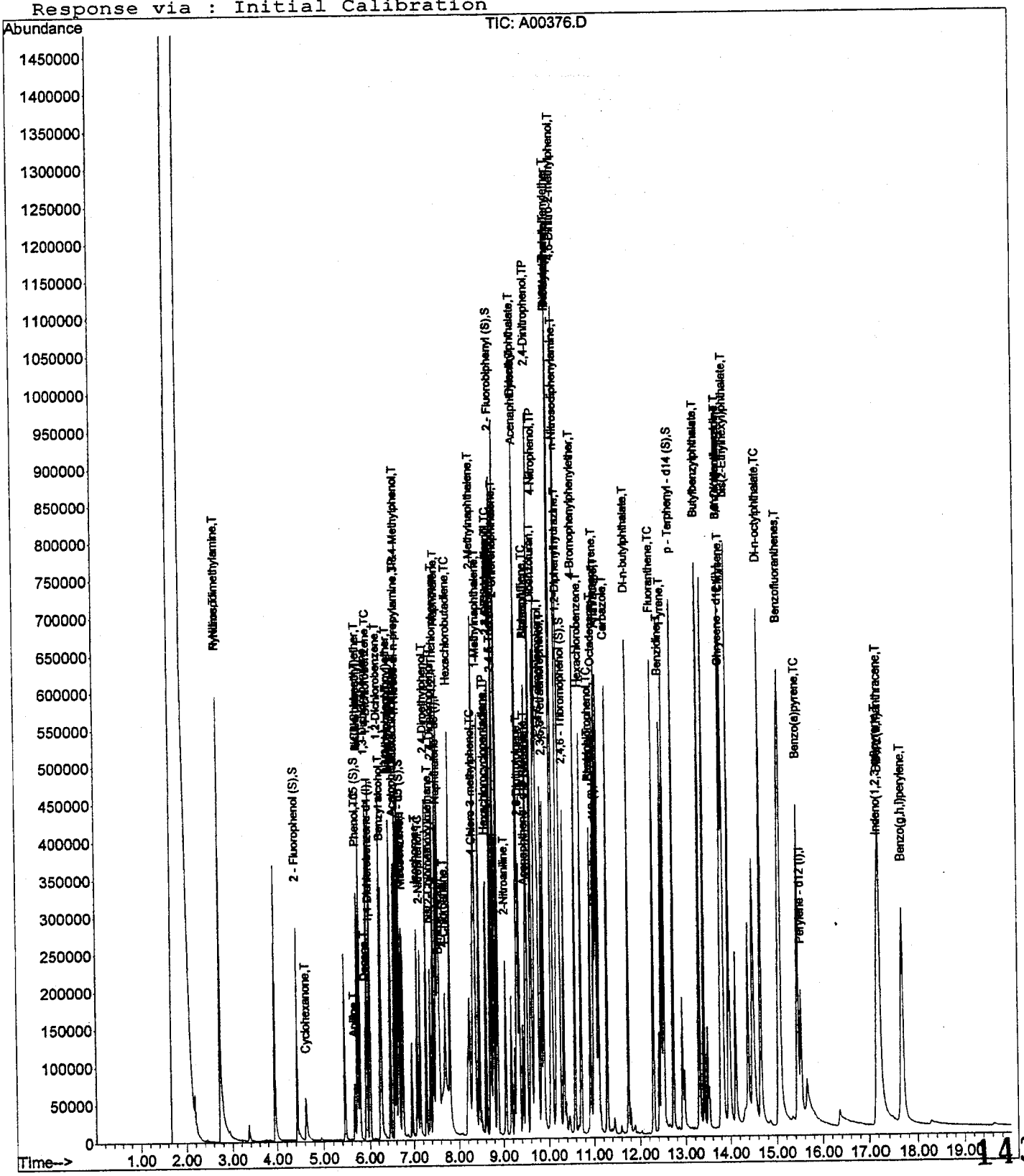
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00376.D
Acq On : 29 Aug 2002 13:14
Sample : 2.5 NG/UL 8270 ICAL STD NO 0980-55-2
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:34 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00377.D Vial: 0
Acq On : 29 Aug 2002 13:40 Operator:
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:52:55 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	44408	1000.00	ug/L		0.00
22) Naphthalene - d8 (I)	7.54	136	108768	1000.00	ug/L		0.00
38) Acenaphthene - d10 (I)	9.48	162	64639	1000.00	ug/L		0.00
62) Phenanthrene - d10 (I)	11.03	188	113273	1000.00	ug/L		0.00
80) Chrysene - d12 (I)	13.81	240	122554	1000.00	ul/l		0.00
86) Perylene - d12 (I)	15.51	264	146956	1000.00	ug/L		0.00
System Monitoring Compounds							
4) 2 - Fluorophenol (S)	0.00	112	0	0.00	ug/L		
7) Phenol - d5 (S)	5.79	99	2042	51.61	ug/L		0.06
23) Nitrobenzene - d5 (S)	0.00	82	0	0.00	ug/L		
43) 2 - Fluorobiphenyl (S)	0.00	172	0	0.00	ug/L		
65) 2,4,6 - Tribromophenol (S)	0.00	330	0	0.00	ug/L		
79) p - Terphenyl - d14 (S)	12.72	244	672	5.29	ug/L		0.00
Target Compounds							Qvalue
2) N-Nitrosodimethylamine	2.73	74	46561	4647.02	ug/L	#	100
3) Pyridine	2.79	79	102125+	4000.70	ug/L		99
6) Aniline	5.67	93	27435	2169.89	ug/L		100
8) Phenol	5.74	94	35696	905.15	ug/L		51
9) bis(2-Chloroethyl)ether	5.78	63	40558	958.76	ug/L	#	21
10) 2-Chlorophenol	5.79	128	38161	983.69	ug/L		68
11) Decane	5.91	57	17351	953.44	ug/L		93
12) 1,3-Dichlorobenzene	5.94	146	44687	1016.92	ug/L		72
13) 1,4-Dichlorobenzene	6.01	146	45251	1016.18	ug/L		99
14) Benzyl alcohol	6.28	79	37370	1046.15	ug/L		98
15) 1,2-Dichlorobenzene	6.24	146	39746	950.95	ug/L		98
16) 2-Methylphenol	6.47	108	27361	990.57	ug/L		95
17) bis(2-chloroisopropyl)ethe	6.46	121	5456+	989.22	ug/L	#	1
18) 3-&4-Methylphenol	6.66	108	27282	924.63	ug/L	#	26
19) n-Nitroso-di-n-propylamine	6.65	70	23552	921.48	ug/L		71
20) Acetophenone	6.57	105	53354	870.92	ug/L		100
21) Hexachloroethane	6.62	166	8958	923.62	ug/L		84
24) Nitrobenzene	6.75	77	28722	854.57	ug/L		69
25) Isophorone	7.07	82	54684	900.87	ug/L		86
26) 2-Nitrophenol	7.14	139	18913	923.10	ug/L		59
27) 2,4-Dimethylphenol	7.28	107	47703	1015.65	ug/L		85
28) bis(2-Chloroethoxy)methane	7.37	93	31510	947.39	ug/L		78
29) Benzoic Acid	7.54	105	130618	7230.28	ug/L		79
30) 2,4-Dichlorophenol	7.44	162	35709	944.06	ug/L		95
31) 1,2,4-Trichlorobenzene	7.51	180	36999	887.41	ug/L		93
32) Naphthalene	7.56	128	103644	821.67	ug/L		78
33) 4-Chloroaniline	7.70	127	31730	1400.74	ug/L	#	98
34) Hexachlorobutadiene	7.81	225	30753	1004.67	ug/L		90
35) 4-Chloro-3-methylphenol	8.29	107	41576	879.23	ug/L		76
36) 2-Methylnaphthalene	8.35	141	74717	871.59	ug/L		72
37) 1-Methylnaphthalene	8.46	141	74781	939.15	ul/l		63
39) Hexachlorocyclopentadiene	8.61	237	26700	982.97	ug/L		96
40) 2,3-Dichloroaniline	8.71	161	43936	954.04	ug/L		95
41) 2,4,6-Trichlorophenol	8.71	196	22198	907.99	ug/L		96
42) 2,4,5-Trichlorophenol	8.75	196	27352	1131.32	ug/L		50
44) 2-Chloronaphthalene	8.87	162	70466	925.51	ug/L		94
45) Biphenyl	9.52	154	63787	919.67	ug/L	#	1
46) 2-Nitroaniline	9.04	138	25181	979.59	ug/L		86

144

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

Data File : C:\MSDCHEM\1\DATA\A00377.D
Acq On : 29 Aug 2002 13:40
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:52:55 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration
DataAcq Meth :

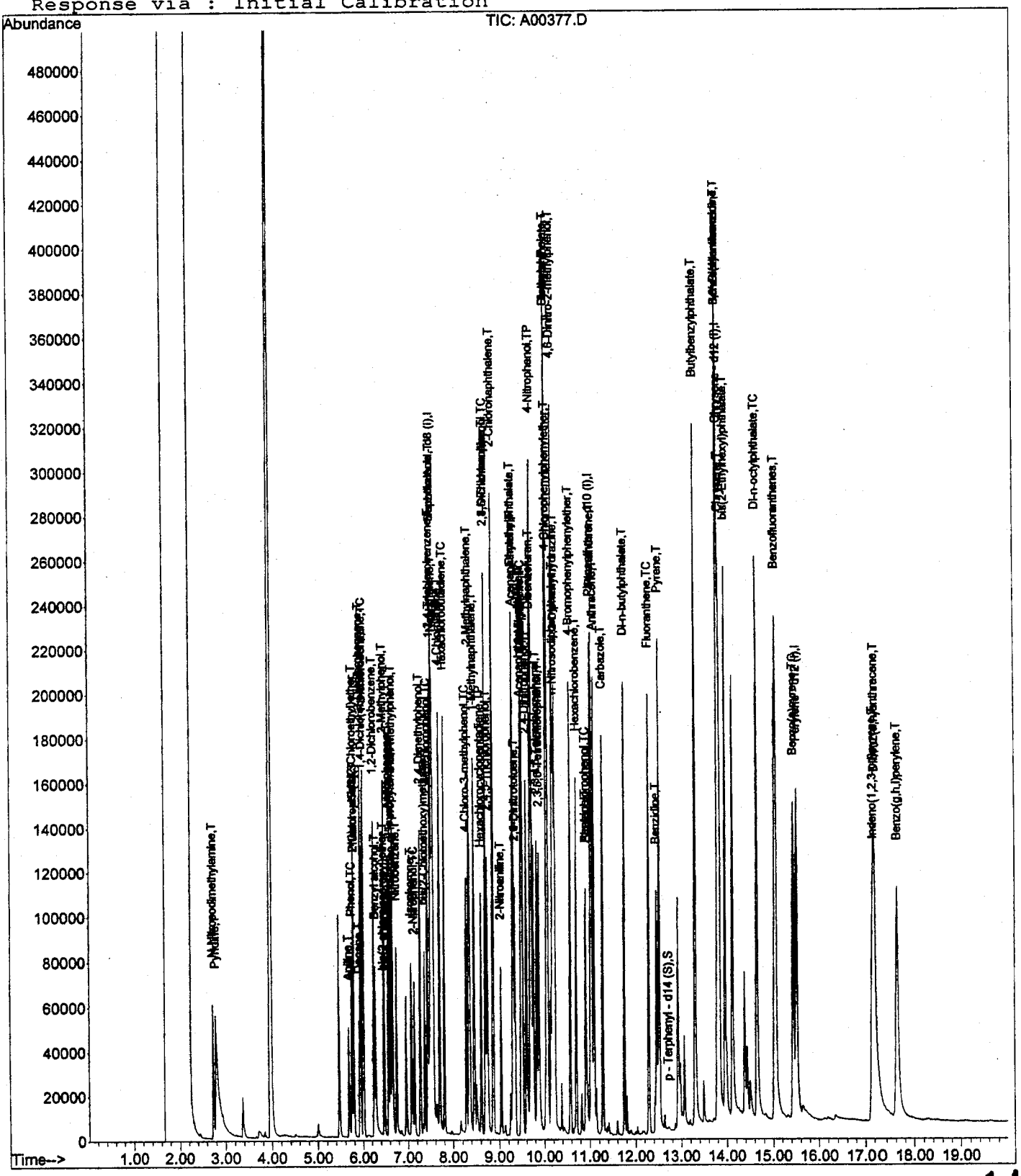
Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
47) Dimethylphthalate	9.30	163	125191	951.86	ug/L		100
48) Acenaphthylene	9.32	152	105147	862.30	ug/L		98
49) 2,6-Dinitrotoluene	9.35	165	22594	954.71	ug/L		88
50) 3-Nitroaniline	9.49	138	14754	1091.62	ug/L		84
51) Acenaphthene	9.52	153	79424	971.45	ug/L		97
52) 2,4-Dinitrophenol	9.60	184	36408	3659.79	ug/L		70
53) 4-Nitrophenol	9.72	109	183642+	5422.18	ug/L	#	28
54) Dibenzofuran	9.69	168	114774	991.95	ug/L	#	1
55) 2,4-Dinitrotoluene	9.35	165	22679	923.45	ug/L		88
56) 2,3,4,6-Tetrachlorophenol	9.84	232	25923	1035.82	ug/L	#	48
57) 2,3,5,6-Tetrachlorophenol	9.89	232	24438	1030.76	ul/l	#	54
58) Diethylphthalate	10.06	149	101025	973.61	ug/L		46
59) Fluorene	10.06	166	79841	960.94	ug/L		63
60) 4-Chlorophenylphenylether	10.08	204	53958	966.99	ug/L		65
61) 4-Nitroaniline	9.49	138	14754	1091.62	ug/L		65
63) 4,6-Dinitro-2-methylphenol	10.19	198	93443	4284.97	ug/L	#	55
64) n-Nitrosodiphenylamine	10.22	169	68919	860.52	ug/L	#	1
66) 1,2-Diphenylhydrazine	10.24	182	39187	911.14	ug/L	#	26
67) 4-Bromophenylphenylether	10.58	248	40588	1031.34	ug/L	#	66
68) Hexachlorobenzene	10.72	284	35593	953.09	ug/L		88
69) Atrazine	10.92	200	5648+	927.17	ug/L		38
70) Pentachlorophenol	10.92	266	23519	1153.00	ug/L		86
71) Phenanthrene	11.05	178	129267	945.01	ug/L		77
72) Anthracene	11.10	178	132071	998.60	ug/L		80
74) Carbazole	11.28	167	121043	1001.23	ug/L		85
75) Di-n-butylphthalate	11.76	149	172899	978.81	ug/L		95
76) Fluoranthene	12.30	202	135894	1015.20	ug/L		80
77) Pyrene	12.52	202	146666	1087.27	ug/L		68
78) Benzidine	12.46	184	85815	4128.38	ug/L		100
81) Butylbenzylphthalate	13.30	149	104564	996.49	ug/L		82
82) Benzo(a)anthracene	13.79	228	154503	1069.54	ug/L		87
83) 3,3'-Dichlorobenzidine	13.79	252	146133+	2373.48	ug/L		99
84) Chrysene	13.83	228	130598	951.27	ug/L		82
85) bis(2-Ethylhexyl)phthalate	13.96	149	162531	899.81	ug/L		99
87) Di-n-octylphthalate	14.64	149	287250	941.95	ug/L		94
88) Benzofluoranthenes	15.05	252	343435	1934.33	ug/L		79
89) Benzo(a)pyrene	15.43	252	155830	951.98	ug/L		74
90) Indeno(1,2,3-cd)pyrene	17.16	276	197372	1021.94	ug/L		95
91) Dibenz(a,h)anthracene	17.20	278	179093	1014.08	ug/L		73
92) Benzo(g,h,i)perylene	17.63	276	168128	997.23	ug/L		89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00377.D
Acq On : 29 Aug 2002 13:40
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:52 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00377.D Vial: 0
Acq On : 29 Aug 2002 13:40 Operator:
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4 (I)	1000.000	1000.000	0.0	78	0.00
2	T	N-Nitrosodimethylamine	5000.000	4647.016	7.1	95	-0.02
3	T	Pyridine	5000.000	4000.701	20.0	61	-0.06
4	S	2 - Fluorophenol (S)	1000.000	0.000	100.0#	0	-4.44#
5	T	Cyclohexanone	1000.000	0.000	100.0#	0	-4.66#
6	T	Aniline	1000.000	2169.889	-117.0#	134	-0.02
7	S	Phenol - d5 (S)	1000.000	51.608	94.8#	4	0.06
8	TC	Phenol	1000.000	905.149	9.5	71	0.00
9	T	bis(2-Chloroethyl)ether	1000.000	958.763	4.1	78	0.02
10	T	2-Chlorophenol	1000.000	983.695	1.6	82	0.00
11	T	Decane	1000.000	953.438	4.7	78	0.00
12	T	1,3-Dichlorobenzene	1000.000	1016.915	-1.7	82	0.01
13	TC	1,4-Dichlorobenzene	1000.000	1016.177	-1.6	81	0.00
14	T	Benzyl alcohol	1000.000	1046.146	-4.6	76	0.00
15	T	1,2-Dichlorobenzene	1000.000	950.951	4.9	76	-0.01
16	T	2-Methylphenol	1000.000	990.569	0.9	77	0.00
17	T	bis(2-chloroisopropyl)ether	1000.000	989.224	1.1	72	-0.01
18	T	3-&4-Methylphenol	2000.000	924.629	53.8#	37	0.00
19	TP	n-Nitroso-di-n-propylamine	1000.000	921.478	7.9	74	0.00
20	T	Acetophenone	1000.000	870.920	12.9	73	0.00
21	T	Hexachloroethane	1000.000	923.621	7.6	68	0.00
22	I	Naphthalene - d8 (I)	1000.000	1000.000	0.0	85	0.00
23	S	Nitrobenzene - d5 (S)	1000.000	0.000	100.0#	0	-6.73#
24	T	Nitrobenzene	1000.000	854.569	14.5	73	-0.01
25	T	Isophorone	1000.000	900.870	9.9	74	-0.01
26	TC	2-Nitrophenol	1000.000	923.101	7.7	77	-0.01
27	T	2,4-Dimethylphenol	1000.000	1015.648	-1.6	82	0.00
28	T	bis(2-Chloroethoxy)methane	1000.000	947.392	5.3	82	0.01
29	T	Benzoic Acid	5000.000	7230.282	-44.6#	100	0.08
30	TC	2,4-Dichlorophenol	1000.000	944.058	5.6	78	0.00
31	T	1,2,4-Trichlorobenzene	1000.000	887.412	11.3	78	0.01
32	T	Naphthalene	1000.000	821.674	17.8	70	0.00
33	T	4-Chloroaniline	1000.000	1400.736	-40.1#	116	0.00
34	TC	Hexachlorobutadiene	1000.000	1004.669	-0.5	86	0.01
35	TC	4-Chloro-3-methylphenol	1000.000	879.233	12.1	74	-0.02
36	T	2-Methylnaphthalene	1000.000	871.594	12.8	74	0.00
37	T	1-Methylnaphthalene	1000.000	939.150	6.1	80	-0.01
38	I	Acenaphthene - d10 (I)	1000.000	1000.000	0.0	81	0.00
39	TP	Hexachlorocyclopentadiene	1000.000	982.968	1.7	77	0.00
40	T	2,3-Dichloroaniline	1000.000	954.039	4.6	76	0.00
41	TC	2,4,6-Trichlorophenol	1000.000	907.985	9.2	74	-0.01
42	T	2,4,5-Trichlorophenol	1000.000	1131.316	-13.1	81	-0.02
43	S	2 - Fluorobiphenyl (S)	1000.000	0.000	100.0#	0	-8.78#
44	T	2-Chloronaphthalene	1000.000	925.514	7.4	77	0.02
45	T	Biphenyl	1000.000	919.671	8.0	76	0.02
46	T	2-Nitroaniline	1000.000	979.594	2.0	75	0.00
47	T	Dimethylphthalate	1000.000	951.858	4.8	77	0.00
48	T	Acenaphthylene	1000.000	862.304	13.8	69	0.00
49	T	2,6-Dinitrotoluene	1000.000	954.715	4.5	77	-0.02
50	T	3-Nitroaniline	1000.000	1091.624	-9.2	79	-0.02
51	TC	Acenaphthene	1000.000	971.452	2.9	78	0.00

(#) = Out of Range

Data File : C:\MSDCHEM\1\DATA\A00377.D Vial: 0
Acq On : 29 Aug 2002 13:40 Operator:
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
52	TP	2,4-Dinitrophenol	5000.000	3659.788	26.8#	55	-0.01
53	TP	4-Nitrophenol	5000.000	5422.177	-8.4	80	0.00
54	T	Dibenzofuran	1000.000	991.951	0.8	77	0.00
55	T	2,4-Dinitrotoluene	1000.000	923.451	7.7	76	-0.01
56	T	2,3,4,6-Tetrachlorophenol	1000.000	1035.821	-3.6	72	-0.02
57	T	2,3,5,6-Tetrachlorophenol	1000.000	1030.756	-3.1	73	0.00
58	T	Diethylphthalate	1000.000	973.606	2.6	78	-0.01
59	T	Fluorene	1000.000	960.939	3.9	75	-0.01
60	T	4-Chlorophenylphenylether	1000.000	966.991	3.3	81	-0.02
61	T	4-Nitroaniline	1000.000	1091.624	-9.2	79	-0.02
62	I	Phenanthrene - d10 (I)	1000.000	1000.000	0.0	82	0.00
63	T	4,6-Dinitro-2-methylphenol	5000.000	4284.974	14.3	67	0.00
64	T	n-Nitrosodiphenylamine	1000.000	860.519	13.9	71	0.02
65	S	2,4,6 - Tribromophenol (S)	1000.000	0.000	100.0#	0	-10.34#
66	T	1,2-Diphenylhydrazine	1000.000	911.139	8.9	75	0.00
67	T	4-Bromophenylphenylether	1000.000	1031.340	-3.1	86	0.00
68	T	Hexachlorobenzene	1000.000	953.085	4.7	79	0.00
69	T	Atrazine	1000.000	927.169	7.3	78	-0.01
70	TC	Pentachlorophenol	1000.000	1153.002	-15.3	82	0.00
71	T	Phenanthrene	1000.000	945.014	5.5	80	0.00
72	T	Anthracene	1000.000	998.599	0.1	82	0.00
73	T	Octadecane	1000.000	0.000	100.0#	0	-11.01#
74	T	Carbazole	1000.000	1001.225	-0.1	82	-0.01
75	T	Di-n-butylphthalate	1000.000	978.809	2.1	78	0.00
76	TC	Fluoranthene	1000.000	1015.200	-1.5	79	0.00
77	T	Pyrene	1000.000	1087.271	-8.7	85	0.00
78	T	Benzidine	5000.000	4128.378	17.4	57	-0.01
79	S	p - Terphenyl - d14 (S)	1000.000	5.295	99.5#	0	0.00
80	I	Chrysene - d12 (I)	1000.000	1000.000	0.0	81	0.00
81	T	Butylbenzylphthalate	1000.000	996.487	0.4	82	0.00
82	T	Benzo(a)anthracene	1000.000	1069.536	-7.0	82	0.01
83	T	3,3'-Dichlorobenzidine	1000.000	2373.485	-137.3#	289	0.00
84	T	Chrysene	1000.000	951.273	4.9	71	0.01
85	T	bis(2-Ethylhexyl)phthalate	1000.000	899.813	10.0	77	0.00
86	I	Perylene - d12 (I)	1000.000	1000.000	0.0	87	0.00
87	TC	Di-n-octylphthalate	1000.000	941.953	5.8	80	-0.01
88	T	Benzofluoranthenes	2000.000	1934.335	3.3	81	0.00
89	TC	Benzo(a)pyrene	1000.000	951.980	4.8	78	0.00
90	T	Indeno(1,2,3-cd)pyrene	1000.000	1021.941	-2.2	83	0.00
91	T	Dibenz(a,h)anthracene	1000.000	1014.078	-1.4	82	0.00
92	T	Benzo(g,h,i)perylene	1000.000	997.227	0.3	82	0.00

Data File : C:\MSDCHEM\1\DATA\A00377.D
Acq On : 29 Aug 2002 13:40
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4 (I)	1.000	1.000	0.0	78	0.00
2	T	N-Nitrosodimethylamine	0.226	0.210#	7.1	95	-0.02
3	T	Pyridine	0.575	0.460#	20.0	61	-0.06
4	S	2 - Fluorophenol (S)	0.743	0.000#	100.0#	0#	-4.44#
5	T	Cyclohexanone	0.235	0.000#	100.0#	0#	-4.66#
6	T	Aniline	0.285	0.618#	-116.8#	134	-0.02
7	S	Phenol - d5 (S)	0.891	0.046#	94.8#	4#	0.06
8	TC	Phenol	0.888	0.804#	9.5	71	0.00
9	T	bis(2-Chloroethyl)ether	0.953	0.913#	4.2	78	0.02
10	T	2-Chlorophenol	0.874	0.859#	1.7	82	0.00
11	T	Decane	0.410	0.391#	4.6	78	0.00
12	T	1,3-Dichlorobenzene	0.990	1.006#	-1.6	82	0.01
13	TC	1,4-Dichlorobenzene	1.003	1.019#	-1.6	81	0.00
14	T	Benzyl alcohol	0.804	0.842#	-4.7	76	0.00
15	T	1,2-Dichlorobenzene	0.941	0.895#	4.9	76	-0.01
16	T	2-Methylphenol	0.622	0.616#	1.0	77	0.00
17	T	bis(2-chloroisopropyl)ether	0.124	0.123#	0.8	72	-0.01
18	T	3-&4-Methylphenol	0.664	0.307#	53.8#	37#	0.00
19	TP	n-Nitroso-di-n-propylamine	0.576	0.530	8.0	74	0.00
20	T	Acetophenone	1.380	1.201#	13.0	73	0.00
21	T	Hexachloroethane	0.218	0.202#	7.3	68	0.00
22	I	Naphthalene - d8 (I)	1.000	1.000	0.0	85	0.00
23	S	Nitrobenzene - d5 (S)	0.320	0.000#	100.0#	0#	-6.73#
24	T	Nitrobenzene	0.309	0.264#	14.6	73	-0.01
25	T	Isophorone	0.558	0.503#	9.9	74	-0.01
26	TC	2-Nitrophenol	0.188	0.174#	7.4	77	-0.01
27	T	2,4-Dimethylphenol	0.432	0.439#	-1.6	82	0.00
28	T	bis(2-Chloroethoxy)methane	0.306	0.290#	5.2	82	0.01
29	T	Benzoic Acid	0.166	0.240#	-44.6#	100	0.08
30	TC	2,4-Dichlorophenol	0.348	0.328#	5.7	78	0.00
31	T	1,2,4-Trichlorobenzene	0.383	0.340#	11.2	78	0.01
32	T	Naphthalene	1.160	0.953#	17.8	70	0.00
33	T	4-Chloroaniline	0.208	0.292#	-40.4#	116	0.00
34	TC	Hexachlorobutadiene	0.281	0.283#	-0.7	86	0.01
35	TC	4-Chloro-3-methylphenol	0.435	0.382#	12.2	74	-0.02
36	T	2-Methylnaphthalene	0.788	0.687#	12.8	74	0.00
37	T	1-Methylnaphthalene	0.732	0.688#	6.0	80	-0.01
38	I	Acenaphthene - d10 (I)	1.000	1.000	0.0	81	0.00
39	TP	Hexachlorocyclopentadiene	0.420	0.413	1.7	77	0.00
40	T	2,3-Dichloroaniline	0.712	0.680#	4.5	76	0.00
41	TC	2,4,6-Trichlorophenol	0.378	0.343#	9.3	74	-0.01
42	T	2,4,5-Trichlorophenol	0.374	0.423#	-13.1	81	-0.02
43	S	2 - Fluorobiphenyl (S)	1.363	0.000#	100.0#	0#	-8.78#
44	T	2-Chloronaphthalene	1.178	1.090#	7.5	77	0.02
45	T	Biphenyl	1.073	0.987#	8.0	76	0.02
46	T	2-Nitroaniline	0.398	0.390#	2.0	75	0.00
47	T	Dimethylphthalate	2.035	1.937#	4.8	77	0.00
48	T	Acenaphthylene	1.886	1.627#	13.7	69	0.00
49	T	2,6-Dinitrotoluene	0.366	0.350#	4.4	77	-0.02
50	T	3-Nitroaniline	0.209	0.228#	-9.1	79	-0.02
51	TC	Acenaphthene	1.265	1.229#	2.8	78	0.00

(#) = Out of Range

Data File : C:\MSDCHEM\1\DATA\A00377.D
Acq On : 29 Aug 2002 13:40
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
52	TP	2,4-Dinitrophenol	0.154	0.113	26.6#	55	-0.01
53	TP	4-Nitrophenol	0.524	0.568	-8.4	80	0.00
54	T	Dibenzofuran	1.790	1.776#	0.8	77	0.00
55	T	2,4-Dinitrotoluene	0.380	0.351#	7.6	76	-0.01
56	T	2,3,4,6-Tetrachlorophenol	0.387	0.401#	-3.6	72	-0.02
57	T	2,3,5,6-Tetrachlorophenol	0.367	0.378#	-3.0	73	0.00
58	T	Diethylphthalate	1.605	1.563#	2.6	78	-0.01
59	T	Fluorene	1.285	1.235#	3.9	75	-0.01
60	T	4-Chlorophenylphenylether	0.863	0.835#	3.2	81	-0.02
61	T	4-Nitroaniline	0.209	0.228#	-9.1	79	-0.02
62	I	Phenanthrene - d10 (I)	1.000	1.000	0.0	82	0.00
63	T	4,6-Dinitro-2-methylphenol	0.193	0.165#	14.5	67	0.00
64	T	n-Nitrosodiphenylamine	0.707	0.608#	14.0	71	0.02
65	S	2,4,6 - Tribromophenol (S)	0.223	0.000#	100.0#	0#	-10.34#
66	T	1,2-Diphenylhydrazine	0.380	0.346#	8.9	75	0.00
67	T	4-Bromophenylphenylether	0.347	0.358#	-3.2	86	0.00
68	T	Hexachlorobenzene	0.330	0.314#	4.8	79	0.00
69	T	Atrazine	0.054	0.050#	7.4	78	-0.01
70	TC	Pentachlorophenol	0.180	0.208#	-15.6	82	0.00
71	T	Phenanthrene	1.208	1.141#	5.5	80	0.00
72	T	Anthracene	1.168	1.166#	0.2	82	0.00
73	T	Octadecane	0.376	0.000#	100.0#	0#	-11.01#
74	T	Carbazole	1.067	1.069#	-0.2	82	-0.01
75	T	Di-n-butylphthalate	1.559	1.526#	2.1	78	0.00
76	TC	Fluoranthene	1.182	1.200#	-1.5	79	0.00
77	T	Pyrene	1.191	1.295#	-8.7	85	0.00
78	T	Benzidine	0.184	0.152#	17.4	57	-0.01
79	S	p - Terphenyl - d14 (S)	1.120	0.006#	99.5#	0#	0.00
80	I	Chrysene - d12 (I)	1.000	1.000	0.0	81	0.00
81	T	Butylbenzylphthalate	0.856	0.853#	0.4	82	0.00
82	T	Benzo(a)anthracene	1.179	1.261#	-7.0	82	0.01
83	T	3,3'-Dichlorobenzidine	0.502	1.192#	-137.5#	289#	0.00
84	T	Chrysene	1.120	1.066#	4.8	71	0.01
85	T	bis(2-Ethylhexyl)phthalate	1.474	1.326#	10.0	77	0.00
86	I	Perylene - d12 (I)	1.000	1.000	0.0	87	0.00
87	TC	Di-n-octylphthalate	2.075	1.955#	5.8	80	-0.01
88	T	Benzofluoranthenes	1.208	1.168#	3.3	81	0.00
89	TC	Benzo(a)pyrene	1.114	1.060#	4.8	78	0.00
90	T	Indeno(1,2,3-cd)pyrene	1.314	1.343#	-2.2	83	0.00
91	T	Dibenz(a,h)anthracene	1.202	1.219#	-1.4	82	0.00
92	T	Benzo(g,h,i)perylene	1.147	1.144#	0.3	82	0.00

CONTINUING CALIBRATION

Sequence Log

Directory : c:\MSDchem\1\DATA

#	Filename	Sample Name					Date/Time
1	a00443.d	DFTPP 9/03/02					09/03/02 13:05
2	a00444.d	1.0 NG/UL 8270 CCAL STD NO 0980-54-6					09/03/02 13:18
3	a00445.d	SS0608 MB	#15.0000	&2.0	SOIL		09/03/02 14:19
4	a00446.d	SS0608 BS	#15.0000	&2.0	SOIL		09/03/02 14:45
5	a00448.d	108164-3 MS	SS0608	&2.0	SOIL	1:10	09/03/02 15:36
6	a00449.d	108164-3 MSD	SS0608	&2.0	SOIL	1:10	09/03/02 16:02
7	a00450.d	108164-1	SS0608	&2.0	SOIL	1:10	09/03/02 16:28
8	a00451.d	108164-2	SS0608	&2.0	SOIL	1:10	09/03/02 16:54
9	a00452.d	108164-3	SS0608	&2.0	SOIL	1:10	09/03/02 17:20
10	a00453.d	108160-1	SS0608	&2.0	SOIL	1:10	09/03/02 17:46
11	a00454.d	108160-2	SS0608	&2.0	SOIL	1:10	09/03/02 18:12
12	a00455.d	108160-3	SS0608	&2.0	SOIL	1:10	09/03/02 18:38
13	a00456.d	108160-4	SS0608	&2.0	SOIL	1:10	09/03/02 19:04

Quantitation Report

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 05 16:47:31 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.89	150	68651	1000.00 ul/l	0.00
22) Naphthalene - d8 (I)	7.43	136	148794	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.38	162	107033	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	10.91	188	175341	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.68	240	183905	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.34	264	201063	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.35	112	54561	1069.41 ug/L	0.00
7) Phenol - d5 (S)	5.66	99	60671	991.87 ug/L	-0.02
23) Nitrobenzene - d5 (S)	6.63	82	56832	1191.90 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.69	172	149978	1027.93 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.22	330	42477	1086.60 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.61	244	190200	968.15 ug/L	0.02

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.63	74	75427	4869.60 ug/L #	100
3) Pyridine	2.65	79	119969+	3040.10 ug/L	99
5) Cyclohexanone	4.52	55	15700	974.40 ug/L #	49
6) Aniline	5.57	93	26009	1330.67 ug/L	99
8) Phenol	5.67	94	65909	1081.08 ug/L	54
9) bis(2-Chloroethyl)ether	5.67	63	40406	617.87 ug/L #	44
10) 2-Chlorophenol	5.69	128	64108	1068.97 ug/L	86
11) Decane	5.81	57	27854	990.08 ug/L	92
12) 1,3-Dichlorobenzene	5.84	146	68230	1004.37 ug/L	73
13) 1,4-Dichlorobenzene	5.84	146	69386	1007.92 ug/L	100
14) Benzyl alcohol	6.18	79	60448	1094.63 ug/L	99
15) 1,2-Dichlorobenzene	6.14	146	59475	920.48 ug/L	99
16) 2-Methylphenol	6.39	108	45108	1056.38 ug/L	91
17) bis(2-chloroisopropyl)ethe	6.36	121	10479+	1229.01 ug/L #	17
18) 3-&4-Methylphenol	6.59	108	101531	2225.89 ug/L	95
19) n-Nitroso-di-n-propylamine	6.54	70	41768	1057.10 ug/L	68
20) Acetophenone	6.46	105	98953	1044.85 ug/L	98
21) Hexachloroethane	6.51	166	14315	954.75 ug/L	91
24) Nitrobenzene	6.59	77	100331	2182.14 ug/L #	15
25) Isophorone	6.96	82	96514	1162.27 ug/L	85
26) 2-Nitrophenol	7.04	139	30170	1076.42 ug/L	62
27) 2,4-Dimethylphenol	7.19	107	70337	1094.70 ug/L	98
28) bis(2-Chloroethoxy)methane	7.27	93	51260	1126.62 ug/L	83
29) Benzoic Acid	7.59	105	112820	4565.14 ug/L	96
30) 2,4-Dichlorophenol	7.35	162	55476	1072.12 ug/L	99
31) 1,2,4-Trichlorobenzene	7.40	180	65353	1145.82 ug/L	94
32) Naphthalene	7.45	128	182050	1055.02 ug/L	82
33) 4-Chloroaniline	7.60	127	43731	1411.21 ug/L	100
34) Hexachlorobutadiene	7.70	225	46012	1098.81 ug/L	90
35) 4-Chloro-3-methylphenol	8.23	107	74711	1154.95 ug/L	79
36) 2-Methylnaphthalene	8.24	141	129418	1103.58 ug/L	76
37) 1-Methylnaphthalene	8.36	141	119794	1099.75 ul/l	63
39) Hexachlorocyclopentadiene	8.50	237	43767	973.09 ug/L	92
40) 2,3-Dichloroaniline	8.61	161	78533	1029.85 ug/L	96
41) 2,4,6-Trichlorophenol	8.62	196	39811	983.43 ug/L	93
42) 2,4,5-Trichlorophenol	8.69	196	35202	879.30 ug/L #	23
44) 2-Chloronaphthalene	8.76	162	116167	921.43 ug/L	95

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

Quantitation Report

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 05 16:47:31 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Initial Calibration
DataAcq Meth :

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45) Biphenyl	9.41	154	107147	932.95 ug/L	#	1
46) 2-Nitroaniline	8.95	138	43448	1020.75 ug/L		85
47) Dimethylphthalate	9.20	163	203918	936.34 ug/L		98
48) Acenaphthylene	9.21	152	194134	961.48 ug/L		90
49) 2,6-Dinitrotoluene	9.25	165	37601	959.53 ug/L		90
50) 3-Nitroaniline	9.39	138	25460	1137.62 ug/L		84
51) Acenaphthene	9.41	153	126132	931.69 ug/L		97
52) 2,4-Dinitrophenol	9.50	184	89841	5453.94 ug/L		81
53) 4-Nitrophenol	9.65	109	311258+	5550.08 ug/L	#	43
54) Dibenzofuran	9.58	168	175562	916.33 ug/L		28
55) 2,4-Dinitrotoluene	9.66	165	45436	1117.29 ug/L		91
56) 2,3,4,6-Tetrachlorophenol	9.74	232	44307	1069.17 ug/L	#	47
57) 2,3,5,6-Tetrachlorophenol	9.78	232	44868	1142.89 ul/l	#	53
58) Diethylphthalate	9.95	149	152828	889.48 ug/L		28
59) Fluorene	9.95	166	135708	986.40 ug/L		69
60) 4-Chlorophenylphenylether	9.97	204	88662	959.58 ug/L		71
61) 4-Nitroaniline	9.39	138	25460	1137.62 ug/L		77
63) 4,6-Dinitro-2-methylphenol	10.08	198	176917	5241.00 ug/L	#	67
64) n-Nitrosodiphenylamine	10.11	169	132750	1070.78 ug/L	#	1
66) 1,2-Diphenylhydrazine	10.13	182	71942	1080.61 ug/L	#	31
67) 4-Bromophenylphenylether	10.47	248	61115	1003.22 ug/L	#	62
68) Hexachlorobenzene	10.60	284	57324	991.62 ug/L		85
69) Atrazine	10.81	200	10125+	1073.75 ug/L		38
70) Pentachlorophenol	10.81	266	37349	1182.86 ug/L		98
71) Phenanthrene	10.94	178	225714	1065.99 ug/L		85
72) Anthracene	10.98	178	206151	1006.96 ug/L		67
73) Octadecane	10.89	57	64138	972.73 ug/L		45
74) Carbazole	11.18	167	198043	1058.27 ug/L		84
75) Di-n-butylphthalate	11.64	149	257510	941.76 ug/L		94
76) Fluoranthene	12.18	202	218661	1055.28 ug/L		78
77) Pyrene	12.40	202	216796	1038.25 ug/L		98
78) Benzidine	12.35	184	212880	6615.98 ug/L		100
81) Butylbenzylphthalate	13.18	149	161577	1026.13 ug/L		85
82) Benzo(a)anthracene	13.66	228	238080	1098.29 ug/L		88
83) 3,3'-Dichlorobenzidine	13.66	252	115427+	1249.34 ug/L		97
84) Chrysene	13.70	228	217239	1054.48 ug/L		81
85) bis(2-Ethylhexyl)phthalate	13.82	149	257055	948.37 ug/L		98
87) Di-n-octylphthalate	14.50	149	395472	947.85 ug/L		95
88) Benzofluoranthenes	14.89	252	511692	2106.45 ug/L		78
89) Benzo(a)pyrene	15.27	252	235829	1053.00 ug/L		77
90) Indeno(1,2,3-cd)pyrene	16.94	276	294590	1114.84 ug/L		93
91) Dibenz(a,h)anthracene	16.98	278	264731	1095.60 ug/L		74
92) Benzo(g,h,i)perylene	17.40	276	244943	1061.88 ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

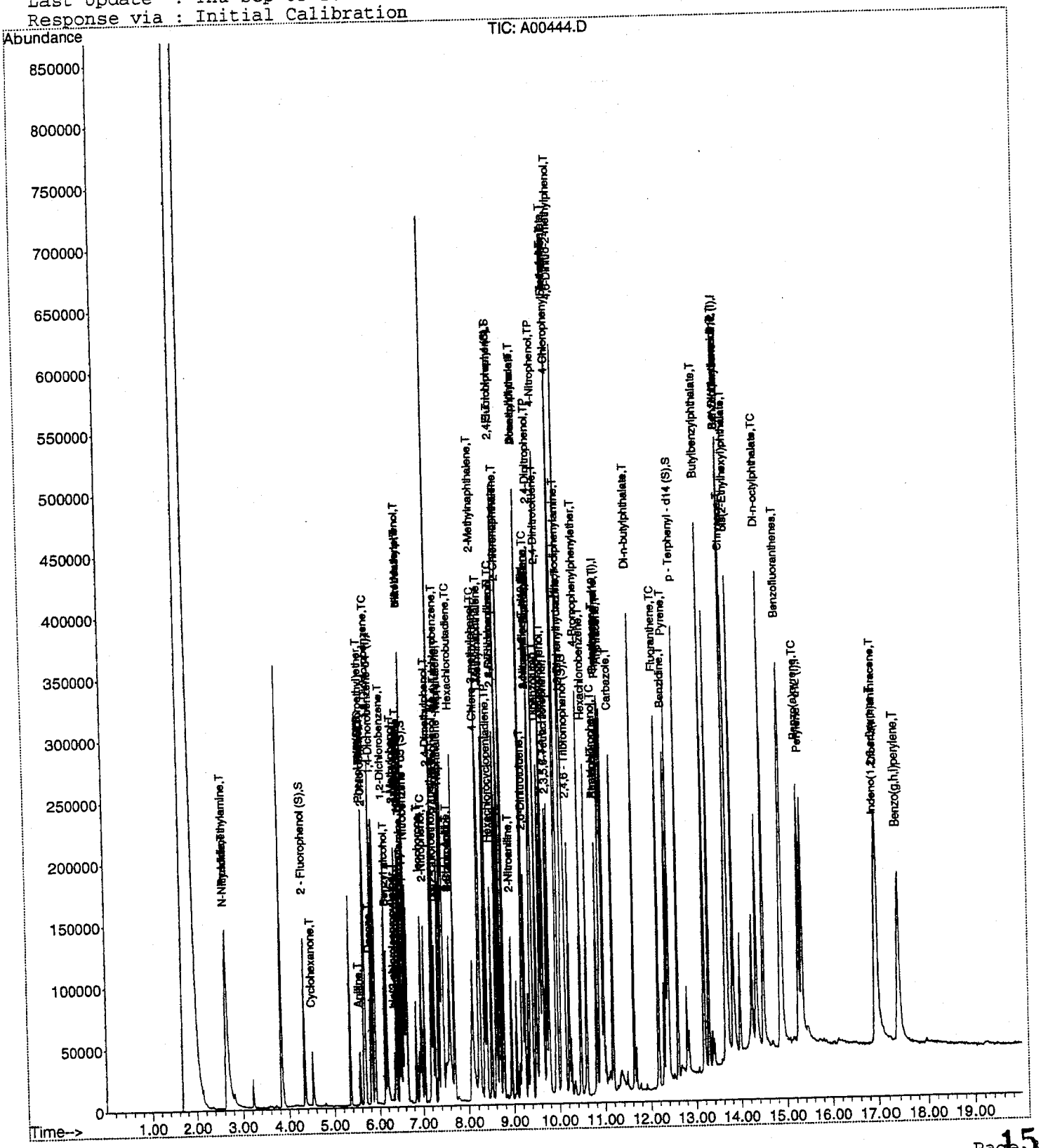
Quantitation Report

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 5 16:47 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Initial Calibration



A00444.D SV5-082902.M Thu Sep 05 16:48:08 2002

Evaluate Continuing ...

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichorobenzene-d4 (I)	1000.000	1000.000	0.0	121	0.00
2	T	N-Nitrosodimethylamine	5000.000	4869.597	2.6	154	-0.06
3	T	Pyridine	5000.000	3040.097	39.2#	72	0.00
4	S	2 - Fluorophenol (S)	1000.000	1069.408	-6.9	127	0.00
5	T	Cyclohexanone	1000.000	974.402	2.6	111	0.03
6	T	Aniline	1000.000	1330.671	-33.1#	127	0.01
7	S	Phenol - d5 (S)	1000.000	991.872	0.8	121	-0.02
8	TC	Phenol	1000.000	1081.084	-8.1	132	0.00
9	T	bis(2-Chloroethyl)ether	1000.000	617.867	38.2#	77	0.04
10	T	2-Chlorophenol	1000.000	1068.974	-6.9	137	0.00
11	T	Decane	1000.000	990.079	1.0	124	0.04
12	T	1,3-Dichlorobenzene	1000.000	1004.369	-0.4	125	0.05
13	TC	1,4-Dichlorobenzene	1000.000	1007.923	-0.8	125	-0.03
14	T	Benzyl alcohol	1000.000	1094.626	-9.5	123	0.00
15	T	1,2-Dichlorobenzene	1000.000	920.479	8.0	113	0.03
16	T	2-Methylphenol	1000.000	1056.382	-5.6	127	0.00
17	T	bis(2-chloroisopropyl)ether	1000.000	1229.007	-22.9#	139	0.04
18	T	3-&4-Methylphenol	2000.000	2225.894	-11.3	137	0.00
19	TP	n-Nitroso-di-n-propylamine	1000.000	1057.097	-5.7	131	-0.03
20	T	Acetophenone	1000.000	1044.852	-4.5	136	-0.02
21	T	Hexachloroethane	1000.000	954.747	4.5	109	0.00
22	I	Naphthalene - d8 (I)	1000.000	1000.000	0.0	117	0.00
23	S	Nitrobenzene - d5 (S)	1000.000	1191.895	-19.2	135	0.00
24	T	Nitrobenzene	1000.000	2182.143	-118.2#	254	-0.07
25	T	Isophorone	1000.000	1162.272	-16.2	130	-0.02
26	TC	2-Nitrophenol	1000.000	1076.416	-7.6	122	0.00
27	T	2,4-Dimethylphenol	1000.000	1094.705	-9.5	121	0.00
28	T	bis(2-Chloroethoxy)methane	1000.000	1126.615	-12.7	133	0.02
29	T	Benzoic Acid	5000.000	4565.139	8.7	86	0.03
30	TC	2,4-Dichlorophenol	1000.000	1072.116	-7.2	121	0.00
31	T	1,2,4-Trichlorobenzene	1000.000	1145.820	-14.6	138	0.01
32	T	Naphthalene	1000.000	1055.023	-5.5	123	0.00
33	T	4-Chloroaniline	1000.000	1411.209	-41.1#	160	0.02
34	TC	Hexachlorobutadiene	1000.000	1098.810	-9.9	128	0.02
35	TC	4-Chloro-3-methylphenol	1000.000	1154.946	-15.5	134	0.04
36	T	2-Methylnaphthalene	1000.000	1103.584	-10.4	128	0.01
37	T	1-Methylnaphthalene	1000.000	1099.752	-10.0	128	0.02
38	I	Acenaphthene - d10 (I)	1000.000	1000.000	0.0	135	0.00
39	TP	Hexachlorocyclopentadiene	1000.000	973.088	2.7	126	0.00
40	T	2,3-Dichloroaniline	1000.000	1029.851	-3.0	136	0.00
41	TC	2,4,6-Trichlorophenol	1000.000	983.433	1.7	132	0.00
42	T	2,4,5-Trichlorophenol	1000.000	879.304	12.1	105	0.02
43	S	2 - Fluorobiphenyl (S)	1000.000	1027.931	-2.8	141	0.00
44	T	2-Chloronaphthalene	1000.000	921.432	7.9	127	0.00
45	T	Biphenyl	1000.000	932.948	6.7	128	0.02
46	T	2-Nitroaniline	1000.000	1020.751	-2.1	130	0.00
47	T	Dimethylphthalate	1000.000	936.335	6.4	125	0.00
48	T	Acenaphthylene	1000.000	961.484	3.9	127	0.00
49	T	2,6-Dinitrotoluene	1000.000	959.526	4.0	128	0.00
50	T	3-Nitroaniline	1000.000	1137.623	-13.8	137	-0.01

(#) = Out of Range

Evaluate Continuing Calib

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	TC	Acenaphthene	1000.000	931.691	6.8	124	0.00
2	TP	2,4-Dinitrophenol	5000.000	5453.943	-9.1	137	0.00
3	TP	4-Nitrophenol	5000.000	5550.078	-11.0	136	-0.03
4	T	Dibenzofuran	1000.000	916.335	8.4	118	0.00
5	T	2,4-Dinitrotoluene	1000.000	1117.293	-11.7	153	0.00
6	T	2,3,4,6-Tetrachlorophenol	1000.000	1069.175	-6.9	123	0.00
7	T	2,3,5,6-Tetrachlorophenol	1000.000	1142.888	-14.3	134	0.00
8	T	Diethylphthalate	1000.000	889.476	11.1	118	0.00
9	T	Fluorene	1000.000	986.398	1.4	127	0.00
0	T	4-Chlorophenylphenylether	1000.000	959.580	4.0	133	0.00
1	T	4-Nitroaniline	1000.000	1137.623	-13.8	137	-0.01
2	I	Phenanthrene - d10 (I)	1000.000	1000.000	0.0	127	0.00
3	T	4,6-Dinitro-2-methylphenol	5000.000	5240.997	-4.8	127	0.00
4	T	n-Nitrosodiphenylamine	1000.000	1070.777	-7.1	136	0.02
5	S	2,4,6 - Tribromophenol (S)	1000.000	1086.604	-8.7	121	0.00
6	T	1,2-Diphenylhydrazine	1000.000	1080.607	-8.1	137	0.00
7	T	4-Bromophenylphenylether	1000.000	1003.217	-0.3	129	0.00
8	T	Hexachlorobenzene	1000.000	991.623	0.8	127	0.00
9	T	Atrazine	1000.000	1073.747	-7.4	141	0.00
70	TC	Pentachlorophenol	1000.000	1182.859	-18.3	129	0.00
71	T	Phenanthrene	1000.000	1065.988	-6.6	140	-0.02
72	T	Anthracene	1000.000	1006.959	-0.7	128	-0.03
73	T	Octadecane	1000.000	972.727	2.7	114	0.00
74	T	Carbazole	1000.000	1058.265	-5.8	133	0.01
75	T	Di-n-butylphthalate	1000.000	941.765	5.8	117	0.00
76	TC	Fluoranthene	1000.000	1055.275	-5.5	128	0.01
77	T	Pyrene	1000.000	1038.251	-3.8	126	0.00
78	T	Benzidine	5000.000	6615.978	-32.3#	141	0.02
79	S	p - Terphenyl - d14 (S)	1000.000	968.151	3.2	127	0.02
80	I	Chrysene - d12 (I)	1000.000	1000.000	0.0	121	0.00
81	T	Butylbenzylphthalate	1000.000	1026.131	-2.6	126	0.00
82	T	Benzo(a)anthracene	1000.000	1098.286	-9.8	126	0.00
83	T	3,3'-Dichlorobenzidine	1000.000	1249.337	-24.9#	228	-0.01
84	T	Chrysene	1000.000	1054.485	-5.4	119	0.01
85	T	bis(2-Ethylhexyl)phthalate	1000.000	948.366	5.2	122	0.00
86	I	Perylene - d12 (I)	1000.000	1000.000	0.0	118	0.00
87	TC	Di-n-octylphthalate	1000.000	947.851	5.2	110	0.00
88	T	Benzofluoranthenes	2000.000	2106.448	-5.3	120	0.00
89	TC	Benzo(a)pyrene	1000.000	1053.001	-5.3	118	0.00
90	T	Indeno(1,2,3-cd)pyrene	1000.000	1114.842	-11.5	124	-0.03
91	T	Dibenz(a,h)anthracene	1000.000	1095.602	-9.6	121	-0.03
92	T	Benzo(g,h,i)perylene	1000.000	1061.877	-6.2	120	0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichorobenzene-d4 (I)	1.000	1.000	0.0	121	0.00
2	T	N-Nitrosodimethylamine	0.226	0.220#	2.7	154#	-0.06
3	T	Pyridine	0.575	0.350#	39.1#	72	0.00
4	S	2 - Fluorophenol (S)	0.743	0.795#	-7.0	127	0.00
5	T	Cyclohexanone	0.235	0.229#	2.6	111	0.03
6	T	Aniline	0.285	0.379#	-33.0#	127	0.01
7	S	Phenol - d5 (S)	0.891	0.884#	0.8	121	-0.02
8	TC	Phenol	0.888	0.960#	-8.1	132	0.00
9	T	bis(2-Chloroethyl)ether	0.953	0.589#	38.2#	77	0.04
10	T	2-Chlorophenol	0.874	0.934#	-6.9	137	0.00
11	T	Decane	0.410	0.406#	1.0	124	0.04
12	T	1,3-Dichlorobenzene	0.990	0.994#	-0.4	125	0.05
13	TC	1,4-Dichlorobenzene	1.003	1.011#	-0.8	125	-0.03
14	T	Benzyl alcohol	0.804	0.881#	-9.6	123	0.00
15	T	1,2-Dichlorobenzene	0.941	0.866#	8.0	113	0.03
16	T	2-Methylphenol	0.622	0.657#	-5.6	127	0.00
17	T	bis(2-chloroisopropyl)ether	0.124	0.153#	-23.4#	139	0.04
18	T	3-&4-Methylphenol	0.664	0.739#	-11.3	137	0.00
19	TP	n-Nitroso-di-n-propylamine	0.576	0.608	-5.6	131	-0.03
20	T	Acetophenone	1.380	1.441#	-4.4	136	-0.02
21	T	Hexachloroethane	0.218	0.209#	4.1	109	0.00
22	I	Naphthalene - d8 (I)	1.000	1.000	0.0	117	0.00
23	S	Nitrobenzene - d5 (S)	0.320	0.382#	-19.4	135	0.00
24	T	Nitrobenzene	0.309	0.674#	-118.1#	254#	-0.07
25	T	Isophorone	0.558	0.649#	-16.3	130	-0.02
26	TC	2-Nitrophenol	0.188	0.203#	-8.0	122	0.00
27	T	2,4-Dimethylphenol	0.432	0.473#	-9.5	121	0.00
28	T	bis(2-Chloroethoxy)methane	0.306	0.345#	-12.7	133	0.02
29	T	Benzoic Acid	0.166	0.152#	8.4	86	0.03
30	TC	2,4-Dichlorophenol	0.348	0.373#	-7.2	121	0.00
31	T	1,2,4-Trichlorobenzene	0.383	0.439#	-14.6	138	0.01
32	T	Naphthalene	1.160	1.224#	-5.5	123	0.00
33	T	4-Chloroaniline	0.208	0.294#	-41.3#	160#	0.02
34	TC	Hexachlorobutadiene	0.281	0.309#	-10.0	128	0.02
35	TC	4-Chloro-3-methylphenol	0.435	0.502#	-15.4	134	0.04
36	T	2-Methylnaphthalene	0.788	0.870#	-10.4	128	0.01
37	T	1-Methylnaphthalene	0.732	0.805#	-10.0	128	0.02
38	I	Acenaphthene - d10 (I)	1.000	1.000	0.0	135	0.00
39	TP	Hexachlorocyclopentadiene	0.420	0.409	2.6	126	0.00
40	T	2,3-Dichloroaniline	0.712	0.734#	-3.1	136	0.00
41	TC	2,4,6-Trichlorophenol	0.378	0.372#	1.6	132	0.00
42	T	2,4,5-Trichlorophenol	0.374	0.329#	12.0	105	0.02
43	S	2 - Fluorobiphenyl (S)	1.363	1.401#	-2.8	141	0.00
44	T	2-Chloronaphthalene	1.178	1.085#	7.9	127	0.00
45	T	Biphenyl	1.073	1.001#	6.7	128	0.02
46	T	2-Nitroaniline	0.398	0.406#	-2.0	130	0.00
47	T	Dimethylphthalate	2.035	1.905#	6.4	125	0.00
48	T	Acenaphthylene	1.886	1.814#	3.8	127	0.00
49	T	2,6-Dinitrotoluene	0.366	0.351#	4.1	128	0.00
50	T	3-Nitroaniline	0.209	0.238#	-13.9	137	-0.01

(#) = Out of Range
A00444.D SV5-082902.M Thu Sep 05 16:48:48 2002

Evaluate Continuing

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

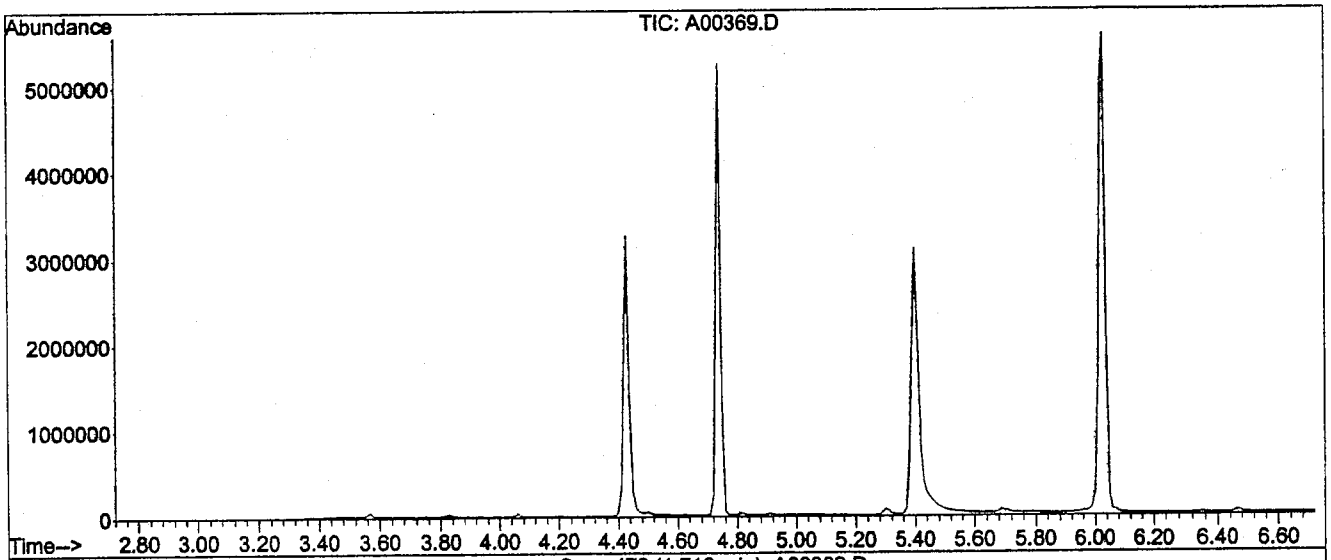
		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	TC	Acenaphthene	1.265	1.178#	6.9	124	0.00
2	TP	2,4-Dinitrophenol	0.154	0.168	-9.1	137	0.00
3	TP	4-Nitrophenol	0.524	0.582	-11.1	136	-0.03
4	T	Dibenzofuran	1.790	1.640#	8.4	118	0.00
5	T	2,4-Dinitrotoluene	0.380	0.425#	-11.8	153#	0.00
6	T	2,3,4,6-Tetrachlorophenol	0.387	0.414#	-7.0	123	0.00
7	T	2,3,5,6-Tetrachlorophenol	0.367	0.419#	-14.2	134	0.00
8	T	Diethylphthalate	1.605	1.428#	11.0	118	0.00
9	T	Fluorene	1.285	1.268#	1.3	127	0.00
50	T	4-Chlorophenylphenylether	0.863	0.828#	4.1	133	0.00
51	T	4-Nitroaniline	0.209	0.238#	-13.9	137	-0.01
52	I	Phenanthrene - d10 (I)	1.000	1.000	0.0	127	0.00
53	T	4,6-Dinitro-2-methylphenol	0.193	0.202#	-4.7	127	0.00
54	T	n-Nitrosodiphenylamine	0.707	0.757#	-7.1	136	0.02
55	S	2,4,6 - Tribromophenol (S)	0.223	0.242#	-8.5	121	0.00
56	T	1,2-Diphenylhydrazine	0.380	0.410#	-7.9	137	0.00
57	T	4-Bromophenylphenylether	0.347	0.349#	-0.6	129	0.00
58	T	Hexachlorobenzene	0.330	0.327#	0.9	127	0.00
69	T	Atrazine	0.054	0.058#	-7.4	141	0.00
70	TC	Pentachlorophenol	0.180	0.213#	-18.3	129	0.00
71	T	Phenanthrene	1.208	1.287#	-6.5	140	-0.02
72	T	Anthracene	1.168	1.176#	-0.7	128	-0.03
73	T	Octadecane	0.376	0.366#	2.7	114	0.00
74	T	Carbazole	1.067	1.129#	-5.8	133	0.01
75	T	Di-n-butylphthalate	1.559	1.469#	5.8	117	0.00
76	TC	Fluoranthene	1.182	1.247#	-5.5	128	0.01
77	T	Pyrene	1.191	1.236#	-3.8	126	0.00
78	T	Benzidine	0.184	0.243#	-32.1#	141	0.02
79	S	p - Terphenyl - d14 (S)	1.120	1.085#	3.1	127	0.02
80	I	Chrysene - d12 (I)	1.000	1.000	0.0	121	0.00
81	T	Butylbenzylphthalate	0.856	0.879#	-2.7	126	0.00
82	T	Benzo(a)anthracene	1.179	1.295#	-9.8	126	0.00
83	T	3,3'-Dichlorobenzidine	0.502	0.628#	-25.1#	228#	-0.01
84	T	Chrysene	1.120	1.181#	-5.4	119	0.01
85	T	bis(2-Ethylhexyl)phthalate	1.474	1.398#	5.2	122	0.00
86	I	Perylene - d12 (I)	1.000	1.000	0.0	118	0.00
87	TC	Di-n-octylphthalate	2.075	1.967#	5.2	110	0.00
88	T	Benzofluoranthenes	1.208	1.272#	-5.3	120	0.00
89	TC	Benzo(a)pyrene	1.114	1.173#	-5.3	118	0.00
90	T	Indeno(1,2,3-cd)pyrene	1.314	1.465#	-11.5	124	-0.03
91	T	Dibenz(a,h)anthracene	1.202	1.317#	-9.6	121	-0.03
92	T	Benzo(g,h,i)perylene	1.147	1.218#	-6.2	120	0.02

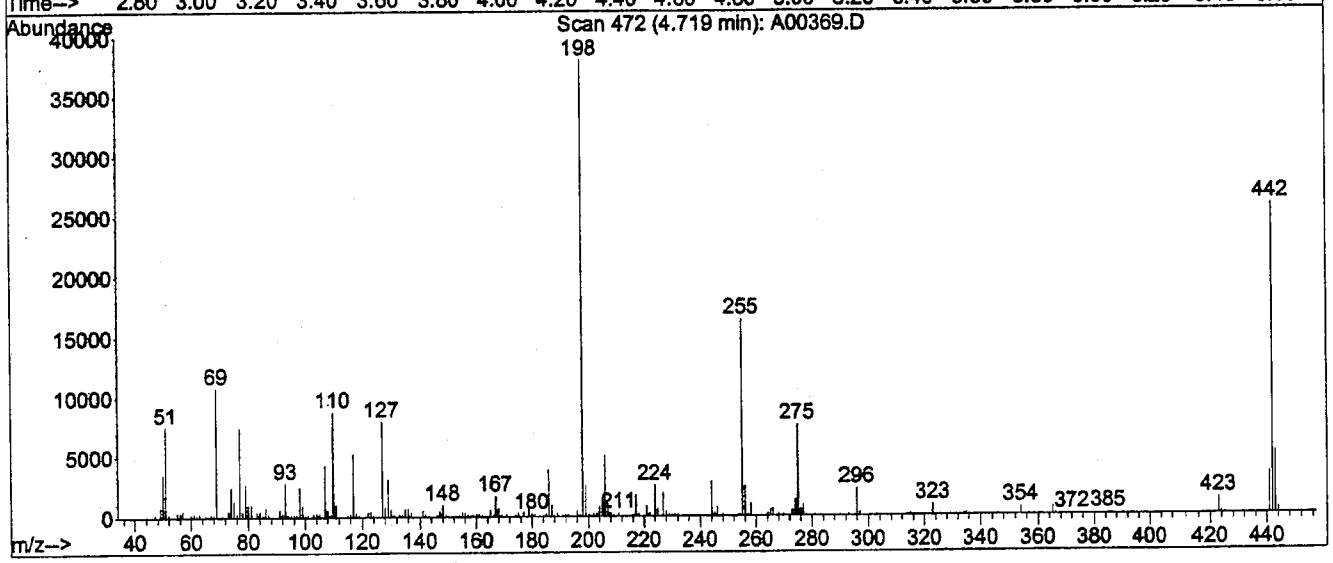
(#) = Out of Range SPCC's out = 0 CCC's out = 0
A00444.D SV5-082902.M Thu Sep 05 16:48:49 2002

DFTPP TUNING

Data File : C:\MSDCHEM\1\DATA\A00369.D
Acq On : 29 Aug 2002 9:24
Sample : DFTPP 8/29/02
Misc :
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation

Vial: 0
Operator:
Inst :
Multiplr: 1.00





Spectrum Information: Scan 472

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	19.8	7555	PASS
68	69	0.00	2	1.8	195	PASS
69	198	0.00	100	28.4	10832	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	21.0	8002	PASS
197	198	0.00	1	0.3	97	PASS
198	198	50	100	100.0	38136	PASS
199	198	5	9	6.9	2639	PASS
275	198	10	60	20.1	7653	PASS
365	198	1	100	1.6	628	PASS
441	443	0.01	100	67.6	3491	PASS
442	198	50	100	67.7	25824	PASS
443	442	15	24	20.0	5167	PASS

A00369.D DFTPP.M Thu Aug 29 14:55:28 2002

DFTPP 8/29/02

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
47.00	209	63.00	363	78.00	432	93.00	2835
49.00	810	65.00	139	79.00	2709	94.00	223
50.00	3519	67.00	279	80.00	1019	95.00	153
51.00	7555	68.00	195	81.00	1033	96.00	153
52.00	265	69.00	10832	83.00	405	97.00	181
55.00	377	71.00	125	84.00	460	98.00	2500
56.00	349	73.00	488	85.00	167	99.00	1005
57.00	530	74.00	2458	86.00	740	100.00	111
60.00	181	75.00	1298	87.00	209	101.00	195
61.00	293	76.00	237	91.00	642	103.00	265
62.00	153	77.00	7486	92.00	265	104.00	321

Scan 472 (4.719 min): A00369.D
DFTPP 8/29/02

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
105.00	307	119.00	195	134.00	209	150.00	111
107.00	4371	121.00	69	135.00	656	153.00	69
108.00	600	122.00	377	136.00	712	154.00	125
109.00	209	123.00	460	137.00	363	155.00	377
110.00	8824	124.00	167	141.00	544	156.00	363
111.00	1019	127.00	8002	142.00	223	157.00	167
112.00	83	128.00	768	143.00	125	158.00	139
115.00	153	129.00	3128	146.00	125	159.00	167
116.00	265	130.00	642	147.00	432	160.00	195
117.00	5265	131.00	167	148.00	991	161.00	209
118.00	363	133.00	237	149.00	167	162.00	125

Scan 472 (4.719 min): A00369.D
DFTPP 8/29/02

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
165.00	530	180.00	251	197.00	97	208.00	307
166.00	111	181.00	195	198.00	38136	209.00	153
167.00	1731	185.00	223	199.00	2639	211.00	279
168.00	712	186.00	3924	200.00	195	216.00	125
169.00	153	187.00	949	201.00	97	217.00	1787
171.00	209	188.00	111	202.00	237	218.00	167
172.00	69	189.00	307	203.00	251	221.00	865
174.00	153	191.00	125	204.00	837	222.00	237
175.00	349	192.00	209	205.00	1620	224.00	2597
177.00	377	193.00	223	206.00	5083	225.00	600
179.00	726	196.00	488	207.00	1368	227.00	1983

Scan 472 (4.719 min): A00369.D
DFTPP 8/29/02

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
228.00	405	255.00	16424	275.00	7653	304.00	97
229.00	167	256.00	2527	276.00	600	315.00	153
230.00	153	257.00	139	277.00	907	323.00	921
231.00	181	258.00	1047	278.00	139	334.00	125
232.00	139	264.00	265	281.00	97	335.00	223
236.00	69	265.00	530	282.00	69	346.00	97
244.00	2863	266.00	614	283.00	83	354.00	670
245.00	251	268.00	223	293.00	111	355.00	111
246.00	768	270.00	167	296.00	2262	365.00	628
248.00	167	273.00	502	297.00	265	366.00	83
254.00	139	274.00	1354	303.00	125	372.00	69

Scan 472 (4.719 min): A00369.D
DFTPP 8/29/02

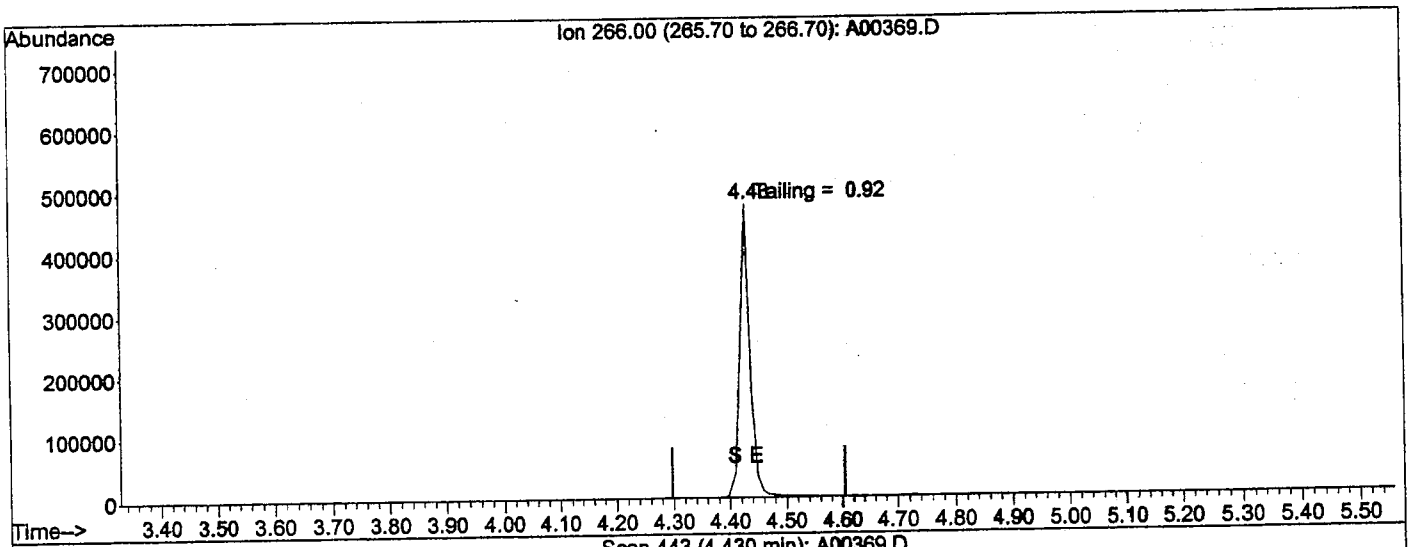
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
385.00	111						
423.00	1368						
424.00	209						
441.00	3491						
442.00	25824						
443.00	5167						
444.00	544						

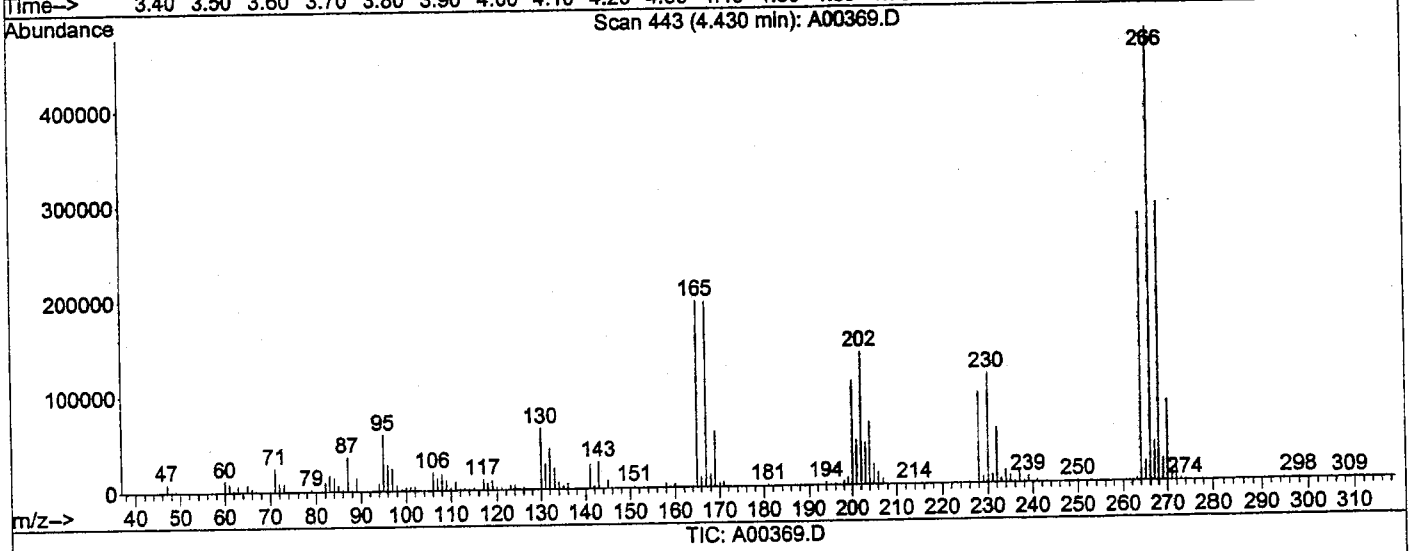
Data File : C:\MSDCHEM\1\DATA\A00369.D
Acq On : 29 Aug 2002 9:24
Sample : DFTPP 8/29/02
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 29 14:56 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Aug 29 14:56:01 2002
Response via : Single Level Calibration





(1) Pentachlorophenol (T)

4.43min 0.58

response 476992

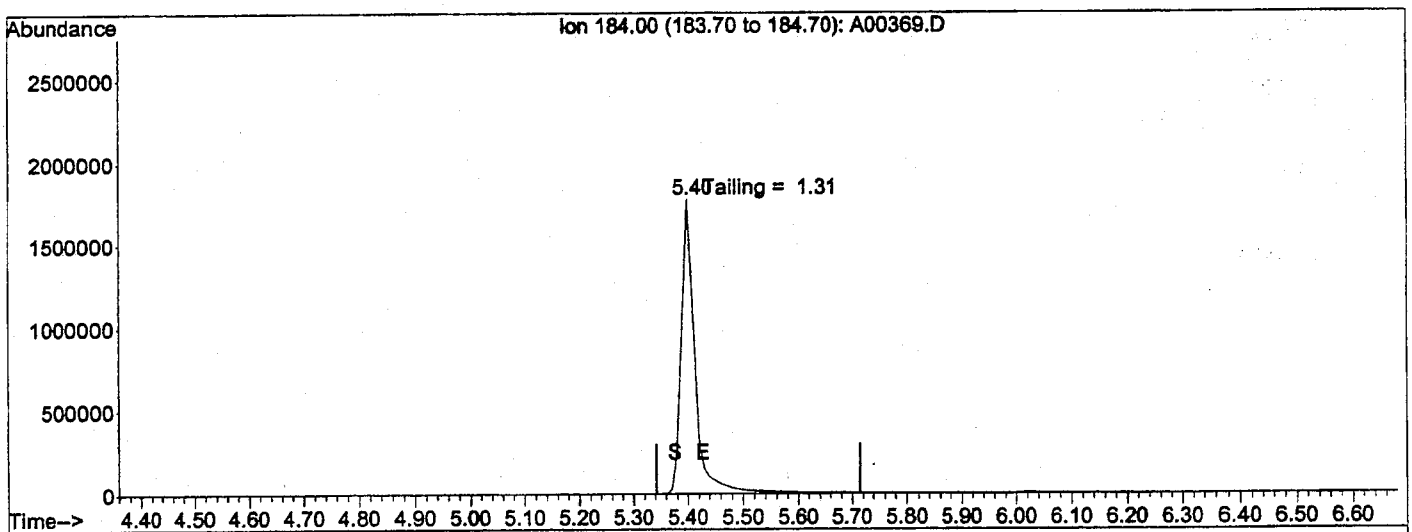
Ion	Exp%	Act%
266.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

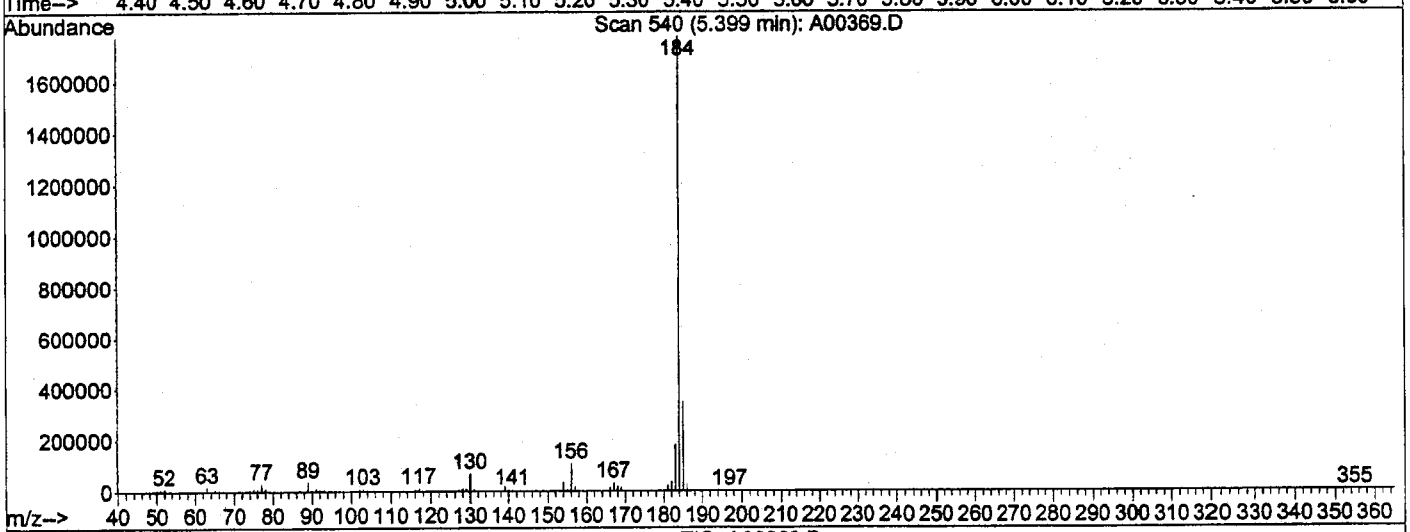
A00369.D DFTPP.M Thu Aug 29 14:56:29 2002

Data File : C:\MSDCHEM\1\DATA\A00369.D
Acq On : 29 Aug 2002 9:24
Sample : DFTPP 8/29/02
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 29 14:56 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Aug 29 14:56:01 2002
Response via : Single Level Calibration





(3) Benzidine (T)

5.40min 0.83

response 1775377

Ion	Exp%	Act%
184.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data File Name **A00369.D**
Data File Path **C:\MSDCHEM\1\DATA**
Operator

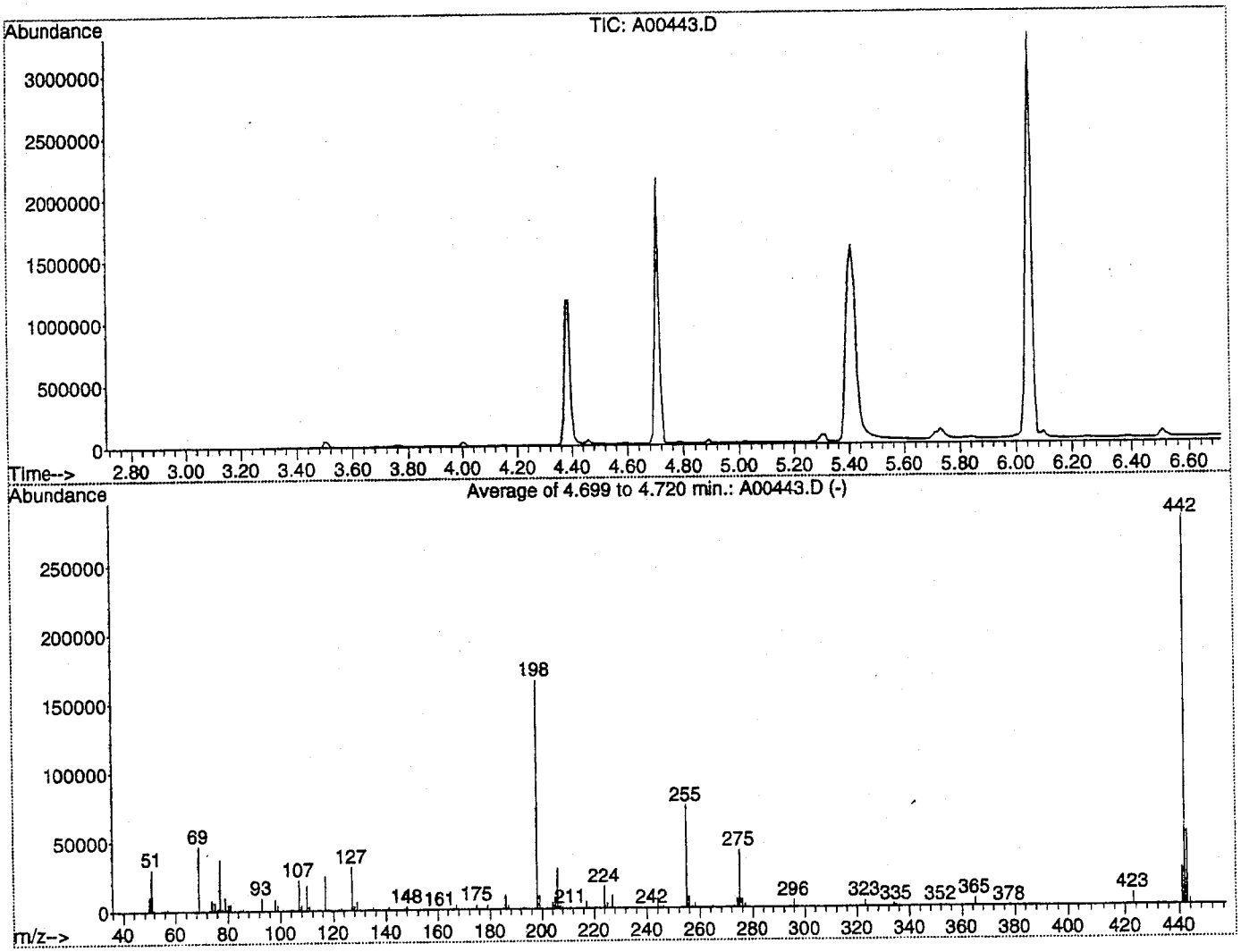
Sample Name **DFTPP 8/29/02**

#	Name	Ret Time	Target Response	Percent Breakdown
4)	DDT	6.03	3888762	0.09%
5)	DDD	5.30	166	
6)	DDE	5.79	3287	
		SUM	3892215	

DFTPP

Data File : C:\MSDCHEM\1\DATA\A00443.D
Acq On : 03 Sep 2002 13:05
Sample : DFTPP 9/03/02
Misc :
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation

Vial: 0
Operator:
Inst :
Multiplr: 1.00



AutoFind: Scans 470, 471, 472; Background Corrected with Scan 465

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	442	10	80	10.8	30412	PASS
68	69	0.00	2	0.9	434	PASS
69	198	0.00	100	28.3	46915	PASS
70	69	0.00	2	0.0	0	PASS
127	442	10	80	11.2	31549	PASS
197	198	0.00	1	0.1	166	PASS
198	442	50	100	58.8	165638	PASS
199	198	5	9	6.0	9956	PASS
275	442	10	60	14.8	41746	PASS
365	442	1	100	2.0	5667	PASS
441	443	0.01	100	51.3	27281	PASS
442	442	50	100	100.0	281472	PASS
443	442	15	24	18.9	53216	PASS

erage of 4.699 to 4.720
TPP 9/03/02
dified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
49.00	722	68.00	434	82.00	186	98.00	8029
50.00	10630	69.00	46915	83.00	142	99.00	4023
51.00	30412	73.00	1200	85.00	811	101.00	1074
52.00	1488	74.00	8148	86.00	1829	103.00	1003
55.00	207	75.00	6079	87.00	160	104.00	1429
56.00	1139	76.00	1888	91.00	770	105.00	1108
57.00	1872	77.00	37289	92.00	571	107.00	22223
61.00	489	78.00	1723	93.00	9304	108.00	3625
62.00	98	79.00	9762	94.00	171	109.00	283
63.00	1016	80.00	4298	95.00	105	110.00	18344
67.00	163	81.00	5088	96.00	34	111.00	3028

erage of 4.699 to 4.720 min.: A00443.D
TPP 9/03/02
dified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
113.00	112	130.00	496	148.00	2356	166.00	66
116.00	309	134.00	147	149.00	337	167.00	3335
117.00	24922	135.00	1868	150.00	474	168.00	1388
118.00	1527	136.00	92	151.00	510	169.00	45
122.00	661	137.00	490	154.00	259	170.00	150
123.00	1469	139.00	216	155.00	996	175.00	3413
124.00	94	141.00	2330	156.00	209	177.00	137
125.00	282	142.00	164	157.00	190	179.00	2964
127.00	31549	143.00	502	160.00	111	180.00	333
128.00	3138	146.00	209	161.00	92	181.00	238
129.00	6357	147.00	884	165.00	856	185.00	695

verage of 4.699 to 4.720 min.: A00443.D
FTPP 9/03/02
odified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
186.00	10476	200.00	637	215.00	230	229.00	951
187.00	3230	201.00	271	217.00	5480	231.00	227
188.00	276	202.00	844	218.00	807	235.00	46
189.00	187	203.00	134	221.00	513	236.00	119
191.00	134	204.00	4452	222.00	862	242.00	514
192.00	86	205.00	8384	223.00	590	244.00	6999
193.00	1130	206.00	29331	224.00	16055	245.00	597
196.00	129	207.00	2296	225.00	4078	246.00	1129
197.00	166	208.00	1459	226.00	496	247.00	185
198.00	165638	210.00	167	227.00	9256	254.00	227
199.00	9956	211.00	975	228.00	850	255.00	74218

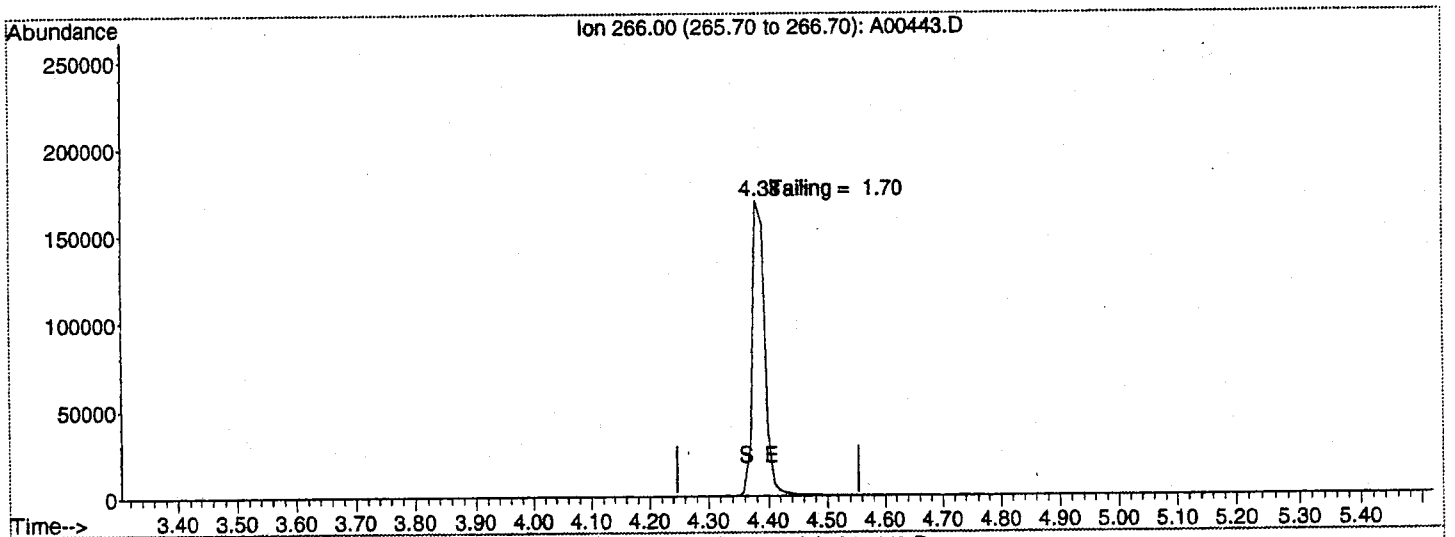
verage of 4.699 to 4.720 min.: A00443.D
FTPP 9/03/02
odified:subtracted

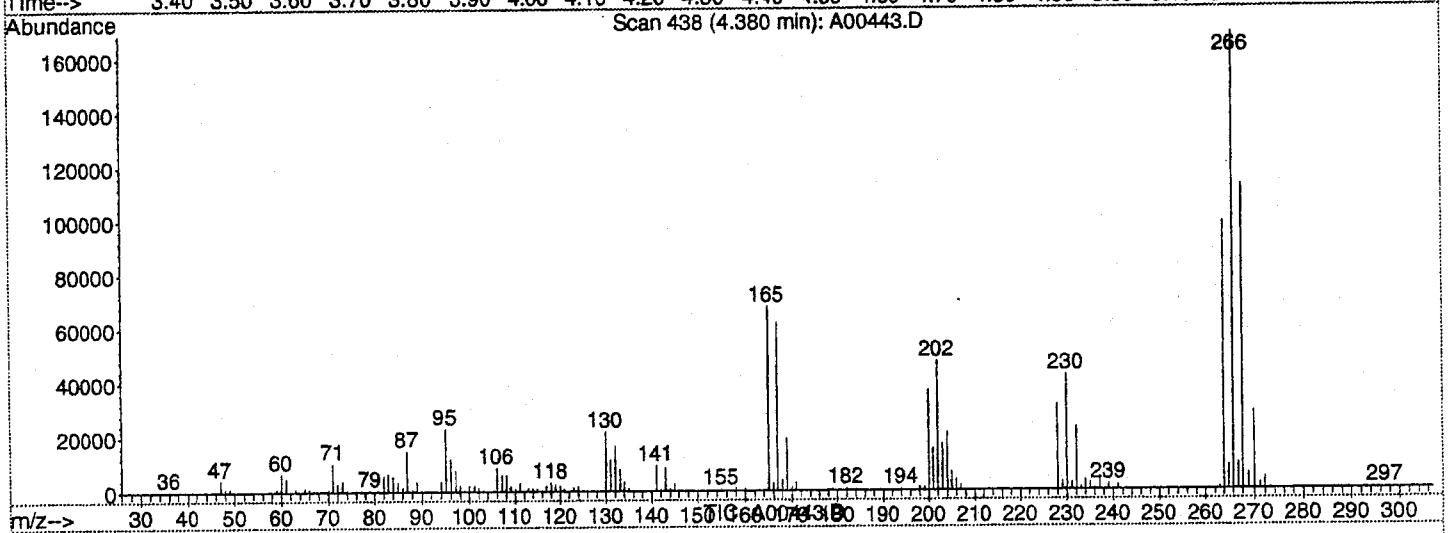
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
256.00	8408	297.00	603	353.00	652	443.00	53216
257.00	1376	303.00	750	354.00	1123	444.00	3982
258.00	3391	315.00	100	365.00	5667		
265.00	1227	316.00	555	366.00	238		
273.00	825	317.00	148	372.00	638		
274.00	6467	323.00	4771	378.00	324		
275.00	41746	324.00	753	421.00	601		
276.00	6257	334.00	2810	423.00	8676		
277.00	2724	335.00	1685	424.00	897		
284.00	168	336.00	277	441.00	27281		
296.00	5198	352.00	1120	442.00	281472		

Data File : C:\MSDCHEM\1\DATA\A00443.D
Acq On : 03 Sep 2002 13:05
Sample : DFTPP 9/03/02
Misc :
MS Integration Params: rteint.p
Quant Time: Sep 4 8:11 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Sep 05 12:14:23 2002
Response via : Single Level Calibration





(1) Pentachlorophenol (T)

4.38min 0.21

response 168955

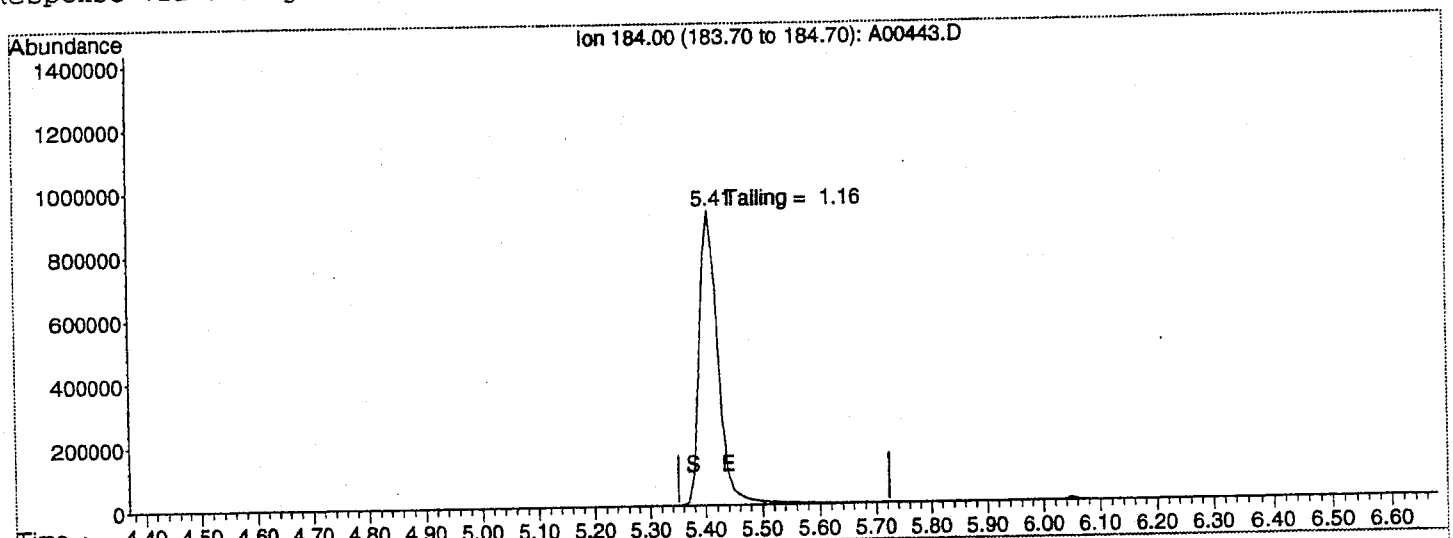
Ion	Exp%	Act%
266.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

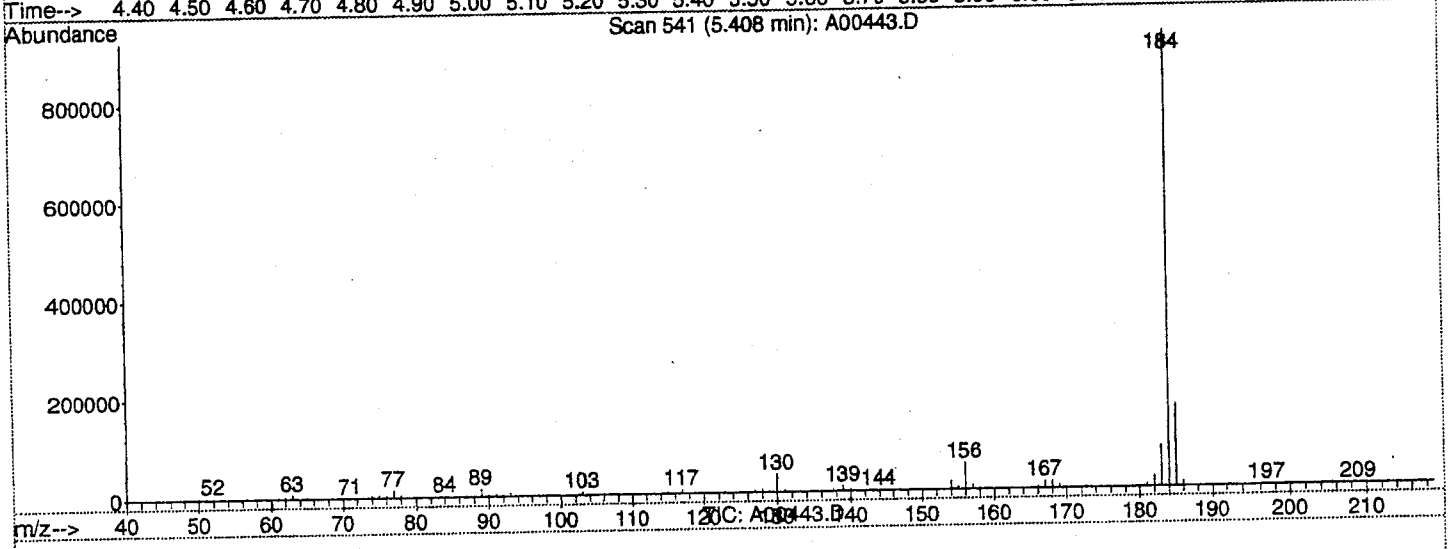
Data File : C:\MSDCHEM\1\DATA\A00443.D
Acq On : 03 Sep 2002 13:05
Sample : DFTPP 9/03/02
Misc :
MS Integration Params: rteint.p
Quant Time: Sep 4 8:11 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Sep 05 12:14:23 2002
Response via : Single Level Calibration





(3) Benzidine (T)

5.41min 0.43

response 925050

Ion	Exp%	Act%
184.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data File Name **A00443.D**
Data File Path **C:\MSDCHEM\1\DATA**
Operator

Sample Name **DFTPP 9/03/02**

#	Name	Ret Time	Target Response	Percent Breakdown
4)	DDT	6.05	2229909	0.00%
5)	DDD	0.00	0	
6)	DDE	5.67	82	
		SUM	2229991	

METHOD BLANK

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00445.D
Acq On : 03 Sep 2002 14:19
Sample : SS0608 MB #15.0000 &2.0 SOIL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 04 09:50:48 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:50:43 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.86	150	46300	1000.00 ul/l	0.00
22) Naphthalene - d8 (I)	7.43	136	107763	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.37	162	73793	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	10.91	188	108978	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.67	240	127801	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.34	264	159971	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.26	112	15967	464.03 ug/L	-0.07
7) Phenol - d5 (S)	5.63	99	17570	425.90 ug/L	0.07
23) Nitrobenzene - d5 (S)	6.63	82	17619	510.20 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.69	172	38723	384.95 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.22	330	10187	419.28 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.60	244	54762	448.49 ug/L	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

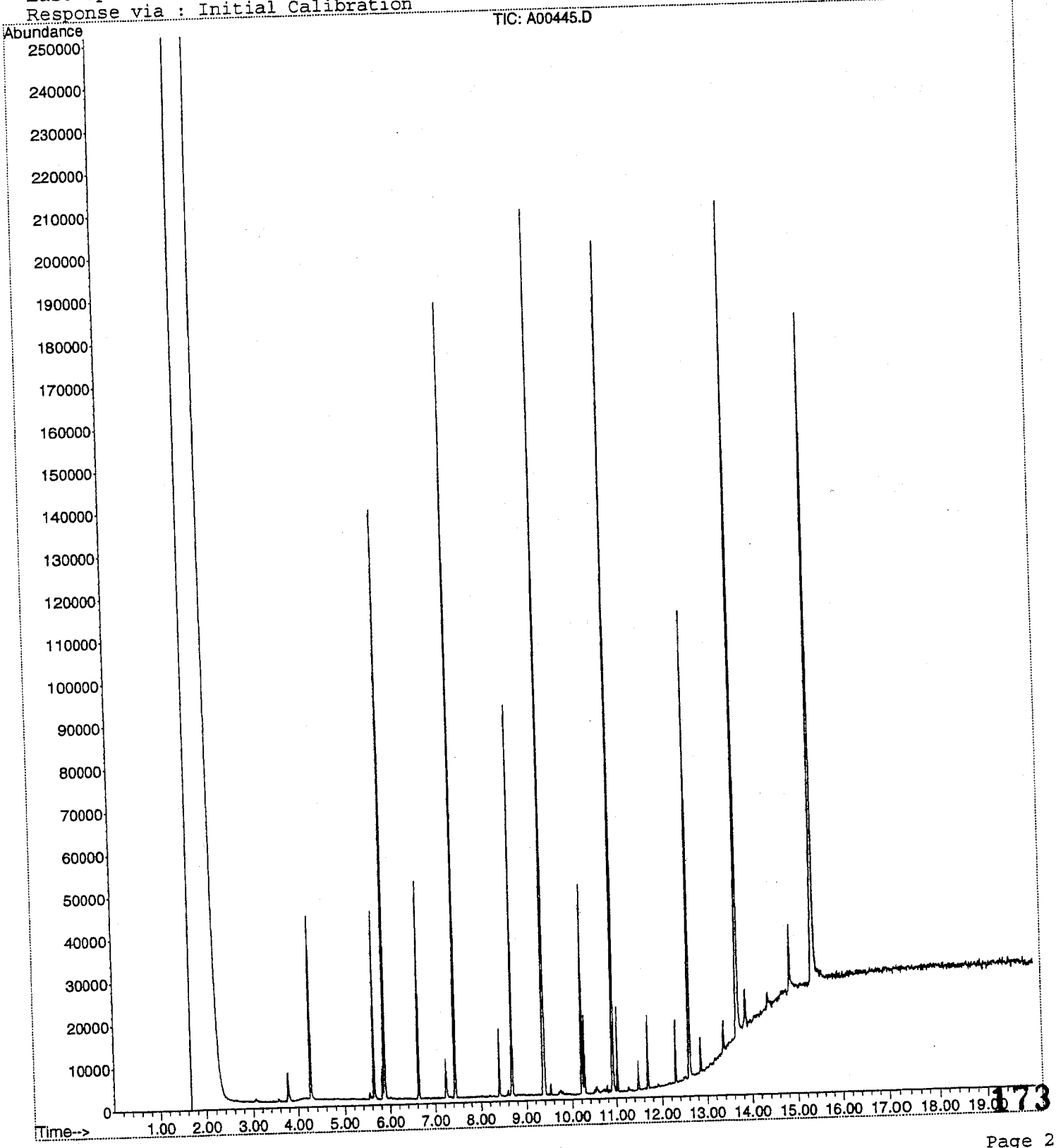
Quantitation Report

Data File : C:\MSDCHEM\1\DATA\A00445.D
Acq On : 03 Sep 2002 14:19
Sample : SS0608 MB #15.0000 &2.0 SOIL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 4 9:51 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Sep 05 12:14:23 2002
Response via : Initial Calibration



173

BLANK SPIKE

Data File : C:\MSDCHEM\1\DATA\A00446.D
Acq On : 03 Sep 2002 14:45
Sample : SS0608 BS #15.0000 &2.0 SOIL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 04 09:53:27 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:53:17 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.86	150	48647	1000.00 ul/l	0.00
22) Naphthalene - d8 (I)	7.43	136	105978	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.37	162	72917	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	10.91	188	112619	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.67	240	118210	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.34	264	139894	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.26	112	13155	363.87 ug/L	-0.07
7) Phenol - d5 (S)	5.63	99	16210	373.98 ug/L	0.07
23) Nitrobenzene - d5 (S)	6.63	82	13017	383.29 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.69	172	32676	328.74 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.22	330	8996	358.29 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.60	244	48850	387.14 ug/L	0.00

Target Compounds					Qvalue
8) Phenol	5.64	94	27315	632.28 ug/L	28
10) 2-Chlorophenol	5.66	128	27577	648.92 ug/L	83
13) 1,4-Dichlorobenzene	5.88	146	17828	365.47 ug/L	91
19) n-Nitroso-di-n-propylamine	6.54	70	11752	419.73 ug/L	73
29) Benzoic Acid	7.44	105	703	39.94 ug/L #	65
31) 1,2,4-Trichlorobenzene	7.40	180	16304	401.34 ug/L	96
35) 4-Chloro-3-methylphenol	8.20	107	29453	639.26 ug/L	80
36) 2-Methylnaphthalene	8.20	141	1585	18.98 ug/L	100
45) Biphenyl	9.41	154	28570	365.15 ug/L #	1
51) Acenaphthene	9.41	153	37619	407.89 ug/L	92
53) 4-Nitrophenol	9.63	109	14585+	381.75 ug/L #	39
55) 2,4-Dinitrotoluene	9.65	165	13860	500.29 ug/L	91
69) Atrazine	10.80	200	1299+	214.48 ug/L	38
70) Pentachlorophenol	10.80	266	5057	249.36 ug/L	86
76) Fluoranthene	12.17	202	655	4.92 ug/L #	62
77) Pyrene	12.40	202	59180	441.26 ug/L	70

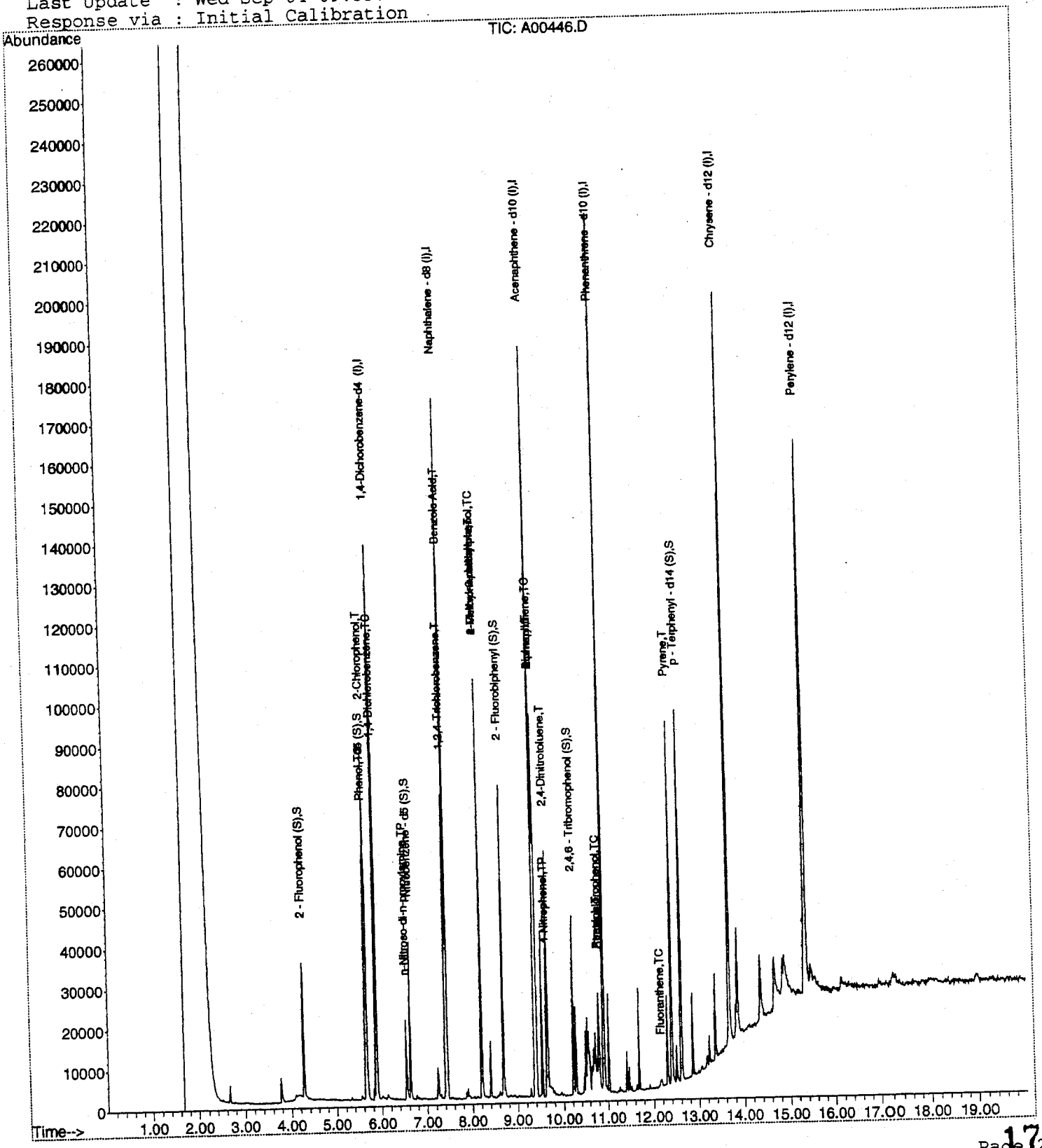
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00446.D
Acq On : 03 Sep 2002 14:45
Sample : SS0608 BS #15.0000 &2.0 SOIL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 4 9:53 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:53:17 2002
Response via : Initial Calibration



A00446.D SV5-082902.M Wed Sep 04 09:53:47 2002

MATIX SPIKE / MATRIX SPIKE DUPLICATE

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00452.D Vial: 0
Acq On : 03 Sep 2002 17:20 Operator:
Sample : 108164-3 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 05 07:34:45 2002 Quant Results File: SV5-082902.RES

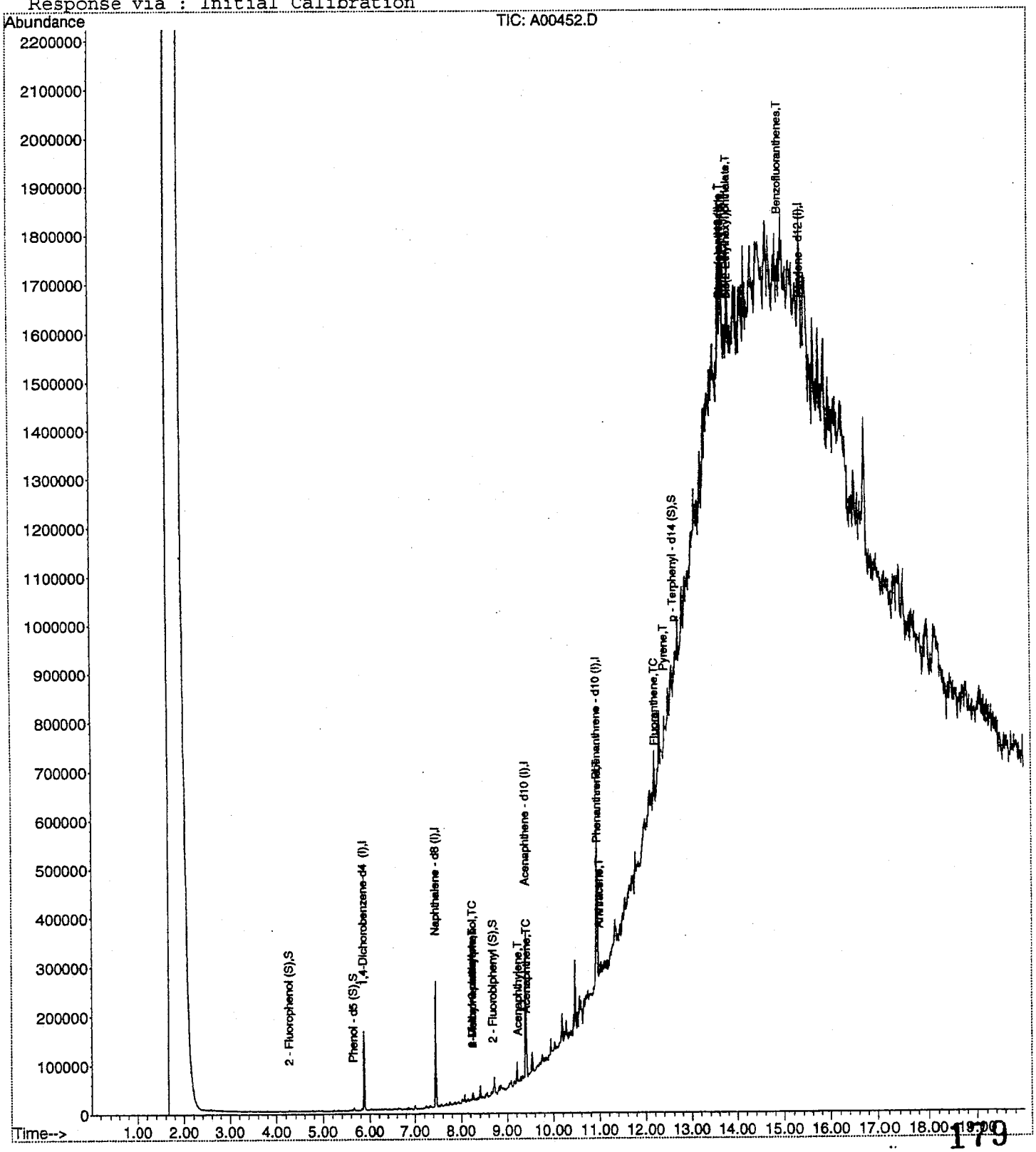
Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 12:34:06 2002
Response via : Initial Calibration
DataAcq Meth :

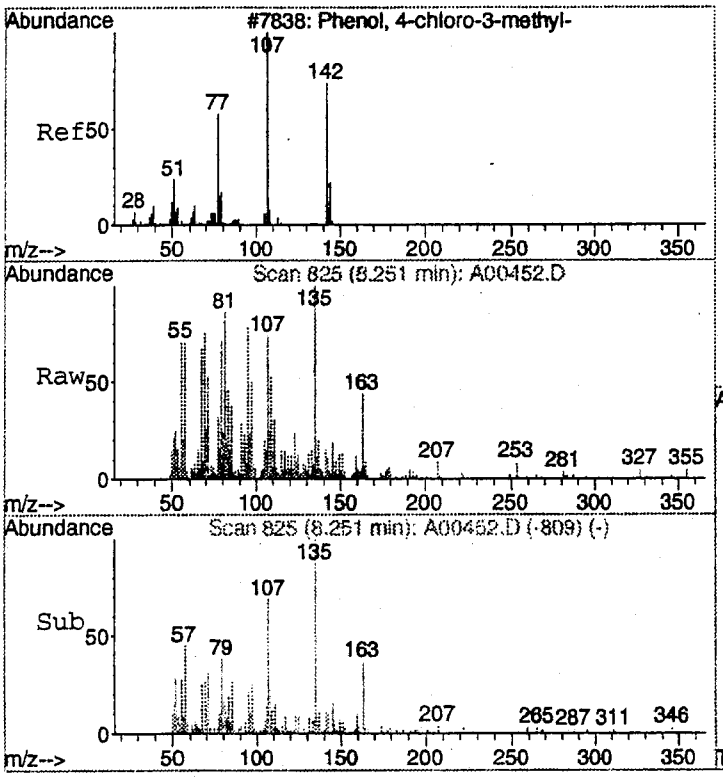
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.87	150	56054	1000.00 ul/l	0.01
22) Naphthalene - d8 (I)	7.45	136	147493	1000.00 ug/L	0.02
38) Acenaphthene - d10 (I)	9.40	162	119093	1000.00 ug/L	0.03
62) Phenanthrene - d10 (I)	10.94	188	214209	1000.00 ug/L	0.03
80) Chrysene - d12 (I)	13.71	240	257225	1000.00 ul/l	0.04
86) Perylene - d12 (I)	15.41	264	274866	1000.00 ug/L	0.07
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.28	112	1125	27.01 ug/L	0.02
7) Phenol - d5 (S)	5.66	99	1622	32.48 ug/L	0.10
23) Nitrobenzene - d5 (S)	6.64	82	1454	30.76 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.70	172	4869	29.99 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.25	330	2165	45.33 ug/L	0.03
79) p - Terphenyl - d14 (S)	12.63	244	15320	63.83 ug/L	0.04
Target Compounds					Qvalue
35) 4-Chloro-3-methylphenol	8.25	107	2589	40.38 ug/L	70
36) 2-Methylnaphthalene	8.26	141	857	7.37 ug/L	44
48) Acenaphthylene	9.24	152	1639	7.30 ug/L	65
51) Acenaphthene	9.43	153	1209	8.03 ug/L	99
71) Phenanthrene	10.96	178	9096m	35.16 ug/L	
72) Anthracene	11.00	178	2122	8.48 ug/L	92
76) Fluoranthene	12.21	202	21545m	85.11 ug/L	
77) Pyrene	12.43	202	22000	86.24 ug/L	67
82) Benzo(a)anthracene	13.69	228	12495	41.21 ug/L	12
85) bis(2-Ethylhexyl)phthalate	13.86	149	89850	237.00 ug/L	86
88) Benzofluoranthenes	14.94	252	22904	68.97 ug/L	33

(#) = qualifier out of range (m) = manual integration (+) = signals summed
A00452.D SV5-082902.M Thu Sep 05 07:37:33 2002

Data File : C:\MSDCHEM\1\DATA\A00452.D Vial: 0
Acq On : 03 Sep 2002 17:20 Operator:
Sample : 108164-3 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 5 7:37 2002 Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 12:34:06 2002
Response via : Initial Calibration

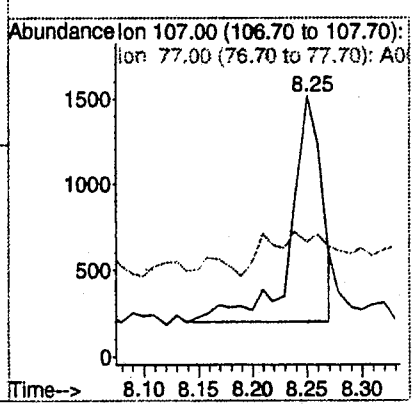


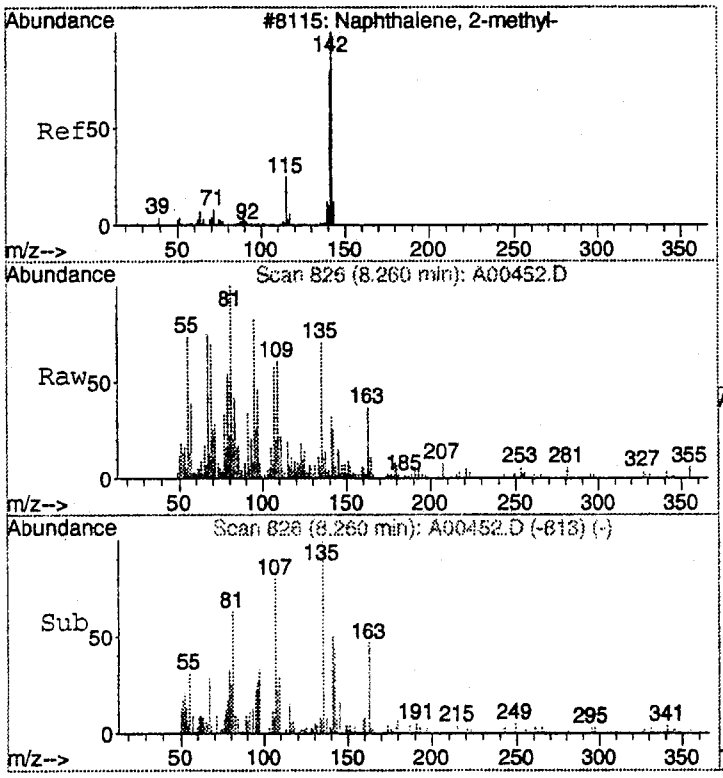


#35
4-Chloro-3-methylphenol
Concen: 40.38 ug/L
RT: 8.25 min Scan# 825
Delta R.T. 0.06 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:107 Resp: 2589

Ion	Ratio	Lower	Upper
107	100		
77	35.9	18.0	98.0

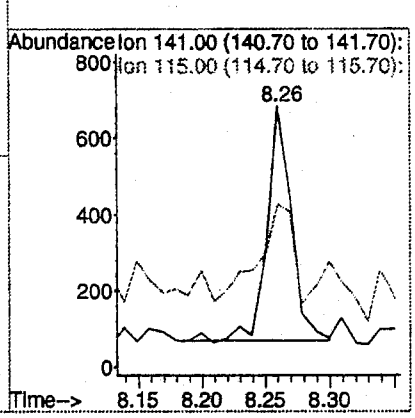


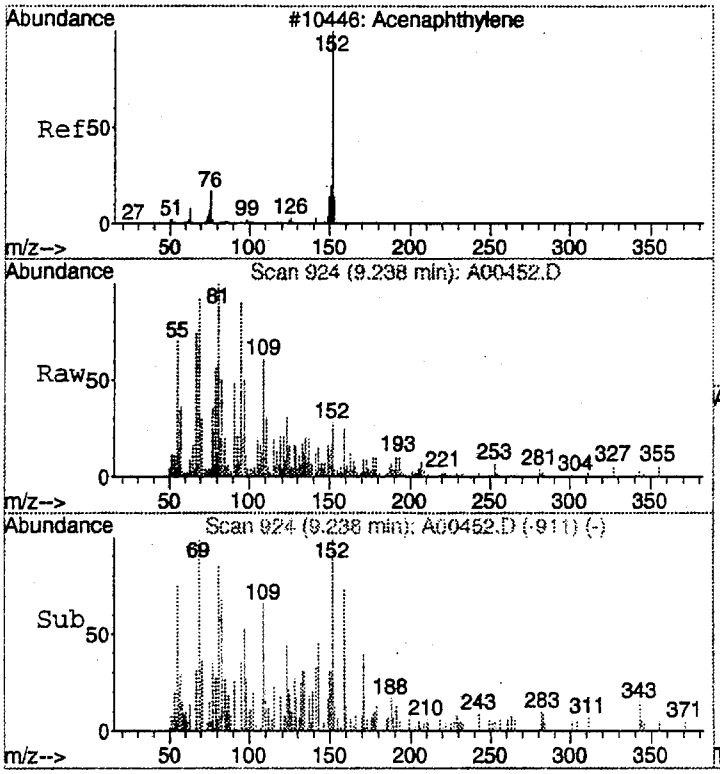


#36
2-Methylnaphthalene
Concen: 7.37 ug/L
RT: 8.26 min Scan# 826
Delta R.T. 0.03 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:141 Resp: 857

Ion	Ratio	Lower	Upper
141	100		
115	62.8	0.0	71.8

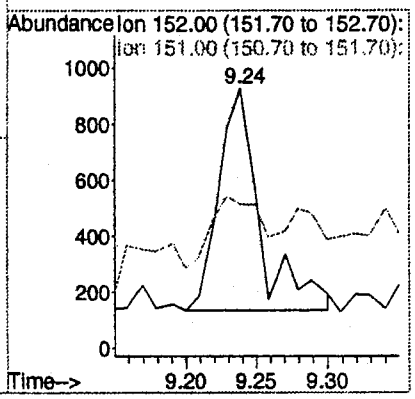


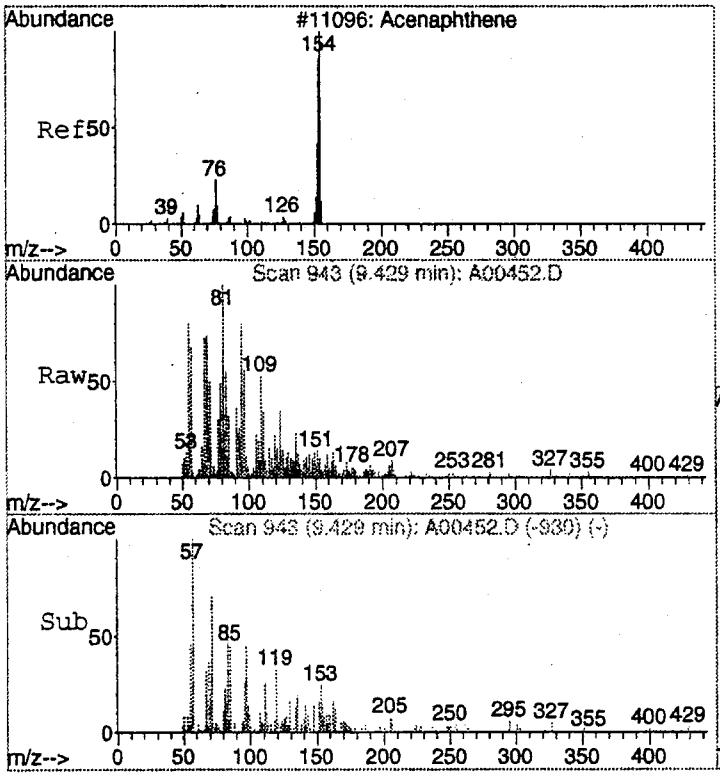


#48
Acenaphthylene
Concen: 7.30 ug/L
RT: 9.24 min Scan# 924
Delta R.T. 0.03 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:152 Resp: 1639

Ion	Ratio	Lower	Upper
152	100		
151	35.6	0.0	59.7

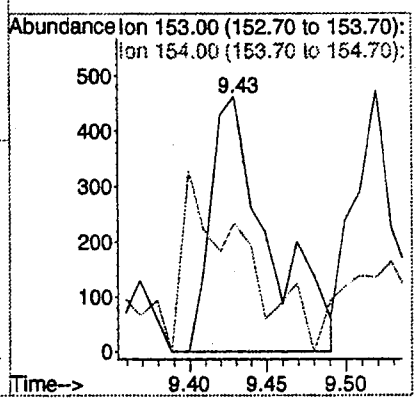


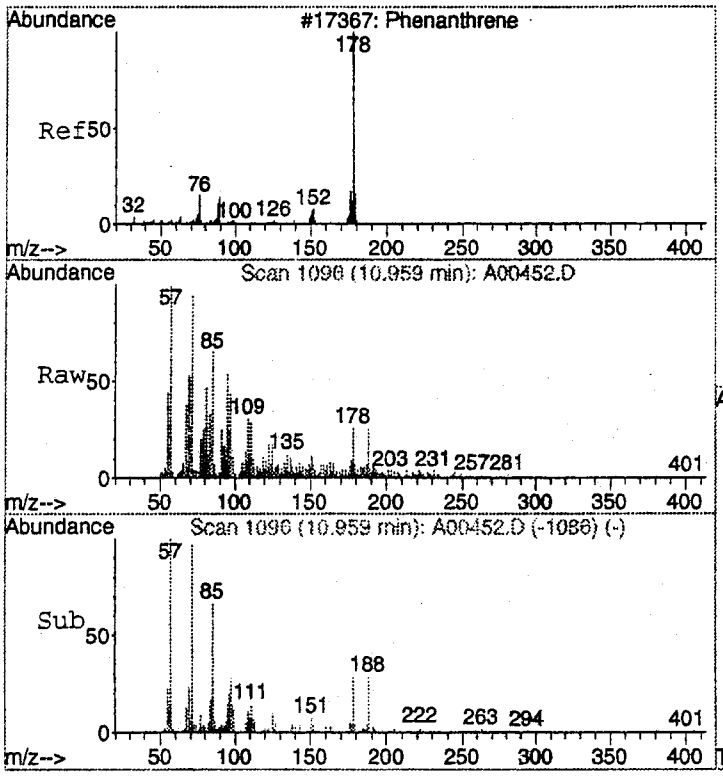


#51
Acenaphthene
Concen: 8.03 ug/L
RT: 9.43 min Scan# 943
Delta R.T. 0.03 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:153 Resp: 1209

Ion	Ratio	Lower	Upper
153	100		
154	84.6	43.3	123.3

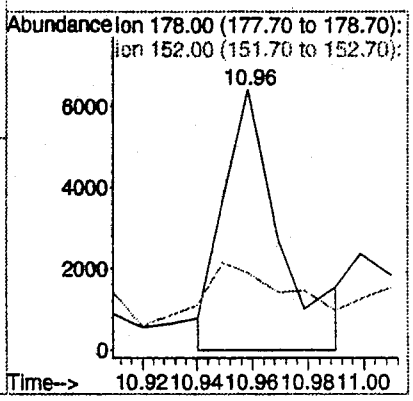


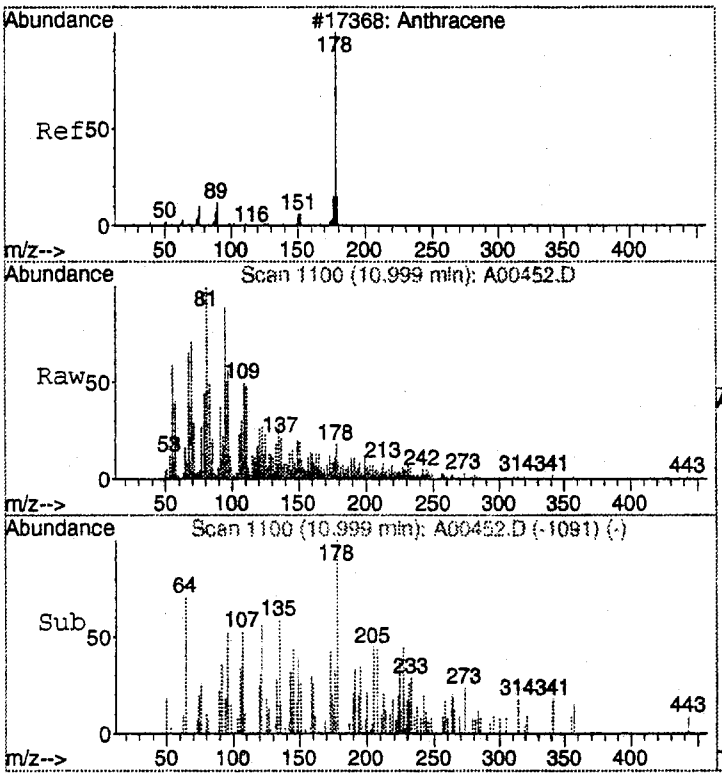


#71
Phenanthrene
Concen: 35.16 ug/L m
RT: 10.96 min Scan# 1096
Delta R.T. -0.00 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:178 Resp: 9096

Ion	Ratio	Lower	Upper
178	100		
152	7.7	0.0	60.6

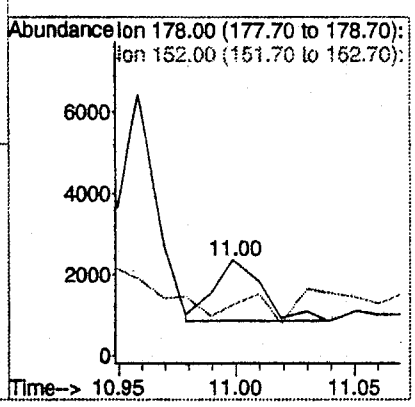


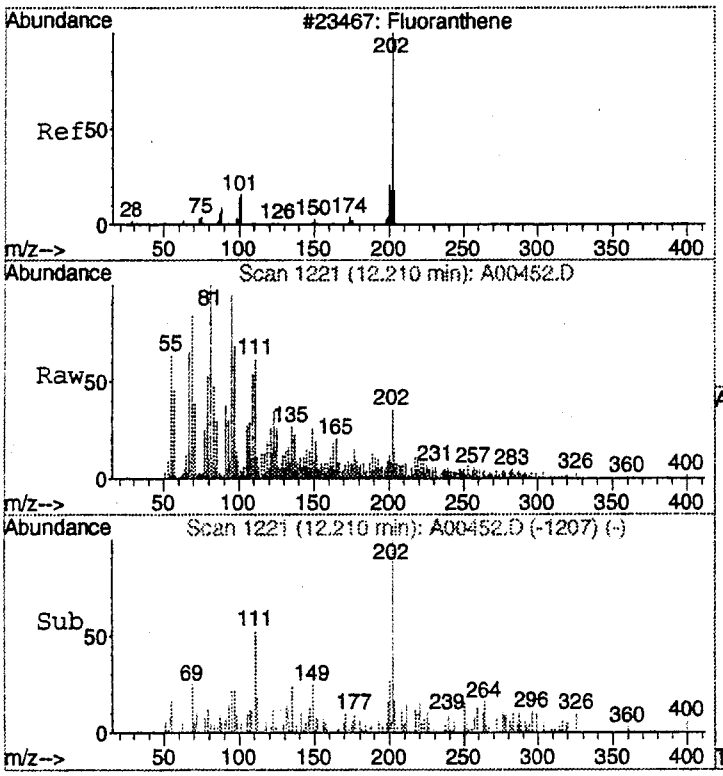


#72
Anthracene
Concen: 8.48 ug/L
RT: 11.00 min Scan# 1100
Delta R.T. -0.01 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:178 Resp: 2122

Ion	Ratio	Lower	Upper
178	100		
152	32.8	0.0	68.8

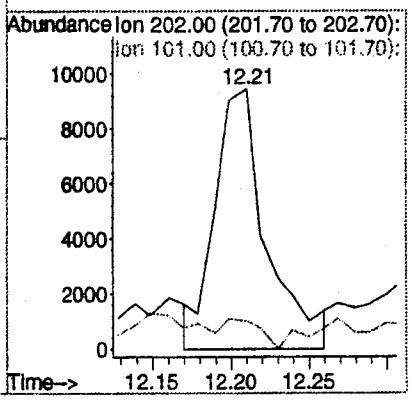


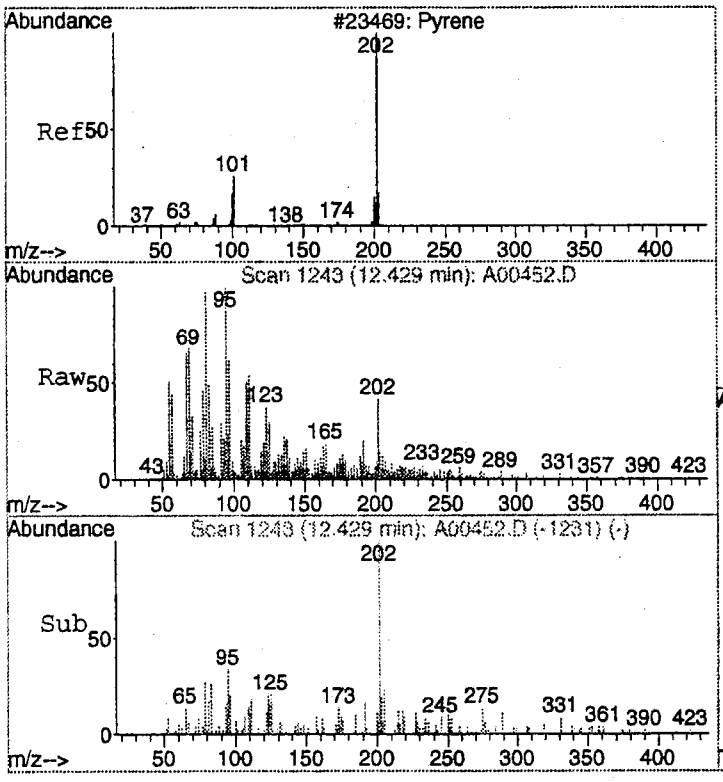


#76
Fluoranthene
Concen: 85.11 ug/L m
RT: 12.21 min Scan# 1221
Delta R.T. 0.04 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:202 Resp: 21545

Ion	Ratio	Lower	Upper
202	100		
101	0.0	0.0	56.4

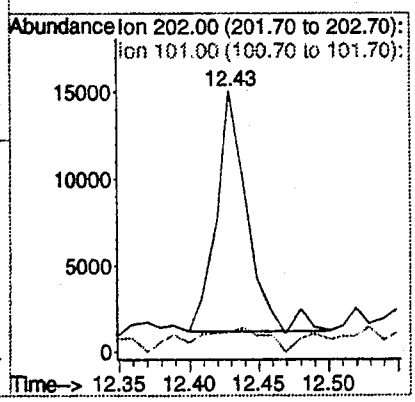


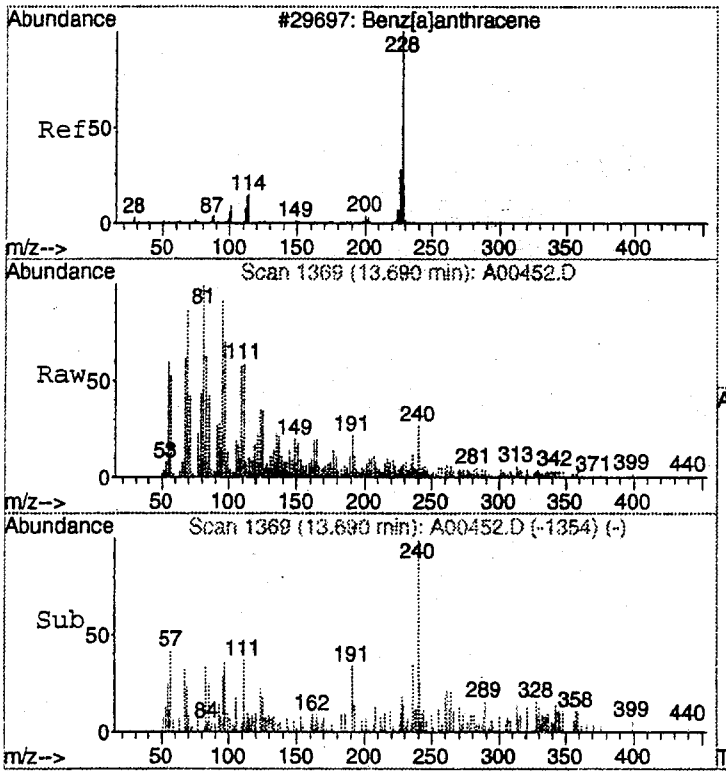


#77
Pyrene
Concen: 86.24 ug/L
RT: 12.43 min Scan# 1243
Delta R.T. 0.02 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:202 Resp: 22000

Ion	Ratio	Lower	Upper
202	100		
101	23.1	0.0	50.6

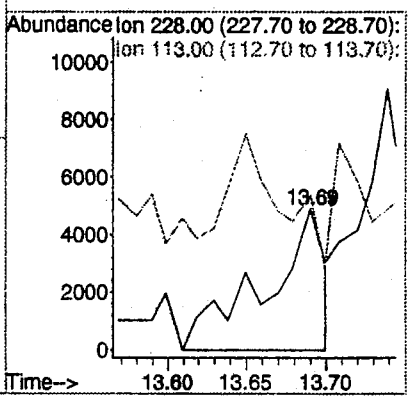


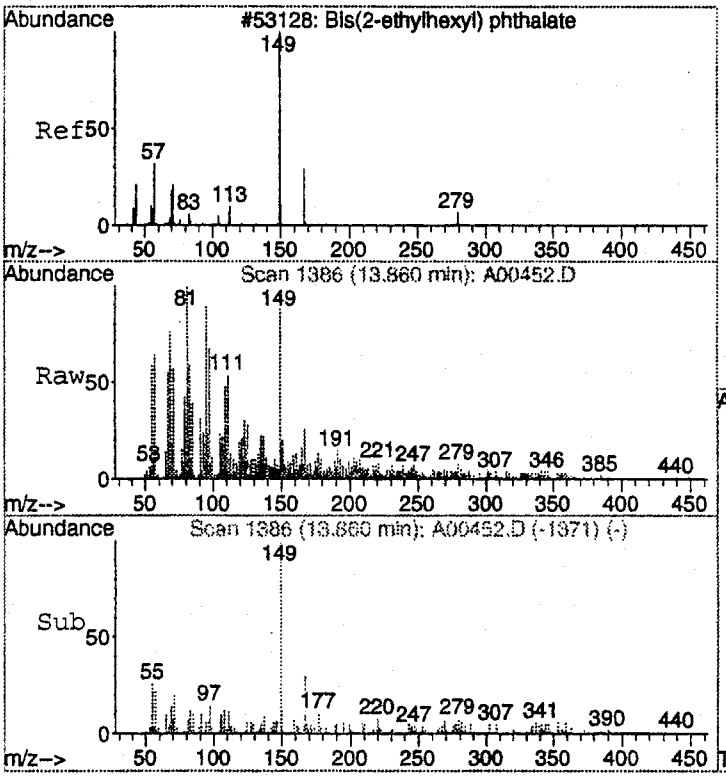


#82
Benzo(a)anthracene
Concen: 41.21 ug/L
RT: 13.69 min Scan# 1369
Delta R.T. 0.05 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:228 Resp: 12495

Ion	Ratio	Lower	Upper
228	100		
113	44.9	0.0	51.2

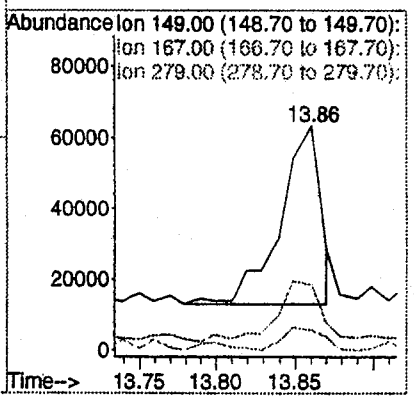


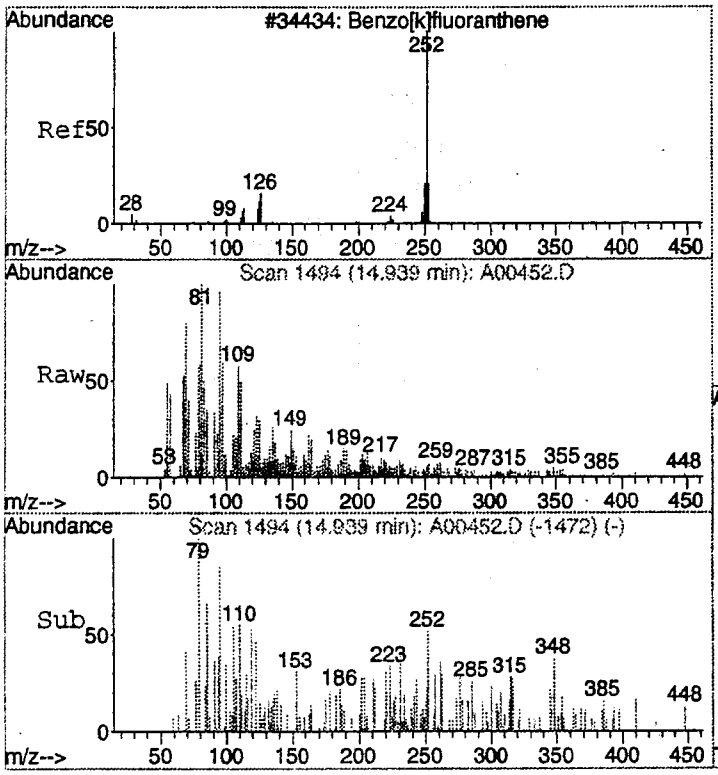


#85
bis(2-Ethylhexyl)phthalate
Concen: 237.00 ug/L
RT: 13.86 min Scan# 1386
Delta R.T. 0.05 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:149 Resp: 89850

Ion	Ratio	Lower	Upper
149	100		
167	35.8	0.0	68.8
279	12.8	0.0	46.8

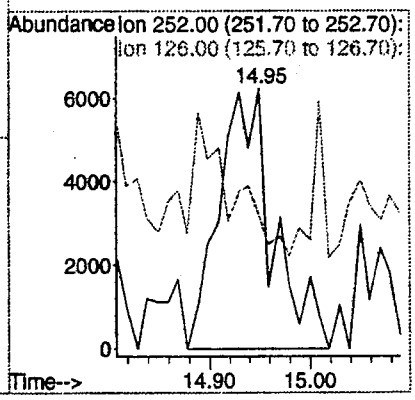




#88
Benzofluoranthenes
Concen: 68.97 ug/L
RT: 14.94 min Scan# 1494
Delta R.T. 0.05 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:252 Resp: 22904

Ion	Ratio	Lower	Upper
252	100		
126	45.5	0.0	56.5



185

Quantitation Report

Data File : C:\MSDCHEM\1\DATA\A00448.D
Acq On : 03 Sep 2002 15:36
Sample : 108164-3 MS SS0608 &2.0 SOIL 1:10
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 04 09:56:35 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:55:04 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.87	150	37708	1000.00	ul/l	0.01
22) Naphthalene - d8 (I)	7.45	136	105200	1000.00	ug/L	0.02
38) Acenaphthene - d10 (I)	9.39	162	88776	1000.00	ug/L	0.02
62) Phenanthrene - d10 (I)	10.93	188	176992	1000.00	ug/L	0.02
80) Chrysene - d12 (I)	13.69	240	197337	1000.00	ul/l	0.02
86) Perylene - d12 (I)	15.38	264	220632	1000.00	ug/L	0.04
System Monitoring Compounds						
4) 2 - Fluorophenol (S)	4.26	112	1367	48.78	ug/L	0.00
7) Phenol - d5 (S)	5.64	99	2067	61.52	ug/L	0.08
23) Nitrobenzene - d5 (S)	6.64	82	1411	41.85	ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.70	172	5805	47.97	ug/L	0.03
65) 2,4,6 - Tribromophenol (S)	10.23	330	2331	59.07	ug/L	0.00
79) p - Terphenyl - d14 (S)	12.62	244	11213	56.54	ug/L	0.03

Target Compounds						Qvalue
8) Phenol	5.65	94	3172	94.72	ug/L	22
10) 2-Chlorophenol	5.67	128	2632	79.90	ug/L	77
13) 1,4-Dichlorobenzene	5.89	146	1297	34.30	ug/L	50
19) n-Nitroso-di-n-propylamine	6.56	70	1892	87.18	ug/L #	49
29) Benzoic Acid	7.38	105	1566	89.63	ug/L #	24
31) 1,2,4-Trichlorobenzene	7.41	180	1771	43.92	ug/L	99
35) 4-Chloro-3-methylphenol	8.21	107	6556	143.35	ug/L	91
36) 2-Methylnaphthalene	8.26	141	770	9.29	ug/L #	14
37) 1-Methylnaphthalene	8.37	141	707	9.18	ul/l #	1
45) Biphenyl	9.42	154	5350	56.16	ug/L #	1
48) Acenaphthylene	9.23	152	1561	9.32	ug/L #	1
51) Acenaphthene	9.42	153	8483	75.55	ug/L	79
55) 2,4-Dinitrotoluene	9.67	165	2888	85.62	ug/L	81
58) Diethylphthalate	9.95	149	5486	38.50	ug/L	91
59) Fluorene	9.96	166	1325	11.61	ug/L #	1
70) Pentachlorophenol	10.82	266	2805	88.01	ug/L	37
71) Phenanthrene	10.95	178	10117	47.33	ug/L	49
72) Anthracene	10.99	178	3546m	17.16	ug/L	
76) Fluoranthene	12.19	202	27855	133.18	ug/L	90
77) Pyrene	12.42	202	38522	182.76	ug/L	99
81) Butylbenzylphthalate	13.21	149	6713	39.73	ug/L #	10
82) Benzo(a)anthracene	13.68	228	17215	74.01	ug/L	4
83) 3,3'-Dichlorobenzidine	13.69	252	11455+	115.55	ug/L #	69
84) Chrysene	13.72	228	19599m	88.66	ug/L	
85) bis(2-Ethylhexyl)phthalate	13.85	149	95303	327.67	ug/L	100
88) Benzofluoranthenes	14.91	252	23867	89.54	ug/L #	1
89) Benzo(a)pyrene	15.30	252	13908m	56.59	ug/L	
90) Indeno(1,2,3-cd)pyrene	17.00	276	14851	51.22	ug/L #	1
91) Dibenz(a,h)anthracene	16.98	278	19001	71.66	ug/L #	48
92) Benzo(g,h,i)perylene	17.43	276	16181	63.93	ug/L #	69

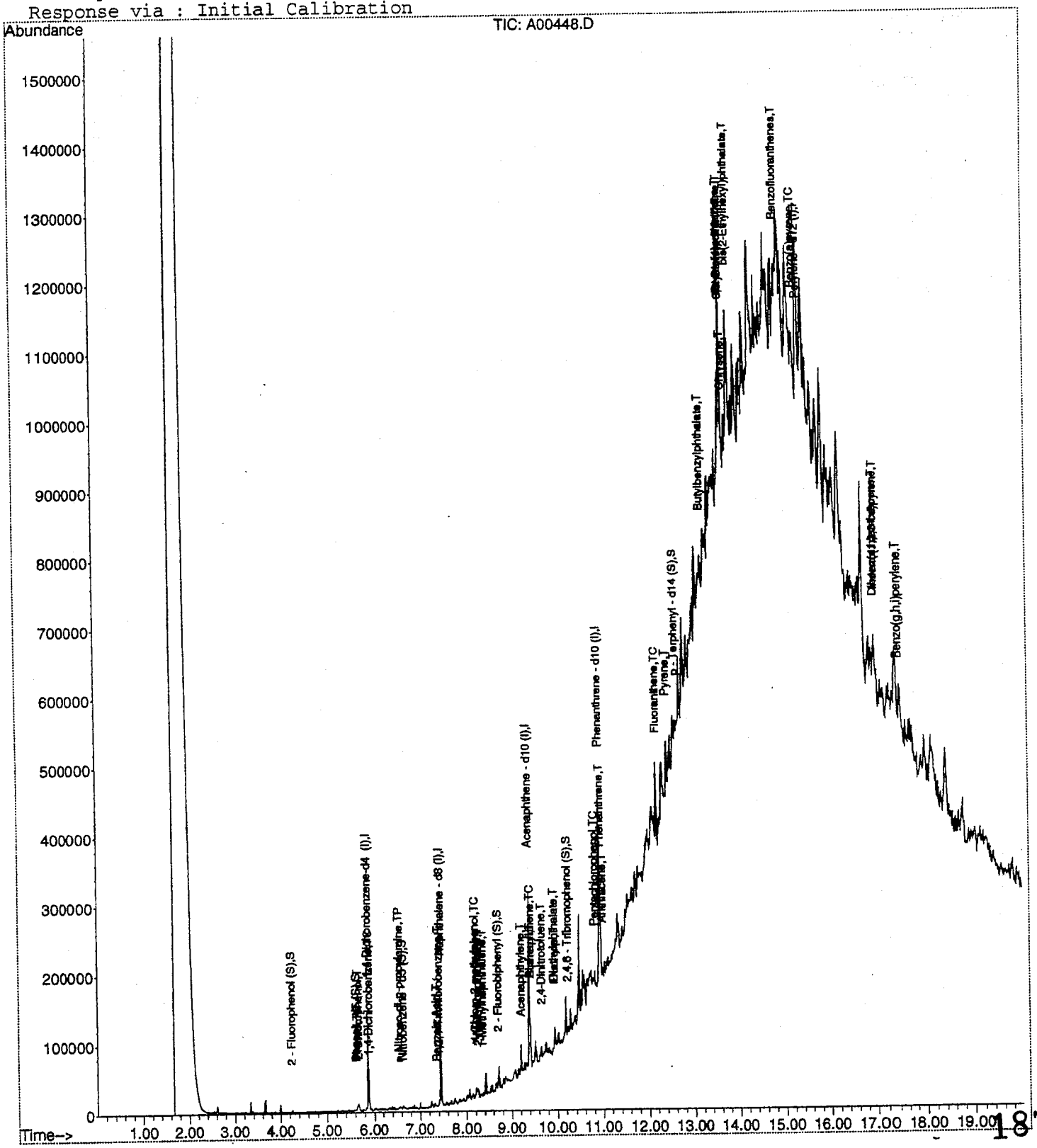
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00448.D
Acq On : 03 Sep 2002 15:36
Sample : 108164-3 MS SS0608 &2.0 SOIL 1:10
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 4 9:58 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 12:10:45 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00449.D Vial: 0
Acq On : 03 Sep 2002 16:02 Operator:
Sample : 108164-3 MSD SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 04 12:25:54 2002 Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:55:04 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.87	150	39294	1000.00 ul/l	0.01
22) Naphthalene - d8 (I)	7.44	136	107546	1000.00 ug/L	0.01
38) Acenaphthene - d10 (I)	9.39	162	92263	1000.00 ug/L	0.02
62) Phenanthrene - d10 (I)	10.92	188	168398	1000.00 ug/L	0.01
80) Chrysene - d12 (I)	13.69	240	193136	1000.00 ul/l	0.02
86) Perylene - d12 (I)	15.37	264	215580	1000.00 ug/L	0.03
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.27	112	1312	44.93 ug/L	0.01
7) Phenol - d5 (S)	5.65	99	1754	50.10 ug/L	0.09
23) Nitrobenzene - d5 (S)	6.64	82	1233	35.78 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.70	172	4703	37.39 ug/L	0.03
65) 2,4,6 - Tribromophenol (S)	10.24	330	1734	46.19 ug/L	0.02
79) p - Terphenyl - d14 (S)	12.62	244	11307	59.93 ug/L	0.03

Target Compounds					Qvalue
8) Phenol	5.66	94	2643	75.74 ug/L	15
10) 2-Chlorophenol	5.68	128	2564	74.70 ug/L	73
13) 1,4-Dichlorobenzene	5.89	146	1261	32.00 ug/L	62
19) n-Nitroso-di-n-propylamine	6.56	70	1352	59.78 ug/L #	49
29) Benzoic Acid	7.45	105	1136	63.60 ug/L #	1
31) 1,2,4-Trichlorobenzene	7.41	180	1773	43.01 ug/L	95
35) 4-Chloro-3-methylphenol	8.22	107	4883	104.44 ug/L	83
36) 2-Methylnaphthalene	8.25	141	816	9.63 ug/L #	43
45) Biphenyl	9.42	154	4742	47.90 ug/L #	1
50) 3-Nitroaniline	9.41	138	718	37.22 ug/L	85
51) Acenaphthene	9.42	153	6815	58.40 ug/L	85
55) 2,4-Dinitrotoluene	9.67	165	2663	75.97 ug/L	78
57) 2,3,5,6-Tetrachlorophenol	9.76	232	235	6.94 ul/l #	51
61) 4-Nitroaniline	9.41	138	718	37.22 ug/L #	1
64) n-Nitrosodiphenylamine	10.14	169	2021	16.97 ug/L #	1
69) Atrazine	10.83	200	2468+	272.52 ug/L	69
70) Pentachlorophenol	10.82	266	2469	81.42 ug/L	63
71) Phenanthrene	10.95	178	3686	18.13 ug/L	1
72) Anthracene	10.95	178	3686	18.75 ug/L	1
73) Octadecane	10.90	57	7820	123.49 ug/L #	27
76) Fluoranthene	12.19	202	8746	43.95 ug/L	94
77) Pyrene	12.41	202	23407	116.72 ug/L	96
78) Benzidine	12.39	184	2394	77.47 ug/L	100
82) Benzo(a)anthracene	13.58	228	1420	6.24 ug/L	5
83) 3,3'-Dichlorobenzidine	13.71	252	3559+	36.68 ug/L	44
84) Chrysene	13.72	228	4040	18.67 ug/L	16
85) bis(2-Ethylhexyl)phthalate	13.84	149	107561	377.86 ug/L	100
88) Benzofluoranthenes	14.91	252	9931	38.13 ug/L #	1
89) Benzo(a)pyrene	15.23	252	11726	48.83 ug/L #	1
90) Indeno(1,2,3-cd)pyrene	16.98	276	8266	29.18 ug/L #	58
91) Dibenz(a,h)anthracene	16.98	278	4964	19.16 ug/L #	48
92) Benzo(g,h,i)perylene	17.44	276	6794	27.47 ug/L #	69

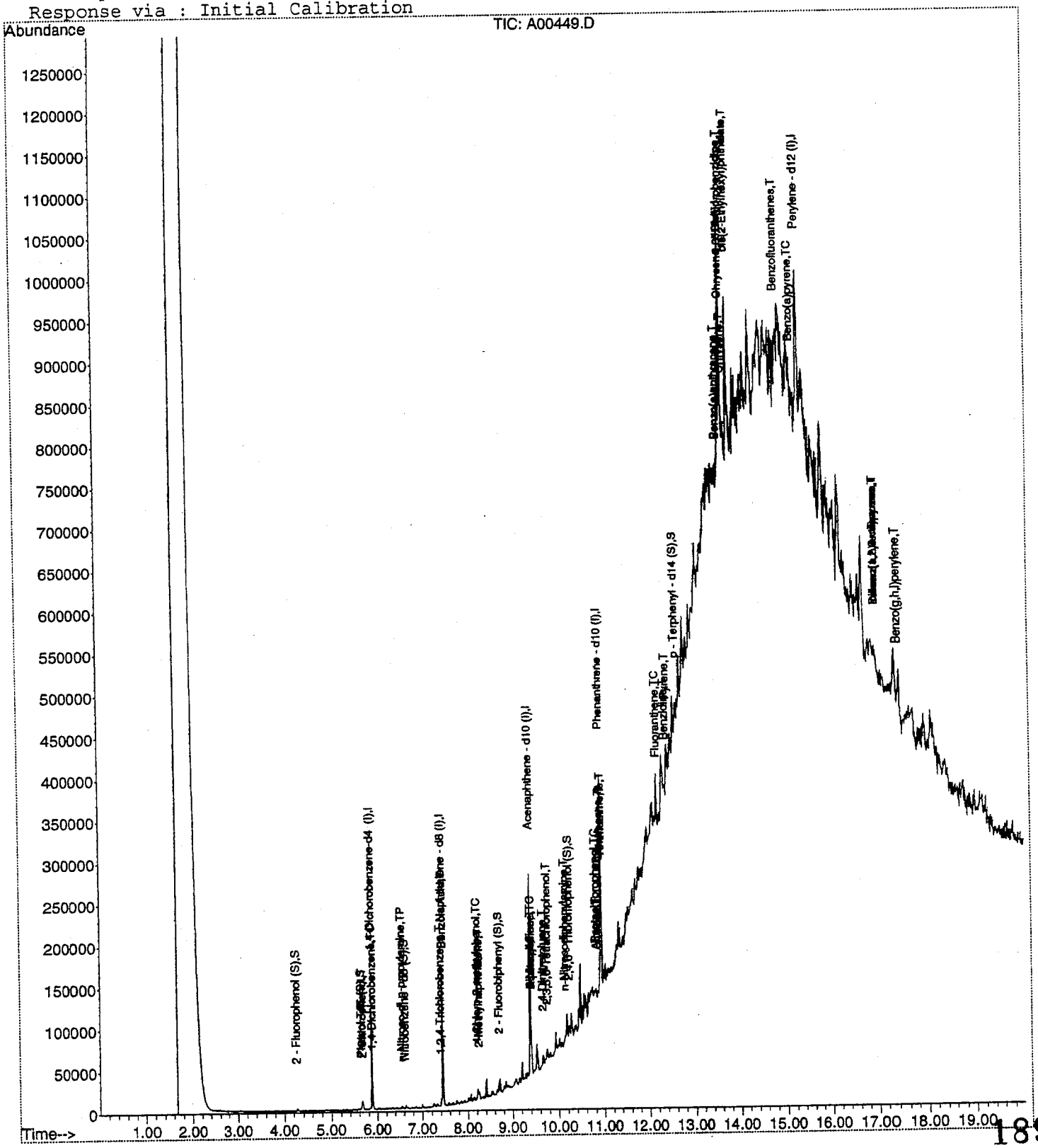
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00449.D
Acq On : 03 Sep 2002 16:02
Sample : 108164-3 MSD SS0608 &2.0 SOIL 1:10
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 5 13:58 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 12:10:45 2002
Response via : Initial Calibration



LABORATORY WORKSHEETS

Semivolatile GCMS Worksheet - total

QC Level:Tier IV	
Matrix:solid	
CH2M Hill	

Due: 09/04/02

Work Order - 108160

Proj. Manager:Katie Downie

L-3

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

Sample number 108160-1		
Sample Weight/Volume	Client Sample ID	PP011802
	Date Received	8/23/02
	Date Sampled	**8/20/02 4:35:00 PM**
Full 8270		

Sample number 108160-2		
Sample Weight/Volume	Client Sample ID	PP011803
	Date Received	8/23/02
	Date Sampled	**8/20/02 5:10:00 PM**
Full 8270		

Sample number 108160-3		
Sample Weight/Volume	Client Sample ID	PP011804D
	Date Received	8/23/02
	Date Sampled	**8/20/02 12:01:00 AM**
Full 8270		

Sample number 108160-4		
Sample Weight/Volume	Client Sample ID	PP011805
	Date Received	8/23/02
	Date Sampled	**8/21/02 9:45:00 AM**
Full 8270		

550608

Analyst _____ Date 9/5/02

Reviewed by _____ Date 9/9/02

Organics worksheet v4.0
If you have suggestions or changes please bring them to me - Dennis

Printed - 8/27/02

Semivolaile Analysis by USEPA Method 8270

[illegible]	SS0608				
[illegible]	Solid				
[illegible]	980-52-06				
[illegible]	8/1/03	Weighed By/Date TM 8-27-02			
[illegible]	01/19/03	Extracted By/Date			
[illegible]	1/19/03	COE - Portland 8270			
[illegible]	980-56-01				
[illegible]	8/15/03				
[illegible]					
[illegible]	V23154				
		Spike Witness Signature/Date			
[illegible]	3550 Sonication				

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	15.0000	2	10	NA
[illegible]					NA
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[illegible]	[illegible]				
[illegible]	[illegible]	15.3367	2	10	10
[illegible]	[illegible]	15.1042	2	10	10
[illegible]					
[illegible]					

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
108160-1	PP011802	15.5281	2	10	
108160-2	PP011803	15.9643	2	10	
108160-3	PP011804D	15.1734	2	10	
108160-4	PP011805	16.9877	2	10	
108164-1	PP011806	18.8258	2	10	
108164-2	PP011807	17.1898	2	10	
108164-3	PP011808	15.2692	2	10	
108166-1	PP011801	15.4033	2	10	
108166-2	PP011809	15.9869	2	10	
108166-3	PP011810	16.9048	2	10	
108177-1	PP01M105	17.1575	2	10	
108177-2	PP01M106	16.0588	2	10	
108177-3	PP01M107	16.0562	2	10	
108177-4	PP01M108	15.7894	2	10	
108177-5	PP01M109	16.1271	2	10	
108177-6	PP01M110	16.5356	2	10	
108177-8	PP01M101	15.9979	2	10	
108177-9	PP01M102D	15.7006	2	10	
108177-10	PP01M103	16.3232	2	10	
108177-11	PP01M104	15.6354	2	10	

8/27/02

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6a **Sample Information**

Thi Client Name	
Work Order Number	
Sample Number	
QC Batch Number	ss0608
Client Sample ID	
Date Received	
Date Prepared	08-27-02
Date Analyzed	09-03-02
Sample matrix type	solid
QC sample type	blank

Related Blank: noblank

Sample weight (g)	15	=	0.015 /kg	Calc. Fact.	0.133333333
Extract volume (ml)	2	=	2 ml	Dry Weight	15 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	66.66666667
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	464.0347		92.8	OK		
x	Phenol - d5	425.9043		85.2	OK		
x	Nitrobenzene - d5	510.202		102	OK		
x	2 - Fluorobiphenyl	384.9533		77	OK		
x	2,4,6 - Tribromophenol	419.284		83.9	OK		
x	p - Terphenyl - d14	448.4938		89.7	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Butylbenzylphthalate	5.0263			ND		13.3
x	bis(2-Ethylhexyl)phthalate	7.0397			ND		13.3

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6a **Sample Information**

Thi: Client Name	CH2M Hill
Work Order Number	108166
Sample Number	
QC Batch Number	ss0608
Client Sample ID	
Date Received	08-23-02
Date Prepared	08-27-02
Date Analyzed	09-03-02
Sample matrix type	solid
QC sample type	bs

Related Blank: ss0608

Sample weight (g)	15	=	0.015 /kg	Calc. Fact.	0.133333333
Extract volume (ml)	2	=	2 ml	Dry Weight	15 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	66.66666667
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	363.8672		72.8	OK		
x	Phenol - d5	373.9798		74.8	OK		
x	Nitrobenzene - d5	383.2885		76.7	OK		
x	2 - Fluorobiphenyl	328.7413		65.7	OK		
x	2,4,6 - Tribromophenol	358.2933		71.7	OK		
x	p - Terphenyl - d14	387.1407		77.4	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Phenol	632.2762			84.3		13.3
x	2-Chlorophenol	648.9224			86.5		13.3
x	1,4-Dichlorobenzene	365.4676			48.7		13.3
x	N-nitroso-di-n-propylamine	419.7338			56		13.3
x	Benzoic Acid	39.9386			5.33	J	66.7
x	1,2,4-Trichlorobenzene	401.3421			53.5		13.3
x	4-Chloro-3-methylphenol	639.2582			85.2		13.3
x	2-Methylnaphthalene	18.9762			2.53		1.33
x	Acenaphthene	407.8895			54.4		1.33
x	4-Nitrophenol	381.7455			50.9	J	66.7
x	2,4-Dinitrotoluene	500.2868			66.7		13.3
x	Pentachlorophenol	249.3555			33.2		13.3
x	Di-n-butylphthalate	7.6756			ND		33.3
x	Pyrene	441.2636			58.8		1.33
x	Butylbenzylphthalate	9.8999			ND		13.3
x	bis(2-Ethylhexyl)phthalate	34.8859			ND		13.3

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6a **Sample Information**

Th	Client Name	**CH2M Hill**
	Work Order Number	**108164**
	Sample Number	**3**
	QC Batch Number	**ss0608**
	Client Sample ID	**PP011808**
	Date Received	**08-23-02**
	Date Prepared	**08-27-02**
	Date Analyzed	**09-03-02**
	Sample matrix type	**solid**
	QC sample type	**sample**

Related Blank: ss0608

Sample weight (g)	**15.2692**	=	0.01527 /kg	Calc. Fact.	1.684230831
Extract volume (ml)	**2**	=	2 ml	Dry Weight	11.87485684 g
Dilution Factor	**10**	=	10	Sample Units	ug/kg
% Solids	**77.77**	=	0.7777	Spike Factor	84.21154153
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	27.0056		54	**OK**		
x	Phenol - d5	32.4762		65	**OK**		
x	Nitrobenzene - d5	30.76		61.5	**OK**		
x	2 - Fluorobiphenyl	29.9922		60	**OK**		
x	2,4,6 - Tribromophenol	45.33		90.7	**OK**		
x	p - Terphenyl - d14	63.8318		128	**OK**		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Acenaphthylene	7.2954			12.3	J	16.8
x	Acenaphthene	8.0261			13.5	J	16.8
x	Phenanthrene	35.1633			59.2		16.8
x	Anthracene	8.4843			14.3	J	16.8
x	Fluoranthene	85.1112			143		16.8
x	Pyrene	86.2422			145		16.8
x	bis(2-Ethylhexyl)phthalate	237.0001			399		168
x	Benzofluoranthenes	68.9707			116		33.7

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6a **Sample Information**

Thi Client Name	CH2M Hill
Work Order Number	108164
Sample Number	3
QC Batch Number	ss0608
Client Sample ID	PP011808
Date Received	08-23-02
Date Prepared	08-27-02
Date Analyzed	09-03-02
Sample matrix type	solid
QC sample type	sample

Related Blank: ss0608

Sample weight (g)	15.2692	=	0.01527 /kg	Calc. Fact.	1.684230831
Extract volume (ml)	2	=	2 ml	Dry Weight	11.87485684 g
Dilution Factor	10	=	10	Sample Units	ug/kg
% Solids	77.77	=	0.7777	Spike Factor	84.21154153
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	27.0056		54	OK		
x	Phenol - d5	32.4762		65	OK		
x	Nitrobenzene - d5	30.76		61.5	OK		
x	2 - Fluorobiphenyl	29.9922		60	OK		
x	2,4,6 - Tribromophenol	45.33		90.7	OK		
x	p - Terphenyl - d14	63.8318		128	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	4-Chloro-3-methylphenol	40.376			68	J	168
x	2-Methylnaphthalene	7.3723			12.4	J	16.8
x	Acenaphthylene	7.2954			12.3	J	16.8
x	Acenaphthene	8.0261			13.5	J	16.8
x	Phenanthrene	35.1633			59.2		16.8
x	Anthracene	8.4843			14.3	J	16.8
x	Fluoranthene	85.1112			143		16.8
x	Pyrene	86.2422			145		16.8
x	Benzo(a)anthracene	41.2106			69.4		33.7
x	bis(2-Ethylhexyl)phthalate	237.0001			399		168
x	Benzofluoranthenes	68.9707			116		33.7

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6a **Sample Information**

Thi Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**3**
QC Batch Number	**ss0608**
Client Sample ID	**PP011808**
Date Received	**08-23-02**
Date Prepared	**08-27-02**
Date Analyzed	**09-03-02**
Sample matrix type	**solid**
QC sample type	**ms**

Related Blank: ss0608

Sample weight (g)	**15.3367**	=	0.01534 /kg	Calc. Fact.	1.676818181
Extract volume (ml)	**2**	=	2 ml	Dry Weight	11.92735159 g
Dilution Factor	**10**	=	10	Sample Units	ug/kg
% Solids	**77.77**	=	0.7777	Spike Factor	83.84090906
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	**Quan Value**	**User Flags**	**% Rec.**	**Warning**	**Water Low**	**Water High**
x	2 - Fluorophenol	48.7801		97.6	**OK**		
x	Phenol - d5	61.5217		123	**OK**		
x	Nitrobenzene - d5	41.8545		83.7	**OK**		
x	2 - Fluorobiphenyl	47.969		95.9	**OK**		
x	2,4,6 - Tribromophenol	59.0731		118	**OK**		
x	p - Terphenyl - d14	56.5437		113	**OK**		

x	**Target Analytes**	**Quan Value**	**User Flag**	**Blank**	**Calculated Amount**	**Total Flags**	**PQL**
x	Phenol	94.7243			159	J	168
x	2-Chlorophenol	79.9014			134	J	168
x	1,4-Dichlorobenzene	34.3012			57.5	J	168
x	N-nitroso-di-n-propylamine	87.1778			146	J	168
x	Benzoic Acid	89.625			150	J	838
x	1,2,4-Trichlorobenzene	43.9177			73.6	J	168
x	4-Chloro-3-methylphenol	143.346			240		168
x	2-Methylnaphthalene	9.2869			15.6	J	16.8
x	Dimethylphthalate	5.9789			ND		168
x	Acenaphthylene	9.3211			15.6	J	16.8
x	Acenaphthene	75.5471			127		16.8
x	4-Nitrophenol	18.1659			ND		838
x	Dibenzofuran	5.6132			ND		168
x	2,4-Dinitrotoluene	85.6222			144	J	168
x	Diethylphthalate	38.4955			64.5	J	168
x	Fluorene	11.6114			19.5		16.8
x	4,6-Dinitro-2-methylphenol	6.9261			ND		838
x	N-Nitrosodiphenylamine	6.984			ND		168
x	Pentachlorophenol	88.0069			148	J	168
x	Phenanthrene	47.3342			79.4		16.8

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x	Anthracene	17.1591		28.8		16.8
x	Di-n-butylphthalate	12.7859	ND			419
x	Fluoranthene	133.1764		223		16.8
x	Pyrene	182.7637		306		16.8
x	Butylbenzylphthalate	39.7306		66.6	J	168
x	3,3'-Dichlorobenzidine	115.5453		194		168
x	Benzo(a)anthracene	74.009		124		33.5
x	Chrysene	88.6587		149		33.5
x	bis(2-Ethylhexyl)phthalate	327.6737		549		168
x	Di-n-octylphthalate	19.8782	ND			168
x	Benzofluoranthenes	89.5372		150		33.5
x	Benzo(a)pyrene	56.5927		94.9		16.8
x	Indeno(1,2,3-cd)pyrene	51.2171		85.9		16.8
x	Dibenz(a,h)anthracene	71.6619		120		16.8
x	Benzo(g,h,i)perylene	63.9261		107		16.8

STL Seattle

6a **Sample Information**

Thi Client Name	CH2M Hill
Work Order Number	108164
Sample Number	3
QC Batch Number	ss0608
Client Sample ID	PP011808
Date Received	08-23-02
Date Prepared	08-27-02
Date Analyzed	09-03-02
Sample matrix type	solid
QC sample type	msd

Related Blank: ss0608

Sample weight (g)	15.1042	=	0.0151 /kg	Calc. Fact.	1.70262956
Extract volume (ml)	2	=	2 ml	Dry Weight	11.74653634 g
Dilution Factor	10	=	10	Sample Units	ug/kg
% Solids	77.77	=	0.7777	Spike Factor	85.131478
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	44.9279		89.9	OK		
x	Phenol - d5	50.0985		100	OK		
x	Nitrobenzene - d5	35.7766		71.6	OK		
x	2 - Fluorobiphenyl	37.394		74.8	OK		
x	2,4,6 - Tribromophenol	46.1863		92.4	OK		
x	p - Terphenyl - d14	59.9275		120	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Phenol	75.7413			129	J	170
x	2-Chlorophenol	74.6954			127	J	170
x	1,4-Dichlorobenzene	32.003			54.5	J	170
x	N-nitroso-di-n-propylamine	59.7818			102	J	170
x	Benzoic Acid	63.5971			108	J	851
x	1,2,4-Trichlorobenzene	43.0081			73.2	J	170
x	4-Chloro-3-methylphenol	104.4371			178		170
x	2-Methylnaphthalene	9.627			16.4	J	17
x	3-Nitroaniline	37.2181			63.4	J	170
x	Acenaphthene	58.3986			99.4		17
x	2,4-Dinitrotoluene	75.9676			129	J	170
x	Diethylphthalate	10.0535			ND		170
x	4-Chlorophenylphenylether	10.6471			ND		170
x	4-Nitroaniline	37.2181			63.4	J	170
x	N-Nitrosodiphenylamine	16.9737			28.9	J	170
x	Pentachlorophenol	81.4182			139	J	170
x	Phenanthrene	18.1257			30.9		17
x	Anthracene	18.7468			31.9		17
x	Di-n-butylphthalate	21.18			ND		426
x	Fluoranthene	43.9491			74.8		17

STL Seattle

x	Pyrene	116.7195		199		17
x	3,3'-Dichlorobenzidine	36.6801		62.5	J	170
x	Benzo(a)anthracene	6.2375		10.6	J	34.1
x	Chrysene	18.673		31.8	J	34.1
x	bis(2-Ethylhexyl)phthalate	377.8637		643		170
x	Di-n-octylphthalate	18.5669	ND			170
x	Benzofluoranthenes	38.1293		64.9		34.1
x	Benzo(a)pyrene	48.8321		83.1		17
x	Indeno(1,2,3-cd)pyrene	29.1753		49.7		17
x	Dibenz(a,h)anthracene	19.1604		32.6		17
x	Benzo(g,h,i)perylene	27.47		46.8		17

STL Seattle

6a Sample Information

Thi: Client Name	CH2M Hill
Work Order Number	108160
Sample Number	1
QC Batch Number	ss0608
Client Sample ID	PP011802
Date Received	08-23-02
Date Prepared	08-27-02
Date Analyzed	09-03-02
Sample matrix type	solid
QC sample type	sample

Related Blank: ss0608

Sample weight (g)	15.5281	=	0.01553 /kg	Calc. Fact.	1.762435117
Extract volume (ml)	2	=	2 ml	Dry Weight	11.34793548 g
Dilution Factor	10	=	10	Sample Units	ug/kg
% Solids	73.08	=	0.7308	Spike Factor	88.12175587
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	33.008		66	OK		
x	Phenol - d5	41.4877		83	OK		
x	Nitrobenzene - d5	25.609		51.2	OK		
x	2 - Fluorobiphenyl	26.91		53.8	OK		
x	2,4,6 - Tribromophenol	46.02		92	OK		
x	p - Terphenyl - d14	61.6023		123	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	3-&4-Methylphenol	25.5085			45	J	352
x	Naphthalene	19.1212			33.7		17.6
x	2-Methylnaphthalene	18.8989			33.3		17.6
x	Acenaphthylene	13.2036			23.3		17.6
x	Acenaphthene	13.5189			23.8		17.6
x	Fluorene	22.4117			39.5		17.6
x	Phenanthrene	12.6796			22.3		17.6
x	Anthracene	17.0886			30.1		17.6
x	Fluoranthene	135.4993			239		17.6
x	Pyrene	144.5735			255		17.6
x	Butylbenzylphthalate	218.7172			385		176
x	bis(2-Ethylhexyl)phthalate	1530.188			2700		176

ug/L X 0.002L

0.0155281 X10 ÷ 0.7308

STL Seattle

6a **Sample Information**

Thi Client Name	CH2M Hill
Work Order Number	108160
Sample Number	2
QC Batch Number	ss0608
Client Sample ID	PP011803
Date Received	08-23-02
Date Prepared	08-27-02
Date Analyzed	09-03-02
Sample matrix type	solid
QC sample type	sample

Related Blank: ss0608

Sample weight (g)	15.9643	=	0.01596 /kg	Calc. Fact.	1.632519285
Extract volume (ml)	2	=	2 ml	Dry Weight	12.25100382 g
Dilution Factor	10	=	10	Sample Units	ug/kg
% Solids	76.74	=	0.7674	Spike Factor	81.62596426
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	29.4431		58.9	OK		
x	Phenol - d5	36.7971		73.6	OK		
x	Nitrobenzene - d5	29.738		59.5	OK		
x	2 - Fluorobiphenyl	29.0245		58	OK		
x	2,4,6 - Tribromophenol	42.8369		85.7	OK		
x	p - Terphenyl - d14	53.3361		107	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	2-Methylnaphthalene	8.1772			13.3	J	16.3
x	Phenanthrene	16.2763			26.6		16.3
x	Anthracene	8.2452			13.5	J	16.3
x	Fluoranthene	58.7573			95.9		16.3
x	Pyrene	52.5363			85.8		16.3
x	bis(2-Ethylhexyl)phthalate	238.6071			390		163

STL Seattle

6a **Sample Information**

Thi Client Name	CH2M Hill
Work Order Number	108160
Sample Number	3
QC Batch Number	ss0608
Client Sample ID	PP011804D
Date Received	08-23-02
Date Prepared	08-27-02
Date Analyzed	09-03-02
Sample matrix type	solid
QC sample type	sample

Related Blank: ss0608

Sample weight (g)	15.1734	=	0.01517 /kg	Calc. Fact.	1.714039196
Extract volume (ml)	2	=	2 ml	Dry Weight	11.6683446 g
Dilution Factor	10	=	10	Sample Units	ug/kg
% Solids	76.9	=	0.769	Spike Factor	85.70195981
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	37.4927		75	OK		
x	Phenol - d5	50.3525		101	OK		
x	Nitrobenzene - d5	39.7666		79.5	OK		
x	2 - Fluorobiphenyl	35.2367		70.5	OK		
x	2,4,6 - Tribromophenol	47.57		95.1	OK		
x	p - Terphenyl - d14	51.82		104	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Naphthalene	6.1067			10.5	J	17.1
x	4-Chloro-3-methylphenol	19.3346			33.1	J	171
x	2-Methylnaphthalene	7.526			12.9	J	17.1
x	Acenaphthylene	5.7094			9.79	J	17.1
x	Acenaphthene	9.5829			16.4	J	17.1
x	Phenanthrene	84.4769			145		17.1
x	Anthracene	16.8269			28.8		17.1
x	Fluoranthene	142.7057			245		17.1
x	Pyrene	143.0584			245		17.1
x	Butylbenzylphthalate	86.3793			148	J	171
x	Benzo(a)anthracene	48.611			83.3		34.3
x	Chrysene	61.974			106		34.3
x	bis(2-Ethylhexyl)phthalate	189.3841			325		171
x	Benzofluoranthenes	81.985			141		34.3
x	Benzo(a)pyrene	84.2822			144		17.1

STL Seattle

6a **Sample Information**

Thi Client Name	CH2M Hill
Work Order Number	108160
Sample Number	4
QC Batch Number	ss0608
Client Sample ID	PP011805
Date Received	08-23-02
Date Prepared	08-27-02
Date Analyzed	09-03-02
Sample matrix type	solid
QC sample type	sample

Related Blank: ss0608

Sample weight (g)	16.9877	=	0.01699 /kg	Calc. Fact.	1.820226369
Extract volume (ml)	2	=	2 ml	Dry Weight	10.98764436 g
Dilution Factor	10	=	10	Sample Units	ug/kg
% Solids	64.68	=	0.6468	Spike Factor	91.01131846
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	31.6457		63.3	OK		
x	Phenol - d5	41.7809		83.6	OK		
x	Nitrobenzene - d5	46.9046		93.8	OK		
x	2 - Fluorobiphenyl	34.9414		69.9	OK		
x	2,4,6 - Tribromophenol	43.7		87.4	OK		
x	p - Terphenyl - d14	66.3681		133	OK		

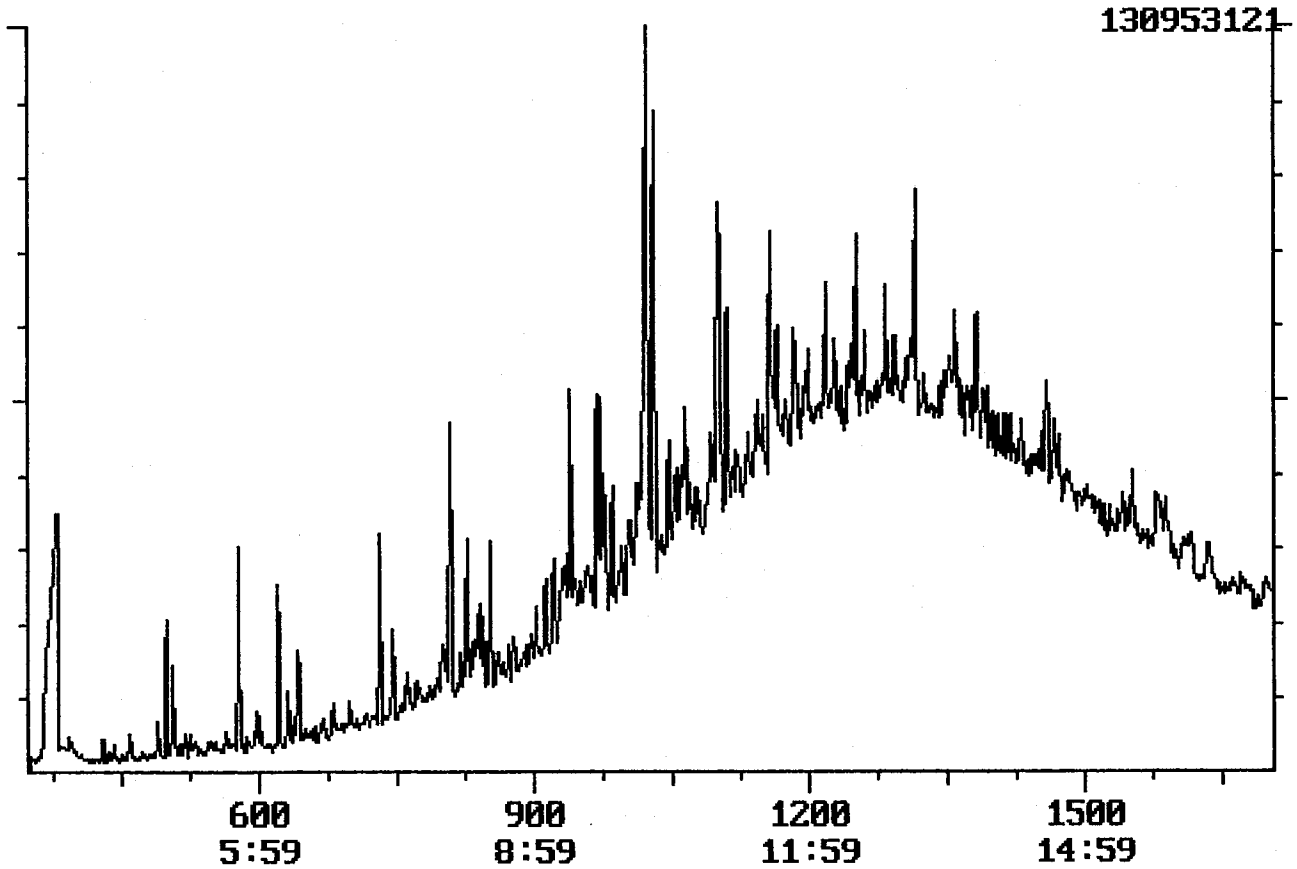
x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	3-&4-Methylphenol	39.7499			72.4	J	364
x	Naphthalene	36.2978			66.1		18.2
x	4-Chloro-3-methylphenol	168.2453			306		182
x	2-Methylnaphthalene	67.9102			124		18.2
x	Acenaphthylene	28.1484			51.2		18.2
x	Acenaphthene	36.1753			65.8		18.2
x	Dibenzofuran	24.7279			45	J	182
x	Fluorene	66.7899			122		18.2
x	Phenanthrene	150.1643			273		18.2
x	Anthracene	51.296			93.4		18.2
x	Di-n-butylphthalate	101.6366			185	J	455
x	Fluoranthene	261.7328			476		18.2
x	Pyrene	294.3326			536		18.2
x	Benzo(a)anthracene	145.5778			265		36.4
x	Chrysene	194.0303			353		36.4
x	bis(2-Ethylhexyl)phthalate	748.1402			1360		182
x	Benzofluoranthenes	331.2614			603		36.4
x	Benzo(a)pyrene	273.9778			499		18.2
x	Indeno(1,2,3-cd)pyrene	64.7797			118		18.2
x	Benzo(g,h,i)perylene	140.4898			256		18.2

HERBICIDE DATA PACKAGE

SAMPLE DATA

SAMPLE CHROMATOGRAM

DATAFILE : L4089 ANALYSIS DATE : 08/29/02 23:24
SAMPLE : 108160-1 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4089 ANALYSIS DATE : 08/29/02 23:24
SAMPLE : 108160-1 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.27	1.000	NG/UL	6464584
Phenanthrene D10 (IS)	9.76	1.000	NG/UL	9039522
2,4-Dichlorophenylacetic a	8.36	0.654	NG/UL	2699608
Dalapon			ND	
4-Nitrophenol			ND	
Dicamba			ND	
MCPP			ND	
MCPA			ND	
Dichloroprop			ND	
2,4-D			ND	
Pentachlorophenol			ND	
Silvex (2,4,5-TP)			ND	
2,4,5-T			ND	
Dinoseb			ND	
2,4-DB			ND	

INTERNAL STANDARD QC REPORT

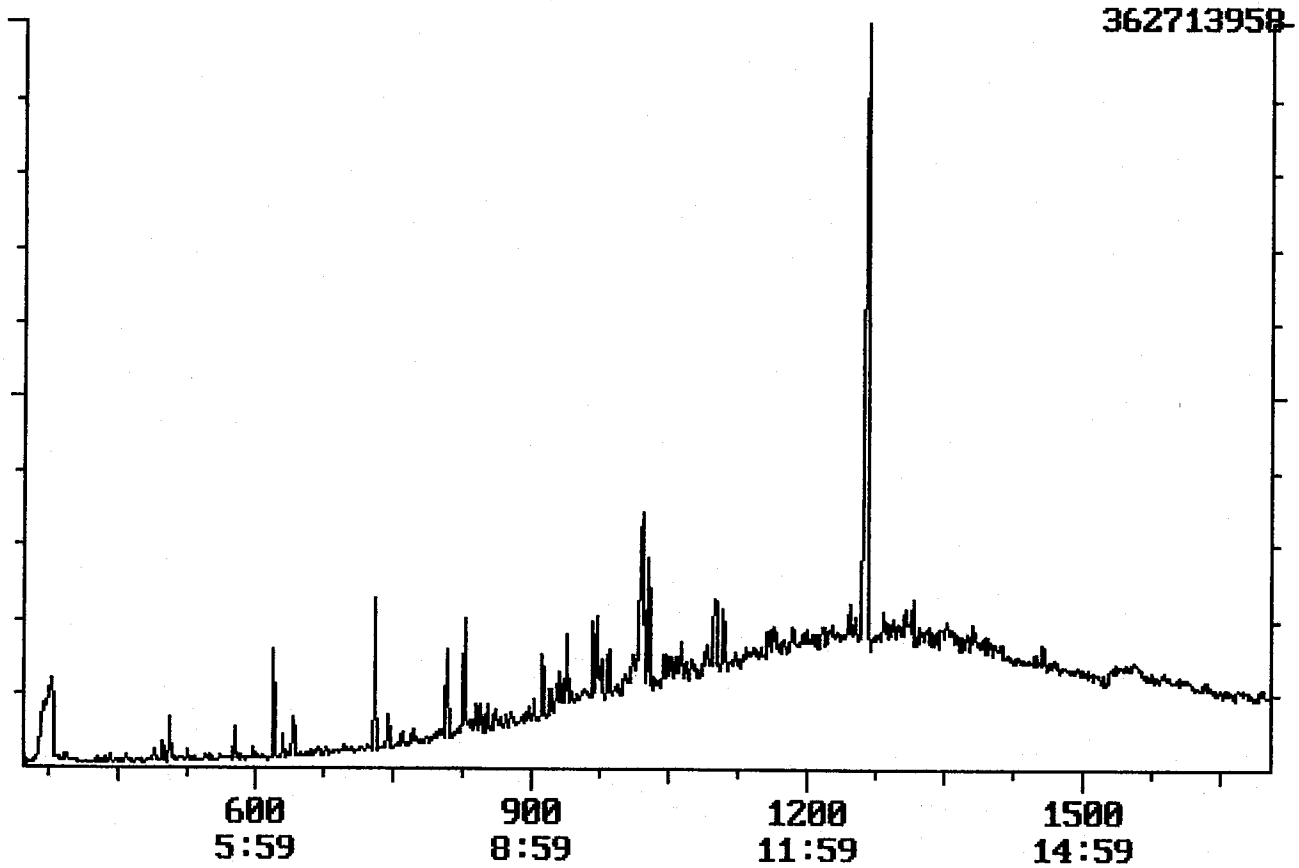
DATAFILE : L4089 ANALYSIS DATE : 08/29/02 23:24
SAMPLE : 108160-1 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.27	0.01	7512438	6464584	14
Phenanthrene D10 (IS)	9.74	9.76	0.02	11413836	9039522	21

SAMPLE CHROMATOGRAM

DATAFILE : L4090
SAMPLE : 108160-2 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

ANALYSIS DATE : 08/29/02 23:48



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4090 ANALYSIS DATE : 08/29/02 23:48
SAMPLE : 108160-2 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.26	1.000	NG/UL	7662613
Phenanthrene D10 (IS)	9.76	1.000	NG/UL	10426068
2,4-Dichlorophenylacetic a	8.35	0.672	NG/UL	3285005
Dalapon			ND	
4-Nitrophenol			ND	
Dicamba			ND	
MCPP			ND	
MCPA			ND	
Dichloroprop			ND	
2,4-D			ND	
Pentachlorophenol			ND	
Silvex (2,4,5-TP)			ND	
2,4,5-T			ND	
Dinoseb			ND	
2,4-DB			ND	

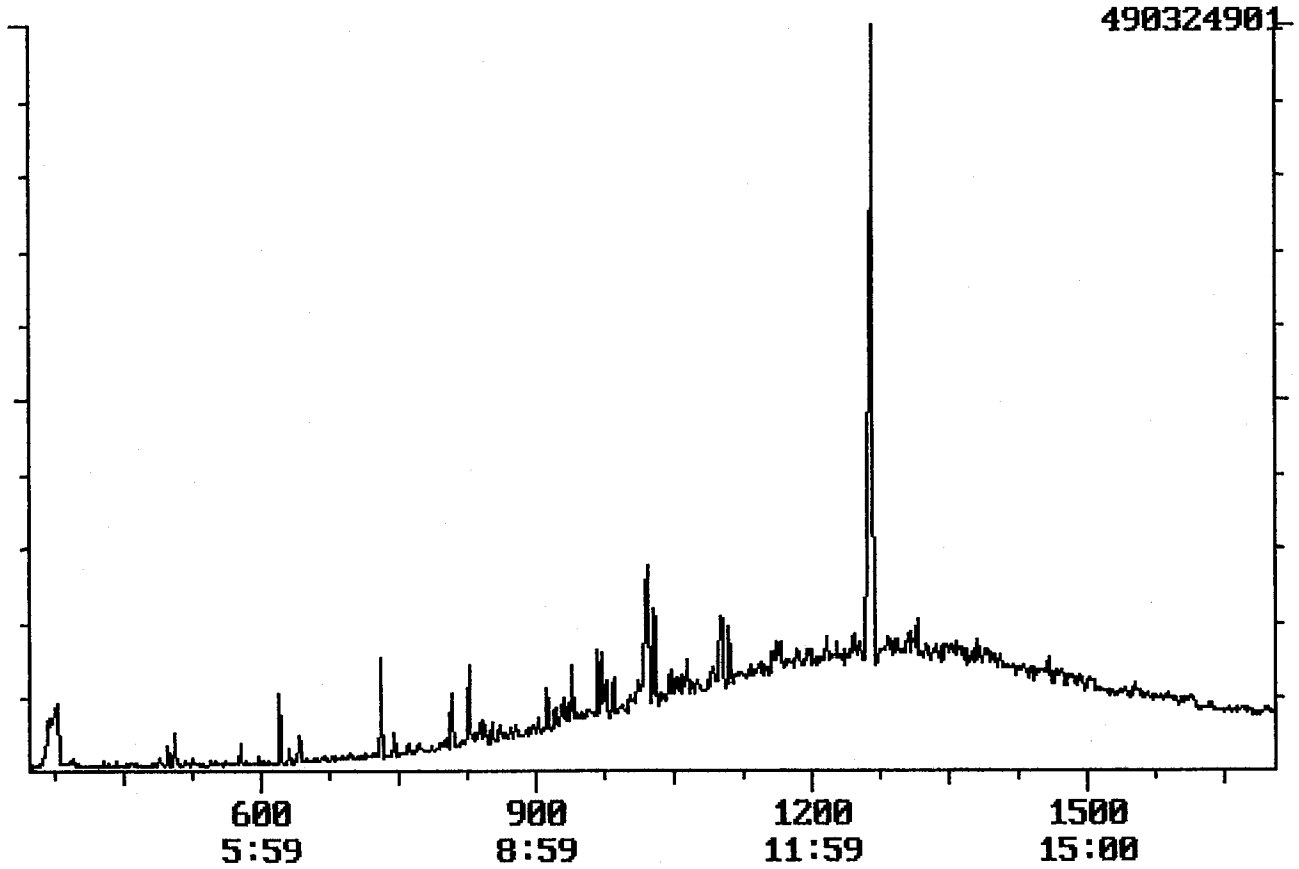
INTERNAL STANDARD QC REPORT

DATAFILE : L4090 ANALYSIS DATE : 08/29/02 23:48
SAMPLE : 108160-2 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.26	0.00	7512438	7662613	2
Phenanthrene D10 (IS)	9.74	9.76	0.02	11413836	10426068	9

SAMPLE CHROMATOGRAM

DATAFILE : L4091 ANALYSIS DATE : 08/30/02 00:11
SAMPLE : 108160-3 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4091 ANALYSIS DATE : 08/30/02 00:11
SAMPLE : 108160-3 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.26	1.000	NG/UL	7262701
Phenanthrene D10 (IS)	9.76	1.000	NG/UL	10171031
2,4-Dichlorophenylacetic a	8.35	0.701	NG/UL	3245230
Dalapon			ND	
4-Nitrophenol			ND	
Dicamba			ND	
MCPP			ND	
MCPA			ND	
Dichloroprop			ND	
2,4-D			ND	
Pentachlorophenol			ND	
Silvex (2,4,5-TP)			ND	
2,4,5-T			ND	
Dinoseb			ND	
2,4-DB			ND	

INTERNAL STANDARD QC REPORT

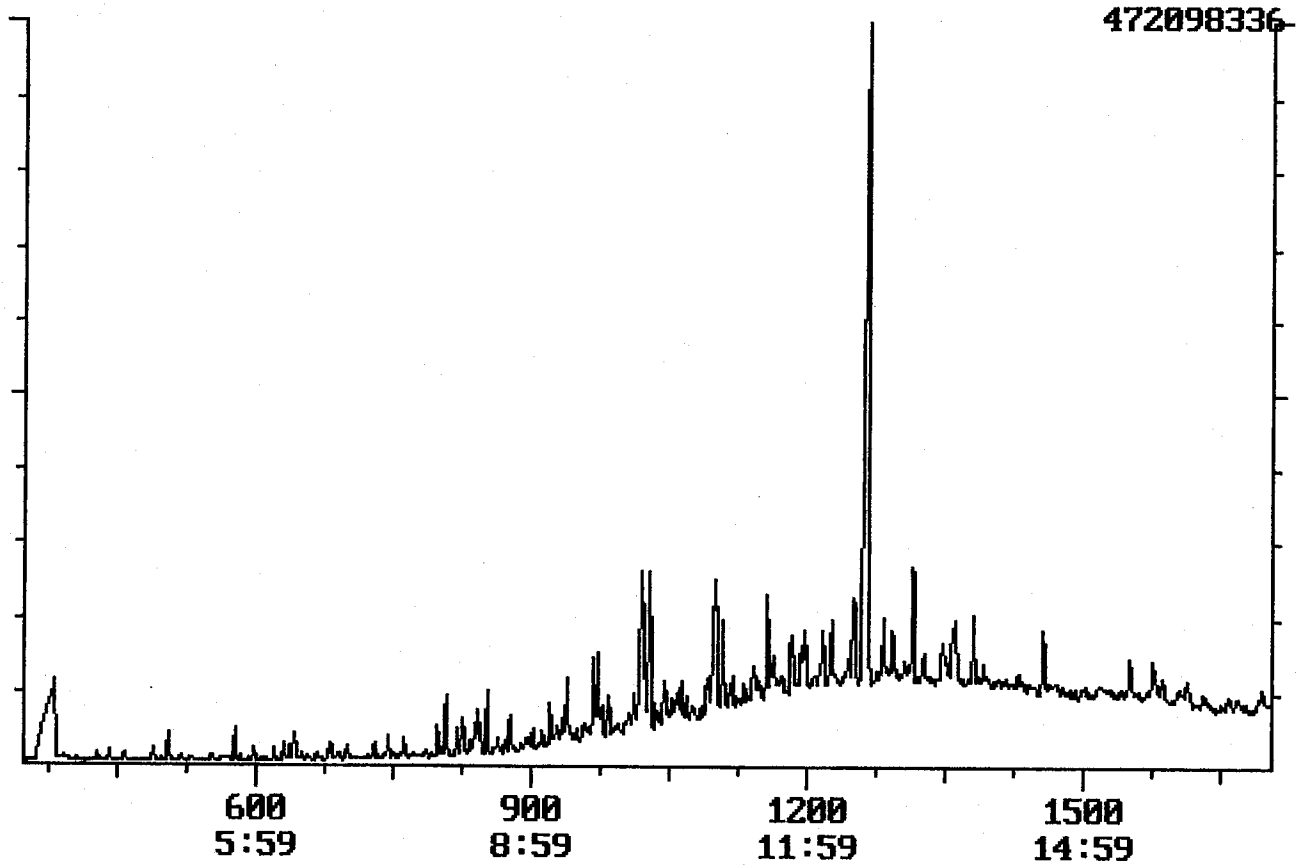
DATAFILE : L4091 ANALYSIS DATE : 08/30/02 00:11
SAMPLE : 108160-3 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.26	0.00	7512438	7262701	3
Phenanthrene D10 (IS)	9.74	9.76	0.02	11413836	10171031	11

SAMPLE CHROMATOGRAM

DATAFILE : L4092
SAMPLE : 108160-4 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

ANALYSIS DATE : 08/30/02 00:34



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4092 ANALYSIS DATE : 08/30/02 00:34
SAMPLE : 108160-4 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.26	1.000	NG/UL	7358195
Phenanthrene D10 (IS)	9.75	1.000	NG/UL	10986848
2,4-Dichlorophenylacetic a	8.35	0.706	NG/UL	3309659
Dalapon			ND	
4-Nitrophenol			ND	
Dicamba			ND	
MCPP			ND	
MCPA			ND	
Dichloroprop			ND	
2,4-D			ND	
Pentachlorophenol			ND	
Silvex (2,4,5-TP)			ND	
2,4,5-T			ND	
Dinoseb			ND	
2,4-DB			ND	

INTERNAL STANDARD QC REPORT

DATAFILE : L4092 ANALYSIS DATE : 08/30/02 00:34
SAMPLE : 108160-4 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.26	0.00	7512438	7358195	2
Phenanthrene D10 (IS)	9.74	9.75	0.01	11413836	10986848	4

INITIAL CALIBRATION

Initial Calibration Report

INSTRUMENT : ITS40
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner

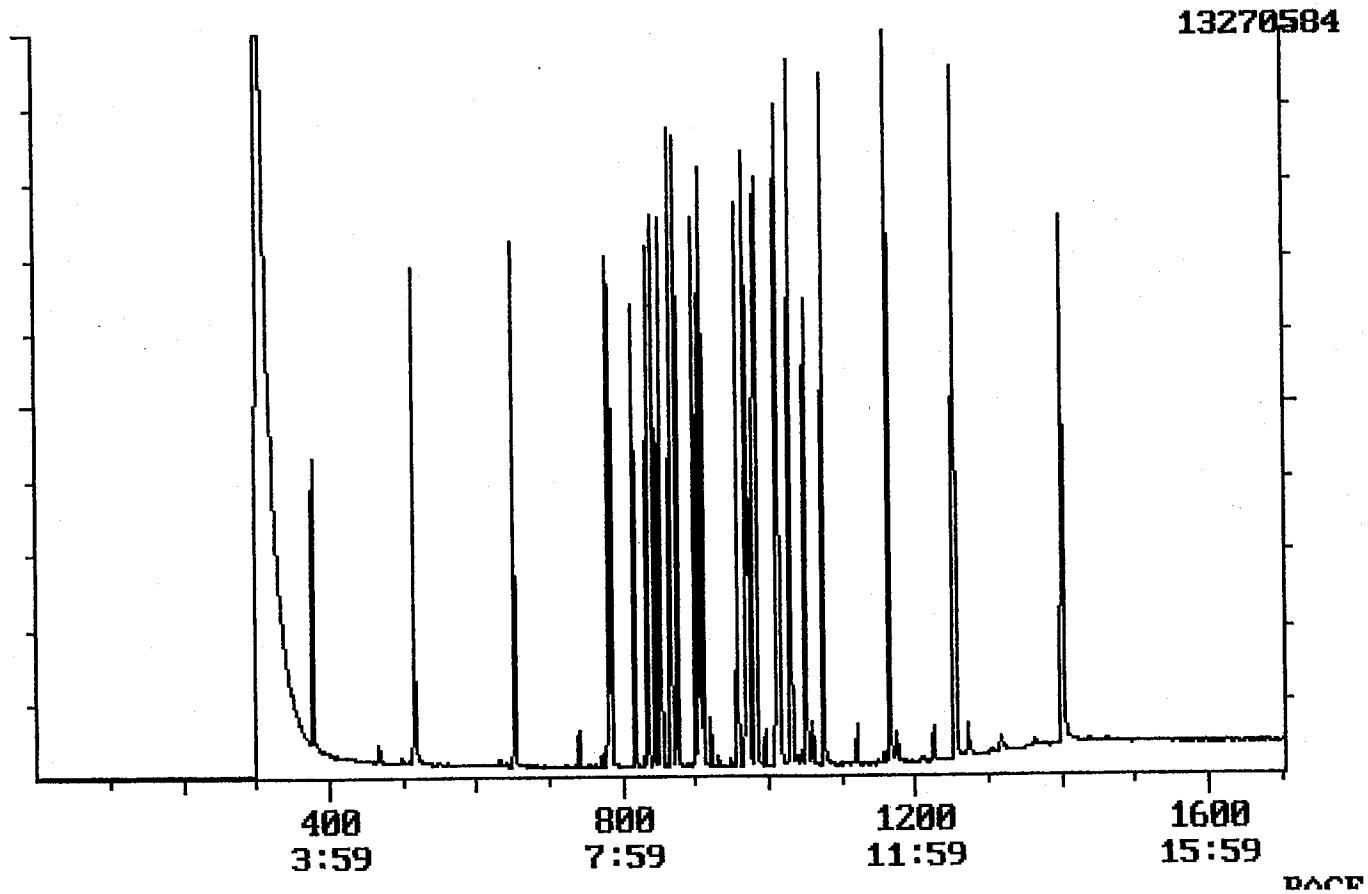
08/22/02

HIT ANY KEY TO CONTINUE

							AVE	RSD
2,4-Dichlorophenylacet	0.596	0.654	0.618	0.655	0.679	0.645	0.641	4.6%
2,4,6-Tribromophenol	0.385	0.412	0.426	0.462	0.406	0.462	0.425	7.3%
Dalapon	0.807	0.881	0.979	0.981	0.964	0.736	0.891	11.5%
4-Nitrophenol	0.578	0.641	0.617	0.558	0.564	0.485	0.574	9.4%
Dicamba	0.733	0.775	0.808	0.814	0.886	0.906	0.820	8.0%
MCPP	0.353	0.381	0.389	0.399	0.362	0.323	0.368	7.5%
MCPA	0.286	0.299	0.312	0.274	0.311	0.265	0.291	6.6%
Dichloroprop	0.344	0.355	0.361	0.324	0.355	0.369	0.351	4.4%
2,4-D	0.381	0.421	0.462	0.416	0.453	0.437	0.428	6.8%
Pentachlorophenol	0.393	0.427	0.442	0.413	0.439	0.461	0.429	5.6%
Silvex (2,4,5-TP)	0.382	0.396	0.427	0.398	0.422	0.388	0.402	4.5%
2,4,5-T	0.461	0.496	0.583	0.545	0.569	0.471	0.521	10.0%
Dinoseb	0.307	0.325	0.335	0.236	0.306	0.248	0.293	14.0%
2,4-DB	0.772	0.831	0.928	0.836	0.927	0.891	0.864	7.1%
Picloram	0.383	0.445	0.497	0.423	0.478	0.498	0.454	10.1%
Clopyralid	0.263	0.279	0.291	0.264	0.268	0.221	0.264	9.0%

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3969
ANALYSIS DATE : 08/22/02 13:52
SAMPLE : 2.0 NG/UL 8151 ICAL STD NO 979-13-2A
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis



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CALIBRATION STANDARD REPORT

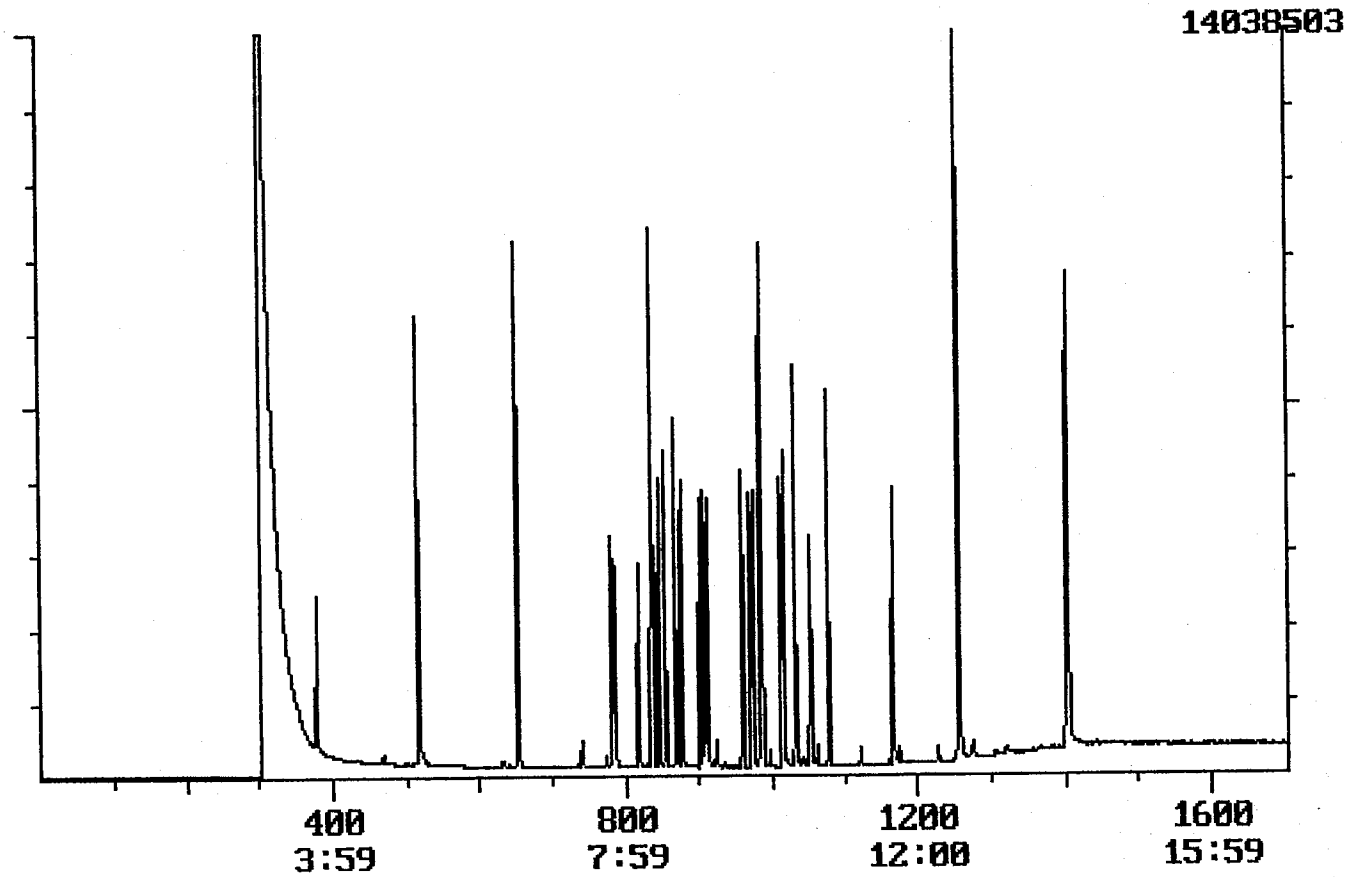
DATAFILE : L3969 ANALYSIS DATE : 08/22/02 13:52
SAMPLE : 2.0 NG/UL 8151 ICAL STD NO 979-13-2A
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.36	1.000	NG/UL	3888623	3888623	1.000
Phenanthrene D10 (IS)	9.85	1.000	NG/UL	6606065	6606065	1.000
2,4-Dichlorophenylacet	8.45	2.000	NG/UL	4633318	3888623	0.596
2,4,6-Tribromophenol	9.06	2.000	NG/UL	5090712	6606065	0.385
Dalapon	3.78	2.000	NG/UL	6277847	3888623	0.807
4-Nitrophenol	7.85	2.000	NG/UL	4496947	3888623	0.578
Dicamba	8.53	2.000	NG/UL	5699831	3888623	0.733
MCPP	8.68	2.000	NG/UL	4666789	6606065	0.353
MCPA	8.76	2.000	NG/UL	3781241	6606065	0.286
Dichloroprop	9.01	2.000	NG/UL	4548844	6606065	0.344
2,4-D	9.11	2.000	NG/UL	5032587	6606065	0.381
Pentachlorophenol	9.58	2.000	NG/UL	5192361	6606065	0.393
Silvex (2,4,5-TP)	9.70	2.000	NG/UL	5043281	6606065	0.382
2,4,5-T	9.82	2.000	NG/UL	6091899	6606065	0.461
Dinoseb	10.15	2.000	NG/UL	4051476	6606065	0.307
2,4-DB	10.12	2.000	NG/UL	10200139	6606065	0.772
Picloram	10.52	2.000	NG/UL	5059242	6606065	0.383
Clopyralid	8.17	2.000	NG/UL	3469638	6606065	0.263

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3970
SAMPLE : 1.0 NG/UL 8151 ICAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

ANALYSIS DATE : 08/22/02 14:15



PAGE 1

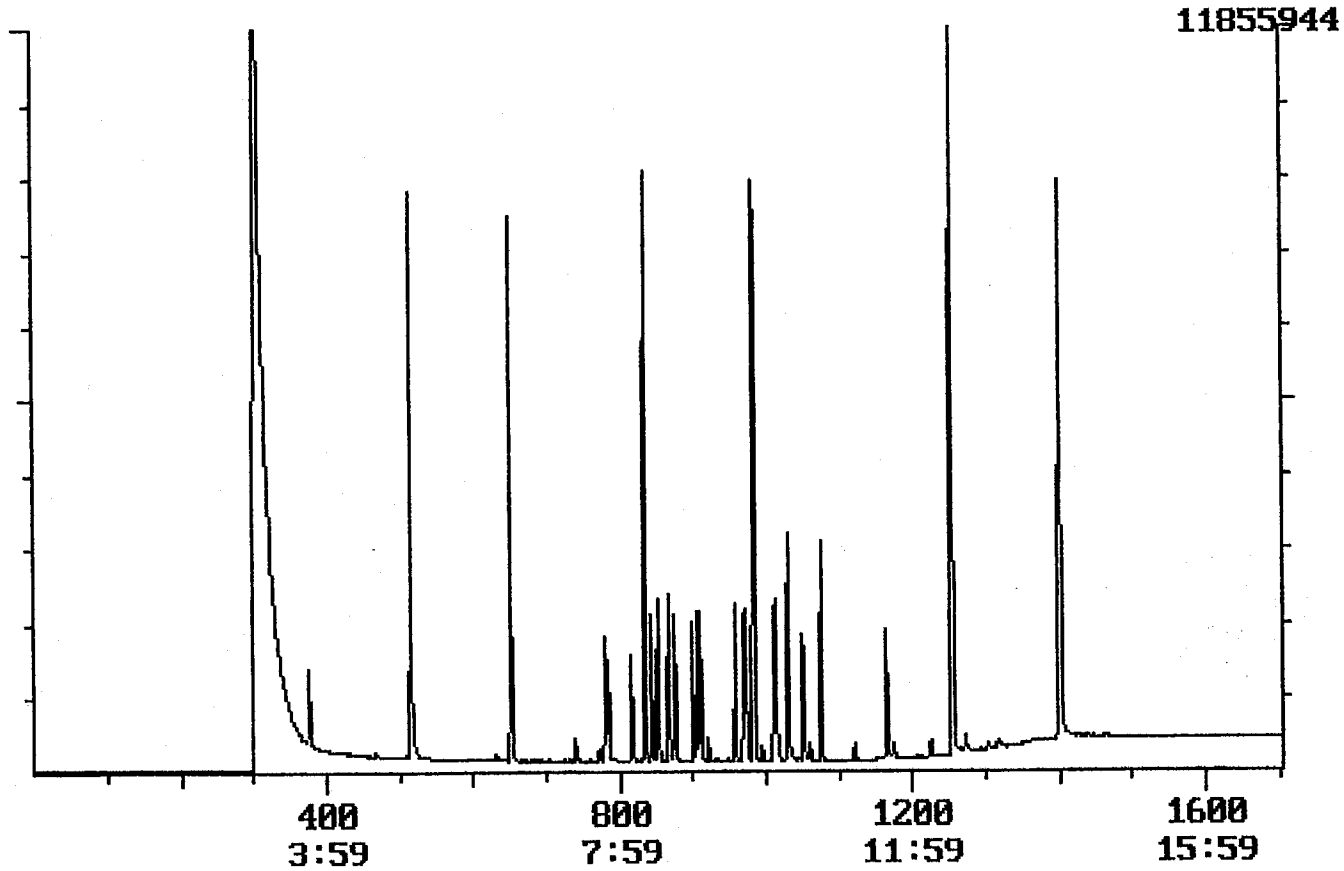
CALIBRATION STANDARD REPORT

DATAFILE : L3970 ANALYSIS DATE : 08/22/02 14:15
SAMPLE : 1.0 NG/UL 8151 ICAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.36	1.000	NG/UL	3916279	3916279	1.000
Phenanthrene D10 (IS)	9.85	1.000	NG/UL	6499037	6499037	1.000
2,4-Dichlorophenylacet	8.45	1.000	NG/UL	2562203	3916279	0.654
2,4,6-Tribromophenol	9.07	1.000	NG/UL	2675599	6499037	0.412
Dalapon	3.79	1.000	NG/UL	3449913	3916279	0.881
4-Nitrophenol	7.85	1.000	NG/UL	2508769	3916279	0.641
Dicamba	8.54	1.000	NG/UL	3034476	3916279	0.775
MCPP	8.68	1.000	NG/UL	2474923	6499037	0.381
MCPA	8.77	1.000	NG/UL	1943297	6499037	0.299
Dichloroprop	9.01	1.000	NG/UL	2306493	6499037	0.355
2,4-D	9.12	1.000	NG/UL	2737717	6499037	0.421
Pentachlorophenol	9.59	1.000	NG/UL	2772646	6499037	0.427
Silvex (2,4,5-TP)	9.70	1.000	NG/UL	2575264	6499037	0.396
2,4,5-T	9.83	1.000	NG/UL	3220473	6499037	0.496
Dinoseb	10.16	1.000	NG/UL	2109291	6499037	0.325
2,4-DB	10.12	1.000	NG/UL	5398488	6499037	0.831
Picloram	10.52	1.000	NG/UL	2892804	6499037	0.445
Clopyralid	8.17	1.000	NG/UL	1814996	6499037	0.279

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3971 ANALYSIS DATE : 08/22/02 14:39
SAMPLE : 0.5 NG/UL 8151 ICAL STD NO 979-13-2C
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis



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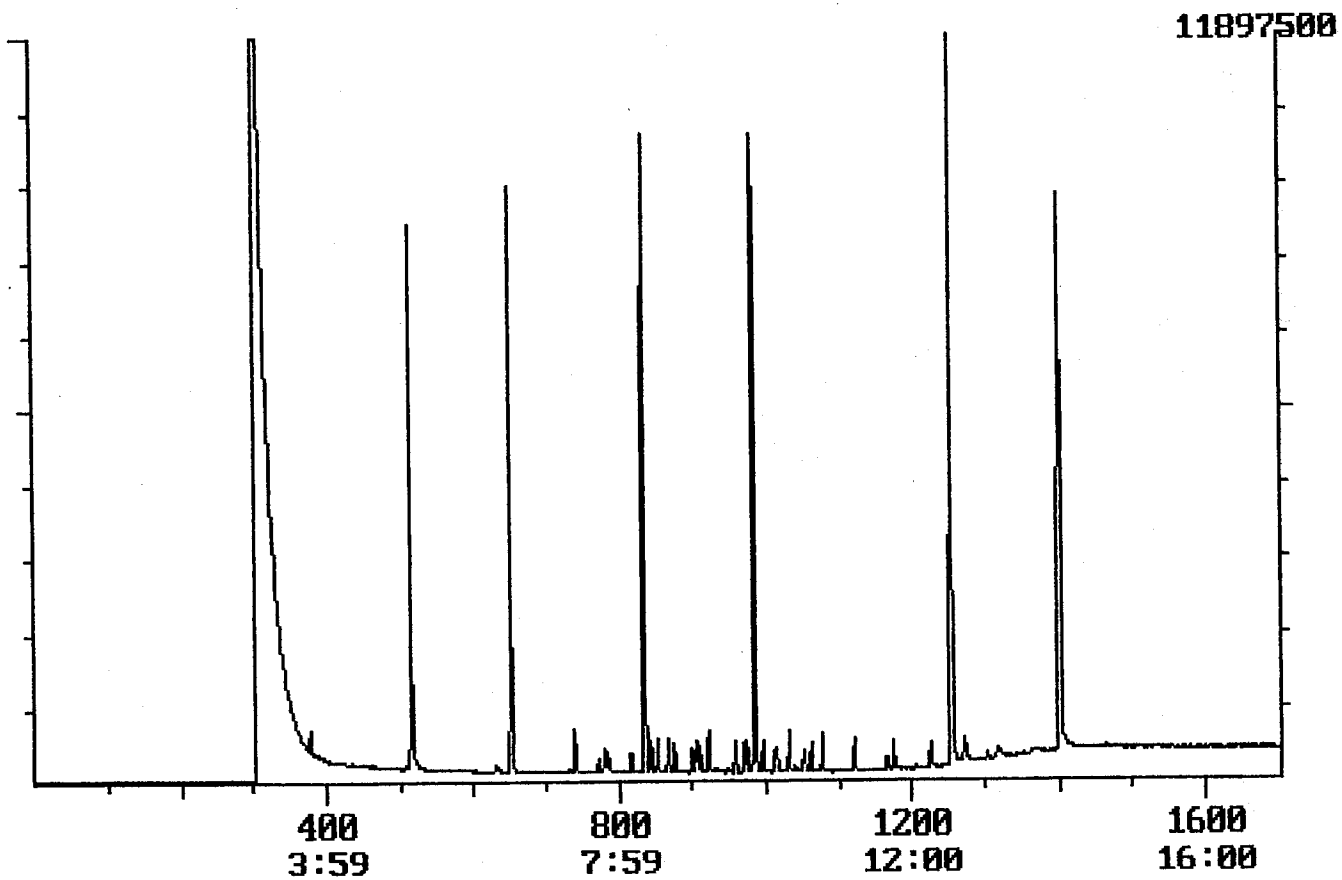
CALIBRATION STANDARD REPORT

DATAFILE : L3971 ANALYSIS DATE : 08/22/02 14:39
SAMPLE : 0.5 NG/UL 8151 ICAL STD NO 979-13-2C
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.35	1.000	NG/UL	3651621	3651621	1.000
Phenanthrene D10 (IS)	9.84	1.000	NG/UL	5869591	5869591	1.000
2,4-Dichlorophenylacet	8.44	0.500	NG/UL	1128542	3651621	0.618
2,4,6-Tribromophenol	9.06	0.500	NG/UL	1250377	5869591	0.426
Dalapon	3.76	0.500	NG/UL	1787906	3651621	0.979
4-Nitrophenol	7.85	0.500	NG/UL	1126903	3651621	0.617
Dicamba	8.53	0.500	NG/UL	1474778	3651621	0.808
MCPP	8.67	0.500	NG/UL	1142145	5869591	0.389
MCPA	8.76	0.500	NG/UL	914482	5869591	0.312
Dichloroprop	9.00	0.500	NG/UL	1058893	5869591	0.361
2,4-D	9.11	0.500	NG/UL	1356755	5869591	0.462
Pentachlorophenol	9.58	0.500	NG/UL	1296036	5869591	0.442
Silvex (2,4,5-TP)	9.69	0.500	NG/UL	1252602	5869591	0.427
2,4,5-T	9.82	0.500	NG/UL	1712031	5869591	0.583
Dinoseb	10.15	0.500	NG/UL	981800	5869591	0.335
2,4-DB	10.11	0.500	NG/UL	2722425	5869591	0.928
Picloram	10.51	0.500	NG/UL	1457813	5869591	0.497
Clopyralid	8.16	0.500	NG/UL	853192	5869591	0.291

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3972
ANALYSIS DATE : 08/22/02 15:02
SAMPLE : 0.1 NG/UL 8151 ICAL STD NO 979-13-2D
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis



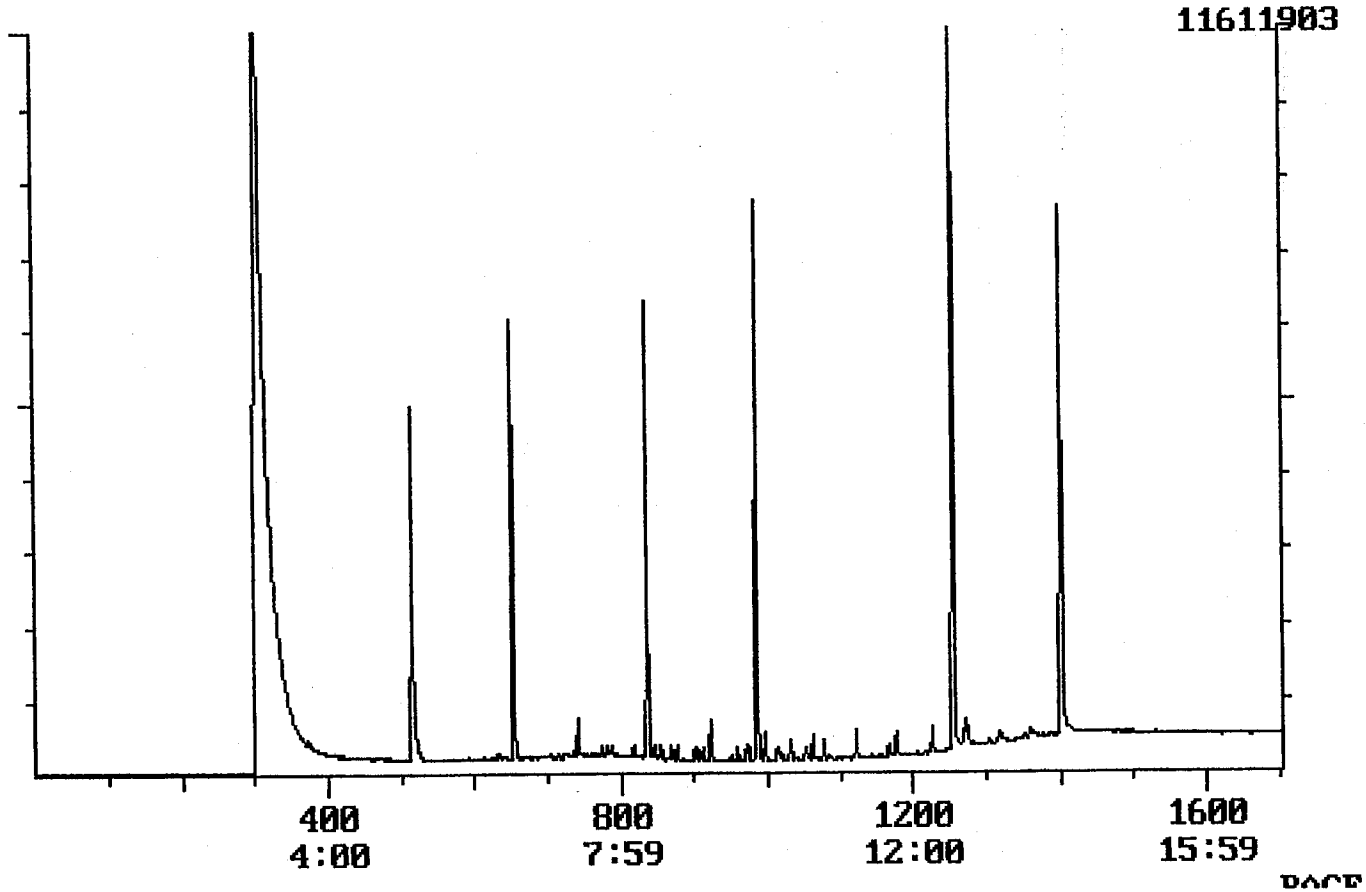
CALIBRATION STANDARD REPORT

DATAFILE : L3972 ANALYSIS DATE : 08/22/02 15:02
SAMPLE : 0.1 NG/UL 8151 ICAL STD NO 979-13-2D
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.35	1.000	NG/UL	3960798	3960798	1.000
Phenanthrene D10 (IS)	9.84	1.000	NG/UL	6303132	6303132	1.000
2,4-Dichlorophenylacet	8.44	0.100	NG/UL	259319	3960798	0.655
2,4,6-Tribromophenol	9.06	0.100	NG/UL	290999	6303132	0.462
Dalapon	3.78	0.100	NG/UL	388397	3960798	0.981
4-Nitrophenol	7.85	0.100	NG/UL	220827	3960798	0.558
Dicamba	8.53	0.100	NG/UL	322580	3960798	0.814
MCPP	8.67	0.100	NG/UL	251711	6303132	0.399
MCPA	8.76	0.100	NG/UL	172611	6303132	0.274
Dichloroprop	9.00	0.100	NG/UL	204432	6303132	0.324
2,4-D	9.11	0.100	NG/UL	262005	6303132	0.416
Pentachlorophenol	9.58	0.100	NG/UL	260595	6303132	0.413
Silvex (2,4,5-TP)	9.69	0.100	NG/UL	250979	6303132	0.398
2,4,5-T	9.82	0.100	NG/UL	343304	6303132	0.545
Dinoseb	10.14	0.100	NG/UL	148472	6303132	0.236
2,4-DB	10.11	0.100	NG/UL	526848	6303132	0.836
Picloram	10.52	0.100	NG/UL	266416	6303132	0.423
Clopyralid	8.17	0.100	NG/UL	166506	6303132	0.264

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3973
ANALYSIS DATE : 08/22/02 17:43
SAMPLE : 0.05 NG/UL 8151 ICAL STD NO 979-13-2E
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis



PAGE 1

CALIBRATION STANDARD REPORT

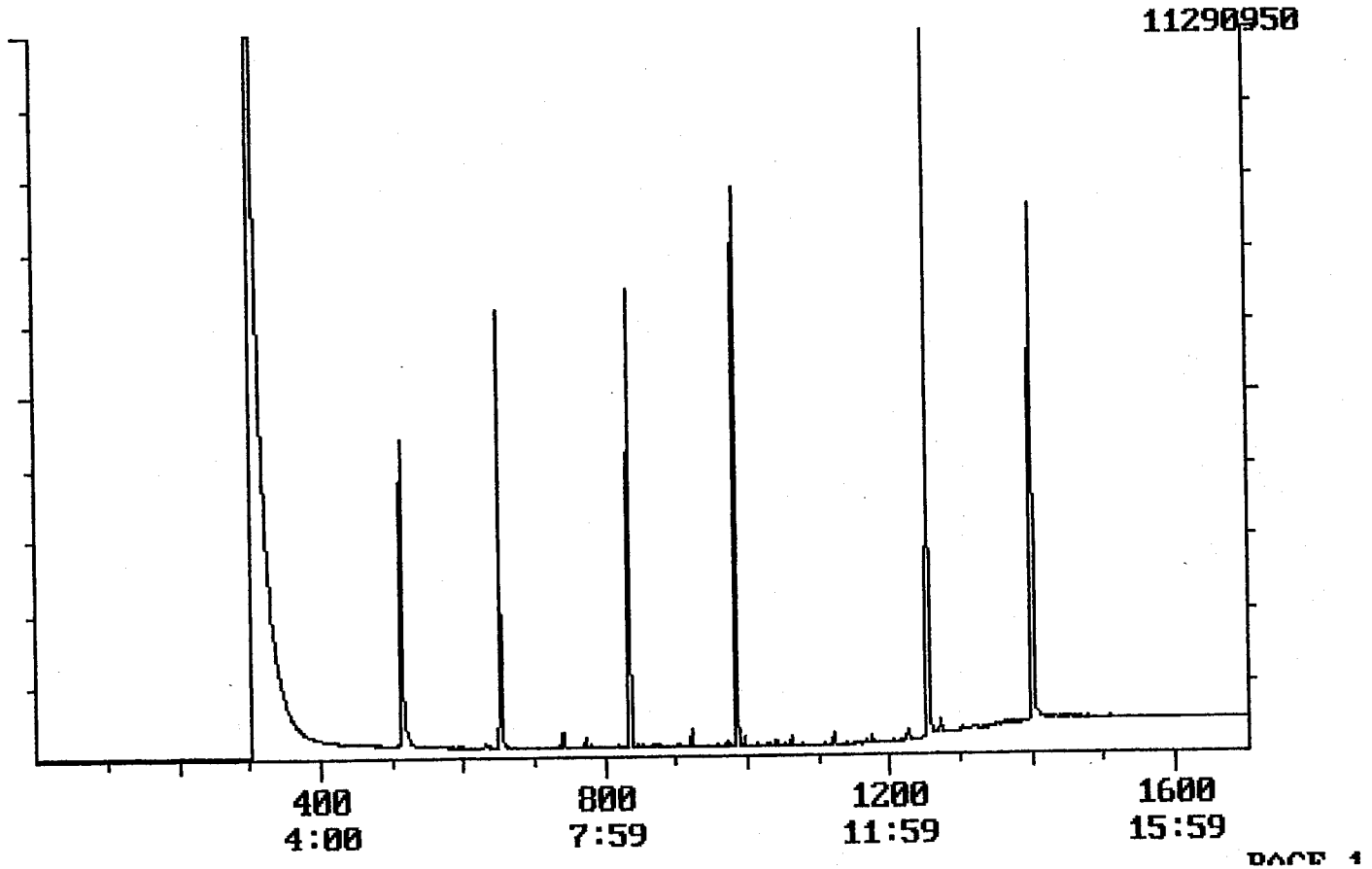
DATAFILE : L3973 ANALYSIS DATE : 08/22/02 17:43
SAMPLE : 0.05 NG/UL 8151 ICAL STD NO 979-13-2E
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.37	1.000	NG/UL	3007623	3007623	1.000
Phenanthrene D10 (IS)	9.86	1.000	NG/UL	5306106	5306106	1.000
2,4-Dichlorophenylacet	8.46	0.050	NG/UL	102095	3007623	0.679
2,4,6-Tribromophenol	9.08	0.050	NG/UL	107655	5306106	0.406
Dalapon	3.75	0.050	NG/UL	144935	3007623	0.964
4-Nitrophenol	7.87	0.050	NG/UL	84831	3007623	0.564
Dicamba	8.55	0.050	NG/UL	133299	3007623	0.886
MCPP	8.69	0.050	NG/UL	96157	5306106	0.362
MCPA	8.77	0.050	NG/UL	82462	5306106	0.311
Dichloroprop	9.02	0.050	NG/UL	94148	5306106	0.355
2,4-D	9.12	0.050	NG/UL	120140	5306106	0.453
Pentachlorophenol	9.59	0.050	NG/UL	116546	5306106	0.439
Silvex (2,4,5-TP)	9.71	0.050	NG/UL	111845	5306106	0.422
2,4,5-T	9.84	0.050	NG/UL	151030	5306106	0.569
Dinoseb	10.16	0.050	NG/UL	81146	5306106	0.306
2,4-DB	10.13	0.050	NG/UL	245823	5306106	0.927
Picloram	10.53	0.050	NG/UL	126850	5306106	0.478
Clopyralid	8.18	0.050	NG/UL	71192	5306106	0.268

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3974
SAMPLE : 0.01 NG/UL 8151 ICAL STD NO 979-13-2F
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

ANALYSIS DATE : 08/22/02 18:11



PAGE 1

CALIBRATION STANDARD REPORT

DATAFILE : L3974 ANALYSIS DATE : 08/22/02 18:11
SAMPLE : 0.01 NG/UL 8151 ICAL STD NO 979-13-2F
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.35	1.000	NG/UL	3101329	3101329	1.000
Phenanthrene D10 (IS)	9.85	1.000	NG/UL	5474825	5474825	1.000
2,4-Dichlorophenylacet	8.45	0.010	NG/UL	20000	3101329	0.645
2,4,6-Tribromophenol	9.06	0.010	NG/UL	25312	5474825	0.462
Dalapon	3.74	0.010	NG/UL	22812	3101329	0.736
4-Nitrophenol	7.87	0.010	NG/UL	15039	3101329	0.485
Dicamba	8.54	0.010	NG/UL	28095	3101329	0.906
MCPP	8.68	0.010	NG/UL	17702	5474825	0.323
MCPA	8.76	0.010	NG/UL	14515	5474825	0.265
Dichloroprop	9.01	0.010	NG/UL	20216	5474825	0.369
2,4-D	9.11	0.010	NG/UL	23927	5474825	0.437
Pentachlorophenol	9.58	0.010	NG/UL	25257	5474825	0.461
Silvex (2,4,5-TP)	9.70	0.010	NG/UL	21235	5474825	0.388
2,4,5-T	9.83	0.010	NG/UL	25773	5474825	0.471
Dinoseb	10.15	0.010	NG/UL	13574	5474825	0.248
2,4-DB	10.12	0.010	NG/UL	48807	5474825	0.891
Picloram	10.52	0.010	NG/UL	27252	5474825	0.498
Clopyralid	8.17	0.010	NG/UL	12091	5474825	0.221

Calibration Check Report

DATAFILE : L3975
ANALYSIS DATE : 08/22/02 18:34
SAMPLE : 1.00 NG/UL 8151 CCAL STD NO 979-13-60CS
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

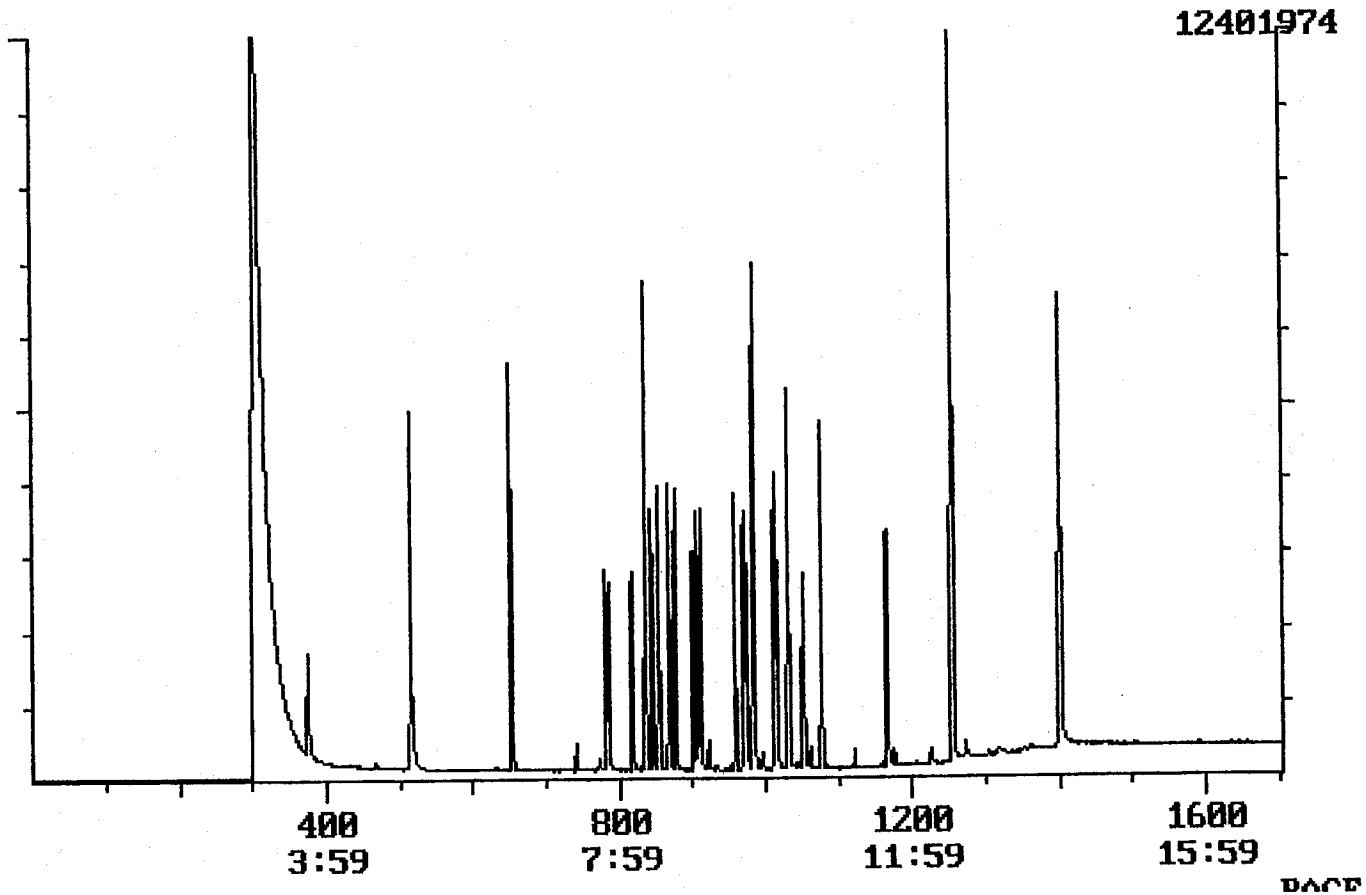
HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
2,4-Dichlorophenylacet	0.641	0.642	0.185	%
2,4,6-Tribromophenol	0.425	0.366	13.874	%
Dalapon	0.891	0.859	3.575	%
4-Nitrophenol	0.574	0.611	6.514	%
Dicamba	0.820	0.770	6.136	%
MCPP	0.368	0.349	5.289	%
MCPA	0.291	0.288	0.921	%
Dichloroprop	0.351	0.345	1.930	%
2,4-D	0.428	0.399	6.757	%
Pentachlorophenol	0.429	0.386	10.056	%
Silvex (2,4,5-TP)	0.402	0.372	7.518	%
2,4,5-T	0.521	0.472	9.380	%
Dinoseb	0.293	0.315	7.657	%
2,4-DB	0.864	0.798	7.694	%
Picloram	0.454	0.406	10.649	%
Clopyralid	0.264	0.258	2.501	%

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3975
SAMPLE : 1.00 NG/UL 8151 CCAL STD NO 979-13-60CS
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

ANALYSIS DATE : 08/22/02 18:34



PAGE 1

CALIBRATION STANDARD REPORT

DATAFILE : L3975 ANALYSIS DATE : 08/22/02 18:34
SAMPLE : 1.00 NG/UL 8151 CCAL STD NO 979-13-60CS
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount	Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.36	1.000 NG/UL	3351180	3351180	1.000
Phenanthrene D10 (IS)	9.85	1.000 NG/UL	5885709	5885709	1.000
2,4-Dichlorophenylacet	8.45	1.000 NG/UL	2152417	3351180	0.642
2,4,6-Tribromophenol	9.07	1.000 NG/UL	2156778	5885709	0.366
Dalapon	3.75	1.000 NG/UL	2879858	3351180	0.859
4-Nitrophenol	7.86	1.000 NG/UL	2048034	3351180	0.611
Dicamba	8.54	1.000 NG/UL	2580498	3351180	0.770
MCPP	8.68	1.000 NG/UL	2051681	5885709	0.349
MCPA	8.77	1.000 NG/UL	1697549	5885709	0.288
Dichloroprop	9.01	1.000 NG/UL	2028366	5885709	0.345
2,4-D	9.12	1.000 NG/UL	2350703	5885709	0.399
Pentachlorophenol	9.59	1.000 NG/UL	2272205	5885709	0.386
Silvex (2,4,5-TP)	9.71	1.000 NG/UL	2188546	5885709	0.372
2,4,5-T	9.83	1.000 NG/UL	2777615	5885709	0.472
Dinoseb	10.16	1.000 NG/UL	1853477	5885709	0.315
2,4-DB	10.12	1.000 NG/UL	4694178	5885709	0.798
Picloram	10.52	1.000 NG/UL	2386990	5885709	0.406
Clopyralid	8.18	1.000 NG/UL	1516834	5885709	0.258

CONTINUING CALIBRATION

Sample Queue Report

INSTRUMENT : ITS40
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner

L4084DF	2.5 NG/UL DFTPP 08/29/02						
L4084CC	1.0 NG/UL 8151 CCAL STD NO 979-13-2B						
L4085	HS0176	MB	#20.0000	&1	SOIL	8151	HS0176
L4086	HS0176	BS	#20.0000	&1	SOIL	8151	HS0176
L4087	108164-3	MS		&1	SOIL	8151	HS0176
L4088	108164-3	MSD		&1	SOIL	8151	HS0176
L4089	108160-1			&1	SOIL	8151	HS0176
L4090	108160-2			&1	SOIL	8151	HS0176
L4091	108160-3			&1	SOIL	8151	HS0176
L4092	108160-4			&1	SOIL	8151	HS0176
L4093	108164-1			&1	SOIL	8151	HS0176
L4094	108164-2			&1	SOIL	8151	HS0176
L4095	108164-3			&1	SOIL	8151	HS0176
L4096	108166-1			&1	SOIL	8151	HS0176
L4097	108166-2			&1	SOIL	8151	HS0176
L4098	108166-3			&1	SOIL	8151	HS0176
L4099	108177-1			&1	SOIL	8151	HS0176
L4100	108177-2			&1	SOIL	8151	HS0176
L4101	108177-3			&1	SOIL	8151	HS0176
L4102	108177-4			&1	SOIL	8151	HS0176
L4103	108177-5			&1	SOIL	8151	HS0176
L4104	108177-6			&1	SOIL	8151	HS0176
L4105	108177-8			&1	SOIL	8151	HS0176
L4106	108177-9			&1	SOIL	8151	HS0176
L4107	108177-10			&1	SOIL	8151	HS0176
L4108	108177-11			&1	SOIL	8151	HS0176

Calibration Check Report

DATAFILE : L4084CC ANALYSIS DATE : 08/29/02 21:28
SAMPLE : 1.0 NG/UL 8151 CCAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

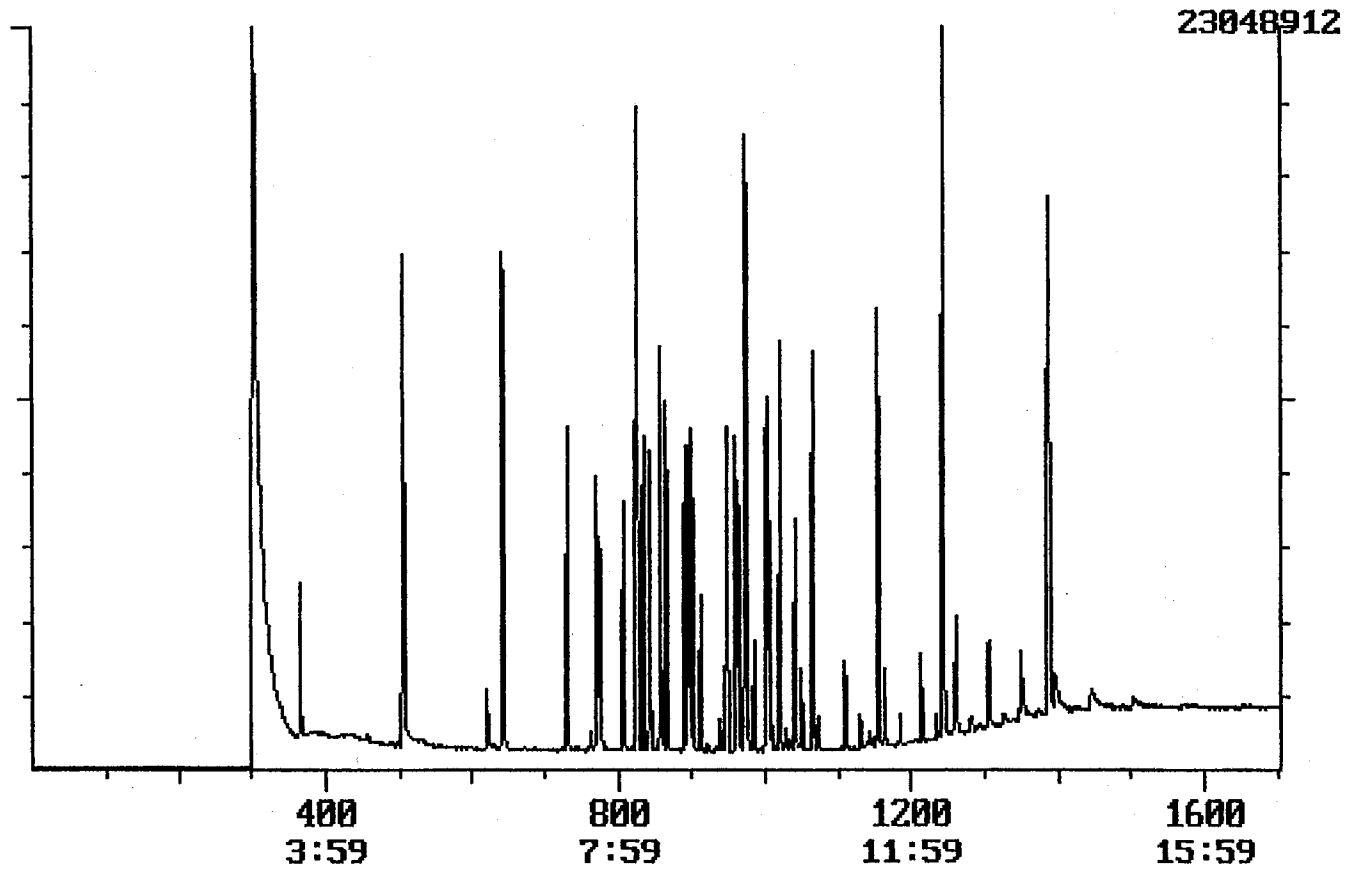
HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
2,4-Dichlorophenylacet	0.641	0.571	10.901	%
Dalapon	0.891	0.792	11.111	%
4-Nitrophenol	0.574	0.560	2.379	%
Dicamba	0.820	0.725	11.681	%
MCPP	0.368	0.365	0.945	%
MCPA	0.291	0.282	3.183	%
Dichloroprop	0.351	0.343	2.446	%
2,4-D	0.428	0.420	1.934	%
Pentachlorophenol	0.429	0.402	6.424	%
Silvex (2,4,5-TP)	0.402	0.383	4.859	%
2,4,5-T	0.521	0.491	5.774	%
Dinoseb	0.293	0.310	6.087	%
2,4-DB	0.864	0.768	11.111	%

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L4084CC
SAMPLE : 1.0 NG/UL 8151 CCAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

ANALYSIS DATE : 08/29/02 21:28



PAGE 1

CALIBRATION STANDARD REPORT

DATAFILE : L4084CC ANALYSIS DATE : 08/29/02 21:28
SAMPLE : 1.0 NG/UL 8151 CCAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

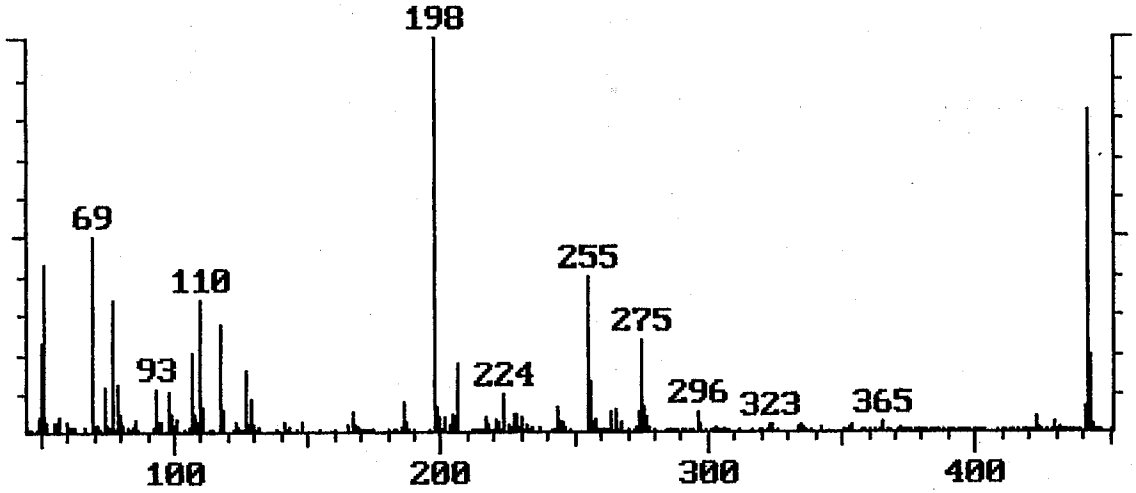
Compound name	Ret. Time	Amount	Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.26	1.000 NG/UL	7512438	7512438	1.000
Phenanthrene D10 (IS)	9.74	1.000 NG/UL	11413836	11413836	1.000
2,4-Dichlorophenylacet	8.35	1.000 NG/UL	4291201	7512438	0.571
Dalapon	3.66	1.000 NG/UL	5951302	7512438	0.792
4-Nitrophenol	7.75	1.000 NG/UL	4207839	7512438	0.560
Dicamba	8.43	1.000 NG/UL	5443062	7512438	0.725
MCPP	8.58	1.000 NG/UL	4161207	11413836	0.365
MCPA	8.66	1.000 NG/UL	3216807	11413836	0.282
Dichloroprop	8.91	1.000 NG/UL	3912795	11413836	0.343
2,4-D	9.01	1.000 NG/UL	4794400	11413836	0.420
Pentachlorophenol	9.48	1.000 NG/UL	4584294	11413836	0.402
Silvex (2,4,5-TP)	9.60	1.000 NG/UL	4366144	11413836	0.383
2,4,5-T	9.72	1.000 NG/UL	5600831	11413836	0.491
Dinoseb	10.05	1.000 NG/UL	3541944	11413836	0.310
2,4-DB	10.01	1.000 NG/UL	8766220	11413836	0.768

DFTPP TUNING

Method 8270 DFTPP Report

Data File: L3968A
Cali File: DFTPP

Acqu Date: 08/22/02
Acqu Time: 13:11

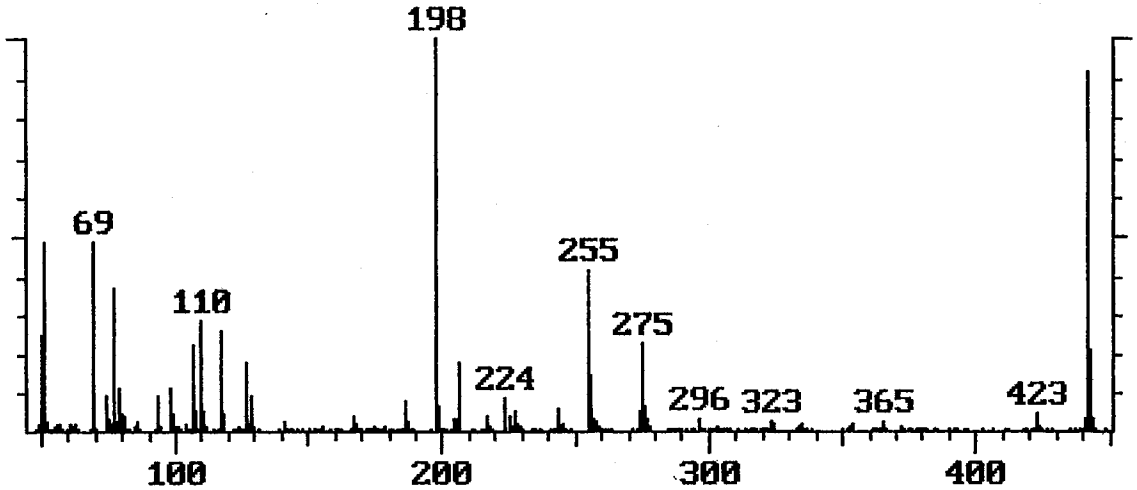


Mass	Acceptance Criterion	Value	Mass Int.	Pass/Fail
51	10-80% of base peak	43.14	32420	Pass
68	<= 2% of Mass 69	0.00	0	Pass
69	Exists Only	50.22	37744	Pass
70	<= 2% of Mass 69	1.45	547	Pass
127	10-80% of base peak	15.15	11390	Pass
197	<= 1% of Mass 198	0.00	0	Pass
198	Base peak or >50% of 442	100.00	75158	Pass
199	5 - 9% of Mass 198	6.36	4779	Pass
275	10-60% of base peak	23.13	17381	Pass
365	>= 1% of Mass 198	2.02	1515	Pass
441	Exists/<= Mass 443	7.49	4598	Pass
442	base peak or >50% of 198	81.73	61428	Pass
443	15-24% of Mass 442	23.87	14663	Pass

Method 8270 DFTPP Report

Data File: L4084DF
Cali File: DFTPP

Acqu Date: 08/29/02
Acqu Time: 21:04

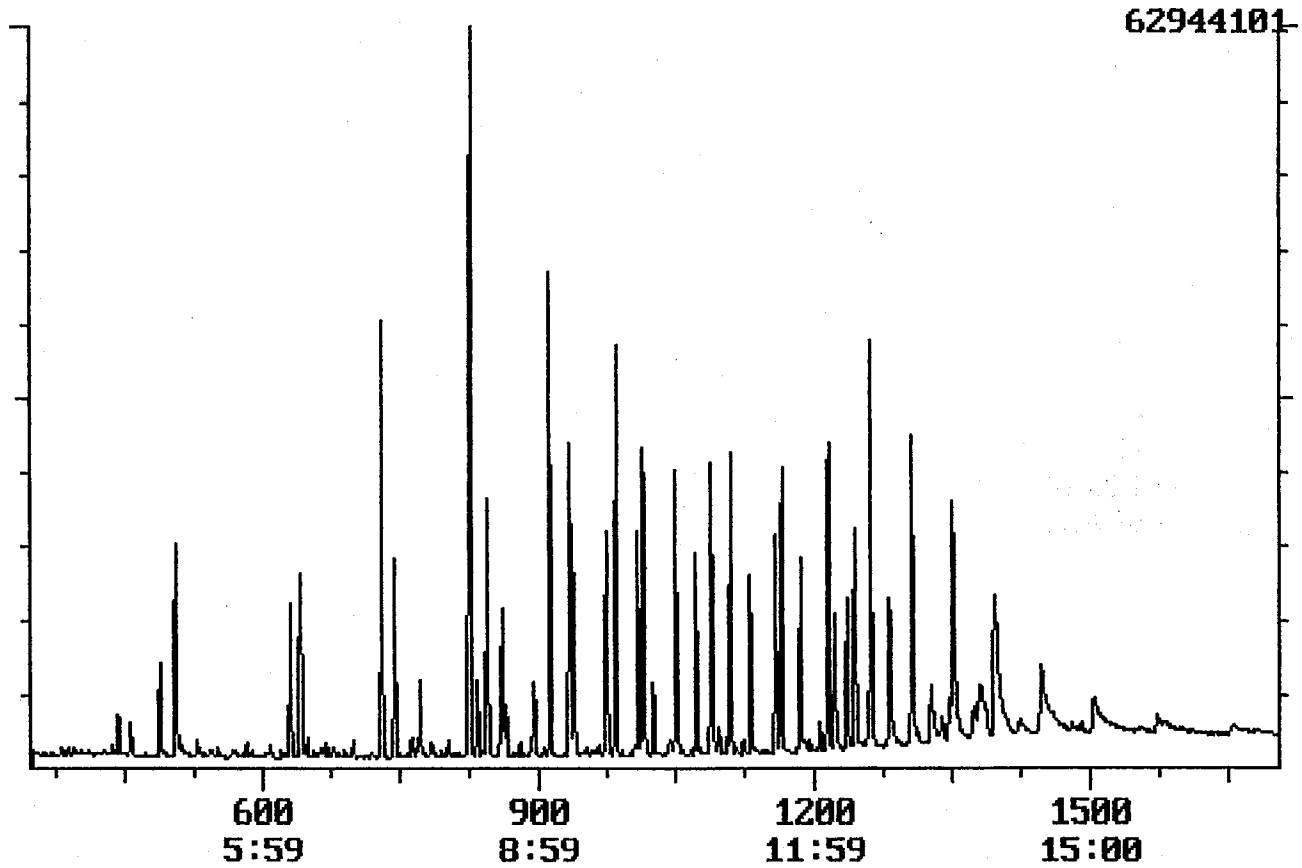


Mass	Acceptance Criterion	Value	Mass Int.	Pass/Fail
51	10-80% of base peak	48.60	320004	Pass
68	<= 2% of Mass 69	0.41	1303	Pass
69	Exists Only	48.66	320385	Pass
70	<= 2% of Mass 69	0.63	2024	Pass
127	10-80% of base peak	17.36	114303	Pass
197	<= 1% of Mass 198	0.00	0	Pass
198	Base peak or >50% of 442	100.00	658378	Pass
199	5 - 9% of Mass 198	6.07	39956	Pass
275	10-60% of base peak	22.63	149007	Pass
365	>= 1% of Mass 198	1.97	12957	Pass
441	Exists/<= Mass 443	2.92	17574	Pass
442	base peak or >50% of 198	91.56	602815	Pass
443	15-24% of Mass 442	22.39	134983	Pass

METHOD BLANK

SAMPLE CHROMATOGRAM

DATAFILE : L4085 ANALYSIS DATE : 08/29/02 21:51
SAMPLE : HS0176 MB #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



SAMPLE QUANTITATION REPORT

DATAFILE : L4085 ANALYSIS DATE : 08/29/02 21:51
SAMPLE : HS0176 MB #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.26	1.000	NG/UL	8008726
Phenanthrene D10 (IS)	9.74	1.000	NG/UL	11721960
2,4-Dichlorophenylacetic a	8.35	0.604	NG/UL	3095195
Dalapon			ND	
4-Nitrophenol			ND	
Dicamba			ND	
MCPP			ND	
MCPA			ND	
Dichloroprop			ND	
2,4-D			ND	
Pentachlorophenol			ND	
Silvex (2,4,5-TP)			ND	
2,4,5-T			ND	
Dinoseb			ND	
2,4-DB			ND	

INTERNAL STANDARD QC REPORT

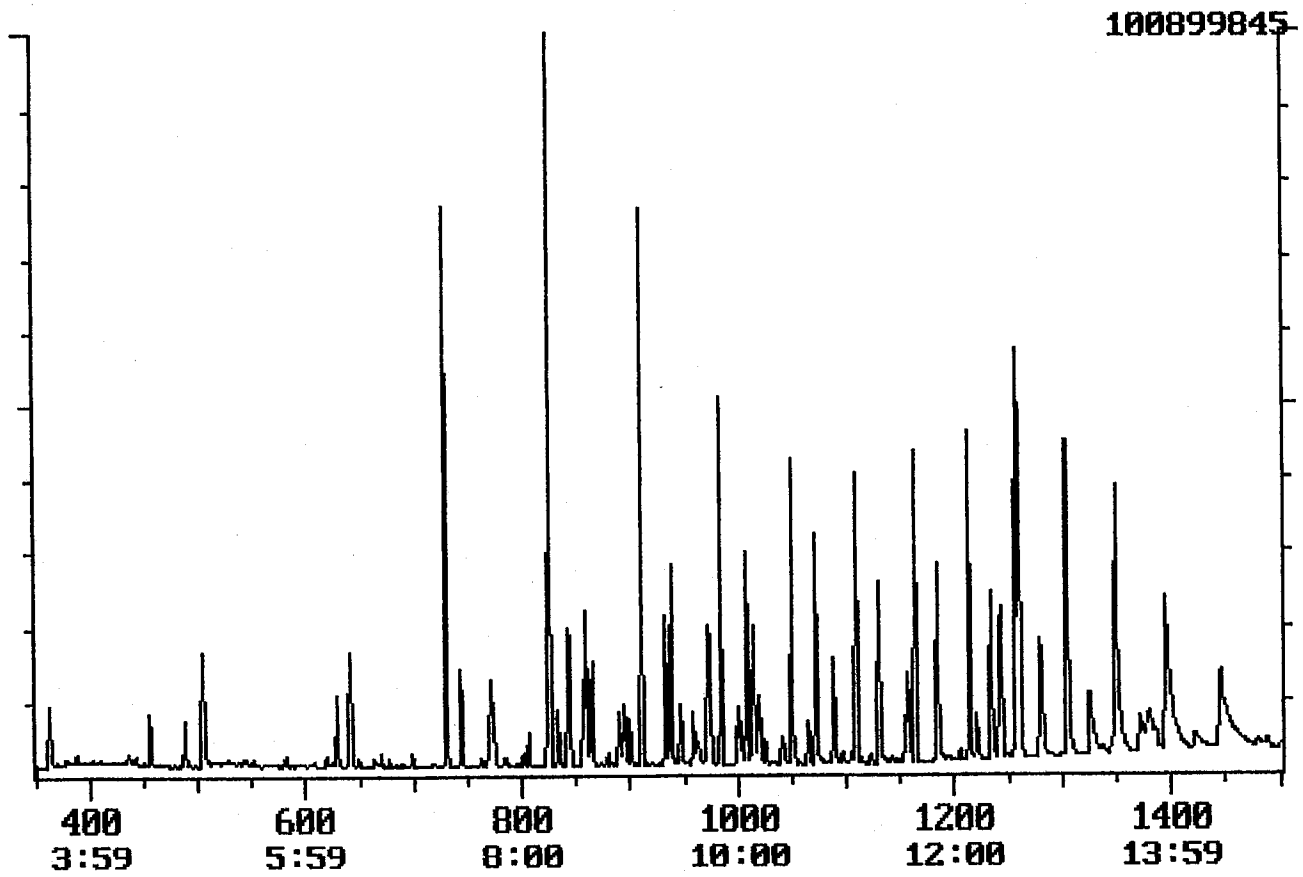
DATAFILE : L4085 ANALYSIS DATE : 08/29/02 21:51
SAMPLE : HS0176 MB #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.26	0.00	7512438	8008726	7
Phenanthrene D10 (IS)	9.74	9.74	0.00	11413836	11721960	3

BLANK SPIKE

SAMPLE CHROMATOGRAM

DATAFILE : L4086 ANALYSIS DATE : 08/29/02 22:15
SAMPLE : HS0176 BS #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4086 ANALYSIS DATE : 08/29/02 22:15
SAMPLE : HS0176 BS #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.25	1.000	NG/UL	7692500
Phenanthrene D10 (IS)	9.73	1.000	NG/UL	10483281
2,4-Dichlorophenylacetic a	8.34	0.673	NG/UL	3303547
Dalapon	3.65	0.411	NG/UL	2834119
4-Nitrophenol	7.74	0.701	NG/UL	3104563
Dicamba	8.43	0.579	NG/UL	3647707
MCPP	8.57	0.865	NG/UL	3335104
MCPA	8.65	0.718	NG/UL	2190519
Dichloroprop	8.90	0.754	NG/UL	2772612
2,4-D	9.00	0.646	NG/UL	2887221
Pentachlorophenol	9.47	0.887	NG/UL	3924416
Silvex (2,4,5-TP)	9.59	0.766	NG/UL	3212057
2,4,5-T	9.71	0.638	NG/UL	3465069
Dinoseb	10.04	0.650	NG/UL	1989618
2,4-DB	10.00	0.815	NG/UL	7251616

INTERNAL STANDARD QC REPORT

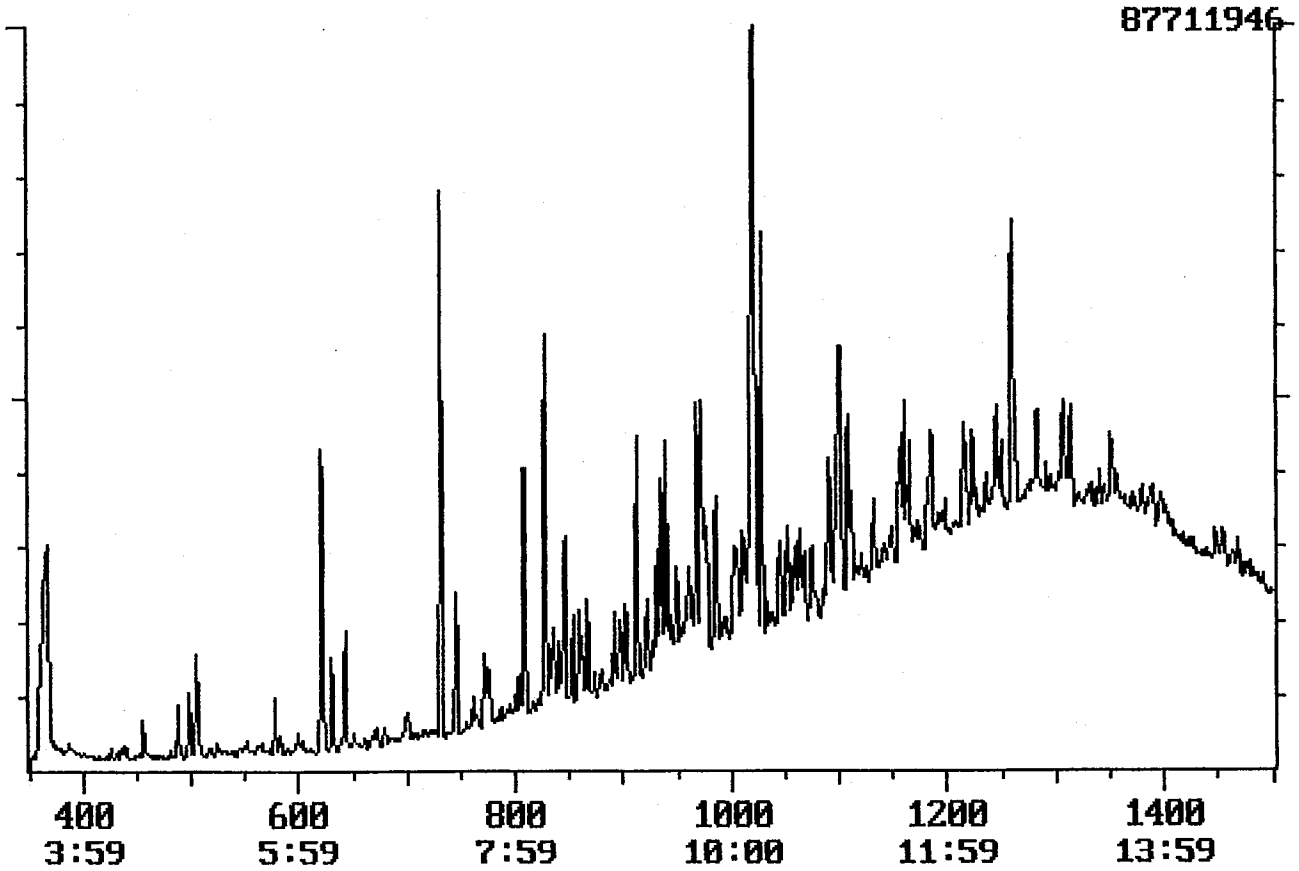
DATAFILE : L4086 ANALYSIS DATE : 08/29/02 22:15
SAMPLE : HS0176 BS #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.25	0.01	7512438	7692500	2
Phenanthrene D10 (IS)	9.74	9.73	0.01	11413836	10483281	8

MATIX SPIKE / MATRIX SPIKE DUPLICATE

SAMPLE CHROMATOGRAM

DATAFILE : L4087 ANALYSIS DATE : 08/29/02 22:38
SAMPLE : 108164-3 MS &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4087 ANALYSIS DATE : 08/29/02 22:38
SAMPLE : 108164-3 MS &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.27	1.000	NG/UL	6295836
Phenanthrene D10 (IS)	9.76	1.000	NG/UL	9376959
2,4-Dichlorophenylacetic a(	8.36	0.927	NG/UL	3683542
Dalapon	3.70	0.141	NG/UL	804591
4-Nitrophenol	7.76	0.868	NG/UL	3177160
Dicamba	8.44	0.838	NG/UL	4213287
MCPP	8.59	0.973	NG/UL	3353211
MCPA	8.67	0.988	NG/UL	2706775
Dichloroprop	8.92	0.921	NG/UL	3027260
2,4-D	9.02	0.959	NG/UL	3754187
Pentachlorophenol	9.49	0.869	NG/UL	3441085
Silvex (2,4,5-TP)	9.61	0.826	NG/UL	3091346
2,4,5-T	9.73	0.863	NG/UL	4127269
Dinoseb	10.06	0.833	NG/UL	2320279
2,4-DB	10.02	1.167	NG/UL	9060370

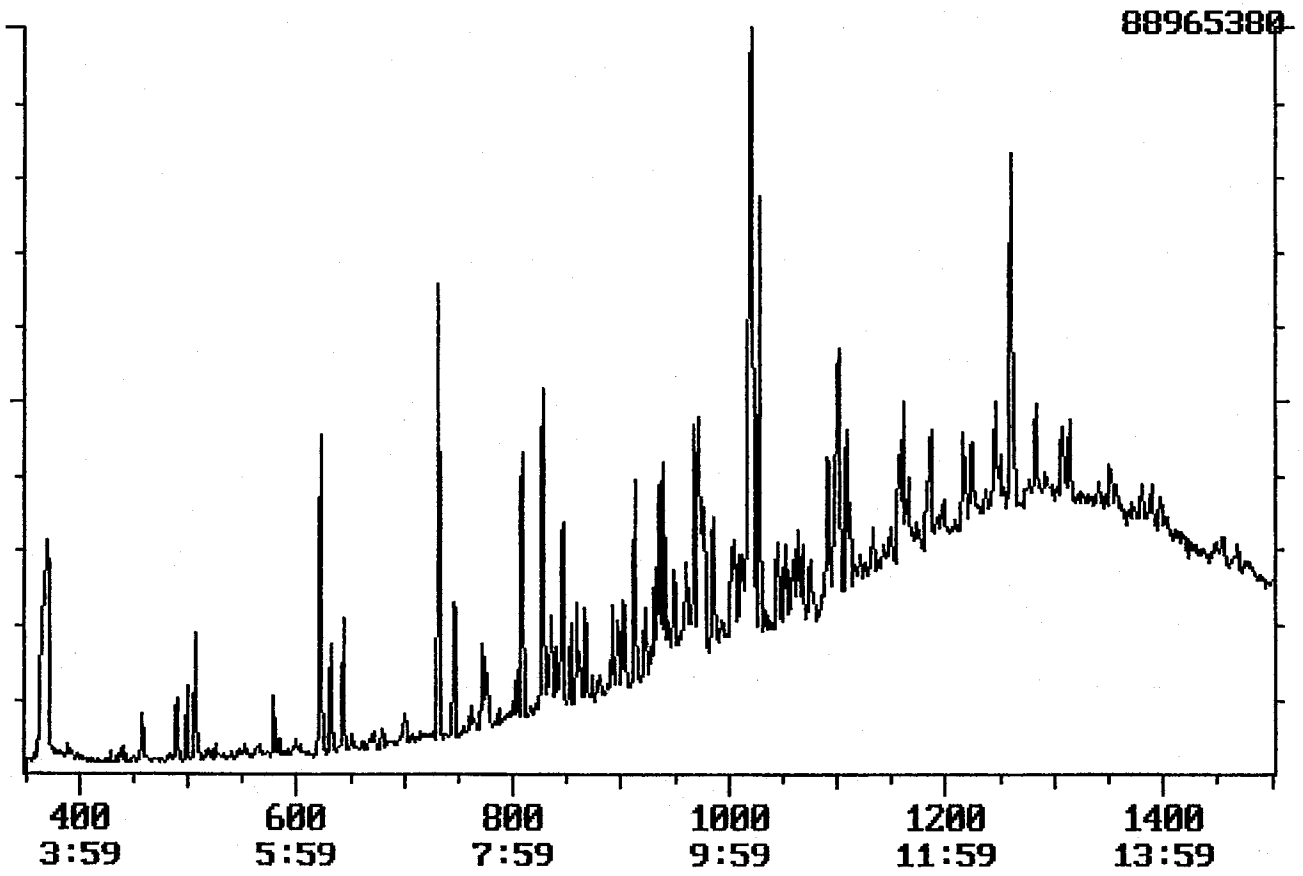
INTERNAL STANDARD QC REPORT

DATAFILE : L4087 ANALYSIS DATE : 08/29/02 22:38
SAMPLE : 108164-3 MS &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.27	0.01	7512438	6295836	16
Phenanthrene D10 (IS)	9.74	9.76	0.02	11413836	9376959	18

SAMPLE CHROMATOGRAM

DATAFILE : L4088 ANALYSIS DATE : 08/29/02 23:01
SAMPLE : 108164-3 MSD &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150



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SAMPLE QUANTITATION REPORT

DATAFILE : L4088 ANALYSIS DATE : 08/29/02 23:01
SAMPLE : 108164-3 MSD &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.27	1.000	NG/UL	7012609
Phenanthrene D10 (IS)	9.76	1.000	NG/UL	10728859
2,4-Dichlorophenylacetic a	8.36	0.931	NG/UL	4122329
Dalapon	3.72	0.156	NG/UL	990079
4-Nitrophenol	7.76	0.917	NG/UL	3749097
Dicamba	8.45	0.849	NG/UL	4752349
MCPP	8.59	0.958	NG/UL	3780270
MCPA	8.67	0.978	NG/UL	3063468
Dichloroprop	8.92	0.928	NG/UL	3489106
2,4-D	9.02	1.002	NG/UL	4473634
Pentachlorophenol	9.49	0.829	NG/UL	3765272
Silvex (2,4,5-TP)	9.61	0.772	NG/UL	3313147
2,4,5-T	9.73	0.855	NG/UL	4684157
Dinoseb	10.06	0.880	NG/UL	2817322
2,4-DB	10.03	1.088	NG/UL	9718009

INTERNAL STANDARD QC REPORT

DATAFILE : L4088 ANALYSIS DATE : 08/29/02 23:01
SAMPLE : 108164-3 MSD &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.27	0.01	7512438	7012609	7
Phenanthrene D10 (IS)	9.74	9.76	0.02	11413836	10728859	6

LABORATORY WORKSHEETS

Herbicides Worksheet - total

QC Level:Tier IV	**Due: 09/04/02**
Matrix:solid	**Work Order - 108160**
CH2M Hill	Proj. Manager:Katie Downie

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

Sample number: 108160-1	Client Sample ID	PP011802
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/20/02 4:35:00 PM**
Herbicides - EPA 8151		

Sample number: 108160-2	Client Sample ID	PP011803
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/20/02 5:10:00 PM**
Herbicides - EPA 8151		

Sample number: 108160-3	Client Sample ID	PP011804D
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/20/02 12:01:00 AM**
Herbicides - EPA 8151		

Sample number: 108160-4	Client Sample ID	PP011805
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/21/02 9:45:00 AM**
Herbicides - EPA 8151		

HS0176

Analyst Brat Hefner Date 09/03/02

Reviewed by SM Date 9/4/02

Organics worksheet v4.0
If you have suggestions for changes please bring them to me - Dennis

Printed - 8/28/02

Chlorinated Herbicides by USEPA Method 8151

QCBatch ID	HS0176				
Sample Matrix	Solid				
Surrogate Standard No.	979-13-4				
Expiration Date	10/11/02	Weighed By/Date	Brent/[illegible]	8/28/02	
8151 MS Spike No.	979-13-5	Extracted By/Date	B[illegible]	8/28/02	
Expiration Date	10/11/02	Derivatized By/Date	B. [illegible]	8/28/02	
Internal Standard No.	979-13-7	CH2M Hill - Tier IV - low level limits - 8151			
Expiration Date	10/11/02				
MeCl2 Lot Number	X10466				
Methanol Lot Number					
		Spike Witness Signature/Date		8/28/02	
Extraction Method	3550 Sonication				

QC Sample Type	QC Identifier	Sample Weight (g)	Final Volume (ml)	Surr Spike (ul)	MS/BS spike amt (ul)
Method Blank	HS0176	20.0000	1	10	N/A
Duplicate					N/A
Duplicate-2					N/A
Blank Spike	sHS0176	20.0000	1	10	100
Blank Spike Duplicate	dHS0176				
Matrix Spike	108164s3	21.1011	1	10	100
Matrix Spike Duplicate	108164d3	20.7466	1	10	100
Matrix Spike-2					
Matrix Spike Duplicate-2					

Sample	Client Sample ID	Sample Weight (g)	Final Volume (ml)	Surr Spike (ul)	Comments
108160-1	PP011802	20.2011	1	10	
108160-2	PP011803	21.3218	1	10	
108160-3	PP011804D	22.1748	1	10	
108160-4	PP011805	21.0236	1	10	
108164-1	PP011806	20.6698	1	10	
108164-2	PP011807	20.4575	1	10	
108164-3	PP011808	21.0256	1	10	
108166-1	PP011801	20.7463	1	10	
108166-2	PP011809	21.1957	1	10	
108166-3	PP011810	20.4574	1	10	
108177-1	PP01M105	21.4855	1	10	
108177-2	PP01M106	20.2658	1	10	
108177-3	PP01M107	22.0470	1	10	
108177-4	PP01M108	21.0223	1	10	
108177-5	PP01M109	20.4942	1	10	
108177-6	PP01M110	21.3369	1	10	
108177-8	PP01M101	20.5539	1	10	
108177-9	PP01M102D	20.9986	1	10	
108177-10	PP01M103	20.5536	1	10	
108177-11	PP01M104	20.8527	1	10	

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108160**
Sample Number	**1**
Batch QC ID	**HS0176**
Client Sample ID	**PP011802**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-29-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blank: HS0176

Sample weight (g)	**20.2011**	=	0.0202 /kg	Calc. Fact.	67.73707557
Extract volume (ml)	**1**	=	1 ml	Dry Weight	14.76296388 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**73.08**	=	0.7308	Spike Factor	67.73707557
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	**Quan Value**	**User Flags**	**% Rec.**	**Warning**	**Water Low**	**Water High**
x	2,4-Dichlorophenylacetic acid	0.654		65.4	**OK**	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	**Target Analytes**	**Quan Value**	**User Flag**	**Blank**	**Calculated Amount**	**Total Flags**	**PQL**

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108160**
Sample Number	**2**
Batch QC ID	**HS0176**
Client Sample ID	**PP011803**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-29-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blank: HS0176

Sample weight (g)	**21.3218**	=	0.02132 /kg	Calc. Fact.	61.11591804
Extract volume (ml)	**1**	=	1 ml	Dry Weight	16.36234932 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**76.74**	=	0.7674	Spike Factor	61.11591804
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.672		67.2	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108160**
Sample Number	**3**
Batch QC ID	**HS0176**
Client Sample ID	**PP011804D**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blank: HS0176

Sample weight (g)	**22.1748**	=	0.02217 /kg	Calc. Fact.	58.64269879
Extract volume (ml)	**1**	=	1 ml	Dry Weight	17.0524212 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**76.9**	=	0.769	Spike Factor	58.64269879
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	**Quan Value**	**User Flags**	**% Rec.**	**Warning**	**Water Low**	**Water High**
x	2,4-Dichlorophenylacetic acid	0.701		70.1	**OK**	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	**Target Analytes**	**Quan Value**	**User Flag**	**Blank**	**Calculated Amount**	**Total Flags**	**PQL**

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108160**
Sample Number	**4**
Batch QC ID	**HS0176**
Client Sample ID	**PP011805**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blank: HS0176

Sample weight (g)	**21.0236**	=	0.02102 /kg	Calc. Fact.	73.53987779
Extract volume (ml)	**1**	=	1 ml	Dry Weight	13.59806448 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**64.68**	=	0.6468	Spike Factor	73.53987779
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	**Quan Value**	**User Flags**	**% Rec.**	**Warning**	**Water Low**	**Water High**
x	2,4-Dichlorophenylacetic acid	0.706		70.6	**OK**	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	**Target Analytes**	**Quan Value**	**User Flag**	**Blank**	**Calculated Amount**	**Total Flags**	**PQL**

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	
Batch QC ID	**HS0176**
Client Sample ID	
Date Received	
Date Prepared	**08-28-02**
Date Analyzed	**08-29-02**
Sample matrix type	**solid**
QC sample type	**blank**

Related Blank: noblank

Sample weight (g)	**20**	=	0.02 /kg	Calc. Fact.	50
Extract volume (ml)	**1**	=	1 ml	Dry Weight	20 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	50
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.604		60.4	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blank: HS0176
Batch QC ID	**HS0176**
Client Sample ID	
Date Received	
Date Prepared	**08-28-02**
Date Analyzed	**08-29-02**
Sample matrix type	**solid**
QC sample type	**bs**

Sample weight (g)	**20**	=	0.02 /kg	Calc. Fact.	50
Extract volume (ml)	**1**	=	1 ml	Dry Weight	20 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	50
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.673		67.3	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Dalapon	0.411			20.6		0.5
x	4-Nitrophenol	0.701			35.1		0.5
x	Dicamba	0.579			29		0.5
x	MCPP	0.865			43.3		0.5
x	MCPA	0.718			35.9		0.5
x	Dichloroprop	0.754			37.7		0.5
x	2,4-D	0.646			32.3		0.5
x	Pentachlorophenol	0.887			44.4		0.5
x	Silvex (2,4,5-TP)	0.766			38.3		0.75
x	2,4,5-T	0.638			31.9		0.75
x	Dinoseb	0.65			32.5		0.5
x	2,4-DB	0.815			40.8		0.5

REVIEWED PREVIOUSLY

$\frac{1ml}{20g} \times 0.815 ng/ul \times \frac{10^3 ul}{1ml} \times \frac{10^3 g}{1kg} \times \frac{1}{10}$

= 40.75

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**3**
Batch QC ID	**HS0176**
Client Sample ID	**PP011808**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-29-02**
Sample matrix type	**solid**
QC sample type	**ms**

Related Blank: HS0176

Sample weight (g)	**21.1011**	=	0.0211 /kg	Calc. Fact.	60.93724356
Extract volume (ml)	**1**	=	1 ml	Dry Weight	16.41032547 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**77.77**	=	0.7777	Spike Factor	60.93724356
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.927		92.7	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Dalapon	0.141			8.59		0.609
x	4-Nitrophenol	0.868			52.9		0.609
x	Dicamba	0.838			51.1		0.609
x	MCPP	0.973			59.3		0.609
x	MCPA	0.988			60.2		0.609
x	Dichloroprop	0.921			56.1		0.609
x	2,4-D	0.959			58.4		0.609
x	Pentachlorophenol	0.869			53		0.609
x	Silvex (2,4,5-TP)	0.826			50.3		0.914
x	2,4,5-T	0.863			52.6		0.914
x	Dinoseb	0.833			50.8		0.609
x	2,4-DB	1.167			71.1		0.609

REVIEWED
PREVIOUSLY
[illegible]

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**3**
Batch QC ID	**HS0176**
Client Sample ID	**PP011808**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-29-02**
Sample matrix type	**solid**
QC sample type	**msd**

Related Blank: HS0176

Sample weight (g)	**20.7466**	=	0.02075 /kg	Calc. Fact.	61.9784866
Extract volume (ml)	**1**	=	1 ml	Dry Weight	16.13463082 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**77.77**	=	0.7777	Spike Factor	61.9784866
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.931		93.1	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Dalapon	0.156			9.67		0.62
x	4-Nitrophenol	0.917			56.8		0.62
x	Dicamba	0.849			52.6		0.62
x	MCPP	0.958			59.4		0.62
x	MCPA	0.978			60.6		0.62
x	Dichloroprop	0.928			57.5		0.62
x	2,4-D	1.002			62.1		0.62
x	Pentachlorophenol	0.829			51.4		0.62
x	Silvex (2,4,5-TP)	0.772			47.8		0.93
x	2,4,5-T	0.855			53		0.93
x	Dinoseb	0.88			54.5		0.62
x	2,4-DB	1.088			67.4		0.62

REVIEWED
PREVIOUSLY

ORGANOCHLORINE PESTICIDES DATA PACKAGE

SAMPLE DATA

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\021F2101.D\ADC1B.CH Vial: 21
Signal #2 : F:\HPCHEM\1\DATA\PE091102\021F2101.D\ADC1A.CH
Acq On : 12-Sep-2002, 04:32:34 Operator: JDW
Sample : 108160-1 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:52:16 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.83	6771000	15096132	10.365	11.079	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					51.82%#	55.40%#	
22)	SR	Decachlorobiphen	13.52	14.43	6519741	12292524	15.644	15.969	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					78.22%	79.84%	
		Target Compounds							
2)		alpha-BHC	4.69f	0.00	854597	0	0.725	N.D.	#
3)	M	gamma-BHC (Linda	5.22	0.00	1081973	0	1.058	N.D.	#
4)	M	Heptachlor	5.95	0.00	1587802	0	1.624	N.D.	#
5)	M	Aldrin	6.42	6.56	2869394	11572916	2.901	6.749	#
6)		beta-BHC	5.35	5.53	993852	1521390	2.625	2.335	
7)		delta-BHC	5.62	0.00	1854748	0	1.874	N.D.	#
8)		Heptachlor Epoxi	7.34	7.47	1401165	8439937	1.684 PCB	5.788	#
9)		Endosulfan I	0.00	8.14	0	2670468	N.D.	1.902	#
10)		gamma-Chlordane	7.55	7.77	4944634	12773277	5.705	8.483	#
11)		alpha-Chlordane	7.77	8.03	5407432	5838966	6.861	4.198	
12)		4,4'-DDE	7.90	8.36	15751073	31718115	21.660	22.219	
13)	M	Dieldrin	8.45	8.65	4478743	5939314	5.660 PCB	4.012	
14)	M	Endrin	0.00	9.24	0	666160	N.D.	0.622	#
15)		Endosulfan II	0.00	9.67	0	1779608	N.D.	1.535	#
16)		4,4'-DDD	9.01	9.47	8244781	13723100	13.713	13.045	
17)	M	4,4'-DDT	9.53	10.07	1492853	4010268	2.423 PCB	4.259	#
18)		Endrin Aldehyde	0.00	10.35f	0	705419	N.D.	0.805	#
19)		Endosulfan Sulfa	10.95	10.85f	770093	2323836	1.398	2.193	#
20)		Methoxychlor	10.52f	0.00	482693	0	1.967	N.D.	#
21)		Endrin Ketone	11.48f	0.00	774235	0	1.189	N.D.	#

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108160-1 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\021F2101.D
Date Acquired 12-Sep-2002, 04:32:34

CCV File Path F:\HPCHEM\1\DATA\PE091102\016F1601.D

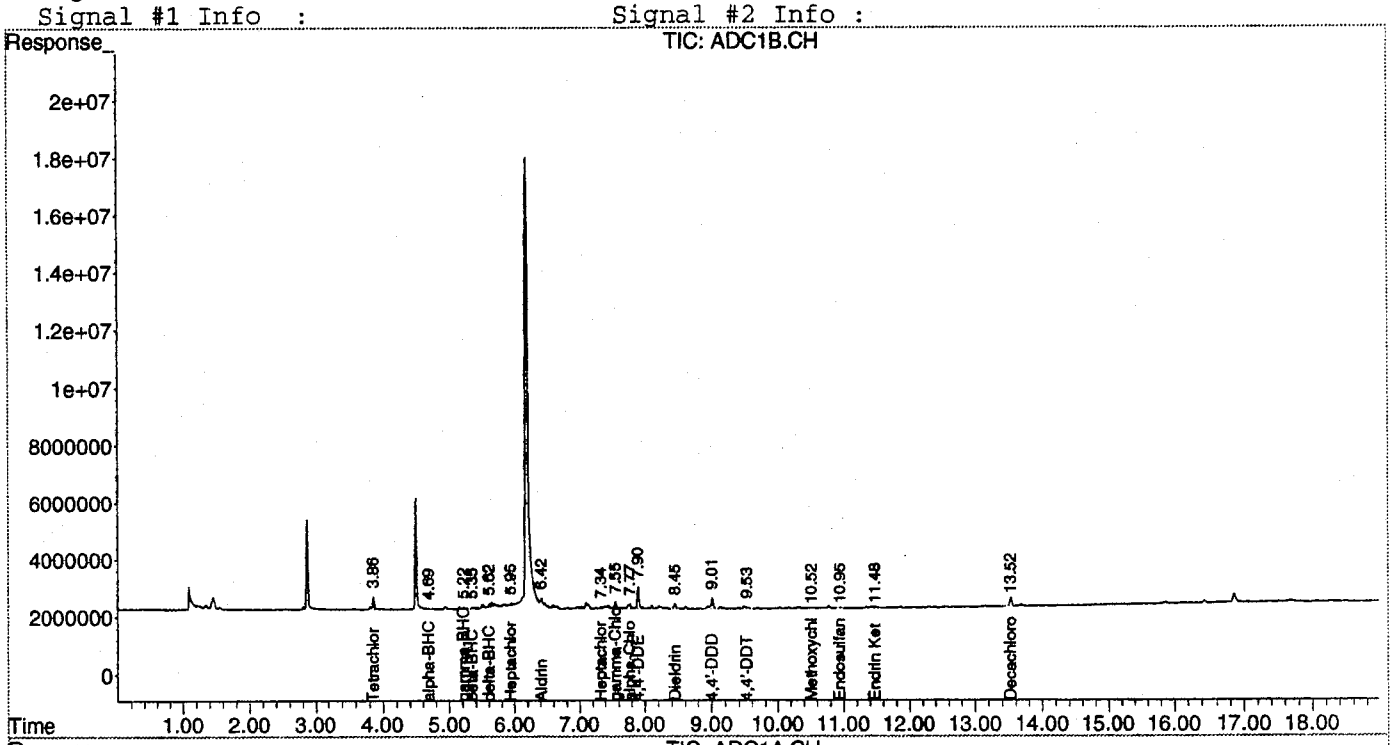
Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.86	3.83	0.2855	0.2657	0.2855	0.2658	OK	OK
alpha-BHC	4.69	0.00	0.3469	0.0000	0.3487	0.3330	OK	--
gamma-BHC (Lindane)	5.22	0.00	0.3858	0.0000	0.3852	0.3724	OK	--
Heptachlor	5.95	0.00	0.4397	0.0000	0.4400	0.4194	OK	--
Aldrin	6.42	6.56	0.4744	0.4542	0.4745	0.4543	OK	OK
beta-BHC	5.35	5.53	0.3953	0.3829	0.3953	0.3822	OK	OK
delta-BHC	5.62	0.00	0.4152	0.0000	0.4160	0.4143	OK	--
Heptachlor Epoxide	7.34	7.47	0.5427	0.5173	0.5435	0.5172	OK	OK
Endosulfan I	0.00	8.14	0.0000	0.5641	0.5926	0.5641	--	OK
gamma-Chlordane	7.55	7.77	0.5585	0.5385	0.5584	0.5385	OK	OK
alpha-Chlordane	7.77	8.03	0.5747	0.5565	0.5747	0.5566	OK	OK
4,4'-DDE	7.90	8.36	0.5845	0.5790	0.5844	0.5791	OK	OK
Dieldrin	8.45	8.65	0.6251	0.5997	0.6251	0.5996	OK	OK
Endrin	0.00	9.24	0.0000	0.6401	0.6568	0.6400	--	OK
Endosulfan II	0.00	9.67	0.0000	0.6701	0.6881	0.6688	--	OK
4,4'-DDD	9.01	9.47	0.6661	0.6559	0.6660	0.6560	OK	OK
4,4'-DDT	9.53	10.07	0.7043	0.6977	0.7050	0.6979	OK	OK
Endrin Aldehyde	0.00	10.35	0.0000	0.7168	0.7473	0.7154	--	OK
Endosulfan Sulfate	10.95	10.85	0.8093	0.7518	0.8102	0.7535	OK	OK
Methoxychlor	10.52	0.00	0.7777	0.0000	0.7751	0.7951	OK	--
Endrin Ketone	11.48	0.00	0.8486	0.0000	0.8509	0.8277	OK	--
Decachlorobiphenyl (S)	13.52	14.43	1.0000	1.0000	1.0000	1.0000	OK	OK

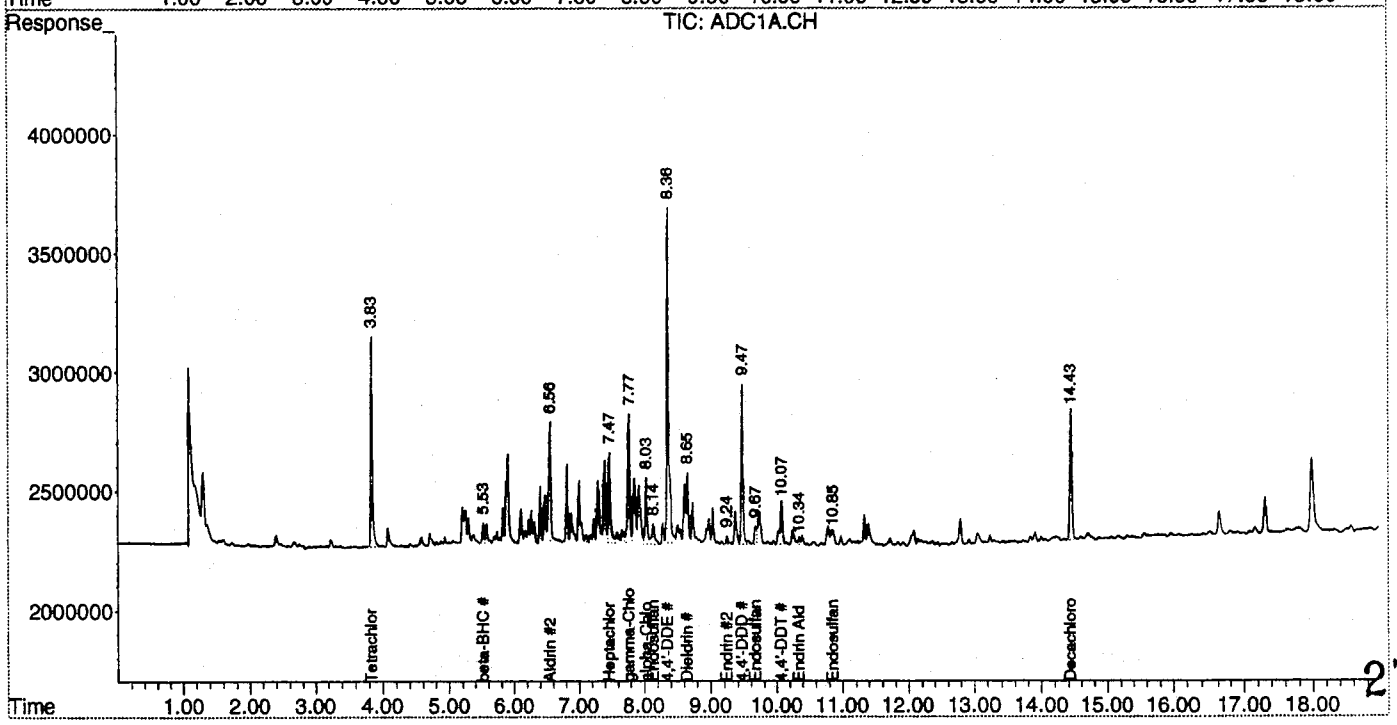
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\021F2101.D\ADC1B.CH Vial: 21
Signal #2 : F:\HPCHEM\1\DATA\PE091102\021F2101.D\ADC1A.CH
Acq On : 12-Sep-2002, 04:32:34 Operator: JDW
Sample : 108160-1 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:52 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\021F2101.D\ADC1B.CH Vial: 21
Signal #2 : F:\HPCHEM\1\DATA\PE091102\021F2101.D\ADC1A.CH
Acq On : 12-Sep-2002, 04:32:34 Operator: JDW
Sample : 108160-1 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:18:57 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	SR Tetrachloro-m-xy	3.86	3.83	8195287	15065851	12.328	11.565
	Spiked Amount 20.000 Range 60 - 150 Recovery =					61.64%	57.82%#
1)	SR Decachlorobiphen	13.52	14.43	6556788	12292524	14.518	16.178
	Spiked Amount 20.000 Range 60 - 150 Recovery =					72.59%	80.89%
	Target Compounds						
2)	Hexachloroethane	1.55	0.00	1497126	0	0.972 BDL	N.D. #
3)	Hexachlorobenzen	4.50f	4.58	71430898	935119	68.985	0.661 # BDL
4)	Hexachlorobutadi	1.82	0.00	169670	0	0.080 BDL	N.D. #
5)	Oxychlordane	0.00	7.30	0	5836437	N.D.	4.793 #
6)	cis-Nonachlor	8.95	9.36f	2079152	3317208	2.568	2.171
7)	trans-Nonachlor	7.77	7.93	5407432	6313623	7.120	4.599
8)	2,4'-DDE	7.34	7.77f	1401165	12138453	2.900	14.242 #
9)	2,4'-DDD	8.22	8.74	4145417	2577049	10.311	3.516 #
10)	2,4'-DDT	0.00	9.36f	0	3317208	N.D.	4.842 #

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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108160-1 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\021F2101.D
Date Acquired 12-Sep-2002, 04:32:34

CCV File Path F:\HPCHEM\1\DATA\PE091102\017F1701.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.86	3.83	0.2855	0.2657	0.2854	0.2658	OK	OK
Hexachloroethane	1.55	0.00	0.1148	0.0000	0.1130	0.1016	OK	--
Hexachlorobenzene	4.50	4.58	0.3325	0.3177	0.3293	0.3167	--	OK
Hexachlorobutadiene	1.82	0.00	0.1344	0.0000	0.1344	0.1192	OK	--
Oxychlordane	0.00	7.30	0.0000	0.5056	0.5316	0.5064	--	OK
cis-Nonachlor	8.95	9.36	0.6615	0.6486	0.6612	0.6506	OK	OK
trans-Nonachlor	7.77	7.93	0.5747	0.5493	0.5724	0.5494	OK	OK
2,4'-DDE	7.34	7.77	0.5427	0.5385	0.5420	0.5396	OK	OK
2,4'-DDD	8.22	8.74	0.6075	0.6053	0.6073	0.6056	OK	OK
2,4'-DDT	0.00	9.36	0.0000	0.6486	0.6420	0.6456	--	--
Decachlorobiphenyl (S)	13.52	14.43	1.0000	1.0000	1.0000	1.0000	OK	OK

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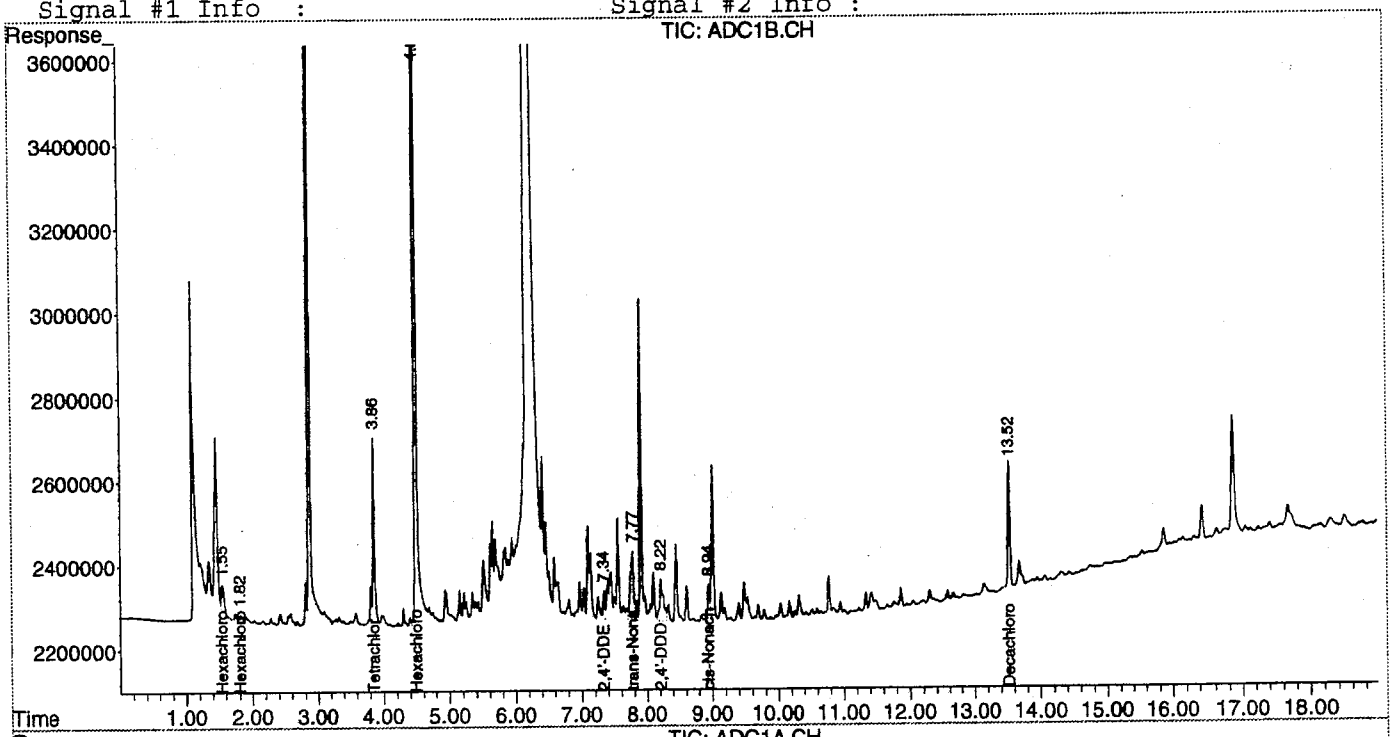
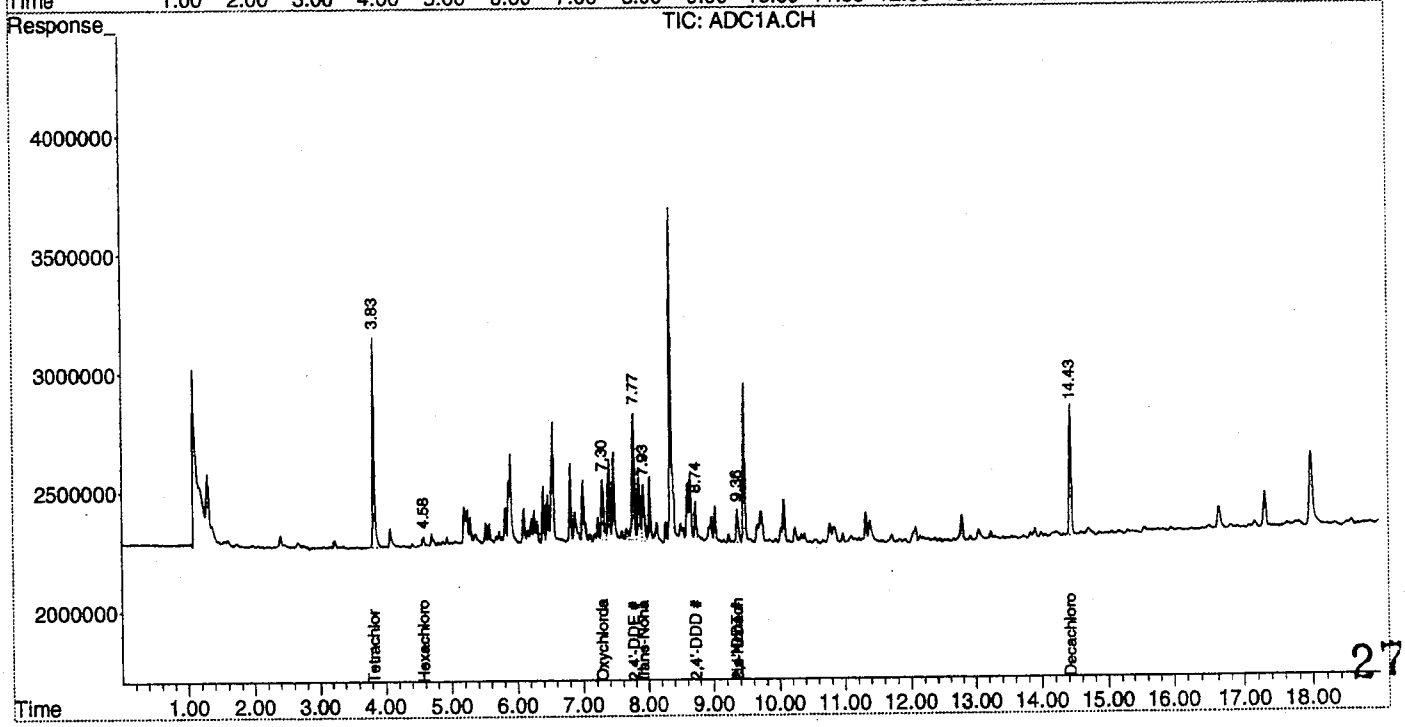
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\021F2101.D\ADC1B.CH Vial: 21
Signal #2 : F:\HPCHEM\1\DATA\PE091102\021F2101.D\ADC1A.CH
Acq On : 12-Sep-2002, 04:32:34 Operator: JDW
Sample : 108160-1 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:19 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\022F2201.D\ADC1B.CH Vial: 22
Signal #2 : F:\HPCHEM\1\DATA\PE091102\022F2201.D\ADC1A.CH
Acq On : 12-Sep-2002, 04:54:28 Operator: JDW
Sample : 108160-2 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:53:51 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.84	8302028	15380537	12.708	11.288	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					63.54%	56.44%#	
22)	SR	Decachlorobiphen	13.53	14.44	6076920	10040297	14.582	13.043	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					72.91%	65.22%	
		Target Compounds							
2)		alpha-BHC	4.69f	0.00	176180	0	0.150	N.D.	#
3)	M	gamma-BHC (Linda	5.22	0.00	556129	0	0.544	N.D.	#
4)	M	Heptachlor	5.95	0.00	991685	0	1.014	N.D.	#
5)	M	Aldrin	6.42	6.56	2253176	7378394	2.278	4.303	#
6)		beta-BHC	5.35	5.53	420843	616964	1.112	0.947	
7)		delta-BHC	5.62	0.00	902701	0	0.912	N.D.	#
8)		Heptachlor Epoxi	7.34	7.47	722446	4011236	0.868 PCB	2.751	#
9)		Endosulfan I	0.00	8.14	0	1502060	N.D.	1.070	#
10)		gamma-Chlordane	7.56	7.78	2833081	7055043	3.269	4.685	#
11)		alpha-Chlordane	7.78	8.04	2868205	3073199	3.639	2.209	
12)		4,4'-DDE	7.91	8.36	9288003	18029570	12.772	12.630	
13)	M	Dieldrin	8.46	8.66	2578389	3338867	3.259 PCB	2.256	
14)	M	Endrin	8.84f	0.00	180306	0	0.312	N.D.	#
15)		Endosulfan II	0.00	9.67f	0	984096	N.D.	0.849	#
16)		4,4'-DDD	9.01	9.47	4315298	6723421	7.177	6.391	
17)	M	4,4'-DDT	9.53	10.07	773812	2318164	1.256 PCB	2.462	#
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D.	N.D.	
19)		Endosulfan Sulfa	10.95	10.84f	439111	1299885	0.797	1.227	#
20)		Methoxychlor	10.52f	0.00	240631	0	0.981	N.D.	#
21)		Endrin Ketone	11.48f	0.00	363158	0	0.558	N.D.	#

277

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108160-2 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\022F2201.D
Date Acquired 12-Sep-2002, 04:54:28

CCV File Path F:\HPCHEM\1\DATA\PE091102\016F1601.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.86	3.84	0.2855	0.2657	0.2855	0.2658	OK	OK
alpha-BHC	4.69	0.00	0.3470	0.0000	0.3487	0.3330	OK	--
gamma-BHC (Lindane)	5.22	0.00	0.3859	0.0000	0.3852	0.3724	OK	--
Heptachlor	5.95	0.00	0.4399	0.0000	0.4400	0.4194	OK	--
Aldrin	6.42	6.56	0.4746	0.4543	0.4745	0.4543	OK	OK
beta-BHC	5.35	5.53	0.3954	0.3830	0.3953	0.3822	OK	OK
delta-BHC	5.62	0.00	0.4154	0.0000	0.4160	0.4143	OK	--
Heptachlor Epoxide	7.34	7.47	0.5427	0.5175	0.5435	0.5172	OK	OK
Endosulfan I	0.00	8.14	0.0000	0.5641	0.5926	0.5641	--	OK
gamma-Chlordane	7.56	7.78	0.5586	0.5386	0.5584	0.5385	OK	OK
alpha-Chlordane	7.78	8.04	0.5749	0.5566	0.5747	0.5566	OK	OK
4,4'-DDE	7.91	8.36	0.5846	0.5790	0.5844	0.5791	OK	OK
Dieldrin	8.46	8.66	0.6252	0.5997	0.6251	0.5996	OK	OK
Endrin	8.84	0.00	0.6535	0.0000	0.6568	0.6400	--	--
Endosulfan II	0.00	9.67	0.0000	0.6700	0.6881	0.6688	--	OK
4,4'-DDD	9.01	9.47	0.6662	0.6559	0.6660	0.6560	OK	OK
4,4'-DDT	9.53	10.07	0.7042	0.6978	0.7050	0.6979	OK	OK
Endrin Aldehyde	0.00	0.00	0.0000	0.0000	0.7473	0.7154	--	--
Endosulfan Sulfate	10.95	10.84	0.8094	0.7506	0.8102	0.7535	OK	OK
Methoxychlor	10.52	0.00	0.7779	0.0000	0.7751	0.7951	OK	--
Endrin Ketone	11.48	0.00	0.8488	0.0000	0.8509	0.8277	OK	--
Decachlorobiphenyl (S)	13.53	14.44	1.0000	1.0000	1.0000	1.0000	OK	OK

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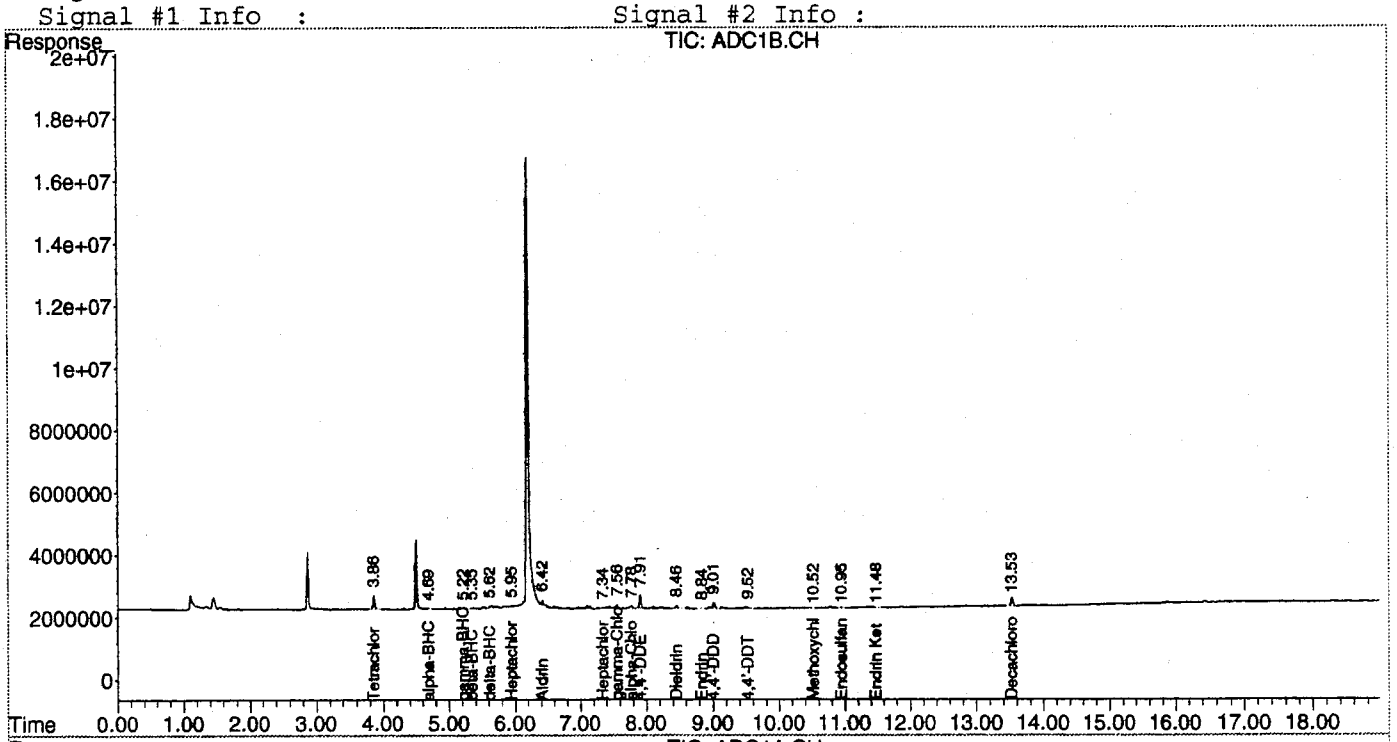
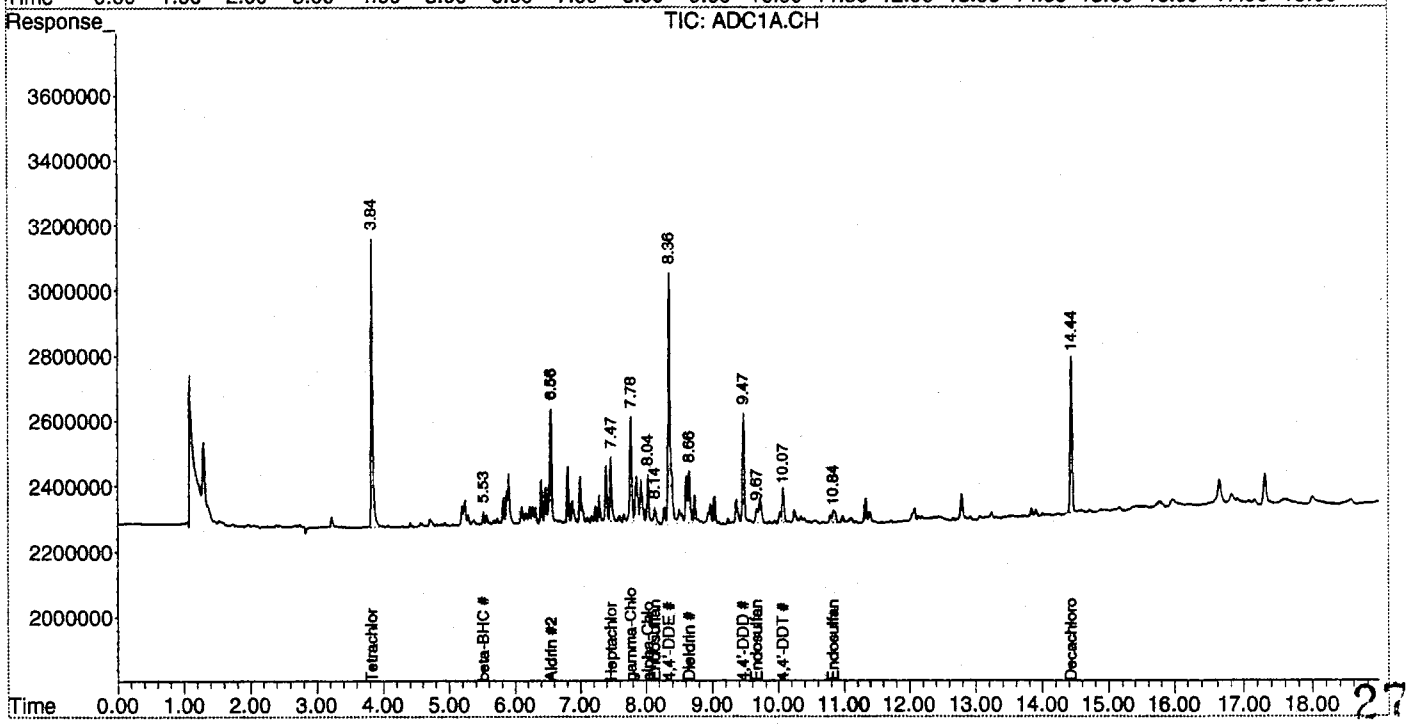
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\022F2201.D\ADC1B.CH Vial: 22
Signal #2 : F:\HPCHEM\1\DATA\PE091102\022F2201.D\ADC1A.CH
Acq On : 12-Sep-2002, 04:54:28 Operator: JDW
Sample : 108160-2 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:53 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\022F2201.D\ADC1B.CH Vial: 22
Signal #2 : F:\HPCHEM\1\DATA\PE091102\022F2201.D\ADC1A.CH
Acq On : 12-Sep-2002, 04:54:28 Operator: JDW
Sample : 108160-2 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:19:32 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) SR Tetrachloro-m-xy	3.86	3.84	8660319	15377079	13.028	11.804
Spiked Amount 20.000 Range 60 - 150 Recovery =					65.14%	59.02%#
11) SR Decachlorobiphen	13.53	14.44	6076920	10040297	13.456	13.214
Spiked Amount 20.000 Range 60 - 150 Recovery =					67.28%	66.07%
Target Compounds						
2) Hexachloroethane	1.55	0.00	1707087	0	1.108	N.D. #
3) Hexachlorobenzen	4.46	0.00	263576	0	0.255	N.D. #
4) Hexachlorobutadi	1.82	0.00	150701	0	0.071	N.D. #
5) Oxychlordane	0.00	7.29	0	1290364	N.D.	1.060 #
6) cis-Nonachlor	8.95	9.37f	1142473	1794934	1.411 BOL	1.175
7) trans-Nonachlor	7.78f	7.93	2868205	3377759	3.777	2.461,
8) 2,4'-DDE	7.34	7.78	722446	7036761	1.495 BOL	8.256 #
9) 2,4'-DDD	8.22	8.74	2135224	1725920	5.311	2.355 #
10) 2,4'-DDT	0.00	9.37f	0	1794934	N.D.	2.620 #

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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
022F2201.D +CPDS_910.M Thu Sep 12 10:24:00 2002

Custom Report - Relative Retention Times

Sample Name 108160-2 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\022F2201.D
Date Acquired 12-Sep-2002, 04:54:28

CCV File Path F:\HPCHEM\1\DATA\PE091102\017F1701.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.86	3.84	0.2855	0.2657	0.2854	0.2658	OK	OK
Hexachloroethane	1.55	0.00	0.1144	0.0000	0.1130	0.1016	OK	--
Hexachlorobenzene	4.46	0.00	0.3294	0.0000	0.3293	0.3167	OK	--
Hexachlorobutadiene	1.82	0.00	0.1343	0.0000	0.1344	0.1192	OK	--
Oxychlordane	0.00	7.29	0.0000	0.5053	0.5316	0.5064	--	OK
cis-Nonachlor	8.95	9.37	0.6616	0.6487	0.6612	0.6506	OK	OK
trans-Nonachlor	7.78	7.93	0.5749	0.5494	0.5724	0.5494	OK	OK
2,4'-DDE	7.34	7.78	0.5427	0.5386	0.5420	0.5396	OK	OK
2,4'-DDD	8.22	8.74	0.6077	0.6054	0.6073	0.6056	OK	OK
2,4'-DDT	0.00	9.37	0.0000	0.6487	0.6420	0.6456	--	--
Decachlorobiphenyl (S)	13.53	14.44	1.0000	1.0000	1.0000	1.0000	OK	OK

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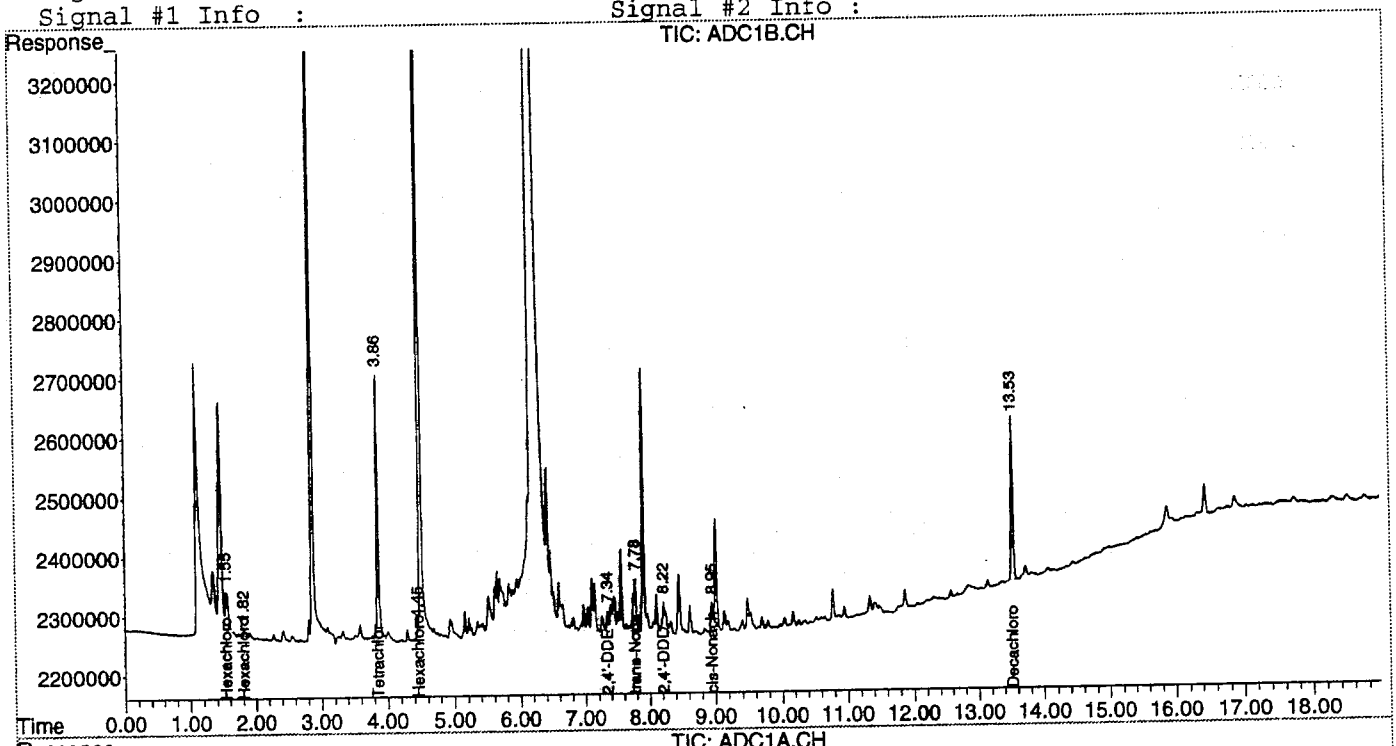
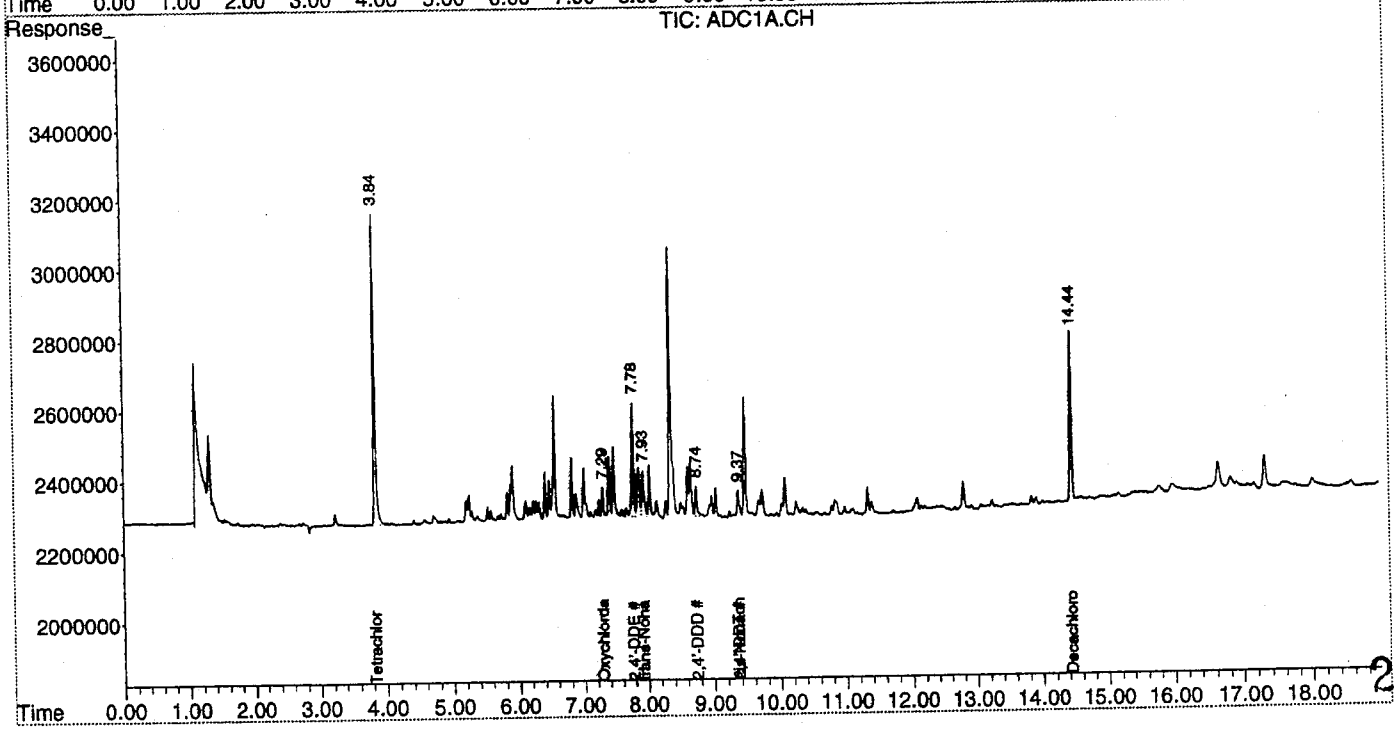
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\022F2201.D\ADC1B.CH Vial: 22
Signal #2 : F:\HPCHEM\1\DATA\PE091102\022F2201.D\ADC1A.CH
Acq On : 12-Sep-2002, 04:54:28 Operator: JDW
Sample : 108160-2 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:19 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\023F2301.D\ADC1B.CH Vial: 23
Signal #2 : F:\HPCHEM\1\DATA\PE091102\023F2301.D\ADC1A.CH
Acq On : 12-Sep-2002, 05:16:42 Operator: JDW
Sample : 108160-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:54:38 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.83	8198215	15805866	12.550	11.600	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					62.75%	58.00%#	
22)	SR	Decachlorobiphen	13.52	14.43	6232781	10458230	14.956	13.586	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					74.78%	67.93%	
		Target Compounds							
2)		alpha-BHC	4.69f	0.00	151973	0	0.129	N.D.	#
3)	M	gamma-BHC (Linda	5.22	0.00	670483	0	0.656	N.D.	#
4)	M	Heptachlor	5.95	0.00	375171	0	0.384	N.D.	#
5)	M	Aldrin	6.42	6.55	1826571	7137559	1.847	4.162	#
6)		beta-BHC	5.35	5.53	380258	728860	1.004	1.119	
7)		delta-BHC	5.61	0.00	919773	0	0.929	N.D.	#
8)		Heptachlor Epoxi	7.34	7.46	868577	5047650	1.044 PCB	3.462	#
9)		Endosulfan I	8.06f	8.14	607452	1604665	0.675	1.143	#
10)		gamma-Chlordane	7.55	7.77	3470299	9139198	4.004	6.069	#
11)		alpha-Chlordane	7.77	8.03	3363107	3487321	4.267	2.507	#
12)		4,4'-DDE	7.90	8.35	10537209	20320877	14.490	14.235	
13)	M	Dieldrin	8.45	8.65	2749454	3504819	3.475 PCB	2.368	
14)	M	Endrin	0.00	0.00	0	0	N.D.	N.D.	
15)		Endosulfan II	0.00	9.67	0	1212616	N.D.	1.046	#
16)		4,4'-DDD	9.01	9.46	4380452	6757094	7.286	6.423	
17)	M	4,4'-DDT	9.52	10.07	806479	2708153	1.309 PCB	2.876	#
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D.	N.D.	
19)		Endosulfan Sulfa	10.94	10.83f	402207	1565947	0.730	1.478	#
20)		Methoxychlor	10.52f	0.00	304779	0	1.242	N.D.	#
21)		Endrin Ketone	11.47f	0.00	447634	0	0.687	N.D.	#

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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108160-3 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\023F2301.D
Date Acquired 12-Sep-2002, 05:16:42

CCV File Path F:\HPCHEM\1\DATA\PE091102\016F1601.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.86	3.83	0.2854	0.2657	0.2855	0.2658	OK	OK
alpha-BHC	4.69	0.00	0.3468	0.0000	0.3487	0.3330	OK	--
gamma-BHC (Lindane)	5.22	0.00	0.3857	0.0000	0.3852	0.3724	OK	--
Heptachlor	5.95	0.00	0.4397	0.0000	0.4400	0.4194	OK	--
Aldrin	6.42	6.55	0.4744	0.4542	0.4745	0.4543	OK	OK
beta-BHC	5.35	5.53	0.3954	0.3830	0.3953	0.3822	OK	OK
delta-BHC	5.61	0.00	0.4152	0.0000	0.4160	0.4143	OK	--
Heptachlor Epoxide	7.34	7.46	0.5426	0.5173	0.5435	0.5172	OK	OK
Endosulfan I	8.06	8.14	0.5959	0.5640	0.5926	0.5641	--	OK
gamma-Chlordane	7.55	7.77	0.5584	0.5384	0.5584	0.5385	OK	OK
alpha-Chlordane	7.77	8.03	0.5747	0.5565	0.5747	0.5566	OK	OK
4,4'-DDE	7.90	8.35	0.5844	0.5789	0.5844	0.5791	OK	OK
Dieldrin	8.45	8.65	0.6249	0.5996	0.6251	0.5996	OK	OK
Endrin	0.00	0.00	0.0000	0.0000	0.6568	0.6400	--	--
Endosulfan II	0.00	9.67	0.0000	0.6698	0.6881	0.6688	--	OK
4,4'-DDD	9.01	9.46	0.6659	0.6558	0.6660	0.6560	OK	OK
4,4'-DDT	9.52	10.07	0.7039	0.6977	0.7050	0.6979	OK	OK
Endrin Aldehyde	0.00	0.00	0.0000	0.0000	0.7473	0.7154	--	--
Endosulfan Sulfate	10.94	10.83	0.8092	0.7505	0.8102	0.7535	OK	OK
Methoxychlor	10.52	0.00	0.7777	0.0000	0.7751	0.7951	OK	--
Endrin Ketone	11.47	0.00	0.8485	0.0000	0.8509	0.8277	OK	--
Decachlorobiphenyl (S)	13.52	14.43	1.0000	1.0000	1.0000	1.0000	OK	OK

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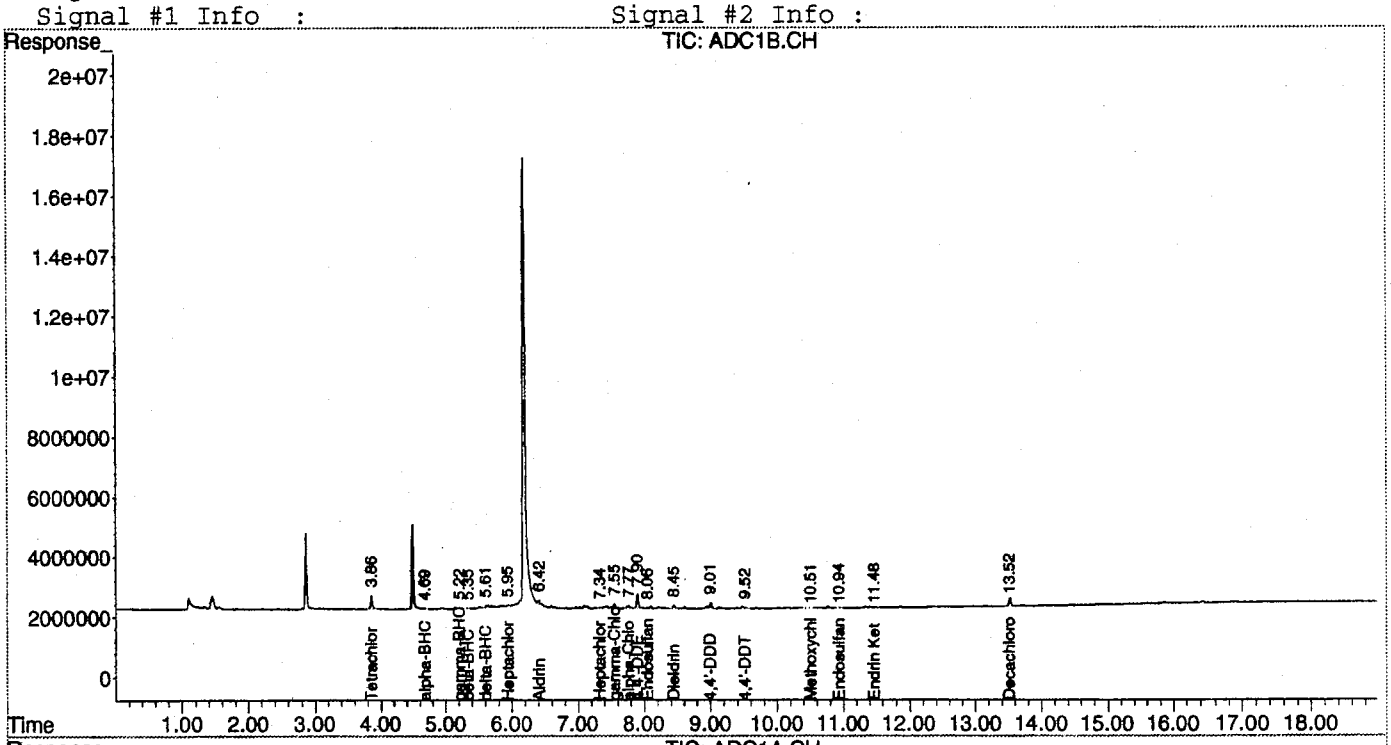
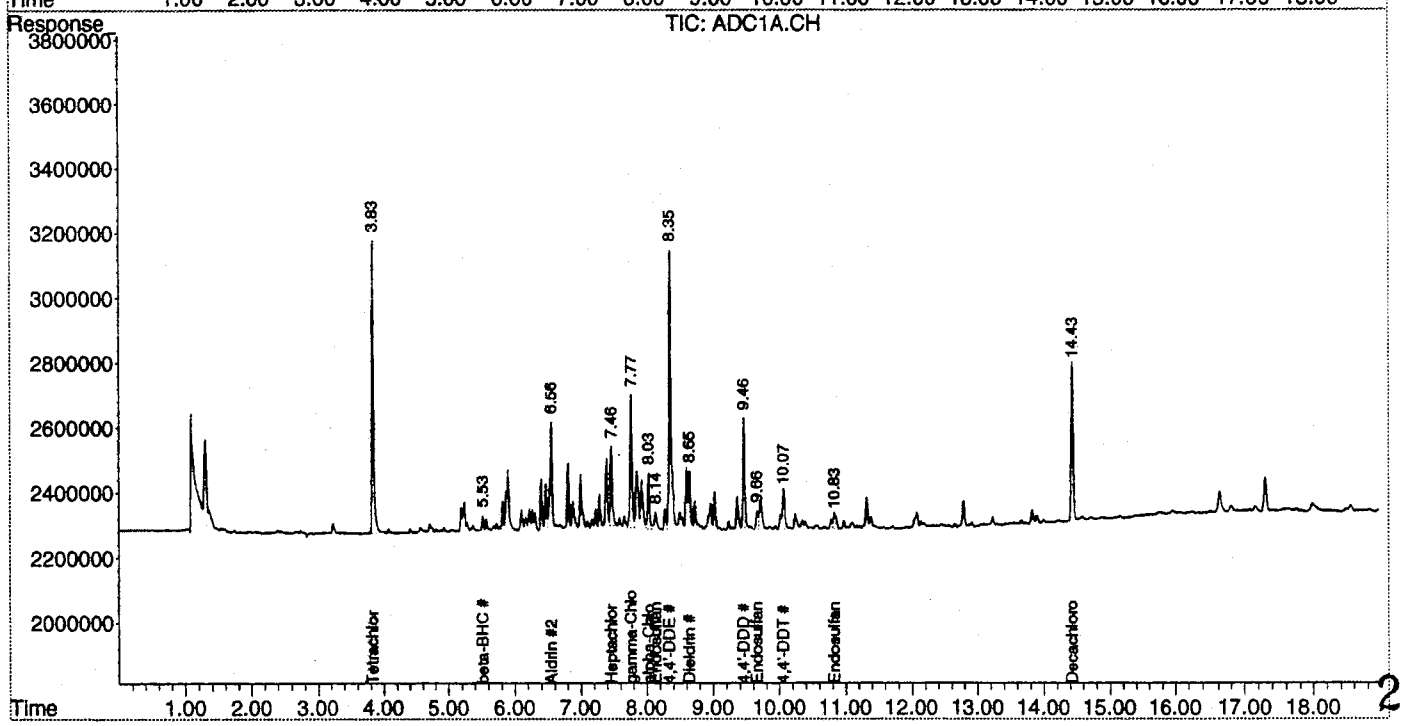
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\023F2301.D\ADC1B.CH Vial: 23
Signal #2 : F:\HPCHEM\1\DATA\PE091102\023F2301.D\ADC1A.CH
Acq On : 12-Sep-2002, 05:16:42 Operator: JDW
Sample : 108160-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:54 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\023F2301.D\ADC1B.CH Vial: 23
Signal #2 : F:\HPCHEM\1\DATA\PE091102\023F2301.D\ADC1A.CH
Acq On : 12-Sep-2002, 05:16:42 Operator: JDW
Sample : 108160-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:19:55 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) SR Tetrachloro-m-xy	3.86	3.83	8817479	15805866	13.264	12.133
Spiked Amount 20.000 Range 60 - 150 Recovery =					66.32%	60.66%
11) SR Decachlorobiphen	13.52	14.43	6237100	10458230	13.811	13.764
Spiked Amount 20.000 Range 60 - 150 Recovery =					69.06%	68.82%
Target Compounds						
2) Hexachloroethane	1.55	0.00	2095092	0	1.360	N.D. #
3) Hexachlorobenzen	4.50f	0.00	50328228	0	48.605	N.D. #
4) Hexachlorobutadi	1.82	0.00	138916	0	0.066	N.D. #
5) Oxychlordane	0.00	7.29f	0	1548765	N.D.	1.272 #
6) cis-Nonachlor	8.94	9.36f	1533885	2177293	1.895 BDL	1.425
7) trans-Nonachlor	7.77	7.93	3363107	3689047	4.428	2.687
8) 2,4'-DDE	7.34	7.77f	868577	9031058	1.798 BDL	10.596 #
9) 2,4'-DDD	8.21	8.73	2175764	1294576	5.412	1.766 # BDL
10) 2,4'-DDT	0.00	9.36f	0	2177293	N.D.	3.178 #

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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
023F2301.D +CPDS_910.M Thu Sep 12 10:24:03 2002

Custom Report - Relative Retention Times

Sample Name 108160-3 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\023F2301.D
Date Acquired 12-Sep-2002, 05:16:42

CCV File Path F:\HPCHEM\1\DATA\PE091102\017F1701.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.86	3.83	0.2854	0.2657	0.2854	0.2658	OK	OK
Hexachloroethane	1.55	0.00	0.1150	0.0000	0.1130	0.1016	OK	--
Hexachlorobenzene	4.50	0.00	0.3324	0.0000	0.3293	0.3167	--	--
Hexachlorobutadiene	1.82	0.00	0.1343	0.0000	0.1344	0.1192	OK	--
Oxychlordane	0.00	7.29	0.0000	0.5052	0.5316	0.5064	--	OK
cis-Nonachlor	8.94	9.36	0.6613	0.6486	0.6612	0.6506	OK	OK
trans-Nonachlor	7.77	7.93	0.5747	0.5493	0.5724	0.5494	OK	OK
2,4'-DDE	7.34	7.77	0.5426	0.5384	0.5420	0.5396	OK	OK
2,4'-DDD	8.21	8.73	0.6075	0.6053	0.6073	0.6056	OK	OK
2,4'-DDT	0.00	9.36	0.0000	0.6486	0.6420	0.6456	--	--
Decachlorobiphenyl (S)	13.52	14.43	1.0000	1.0000	1.0000	1.0000	OK	OK

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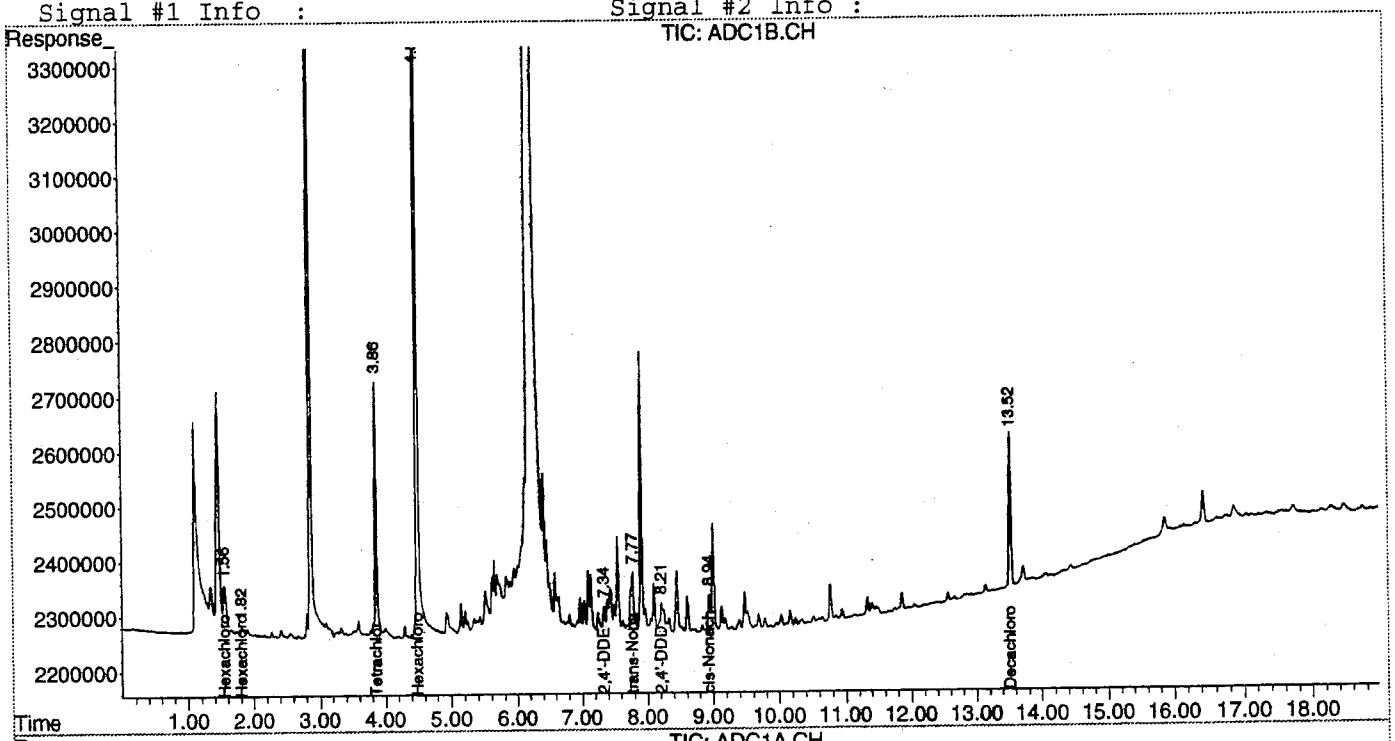
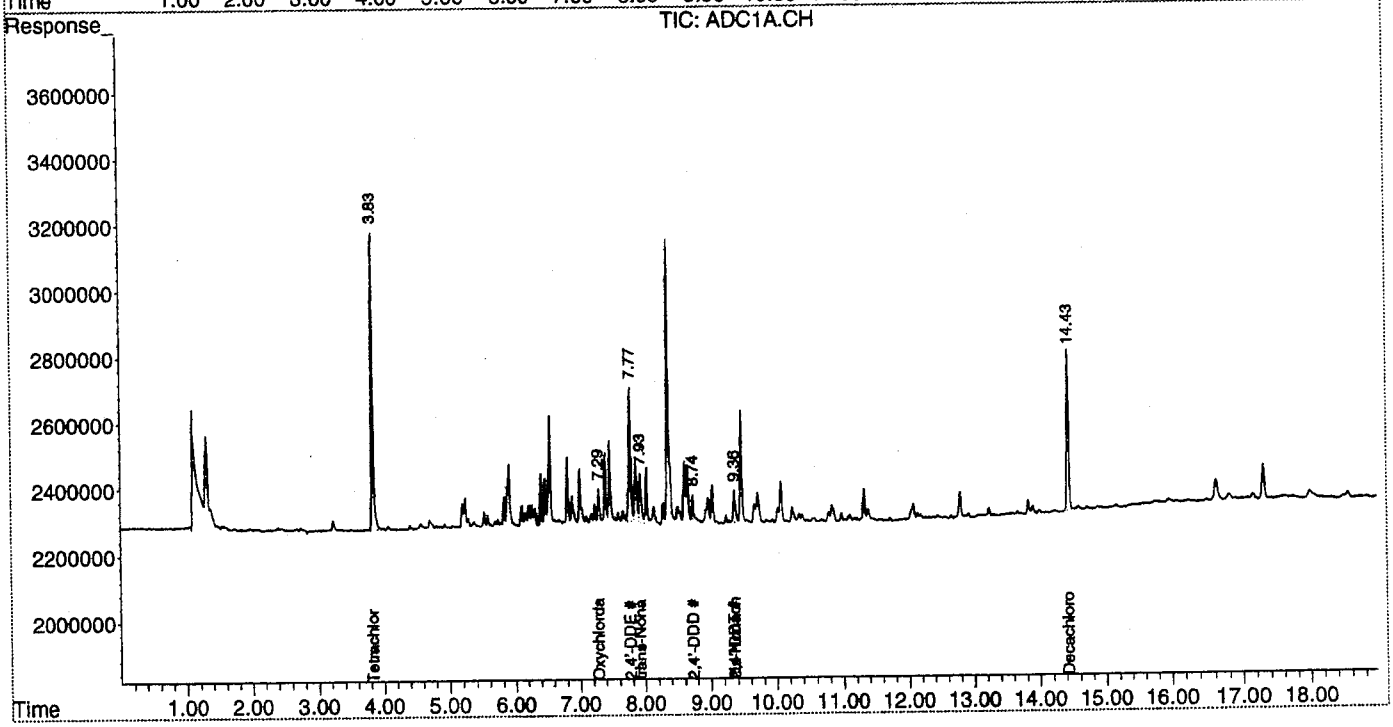
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\023F2301.D\ADC1B.CH Vial: 23
Signal #2 : F:\HPCHEM\1\DATA\PE091102\023F2301.D\ADC1A.CH
Acq On : 12-Sep-2002, 05:16:42 Operator: JDW
Sample : 108160-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:20 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\024F2401.D\ADC1B.CH Vial: 24
Signal #2 : F:\HPCHEM\1\DATA\PE091102\024F2401.D\ADC1A.CH
Acq On : 12-Sep-2002, 05:38:42 Operator: JDW
Sample : 108160-4 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:56:11 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

QC

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.83	6447390	14909948	9.869	10.942	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					49.34%#	54.71%#	
22)	SR	Decachlorobiphen	13.52	14.43	6767707	11447654	16.239	14.871	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					81.20%	74.36%	
		Target Compounds							
2)		alpha-BHC	4.69f	0.00	640202	0	0.543	N.D.	#
3)	M	gamma-BHC (Linda	5.22	0.00	799202	0	0.781	N.D.	#
4)	M	Heptachlor	5.95	0.00	2672292	0	2.732	N.D.	#
5)	M	Aldrin	6.42	6.56	3456445	14333493	3.494	8.359	#
6)		beta-BHC	5.35	5.53	642189	1067668	1.696	1.638	
7)		delta-BHC	5.62	0.00	2029104	0	2.050	N.D.	#
8)		Heptachlor Epoxi	7.34	7.47	1366554	7388993	1.642 PCB	5.067	#
9)		Endosulfan I	8.06f	8.14	1064667	2989760	1.183	2.130	#
10)		gamma-Chlordane	7.55	7.75	3661905	24528714	4.225	16.289	#
11)		alpha-Chlordane	7.77	8.03	2522195	4305940	3.200	3.096	
12)		4,4'-DDE	7.90	8.35	16237163	32698571	22.329	22.905	
13)	M	Dieldrin	8.45	8.65	3570507	4746804	4.513 PCB	3.207	
14)	M	Endrin	0.00	0.00	0	0	N.D.	N.D.	
15)		Endosulfan II	0.00	9.67	0	1327321	N.D.	1.145	#
16)		4,4'-DDD	9.00	9.46	6844421	11666327	11.384	11.090	
17)	M	4,4'-DDT	9.52	10.07	1300606	3418287	2.117 PCB	3.630	#
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D.	N.D.	
19)		Endosulfan Sulfa	10.94	0.00	519880	0	0.944	N.D.	#
20)		Methoxychlor	10.51f	0.00	436515	0	1.779	N.D.	#
21)		Endrin Ketone	11.47f	0.00	511387	0	0.785	N.D.	#

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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108160-4 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\024F2401.D
Date Acquired 12-Sep-2002, 05:38:42

CCV File Path F:\HPCHEM\1\DATA\PE091102\016F1601.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.86	3.83	0.2856	0.2658	0.2855	0.2658	OK	OK
alpha-BHC	4.69	0.00	0.3470	0.0000	0.3487	0.3330	OK	--
gamma-BHC (Lindane)	5.22	0.00	0.3860	0.0000	0.3852	0.3724	OK	--
Heptachlor	5.95	0.00	0.4400	0.0000	0.4400	0.4194	OK	--
Aldrin	6.42	6.56	0.4748	0.4545	0.4745	0.4543	OK	OK
beta-BHC	5.35	5.53	0.3955	0.3831	0.3953	0.3822	OK	OK
delta-BHC	5.62	0.00	0.4155	0.0000	0.4160	0.4143	OK	--
Heptachlor Epoxide	7.34	7.47	0.5430	0.5176	0.5435	0.5172	OK	OK
Endosulfan I	8.06	8.14	0.5961	0.5642	0.5926	0.5641	--	OK
gamma-Chlordane	7.55	7.75	0.5587	0.5372	0.5584	0.5385	OK	OK
alpha-Chlordane	7.77	8.03	0.5749	0.5567	0.5747	0.5566	OK	OK
4,4'-DDE	7.90	8.35	0.5846	0.5790	0.5844	0.5791	OK	OK
Dieldrin	8.45	8.65	0.6250	0.5997	0.6251	0.5996	OK	OK
Endrin	0.00	0.00	0.0000	0.0000	0.6568	0.6400	--	--
Endosulfan II	0.00	9.67	0.0000	0.6702	0.6881	0.6688	--	OK
4,4'-DDD	9.00	9.46	0.6661	0.6557	0.6660	0.6560	OK	OK
4,4'-DDT	9.52	10.07	0.7043	0.6978	0.7050	0.6979	OK	OK
Endrin Aldehyde	0.00	0.00	0.0000	0.0000	0.7473	0.7154	--	--
Endosulfan Sulfate	10.94	0.00	0.8093	0.0000	0.8102	0.7535	OK	--
Methoxychlor	10.51	0.00	0.7777	0.0000	0.7751	0.7951	OK	--
Endrin Ketone	11.47	0.00	0.8486	0.0000	0.8509	0.8277	OK	--
Decachlorobiphenyl (S)	13.52	14.43	1.0000	1.0000	1.0000	1.0000	OK	OK

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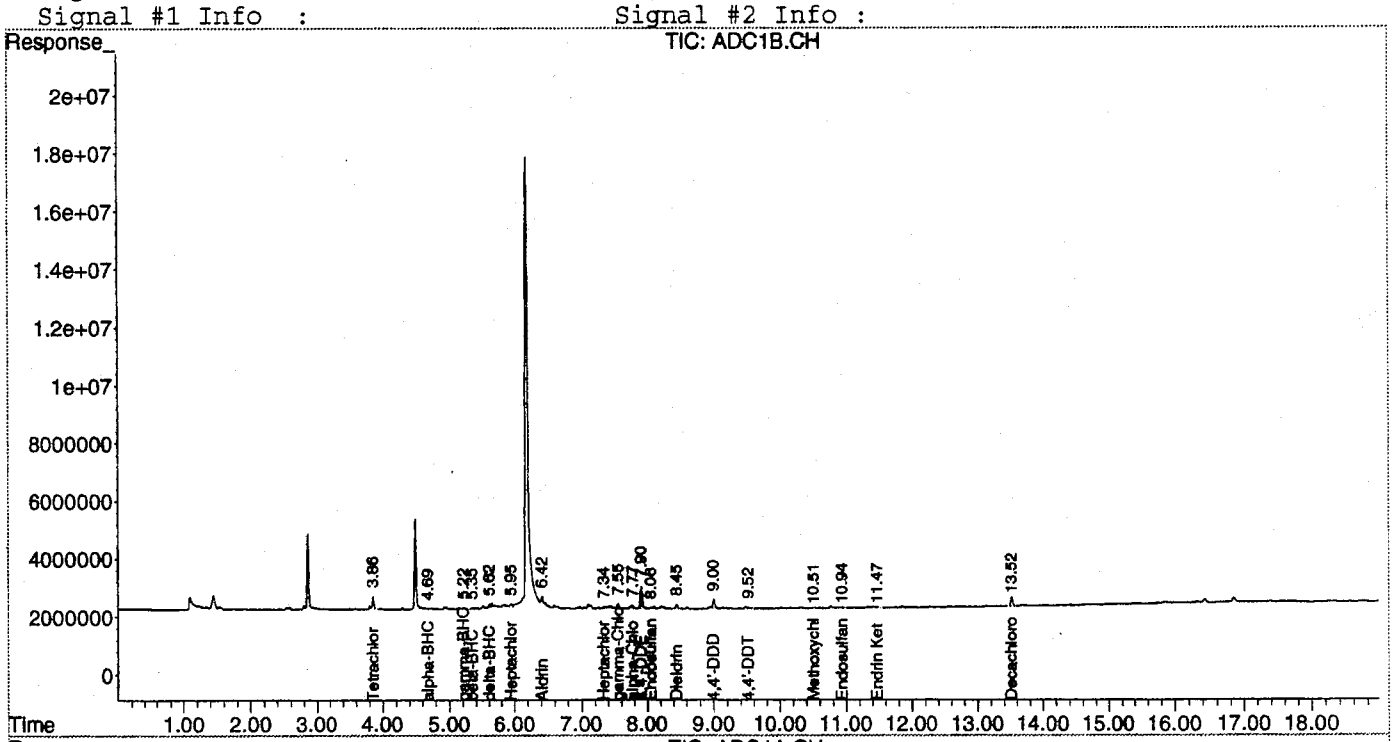
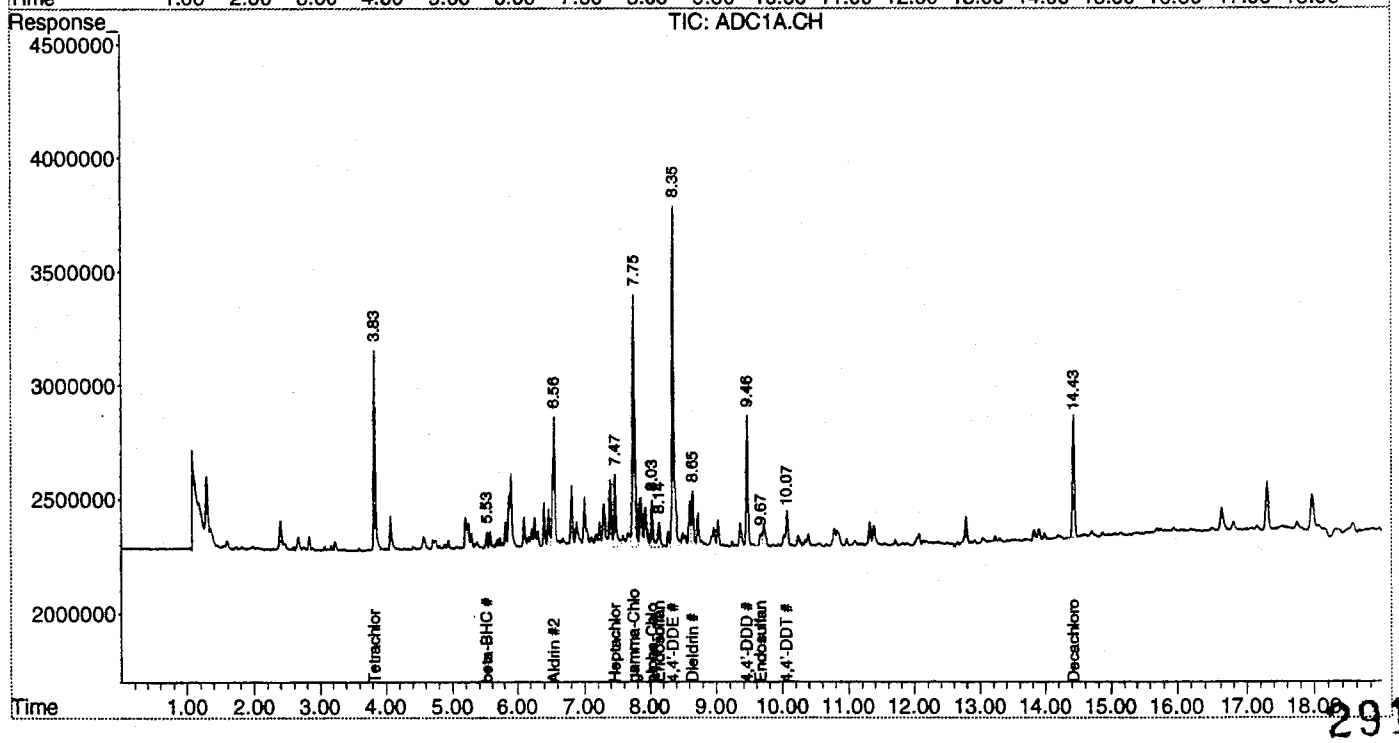
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\024F2401.D\ADC1B.CH Vial: 24
Signal #2 : F:\HPCHEM\1\DATA\PE091102\024F2401.D\ADC1A.CH
Acq On : 12-Sep-2002, 05:38:42 Operator: JDW
Sample : 108160-4 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:56 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\024F2401.D\ADC1B.CH Vial: 24
Signal #2 : F:\HPCHEM\1\DATA\PE091102\024F2401.D\ADC1A.CH
Acq On : 12-Sep-2002, 05:38:42 Operator: JDW
Sample : 108160-4 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:20:25 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
	System Monitoring Compounds							
1)	SR Tetrachloro-m-xy	3.86	3.83	7886915	14909948	11.864	11.445	
	Spiked Amount 20.000 Range 60 - 150 Recovery =					59.32%#	57.23%#	
1)	SR Decachlorobiphen	13.52f	14.43	6763647	11447654	14.976	15.066	
	Spiked Amount 20.000 Range 60 - 150 Recovery =					74.88%	75.33%	
	Target Compounds							
2)	Hexachloroethane	1.55	0.00	2273708	0	1.476	N.D.	#
3)	Hexachlorobenzen	4.50f	4.57	58152269	1652287	56.161	1.167	#
4)	Hexachlorobutadi	1.82	0.00	208604	0	0.098	N.D.	#
5)	Oxychlordane	0.00	7.30	0	3446256	N.D.	2.830	#
6)	cis-Nonachlor	8.94	9.36f	1484383	2255636	1.834	1.476	
7)	trans-Nonachlor	7.77	7.93	3852738	4208091	5.073	3.066	
8)	2,4'-DDE	7.34	7.75f	1369382	23275251	2.834	27.310	#
9)	2,4'-DDD	8.22	8.73	3811253	2229814	9.480	3.042	#
10)	2,4'-DDT	0.00	9.36f	0	2255636	N.D.	3.293	#

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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108160-4 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\024F2401.D
Date Acquired 12-Sep-2002, 05:38:42

CCV File Path F:\HPCHEM\1\DATA\PE091102\017F1701.D

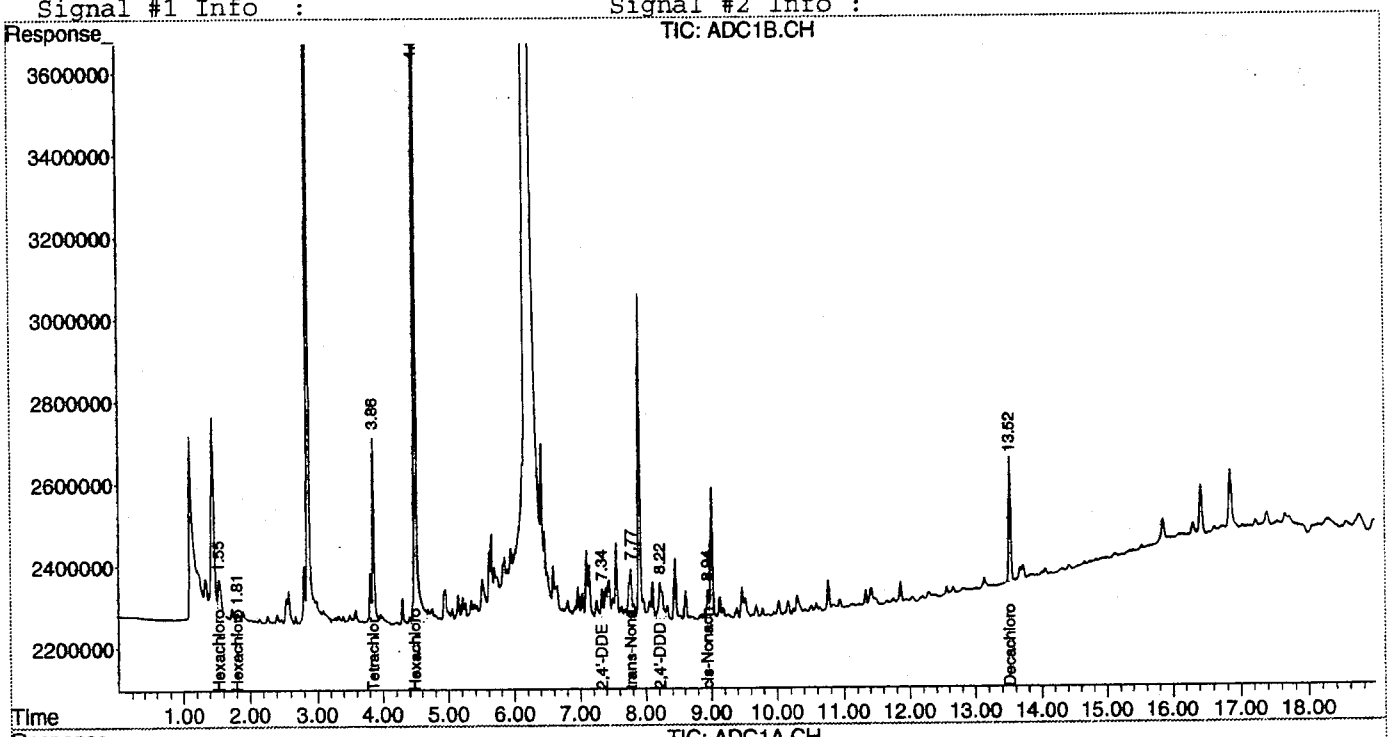
Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.86	3.83	0.2856	0.2658	0.2854	0.2658	OK	OK
Hexachloroethane	1.55	0.00	0.1145	0.0000	0.1130	0.1016	OK	--
Hexachlorobenzene	4.50	4.57	0.3326	0.3167	0.3293	0.3167	--	OK
Hexachlorobutadiene	1.82	0.00	0.1343	0.0000	0.1344	0.1192	OK	--
Oxychlordane	0.00	7.30	0.0000	0.5057	0.5316	0.5064	--	OK
cis-Nonachlor	8.94	9.36	0.6615	0.6486	0.6612	0.6506	OK	OK
trans-Nonachlor	7.77	7.93	0.5749	0.5495	0.5724	0.5494	OK	OK
2,4'-DDE	7.34	7.75	0.5430	0.5372	0.5420	0.5396	OK	OK
2,4'-DDD	8.22	8.73	0.6077	0.6054	0.6073	0.6056	OK	OK
2,4'-DDT	0.00	9.36	0.0000	0.6486	0.6420	0.6456	--	--
Decachlorobiphenyl (S)	13.52	14.43	1.0000	1.0000	1.0000	1.0000	OK	OK

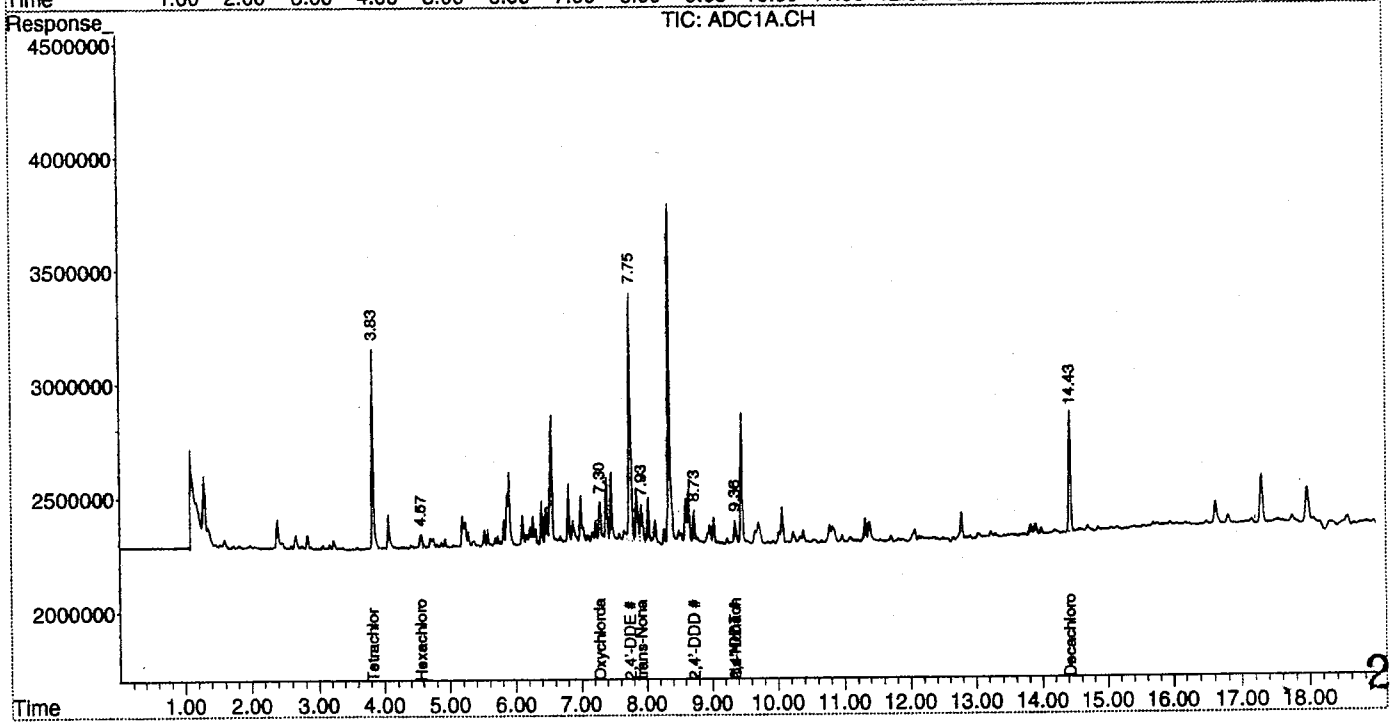
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\024F2401.D\ADC1B.CH Vial: 24
Signal #2 : F:\HPCHEM\1\DATA\PE091102\024F2401.D\ADC1A.CH
Acq On : 12-Sep-2002, 05:38:42 Operator: JDW
Sample : 108160-4 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:20 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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INITIAL CALIBRATION

Response Factor Report HP35900C

Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002

Calibration Files
1 =014F1401.D 2 =013F1301.D 3 =012F1201.D
4 =011F1101.D 5 =010F1001.D 6 =009F0901.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)	SR	Tetrachloro-m-xy	8.393	7.005	6.681	6.026	5.659	5.433	6.533	E5	16.68
2)		alpha-BHC	1.511	1.231	1.189	1.097	1.038	1.002	1.178	E6	15.70
3)	M	gamma-BHC (Linda	1.323	1.066	1.021	0.951	0.900	0.875	1.023	E6	15.98
4)	M	Heptachlor	1.250	1.019	0.994	0.909	0.859	0.837	0.978	E6	15.50
5)	M	Aldrin	1.268	1.036	1.005	0.918	0.863	0.846	0.989	E6	15.79
6)		beta-BHC	4.503	3.854	3.739	3.704	3.504	3.411	3.786	E5	10.22
7)		delta-BHC	1.197	0.996	1.048	0.943	0.887	0.868	0.990	E6	12.31
8)		Heptachlor Epoxi	1.066	0.869	0.843	0.776	0.727	0.712	0.832	E6	15.65
9)		Endosulfan I	1.163	0.946	0.896	0.844	0.789	0.763	0.900	E6	16.16
10)		gamma-Chlordane	1.090	0.920	0.881	0.809	0.760	0.741	0.867	E6	14.91
11)		alpha-Chlordane	1.004	0.817	0.797	0.742	0.693	0.675	0.788	E6	15.16
12)		4,4'-DDE	9.648	7.541	7.322	6.759	6.322	6.039	7.272	E5	17.83
13)	M	Dieldrin	1.024	0.830	0.807	0.738	0.689	0.659	0.791	E6	16.60
14)	M	Endrin	7.355	6.060	5.872	5.421	5.058	4.935	5.784	E5	15.33
15)		Endosulfan II	7.598	6.641	6.401	5.807	5.480	5.322	6.208	E5	13.73
16)		4,4'-DDD	6.959	6.479	6.294	5.713	5.383	5.247	6.013	E5	11.19
17)	M	4,4'-DDT	7.399	6.493	6.384	5.728	5.543	5.422	6.161	E5	12.16
18)		Endrin Aldehyde	5.587	5.230	4.993	4.262	3.944	3.806	4.637	E5	15.82
19)		Endosulfan Sulfa	6.830	5.640	5.633	5.270	4.891	4.791	5.509	E5	13.42
20)		Methoxychlor	3.194	2.601	2.579	2.367	2.070	1.913	2.454	E5	18.52
21)		Endrin Ketone	8.177	6.937	6.615	6.137	5.698	5.506	6.512	E5	15.02
22)	SR	Decachlorobiphen	3.602	5.021	4.825	4.287	3.781	3.489	4.168	E5	15.56

Signal #2 Calibration Files
1 =014F1401.D 2 =013F1301.D 3 =012F1201.D
4 =011F1101.D 5 =010F1001.D 6 =009F0901.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)	SR	Tetrachloro-m-xy	1.558	1.306	1.289	1.305	1.342	1.377	1.363	E6	7.40
2)		alpha-BHC	2.252	1.948	1.969	2.011	2.112	2.203	2.083	E6	6.09
3)	M	gamma-BHC (Linda	2.014	1.716	1.729	1.717	1.799	1.880	1.809	E6	6.57
4)	M	Heptachlor	0.767	0.785	0.834	0.857	0.956	1.066	0.878	E6	12.95
5)	M	Aldrin	1.893	1.620	1.622	1.653	1.727	1.774	1.715	E6	6.22
6)		beta-BHC	6.622	6.433	6.773	6.406	6.185	6.679	6.516	E5	3.31
7)		delta-BHC	1.786	1.524	1.550	1.550	1.602	1.677	1.615	E6	6.18
8)		Heptachlor Epoxi	1.624	1.392	1.423	1.397	1.428	1.485	1.458	E6	6.01
9)		Endosulfan I	1.512	1.361	1.379	1.367	1.374	1.430	1.404	E6	4.16
10)		gamma-Chlordane	1.684	1.443	1.464	1.441	1.468	1.536	1.506	E6	6.23
11)		alpha-Chlordane	1.611	1.354	1.356	1.313	1.327	1.386	1.391	E6	7.95
12)		4,4'-DDE	1.523	1.324	1.366	1.409	1.457	1.486	1.428	E6	5.27
13)	M	Dieldrin	1.545	1.400	1.409	1.460	1.517	1.550	1.480	E6	4.52
14)	M	Endrin	1.178	1.039	1.045	1.007	1.085	1.073	1.071	E6	5.54
15)		Endosulfan II	1.200	1.115	1.111	1.116	1.193	1.221	1.159	E6	4.37
16)		4,4'-DDD	1.090	1.021	1.022	1.010	1.069	1.099	1.052	E6	3.70
17)	M	4,4'-DDT	0.977	0.865	0.892	0.922	0.975	1.019	0.942	E6	6.22
18)		Endrin Aldehyde	9.702	8.742	8.412	8.499	8.500	8.728	8.764	E5	5.46
19)		Endosulfan Sulfa	1.225	1.041	1.024	1.002	1.009	1.057	1.060	E6	7.88
20)		Methoxychlor	4.113	3.693	3.836	4.091	4.075	4.044	3.975	E5	4.30
21)		Endrin Ketone	1.474	1.241	1.241	1.232	1.272	1.291	1.292	E6	7.11
22)	SR	Decachlorobiphen	6.277	8.486	8.224	7.862	7.600	7.738	7.698	E5	9.99

(#) = Out of Range

Signal #1 : F:\HPCHEM\1\DATA\PE091002\014F1401.D\ADC1B.CH Vial: 14
Signal #2 : F:\HPCHEM\1\DATA\PE091002\014F1401.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:48:04 Operator: JDW
Sample : 1.0/2.0 ng/ml 8081A ICAL Pest886G Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:35:40 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:34:57 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

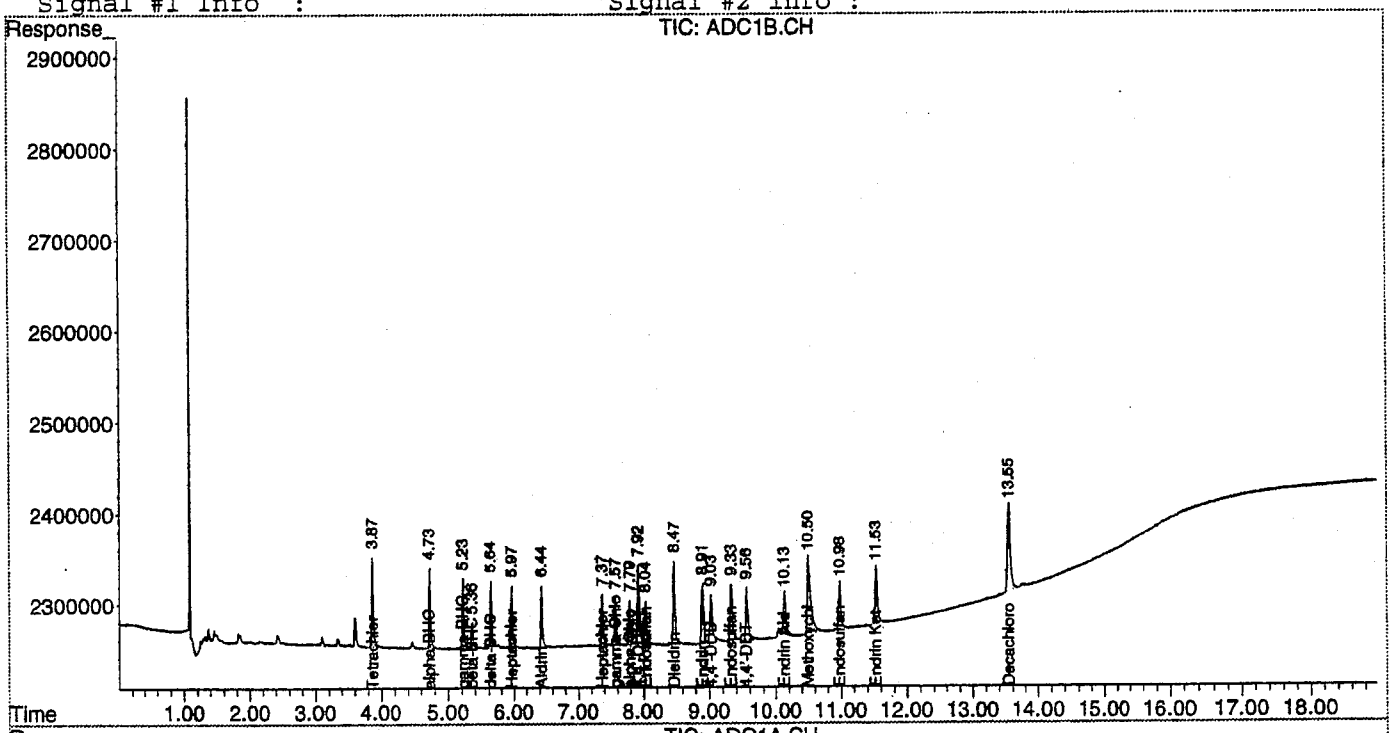
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.85	1678600	3115677	2.570	2.287
Spiked Amount			20.000	Range	60 - 150	Recovery	=	12.85%# 11.43%#
22)	SR	Decachlorobiphen	13.55	14.45	2881852	5021535	6.915	6.523
Spiked Amount			20.000	Range	60 - 150	Recovery	=	34.58%# 32.62%#
		Target Compounds						
2)		alpha-BHC	4.73	4.82	1511387	2251969	1.283	1.081
3)	M	gamma-BHC (Linda	5.23	5.39	1322597	2014155	1.293	1.113
4)	M	Heptachlor	5.97	6.07	1250363	767472	1.279	0.874
5)	M	Aldrin	6.44	6.57	1268388	1892894	1.282	1.104
6)		beta-BHC	5.36	5.53	450334	662194	1.190	1.016
7)		delta-BHC	5.64	6.00	1197067	1785595	1.210	1.106
8)		Heptachlor Epoxi	7.37	7.48	1065999	1623734	1.281	1.114
9)		Endosulfan I	8.04	8.16	1163262	1511741	1.292	1.077
10)		gamma-Chlordane	7.57	7.79	1090114	1683978	1.258	1.118
11)		alpha-Chlordane	7.79	8.05	1003922	1610594	1.274	1.158
12)		4,4'-DDE	7.92	8.38	1929643	3046632	2.654	2.134
13)	M	Dieldrin	8.48	8.67	2047393	3089145	2.588	2.087
14)	M	Endrin	8.91	9.26	1471041	2356297	2.543	2.200
15)		Endosulfan II	9.33	9.67	1519692	2399429	2.448	2.070
16)		4,4'-DDD	9.03	9.49	1391836	2180577	2.315	2.073
17)	M	4,4'-DDT	9.56	10.09	1479738	1953092	2.402	2.074
18)		Endrin Aldehyde	10.13	10.35	1117324	1940496	2.268	2.208
19)		Endosulfan Sulfa	10.98	10.90	1366081	2450422	2.480	2.312
20)		Methoxychlor	10.50	11.50	3194422	4113223	13.017	10.346
21)		Endrin Ketone	11.53	11.97	1635488	2947200	2.502	2.281

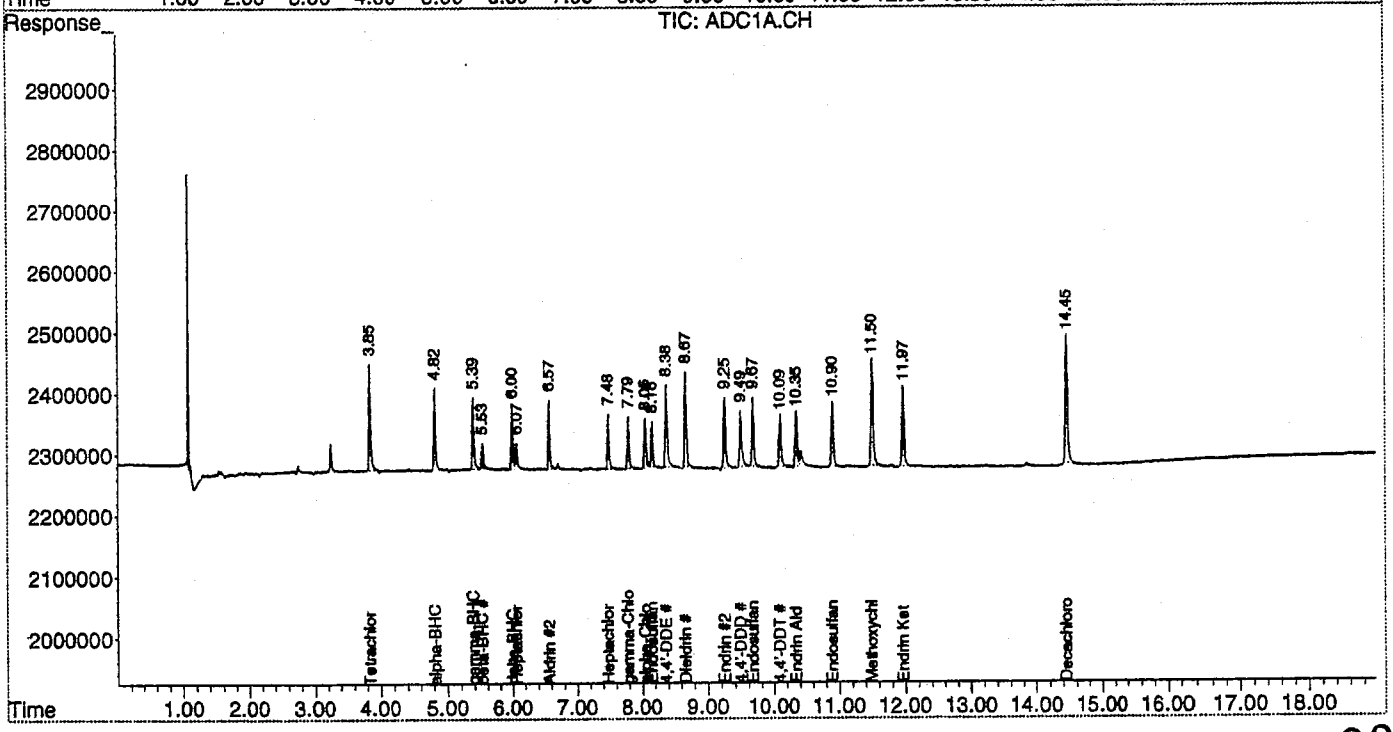
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Signal #1 : F:\HPCHEM\1\DATA\PE091002\014F1401.D\ADC1B.CH Vial: 14
Signal #2 : F:\HPCHEM\1\DATA\PE091002\014F1401.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:48:04 Operator: JDW
Sample : 1.0/2.0 ng/ml 8081A ICAL Pest886G Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:35 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:34:57 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Signal #1 : F:\HPCHEM\1\DATA\PE091002\013F1301.D\ADC1B.CH Vial: 13
Signal #2 : F:\HPCHEM\1\DATA\PE091002\013F1301.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:26:02 Operator: JDW
Sample : 5/10 ng/ml 8081A ICAL Pest886F Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:34:05 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

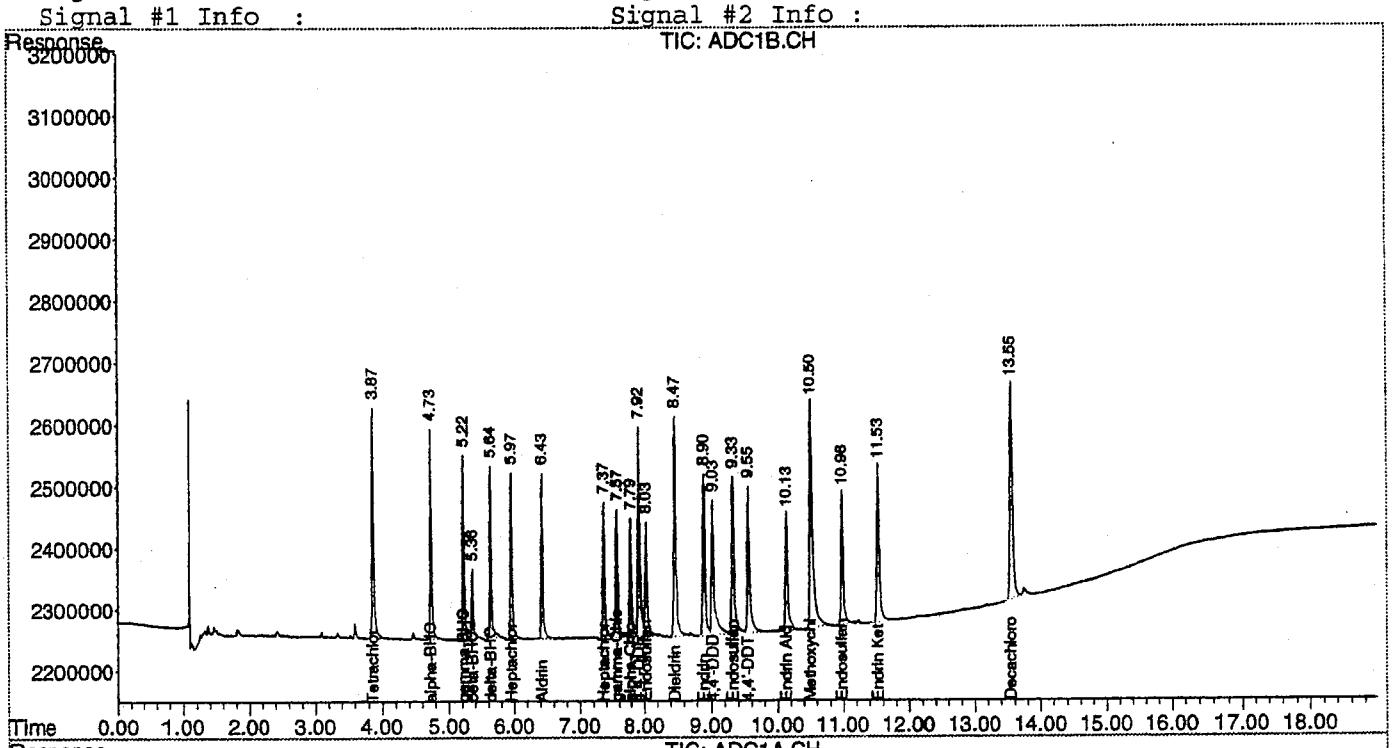
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.84	7004674	13057142	12.831	9.689
		Spiked Amount 20.000 Range 60 - 150 Recovery =					64.16%	48.45%#
22)	SR	Decachlorobiphen	13.55	14.45	10041469	16972080	32.514	24.380
		Spiked Amount 20.000 Range 60 - 150 Recovery =					162.57%#	121.90%
		Target Compounds						
2)		alpha-BHC	4.73	4.82	6153353	9737722	6.513	4.776
3)	M	gamma-BHC (Linda	5.22	5.39	5328448	8579187	6.539	4.887
4)	M	Heptachlor	5.97	6.07	5093262	3924858	6.407	3.871
5)	M	Aldrin	6.43	6.57	5177547	8098193	6.486	4.823
6)		beta-BHC	5.36	5.53	1927011	3216622	6.470	5.010
7)		delta-BHC	5.64	5.99	4982180	7619170	6.520	4.842
8)		Heptachlor Epoxi	7.37	7.48	4342655	6961614	6.483	4.811
9)		Endosulfan I	8.03	8.16	4728489	6805234	6.681	4.890
10)		gamma-Chlordane	7.57	7.79	4598949	7215219	6.649	4.835
11)		alpha-Chlordane	7.79	8.05	4086715	6767675	6.475	4.912
12)		4,4'-DDE	7.92	8.37	7541139	13240484	12.490	9.367
13)	M	Dieldrin	8.47	8.67	8295508	14000056	13.193	9.835
14)	M	Endrin	8.90	9.25	6059826	10386043	13.502	10.353
15)		Endosulfan II	9.33	9.67	6640799	11147463	14.067	10.233
16)		4,4'-DDD	9.03	9.49	6479306	10210574	13.705	10.045
17)	M	4,4'-DDT	9.56	10.09	6492845	8646068	13.529	11.672
18)		Endrin Aldehyde	10.13	10.34	5230288	8741878	13.594	10.756
19)		Endosulfan Sulfa	10.98	10.89	5639802	10406961	13.367	10.329
20)		Methoxychlor	10.50	11.49	13003144	18467329	68.466	67.821
21)		Endrin Ketone	11.53	11.96	6937419	12411291	14.108	10.441

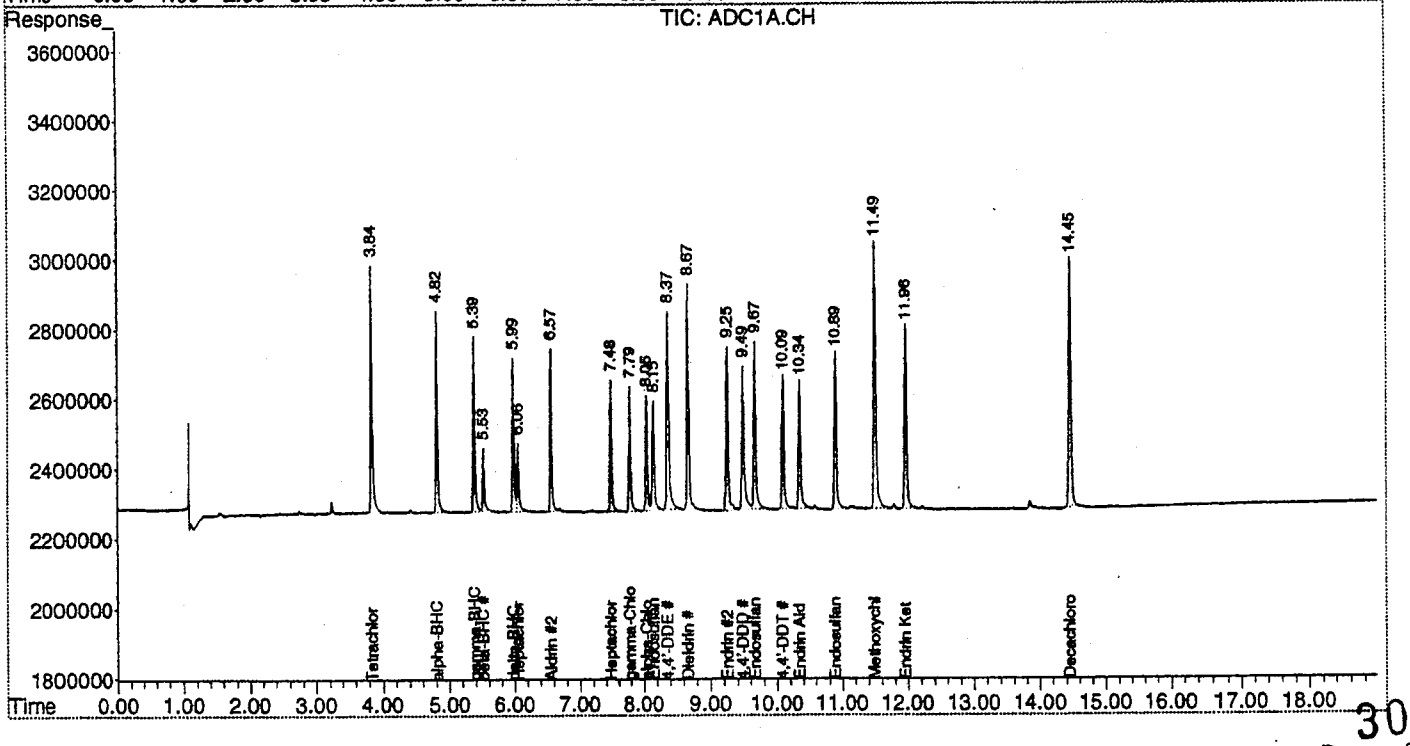
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Signal #1 : F:\HPCHEM\1\DATA\PE091002\013F1301.D\ADC1B.CH Vial: 13
Signal #2 : F:\HPCHEM\1\DATA\PE091002\013F1301.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:26:02 Operator: JDW
Sample : 5/10 ng/ml 8081A ICAL Pest886F Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:34 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Signal #1 : F:\HPCHEM\1\DATA\PE091002\012F1201.D\ADC1B.CH Vial: 12
Signal #2 : F:\HPCHEM\1\DATA\PE091002\012F1201.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:04:05 Operator: JDW
Sample : 10/20 ng/ml 8081A ICAL Pest886E Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33:56 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.86	3.84	13362254	25771447	24.476	19.123
Spiked Amount		20.000 Range	60 - 150		Recovery	=	122.38%	95.62%
2)	SR	Decachlorobiphen	13.54	14.44	19298669	32897645	62.489	47.257
Spiked Amount		20.000 Range	60 - 150		Recovery	=	312.44%#	236.29%#
		Target Compounds						
2)		alpha-BHC	4.72	4.81	11892662	19692267	12.587	9.659
3)	M	gamma-BHC (Linda	5.21	5.38	10211973	17294647	12.532	9.852
4)	M	Heptachlor	5.95	6.05	9939053	8342763	12.503	8.228
5)	M	Aldrin	6.42	6.56	10050666	16222132	12.590	9.661
6)		beta-BHC	5.35	5.52	3739008	6772581	12.554	10.549
7)		delta-BHC	5.63	5.98	10476350	15495794	13.710	9.847
8)		Heptachlor Epoxi	7.36	7.47	8433960	14229275	12.591	9.834
9)		Endosulfan I	8.02	8.14	8956618	13785318	12.656	9.906
.0)		gamma-Chlordane	7.56	7.77	8807773	14637180	12.734	9.809
.1)		alpha-Chlordane	7.78	8.04	7972559	13562542	12.632	9.845
.2)		4,4'-DDE	7.91	8.36	14644195	27319436	24.255	19.327
.3)	M	Dieldrin	8.46	8.66	16138276	28172726	25.667	19.791
.4)	M	Endrin	8.89	9.24	11744946	20892099	26.168	20.825
.5)		Endosulfan II	9.31	9.66	12801375	22227681	27.118	20.404
.6)		4,4'-DDD	9.01	9.47	12587211	20446678	26.624	20.115
.7)	M	4,4'-DDT	9.54	10.08	12767396	17849806	26.603	24.096
.8)		Endrin Aldehyde	10.11	10.33	9985348	16823444	25.953	20.699
.9)		Endosulfan Sulfa	10.97	10.88	11265343	20475119	26.700	20.322
:0)		Methoxychlor	10.49	11.48	25793092	38359440	135.809	140.874
:1)		Endrin Ketone	11.52	11.95	13230747	24820234	26.906	20.879

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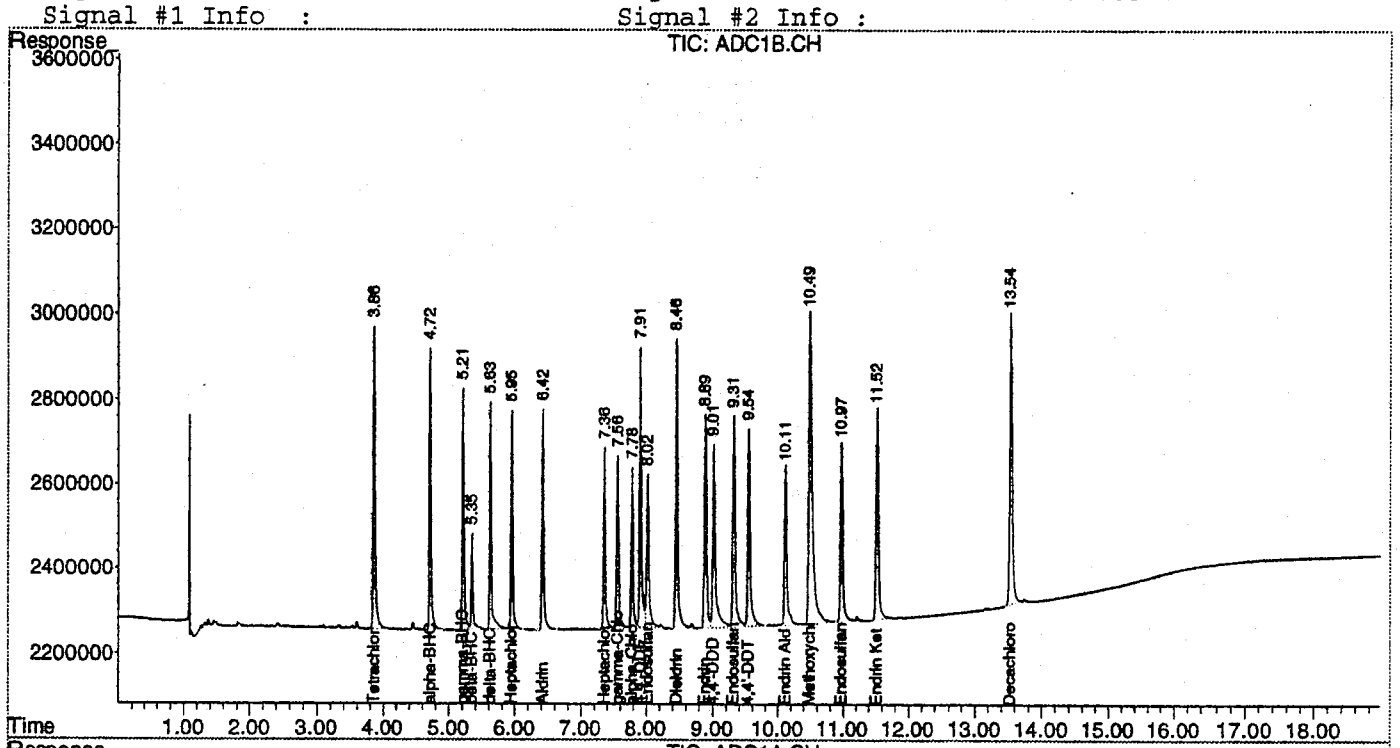
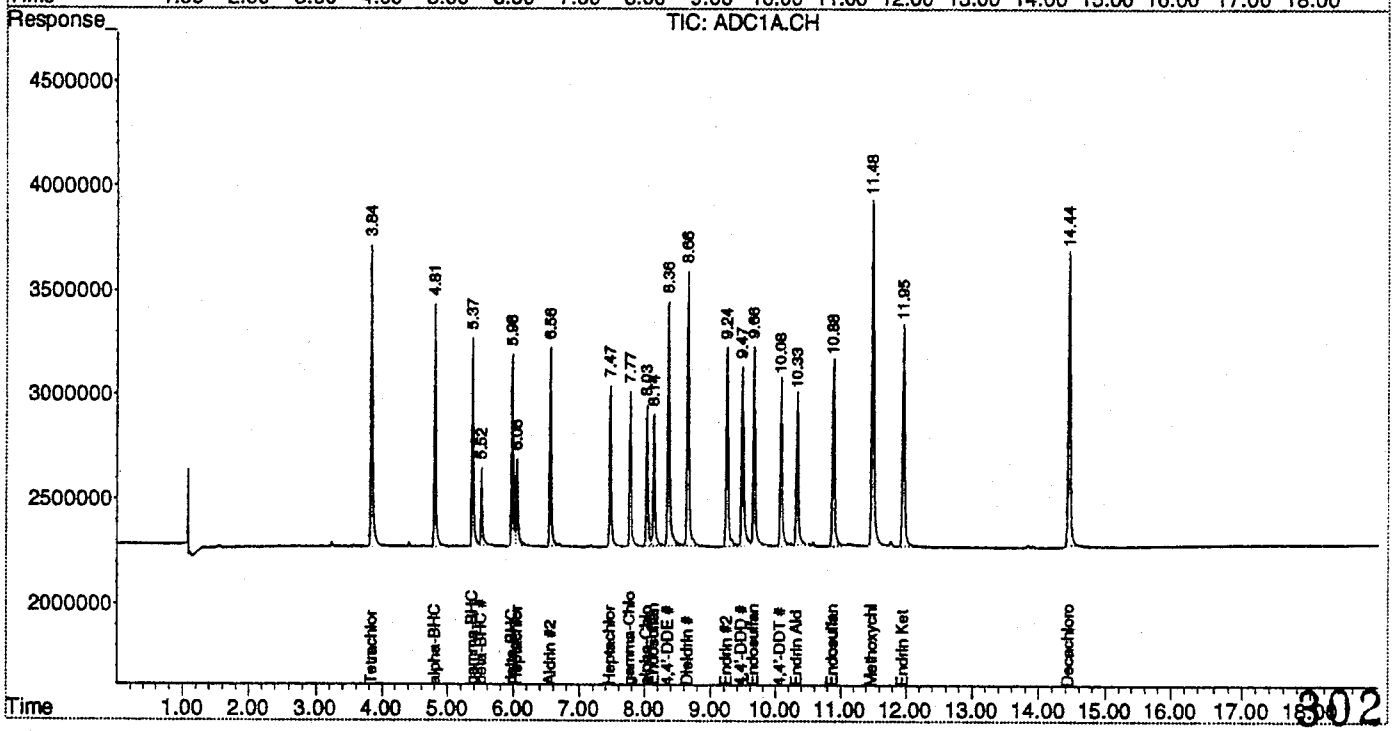
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Signal #1 : F:\HPCHEM\1\DATA\PE091002\012F1201.D\ADC1B.CH Vial: 12
Signal #2 : F:\HPCHEM\1\DATA\PE091002\012F1201.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:04:05 Operator: JDW
Sample : 10/20 ng/ml 8081A ICAL Pest886E Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Signal #1 : F:\HPCHEM\1\DATA\PE091002\011F1101.D\ADC1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\PE091002\011F1101.D\ADC1A.CH
Acq On : 11-Sep-2002, 00:42:08 Operator: JDW
Sample : 25/50 ng/ml 8081A ICAL Pest886D Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33:48 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

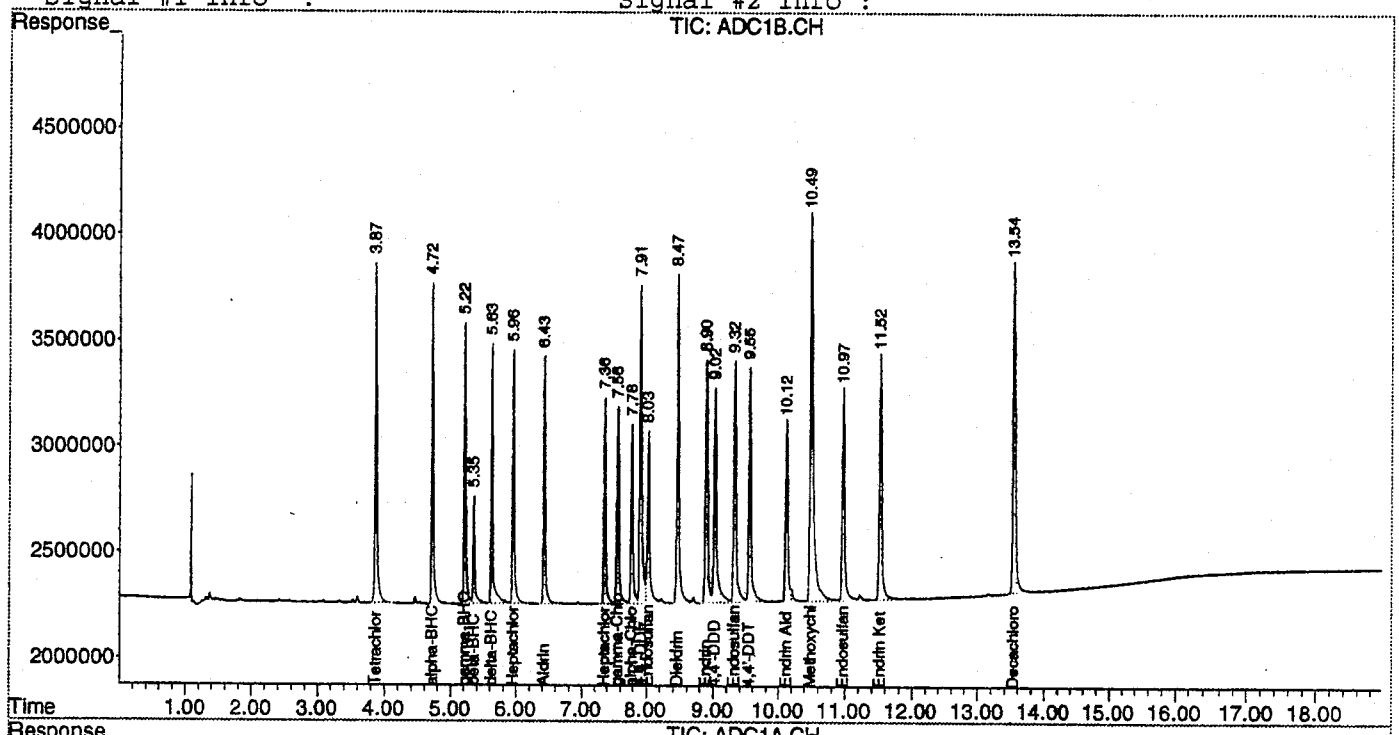
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.84	30128264	65228995	55.187	48.401
		Spiked Amount 20.000 Range 60 - 150 Recovery =					275.94%#	242.01%#
22)	SR	Decachlorobiphen	13.54	14.45	42867605	78618579	138.804	112.935
		Spiked Amount 20.000 Range 60 - 150 Recovery =					694.02%#	564.67%#
		Target Compounds						
2)		alpha-BHC	4.72	4.81	27415349	50276558	29.017	24.659
3)	M	gamma-BHC (Linda	5.22	5.38	23777035	42919296	29.180	24.450
4)	M	Heptachlor	5.96	6.06	22717106	21435365	28.577	21.141
5)	M	Aldrin	6.43	6.56	22946949	41320033	28.745	24.608
6)		beta-BHC	5.36	5.52	9258928	16015871	31.086	24.946
7)		delta-BHC	5.64	5.98	23564773	38760917	30.838	24.630
8)		Heptachlor Epoxi	7.36	7.47	19391451	34923056	28.950	24.136
9)		Endosulfan I	8.03	8.15	21109630	34185183	29.828	24.566
10)		gamma-Chlordane	7.56	7.78	20233286	36020697	29.253	24.138
11)		alpha-Chlordane	7.78	8.04	18537729	32816216	29.372	23.820
12)		4,4'-DDE	7.92	8.37	33793374	70444071	55.972	49.836
13)	M	Dieldrin	8.47	8.66	36923830	73020327	58.724	51.296
14)	M	Endrin	8.90	9.25	27107285	50326046	60.397	50.164
15)		Endosulfan II	9.32	9.66	29036211	55783432	61.508	51.207
16)		4,4'-DDD	9.02	9.48	28567359	50498931	60.425	49.680
17)	M	4,4'-DDT	9.55	10.08	28641562	46077654	59.680	62.202
18)		Endrin Aldehyde	10.12	10.34	21311823	42492866	55.393	52.282
19)		Endosulfan Sulfa	10.97	10.89	26350182	50116849	62.452	49.741
20)		Methoxychlor	10.50	11.49	59177497	102.3E6	311.588	375.591
21)		Endrin Ketone	11.52	11.96	30684690	61590584	62.401	51.812

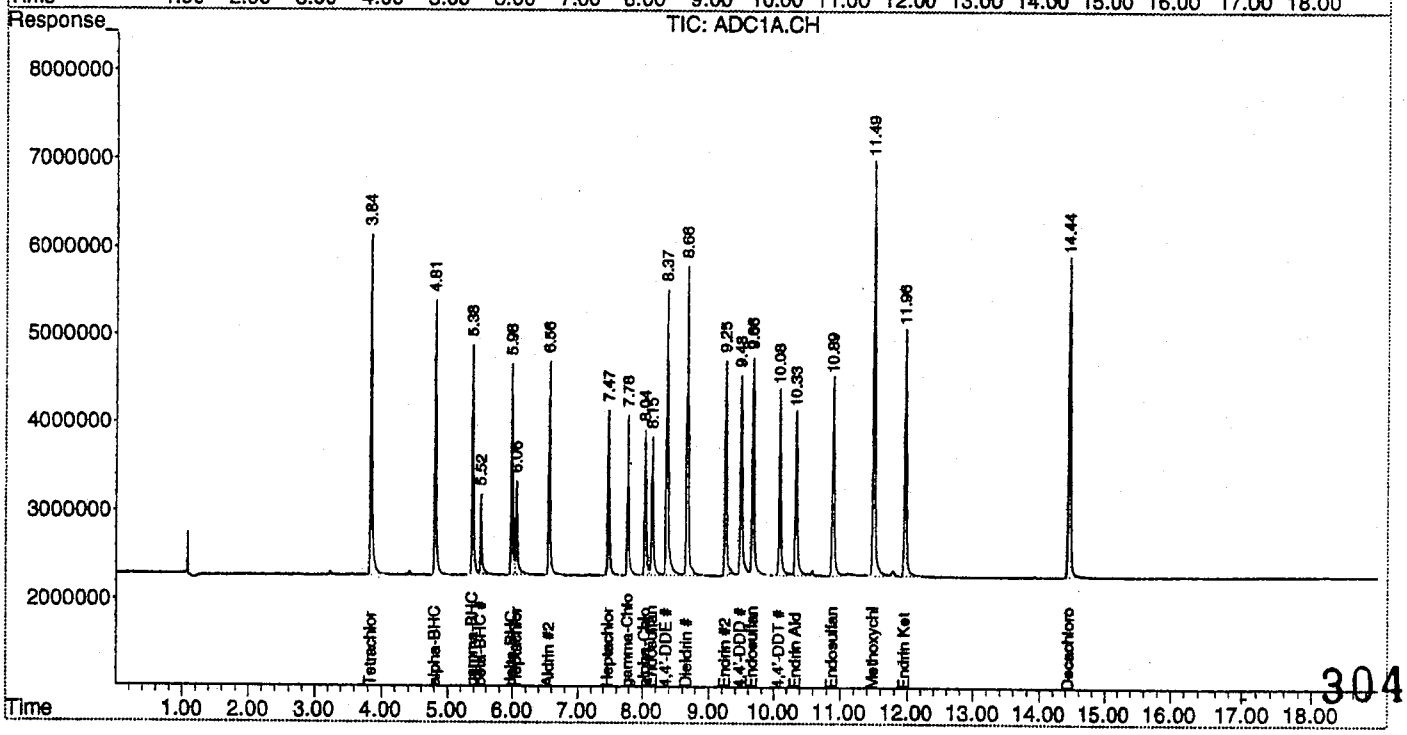
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
011F1101.D 8081_910.M Wed Sep 11 10:58:40 2002

Signal #1 : F:\HPCHEM\1\DATA\PE091002\011F1101.D\ADC1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\PE091002\011F1101.D\ADC1A.CH
Acq On : 11-Sep-2002, 00:42:08 Operator: JDW
Sample : 25/50 ng/ml 8081A ICAL Pest886D Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Signal #1 : F:\HPCHEM\1\DATA\PE091002\010F1001.D\ADC1B.CH Vial: 10
Signal #2 : F:\HPCHEM\1\DATA\PE091002\010F1001.D\ADC1A.CH
Acq On : 11-Sep-2002, 00:20:12 Operator: JDW
Sample : 50/100 ng/ml 8081A ICAL Pest886C Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33:35 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

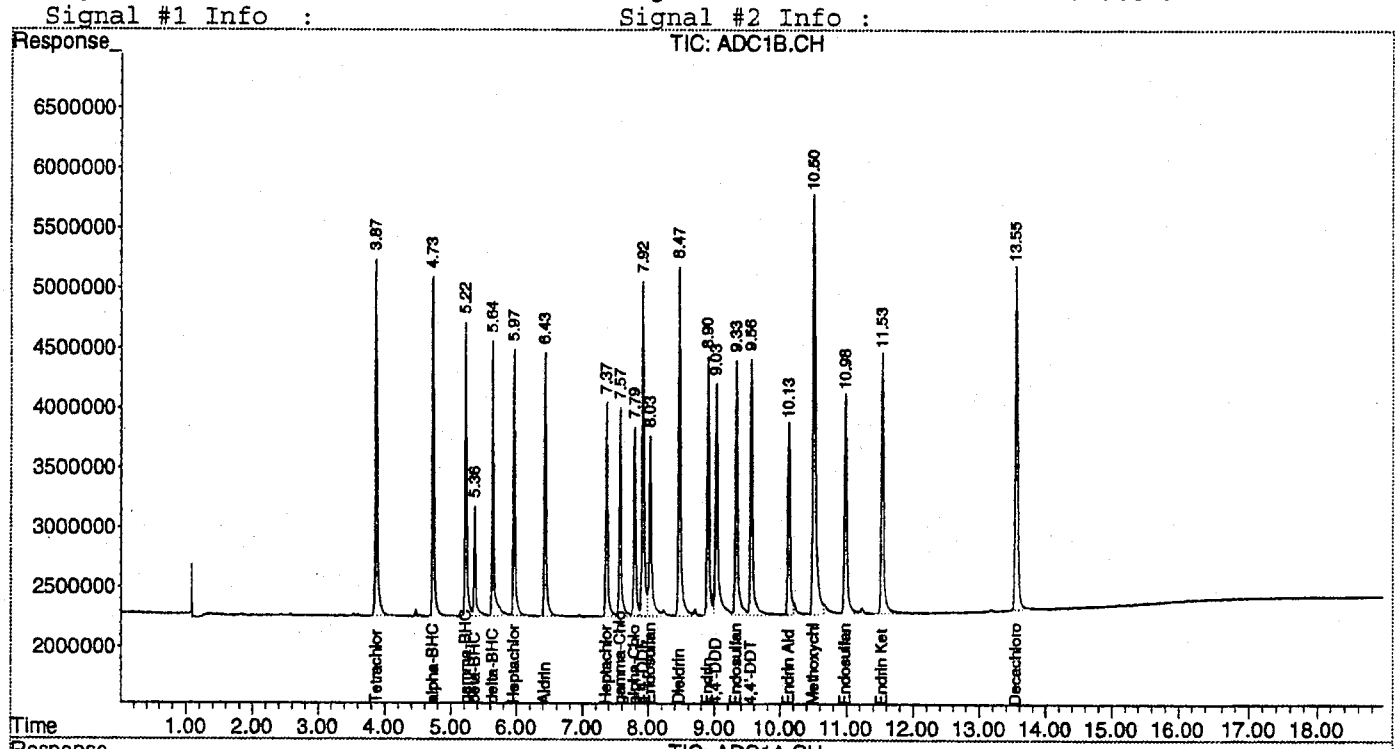
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.85	56588164	134.2E6	103.654	99.570
		Spiked Amount 20.000 Range 60 - 150 Recovery =					518.27%#	497.85%#
22)	SR	Decachlorobiphen	13.55	14.45	75626748	152.0E6	244.877	218.333
		Spiked Amount 20.000 Range 60 - 150 Recovery =					1224.39%#	1091.67%#
		Target Compounds						
2)		alpha-BHC	4.73	4.82	51918844	105.6E6	54.952	51.797
3)	M	gamma-BHC (Linda	5.22	5.39	45010682	89956048	55.238	51.245
4)	M	Heptachlor	5.97	6.07	42945230	47812415	54.024	47.157
5)	M	Aldrin	6.43	6.57	43128772	86357660	54.027	51.430
6)		beta-BHC	5.36	5.53	17519200	30923135	58.820	48.165
7)		delta-BHC	5.64	5.99	44327758	80081017	58.010	50.887
8)		Heptachlor Epoxi	7.37	7.48	36364342	71382952	54.290	49.334
9)		Endosulfan I	8.03	8.16	39436071	68681680	55.723	49.355
10)		gamma-Chlordane	7.57	7.79	37991641	73378157	54.927	49.172
11)		alpha-Chlordane	7.79	8.05	34651164	66341358	54.903	48.155
12)		4,4'-DDE	7.92	8.37	63224921	145.7E6	104.719	103.075
13)	M	Dieldrin	8.47	8.67	68933618	151.7E6	109.634	106.595
14)	M	Endrin	8.90	9.25	50575897	108.5E6	112.686	108.162
15)		Endosulfan II	9.33	9.67	54797081	119.3E6	116.078	109.524
16)		4,4'-DDD	9.03	9.48	53825626	106.9E6	113.851	105.170
17)	M	4,4'-DDT	9.56	10.09	55425526	97472697	115.490	131.583
18)		Endrin Aldehyde	10.13	10.34	39439109	85001520	102.508	104.584
19)		Endsulfan Sulfa	10.98	10.89	48911520	100.9E6	115.924	100.183
20)		Methoxychlor	10.50	11.49	103.5E6	203.8E6	545.051	748.346
21)		Endrin Ketone	11.53	11.96	56984355	127.2E6	115.885	106.987

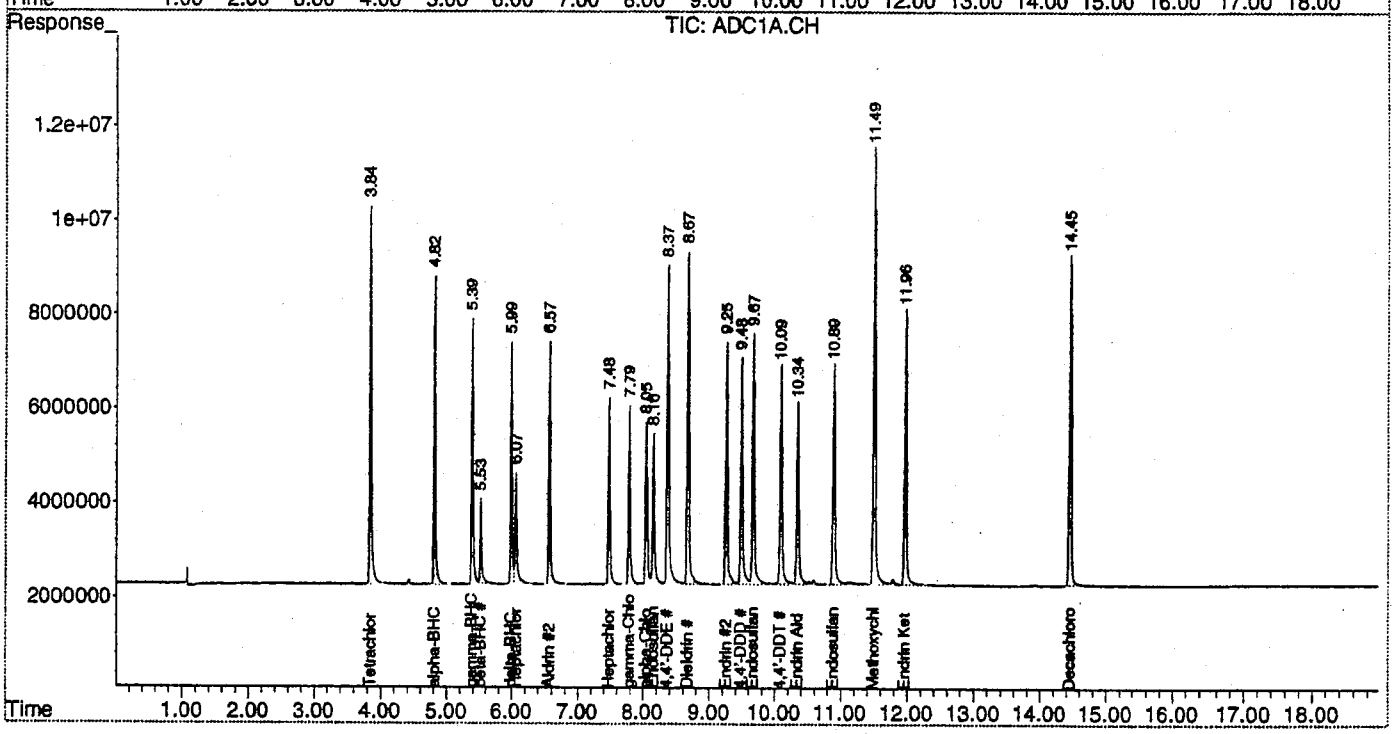
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
010F1001.D 8081_910.M Wed Sep 11 10:58:35 2002

Signal #1 : F:\HPCHEM\1\DATA\PE091002\010F1001.D\ADC1B.CH Vial: 10
Signal #2 : F:\HPCHEM\1\DATA\PE091002\010F1001.D\ADC1A.CH
Acq On : 11-Sep-2002, 00:20:12 Operator: JDW
Sample : 50/100 ng/ml 8081A ICAL Pest886C Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Signal #1 : F:\HPCHEM\1\DATA\PE091002\009F0901.D\ADC1B.CH Vial: 9
Signal #2 : F:\HPCHEM\1\DATA\PE091002\009F0901.D\ADC1A.CH
Acq On : 10-Sep-2002, 23:58:09 Operator: JDW
Sample : 75/150 ng/ml 8081A ICAL Pest886B Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33:27 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

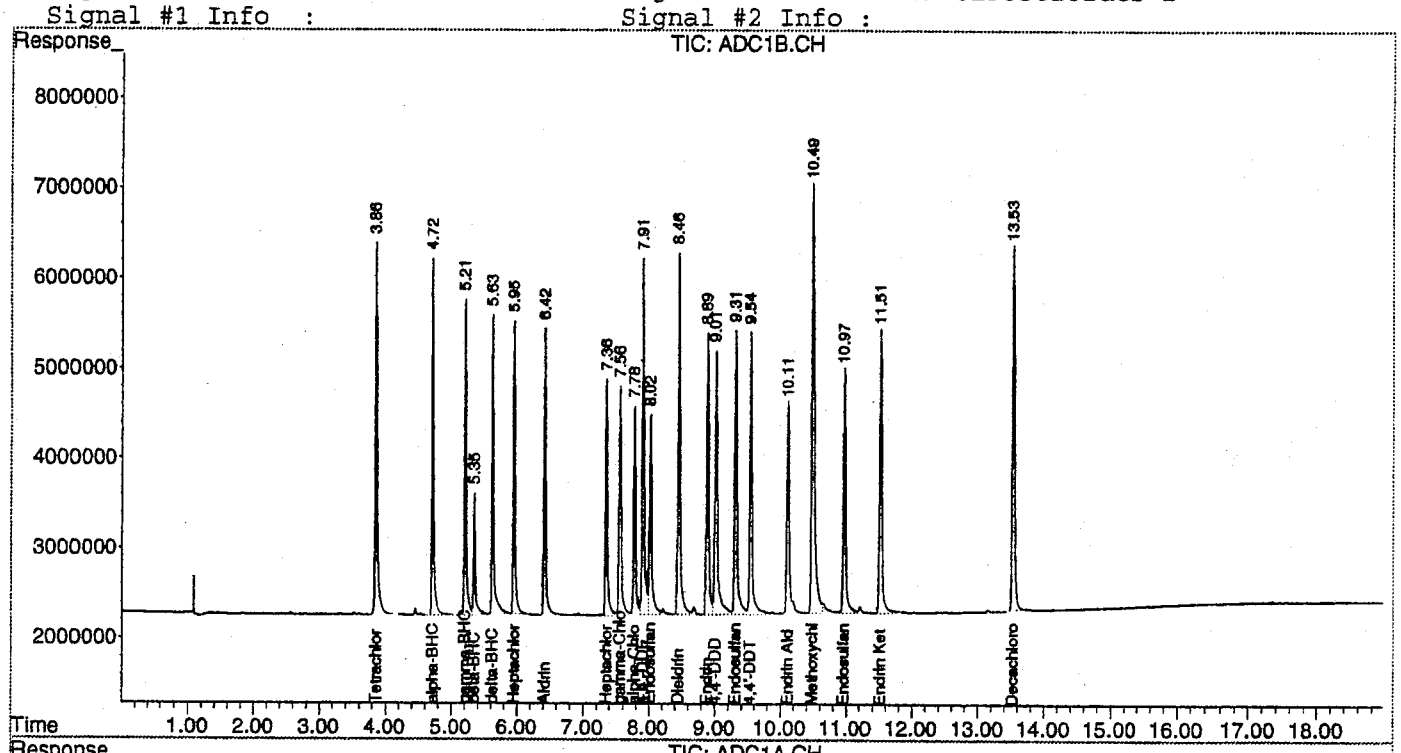
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.84	81493468	206.5E6	149.274	153.246	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					746.37%#	766.23%#	
22)	SR	Decachlorobiphen	13.53	14.44	104.7E6	232.1E6	338.966	333.472	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					1694.83%#	1667.36%#	
		Target Compounds							
2)		alpha-BHC	4.72	4.81	75154761	165.2E6	79.546	81.051	
3)	M	gamma-BHC (Linda	5.21	5.38	65657952	141.0E6	80.577	80.303	
4)	M	Heptachlor	5.95	6.05	62805311	79933455	79.007	78.838	
5)	M	Aldrin	6.42	6.56	63427539	133.1E6	79.454	79.241	
6)		beta-BHC	5.35	5.51	25583455	50092251	85.895	78.022	
7)		delta-BHC	5.63	5.98	65073779	125.8E6	85.159	79.909	
8)		Heptachlor Epoxi	7.36	7.47	53395002	111.4E6	79.716	76.997	
9)		Endosulfan I	8.02	8.14	57187727	107.2E6	80.807	77.068	
10)		gamma-Chlordane	7.56	7.77	55551485	115.2E6	80.315	77.188	
11)		alpha-Chlordane	7.78	8.03	50661612	104.0E6	80.271	75.471	
12)		4,4'-DDE	7.91	8.36	90581893	222.9E6	150.031	157.697	
13)	M	Dieldrin	8.46	8.66	98916141	232.5E6	157.318	163.359	
14)	M	Endrin	8.89	9.24	74027787	160.9E6	164.938	160.388	
15)		Endosulfan II	9.31	9.65	79831580	183.2E6	169.110	168.187	
16)		4,4'-DDD	9.01	9.47f	78706249	164.9E6	166.478	162.195	
17)	M	4,4'-DDT	9.54	10.07	81336418	152.9E6	169.481	206.433	
18)		Endrin Aldehyde	10.11	10.33	57091923	130.9E6	148.390	161.073	
19)		Endosulfan Sulfa	10.97	10.88	71865775	158.6E6	170.327	157.392	
20)		Methoxychlor	10.49	11.48	143.5E6	303.3E6	755.311	1113.866	#
21)		Endrin Ketone	11.52	11.95	82585099	193.7E6	167.947	162.948	

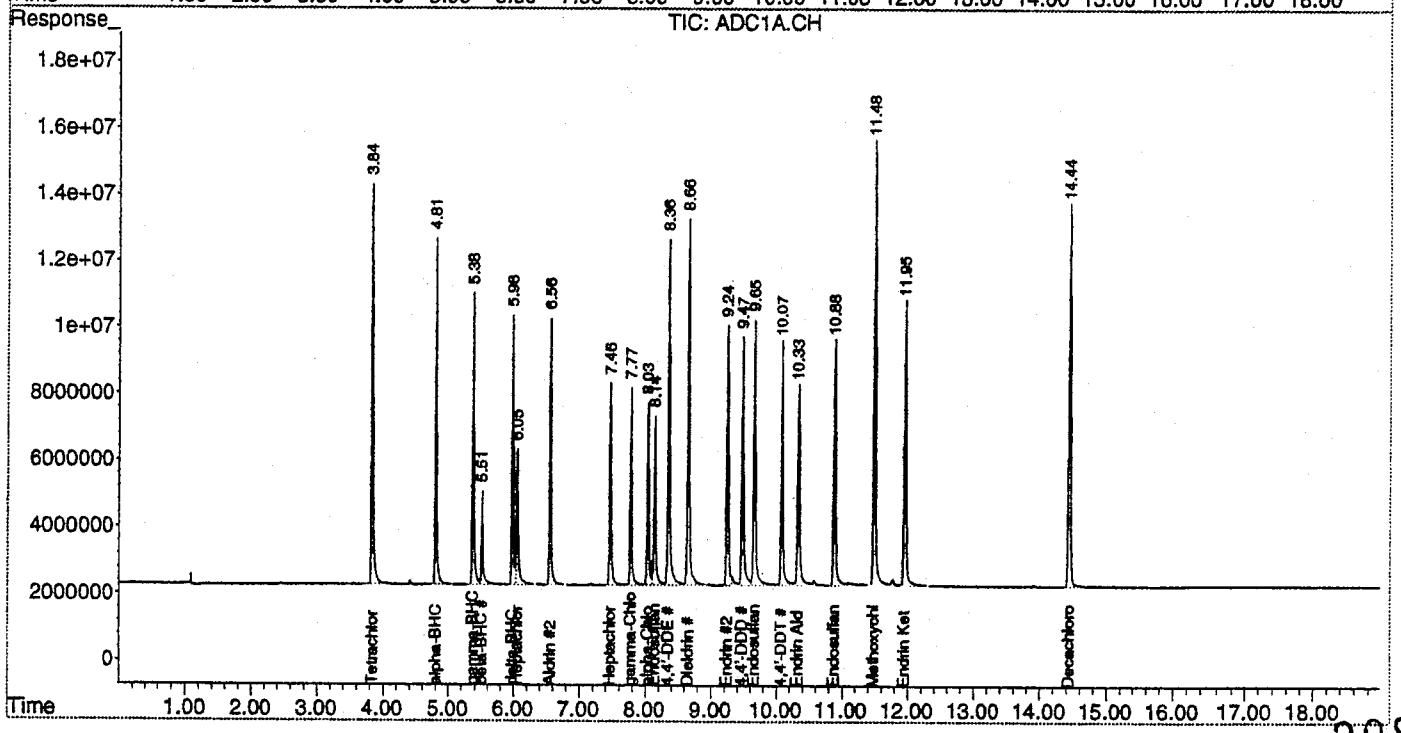
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Signal #1 : F:\HPCHEM\1\DATA\PE091002\009F0901.D\ADC1B.CH Vial: 9
Signal #2 : F:\HPCHEM\1\DATA\PE091002\009F0901.D\ADC1A.CH
Acq On : 10-Sep-2002, 23:58:09 Operator: JDW
Sample : 75/150 ng/ml 8081A ICAL Pest886B Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Response Factor Report HP35900C

Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002

Calibration Files
1 =013F1301.D 2 =012F1201.D 3 =011F1101.D
4 =010F1001.D 5 =009F0901.D 6 =008F0801.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)	SR	Tetrachloro-m-xy	6.615	6.581	6.406	6.679	6.807	6.798	6.648	E5	2.26
2)		Hexachloroethane	1.630	1.679	1.626	1.503	1.439	1.366	1.540	E6	8.03
3)		Hexachlorobenzen	1.267	1.195	1.045	0.957	0.892	0.856	1.035	E6	16.05
4)		Hexachlorobutadi	2.453	2.457	2.186	2.011	1.885	1.730	2.120	E6	14.12
5)		Oxychlordane	8.133	7.469	7.061	6.561	6.200	6.020	6.907	E5	11.67
6)		cis-Nonachlor	8.887	8.916	8.203	7.917	7.473	7.178	8.096	E5	8.86
7)		trans-Nonachlor	8.576	8.276	7.465	7.411	7.000	6.839	7.594	E5	9.13
8)		2,4'-DDE	5.287	4.898	5.039	4.664	4.615	4.490	4.832	E5	6.18
9)		2,4'-DDD	3.878	4.084	4.373	4.108	3.911	3.767	4.020	E5	5.36
10)		2,4'-DDT	4.799	5.006	4.857	4.577	4.371	4.206	4.636	E5	6.62
11)	SR	Decachlorobiphen	4.478	4.563	4.380	4.569	4.553	4.554	4.516	E5	1.65

Signal #2 Calibration Files
1 =013F1301.D 2 =012F1201.D 3 =011F1101.D
4 =010F1001.D 5 =009F0901.D 6 =008F0801.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)	SR	Tetrachloro-m-xy	1.300	1.300	1.260	1.309	1.324	1.323	1.303	E6	1.81
2)		Hexachloroethane	2.458	2.598	2.726	2.768	2.937	3.015	2.751	E6	7.53
3)		Hexachlorobenzen	1.295	1.502	1.413	1.391	1.423	1.469	1.416	E6	5.06
4)		Hexachlorobutadi	4.370	3.749	3.818	4.036	4.191	4.275	4.073	E6	6.15
5)		Oxychlordane	1.230	1.207	1.212	1.189	1.210	1.257	1.218	E6	1.92
6)		cis-Nonachlor	1.466	1.498	1.505	1.502	1.565	1.631	1.528	E6	3.92
7)		trans-Nonachlor	1.326	1.332	1.354	1.366	1.395	1.463	1.373	E6	3.71
8)		2,4'-DDE	8.376	8.352	8.757	8.511	8.476	8.664	8.523	E5	1.88
9)		2,4'-DDD	7.082	6.812	7.521	7.531	7.488	7.544	7.330	E5	4.22
10)		2,4'-DDT	6.622	6.965	6.898	6.843	6.831	6.944	6.850	E5	1.81
11)	SR	Decachlorobiphen	7.697	7.562	7.398	7.599	7.664	7.670	7.598	E5	1.45

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\013F1301.D\ADC1B.CH Vial: 13
Signal #2 : F:\HPCHEM\1\DATA\PE091102\013F1301.D\ADC1A.CH
Acq On : 12-Sep-2002, 01:36:38 Operator: JDW
Sample : 1.0 ng/ml 8081A Plus Pest902F Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:02:54 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:00:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) SR Tetrachloro-m-xy	3.86	3.84	13229614	26002163	19.890	19.960
Spiked Amount 20.000 Range 60 - 150 Recovery =					99.45%	99.80%
1) SR Decachlorobiphen	13.54	14.44	8956605	15394531	19.856	20.261
Spiked Amount 20.000 Range 60 - 150 Recovery =					99.28%	101.31%
Target Compounds						
2) Hexachloroethane	1.53	1.47	1629844	2458011	0.977	0.892
3) Hexachlorobenzen	4.46	4.57	1267338	1294734	1.155	0.915
4) Hexachlorobutadi	1.82	1.72	2453338	4369564	1.102	1.065
5) Oxychlordane	7.19	7.31	813295	1229527	1.166	1.010
6) cis-Nonachlor	8.95	9.39	888672	1466336	1.098	0.960
7) trans-Nonachlor	7.75	7.93	857554	1325568	1.129	0.966
8) 2,4'-DDE	7.34	7.79	528685	837567	1.072	0.983
9) 2,4'-DDD	8.22	8.74	387780	708240	0.965	0.966
10) 2,4'-DDT	8.69	9.32	479904	662156	1.035	0.967

310

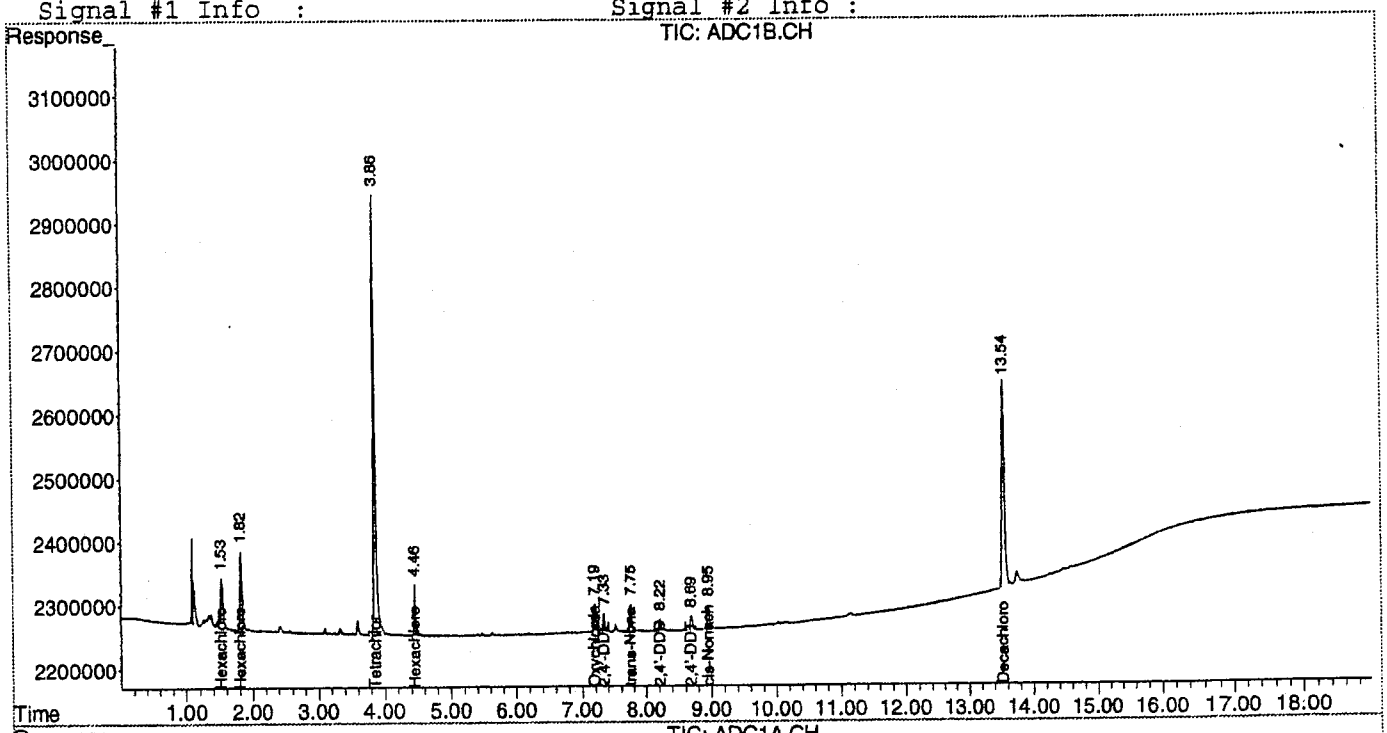
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

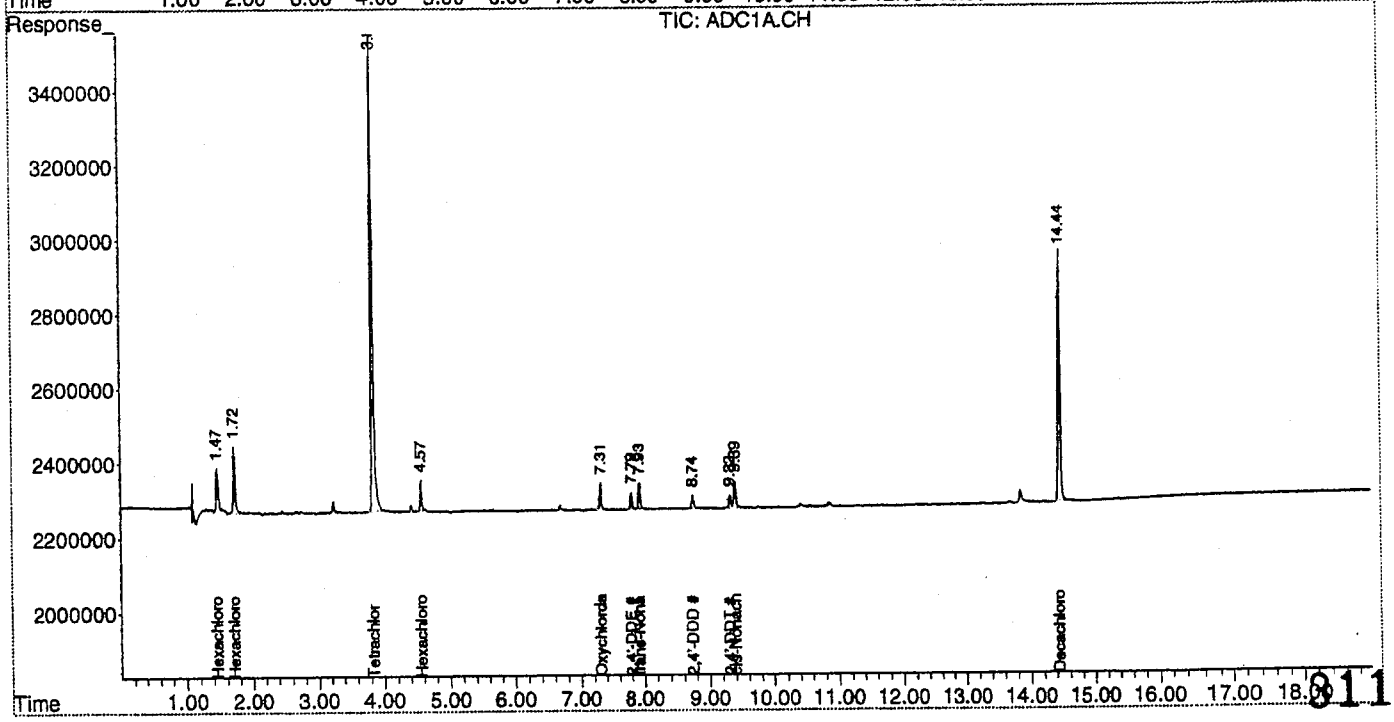
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\013F1301.D\ADC1B.CH Vial: 13
Signal #2 : F:\HPCHEM\1\DATA\PE091102\013F1301.D\ADC1A.CH
Acq On : 12-Sep-2002, 01:36:38 Operator: JDW
Sample : 1.0 ng/ml 8081A Plus Pest902F Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:02 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:00:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\012F1201.D\ADC1B.CH Vial: 12
Signal #2 : F:\HPCHEM\1\DATA\PE091102\012F1201.D\ADC1A.CH
Acq On : 12-Sep-2002, 01:14:31 Operator: JDW
Sample : 2.0 ng/ml 8081A Plus Pest902E Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:02:20 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:00:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) SR Tetrachloro-m-xy	3.86	3.84	13162791	25992458	19.789	19.953
Spiked Amount 20.000 Range 60 - 150 Recovery =					98.95%	99.76%
11) SR Decachlorobiphen	13.53	14.44	9126070	15123340	20.231	19.904
Spiked Amount 20.000 Range 60 - 150 Recovery =					101.16%	99.52%
Target Compounds						
2) Hexachloroethane	1.53	1.47	3357281	5196294	2.013	1.886
3) Hexachlorobenzen	4.46	4.57	2389147	3003977	2.177	2.122
4) Hexachlorobutadi	1.82	1.72	4913644	7497624	2.207	1.828
5) Oxychlordane	7.19	7.31	1493705	2414447	2.141	1.983
6) cis-Nonachlor	8.95	9.39	1783196	2996820	2.203	1.961
7) trans-Nonachlor	7.75	7.93	1655137	2663317	2.179	1.940
8) 2,4'-DDE	7.33	7.79	979533	1670452	1.987	1.960
9) 2,4'-DDD	8.22	8.74	816897	1362381	2.032	1.859
10) 2,4'-DDT	8.69	9.32	1001255	1392967	2.160	2.033

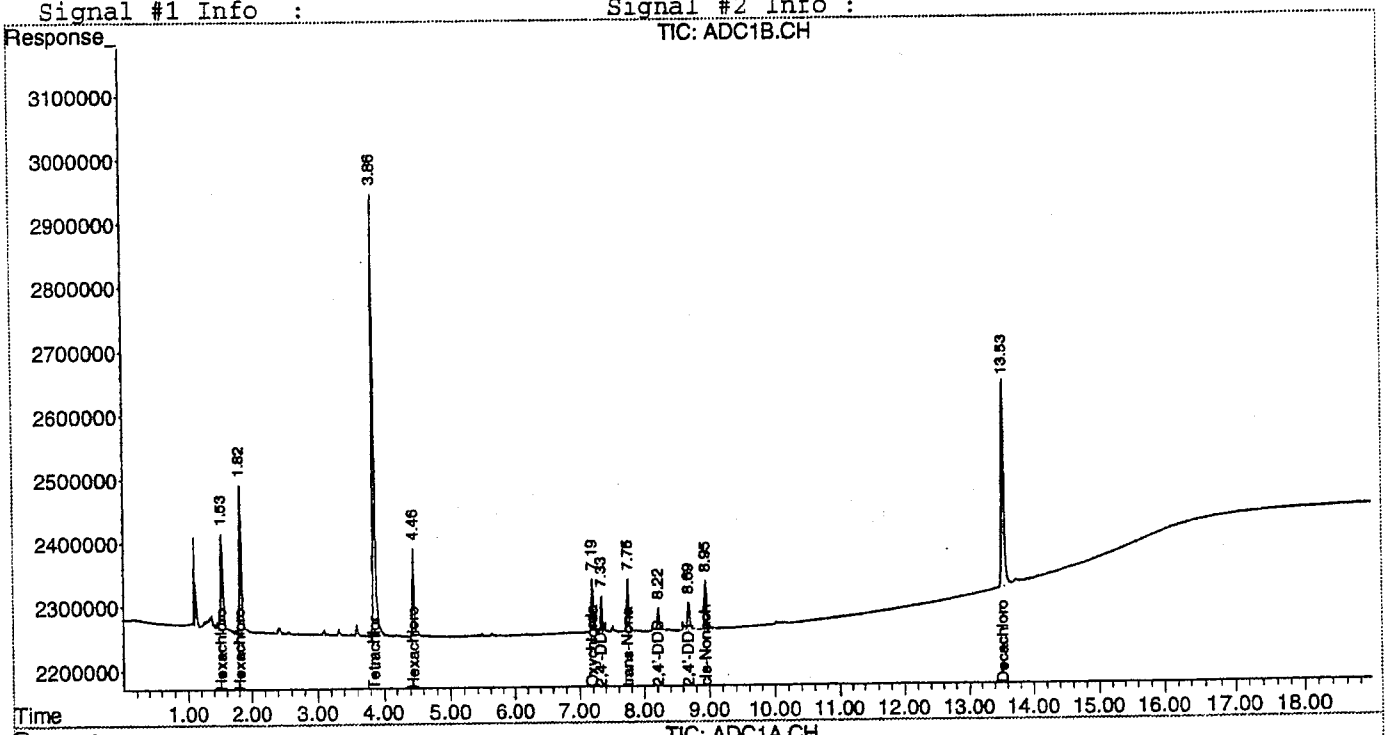
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
012F1201.D +CPDS_910.M Thu Sep 12 10:23:46 2002

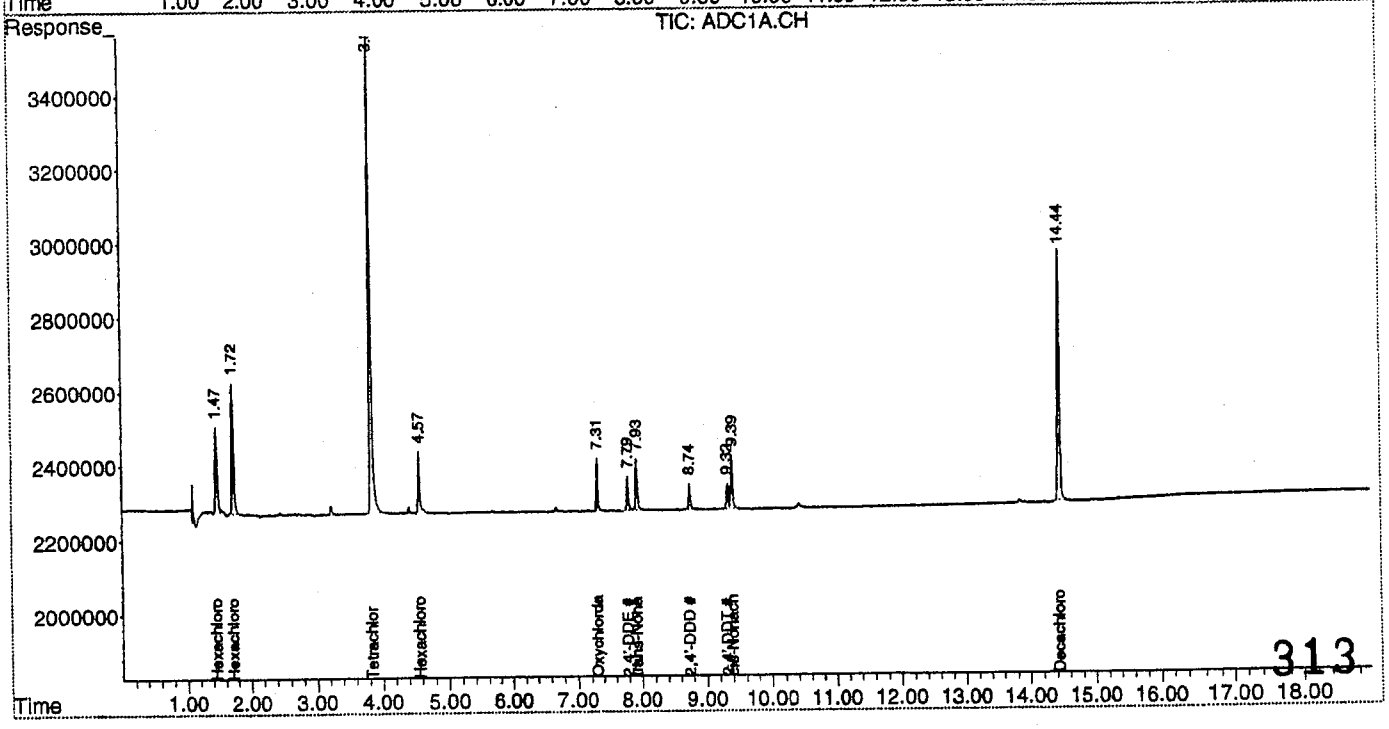
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\012F1201.D\ADC1B.CH Vial: 12
Signal #2 : F:\HPCHEM\1\DATA\PE091102\012F1201.D\ADC1A.CH
Acq On : 12-Sep-2002, 01:14:31 Operator: JDW
Sample : 2.0 ng/ml 8081A Plus Pest902E Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:02 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:00:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





313

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\011F1101.D\ADC1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\PE091102\011F1101.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:52:23 Operator: JDW
Sample : 10 ng/ml 8081A Plus Pest902D Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 09:49:14 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.87	3.84	12812709	25195401	25.000	18.635	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	125.00%	93.18%	
1)	SR	Decachlorobiphen	13.54	14.45	8760414	14795004	30.113	21.332	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	150.57%#	106.66%	
		Target Compounds							
2)		Hexachloroethane	1.53	1.47	16262121	27263017	18.825	13.421	
3)	M	Hexachlorobenzen	4.46	4.58	10454687	14125772	14.119	8.060	#
4)	M	Hexachlorobutadi	1.82	1.72	21856286	38183259	30.012	36.279	
5)	M	Oxychlordane	7.20	7.32	7061408	12123673	9.653	7.255	
6)		cis-Nonachlor	8.96	9.40	8202571	15047065	30.484	23.424	
7)		trans-Nonachlor	7.75	7.94	7464691	13543577	10.565	8.608	
8)		2,4'-DDE	7.34	7.80	5038576	8756980	8.939	6.176	
9)		2,4'-DDD	8.23	8.75	4372852	7520767	9.896	7.368	
10)	M	2,4'-DDT	8.70	9.33	4857362	6897805	10.935	9.922	

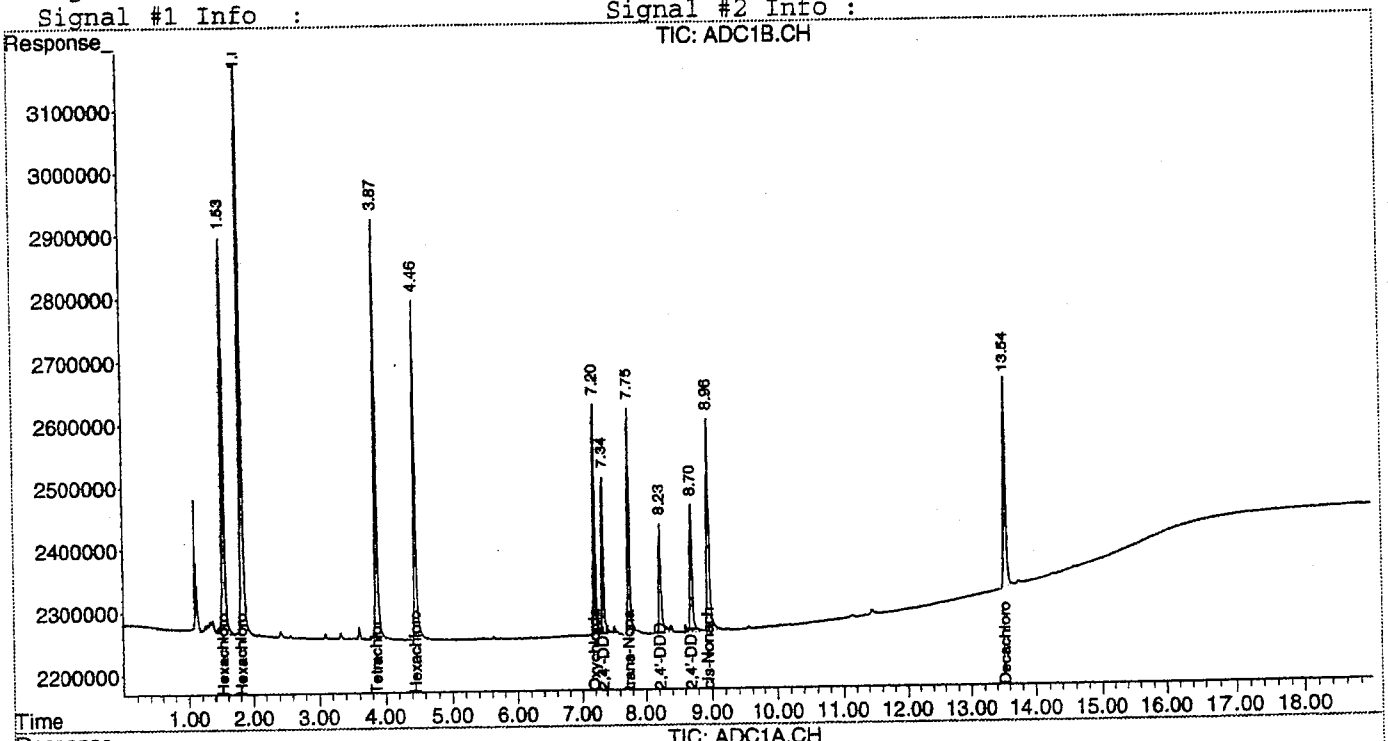
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
011F1101.D +CPDS_910.M Thu Sep 12 10:23:43 2002

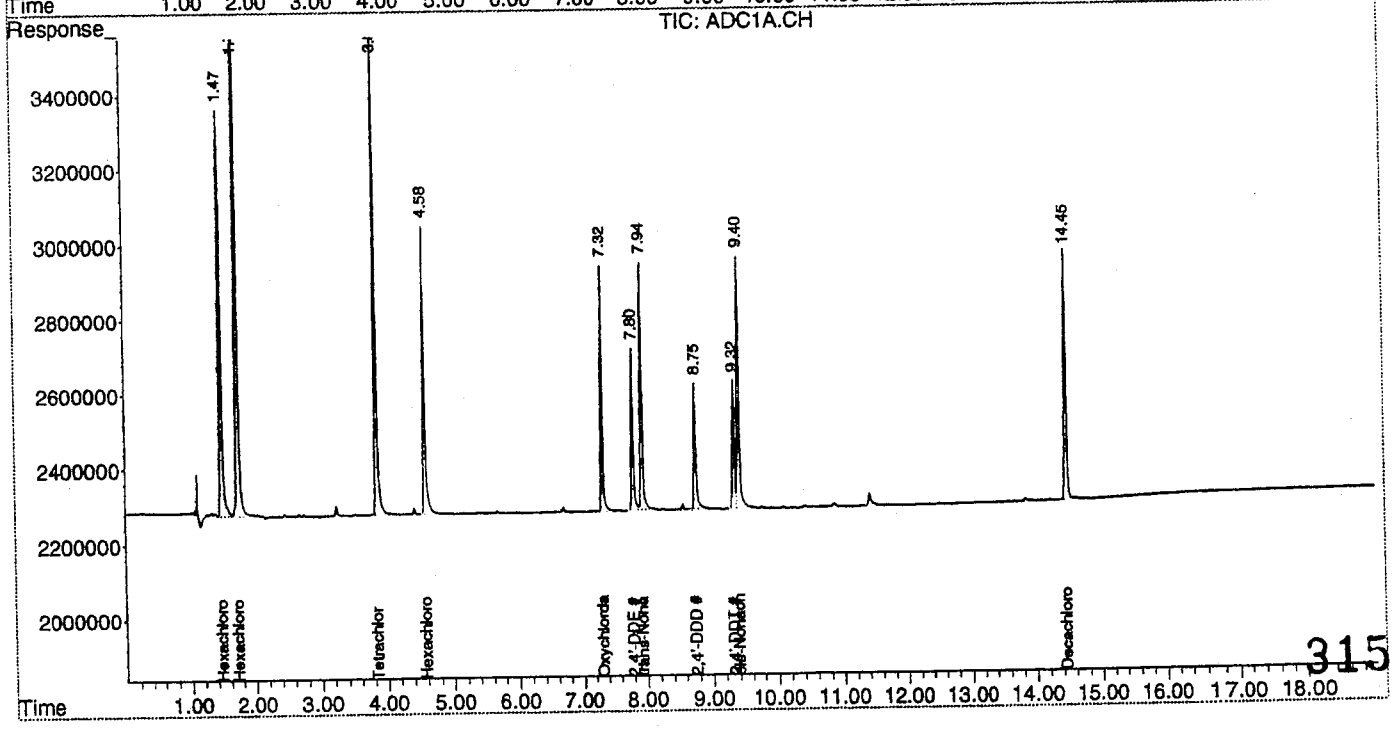
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\011F1101.D\ADC1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\PE091102\011F1101.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:52:23 Operator: JDW
Sample : 10 ng/ml 8081A Plus Pest902D Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 9:49 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





315

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\010F1001.D\ADC1B.CH Vial: 10
Signal #2 : F:\HPCHEM\1\DATA\PE091102\010F1001.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:30:29 Operator: JDW
Sample : 25 ng/ml 8081A Plus Pest902C Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 09:49:05 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.84	13357338	26183722	26.062	19.366
Spiked Amount		20.000 Range	60 - 150		Recovery	=	130.31%	96.83%
1)	SR	Decachlorobiphen	13.55	14.45	9137174	15198026	31.408	21.913
Spiked Amount		20.000 Range	60 - 150		Recovery	=	157.04%#	109.57%
		Target Compounds						
2)		Hexachloroethane	1.53	1.47	37575422	69204682	43.496	34.068
3)	M	Hexachlorobenzen	4.47	4.58	23935294	34777819	32.324	19.843
4)	M	Hexachlorobutadi	1.82	1.73	50267287	100.9E6	69.025	95.877
5)	M	Oxychlordane	7.21	7.32	16402191	29728152	22.421	17.789
6)		cis-Nonachlor	8.96	9.40	19792906	37552667	73.558	58.460
7)		trans-Nonachlor	7.76	7.94	18528181	34161954	26.223	21.714
8)		2,4'-DDE	7.35	7.80	11659791	21277495	20.685	15.005
9)		2,4'-DDD	8.23	8.75	10269003	18828633	23.238	18.446
0)	M	2,4'-DDT	8.70	9.33	11443155	17106451	25.762	24.607

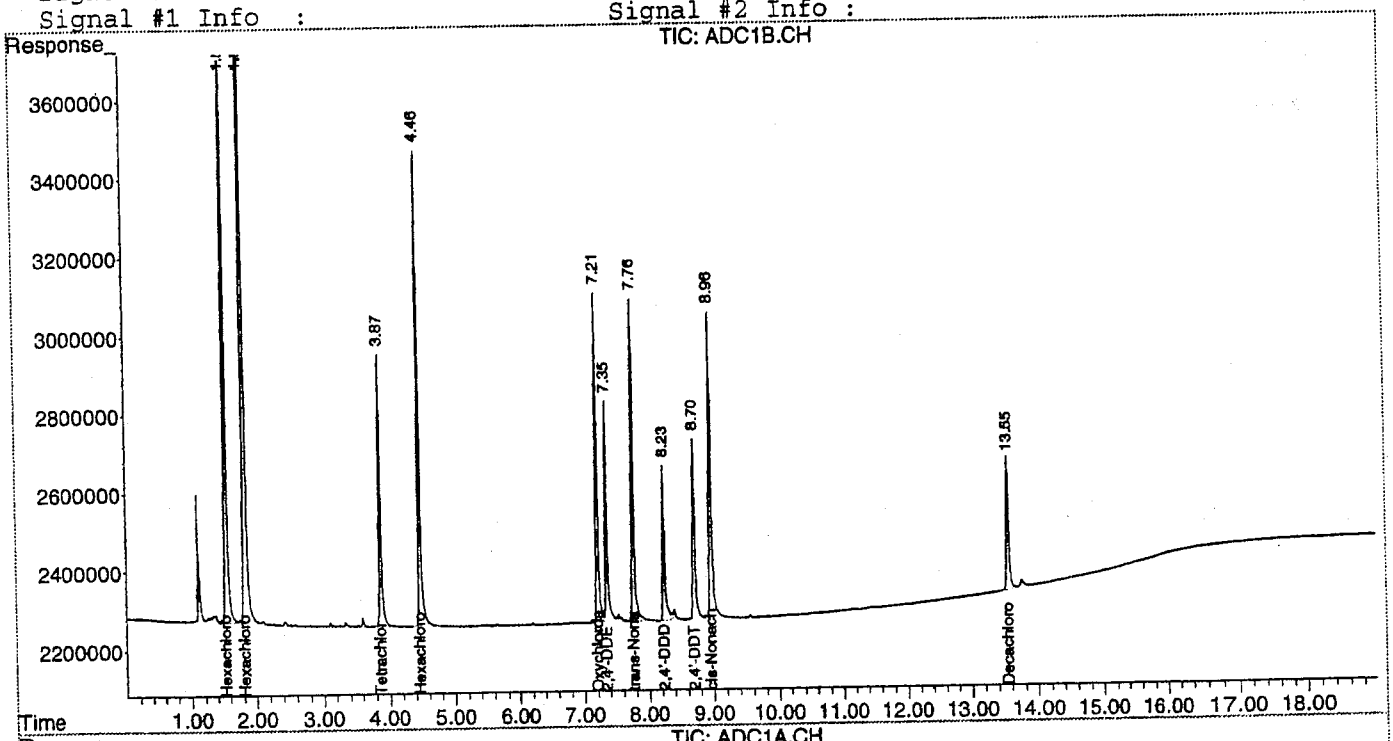
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
010F1001.D +CPDS_910.M Thu Sep 12 10:23:41 2002

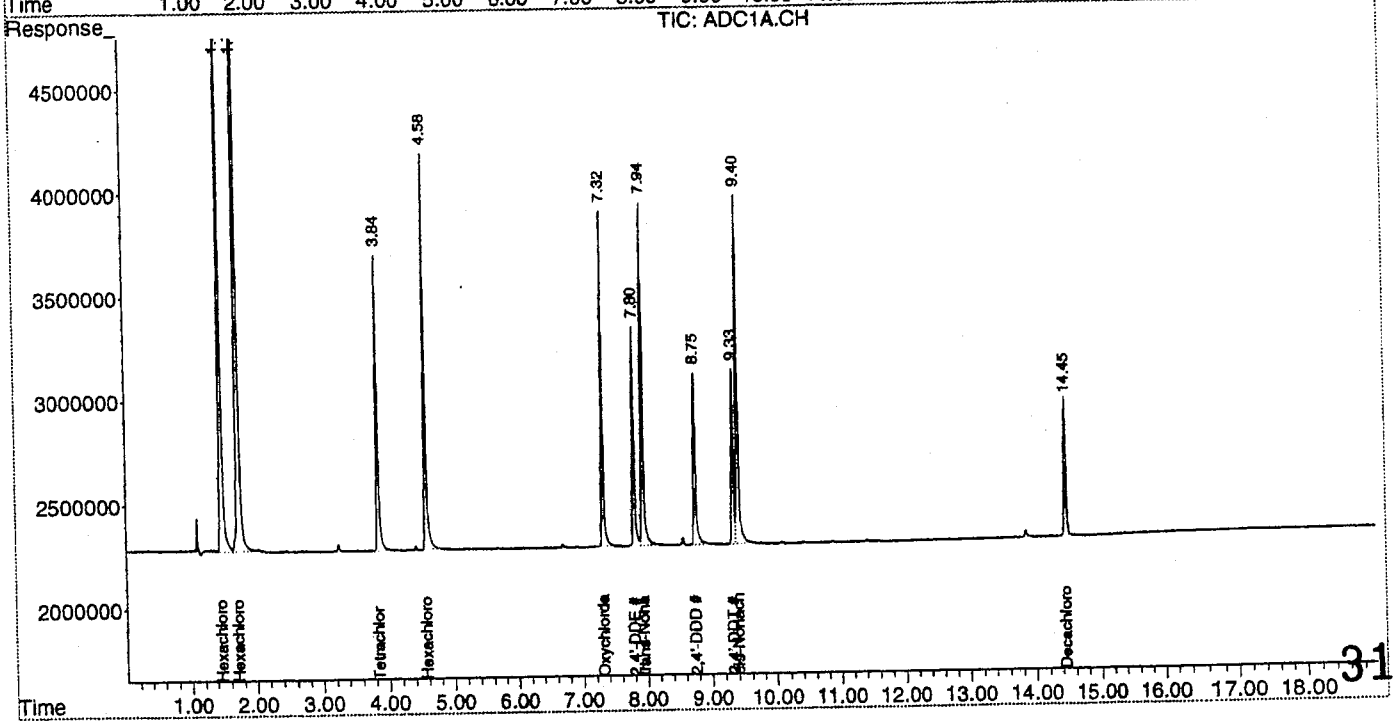
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\010F1001.D\ADC1B.CH Vial: 10
Signal #2 : F:\HPCHEM\1\DATA\PE091102\010F1001.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:30:29 Operator: JDW
Sample : 25 ng/ml 8081A Plus Pest902C Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 9:49 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





317

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\009F0901.D\ADC1B.CH Vial: 9
Signal #2 : F:\HPCHEM\1\DATA\PE091102\009F0901.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:08:33 Operator: JDW
Sample : 50 ng/ml 8081A Plus Pest902B Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 09:48:46 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.87	3.84	13613432	26488474	26.562	19.591	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	132.81%	97.95%	
11)	SR	Decachlorobiphen	13.55	14.45	9106601	15327549	31.302	22.100	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	156.51%#	110.50%	
		Target Compounds							
2)		Hexachloroethane	1.53	1.47	71933279	146.9E6	83.268	72.298	
3)	M	Hexachlorobenzen	4.46	4.58	44614383	71163876	60.250	40.604	
4)	M	Hexachlorobutadi	1.82	1.73	94265872	209.5E6	129.441	199.089	#
5)	M	Oxychlordane	7.20	7.32	31001808	60494354	42.379	36.200	
6)		cis-Nonachlor	8.96	9.40	37364322	78253207	138.860	121.820	
7)		trans-Nonachlor	7.76	7.94	34998528	69749250	49.534	44.333	
8)		2,4'-DDE	7.34	7.80	23076334	42381949	40.938	29.889	
9)		2,4'-DDD	8.23	8.75	19556628	37439665	44.256	36.679	
10)	M	2,4'-DDT	8.70	9.33	21857154	34156025	49.207	49.132	

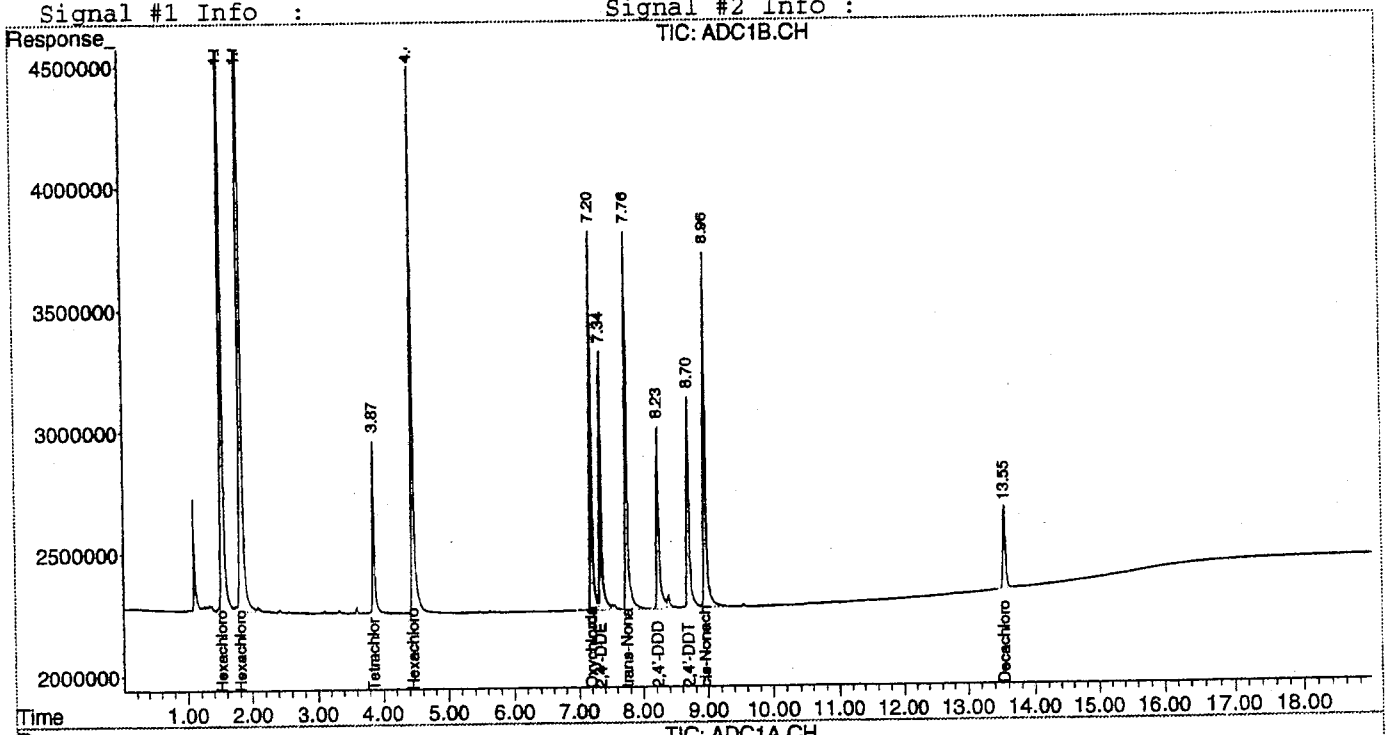
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
009F0901.D +CPDS_910.M Thu Sep 12 10:23:38 2002

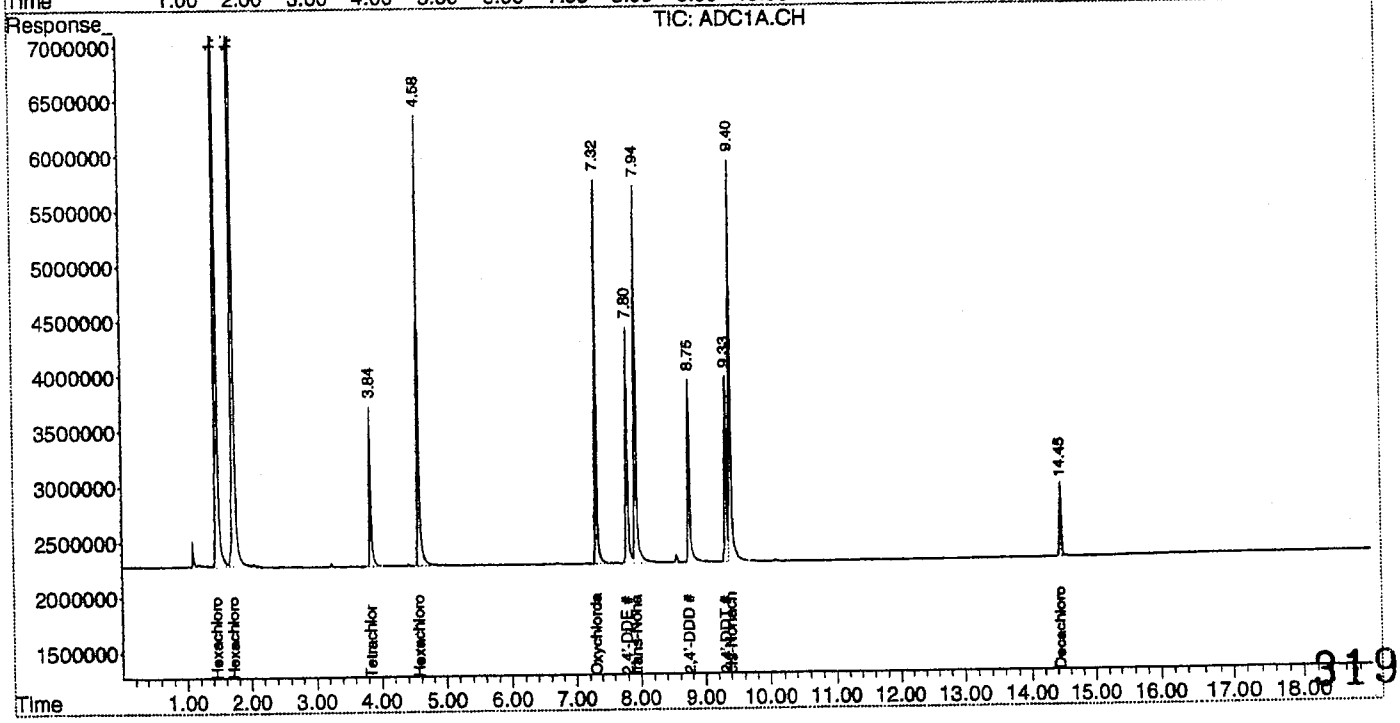
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\009F0901.D\ADC1B.CH Vial: 9
Signal #2 : F:\HPCHEM\1\DATA\PE091102\009F0901.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:08:33 Operator: JDW
Sample : 50 ng/ml 8081A Plus Pest902B Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 9:48 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\008F0801.D\ADC1B.CH Vial: 8
Signal #2 : F:\HPCHEM\1\DATA\PE091102\008F0801.D\ADC1A.CH
Acq On : 11-Sep-2002, 23:46:30 Operator: JDW
Sample : 75 ng/ml 8081A Plus Pest902A Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 09:48:36 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.87	3.84	13595189	26461211	26.526	19.571	
Spiked Amount			20.000	Range	60 - 150	Recovery	=	132.63%	97.86%
1)	SR	Decachlorobiphen	13.54	14.44	9107525	15339014	31.306	22.116	
Spiked Amount			20.000	Range	60 - 150	Recovery	=	156.53%#	110.58%
		Target Compounds							
2)		Hexachloroethane	1.53	1.47	102.5E6	226.2E6	118.622	111.334	
3)	M	Hexachlorobenzen	4.46	4.57	64173186	110.2E6	86.663	62.880	
4)	M	Hexachlorobutadi	1.82	1.73	129.7E6	320.6E6	178.137	304.612	#
5)	M	Oxychlordane	7.20	7.32	45152340	94308339	61.722	56.434	
6)		cis-Nonachlor	8.96	9.40	53836919	122.3E6	200.078	190.454	
7)		trans-Nonachlor	7.75	7.94	51292966	109.7E6	72.595	69.754	
8)		2,4'-DDE	7.34	7.80	33677299	64980969	59.744	45.826	
9)		2,4'-DDD	8.23	8.75	28256105	56577502	63.943	55.428	
0)	M	2,4'-DDT	8.70	9.32	31544930	52077481	71.017	74.911	

320

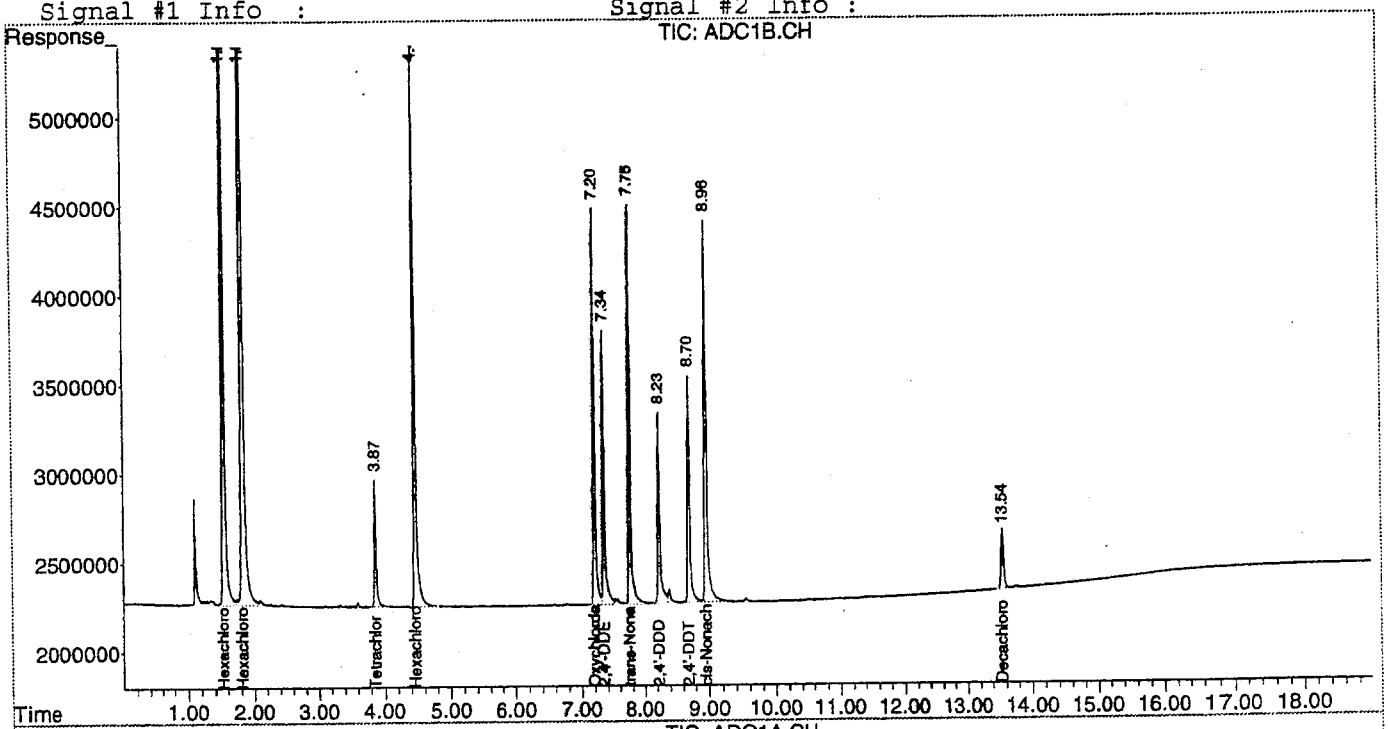
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

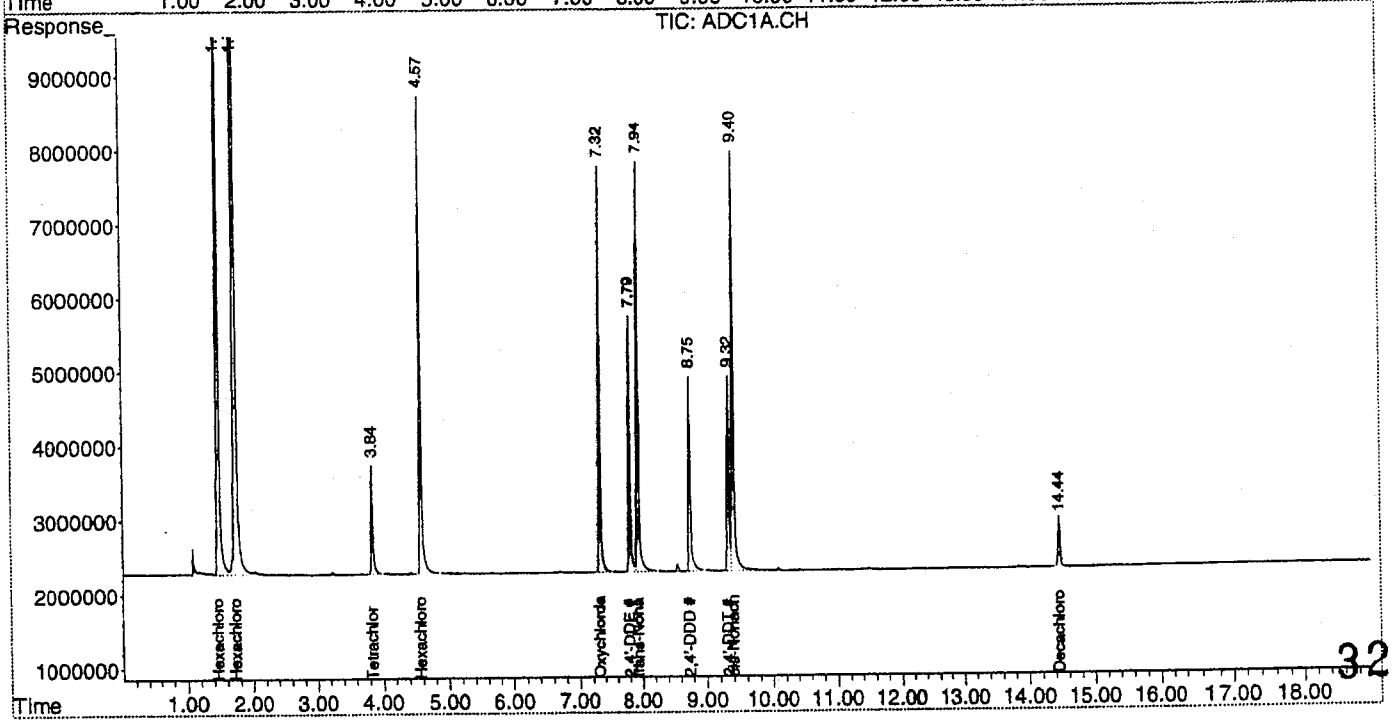
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\008F0801.D\ADC1B.CH Vial: 8
Signal #2 : F:\HPCHEM\1\DATA\PE091102\008F0801.D\ADC1A.CH
Acq On : 11-Sep-2002, 23:46:30 Operator: JDW
Sample : 75 ng/ml 8081A Plus Pest902A Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 9:48 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





CONTINUING CALIBRATION

Sequence Log

Directory : f:\HPCHEM\1\DATA\PE091102

#	Filename	Sample Name		Date/Time
1	008f0801.d	75 ng/ml 8081A Plus Pest902A		09/11/02 23:46
2	009f0901.d	50 ng/ml 8081A Plus Pest902B	QuantFile: P	09/12/02 00:08
3	010f1001.d	25 ng/ml 8081A Plus Pest902C	QuantFile: P	09/12/02 00:30
4	011f1101.d	10 ng/ml 8081A Plus Pest902D	QuantFile: P	09/12/02 00:52
5	012f1201.d	2.0 ng/ml 8081A Plus Pest902E	QuantFile: P	09/12/02 01:14
6	013f1301.d	1.0 ng/ml 8081A Plus Pest902F	QuantFile: P	09/12/02 01:36
7	014f1401.d	Hexane blank	QuantFile: P	09/12/02 01:58
8	015f1501.d	Eval Pest889		09/12/02 02:20
9	016f1601.d	10/20 ng/ml 80810A CCV Pest888		09/12/02 02:42
10	017f1701.d	15 ng/ml 8081A Plus CCV Pest903		09/12/02 03:04
11	018f1801.d	mb pe1511		09/12/02 03:26
12	019f1901.d	bs pe1511		09/12/02 03:48
13	020f2001.d	bsd pe1511		09/12/02 04:10
14	021f2101.d	108160-1 1:2	QuantFile: 8	09/12/02 04:32
15	022f2201.d	108160-2 1:2	QuantFile: P	09/12/02 04:54
16	023f2301.d	108160-3 1:2	QuantFile: +	09/12/02 05:16
17	024f2401.d	108160-4 1:2	QuantFile: P	09/12/02 05:38
18	025f2501.d	108164-1 1:2	QuantFile: P	09/12/02 06:00
19	026f2601.d	108164-2 1:2	QuantFile: P	09/12/02 06:22
20	027f2701.d	108164-3 1:2	QuantFile: +	09/12/02 06:44
21	028f2801.d	108164-3 ms 1:2		09/12/02 07:06
22	029f2901.d	108164-3 msd 1:2		09/12/02 07:28
23	030f3001.d	Hexane blank		09/12/02 07:50
24	031f3101.d	Eval Pest889		09/12/02 08:12
25	032f3201.d	10/20 ng/ml 8081A CCV Pest888		09/12/02 08:34
26	033f3301.d	15 ng/ml 8081A Plus CCV Pest903		09/12/02 08:56
27	034f3401.d	108166-1		09/12/02 09:18
28	035f3501.d	108166-2		09/12/02 09:40
29	036f3601.d	108166-3		09/12/02 10:02
30	037f3701.d	108177-1		09/12/02 10:24
31	038f3801.d	108177-2		09/12/02 10:46
32	039f3901.d	108177-3 1:2	QuantFile: P	09/12/02 11:08
33	040f4001.d	108177-4 1:2		09/12/02 11:30
34	041f4101.d	108177-5 1:2	QuantFile: P	09/12/02 11:52
35	042f4201.d	108177-6 1:2		09/12/02 12:14
36	043f4301.d	108177-8 1:2		09/12/02 12:36
37	044f4401.d	108177-9 1:2	QuantFile: 8	09/12/02 12:58
38	045f4501.d	108177-10 1:2		09/12/02 13:20
39	046f4601.d	108177-11 1:2	QuantFile: 8	09/12/02 13:42
40	047f4701.d	108164-3 msd 1:2	QuantFile: P	09/12/02 14:04
41	048f4801.d	Hexane blank		09/12/02 14:26
42	049f4901.d	Eval Pest889		09/12/02 14:49
43	050f5001.d	10/20 ng/ml 8081A CCV Pest888		09/12/02 15:10
44	051f5101.d	15 ng/ml 8081A Plus Pest903		09/12/02 15:32
45	052f5201.d	100 ng/ml 1242/1260 561-102-5		09/12/02 15:54

Custom Report - DDT/Endrin Breakdown Evaluation

Sample Name Eval Pest889

Data File Name F:\HPCHEM\1\DATA\PE091102\015F1501.D
Date Acquired 12-Sep-2002, 02:20:40

Compound Name	RT #1	RT #2	Resp. #1	Resp. #2	Amt. #1	Amt. #2	% Breakdown Column #1	% Breakdown Column #2
Endrin	8.89	9.24	24593363	46719088	42.52	43.62	**13.97%**	**13.34%**
Endrin Aldehyde	10.11	10.33	1643730	2635544	6.91	6.29		
Endrin Ketone	11.51	11.95	2350407	4558785	6.17	5.55		
4,4'-DDT	9.54	10.07	50366261	88456539	81.74	93.95	**5.66%**	**4.59%**
4,4'-DDD	9.02	9.47	2749678	4254444	4.57	4.04		
4,4'-DDE	7.91	0.00	272969	0	0.38	0.00		

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\015F1501.D\ADC1B.CH Vial: 15
Signal #2 : F:\HPCHEM\1\DATA\PE091102\015F1501.D\ADC1A.CH
Acq On : 12-Sep-2002, 02:20:40 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:50:22 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.83	12948690	25161596	19.821	18.466	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	99.11%	92.33%	
22)	SR	Decachlorobiphen	13.53	14.44	9596338	16300358	23.026	21.175	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	115.13%	105.88%	
		Target Compounds							
2)		alpha-BHC	4.72	4.80	11818744	19806748	10.032	9.511	
3)	M	gamma-BHC (Linda	5.21	5.37	10224665	17529774	9.998	9.690	
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.	
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.	
6)		beta-BHC	5.35	5.51	3687237	6721104	9.740	10.314	
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.	
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.	
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
10)		gamma-Chlordane	7.51f	0.00	124052	0	0.143	N.D.	#
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
12)		4,4'-DDE	7.91	0.00	272969	0	0.375	N.D.	#
13)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.	
14)	M	Endrin	8.89	9.24	24593363	46719088	42.522	43.624	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	9.02	9.47	2749678	4254444	4.573	4.044	
17)	M	4,4'-DDT	9.54	10.07	50366261	88456539	81.745	93.946	
18)		Endrin Aldehyde	10.12	10.33	1643730	2635544	3.545	3.007	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	10.49	11.48	51935865	87265318	211.631	219.508	
21)		Endrin Ketone	11.51	11.95	2350407	4558785	3.609	3.529	

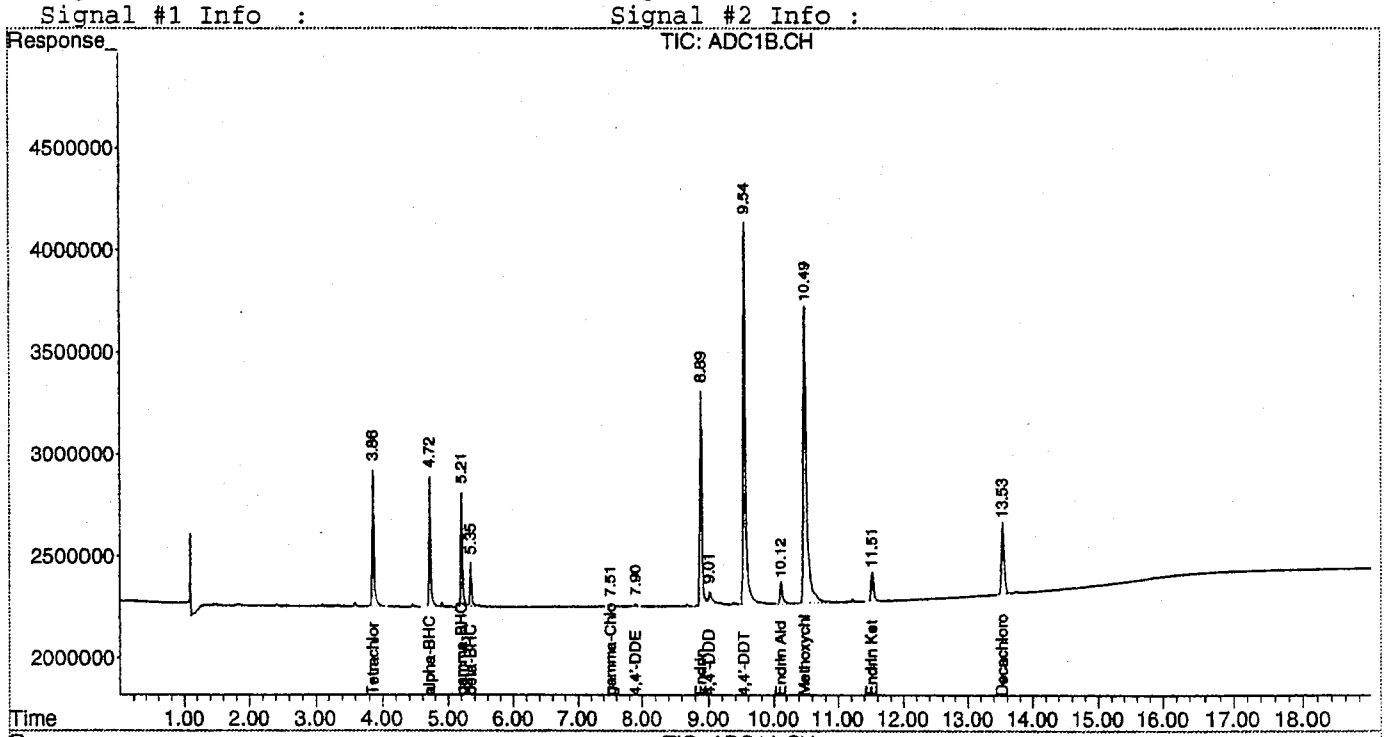
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
015F1501.D 8081_910.M Thu Sep 12 10:50:24 2002

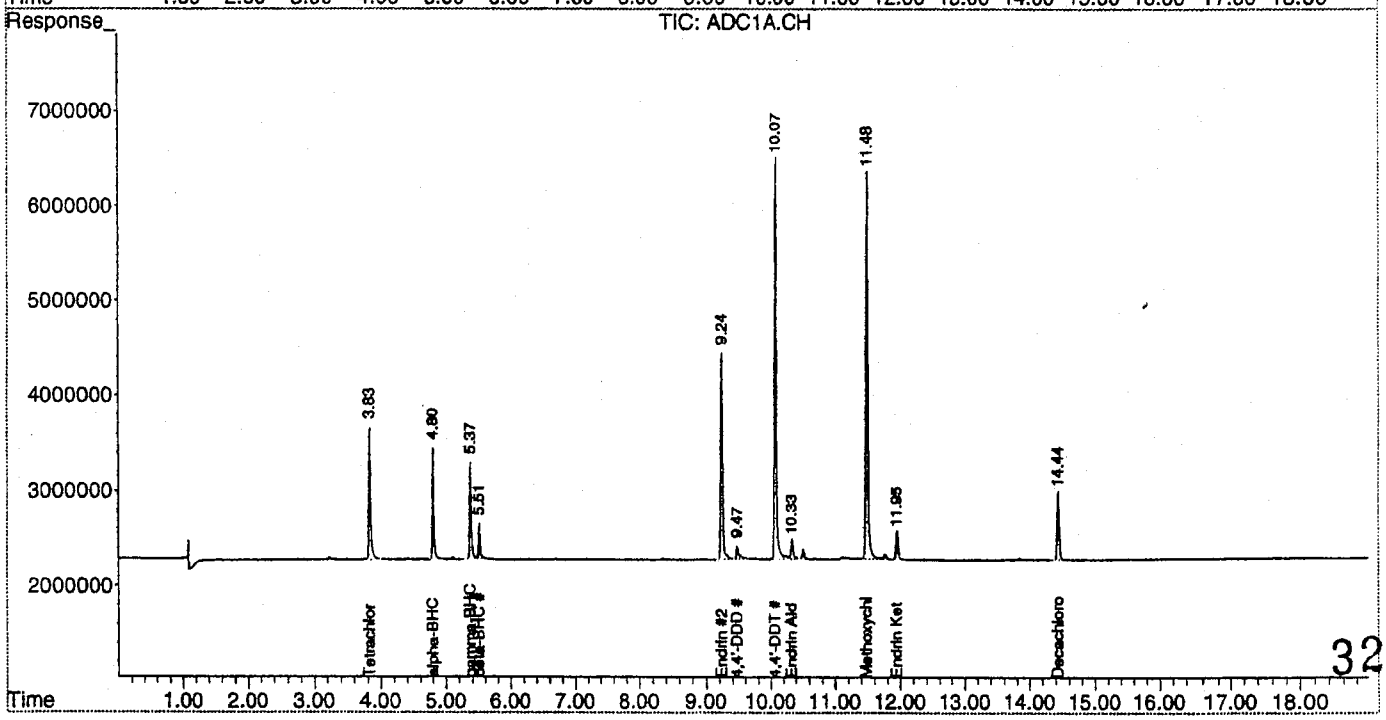
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\015F1501.D\ADC1B.CH Vial: 15
Signal #2 : F:\HPCHEM\1\DATA\PE091102\015F1501.D\ADC1A.CH
Acq On : 12-Sep-2002, 02:20:40 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:50 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





326

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\016F1601.D\ADC1B.CH Vial: 16
Signal #2 : F:\HPCHEM\1\DATA\PE091102\016F1601.D\ADC1A.CH
Acq On : 12-Sep-2002, 02:42:42 Operator: JDW
Sample : 10/20 ng/ml 80810A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:45:59 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.86	3.84	13891721	27159130	21.265	19.932
		Spiked Amount 20.000 Range 60 - 150 Recovery =					106.33%	99.66%
22)	SR	Decachlorobiphen	13.53	14.44	18885484	32515580	45.316	42.240
		Spiked Amount 20.000 Range 60 - 150 Recovery =					226.58%#	211.20%#
		Target Compounds						
2)		alpha-BHC	4.72	4.81	12571342	21162046	10.671	10.162
3)	M	gamma-BHC (Linda	5.21	5.38	11260070	18874797	11.010	10.433
4)	M	Heptachlor	5.95	6.06	10445233	7677423	10.680	8.747
5)	M	Aldrin	6.42	6.56	10673320	17750538	10.790	10.351
6)		beta-BHC	5.35	5.52	3951415	7257510	10.437	11.137
7)		delta-BHC	5.63	5.98	10703494	17077378	10.815	10.577
8)		Heptachlor Epoxi	7.36	7.47	9279572	15836620	11.152	10.861
9)		Endosulfan I	8.02	8.14	9398700	15071147	10.443	10.737
10)		gamma-Chlordane	7.56	7.78	9901757	16615357	11.424	11.034
11)		alpha-Chlordane	7.78	8.04	8557275	14831191	10.858	10.662
12)		4,4'-DDE	7.91	8.36	16125278	30572992	22.175	21.416
13)	M	Dieldrin	8.46	8.66	17177676	30915699	21.710	20.886
14)	M	Endrin	8.89	9.24	11309801	19627249	19.555	18.327
15)		Endosulfan II	9.31	9.66	14238090	24862448	22.934	21.445
16)		4,4'-DDD	9.01	9.47	13264390	23724157	22.061	22.552
17)	M	4,4'-DDT	9.54	10.08	12288530	18279262	19.944	19.414
18)		Endrin Aldehyde	10.11	10.33	10534852	19317864	22.719	22.043
19)		Endosulfan Sulfa	10.96	10.88	12455656	23461618	22.609	22.139
20)		Methoxychlor	10.49	11.48	25293593	37619159	103.068	94.628
21)		Endrin Ketone	11.51	11.95	14807519	28520416	22.739	22.078

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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 80810A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 016F1601.D
Date Acquired 12-Sep-2002, 02:42:42

Column #1

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation
Tetrachloro-m-xylene (S)	20	21.26	6.3
alpha-BHC	10	10.67	6.7
gamma-BHC (Lindane)	10	11.01	10.1
Heptachlor	10	10.68	6.8
Aldrin	10	10.79	7.9
beta-BHC	10	10.44	4.4
delta-BHC	10	10.82	8.2
Heptachlor Epoxide	10	11.15	11.5
Endosulfan I	10	10.44	4.4
gamma-Chlordane	10	11.42	14.2
alpha-Chlordane	10	10.86	8.6
4,4'-DDE	20	22.17	10.9
Dieldrin	20	21.71	8.5
Endrin	20	19.55	2.2
Endosulfan II	20	22.93	14.7
4,4'-DDD	20	22.06	10.3
4,4'-DDT	20	19.94	0.3
Endrin Aldehyde	20	22.72	13.6
Endosulfan Sulfate	20	22.61	13.0
Methoxychlor	100	103.07	3.1
Endrin Ketone	20	22.74	13.7
Decachlorobiphenyl (S)	40	45.32	13.3

Average Percent Difference of All Compounds 8.76

(#) = Out of Range

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Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 80810A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 016F1601.D
Date Acquired 12-Sep-2002, 02:42:42

Column #2

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation
Tetrachloro-m-xylene (S)	20	19.93	0.3
alpha-BHC	10	10.16	1.6
gamma-BHC (Lindane)	10	10.43	4.3
Heptachlor	10	8.75	12.5
Aldrin	10	10.35	3.5
beta-BHC	10	11.14	11.4
delta-BHC	10	10.58	5.8
Heptachlor Epoxide	10	10.86	8.6
Endosulfan I	10	10.74	7.4
gamma-Chlordane	10	11.03	10.3
alpha-Chlordane	10	10.66	6.6
4,4'-DDE	20	21.42	7.1
Dieldrin	20	20.89	4.4
Endrin	20	18.33	8.4
Endosulfan II	20	21.45	7.2
4,4'-DDD	20	22.55	12.8
4,4'-DDT	20	19.41	2.9
Endrin Aldehyde	20	22.04	10.2
Endosulfan Sulfate	20	22.14	10.7
Methoxychlor	100	94.63	5.4
Endrin Ketone	20	22.08	10.4
Decachlorobiphenyl (S)	40	42.24	5.6

Average Percent Difference of All Compounds 7.16

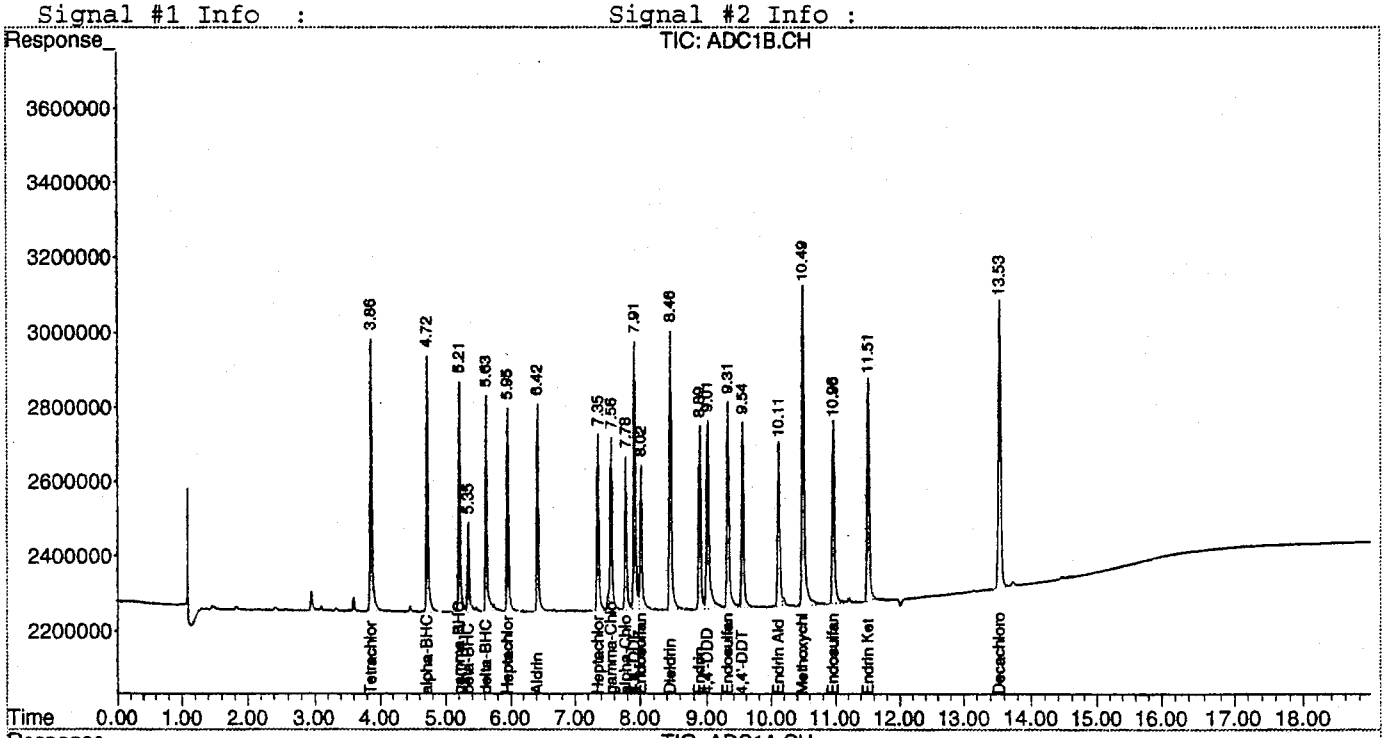
(#) = Out of Range

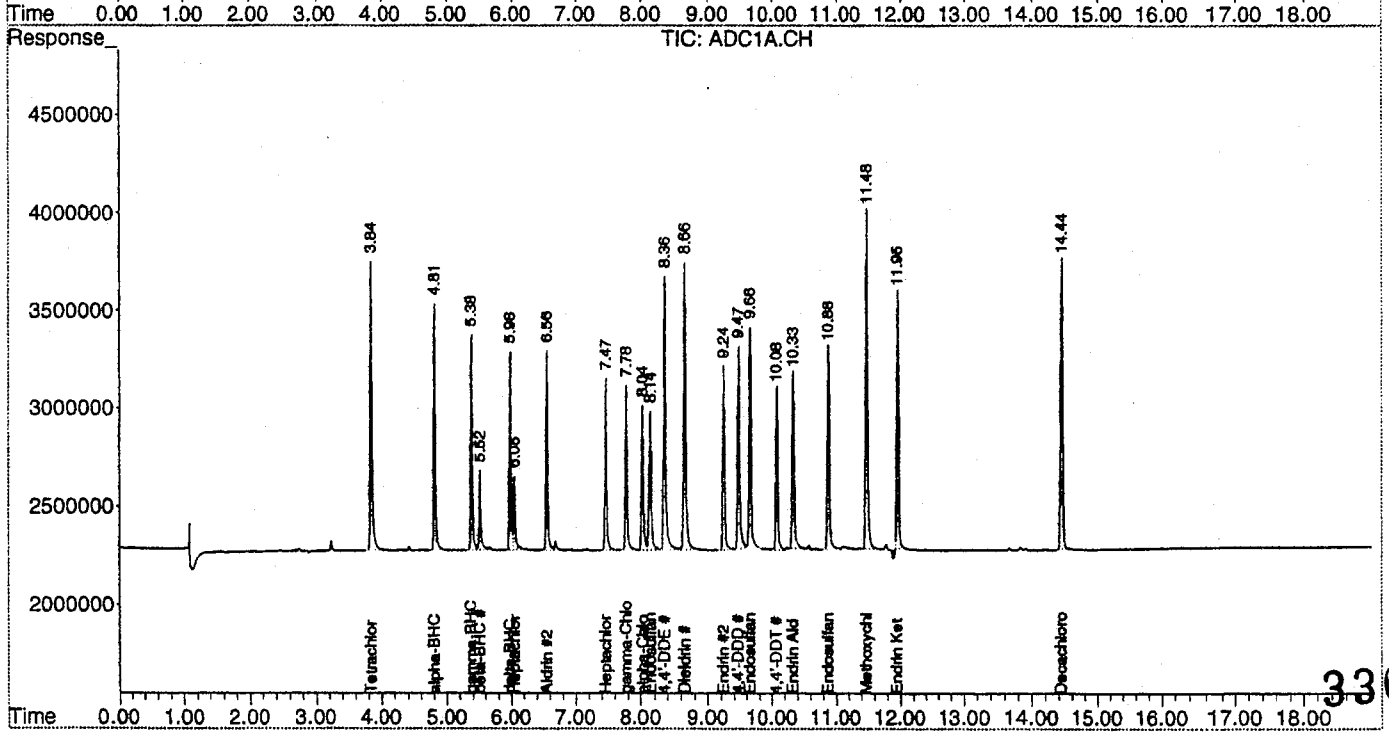
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\016F1601.D\ADC1B.CH Vial: 16
Signal #2 : F:\HPCHEM\1\DATA\PE091102\016F1601.D\ADC1A.CH
Acq On : 12-Sep-2002, 02:42:42 Operator: JDW
Sample : 10/20 ng/ml 80810A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:46 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1B.CH Vial: 17
Signal #2 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:04:39 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:03:35 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) SR Tetrachloro-m-xy	3.86	3.84	13170457	25861534	19.812	19.852
Spiked Amount 20.000 Range 60 - 150 Recovery =					99.06%	99.26%
11) SR Decachlorobiphen	13.54	14.44	8941593	15401658	19.799	20.270
Spiked Amount 20.000 Range 60 - 150 Recovery =					99.00%	101.35%
Target Compounds						
2) Hexachloroethane	1.53	1.47	22933323	39786160	14.887	14.465
3) Hexachlorobenzen	4.46	4.57	14507226	20200765	14.011	14.271
4) Hexachlorobutadi	1.82	1.72	30911024	56434333	14.579	13.855
5) Oxychlordane	7.20	7.31	9931660	17412829	14.378	14.301
6) cis-Nonachlor	8.95	9.40	11699705	21761944	14.452	14.242
7) trans-Nonachlor	7.75	7.93	10601024	19544276	13.959	14.238
8) 2,4'-DDE	7.34	7.79	7087536	12539886	14.668	14.713
9) 2,4'-DDD	8.22	8.75	6080104	10742326	15.124	14.656
10) 2,4'-DDT	8.69	9.32	6934342	9888594	14.957	14.435

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
017F1701.D +CPDS_910.M Thu Sep 12 10:23:52 2002

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1B.CH Vial: 17
Signal #2 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:04:39 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E

Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	SR	Tetrachloro-m-xylene (S)	20.000	19.812	0.9	0	0.00
2		Hexachloroethane	15.000	14.887	0.8	0	0.00
3		Hexachlorobenzene	15.000	14.011	6.6	0	0.00
4		Hexachlorobutadiene	15.000	14.579	2.8	0	0.00
5		Oxychlordane	15.000	14.378	4.1	0	0.00
6		cis-Nonachlor	15.000	14.452	3.7	0	0.00
7		trans-Nonachlor	15.000	13.959	6.9	0	0.00
8		2,4'-DDE	15.000	14.668	2.2	0	0.00
9		2,4'-DDD	15.000	15.124	-0.8	0	0.00
10		2,4'-DDT	15.000	14.957	0.3	0	0.00
11	SR	Decachlorobiphenyl (S)	20.000	19.799	1.0	0	0.00

Signal #2

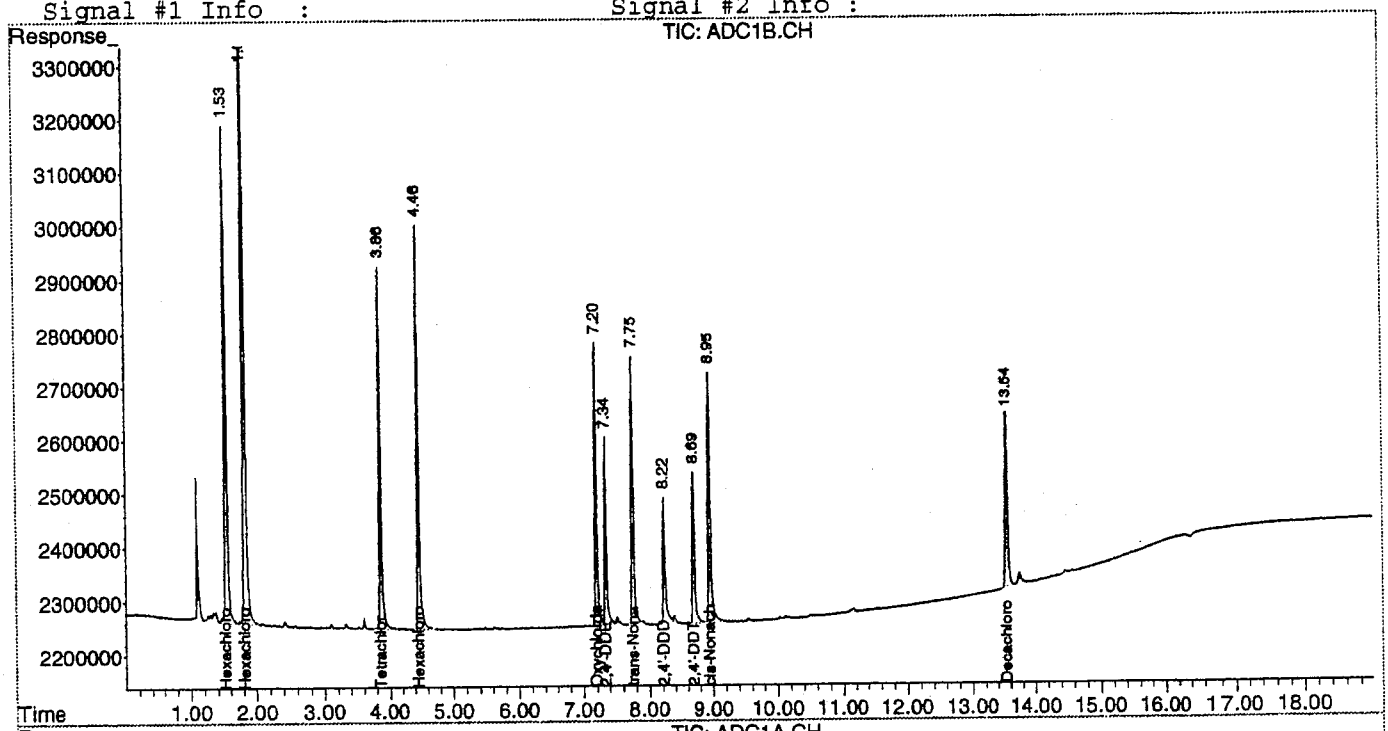
1	SR	Tetrachloro-m-xylene (S)	20.000	19.852	0.7	0	0.00
2		Hexachloroethane	15.000	14.465	3.6	0	0.00
3		Hexachlorobenzene	15.000	14.271	4.9	0	0.00
4		Hexachlorobutadiene	15.000	13.855	7.6	0	0.00
5		Oxychlordane	15.000	14.301	4.7	0	0.00
6		cis-Nonachlor	15.000	14.242	5.1	0	0.00
7		trans-Nonachlor	15.000	14.238	5.1	0	0.00
8		2,4'-DDE	15.000	14.713	1.9	0	0.00
9		2,4'-DDD	15.000	14.656	2.3	0	0.00
10		2,4'-DDT	15.000	14.435	3.8	0	0.00
11	SR	Decachlorobiphenyl (S)	20.000	20.270	-1.3	0	0.00

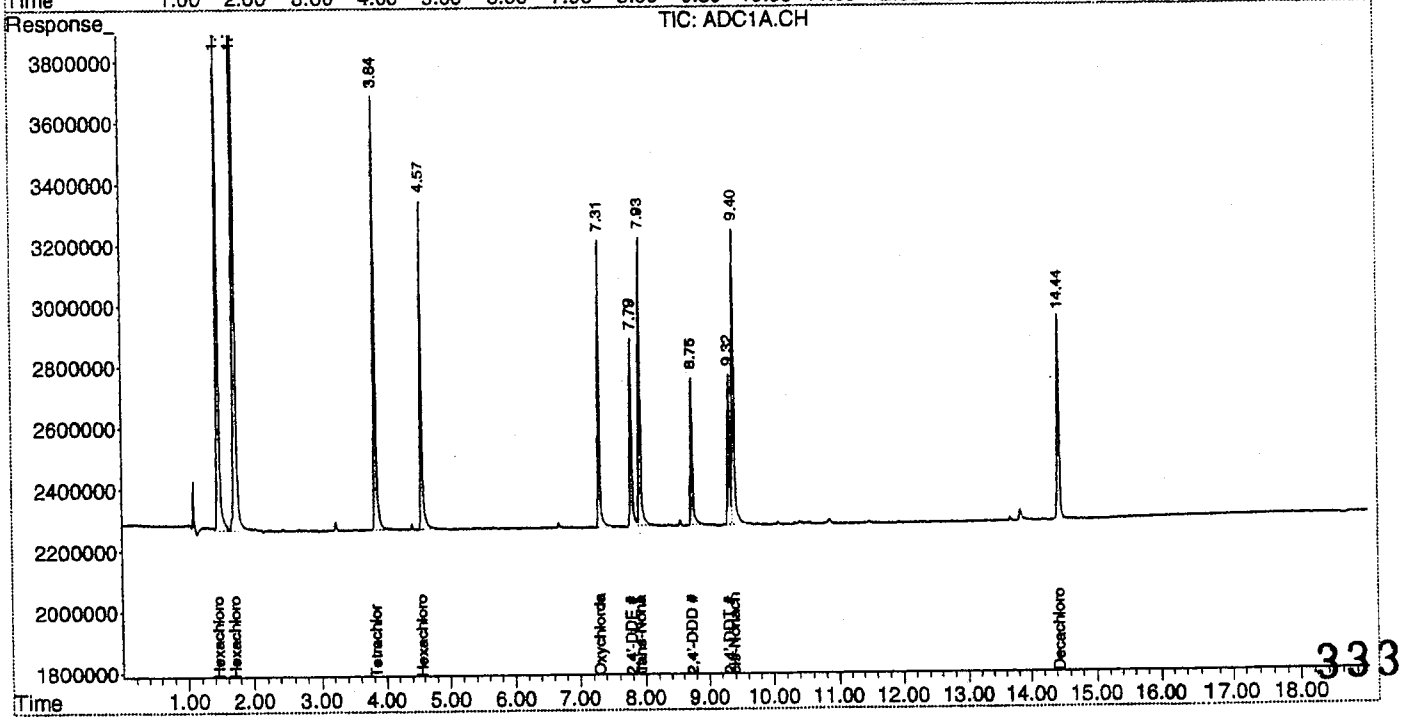
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1B.CH Vial: 17
Signal #2 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:04:39 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:03 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Custom Report - DDT/Endrin Breakdown Evaluation

Sample Name Eval Pest889

Data File Name F:\HPCHEM\1\DATA\PE091102\031F3101.D
Date Acquired 12-Sep-2002, 08:12:39

Compound Name	RT #1	RT #2	Resp. #1	Resp. #2	Amt. #1	Amt. #2	% Breakdown Column #1	% Breakdown Column #2
Endrin	8.88	9.23	24654933	48314513	42.63	45.11	**10.76%**	**9.13%**
Endrin Aldehyde	10.10	10.32	1171508	2049160	5.89	4.96		
Endrin Ketone	11.50	11.94	1800134	2807264	5.61	4.97		
4,4'-DDT	9.53	10.07	46307894	91058093	75.16	96.71	**7.19%**	**5.11%**
4,4'-DDD	9.01	9.46	3268158	4903095	5.44	4.66		
4,4'-DDE	7.90	0.00	317553	0	0.44	0.00		

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\031F3101.D\ADC1B.CH Vial: 31
Signal #2 : F:\HPCHEM\1\DATA\PE091102\031F3101.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:12:39 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 09:27:18 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.83	12626377	24771123	19.328	18.180	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					96.64%	90.90%	
22)	SR	Decachlorobiphen	13.52	14.43	9474509	15565258	22.734	20.220	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					113.67%	101.10%	
		Target Compounds							
2)		alpha-BHC	4.71	4.80	11701025	19612886	9.932	9.418	
3)	M	gamma-BHC (Linda	5.21	5.37	10161112	17465937	9.936	9.654	
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.	
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.	
6)		beta-BHC	5.34	5.51	3784855	6764730	9.997	10.381	
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.	
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.	
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
10)		gamma-Chlordane	7.51f	0.00	164914	0	0.190	N.D.	#
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
12)		4,4'-DDE	7.90	0.00	317553	0	0.437	N.D.	#
13)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.	
14)	M	Endrin	8.88	9.23	24654933	48314513	42.629	45.114	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	9.01	9.46	3268158	4903095	5.436	4.661	
17)	M	4,4'-DDT	9.53	10.07	46307894	91058093	75.158	96.709	
18)		Endrin Aldehyde	10.10	10.32	1171508	2049160	2.526	2.338	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	10.48	11.47	46537722	94667551	189.634	238.127	
21)		Endrin Ketone	11.50	11.94	1800134	2807264	2.764	2.173	

335

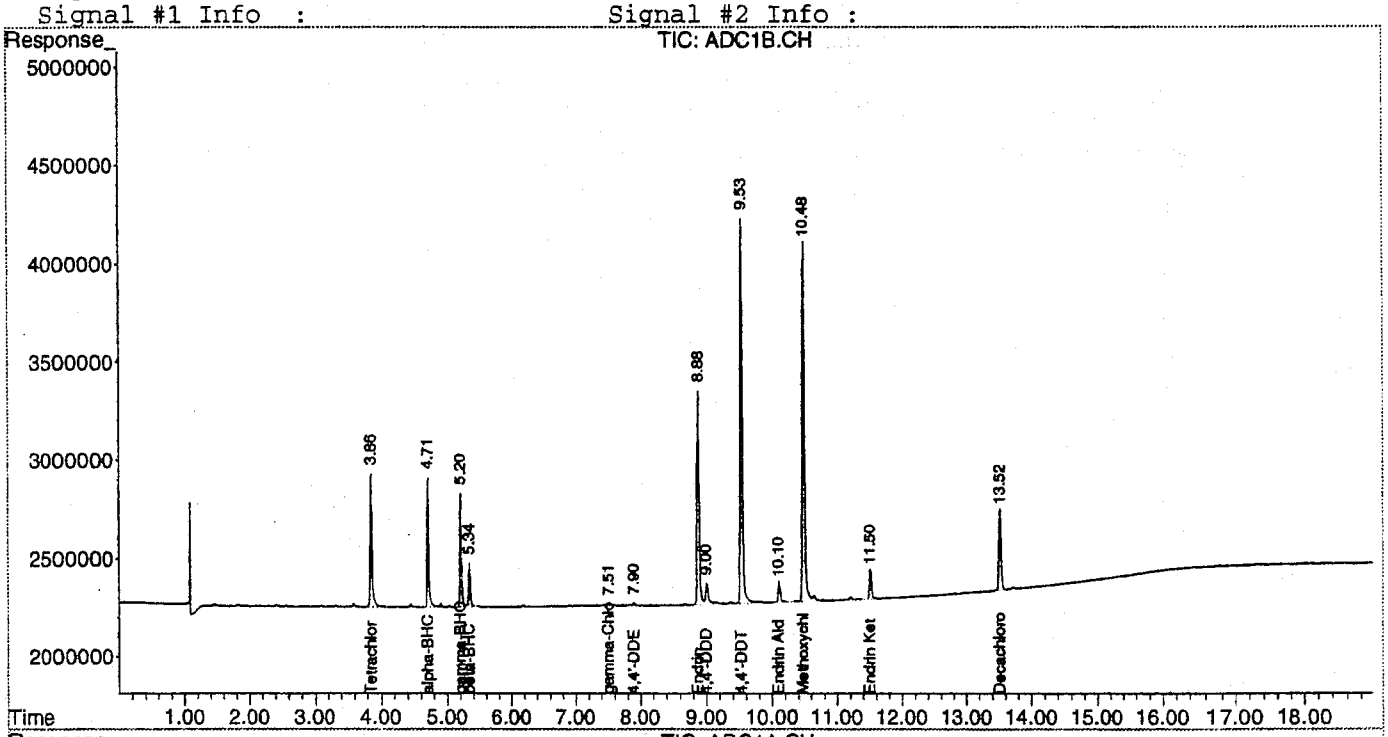
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

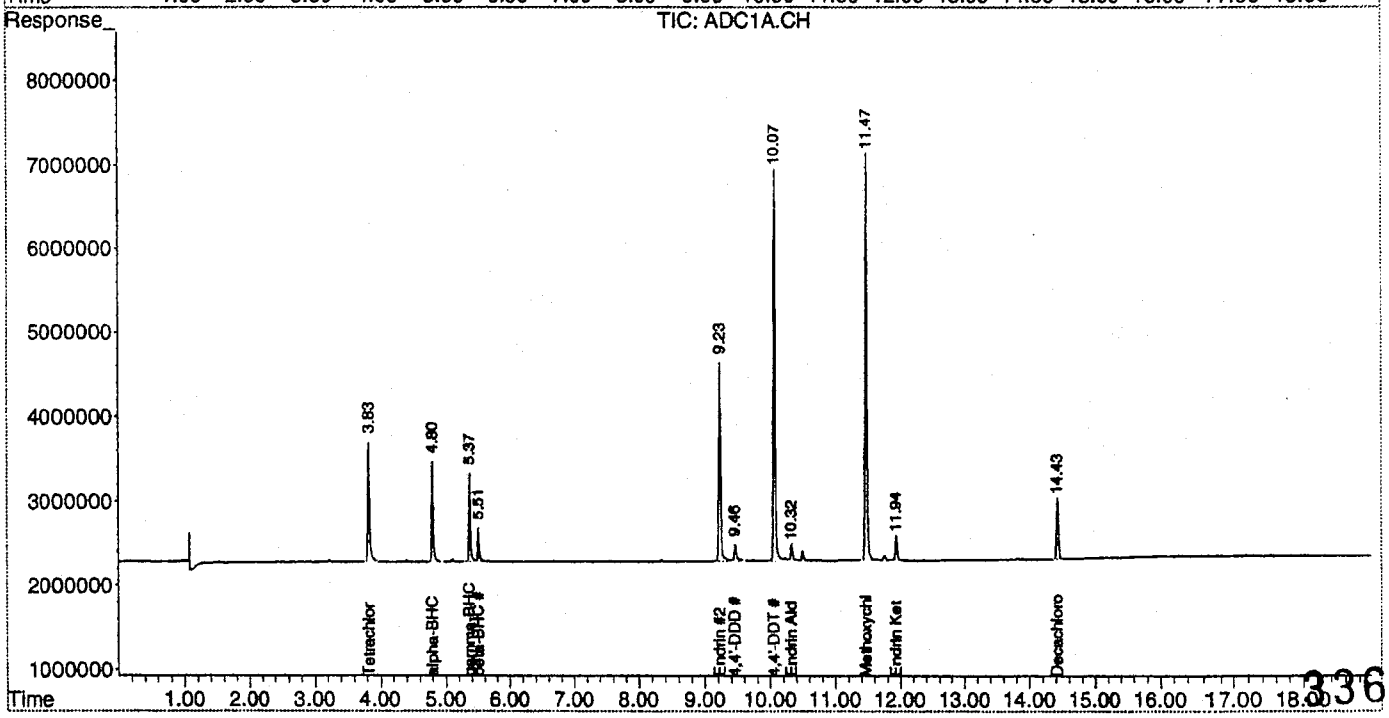
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\031F3101.D\ADC1B.CH Vial: 31
Signal #2 : F:\HPCHEM\1\DATA\PE091102\031F3101.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:12:39 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 9:27 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\032F3201.D\ADC1B.CH Vial: 32
Signal #2 : F:\HPCHEM\1\DATA\PE091102\032F3201.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:34:39 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:48:23 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.85	3.83	13652822	27113778	20.899	19.899	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					104.50%	99.50%	
22)	SR	Decachlorobiphen	13.52	14.42	19129981	32259401	45.902	41.907	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					229.51%#	209.53%#	
		Target Compounds							
2)		alpha-BHC	4.71	4.80	12499400	21318448	10.610	10.237	
3)	M	gamma-BHC (Linda	5.20	5.37	11216674	19094341	10.968	10.554	
4)	M	Heptachlor	5.94	6.05	10265307	14205956	10.496	16.186	#
5)	M	Aldrin	6.41	6.55	10594854	17864704	10.711	10.418	
6)		beta-BHC	5.34	5.51	4143892	7395909	10.946	11.350	
7)		delta-BHC	5.62	5.97	10803565	17689262	10.916	10.956	
8)		Heptachlor Epoxi	7.34	7.46	9217520	15887883	11.077	10.896	
9)		Endosulfan I	8.01	8.13	9072154	14983811	10.080	10.674	
10)		gamma-Chlordane	7.54	7.76	9903951	16598889	11.426	11.023	
11)		alpha-Chlordane	7.77	8.02	8534508	14915039	10.829	10.722	
12)		4,4'-DDE	7.90	8.35	16128536	30565757	22.179	21.411	
13)	M	Dieldrin	8.44	8.65	16940424	30941471	21.410	20.903	
14)	M	Endrin	8.87	9.23	11116653	20078791	19.221	18.749	
15)		Endosulfan II	9.30	9.64	14011087	25598446	22.569	22.080	
16)		4,4'-DDD	9.00	9.46	13471850	23803473	22.406	22.628	
17)	M	4,4'-DDT	9.53	10.06	11260465	19098447	18.276	20.284	
18)		Endrin Aldehyde	10.10	10.32	10604426	19935961	22.869	22.748	
19)		Endosulfan Sulfa	10.95	10.87	12126772	23498848	22.012	22.174	
20)		Methoxychlor	10.47	11.47	22689515	40343830	92.456	101.481	
21)		Endrin Ketone	11.50	11.94	14474748	28825517	22.228	22.314	

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
032F3201.D 8081_910.M Fri Sep 13 09:21:14 2002

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 032F3201.D
Date Acquired 12-Sep-2002, 08:34:39

Column #1

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation
Tetrachloro-m-xylene (S)	20	20.90	4.5
alpha-BHC	10	10.61	6.1
gamma-BHC (Lindane)	10	10.97	9.7
Heptachlor	10	10.50	5.0
Aldrin	10	10.71	7.1
beta-BHC	10	10.95	9.5
delta-BHC	10	10.92	9.2
Heptachlor Epoxide	10	11.08	10.8
Endosulfan I	10	10.08	0.8
gamma-Chlordane	10	11.43	14.3
alpha-Chlordane	10	10.83	8.3
4,4'-DDE	20	22.18	10.9
Dieldrin	20	21.41	7.1
Endrin	20	19.22	3.9
Endosulfan II	20	22.57	12.8
4,4'-DDD	20	22.41	12.0
4,4'-DDT	20	18.28	8.6
Endrin Aldehyde	20	22.87	14.3
Endosulfan Sulfate	20	22.01	10.1
Methoxychlor	100	92.46	7.5
Endrin Ketone	20	22.23	11.1
Decachlorobiphenyl (S)	40	45.90	14.8

Average Percent Difference of All Compounds 9.01

(#) = Out of Range

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 032F3201.D
Date Acquired 12-Sep-2002, 08:34:39

Column #2

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation	
Tetrachloro-m-xylene (S)	20	19.90	0.5	
alpha-BHC	10	10.24	2.4	
gamma-BHC (Lindane)	10	10.55	5.5	
Heptachlor	10	16.19	61.9	#
Aldrin	10	10.42	4.2	
beta-BHC	10	11.35	13.5	
delta-BHC	10	10.96	9.6	
Heptachlor Epoxide	10	10.90	9.0	
Endosulfan I	10	10.67	6.7	
gamma-Chlordane	10	11.02	10.2	
alpha-Chlordane	10	10.72	7.2	
4,4'-DDE	20	21.41	7.1	
Dieldrin	20	20.90	4.5	
Endrin	20	18.75	6.3	
Endosulfan II	20	22.08	10.4	
4,4'-DDD	20	22.63	13.1	
4,4'-DDT	20	20.28	1.4	
Endrin Aldehyde	20	22.75	13.7	
Endosulfan Sulfate	20	22.17	10.9	
Methoxychlor	100	101.48	1.5	
Endrin Ketone	20	22.31	11.6	
Decachlorobiphenyl (S)	40	41.91	4.8	

Average Percent Difference of All Compounds 9.81

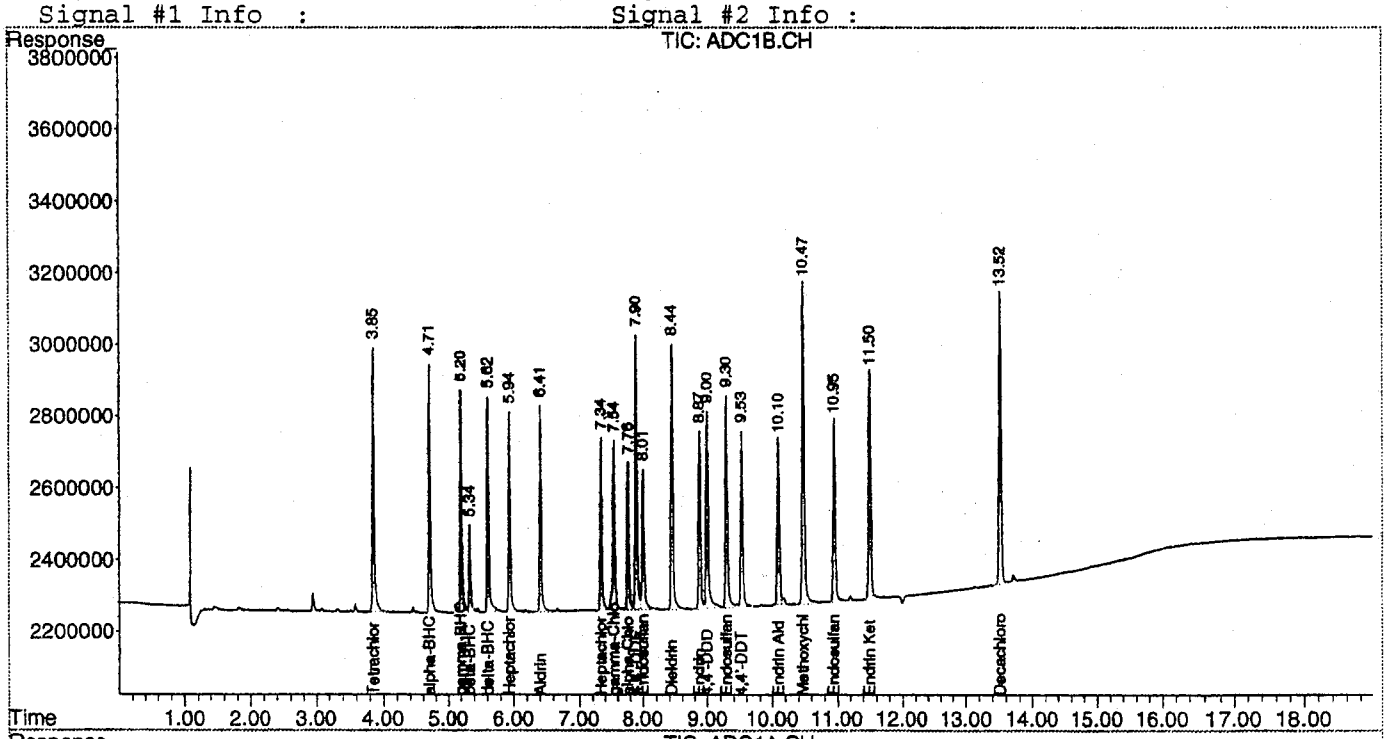
(#) = Out of Range

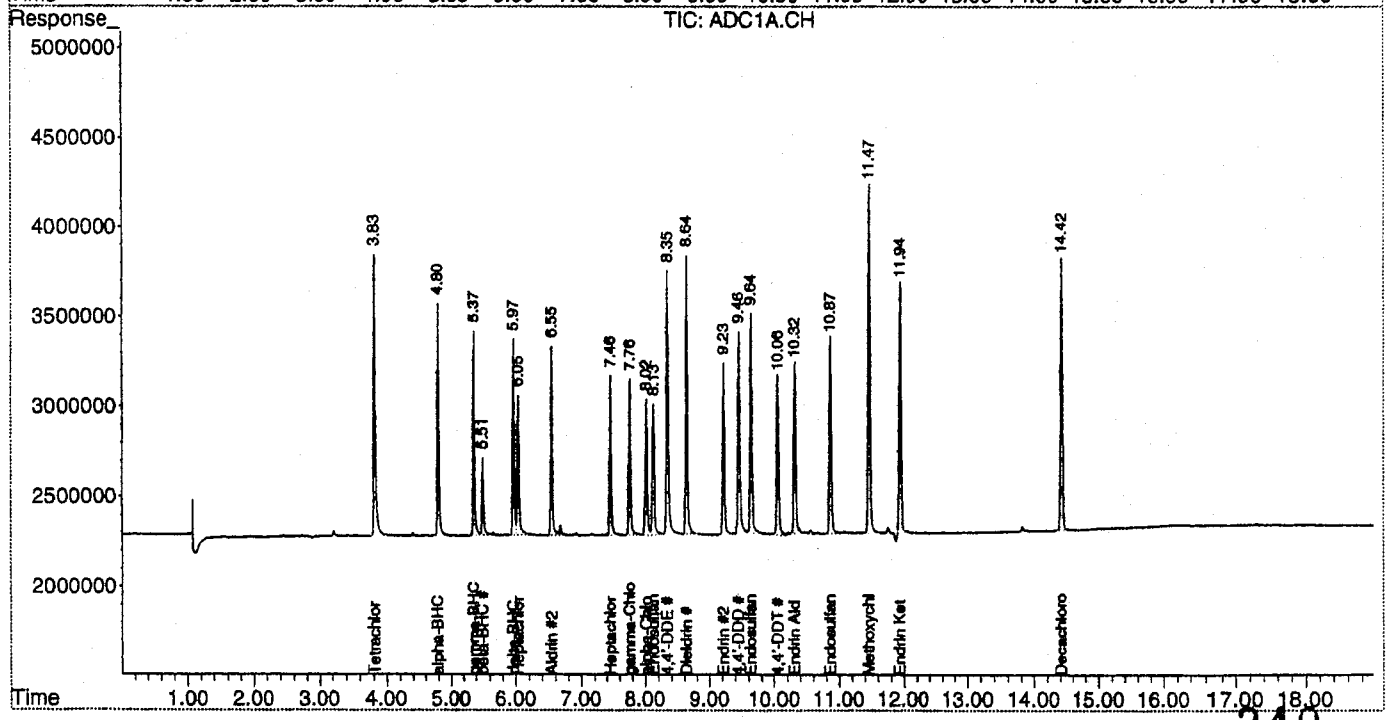
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\032F3201.D\ADC1B.CH Vial: 32
Signal #2 : F:\HPCHEM\1\DATA\PE091102\032F3201.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:34:39 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:48 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1B.CH Vial: 33
Signal #2 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:56:42 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:05:43 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	SR Tetrachloro-m-xy	3.85	3.83	13230663	25872140	19.903	19.860
	Spiked Amount 20.000 Range 60 - 150 Recovery =					99.52%	99.30%
1)	SR Decachlorobiphen	13.51f	14.42f	8938812	14952908	19.793	19.680
	Spiked Amount 20.000 Range 60 - 150 Recovery =					98.96%	98.40%
	Target Compounds						
2)	Hexachloroethane	1.53	1.46	23147585	39468723	15.026	14.349
3)	Hexachlorobenzen	4.45	4.56	14396139	20120834	13.903	14.214
4)	Hexachlorobutadi	1.81	1.72	30892685	55931338	14.570	13.732
5)	Oxychlordane	7.18	7.30	9838748	17210654	14.244	14.135
6)	cis-Nonachlor	8.93f	9.38	11454236	21291492	14.149	13.934
7)	trans-Nonachlor	7.73	7.92	10424342	19458208	13.726	14.175
8)	2,4'-DDE	7.33	7.78	7107683	12604904	14.709	14.790
9)	2,4'-DDD	8.20	8.73	6193449	11080118	15.406	15.117
10)	2,4'-DDT	8.67f	9.30	6460276	10316748	13.934	15.060

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1B.CH Vial: 33
Signal #2 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:56:42 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E

Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	SR	Tetrachloro-m-xylene (S)	20.000	19.903	0.5	0	-0.01
2		Hexachloroethane	15.000	15.026	-0.2	0	0.00
3		Hexachlorobenzene	15.000	13.903	7.3	0	-0.01
4		Hexachlorobutadiene	15.000	14.570	2.9	0	0.00
5		Oxychlordane	15.000	14.244	5.0	0	-0.02
6		cis-Nonachlor	15.000	14.149	5.7	0	-0.02
7		trans-Nonachlor	15.000	13.726	8.5	0	-0.02
8		2,4'-DDE	15.000	14.709	1.9	0	-0.02
9		2,4'-DDD	15.000	15.406	-2.7	0	-0.02
10		2,4'-DDT	15.000	13.934	7.1	0	-0.02
11	SR	Decachlorobiphenyl (S)	20.000	19.793	1.0	0	-0.03

Signal #2

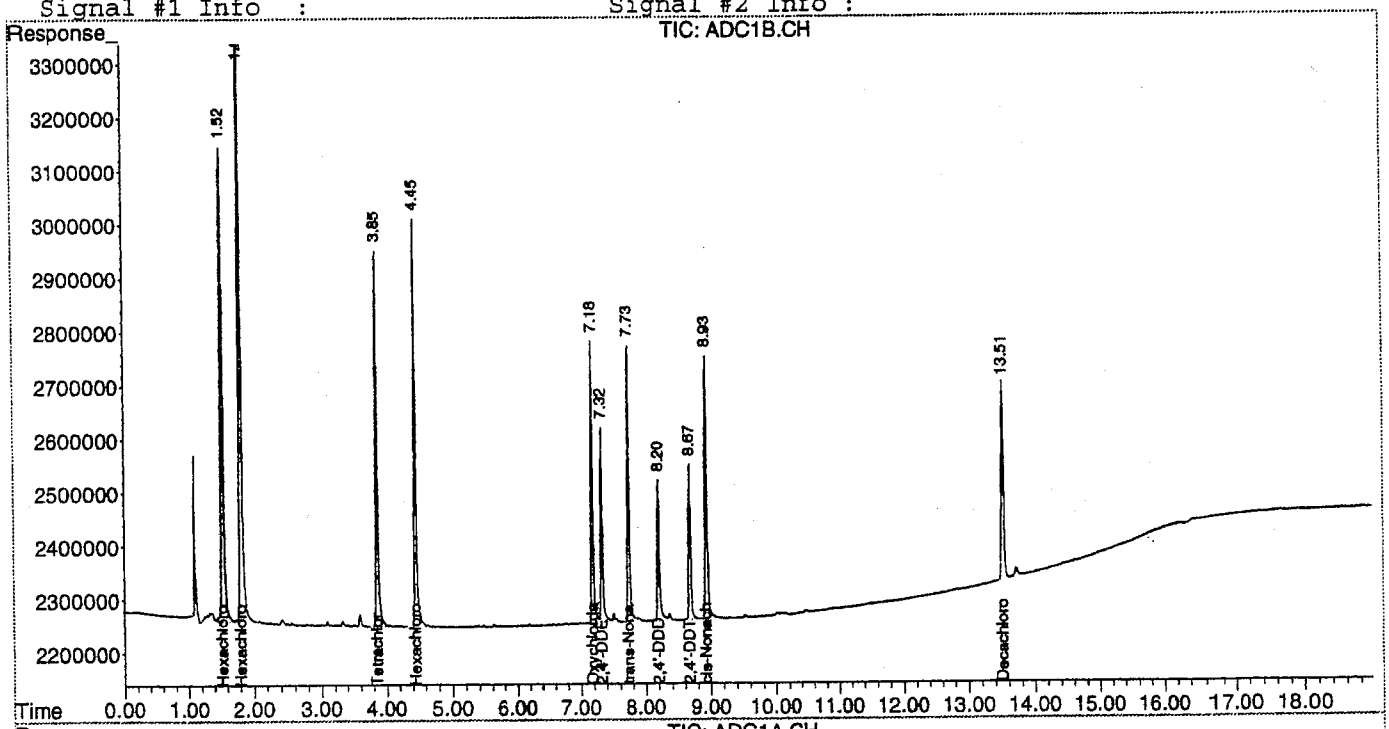
1	SR	Tetrachloro-m-xylene (S)	20.000	19.860	0.7	0	-0.01
2		Hexachloroethane	15.000	14.349	4.3	0	0.00
3		Hexachlorobenzene	15.000	14.214	5.2	0	-0.01
4		Hexachlorobutadiene	15.000	13.732	8.5	0	0.00
5		Oxychlordane	15.000	14.135	5.8	0	-0.01
6		cis-Nonachlor	15.000	13.934	7.1	0	-0.02
7		trans-Nonachlor	15.000	14.175	5.5	0	-0.02
8		2,4'-DDE	15.000	14.790	1.4	0	-0.02
9		2,4'-DDD	15.000	15.117	-0.8	0	-0.02
10		2,4'-DDT	15.000	15.060	-0.4	0	-0.02
11	SR	Decachlorobiphenyl (S)	20.000	19.680	1.6	0	-0.02

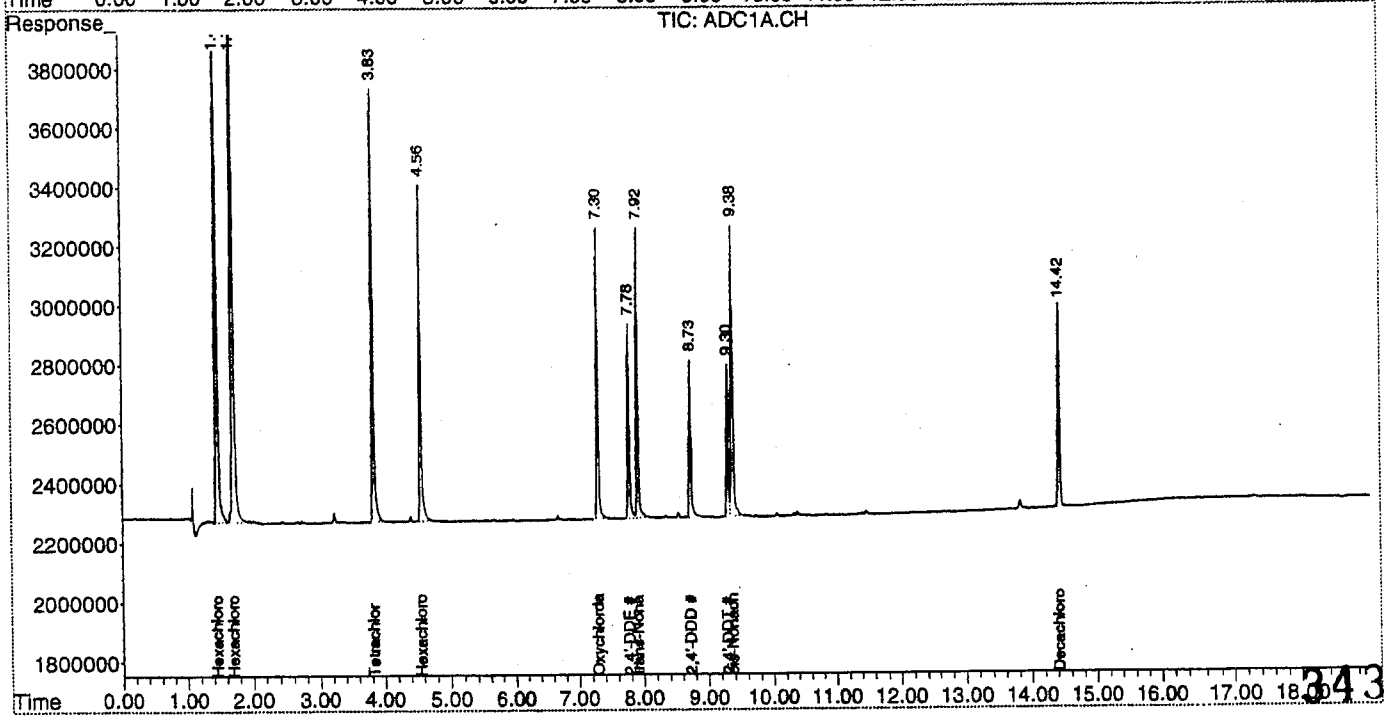
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1B.CH Vial: 33
Signal #2 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:56:42 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:05 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Custom Report - DDT/Endrin Breakdown Evaluation

Sample Name Eval Pest889

Data File Name F:\HPCHEM\1\DATA\PE091102\049F4901.D
Date Acquired 12-Sep-2002, 14:49:00

Compound Name	RT #1	RT #2	Resp. #1	Resp. #2	Amt. #1	Amt. #2	% Breakdown Column #1	% Breakdown Column #2
Endrin	8.88	9.23	24201480	48040196	41.84	44.86	21.42%	18.74%
Endrin Aldehyde	10.10	10.32	2806773	4467514	6.05	5.10		
Endrin Ketone	11.50	11.94	3789509	6613633	5.82	5.12		
4,4'-DDT	9.53	10.07	42968002	85946765	69.74	91.28	10.71%	8.14%
4,4'-DDD	9.01	9.46	4844567	7617712	8.06	7.24		
4,4'-DDE	7.90	0.00	308655	0	0.42	0.00		

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\049F4901.D\ADC1B.CH Vial: 49
Signal #2 : F:\HPCHEM\1\DATA\PE091102\049F4901.D\ADC1A.CH
Acq On : 12-Sep-2002, 14:49:00 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 08:21:41 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.85	3.83	12995136	25561800	19.892	18.760	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	99.46%	93.80%	
2)	SR	Decachlorobiphen	13.52	14.43	9114806	14944900	21.871	19.414	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	109.36%	97.07%	
		Target Compounds							
2)		alpha-BHC	4.71	4.80	11765112	19908102	9.987	9.560	
3)	M	gamma-BHC (Linda	5.20	5.37	10178575	17587871	9.953	9.722	
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.	
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.	
6)		beta-BHC	5.34	5.51	3854441	6909619	10.181	10.604	
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.	
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.	
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
10)		gamma-Chlordane	7.50f	0.00	130171	0	0.150	N.D.	#
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
12)		4,4'-DDE	7.90	0.00	308655	0	0.424	N.D.	#
13)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.	
14)	M	Endrin	8.88	9.23	24201480	48040196	41.845	44.858	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	9.01	9.46	4844567	7617712	8.057	7.241	
17)	M	4,4'-DDT	9.53	10.07	42968002	85946765	69.737	91.281	
18)		Endrin Aldehyde	10.10	10.32	2806773	4467514	6.053	5.098	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	10.48	11.47	43160025	88317609	175.871	222.155	
21)		Endrin Ketone	11.50	11.94	3789509	6613633	5.819	5.120	

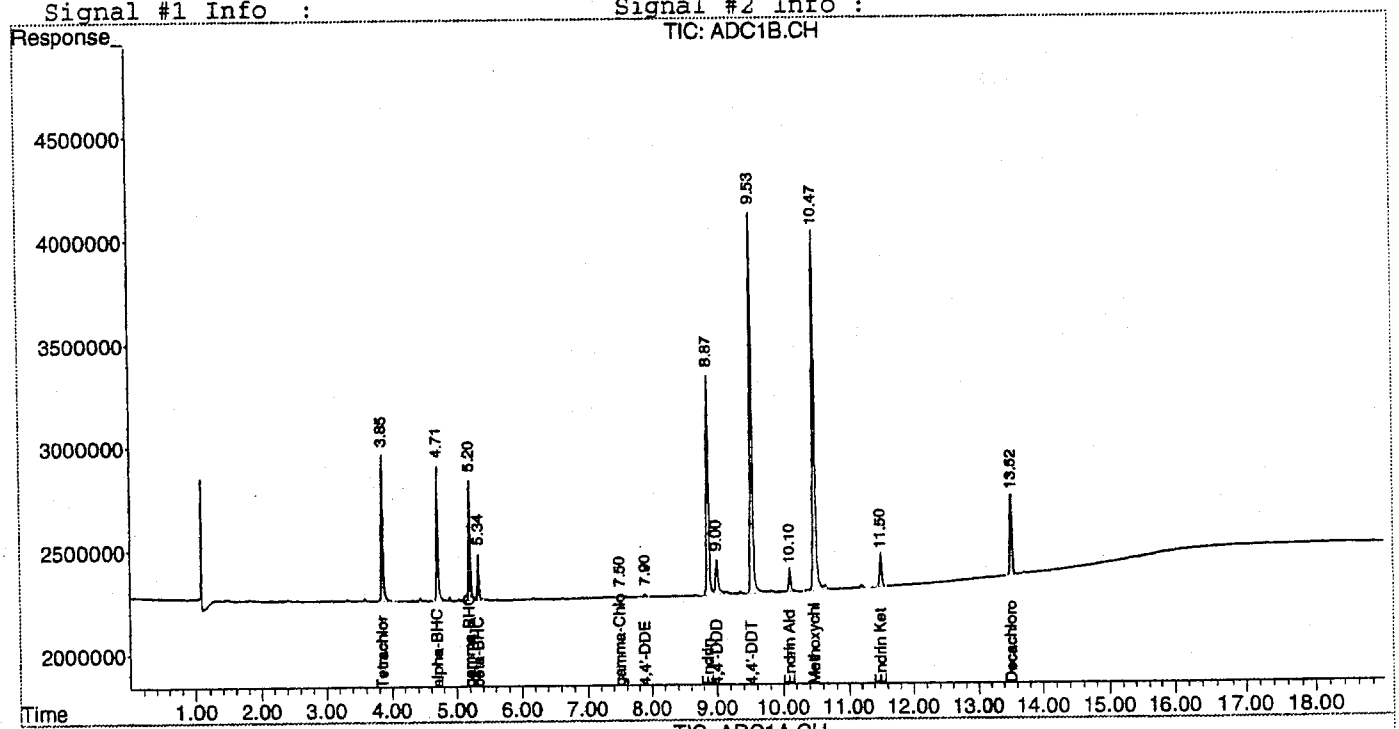
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
049F4901.D 8081_910.M Fri Sep 13 08:24:53 2002

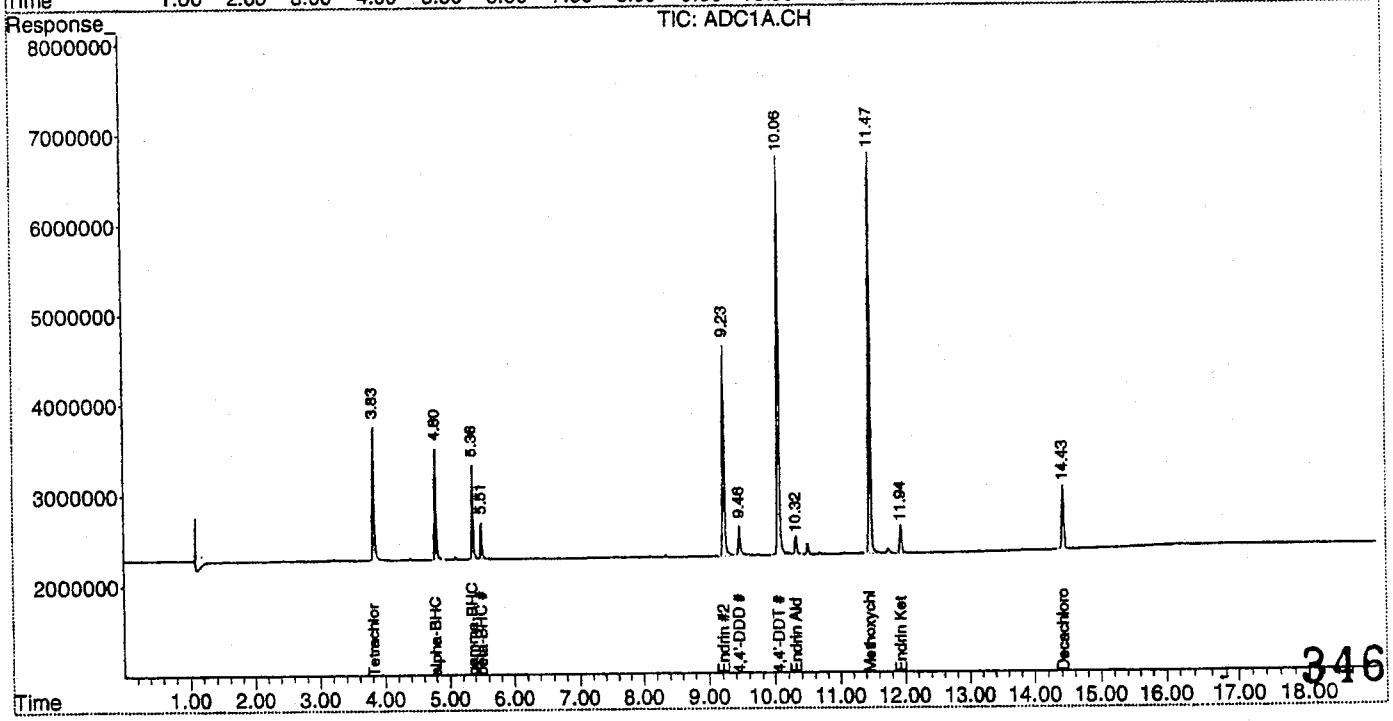
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\049F4901.D\ADC1B.CH Vial: 49
Signal #2 : F:\HPCHEM\1\DATA\PE091102\049F4901.D\ADC1A.CH
Acq On : 12-Sep-2002, 14:49:00 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 8:21 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





346

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\050F5001.D\ADC1B.CH Vial: 50
Signal #2 : F:\HPCHEM\1\DATA\PE091102\050F5001.D\ADC1A.CH
Acq On : 12-Sep-2002, 15:10:57 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 08:23:55 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.86	3.83	13869422	27787344	21.231	20.393
Spiked Amount		20.000 Range	60 -	150	Recovery	=	106.16%	101.96%
22)	SR	Decachlorobiphen	13.52	14.43	19069615	32229787	45.757	41.869
Spiked Amount		20.000 Range	60 -	150	Recovery	=	228.78%#	209.34%#
		Target Compounds						
2)		alpha-BHC	4.71	4.80	12528256	21598802	10.635	10.371
3)	M	gamma-BHC (Linda	5.21	5.37	11189000	19249873	10.941	10.640
4)	M	Heptachlor	5.95	6.05	9922631	13512862	10.146	15.396 #
5)	M	Aldrin	6.42	6.55	10463621	18139653	10.578	10.578
6)		beta-BHC	5.34	5.51	4081558	6995994	10.781	10.736
7)		delta-BHC	5.62	5.98	10846229	18167654	10.960	11.252
8)		Heptachlor Epoxi	7.35	7.46	9136008	15960591	10.979	10.946
9)		Endosulfan I	8.01	8.14	8918888	15021259	9.909	10.701
10)		gamma-Chlordane	7.55	7.77	9821219	16723534	11.331	11.106
11)		alpha-Chlordane	7.77	8.03	8499610	15154172	10.785	10.894
12)		4,4'-DDE	7.90	8.35	16149399	30966408	22.208	21.692
13)	M	Dieldrin	8.45	8.65	16836619	31057897	21.279	20.982
14)	M	Endrin	8.88	9.23	10958419	19891582	18.947	18.574
15)		Endosulfan II	9.30	9.65	13790654	25466936	22.214	21.967
16)		4,4'-DDD	9.00	9.46	13932590	25799234	23.173	24.525
17)	M	4,4'-DDT	9.53	10.07	10588895	18224017	17.186	19.355
18)		Endrin Aldehyde	10.10	10.32	10635001	20222755	22.935	23.076
19)		Endosulfan Sulfa	10.95	10.87	11580771	23449079	21.021	22.127
20)		Methoxychlor	10.48	11.47	21126321	38276950	86.087	96.282
21)		Endrin Ketone	11.50	11.94	14850412	28915739	22.805	22.384

347

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 050F5001.D
Date Acquired 12-Sep-2002, 15:10:57

Column #1

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation	
Tetrachloro-m-xylene (S)	20	21.23	6.2	
alpha-BHC	10	10.63	6.3	
gamma-BHC (Lindane)	10	10.94	9.4	
Heptachlor	10	10.15	1.5	
Aldrin	10	10.58	5.8	
beta-BHC	10	10.78	7.8	
delta-BHC	10	10.96	9.6	
Heptachlor Epoxide	10	10.98	9.8	
Endosulfan I	10	9.91	0.9	
gamma-Chlordane	10	11.33	13.3	
alpha-Chlordane	10	10.79	7.9	
4,4'-DDE	20	22.21	11.0	
Dieldrin	20	21.28	6.4	
Endrin	20	18.95	5.3	
Endosulfan II	20	22.21	11.1	
4,4'-DDD	20	23.17	15.9	#
4,4'-DDT	20	17.19	14.1	
Endrin Aldehyde	20	22.94	14.7	
Endosulfan Sulfate	20	21.02	5.1	
Methoxychlor	100	86.09	13.9	
Endrin Ketone	20	22.81	14.0	
Decachlorobiphenyl (S)	40	45.76	14.4	
Average Percent Difference of All Compounds			9.28	

(#) = Out of Range

348

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 050F5001.D
Date Acquired 12-Sep-2002, 15:10:57

Column #2

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation	
Tetrachloro-m-xylene (S)	20	20.39	2.0	
alpha-BHC	10	10.37	3.7	
gamma-BHC (Lindane)	10	10.64	6.4	
Heptachlor	10	15.40	54.0	#
Aldrin	10	10.58	5.8	
beta-BHC	10	10.74	7.4	
delta-BHC	10	11.25	12.5	
Heptachlor Epoxide	10	10.95	9.5	
Endosulfan I	10	10.70	7.0	
gamma-Chlordane	10	11.11	11.1	
alpha-Chlordane	10	10.89	8.9	
4,4'-DDE	20	21.69	8.5	
Dieldrin	20	20.98	4.9	
Endrin	20	18.57	7.1	
Endosulfan II	20	21.97	9.8	
4,4'-DDD	20	24.52	22.6	#
4,4'-DDT	20	19.36	3.2	
Endrin Aldehyde	20	23.08	15.4	#
Endosulfan Sulfate	20	22.13	10.6	
Methoxychlor	100	96.28	3.7	
Endrin Ketone	20	22.38	11.9	
Decachlorobiphenyl (S)	40	41.87	4.7	
Average Percent Difference of All Compounds			10.49	

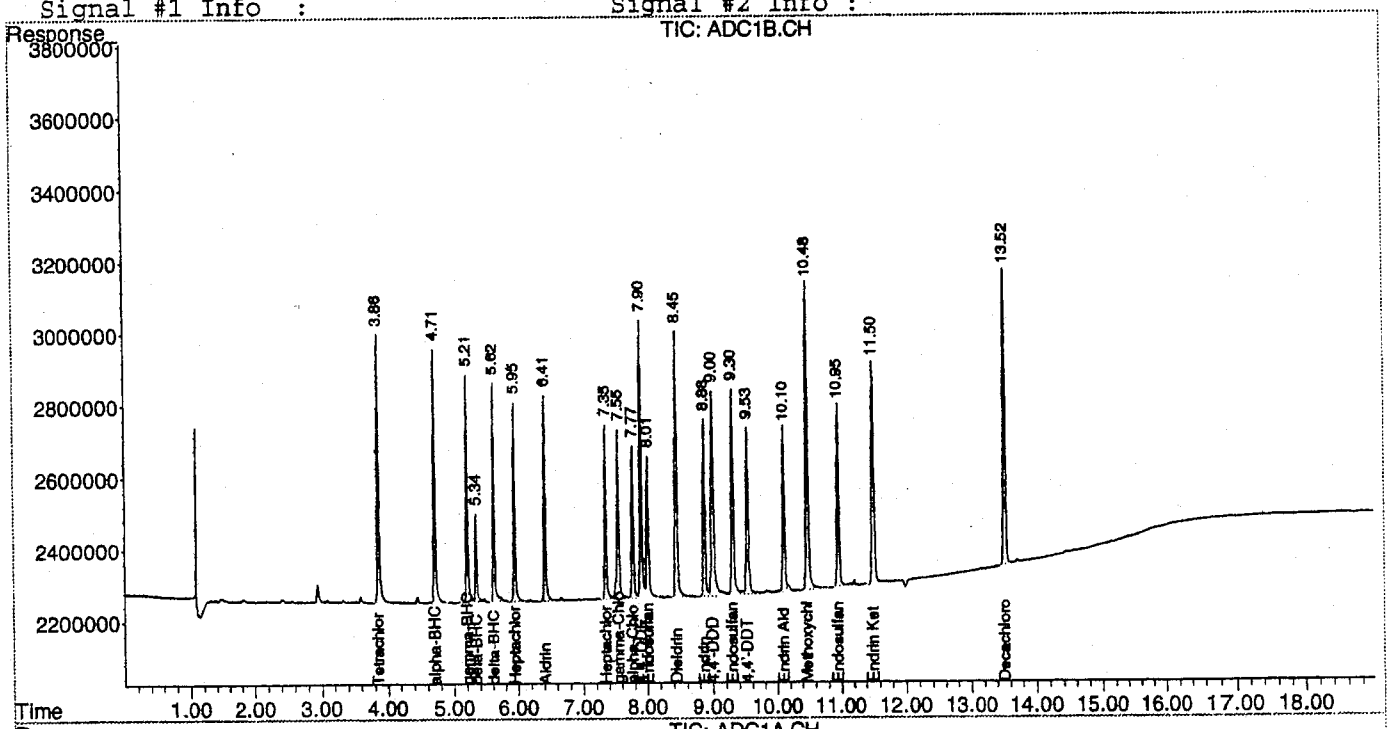
(#) = Out of Range

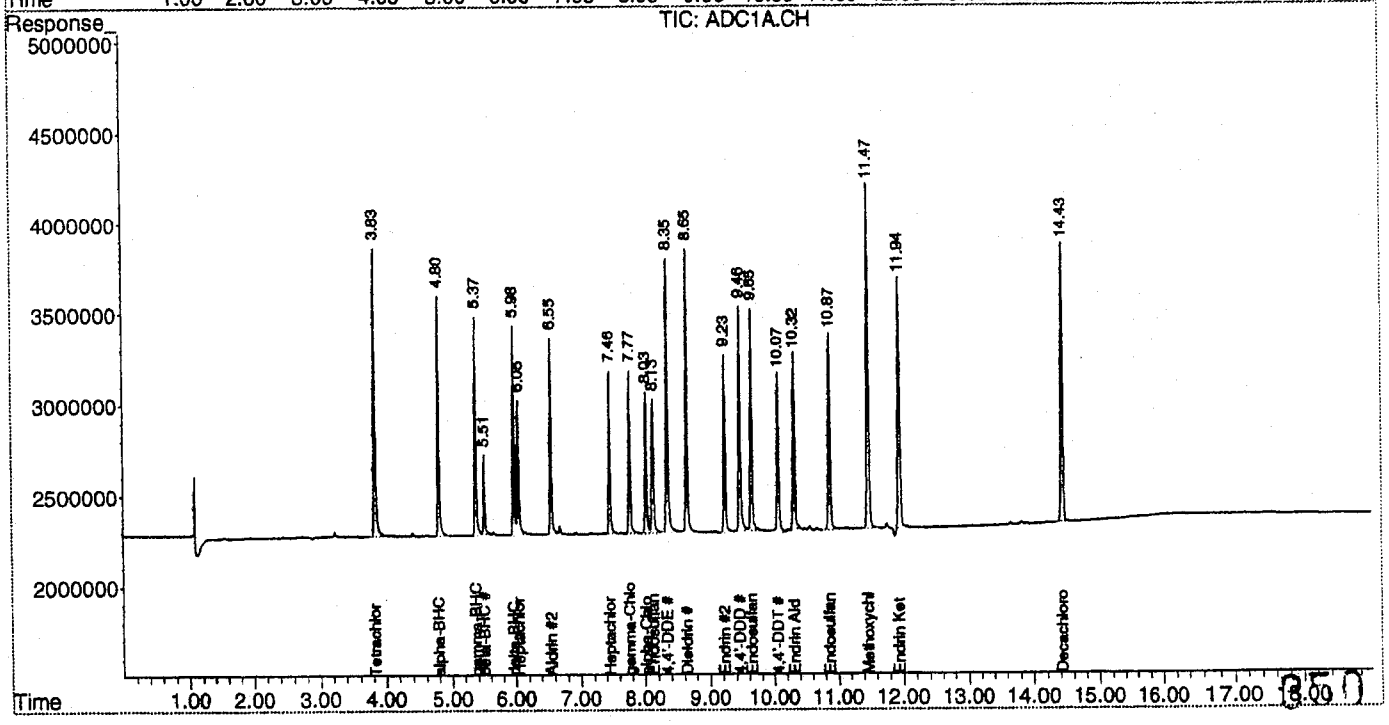
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\050F5001.D\ADC1B.CH Vial: 50
Signal #2 : F:\HPCHEM\1\DATA\PE091102\050F5001.D\ADC1A.CH
Acq On : 12-Sep-2002, 15:10:57 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 8:24 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1B.CH Vial: 51
Signal #2 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1A.CH
Acq On : 12-Sep-2002, 15:32:53 Operator: JDW
Sample : 15 ng/ml 8081A Plus Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 08:29:57 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	SR Tetrachloro-m-xy	3.86	3.84	13412257	26733691	20.176	20.522
	Spiked Amount 20.000 Range 60 - 150 Recovery =					100.88%	102.61%
1)	SR Decachlorobiphen	13.53	14.44	8934823	14550144	19.784	19.150
	Spiked Amount 20.000 Range 60 - 150 Recovery =					98.92%	95.75%
	Target Compounds						
2)	Hexachloroethane	1.53	1.46	23519038	40311511	15.268	14.656
3)	Hexachlorobenzen	4.46	4.57	14580497	20719122	14.081	14.637
4)	Hexachlorobutadi	1.82	1.72	31030935	56850637	14.635	13.958
5)	Oxychlordane	7.19	7.31	9972031	17673098	14.437	14.515
6)	cis-Nonachlor	8.95	9.39	11638831	21716170	14.377	14.212
7)	trans-Nonachlor	7.75	7.93	10682930	19872625	14.067	14.477
8)	2,4'-DDE	7.34	7.79	7247972	12970850	15.000	15.219
9)	2,4'-DDD	8.22	8.74	6396830	11512243	15.911	15.706
10)	2,4'-DDT	8.69	9.32	6216168	10199534	13.408	14.889

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1B.CH Vial: 51
Signal #2 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1A.CH
Acq On : 12-Sep-2002, 15:32:53 Operator: JDW
Sample : 15 ng/ml 8081A Plus Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E

Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	SR	Tetrachloro-m-xylene (S)	20.000	20.176	-0.9	0	0.00
2		Hexachloroethane	15.000	15.268	-1.8	0	0.00
3		Hexachlorobenzene	15.000	14.081	6.1	0	0.00
4		Hexachlorobutadiene	15.000	14.635	2.4	0	0.00
5		Oxychlordane	15.000	14.437	3.8	0	0.00
6		cis-Nonachlor	15.000	14.377	4.2	0	0.00
7		trans-Nonachlor	15.000	14.067	6.2	0	0.00
8		2,4'-DDE	15.000	15.000	0.0	0	0.00
9		2,4'-DDD	15.000	15.911	-6.1	0	0.00
10		2,4'-DDT	15.000	13.408	10.6	0	0.00
11	SR	Decachlorobiphenyl (S)	20.000	19.784	1.1	0	0.00

Signal #2

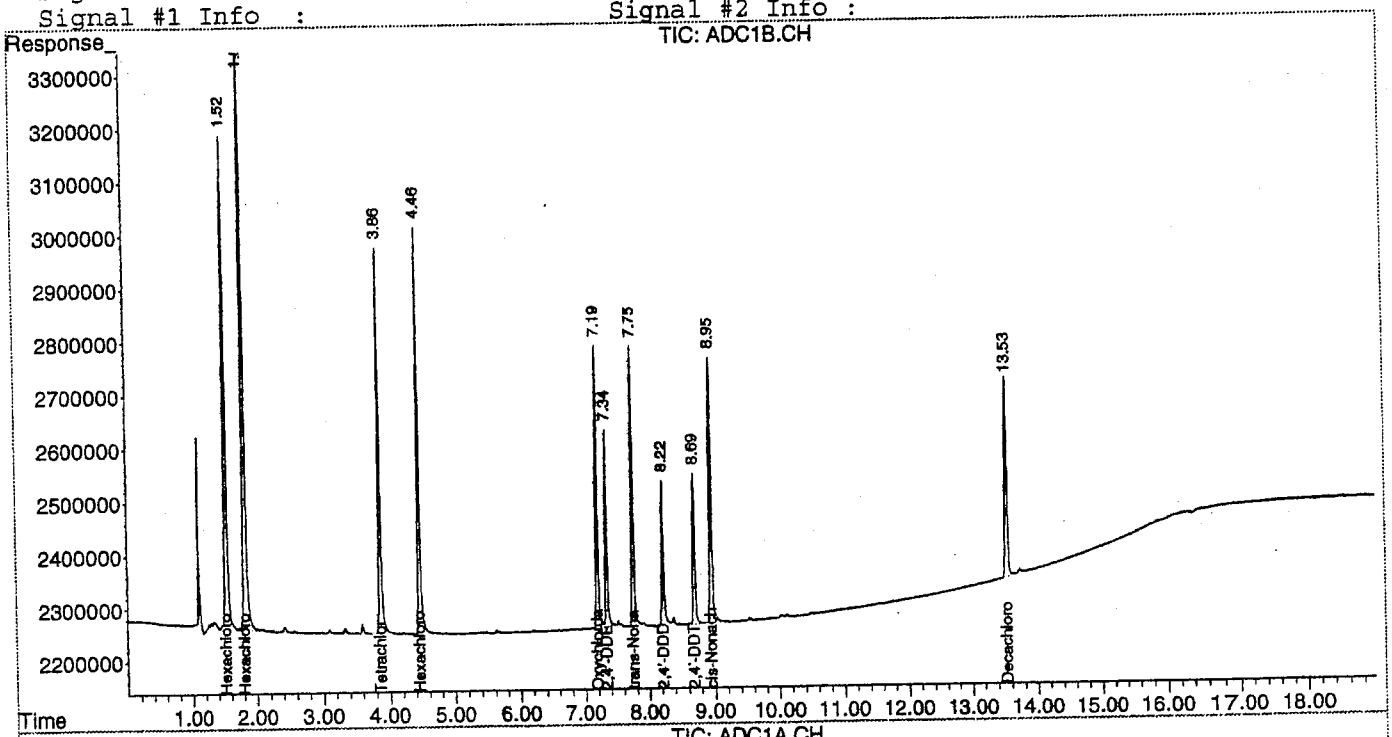
1	SR	Tetrachloro-m-xylene (S)	20.000	20.522	-2.6	0	0.00
2		Hexachloroethane	15.000	14.656	2.3	0	0.00
3		Hexachlorobenzene	15.000	14.637	2.4	0	0.00
4		Hexachlorobutadiene	15.000	13.958	6.9	0	0.00
5		Oxychlordane	15.000	14.515	3.2	0	0.00
6		cis-Nonachlor	15.000	14.212	5.3	0	0.00
7		trans-Nonachlor	15.000	14.477	3.5	0	0.00
8		2,4'-DDE	15.000	15.219	-1.5	0	0.00
9		2,4'-DDD	15.000	15.706	-4.7	0	0.00
10		2,4'-DDT	15.000	14.889	0.7	0	0.00
11	SR	Decachlorobiphenyl (S)	20.000	19.150	4.3	0	0.00

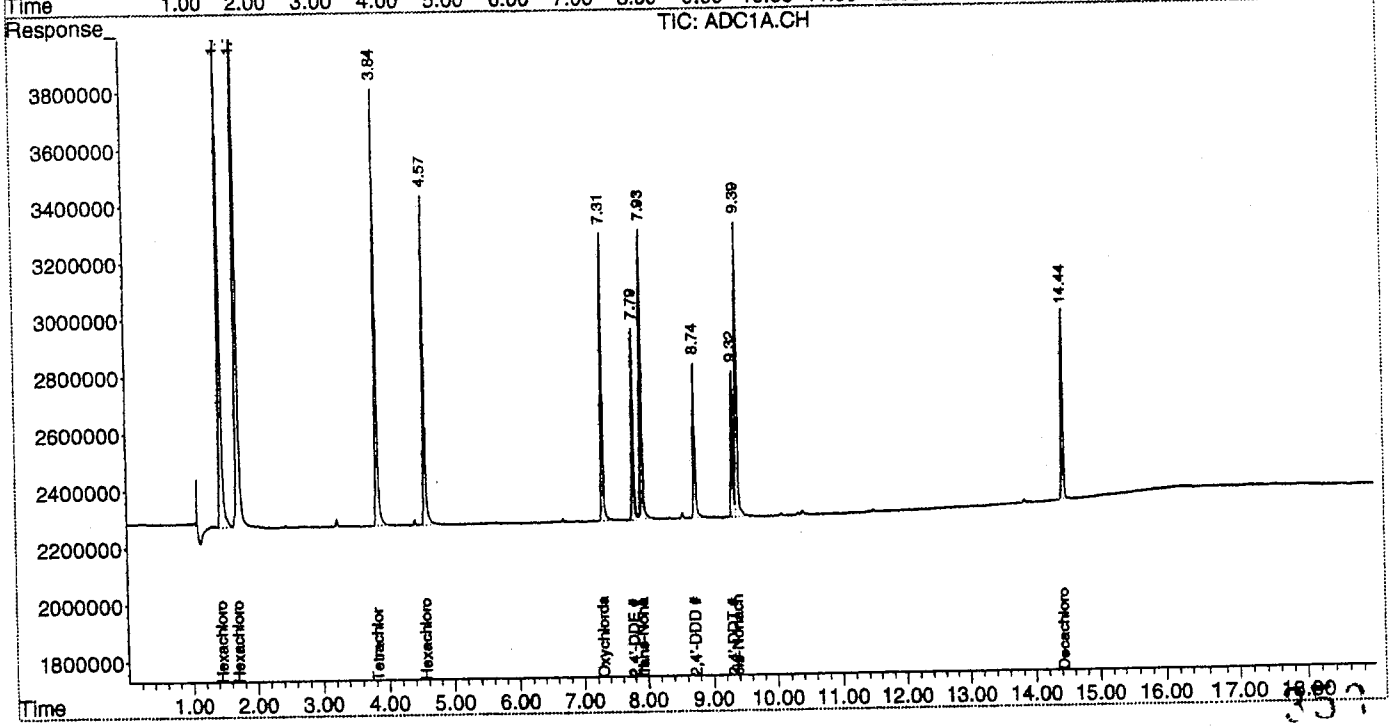
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1B.CH Vial: 51
Signal #2 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1A.CH
Acq On : 12-Sep-2002, 15:32:53 Operator: JDW
Sample : 15 ng/ml 8081A Plus Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 8:30 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





METHOD BLANK

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1B.CH Vial: 18
Signal #2 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:26:46 Operator: JDW
Sample : mb pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:50:44 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

NID

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.87	3.84	14504615	28288968	22.203	20.761	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					111.02%	103.80%	
2)	SR	Decachlorobiphen	13.54	14.44	10706901	18165006	25.691	23.598	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					128.45%	117.99%	
		Target Compounds							
2)		alpha-BHC	0.00	0.00	0	0	N.D.	N.D.	
3)	M	gamma-BHC (Linda	0.00	0.00	0	0	N.D.	N.D.	
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.	
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.	
6)		beta-BHC	0.00	0.00	0	0	N.D.	N.D.	
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.	
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.	
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
10)		gamma-Chlordane	7.52f	0.00	265634	0	0.306	N.D.	#
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
12)		4,4'-DDE	0.00	0.00	0	0	N.D.	N.D.	
13)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.	
14)	M	Endrin	0.00	0.00	0	0	N.D.	N.D.	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	0.00	0.00	0	0	N.D.	N.D.	
17)	M	4,4'-DDT	0.00	0.00	0	0	N.D.	N.D.	
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D.	N.D.	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	0.00	0.00	0	0	N.D.	N.D.	
21)		Endrin Ketone	0.00	0.00	0	0	N.D.	N.D.	

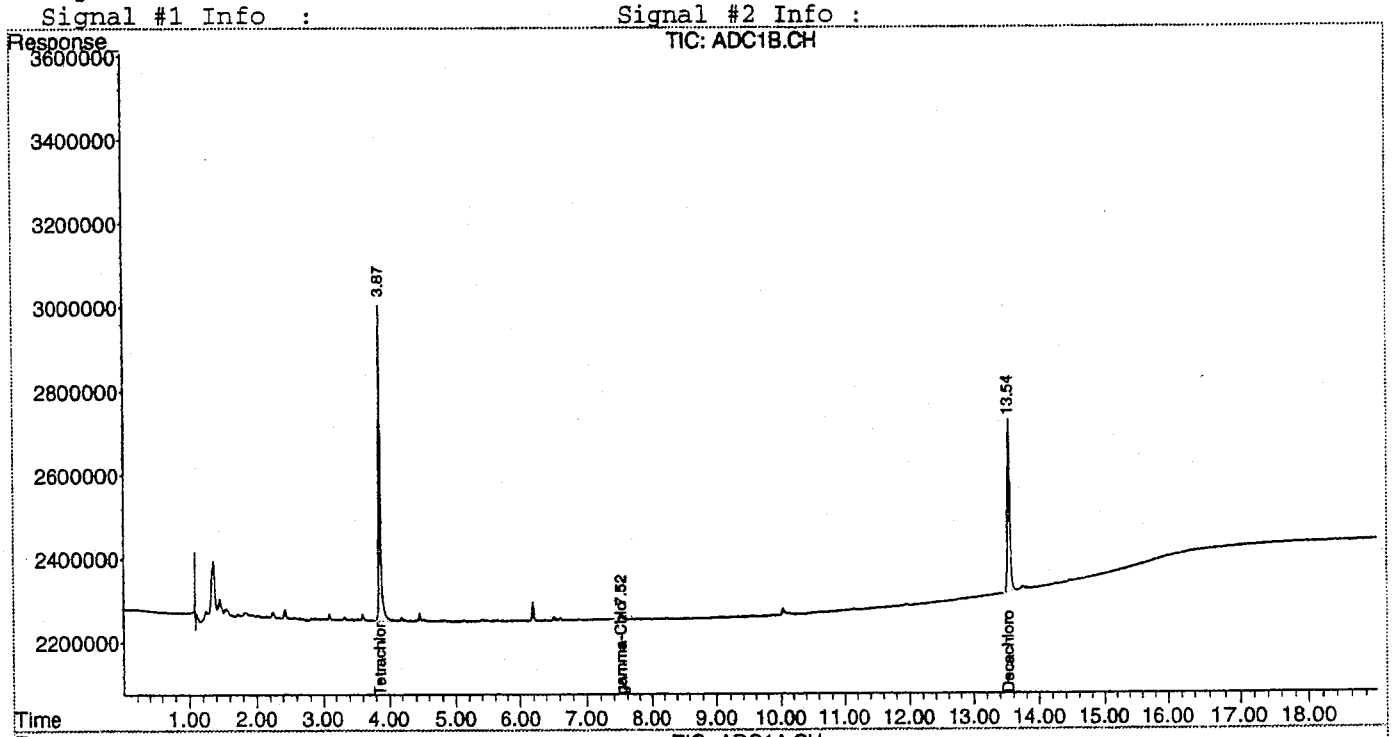
355

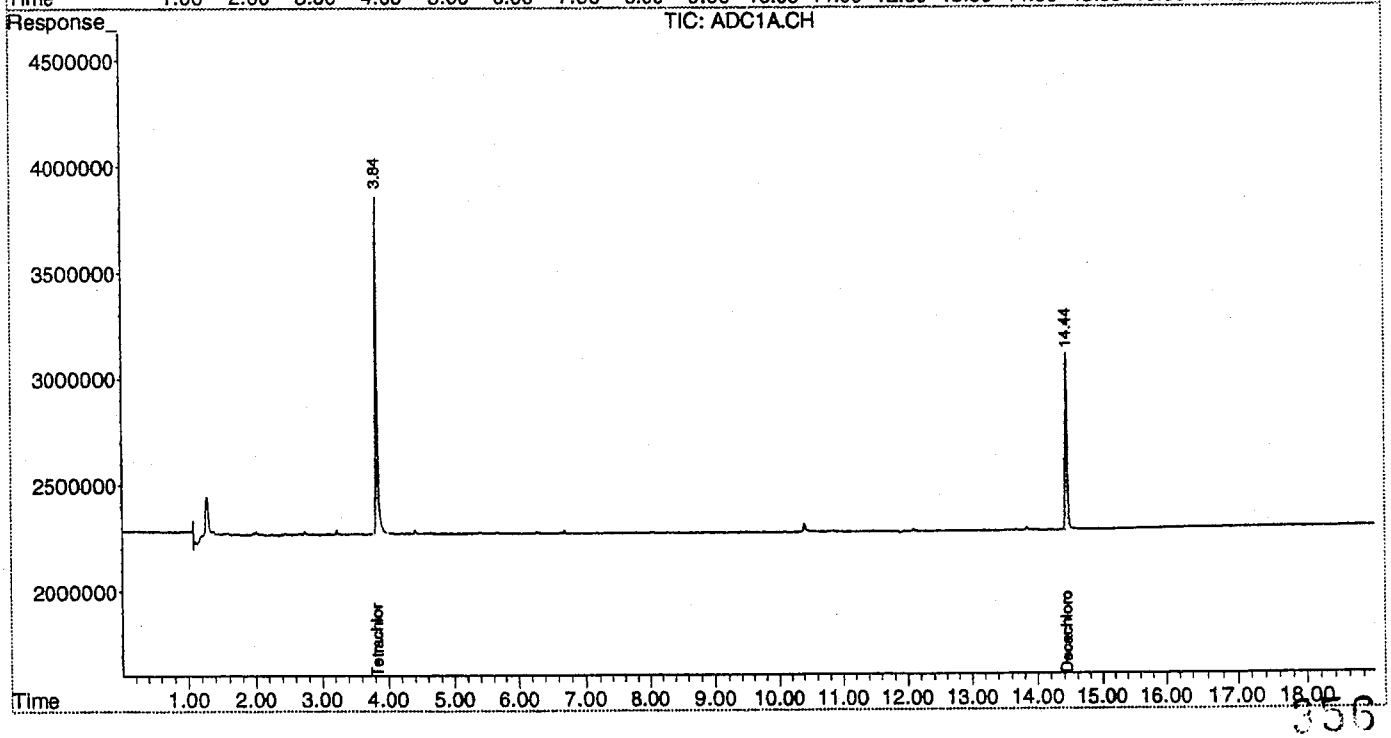
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Signal #1 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1B.CH Vial: 18
Signal #2 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:26:46 Operator: JDW
Sample : mb pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:50 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1B.CH Vial: 18
Signal #2 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:26:46 Operator: JDW
Sample : mb pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:06:05 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

ND

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
System Monitoring Compounds							
1) SR Tetrachloro-m-xy	3.87	3.84	14487177	28288968	21.793	21.716	
Spiked Amount 20.000 Range 60 - 150 Recovery =					108.97%	108.58%	
11) SR Decachlorobiphen	13.54	14.44	10585758	18165006	23.440	23.907	
Spiked Amount 20.000 Range 60 - 150 Recovery =					117.20%	119.54%	
Target Compounds							
2) Hexachloroethane	1.56f	0.00	994262	0	0.645	N.D.	#
3) Hexachlorobenzen	4.46	0.00	294453	0	0.284	N.D.	#
4) Hexachlorobutadi	1.82	0.00	150117	0	0.071	N.D.	#
5) Oxychlordane	0.00	0.00	0	0	N.D.	N.D.	
6) cis-Nonachlor	0.00	0.00	0	0	N.D.	N.D.	
7) trans-Nonachlor	0.00	0.00	0	0	N.D.	N.D.	
8) 2,4'-DDE	0.00	0.00	0	0	N.D.	N.D.	
9) 2,4'-DDD	0.00	0.00	0	0	N.D.	N.D.	
10) 2,4'-DDT	0.00	0.00	0	0	N.D.	N.D.	

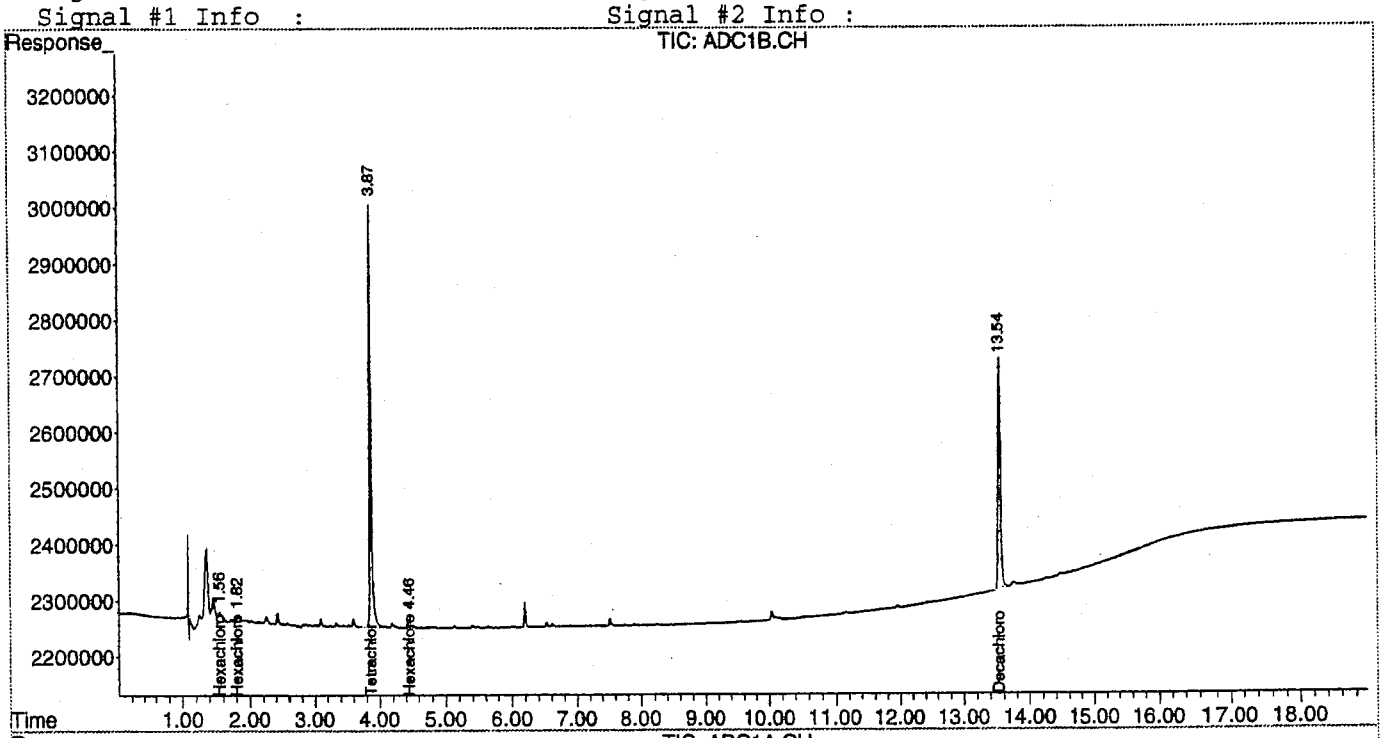
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
018F1801.D +CPDS_910.M Thu Sep 12 10:23:55 2002

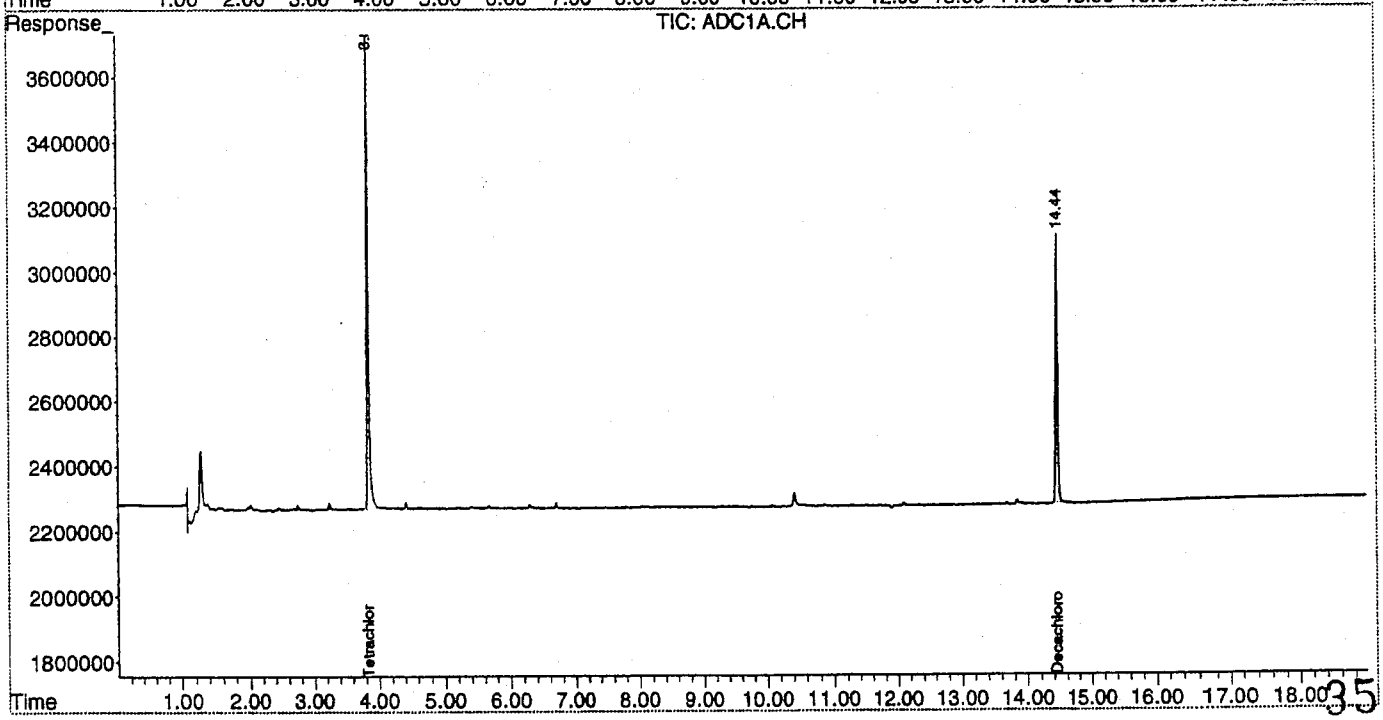
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1B.CH Vial: 18
Signal #2 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:26:46 Operator: JDW
Sample : mb pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:06 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\019F1901.D\ADC1B.CH Vial: 19
Signal #2 : F:\HPCHEM\1\DATA\PE091102\019F1901.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:48:44 Operator: JDW
Sample : bs pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:50:53 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

OK

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.84	14913287	28802273	22.829	21.138
Spiked Amount		20.000	Range	60 - 150	Recovery	=	114.15%	105.69%
22)	SR	Decachlorobiphen	13.54	14.45	10813526	18334980	25.947	23.818
Spiked Amount		20.000	Range	60 - 150	Recovery	=	129.74%	119.09%
		Target Compounds						
2)		alpha-BHC	0.00	0.00	0	0	N.D.	N.D.
3)	M	gamma-BHC (Linda	5.22	5.39	21699575	39520020	21.218	21.845
4)	M	Heptachlor	5.96	6.06	21864029	13436325	22.356	15.309
5)	M	Aldrin	6.43	6.57	21022375	36598102	21.252	21.342
6)		beta-BHC	0.00	0.00	0	0	N.D.	N.D.
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D. d	N.D. d
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.
10)		gamma-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.
12)		4,4'-DDE	0.00	0.00	0	0	N.D. d	N.D. d
13)	M	Dieldrin	8.47	8.67	38158739	74011297	48.227	50.000
14)	M	Endrin	8.90	9.25	26132199	50914687	45.183	47.542
15)		Endosulfan II	0.00	0.00	0	0	N.D. d	N.D. d
16)		4,4'-DDD	0.00	0.00	0	0	N.D. d	N.D. d
17)	M	4,4'-DDT	9.55	10.09	26168375	47732260	42.471	50.695
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D. d	N.D. d
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D. d	N.D. d
20)		Methoxychlor	0.00	0.00	0	0	N.D.	N.D.
21)		Endrin Ketone	0.00	0.00	0	0	N.D. d	N.D. d

360

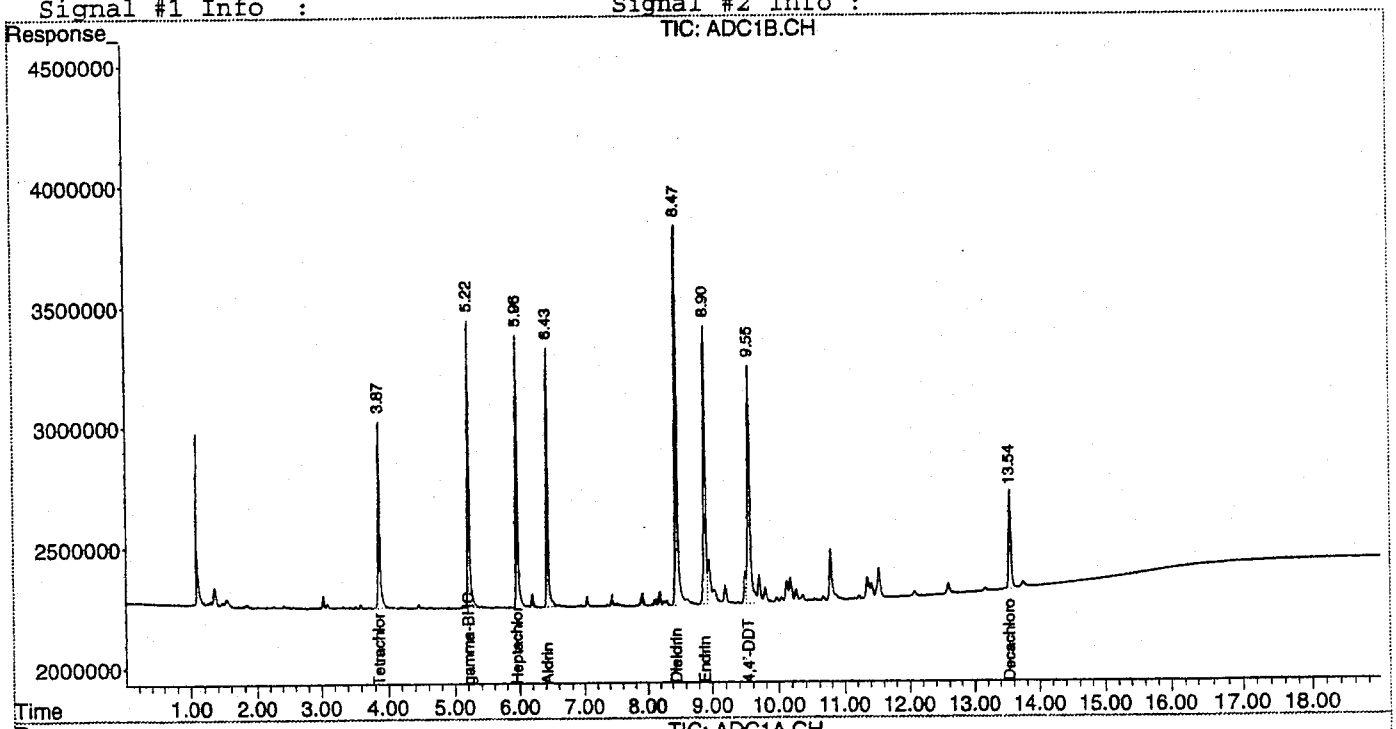
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

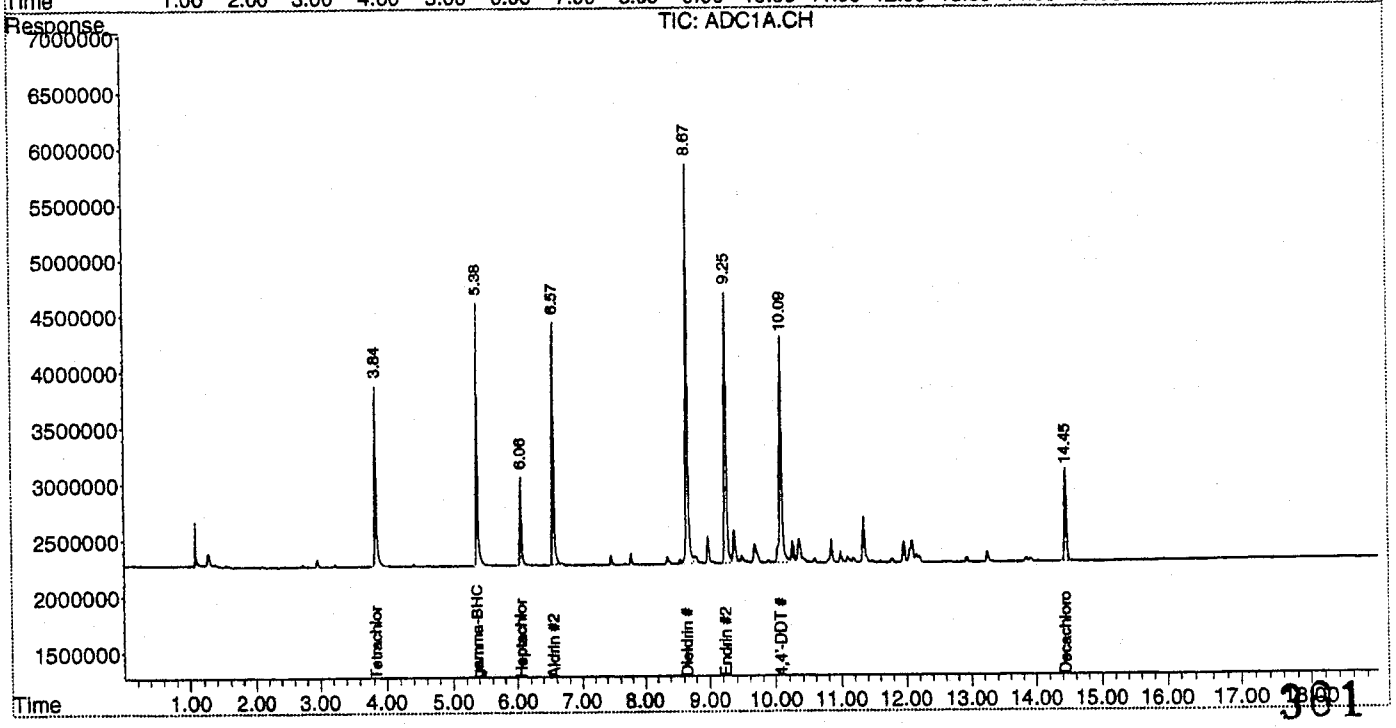
Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\019F1901.D\ADC1B.CH Vial: 19
Signal #2 : F:\HPCHEM\1\DATA\PE091102\019F1901.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:48:44 Operator: JDW
Sample : bs pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:51 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\020F2001.D\ADC1B.CH Vial: 20
Signal #2 : F:\HPCHEM\1\DATA\PE091102\020F2001.D\ADC1A.CH
Acq On : 12-Sep-2002, 04:10:35 Operator: JDW
Sample : bsd pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:51:23 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

OK

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.86	3.83	14713974	28936584	22.524	21.237
Spiked Amount		20.000 Range	60 - 150	Recovery	=		112.62%	106.19%
22)	SR	Decachlorobiphen	13.53	14.43	10898963	18490269	26.152	24.020
Spiked Amount		20.000 Range	60 - 150	Recovery	=		130.76%	120.10%
		Target Compounds						
2)		alpha-BHC	0.00	0.00	0	0	N.D.	N.D.
3)	M	gamma-BHC (Linda	5.21	5.37	22361987	40411742	21.866	22.337
4)	M	Heptachlor	5.95	6.05	22289961	13529526	22.792	15.415
5)	M	Aldrin	6.42	6.55	21294280	37322333	21.527	21.765
6)		beta-BHC	0.00	0.00	0	0	N.D.	N.D.
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D. d	N.D. d
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.
10)		gamma-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.
12)		4,4'-DDE	0.00	0.00	0	0	N.D. d	N.D. d
13)	M	Dieldrin	8.45	8.65	38819332	75660901	49.062	51.115
14)	M	Endrin	8.88	9.23	26639259	52098890	46.060	48.647
15)		Endosulfan II	0.00	0.00	0	0	N.D. d	N.D. d
16)		4,4'-DDD	0.00	0.00	0	0	N.D. d	N.D. d
17)	M	4,4'-DDT	9.54	10.07	26601811	48870486	43.175	51.903
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D. d	N.D. d
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D. d	N.D. d
20)		Methoxychlor	0.00	0.00	0	0	N.D. d	N.D. d
21)		Endrin Ketone	0.00	0.00	0	0	N.D. d	N.D. d

362

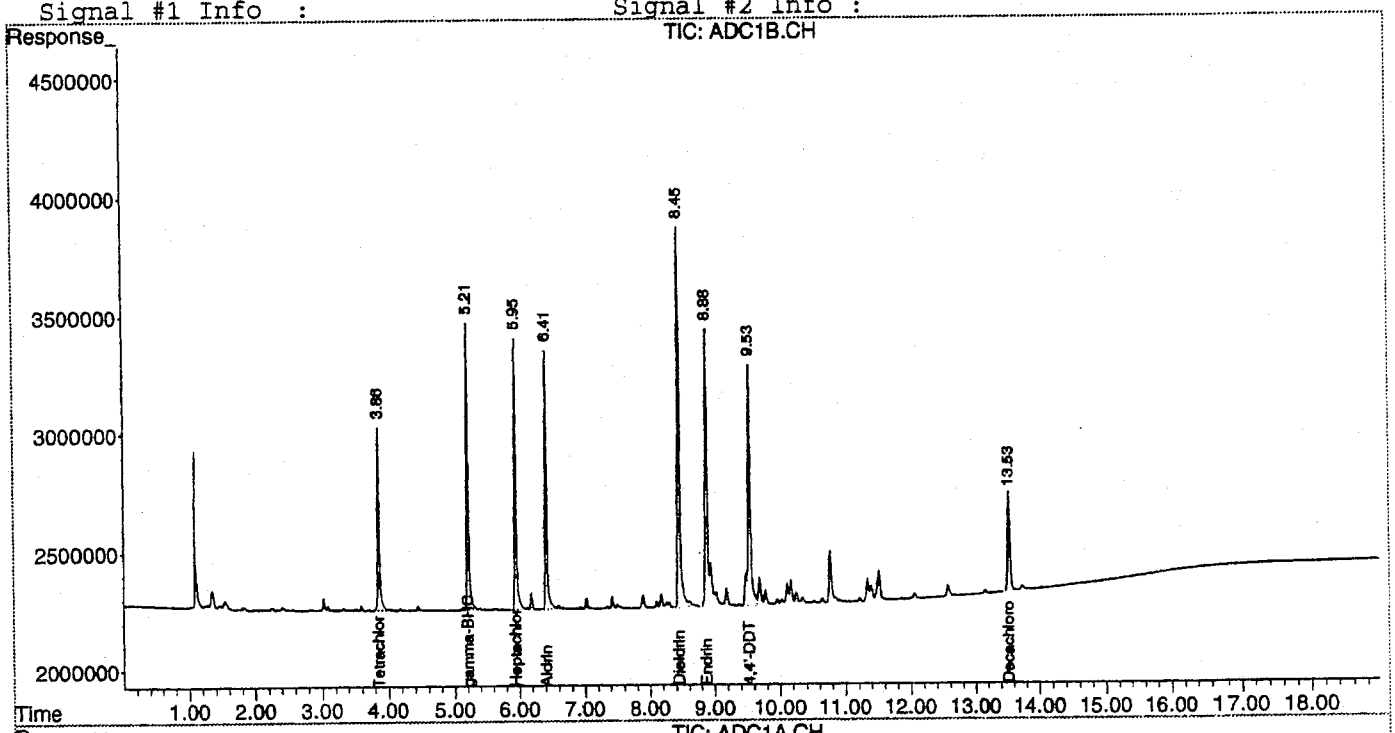
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
020F2001.D 8081_910.M Thu Sep 12 11:59:04 2002

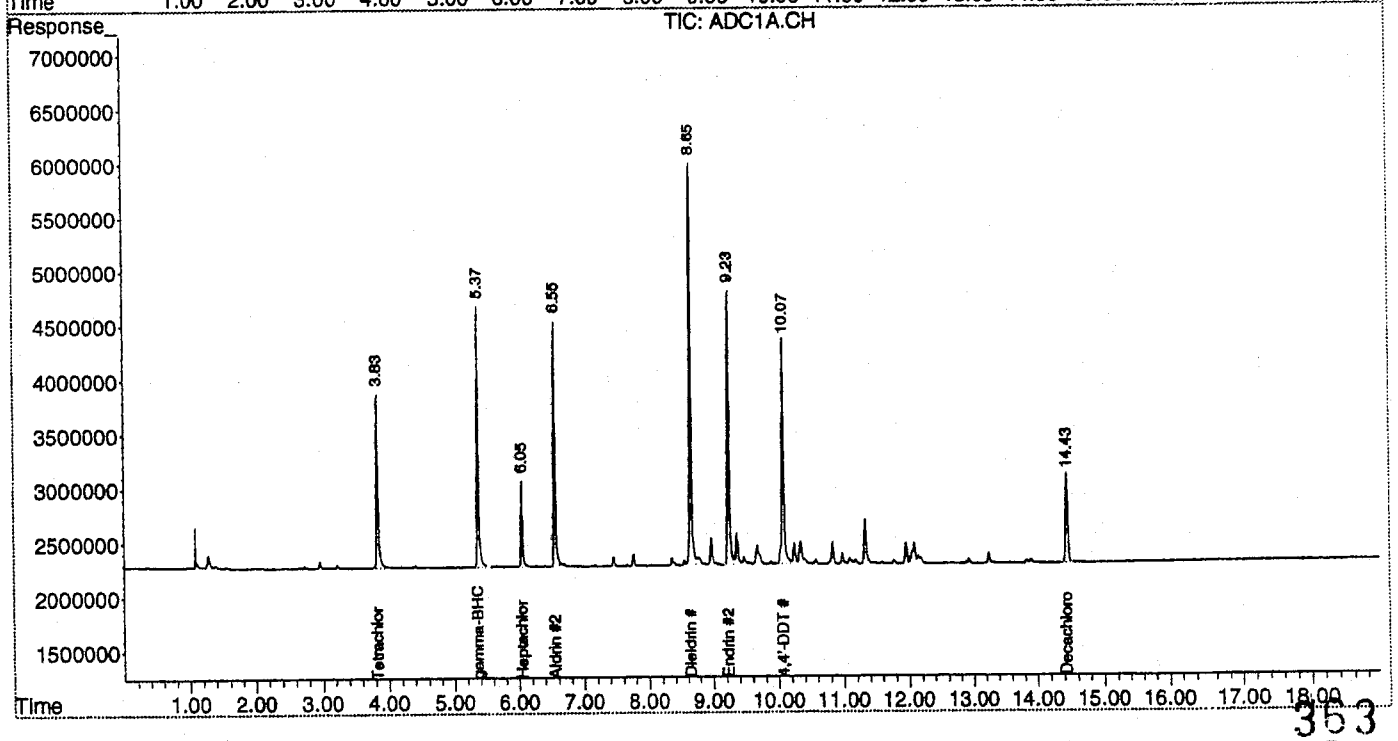
Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\020F2001.D\ADC1B.CH Vial: 20
Signal #2 : F:\HPCHEM\1\DATA\PE091102\020F2001.D\ADC1A.CH
Acq On : 12-Sep-2002, 04:10:35 Operator: JDW
Sample : bsd pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:51 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





MATIX SPIKE / MATRIX SPIKE DUPLICATE

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1B.CH Vial: 27
Signal #2 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:44:37 Operator: JDW
Sample : 108164-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:58:14 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

OK

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.85	3.82	6721280	14286916	10.289	10.485	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	51.44%#	52.42%#	
2)	SR	Decachlorobiphen	13.50f	14.41	4790714	7510873	11.495	9.757	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	57.48%#	48.79%#	
		Target Compounds							
2)		alpha-BHC	4.67f	0.00	103638	0	0.088	N.D.	#
3)	M	gamma-BHC (Linda	5.20	0.00	369049	0	0.361	N.D.	#
4)	M	Heptachlor	5.93f	6.09f	852774	2065720	0.872	~~2.354~~	#
5)	M	Aldrin	6.40	6.54	2113457	6019785	2.137	3.510	#
6)		beta-BHC	5.33	5.51	232171	707156	0.613 J	1.085	#
7)		delta-BHC	5.63	0.00	2395789	0	2.421	N.D.	#
8)		Heptachlor Epoxi	7.37	7.45	1202877	4746818	1.446 PCB	3.255	#
9)		Endosulfan I	8.04f	8.12	526429	1332635	0.585 J	0.949	#
0)		gamma-Chlordane	7.53	7.75	2661540	6018461	3.071	3.997	
1)		alpha-Chlordane	7.80	8.01	557369	2902832	0.707	2.087	#
2)		4,4'-DDE	7.88f	8.33f	8622143	15556943	11.857	10.898	
3)	M	Dieldrin	8.42f	8.64	1100793	1042389	1.391 MC	0.704	#
4)	M	Endrin	8.92f	0.00	1334857	0	2.308	N.D.	#
5)		Endosulfan II	0.00	9.65	0	1026001	N.D.	0.885	#
6)		4,4'-DDD	8.98f	9.44	2697425	4027152	4.486	3.828	
7)	M	4,4'-DDT	9.50f	10.05	829838	2547338	1.547 PCB	2.705	#
8)		Endrin Aldehyde	10.14f	0.00	479980	0	1.035 MC	N.D.	#
9)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
0)		Methoxychlor	10.50	0.00	305272	0	1.244 MC	N.D.	#
1)		Endrin Ketone	0.00	0.00	0	0	N.D.	N.D.	

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108164-3 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\027F2701.D
Date Acquired 12-Sep-2002, 06:44:37

CCV File Path F:\HPCHEM\1\DATA\PE091102\016F1601.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.85	3.82	0.2848	0.2650	0.2855	0.2658	OK	OK
alpha-BHC	4.67	0.00	0.3463	0.0000	0.3487	0.3330	OK	--
gamma-BHC (Lindane)	5.20	0.00	0.3851	0.0000	0.3852	0.3724	OK	--
Heptachlor	5.93	6.09	0.4390	0.4225	0.4400	0.4194	OK	--
Aldrin	6.40	6.54	0.4739	0.4536	0.4745	0.4543	OK	OK
beta-BHC	5.33	5.51	0.3946	0.3822	0.3953	0.3822	OK	OK
delta-BHC	5.63	0.00	0.4171	0.0000	0.4160	0.4143	OK	--
Heptachlor Epoxide	7.37	7.45	0.5459	0.5167	0.5435	0.5172	OK	OK
Endosulfan I	8.04	8.12	0.5953	0.5634	0.5926	0.5641	OK	OK
gamma-Chlordane	7.53	7.75	0.5579	0.5378	0.5584	0.5385	OK	OK
alpha-Chlordane	7.80	8.01	0.5774	0.5558	0.5747	0.5566	OK	OK
4,4'-DDE	7.88	8.33	0.5838	0.5782	0.5844	0.5791	OK	OK
Dieldrin	8.42	8.64	0.6238	0.5995	0.6251	0.5996	OK	OK
Endrin	8.92	0.00	0.6609	0.0000	0.6568	0.6400	--	--
Endosulfan II	0.00	9.65	0.0000	0.6696	0.6881	0.6688	--	OK
4,4'-DDD	8.98	9.44	0.6655	0.6552	0.6660	0.6560	OK	OK
4,4'-DDT	9.50	10.05	0.7038	0.6972	0.7050	0.6979	OK	OK
Endrin Aldehyde	10.14	0.00	0.7514	0.0000	0.7473	0.7154	--	--
Endosulfan Sulfate	0.00	0.00	0.0000	0.0000	0.8102	0.7535	--	--
Methoxychlor	10.50	0.00	0.7774	0.0000	0.7751	0.7951	OK	--
Endrin Ketone	0.00	0.00	0.0000	0.0000	0.8509	0.8277	--	--
Decachlorobiphenyl (S)	13.50	14.41	1.0000	1.0000	1.0000	1.0000	OK	OK

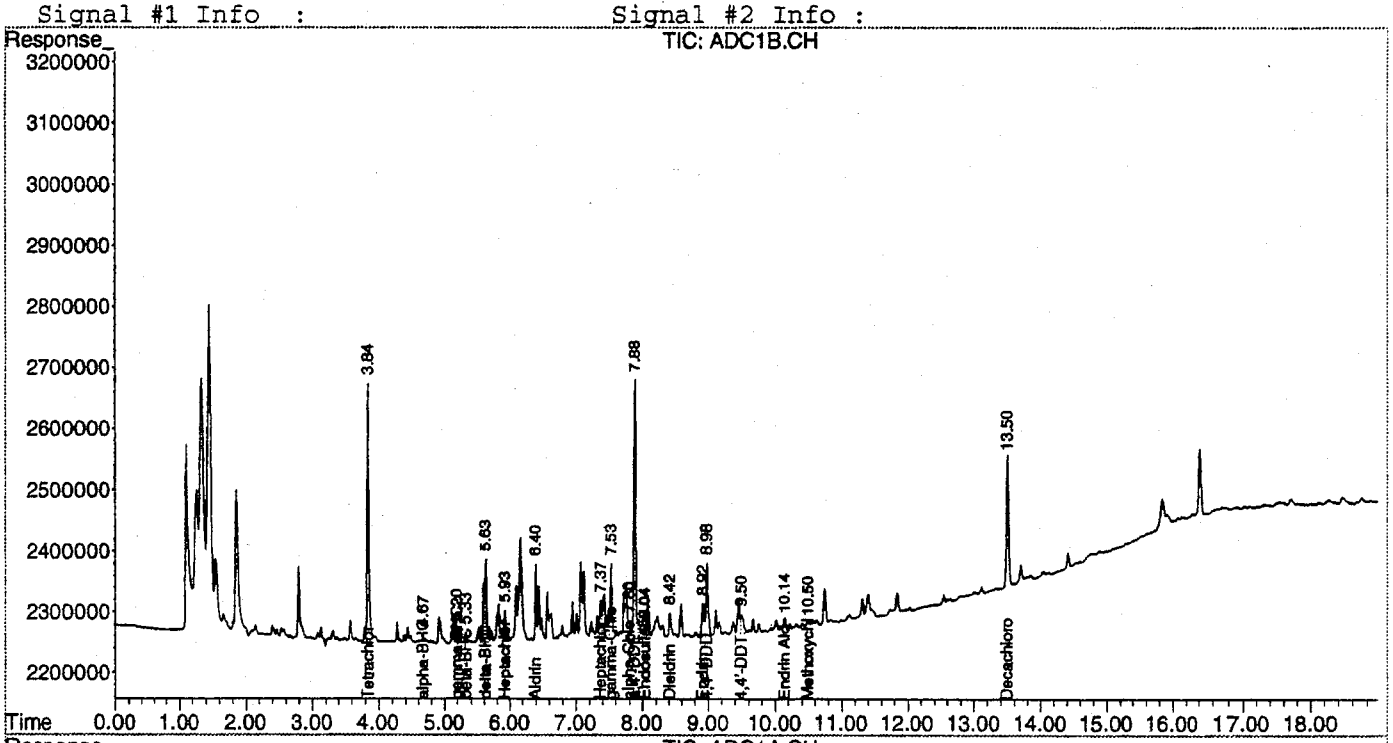
366

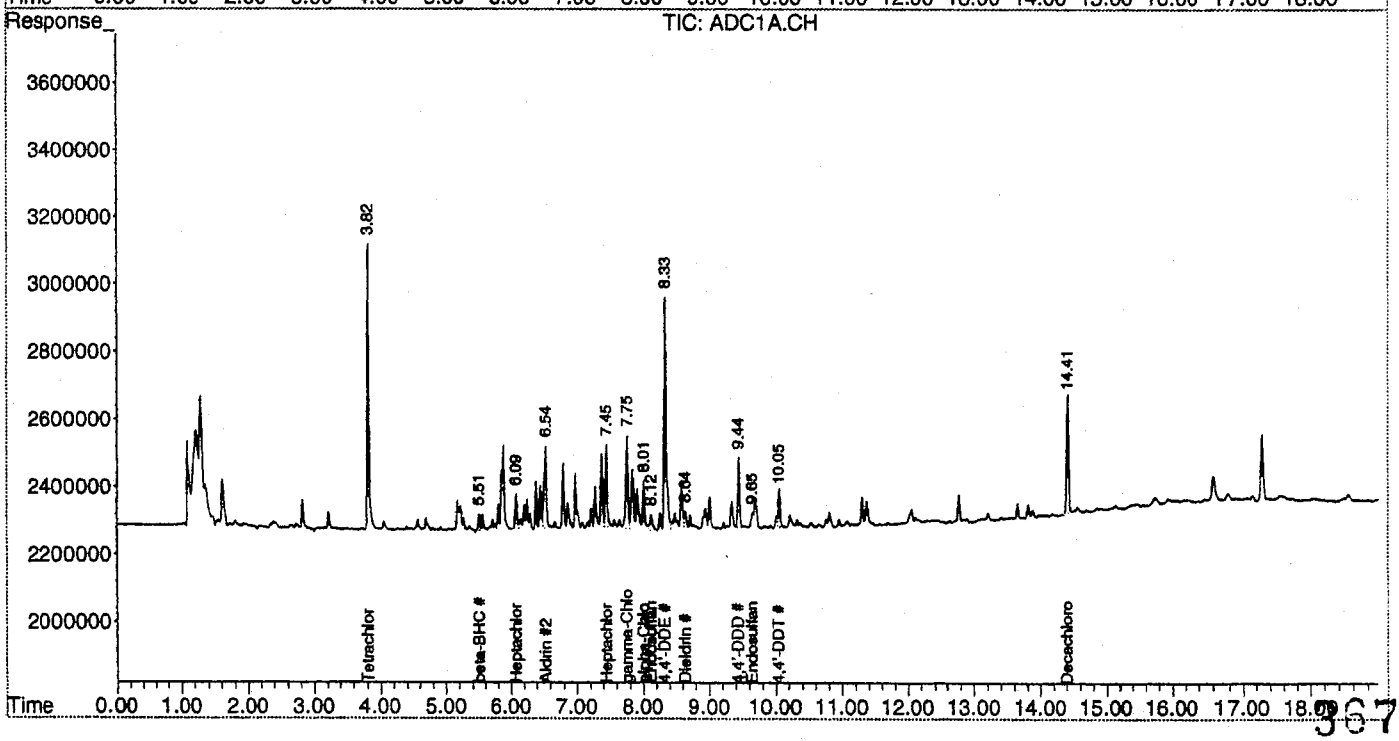
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1B.CH Vial: 27
Signal #2 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:44:37 Operator: JDW
Sample : 108164-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:58 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1B.CH Vial: 27
Signal #2 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:44:37 Operator: JDW
Sample : 108164-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:22:07 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	SR Tetrachloro-m-xy	3.85	3.82	7224796	14275283	10.868	10.958
	Spiked Amount 20.000 Range 60 - 150 Recovery =					54.34%#	54.79%#
1)	SR Decachlorobiphen	13.50f	14.41f	4787186	7510873	10.600	9.885
	Spiked Amount 20.000 Range 60 - 150 Recovery =					53.00%#	49.42%#
	Target Compounds						
2)	Hexachloroethane	1.55	0.00	2798455	0	1.817	N.D. #
3)	Hexachlorobenzen	4.48	4.57	239023	711663	0.231 BDL	0.503 #
4)	Hexachlorobutadi	1.81	0.00	185230	0	0.087	N.D. #
5)	Oxychlordane	7.23f	7.27f	881555	2445262	1.276	2.008 #
6)	cis-Nonachlor	8.98f	9.44f	2620832	4027152	3.237	2.636
7)	trans-Nonachlor	7.75	7.91f	2965514	3061766	3.905	2.230 #
8)	2,4'-DDE	7.32	7.83f	840482	4395456	1.739	5.157 #
9)	2,4'-DDD	8.23	8.72f	1793635	594369	4.461	0.811 # BDL
10)	2,4'-DDT	0.00	9.34	0	1960748	N.D.	2.862 #

368

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108164-3 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\027F2701.D
Date Acquired 12-Sep-2002, 06:44:37

CCV File Path F:\HPCHEM\1\DATA\PE091102\017F1701.D

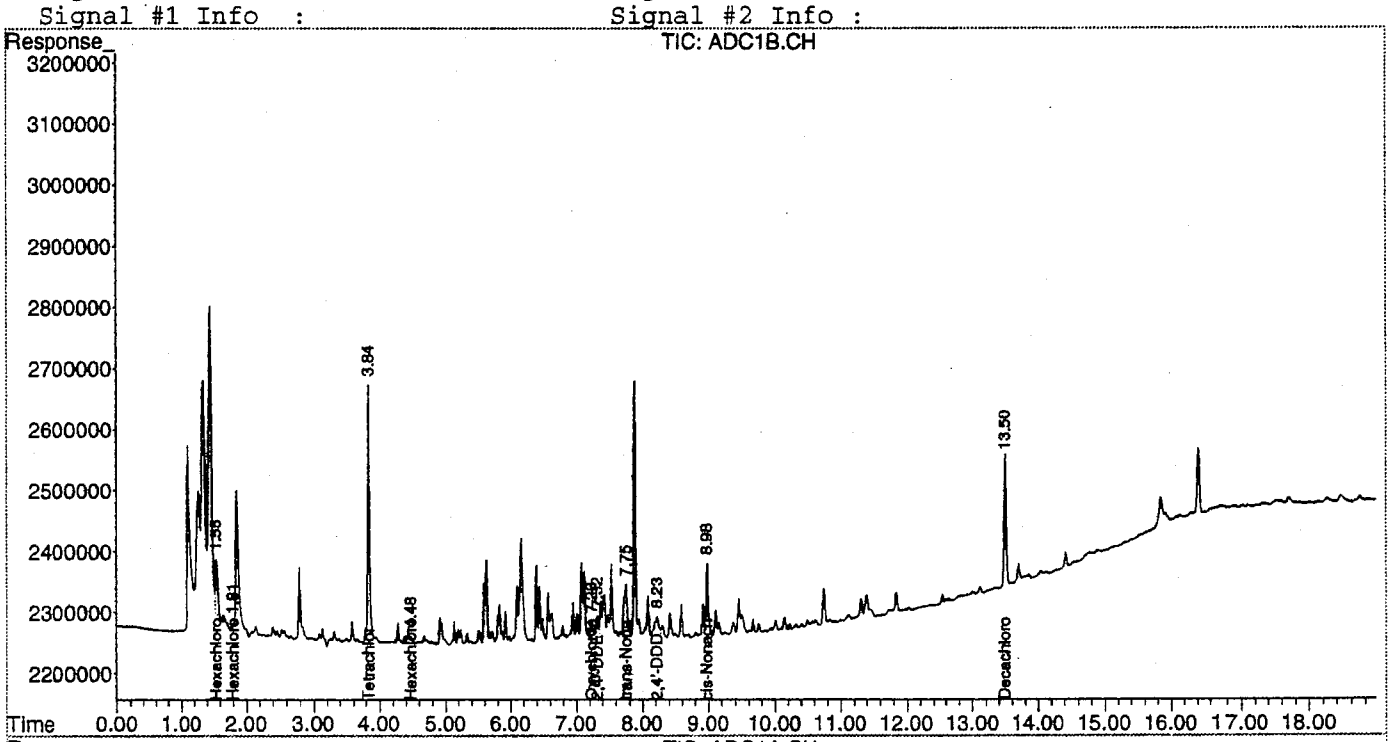
Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.85	3.82	0.2848	0.2650	0.2854	0.2658	OK	OK
Hexachloroethane	1.55	0.00	0.1144	0.0000	0.1130	0.1016	OK	--
Hexachlorobenzene	4.48	4.57	0.3316	0.3170	0.3293	0.3167	OK	OK
Hexachlorobutadiene	1.81	0.00	0.1340	0.0000	0.1344	0.1192	OK	--
Oxychlordane	7.23	7.27	0.5357	0.5047	0.5316	0.5064	--	OK
cis-Nonachlor	8.98	9.44	0.6655	0.6552	0.6612	0.6506	--	--
trans-Nonachlor	7.75	7.91	0.5741	0.5487	0.5724	0.5494	OK	OK
2,4'-DDE	7.32	7.83	0.5423	0.5436	0.5420	0.5396	OK	--
2,4'-DDD	8.23	8.72	0.6094	0.6047	0.6073	0.6056	OK	OK
2,4'-DDT	0.00	9.34	0.0000	0.6481	0.6420	0.6456	--	OK
Decachlorobiphenyl (S)	13.50	14.41	1.0000	1.0000	1.0000	1.0000	OK	OK

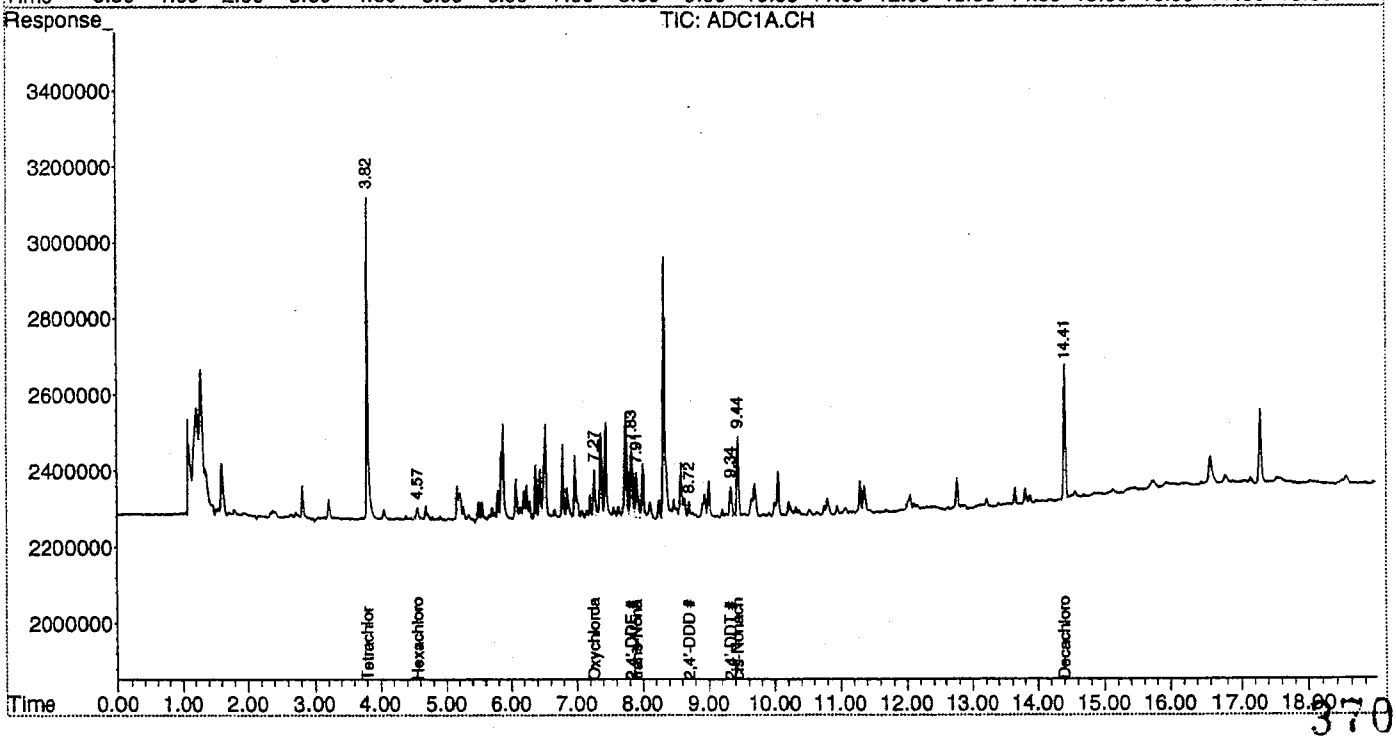
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1B.CH Vial: 27
Signal #2 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:44:37 Operator: JDW
Sample : 108164-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:22 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\028F2801.D\ADC1B.CH Vial: 28
Signal #2 : F:\HPCHEM\1\DATA\PE091102\028F2801.D\ADC1A.CH
Acq On : 12-Sep-2002, 07:06:39 Operator: JDW
Sample : 108164-3 ms 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:58:45 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

OK

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.85	3.82	6384842	14215377	9.774	10.433
		Spiked Amount 20.000 Range 60 - 150 Recovery =					48.87%#	52.16%#
22)	SR	Decachlorobiphen	13.51	14.41	5836774	11667859	14.005	15.157
		Spiked Amount 20.000 Range 60 - 150 Recovery =					70.03%	75.78%
		Target Compounds						
2)		alpha-BHC	0.00	0.00	0	0	N.D. d	N.D. d
3)	M	gamma-BHC (Linda	5.20	5.36	8201707	14721868	8.020	8.137
4)	M	Heptachlor	5.94	6.04	10827379	14643534	11.071	16.684 #
5)	M	Aldrin	6.40	6.54	9219414	22367612	9.320	13.044
6)		beta-BHC	0.00	0.00	0	0	N.D. d	N.D. d
7)		delta-BHC	0.00	0.00	0	0	N.D. d	N.D. d
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D. d	N.D. d
9)		Endosulfan I	0.00	0.00	0	0	N.D. d	N.D. d
10)		gamma-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
11)		alpha-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
12)		4,4'-DDE	0.00	0.00	0	0	N.D. d	N.D. d
13)	M	Dieldrin	8.44	8.64	18153911	28708196	22.944	19.395
14)	M	Endrin	8.87	9.22	13059077	21826790	22.579	20.381
15)		Endosulfan II	0.00	0.00	0	0	N.D. d	N.D. d
16)		4,4'-DDD	0.00	0.00	0	0	N.D. d	N.D. d
17)	M	4,4'-DDT	9.52	10.06	12837897	24329744	20.836	25.840
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D. d	N.D. d
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D. d	N.D. d
20)		Methoxychlor	0.00	0.00	0	0	N.D. d	N.D. d
21)		Endrin Ketone	0.00	0.00	0	0	N.D. d	N.D. d

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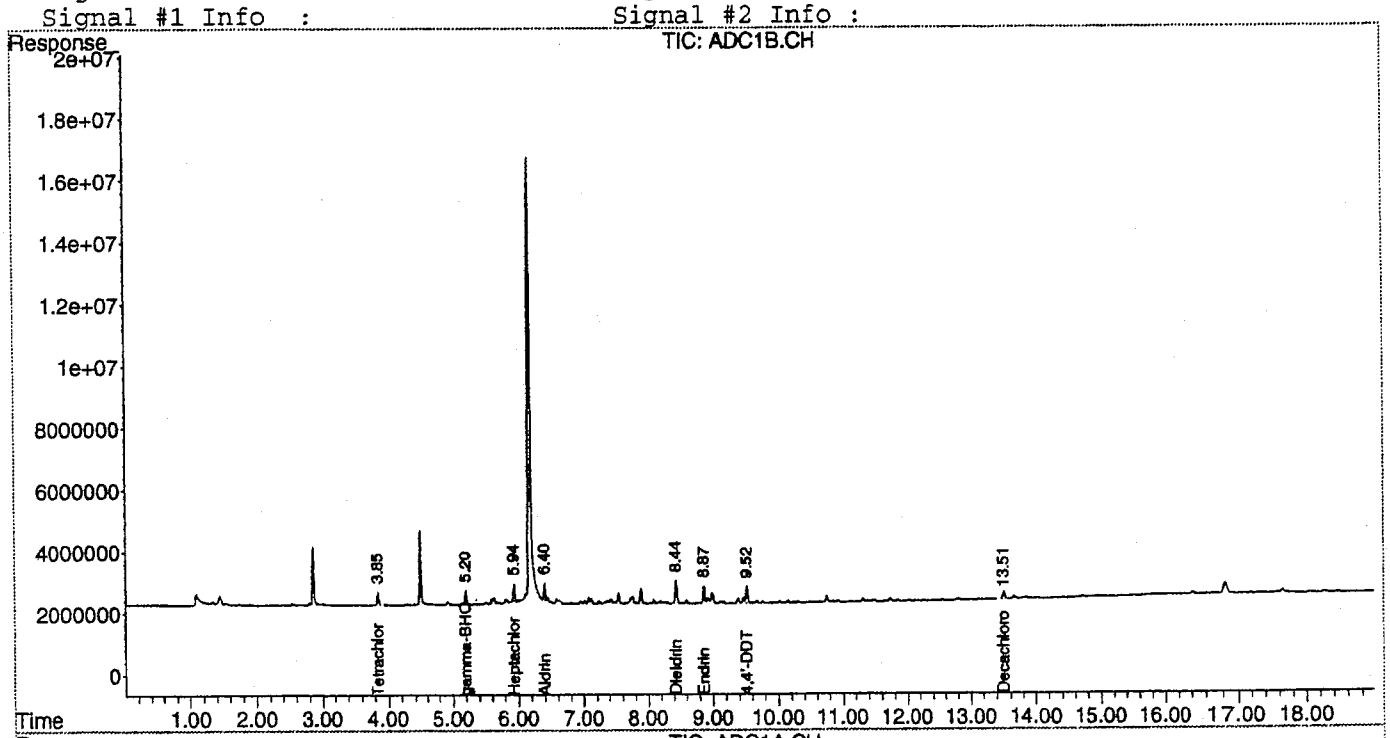
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

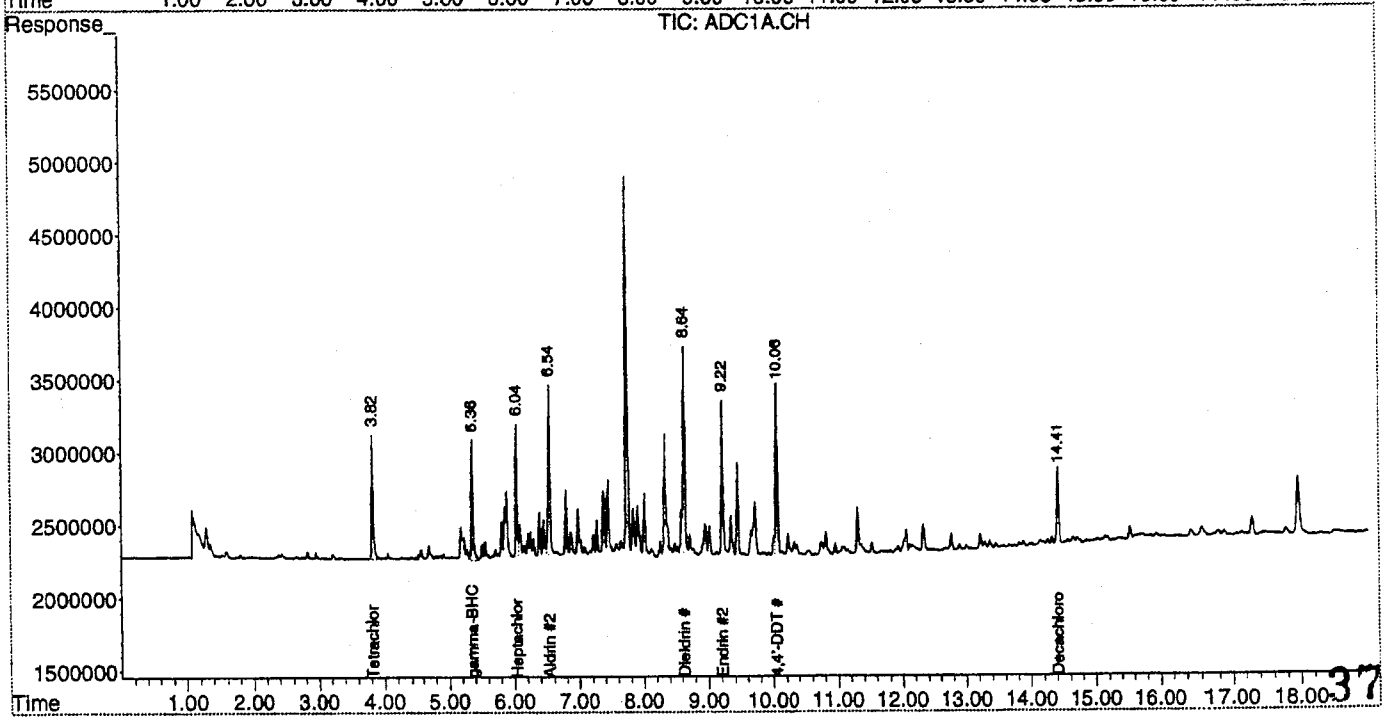
Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\028F2801.D\ADC1B.CH Vial: 28
Signal #2 : F:\HPCHEM\1\DATA\PE091102\028F2801.D\ADC1A.CH
Acq On : 12-Sep-2002, 07:06:39 Operator: JDW
Sample : 108164-3 ms 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:59 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\047F4701.D\ADC1B.CH Vial: 47
Signal #2 : F:\HPCHEM\1\DATA\PE091102\047F4701.D\ADC1A.CH
Acq On : 12-Sep-2002, 14:04:40 Operator: JDW
Sample : 108164-3 msd 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 15:20:14 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

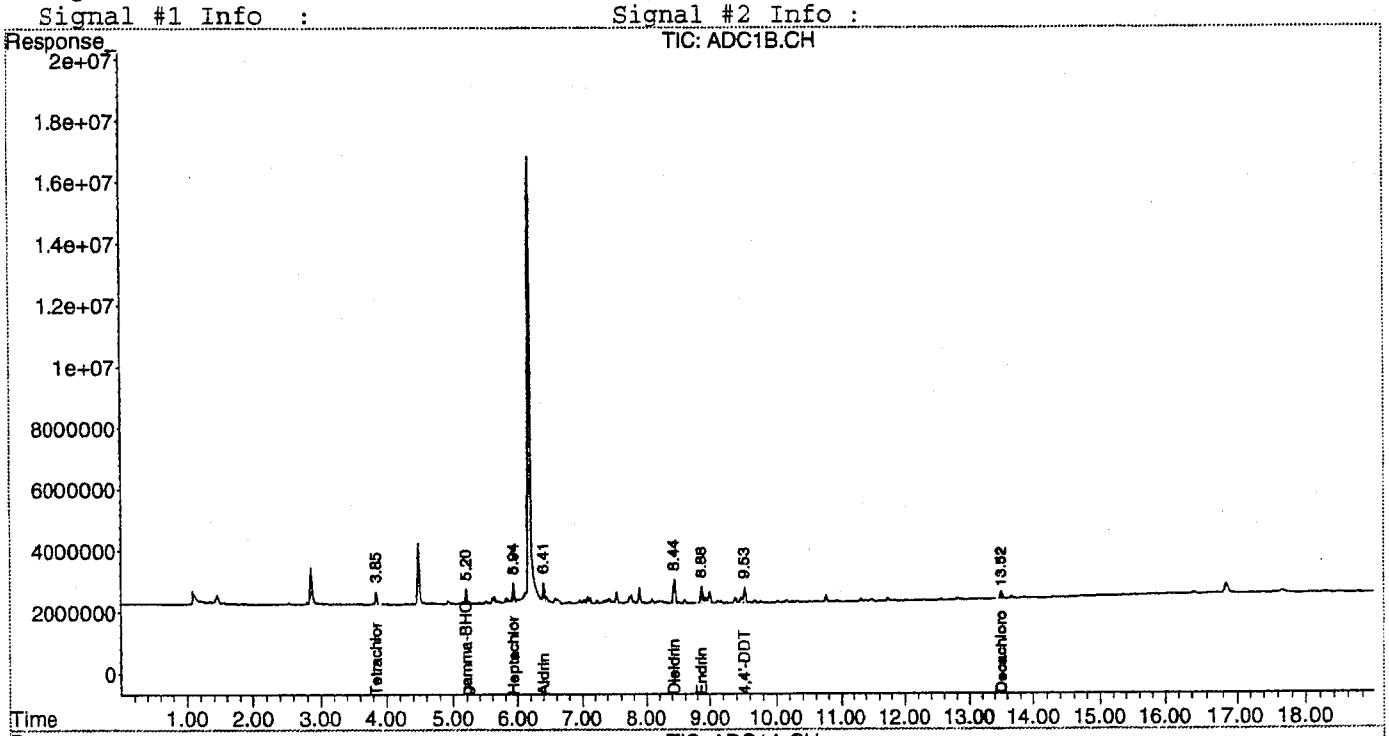
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.85	3.83	6450532	14520996	9.874	10.657
		Spiked Amount 20.000 Range 60 - 150 Recovery =					49.37%#	53.29%#
22)	SR	Decachlorobiphen	13.52	14.43	5626613	11664204	13.501	15.153
		Spiked Amount 20.000 Range 60 - 150 Recovery =					67.50%	75.77%
		Target Compounds						
2)		alpha-BHC	0.00	0.00	0	0	N.D. d	N.D. d
3)	M	gamma-BHC (Linda	5.20	5.37	8275053	15263575	8.091	8.437
4)	M	Heptachlor	5.94	6.04	10899388	13496261	11.145	15.377
5)	M	Aldrin	6.41	6.55	9992496	23135311	10.102	13.492
6)		beta-BHC	0.00	0.00	0	0	N.D. d	N.D. d
7)		delta-BHC	0.00	0.00	0	0	N.D. d	N.D. d
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D. d	N.D. d
9)		Endosulfan I	0.00	0.00	0	0	N.D. d	N.D. d
10)		gamma-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
11)		alpha-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
12)		4,4'-DDE	0.00	0.00	0	0	N.D. d	N.D. d
13)	M	Dieldrin	8.45	8.65	18308715	29938240	23.139	20.226
14)	M	Endrin	8.88	9.23	12849903	22116457	22.218	20.651
15)		Endosulfan II	0.00	0.00	0	0	N.D. d	N.D. d
16)		4,4'-DDD	0.00	0.00	0	0	N.D. d	N.D. d
17)	M	4,4'-DDT	9.53	10.07	11791177	23507002	19.137	24.966
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D. d	N.D. d
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D. d	N.D. d
20)		Methoxychlor	0.00	0.00	0	0	N.D. d	N.D. d
21)		Endrin Ketone	0.00	0.00	0	0	N.D. d	N.D. d

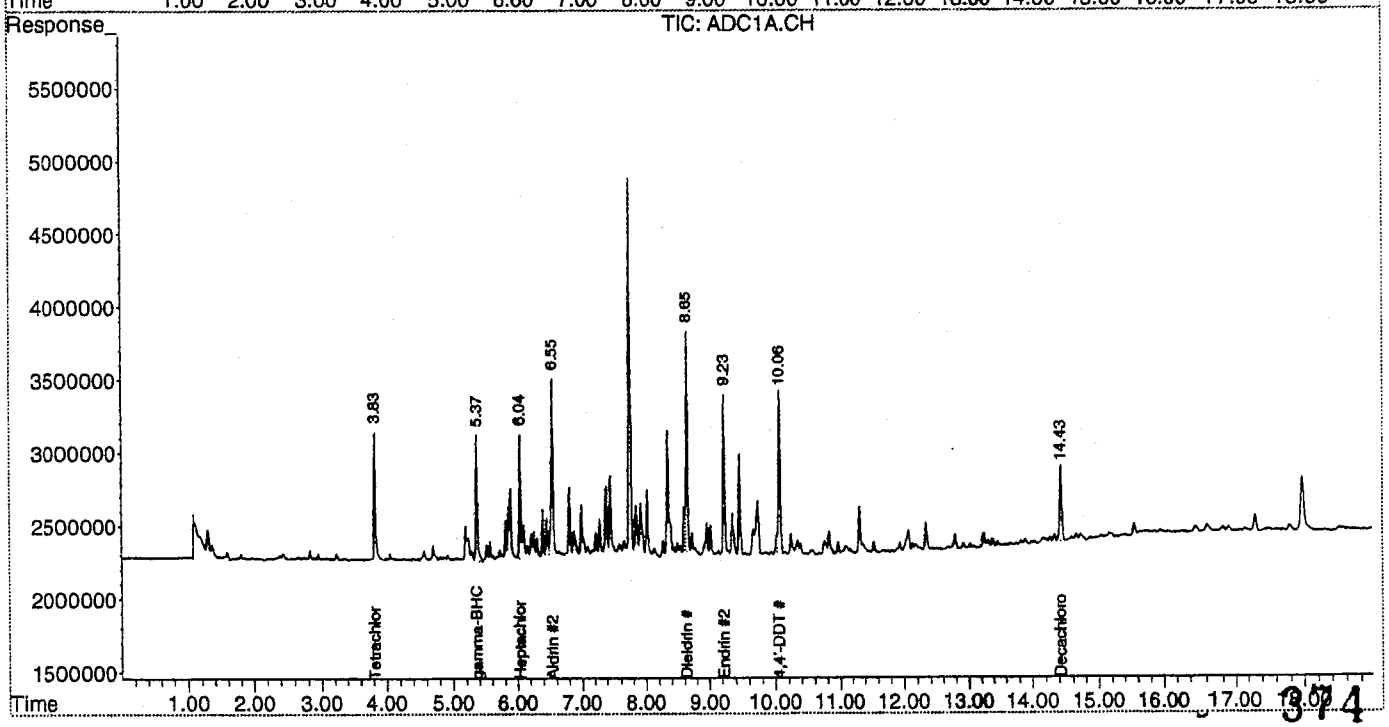
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Signal #1 : F:\HPCHEM\1\DATA\PE091102\047F4701.D\ADC1B.CH Vial: 47
Signal #2 : F:\HPCHEM\1\DATA\PE091102\047F4701.D\ADC1A.CH
Acq On : 12-Sep-2002, 14:04:40 Operator: JDW
Sample : 108164-3 msd 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 15:20 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





LABORATORY WORKSHEETS

Chlorinated Pesticides Worksheet - total

QC Level:Tier IV	Due: 09/04/02	Work Order - 108160
Matrix:solid		
CH2M Hill	Proj. Manager:Katie Downie	

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

Sample Number [illegible]	Client Sample ID	PP011802
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/20/02 4:35:00 PM**

Chlor. Pest. - EPA 8081

Sample Number [illegible]	Client Sample ID	PP011803
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/20/02 5:10:00 PM**

Chlor. Pest. - EPA 8081

Sample Number [illegible]	Client Sample ID	PP011804D
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/20/02 12:01:00 AM**

Chlor. Pest. - EPA 8081

Sample Number [illegible]	Client Sample ID	PP011805
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/21/02 9:45:00 AM**

Chlor. Pest. - EPA 8081

Analyst [illegible] Date 9/12/2002

Reviewed by [illegible] Date 9/12/2002

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Organics worksheet v4.0
If you have suggestions for changes please bring them to me - Dennis

Sample Prep Log Sheet

Organochlorine Pesticide Analysis by USEPA Method 8081A

[redacted]	pe1511				
	561-80-4				
	Pest889	Weighed By/Date			
		Extracted By/Date	[signature] 9/3/02		
	012691	Florisil & sulfur cleanups performed.			
	3550				
	9/3/2002				
		Spike Witness Signature/Date	[signature] 9/3/02		

[redacted]		Sample Volume (g)	[illegible]	Sun Spike (ml)	MS/BS Spike Amount (ml)
		10.0000	10.0	100	
		10.0000	10.0	100	100
		10.0000	10.0	100	100
		10.2092	10.0	100	100
		11.9823	10.0	100	100

Sample	Client Sample ID	Sample Volume (g)	[illegible]	Sun Spike (ml)	Sample Cleanup
108160-1	PP011802	10.2202	10.0	100	☐ No ☑ Yes
108160-2	PP011803	10.1058	10.0	100	☐ No ☑ Yes
108160-3	PP011804D	11.0424	10.0	100	☐ No ☑ Yes
108160-4	PP011805	10.6777	10.0	100	☐ No ☑ Yes
108164-1	PP011806	11.3644	10.0	100	☐ No ☑ Yes
108164-2	PP011807	11.2222	10.0	100	☐ No ☑ Yes
108164-3	PP011808	10.9277	10.0	100	☐ No ☑ Yes
108166-1	PP011801	10.3754	10.0	100	☐ No ☑ Yes
108166-2	PP011809	11.1500	10.0	100	☐ No ☑ Yes
108166-3	PP011810	10.2683	10.0	100	☐ No ☑ Yes
108177-1	PP01M105	10.2935	10.0	100	☐ No ☑ Yes
108177-2	PP01M106	11.1652	10.0	100	☐ No ☑ Yes
108177-3	PP01M107	10.4641	10.0	100	☐ No ☑ Yes
108177-4	PP01M108	10.3117	10.0	100	☐ No ☑ Yes
108177-5	PP01M109	10.7173	10.0	100	☐ No ☑ Yes
108177-6	PP01M110	10.6280	10.0	100	☐ No ☑ Yes
108177-8	PP01M101	10.9303	10.0	100	☐ No ☑ Yes
108177-9	PP01M102D	10.5377	10.0	100	☐ No ☑ Yes
108177-10	PP01M103	10.2493	10.0	100	☐ No ☑ Yes
108177-11	PP01M104	10.3729	10.0	100	☐ No ☑ Yes

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108160**
Sample Number	**1**
Data Filename	**pe1511**
Client Sample ID	**PP011802**
Date Received	**08-23-02**
Date Prepared	**09-03-02**
Date Analyzed	**09-12-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blank: pe1511

Sample weight (g)	**10.2202**	=	0.01022 /kg	Calc. Fact.	2.677762543
Extract volume (ml)	**10**	=	10 ml	Dry Weight	7.46892216 g
Dilution Factor	**2**	=	2	Sample Units	ug/kg
% Solids	**73.08**	=	0.7308	Spike Factor	133.8881272
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	10.3648		104	OK	70	122
x	Decachlorobiphenyl	15.6441	X9	156	HIGH	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	2.901	C2		7.77	C2	2.68
x	beta-BHC	2.6252	C1		7.03	C1	2.68
x	4,4'-DDD	13.7127	C1		36.7	C1	5.36
x	4,4'-DDE	21.6602	C1		58	C1	5.36
x	Endosulfan sulfate	1.398	C2		3.74	J C2	5.36
x	alpha-Chlordane	6.8614	C2		18.4	C2	2.68
x	gamma-Chlordane	5.7048	C1		15.3	C1	2.68
x	cis-Nonachlor	2.568	C1		6.88	C1	5.36
x	trans-Nonachlor	7.12	C1		19.1	C1	5.36
x	2,4'-DDE	2.9	C2		7.77	C2	5.36
x	2,4'-DDD	3.516	C2		9.42	C2	5.36

$$\frac{2.901\ ug/L \times 0.01L \times 2}{0.0102202\ Kg \times 0.7308} = 7.77\ ug/Kg$$

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108160
Sample Number	2
Data Filename	pe1511
Client Sample ID	PP011803
Date Received	08-23-02
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	sample

Related Blank: pe1511

Sample weight (g)	10.1058	=	0.01011 /kg	Calc. Fact.	2.578917812
Extract volume (ml)	10	=	10 ml	Dry Weight	7.75519092 g
Dilution Factor	2	=	2	Sample Units	ug/kg
% Solids	76.74	=	0.7674	Spike Factor	128.9458906
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	12.7084		127	OK	70	122
x	Decachlorobiphenyl	14.5815	X9	146	HIGH	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	2.278	C2		5.87	C2	2.58
x	beta-BHC	1.1116	C1		2.87	C1	2.58
x	4,4'-DDD	7.1772	C1		18.5	C1	5.16
x	4,4'-DDE	12.7725	C1		32.9	C1	5.16
x	Endosulfan sulfate	0.797	C2		2.06	J C2	5.16
x	alpha-Chlordane	3.6394	C2		9.39	C2	2.58
x	gamma-Chlordane	3.2686	C1		8.43	C1	2.58
x	trans-Nonachlor	3.777	C1		9.74	C1	5.16
x	2,4'-DDD	2.355	C2		6.07	C2	5.16

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108160**
Sample Number	**3**
Data Filename	**pe1511**
Client Sample ID	**PP011804D**
Date Received	**08-23-02**
Date Prepared	**09-03-02**
Date Analyzed	**09-12-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blank: pe1511

Sample weight (g)	**11.0424**	=	0.01104 /kg	Calc. Fact.	2.355267183
Extract volume (ml)	**10**	=	10 ml	Dry Weight	8.4916056 g
Dilution Factor	**2**	=	2	Sample Units	ug/kg
% Solids	**76.9**	=	0.769	Spike Factor	117.7633591
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	12.5495		125	OK	70	122
x	Decachlorobiphenyl	14.9555	X9	150	HIGH	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	1.847	C2		4.35	C2	2.36
x	beta-BHC	1.0044	C1		2.37	C1	2.36
x	4,4'-DDD	7.2855	C1		17.2	C1	4.71
x	4,4'-DDE	14.4903	C1		34.1	C1	4.71
x	Endosulfan sulfate	0.73	C2		1.72	J C2	4.71
x	alpha-Chlordane	4.2674	C2		10.1	C2	2.36
x	gamma-Chlordane	6.0692	C2		14.3	C2	2.36
x	trans-Nonachlor	4.428	C1		10.4	C1	4.71

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108160
Sample Number	4
Data Filename	pe1511
Client Sample ID	PP011805
Date Received	08-23-02
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	sample

Related Blank: pe1511

Sample weight (g)	10.6777	=	0.01068 /kg	Calc. Fact.	2.89589139
Extract volume (ml)	10	=	10 ml	Dry Weight	6.90633636 g
Dilution Factor	2	=	2	Sample Units	ug/kg
% Solids	64.68	=	0.6468	Spike Factor	144.7945695
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	9.8694		98.7	OK	70	122
x	Decachlorobiphenyl	16.2391	X9	162	HIGH	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	8.3587	C2		24.2	C2	2.9
x	beta-BHC	1.6963	C1		4.91	C1	2.9
x	4,4'-DDD	11.3836	C1		33	C1	5.79
x	4,4'-DDE	22.3286	C1		64.7	C1	5.79
x	alpha-Chlordane	3.2004	C1		9.27	C1	2.9
x	gamma-Chlordane	4.2248	C2		12.2	C2	2.9
x	trans-Nonachlor	5.073	C1		14.7	C1	5.79
x	2,4'-DDE	2.834	C2		8.21	C2	5.79
x	2,4'-DDD	3.042	C2		8.81	C2	5.79

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	
Data Filename	pe1511
Client Sample ID	
Date Received	
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	blank

Related Blank: noblank

Sample weight (g)	10	=	0.01 /kg	Calc. Fact.	1
Extract volume (ml)	10	=	10 ml	Dry Weight	10 g
Dilution Factor	1	=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	100
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	22.2031		111	OK	70	122
x	Decachlorobiphenyl	25.6911		128	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blank: pe1511
Data Filename	**pe1511**
Client Sample ID	
Date Received	
Date Prepared	**09-03-02**
Date Analyzed	**09-12-02**
Sample matrix type	**solid**
QC sample type	**bs**

Sample weight (g)	10	=	0.01 /kg	Calc. Fact.	1
Extract volume (ml)	10	=	10 ml	Dry Weight	10 g
Dilution Factor	1	=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	100
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	22.8287		114	OK	70	122
x	Decachlorobiphenyl	25.947		130	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	21.2522	C1		21.3	C1	1
x	gamma-BHC (Lindane)	21.2179	C1		21.2	C1	1
x	4,4'-DDT	42.4713	C1		42.5	C1	2
x	Dieldrin	48.2268	C1		48.2	C1	2
x	Endrin	45.1831	C1		45.2	C1	2
x	Heptachlor	22.3562	C1		22.4	C1	1

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blank: pe1511
Data Filename	pe1511
Client Sample ID	
Date Received	
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	bsd

Sample weight (g)	10	=	0.01 /kg	Calc. Fact.	1
Extract volume (ml)	10	=	10 ml	Dry Weight	10 g
Dilution Factor	1	=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	100
GPC (Enter 2 If GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	22.5236		113	OK	70	122
x	Decachlorobiphenyl	26.152		131	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	21.5271	C1		21.5	C1	1
x	gamma-BHC (Lindane)	21.8656	C1		21.9	C1	1
x	4,4'-DDT	43.1748	C1		43.2	C1	2
x	Dieldrin	49.0616	C1		49.1	C1	2
x	Endrin	46.0598	C1		46.1	C1	2
x	Heptachlor	22.7917	C1		22.8	C1	1

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108164
Sample Number	3
Data Filename	pe1511
Client Sample ID	PP011808
Date Received	08-23-02
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	ms

Related Blank: pe1511

Sample weight (g)	10.2092	=	0.01021 /kg	Calc. Fact.	2.518988501
Extract volume (ml)	10	=	10 ml	Dry Weight	7.93969484 g
Dilution Factor	2	=	2	Sample Units	ug/kg
% Solids	77.77	=	0.7777	Spike Factor	125.949425
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	9.7737		97.7	OK	70	122
x	Decachlorobiphenyl	14.0053		140	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	9.3202	C1		23.5	C1	2.52
x	gamma-BHC (Lindane)	8.0196	C1		20.2	C1	2.52
x	4,4'-DDT	20.8359	C1		52.5	C1	5.04
x	Dieldrin	22.9437	C1		57.8	C1	5.04
x	Endrin	22.5794	C1		56.9	C1	5.04
x	Heptachlor	11.071	C2		27.9	C2	2.52

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108164
Sample Number	3
Data Filename	pe1511
Client Sample ID	PP011808
Date Received	08-23-02
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	msd

Related Blank: pe1511

Sample weight (g)	11.9823	=	0.01198 /kg	Calc. Fact.	2.14623715
Extract volume (ml)	10	=	10 ml	Dry Weight	9.31863471 g
Dilution Factor	2	=	2	Sample Units	ug/kg
% Solids	77.77	=	0.7777	Spike Factor	107.3118575
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	9.8742		98.7	OK	70	122
x	Decachlorobiphenyl	13.501		135	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	10.1017	C1		21.7	C1	2.15
x	gamma-BHC (Lindane)	8.0914	C1		17.4	C1	2.15
x	4,4'-DDT	19.1371	C1		41.1	C1	4.29
x	Dieldrin	23.1394	C1		49.7	C1	4.29
x	Endrin	22.2177	C1		47.7	C1	4.29
x	Heptachlor	11.1447	C1		23.9	C1	2.15

TOTAL METALS DATA PACKAGE

Mean Data

ID: Calib Blank 1 Seq. No.: 1 A/S Pos: 1

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 10:57:04

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	261,646.5	[0.00]	2,740.52	%				1.05 %
Sc 361.383	654,711.1	[0.00]	7,923.84	%				1.21 %
Al 308.215	2,672.0	[0.00]	74.19	mg/L				2.78 %

Mean Data

ID: High Standard Seq. No.: 2 A/S Pos: 2

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 11:12:44

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	265,598.0	101.5	5,514.92	%				2.08 %
Sc 361.383	678,072.3	103.6	5,466.76	%				0.81 %
Al 308.215	43,369.7	[2.00]	613.62	mg/L				1.41 %

Mean Data

ID: ICV Seq. No.: 3 A/S Pos: 3

2002/09/03 07:43:11 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 11:17:18

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	267,383.4	102.2	1.81	%				1.77 %
Sc 361.383	670,983.6	102.5	1.87	%				1.83 %
Al 308.215	39,278.9	1.811	0.0083	mg/L	1.811			0.46 %

2002/09/03 07:43:11 QC value within limits for Al 308.215 Recovery = 90.57%

Mean Data

ID: ICB Seq. No.: 4 A/S Pos: 1

2002/09/03 07:43:14 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 11:23:05

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	269,904.0	103.2	0.91	%				0.88 %
Sc 361.383	674,113.6	103.0	0.89	%				0.86 %
Al 308.215	-181.7	-0.0084	0.00298	mg/L	-0.0084			35.61 %

2002/09/03 07:43:14 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: ICSA Seq. No.: 5 A/S Pos: 7

2002/09/03 07:43:19 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 11:43:57

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	256,246.2	97.94	0.510	%				0.52 %

Sc 361.383	616,162.1	94.11	0.749	%				0.80 %
Al 308.215	2,730,993.3	125.9	0.99	mg/L	125.9			0.78 %

2002/09/03 07:43:19 QC value within limits for Al 308.215 Recovery = 104.95%

Mean Data

ID: ICSAB **Seq. No.:** 6 **A/S Pos:** 8

2002/09/03 07:43:19 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 11:48:31

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	256,963.6	98.21	0.546	%				0.56 %
Sc 361.383	616,792.8	94.21	0.544	%				0.58 %
Al 308.215	2,826,940.6	130.4	1.19	mg/L	130.4			0.92 %

2002/09/03 07:43:19 QC value within limits for Al 308.215 Recovery = 108.64%

Mean Data

ID: CCV **Seq. No.:** 7 **A/S Pos:** 5

2002/09/03 07:44:46 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 20:17:34

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	188,891.6	102.1	7.37	%				7.21 %
Sc 361.383	500,904.7	106.9	7.84	%				7.33 %
Al 308.215	10,731.1	0.4608	0.04646	mg/L	0.4608			10.08 %

2002/09/03 07:44:46 QC value within limits for Al 308.215 Recovery = 92.16%

Mean Data

ID: CCB **Seq. No.:** 8 **A/S Pos:** 6

2002/09/03 07:44:46 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 20:18:58

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	181,898.4	98.35	6.125	%				6.23 %
Sc 361.383	459,275.0	97.98	6.308	%				6.44 %
Al 308.215	122.4	0.0053	0.00358	mg/L	0.0053			68.05 %

2002/09/03 07:44:46 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: mb sp883 **Seq. No.:** 9 **A/S Pos:** 93

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 20:20:21

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	180,208.9	97.44	6.296	%			%	6.46 %
Sc 361.383	459,118.0	97.95	6.381	%			%	6.51 %
Al 308.215	-52.8	-0.0023	0.00818	mg/L	-0.0023	0.00818	mg/L	361.06 %

Mean Data

ID: 108164-3-1/5 Seq. No.: 10 A/S Pos: 94

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:21:41

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	178,976.0	96.77	2.598	%			%	2.68 %
Sc 361.383	475,601.0	101.5	2.85	%			%	2.81 %
Al 308.215	142,228.7	6.108	0.1871	mg/L	6.108	0.1871	mg/L	3.06 %

Mean Data

ID: 108164-3 Seq. No.: 11 A/S Pos: 95

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:23:53

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	177,847.4	96.16	4.508	%			%	4.69 %
Sc 361.383	489,683.5	104.5	2.98	%			%	2.86 %
Al 308.215	674,432.1	28.96	1.244	mg/L	28.96	1.244	mg/L	4.29 %

Mean Data

ID: 108164-3d Seq. No.: 12 A/S Pos: 96

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:26:04

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	181,112.5	97.93	1.291	%			%	1.32 %
Sc 361.383	500,471.2	106.8	1.51	%			%	1.41 %
Al 308.215	561,214.2	24.10	0.364	mg/L	24.10	0.364	mg/L	1.51 %

Mean Data

ID: 108164-3dd Seq. No.: 13 A/S Pos: 97

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:28:14

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	173,670.6	93.90	2.670	%			%	2.84 %
Sc 361.383	486,277.1	103.7	3.00	%			%	2.90 %
Al 308.215	673,315.5	28.91	0.660	mg/L	28.91	0.660	mg/L	2.28 %

Mean Data

ID: 108164-3s Seq. No.: 14 A/S Pos: 98

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:30:25

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	177,035.3	95.72	0.677	%			%	0.71 %

Sc 361.383	481,808.0	102.8	0.73	%			%	0.71 %
Al 308.215	664,639.1	28.54	0.417	mg/L	28.54	0.417	mg/L	1.46 %

Mean Data

ID: 108164-3sd Seq. No.: 15 A/S Pos: 99

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:32:36

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	174,680.3	94.45	1.991	%			%	2.11 %
Sc 361.383	472,495.9	100.8	2.06	%			%	2.04 %
Al 308.215	608,269.4	26.12	0.822	mg/L	26.12	0.822	mg/L	3.15 %

Mean Data

ID: 108164-3ps Seq. No.: 16 A/S Pos: 100

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:34:48

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	164,879.0	89.15	2.211	%			%	2.48 %
Sc 361.383	461,169.7	98.39	2.379	%			%	2.42 %
Al 308.215	796,116.9	34.19	1.220	mg/L	34.19	1.220	mg/L	3.57 %

Mean Data

ID: lcs-soil Seq. No.: 17 A/S Pos: 101

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:37:00

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	174,578.0	94.40	2.205	%			%	2.34 %
Sc 361.383	467,141.6	99.66	2.315	%			%	2.32 %
Al 308.215	501,128.5	21.52	0.539	mg/L	21.52	0.539	mg/L	2.50 %

Mean Data

ID: CCV Seq. No.: 18 A/S Pos: 5

2002/09/03 07:44:49 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:39:14

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	175,294.7	94.78	3.776	%				3.98 %
Sc 361.383	470,979.8	100.5	6.27	%				6.24 %
Al 308.215	11,652.1	0.5004	0.04124	mg/L	0.5004			8.24 %

2002/09/03 07:44:49 QC value within limits for Al 308.215 Recovery = 100.07%

Mean Data

ID: CCB Seq. No.: 19 A/S Pos: 6

2002/09/03 07:44:49 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:40:39

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	181,119.0	97.93	5.319	%				5.43 %
Sc 361.383	458,188.4	97.75	5.428	%				5.55 %
Al 308.215	199.1	0.0086	0.00822	mg/L	0.0086			96.12 %

2002/09/03 07:44:49 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: mb sp883 Seq. No.: 20 A/S Pos: 102

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:42:00

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	189,987.9	102.7	3.46	%			%	3.37 %
Sc 361.383	480,791.3	102.6	3.18	%			%	3.10 %
Al 308.215	193.9	0.0083	0.00287	mg/L	0.0083	0.00287	mg/L	34.51 %

Mean Data

ID: 180164-1 Seq. No.: 21 A/S Pos: 103

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:43:16

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	175,425.6	94.85	0.933	%			%	0.98 %
Sc 361.383	496,779.8	106.0	1.41	%			%	1.33 %
Al 308.215	690,489.7	29.65	0.298	mg/L	29.65	0.298	mg/L	1.01 %

Mean Data

ID: 108164-2 Seq. No.: 22 A/S Pos: 104

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:45:23

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	167,399.1	90.51	3.705	%			%	4.09 %
Sc 361.383	457,757.0	97.66	3.956	%			%	4.05 %
Al 308.215	576,539.2	24.76	1.027	mg/L	24.76	1.027	mg/L	4.15 %

Mean Data

ID: 108160-1 Seq. No.: 23 A/S Pos: 105

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:47:29

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	168,386.0	91.05	2.954	%			%	3.24 %

Sc 361.383	468,350.5	99.92	3.124	%			%	3.13 %
Al 308.215	664,538.6	28.54	1.099	mg/L	28.54	1.099	mg/L	3.85 %

Mean Data

ID: 108160-2 Seq. No.: 24 A/S Pos: 106

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:49:36

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	173,155.8	93.63	3.132	%			%	3.35 %
Sc 361.383	473,391.8	101.0	3.34	%			%	3.31 %
Al 308.215	577,440.1	24.80	0.766	mg/L	24.80	0.766	mg/L	3.09 %

Mean Data

ID: 108160-3 Seq. No.: 25 A/S Pos: 107

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:51:46

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	180,005.0	97.33	2.650	%			%	2.72 %
Sc 361.383	512,429.9	109.3	1.47	%			%	1.34 %
Al 308.215	883,236.7	37.93	0.767	mg/L	37.93	0.767	mg/L	2.02 %

Mean Data

ID: 108160-4 Seq. No.: 26 A/S Pos: 108

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:53:55

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	170,794.4	92.35	2.223	%			%	2.41 %
Sc 361.383	465,325.7	99.27	2.436	%			%	2.45 %
Al 308.215	554,089.1	23.79	0.531	mg/L	23.79	0.531	mg/L	2.23 %

Mean Data

ID: 108166-1 Seq. No.: 27 A/S Pos: 109

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:56:03

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	162,007.7	87.60	4.202	%			%	4.80 %
Sc 361.383	455,094.2	97.09	4.388	%			%	4.52 %
Al 308.215	716,277.4	30.76	1.182	mg/L	30.76	1.182	mg/L	3.84 %

Mean Data

ID: bs sp883 Seq. No.: 28 A/S Pos: 110

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:58:11

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	182,646.4	98.76	0.986	%			%	1.00 %
Sc 361.383	461,422.5	98.44	0.794	%			%	0.81 %
Al 308.215	80,671.1	3.464	0.0306	mg/L	3.464	0.0306	mg/L	0.88 %

Mean Data

ID: bsd sp883 Seq. No.: 29 A/S Pos: 111

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:00:19

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	166,520.2	90.04	4.194	%			%	4.66 %
Sc 361.383	426,339.3	90.96	4.429	%			%	4.87 %
Al 308.215	88,977.9	3.821	0.1819	mg/L	3.821	0.1819	mg/L	4.76 %

Mean Data

ID: CCV Seq. No.: 30 A/S Pos: 5

2002/09/03 07:44:52 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:02:32

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	171,220.0	92.58	7.294	%				7.88 %
Sc 361.383	469,454.5	100.2	8.71	%				8.70 %
Al 308.215	11,497.5	0.4937	0.05301	mg/L	0.4937			10.74 %

2002/09/03 07:44:52 QC value within limits for Al 308.215 Recovery = 98.75%

Mean Data

ID: CCB Seq. No.: 31 A/S Pos: 6

2002/09/03 07:44:53 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:03:55

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	190,911.7	103.2	4.80	%				4.65 %
Sc 361.383	482,277.1	102.9	4.67	%				4.54 %
Al 308.215	30.0	0.0013	0.00563	mg/L	0.0013			436.58 %

2002/09/03 07:44:53 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: mb sp883 Seq. No.: 32 A/S Pos: 112

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:05:19

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	164,798.3	89.11	4.643	%			%	5.21 %

Sc 361.383	424,073.0	90.47	5.218	%			%	5.77 %
Al 308.215	576.7	0.0248	0.01032	mg/L	0.0248	0.01032	mg/L	41.69 %

Mean Data

ID: 108166-2 Seq. No.: 33 A/S Pos: 113

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:06:41

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	180,074.4	97.37	1.386	%			%	1.42 %
Sc 361.383	503,782.9	107.5	1.74	%			%	1.61 %
Al 308.215	592,283.7	25.43	0.509	mg/L	25.43	0.509	mg/L	2.00 %

Mean Data

ID: 108166-3 Seq. No.: 34 A/S Pos: 114

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:08:51

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	163,832.8	88.59	3.009	%			%	3.40 %
Sc 361.383	482,397.0	102.9	3.28	%			%	3.19 %
Al 308.215	951,346.8	40.85	1.352	mg/L	40.85	1.352	mg/L	3.31 %

Mean Data

ID: 108177-1 Seq. No.: 35 A/S Pos: 115

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:11:05

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	182,510.2	98.68	7.236	%			%	7.33 %
Sc 361.383	459,286.1	97.99	5.414	%			%	5.53 %
Al 308.215	291,840.5	12.53	0.689	mg/L	12.53	0.689	mg/L	5.50 %

Mean Data

ID: 108177-2 Seq. No.: 36 A/S Pos: 116

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:13:18

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	169,397.4	91.59	4.530	%			%	4.95 %
Sc 361.383	455,607.7	97.20	4.999	%			%	5.14 %
Al 308.215	477,497.7	20.51	1.161	mg/L	20.51	1.161	mg/L	5.66 %

Mean Data

ID: 108177-3 Seq. No.: 37 A/S Pos: 117

Date: 2002/08/30 21:15:27

Sample Qty g Prep. Vol.: Dilution: :

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	178,697.1	96.62	2.540	%			%	2.63 %
Sc 361.383	481,286.5	102.7	2.61	%			%	2.54 %
Al 308.215	484,312.0	20.80	0.539	mg/L	20.80	0.539	mg/L	2.59 %

Mean Data

ID: 108177-4 Seq. No.: 38 A/S Pos: 118

Date: 2002/08/30 21:17:34

Sample Qty g Prep. Vol.: Dilution: :

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	182,425.3	98.64	1.946	%			%	1.97 %
Sc 361.383	539,975.7	115.2	1.31	%			%	1.13 %
Al 308.215	709,171.8	30.45	0.472	mg/L	30.45	0.472	mg/L	1.55 %

Mean Data

ID: 108177-5 Seq. No.: 39 A/S Pos: 119

Date: 2002/08/30 21:19:41

Sample Qty g Prep. Vol.: Dilution: :

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	161,736.8	87.45	2.723	%			%	3.11 %
Sc 361.383	450,743.9	96.16	2.876	%			%	2.99 %
Al 308.215	695,999.1	29.89	1.126	mg/L	29.89	1.126	mg/L	3.77 %

Mean Data

ID: lcs-soil Seq. No.: 40 A/S Pos: 120

Date: 2002/08/30 21:21:48

Sample Qty g Prep. Vol.: Dilution: :

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	192,382.5	104.0	2.55	%			%	2.45 %
Sc 361.383	509,318.5	108.7	2.81	%			%	2.59 %
Al 308.215	451,115.5	19.37	0.691	mg/L	19.37	0.691	mg/L	3.57 %

Mean Data

ID: CCV Seq. No.: 41 A/S Pos: 5

2002/09/03 07:44:55 All analytes passed QC.

Date: 2002/08/30 21:23:59

Sample Qty g Prep. Vol.: Dilution: :

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	170,640.8	92.27	7.220	%				7.83 %

Sc 361.383	466,134.4	99.45	10.702	%					10.76 %
Al 308.215	11,798.0	0.5066	0.06245	mg/L	0.5066				12.33 %

2002/09/03 07:44:55 QC value within limits for Al 308.215 Recovery = 101.33%

Mean Data

ID: CCB **Seq. No.:** 42 **A/S Pos:** 6

2002/09/03 07:44:56 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:25:24

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	176,540.2	95.46	5.678	%				5.95 %
Sc 361.383	446,724.8	95.31	5.638	%				5.92 %
Al 308.215	292.5	0.0126	0.00697	mg/L	0.0126			55.52 %

2002/09/03 07:44:56 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: mb sp883 **Seq. No.:** 43 **A/S Pos:** 121

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:26:46

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	187,412.5	101.3	7.09	%			%	7.00 %
Sc 361.383	477,730.4	101.9	6.93	%			%	6.80 %
Al 308.215	-110.1	-0.0047	0.00343	mg/L	-0.0047	0.00343	mg/L	72.46 %

Mean Data

ID: 108177-6 **Seq. No.:** 44 **A/S Pos:** 122

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:28:04

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	170,370.7	92.12	2.662	%			%	2.89 %
Sc 361.383	472,779.5	100.9	2.99	%			%	2.96 %
Al 308.215	541,426.2	23.25	1.085	mg/L	23.25	1.085	mg/L	4.67 %

Mean Data

ID: 108177-8 **Seq. No.:** 45 **A/S Pos:** 123

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:30:11

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	177,938.0	96.21	4.300	%			%	4.47 %
Sc 361.383	489,366.5	104.4	4.69	%			%	4.50 %
Al 308.215	585,861.9	25.16	1.055	mg/L	25.16	1.055	mg/L	4.19 %

Mean Data

ID: 108177-9 Seq. No.: 46 A/S Pos: 124

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:32:19

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	167,802.1	90.73	2.770	%			%	3.05 %
Sc 361.383	460,840.9	98.32	3.008	%			%	3.06 %
Al 308.215	541,320.8	23.25	0.876	mg/L	23.25	0.876	mg/L	3.77 %

Mean Data

ID: 108177-10 Seq. No.: 47 A/S Pos: 125

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:34:30

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	168,420.2	91.07	3.606	%			%	3.96 %
Sc 361.383	472,595.4	100.8	1.64	%			%	1.63 %
Al 308.215	935,035.2	40.15	0.726	mg/L	40.15	0.726	mg/L	1.81 %

Mean Data

ID: 108177-11 Seq. No.: 48 A/S Pos: 126

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:36:40

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	179,536.0	97.08	2.985	%			%	3.07 %
Sc 361.383	483,322.0	103.1	3.22	%			%	3.12 %
Al 308.215	470,036.5	20.18	0.618	mg/L	20.18	0.618	mg/L	3.06 %

Mean Data

ID: bs sp883 Seq. No.: 49 A/S Pos: 127

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:38:49

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	190,589.4	103.1	0.87	%			%	0.84 %
Sc 361.383	511,215.6	109.1	1.12	%			%	1.02 %
Al 308.215	459,475.8	19.73	0.335	mg/L	19.73	0.335	mg/L	1.70 %

Mean Data

ID: bsd sp883 Seq. No.: 50 A/S Pos: 128

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:40:59

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	176,902.1	95.65	4.742	%			%	4.96 %

Sc 361.383	451,208.5	96.26	5.038	%			%	5.23 %
Al 308.215	81,882.8	3.516	0.1546	mg/L	3.516	0.1546	mg/L	4.40 %

Mean Data

ID: mb sp883 Seq. No.: 51 A/S Pos: 129

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:43:08

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	176,471.9	95.42	1.139	%			%	1.19 %
Sc 361.383	453,955.0	96.85	1.432	%			%	1.48 %
Al 308.215	82,052.7	3.524	0.0640	mg/L	3.524	0.0640	mg/L	1.82 %

Mean Data

ID: CCV Seq. No.: 52 A/S Pos: 5

2002/09/03 07:44:59 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:45:22

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	177,911.0	96.20	5.538	%				5.76 %
Sc 361.383	483,746.3	103.2	5.95	%				5.76 %
Al 308.215	11,113.4	0.4772	0.03229	mg/L	0.4772			6.77 %

2002/09/03 07:44:59 QC value within limits for Al 308.215 Recovery = 95.45%

Mean Data

ID: CCB Seq. No.: 53 A/S Pos: 6

2002/09/03 07:44:59 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:46:47

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	180,210.8	97.44	5.304	%				5.44 %
Sc 361.383	456,745.5	97.44	5.400	%				5.54 %
Al 308.215	253.6	0.0109	0.00329	mg/L	0.0109			30.17 %

2002/09/03 07:44:59 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: ICSA Seq. No.: 54 A/S Pos: 7

2002/09/03 07:44:59 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:48:16

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	161,133.9	87.13	5.618	%				6.45 %
Sc 361.383	387,499.2	82.67	4.920	%				5.95 %
Al 308.215	3,036,263.0	130.4	7.60	mg/L	130.4			5.83 %

2002/09/03 07:44:59 QC value within limits for Al 308.215 Recovery = 108.65%

Mean Data

ID: ICSAB **Seq. No.:** 55 **A/S Pos:** 8

2002/09/03 07:44:59 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:50:36

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	167,911.0	90.79	7.261	%				8.00 %
Sc 361.383	389,696.4	83.14	7.528	%				9.06 %
Al 308.215	3,103,632.3	133.3	12.66	mg/L	133.3			9.50 %

2002/09/03 07:44:59 QC value within limits for Al 308.215 Recovery = 111.07%

STL Seattle Perkin-Elmer Elan 6100 ICP-MS
Quantitative Analysis Calibration Report

File Name:
File Path:
Calibration Type: External Calibration

(Dual Detector Mode)

Analyte	Mass	Curve Type	Slope	Intercept	Corr. Coeff.
Cr	51.941	Linear Thru Zero	0.01	0.00	1.000000
Ni	59.933	Linear Thru Zero	0.00	0.00	0.999961
Cu	64.928	Linear Thru Zero	0.00	0.00	0.999989
Zn	67.925	Linear Thru Zero	0.00	0.00	0.999931
As	74.922	Linear Thru Zero	0.00	0.00	0.999989
Se	81.917	Linear Thru Zero	0.00	0.00	0.999931
Ge	73.922	Linear Thru Zero	0.00	0.00	0.000000
Ag	106.905	Linear Thru Zero	0.01	0.00	0.999987
Cd	113.904	Linear Thru Zero	0.01	0.00	0.999949
Sb	122.904	Linear Thru Zero	0.01	0.00	0.999987
Rh	102.905	Linear Thru Zero	0.00	0.00	0.000000
Pb	207.977	Linear Thru Zero	0.04	0.00	0.999828
Ho	164.930	Linear Thru Zero	0.00	0.00	0.000000

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Blank

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:35:09
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Blank.003

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52		ug/L			7828.4	3.6
│	Ni	60		ug/L			111.1	4.6
│	Cu	65		ug/L			137.8	12.4
│	Zn	68		ug/L			941.9	9.2
│	As	75		ug/L			185.4	20.6
│	Se	82		ug/L			-10.9	355.5
└>	Ge	74		ug/L			1206756.4	0.9
┌	Ag	107		ug/L			606.7	3.6
│	Cd	114		ug/L			9.8	206.9
│	Sb	123		ug/L			320.1	3.5
└>	Rh	103		ug/L			1149578.7	1.2
┌	Pb	208		ug/L			746.7	7.8
└>	Ho	165		ug/L			1062362.2	2.0

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 1

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:37:28
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Standard 1.004

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**5.000**	ug/L	1.8	7828.421	58358.4	1.6
|	Ni	60	**5.000**	ug/L	1.2	111.112	12476.6	1.0
|	Cu	65	**5.000**	ug/L	2.0	137.778	13906.8	1.8
|	Zn	68	**5.000**	ug/L	1.1	941.907	8623.0	1.0
|	As	75	**5.000**	ug/L	1.8	185.412	11028.4	1.7
|	Se	82	**5.000**	ug/L	3.0	-10.889	1379.2	3.0
⌊>	Ge	74		ug/L		1206756.445	1206813.3	0.4
⌈	Ag	107	**5.000**	ug/L	2.8	606.680	51021.0	2.7
|	Cd	114	**5.000**	ug/L	2.9	9.798	29550.0	1.9
|	Sb	123	**5.000**	ug/L	2.4	320.125	35419.1	1.0
⌊>	Rh	103		ug/L		1149578.700	1146041.7	1.4
⌈	Pb	208	**5.000**	ug/L	2.4	746.675	200783.1	2.2
⌊>	Ho	165		ug/L		1062362.244	1054504.1	0.7

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 2

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:40:18
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Standard 2.005

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**9.990**	ug/L	1.7	7828.421	107204.4	2.0
│	Ni	60	**10.069**	ug/L	1.1	111.112	25436.0	1.1
│	Cu	65	**10.058**	ug/L	1.8	137.778	28186.7	0.9
│	Zn	68	**10.024**	ug/L	3.0	941.907	16317.1	4.9
│	As	75	**9.999**	ug/L	0.4	185.412	21626.9	2.6
│	Se	82	**9.884**	ug/L	2.3	-10.889	2586.1	2.1
└>	Ge	74		ug/L		1206756.445	1193843.4	2.2
┌	Ag	107	**10.013**	ug/L	1.6	606.680	102534.5	1.5
│	Cd	114	**10.011**	ug/L	2.3	9.798	59673.3	2.4
│	Sb	123	**9.973**	ug/L	1.5	320.125	69886.9	1.6
└>	Rh	103		ug/L		1149578.700	1150728.5	0.1
┌	Pb	208	**10.027**	ug/L	0.6	746.675	403693.2	1.2
└>	Ho	165		ug/L		1062362.244	1047893.2	1.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 3

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:43:38
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Standard 3.006

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**24.964**	ug/L	1.6	7828.421	257084.5	1.2
|	Ni	60	**24.789**	ug/L	2.2	111.112	60544.7	2.3
|	Cu	65	**24.857**	ug/L	2.9	137.778	68210.3	2.3
|	Zn	68	**24.629**	ug/L	1.6	941.907	36467.8	1.2
|	As	75	**24.952**	ug/L	1.7	185.412	53721.1	2.2
|	Se	82	**24.794**	ug/L	1.3	-10.889	6310.5	2.0
⌊>	Ge	74		ug/L		1206756.445	1205776.2	0.6
⌈	Ag	107	**24.989**	ug/L	1.9	606.680	260274.4	1.6
|	Cd	114	**24.935**	ug/L	1.5	9.798	150076.8	1.4
|	Sb	123	**24.886**	ug/L	2.0	320.125	173937.2	1.8
⌊>	Rh	103		ug/L		1149578.700	1177198.1	0.3
⌈	Pb	208	**24.944**	ug/L	2.5	746.675	999377.2	2.1
⌊>	Ho	165		ug/L		1062362.244	1055705.1	0.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 4

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:47:29
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Standard 4.007

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**50.014**	ug/L	2.5	7828.421	506925.2	2.1
|	Ni	60	**50.082**	ug/L	2.2	111.112	122697.0	1.9
|	Cu	65	**50.044**	ug/L	4.7	137.778	137409.7	4.6
|	Zn	68	**49.682**	ug/L	2.5	941.907	71013.7	2.0
|	As	75	**49.831**	ug/L	1.8	185.412	105743.2	1.2
|	Se	82	**49.561**	ug/L	1.6	-10.889	12246.6	0.9
L>	Ge	74		ug/L		1206756.445	1204110.7	1.1
Γ	Ag	107	**49.860**	ug/L	1.9	606.680	504086.1	1.4
|	Cd	114	**50.156**	ug/L	3.0	9.798	299189.4	2.4
|	Sb	123	**49.997**	ug/L	2.3	320.125	342390.2	2.3
L>	Rh	103		ug/L		1149578.700	1155082.3	3.0
Γ	Pb	208	**49.483**	ug/L	0.6	746.675	1943503.0	0.8
L>	Ho	165		ug/L		1062362.244	1070849.7	0.7

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 5

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:53:21
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Standard 5.008

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**100.020**	ug/L	2.8	7828.421	991565.7	0.8
|	Ni	60	**100.420**	ug/L	0.4	111.112	245518.3	2.6
|	Cu	65	**99.819**	ug/L	0.7	137.778	268454.0	2.1
|	Zn	68	**99.650**	ug/L	0.5	941.907	137964.9	2.2
|	As	75	**100.187**	ug/L	0.7	185.412	210523.4	1.6
|	Se	82	**100.406**	ug/L	2.1	-10.889	24766.1	1.9
L>	Ge	74		ug/L		1206756.445	1186522.2	2.2
Γ	Ag	107	**99.748**	ug/L	1.2	606.680	1002001.2	1.8
|	Cd	114	**99.452**	ug/L	3.1	9.798	584408.6	2.2
|	Sb	123	**99.746**	ug/L	1.1	320.125	678703.6	1.8
L>	Rh	103		ug/L		1149578.700	1156941.3	2.0
Γ	Pb	208	**99.098**	ug/L	2.2	746.675	3767149.1	1.0
L>	Ho	165		ug/L		1062362.244	1065925.7	3.3

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MSICV

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:03:29
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\MSICV.010

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**9.933**	ug/L	1.8	7828.421	108323.5	1.9
|	Ni	60	**10.085**	ug/L	2.4	111.112	25424.8	1.6
|	Cu	65	**9.881**	ug/L	2.5	137.778	27421.9	1.1
|	Zn	68	**10.699**	ug/L	1.1	941.907	16069.8	2.8
|	As	75	**9.907**	ug/L	2.4	185.412	21552.8	1.3
|	Se	82	**9.785**	ug/L	1.8	-10.889	2470.3	2.8
⌊>	Ge	74		ug/L		1206756.445	1219377.1	3.6
⌈	Ag	107	**10.255**	ug/L	0.8	606.680	105578.7	1.0
|	Cd	114	**10.083**	ug/L	1.0	9.798	60428.6	1.4
|	Sb	123	**10.218**	ug/L	2.6	320.125	71176.9	2.5
⌊>	Rh	103		ug/L		1149578.700	1179410.1	0.4
⌈	Pb	208	**10.559**	ug/L	0.7	746.675	405378.0	0.4
⌊>	Ho	165		ug/L		1062362.244	1074260.9	0.7

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: ICB

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:11:18
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\ICB.011

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**-0.007**	ug/L	319.8	7828.421	7889.3	2.5
|	Ni	60	**-0.012**	ug/L	51.3	111.112	82.2	18.3
|	Cu	65	**-0.010**	ug/L	98.5	137.778	113.3	22.2
|	Zn	68	**-0.014**	ug/L	230.3	941.907	937.4	4.0
|	As	75	**0.060**	ug/L	22.6	185.412	319.1	10.0
|	Se	82	**0.102**	ug/L	122.0	-10.889	14.8	214.1
⌊>	Ge	74		ug/L		1206756.445	1227567.0	1.0
⌈	Ag	107	**-0.041**	ug/L	7.6	606.680	206.7	14.8
|	Cd	114	**0.001**	ug/L	53.8	9.798	18.2	23.9
|	Sb	123	**-0.023**	ug/L	11.2	320.125	169.0	12.4
⌊>	Rh	103		ug/L		1149578.700	1197506.2	1.7
⌈	Pb	208	**0.000**	ug/L	970.8	746.675	761.1	2.7
⌊>	Ho	165		ug/L		1062362.244	1079171.7	2.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 0.5 PPB (MDL VERIFICATION STANDARD)

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:15:53
Number of Replicates: 3
Batch ID: 08-30-02
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\0.5 PPB (MDL VERIFICATION STANDARD).013

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**0.502**	ug/L	7.8	7828.421	13073.6	1.3
|	Ni	60	**0.464**	ug/L	9.4	111.112	1286.7	7.4
|	Cu	65	**0.480**	ug/L	5.3	137.778	1475.6	3.1
|	Zn	68	**0.481**	ug/L	4.7	941.907	1642.6	0.8
|	As	75	**0.445**	ug/L	16.7	185.412	1155.7	14.5
|	Se	82	**0.396**	ug/L	32.6	-10.889	90.3	37.9
L>	Ge	74		ug/L		1206756.445	1227838.7	1.9
Γ	Ag	107	**0.459**	ug/L	1.5	606.680	5305.4	1.7
|	Cd	114	**0.503**	ug/L	5.4	9.798	3013.0	4.5
|	Sb	123	**0.471**	ug/L	2.0	320.125	3582.1	2.8
L>	Rh	103		ug/L		1149578.700	1175934.1	1.2
Γ	Pb	208	**0.522**	ug/L	1.3	746.675	20503.6	1.9
L>	Ho	165		ug/L		1062362.244	1060991.2	2.3

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MSICSA

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:22:49
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\MSICSA.016

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**1.855**	ug/L	4.0	7828.421	26221.1	3.4
│	Ni	60	**3.607**	ug/L	1.2	111.112	9016.2	0.6
│	Cu	65	**4.410**	ug/L	3.2	137.778	12112.9	2.6
│	Zn	68	**4.684**	ug/L	4.3	941.907	7444.3	4.1
│	As	75	**0.476**	ug/L	18.0	185.412	1194.7	15.9
│	Se	82	**-0.528**	ug/L	24.2	-10.889	-142.2	21.8
└>	Ge	74		ug/L		1206756.445	1198803.8	0.6
┌	Ag	107	**0.129**	ug/L	2.3	606.680	1874.6	2.6
│	Cd	114	**0.334**	ug/L	24.4	9.798	1938.8	24.5
│	Sb	123	**1.826**	ug/L	2.4	320.125	12522.9	1.8
└>	Rh	103		ug/L		1149578.700	1137009.2	1.4
┌	Pb	208	**0.649**	ug/L	2.2	746.675	24718.4	1.3
└>	Ho	165		ug/L		1062362.244	1036835.1	2.1

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MSICSAB

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:25:09
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\MSICSAB.017

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**21.714**	ug/L	1.1	7828.421	220116.5	2.2
|	Ni	60	**40.026**	ug/L	1.1	111.112	97358.5	1.9
|	Cu	65	**21.264**	ug/L	2.0	137.778	56971.2	2.9
|	Zn	68	**21.557**	ug/L	0.1	941.907	30394.9	1.1
|	As	75	**20.335**	ug/L	2.9	185.412	42621.2	1.8
|	Se	82	**18.539**	ug/L	3.2	-10.889	4537.4	2.0
⌊>	Ge	74		ug/L		1206756.445	1179656.0	1.2
⌈	Ag	107	**19.326**	ug/L	1.6	606.680	184278.1	2.5
|	Cd	114	**10.218**	ug/L	2.9	9.798	56854.9	1.8
|	Sb	123	**1.777**	ug/L	4.8	320.125	11747.7	4.6
⌊>	Rh	103		ug/L		1149578.700	1095256.4	1.1
⌈	Pb	208	**0.668**	ug/L	2.6	746.675	24839.6	2.1
⌊>	Ho	165		ug/L		1062362.244	1012160.0	1.5

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 3

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:32:56
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 3.018

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**51.221**	ug/L	0.8	7828.421	536768.8	2.3
│	Ni	60	**49.970**	ug/L	1.6	111.112	128205.3	3.0
│	Cu	65	**49.847**	ug/L	0.6	137.778	140688.5	2.1
│	Zn	68	**50.493**	ug/L	1.1	941.907	73805.0	2.4
│	As	75	**49.628**	ug/L	0.7	185.412	109482.7	1.9
│	Se	82	**50.229**	ug/L	1.2	-10.889	12989.7	0.5
└>	Ge	74		ug/L		1206756.445	1244435.8	1.5
┌	Ag	107	**50.637**	ug/L	2.6	606.680	527166.6	2.5
│	Cd	114	**50.394**	ug/L	0.8	9.798	306799.7	0.7
│	Sb	123	**50.094**	ug/L	0.7	320.125	353217.3	0.5
└>	Rh	103		ug/L		1149578.700	1198315.1	1.2
┌	Pb	208	**50.592**	ug/L	0.9	746.675	1969365.9	1.7
└>	Ho	165		ug/L		1062362.244	1090717.9	0.9

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 4

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:38:50
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 4.019

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**-0.006**	ug/L	409.5	7828.421	8156.4	3.2
I	Ni	60	**0.087**	ug/L	18.8	111.112	342.2	12.1
I	Cu	65	**0.115**	ug/L	5.8	137.778	474.5	3.9
I	Zn	68	**0.088**	ug/L	57.1	941.907	1117.4	6.6
I	As	75	**-0.027**	ug/L	191.3	185.412	135.1	84.1
I	Se	82	**-0.040**	ug/L	66.0	-10.889	-22.0	31.7
L>	Ge	74		ug/L		1206756.445	1266357.9	0.3
Γ	Ag	107	**-0.046**	ug/L	3.0	606.680	161.1	9.3
I	Cd	114	**-0.001**	ug/L	266.3	9.798	1.8	1258.7
I	Sb	123	**-0.023**	ug/L	24.4	320.125	177.8	22.7
L>	Rh	103		ug/L		1149578.700	1215831.5	1.8
Γ	Pb	208	**0.006**	ug/L	15.5	746.675	1000.0	5.8
L>	Ho	165		ug/L		1062362.244	1076791.1	2.9

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MB

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:41:14
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\MB.020

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**-0.012**	ug/L	248.1	7828.421	8288.1	3.4
|	Ni	60	**0.036**	ug/L	4.1	111.112	215.6	2.4
|	Cu	65	**0.055**	ug/L	11.1	137.778	311.1	5.3
|	Zn	68	**1.823**	ug/L	4.3	941.907	3755.1	2.9
|	As	75	**0.056**	ug/L	117.7	185.412	329.2	46.4
|	Se	82	**0.069**	ug/L	134.2	-10.889	6.9	362.2
⌊>	Ge	74		ug/L		1206756.445	1298089.8	0.6
⌈	Ag	107	**-0.052**	ug/L	0.8	606.680	100.0	3.3
|	Cd	114	**0.001**	ug/L	182.2	9.798	14.1	44.5
|	Sb	123	**-0.023**	ug/L	16.4	320.125	176.2	15.1
⌊>	Rh	103		ug/L		1149578.700	1252811.0	1.4
⌈	Pb	208	**0.032**	ug/L	8.6	746.675	2110.1	5.5
⌊>	Ho	165		ug/L		1062362.244	1151963.7	0.3

MB

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3 (25X)

Sample Description: 25X
Sample Date/Time: Friday, August 30, 2002 11:43:37
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3 (25X).021

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**5.348**	ug/L	1.7	7828.421	67661.7	0.8
│	Ni	60	**2.986**	ug/L	3.3	111.112	8305.7	3.2
│	Cu	65	**12.760**	ug/L	0.9	137.778	38624.4	0.9
│	Zn	68	**48.175**	ug/L	0.9	941.907	75354.1	2.1
│	As	75	**0.995**	ug/L	9.7	185.412	2549.3	10.2
│	Se	82	**0.073**	ug/L	51.0	-10.889	8.0	126.4
└>	Ge	74		ug/L		1206756.445	1330936.7	1.8
┌	Ag	107	**-0.009**	ug/L	14.1	606.680	575.6	0.9
│	Cd	114	**0.139**	ug/L	1.5	9.798	913.9	2.9
│	Sb	123	**0.167**	ug/L	1.5	320.125	1612.7	2.5
└>	Rh	103		ug/L		1149578.700	1277787.7	1.6
┌	Pb	208	**25.926**	ug/L	0.9	746.675	1107238.7	2.3
└>	Ho	165		ug/L		1062362.244	1196191.8	1.5

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 11:46:00
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3.022

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**27.391**	ug/L	2.0	7828.421	303540.6	0.5
│	Ni	60	**15.527**	ug/L	1.3	111.112	41666.2	0.8
│	Cu	65	**63.634**	ug/L	2.9	137.778	187421.7	1.9
│	Zn	68	**216.062**	ug/L	2.5	941.907	326331.2	1.7
│	As	75	**4.669**	ug/L	1.0	185.412	10934.1	1.4
│	Se	82	**0.307**	ug/L	18.0	-10.889	71.2	19.5
└>	Ge	74		ug/L		1206756.445	1299361.8	1.8
┌	Ag	107	**0.146**	ug/L	6.3	606.680	2204.6	5.0
│	Cd	114	**0.599**	ug/L	7.7	9.798	3744.2	6.0
│	Sb	123	**0.923**	ug/L	4.9	320.125	6999.6	3.0
└>	Rh	103		ug/L		1149578.700	1227724.0	1.8
┌	Pb	208	**124.231**	ug/L	1.7	746.675	5147803.1	0.5
└>	Ho	165		ug/L		1062362.244	1161555.1	1.2

Sample

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3D

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 11:48:23
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3D.023

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**27.876**	ug/L	0.8	7828.421	307024.5	1.0
|	Ni	60	**15.565**	ug/L	2.9	111.112	41523.6	2.5
|	Cu	65	**64.973**	ug/L	1.0	137.778	190300.5	1.7
|	Zn	68	**220.313**	ug/L	1.9	941.907	330857.4	2.3
|	As	75	**4.718**	ug/L	3.0	185.412	10982.8	3.1
|	Se	82	**0.184**	ug/L	41.2	-10.889	37.7	53.6
L>	Ge	74		ug/L		1206756.445	1291711.4	0.8
Γ	Ag	107	**0.139**	ug/L	7.2	606.680	2093.5	3.8
|	Cd	114	**0.555**	ug/L	5.1	9.798	3419.4	6.0
|	Sb	123	**0.976**	ug/L	4.8	320.125	7268.1	3.4
L>	Rh	103		ug/L		1149578.700	1208455.1	1.2
Γ	Pb	208	**125.009**	ug/L	1.7	746.675	5268258.7	1.8
L>	Ho	165		ug/L		1062362.244	1181614.8	3.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3DD

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 11:50:48
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3DD.024

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**26.876**	ug/L	2.3	7828.421	294819.8	1.3
|	Ni	60	**16.298**	ug/L	2.2	111.112	43258.7	1.0
|	Cu	65	**110.892**	ug/L	2.1	137.778	323030.3	0.4
|	Zn	68	**238.935**	ug/L	1.4	941.907	356943.4	0.7
|	As	75	**5.306**	ug/L	4.7	185.412	12260.1	2.9
|	Se	82	**0.226**	ug/L	83.4	-10.889	48.7	104.0
L>	Ge	74		ug/L		1206756.445	1285504.6	1.9
Γ	Ag	107	**0.166**	ug/L	4.2	606.680	2406.9	1.8
|	Cd	114	**0.654**	ug/L	2.4	9.798	4084.5	2.4
|	Sb	123	**2.433**	ug/L	2.8	320.125	17867.8	1.1
L>	Rh	103		ug/L		1149578.700	1225776.4	1.8
Γ	Pb	208	**155.828**	ug/L	0.4	746.675	6519843.9	2.1
L>	Ho	165		ug/L		1062362.244	1172764.2	2.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3S

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 11:53:11
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3S.025

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**27.281**	ug/L	2.0	7828.421	310464.3	1.7
|	Ni	60	**57.448**	ug/L	2.3	111.112	157954.3	2.5
|	Cu	65	**41.466**	ug/L	2.6	137.778	125472.2	2.8
|	Zn	68	**111.966**	ug/L	1.7	941.907	174148.0	1.8
|	As	75	**198.735**	ug/L	1.7	185.412	469330.1	1.9
|	Se	82	**184.684**	ug/L	3.1	-10.889	51233.4	3.1
⌊>	Ge	74		ug/L		1206756.445	1333923.9	0.3
⌈	Ag	107	**31.638**	ug/L	2.3	606.680	353248.1	1.6
|	Cd	114	**5.266**	ug/L	2.2	9.798	34397.0	5.2
|	Sb	123	**138.104**	ug/L	3.7	320.125	1042608.4	0.4
⌊>	Rh	103		ug/L		1149578.700	1284937.0	3.9
⌈	Pb	208	**75.806**	ug/L	0.3	746.675	3251014.7	0.8
⌊>	Ho	165		ug/L		1062362.244	1201893.5	1.0

Spike

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3SD

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 11:55:32
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3SD.026

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**26.625**	ug/L	1.5	7828.421	292137.5	1.8
│	Ni	60	**53.560**	ug/L	1.0	111.112	141881.1	0.9
│	Cu	65	**40.605**	ug/L	2.6	137.778	118395.7	3.6
│	Zn	68	**102.507**	ug/L	0.2	941.907	153707.1	1.9
│	As	75	**191.079**	ug/L	1.4	185.412	434859.1	3.1
│	Se	82	**180.399**	ug/L	2.9	-10.889	48228.5	4.1
└>	Ge	74		ug/L		1206756.445	1285261.6	1.7
┌	Ag	107	**30.199**	ug/L	1.1	606.680	319331.9	2.3
│	Cd	114	**5.170**	ug/L	1.2	9.798	31960.2	3.2
│	Sb	123	**139.004**	ug/L	0.4	320.125	994057.8	1.6
└>	Rh	103		ug/L		1149578.700	1216066.2	2.0
┌	Pb	208	**75.449**	ug/L	1.4	746.675	3060860.1	2.4
└>	Ho	165		ug/L		1062362.244	1136877.9	1.5

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3PS

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 11:57:49
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3PS.027

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**27.168**	ug/L	1.2	7828.421	270153.9	1.0
|	Ni	60	**55.634**	ug/L	1.1	111.112	133663.7	2.4
|	Cu	65	**41.862**	ug/L	1.4	137.778	110662.6	1.1
|	Zn	68	**115.234**	ug/L	2.9	941.907	156620.3	4.4
|	As	75	**197.589**	ug/L	2.0	185.412	407629.6	0.6
|	Se	82	**186.960**	ug/L	2.9	-10.889	45304.5	1.5
L>	Ge	74		ug/L		1206756.445	1165512.7	1.5
Γ	Ag	107	**31.408**	ug/L	0.8	606.680	303026.8	2.2
|	Cd	114	**5.237**	ug/L	1.7	9.798	29533.7	2.5
|	Sb	123	**145.068**	ug/L	1.8	320.125	946519.6	1.8
L>	Rh	103		ug/L		1149578.700	1109569.0	1.6
Γ	Pb	208	**76.182**	ug/L	1.3	746.675	2840045.7	2.4
L>	Ho	165		ug/L		1062362.244	1045012.3	3.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: BS-SP883

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 12:00:07
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\BS-SP883.028

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**20.895**	ug/L	3.9	7828.421	216176.2	2.0
│	Ni	60	**50.222**	ug/L	3.3	111.112	124490.2	1.9
│	Cu	65	**25.351**	ug/L	0.8	137.778	69225.1	1.6
│	Zn	68	**56.626**	ug/L	3.0	941.907	79860.9	1.5
│	As	75	**198.308**	ug/L	0.5	185.412	422380.1	2.8
│	Se	82	**202.911**	ug/L	2.1	-10.889	50765.1	3.1
└>	Ge	74		ug/L		1206756.445	1202994.8	2.3
┌	Ag	107	**30.227**	ug/L	1.1	606.680	300759.4	2.0
│	Cd	114	**5.037**	ug/L	2.3	9.798	29299.0	3.7
│	Sb	123	**150.488**	ug/L	1.0	320.125	1012597.1	1.1
└>	Rh	103		ug/L		1149578.700	1144262.7	1.5
┌	Pb	208	**51.627**	ug/L	1.8	746.675	1933536.7	1.8
└>	Ho	165		ug/L		1062362.244	1049468.2	0.1

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: BSD-SP883

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 12:02:26
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\BSD-SP883.029

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**21.371**	ug/L	3.4	7828.421	217471.1	1.6
|	Ni	60	**50.009**	ug/L	2.9	111.112	122023.5	1.5
|	Cu	65	**25.366**	ug/L	2.1	137.778	68164.5	0.6
|	Zn	68	**56.844**	ug/L	0.8	941.907	78925.5	1.2
|	As	75	**200.065**	ug/L	1.5	185.412	419296.9	0.3
|	Se	82	**202.503**	ug/L	1.8	-10.889	49854.1	0.3
⌊>	Ge	74		ug/L		1206756.445	1184002.0	1.6
⌈	Ag	107	**30.308**	ug/L	1.7	606.680	297907.3	2.2
|	Cd	114	**5.031**	ug/L	4.2	9.798	28887.8	1.5
|	Sb	123	**149.168**	ug/L	1.6	320.125	991517.2	1.1
⌊>	Rh	103		ug/L		1149578.700	1130605.4	2.7
⌈	Pb	208	**52.087**	ug/L	4.2	746.675	1919356.0	1.6
⌊>	Ho	165		ug/L		1062362.244	1034224.4	5.7

BSD

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 3

Sample Description:
Sample Date/Time: Friday, August 30, 2002 12:07:18
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 3.030

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**51.249**	ug/L	2.0	7828.421	525689.7	1.8
|	Ni	60	**49.981**	ug/L	3.1	111.112	125531.9	3.7
|	Cu	65	**50.807**	ug/L	1.9	137.778	140375.5	2.5
|	Zn	68	**52.231**	ug/L	1.9	941.907	74706.0	2.6
|	As	75	**50.061**	ug/L	0.9	185.412	108113.7	1.7
|	Se	82	**51.042**	ug/L	0.6	-10.889	12924.0	1.4
L>	Ge	74		ug/L		1206756.445	1218236.3	0.8
Γ	Ag	107	**50.250**	ug/L	0.7	606.680	511857.3	1.9
|	Cd	114	**49.910**	ug/L	0.8	9.798	297307.4	2.4
|	Sb	123	**50.626**	ug/L	1.1	320.125	349275.6	2.4
L>	Rh	103		ug/L		1149578.700	1172345.8	1.6
Γ	Pb	208	**52.063**	ug/L	1.9	746.675	1951846.3	0.7
L>	Ho	165		ug/L		1062362.244	1050873.7	2.6

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 4

Sample Description:
Sample Date/Time: Friday, August 30, 2002 12:13:12
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 4.031

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**0.011**	ug/L	352.9	7828.421	8357.1	2.6
|	Ni	60	**0.126**	ug/L	8.5	111.112	445.6	4.6
|	Cu	65	**0.122**	ug/L	0.6	137.778	496.7	1.8
|	Zn	68	**0.265**	ug/L	27.6	941.907	1384.0	8.3
|	As	75	**-0.031**	ug/L	116.3	185.412	126.1	66.1
|	Se	82	**0.108**	ug/L	14.4	-10.889	17.1	23.1
⌊>	Ge	74		ug/L		1206756.445	1271907.8	2.0
⌈	Ag	107	**-0.045**	ug/L	1.1	606.680	171.1	1.1
|	Cd	114	**-0.001**	ug/L	168.8	9.798	3.4	340.5
|	Sb	123	**0.121**	ug/L	12.5	320.125	1200.3	10.6
⌊>	Rh	103		ug/L		1149578.700	1209920.0	2.7
⌈	Pb	208	**0.008**	ug/L	8.4	746.675	1052.2	3.0
⌊>	Ho	165		ug/L		1062362.244	1072312.8	2.1

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108160-1

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 12:20:13
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108160-1.034

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**25.871**	ug/L	9.6	7828.421	286304.7	7.5
│	Ni	60	**14.988**	ug/L	1.3	111.112	40147.5	2.7
│	Cu	65	**42.358**	ug/L	2.0	137.778	124549.5	0.6
│	Zn	68	**153.902**	ug/L	0.9	941.907	232277.9	1.1
│	As	75	**4.315**	ug/L	2.8	185.412	10102.7	4.0
│	Se	82	**0.237**	ug/L	26.9	-10.889	52.3	33.7
└>	Ge	74		ug/L		1206756.445	1296651.2	2.0
┌	Ag	107	**0.113**	ug/L	8.6	606.680	1852.3	6.5
│	Cd	114	**0.348**	ug/L	13.6	9.798	2178.9	13.1
│	Sb	123	**1.393**	ug/L	2.7	320.125	10379.5	3.5
└>	Rh	103		ug/L		1149578.700	1225313.6	1.2
┌	Pb	208	**68.221**	ug/L	0.9	746.675	2882786.4	1.5
└>	Ho	165		ug/L		1062362.244	1184345.6	2.3

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108160-2

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 12:22:33
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108160-2.035

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**29.819**	ug/L	1.1	7828.421	320159.0	0.5
|	Ni	60	**19.161**	ug/L	0.5	111.112	49901.5	1.1
|	Cu	65	**55.810**	ug/L	3.5	137.778	159635.3	3.1
|	Zn	68	**224.587**	ug/L	1.3	941.907	329376.6	1.8
|	As	75	**5.561**	ug/L	2.5	185.412	12607.7	1.6
|	Se	82	**0.182**	ug/L	79.1	-10.889	36.5	104.2
⌊>	Ge	74		ug/L		1206756.445	1261594.6	1.5
⌈	Ag	107	**0.152**	ug/L	15.2	606.680	2204.6	11.4
|	Cd	114	**0.468**	ug/L	1.2	9.798	2852.1	1.8
|	Sb	123	**2.302**	ug/L	2.9	320.125	16504.4	1.6
⌊>	Rh	103		ug/L		1149578.700	1195190.9	1.3
⌈	Pb	208	**112.044**	ug/L	1.4	746.675	4669113.4	1.7
⌊>	Ho	165		ug/L		1062362.244	1168002.5	1.5

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108160-3

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 12:24:53
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108160-3.036

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**42.070**	ug/L	1.0	7828.421	451583.1	1.4
|	Ni	60	**18.392**	ug/L	1.2	111.112	48248.0	1.6
|	Cu	65	**52.464**	ug/L	1.2	137.778	151175.8	1.7
|	Zn	68	**262.080**	ug/L	0.4	941.907	386946.0	0.8
|	As	75	**5.314**	ug/L	4.2	185.412	12142.4	3.6
|	Se	82	**0.186**	ug/L	38.2	-10.889	37.6	49.2
⌊>	Ge	74		ug/L		1206756.445	1270586.4	0.6
⌈	Ag	107	**0.183**	ug/L	10.5	606.680	2511.3	7.4
|	Cd	114	**0.544**	ug/L	1.7	9.798	3297.6	1.6
|	Sb	123	**1.823**	ug/L	0.9	320.125	13064.7	1.5
⌊>	Rh	103		ug/L		1149578.700	1188484.8	1.5
⌈	Pb	208	**170.575**	ug/L	0.8	746.675	6999101.9	1.6
⌊>	Ho	165		ug/L		1062362.244	1150155.3	1.8

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108160-4

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 12:27:15
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108160-4.037

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**32.280**	ug/L	2.2	7828.421	338789.4	2.7
│	Ni	60	**14.410**	ug/L	3.2	111.112	36775.1	2.8
│	Cu	65	**47.635**	ug/L	2.7	137.778	133446.0	1.5
│	Zn	68	**184.992**	ug/L	2.3	941.907	265816.2	1.1
│	As	75	**3.914**	ug/L	3.6	185.412	8745.4	3.0
│	Se	82	**0.298**	ug/L	33.5	-10.889	65.6	40.0
└>	Ge	74		ug/L		1206756.445	1235505.7	1.5
┌	Ag	107	**0.148**	ug/L	2.6	606.680	2160.2	1.6
│	Cd	114	**0.452**	ug/L	6.7	9.798	2742.6	8.1
│	Sb	123	**1.783**	ug/L	3.1	320.125	12805.4	2.4
└>	Rh	103		ug/L		1149578.700	1190096.0	2.2
┌	Pb	208	**57.572**	ug/L	1.6	746.675	2342516.5	0.8
└>	Ho	165		ug/L		1062362.244	1140403.1	1.8

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: SOIL LCS

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 12:39:13
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\SOIL LCS.041

Results (ug / l)

Dual Detector Mode

Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Cr	52	**21.932**	ug/L	2.1	7828.421	238360.1	0.4
Ni	60	**22.405**	ug/L	1.7	111.112	58504.0	0.5
Cu	65	**32.639**	ug/L	1.7	137.778	93724.3	1.9
Zn	68	**71.884**	ug/L	0.4	941.907	106434.8	2.0
As	75	**47.170**	ug/L	0.5	185.412	105837.4	1.9
Se	82	**27.921**	ug/L	2.9	-10.889	7336.6	0.8
Ge	74		ug/L		1206756.445	1265643.5	2.1
Ag	107	**42.024**	ug/L	0.6	606.680	444087.9	1.6
Cd	114	**17.259**	ug/L	1.7	9.798	106617.9	0.6
Sb	123	**38.557**	ug/L	4.0	320.125	275831.9	1.9
Rh	103		ug/L		1149578.700	1216071.2	2.2
Pb	208	**25.070**	ug/L	2.6	746.675	1021292.1	2.3
Ho	165		ug/L		1062362.244	1141418.9	2.8

LCS

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 3

Sample Description:
Sample Date/Time: Friday, August 30, 2002 12:42:37
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 3.042

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**51.669**	ug/L	0.9	7828.421	517721.4	1.0
│	Ni	60	**51.437**	ug/L	0.0	111.112	126199.5	1.8
│	Cu	65	**50.531**	ug/L	3.0	137.778	136429.2	4.4
│	Zn	68	**51.915**	ug/L	1.6	941.907	72553.4	2.9
│	As	75	**49.768**	ug/L	0.9	185.412	105013.0	2.4
│	Se	82	**50.799**	ug/L	0.8	-10.889	12566.1	1.8
└>	Ge	74		ug/L		1206756.445	1190235.9	1.8
┌	Ag	107	**50.756**	ug/L	1.5	606.680	504449.5	1.9
│	Cd	114	**50.441**	ug/L	1.0	9.798	293156.5	1.3
│	Sb	123	**51.478**	ug/L	2.0	320.125	346504.9	2.2
└>	Rh	103		ug/L		1149578.700	1143873.2	0.4
┌	Pb	208	**51.459**	ug/L	2.0	746.675	1930634.3	1.1
└>	Ho	165		ug/L		1062362.244	1051463.3	1.1

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 4

Sample Description:
Sample Date/Time: Friday, August 30, 2002 12:48:32
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 4.043

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**-0.027**	ug/L	49.6	7828.421	7761.7	0.3
|	Ni	60	**0.108**	ug/L	26.6	111.112	388.9	18.5
|	Cu	65	**0.107**	ug/L	24.9	137.778	441.1	18.1
|	Zn	68	**0.367**	ug/L	16.4	941.907	1492.8	4.2
|	As	75	**0.015**	ug/L	195.8	185.412	222.6	27.3
|	Se	82	**0.073**	ug/L	120.6	-10.889	7.9	285.7
L>	Ge	74		ug/L		1206756.445	1239001.0	2.0
Γ	Ag	107	**-0.050**	ug/L	1.6	606.680	113.3	7.8
|	Cd	114	**-0.004**	ug/L	21.1	9.798	-14.9	35.8
|	Sb	123	**0.171**	ug/L	8.4	320.125	1542.9	6.4
L>	Rh	103		ug/L		1149578.700	1199698.4	0.3
Γ	Pb	208	**0.008**	ug/L	10.6	746.675	1040.0	2.3
L>	Ho	165		ug/L		1062362.244	1068517.8	2.0

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 3

Sample Description:
Sample Date/Time: Friday, August 30, 2002 13:16:38
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 3.054

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**50.944**	ug/L	2.8	7828.421	544368.5	2.0
|	Ni	60	**49.580**	ug/L	1.9	111.112	129698.4	1.6
|	Cu	65	**49.116**	ug/L	0.7	137.778	141374.0	1.9
|	Zn	68	**50.431**	ug/L	0.4	941.907	75175.2	1.8
|	As	75	**50.240**	ug/L	2.3	185.412	113033.9	3.0
|	Se	82	**49.653**	ug/L	3.2	-10.889	13097.5	3.7
L>	Ge	74		ug/L		1206756.445	1269146.6	1.6
Γ	Ag	107	**50.820**	ug/L	1.4	606.680	530276.0	0.6
|	Cd	114	**50.408**	ug/L	0.7	9.798	307633.4	2.0
|	Sb	123	**49.396**	ug/L	1.3	320.125	349102.6	1.0
L>	Rh	103		ug/L		1149578.700	1201119.3	1.5
Γ	Pb	208	**50.279**	ug/L	1.5	746.675	1926443.8	2.1
L>	Ho	165		ug/L		1062362.244	1073565.7	0.6

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 4

Sample Description:
Sample Date/Time: Friday, August 30, 2002 13:22:31
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 4.055

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**-0.026**	ug/L	107.0	7828.421	8267.7	2.1
|	Ni	60	**0.108**	ug/L	31.0	111.112	414.5	20.4
|	Cu	65	**0.111**	ug/L	5.9	137.778	482.2	3.9
|	Zn	68	**0.423**	ug/L	8.6	941.907	1675.0	2.8
|	As	75	**-0.014**	ug/L	573.4	185.412	172.2	109.8
|	Se	82	**-0.024**	ug/L	426.9	-10.889	-18.7	149.2
⌊>	Ge	74		ug/L		1206756.445	1318121.7	1.7
⌈	Ag	107	**-0.050**	ug/L	3.8	606.680	115.6	18.3
|	Cd	114	**-0.007**	ug/L	57.9	9.798	-33.2	77.3
|	Sb	123	**0.023**	ug/L	21.4	320.125	519.4	5.9
⌊>	Rh	103		ug/L		1149578.700	1257458.1	1.3
⌈	Pb	208	**0.006**	ug/L	17.6	746.675	1006.7	2.8
⌊>	Ho	165		ug/L		1062362.244	1095329.6	1.3

metals Worksheet - total

QC Level:Tier IV	Due: 09/04/02
Matrix:solid	Work Order - 108160
CH2M Hill	Proj. Manager:Katie Downie

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

Sample number 108160-1	%Solids	Client Sample ID	PP011802
Sample Weight/Volume	QA/QC Batch SP883	Date Received	8/23/02
		Date Sampled	**8/20/02 4:35:00 PM**

Analyte Name	ICP	ICPMS	Result	PQL	Units
Aluminum 6020	X				
Antimony 6020					
Arsenic 6020					
Cadmium 6020					
Chromium 6020					
Copper 6020					
Lead 6020					
Nickel 6020					
Selenium 6020					
Silver 6020					
Zinc 6020					

Sample number 108160-2	%Solids	Client Sample ID	PP011803
Sample Weight/Volume	QA/QC Batch	Date Received	8/23/02
		Date Sampled	**8/20/02 5:10:00 PM**

Analyte Name	ICP	ICPMS	Result	PQL	Units
Aluminum 6020					
Antimony 6020					
Arsenic 6020					
Cadmium 6020					
Chromium 6020					
Copper 6020					
Lead 6020					
Nickel 6020					
Selenium 6020					
Silver 6020					
Zinc 6020					

Analyst _____ Date 8/30/02

Reviewed by _____ Date 9-3-02

Organics worksheet v4.0
If you have suggestions for changes please bring them to me - Dennis

metals Worksheet - total

QC Level:Tier IV	
Matrix:solid	
CH2M Hill	

Due: 09/04/02 | **Work Order - 108160**

Proj. Manager:Katie Downie

Special Instructions: Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

Sample Number [illegible]	%Solids	Client Sample ID	PP011804D
Sample Weight/Volume	QA/QC Batch	Date Received	8/23/02
		Date Sampled	**8/20/02 12:01:00 AM**

Analyte Name	ICP	ICPMS	Result	PQL	Units
Aluminum 6020					
Antimony 6020					
Arsenic 6020					
Cadmium 6020					
Chromium 6020					
Copper 6020					
Lead 6020					
Nickel 6020					
Selenium 6020					
Silver 6020					
Zinc 6020					

Sample Number [illegible]	%Solids	Client Sample ID	PP011805
Sample Weight/Volume	QA/QC Batch	Date Received	8/23/02
		Date Sampled	**8/21/02 9:45:00 AM**

Analyte Name	ICP	ICPMS	Result	PQL	Units
Aluminum 6020					
Antimony 6020					
Arsenic 6020					
Cadmium 6020					
Chromium 6020					
Copper 6020					
Lead 6020					
Nickel 6020					
Selenium 6020					
Silver 6020					
Zinc 6020					

Analyst _____ Date 8/30/02

Reviewed by KRW Date 9-3-02

Organics worksheet v4.0
If you have suggestions for changes please bring them to me - Dennis

Sample Prep Log Sheet - 8/30/02

Metals Digestion Log

Extraction Date					
QCBatch ID	SP883				
Sample Matrix	solid				
	Soil Microwave (206.13)				
MS Spike No.	GPS#1 : 1001-04-21	Weighed By/Date			
	GPS#2 : 1001-03-24	FJ 8/30/02			
HCL Lot No.	S003				
Nitric Acid Lot No.	S005				
H202 Lot No.	N/A	Spike Witness Signature/Date			

QC Sample Type	QC Identifier	Sample Weight	Final Volume		MS/BS spike
Method Blank	SP883	0.5000	100		NA
Duplicate	108164-3	0.5336	100		NA
Duplicate-2	108160-3	0.5714			NA
Blank Spike	SSP883	0.5000	100		2 ml
Blank Spike Duplicate	4SP883	0.5000	100		2 ml
Matrix Spike	108164-3	0.5704	100		2 ml
Matrix Spike Duplicate	108164-3	0.5562	100		2 ml
Matrix Spike-2					
Matrix Spike Duplicate-2					
LCS					
ERA		0.5216	100		

Sample	Client Sample ID	Sample Weight (g)	Final Volume (ml)		
108164-1	PP011806	0.5317	100		
108164-2	PP011807	0.5509	100		
108164-3	PP011808	0.5405	100		
108160-1	PP011802	0.5176	100		
108160-2	PP011803	0.5951	100		
108160-3	PP011804D	0.5993	100		
108160-4	PP011805	0.5578	100		
108166-1	PP011801	0.5466	100		
108166-2	PP011809	0.5821	100		
108166-3	PP011810	0.5593	100		
108177-1	PP01M105	0.5377	100		
108177-2	PP01M106	0.5286	100		
108177-3	PP01M107	0.5130	100		
108177-4	PP01M108	0.5592	100		
108177-5	PP01M109	0.5257	100		
108177-6	PP01M110	0.5984	100		
108177-8	PP01M101	0.5735	100		
108177-9	PP01M102D	0.5230	100		
108177-10	PP01M103	0.5656	100		
108177-11	PP01M104	0.5588	100		

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108160
Sample Number	1
Data Filename	SP883
Client Sample ID	PP011802
Date Received	08-23-02
Date Prepared	08-30-02
Date Analyzed	08-30-02
Sample matrix type	solid
QC sample type	sample

Related Blan SP883

Sample weight (g)	0.5176	=	0.00052 /kg	Calc. Fact.	264.36697
Digest volume		=	100 ml	Dry Weight	0.37826208 g
Dilution Factor		=	1	Sample Units	mg/kg
% Solids	73.08	=	0.7308	Spike Factor	2.6436697
		=	1	Rept. Dil. Fac	1
blank= PPB, 1=PPM, 2=%	1	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aluminum	28.53717			7540		26.4

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108160**
Sample Number	**2**
Data Filename	**SP883**
Client Sample ID	**PP011803**
Date Received	**08-23-02**
Date Prepared	**08-30-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blan SP883

Sample weight (g)	**0.5951**	=	0.0006 /kg	Calc. Fact.	218.971834
Digest volume		=	100 ml	Dry Weight	0.45667974 g
Dilution Factor		=	1	Sample Units	mg/kg
% Solids	**76.74**	=	0.7674	Spike Factor	2.18971834
		=	1	Rept. Dil. Fac	1
blank= PPB, 1=PPM, 2=%	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aluminum	24.79691			5430		21.9

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108160
Sample Number	3
Data Filename	SP883
Client Sample ID	PP011804D
Date Received	08-23-02
Date Prepared	08-30-02
Date Analyzed	08-30-02
Sample matrix type	solid
QC sample type	sample

Related Blan SP883

Sample weight (g)	0.5993	=	0.0006 /kg	Calc. Fact.	216.984835
Digest volume		=	100 ml	Dry Weight	0.4608617 g
Dilution Factor		=	1	Sample Units	mg/kg
% Solids	76.9	=	0.769	Spike Factor	2.16984835
		=	1	Rept. Dil. Fac	1
blank= PPB, 1=PPM, 2=%	1	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aluminum	37.92869			8230		21.7

$\frac{3793 mg/L \times .1 L}{.0005993 kg \times .769} = 8230 mg/kg$

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108160
Sample Number	4
Data Filename	SP883
Client Sample ID	PP011805
Date Received	08-23-02
Date Prepared	08-30-02
Date Analyzed	08-30-02
Sample matrix type	solid
QC sample type	sample

Related Blan SP883

Sample weight (g)	0.5578	=	0.00056 /kg	Calc. Fact.	277.173355
Digest volume		=	100 ml	Dry Weight	0.36078504 g
Dilution Factor		=	1	Sample Units	mg/kg
% Solids	64.68	=	0.6468	Spike Factor	2.77173355
		=	1	Rept. Dil. Fac	1
blank= PPB, 1=PPM, 2=%	1	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aluminum	23.79416			6600		27.7

STL Seattle

6a **Sample Information**

Client Name					
Work Order Number					
Sample Number				Related Blan	noblank
Data Filename	SP883				
Client Sample ID					
Date Received					
Date Prepared	08-30-02				
Date Analyzed	08-30-02				
Sample matrix type	solid				
QC sample type	blank				
Sample weight (g)		=	0.0005 /kg	Calc. Fact.	200
Digest volume		=	100 ml	Dry Weight	0 g
Dilution Factor		=	1	Sample Units	mg/kg
% Solids		=	1	Spike Factor	2
		=	1	Rept. Dil. Fac	1
blank= PPB, 1=PPM, 2=%	1	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108160**
Sample Number	**1**
Data Filename	**sp883**
Client Sample ID	**PP011802**
Date Received	**08-23-02**
Date Prepared	**08-30-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blan sp883

Sample weight (g)	**0.5176**	=	0.00052 /kg	Calc. Fact.	1321.83485
Digest volume		=	100 ml	Dry Weight	.37826208 g
Dilution Factor	**5**	=	5	Sample Unit	mg/kg
% Solids	**73.08**	=	0.7308	Spike Factor	2.6436697
		=	1	Rept. Dil. Fa	5
Report in PPM	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Arsenic	0.004315			5.7		1.32
x	Antimony	0.001393			1.84	J	3.97
x	Cadmium	0.000348			0.46	J	0.661
x	Chromium	0.025871			34.2		1.32
x	Copper	0.042358		5.5E-05	56	B2	1.32
x	Lead	0.068221		3.2E-05	90.2	B2	0.661
x	Nickel	0.014988		3.6E-05	19.8	B2	1.32
x	Silver	0.000113			0.149	J	0.661
x	Zinc	0.153902		0.00182	203	B2	3.97

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6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108160**
Sample Number	**2**
Data Filename	**sp883**
Client Sample ID	**PP011803**
Date Received	**08-23-02**
Date Prepared	**08-30-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blan sp883

Sample weight (g)	**0.5951**	=	0.0006 /kg	Calc. Fact.	1094.85917
Digest volume		=	100 ml	Dry Weight	.45667974 g
Dilution Factor	**5**	=	5	Sample Unit	mg/kg
% Solids	**76.74**	=	0.7674	Spike Factor	2.18971834
		=	1	Rept. Dil. Fa	5
Report in PPM	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Arsenic	0.005561			6.09		1.09
x	Antimony	0.002302			2.52	J	3.28
x	Cadmium	0.000468			0.512	J	0.547
x	Chromium	0.029819			32.6		1.09
x	Copper	0.05581		5.5E-05	61.1	B2	1.09
x	Lead	0.112044		3.2E-05	123	B2	0.547
x	Nickel	0.019161		3.6E-05	21	B2	1.09
x	Silver	0.000152			0.166	J	0.547
x	Zinc	0.224587		0.00182	246	B2	3.28

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108160**
Sample Number	**3**
Data Filename	**sp883**
Client Sample ID	**PP011804D**
Date Received	**08-23-02**
Date Prepared	**08-30-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blan sp883

Sample weight (g)	**0.5993**	=	0.0006 /kg	Calc. Fact.	1084.92418
Digest volume		=	100 ml	Dry Weight	0.4608617 g
Dilution Factor	**5**	=	5	Sample Unit	mg/kg
% Solids	**76.9**	=	0.769	Spike Factor	2.16984835
		=	1	Rept. Dil. Fa	5
Report in PPM	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Arsenic	0.005314			5.77		1.08
x	Antimony	0.001823			1.98	J	3.25
x	Cadmium	0.000544			0.59		0.542
x	Chromium	0.04207			45.6		1.08
x	Copper	0.052464		5.5E-05	56.9	B2	1.08
x	Lead	0.170575		3.2E-05	185	B2	0.542
x	Nickel	0.018392		3.6E-05	20	B2	1.08
x	Silver	0.000183			0.199	J	0.542
x	Zinc	0.26208		0.00182	284	B2	3.25

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108160**
Sample Number	**4**
Data Filename	**sp883**
Client Sample ID	**PP011805**
Date Received	**08-23-02**
Date Prepared	**08-30-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blan sp883

Sample weight (g)	**0.5578**	=	0.00056 /kg	Calc. Fact.	1385.86678
Digest volume		=	100 ml	Dry Weight	.36078504 g
Dilution Factor	**5**	=	5	Sample Unit	mg/kg
% Solids	**64.68**	=	0.6468	Spike Factor	2.77173355
		=	1	Rept. Dil. Fa	5
Report in PPM	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Arsenic	0.003914			5.42		1.39
x	Antimony	0.001783			2.47	J	4.16
x	Cadmium	0.000452			0.626	J	0.693
x	Chromium	0.03228			44.7		1.39
x	Copper	0.047635		5.5E-05	66	B2	1.39
x	Lead	0.057572		3.2E-05	79.8	B2	0.693
x	Nickel	0.01441		3.6E-05	20	B2	1.39
x	Silver	0.000148			0.205	J	0.693
x	Zinc	0.184992		0.00182	256	B2	4.16

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blan noblank
Data Filename	**sp883**
Client Sample ID	
Date Received	
Date Prepared	**08-30-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**blank**

Sample weight (g)		=	0.0005 /kg	Calc. Fact.	200
Digest volume		=	100 ml	Dry Weight	0 g
Dilution Factor		=	1	Sample Unit	mg/kg
% Solids		=	1	Spike Factor	2
		=	1	Rept. Dil. Fa	1
Report in PPM	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Copper	0.000055			0.011	J	0.2
x	Lead	0.000032			0.0064	J	0.1
x	Nickel	0.000036			0.0072	J	0.2
x	Zinc	0.001823			0.365	J	0.6

METHOD DETECTION STUDY SUMMARIES

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Soil Metals
Method 6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	4.93E+00	4.92E+00	4.89E+00	4.71E+00	4.78E+00	4.82E+00	4.87E+00	0.0812	0.2437
As	193.696	4.95E+00	4.95E+00	4.88E+00	4.71E+00	4.78E+00	4.77E+00	4.82E+00	0.0907	0.2722
Ba	233.527	4.94E-01	4.92E-01	4.93E-01	4.84E-01	4.86E-01	4.95E-01	4.94E-01	0.0042	0.0127
Cd	226.502	4.93E-01	4.92E-01	4.92E-01	4.85E-01	4.89E-01	4.92E-01	4.89E-01	0.0029	0.0086
Cr	283.563	4.89E-01	4.89E-01	4.88E-01	4.83E-01	4.84E-01	4.92E-01	4.91E-01	0.0034	0.0103
Pb	220.353	5.00E+00	4.99E+00	4.96E+00	4.85E+00	4.89E+00	4.88E+00	4.90E+00	0.0593	0.1778
Se	196.026	5.06E+00	5.06E+00	5.00E+00	4.81E+00	4.87E+00	4.84E+00	4.93E+00	0.1042	0.3127
Ag	338.289	4.87E-01	4.86E-01	4.87E-01	4.80E-01	4.80E-01	4.86E-01	4.91E-01	0.0039	0.0117
Cu	324.752	4.80E-01	4.80E-01	4.80E-01	4.70E-01	4.68E-01	4.73E-01	4.81E-01	0.0055	0.0164
Cu	327.393	4.88E-01	4.88E-01	4.88E-01	4.74E-01	4.71E-01	4.73E-01	4.82E-01	0.0079	0.0236
Ni	232.003	4.96E-01	4.96E-01	4.93E-01	4.82E-01	4.86E-01	4.87E-01	4.90E-01	0.0054	0.0161
Zn	213.857	4.93E-01	4.93E-01	4.89E-01	4.84E-01	4.89E-01	4.96E-01	4.91E-01	0.0039	0.0118
Be	313.107	4.89E-01	4.89E-01	4.89E-01	4.76E-01	4.81E-01	4.91E-01	4.91E-01	0.0057	0.0172
Sb	206.836	4.87E+00	4.85E+00	4.82E+00	4.68E+00	4.70E+00	4.80E+00	4.88E+00	0.0818	0.2453
Tl	190.801	5.10E+00	5.12E+00	5.06E+00	4.90E+00	4.94E+00	4.96E+00	4.99E+00	0.0838	0.2515
Co	228.616	5.02E-01	5.01E-01	4.97E-01	4.85E-01	4.90E-01	4.89E-01	4.92E-01	0.0064	0.0191
Mn	257.61	5.21E+00	5.22E+00	5.22E+00	5.11E+00	5.16E+00	5.18E+00	5.19E+00	0.0401	0.1203
Mn	294.92	4.98E+00	4.98E+00	4.97E+00	4.91E+00	4.92E+00	5.01E+00	5.01E+00	0.0409	0.1226
V	292.402	4.83E-01	4.83E-01	4.83E-01	4.76E-01	4.77E-01	4.86E-01	4.88E-01	0.0043	0.0128
K	766.49	9.49E+00	9.55E+00	9.18E+00	9.35E+00	8.92E+00	9.21E+00	9.49E+00	0.2271	0.6812
Na	330.237	1.41E+01	1.40E+01	1.41E+01	1.33E+01	1.35E+01	1.32E+01	1.36E+01	0.3788	1.1364
Al	308.215	4.80E-01	4.84E-01	4.80E-01	4.66E-01	4.69E-01	4.72E-01	4.70E-01	0.0070	0.0209
Al	237.313	4.87E-01	4.92E-01	4.78E-01	4.63E-01	4.66E-01	4.67E-01	4.81E-01	0.0112	0.0335
Fe	273.955	4.95E-01	4.97E-01	4.93E-01	4.82E-01	4.85E-01	4.87E-01	4.90E-01	0.0057	0.0170
Ca	315.887	4.73E+00	4.67E+00	4.74E+00	4.79E+00	4.67E+00	4.87E+00	4.91E+00	0.0931	0.2794
Mg	279.077	4.80E+00	4.74E+00	4.79E+00	4.86E+00	4.76E+00	4.88E+00	4.91E+00	0.0648	0.1945
Mo	202.031	0.4915	0.4917	0.4886	0.4736	0.4766	0.4732	0.4778	0.0084	0.0252
Si	251.611	4.9360	4.9370	4.9370	4.8340	4.8370	4.8610	4.8880	0.0471	0.1414
Sr	232.235	4.9560	4.9720	4.9580	4.8410	4.8840	4.9440	4.9180	0.0473	0.1418
B	249.677	4.7930	4.8760	4.9070	4.6610	4.7350	4.7450	4.8500	0.0877	0.2632
Ti	336.121	4.9570	4.9830	4.9690	4.8090	4.8420	4.9040	4.9460	0.0670	0.2011
Sn	189.927	4.9730	4.9870	4.9450	4.8460	4.9000	4.9140	4.9450	0.0479	0.1437

450

MDL 0.5 Soil

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Soil Metals
Method 6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	5.05E-01	4.97E-01	5.02E-01	4.84E-01	4.88E-01	4.77E-01	4.80E-01	0.0109	0.0326
As	193.696	5.03E-01	4.97E-01	4.96E-01	4.82E-01	4.87E-01	4.74E-01	4.77E-01	0.0111	0.0333
Ba	233.527	5.05E-02	4.98E-02	5.02E-02	4.98E-02	5.01E-02	5.01E-02	5.06E-02	0.0003	0.0009
Cd	226.502	4.96E-02	4.88E-02	4.91E-02	4.88E-02	4.93E-02	4.87E-02	4.90E-02	0.0003	0.0010
Cr	283.563	4.96E-02	4.89E-02	4.92E-02	4.94E-02	4.99E-02	5.01E-02	4.98E-02	0.0004	0.0013
Pb	220.353	5.16E-01	5.07E-01	5.11E-01	5.02E-01	5.07E-01	4.97E-01	4.99E-01	0.0069	0.0206
Se	196.026	5.21E-01	5.14E-01	5.16E-01	4.95E-01	5.02E-01	4.83E-01	4.85E-01	0.0150	0.0449
Ag	338.289	4.98E-02	4.95E-02	4.97E-02	4.85E-02	4.94E-02	4.86E-02	4.91E-02	0.0005	0.0015
Cu	324.752	4.91E-02	4.94E-02	4.96E-02	4.80E-02	4.85E-02	4.73E-02	4.77E-02	0.0009	0.0027
Cu	327.393	5.00E-02	5.11E-02	5.16E-02	4.67E-02	4.80E-02	4.72E-02	4.74E-02	0.0020	0.0060
Ni	232.003	5.11E-02	5.03E-02	5.06E-02	4.99E-02	5.04E-02	4.91E-02	4.96E-02	0.0007	0.0020
Zn	213.857	5.07E-02	4.98E-02	5.02E-02	4.97E-02	5.04E-02	4.91E-02	4.94E-02	0.0006	0.0017
Be	313.107	5.00E-02	4.97E-02	5.00E-02	4.88E-02	4.93E-02	4.92E-02	4.95E-02	0.0004	0.0013
Sb	206.836	4.89E-01	4.83E-01	4.88E-01	4.60E-01	4.81E-01	4.71E-01	4.76E-01	0.0102	0.0305
Tl	190.801	5.28E-01	5.24E-01	5.25E-01	5.08E-01	5.14E-01	4.86E-01	4.89E-01	0.0174	0.0523
Co	228.616	5.18E-02	5.11E-02	5.14E-02	5.07E-02	5.10E-02	5.01E-02	5.00E-02	0.0007	0.0020
Mn	257.61	5.49E-01	5.46E-01	5.50E-01	5.42E-01	5.48E-01	5.41E-01	5.44E-01	0.0036	0.0109
Mn	294.92	5.18E-01	5.14E-01	5.18E-01	5.12E-01	5.17E-01	5.17E-01	5.19E-01	0.0025	0.0074
V	292.402	4.89E-02	4.88E-02	4.90E-02	4.85E-02	4.92E-02	4.89E-02	4.87E-02	0.0002	0.0007
K	766.49	8.63E-01	8.55E-01	8.50E-01	9.45E-01	9.49E-01	9.03E-01	9.12E-01	0.0415	0.1244
Na	330.237	1.37E+00	1.31E+00	1.34E+00	1.26E+00	1.34E+00	1.22E+00	1.25E+00	0.0566	0.1698
Al	308.215	4.48E-02	4.23E-02	4.31E-02	5.22E-02	5.20E-02	4.74E-02	4.91E-02	0.0040	0.0121
Al	237.313	4.99E-02	4.99E-02	4.96E-02	4.70E-02	4.74E-02	4.64E-02	4.63E-02	0.0017	0.0050
Fe	273.955	5.08E-02	5.04E-02	5.06E-02	4.92E-02	4.99E-02	4.89E-02	4.30E-02	0.0027	0.0082
Ca	315.887	4.73E-01	4.67E-01	4.75E-01	4.85E-01	4.92E-01	4.92E-01	4.94E-01	0.0109	0.0328
Mg	279.077	4.88E-01	4.84E-01	4.98E-01	4.96E-01	5.03E-01	4.96E-01	4.94E-01	0.0064	0.0191
Mo	202.031	0.0499	0.0495	0.0503	0.0477	0.0494	0.0483	0.0485	0.0009	0.0028
Si	251.611	0.4900	0.4886	0.4901	0.4783	0.4830	0.4738	0.4778	0.0066	0.0199
Sr	232.235	0.5050	0.4959	0.5008	0.4961	0.4978	0.4985	0.5016	0.0033	0.0098
B	249.677	0.4725	0.4802	0.4872	0.4748	0.4926	0.4887	0.4944	0.0086	0.0258
Ti	336.121	0.5070	0.5059	0.5096	0.4914	0.4956	0.4961	0.4988	0.0069	0.0206
Sn	189.927	0.4950	0.4925	0.4965	0.4848	0.4961	0.4763	0.4854	0.0076	0.0227

MDL 0.05 Soil

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Soil Metals
Method 6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	5.16E-02	5.10E-02	5.00E-02	5.02E-02	4.98E-02	4.59E-02	4.48E-02	0.0026	0.0078
As	193.696	5.03E-02	4.97E-02	4.97E-02	5.18E-02	4.91E-02	4.55E-02	4.72E-02	0.0021	0.0062
Ba	233.527	5.10E-03	5.10E-03	5.10E-03	5.00E-03	5.00E-03	4.70E-03	4.80E-03	0.0002	0.0005
Cd	226.502	5.00E-03	4.90E-03	4.90E-03	5.10E-03	4.90E-03	4.70E-03	4.60E-03	0.0002	0.0005
Cr	283.563	4.90E-03	5.00E-03	4.70E-03	5.30E-03	5.30E-03	4.70E-03	4.70E-03	0.0003	0.0008
Pb	220.353	5.35E-02	5.31E-02	5.28E-02	5.27E-02	5.09E-02	4.92E-02	4.77E-02	0.0022	0.0067
Se	196.026	5.16E-02	5.13E-02	5.04E-02	5.35E-02	5.22E-02	4.40E-02	4.69E-02	0.0033	0.0100
Ag	338.289	4.70E-03	5.00E-03	4.90E-03	5.20E-03	4.70E-03	4.70E-03	4.70E-03	0.0002	0.0006
Cu	324.752	4.60E-03	4.50E-03	4.50E-03	3.50E-03	4.70E-03	2.60E-03	3.80E-03	0.0008	0.0023
Cu	327.393	5.40E-03	5.20E-03	5.20E-03	2.50E-03	3.90E-03	1.70E-03	2.90E-03	0.0015	0.0045
Ni	232.003	4.90E-03	5.10E-03	5.00E-03	5.10E-03	5.20E-03	4.90E-03	4.70E-03	0.0002	0.0005
Zn	213.857	5.00E-03	5.00E-03	5.00E-03	5.10E-03	4.80E-03	4.90E-03	4.60E-03	0.0002	0.0005
Be	313.107	5.00E-03	5.00E-03	5.00E-03	5.00E-03	4.90E-03	4.80E-03	4.70E-03	0.0001	0.0004
Sb	206.836	4.72E-02	4.67E-02	4.59E-02	4.88E-02	4.91E-02	4.40E-02	4.34E-02	0.0022	0.0066
Tl	190.801	5.12E-02	5.16E-02	5.21E-02	5.19E-02	5.09E-02	2.82E-02	2.41E-02	0.0125	0.0374
Co	228.616	5.30E-03	5.30E-03	5.50E-03	5.10E-03	5.20E-03	4.60E-03	4.70E-03	0.0003	0.0010
Mn	257.61	5.59E-02	5.54E-02	5.56E-02	5.48E-02	5.49E-02	5.14E-02	5.16E-02	0.0019	0.0057
Mn	294.92	5.24E-02	5.19E-02	5.19E-02	5.14E-02	5.13E-02	4.88E-02	4.87E-02	0.0015	0.0046
V	292.402	4.90E-03	5.00E-03	4.90E-03	5.00E-03	5.00E-03	4.70E-03	4.40E-03	0.0002	0.0007
K	766.49	1.91E-02	-9.30E-03	-1.55E-02	1.75E-01	1.09E-01	1.07E-01	5.48E-02	0.0707	0.2120
Na	330.237	1.80E-01	1.36E-01	2.29E-01	2.39E-01	1.35E-01	-1.31E-02	1.21E-01	0.0844	0.2533
Al	308.215	1.00E-03	2.70E-03	2.50E-03	1.38E-02	9.40E-03	1.38E-02	9.30E-03	0.0054	0.0163
Al	237.313	3.80E-03	3.70E-03	3.10E-03	2.30E-03	3.80E-03	-1.80E-03	5.10E-03	0.0022	0.0067
Fe	273.955	5.10E-03	4.80E-03	4.90E-03	5.20E-03	4.80E-03	4.60E-03	4.50E-03	0.0003	0.0008
Ca	315.887	4.69E-02	4.57E-02	4.66E-02	5.49E-02	5.00E-02	5.80E-02	5.06E-02	0.0046	0.0138
Mg	279.077	5.15E-02	5.48E-02	5.47E-02	5.23E-02	5.03E-02	3.59E-02	4.39E-02	0.0069	0.0206
Mo	202.031	0.0046	0.0046	0.0047	0.0048	0.0049	0.0049	0.0047	0.0001	0.0004
Si	251.611	0.0414	0.0406	0.0401	0.0419	0.0379	0.0363	0.0340	0.0029	0.0088
Sr	232.235	0.0510	0.0488	0.0511	0.0506	0.0465	0.0539	0.0522	0.0024	0.0071
B	249.677	0.0472	0.0359	0.0320	0.0604	0.0559	0.0622	0.0573	0.0121	0.0362
Ti	336.121	0.0515	0.0508	0.0508	0.0502	0.0503	0.0486	0.0474	0.0014	0.0043
Sn	189.927	0.0494	0.0495	0.0488	0.0511	0.0503	0.0461	0.0462	0.0019	0.0058

MDL 0.005 Soil

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Water Metals
Method 200.7/6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	4.95E+00	5.01E+00	4.96E+00	4.85E+00	4.82E+00	4.85E+00	4.85E+00	0.0744	0.2231
As	193.696	4.97E+00	4.98E+00	4.95E+00	4.85E+00	4.80E+00	4.75E+00	4.83E+00	0.0903	0.2709
Ba	233.527	4.95E-01	4.98E-01	4.92E-01	4.87E-01	4.89E-01	4.96E-01	4.92E-01	0.0038	0.0115
Cd	226.502	4.95E-01	4.99E-01	4.92E-01	4.87E-01	4.91E-01	4.93E-01	4.90E-01	0.0040	0.0120
Cr	283.563	4.92E-01	4.93E-01	4.91E-01	4.85E-01	4.86E-01	4.95E-01	4.92E-01	0.0035	0.0105
Pb	220.353	5.02E+00	5.05E+00	4.99E+00	4.91E+00	4.92E+00	4.88E+00	4.89E+00	0.0696	0.2087
Se	196.026	5.07E+00	5.09E+00	5.05E+00	4.94E+00	4.93E+00	4.87E+00	4.93E+00	0.0848	0.2545
Ag	338.289	4.89E-01	4.90E-01	4.91E-01	4.84E-01	4.84E-01	4.90E-01	4.88E-01	0.0030	0.0091
Cu	324.752	4.79E-01	4.80E-01	4.83E-01	4.76E-01	4.71E-01	4.82E-01	4.78E-01	0.0040	0.0119
Cu	327.393	4.83E-01	4.86E-01	4.90E-01	4.79E-01	4.73E-01	4.81E-01	4.78E-01	0.0054	0.0162
Ni	232.003	5.00E-01	5.04E-01	4.98E-01	4.88E-01	4.91E-01	4.87E-01	4.87E-01	0.0069	0.0207
Zn	213.857	5.00E-01	5.04E-01	4.94E-01	4.89E-01	4.93E-01	4.92E-01	4.92E-01	0.0053	0.0159
Be	313.107	4.92E-01	4.96E-01	4.94E-01	4.85E-01	4.89E-01	4.93E-01	4.92E-01	0.0036	0.0108
Sb	206.836	4.90E+00	4.94E+00	4.91E+00	4.80E+00	4.79E+00	4.79E+00	4.84E+00	0.0635	0.1905
Tl	190.801	5.15E+00	5.17E+00	5.14E+00	4.99E+00	5.00E+00	4.92E+00	4.96E+00	0.1035	0.3105
Co	228.616	5.04E-01	5.07E-01	5.01E-01	4.93E-01	4.94E-01	4.90E-01	4.88E-01	0.0072	0.0217
Mn	257.61	5.23E+00	5.28E+00	5.26E+00	5.19E+00	5.24E+00	5.20E+00	5.18E+00	0.0368	0.1104
Mn	294.92	5.01E+00	5.03E+00	5.01E+00	4.94E+00	4.96E+00	5.03E+00	4.99E+00	0.0354	0.1063
V	292.402	4.85E-01	4.86E-01	4.86E-01	4.80E-01	4.80E-01	4.90E-01	4.87E-01	0.0036	0.0109
K	766.49	9.37E+00	9.61E+00	9.79E+00	9.38E+00	9.31E+00	9.48E+00	9.33E+00	0.1739	0.5218
Na	330.237	1.39E+01	1.40E+01	1.41E+01	1.36E+01	1.36E+01	1.35E+01	1.36E+01	0.2346	0.7039
Al	308.215	4.78E-01	4.83E-01	4.79E-01	4.65E-01	4.70E-01	4.71E-01	4.72E-01	0.0061	0.0182
Al	237.313	4.88E-01	4.89E-01	4.86E-01	4.74E-01	4.68E-01	4.68E-01	4.75E-01	0.0092	0.0277
Fe	273.955	4.99E-01	5.04E-01	4.99E-01	4.86E-01	4.90E-01	4.84E-01	4.88E-01	0.0076	0.0228
Ca	315.887	4.70E+00	4.78E+00	4.76E+00	4.80E+00	4.83E+00	4.76E+00	4.79E+00	0.0422	0.1266
Mg	279.077	4.76E+00	4.84E+00	4.91E-01	4.85E+00	4.89E+00	4.76E+00	4.80E+00	1.6354	4.9061
Mo	202.031	0.4921	0.4943	0.4911	0.4788	0.4824	0.4751	0.4784	0.0077	0.0232
Si	251.611	4.9370	4.9630	4.9570	4.8870	4.8720	4.9170	4.8750	0.0383	0.1148
Sr	232.235	4.9930	5.0560	4.9660	4.8880	4.9010	4.9160	4.8980	0.0623	0.1869
B	249.677	4.7850	4.8750	4.9100	4.7450	4.7800	4.8180	4.8550	0.0587	0.1762
Ti	336.121	4.9560	5.0120	5.0210	4.9010	4.9290	4.9370	4.9220	0.0458	0.1375
Sn	189.927	5.0200	5.0730	4.9920	4.9230	4.9440	4.8810	4.9300	0.0657	0.1971

MDL 0.5 Water

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Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Water Metals
Method 200.7/6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	5.11E-01	5.00E-01	5.03E-01	4.88E-01	4.85E-01	4.78E-01	4.87E-01	0.0118	0.0353
As	193.696	5.10E-01	4.98E-01	5.02E-01	4.89E-01	4.87E-01	4.78E-01	4.82E-01	0.0113	0.0340
Ba	233.527	5.12E-02	5.02E-02	5.04E-02	5.05E-02	5.00E-02	5.02E-02	5.10E-02	0.0004	0.0013
Cd	226.502	5.06E-02	4.98E-02	4.97E-02	4.95E-02	4.87E-02	4.86E-02	4.94E-02	0.0007	0.0020
Cr	283.563	5.07E-02	4.99E-02	4.97E-02	5.00E-02	4.94E-02	4.98E-02	5.07E-02	0.0005	0.0015
Pb	220.353	5.26E-01	5.17E-01	5.15E-01	5.00E-01	5.00E-01	4.95E-01	5.03E-01	0.0113	0.0339
Se	196.026	5.22E-01	5.12E-01	5.15E-01	5.05E-01	5.02E-01	4.86E-01	4.93E-01	0.0127	0.0381
Ag	338.289	5.07E-02	5.00E-02	5.05E-02	4.94E-02	4.89E-02	4.89E-02	4.98E-02	0.0007	0.0022
Cu	324.752	4.90E-02	4.74E-02	4.86E-02	5.06E-02	5.04E-02	4.91E-02	4.96E-02	0.0011	0.0033
Cu	327.393	4.88E-02	4.72E-02	4.90E-02	5.20E-02	5.09E-02	4.97E-02	4.96E-02	0.0015	0.0046
Ni	232.003	5.20E-02	5.10E-02	5.10E-02	5.02E-02	4.99E-02	4.95E-02	5.01E-02	0.0009	0.0026
Zn	213.857	5.23E-02	5.15E-02	5.11E-02	4.94E-02	4.92E-02	4.87E-02	4.95E-02	0.0014	0.0041
Be	313.107	5.11E-02	5.04E-02	5.04E-02	4.95E-02	4.90E-02	4.94E-02	5.01E-02	0.0007	0.0022
Sb	206.836	4.84E-01	4.78E-01	4.89E-01	4.79E-01	4.82E-01	4.71E-01	4.81E-01	0.0055	0.0166
Tl	190.801	5.35E-01	5.24E-01	5.26E-01	5.14E-01	5.13E-01	4.88E-01	4.97E-01	0.0167	0.0501
Co	228.616	5.24E-02	5.15E-02	5.17E-02	5.09E-02	5.08E-02	4.99E-02	5.07E-02	0.0008	0.0024
Mn	257.61	5.58E-01	5.50E-01	5.51E-01	5.51E-01	5.46E-01	5.45E-01	5.51E-01	0.0044	0.0131
Mn	294.92	5.27E-01	5.20E-01	5.21E-01	5.21E-01	5.16E-01	5.20E-01	5.27E-01	0.0040	0.0120
V	292.402	4.98E-02	4.91E-02	4.91E-02	4.94E-02	4.87E-02	4.90E-02	4.99E-02	0.0004	0.0013
K	766.49	9.65E-01	9.03E-01	9.12E-01	9.82E-01	9.58E-01	9.62E-01	9.30E-01	0.0295	0.0886
Na	330.237	1.34E+00	1.29E+00	1.40E+00	1.26E+00	1.26E+00	1.27E+00	1.27E+00	0.0532	0.1597
Al	308.215	5.11E-02	5.39E-02	4.89E-02	4.10E-02	4.18E-02	4.26E-02	4.49E-02	0.0050	0.0151
Al	237.313	4.91E-02	4.85E-02	4.87E-02	4.85E-02	4.89E-02	4.57E-02	4.58E-02	0.0015	0.0044
Fe	273.955	5.21E-02	5.12E-02	5.13E-02	4.96E-02	4.89E-02	4.89E-02	4.96E-02	0.0013	0.0039
Ca	315.887	4.85E-01	4.76E-01	4.72E-01	4.93E-01	4.91E-01	4.92E-01	4.98E-01	0.0096	0.0288
Mg	279.077	4.95E-01	4.86E-01	4.82E-01	5.10E-01	5.09E-01	4.96E-01	5.04E-01	0.0107	0.0322
Mo	202.031	0.0500	0.0494	0.0501	0.0488	0.0492	0.0477	0.0493	0.0008	0.0024
Si	251.611	0.5027	0.4946	0.4970	0.4955	0.4886	0.4830	0.4864	0.0068	0.0205
Sr	232.235	0.5171	0.5070	0.5061	0.4933	0.4917	0.4933	0.5031	0.0094	0.0281
B	249.677	0.4729	0.4732	0.4828	0.5052	0.5059	0.4928	0.5005	0.0143	0.0429
Ti	336.121	0.5132	0.5047	0.5079	0.5037	0.4982	0.5019	0.5072	0.0048	0.0144
Sn	189.927	0.4995	0.4974	0.5011	0.4883	0.4907	0.4742	0.4882	0.0092	0.0277

MDL 0.05 Water

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Water Metals
Method 200.7/6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	5.06E-02	5.06E-02	5.20E-02	4.66E-02	4.94E-02	4.77E-02	4.52E-02	0.0025	0.0074
As	193.696	5.20E-02	4.87E-02	5.04E-02	4.86E-02	5.05E-02	4.64E-02	4.62E-02	0.0022	0.0065
Ba	233.527	5.00E-03	5.10E-03	5.10E-03	4.90E-03	5.00E-03	4.80E-03	4.80E-03	0.0001	0.0004
Cd	226.502	5.00E-03	5.00E-03	5.00E-03	4.80E-03	4.90E-03	4.60E-03	4.50E-03	0.0002	0.0006
Cr	283.563	5.00E-03	4.90E-03	5.00E-03	4.90E-03	5.00E-03	4.80E-03	4.70E-03	0.0001	0.0003
Pb	220.353	5.34E-02	5.39E-02	5.32E-02	4.99E-02	4.96E-02	4.75E-02	4.71E-02	0.0029	0.0086
Se	196.026	5.05E-02	5.26E-02	5.15E-02	5.00E-02	5.08E-02	4.64E-02	4.49E-02	0.0028	0.0084
Ag	338.289	5.00E-03	5.00E-03	4.70E-03	4.30E-03	4.20E-03	4.40E-03	4.50E-03	0.0003	0.0010
Cu	324.752	4.20E-03	4.20E-03	4.00E-03	6.00E-03	5.70E-03	4.50E-03	4.60E-03	0.0008	0.0024
Cu	327.393	4.00E-03	4.10E-03	3.70E-03	5.70E-03	6.10E-03	4.00E-03	4.40E-03	0.0009	0.0028
Ni	232.003	5.10E-03	5.00E-03	5.20E-03	5.00E-03	5.00E-03	4.80E-03	4.80E-03	0.0001	0.0004
Zn	213.857	5.10E-03	5.20E-03	5.20E-03	4.70E-03	4.80E-03	4.60E-03	4.40E-03	0.0003	0.0009
Be	313.107	5.10E-03	5.10E-03	5.10E-03	4.80E-03	4.90E-03	4.70E-03	4.70E-03	0.0002	0.0006
Sb	206.836	4.67E-02	4.73E-02	4.72E-02	4.65E-02	4.85E-02	4.14E-02	4.11E-02	0.0030	0.0090
Tl	190.801	5.20E-02	5.22E-02	5.18E-02	4.84E-02	4.86E-02	2.81E-02	2.69E-02	0.0114	0.0342
Co	228.616	5.20E-03	5.20E-03	5.30E-03	5.10E-03	5.10E-03	4.50E-03	4.80E-03	0.0003	0.0008
Mn	257.61	5.55E-02	5.58E-02	5.57E-02	5.45E-02	5.51E-02	5.21E-02	5.20E-02	0.0017	0.0050
Mn	294.92	5.23E-02	5.19E-02	5.25E-02	5.16E-02	5.23E-02	4.97E-02	4.88E-02	0.0015	0.0044
V	292.402	5.10E-03	4.90E-03	5.00E-03	4.90E-03	4.80E-03	4.50E-03	4.60E-03	0.0002	0.0006
K	766.49	4.11E-02	7.07E-02	5.91E-02	1.30E-01	1.09E-01	9.97E-02	1.11E-01	0.0320	0.0961
Na	330.237	1.50E-01	1.49E-01	1.18E-01	1.15E-01	1.47E-01	7.43E-02	6.47E-02	0.0356	0.1068
Al	308.215	6.10E-03	7.60E-03	8.10E-03	1.90E-03	3.00E-04	5.00E-03	4.10E-03	0.0029	0.0086
Al	237.313	2.90E-03	3.60E-03	3.00E-03	4.20E-03	3.70E-03	2.30E-03	1.70E-03	0.0009	0.0026
Fe	273.955	5.10E-03	5.50E-03	5.20E-03	4.50E-03	4.40E-03	4.40E-03	4.30E-03	0.0005	0.0014
Ca	315.887	4.87E-02	5.04E-02	4.94E-02	4.49E-02	4.48E-02	4.54E-02	4.48E-02	0.0025	0.0074
Mg	279.077	4.95E-02	5.12E-02	5.25E-02	5.20E-02	5.31E-02	5.04E-02	4.54E-02	0.0026	0.0078
Mo	202.031	0.0046	0.0046	0.0047	0.0046	0.0048	0.0047	0.0048	0.0001	0.0003
Si	251.611	0.0474	0.0460	0.0469	0.0444	0.0446	0.0388	0.0385	0.0037	0.0111
Sr	232.235	0.0531	0.0535	0.0534	0.0468	0.0449	0.0434	0.0435	0.0048	0.0143
B	249.677	0.0550	0.0443	0.0379	0.0680	0.0637	0.0626	0.0551	0.0109	0.0326
Ti	336.121	0.0513	0.0511	0.0508	0.0503	0.0506	0.0488	0.0486	0.0011	0.0033
Sn	189.927	0.0490	0.0488	0.0490	0.0474	0.0491	0.0440	0.0454	0.0021	0.0062

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MDL 0.005 Water

STL Seattle Perkin - Elmer Elan 6100 ICP-MS
2/15/2002
FCW

AVERAGE SOIL MDL (mg / kg) ANNUALLY

ELEMENT	MASS	RUN #1	RUN #2	RUN #3	NEW MDL	CURRENT MDL
Lithium	7	0.01095	0.01158	0.00898	**0.0105**	********
Beryllium	9	0.01171	0.0106	0.01068	**0.0110**	0.044
Magnesium	24	0.03216	0.04357	0.07977	**0.0518**	********
Aluminum	27	0.14472	0.06699	1.78178	**0.6645**	5
Titanium	47	0.07776	0.09294	0.10461	**0.0918**	0.1248
Vanadium	51	0.1016	0.09801	0.06504	**0.0882**	0.1454
Chromium	52	0.05538	0.03263	0.02943	**0.0391**	0.0477
Manganese	55	0.03088	0.0364	0.02732	**0.0315**	0.0225
Cobalt	59	0.00364	0.00334	0.00424	**0.0037**	0.0377
Nickel	60	0.00791	0.00567	0.00424	**0.0059**	0.0735
Copper	65	0.0068	0.01141	0.01119	**0.0098**	0.0812
Zinc	68	0.05438	0.06108	0.06446	**0.0600**	0.1818
Arsenic	75	0.09764	0.10609	0.11282	**0.1055**	0.1537
Selenium	82	0.36309	0.20149	0.42598	**0.3302**	0.3864
Strontium	88	0.04385	0.00285	0.00285	**0.0165**	0.0177
Molybdenum	95	0.01301	0.02365	0.0268	**0.0212**	0.0488
Silver	107	0.00334	0.00574	0.00454	**0.0045**	0.0485
Cadmium	114	0.0069	0.0068	0.0069	**0.0069**	0.0833
Indium	115	0.00236	0.00227	0.00113	**0.0019**	********
Tin	118	0.02784	0.03907	0.03249	**0.0331**	0.0642
Antimony	123	0.01629	0.01856	0.02386	**0.0196**	0.0201
Barium	137	0.00611	0.00849	0.00898	**0.0079**	0.0933
Thallium	205	0.01406	0.00532	0.00763	**0.0090**	0.0473
Lead	208	0.00113	0.0034	0.00207	**0.0022**	0.0232
Bismuth	209	0.0218	0.01301	0.04173	**0.0255**	********
Uranium	238	0.00207	0.00236	0.0001	**0.0015**	********

STL Seattle Perkin - Elmer Elan 6100 ICP-MS
2/11/2002
FCW

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SOIL / OIL / WIPE / FILTER / PAINT CHIP'S MDL #1

ELEMENT	MASS	spike (ug/l)	Result	Result	Result	Result	Result	Result	Result	Std Dev	(mg / kg) MDL	CURRENT MDL
Lithium	7	0.01	-0.074	-0.083	-0.079	-0.078	-0.085	-0.082	-0.079	0.0037	**0.01095**	********
Beryllium	9	0.01	0.01	0.003	0.013	0.013	0.008	0.006	0.005	0.0039	**0.01171**	0.044
Magnesium	24	0.5	0.386	0.396	0.403	0.4	0.412	0.4	0.419	0.0107	**0.03216**	********
Aluminum	27	0.5	0.328	0.367	0.341	0.372	0.474	0.389	0.405	0.0482	**0.14472**	5
Titanium	47	0.5	0.198	0.202	0.241	0.203	0.218	0.172	0.165	0.0259	**0.07776**	0.1248
Vanadium	51	0.5	0.477	0.425	0.375	0.463	0.452	0.425	0.419	0.0339	**0.1016**	0.1454
Chromium	52	0.05	-0.031	0.007	0.019	0.003	-0.016	-0.012	-0.027	0.0185	**0.05538**	0.0477
Manganese	55	0.5	0.51	0.508	0.523	0.514	0.534	0.532	0.523	0.0103	**0.03088**	0.0225
Cobalt	59	0.01	0.009	0.01	0.011	0.009	0.009	0.007	0.009	0.0012	**0.00364**	0.0377
Nickel	60	0.01	0.007	0.011	0.011	0.008	0.004	0.008	0.011	0.0026	**0.00791**	0.0735
Copper	65	0.01	-0.009	-0.006	-0.012	-0.007	-0.008	-0.008	-0.005	0.0023	**0.0068**	0.0812
Zinc	68	0.5	0.374	0.356	0.347	0.379	0.38	0.344	0.336	0.0181	**0.05438**	0.1818
Arsenic	75	0.5	0.541	0.636	0.558	0.606	0.579	0.576	0.557	0.0325	**0.09764**	0.1537
Selenium	82	0.5	0.794	0.886	0.697	0.75	0.594	0.685	0.525	0.1210	**0.36309**	0.3864
Strontium	88	0.01	0.011	0.01	-0.027	0.014	0.012	0.01	0.012	0.0146	**0.04385**	0.0177
Molybdenum	95	0.05	0.066	0.057	0.059	0.055	0.055	0.055	0.053	0.0043	**0.01301**	0.0488
Silver	107	0.01	0.012	0.014	0.013	0.011	0.013	0.011	0.012	0.0011	**0.00334**	0.0485
Cadmium	114	0.01	0.003	0.007	0.009	0.003	0.007	0.004	0.005	0.0023	**0.0069**	0.0833
Indium	115	0.01	0.01	0.011	0.01	0.012	0.01	0.011	0.01	0.0008	**0.00236**	********
Tin	118	0.05	0.091	0.084	0.079	0.073	0.072	0.071	0.063	0.0093	**0.02784**	0.0642
Antimony	123	0.05	0.077	0.077	0.067	0.073	0.067	0.066	0.064	0.0054	**0.01629**	0.0201
Barium	137	0.01	0.008	0.009	0.009	0.011	0.009	0.014	0.009	0.0020	**0.00611**	0.0933
Thallium	205	0.05	0.093	0.093	0.083	0.086	0.082	0.085	0.083	0.0047	**0.01406**	0.0473
Lead	208	0.01	0.013	0.013	0.013	0.014	0.013	0.013	0.013	0.0004	**0.00113**	0.0232
Bismuth	209	0.05	0.075	0.083	0.071	0.069	0.064	0.063	0.064	0.0073	**0.0218**	********
Uranium	238	0.01	0.01	0.01	0.011	0.01	0.01	0.011	0.009	0.0007	**0.00207**	********

STL Seattle Perkin - Elmer Elan 6100 ICP-MS
2/13/2002
FCW

SOIL / OIL / WIPE / FILTER / PAINT CHIP'S MDL #2 (mg / kg)

ELEMENT	MASS	spike (ug/l)	Result	Result	Result	Result	Result	Result	Result	Std Dev	MDL	CURRENT MDL
Lithium	7	0.01	-0.008	-0.009	-0.017	-0.015	-0.016	-0.015	-0.009	0.0039	**0.01158**	********
Beryllium	9	0.01	0.012	0.009	0.016	0.008	0.008	0.015	0.015	0.0035	**0.0106**	0.044
Magnesium	24	0.5	0.444	0.433	0.427	0.413	0.408	0.404	0.415	0.0145	**0.04357**	********
Aluminum	27	0.5	-0.492	-0.493	-0.55	-0.52	-0.531	-0.539	-0.51	0.0223	**0.06699**	5
Titanium	47	0.5	0.407	0.355	0.404	0.364	0.392	0.443	0.422	0.0310	**0.09294**	0.1248
Vanadium	51	0.5	0.399	0.489	0.485	0.468	0.466	0.471	0.498	0.0327	**0.09801**	0.1454
Chromium	52	0.05	-0.016	0.01	-0.003	0.011	-0.013	0.006	-0.006	0.0109	**0.03263**	0.0477
Manganese	55	0.5	0.507	0.509	0.51	0.499	0.514	0.488	0.527	0.0121	**0.0364**	0.0225
Cobalt	59	0.01	0.01	0.009	0.012	0.011	0.009	0.011	0.01	0.0011	**0.00334**	0.0377
Nickel	60	0.01	-0.005	-0.005	-0.009	-0.005	-0.004	-0.006	-0.003	0.0019	**0.00567**	0.0735
Copper	65	0.01	0.006	0.003	0.011	0.007	0.012	0.014	0.009	0.0038	**0.01141**	0.0812
Zinc	68	0.5	0.347	0.383	0.39	0.362	0.379	0.388	0.41	0.0204	**0.06108**	0.1818
Arsenic	75	0.5	0.613	0.656	0.564	0.629	0.555	0.611	0.612	0.0354	**0.10609**	0.1537
Selenium	82	0.5	0.34	0.307	0.292	0.346	0.395	0.414	0.214	0.0672	**0.20149**	0.3864
Strontium	88	0.01	0.006	0.007	0.007	0.005	0.007	0.007	0.008	0.0010	**0.00285**	0.0177
Molybdenum	95	0.05	0.071	0.069	0.062	0.061	0.054	0.051	0.053	0.0079	**0.02365**	0.0488
Silver	107	0.01	0.013	0.015	0.016	0.012	0.011	0.013	0.011	0.0019	**0.00574**	0.0485
Cadmium	114	0.01	0.01	0.009	0.007	0.006	0.008	0.003	0.007	0.0023	**0.0068**	0.0833
Indium	115	0.01	0.009	0.011	0.01	0.009	0.01	0.01	0.009	0.0008	**0.00227**	********
Tin	118	0.05	0.095	0.079	0.07	0.071	0.062	0.061	0.057	0.0130	**0.03907**	0.0642
Antimony	123	0.05	0.084	0.084	0.078	0.075	0.072	0.075	0.067	0.0062	**0.01856**	0.0201
Barium	137	0.01	0.003	0.005	0.008	0.004	0.011	0.004	0.007	0.0028	**0.00849**	0.0933
Thallium	205	0.05	0.057	0.053	0.055	0.055	0.058	0.054	0.054	0.0018	**0.00532**	0.0473
Lead	208	0.01	0.008	0.007	0.007	0.01	0.009	0.009	0.009	0.0011	**0.0034**	0.0232
Bismuth	209	0.05	0.061	0.055	0.058	0.059	0.057	0.053	0.048	0.0043	**0.01301**	********
Uranium	238	0.01	0.011	0.012	0.011	0.01	0.01	0.01	0.01	0.0008	**0.00236**	********

STL Seattle Perkin - Elmer Elan 6100 ICP-MS
2/15/2002
FCW

SOIL / OIL / WIPE / FILTER / PAINT CHIP'S MDL #3

ELEMENT	MASS	spike (ug/l)	Result	Result	Result	Result	Result	Result	Result	Std Dev	(mg / kg) MDL	CURRENT MDL
Lithium	7	0.01	0.019	0.023	0.02	0.017	0.024	0.018	0.016	0.0030	**0.00898**	********
Beryllium	9	0.01	0.016	0.009	0.013	0.008	0.015	0.008	0.008	0.0036	**0.01068**	0.044
Magnesium	24	0.5	0.659	0.705	0.675	0.74	0.693	0.69	0.672	0.0266	**0.07977**	********
Aluminum	27	0.5	0.427	1.295	1.75	1.016	1.873	1.815	0.598	0.5939	**1.78178**	5
Titanium	47	0.5	0.382	0.442	0.475	0.435	0.466	0.391	0.431	0.0349	**0.10461**	0.1248
Vanadium	51	0.5	0.374	0.351	0.386	0.403	0.361	0.338	0.37	0.0217	**0.06504**	0.1454
Chromium	52	0.05	-0.034	-0.043	-0.038	-0.021	-0.015	-0.035	-0.033	0.0098	**0.02943**	0.0477
Manganese	55	0.5	0.524	0.523	0.518	0.541	0.525	0.511	0.522	0.0091	**0.02732**	0.0225
Cobalt	59	0.01	0.012	0.011	0.009	0.01	0.009	0.011	0.008	0.0014	**0.00424**	0.0377
Nickel	60	0.01	0.004	0.005	0.001	0.002	0.004	0.002	0.003	0.0014	**0.00424**	0.0735
Copper	65	0.01	0.018	0.016	0.009	0.008	0.015	0.012	0.011	0.0037	**0.01119**	0.0812
Zinc	68	0.5	0.854	0.892	0.887	0.865	0.837	0.867	0.895	0.0215	**0.06446**	0.1818
Arsenic	75	0.5	0.551	0.564	0.506	0.579	0.559	0.609	0.505	0.0376	**0.11282**	0.1537
Selenium	82	0.5	0.396	0.477	0.474	0.333	0.413	0.665	0.204	0.1420	**0.42598**	0.3864
Strontium	88	0.01	0.011	0.011	0.011	0.011	0.012	0.009	0.01	0.0010	**0.00285**	0.0177
Molybdenum	95	0.05	0.076	0.065	0.079	0.068	0.06	0.054	0.061	0.0089	**0.0268**	0.0488
Silver	107	0.01	0.013	0.012	0.014	0.01	0.011	0.011	0.01	0.0015	**0.00454**	0.0485
Cadmium	114	0.01	0.011	0.01	0.008	0.006	0.012	0.008	0.012	0.0023	**0.0069**	0.0833
Indium	115	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.009	0.0004	**0.00113**	********
Tin	118	0.05	0.108	0.098	0.088	0.084	0.079	0.078	0.085	0.0108	**0.03249**	0.0642
Antimony	123	0.05	0.1	0.08	0.085	0.079	0.084	0.083	0.075	0.0080	**0.02386**	0.0201
Barium	137	0.01	0.012	0.01	0.012	0.011	0.011	0.019	0.012	0.0030	**0.00898**	0.0933
Thallium	205	0.05	0.048	0.043	0.047	0.041	0.044	0.046	0.047	0.0025	**0.00763**	0.0473
Lead	208	0.01	0.015	0.015	0.016	0.015	0.014	0.015	0.014	0.0007	**0.00207**	0.0232
Bismuth	209	0.05	0.117	0.11	0.101	0.095	0.085	0.085	0.08	0.0139	**0.04173**	********
Uranium	238	0.01	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.0000	**7E-10**	********

STL Seattle Perkin - Elmer Elan 6100 ICP-MS
2/13/2002
FCW

WATER MDL

ELEMENT	MASS	spike (ug/l)	Result	Result	Result	Result	Result	Result	Result	Std Dev	(ug / l) **MDL**	CURRENT MDL
Lithium	7	0.05	0.026	0.03	0.034	0.03	0.028	0.021	0.026	0.0041	**0.0123**	********
Beryllium	9	0.05	0.062	0.05	0.057	0.054	0.057	0.045	0.054	0.0055	**0.01638**	0.044
Magnesium	24	0.05	-0.062	-0.064	-0.072	-0.066	-0.075	-0.063	-0.068	0.0048	**0.01454**	********
Aluminum	27	0.5	-0.618	-0.61	-0.588	-0.595	-0.517	-0.561	-0.615	0.0363	**0.10894**	5
Titanium	47	0.05	-0.024	-0.012	-0.015	-0.004	-0.033	0.006	-0.03	0.0141	**0.04232**	0.1248
Vanadium	51	0.5	0.505	0.459	0.45	0.55	0.486	0.447	0.473	0.0366	**0.10972**	0.1454
Chromium	52	0.05	-0.016	-0.044	-0.016	-0.007	-0.013	-0.014	-0.003	0.0132	**0.03963**	0.0477
Manganese	55	0.05	0.07	0.069	0.073	0.067	0.066	0.075	0.074	0.0035	**0.01052**	0.0225
Cobalt	59	0.01	0.012	0.01	0.011	0.009	0.011	0.011	0.007	0.0017	**0.00503**	0.0377
Nickel	60	0.05	0.031	0.038	0.038	0.027	0.032	0.034	0.032	0.0039	**0.0118**	0.0735
Copper	65	0.05	0.052	0.045	0.045	0.052	0.047	0.04	0.047	0.0042	**0.01266**	0.0812
Zinc	68	0.05	-0.041	-0.055	-0.064	-0.065	-0.053	-0.06	-0.051	0.0084	**0.02509**	0.1818
Arsenic	75	0.5	0.632	0.696	0.665	0.598	0.56	0.585	0.632	0.0471	**0.14117**	0.1537
Selenium	82	0.5	0.518	0.447	0.569	0.312	0.263	0.179	0.418	0.1409	**0.42269**	0.3864
Strontium	88	0.01	0.008	0.006	0.007	0.005	0.008	0.006	0.006	0.0011	**0.0034**	0.0177
Molybdenum	95	0.05	0.08	0.067	0.061	0.057	0.06	0.051	0.049	0.0105	**0.0314**	0.0488
Silver	107	0.01	0.019	0.016	0.014	0.014	0.012	0.014	0.013	0.0023	**0.0069**	0.0485
Cadmium	114	0.01	0.009	0.007	0.004	0.006	0.003	0.007	0.006	0.0020	**0.006**	0.0833
Indium	115	0.01	0.009	0.01	0.01	0.008	0.009	0.01	0.009	0.0008	**0.00227**	********
Tin	118	0.05	0.092	0.089	0.082	0.071	0.071	0.066	0.057	0.0127	**0.03814**	0.0642
Antimony	123	0.05	0.095	0.094	0.091	0.081	0.078	0.081	0.078	0.0076	**0.02277**	0.0201
Barium	137	0.01	0.006	0.005	0.009	0.005	0.005	0.003	0.003	0.0020	**0.00611**	0.0933
Thallium	205	0.5	0.47	0.473	0.506	0.511	0.5	0.504	0.507	0.0170	**0.05095**	0.0473
Lead	208	0.01	0.014	0.01	0.012	0.01	0.008	0.008	0.009	0.0022	**0.00658**	0.0232
Bismuth	209	0.05	0.077	0.07	0.068	0.065	0.062	0.06	0.054	0.0074	**0.02234**	********
Uranium	238	0.01	0.012	0.011	0.01	0.011	0.01	0.009	0.011	0.0010	**0.00293**	********

SOUND ANALYTICAL SERVICES

Instrument:	3400-II
Method:	8081A
Matrix:	liquid
Analyst:	JDW
Date Prepared:	4/29/2002
Date Analyzed:	5/3/2002
Units:	ug/L

Sample Amount:	125 ml
Final Volume:	1.0 ml
Cleanup Used:	Restek CLP1 Column

Data Filenames: ->	025F2501	026F2601	027F2701	028F2801	029F2901	030F3001	031F3101	Spiked	Ave.			
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	Pass/Fail
Aldrin	0.008459	0.007771	0.008585	0.009053	0.008817	0.008777	0.00898	0.008	108	**0.00126**	0.008	This MDL passes
alpha-BHC	0.008727	0.007246	0.008714	0.009075	0.008573	0.008714	0.008718	0.008	107	**0.00172**	0.008	This MDL passes
beta-BHC	0.012942	0.008159	0.010009	0.012978	0.010705	0.010793	0.011174	0.008	137	**0.00488**	0.008	amount OR PQL is
delta-BHC	0.00981	0.007276	0.009685	0.010879	0.010503	0.010597	0.010764	0.008	121	**0.00366**	0.008	amount OR PQL is
gamma-BHC (Lindane)	0.009967	0.00866	0.009994	0.010873	0.01035	0.010534	0.010255	0.008	123	**0.00205**	0.008	This MDL passes
Chlordane (technical)	0.094256	0.083472	0.091448	0.092624	0.09556	0.09728	0.09864	0.08	117	**0.01459**	0.08	This MDL passes
4,4'-DDD	0.017773	0.018962	0.019078	0.024366	0.018498	0.019209	0.019809	0.016	123	**0.00630**	0.016	amount OR PQL is
4,4'-DDE	0.019765	0.01863	0.01744	0.020326	0.020094	0.019655	0.01995	0.016	121	**0.00298**	0.016	This MDL passes
4,4'-DDT	0.019098	0.017768	0.018862	0.025954	0.020425	0.019902	0.019726	0.016	127	**0.00773**	0.016	amount OR PQL is
Dieldrin	0.021022	0.018319	0.019487	0.021295	0.020859	0.020848	0.020637	0.016	127	**0.00310**	0.016	This MDL passes
Endosulfan I	0.009485	0.009639	0.009602	0.009491	0.010159	0.008907	0.010005	0.008	120	**0.00118**	0.008	This MDL passes
Endosulfan II	0.018096	0.01779	0.01813	0.020942	0.01856	0.01937	0.019416	0.016	118	**0.00320**	0.016	This MDL passes
Endosulfan sulfate	0.018622	0.016966	0.017831	0.018878	0.019268	0.018921	0.01898	0.016	116	**0.00236**	0.016	This MDL passes
Endrin	0.023056	0.022177	0.022081	0.026383	0.022985	0.024836	0.024798	0.016	148	**0.00468**	0.016	This MDL passes
Endrin aldehyde	0.018316	0.016406	0.017201	0.018484	0.016866	0.01692	0.016341	0.016	108	**0.00251**	0.016	This MDL passes
Heptachlor	0.0086	0.007026	0.008996	0.011828	0.008673	0.009594	0.010038	0.008	116	**0.00431**	0.008	amount OR PQL is
Heptachlor epoxide	0.009517	0.00893	0.009486	0.009728	0.009754	0.009993	0.00993	0.008	120	**0.00104**	0.008	This MDL passes
Methoxychlor	0.141483	0.168251	0.158623	0.169802	0.257762	0.494244	0.346882	0.08	310	**0.37999**	0.08	amount OR PQL is
Endrin ketone	0.01939	0.0183	0.01855	0.019737	0.018557	0.023458	0.019586	0.016	123	**0.00515**	0.016	This MDL passes
Toxaphene	0.614768	0.753064	0.706544	0.612616	0.577904	0.575392	0.572672	0.8	79	**0.20753**	0.8	This MDL passes
alpha-Chlordane	0.010324	0.010101	0.010718	0.010657	0.01073	0.010042	0.010572	0.008	131	**0.00085**	0.008	This MDL passes
gamma-Chlordane	0.00934	0.008622	0.010161	0.009502	0.009159	0.009078	0.009281	0.008	116	**0.00136**	0.016	This MDL passes

SOUND ANALYTICAL SERVICES

Instrument:	3400-II
Method:	8081A
Matrix:	liquid
Analyst:	JDW
Date Prepared:	4/29/2002
Date Analyzed:	5/3/2002
Units:	ug/L

Sample Amount:	125 ml
Final Volume:	1.0 ml
Cleanup Used:	Restek CLP2 Column

Data Filenames: ->	025F2501	026F2601	027F2701	028F2801	029F2901	030F3001	031F3101	**Spiked**	**Ave.**			
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	Pass/Fail
Aldrin	0.008839	0.00804	0.008758	0.009967	0.008845	0.00874	0.009485	0.008	112	**0.00178**	0.008	This MDL passes
alpha-BHC	0.00779	0.007894	0.007926	0.008557	0.007663	0.008075	0.007698	0.008	99	**0.00089**	0.008	This MDL passes
beta-BHC	0.009919	0.008444	0.009651	0.010886	0.009758	0.010316	0.009846	0.008	123	**0.00216**	0.008	This MDL passes
delta-BHC	0.00906	0.007506	0.008115	0.00945	0.008993	0.008974	0.008653	0.008	107	**0.00192**	0.008	This MDL passes
gamma-BHC (Lindane)	0.008949	0.00801	0.008864	0.009633	0.00901	0.008992	0.009009	0.008	110	**0.00139**	0.008	This MDL passes
Chlordane (technical)	0.0846	0.094344	0.098744	0.092536	0.083368	0.09092	0.092792	0.08	114	**0.01576**	0.08	This MDL passes
4,4'-DDD	0.015626	0.01679	0.015652	0.016393	0.015582	0.016414	0.016232	0.016	101	**0.00139**	0.016	amount OR PQL is
4,4'-DDE	0.017803	0.017435	0.017646	0.01861	0.017842	0.018396	0.018769	0.016	113	**0.00150**	0.016	amount OR PQL is
4,4'-DDT	0.019066	0.017779	0.018624	0.019529	0.018768	0.019326	0.018702	0.016	118	**0.00166**	0.016	This MDL passes
Dieldrin	0.018067	0.017411	0.017766	0.018521	0.017963	0.018264	0.017983	0.016	112	**0.00103**	0.016	amount OR PQL is
Endosulfan I	0.008729	0.008799	0.008656	0.009079	0.008684	0.008902	0.008751	0.008	110	**0.00043**	0.008	amount OR PQL is
Endosulfan II	0.017724	0.016658	0.017208	0.01829	0.017778	0.018024	0.017962	0.016	110	**0.00161**	0.016	This MDL passes
Endosulfan sulfate	0.018864	0.016735	0.017898	0.018845	0.019363	0.019401	0.018984	0.016	116	**0.00278**	0.016	This MDL passes
Endrin	0.020956	0.020058	0.021194	0.021548	0.020917	0.021459	0.021029	0.016	131	**0.00143**	0.016	amount OR PQL is
Endrin aldehyde	0.017294	0.016879	0.017007	0.017786	0.016989	0.017095	0.017286	0.016	107	**0.00089**	0.016	amount OR PQL is
Heptachlor	0.009337	0.008904	0.008992	0.008672	0.010232	0.009592	0.01004	0.008	117	**0.00172**	0.008	This MDL passes
Heptachlor epoxide	0.009702	0.00897	0.009558	0.009922	0.00914	0.009626	0.009253	0.008	118	**0.00099**	0.008	This MDL passes
Methoxychlor	0.141483	0.08148	0.082162	0.087646	0.086502	0.087635	0.086519	0.08	117	**0.00220**	0.08	amount OR PQL is
Endrin ketone	0.017344	0.016786	0.016995	0.017933	0.017277	0.018352	0.018303	0.016	110	**0.00183**	0.016	This MDL passes
Toxaphene	0.583968	0.574464	0.535904	0.593216	0.569888	0.501312	0.470032	0.8	68	**0.13500**	0.8	This MDL passes
alpha-Chlordane	0.009526	0.009168	0.009474	0.009899	0.009569	0.010038	0.009786	0.008	120	**0.00085**	0.008	This MDL passes
gamma-Chlordane	0.008266	0.007485	0.008844	0.008492	0.008226	0.008764	0.008302	0.008	104	**0.00131**	0.016	This MDL passes

SOUND ANALYTICAL SERVICES

Instrument:	3400-II
Method:	8081A
Matrix:	solid
Analyst:	JDW
Date Prepared:	4/17/2002
Date Analyzed:	4/18/2002
Units:	ug/kg

Sample Amount:	10 g
Final Volume:	10 g
Cleanup Used:	Restek CLP2 Column

Data Filenames: ->	025F2501	026F2601	027F2701	028F2801	029F2901	030F3001	031F3101	Spiked	Ave.			
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	Pass/Fail
Aldrin	0.804	0.7155	0.7488	0.6983	0.7152	0.7273	0.7304	0.75	98	**0.1004**	1	This MDL passes
alpha-BHC	0.7345	0.7293	0.7368	0.7373	0.6987	0.7522	0.7453	0.75	98	**0.0495**	1	amount OR PQL is
beta-BHC	0.9522	0.6633	0.5821	0.9598	0.7736	0.6971	0.7403	0.75	102	**0.4150**	1	amount OR PQL is
delta-BHC	0.8459	0.8513	0.8877	1.0285	1.0245	1.0262	1.0149	0.75	124	**0.2550**	1	This MDL passes
gamma-BHC (Lindane)	0.8095	0.824	0.8377	0.9487	0.8021	0.7881	0.8225	0.75	110	**0.1554**	1	This MDL passes
Chlordane (technical)	5.218	5.955	5.488	5.351	5.042	5.88	5.663	7.5	74	**0.9856**	10	This MDL passes
4,4'-DDD	1.6382	1.5212	1.5414	1.6387	1.4994	1.4205	1.4857	1.5	102	**0.2329**	2	This MDL passes
4,4'-DDE	1.5898	1.4919	1.6176	1.5728	1.481	1.4717	1.4903	1.5	102	**0.1758**	2	This MDL passes
4,4'-DDT	1.8447	1.5487	1.6574	1.8711	1.5881	1.5341	1.5345	1.5	110	**0.4243**	2	This MDL passes
Dieldrin	1.6498	1.8768	1.6675	1.7414	1.4826	1.4383	1.473	1.5	108	**0.4712**	2	This MDL passes
Endosulfan I	0.8179	0.7605	0.835	0.8223	0.7587	0.7634	0.8194	0.75	106	**0.0990**	1	This MDL passes
Endosulfan II	1.6533	1.525	1.5815	1.4453	1.5658	1.5691	1.5598	1.5	104	**0.1825**	2	This MDL passes
Endosulfan sulfate	1.7852	1.6551	1.7141	1.7043	1.703	1.5416	1.6196	1.5	112	**0.2272**	2	This MDL passes
Endrin	1.6347	1.5837	1.5591	1.6005	1.5637	1.4971	1.5076	1.5	104	**0.1425**	2	amount OR PQL is
Endrin aldehyde	1.7033	1.2798	1.6139	1.513	1.5407	1.5014	1.3995	1.5	100	**0.4017**	2	This MDL passes
Heptachlor	0.8564	0.8237	0.9226	1.1021	0.8482	0.916	0.8413	0.75	120	**0.2797**	1	This MDL passes
Heptachlor epoxide	0.8116	0.8977	0.8148	0.8446	0.8285	0.8766	0.8333	0.75	113	**0.0936**	1	This MDL passes
Methoxychlor	7.4469	6.6056	6.8177	7.0078	6.8246	6.5638	6.5753	7.5	91	**0.9189**	10	This MDL passes
Endrin ketone	1.7205	1.4524	1.6409	1.5329	1.514	1.4307	1.4392	1.5	102	**0.3208**	2	This MDL passes
Toxaphene	86.401	85.665	86.359	86.849	88.055	101.4	87.96	75	119	**15.1665**	100	This MDL passes
alpha-Chlordane	0.8862	0.7397	0.8472	0.8422	0.7942	0.8027	0.8302	0.75	109	**0.1361**	1	This MDL passes
gamma-Chlordane	0.8609	0.7845	0.8921	0.8967	0.7743	0.8095	0.8197	0.75	111	**0.1448**	2	This MDL passes

SOUND ANALYTICAL SERVICES

Instrument:	3400-II
Method:	8081A
Matrix:	solid
Analyst:	JDW
Date Prepared:	4/17/2002
Date Analyzed:	4/18/2002
Units:	ug/kg

Sample Amount:	10 g
Final Volume:	10 g
Cleanup Used:	Restek CLP1 Column

Data Filenames: ->	025F2501	026F2601	027F2701	028F2801	029F2901	030F3001	031F3101	Spiked	Ave.			
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	Pass/Fail
Aldrin	0.8566	0.8669	0.9	0.8458	0.8352	0.8384	0.8492	0.75	114	**0.0645**	1	amount OR PQL is
alpha-BHC	0.7762	0.787	0.8002	0.7806	0.766	0.7608	0.7795	0.75	104	**0.0380**	1	amount OR PQL is
beta-BHC	0.9522	0.7583	0.7272	0.9598	0.798	0.7277	0.7348	0.75	108	**0.3023**	1	This MDL passes
delta-BHC	1.0038	0.902	0.9861	1.2687	0.9122	1.0921	0.8966	0.75	130	**0.3910**	1	amount OR PQL is
gamma-BHC (Lindane)	0.8619	0.8618	0.8531	0.8961	0.8628	0.8473	0.8758	0.75	113	**0.0469**	1	amount OR PQL is
Chlordane (technical)	6.723	6.374	6.18	6.409	6.443	8.671	7.194	7.5	91	**2.5160**	10	This MDL passes
4,4'-DDD	1.5385	1.6346	1.489	1.5234	1.4574	1.3657	1.4397	1.5	100	**0.2474**	2	This MDL passes
4,4'-DDE	1.669	1.4958	1.6402	1.6988	1.6097	1.4681	1.4684	1.5	105	**0.2876**	2	This MDL passes
4,4'-DDT	1.8614	1.6375	1.8243	1.9681	1.7224	1.5744	1.656	1.5	117	**0.4091**	2	This MDL passes
Dieldrin	1.7451	1.6199	1.6701	1.6403	1.6339	1.627	1.5849	1.5	110	**0.1472**	2	amount OR PQL is
Endosulfan I	0.7302	0.7324	0.7424	0.7593	0.7538	0.7539	0.7507	0.75	99	**0.0330**	1	amount OR PQL is
Endosulfan II	1.5441	1.4968	1.5121	1.5927	1.5295	1.4295	1.4709	1.5	101	**0.1529**	2	This MDL passes
Endosulfan sulfate	1.8649	2.3917	1.7623	1.9622	2.0454	2.2083	1.9184	1.5	135	**0.6268**	2	This MDL passes
Endrin	1.6878	1.6912	1.5138	1.7058	1.633	1.5512	1.5536	1.5	108	**0.2304**	2	This MDL passes
Endrin aldehyde	1.7033	1.3814	1.652	1.5261	1.5987	1.5262	1.6413	1.5	105	**0.3134**	2	This MDL passes
Heptachlor	0.9305	0.9668	0.9501	1.0279	0.9863	0.997	0.9928	0.75	131	**0.0943**	1	This MDL passes
Heptachlor epoxide	0.8568	0.8232	0.8111	0.7817	0.7884	0.7818	0.7949	0.75	107	**0.0798**	1	This MDL passes
Methoxychlor	9.5247	8.054	8.407	8.8792	8.5595	8.193	8.3413	7.5	114	**1.4522**	10	This MDL passes
Endrin ketone	1.7887	1.5974	1.6461	1.6913	1.6257	1.4599	1.5575	1.5	108	**0.3010**	2	This MDL passes
Toxaphene	86.398	90.652	83.573	75.451	89.386	85.271	84.762	75	113	**14.3761**	100	This MDL passes
alpha-Chlordane	1.0196	0.9021	1.0437	1.0462	0.9345	0.9023	0.9039	0.75	129	**0.1999**	1	This MDL passes
gamma-Chlordane	0.7528	0.718	0.7374	0.7342	0.7059	0.6868	0.7363	0.75	97	**0.0652**	2	amount OR PQL is

SOUND ANALYTICAL SERVICES

Instrument:	ITS-40 3	its_40__
Method:	8151A	8151a
Matrix:	SOIL	soil
Analyst:	BRENT HEPNER	brent_he
Date Prepared:	4/4/02	1
Date Analyzed:	4/4/02	its_40__.xls
Units:	UG/KG	e:\mdl\soil\8151a

Sample Amount: 15.0000 GRAMS
Final Volume: 2.0 ML
Cleanup Used:

Data Filenames: ->	L1917	L1918	L1919	L1920	L1921	L1922	L1923	Spiked	Ave.			factor	133.3333
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	base PQL	base mdl
Dalapon	1.2	1.47	1.33	1.47	1.47	1.33	1.33	1.3	105	**0.30**	0.32	0.01	0.002248
4-Nitrophenol	1.6	1.73	1.73	1.73	1.47	1.73	1.73	1.3	129	**0.30**	0.42	0.01	0.002232
Dicamba	1.6	1.6	1.6	1.47	1.47	1.33	1.6	1.3	117	**0.31**	0.37	0.01	0.002299
MCPP	1.2	1.2	1.33	1.33	1.2	1.07	1.2	1.3	94	**0.26**	0.28	0.01	0.001958
MCPA	1.47	1.33	1.73	1.6	1.2	1.33	1.2	1.3	108	**0.59**	0.64	0.01	0.004393
Dichloroprop	1.33	1.2	1.47	1.73	1.33	1.33	1.47	1.3	108	**0.49**	0.54	0.01	0.003705
2,4-D	1.6	1.73	1.73	1.2	1.6	1.6	1.6	1.3	122	**0.52**	0.66	0.01	0.003894
Pentachlorophenol	1.6	1.33	1.47	1.47	1.33	1.2	1.33	1.3	107	**0.38**	0.41	0.01	0.00287
Silvex (2,4,5-TP)	1.47	1.73	1.6	1.47	1.47	1.33	1.2	1.3	113	**0.50**	0.57	0.015	0.003748
2,4,5-T	1.6	1.33	1.47	1.2	1.33	0.933	1.33	1.3	101	**0.61**	0.62	0.015	0.004587
Dinoseb	1.33	1.2	1.33	1.47	1.2	1.07	1.07	1.3	95	**0.43**	0.45	0.01	0.003213
2,4-DB	1.33	0.933	1.07	1.07	1.2	1.07	1.2	1.3	87	**0.37**	0.43	0.01	0.002806
Picloram	1.6	1.6	1.6	1.33	1.47	1.47	1.33	1.3	113	**0.38**	0.44	0.01	0.002867
Clopyralid	1.73	1.47	1.73	1.6	1.33	1.33	1.47	1.3	115	**0.52**	0.61	0.015	0.003866

SOUND ANALYTICAL SERVICES

Instrument:	ITS40-3	its40_3
Method:	8270	8270
Matrix:	liquid	liquid
Analyst:	B. HEPNER	b__hepne
Date Prepared:	5/4/01	0
Date Analyzed:	5/5/01	its40_3.xls
Units:	ug/l	e:\mdl\liquid\8270

Sample Amount: 1000
Final Volume: 1
Cleanup Used:

Data Filenames: ->	E7124	E7125	E7126	E7127	E7128	E7129	E7130	Spiked	Ave.			factor	1
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	base PQL	base mdl
Phenol	0.024	0.027	0.026	0.024	0.027	0.024	0.026	0.05	57	**0.026**	0.05	0.045302	0.025822
bis(2-Chloroethyl)ether	0.009	0.011	0.009	0.041	0.01	0.009	0.01	0.05	37	**0.049**	0.13	0.132401	0.04932
2-Chlorophenol	0.038	0.048	0.046	0.043	0.049	0.042	0.048	0.05	91	**0.012**	0.01	0.013377	0.012173
1,3-Dichlorobenzene	0.046	0.056	0.049	0.049	0.049	0.048	0.054	0.05	100	**0.010**	0.01	0.00964	0.009615
1,4-Dichlorobenzene	0.046	0.063	0.057	0.046	0.058	0.048	0.059	0.05	107	**0.019**	0.02	0.020909	0.019498
Benzyl Alcohol	0.026	0.027	0.024	0.028	0.025	0.025	0.029	0.05	59	**0.025**	0.04	0.04296	0.025132
1,2-Dichlorobenzene	0.049	0.052	0.053	0.048	0.054	0.047	0.054	0.05	102	**0.008**	0.01	0.008224	0.00808
2-Methylphenol	0.039	0.042	0.043	0.04	0.044	0.038	0.045	0.05	85	**0.011**	0.01	0.013285	0.011325
bis(2-Chloroisopropyl)ether	0.043	0.046	0.047	0.042	0.05	0.042	0.048	0.05	92	**0.010**	0.01	0.010667	0.009814
3- & 4-Methylphenol	0.032	0.04	0.035	0.034	0.038	0.034	0.039	0.05	76	**0.017**	0.02	0.022102	0.016687
N-nitroso-di-n-propylamine	0.034	0.04	0.037	0.033	0.039	0.032	0.043	0.05	77	**0.018**	0.02	0.022818	0.01757
Hexachloroethane	0.05	0.059	0.054	0.049	0.054	0.05	0.057	0.05	106	**0.011**	0.01	0.011604	0.010937
Nitrobenzene	0.047	0.05	0.048	0.051	0.05	0.051	0.045	0.05	98	**0.006**	0.01	0.006414	0.006286
Isophorone	0.033	0.037	0.033	0.035	0.039	0.037	0.037	0.05	75	**0.016**	0.02	0.021188	0.015944
2-Nitrophenol	0.035	0.035	0.033	0.034	0.034	0.035	0.034	0.05	73	**0.016**	0.02	0.022708	0.016463
2,4-Dimethylphenol	0.045	0.043	0.043	0.042	0.042	0.044	0.043	0.05	88	**0.008**	0.01	0.008749	0.007699
Benzoic Acid	0.017	0.022	0.025	0.027	0.021	0.026	0.021	0.05	52	**0.030**	0.06	0.057259	0.029918
bis(2-Chloroethoxy)methane	0.04	0.042	0.042	0.039	0.038	0.038	0.038	0.05	82	**0.012**	0.01	0.014569	0.01191
2,4-Dichlorophenol	0.034	0.042	0.032	0.035	0.039	0.034	0.041	0.05	77	**0.017**	0.02	0.022703	0.017424
1,2,4-Trichlorobenzene	0.045	0.047	0.047	0.044	0.045	0.047	0.046	0.05	93	**0.005**	0.01	0.005854	0.00543
Naphthalene	0.045	0.047	0.051	0.047	0.044	0.047	0.045	0.05	94	**0.007**	0.01	0.007661	0.007202
4-Chloroaniline	0.023	0.032	0.026	0.027	0.025	0.025	0.025	0.05	58	**0.026**	0.04	0.044612	0.025986
Hexachlorobutadiene	0.049	0.046	0.044	0.045	0.047	0.044	0.045	0.05	93	**0.007**	0.01	0.007158	0.006621
4-Chloro-3-methylphenol	0.038	0.039	0.038	0.039	0.039	0.043	0.039	0.05	81	**0.012**	0.01	0.014849	0.012065
2-Methylnaphthalene	0.049	0.049	0.049	0.047	0.046	0.047	0.047	0.05	96	**0.004**	0.00	0.004331	0.004158
Hexachlorocyclopentadiene	0.034	0.036	0.037	0.039	0.037	0.036	0.034	0.05	76	**0.015**	0.02	0.020054	0.015191
2,4,6-Trichlorophenol	0.037	0.037	0.037	0.037	0.038	0.037	0.039	0.05	78	**0.013**	0.02	0.016977	0.013242
2,4,5-Trichlorophenol	0.044	0.045	0.039	0.042	0.04	0.042	0.041	0.05	86	**0.010**	0.01	0.011939	0.010237
2-Chloronaphthalene	0.048	0.046	0.048	0.048	0.047	0.047	0.046	0.05	95	**0.004**	0.00	0.004052	0.003849
2-Nitroaniline	0.038	0.037	0.038	0.036	0.037	0.035	0.037	0.05	77	**0.014**	0.02	0.01814	0.013968
Dimethylphthalate	0.048	0.05	0.049	0.047	0.047	0.047	0.048	0.05	97	**0.004**	0.00	0.003905	0.003768
Acenaphthylene	0.046	0.047	0.044	0.044	0.044	0.044	0.045	0.05	91	**0.006**	0.01	0.006908	0.006286
2,6-Dinitrotoluene	0.041	0.042	0.039	0.039	0.038	0.04	0.04	0.05	82	**0.011**	0.01	0.013569	0.011161
3-Nitroaniline	0.03	0.035	0.032	0.033	0.036	0.034	0.03	0.05	70	**0.019**	0.03	0.027033	0.018923
Acenaphthene	0.048	0.05	0.049	0.048	0.048	0.048	0.048	0.05	97	**0.003**	0.00	0.00277	0.002693
2,4-Dinitrophenol	0.011	0.011	0.009	0.009	0.008	0.007	0.005	0.05	28	**0.043**	0.16	0.158031	0.043458
4-Nitrophenol	0.017	0.017	0.018	0.019	0.019	0.015	0.017	0.05	43	**0.034**	0.08	0.079231	0.034069
Dibenzofuran	0.045	0.049	0.048	0.048	0.048	0.047	0.045	0.05	95	**0.005**	0.01	0.005486	0.005212
2,4-Dinitrotoluene	0.036	0.035	0.034	0.033	0.034	0.033	0.034	0.05	72	**0.017**	0.02	0.023166	0.016738
Diethylphthalate	0.048	0.044	0.046	0.047	0.044	0.045	0.045	0.05	92	**0.006**	0.01	0.006693	0.006175
4-Chlorophenylphenylether	0.043	0.044	0.044	0.044	0.044	0.044	0.043	0.05	89	**0.007**	0.01	0.007491	0.006667
Fluorene	0.049	0.048	0.049	0.047	0.048	0.047	0.047	0.05	96	**0.003**	0.00	0.003439	0.00331
4-Nitroaniline	0.035	0.035	0.03	0.032	0.032	0.029	0.029	0.05	68	**0.020**	0.03	0.029776	0.020247
4,6-Dinitro-2-methylphenol	0.008	0.009	0.008	0.007	0.009	0.008	0.007	0.05	27	**0.044**	0.16	0.164956	0.043713
N-Nitrosodiphenylamine	0.045	0.048	0.045	0.041	0.049	0.046	0.047	0.05	93	**0.008**	0.01	0.008956	0.008306
4-Bromophenylphenylether	0.048	0.05	0.048	0.036	0.05	0.049	0.048	0.05	95	**0.014**	0.01	0.014548	0.013784
Hexachlorobenzene	0.046	0.048	0.044	0.042	0.045	0.045	0.043	0.05	91	**0.008**	0.01	0.008472	0.007689
Pentachlorophenol	0.027	0.027	0.027	0.025	0.028	0.027	0.024	0.05	59	**0.025**	0.04	0.042204	0.024795
Phenanthrene	0.048	0.05	0.05	0.043	0.051	0.049	0.048	0.05	97	**0.007**	0.01	0.007569	0.007361
Anthracene	0.05	0.051	0.048	0.043	0.05	0.045	0.051	0.05	97	**0.009**	0.01	0.00902	0.00875
Di-n-butylphthalate	0.059	0.061	0.062	0.055	0.062	0.057	0.058	0.05	116	**0.012**	0.01	0.014248	0.011968
Fluoranthene	0.047	0.05	0.048	0.043	0.049	0.046	0.046	0.05	95	**0.007**	0.01	0.007406	0.007017
Pyrene	0.047	0.049	0.048	0.045	0.048	0.047	0.049	0.05	96	**0.005**	0.00	0.004767	0.004565
Butylbenzylphthalate	0.044	0.039	0.046	0.042	0.042	0.042	0.041	0.05	87	**0.010**	0.01	0.011597	0.010832
3,3'-Dichlorobenzidine	0.029	0.028	0.028	0.024	0.024	0.023	0.023	0.05	57	**0.026**	0.05	0.046091	0.026387

SOUND ANALYTICAL SERVICES

Benzo(a)anthracene	0.029	0.026	0.039	0.035	0.03	0.043	0.041	0.05	73	**0.024**	0.03	0.032603	0.023882
Chrysene	0.043	0.039	0.05	0.044	0.042	0.045	0.044	0.05	89	**0.011**	0.01	0.012443	0.011105
bis(2-Ethylhexyl)phthalate	0.062	0.053	0.052	0.054	0.048	0.051	0.05	0.05	105	**0.013**	0.01	0.013234	0.012572
Di-n-octylphthalate	0.055	0.042	0.05	0.047	0.05	0.043	0.043	0.05	95	**0.013**	0.01	0.014134	0.013427
Benzo(b)fluoranthene	0.061	0.042	0.039	0.035	0.05	0.039	0.041	0.05	89	**0.025**	0.03	0.027893	0.024894
Benzo(k)fluoranthene	0.057	0.05	0.052	0.048	0.06	0.046	0.048	0.05	103	**0.014**	0.01	0.014538	0.014138
Benzo(a)pyrene	0.048	0.039	0.04	0.036	0.045	0.038	0.038	0.05	84	**0.015**	0.02	0.01832	0.015297
Indeno(1,2,3-cd)pyrene	0.05	0.04	0.042	0.04	0.049	0.037	0.04	0.05	87	**0.016**	0.02	0.017882	0.015557
Dibenz(a,h)anthracene	0.049	0.038	0.041	0.029	0.044	0.034	0.037	0.05	81	**0.021**	0.03	0.026463	0.021302
Benzo(g,h,i)perylene	0.049	0.04	0.041	0.038	0.045	0.035	0.037	0.05	84	**0.016**	0.02	0.01954	0.016365
Carbazole	0.05	0.052	0.049	0.047	0.051	0.051	0.051	0.05	100	**0.005**	0.00	0.004576	0.004565
N-nitrosodimethylamine	0.005	0.013	0.007	0.011	0.011	0.01	0.013	0.05	30	**0.042**	0.14	0.141241	0.042372
Pyridine	ND	ND	ND	ND	ND	ND	ND	0.05	100	**0.000**	0.00	0	0
Benzidine	0.009	0.012	0.007	0.009	0.01	0.006	0.011	0.05	29	**0.043**	0.15	0.150378	0.042858
1,2-Diphenylhydrazine	0.04	0.043	0.043	0.039	0.042	0.043	0.044	0.05	86	**0.010**	0.01	0.011264	0.009687
2,3,4,6-Tetrachlorophenol	0.036	0.037	0.034	0.034	0.038	0.035	0.037	0.05	75	**0.015**	0.02	0.020348	0.015312

SOUND ANALYTICAL SERVICES

Instrument:	ITS40-III
Method:	8270
Matrix:	solid
Analyst:	BRENT HEPNER
Date Prepared:	5/5/01
Date Analyzed:	5/30/01
Units:	ug/kg

Sample Amount: 15
Final Volume: 2
Cleanup Used:

Data Filenames: ->	LV7765	LV7766	LV7767	LV7768	LV7769	LV7770	LV7771	Spiked	Ave.	
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**
Phenol	5.3	6	5.5	5.6	6	4.5	5.1	5	108	**1.51**
bis(2-Chloroethyl)ether	5.1	5.2	4.5	5.1	5.1	4.5	5.1	5	99	**0.83**
2-Chlorophenol	5.6	6.1	5.9	6.1	5.9	5.6	6.4	5	119	**0.84**
1,3-Dichlorobenzene	6.3	7.1	6.4	6.9	6.7	6.1	7.3	5	134	**1.28**
1,4-Dichlorobenzene	7.2	7.6	6	7.7	8	6.1	7.7	5	144	**2.36**
Benzyl Alcohol	5.1	4.9	4.5	4.7	5.1	4.4	4.9	5	96	**0.81**
1,2-Dichlorobenzene	6.5	7.1	6.7	6.8	7.5	6.1	6.9	5	136	**1.29**
2-Methylphenol	5.2	5.2	4.7	4.7	4.9	3.9	4.7	5	95	**1.28**
bis(2-Chloroisopropyl)ether	5.6	6	5.6	5.6	5.6	4.9	5.6	5	111	**0.95**
3- & 4-Methylphenol	5.6	5.3	5.6	4.9	5.2	4.9	5.5	5	106	**0.88**
N-nitroso-di-n-propylamine	4.4	4.3	4.3	4.3	4.1	4.1	4.7	5	86	**0.59**
Hexachloroethane	11	11	12	13	13	11	9	5	229	**4.07**
Nitrobenzene	6.3	6.4	5.5	5.6	5.7	6.1	5.9	5	119	**1.02**
Isophorone	6	5.2	4.9	5.6	5.6	5.9	5.3	5	110	**1.14**
2-Nitrophenol	5.3	5.5	5.1	4.7	5.1	5.6	5.3	5	105	**0.87**
2,4-Dimethylphenol	6	6	5.3	5.5	5.5	5.9	5.6	5	114	**0.81**
Benzoic Acid	1.5	1.2	3.9	1.1	2.1	1.6	1.6	5	37	**2.79**
bis(2-Chloroethoxy)methane	5.5	5.3	4.8	4.9	4.9	5.2	5.2	5	102	**0.74**
2,4-Dichlorophenol	4.9	5.6	4.5	4	4.8	5.2	4.8	5	97	**1.47**
1,2,4-Trichlorobenzene	6	6.7	5.9	6	5.7	6.3	6.7	5	124	**1.14**
Naphthalene	8.4	8.7	8.4	7.5	7.9	8.7	8.3	5	165	**1.27**
4-Chloroaniline	5.6	5.5	4.7	4.7	5.1	5.2	4.8	5	102	**1.08**
Hexachlorobutadiene	5.9	5.9	5.9	5.1	5.9	5.9	6.1	5	116	**0.94**
4-Chloro-3-methylphenol	6.3	6.1	5.5	5.3	5.6	5.9	5.5	5	115	**1.06**
2-Methylnaphthalene	6.8	7.1	6.9	6.3	7.6	7.2	6.7	5	139	**1.20**
Hexachlorocyclopentadiene	2.8	3.5	2.7	3.3	2.7	3.1	2.9	5	60	**0.90**
2,4,6-Trichlorophenol	4.9	4.4	4	4	4.3	4.5	4.4	5	87	**0.90**
2,4,5-Trichlorophenol	4.8	4.4	4.3	3.9	4.5	4.8	4.5	5	89	**0.90**
2-Chloronaphthalene	6	5.5	5.1	4.8	5.3	6.1	5.9	5	111	**1.43**
2-Nitroaniline	4.8	4.7	4.7	4	4.5	5.1	4.4	5	92	**1.01**
Dimethylphthalate	7.3	7.2	7.1	6.8	7.3	8.1	7.3	5	146	**1.15**
Acenaphthylene	5.5	5.5	5.1	4.5	5.3	5.6	5.5	5	106	**1.12**
2,6-Dinitrotoluene	5.9	5.1	4.8	4.7	5.2	5.2	4.9	5	102	**1.16**
3-Nitroaniline	5.9	4.8	4.8	4.3	5.3	5.1	4.9	5	100	**1.45**
Acenaphthene	5.1	5.3	4.9	5.1	5.7	5.3	5.6	5	106	**0.83**
2,4-Dinitrophenol	1.5	1.5	1.2	1.3	1.9	1.3	1.7	5	30	**0.72**
4-Nitrophenol	3.9	3.5	4.1	3.5	3.1	4.5	2.7	5	72	**1.77**
Dibenzofuran	6.8	6.4	6.1	5.5	6.7	6.5	6.4	5	127	**1.27**
2,4-Dinitrotoluene	6.4	6.4	5.6	5.6	6.1	6.1	6.1	5	121	**0.96**
Diethylphthalate	6.1	6.3	5.5	5.1	6.7	6.7	6.1	5	121	**1.73**

4-Chlorophenylphenylether	5.6	4.7	4.5	4.4	5.1	5.3	5.3	5	100	**1.33**
Fluorene	6.1	6.1	5.2	5.5	5.9	5.9	5.9	5	116	**0.97**
4-Nitroaniline	5.6	5.3	4.7	4.4	4.9	5.2	4.7	5	99	**1.21**
4,6-Dinitro-2-methylphenol	3.2	3.1	2.9	2.7	2.7	2.5	3.1	5	58	**0.76**
N-Nitrosodiphenylamine	5.7	4.8	5.2	5.5	5.2	5.5	5.3	5	106	**0.85**
4-Bromophenylphenylether	5.2	4.9	4.9	4.7	4.7	5.2	4.7	5	98	**0.65**
Hexachlorobenzene	5.2	5.2	5.2	5.1	4.8	5.2	4.9	5	102	**0.49**
Pentachlorophenol	3.5	3.1	2.9	2.9	2.5	3.1	2.8	5	59	**0.90**
Phenanthrene	7.9	7.1	7.5	7.1	7.1	8.1	7.2	5	149	**1.22**
Anthracene	7.3	6.8	6.9	6.9	6	6.9	6.8	5	136	**1.14**
Di-n-butylphthalate	13	12	13	14	13	12	12	5	254	**2.20**
Fluoranthene	6.4	6.3	6.1	6.3	5.6	6.1	5.9	5	122	**0.81**
Pyrene	7.1	5.7	6.8	6.3	5.9	6.1	7.1	5	129	**1.67**
Butylbenzylphthalate	6.4	5.9	6.1	6.4	6.3	5.9	5.1	5	120	**1.33**
3,3'-Dichlorobenzidine	5.3	4.9	5.1	5.2	4.7	4.9	4.7	5	99	**0.69**
Benzo(a)anthracene	6.9	6.4	7.2	8	6.9	7.2	6.3	5	140	**1.66**
Chrysene	7.3	8.3	6.8	7.7	7.5	8.3	7.5	5	153	**1.56**
bis(2-Ethylhexyl)phthalate	6.9	6.4	6.1	7.3	6.8	6.7	6	5	132	**1.34**
Di-n-octylphthalate	8.5	9.3	8.3	8.7	8.1	8	8.7	5	170	**1.28**
Benzo(b)fluoranthene	7.2	6.8	6.4	6.1	6.8	7.1	7.2	5	136	**1.22**
Benzo(k)fluoranthene	7.5	6.5	6.9	7.1	6.4	6.4	6.8	5	136	**1.19**
Benzo(a)pyrene	5.7	6	6.9	6.1	6	6.1	6.1	5	123	**1.07**
Indeno(1,2,3-cd)pyrene	5.9	6	5.9	5.6	5.6	5.6	5.7	5	115	**0.50**
Dibenz(a,h)anthracene	6	6.1	6.1	5.9	6.1	5.5	6.4	5	120	**0.80**
Benzo(g,h,i)perylene	5.9	5.9	5.9	5.6	5.7	5.6	5.9	5	116	**0.43**
Carbazole	6.9	6.7	6.9	6.5	6	7.1	6.5	5	133	**1.06**
N-nitrosodimethylamine	11	16	15	17	15	10	11	5	271	**8.21**
Pyridine	13	12	15	11	17	15	17	5	286	**6.87**
Benzidine	8.8	14	10	10	9.6	8.4	6.1	5	191	**6.93**
1,2-Diphenylhydrazine	5.1	5.2	5.2	5.3	4.7	4.9	5.1	5	101	**0.60**
2,3,4,6-Tetrachlorophenol	4.4	4.1	3.9	3.6	4.3	4.1	4.1	5	81	**0.76**

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STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

TRANSMITTAL MEMORANDUM

DATE: September 17, 2002

TO: Kathy McKinley
CH2M Hill
2300 NW Walnut Blvd
Corvallis, OR 97330-3538

PROJECT: Portland Harbor 163160.AS.OS

REPORT NUMBER: 108160 Addendum

TOTAL NUMBER OF PAGES: 30

Enclosed are the additional test results for four samples received at STL Seattle on August 23, 2002, and submitted to STL Burlington for analysis of grain size. Please add the enclosed data package to the previously submitted report.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Katie Downie
Project Manager

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender immediately at 253-922-2310 and destroy this report immediately.

STL Seattle

Sample Identification:

Lab. No.	Client ID	Date/Time Sampled	Matrix
108164-1	PP011806	08-21-02 10:30	solid
108164-2	PP011807	08-21-02 11:45	solid
108164-3	PP011808	08-21-02 14:15	solid

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender immediately at 253-922-2310 and destroy this report immediately.

PHYSICAL ANALYSIS DATA PACKAGE

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Severn Trent Laboratories, Inc.

NARRATIVE

SEVERN
TRENT
SERVICES

STL Burlington
208 South Park Drive
Suite 1
Colchester, VT 05446

Tel: 802 655 1203
Fax: 802 655 1248
www.stl-inc.com

September 16, 2002

Ms. Katie Downie
STL Seattle
5755 8th Street East
Tacoma, WA 98424

Re: Laboratory Project No. 22029
Case: 22029; SDG: 89517

Dear Ms. Downie:

Enclosed are the analytical results of samples received intact by Severn Trent Laboratories on August 27, 2002. Laboratory numbers have been assigned and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 08/27/02	ETR No: 89517	
499886	108160-1	08/20/02	Soil
499887	108160-2	08/20/02	Soil
499888	108160-3	08/20/02	Soil
499889	108160-4	08/21/02	Soil
499890	108164-1	08/21/02	Soil
499891	108164-2	08/21/02	Soil
499892	108164-3	08/21/02	Soil
499893	108166-1	08/20/02	Soil
499894	108166-2	08/21/02	Soil
499895	108166-3	08/21/02	Soil

There were no exceptions noted during the analysis of samples in this delivery group. If there are any questions regarding this submittal, please contact Jeannine McCrumb at (802) 655-1203.

This report shall not be reproduced, except in full, without the written approval of the laboratory. This report is sequentially numbered starting with page 0001 and ending with page 0026.

I certify that this package is in compliance with the NELAC requirements, both technically and for completeness, for other than the conditions detailed above. The release of the data contained in this hardcopy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Sincerely,

Michael F. Wheeler, Ph.D.
Laboratory Director

mfw/jta/jmm
Enclosure

5

Chain of Custody Record

STL-8274 (0102)

STL Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.stl-inc.com

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc.

Client: STL - SEATTLE	Project Manager: KATIE DOWNIE	Date: 8/26/02	Chain of Custody Number: 005412
Address: 5755 8TH STREET EAST	Telephone Number (Area Code)/Fax Number: 253-922-2310 / 253-922-5047	Lab Number:	Page 1 of 2
City: TACOMA; State: WA; Zip Code: 98424	Site Contact:	Lab Contact:	
Project Name and Location (State): CH2M HILL	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Analysis (Attach list if more space is needed)

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Matrix: Aqueous	Matrix: Sed.	Matrix: Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	GRAIN SIZE	Special Instructions/ Conditions of Receipt
108160-1	8/20/02	4:35PM				X							X	
108160-2	8/20/02	5:10PM				X							X	
108160-3	8/20/02	12:01AM				X							X	
108160-4	8/21/02	9:45AM				X							X	
108164-1	8/21/02	10:30AM				X							X	
108164-2	8/21/02	11:45AM				X							X	
108164-3	8/21/02	2:15PM				X							X	
108166-1	8/20/02	4:00PM				X							X	
108166-2	8/21/02	3:00PM				X							X	
108166-3	8/21/02	4:00PM				X							X	

Cooler: ☐ Yes ☐ No Cooler Temp: _____

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days): ☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☐ 15 Days ☐ Other STD

QC Requirements (Specify): TIER IV DELIVERABLE

	Date	Time		Date	Time
1. Relinquished By: [signature]	8/26/02	4:15pm	1. Received By		
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By: [signature]	8-27-02	0930

Comments: 6

DISTRIBUTION: WHITE - Stays with the Samples; CANARY - Returned to Client with Report; PINK - Field Copy

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Severn Trent Laboratories, Inc.

PARTICLE SIZE ANALYSIS

Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

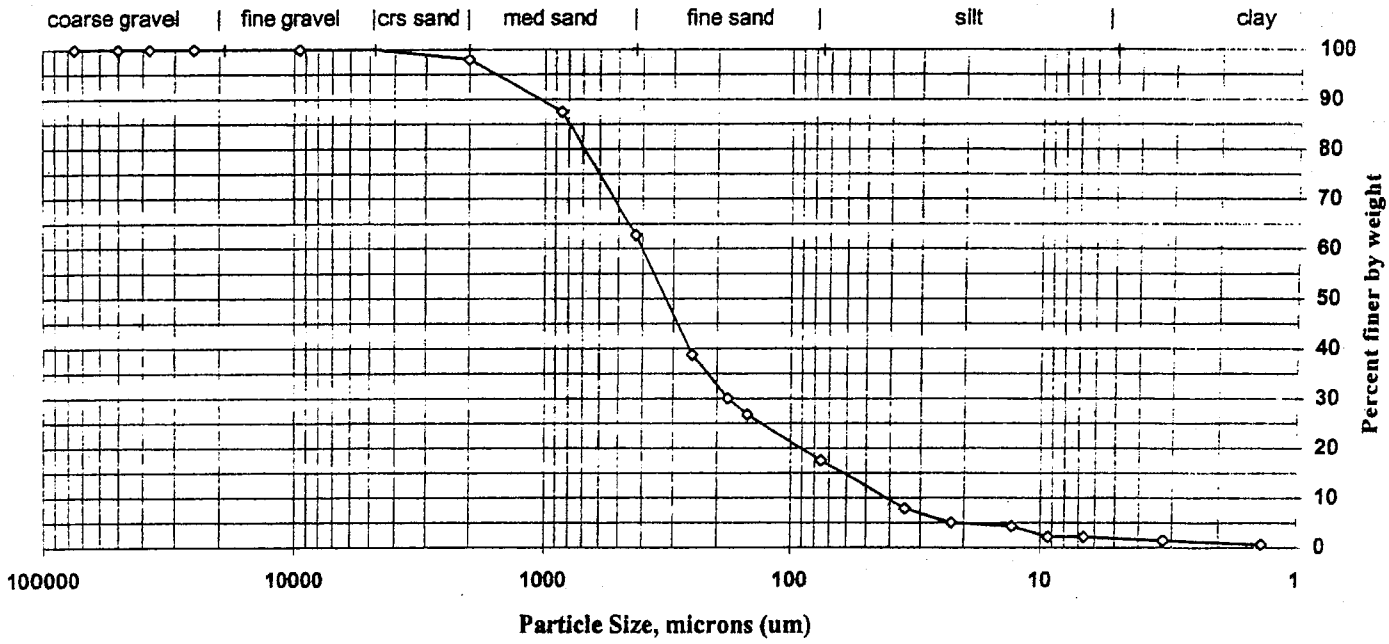
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499886 **Sample ID:** 108160-1

Percent Solids: 71.0% **Maximum Particle Size:** Crs sand

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	98.1	1.9
#20	850	87.5	10.6
#40	425	62.8	24.7
#60	250	38.8	24.0
#80	180	30.0	8.7
#100	150	26.7	3.3
#200	75	17.6	9.1
Hydrometer	34.7	7.9	9.7
|	22.3	5.0	2.9
|	13.0	4.3	0.7
|	9.3	2.1	2.1
|	6.6	2.1	0.0
|	3.2	1.4	0.7
V	1.4	0.7	0.8

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

0004

8

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington 89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

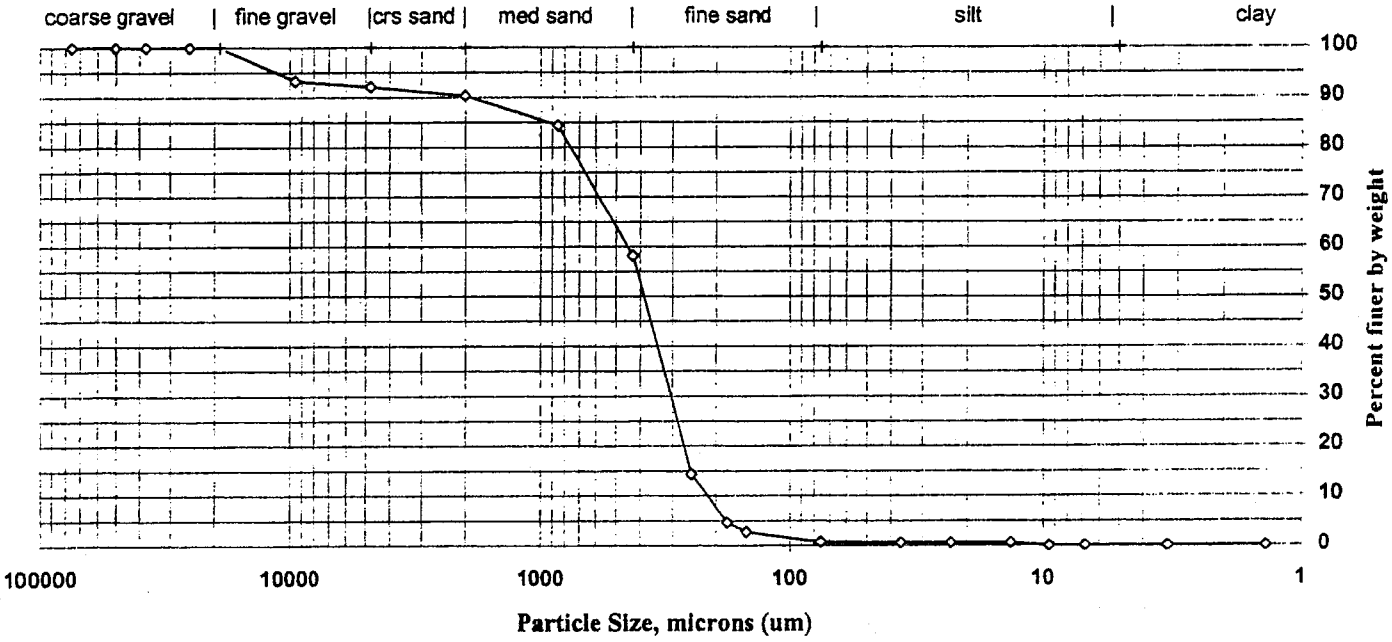
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499887 **Sample ID:** 108160-2

Percent Solids: 70.7% **Maximum Particle Size:** 19 mm

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	93.4	6.6
#4	4750	92.2	1.2
#10	2000	90.3	1.9
#20	850	84.5	5.9
#40	425	58.2	26.3
#60	250	14.4	43.8
#80	180	4.6	9.8
#100	150	2.8	1.8
#200	75	0.7	2.1
Hydrometer	36.3	0.6	0.1
|	22.9	0.6	0.0
|	13.2	0.6	0.0
|	9.4	0.0	0.6
|	6.8	0.0	0.0
|	3.2	0.0	0.0
V	1.4	0.0	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

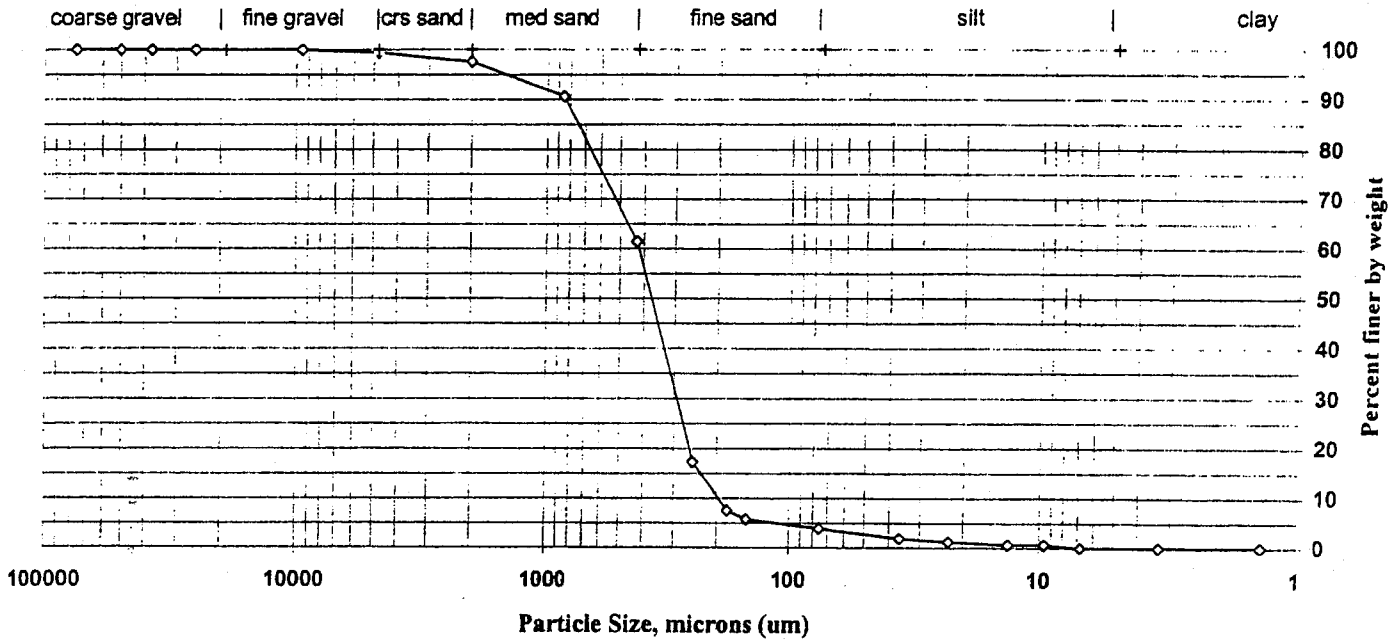
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499888 **Sample ID:** 108160-3

Percent Solids: 69.0% **Maximum Particle Size:** 9.5 mm

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	99.4	0.6
#10	2000	97.6	1.9
#20	850	90.6	7.0
#40	425	61.4	29.2
#60	250	17.3	44.1
#80	180	7.6	9.7
#100	150	5.8	1.8
#200	75	3.9	1.9
Hydrometer	36.0	1.8	2.0
|	22.8	1.2	0.6
|	13.2	0.6	0.6
|	9.5	0.6	0.0
|	6.8	0.0	0.6
|	3.3	0.0	0.0
V	1.4	0.0	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

10

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

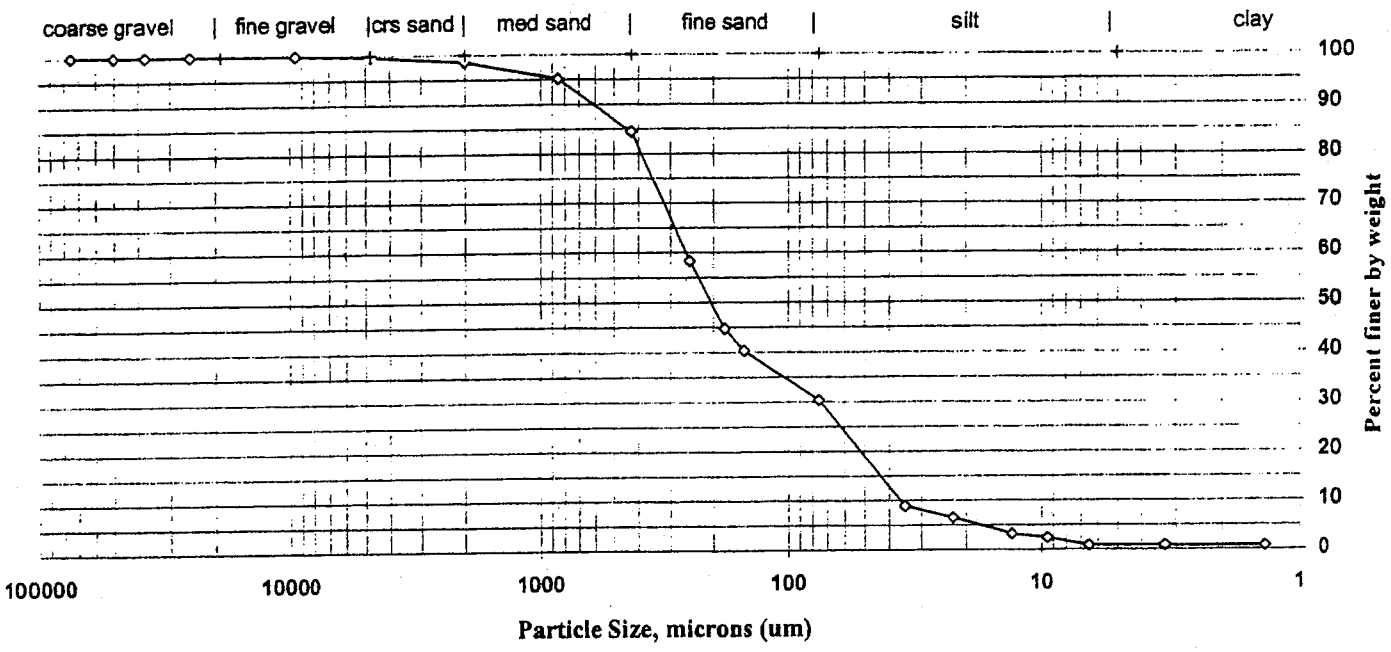
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499889 **Sample ID:** 108160-4

Percent Solids: 58.2% **Maximum Particle Size:** 9.5 mm

Specific Gravity: 2.65 **Shape (> #10):** subrounded

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	99.7	0.3
#10	2000	98.7	1.0
#20	850	95.3	3.4
#40	425	84.5	10.7
#60	250	58.3	26.2
#80	180	44.8	13.5
#100	150	40.4	4.4
#200	75	30.3	10.0
Hydrometer	34.7	8.9	21.4
|	22.2	6.5	2.4
|	13.1	3.2	3.2
|	9.4	2.4	0.8
|	6.5	0.8	1.6
|	3.2	0.8	0.0
V	1.4	0.7	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

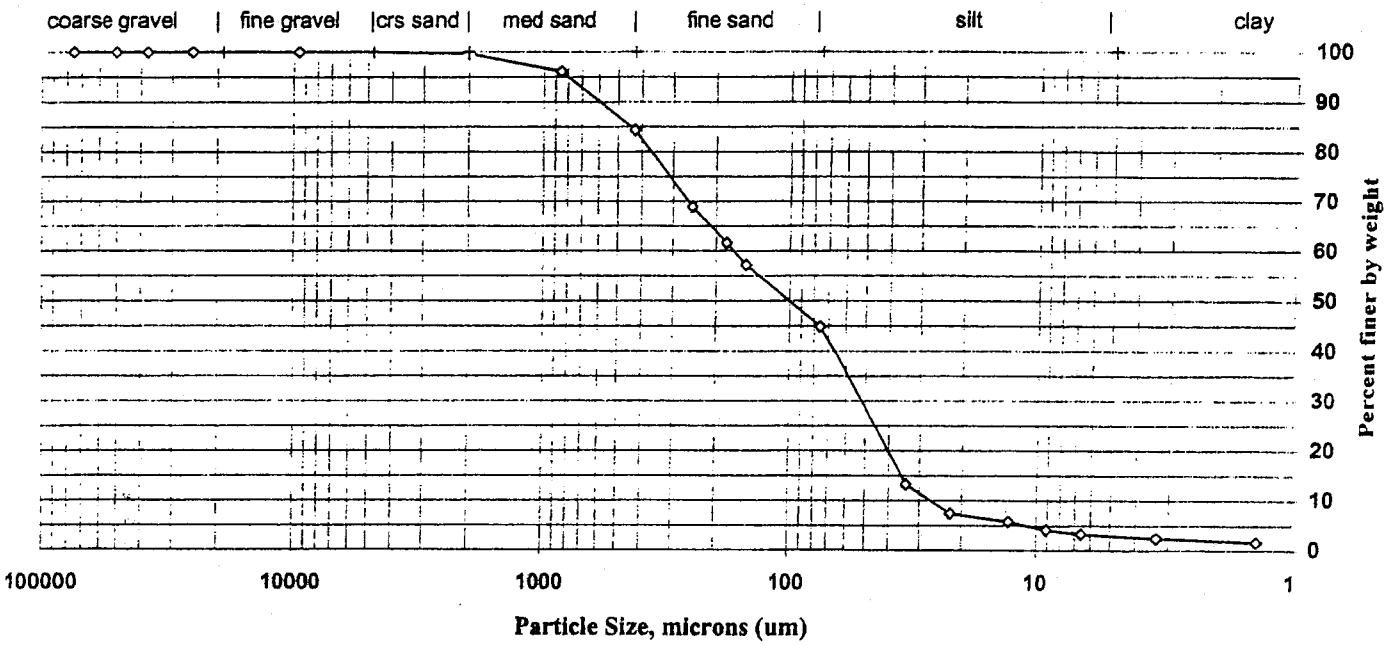
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499890 **Sample ID:** 108164-1

Percent Solids: 59.4% **Maximum Particle Size:** Crs sand

Specific Gravity: 2.65 **Shape (> #10):** subrounded

Hardness (> #10): brittle



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.7	0.3
#20	850	96.1	3.5
#40	425	84.4	11.8
#60	250	69.0	15.4
#80	180	61.6	7.3
#100	150	57.2	4.5
#200	75	44.9	12.3
Hydrometer	33.8	13.2	31.7
|	22.1	7.5	5.8
|	12.9	5.8	1.7
|	9.1	4.1	1.7
|	6.5	3.3	0.8
|	3.3	2.5	0.8
V	1.4	1.6	0.9

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** 89517PS.xls::Report

Particle Size of Soils by ASTM D422

Sample preparation by: D2217

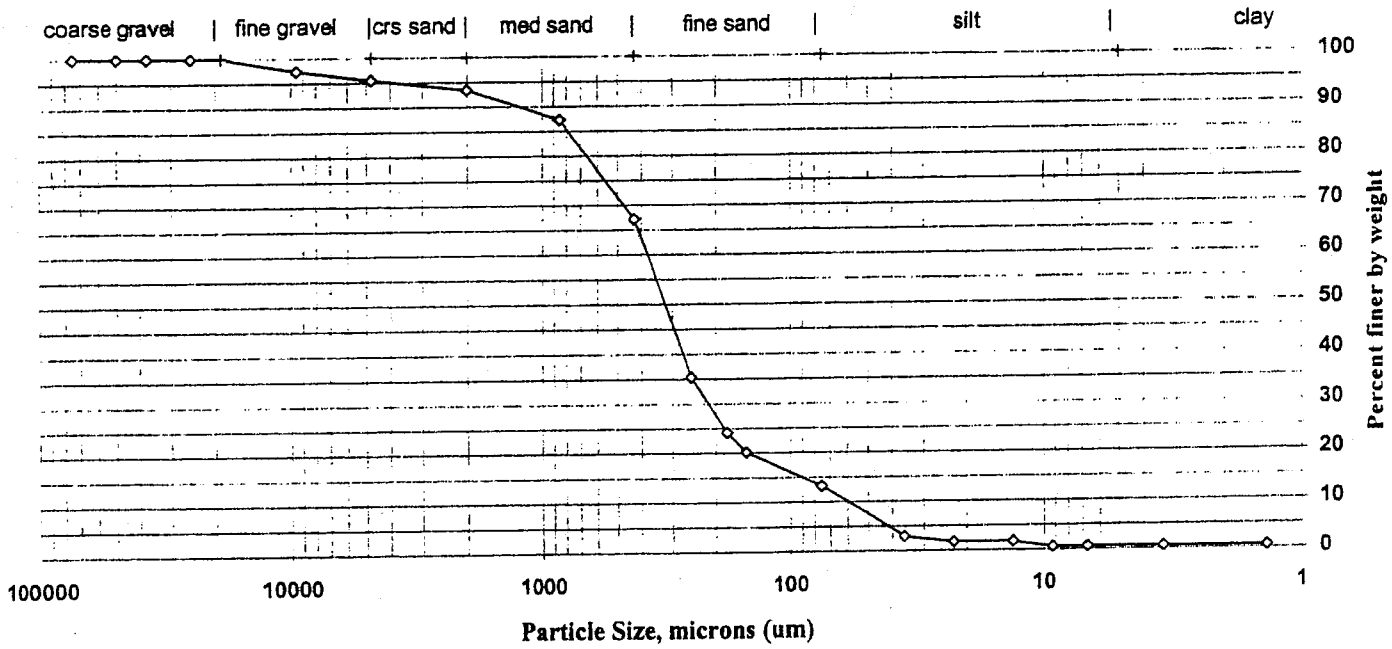
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499891 **Sample ID:** 108164-2

Percent Solids: 71.9% **Maximum Particle Size:** 19 mm

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	97.4	2.6
#4	4750	95.5	1.9
#10	2000	93.5	2.0
#20	850	87.4	6.1
#40	425	67.2	20.2
#60	250	35.4	31.7
#80	180	24.2	11.2
#100	150	20.2	4.0
#200	75	13.3	6.9
Hydrometer	35.6	2.9	10.4
|	22.7	1.7	1.2
|	13.1	1.7	0.0
|	9.2	0.6	1.2
|	6.7	0.6	0.0
|	3.4	0.6	0.0
V	1.4	0.5	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: _____ **Date:** 09/13/02 STL - Burlington 89517PS.xls::Report

Particle Size of Soils by ASTM D422

Sample preparation by: D2217

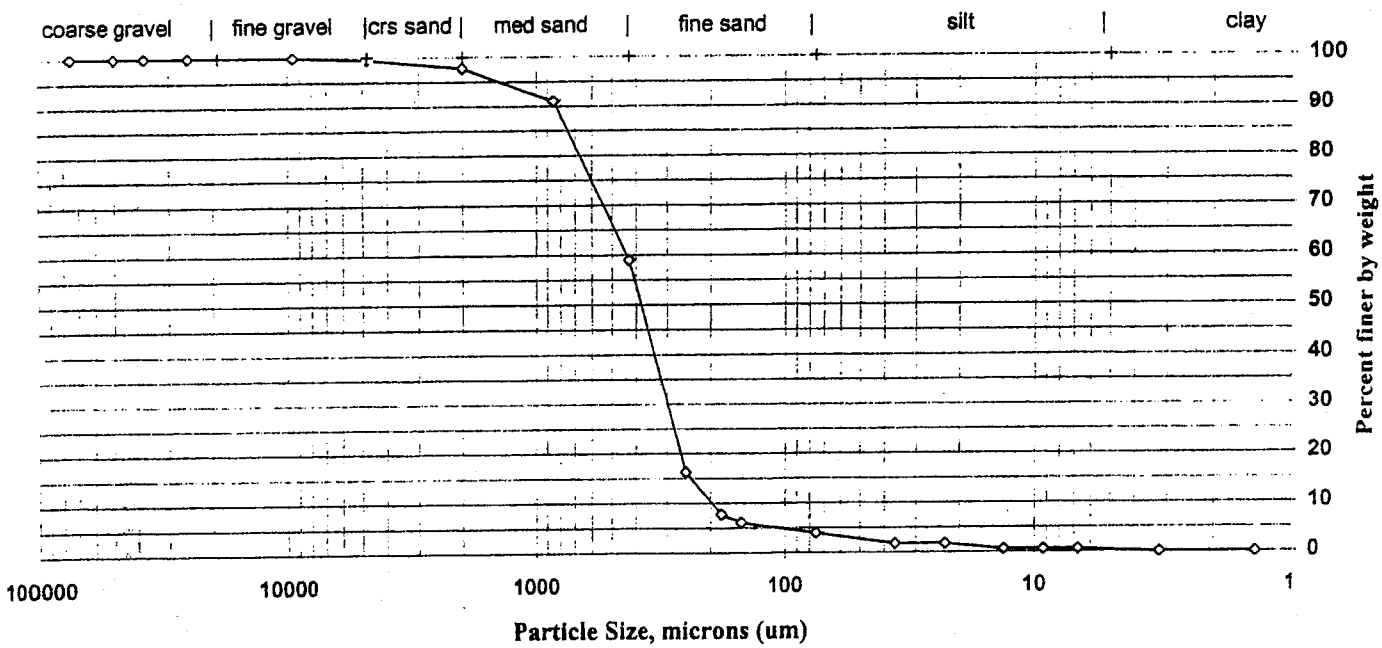
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499892 **Sample ID:** 108164-3

Percent Solids: 68.7% **Maximum Particle Size:** 9.5 mm

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	99.5	0.5
#10	2000	97.8	1.7
#20	850	91.0	6.7
#40	425	59.0	32.1
#60	250	16.3	42.7
#80	180	7.7	8.6
#100	150	6.1	1.6
#200	75	3.9	2.1
Hydrometer	36.0	1.7	2.2
|	22.7	1.7	0.0
|	13.2	0.6	1.2
|	9.2	0.6	0.0
|	6.7	0.6	0.0
|	3.2	0.0	0.6
V	1.4	0.0	100

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

14

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

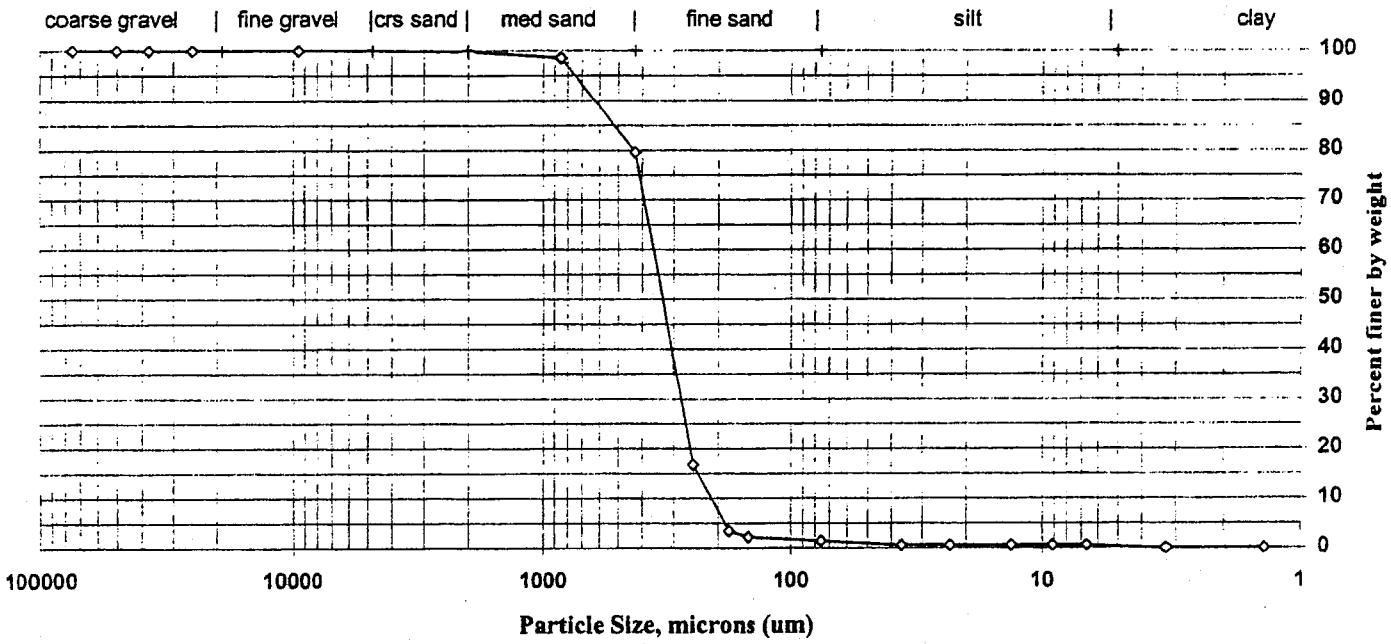
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499893 **Sample ID:** 108166-1

Percent Solids: 70.7% **Maximum Particle Size:** Crs sand

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): brittle



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.8	0.2
#20	850	98.6	1.2
#40	425	79.6	19.0
#60	250	16.8	62.8
#80	180	3.4	13.4
#100	150	2.2	1.2
#200	75	1.4	0.8
Hydrometer	36.3	0.5	0.9
|	22.9	0.5	0.0
|	13.2	0.5	0.0
|	9.1	0.5	0.0
|	6.6	0.5	0.0
|	3.2	0.0	0.5
V	1.4	0.0	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: D2217

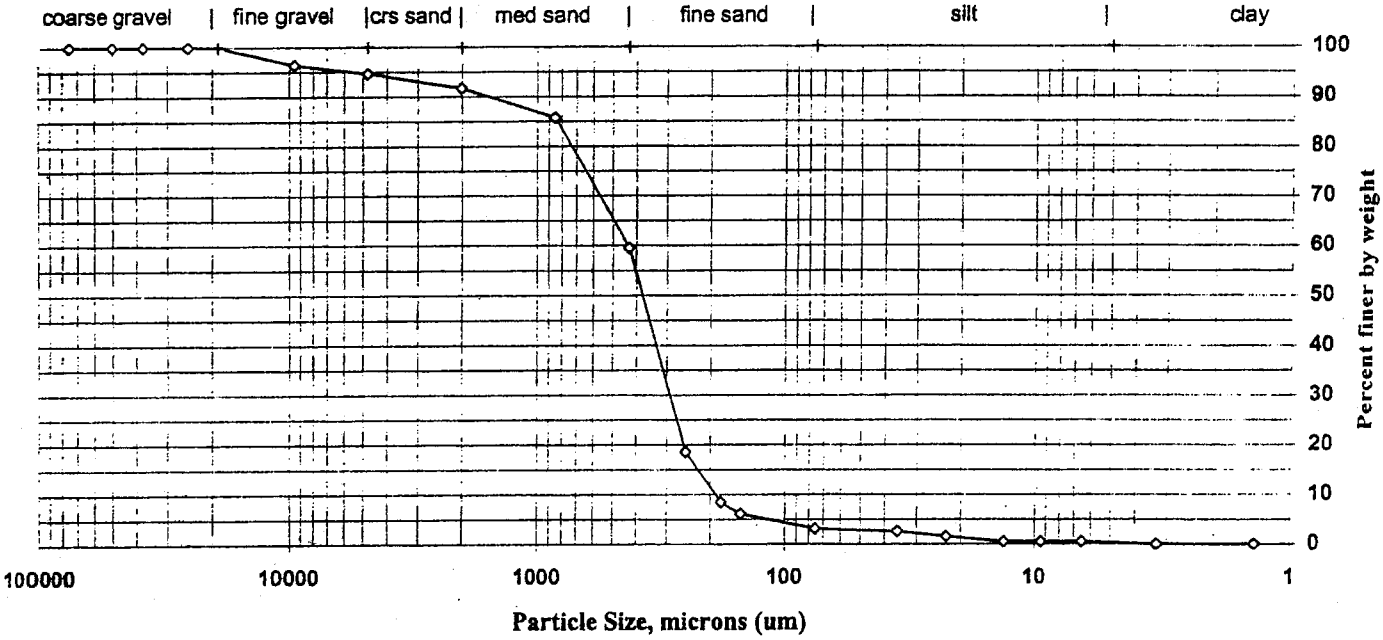
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499894 **Sample ID:** 108166-2

Percent Solids: 71.4% **Maximum Particle Size:** 19 mm

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	96.5	3.5
#4	4750	94.7	1.7
#10	2000	91.7	3.0
#20	850	85.8	5.9
#40	425	59.5	26.3
#60	250	18.6	40.9
#80	180	8.5	10.2
#100	150	6.1	2.4
#200	75	3.1	3.0
Hydrometer	35.6	2.6	0.5
|	22.7	1.6	1.0
|	13.2	0.5	1.0
|	9.4	0.5	0.0
|	6.5	0.5	0.0
|	3.2	0.0	0.5
V	1.4	0.0	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: D2217

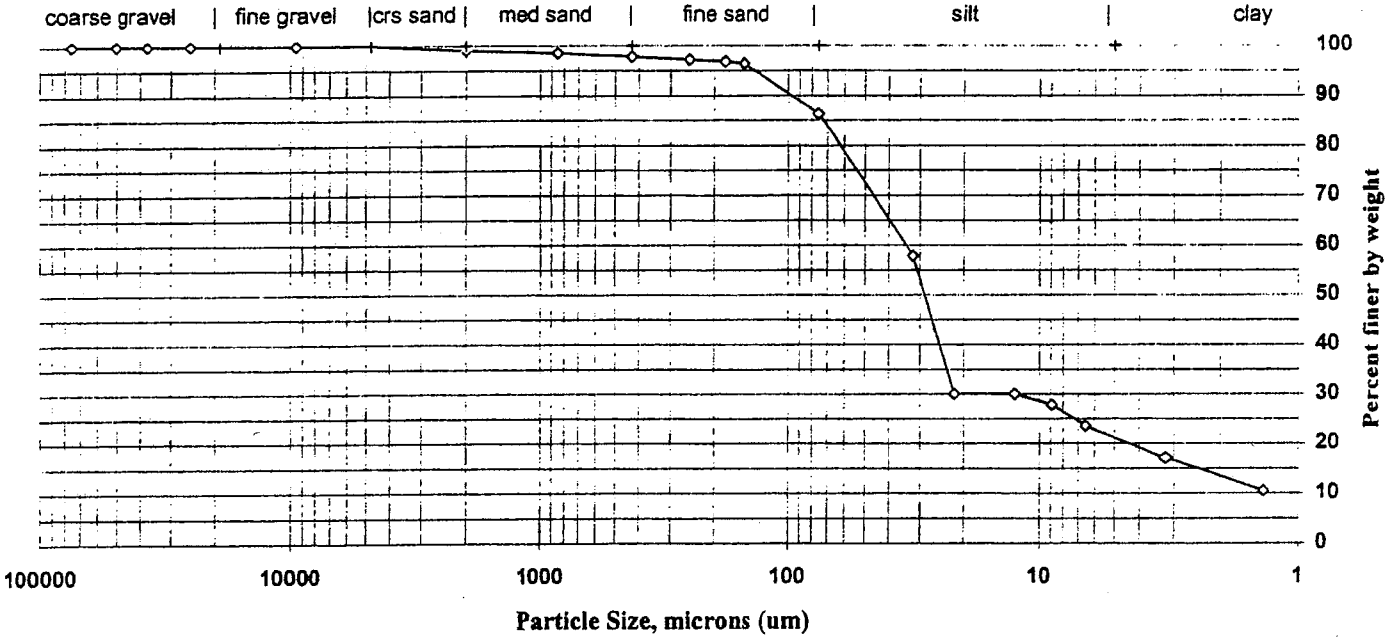
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499895 **Sample ID:** 108166-3

Percent Solids: 46.7% **Maximum Particle Size:** Crs sand

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.0	1.0
#20	850	98.5	0.5
#40	425	97.8	0.7
#60	250	97.2	0.6
#80	180	96.8	0.4
#100	150	96.4	0.4
#200	75	86.3	10.1
Hydrometer	31.9	57.9	28.5
|	21.6	30.0	27.9
|	12.5	30.0	0.0
|	8.9	27.9	2.1
|	6.5	23.6	4.3
|	3.2	17.1	6.4
V	1.4	10.5	6.6

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** 89517PS.xls::Report

SEVERN
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SERVICES

Severn Trent Laboratories, Inc.

SAMPLE PREPARATION

Particle Size Analysis
Sieve Data

Client: STLWAS | ETR(s): 89517 | Project: 22029 | Date Rec: 27-Aug-02 | Start Date: 06-Sep-02
Client Code: STLWAS | SDG(s): 89517 | Case: 22029 | End Date: 13-Sep-02

SET: 89517

Dry prep = D421
Wet prep = D2217

Test	1	2	3	4	5	6	7	8	9	10	11	12
Laboratory No	499886	499887	499888	499889	499890	499891	499892	499893	499894	499895		
Sample ID	108160-1	108160-2	108160-3	108160-4	108164-1	108164-2	108164-3	108166-1	108166-2	108166-3		
Sample Prep Method	D2217	D2217	D2217	D2217	D2217	D2217	D2217	D2217	D2217	D2217		
Pan, g												
Pan/sample, g	158.22	193.91	189.56	171.33	165.67	191.88	202.33	206.81	215.30	80.19		
Pan/dry sampl, g												
Non-soil material												
Description	wood	wood/glass	n/a	wood	wood	wood	wood/glass	n/a	n/a	n/a		
Pan, g	3.68	3.68		3.68	3.68	3.68	3.68					
Pan/dry sampl, g	3.85	3.83		4.43	5.07	3.83	3.78					
Non-soil, g	0.17	0.15		0.75	1.39	0.15	0.10					
Hydroscopic Moisture correction factor (HMCF) for dry prep / Percent Solids for dry and wet prep												
Pan, g	1.27	1.27	1.26	1.28	1.27	1.28	1.28	1.27	1.28	1.28		
Pan/sample, g	40.38	34.15	41.33	39.87	35.24	39.46	35.37	37.49	45.20	34.49		
Pan/dry sampl, g	29.04	24.52	28.91	23.73	21.44	28.75	24.70	26.88	32.64	16.80		
HMCF	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		
Sample % Solids	71.0%	70.7%	69.0%	58.2%	59.4%	71.9%	68.7%	70.7%	71.4%	46.7%		
Sample used, g	112.17	136.97	130.80	98.92	96.98	137.91	138.90	146.23	153.73	37.48		

Standard Values

Sieve	Opening, um
3 inch	75000
2 inch	50000
1.5 inch	37500
1 inch	25000
3/4 inch	19000
3/8 inch	9500
#4	4750
#10	2000
#20	850
#40	425
#60	250
#80	180
#100	150
#200	75

Sieve (tares)

Size	Mass, g	
3 inch		
2 inch		
1.5 inch		
1 inch		
3/4 inch		
3/8 inch	447.98	
#4	443.02	
#10	437.39	
#20	387.02	c
#40	345.91	c
#60	328.19	c
#80	306.55	c
#100	306.25	c
#200	303.17	c

Sieve + Sample Weights

Size	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g
3 inch												
2 inch												
1.5 inch												
1 inch												
3/4 inch												
3/8 inch		457.08				451.57			453.41			
#4		444.60	443.75	443.35		445.62	443.72		445.70			
#10	439.54	439.93	439.83	438.39	437.71	440.19	439.79	437.66	442.02	437.76		
#20	398.92	395.09	396.12	390.39	390.44	395.46	396.37	388.80	396.11	387.21		
#40	373.64	381.90	384.12	356.52	357.34	373.77	390.46	373.67	386.33	346.17		
#60	355.11	388.13	385.87	354.12	343.13	371.95	387.52	420.02	391.05	328.41		
#80	316.32	319.95	319.27	319.93	313.66	322.06	318.45	326.15	322.16	306.70		
#100	309.99	308.78	308.62	310.63	310.58	311.79	308.51	308.04	309.87	306.40		
#200	313.43	306.02	305.64	313.09	315.05	312.67	306.12	304.31	307.80	306.96		

Maximum Particle size

	Crs sand	19 mm	9.5 mm	9.5 mm	Crs sand	19 mm	9.5 mm	Crs sand	19 mm	Crs sand		

Description of >#10 particles

Shape	subangular	subangular	subangular	subrounded	subrounded	subangular	subangular	subangular	subangular	subangular	N/A	N/A
Hardness	hard	hard	hard	hard	brittle	hard	hard	brittle	hard	hard	N/A	N/A

Sample Mass Parameters

Pan/sample, g	158.22	193.91	189.56	171.33	165.67	191.88	202.33	206.81	215.30	80.19		
Mass removed, g	2.32	13.37	3.17	2.08	1.71	9.14	3.20	0.27	12.74	0.37	0.00	0.00
Sample mass, g	110.02	123.75	127.64	97.59	96.66	128.92	135.80	145.96	140.99	37.11		

STL-Burlington

89517PS.xls::Sieves

Particle Size Analysis
Hydrometer Data

Set Number	Client:	Project No.:	ETR(s) #:
89517	STLWAS	22029	89517
	Client Code: STLWAS	Job No.: N/A	SDG(s): 89517
	Date Received: 27-Aug-02	Start Date: 06-Sep-02	End Date: 13-Sep-02

Date and Analyst

Percent Solids	Weighed/Mixed	Hydrometer	Large sieves	Non-soil	Small sieves
JTE 9/10/02	JTE 9/10/02	ERB 9/10/02	MRD 9/10/02	MRD 9/10/02	ERB 9/12/02
DJP 9/11/02	MRD 9/10/02	ERB 9/11/02	JTE 9/11/02	JTE 9/11/02	MRD 9/13/02

Test number	1	2	3	4	5	6	7	8	9	10	11	12
Lab number	499886	499887	499888	499889	499890	499891	499892	499893	499894	499895		
Time, min. (2)	2	2	2	2	2	2	2	2	2	2	2	2
Reading	1.0090	1.0040	1.0050	1.0090	1.0115	1.0060	1.0050	1.0040	1.0060	1.0170		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (5)	5	5	5	5	5	5	5	5	5	5	5	5
Reading	1.0070	1.0040	1.0045	1.0075	1.0080	1.0050	1.0050	1.0040	1.0050	1.0105		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (15)	15	15	15	15	15	15	15	15	15	15	15	15
Reading	1.0065	1.0040	1.0040	1.0055	1.0070	1.0050	1.0040	1.0040	1.0040	1.0105		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (30)	30	30	29	29	31	31	31	32	30	30	30	31
Reading	1.0050	1.0035	1.0040	1.0050	1.0060	1.0040	1.0040	1.0040	1.0040	1.0100		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (60)	59	58	58	63	60	59	59	60	63	57	63	57
Reading	1.0050	1.0035	1.0035	1.0040	1.0055	1.0040	1.0040	1.0040	1.0040	1.0090		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (250)	256	256	250	250	240	234	265	259	253	247	241	235
Reading	1.0045	1.0035	1.0035	1.0040	1.0050	1.0040	1.0035	1.0035	1.0035	1.0075		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (1440)	1440	1440	1434	1434	1424	1418	1412	1406	1400	1394	1388	1382
Reading	1.0040	1.0035	1.0035	1.0040	1.0045	1.0040	1.0035	1.0035	1.0035	1.0060		
Temperature, C	22.5	23.0	23.0	22.5	22.5	22.5	23.0	23.0	23.0	22.5		

Hydrometer used: 548343 **Model #:** ASTM 151H **Manufacturer:** CHASE **Hydrometer start time:** 20:10

Calibrations:

L temp, C	L read	H Temp, C	H read
17.0	1.0040	23.0	1.0035

Cal. Date: 18-Feb-02 **Hydrometer data entered:** MRD 9/13/02

Particle Size Analysis
Hydrometer Data

Set Number: 89517

Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	6-Sep-02	**End Date:**	0-Jan-00

Date and Analyst

Percent Solids	Weighed/Mixed	Hydrometer	Large sieves	Non-soil	Small sieves
[illegible] 9/10/02 DJP 9/11/02	[illegible] 9/10/02 MRD 9/10/02	ERB 9/10/02 ERB 9/11/02	MRD 9/10/02 [illegible] 9/11/02	MRD 9/10/02 [illegible] 9/11/02	ERB 9/12/02 MRD 9/13/02

Test number	1	2	3	4	5	6	7	8	9	10	11	12
Lab number	499886	499887	499888	499889	499890	499891	499892	499893	499894	499895		
Time, min. (2)	2	2	2	2	2	2	2	2	2	2	2	2
Reading	1.0070	1.0040	1.0050	1.0070	1.0115	1.0060	1.0050	1.0040	1.0060	1.0170		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (5)	5	5	5	5	5	5	5	5	5	5	5	5
Reading	1.0070	1.0040	1.0045	1.0075	1.0080	1.0050	1.0050	1.0040	1.0050	1.0105 ~~1.0150~~		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (15)	15	15	15	15	15	15	15	15	15	15	15	15
Reading	1.0065	1.0040	1.0040	1.0055	1.0070	1.0050	1.0040	1.0040	1.0010	1.0105		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (30)	30	30	29	29	31	31	31	32	30	30	30	31
Reading	1.0050	1.0030	1.0040	1.0050	1.0060	1.0040	1.0040	1.0040	1.0040	1.0100		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (60)	59	58	58	63	60	59	59	60	63	57	63	57
Reading	1.0050	1.0035	1.0035	1.0040	1.0055	1.0040	1.0040	1.0040	1.0040	1.0090		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (250)	256	256	250	250	240	234	265	259	253	247	241	235
Reading	1.0045	1.0035	1.0035	1.0040	1.0050	1.0040	1.0035	1.0035	1.0035	1.0075		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (1440)	1440	1440	1434	1434	1424	1418	1412	1406	1400	1394	1388	1382
Reading	1.0040 ~~21.0~~	1.0035	1.0035	1.0040	1.0045	1.0040	1.0035	1.0035	1.0035	1.0060		
Temperature, C	22.5 ~~21.3~~	~~21.0~~ 23.0	~~21.0~~ 23.0	~~21.0~~ 22.5	~~21.0~~ 22.5	~~21.0~~ 22.5	~~21.0~~ 22.5	~~21.0~~ 23.0	~~21.0~~ 23.0	~~21.0~~ 22.5	22.5	

ERB 9/11/02

Hydrometer used: 548343 **Model #:** ASTM 151H **Manufacturer:**

Calibrations:

L temp, C	L read	H Temp, C	H read
17.0		23.0	

Cal. Date: 18-Feb-02

Hydrometer start time:

Hydrometer data entered: 20:10 MRD 9/13/02

STL Burlington

89517ps::Hydrometer

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Balance Calibration Log

Type:	Mettler PB3002-S
Serial #:	1120173088
Asset #:	n/a
Location:	Soils Lab
Calibrate to:	2000g

Date	Time	Calibration Weight	Initials
01-Sep-02	13:52	2000.00	SLH
02-Sep-02			
03-Sep-02	08:39	2000.00	DJP
04-Sep-02	07:00	2000.00	DJP
05-Sep-02	07:50	2000.00	DJP
06-Sep-02	07:50	2000.00	DJP
07-Sep-02			
08-Sep-02			
09-Sep-02	08:00	2000.00	DJP
10-Sep-02	08:00	2000.00	DJP
11-Sep-02	08:03	2000.00	DJP
12-Sep-02	07:50	2000.00	DJP
13-Sep-02	07:50	2000.00	DJP
14-Sep-02			
15-Sep-02			
16-Sep-02			

Date	Time	Calibration Weight	Initials
17-Sep-02			
18-Sep-02			
19-Sep-02			
20-Sep-02			
21-Sep-02			
22-Sep-02			
23-Sep-02			
24-Sep-02			
25-Sep-02			
26-Sep-02			
27-Sep-02			
28-Sep-02			
29-Sep-02			
30-Sep-02			
01-Oct-02			

Balance Calibration Log

Type:	Mettler Toledo PB3002
Serial #:	1116283195
Asset #:	N/A
Location:	Soils Lab
Calibrate to:	2000g

Date	Time	Calibration Weight	Initials
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
03-Sep-02	08:40	2000.00	DJP
04-Sep-02	07:01	2000.00	DJP
05-Sep-02	07:51	2000.00	DJP
06-Sep-02	07:51	2000.00	DJP
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
09-Sep-02	08:01	2000.00	DJP
10-Sep-02	08:02	2000.00	DJP
11-Sep-02	08:04	2000.00	DJP
12-Sep-02	07:55	2000.00	DJP
13-Sep-02	07:51	2000.00	DJP
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
16-Sep-02			

Date	Time	Calibration Weight	Initials
17-Sep-02			
18-Sep-02			
19-Sep-02			
20-Sep-02			
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
23-Sep-02			
24-Sep-02			
25-Sep-02			
26-Sep-02			
27-Sep-02			
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
30-Sep-02			
01-Oct-02			

Oven #1 Quality Control Log

Type:	Baxter/Scientific Products (H6620-13A)
Serial #:	1090-0313
Asset #:	N/A
Location:	Soils Lab
Calibration Range:	110°C ±5

Date	Temperature	Oven Setting	Initials
01-Sep-02			
02-Sep-02			
03-Sep-02	114°	5.4	DJP
04-Sep-02	115°	5.1	DJP
05-Sep-02	110°	5.1	DJP
06-Sep-02	105°	5.1	DJP
07-Sep-02			
08-Sep-02			
09-Sep-02	110°	5.1	DJP
10-Sep-02	109°	5.1	DJP
11-Sep-02	108	5.1	DJP
12-Sep-02	107°	5.1	DJP
13-Sep-02	115°	5.1	DJP
14-Sep-02			
15-Sep-02			
16-Sep-02			

Date	Temperature	Oven Setting	Initials
17-Sep-02			
18-Sep-02			
19-Sep-02			
20-Sep-02			
21-Sep-02			
22-Sep-02			
23-Sep-02			
24-Sep-02			
25-Sep-02			
26-Sep-02			
27-Sep-02			
28-Sep-02			
29-Sep-02			
30-Sep-02			
01-Oct-02			

Oven #2 Quality Control Log

Type:	Baxter/Scientific Products (H6620-13A)
Serial #:	0292-0485
Asset #:	3333
Location:	Soils Lab
Calibration Range:	110°C ±5

Date	Temperature	Oven Setting	Initials
[redacted]			
[redacted]			
03-Sep-02	115°	4.5	DJP
04-Sep-02	105°	4.5	DJP
05-Sep-02	115°	4.5	DJP
06-Sep-02	105°	4.5	DJP
[redacted]			
[redacted]			
09-Sep-02	112°	4.8	DJP
10-Sep-02	105°	4.8	DJP
11-Sep-02	115°	4.8	DJP
12-Sep-02	105°	4.8	DJP
13-Sep-02	106°	4.8	DJP
[redacted]			
[redacted]			
16-Sep-02			

Date	Temperature	Oven Setting	Initials
17-Sep-02			
18-Sep-02			
19-Sep-02			
20-Sep-02			
[redacted]			
[redacted]			
23-Sep-02			
24-Sep-02			
25-Sep-02			
26-Sep-02			
27-Sep-02			
[redacted]			
[redacted]			
30-Sep-02			
01-Oct-02			

Sodium Hexametaphosphate
Quality Control Log

Date	Amount	Concentration	Mfg./Supplier	Lot #	Exp. Date*	Initials
6/13/02	3L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	MRO
6/20/02	3L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	MRO
6/24/02	3L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	DJP
7/1/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	DJP
7/9/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	DJP
7/19/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	DJP
7/24/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	DJP
7/29/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	DJP
7/30/02	3L	120g / 3L H20	Em Science	41285146	4/17/03	DJP
8/7/02	3L	120g / 3L H20	Em Sciences	41285146	4/17/03	DJP
8/9/02	3L	120g / 3L H20	Em Science	41285146	4/17/03	ERB
8/14/02	3L	120g / 3L H20	Em Science	41285146	4/17/03	DJP
8/16/02	3L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	DJP
8/19/02	6L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	MRO
8/19/02	6L	120g / 3L H20	Em Science	41285146	4/17/03	JCH
8/20/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	JKZ
8/22/02	6L	120g / 3L H20	EM Science	41285146	7/18/02	JKZ
8/28/02	3L	120g / 3L H20	EM Science	42193230	8/28/03	SAC
9/12/02	9L	120g / 3L H20	EM SCIENCE	42193230	9/29/03	MRO
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				

Note: * No expiration date noted on container. Date is one year from opening.

SEVERN
TRENT
SERVICES

Severn Trent Laboratories, Inc.

SAMPLE HANDLING

From: KIM A PRESLEY (253)922-2310
STL-Seattle
5755 8TH STREET EAST

Tacoma, WA, 98424

REVENUE BARCODE

FedEx.

To: Sample Receiving (802)655-1203
STL-Burlington
208 South Park Drive
Suite 1
Colchester, VT, 05446

SHIP DATE: 26AUG02
WEIGHT: 78 LBS

Ref:

(2004 - ORIGINAL ON FILE
SDG # ~~108177~~ ETR # 89513
8-27-02 89513

DELIVERY ADDRESS BARCODE(FEDEX-EDR)

TRK # 7900 3537 3495 FORM 0201

FedEx STANDARD OVERNIGHT

TUE
AA
Deliver by:
27AUG02

BTV

05446-VT-US XB BTVA

8-27-02 0930

Please fold this document in half and place it in the waybill pouch affixed to your shipment so that the barcode portion of the label can be read and scanned.
***WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

View Airbills

1. Use the "Print" feature from your browser to send this page to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping label pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Use of this system constitutes your agreement to the service conditions in the current FedEx service Guide, available upon request.
FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

SEVERN TRENT LABORATORIES LOG-IN SHEET - Form DC-1

Lab Name: STL Burlington

Received By (Print or Type Name): Frank N. Bessette

Log-in Date: 08/28/02

Received By (Signature):

Case Number:	22029
Sample Delivery Group No.:	89517
ETR Number:	89517
REMARKS:	
1. Custody Seal	Present and Intact
2. Custody Seal Nos:	339198,339758
3. Chain-of-Custody Records	Present
4. Sample Information Sheets	Absent*
5. Airbill Present	As Airbill
6. Airbill Number(s):	7900-3537-3495
7. Sample Tags	Absent*
8. Tag Nos. Listed on COC	N/A
9. Sample Condition:	Intact
10. VOA Vial Bubbles	N/A
11. Does info on the custody records, sample info sheets, sample tags and labels agree?	Yes
12. Date Received at Lab:	08/27/02
13. Time Received at Lab:	0930
14. Cooler Temperature(s):	5 C
SAMPLE TRANSFER:	
Fraction(s):	ALL
Area Number:	Level 4 Storage
Transferred By:	FNB
Transferred On:	08/27/02

CORRESPONDING			
CLIENT SAMPLE #	SAMPLE TAG #	ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT ETC.
108160-1	NA	499886	
108160-2	NA	499887	
108160-3	NA	499888	
108160-4	NA	499889	
108164-1	NA	499890	
108164-2	NA	499891	
108164-3	NA	499892	
108166-1	NA	499893	
108166-2	NA	499894	
108166-3	NA	499895	

8-28-02

0025

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* *Contact Project Director*

Reviewed By:_____ Date:_____

** COOLER RECEIPT CHECKLIST **

List ETR 89517

WERE CUSTODY SEALS PRESENT ON THE COOLERS?

YES NO

WERE THE CUSTODY SEALS SIGNED?

YES NO

COPY - ORIGINAL ON FILE
SDG # 108177 ETR # 89513
89513
FM
8-27-02

WERE THERE CUSTODY SEAL NUMBERS?

YES NO

LIST THE CUSTODY SEAL NUMBERS 339198 339758

WHAT TYPE OF COOLING WAS UTILIZED?

ICE MELTED ICE PACKS NONE

COOLER TEMPERATURE (degrees c): 5 (2-6 °C Acceptable)

DATE AND TIME COOLER RECEIVED: 08-27-02 0930

DO SAMPLES APPEAR TO BE INTACT: YES NO

DO ANY SAMPLES HAVE SHORT HOLDING TIMES?
(less than seven days)

WET CHEM YES NO

EXTRACTABLES YES NO

UNPRES VOA YES NO

RADIATION SCREEN RESULTS <0.05 MR/HR YES NO

0026

SM02 Cooler Rpt Chklist
STL Burlington

108164

SEVERN TRENT SERVICES

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

TRANSMITTAL MEMORANDUM

DATE: September 14, 2002

TO: Kathy McKinley
CH2M Hill
2300 NW Walnut Blvd
Corvallis, OR 97330-3538

PROJECT: Portland Harbor 163160.AS.OS

REPORT NUMBER: 108164

TOTAL NUMBER OF PAGES: 419

Enclosed are the test results for three samples received at STL Seattle on August 23, 2002.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Katie Downie
Project Manager

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STL Seattle

Sample Identification:

Lab. No.	Client ID	Date/Time Sampled	Matrix
108164-1	PP011806	08-21-02 10:30	solid
108164-2	PP011807	08-21-02 11:45	solid
108164-3	PP011808	08-21-02 14:15	solid

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SEVERN TRENT SERVICES

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

ANALYTICAL NARRATIVE

Client: CH2M Hill

Date: September 14, 2002

Project: Portland Harbor 163160.AS.OS

Lab No.: 108164

Delivered By: Federal Express

Condition of samples upon receipt: Samples were received in good condition. Chain of custody was in order. The chain of custody requested a matrix spike duplicate analysis of sample PP011808, but did not request a matrix spike analysis. A Sample Receipt Exception Report was received from K. McKinley adding the matrix spike analysis to all analyses except grain size. A copy of the request is included in the chain of custody section of the report. A second chain of custody was received on August 26, 2002, adding the semivolatile organic compound analyses to these samples. Both sets of chain of custodies are included in the chain of custody section of the data report.

Sample Identification:

Lab. No.	Client ID	Date Sampled	Matrix
108164-1	PP011806	08-21-02	solid
108164-2	PP011807	08-21-02	solid
108164-3	PP011808	08-21-02	solid

SAMPLE EXTRACTION AND ANALYSIS

SEMIVOLATILE ORGANIC COMPOUNDS

Samples 108164-1, 108164-2 and 108164-3 were analyzed for semivolatile organic compounds in accordance with EPA SW-846 Method 8270C. The samples were extracted in accordance with EPA SW-846 Method 3550B on 08-27-02 and analyzed on 09-03-02. The samples were extracted and analyzed within the required holding time.

Benzo(b)fluoranthene and benzo(k)fluoranthene are not well resolved, and the reported results are for the combined benzofluoranthenes. The three tetrachlorophenols are also not well resolved, and have been reported as the combined tetrachlorophenols.

The requested detection limits were not met, due to the high levels of organics in the samples (target analytes and non-target analytes), requiring dilution prior to analysis.

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SEMIVOLATILE ORGANIC COMPOUNDS, cont.

Various analytes were detected in the samples at levels that were above the method detection limit (MDL) but below the practical quantitation limit (PQL). The values should be considered as estimates, and have been flagged "J".

The percent recoveries (%Rs) of the surrogates p-terphenyl-d14 in sample 108164-1 and 2-fluorobiphenyl in sample 108164-2 exceeded the quality control (QC) acceptance limits, due to matrix interference. The %Rs have been flagged "X9".

The %Rs of N-nitroso-di-n-propylamine, acenaphthene, 2,4-dinitrotoluene and pyrene in the matrix spike (MS) analysis of sample 108164-3 and 4-nitrophenol and 2,4-dinitrophenol in the matrix spike duplicate (MSD) exceeded the QC acceptance. Matrix interference is indicated by the acceptable recoveries for these analytes in the blank spike (BS). The %Rs have been flagged "X7".

The relative percent differences (RPDs) between the MS and MSD for 4-nitrophenol and pyrene exceeded the QC acceptance limits, due to the difficulties in recovering these compounds. The RPDs have been flagged "X7".

All other quality control parameters were within the acceptance limits.

No other difficulties were encountered during the semivolatile organic compounds analyses.

ORGANOCHLORINE HERBICIDES

Samples 108164-1, 108164-2 and 108164-3 were analyzed for organochlorine herbicides in accordance with EPA SW-846 Method 8151A GC/MS Modified. The samples were extracted in accordance with EPA SW-846 Method 3550B on 08-28-02 and analyzed on 08-30-02. The samples were extracted and analyzed within the required holding time.

The %Rs for Dalapon in the MS and MSD analyses of sample 108164-3 exceeded the QC acceptance limits. No corrective action was taken, as the %R for Dalapon was within acceptance limits for the blank spike, and the %Rs of the other spike analytes were within the QC limits. The %Rs for Dalapon have been flagged "X7".

All other quality control parameters were within the acceptance limits.

No other difficulties were encountered during the organochlorine herbicide analyses.

CHLORINATED PESTICIDES

Samples 108164-1, 108164-2 and 108164-3 were analyzed for chlorinated pesticides in accordance with EPA SW-846 Method 8081. The samples were extracted in accordance with EPA SW-846 Method 3550B on 09-03-02 and analyzed on 09-12-02. The samples were extracted and analyzed within the required holding time.

Results were confirmed using a second column. Results are flagged "C1" or "C2", as appropriate.

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STL Seattle

ANALYTICAL NARRATIVE

Client: CH2M Hill | Date: September 14, 2002

Project: Portland Harbor 163160.AS.OS | Lab No.: 108164

CHLORINATED PESTICIDES, cont.

Two compounds that were requested, alpha-chlordene and gamma-chlordene, are apparently no longer available. The laboratory contacted four suppliers who had the compounds listed in their catalogs and none of the contacted suppliers have these compounds currently in stock. The requested analyte list also had two compounds listed under synonyms: alpha-chlordane has the same CAS number as cis-chlordane, and gamma-chlordane has the same CAS number as trans-chlordane.

Florisil and sulfur cleanup, in accordance with EPA SW-846 Method 3620B and 3660B, respectively, were used on the extracts to remove some of the non-target analyte interferences, but the samples still required a two-fold dilution.

Various analytes were detected in the samples at levels that were above the MDL but below the PQL. The values should be considered as estimates, and have been flagged "J".

The continuing calibration verification drift values for several analytes exceeded 15%. In these instances, the alternate criteria was used: the average percent drift for all analytes was less than 15%. The end-of-run Endrin breakdown exceeded QC limits, and machine maintenance was performed before additional samples were analyzed.

The %Rs of the surrogate decachlorobiphenyl in samples 108164-1 and 108164-2 exceeded the QC acceptance limits, and the %Rs have been flagged "X9".

The %Rs of Aldrin in the MS and MSD analysis of sample 108164-3 exceeded the QC acceptance limits. Matrix interference is indicated by the acceptable recoveries of this compound in the BS and BSD. The %Rs have been flagged "X7".

All other quality control parameters were within acceptance limits.

No other difficulties were encountered during the chlorinated pesticide analyses.

METALS

Samples 108164-1, 108164-2 and 108164-3 were analyzed for aluminum in accordance with EPA SW-846 Method 6010B (ICP), antimony, arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, and zinc in accordance with EPA SW-846 Method 6020 (ICP-MS). Samples 108164-1, 108164-2 and 108164-3 were digested in accordance with EPA SW-846 Method 3051 on 08-30-02 and analyzed by ICP and ICP-MS on 08-30-02. All samples were analyzed within the required holding time.

Copper, lead, nickel and zinc were detected in the ICP-MS method blank at levels that were above the MDL but below the PQL. The sample results have been flagged "B1" or "B2" as appropriate.

Various analytes were detected at levels that were above the MDL but below the PQL. The values should be considered as estimates, and have been flagged "J".

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STL Seattle

ANALYTICAL NARRATIVE

Client: CH2M Hill | Date: September 14, 2002

Project: Portland Harbor 163160.AS.OS | Lab No.: 108164

METALS, cont.
Selenium was not detected in samples 108164-2 and 108164-3. The MDL for both samples was below the requested reporting limit (RL), although the PQL for each was above the requested RL. The other analytes were detected at or above the requested RLs.

The %R of aluminum in the MS analysis of sample 108164-3 exceeded the QC limits, due to the high concentration of this analyte in the original sample, and the %R has been flagged "X7a". The %R of aluminum in the blank spike and blank spike duplicate were within the QC limits.

All other quality control parameters were within the acceptance limits.

No other difficulties were encountered during the metals analyses.

GRAIN SIZE
Samples 108164-1, 108164-2 and 108164-3 were submitted to STL Burlington for analysis of grain size in accordance with ASTM D422-PSEP. The grain size data package will be submitted separately.

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STL Seattle

Client Name	CH2M Hill
Client ID:	PP011806
Lab ID:	108164-01
Date Received:	8/23/02
Date Prepared:	8/27/02
Date Analyzed:	9/3/02
% Solids	67.59
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	53.6		37	160
Phenol - d5	79.8		43	157
Nitrobenzene - d5	136		42	154
2 - Fluorobiphenyl	56.5		51	142
2,4,6 - Tribromophenol	46.3		36	159
p - Terphenyl - d14	182	X9	44	144

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	ND		157	31.4	
bis(2-Chloroethyl)ether	ND		157	30	
2-Chlorophenol	ND		157	23.6	
1,3-Dichlorobenzene	ND		157	22	
1,4-Dichlorobenzene	ND		157	25.1	
Benzyl Alcohol	ND		157	33	
1,2-Dichlorobenzene	ND		157	16.2	
2-Methylphenol	ND		157	18.9	
bis(2-Chloroisopropyl)ether	ND		157	40.9	
3-&4-Methylphenol	ND		314	23.3	
N-nitroso-di-n-propylamine	ND		157	17.3	
Hexachloroethane	ND		157	29.9	
Nitrobenzene	ND		157	21.5	
Isophorone	ND		157	22	
2-Nitrophenol	ND		157	22	
2,4-Dimethylphenol		18.4	157	17.3	J
Benzoic Acid	ND		786	53.4	
bis(2-Chloroethoxy)methane	ND		157	18.9	
2,4-Dichlorophenol	ND		157	17.3	
1,2,4-Trichlorobenzene	ND		157	13	
Naphthalene		132	15.7	7.36	
4-Chloroaniline	ND		157	14.6	
Hexachlorobutadiene	ND		157	14.1	
4-Chloro-3-methylphenol	ND		157	17.3	
2-Methylnaphthalene		147	15.7	2.45	
Hexachlorocyclopentadiene	ND		157	22.2	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 108164-01 continued...

Analyte		Result (ug/kg)	PQL	MDL
2,4,6-Trichlorophenol	ND		393	20.9
2,4,5-Trichlorophenol	ND		157	28.3
2-Chloronaphthalene	ND		15.7	4.72
2-Nitroaniline	ND		157	20.4
Dimethylphthalate	ND		157	17.3
Acenaphthylene	ND		15.7	6.85
2,6-Dinitrotoluene	ND		157	28.3
3-Nitroaniline	ND		157	26.7
Acenaphthene		189	15.7	7.78
2,4-Dinitrophenol	ND		786	37.7
4-Nitrophenol	ND		786	29.9
Dibenzofuran	ND		157	18.2
2,4-Dinitrotoluene	ND		157	20.4
Diethylphthalate	ND		157	26.7
4-Chlorophenylphenylether	ND		157	26.4
Fluorene	ND		15.7	7.34
4-Nitroaniline	ND		157	26.7
4,6-Dinitro-2-methylphenol	ND		786	58.2
N-Nitrosodiphenylamine	ND		157	12.6
4-Bromophenylphenylether	ND		157	20.9
Hexachlorobenzene	ND		157	17.3
Pentachlorophenol	ND		157	33
Phenanthrene		695	15.7	3.35
Anthracene		170	15.7	3.96
Di-n-butylphthalate	ND		393	137
Fluoranthene		737	15.7	7.34
Pyrene		790	15.7	5.19
Butylbenzylphthalate	ND		157	29.9
3,3'-Dichlorobenzidine	ND		157	17.3
Benzo(a)anthracene		405	31.4	9.59
Chrysene		419	31.4	9.23
bis(2-Ethylhexyl)phthalate		2650	157	64.4
Di-n-octylphthalate	ND		157	40.9
Benzofluoranthenes		397	31.4	6.92
Benzo(a)pyrene		254	15.7	9.23
Indeno(1,2,3-cd)pyrene	ND		15.7	3.66
Dibenz(a,h)anthracene	ND		15.7	3.66
Benzo(g,h,i)perylene	ND		15.7	2.59
Carbazole	ND		786	61.3
N-nitrosodimethylamine	ND		786	17.3
Aniline	ND		157	0
Tetrachlorophenols	ND		157	29.7

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011807
Lab ID:	108164-02
Date Received:	8/23/2002
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
% Solids	76.13
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	53.4		37	160
Phenol - d5	78.4		43	157
Nitrobenzene - d5	63.9		42	154
2 - Fluorobiphenyl	50.7	X9	51	142
2,4,6 - Tribromophenol	68.4		36	159
p - Terphenyl - d14	121		44	144

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	ND		153	30.6	
bis(2-Chloroethyl)ether	ND		153	29.2	
2-Chlorophenol	ND		153	22.9	
1,3-Dichlorobenzene	ND		153	21.4	
1,4-Dichlorobenzene	ND		153	24.5	
Benzyl Alcohol	ND		153	32.1	
1,2-Dichlorobenzene	ND		153	15.7	
2-Methylphenol	ND		153	18.3	
bis(2-Chloroisopropyl)ether	ND		153	39.7	
3-&4-Methylphenol	ND		306	22.6	
N-nitroso-di-n-propylamine	ND		153	16.8	
Hexachloroethane	ND		153	29	
Nitrobenzene	ND		153	20.9	
Isophorone	ND		153	21.4	
2-Nitrophenol	ND		153	21.4	
2,4-Dimethylphenol	ND		153	16.8	
Benzoic Acid	ND		764	52	
bis(2-Chloroethoxy)methane	ND		153	18.3	
2,4-Dichlorophenol	ND		153	16.8	
1,2,4-Trichlorobenzene	ND		153	12.7	
Naphthalene		44.5	15.3	7.15	
4-Chloroaniline	ND		153	14.2	
Hexachlorobutadiene	ND		153	13.8	
4-Chloro-3-methylphenol	ND		153	16.8	
2-Methylnaphthalene		210	15.3	2.38	
Hexachlorocyclopentadiene	ND		153	21.5	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 108164-02 continued...

Analyte	Result (ug/kg)	PQL	MDL
2,4,6-Trichlorophenol	ND	382	20.3
2,4,5-Trichlorophenol	ND	153	27.5
2-Chloronaphthalene	ND	15.3	4.58
2-Nitroaniline	ND	153	19.9
Dimethylphthalate	ND	153	16.8
Acenaphthylene	16	15.3	6.66
2,6-Dinitrotoluene	ND	153	27.5
3-Nitroaniline	ND	153	26
Acenaphthene	45	15.3	7.56
2,4-Dinitrophenol	ND	764	36.7
4-Nitrophenol	ND	764	29
Dibenzofuran	ND	153	17.7
2,4-Dinitrotoluene	ND	153	19.9
Diethylphthalate	ND	153	26
4-Chlorophenylphenylether	ND	153	25.7
Fluorene	ND	15.3	7.14
4-Nitroaniline	ND	153	26
4,6-Dinitro-2-methylphenol	ND	764	56.5
N-Nitrosodiphenylamine	ND	153	12.2
4-Bromophenylphenylether	ND	153	20.3
Hexachlorobenzene	ND	153	16.8
Pentachlorophenol	ND	153	32.1
Phenanthrene	168	15.3	3.26
Anthracene	37.1	15.3	3.85
Di-n-butylphthalate	ND	382	133
Fluoranthene	258	15.3	7.14
Pyrene	247	15.3	5.04
Butylbenzylphthalate	ND	153	29
3,3'-Dichlorobenzidine	ND	153	16.8
Benzo(a)anthracene	ND	30.6	9.32
Chrysene	ND	30.6	8.97
bis(2-Ethylhexyl)phthalate	ND	153	62.7
Di-n-octylphthalate	190	153	39.7
Benzofluoranthenes	ND	30.6	6.72
Benzo(a)pyrene	ND	15.3	8.97
Indeno(1,2,3-cd)pyrene	ND	15.3	3.56
Dibenz(a,h)anthracene	ND	15.3	3.56
Benzo(g,h,i)perylene	ND	15.3	2.52
Carbazole	ND	764	59.6
N-nitrosodimethylamine	ND	764	16.8
Aniline	ND	153	0
Tetrachlorophenols	ND	153	28.9

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808
Lab ID:	108164-03
Date Received:	8/23/2002
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
% Solids	77.77
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	54		37	160
Phenol - d5	65		43	157
Nitrobenzene - d5	61.5		42	154
2 - Fluorobiphenyl	60		51	142
2,4,6 - Tribromophenol	90.7		36	159
p - Terphenyl - d14	128		44	144

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	ND		168	33.7	
bis(2-Chloroethyl)ether	ND		168	32.2	
2-Chlorophenol	ND		168	25.3	
1,3-Dichlorobenzene	ND		168	23.6	
1,4-Dichlorobenzene	ND		168	26.9	
Benzyl Alcohol	ND		168	35.4	
1,2-Dichlorobenzene	ND		168	17.3	
2-Methylphenol	ND		168	20.2	
bis(2-Chloroisopropyl)ether	ND		168	43.8	
3-&4-Methylphenol	ND		337	24.9	
N-nitroso-di-n-propylamine	ND		168	18.5	
Hexachloroethane	ND		168	32	
Nitrobenzene	ND		168	23.1	
Isophorone	ND		168	23.6	
2-Nitrophenol	ND		168	23.6	
2,4-Dimethylphenol	ND		168	18.5	
Benzoic Acid	ND		842	57.3	
bis(2-Chloroethoxy)methane	ND		168	20.2	
2,4-Dichlorophenol	ND		168	18.5	
1,2,4-Trichlorobenzene	ND		168	14	
Naphthalene	ND		16.8	7.88	
4-Chloroaniline	ND		168	15.7	
Hexachlorobutadiene	ND		168	15.2	
4-Chloro-3-methylphenol		68	168	18.5	J
2-Methylnaphthalene		12.4	16.8	2.63	J
Hexachlorocyclopentadiene	ND		168	23.7	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 108164-03 continued...

Analyte		Result (ug/kg)	PQL	MDL	
2,4,6-Trichlorophenol	ND		421	22.4	
2,4,5-Trichlorophenol	ND		168	30.3	
2-Chloronaphthalene	ND		16.8	5.05	
2-Nitroaniline	ND		168	21.9	
Dimethylphthalate	ND		168	18.5	
Acenaphthylene		12.3	16.8	7.34	J
2,6-Dinitrotoluene	ND		168	30.3	
3-Nitroaniline	ND		168	28.6	
Acenaphthene		13.5	16.8	8.34	J
2,4-Dinitrophenol	ND		842	40.4	
4-Nitrophenol	ND		842	32	
Dibenzofuran	ND		168	19.5	
2,4-Dinitrotoluene	ND		168	21.9	
Diethylphthalate	ND		168	28.6	
4-Chlorophenylphenylether	ND		168	28.3	
Fluorene	ND		16.8	7.87	
4-Nitroaniline	ND		168	28.6	
4,6-Dinitro-2-methylphenol	ND		842	62.3	
N-Nitrosodiphenylamine	ND		168	13.5	
4-Bromophenylphenylether	ND		168	22.4	
Hexachlorobenzene	ND		168	18.5	
Pentachlorophenol	ND		168	35.4	
Phenanthrene		59.2	16.8	3.59	
Anthracene		14.3	16.8	4.24	J
Di-n-butylphthalate	ND		421	147	
Fluoranthene		143	16.8	7.87	
Pyrene		145	16.8	5.56	
Butylbenzylphthalate	ND		168	32	
3,3'-Dichlorobenzidine	ND		168	18.5	
Benzo(a)anthracene		69.4	33.7	10.3	
Chrysene	ND		33.7	9.89	
bis(2-Ethylhexyl)phthalate		399	168	69.1	
Di-n-octylphthalate	ND		168	43.8	
Benzofluoranthenes		116	33.7	7.41	
Benzo(a)pyrene	ND		16.8	9.89	
Indeno(1,2,3-cd)pyrene	ND		16.8	3.92	
Dibenz(a,h)anthracene	ND		16.8	3.92	
Benzo(g,h,i)perylene	ND		16.8	2.78	
Carbazole	ND		842	65.7	
N-nitrosodimethylamine	ND		842	18.5	
Aniline	ND		168	0	
Tetrachlorophenols	ND		168	31.8	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011806
Lab ID:	108164-01
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/30/02
% Solids	67.59
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2,4-Dichlorophenylacetic acid	76.8		48	128

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dalapon	ND		0.716	0.161	
4-Nitrophenol	ND		0.716	0.16	
Dicamba	ND		0.716	0.165	
MCPP	ND		0.716	0.14	
MCPA	ND		0.716	0.314	
Dichloroprop	ND		0.716	0.265	
2,4-D	ND		0.716	0.279	
Pentachlorophenol		8.45	0.716	0.205	
Silvex (2,4,5-TP)	ND		1.07	0.268	
2,4,5-T	ND		1.07	0.328	
Dinoseb	ND		0.716	0.23	
2,4-DB	ND		0.716	0.201	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011807
Lab ID:	108164-02
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/30/02
% Solids	76.13
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2,4-Dichlorophenylacetic acid	71.3		48	128

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Dalapon	ND		0.642	0.144	
4-Nitrophenol	ND		0.642	0.143	
Dicamba	ND		0.642	0.148	
MCPP	ND		0.642	0.126	
MCPA	ND		0.642	0.282	
Dichloroprop	ND		0.642	0.238	
2,4-D	ND		0.642	0.25	
Pentachlorophenol		3.21	0.642	0.184	
Silvex (2,4,5-TP)	ND		0.963	0.241	
2,4,5-T	ND		0.963	0.295	
Dinoseb	ND		0.642	0.206	
2,4-DB	ND		0.642	0.18	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808
Lab ID:	108164-03
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/30/02
% Solids	77.77
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2,4-Dichlorophenylacetic acid	86.1		48	128

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dalapon	ND	0.612	0.138	
4-Nitrophenol	ND	0.612	0.137	
Dicamba	ND	0.612	0.141	
MCPP	ND	0.612	0.12	
MCPA	ND	0.612	0.269	
Dichloroprop	ND	0.612	0.227	
2,4-D	ND	0.612	0.238	
Pentachlorophenol	ND	0.612	0.176	
Silvex (2,4,5-TP)	ND	0.917	0.229	
2,4,5-T	ND	0.917	0.281	
Dinoseb	ND	0.612	0.197	
2,4-DB	ND	0.612	0.172	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011806
Lab ID:	108164-01
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	67.59
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Tetrachloro-m-xylene	75.7		54	129
Decachlorobiphenyl	175	X9	54	140

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin		28.6	2.6	1.12	C2
alpha-BHC		1.03	2.6	0.809	J C1
beta-BHC		1.19	2.6	1.1	J C2
delta-BHC	ND		2.6	0.999	
gamma-BHC (Lindane)	ND		2.6	0.995	
Chlordane (technical)	ND		26	3.67	
4,4'-DDD		54.5	5.21	0.506	C1
4,4'-DDE		124	5.21	0.599	C1
4,4'-DDT	ND		5.21	0.675	
Dieldrin	ND		5.21	0.854	
Endosulfan I		4.95	2.6	1.11	C2
Endosulfan II	ND		5.21	1.01	
Endosulfan sulfate	ND		5.21	0.947	
Endrin	ND		5.21	0.94	
Endrin aldehyde	ND		5.21	1.06	
Heptachlor	ND		2.6	0.896	
Heptachlor epoxide	ND		2.6	0.951	
Methoxychlor	ND		26	3.59	
Endrin ketone	ND		5.21	0.732	
Toxaphene	ND		260	16.3	
alpha-Chlordane		14.7	2.6	1.04	C1
gamma-Chlordane		19.9	2.6	1.06	C2
Hexachlorobenzene		5.44	2.6	2.6	C2
Hexachlorobutadiene	ND		2.6	2.6	
Hexachloroethane	ND		2.6	2.6	
Oxychlordane	ND		5.21	5.21	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for 108164-01 continued...

Analyte	Result (ug/kg)	PQL	MDL	Flags
cis-Nonachlor	ND	5.21	5.21	
trans-Nonachlor	15.3	5.21	5.21	C1
2,4'-DDE	ND	5.21	5.21	
2,4'-DDD	24	5.21	5.21	C1
2,4'-DDT	ND	5.21	5.21	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011807
Lab ID:	108164-02
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	76.13
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	89.7		54	129
Decachlorobiphenyl	158	X9	54	140

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin		8.38	2.34	1.01	C2
alpha-BHC	ND		2.34	0.727	
beta-BHC		2.31	2.34	0.991	J C2
delta-BHC	ND		2.34	0.898	
gamma-BHC (Lindane)	ND		2.34	0.895	
Chlordane (technical)	ND		23.4	3.3	
4,4'-DDD		82.7	4.68	0.455	C1
4,4'-DDE		75.4	4.68	0.539	C1
4,4'-DDT	ND		4.68	0.606	
Dieldrin	ND		4.68	0.768	
Endosulfan I	ND		2.34	0.997	
Endosulfan II	ND		4.68	0.905	
Endosulfan sulfate	ND		4.68	0.852	
Endrin	ND		4.68	0.845	
Endrin aldehyde	ND		4.68	0.954	
Heptachlor	ND		2.34	0.806	
Heptachlor epoxide	ND		2.34	0.855	
Methoxychlor	ND		23.4	3.22	
Endrin ketone	ND		4.68	0.658	
Toxaphene	ND		234	14.7	
alpha-Chlordane		17.3	2.34	0.931	C2
gamma-Chlordane		25.3	2.34	0.95	C2
Hexachlorobenzene		3.2	2.34	2.34	C2
Hexachlorobutadiene	ND		2.34	2.34	
Hexachloroethane	ND		2.34	2.34	
Oxychlordane	ND		4.68	4.68	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for 108164-02 continued...

Analyte	Result (ug/kg)	PQL	MDL	Flags
cis-Nonachlor	ND	4.68	4.68	
trans-Nonachlor	13.5	4.68	4.68	C2
2,4'-DDE	ND	4.68	4.68	
2,4'-DDD	17.5	4.68	4.68	C2
2,4'-DDT	ND	4.68	4.68	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808
Lab ID:	108164-03
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	77.77
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Tetrachloro-m-xylene	103		54	129
Decachlorobiphenyl	115		54	140

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin		5.03	2.35	1.02	C2
alpha-BHC	ND		2.35	0.731	
beta-BHC		1.44	2.35	0.996	J C2
delta-BHC	ND		2.35	0.903	
gamma-BHC (Lindane)	ND		2.35	0.899	
Chlordane (technical)	ND		23.5	3.31	
4,4'-DDD		10.6	4.71	0.458	C1
4,4'-DDE		27.9	4.71	0.542	C1
4,4'-DDT	ND		4.71	0.61	
Dieldrin	ND		4.71	0.772	
Endosulfan I		1.38	2.35	1	J C2
Endosulfan II	ND		4.71	0.91	
Endosulfan sulfate	ND		4.71	0.856	
Endrin	ND		4.71	0.849	
Endrin aldehyde	ND		4.71	0.959	
Heptachlor	ND		2.35	0.81	
Heptachlor epoxide	ND		2.35	0.86	
Methoxychlor	ND		23.5	3.24	
Endrin ketone	ND		4.71	0.661	
Toxaphene	ND		235	14.7	
alpha-Chlordane		1.66	2.35	0.935	J C2
gamma-Chlordane		7.23	2.35	0.955	C1
Hexachlorobenzene	ND		2.35	2.35	
Hexachlorobutadiene	ND		2.35	2.35	
Hexachloroethane	ND		2.35	2.35	
Oxychlordane	ND		4.71	4.71	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for 108164-03 continued...

Analyte	Result (ug/kg)	PQL	MDL	Flags
cis-Nonachlor	ND	4.71	4.71	
trans-Nonachlor	9.19	4.71	4.71	C2
2,4'-DDE	ND	4.71	4.71	
2,4'-DDD	ND	4.71	4.71	
2,4'-DDT	ND	4.71	4.71	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011806
Lab ID:	108164-01
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1
% Solids	67.59

Metals by ICP - USEPA Method 6010

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Aluminum	8250	27.8	2.5	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011806
Lab ID:	108164-01
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	5
% Solids	67.59

Metals by ICP-MS - USEPA Method 6020

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Arsenic	9.76	1.39	0.151	
Antimony	6.86	4.17	0.0312	
Cadmium	0.897	0.696	0.00988	
Chromium	71	1.39	0.0493	
Copper	98.9	1.39	0.02	B2
Lead	210	0.696	0.00626	B2
Nickel	19.8	1.39	0.0394	B2
Selenium	0.614	4.17	0.535	J
Silver	0.349	0.696	0.00835	J
Zinc	269	4.17	0.0455	B2

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011807
Lab ID:	108164-02
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1
% Solids	76.13

Metals by ICP - USEPA Method 6010

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Aluminum	5900	23.8	2.15	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011807
Lab ID:	108164-02
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	5
% Solids	76.13

Metals by ICP-MS - USEPA Method 6020

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Arsenic	7.41	1.19	0.129	
Antimony	2.6	3.58	0.0267	J
Cadmium	0.664	0.596	0.00846	
Chromium	23.7	1.19	0.0422	
Copper	79.3	1.19	0.0172	B2
Lead	97.6	0.596	0.00536	B2
Nickel	18.1	1.19	0.0337	B2
Selenium	ND	3.58	0.459	
Silver	0.165	0.596	0.00715	J
Zinc	245	3.58	0.039	B2

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808
Lab ID:	108164-03
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1
% Solids	77.77

Metals by ICP - USEPA Method 6010

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Aluminum	5810	24.1	2.17	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808
Lab ID:	108164-03
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	5
% Solids	77.77

Metals by ICP-MS - USEPA Method 6020

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Arsenic	5.55	1.19	0.129	
Antimony	1.1	3.57	0.0266	J
Cadmium	0.713	0.595	0.00845	
Chromium	32.6	1.19	0.0421	
Copper	75.7	1.19	0.0171	B2
Lead	148	0.595	0.00535	B2
Nickel	18.5	1.19	0.0337	B2
Selenium	ND	3.57	0.457	
Silver	0.174	0.595	0.00714	J
Zinc	257	3.57	0.0389	B2

STL Seattle

Lab ID:	Method Blank - SS0608
Date Received:	-
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
% Solids	
Dilution Factor	2

Semivolatile Organics by USEPA Method 8270

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2 - Fluorophenol	92.8		37	160
Phenol - d5	85.2		43	157
Nitrobenzene - d5	102		42	154
2 - Fluorobiphenyl	77		51	142
2,4,6 - Tribromophenol	83.9		36	159
p - Terphenyl - d14	89.7		44	144

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Phenol	ND	13.3	2.67	
bis(2-Chloroethyl)ether	ND	13.3	2.55	
2-Chlorophenol	ND	13.3	2	
1,3-Dichlorobenzene	ND	13.3	1.87	
1,4-Dichlorobenzene	ND	13.3	2.13	
Benzyl Alcohol	ND	13.3	2.8	
1,2-Dichlorobenzene	ND	13.3	1.37	
2-Methylphenol	ND	13.3	1.6	
bis(2-Chloroisopropyl)ether	ND	13.3	3.47	
3-&4-Methylphenol	ND	26.7	1.97	
N-nitroso-di-n-propylamine	ND	13.3	1.47	
Hexachloroethane	ND	13.3	2.53	
Nitrobenzene	ND	13.3	1.83	
Isophorone	ND	13.3	1.87	
2-Nitrophenol	ND	13.3	1.87	
2,4-Dimethylphenol	ND	13.3	1.47	
Benzoic Acid	ND	66.7	4.53	
bis(2-Chloroethoxy)methane	ND	13.3	1.6	
2,4-Dichlorophenol	ND	13.3	1.47	
1,2,4-Trichlorobenzene	ND	13.3	1.11	
Naphthalene	ND	1.33	0.624	
4-Chloroaniline	ND	13.3	1.24	
Hexachlorobutadiene	ND	13.3	1.2	
4-Chloro-3-methylphenol	ND	13.3	1.47	
2-Methylnaphthalene	ND	1.33	0.208	
Hexachlorocyclopentadiene	ND	13.3	1.88	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for SS0608 continued...

Analyte	Result (ug/kg)	PQL	MDL
2,4,6-Trichlorophenol	ND	33.3	1.77
2,4,5-Trichlorophenol	ND	13.3	2.4
2-Chloronaphthalene	ND	1.33	0.4
2-Nitroaniline	ND	13.3	1.73
Dimethylphthalate	ND	13.3	1.47
Acenaphthylene	ND	1.33	0.581
2,6-Dinitrotoluene	ND	13.3	2.4
3-Nitroaniline	ND	13.3	2.27
Acenaphthene	ND	1.33	0.66
2,4-Dinitrophenol	ND	66.7	3.2
4-Nitrophenol	ND	66.7	2.53
Dibenzofuran	ND	13.3	1.55
2,4-Dinitrotoluene	ND	13.3	1.73
Diethylphthalate	ND	13.3	2.27
4-Chlorophenylphenylether	ND	13.3	2.24
Fluorene	ND	1.33	0.623
4-Nitroaniline	ND	13.3	2.27
4,6-Dinitro-2-methylphenol	ND	66.7	4.93
N-Nitrosodiphenylamine	ND	13.3	1.07
4-Bromophenylphenylether	ND	13.3	1.77
Hexachlorobenzene	ND	13.3	1.47
Pentachlorophenol	ND	13.3	2.8
Phenanthrene	ND	1.33	0.284
Anthracene	ND	1.33	0.336
Di-n-butylphthalate	ND	33.3	11.6
Fluoranthene	ND	1.33	0.623
Pyrene	ND	1.33	0.44
Butylbenzylphthalate	ND	13.3	2.53
3,3'-Dichlorobenzidine	ND	13.3	1.47
Benzo(a)anthracene	ND	2.67	0.813
Chrysene	ND	2.67	0.783
bis(2-Ethylhexyl)phthalate	ND	13.3	5.47
Di-n-octylphthalate	ND	13.3	3.47
Benzofluoranthenes	ND	2.67	0.587
Benzo(a)pyrene	ND	1.33	0.783
Indeno(1,2,3-cd)pyrene	ND	1.33	0.311
Dibenz(a,h)anthracene	ND	1.33	0.311
Benzo(g,h,i)perylene	ND	1.33	0.22
Carbazole	ND	13.3	5.2
N-nitrosodimethylamine	ND	66.7	1.47
Aniline	ND	13.3	0
Tetrachlorophenols	ND	13.3	2.52

STL Seattle

Blank Spike Report

Lab ID:	SS0608
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
QC Batch ID:	SS0608

Semivolatile Organics by USEPA Method 8270

Compound Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Phenol	0	100	84.3	84.3	
2-Chlorophenol	0	100	86.5	86.5	
1,4-Dichlorobenzene	0	66.7	48.7	73.1	
N-nitroso-di-n-propylamine	0	66.7	56	83.9	
1,2,4-Trichlorobenzene	0	66.7	53.5	80.3	
4-Chloro-3-methylphenol	0	100	85.2	85.2	
Acenaphthene	0	66.7	54.4	81.6	
4-Nitrophenol	0	100	50.9	50.9	
2,4-Dinitrotoluene	0	66.7	66.7	100	
Pentachlorophenol	0	100	33.2	33.2	
Pyrene	0	66.7	58.8	88.3	

STL Seattle

Client Name	CH2M Hill
Client ID:	
Lab ID:	SSS0608
Date Received:	-
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
% Solids	
Dilution Factor	2

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	72.8		37	160
Phenol - d5	74.8		43	157
Nitrobenzene - d5	76.7		42	154
2 - Fluorobiphenyl	65.7		51	142
2,4,6 - Tribromophenol	71.7		36	159
p - Terphenyl - d14	77.4		44	144

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	84.3	13.3	2.67	
2-Chlorophenol	86.5	13.3	2	
1,4-Dichlorobenzene	48.7	13.3	2.13	
N-nitroso-di-n-propylamine	56	13.3	1.47	
1,2,4-Trichlorobenzene	53.5	13.3	1.11	
4-Chloro-3-methylphenol	85.2	13.3	1.47	
Acenaphthene	54.4	1.33	0.66	
4-Nitrophenol	50.9	66.7	2.53	J
2,4-Dinitrotoluene	66.7	13.3	1.73	
Pentachlorophenol	33.2	13.3	2.8	
Pyrene	58.8	1.33	0.44	

STL Seattle

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/27/02
Date Analyzed:	9/3/02
QC Batch ID:	SS0608

Semivolatile Organics by USEPA Method 8270

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Phenol	0	126	159	126	129	101	-22	
2-Chlorophenol	0	126	134	107	127	99.6	-7.2	
1,4-Dichlorobenzene	0	83.8	57.5	68.6	54.5	64	-6.9	
N-nitroso-di-n-propylamine	0	83.8	146	174	102	120	-37	X7
1,2,4-Trichlorobenzene	0	83.8	73.6	87.8	73.2	86	-2.1	
4-Chloro-3-methylphenol	68	126	240	137	178	86	-46	
Acenaphthene	14	83.8	127	135	99.4	101	-29	X7
4-Nitrophenol	0	126	30.5	24.2	0	0	-200	X7
2,4-Dinitrotoluene	0	83.8	144	171	129	152	-12	X7
Pentachlorophenol	0	126	148	117	139	109	-7.1	
Pyrene	150	83.8	306	192	199	62.8	-100	X7

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - ms
Lab ID:	108164S03
Date Received:	8/23/2002
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
% Solids	77.77
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	97.6		37	160
Phenol - d5	123		43	157
Nitrobenzene - d5	83.7		42	154
2 - Fluorobiphenyl	95.9		51	142
2,4,6 - Tribromophenol	118		36	159
p - Terphenyl - d14	113		44	144

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	159	168	33.5	J
2-Chlorophenol	134	168	25.2	J
1,4-Dichlorobenzene	57.5	168	26.8	J
N-nitroso-di-n-propylamine	146	168	18.4	J
1,2,4-Trichlorobenzene	73.6	168	13.9	J
4-Chloro-3-methylphenol	240	168	18.4	
Acenaphthene	127	16.8	8.3	
4-Nitrophenol	ND	838	31.9	
2,4-Dinitrotoluene	144	168	21.8	J
Pentachlorophenol	148	168	35.2	J
Pyrene	306	16.8	5.53	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - msd
Lab ID:	108164D03
Date Received:	8/23/2002
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
% Solids	77.77
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2 - Fluorophenol	89.9		37	160
Phenol - d5	100		43	157
Nitrobenzene - d5	71.6		42	154
2 - Fluorobiphenyl	74.8		51	142
2,4,6 - Tribromophenol	92.4		36	159
p - Terphenyl - d14	120		44	144

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Phenol	129	170	34.1	J
2-Chlorophenol	127	170	25.5	J
1,4-Dichlorobenzene	54.5	170	27.2	J
N-nitroso-di-n-propylamine	102	170	18.7	J
1,2,4-Trichlorobenzene	73.2	170	14.1	J
4-Chloro-3-methylphenol	178	170	18.7	
Acenaphthene	99.4	17	8.43	
4-Nitrophenol	ND	851	32.3	
2,4-Dinitrotoluene	129	170	22.1	J
Pentachlorophenol	139	170	35.8	J
Pyrene	199	17	5.62	

STL Seattle

Lab ID:	Method Blank - HS0176
Date Received:	-
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
% Solids	
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2,4-Dichlorophenylacetic acid	60.4		48	128

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Dalapon	ND	0.5	0.112	
4-Nitrophenol	ND	0.5	0.112	
Dicamba	ND	0.5	0.115	
MCPP	ND	0.5	0.0979	
MCPA	ND	0.5	0.22	
Dichloroprop	ND	0.5	0.185	
2,4-D	ND	0.5	0.195	
Pentachlorophenol	ND	0.5	0.144	
Silvex (2,4,5-TP)	ND	0.75	0.187	
2,4,5-T	ND	0.75	0.229	
Dinoseb	ND	0.5	0.161	
2,4-DB	ND	0.5	0.14	

STL Seattle

Blank Spike Report

Lab ID:	HS0176
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
QC Batch ID:	HS0176

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Compound Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Dalapon	0	50	20.6	41.1	
Dicamba	0	50	29	57.9	
MCPP	0	50	43.3	86.5	
2,4-D	0	50	32.3	64.6	
Silvex (2,4,5-TP)	0	50	38.3	76.6	
Dinoseb	0	50	32.5	65	

STL Seattle

Client Name	0
Client ID:	
Lab ID:	SHS0176
Date Received:	-
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
% Solids	
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2,4-Dichlorophenylacetic acid	67.3		48	128

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Dalapon	20.6	0.5	0.112	
Dicamba	29	0.5	0.115	
MCPP	43.3	0.5	0.0979	
2,4-D	32.3	0.5	0.195	
Silvex (2,4,5-TP)	38.3	0.75	0.187	
Dinoseb	32.5	0.5	0.161	

STL Seattle

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
QC Batch ID:	HS0176

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Dalapon	0	60.9	8.59	14.1	9.67	15.6	10	X7
Dicamba	0	60.9	51.1	83.8	52.6	84.9	1.3	
MCPP	0	60.9	59.3	97.3	59.4	95.8	-1.6	
2,4-D	0	60.9	58.4	95.9	62.1	100	4.2	
Silvex (2,4,5-TP)	0	60.9	50.3	82.6	47.8	77.2	-6.8	
Dinoseb	0	60.9	50.8	83.3	54.5	88	5.5	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - ms
Lab ID:	108164S03
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
% Solids	77.77
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2,4-Dichlorophenylacetic acid	92.7		48	128

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Dalapon	8.59	0.609	0.137	
Dicamba	51.1	0.609	0.14	
MCPP	59.3	0.609	0.119	
2,4-D	58.4	0.609	0.237	
Silvex (2,4,5-TP)	50.3	0.914	0.228	
Dinoseb	50.8	0.609	0.196	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - msd
Lab ID:	108164D03
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
% Solids	77.77
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2,4-Dichlorophenylacetic acid	93.1		48	128

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Dalapon	9.67	0.62	0.139	
Dicamba	52.6	0.62	0.142	
MCPP	59.4	0.62	0.121	
2,4-D	62.1	0.62	0.241	
Silvex (2,4,5-TP)	47.8	0.93	0.232	
Dinoseb	54.5	0.62	0.199	

STL Seattle

Lab ID:	Method Blank - SP883
Date Received:	-
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Sample results are on an as received basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Aluminum	ND	20	1.8	

STL Seattle

Lab ID:	Method Blank - PE1511
Date Received:	-
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081A

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Tetrachloro-m-xylene	111		54	129
Decachlorobiphenyl	128		54	140

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND	1	0.431	
alpha-BHC	ND	1	0.311	
beta-BHC	ND	1	0.423	
delta-BHC	ND	1	0.384	
gamma-BHC (Lindane)	ND	1	0.382	
Chlordane (technical)	ND	10	1.41	
4,4'-DDD	ND	2	0.194	
4,4'-DDE	ND	2	0.23	
4,4'-DDT	ND	2	0.259	
Dieldrin	ND	2	0.328	
Endosulfan I	ND	1	0.426	
Endosulfan II	ND	2	0.386	
Endosulfan sulfate	ND	2	0.364	
Endrin	ND	2	0.361	
Endrin aldehyde	ND	2	0.408	
Heptachlor	ND	1	0.344	
Heptachlor epoxide	ND	1	0.365	
Methoxychlor	ND	10	1.38	
Endrin ketone	ND	2	0.281	
Toxaphene	ND	100	6.27	
alpha-Chlordane	ND	1	0.398	
gamma-Chlordane	ND	1	0.406	
Hexachlorobenzene	ND	1	1	
Hexachlorobutadiene	ND	1	1	
Hexachloroethane	ND	1	1	
Oxychlordane	ND	2	2	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for PE1511 continued...

Analyte	Result (ug/kg)	PQL	MDL	Flags
cis-Nonachlor	ND	2	2	
trans-Nonachlor	ND	2	2	
2,4'-DDE	ND	2	2	
2,4'-DDD	ND	2	2	
2,4'-DDT	ND	2	2	

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	PE1511
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
QC Batch ID:	PE1511

Organochlorine Pesticides by USEPA Method 8081A

Compound Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	BSD Result (ug/kg)	BSD % Rec.	RPD	Flag
Aldrin	0	25	21.3	85	21.5	86.1	1.3	
gamma-BHC (Lindane)	0	25	21.2	84.9	21.9	87.5	3	
4,4'-DDT	0	50	42.5	84.9	43.2	86.3	1.6	
Dieldrin	0	50	48.2	96.5	49.1	98.1	1.6	
Endrin	0	50	45.2	90.4	46.1	92.1	1.9	
Heptachlor	0	25	22.4	89.4	22.8	91.2	2	

STL Seattle

Client Name	0
Client ID:	
Lab ID:	SPE1511
Date Received:	-
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	114		54	129
Decachlorobiphenyl	130		54	140

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	21.3	1	0.431	C1
gamma-BHC (Lindane)	21.2	1	0.382	C1
4,4'-DDT	42.5	2	0.259	C1
Dieldrin	48.2	2	0.328	C1
Endrin	45.2	2	0.361	C1
Heptachlor	22.4	1	0.344	C1

STL Seattle

Client Name	0
Client ID:	
Lab ID:	DPE1511
Date Received:	-
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	113		54	129
Decachlorobiphenyl	131		54	140

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	21.5	1	0.431	C1
gamma-BHC (Lindane)	21.9	1	0.382	C1
4,4'-DDT	43.2	2	0.259	C1
Dieldrin	49.1	2	0.328	C1
Endrin	46.1	2	0.361	C1
Heptachlor	22.8	1	0.344	C1

STL Seattle

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	9/3/02
Date Analyzed:	9/12/02
QC Batch ID:	PE1511

Organochlorine Pesticides by USEPA Method 8081A

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Aldrin	5	31.5	23.5	58.6	21.7	62.1	5.8	X7
gamma-BHC (Lindane)	0	31.5	20.2	64.2	17.4	64.7	0.78	
4,4'-DDT	0	63	52.5	83.3	41.1	76.5	-8.5	
Dieldrin	0	63	57.8	91.8	49.7	92.6	0.87	
Endrin	0	63	56.9	90.3	47.7	88.9	-1.6	
Heptachlor	0	31.5	27.9	88.6	23.9	89.2	0.67	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - ms
Lab ID:	108164S03
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	77.77
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	97.7		54	129
Decachlorobiphenyl	140		54	140

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	23.5	2.52	1.09	C1
gamma-BHC (Lindane)	20.2	2.52	0.963	C1
4,4'-DDT	52.5	5.04	0.653	C1
Dieldrin	57.8	5.04	0.826	C1
Endrin	56.9	5.04	0.909	C1
Heptachlor	27.9	2.52	0.867	C2

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - msd
Lab ID:	108164D03
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	77.77
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	98.7		54	129
Decachlorobiphenyl	135		54	140

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	21.7	2.15	0.926	C1
gamma-BHC (Lindane)	17.4	2.15	0.82	C1
4,4'-DDT	41.1	4.29	0.556	C1
Dieldrin	49.7	4.29	0.704	C1
Endrin	47.7	4.29	0.774	C1
Heptachlor	23.9	2.15	0.739	C1

STL Seattle

Lab ID:	Method Blank - SP883
Date Received:	-
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1

Metals by ICP-MS - USEPA Method 6020

Sample results are on an as received basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Arsenic	ND	0.2	0.0217	
Antimony	ND	0.6	0.00448	
Cadmium	ND	0.1	0.00142	
Chromium	ND	0.2	0.00708	
Copper	0.011	0.2	0.00288	J
Lead	0.0064	0.1	0.0009	J
Nickel	0.0072	0.2	0.00566	J
Selenium	ND	0.6	0.0769	
Silver	ND	0.1	0.0012	
Zinc	0.365	0.6	0.00654	J

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	SP883
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP - USEPA Method 6010

Compound Name	Blank Result (mg/kg)	Spike Amount (mg/kg)	BS Result (mg/kg)	BS % Rec.	BSD Result (mg/kg)	BSD % Rec.	RPD	Flag
Aluminum	0	800	693	86.6	764	95.5	9.8	

STL Seattle

Matrix Spike Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	Flag
Aluminum	5800	902	6430	70	X7a

STL Seattle

Matrix Spike Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	Flag
Arsenic	5.55	902	896	99	
Antimony	1.1	676	623	92	
Cadmium	0.71	22.5	23.7	102	
Chromium	33	90.2	123	100	
Copper	76	113	187	99	
Lead	150	225	342	86	
Nickel	18	225	259	107	
Selenium	0	902	833	92	
Silver	0.17	135	143	105	
Zinc	260	225	505	110	

STL Seattle

Duplicate Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD %	Flag
Aluminum	5800	6500	-11.0	

STL Seattle

Duplicate Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD %	Flag
Arsenic	5.6	5.7	-1.8	
Antimony	1.1	1.2	-8.7	
Cadmium	0.71	0.67	5.8	
Chromium	33	34	-3.0	
Copper	76	78	-2.6	
Lead	150	150	0.0	
Nickel	18	19	-5.4	
Selenium	0	0	NC	
Silver	0.17	0.17	0.0	
Zinc	260	270	-3.8	

STL Seattle

Laboratory Control Sample

Lab ID:	RSP883
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/kg)	True Value (mg/kg)	Lower Limit (mg/kg)	Upper Limit (mg/kg)	Flag
Aluminum	4100	7050	2790	11300	Pass

STL Seattle

Laboratory Control Sample

Lab ID:	RSP883
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/kg)	True Value (mg/kg)	Lower Limit (mg/kg)	Upper Limit (mg/kg)	Flag
Arsenic	180	195	155	235	Pass
Antimony	150	138	42.1	234	Pass
Cadmium	66	68.6	55.2	82	Pass
Chromium	84	86.5	63.4	110	Pass
Copper	130	127	92.7	161	Pass
Lead	96	94.5	73	116	Pass
Nickel	86	83.6	65.5	101	Pass
Selenium	110	114	84.4	144	Pass
Silver	160	119	26.1	212	Pass
Zinc	280	265	204	326	Pass

DATA QUALIFIER DEFINITIONS

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

SEVERN TRENT SERVICES

DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).

B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).

C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be $\leq$ 40%.

C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted.

M: GC/MS confirmation was performed. The result derived from the original analysis was reported.

D: The reported result for this analyte was calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

N: See analytical narrative.

ND: Not Detected

PQL: Practical Quantitation Limit

X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be _____ .

X2: Contaminant does not appear to be "typical" product.

X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.

X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.

X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.

X5: Matrix spike recovery was not determined due to the required dilution.

X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was re-analyzed with similar results.

X7: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.

X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.

X8: Surrogate recovery was not determined due to the required dilution.

X9: Surrogate recovery outside advisory QC limits due to matrix interference.

QC ACCEPTANCE LIMITS

STL Seattle - Method QC Limits

Total Metals by ICP - USEPA Method 6010

Record Number : 537
Analysis Method : 6010
Matrix : Sediment
Preparation Method : TOTREC
Expires: 08/01/2002

Blank Spike Recovery

Aluminum	80 - 120%

Duplicate RPD

Aluminum	=<35% RPD

Matrix Spike Recovery

Aluminum	75 - 125%

Metals by ICP-MS - USEPA Method 6020

Record Number : 540
Analysis Method : 6020
Matrix : Sediment
Preparation Method : 3005
Expires: 08/01/2002

Blank Spike Recovery

Antimony	80 - 120%
Arsenic	80 - 120%
Cadmium	80 - 120%
Chromium	80 - 120%
Copper	80 - 120%
Lead	80 - 120%
Nickel	80 - 120%
Selenium	80 - 120%
Silver	80 - 120%
Zinc	80 - 120%

Duplicate RPD

Antimony	=<35% RPD
Arsenic	=<35% RPD
Cadmium	=<35% RPD
Chromium	=<35% RPD
Copper	=<35% RPD
Lead	=<35% RPD
Nickel	=<35% RPD
Selenium	=<35% RPD
Silver	=<35% RPD
Zinc	=<35% RPD

Matrix Spike Recovery

Antimony	75 - 125%
Arsenic	75 - 125%
Cadmium	75 - 125%
Chromium	75 - 125%
Copper	75 - 125%
Lead	75 - 125%
Selenium	75 - 125%
Silver	75 - 125%
Zinc	75 - 125%

Organochlorine Pesticides by USEPA Method 8081A

Record Number : 566
Analysis Method : 8081A
Matrix : Soil
Preparation Method : 3550C
Expires: 08/01/2002

Blank Spike Recovery

4,4'-DDT	67 - 122%	=<10% RPD
Aldrin	63 - 112%	=<8% RPD
Dieldrin	77 - 119%	=<10% RPD
Endrin	75 - 128%	=<11% RPD
gamma-BHC (Lindane)	60 - 115%	=<8% RPD
Heptachlor	65 - 120%	=<8% RPD

Matrix Spike Recovery

4,4'-DDT	67 - 122%	=<10% RPD
Aldrin	63 - 112%	=<8% RPD
Dieldrin	77 - 119%	=<10% RPD
Endrin	75 - 128%	=<11% RPD
gamma-BHC (Lindane)	60 - 115%	=<8% RPD
Heptachlor	65 - 120%	=<8% RPD

Surrogate Recovery

Decachlorobiphenyl	64 - 130%
TCMX	70 - 122%

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Record Number : 647
Analysis Method : 8151A
Matrix : Soil
Expires: 02/12/2003

Blank Spike Recovery

2,4-Dichlorophenoxyacetic acid	50 - 119%	=<27% RPD
Dalapon	19 - 57%	=<33% RPD
Dicamba	46 - 121%	=<30% RPD
Dinoseb	38 - 146%	=<40% RPD
MCPP	62 - 129%	=<26% RPD
Pentachlorophenol	53 - 134%	=<20% RPD
Silvex (2,4,5-TP)	59 - 127%	=<23% RPD

Surrogate Recovery

2,4-Dichlorophenylacetic acid	48 - 128%

Semivolatile Organics by USEPA Method 8270C

Record Number : 623
Analysis Method : 8270
Matrix : Soil
Preparation Method : 3550B Modified
Expires: 08/01/2002

Blank Spike Recovery

1,2,4-Trichlorobenzene	53 - 139%
1,4-Dichlorobenzene	48 - 133%
2,4-Dinitrotoluene	45 - 140%
2-Chlorophenol	59 - 123%
4-Chloro-3-methylphenol	47 - 149%
4-Nitrophenol	22 - 160%
Acenaphthene	58 - 127%
N-nitroso-di-n-propylamine	38 - 135%
Pentachlorophenol	D - 136%
Phenol	46 - 127%
Pyrene	54 - 136%

Matrix Spike Recovery

1,2,4-Trichlorobenzene	53 - 139%	=<60% RPD
1,4-Dichlorobenzene	48 - 133%	=<60% RPD
2,4-Dinitrotoluene	45 - 140%	=<60% RPD
2-Chlorophenol	59 - 123%	=<60% RPD
4-Chloro-3-methylphenol	47 - 149%	=<60% RPD
4-Nitrophenol	22 - 160%	=<60% RPD
Acenaphthene	58 - 127%	=<60% RPD
N-nitroso-di-n-propylamine	38 - 135%	=<60% RPD
Pentachlorophenol	D - 136%	=<60% RPD
Phenol	46 - 127%	=<60% RPD
Pyrene	54 - 136%	=<60% RPD

Surrogate Recovery

2 - Fluorobiphenyl	51 - 142%
2 - Fluorophenol	37 - 160%
2,4,6 - Tribromophenol	36 - 159%
Nitrobenzene - d5	42 - 154%
p - Terphenyl - d14	44 - 144%
Phenol - d5	43 - 157%

CHAIN OF CUSTODY

CH2MHILL
Applied Sciences Group

2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

SUBCONTRACT REQUEST

Laboratory Information:
STL
Attn: Sample Receiving
5755 8th ST E
Tacoma, WA 98427
Phone: (253) 922-2374

Sample Batch Information:
Client: Portland Harbor
Batch Code: 8008
Date Received: 08/22/2002
Contact: Kathy McKinley
Hazardous: No

Billing Information:
Reference Project Number: 163160.AS.OS

Report Information:
Reporting Address: CH2M HILL Applied Sciences Group, 2300 NW Walnut Blvd., Corvallis, OR 97330
Attention: Kathy McKinley **Report Due:** ~~09/03/2002~~ 9/11/02 **QA Level:** ~~3~~ 4 + EDD

Sample Information
Corvallis Laboratory ID: 800801
Client ID: PP011806
Sample Matrix: Other
Sample Collection Date: 08/21/2002
Sample Collection Time: 10:30

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Sample Information
Corvallis Laboratory ID: 800802
Client ID: PP011807
Sample Matrix: Other
Sample Collection Date: 08/21/2002
Sample Collection Time: 11:45

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Relinquished By	Date	Time	Received By	Date	Time
Kathy McKinley	8/22/02	1335	[illegible]	8/23/02	9 AM

CH2MHILL
Applied Sciences Group

2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

SUBCONTRACT REQUEST

Sample Information

Corvallis Laboratory ID: 800803
Client ID: PP011808

Sample Matrix: Other
Sample Collection Date: 08/21/2002
Sample Collection Time: 14:15

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Sample Information

Corvallis Laboratory ID: 800804MSD
Client ID: PP011808MSD

Sample Matrix: Other
Sample Collection Date: 08/21/2002
Sample Collection Time: 14:15

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002

Relinquished By	Date	Time	Received By	Date	Time
			[illegible]	8/23/02	9 Am

CH2MHILL
Applied Sciences Group

2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

SUBCONTRACT COST DETAIL

Laboratory Information:
STL
5755 8th ST E
Tacoma, WA 98427
Phone: (253) 922-2374

Sample Batch Information:
Client: Portland Harbor
CH2M HILL Applied Sciences Group Reference: 8008
Invoice: A02-1580
Invoice Date: 08/22/02

Billing Information:
Reference Project Number: 163160.AS.OS

Qty	Description	Trans. Date	Unit Cost	Subtotal
4	ICP-MS (11 metals)-Performed by STL	08/22/2002	$176.40	$705.60
4	Sample Digestion (ICP-MS) Performed by STL	08/22/2002	$9.45	$37.80
4	Pesticides-Performed by STL	08/22/2002	$141.75	$567.00
4	Chlorinated Herbicides-Performed by STL	08/22/2002	$162.75	$651.00
3	Particle Size--Performed by STL	08/22/2002	$115.50	$346.50

TOTAL SUBCONTRACT AMOUNT: **$2,307.90**

New Chain 8/26/02

CH2MHILL
Applied Sciences Group

2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

SUBCONTRACT REQUEST

Laboratory Information:
STL
Attn: Sample Receiving
5755 8th ST E
Tacoma, WA 98427
Phone: (253) 922-2374

Sample Batch Information:
Client: Portland Harbor
Batch Code: 8008
Date Received: 08/22/2002
Contact: Kathy McKinley
Hazardous: No

Billing Information:
Reference Project Number: 163160.AS.OS

Report Information:
Reporting Address: CH2M HILL Applied Sciences Group, 2300 NW Walnut Blvd., Corvallis, OR 97330
Attention: Kathy McKinley **Report Due:** 09/03/2002 **QA Level:** 3

Sample Information
Corvallis Laboratory ID: 800801
Client ID: PP011806
Sample Matrix: Other
Sample Collection Date: 08/21/2002
Sample Collection Time: 10:30

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
SVOCs	SW 8270	09/11/2002	08/27/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Sample Information
Corvallis Laboratory ID: 800802
Client ID: PP011807
Sample Matrix: Other
Sample Collection Date: 08/21/2002
Sample Collection Time: 11:45

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
SVOCs	SW 8270	09/11/2002	08/27/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

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Relinquished By	Date	Time	Received By	Date	Time
Kathy McKinley	8/23/02	1035	[illegible]	8/26/02	9 AM

CH2MHILL
Applied Sciences Group

2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

SUBCONTRACT REQUEST

Sample Information

Corvallis Laboratory ID: 800803
Client ID: PP011808

Sample Matrix: Other
Sample Collection Date: 08/21/2002
Sample Collection Time: 14:15

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
SVOCs	SW 8270	09/11/2002	08/27/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Sample Information

Corvallis Laboratory ID: 800804MSD
Client ID: PP011808MSD

Sample Matrix: Other
Sample Collection Date: 08/21/2002
Sample Collection Time: 14:15

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
SVOCs	SW 8270	09/11/2002	08/27/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002

Relinquished By	Date	Time	Received By	Date	Time
Kathy McKinley	8/23/02	1035	[illegible]	8/23/02	9AM

CH2MHILL
Applied Sciences Group

2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

SUBCONTRACT COST DETAIL

Laboratory Information:
STL
5755 8th ST E
Tacoma, WA 98427
Phone: (253) 922-2374

Sample Batch Information:
Client: Portland Harbor
CH2M HILL Applied Sciences Group Reference: 8008
Invoice: A02-1580
Invoice Date: 08/22/02

Billing Information:
Reference Project Number: 163160.AS.OS

Qty	Description	Trans. Date	Unit Cost	Subtotal
4	ICP-MS (11 metals)-Performed by STL	08/22/2002	$194.00	$776.00
4	Sample Digestion (ICP-MS) Performed by STL	08/22/2002	$10.40	$41.60
4	Pesticides-Performed by STL	08/22/2002	$156.00	$624.00
4	SVOCs--Performed by STL	08/22/2002	$315.00	$1,260.00
4	Chlorinated Herbicides-Performed by STL	08/22/2002	$190.00	$760.00
3	Particle Size--Performed by STL	08/22/2002	$127.00	$381.00

TOTAL SUBCONTRACT AMOUNT: **$3,842.60**

CH2MHILL
Applied Sciences Group

Sample Receipt Exception Report

Sample Batch Number: 8008 **Client/Project** Portland Harbor

The following exceptions were noted:		
		Comments (write number of exception description and the impacted sample numbers)
	1. No custody seal as required by project	
	2. No chain-of-custody provided	
	3. Analysis, description, date of collection not provided	
	4. Samples broken or leaking on reciept.	
	5. Temperature of samples inappropriate for analysis requested	
	6. Container inappropriate for analysis requested	
	7. Inadequate sample volume.	
	8. Preservation inappropriate for analysis requested	
	9. Samples received out of holding time for analysis requrested	
	10. Discrepancies between COC form and container labels.	
X	11. Other.	For sample PP011808., MSD requested but no MS. Per project chemist, add MS for all analyses except grain size.

ACTION TAKEN:

Originator: Kathy McKinley Date: 8/26/02

Client was notified on: (Date/Time) 8/26/02 Client Contact: Scott Echols/CVO

Also notify SPL - Katie Dennis of addition

8/21/02 1415 PP011808MS 8008-05

Client Services:

CH2M HILL
Applied Sciences Laboratory

2300 NW Walnut Blvd., Corvallis, OR 97330-3538
P.O. Box 428, Corvallis, OR 97339-0428

Tel 541.752.4271
Fax 541.752.0276

PERCENT SOLIDS DATA

Sample Receiving Login

Full Client Name	**CH2M Hill**
Work Order	**108164**
Date Received	**8/23/02**

Individual Sample Information

SAS Lab ID	Sample No.	Client Sample ID	Date Sampled	**% Solid**	Sample+Tin	Final Wt.	Sample Wt.
108164-1	1	PP011806	8/21/02	67.59	10.4939	7.3261	9.7739
108164-2	2	PP011807	8/21/02	76.13	9.136	7.127	8.4171
108164-3	3	PP011808	8/21/02	77.77	12.7947	10.1118	12.0685

DATA DELIVERABLES

SEMIVOLATILE DATA PACKAGE

SAMPLE DATA

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00450.D Vial: 0
Acq On : 03 Sep 2002 16:28 Operator:
Sample : 108164-1 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 04 12:30:30 2002 Quant Results File: SV5-082902.RES

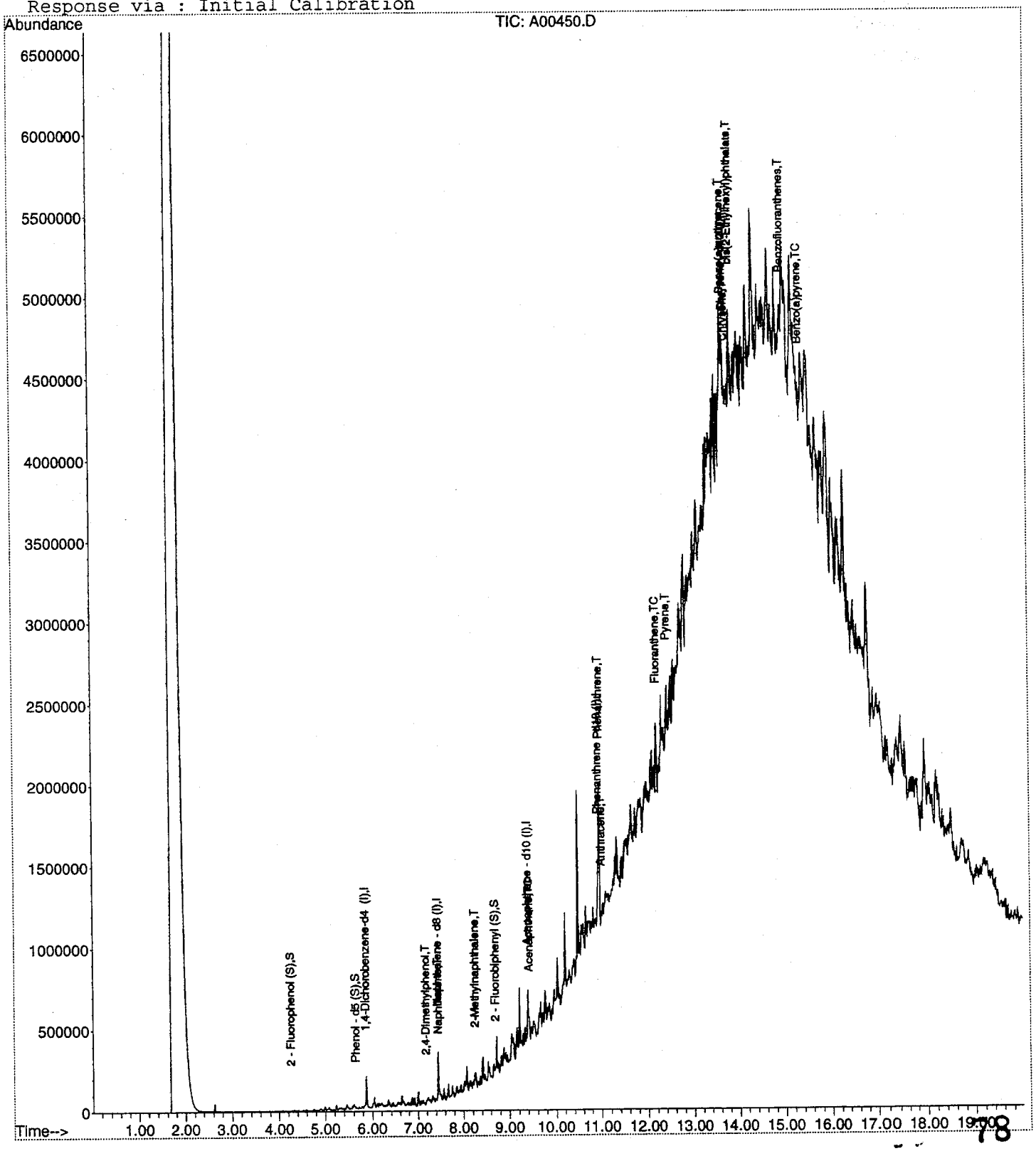
Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:55:04 2002
Response via : Initial Calibration
DataAcq Meth :

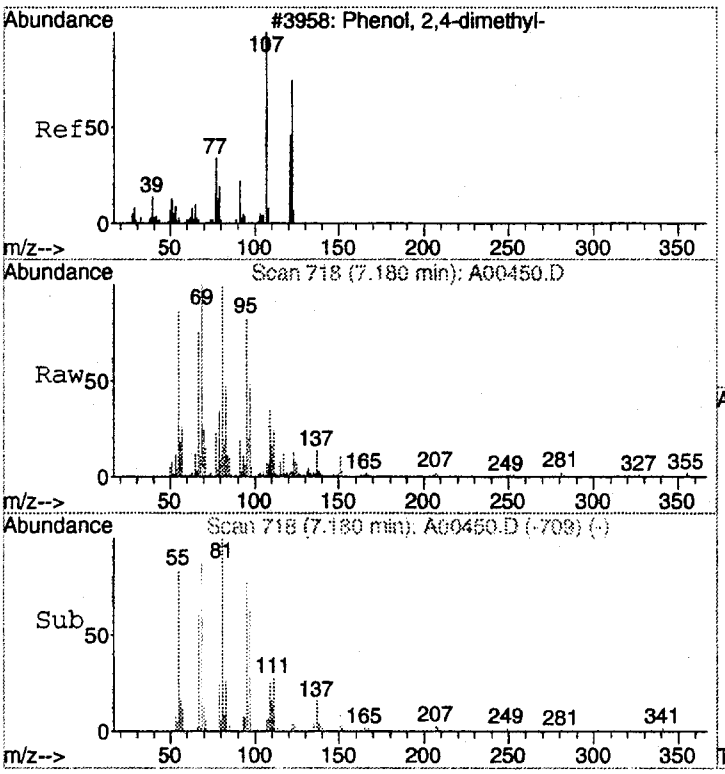
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.87	150	54847	1000.00 ul/l	0.01
22) Naphthalene - d8 (I)	7.45	136	156801	1000.00 ug/L	0.02
38) Acenaphthene - d10 (I)	9.40	162	122831	1000.00 ug/L	0.03
62) Phenanthrene - d10 (I)	10.94	188	237873	1000.00 ug/L	0.03
80) Chrysene - d12 (I)	13.73	240	267680	1000.00 ul/l	0.06
86) Perylene - d12 (I)	15.44	264	398114	1000.00 ug/L	0.10
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.27	112	1093	26.81 ug/L	0.01
7) Phenol - d5 (S)	5.66	99	1950	39.90 ug/L	0.10
23) Nitrobenzene - d5 (S)	6.64	82	3410	67.86 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.70	172	4730	28.25 ug/L	0.03
65) 2,4,6 - Tribromophenol (S)	10.24	330	1227	23.14 ug/L	0.02
79) p - Terphenyl - d14 (S)	12.64	244	24187	90.75 ug/L	0.05
Target Compounds					Qvalue
27) 2,4-Dimethylphenol	7.18	107	791	11.68 ug/L	73
32) Naphthalene	7.47	128	15321	84.25 ug/L	69
36) 2-Methylnaphthalene	8.26	141	11535m	93.34 ug/L	
51) Acenaphthene	9.43	153	18709	120.42 ug/L	77
71) Phenanthrene	10.96	178	126953	441.95 ug/L	81
72) Anthracene	11.01	178	29982	107.95 ug/L	3
76) Fluoranthene	12.21	202	131762	468.73 ug/L	73
77) Pyrene	12.44	202	142391	502.66 ug/L	98
82) Benzo(a)anthracene	13.70	228	81351m	257.83 ug/L	
84) Chrysene	13.75	228	79903m	266.47 ug/L	
85) bis(2-Ethylhexyl)phthalate	13.87	149	665163m	1685.99 ug/L	
88) Benzofluoranthenes	14.99	252	121542	252.69 ug/L	27
89) Benzo(a)pyrene	15.36	252	71656m	161.59 ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00450.D Vial: 0
Acq On : 03 Sep 2002 16:28 Operator:
Sample : 108164-1 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 4 12:33 2002 Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:55:04 2002
Response via : Initial Calibration

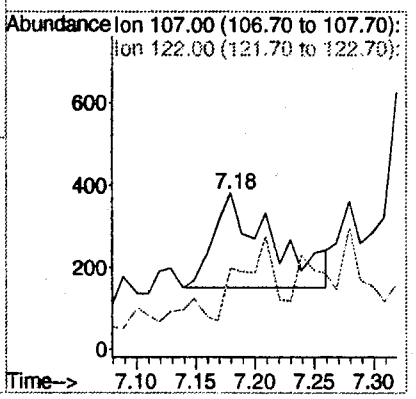


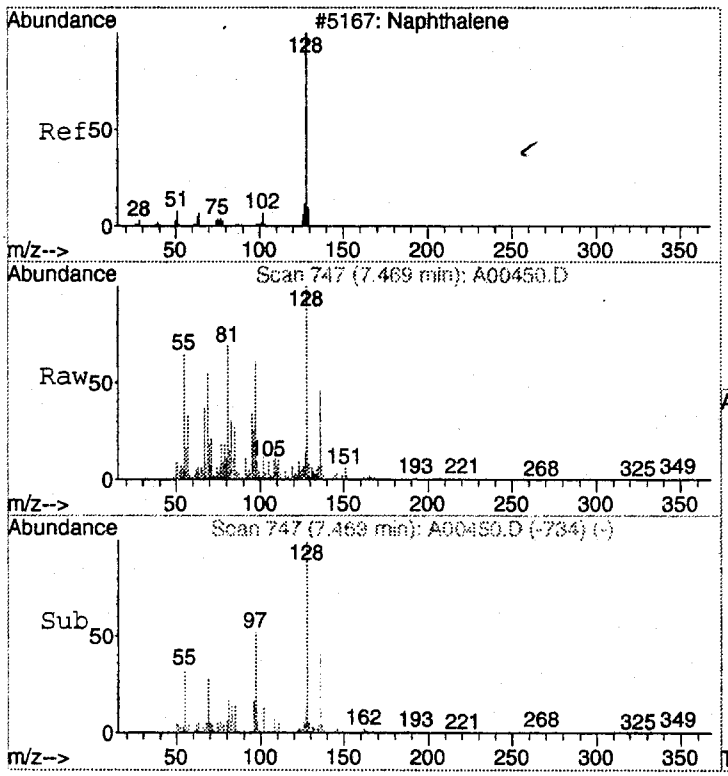


#27
2,4-Dimethylphenol
Concen: 11.68 ug/L
RT: 7.18 min Scan# 718
Delta R.T. -0.01 min
Lab File: A00450.D
Acq: 03 Sep 2002 16:28

Tgt Ion:107 Resp: 791

Ion	Ratio	Lower	Upper
107	100		
122	86.7	25.4	105.4

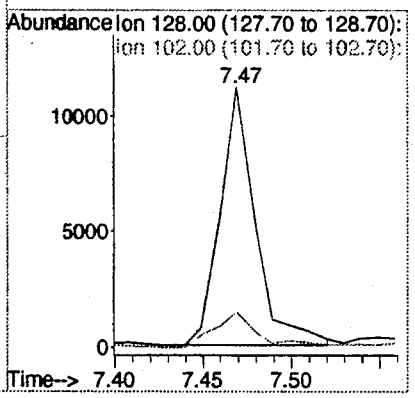


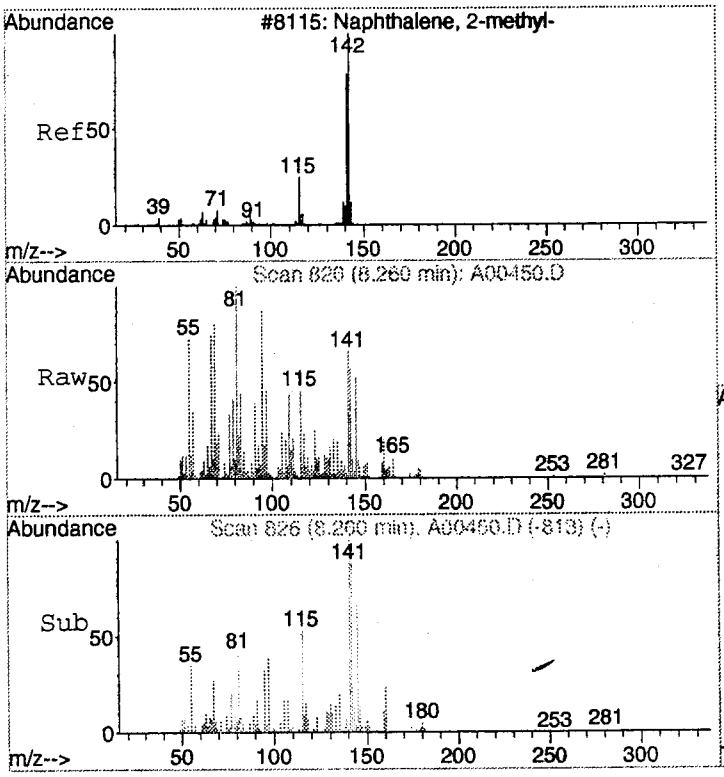


#32
Naphthalene
Concen: 84.25 ug/L
RT: 7.47 min Scan# 747
Delta R.T. 0.03 min
Lab File: A00450.D
Acq: 03 Sep 2002 16:28

Tgt Ion:128 Resp: 15321

Ion	Ratio	Lower	Upper
128	100		
102	17.8	0.0	47.0

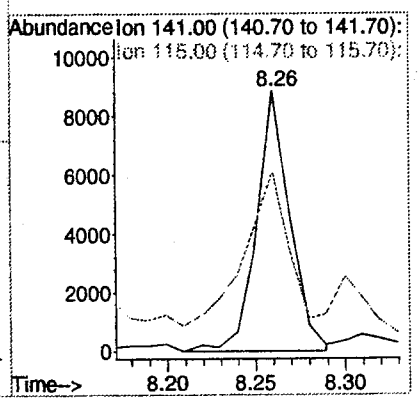


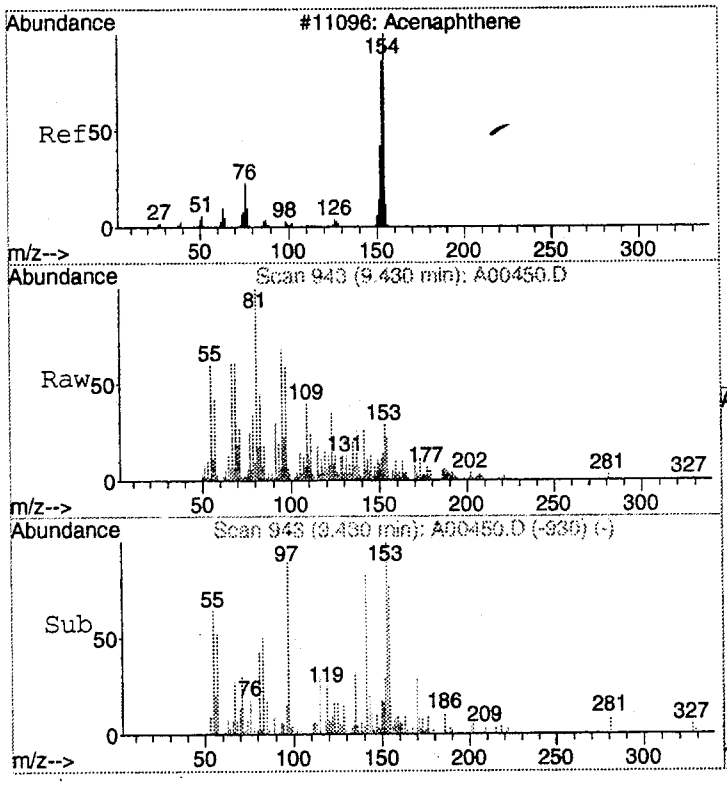


#36
2-Methylnaphthalene
Concen: 93.34 ug/L m
RT: 8.26 min Scan# 826
Delta R.T. 0.03 min
Lab File: A00450.D
Acq: 03 Sep 2002 16:28

Tgt Ion:141 Resp: 11535

Ion	Ratio	Lower	Upper
141	100		
115	81.8	0.0	71.8#

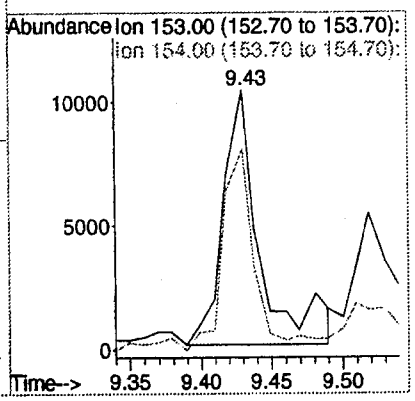


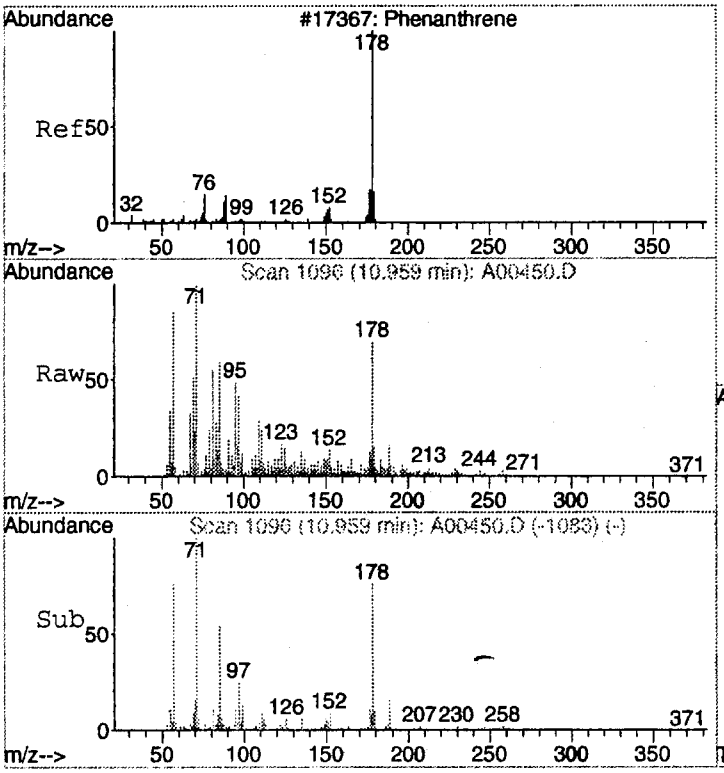


#51
Acenaphthene
Concen: 120.42 ug/L
RT: 9.43 min Scan# 943
Delta R.T. 0.03 min
Lab File: A00450.D
Acq: 03 Sep 2002 16:28

Tgt Ion:153 Resp: 18709

Ion	Ratio	Lower	Upper
153	100		
154	62.3	43.3	123.3

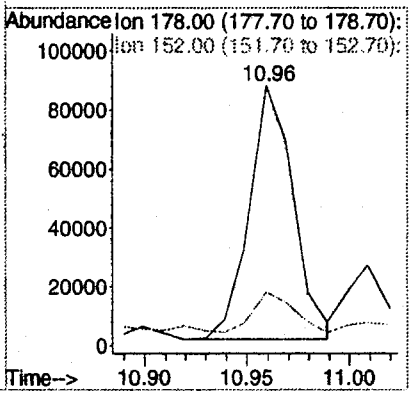


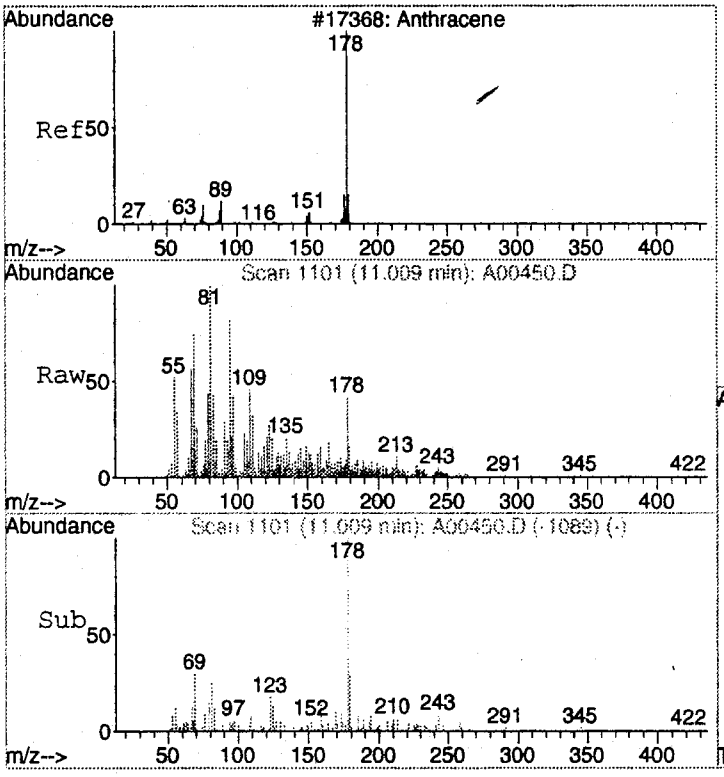


#71
Phenanthrene
Concen: 441.95 ug/L
RT: 10.96 min Scan# 1096
Delta R.T. 0.03 min
Lab File: A00450.D
Acq: 03 Sep 2002 16:28

Tgt Ion:178 Resp: 126953

Ion	Ratio	Lower	Upper
178	100		
152	14.5	0.0	47.9

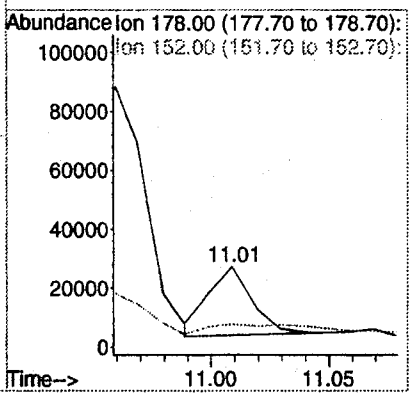


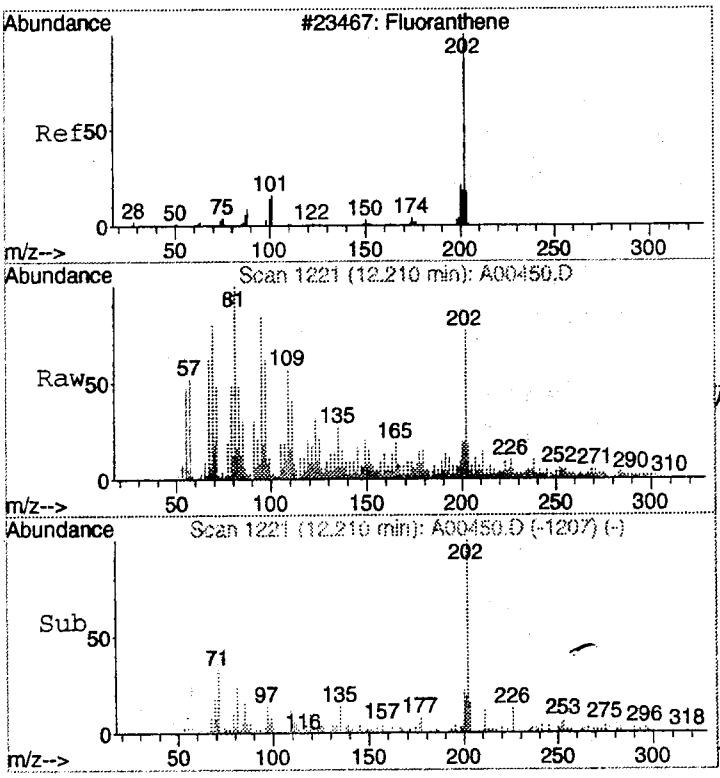


#72
Anthracene
Concen: 107.95 ug/L
RT: 11.01 min Scan# 1101
Delta R.T. 0.02 min
Lab File: A00450.D
Acq: 03 Sep 2002 16:28

Tgt Ion:178 Resp: 29982

Ion	Ratio	Lower	Upper
178	100		
152	38.9	0.0	46.0

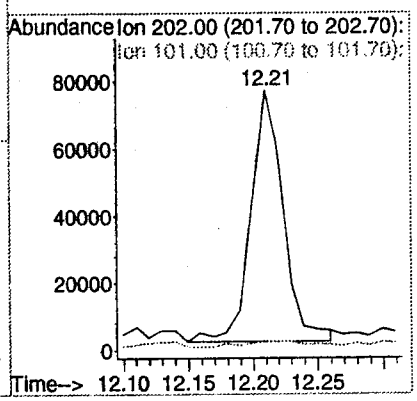


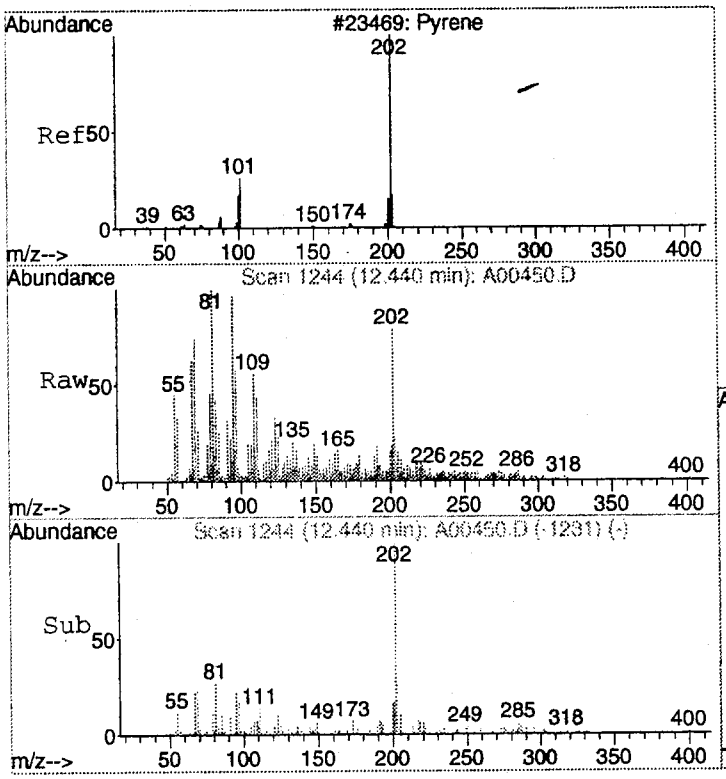


#76
Fluoranthene
Concen: 468.73 ug/L
RT: 12.21 min Scan# 1221
Delta R.T. 0.04 min
Lab File: A00450.D
Acq: 03 Sep 2002 16:28

Tgt Ion:202 Resp: 131762

Ion	Ratio	Lower	Upper
202	100		
101	4.7	0.0	56.4

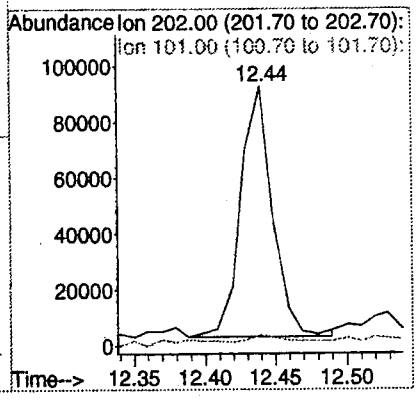


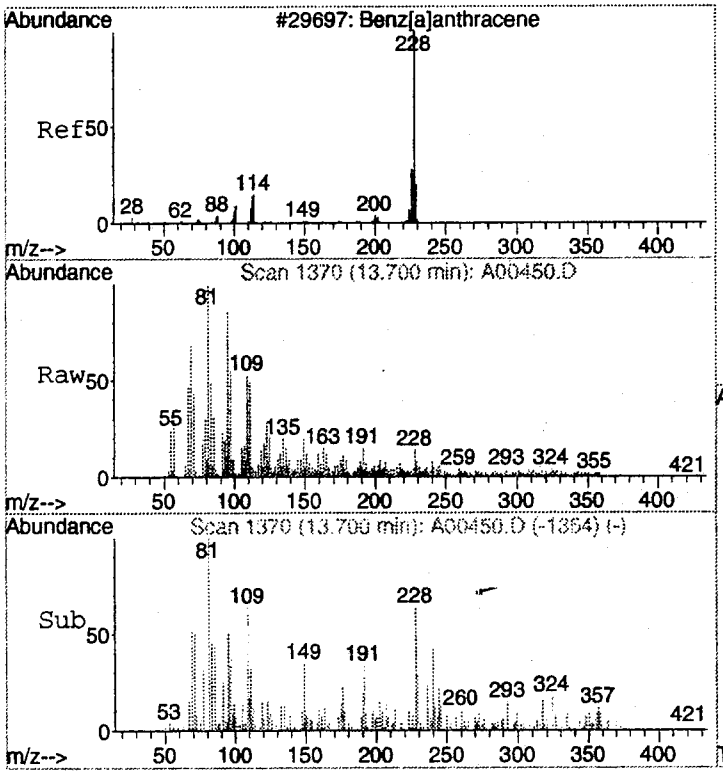


#77
Pyrene
Concen: 502.66 ug/L
RT: 12.44 min Scan# 1244
Delta R.T. 0.03 min
Lab File: A00450.D
Acq: 03 Sep 2002 16:28

Tgt Ion:202 Resp: 142391

Ion	Ratio	Lower	Upper
202	100		
101	11.2	0.0	50.6

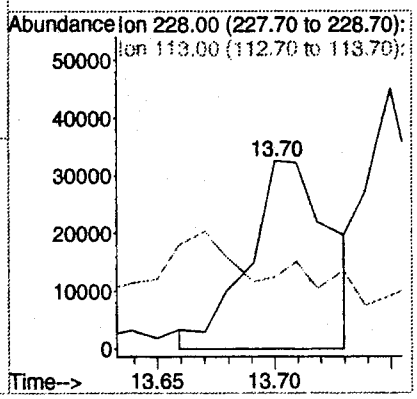


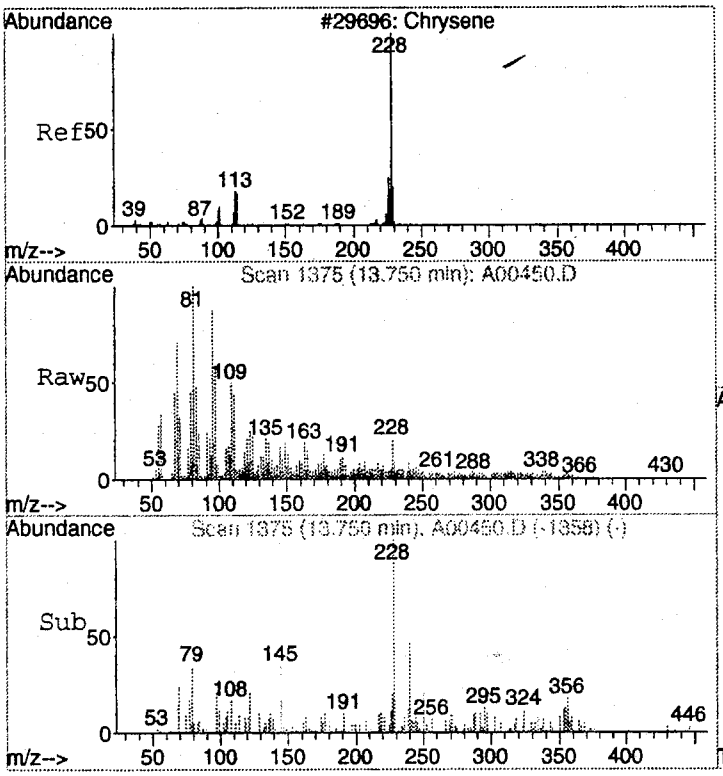


#82
Benzo(a)anthracene
Concen: 257.83 ug/L m
RT: 13.70 min Scan# 1370
Delta R.T. 0.06 min
Lab File: A00450.D
Acq: 03 Sep 2002 16:28

Tgt Ion:228 Resp: 81351

Ion	Ratio	Lower	Upper
228	100		
113	5.4	0.0	51.2

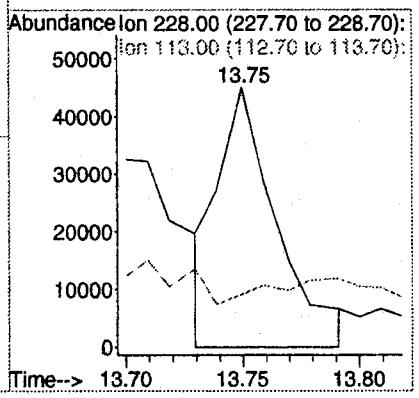


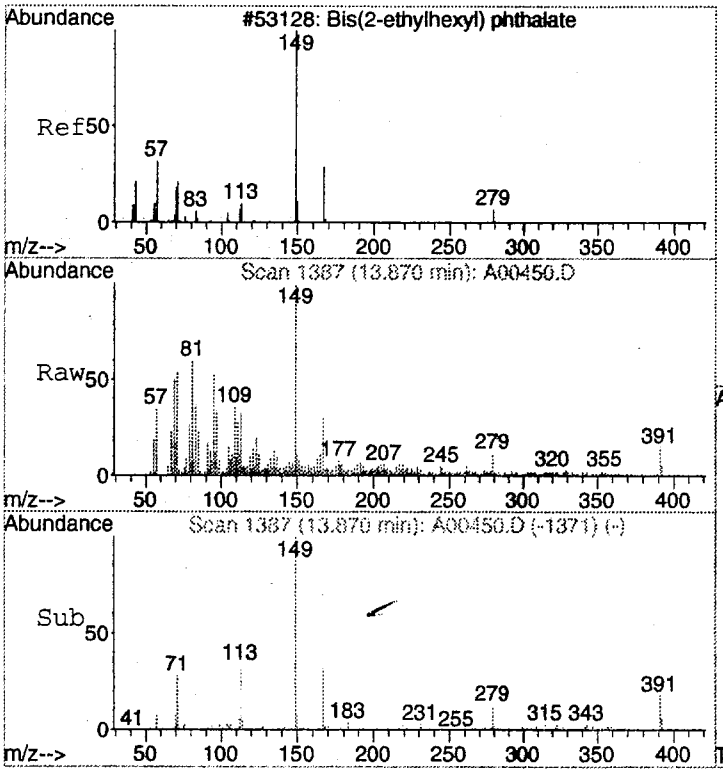


#84
Chrysene
Concen: 266.47 ug/L m
RT: 13.75 min Scan# 1375
Delta R.T. 0.07 min
Lab File: A00450.D
Acq: 03 Sep 2002 16:28

Tgt Ion:228 Resp: 79903

Ion	Ratio	Lower	Upper
228	100		
113	12.1	0.0	56.4

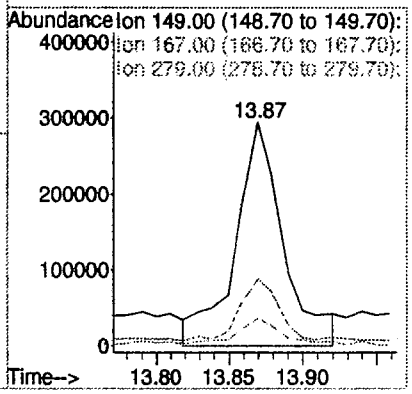


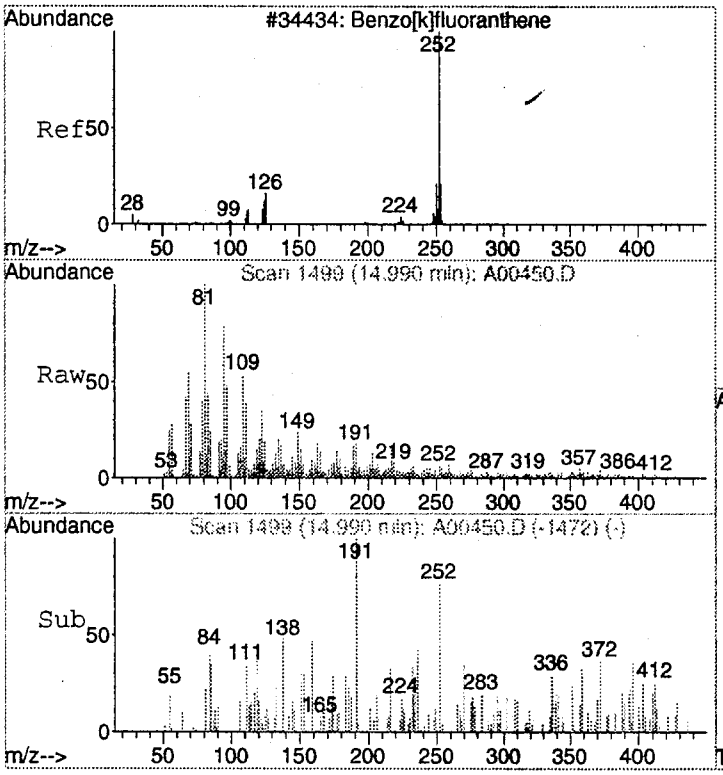


#85
bis(2-Ethylhexyl)phthalate
Concen: 1685.99 ug/L m
RT: 13.87 min Scan# 1387
Delta R.T. 0.06 min
Lab File: A00450.D
Acq: 03 Sep 2002 16:28

Tgt Ion:149 Resp: 665163

Ion	Ratio	Lower	Upper
149	100		
167	0.0	0.0	68.8
279	0.0	0.0	46.8

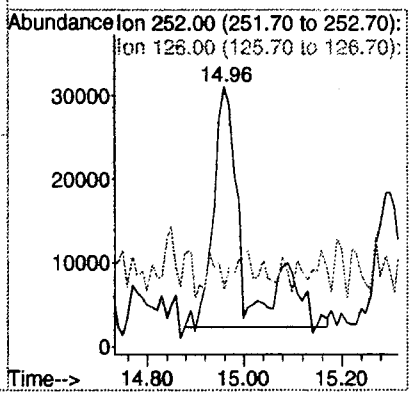


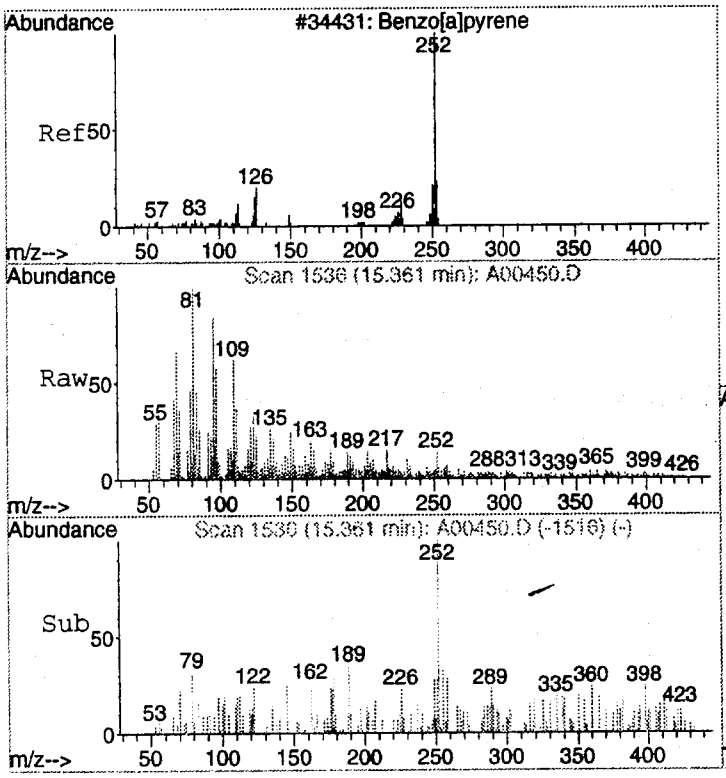


#88
Benzofluoranthenes
Concen: 252.69 ug/L
RT: 14.99 min Scan# 1499
Delta R.T. 0.10 min
Lab File: A00450.D
Acq: 03 Sep 2002 16:28

Tgt Ion:252 Resp: 121542

Ion	Ratio	Lower	Upper
252	100		
126	48.0	0.0	56.5

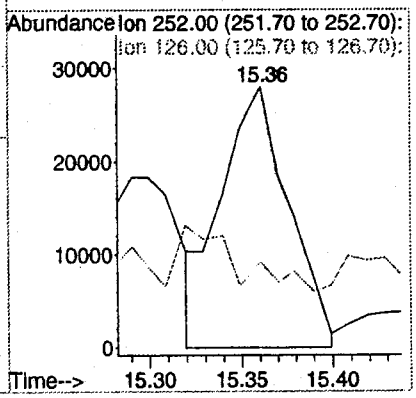




#89
Benzo(a)pyrene
Concen: 161.59 ug/L m
RT: 15.36 min Scan# 1536
Delta R.T. 0.09 min
Lab File: A00450.D
Acq: 03 Sep 2002 16:28

Tgt Ion:252 Resp: 71656

Ion	Ratio	Lower	Upper
252	100		
126	22.0	0.0	59.8



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00451.D Vial: 0
Acq On : 03 Sep 2002 16:54 Operator:
Sample : 108164-2 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 04 12:34:25 2002 Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 12:34:06 2002
Response via : Initial Calibration
DataAcq Meth :

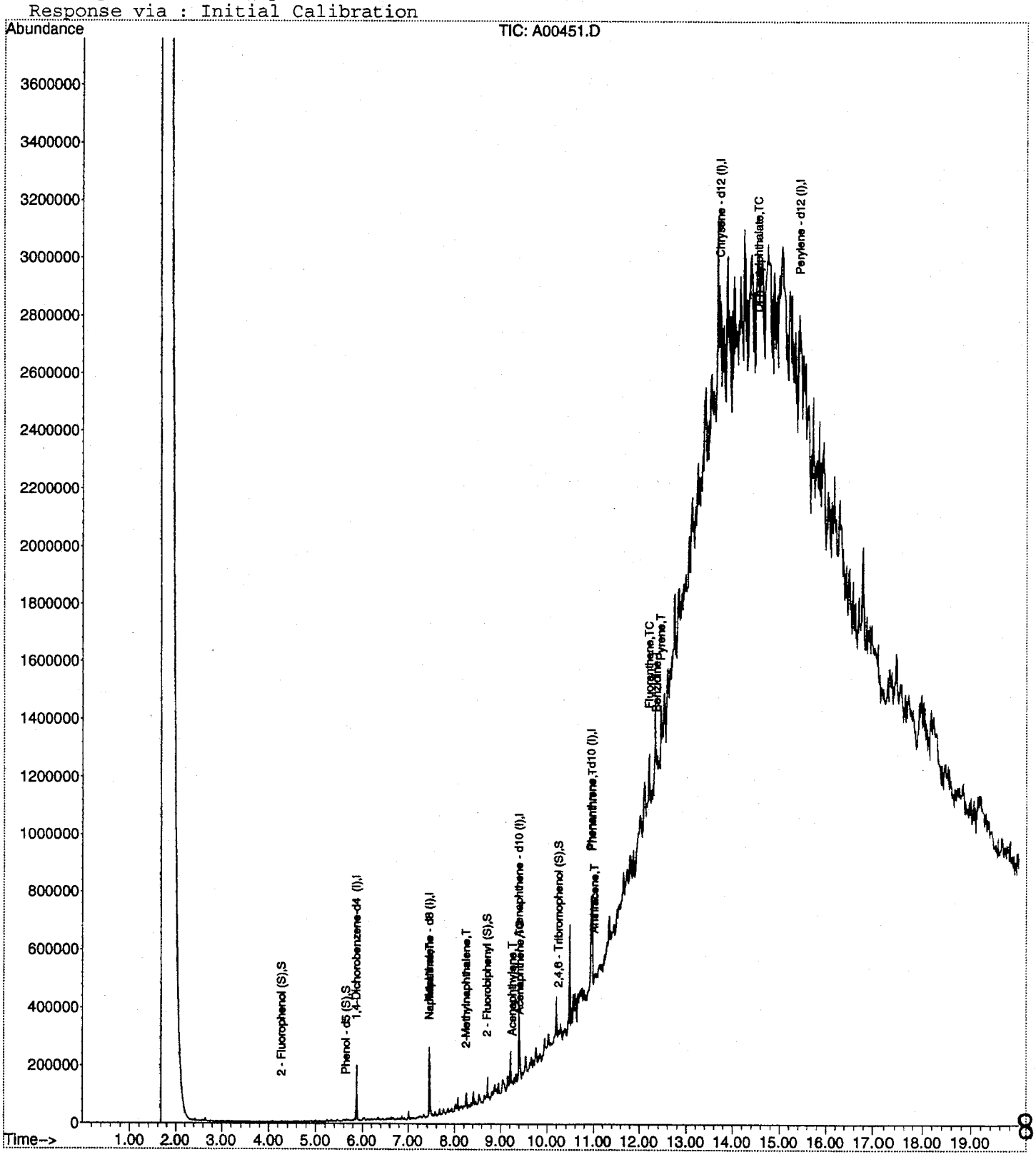
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.88	150	50005	1000.00	ul/l	0.02
22) Naphthalene - d8 (I)	7.45	136	151395	1000.00	ug/L	0.02
38) Acenaphthene - d10 (I)	9.40	162	122623	1000.00	ug/L	0.03
62) Phenanthrene - d10 (I)	10.94	188	211584	1000.00	ug/L	0.03
80) Chrysene - d12 (I)	13.72	240	236731	1000.00	ul/l	0.05
86) Perylene - d12 (I)	15.42	264	301987	1000.00	ug/L	0.08
System Monitoring Compounds						
4) 2 - Fluorophenol (S)	4.28	112	992	26.69	ug/L	0.02
7) Phenol - d5 (S)	5.66	99	1747	39.21	ug/L	0.10
23) Nitrobenzene - d5 (S)	6.64	82	1550	31.95	ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.71	172	4235	25.34	ug/L	0.04
65) 2,4,6 - Tribromophenol (S)	10.24	330	1614	34.22	ug/L	0.02
79) p - Terphenyl - d14 (S)	12.64	244	14392	60.71	ug/L	0.05
Target Compounds						Qvalue
32) Naphthalene	7.47	128	5115	29.13	ug/L	45
36) 2-Methylnaphthalene	8.26	141	16423	137.64	ug/L	55
48) Acenaphthylene	9.25	152	2427	10.49	ug/L	28
51) Acenaphthene	9.43	153	4570	29.47	ug/L	74
71) Phenanthrene	10.96	178	28122m	110.06	ug/L	
72) Anthracene	11.01	178	5997	24.28	ug/L	99
76) Fluoranthene	12.21	202	42142	168.54	ug/L	83
77) Pyrene	12.44	202	40761	161.77	ug/L	95
78) Benzidine	12.34	184	4781	123.13	ug/L	100
87) Di-n-octylphthalate	14.54	149	77750	124.07	ug/L	1

(#) = qualifier out of range (m) = manual integration (+) = signals summed
A00451.D SV5-082902.M Thu Sep 05 07:34:34 2002

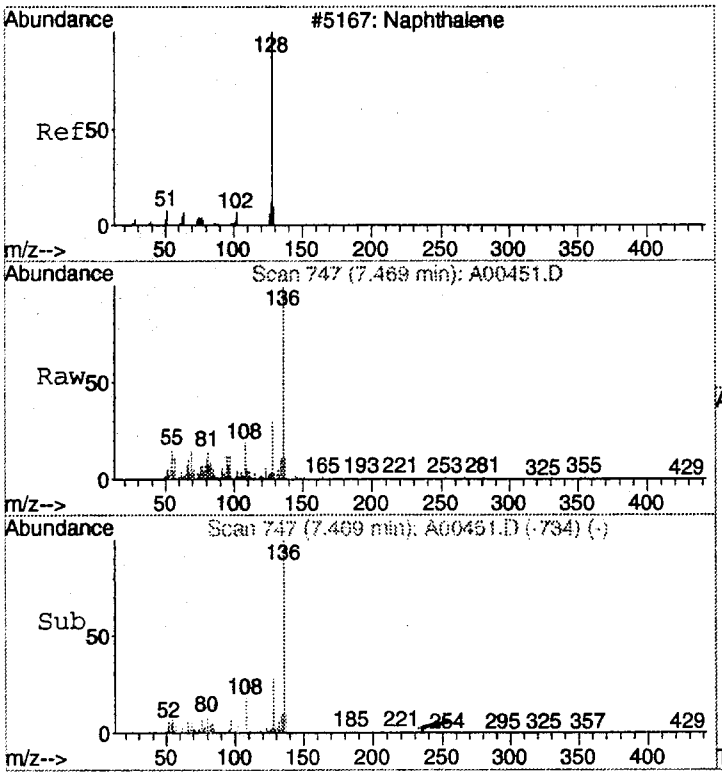
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00451.D Vial: 0
Acq On : 03 Sep 2002 16:54 Operator:
Sample : 108164-2 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 4 12:36 2002 Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 12:34:06 2002
Response via : Initial Calibration



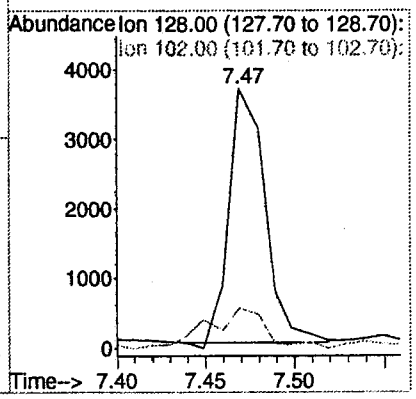
87

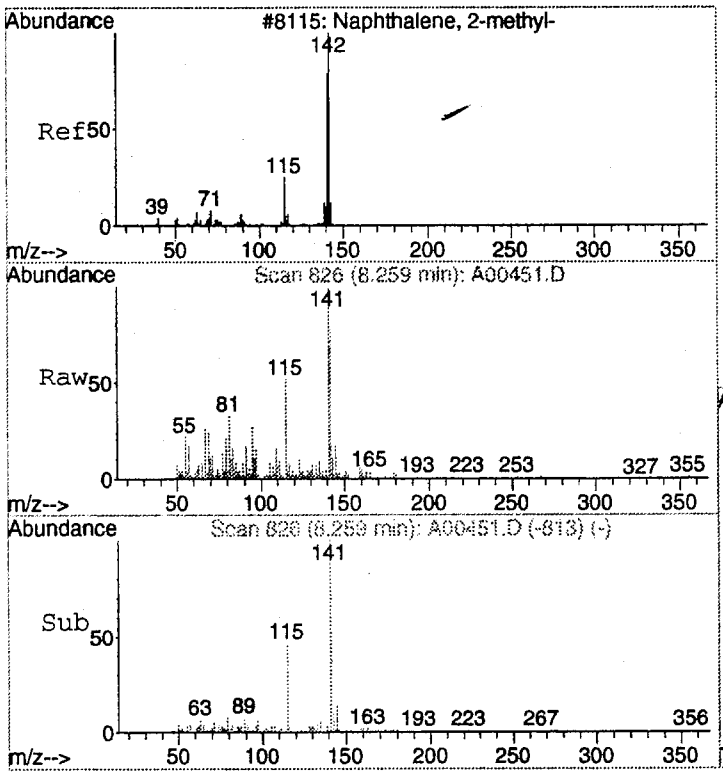


#32
Naphthalene
Concen: 29.13 ug/L
RT: 7.47 min Scan# 747
Delta R.T. 0.03 min
Lab File: A00451.D
Acq: 03 Sep 2002 16:54

Tgt Ion:128 Resp: 5115

Ion	Ratio	Lower	Upper
128	100		
102	26.1	0.0	47.0

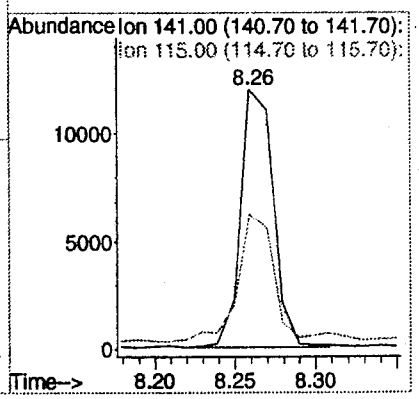


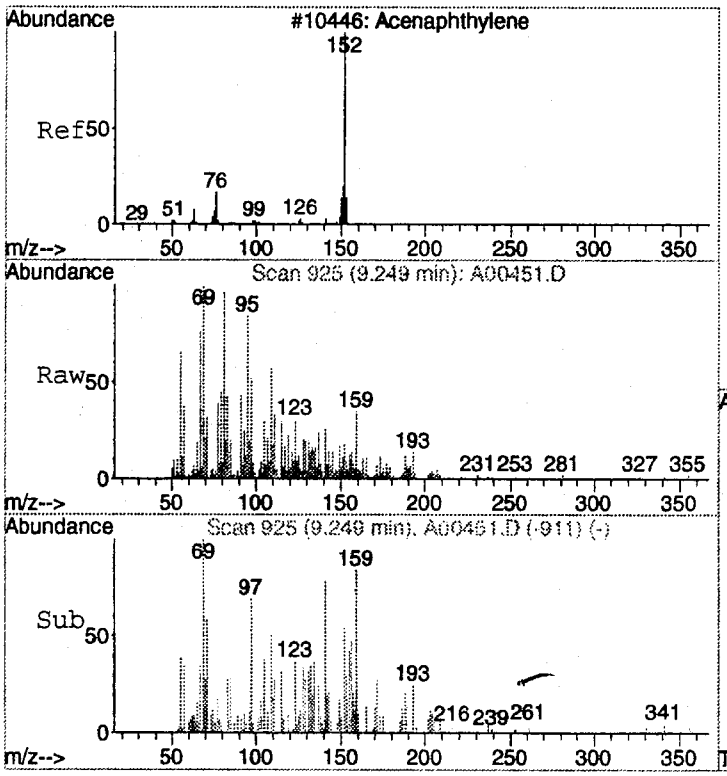


#36
2-Methylnaphthalene
Concen: 137.64 ug/L
RT: 8.26 min Scan# 826
Delta R.T. 0.03 min
Lab File: A00451.D
Acq: 03 Sep 2002 16:54

Tgt Ion:141 Resp: 16423

Ion	Ratio	Lower	Upper
141	100		
115	56.8	0.0	71.8

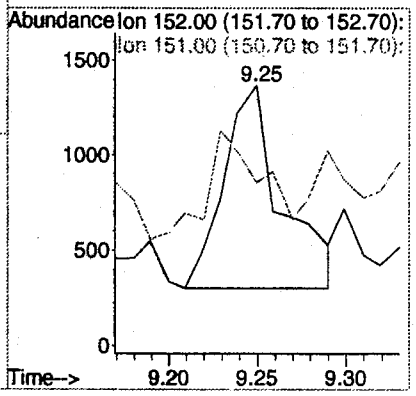


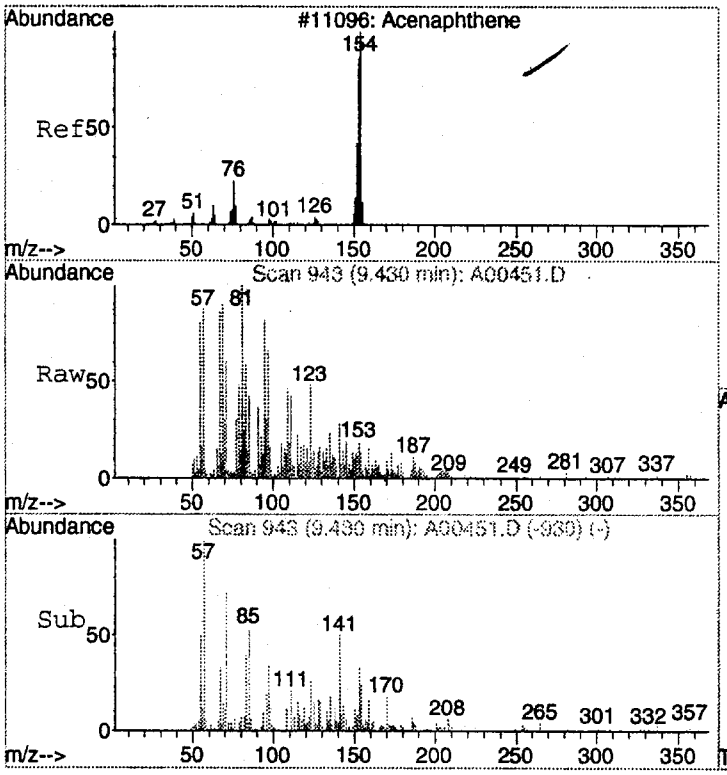


#48
Acenaphthylene
Concen: 10.49 ug/L
RT: 9.25 min Scan# 925
Delta R.T. 0.04 min
Lab File: A00451.D
Acq: 03 Sep 2002 16:54

Tgt Ion:152 Resp: 2427

Ion	Ratio	Lower	Upper
152	100		
151	52.7	0.0	59.7

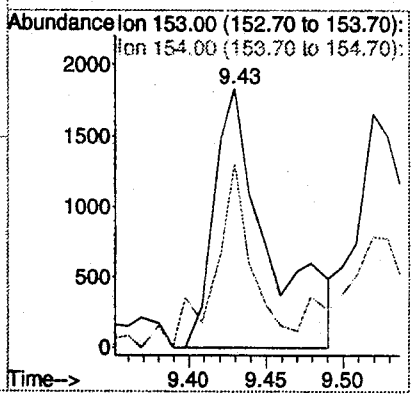


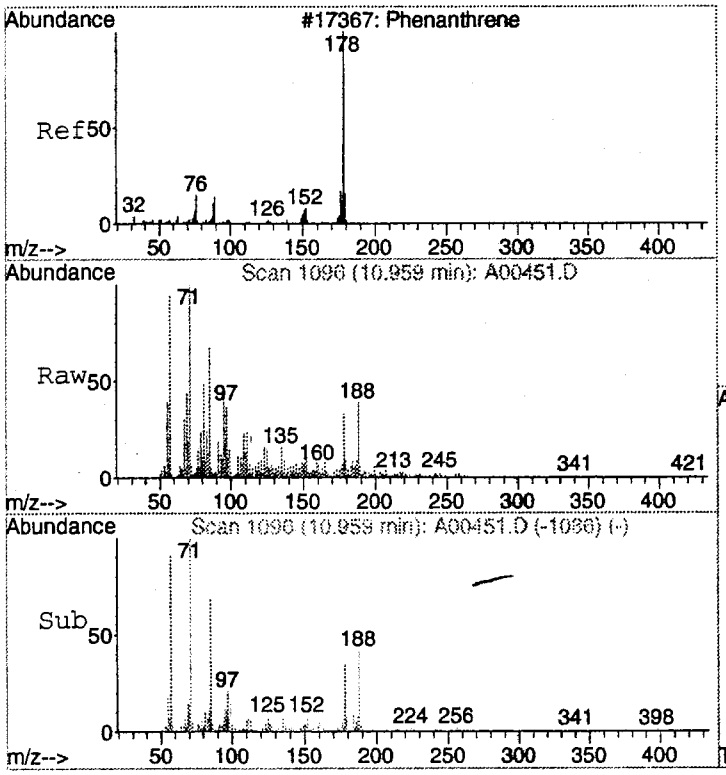


#51
Acenaphthene
Concen: 29.47 ug/L
RT: 9.43 min Scan# 943
Delta R.T. 0.03 min
Lab File: A00451.D
Acq: 03 Sep 2002 16:54

Tgt Ion:153 Resp: 4570

Ion	Ratio	Lower	Upper
153	100		
154	59.4	43.3	123.3

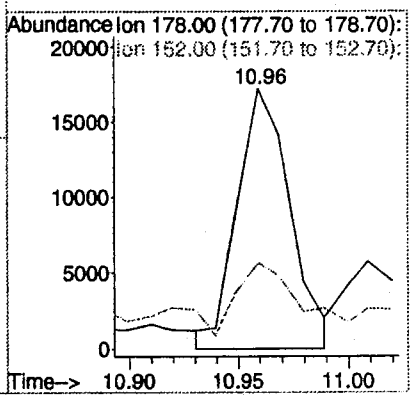


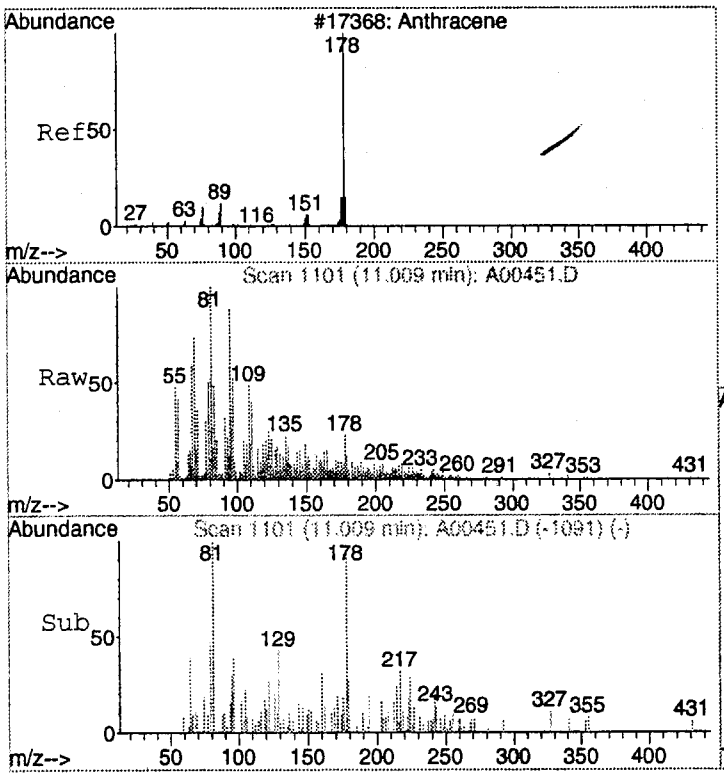


#71
Phenanthrene
Concen: 110.06 ug/L m
RT: 10.96 min Scan# 1096
Delta R.T. 0.00 min
Lab File: A00451.D
Acq: 03 Sep 2002 16:54

Tgt Ion:178 Resp: 28122

Ion	Ratio	Lower	Upper
178	100		
152	7.0	0.0	60.6

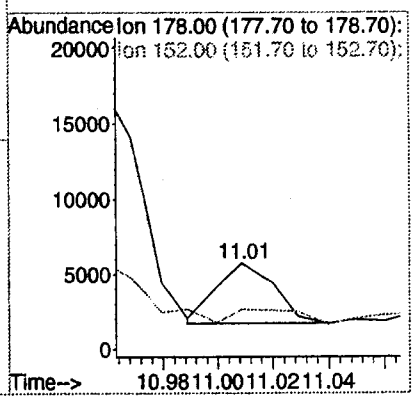


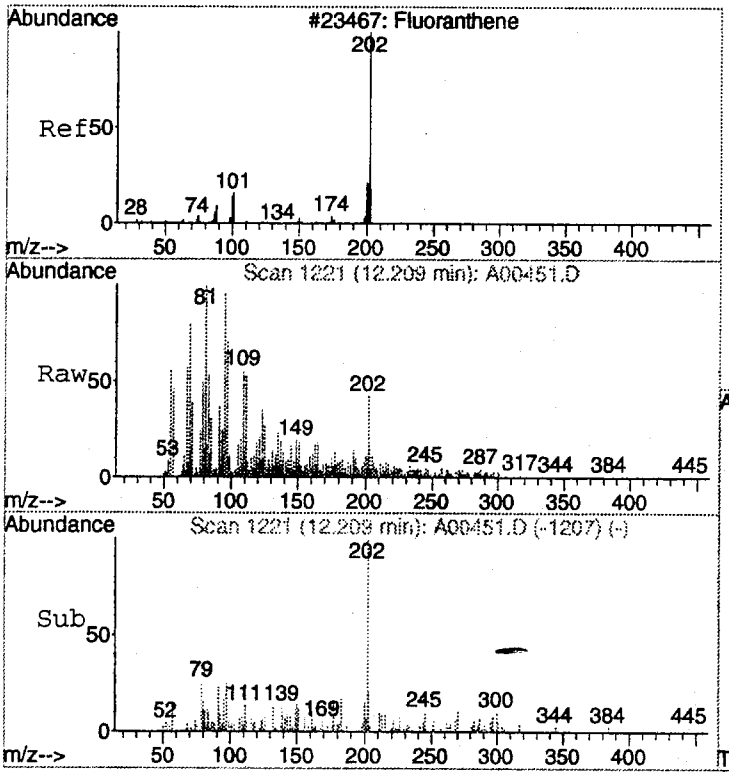


#72
Anthracene
Concen: 24.28 ug/L
RT: 11.01 min Scan# 1101
Delta R.T. 0.00 min
Lab File: A00451.D
Acq: 03 Sep 2002 16:54

Tgt Ion:178 Resp: 5997

Ion	Ratio	Lower	Upper
178	100		
152	28.3	0.0	68.8

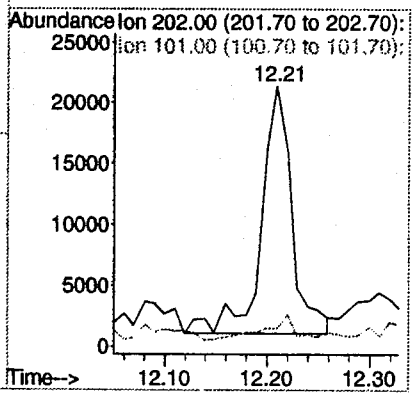


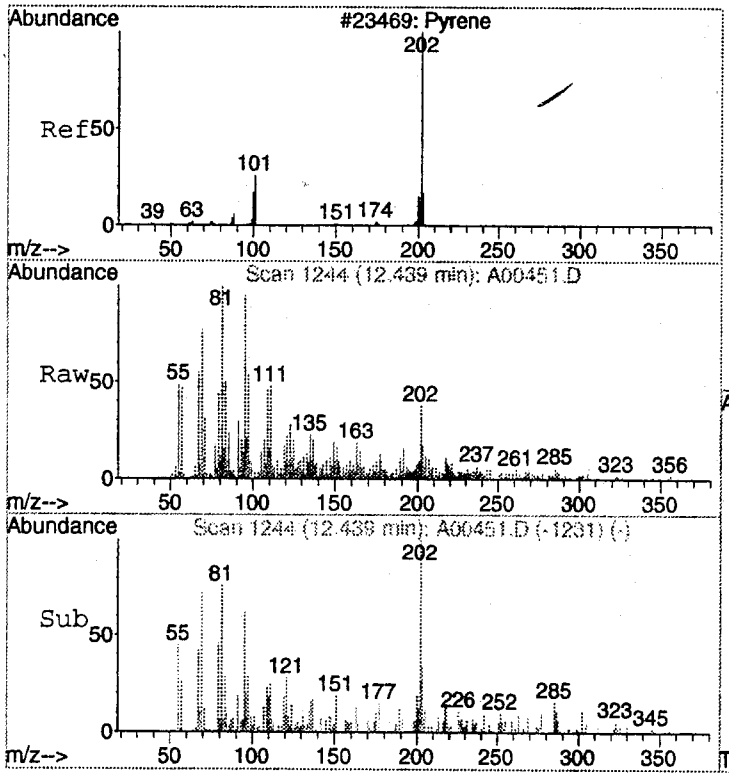


#76
Fluoranthene
Concen: 168.54 ug/L
RT: 12.21 min Scan# 1221
Delta R.T. 0.04 min
Lab File: A00451.D
Acq: 03 Sep 2002 16:54

Tgt Ion:202 Resp: 42142

Ion	Ratio	Lower	Upper
202	100		
101	9.1	0.0	56.4

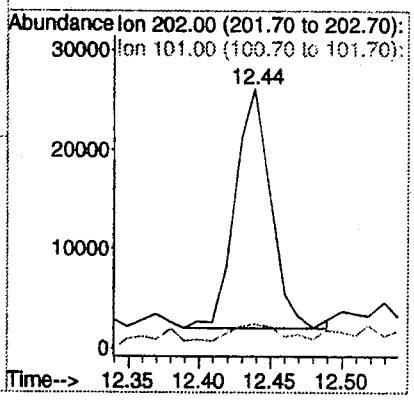


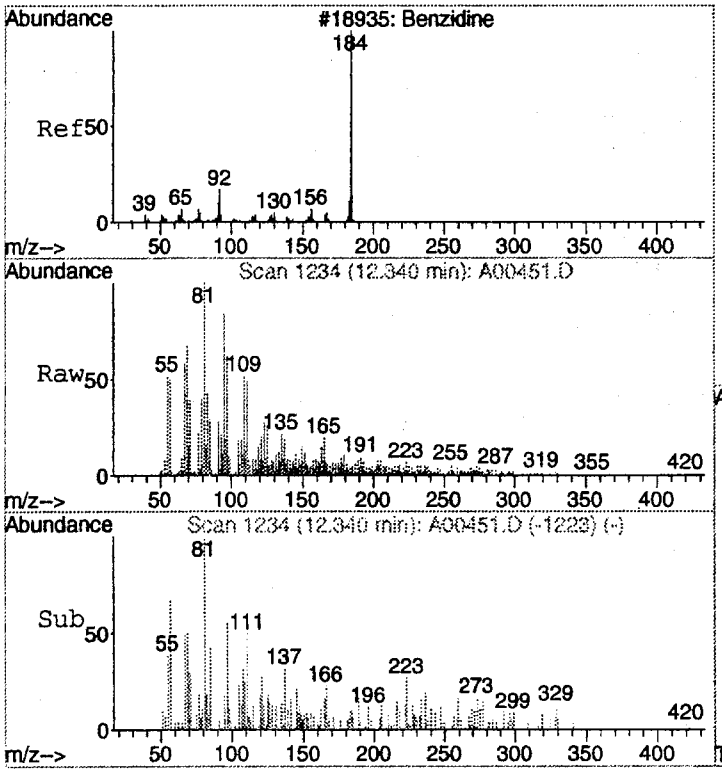


#77
Pyrene
Concen: 161.77 ug/L
RT: 12.44 min Scan# 1244
Delta R.T. 0.03 min
Lab File: A00451.D
Acq: 03 Sep 2002 16:54

Tgt Ion:202 Resp: 40761

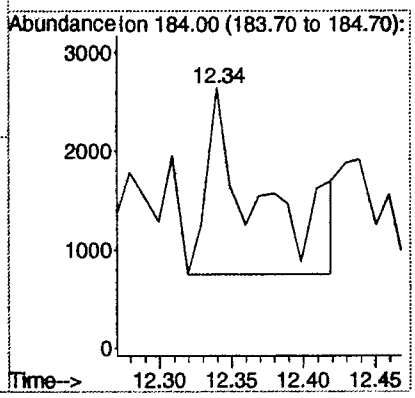
Ion	Ratio	Lower	Upper
202	100		
101	12.5	0.0	50.6

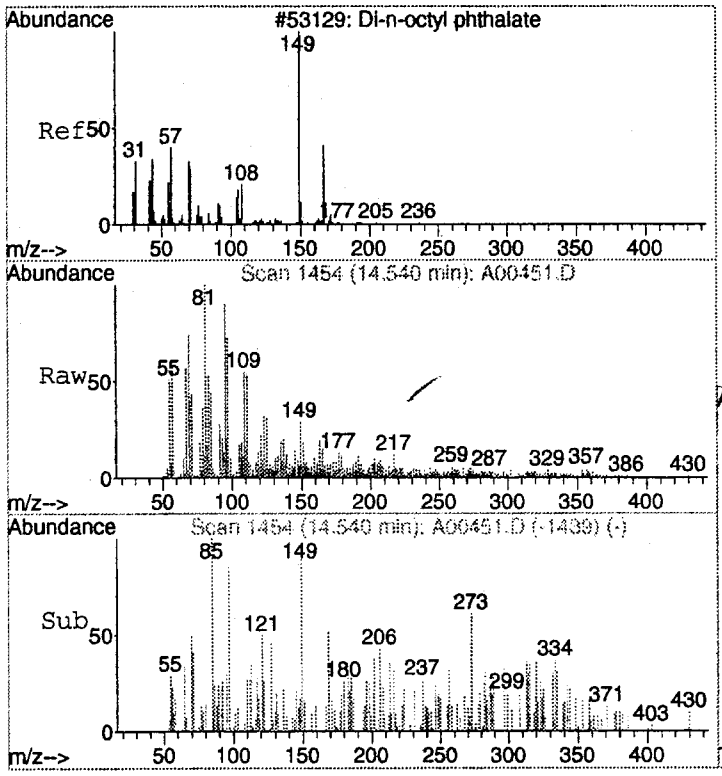




#78
Benzidine
Concen: 123.13 ug/L
RT: 12.34 min Scan# 1234
Delta R.T. 0.01 min
Lab File: A00451.D
Acq: 03 Sep 2002 16:54

Tgt Ion:184 Resp: 4781

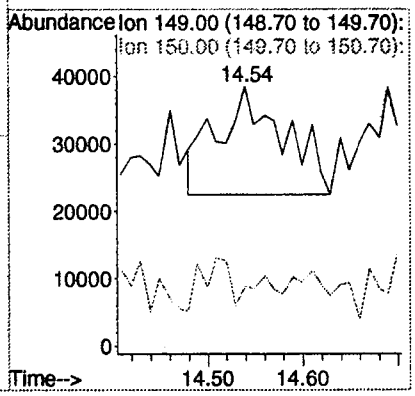




#87
Di-n-octylphthalate
Concen: 124.07 ug/L
RT: 14.54 min Scan# 1454
Delta R.T. 0.05 min
Lab File: A00451.D
Acq: 03 Sep 2002 16:54

Tgt Ion:149 Resp: 77750

Ion	Ratio	Lower	Upper
149	100		
150	50.3	0.0	52.0



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Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00452.D Vial: 0
Acq On : 03 Sep 2002 17:20 Operator:
Sample : 108164-3 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 05 07:34:45 2002 Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 12:34:06 2002
Response via : Initial Calibration
DataAcq Meth :

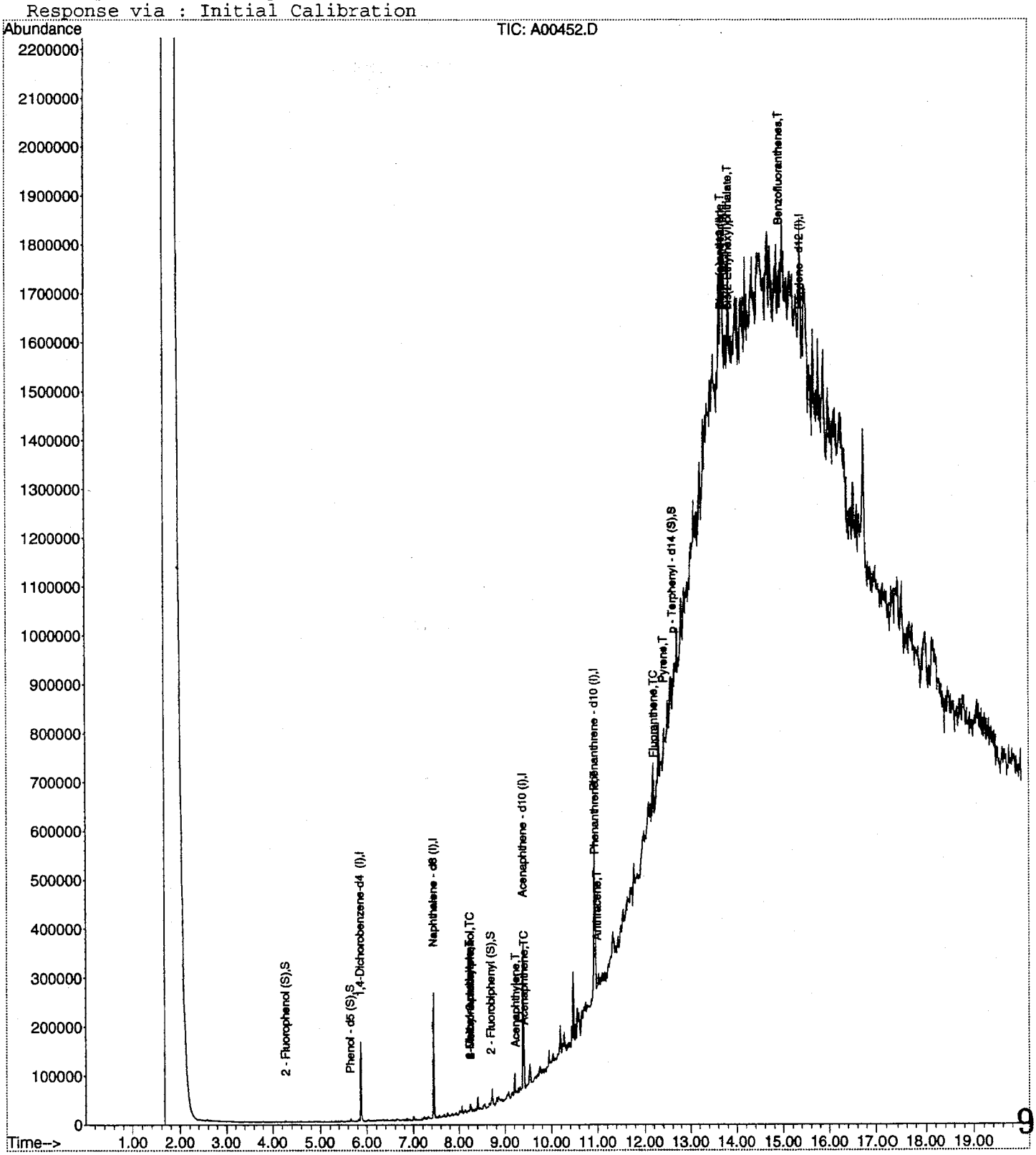
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.87	150	56054	1000.00 ul/l	0.01
22) Naphthalene - d8 (I)	7.45	136	147493	1000.00 ug/L	0.02
38) Acenaphthene - d10 (I)	9.40	162	119093	1000.00 ug/L	0.03
62) Phenanthrene - d10 (I)	10.94	188	214209	1000.00 ug/L	0.03
80) Chrysene - d12 (I)	13.71	240	257225	1000.00 ul/l	0.04
86) Perylene - d12 (I)	15.41	264	274866	1000.00 ug/L	0.07
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.28	112	1125	27.01 ug/L	0.02
7) Phenol - d5 (S)	5.66	99	1622	32.48 ug/L	0.10
23) Nitrobenzene - d5 (S)	6.64	82	1454	30.76 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.70	172	4869	29.99 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.25	330	2165	45.33 ug/L	0.03
79) p - Terphenyl - d14 (S)	12.63	244	15320	63.83 ug/L	0.04
Target Compounds					Qvalue
35) 4-Chloro-3-methylphenol	8.25	107	2589	40.38 ug/L	70
36) 2-Methylnaphthalene	8.26	141	857	7.37 ug/L	44
48) Acenaphthylene	9.24	152	1639	7.30 ug/L	65
51) Acenaphthene	9.43	153	1209	8.03 ug/L	99
71) Phenanthrene	10.96	178	9096m	35.16 ug/L	
72) Anthracene	11.00	178	2122	8.48 ug/L	92
76) Fluoranthene	12.21	202	21545m	85.11 ug/L	
77) Pyrene	12.43	202	22000	86.24 ug/L	67
82) Benzo(a)anthracene	13.69	228	12495	41.21 ug/L	12
85) bis(2-Ethylhexyl)phthalate	13.86	149	89850	237.00 ug/L	86
88) Benzofluoranthenes	14.94	252	22904	68.97 ug/L	33

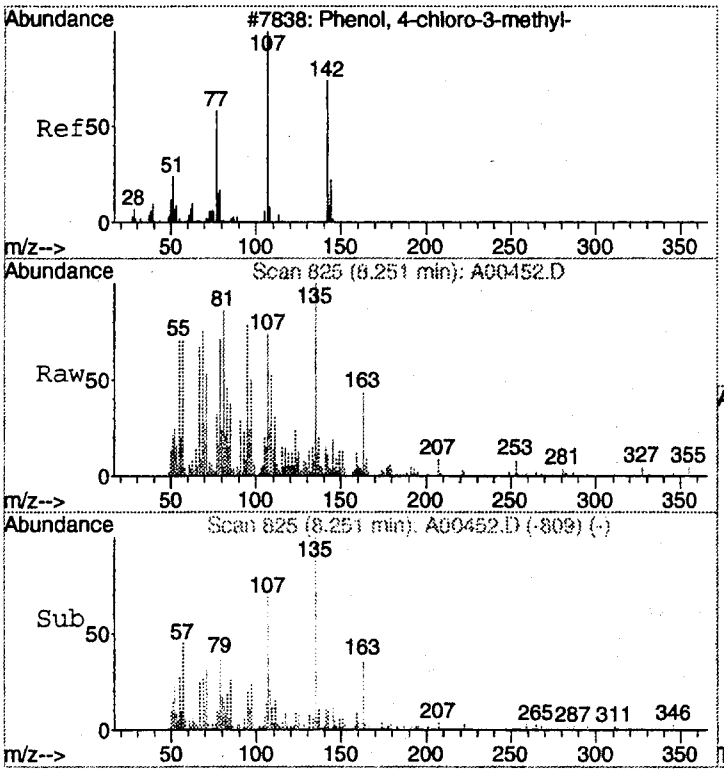
(#) = qualifier out of range (m) = manual integration (+) = signals summed
A00452.D SV5-082902.M Thu Sep 05 07:37:33 2002

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00452.D Vial: 0
Acq On : 03 Sep 2002 17:20 Operator:
Sample : 108164-3 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 5 7:37 2002 Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 12:34:06 2002
Response via : Initial Calibration

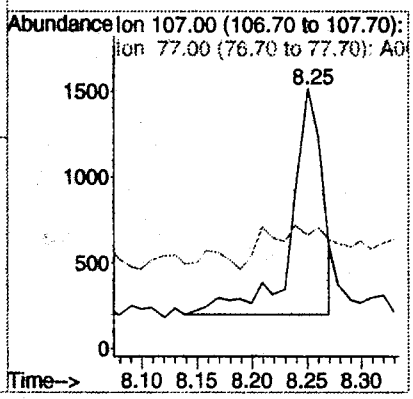


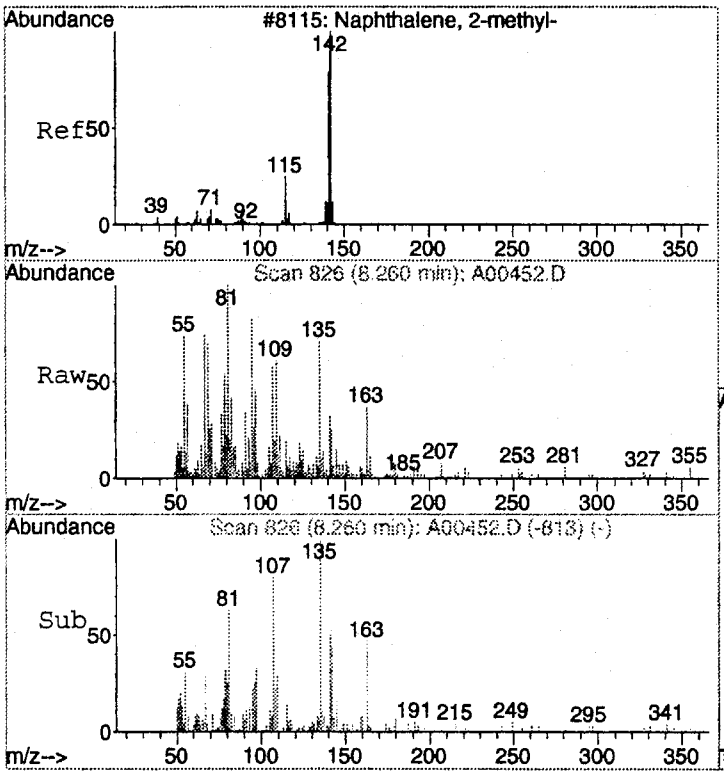


#35
4-Chloro-3-methylphenol
Concen: 40.38 ug/L
RT: 8.25 min Scan# 825
Delta R.T. 0.06 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:107 Resp: 2589

Ion	Ratio	Lower	Upper
107	100		
77	35.9	18.0	98.0

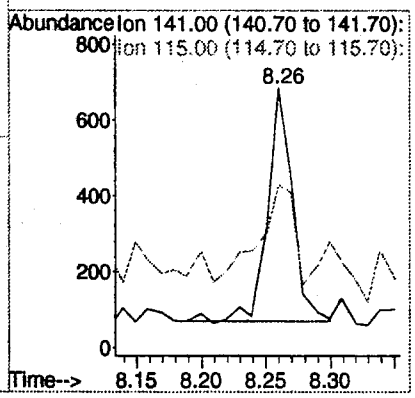


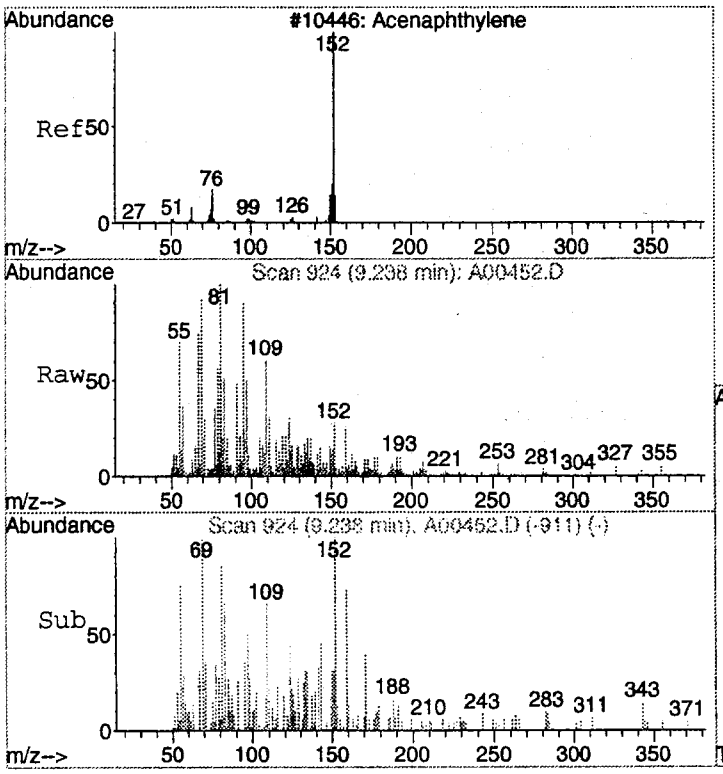


#36
2-Methylnaphthalene
Concen: 7.37 ug/L
RT: 8.26 min Scan# 826
Delta R.T. 0.03 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:141 Resp: 857

Ion	Ratio	Lower	Upper
141	100		
115	62.8	0.0	71.8

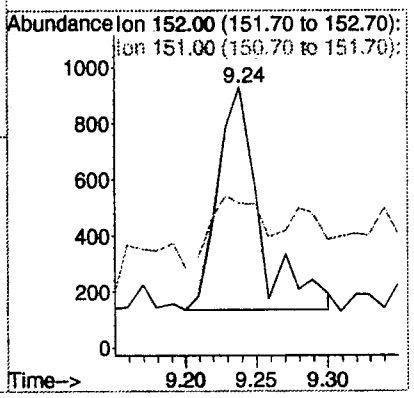


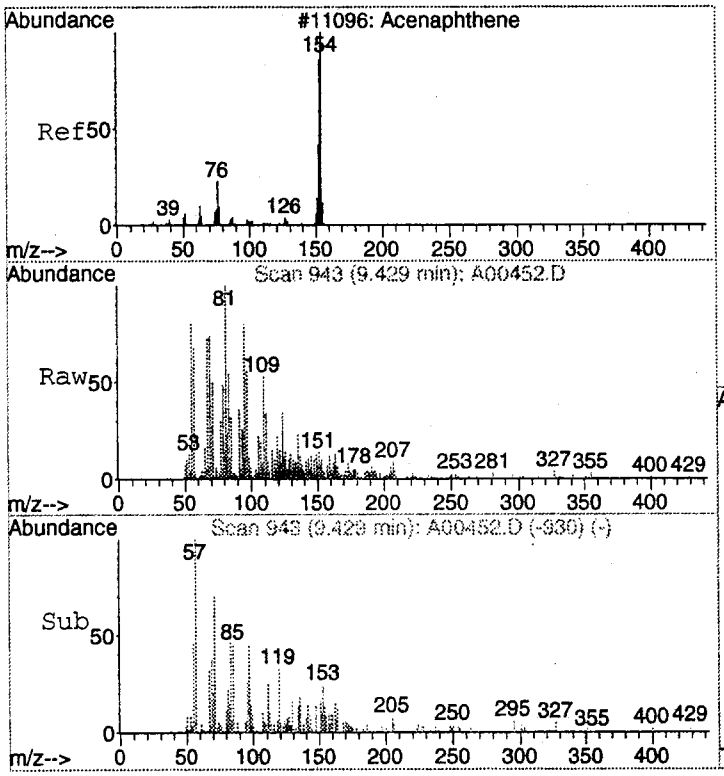


#48
Acenaphthylene
Concen: 7.30 ug/L
RT: 9.24 min Scan# 924
Delta R.T. 0.03 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:152 Resp: 1639

Ion	Ratio	Lower	Upper
152	100		
151	35.6	0.0	59.7

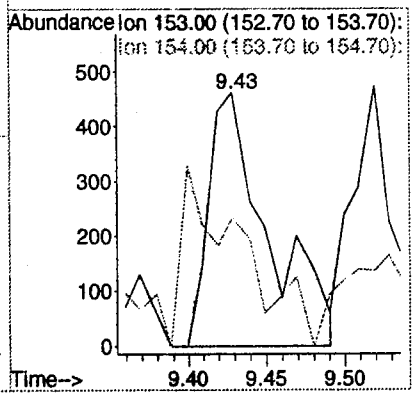


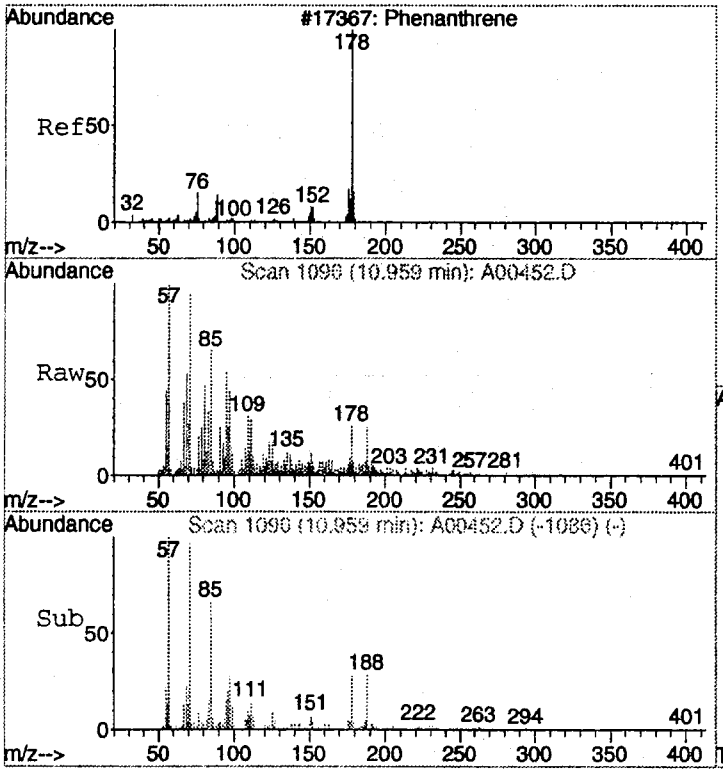


#51
Acenaphthene
Concen: 8.03 ug/L
RT: 9.43 min Scan# 943
Delta R.T. 0.03 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:153 Resp: 1209

Ion	Ratio	Lower	Upper
153	100		
154	84.6	43.3	123.3

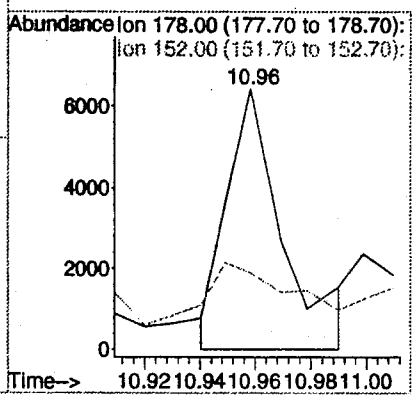


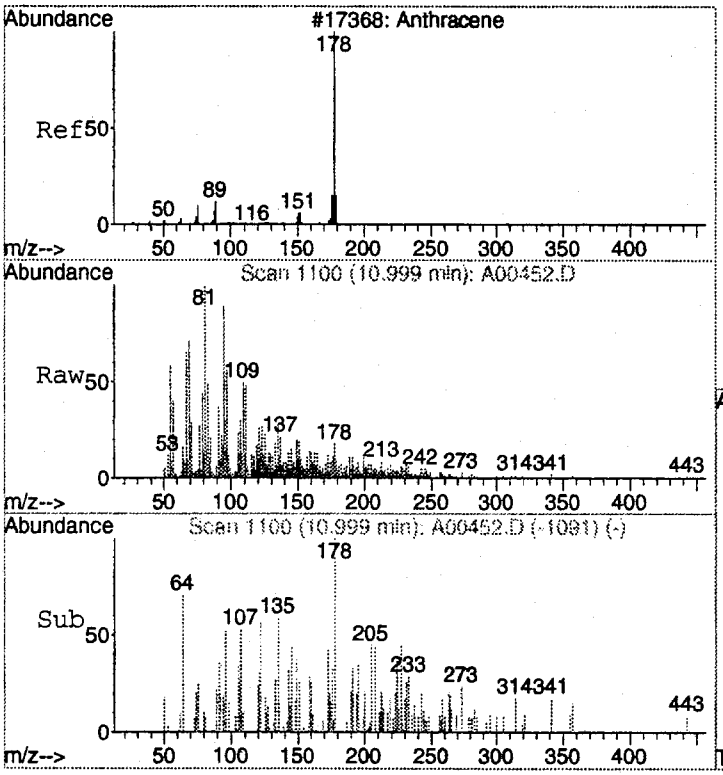


#71
Phenanthrene
Concen: 35.16 ug/L m
RT: 10.96 min Scan# 1096
Delta R.T. -0.00 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:178 Resp: 9096

Ion	Ratio	Lower	Upper
178	100		
152	7.7	0.0	60.6

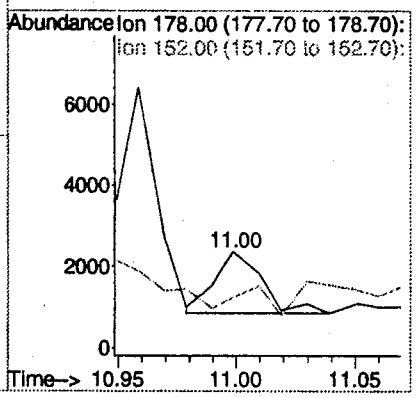


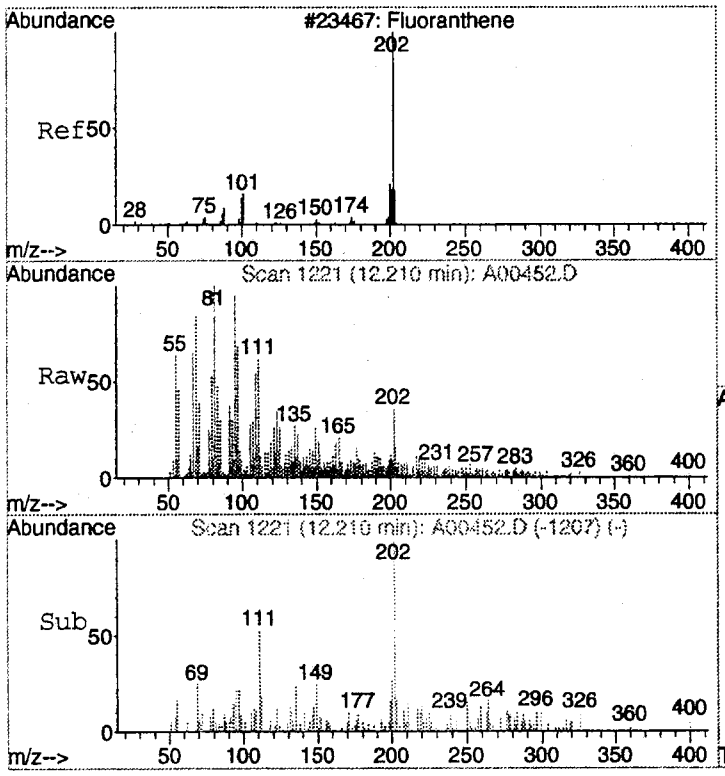


#72
Anthracene
Concen: 8.48 ug/L
RT: 11.00 min Scan# 1100
Delta R.T. -0.01 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:178 Resp: 2122

Ion	Ratio	Lower	Upper
178	100		
152	32.8	0.0	68.8

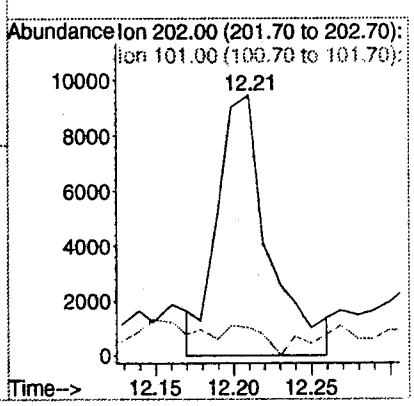


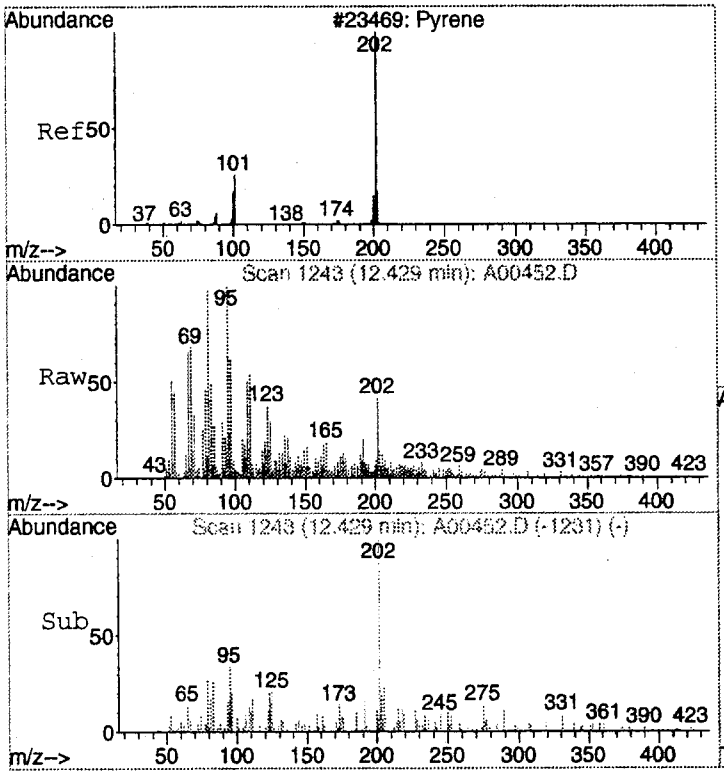


#76
Fluoranthene
Concen: 85.11 ug/L m
RT: 12.21 min Scan# 1221
Delta R.T. 0.04 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:202 Resp: 21545

Ion	Ratio	Lower	Upper
202	100		
101	0.0	0.0	56.4

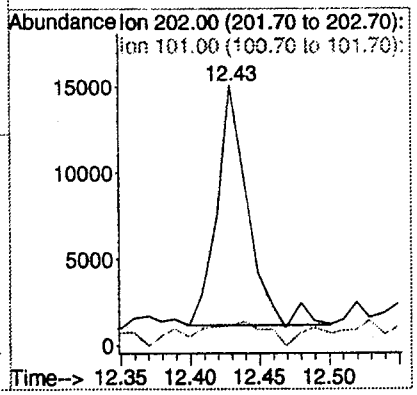


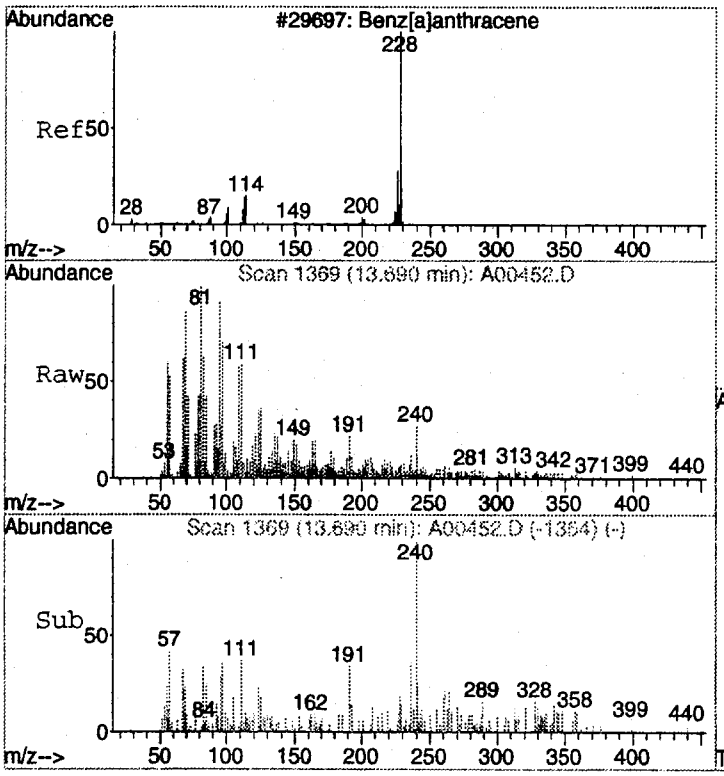


#77
Pyrene
Concen: 86.24 ug/L
RT: 12.43 min Scan# 1243
Delta R.T. 0.02 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:202 Resp: 22000

Ion	Ratio	Lower	Upper
202	100		
101	23.1	0.0	50.6

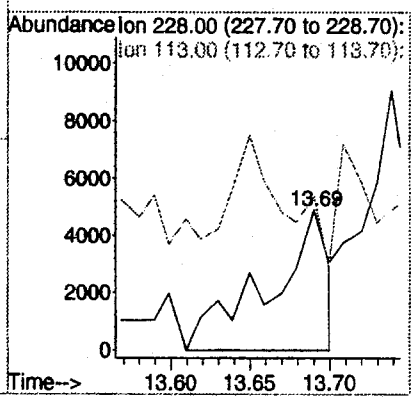


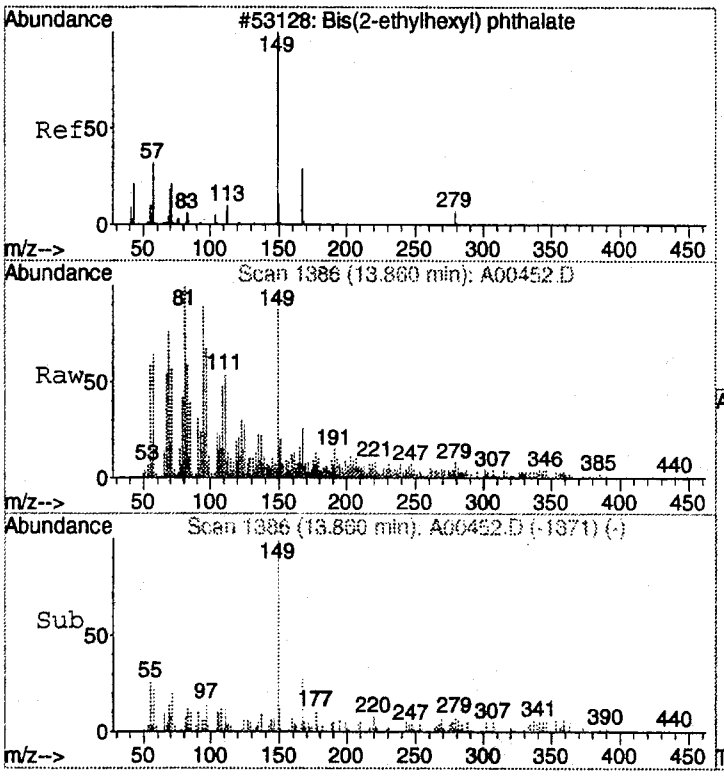


#82
Benzo(a)anthracene
Concen: 41.21 ug/L
RT: 13.69 min Scan# 1369
Delta R.T. 0.05 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:228 Resp: 12495

Ion	Ratio	Lower	Upper
228	100		
113	44.9	0.0	51.2

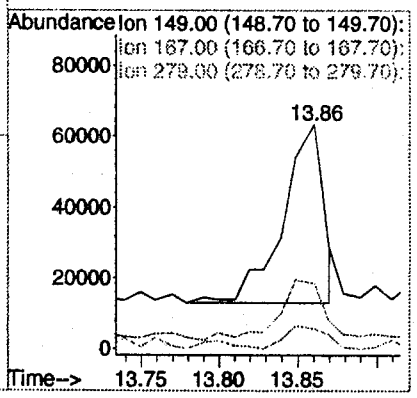


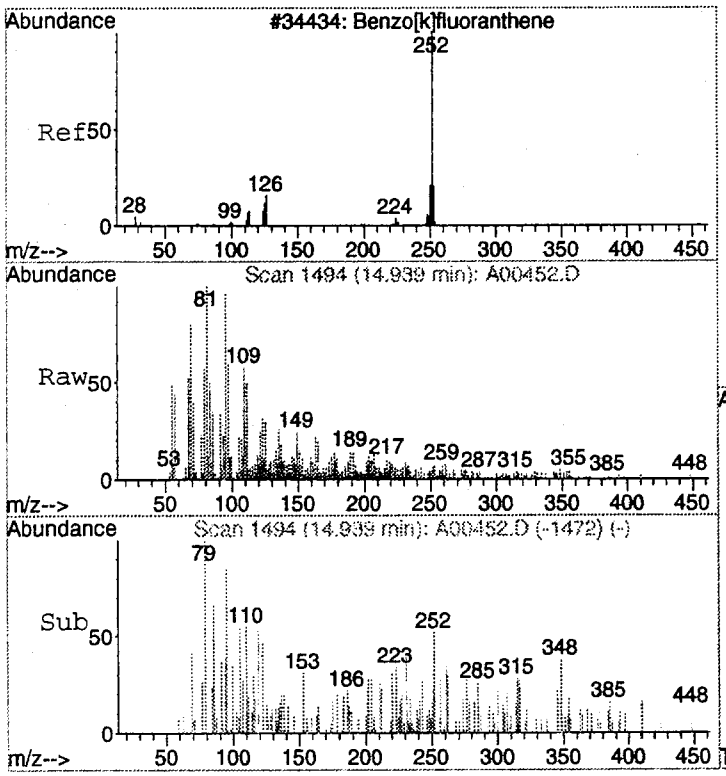


#85
bis(2-Ethylhexyl)phthalate
Concen: 237.00 ug/L
RT: 13.86 min Scan# 1386
Delta R.T. 0.05 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:149 Resp: 89850

Ion	Ratio	Lower	Upper
149	100		
167	35.8	0.0	68.8
279	12.8	0.0	46.8

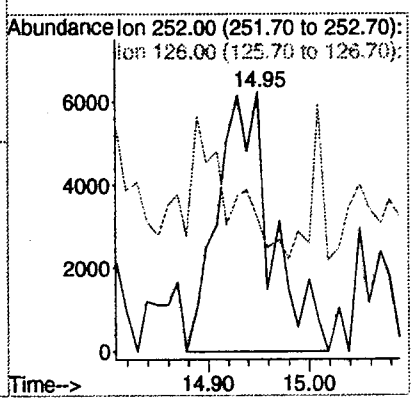




#88
Benzofluoranthenes
Concen: 68.97 ug/L
RT: 14.94 min Scan# 1494
Delta R.T. 0.05 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:252 Resp: 22904

Ion	Ratio	Lower	Upper
252	100		
126	45.5	0.0	56.5



100

INITIAL CALIBRATION

Response Factor Report

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:23 2002
Response via : Initial Calibration

Calibration Files
100 =A00371.D 10 =A00370.D 250 =A00372.D
500 =A00373.D 1500 =A00375.D 1000 =A00374.D

		Compound	100	10	250	500	1500	1000	Avg	%RSD
1)	I	1,4-Dichlorobenzene-d	ISTD							
2)	T	N-Nitrosodimeth	0.263		0.267	0.194	0.183	0.173	0.23#	20.9
3)	T	Pyridine	0.172		0.543	0.778	0.759	0.587	0.57#	38.1
4)	S	2 - Fluorophenol	0.819		0.806	0.717	0.730	0.755	0.74#	9.1
5)	T	Cyclohexanone	0.208		0.271	0.236	0.234	0.249	0.23#	10.2
6)	T	Aniline	0.148		0.223	0.265	0.374	0.360	0.28#	31.1
7)	S	Phenol - d5 (S)	0.930		0.911	0.892	0.897	0.881	0.89#	3.6
8)	TC	Phenol	0.951		0.980	0.759	0.875	0.881	0.89#	8.6
9)	T	bis(2-Chloroeth	1.122		1.084	0.869	0.936	0.920	0.95#	13.5
10)	T	2-Chlorophenol	0.922		0.896	0.860	0.923	0.821	0.87#	5.4
11)	T	Decane	0.461		0.482	0.389	0.391	0.394	0.41#	12.7
12)	T	1,3-Dichloroben	1.119		1.016	0.980	0.997	0.960	0.99#	8.3
13)	TC	1,4-Dichloroben	1.141		1.094	0.932	0.999	0.979	1.00#	10.0
14)	T	Benzyl alcohol	0.776		0.788	0.774	0.847	0.863	0.80#	5.0
15)	T	1,2-Dichloroben	1.032		1.005	0.919	0.911	0.925	0.94#	6.9
16)	T	2-Methylphenol	0.660		0.597	0.594	0.660	0.623	0.62#	5.0
17)	T	bis(2-chloroiso	0.141		0.129	0.117	0.113	0.133	0.12#	9.5
18)	T	3-&4-Methylphen	0.703		0.677	0.653	0.677	0.653	0.66#	4.2
19)	TP	n-Nitroso-di-n-	0.661		0.589	0.549	0.597	0.559	0.58	9.5
20)	T	Acetophenone	1.610		1.458	1.340	1.362	1.279	1.38#	10.0
21)	T	Hexachloroethan	0.238		0.227	0.213	0.204	0.231	0.22#	7.4
22)	I	Naphthalene - d8 (I)	ISTD							
23)	S	Nitrobenzene -	0.357		0.339	0.345	0.288	0.329	0.32#	11.1
24)	T	Nitrobenzene	0.310		0.314	0.323	0.315	0.309	0.31#	4.4
25)	T	Isophorone	0.560		0.575	0.582	0.556	0.583	0.56#	6.2
26)	TC	2-Nitrophenol	0.173		0.176	0.199	0.191	0.193	0.19#	5.7
27)	T	2,4-Dimethylphe	0.443		0.421	0.434	0.414	0.457	0.43#	3.7
28)	T	bis(2-Chloroeth	0.317		0.317	0.313	0.287	0.302	0.31#	4.0
29)	T	Benzoic Acid	0.045		0.162	0.214	0.191	0.206	0.17#	37.3
30)	TC	2,4-Dichlorophe	0.335		0.326	0.355	0.352	0.360	0.35#	4.0
31)	T	1,2,4-Trichloro	0.407		0.409	0.358	0.379	0.371	0.38#	5.3
32)	T	Naphthalene	1.236	1.152	1.159	1.163	1.135	1.157	1.16#	3.2
33)	T	4-Chloroaniline	0.209		0.213	0.216	0.203	0.214	0.21#	4.1
34)	TC	Hexachlorobutad	0.299		0.282	0.293	0.273	0.282	0.28#	4.9
35)	TC	4-Chloro-3-meth	0.410		0.423	0.445	0.445	0.439	0.43#	3.4
36)	T	2-Methylnaphtha	0.807	0.784	0.780	0.810	0.770	0.791	0.79#	2.0
37)	T	1-Methylnaphtha	0.727	0.759	0.740	0.727	0.721	0.734	0.73#	2.0
38)	I	Acenaphthene - d10 (I	ISTD							
39)	TP	Hexachlorocyclo	0.377		0.374	0.432	0.445	0.438	0.42	8.5
40)	T	2,3-Dichloroani	0.615		0.630	0.689	0.779	0.726	0.71#	12.0
41)	TC	2,4,6-Trichloro	0.300		0.388	0.405	0.408	0.379	0.38#	10.6
42)	T	2,4,5-Trichloro	0.349		0.369	0.427	0.389	0.423	0.37#	14.0
43)	S	2 - Fluorobiphe	1.238	1.266	1.316	1.261	1.465	1.336	1.36#	11.1
44)	T	2-Chloronaphtha	1.217	1.271	1.194	1.217	1.153	1.155	1.18#	6.2
45)	T	Biphenyl	0.999		0.964	1.017	1.116	1.051	1.07#	11.0
46)	T	2-Nitroaniline	0.325		0.353	0.382	0.450	0.422	0.40#	13.3
47)	T	Dimethylphthala	1.824		1.902	1.998	2.171	2.053	2.03	8.0
48)	T	Acenaphthylene	1.898	1.740	1.844	1.815	1.949	1.930	1.89#	5.1
49)	T	2,6-Dinitrotolu	0.338		0.342	0.371	0.389	0.369	0.37#	6.0
50)	T	3-Nitroaniline	0.176		0.219	0.213	0.219	0.235	0.21#	10.1
51)	TC	Acenaphthene	1.260	1.118	1.274	1.303	1.306	1.282	1.26#	5.3
52)	TP	2,4-Dinitrophen	0.107		0.104	0.124	0.208	0.165	0.15	32.6
53)	TP	4-Nitrophenol	0.355		0.399	0.474	0.627	0.578	0.52	26.3

(#) = Out of Range ### Number of calibration levels exceeded format ### 102

Response Factor Report

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:23 2002
Response via : Initial Calibration

Calibration Files
100 =A00371.D 10 =A00370.D 250 =A00372.D
500 =A00373.D 1500 =A00375.D 1000 =A00374.D

		Compound	100	10	250	500	1500	1000	Avg	%RSD
54)	T	Dibenzofuran	1.724		1.719	1.759	1.812	1.867	1.79#	3.7
55)	T	2,4-Dinitrotolu	0.343		0.346	0.386	0.392	0.375	0.38#	9.2
56)	T	2,3,4,6-Tetrach	0.265		0.303	0.395	0.443	0.453	0.39#	21.7
57)	T	2,3,5,6-Tetrach	0.202		0.334	0.373	0.436	0.420	0.37#	24.6
58)	T	Diethylphthalat	1.699		1.870	1.759	1.495	1.629	1.61#	15.2
59)	T	Fluorene	1.106	1.088	1.254	1.284	1.385	1.342	1.29#	12.3
60)	T	4-Chlorophenylp	0.819		0.824	0.882	0.921	0.842	0.86#	4.8
61)	T	4-Nitroaniline	0.176		0.219	0.213	0.219	0.235	0.21#	10.1
62)	I	Phenanthrene - d10 (I	----------ISTD----------							
63)	T	4,6-Dinitro-2-m	0.154		0.180	0.185	0.220	0.202	0.19#	12.7
64)	T	n-Nitrosodiphen	0.569		0.583	0.632	0.780	0.706	0.71#	21.5
65)	S	2,4,6 - Tribrom	0.148		0.222	0.229	0.244	0.253	0.22#	17.1
66)	T	1,2-Diphenylhyd	0.327		0.319	0.336	0.423	0.381	0.38#	17.8
67)	T	4-Bromophenylph	0.355		0.330	0.341	0.361	0.343	0.35#	3.3
68)	T	Hexachlorobenze	0.345		0.329	0.330	0.326	0.327	0.33#	2.4
69)	T	Atrazine	0.085		0.036	0.046	0.051	0.052	0.05#	30.4
70)	TC	Pentachlorophen	0.132		0.142	0.182	0.203	0.209	0.18#	19.3
71)	T	Phenanthrene	1.168	1.192	1.169	1.233	1.258	1.168	1.21#	3.6
72)	T	Anthracene	1.159	1.151	1.093	1.098	1.234	1.170	1.17#	5.5
73)	T	Octadecane	0.388		0.397	0.379	0.347	0.407	0.38#	7.3
74)	T	Carbazole	1.040		1.006	1.021	1.137	1.076	1.07#	5.1
75)	T	Di-n-butylphtha	1.836		1.728	1.658	1.406	1.601	1.56#	16.4
76)	TC	Fluoranthene	1.139	1.180	1.151	1.164	1.212	1.241	1.18#	3.0
77)	T	Pyrene	1.239	1.125	1.151	1.181	1.195	1.245	1.19#	3.7
78)	T	Benzidine			0.116	0.122	0.228	0.218	0.18#	32.3
79)	S	p - Terphenyl -	1.061	1.353	1.174	1.089	1.052	1.082	1.12#	10.0
80)	I	Chrysene - d12 (I)	----------ISTD----------							
81)	T	Butylbenzylphth	0.975		0.893	0.852	0.811	0.841	0.86#	8.4
82)	T	Benzo(a)anthrac	0.948	0.919	1.083	1.123	1.472	1.238	1.18#	19.2
83)	T	3,3'-Dichlorobe	0.613		0.465	0.578	0.443	0.332	0.50#	21.5
84)	T	Chrysene	0.974	1.042	1.084	1.163	1.108	1.201	1.12#	8.9
85)	T	bis(2-Ethylhexy	1.761		1.613	1.441	1.398	1.389	1.47#	12.5
86)	I	Perylene - d12 (I)	----------ISTD----------							
87)	TC	Di-n-octylphtha	2.331		2.072	2.137	1.971	2.121	2.08	8.3
88)	T	Benzofluoranthe	1.181	1.100	1.130	1.208	1.262	1.256	1.21#	6.4
89)	TC	Benzo(a)pyrene	1.103	0.935	1.014	1.113	1.200	1.176	1.11#	9.9
90)	T	Indeno(1,2,3-cd	1.243	0.996	1.240	1.330	1.435	1.398	1.31#	13.6
91)	T	Dibenz(a,h)anth	1.213	0.888	1.178	1.252	1.273	1.285	1.20#	12.2
92)	T	Benzo(g,h,i)per	1.139	0.970	1.088	1.148	1.207	1.204	1.15#	8.6

(#) = Out of Range ### Number of calibration levels exceeded format ###

Data File : C:\MSDCHEM\1\DATA\A00370.D
Acq On : 29 Aug 2002 9:42
Sample : 0.01 NG/UL 8270 ICAL STD NO 0980-53-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:38:24 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:38:20 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	51087	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	115923	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.49	162	72538	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.02	188	99214	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.80	240	122975	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.51	264	140602	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	0.00	112	0	0.00 ug/L	
7) Phenol - d5 (S)	0.00	99	0	0.00 ug/L	
23) Nitrobenzene - d5 (S)	6.74	82	558	15.02 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.80	172	918	9.55 ug/L	0.01
65) 2,4,6 - Tribromophenol (S)	0.00	330	0	0.00 ug/L	
79) p - Terphenyl - d14 (S)	12.73	244	1342	13.02 ug/L	0.00

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.83	74	755	65.50 ug/L #	100
32) Naphthalene	7.56	128	1336	10.42 ug/L #	1
36) 2-Methylnaphthalene	8.35	141	909	10.50 ug/L	58
37) 1-Methylnaphthalene	8.46	141	880	11.11 ul/l #	6
44) 2-Chloronaphthalene	8.87	162	922	11.78 ug/L	92
48) Acenaphthylene	9.32	152	1262	9.78 ug/L #	57
51) Acenaphthene	9.52	153	811	9.28 ug/L	84
53) 4-Nitrophenol	9.72	109	1246+	32.78 ug/L #	26
55) 2,4-Dinitrotoluene	9.48	165	7186	260.74 ug/L #	18
57) 2,3,5,6-Tetrachlorophenol	9.84	232	102	3.83 ul/l #	68
59) Fluorene	10.05	166	789	8.89 ug/L #	54
63) 4,6-Dinitro-2-methylphenol	10.20	198	439	22.98 ug/L #	1
71) Phenanthrene	11.05	178	1183	10.66 ug/L	79
72) Anthracene	11.09	178	1142	10.60 ug/L	65
76) Fluoranthene	12.29	202	1171	10.54 ug/L #	62
77) Pyrene	12.52	202	1116	9.86 ug/L #	49
78) Benzidine	12.47	184	1191	65.42 ug/L	100
82) Benzo(a)anthracene	13.78	228	1130m	7.65 ug/L	
84) Chrysene	13.82	228	1281	9.91 ug/L	61
88) Benzofluoranthenes	15.04	252	3094	18.74 ug/L	84
89) Benzo(a)pyrene	15.43	252	1315	8.25 ug/L #	57
90) Indeno(1,2,3-cd)pyrene	17.16	276	1401	7.91 ug/L	47
91) Dibenz(a,h)anthracene	17.20	278	1248	7.51 ug/L #	48
92) Benzo(g,h,i)perylene	17.62	276	1364	8.83 ug/L #	1

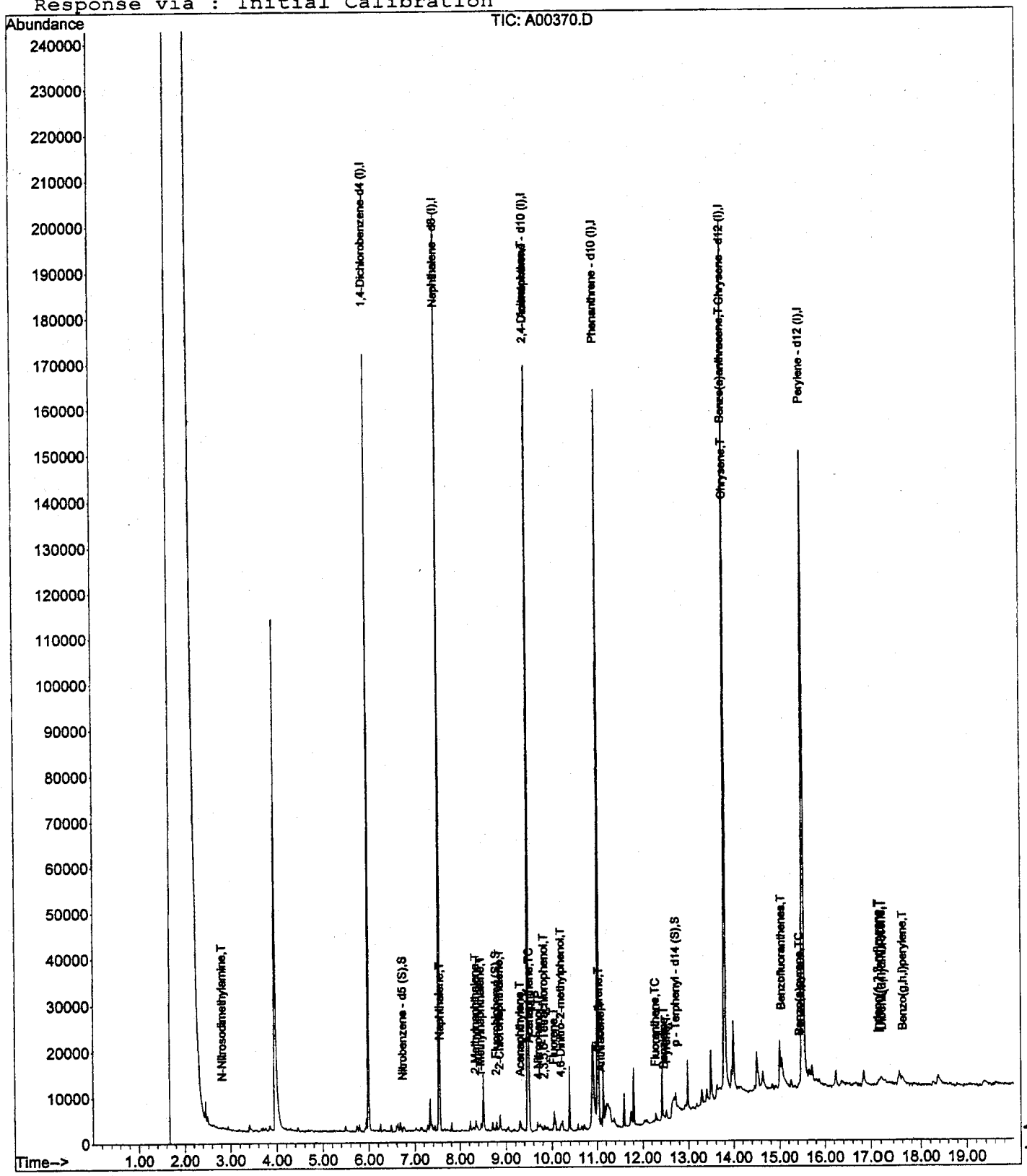
(#) = qualifier out of range (m) = manual integration (+) = signals summed
A00370.D SV5-080902.M Thu Aug 29 14:51:47 2002 Page 1

Data File : C:\MSDCHEM\1\DATA\A00370.D
Acq On : 29 Aug 2002 9:42
Sample : 0.01 NG/UL 8270 ICAL STD NO 0980-53-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:38 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



105

Data File : C:\MSDCHEM\1\DATA\A00371.D
Acq On : 29 Aug 2002 10:08
Sample : 0.1 NG/UL 8270 ICAL STD NO 0980-54-3
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:25:49 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:25:45 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.98	150	55976	1000.00 ug/L	-0.01
22) Naphthalene - d8 (I)	7.53	136	132353	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.47	162	85236	1000.00 ug/L	-0.02
62) Phenanthrene - d10 (I)	11.02	188	134966	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.79	240	151178	1000.00 ul/l	-0.02
86) Perylene - d12 (I)	15.49	264	169585	1000.00 ug/L	-0.02
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.44	112	4582	170.04 ug/L	0.00
7) Phenol - d5 (S)	5.72	99	5207	184.23 ug/L	-0.01
23) Nitrobenzene - d5 (S)	6.73	82	4720	115.13 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.79	172	10549	164.05 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.32	330	2001	119.24 ug/L	-0.02
79) p - Terphenyl - d14 (S)	12.72	244	14315	175.91 ug/L	-0.01

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.78	74	7359	1008.68 ug/L #	100
3) Pyridine	2.70	79	4807m+	225.61 ug/L	
5) Cyclohexanone	4.69	55	1166	158.73 ug/L	92
6) Aniline	5.70	93	830	50.58 ug/L #	85
8) Phenol	5.74	94	5326	183.98 ug/L	71
9) bis(2-Chloroethyl)ether	5.78	63	6278	398.68 ug/L #	37
10) 2-Chlorophenol	5.78	128	5159	210.10 ug/L	69
11) Decane	5.91	57	2579	200.03 ug/L	100
12) 1,3-Dichlorobenzene	5.94	146	6266	191.48 ug/L	69
13) 1,4-Dichlorobenzene	6.00	146	6389	189.01 ug/L #	27
14) Benzyl alcohol	6.29	79	4342	175.51 ug/L	94
15) 1,2-Dichlorobenzene	6.24	146	5777	180.04 ug/L	93
16) 2-Methylphenol	6.46	108	3694	179.14 ug/L	95
17) bis(2-chloroisopropyl)ethe	6.46	121	789+	162.69 ug/L #	1
18) 3-&4-Methylphenol	6.66	108	7875	329.10 ug/L #	31
19) n-Nitroso-di-n-propylamine	6.66	70	3701	190.56 ug/L #	49
20) Acetophenone	6.57	105	9014	192.06 ug/L	99
21) Hexachloroethane	6.61	166	1332	177.70 ug/L	85
24) Nitrobenzene	6.75	77	4106	169.18 ug/L #	74
25) Isophorone	7.09	82	7413	167.26 ug/L	91
26) 2-Nitrophenol	7.14	139	2296	140.71 ug/L	49
27) 2,4-Dimethylphenol	7.27	107	5866	162.35 ug/L	81
28) bis(2-Chloroethoxy)methane	7.36	93	4201	152.35 ug/L	75
29) Benzoic Acid	7.52	105	3001	267.80 ug/L	69
30) 2,4-Dichlorophenol	7.43	162	4436	153.02 ug/L	97
31) 1,2,4-Trichlorobenzene	7.50	180	5389	190.59 ug/L	97
32) Naphthalene	7.55	128	16354	177.08 ug/L	72
33) 4-Chloroaniline	7.70	127	2766	199.13 ug/L #	97
34) Hexachlorobutadiene	7.80	225	3952	172.96 ug/L	90
35) 4-Chloro-3-methylphenol	8.28	107	5430	148.50 ug/L	82
36) 2-Methylnaphthalene	8.34	141	10685	165.77 ug/L	73
37) 1-Methylnaphthalene	8.46	141	9623	161.51 ul/l	56
39) Hexachlorocyclopentadiene	8.61	237	3213	161.25 ug/L	96
40) 2,3-Dichloroaniline	8.70	161	5246	170.19 ug/L	97
41) 2,4,6-Trichlorophenol	8.71	196	2553	142.75 ug/L	94
42) 2,4,5-Trichlorophenol	8.75	196	2977	164.04 ug/L	52
44) 2-Chloronaphthalene	8.86	162	10371	197.51 ug/L	89
45) Biphenyl	9.51	154	8519	122.78 ug/L #	1

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

Data File : C:\MSDCHEM\1\DATA\A00371.D
Acq On : 29 Aug 2002 10:08
Sample : 0.1 NG/UL 8270 ICAL STD NO 0980-54-3
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:25:49 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

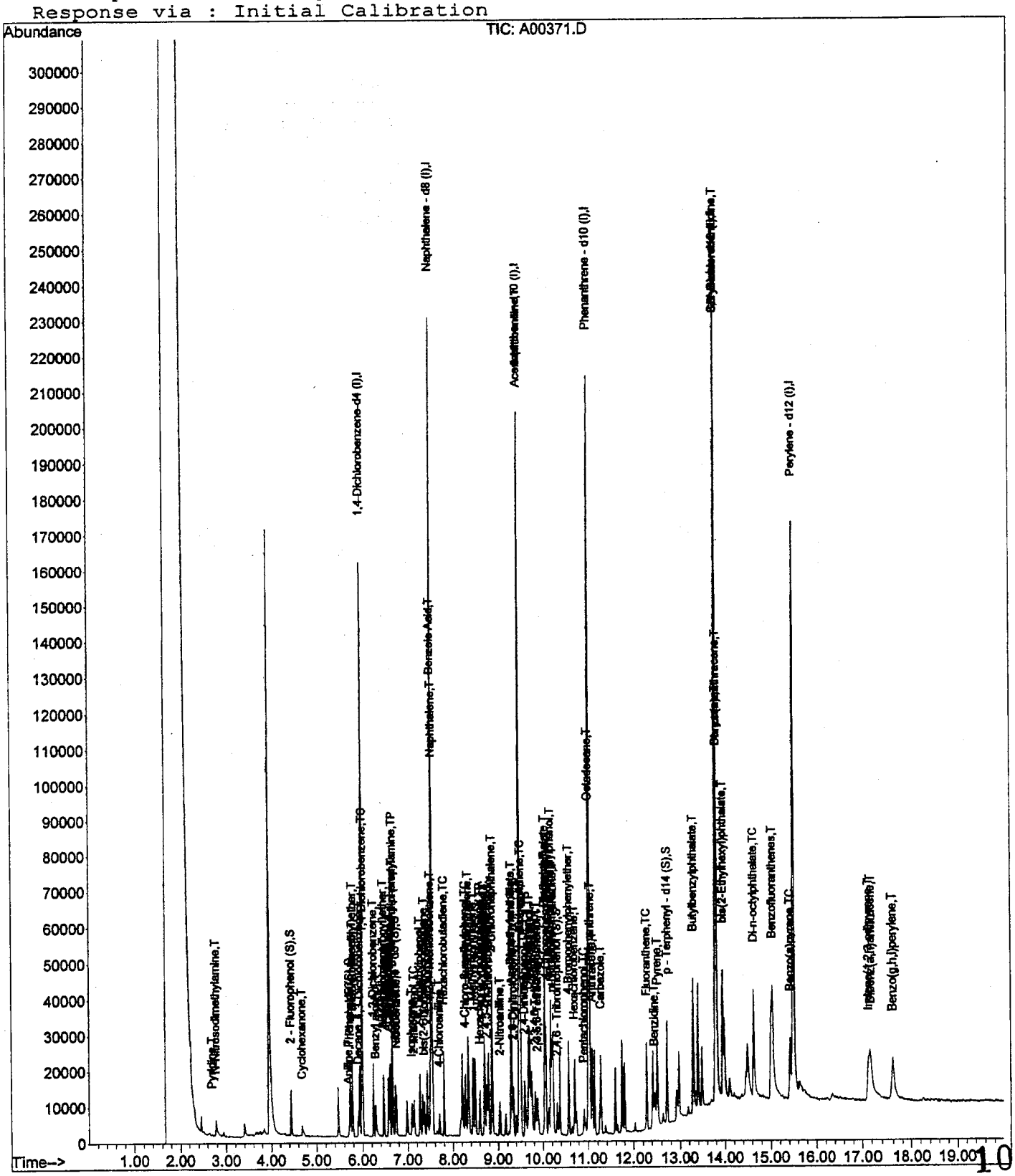
Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:25:45 2002
Response via : Initial Calibration
DataAcq Meth :

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46) 2-Nitroaniline	9.04	138	2769	144.59 ug/L		94
47) Dimethylphthalate	9.29	163	15543	182.49 ug/L		94
48) Acenaphthylene	9.31	152	16174	188.76 ug/L		99
49) 2,6-Dinitrotoluene	9.34	165	2882	186.97 ug/L		85
50) 3-Nitroaniline	9.48	138	1504	158.33 ug/L	#	45
51) Acenaphthene	9.51	153	10737	184.92 ug/L		94
52) 2,4-Dinitrophenol	9.59	184	4544	584.06 ug/L		68
53) 4-Nitrophenol	9.70	109	15137+	689.76 ug/L	#	54
54) Dibenzofuran	9.68	168	14695	190.95 ug/L	#	1
55) 2,4-Dinitrotoluene	9.34	165	2927	113.27 ug/L		91
56) 2,3,4,6-Tetrachlorophenol	9.83	232	2258	115.21 ug/L	#	52
57) 2,3,5,6-Tetrachlorophenol	9.88	232	1720	108.96 ul/l	#	56
58) Diethylphthalate	10.04	149	14484	197.16 ug/L		100
59) Fluorene	10.04	166	9429	156.53 ug/L		59
60) 4-Chlorophenylphenylether	10.07	204	6977	197.05 ug/L		66
61) 4-Nitroaniline	9.48	138	1504	78.53 ug/L	#	1
63) 4,6-Dinitro-2-methylphenol	10.18	198	10387	781.09 ug/L	#	43
64) n-Nitrosodiphenylamine	10.20	169	7682	136.93 ug/L	#	1
66) 1,2-Diphenylhydrazine	10.23	182	4420	160.03 ug/L	#	1
67) 4-Bromophenylphenylether	10.57	248	4796	197.46 ug/L	#	65
68) Hexachlorobenzene	10.70	284	4654	194.71 ug/L		87
70) Pentachlorophenol	10.91	266	1788	140.72 ug/L		89
71) Phenanthrene	11.04	178	15764	165.37 ug/L		76
72) Anthracene	11.09	178	15645	215.34 ug/L		74
73) Octadecane	10.99	57	5241	204.37 ug/L		54
74) Carbazole	11.27	167	14037	178.54 ug/L		81
76) Fluoranthene	12.28	202	15368	165.59 ug/L		83
77) Pyrene	12.51	202	16718	184.37 ug/L		72
78) Benzidine	12.45	184	9306	669.25 ug/L		100
81) Butylbenzylphthalate	13.29	149	14744	190.45 ug/L		76
82) Benzo(a)anthracene	13.82	228	14326	105.28 ug/L		57
83) 3,3'-Dichlorobenzidine	13.78	252	9271+	163.15 ug/L		95
84) Chrysene	13.82	228	14731	165.86 ug/L		90
85) bis(2-Ethylhexyl)phthalate	13.95	149	26615	186.35 ug/L		98
87) Di-n-octylphthalate	14.63	149	39536	168.88 ug/L		92
88) Benzofluoranthenes	15.03	252	40072	301.69 ug/L		79
89) Benzo(a)pyrene	15.42	252	18703	139.55 ug/L		87
90) Indeno(1,2,3-cd)pyrene	17.14	276	21075	143.45 ug/L		92
91) Dibenz(a,h)anthracene	17.18	278	20568	148.34 ug/L		71
92) Benzo(g,h,i)perylene	17.60	276	19309	148.03 ug/L		84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00371.D Vial: 0
Acq On : 29 Aug 2002 10:08 Operator:
Sample : 0.1 NG/UL 8270 ICAL STD NO 0980-54-3 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:26 2002 Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00372.D
Acq On : 29 Aug 2002 10:34
Sample : 0.25 NG/UL 8270 ICAL STD NO 0980-54-4
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:30:52 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:30:43 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	53109	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	125598	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.48	162	76662	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.02	188	126765	1000.00 ug/L	-0.01
80) Chrysene - d12 (I)	13.80	240	146131	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.50	264	170837	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.44	112	10695	375.47 ug/L	0.00
7) Phenol - d5 (S)	5.72	99	12091	380.92 ug/L	0.00
23) Nitrobenzene - d5 (S)	6.73	82	10632	269.49 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.79	172	25219	390.16 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.33	330	7051	422.80 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.72	244	37202	432.30 ug/L	-0.01

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.75	74	17739	2228.35 ug/L #	100
3) Pyridine	2.99	79	36030+	1914.07 ug/L	96
5) Cyclohexanone	4.67	55	3601	469.00 ug/L	96
6) Aniline	5.69	93	2964	198.43 ug/L #	85
8) Phenol	5.74	94	13015	399.15 ug/L	72
9) bis(2-Chloroethyl)ether	5.78	63	14397	635.08 ug/L #	38
10) 2-Chlorophenol	5.78	128	11903	428.87 ug/L	69
11) Decane	5.91	57	6402	449.83 ug/L	95
12) 1,3-Dichlorobenzene	5.94	146	13490	378.24 ug/L	67
13) 1,4-Dichlorobenzene	6.01	146	14522	389.22 ug/L	92
14) Benzyl alcohol	6.29	79	10456	375.28 ug/L	99
15) 1,2-Dichlorobenzene	6.24	146	13339	382.45 ug/L	98
16) 2-Methylphenol	6.47	108	7932	350.49 ug/L	98
17) bis(2-chloroisopropyl)ethe	6.47	121	1708+	332.43 ug/L #	1
18) 3-&4-Methylphenol	6.66	108	17975	687.81 ug/L #	34
19) n-Nitroso-di-n-propylamine	6.65	70	7816	361.45 ug/L	74
20) Acetophenone	6.57	105	19364	373.05 ug/L	100
21) Hexachloroethane	6.61	166	3019	377.94 ug/L #	81
24) Nitrobenzene	6.75	77	9866	382.07 ug/L #	72
25) Isophorone	7.09	82	18060	385.37 ug/L	88
26) 2-Nitrophenol	7.15	139	5538	325.09 ug/L	60
27) 2,4-Dimethylphenol	7.27	107	13208	344.95 ug/L	81
28) bis(2-Chloroethoxy)methane	7.37	93	9947	346.04 ug/L	71
29) Benzoic Acid	7.44	105	25361	2445.89 ug/L	84
30) 2,4-Dichlorophenol	7.44	162	10242	330.12 ug/L	96
31) 1,2,4-Trichlorobenzene	7.50	180	12849	419.53 ug/L	95
32) Naphthalene	7.56	128	36388	371.20 ug/L	79
33) 4-Chloroaniline	7.70	127	6695	424.68 ug/L	98
34) Hexachlorobutadiene	7.81	225	8855	366.01 ug/L	90
35) 4-Chloro-3-methylphenol	8.29	107	13271	349.49 ug/L	81
36) 2-Methylnaphthalene	8.35	141	24490	365.50 ug/L	71
37) 1-Methylnaphthalene	8.46	141	23246	374.91 ul/l	66
39) Hexachlorocyclopentadiene	8.61	237	7167	351.51 ug/L	94
40) 2,3-Dichloroaniline	8.71	161	12079	379.39 ug/L	93
41) 2,4,6-Trichlorophenol	8.71	196	7427	420.72 ug/L	96
42) 2,4,5-Trichlorophenol	8.76	196	7079	382.90 ug/L	50
44) 2-Chloronaphthalene	8.87	162	22875	421.02 ug/L	89
45) Biphenyl	9.52	154	18482	277.03 ug/L #	1

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

Data File : C:\MSDCHEM\1\DATA\A00372.D
Acq On : 29 Aug 2002 10:34
Sample : 0.25 NG/UL 8270 ICAL STD NO 0980-54-4
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:30:52 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:30:43 2002
Response via : Initial Calibration
DataAcq Meth :

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46) 2-Nitroaniline	9.04	138	6775	355.31 ug/L		92
47) Dimethylphthalate	9.30	163	36458	409.36 ug/L		97
48) Acenaphthylene	9.32	152	35343	399.79 ug/L		96
49) 2,6-Dinitrotoluene	9.35	165	6549	404.68 ug/L		91
50) 3-Nitroaniline	9.49	138	4190	432.36 ug/L		87
51) Acenaphthene	9.52	153	24410	408.94 ug/L		93
52) 2,4-Dinitrophenol	9.60	184	9951	1315.28 ug/L	#	61
53) 4-Nitrophenol	9.71	109	38241+	1712.58 ug/L	#	48
54) Dibenzofuran	9.69	168	32951	404.76 ug/L	#	1
55) 2,4-Dinitrotoluene	9.35	165	6625	273.09 ug/L		85
56) 2,3,4,6-Tetrachlorophenol	9.84	232	5811	310.94 ug/L	#	49
57) 2,3,5,6-Tetrachlorophenol	9.89	232	6405	419.39 ul/l	#	54
58) Diethylphthalate	10.05	149	35848	468.93 ug/L		91
59) Fluorene	10.05	166	24027	400.40 ug/L		61
60) 4-Chlorophenylphenylether	10.08	204	15789	420.16 ug/L		69
61) 4-Nitroaniline	9.49	138	4190	244.01 ug/L		46
63) 4,6-Dinitro-2-methylphenol	10.18	198	28580	2054.34 ug/L	#	49
64) n-Nitrosodiphenylamine	10.21	169	18475	317.19 ug/L	#	1
66) 1,2-Diphenylhydrazine	10.24	182	10109	342.50 ug/L	#	1
67) 4-Bromophenylphenylether	10.58	248	10457	390.45 ug/L	#	60
68) Hexachlorobenzene	10.71	284	10412	397.78 ug/L		86
69) Atrazine	10.92	200	1140+	250.09 ug/L		38
70) Pentachlorophenol	10.92	266	4514	339.92 ug/L		88
71) Phenanthrene	11.05	178	37043	374.06 ug/L		76
72) Anthracene	11.09	178	34630	431.69 ug/L		76
73) Octadecane	11.00	57	12566	455.54 ug/L		49
74) Carbazole	11.28	167	31877	379.81 ug/L		81
75) Di-n-butylphthalate	11.75	149	54755	423.07 ug/L		95
76) Fluoranthene	12.29	202	36470	379.04 ug/L		81
77) Pyrene	12.52	202	36466	379.17 ug/L		71
78) Benzidine	12.46	184	18326	1403.19 ug/L		100
81) Butylbenzylphthalate	13.30	149	32611	381.44 ug/L		77
82) Benzo(a)anthracene	13.83	228	39563	296.53 ug/L		53
83) 3,3'-Dichlorobenzidine	13.79	252	16984+	278.35 ug/L		95
84) Chrysene	13.83	228	39602	409.68 ug/L		81
85) bis(2-Ethylhexyl)phthalate	13.95	149	58912	394.10 ug/L		96
87) Di-n-octylphthalate	14.64	149	88488	342.32 ug/L		95
88) Benzofluoranthenes	15.04	252	96546	655.59 ug/L		80
89) Benzo(a)pyrene	15.43	252	43305	296.56 ug/L		81
90) Indeno(1,2,3-cd)pyrene	17.14	276	52961	333.31 ug/L		97
91) Dibenz(a,h)anthracene	17.19	278	50321	333.16 ug/L		71
92) Benzo(g,h,i)perylene	17.61	276	46478	330.45 ug/L		84

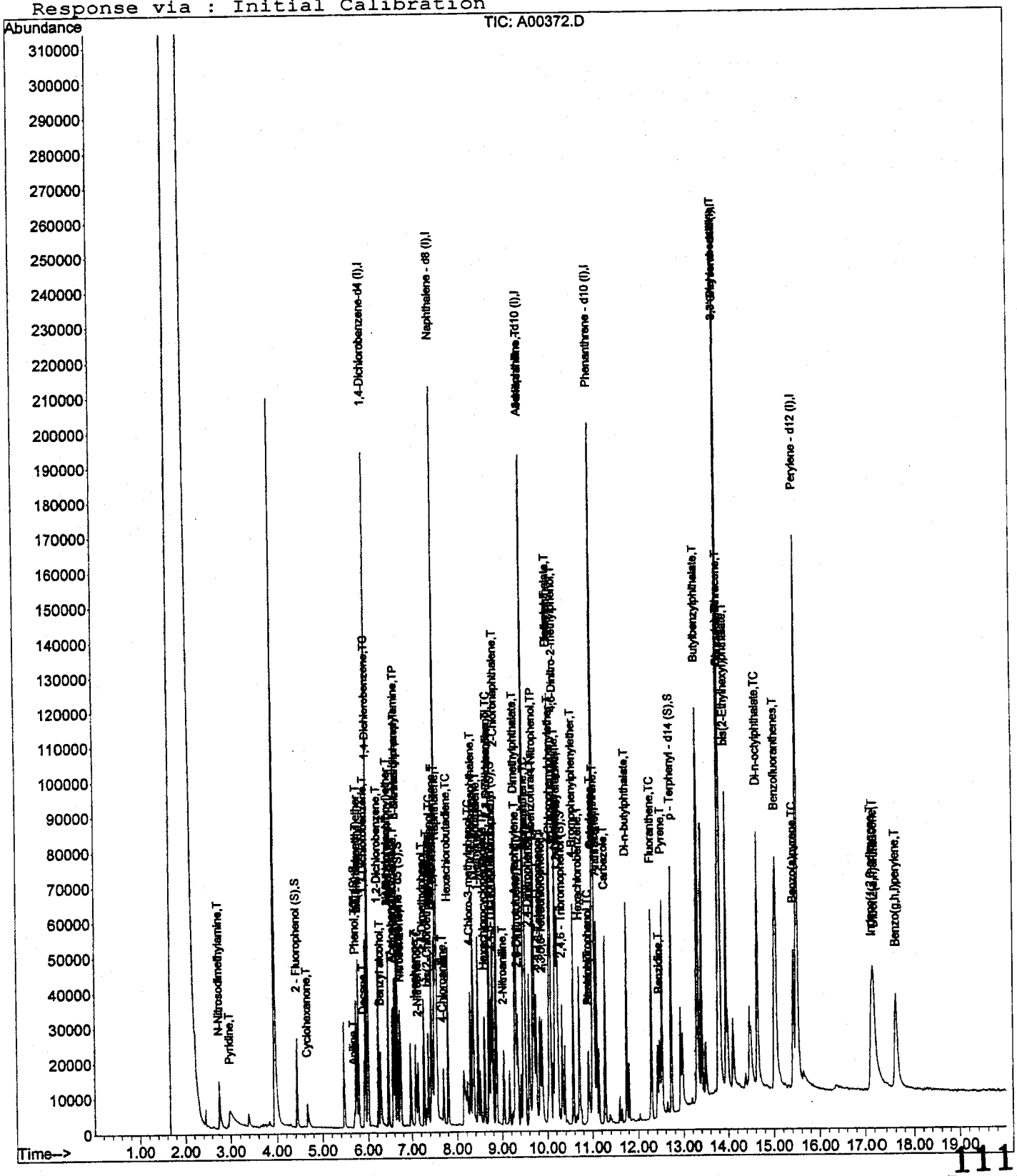
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00372.D
Acq On : 29 Aug 2002 10:34
Sample : 0.25 NG/UL 8270 ICAL STD NO 0980-54-4
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:30 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00373.D
Acq On : 29 Aug 2002 11:56
Sample : 0.5 NG/UL 8270 ICAL STD NO 0980-54-5
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:22:12 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:22:04 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	60002	1000.00	ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	132492	1000.00	ug/L	0.00
38) Acenaphthene - d10 (I)	9.49	162	82099	1000.00	ug/L	0.00
62) Phenanthrene - d10 (I)	11.03	188	141494	1000.00	ug/L	0.00
80) Chrysene - d12 (I)	13.81	240	154229	1000.00	ul/l	0.00
86) Perylene - d12 (I)	15.51	264	172655	1000.00	ug/L	0.00
System Monitoring Compounds						
4) 2 - Fluorophenol (S)	4.44	112	21524	745.18	ug/L	0.00
7) Phenol - d5 (S)	5.73	99	26767	883.49	ug/L	0.00
23) Nitrobenzene - d5 (S)	6.73	82	22839	556.48	ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.80	172	51778	835.98	ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.33	330	16225	922.21	ug/L	-0.01
79) p - Terphenyl - d14 (S)	12.73	244	77024	902.83	ug/L	0.00

Target Compounds						Qvalue
2) N-Nitrosodimethylamine	2.75	74	29138	3725.89	ug/L #	100
3) Pyridine	2.85	79	116714+	5110.32	ug/L	97
5) Cyclohexanone	4.66	55	7082	899.38	ug/L	96
6) Aniline	5.69	93	7947	451.79	ug/L #	85
8) Phenol	5.74	94	22776	733.98	ug/L	98
9) bis(2-Chloroethyl)ether	5.78	63	26064	1544.12	ug/L #	22
10) 2-Chlorophenol	5.79	128	25799	980.15	ug/L	67
11) Decane	5.91	57	11657	843.48	ug/L	99
12) 1,3-Dichlorobenzene	5.94	146	29408	838.38	ug/L	71
13) 1,4-Dichlorobenzene	6.01	146	27955	771.54	ug/L	96
14) Benzyl alcohol	6.28	79	23224	875.76	ug/L	100
15) 1,2-Dichlorobenzene	6.25	146	27572	801.64	ug/L	98
16) 2-Methylphenol	6.47	108	17827	806.50	ug/L	98
17) bis(2-chloroisopropyl)ethe	6.47	121	3523+	677.68	ug/L #	1
18) 3-&4-Methylphenol	6.67	108	39152	1526.40	ug/L #	37
19) n-Nitroso-di-n-propylamine	6.65	70	16473	791.26	ug/L	71
20) Acetophenone	6.57	105	40192	798.90	ug/L	98
21) Hexachloroethane	6.62	166	6396	796.01	ug/L	86
24) Nitrobenzene	6.76	77	21365	879.38	ug/L	72
25) Isophorone	7.08	82	38582	869.61	ug/L	87
26) 2-Nitrophenol	7.15	139	13168	806.14	ug/L	64
27) 2,4-Dimethylphenol	7.28	107	28732	794.35	ug/L	85
28) bis(2-Chloroethoxy)methane	7.37	93	20730	751.01	ug/L	74
29) Benzoic Acid	7.56	105	70751	6306.99	ug/L #	55
30) 2,4-Dichlorophenol	7.44	162	23485	809.26	ug/L	99
31) 1,2,4-Trichlorobenzene	7.51	180	23738	838.65	ug/L	95
32) Naphthalene	7.56	128	77070	833.63	ug/L	80
33) 4-Chloroaniline	7.70	127	14317	1029.64	ug/L	98
34) Hexachlorobutadiene	7.81	225	19408	848.51	ug/L	88
35) 4-Chloro-3-methylphenol	8.31	107	29457	804.73	ug/L	73
36) 2-Methylnaphthalene	8.35	141	53666	831.73	ug/L	73
37) 1-Methylnaphthalene	8.47	141	48164	807.54	ul/l	63
39) Hexachlorocyclopentadiene	8.62	237	17737	924.15	ug/L	94
40) 2,3-Dichloroaniline	8.71	161	28280	952.54	ug/L	95
41) 2,4,6-Trichlorophenol	8.72	196	16620	964.84	ug/L	99
42) 2,4,5-Trichlorophenol	8.77	196	17526	1002.60	ug/L	51
44) 2-Chloronaphthalene	8.87	162	49960	987.80	ug/L	91
45) Biphenyl	9.52	154	41752	624.75	ug/L #	112

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

Data File : C:\MSDCHEM\1\DATA\A00373.D
Acq On : 29 Aug 2002 11:56
Sample : 0.5 NG/UL 8270 ICAL STD NO 0980-54-5
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:22:12 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:22:04 2002
Response via : Initial Calibration
DataAcq Meth :

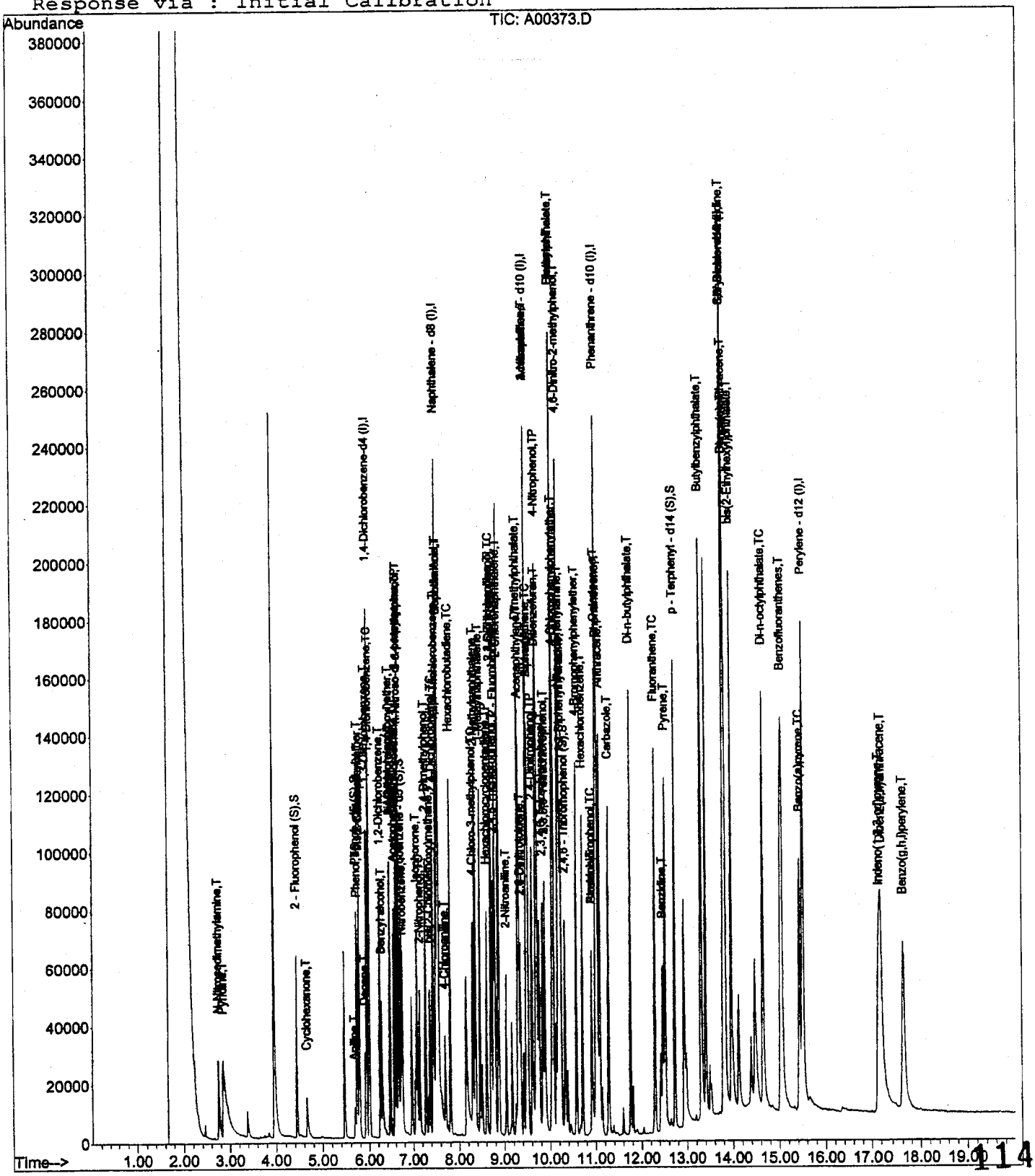
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	2-Nitroaniline	9.05	138	15679	850.00	ug/L		90
47)	Dimethylphthalate	9.30	163	82017	999.76	ug/L		100
48)	Acenaphthylene	9.32	152	74501	902.70	ug/L		96
49)	2,6-Dinitrotoluene	9.36	165	15238	1026.36	ug/L		86
50)	3-Nitroaniline	9.49	138	8746	955.88	ug/L		84
51)	Acenaphthene	9.52	153	53503	956.66	ug/L		94
52)	2,4-Dinitrophenol	9.61	184	25376	3386.30	ug/L	#	68
53)	4-Nitrophenol	9.72	109	97340+	4605.03	ug/L	#	40
54)	Dibenzofuran	9.70	168	72197	973.99	ug/L	#	1
55)	2,4-Dinitrotoluene	9.36	165	15830	635.99	ug/L		88
56)	2,3,4,6-Tetrachlorophenol	9.84	232	16215	858.94	ug/L	#	51
57)	2,3,5,6-Tetrachlorophenol	9.89	232	15296	1006.05	ul/l	#	56
58)	Diethylphthalate	10.06	149	72222	1020.66	ug/L		74
59)	Fluorene	10.06	166	52714	908.51	ug/L		64
60)	4-Chlorophenylphenylether	10.08	204	36223	1062.15	ug/L		73
61)	4-Nitroaniline	9.49	138	8746	474.14	ug/L		59
63)	4,6-Dinitro-2-methylphenol	10.19	198	65509	4698.95	ug/L	#	53
64)	n-Nitrosodiphenylamine	10.22	169	44722	760.37	ug/L	#	1
66)	1,2-Diphenylhydrazine	10.25	182	23755	820.41	ug/L	#	1
67)	4-Bromophenylphenylether	10.59	248	24154	948.59	ug/L	#	63
68)	Hexachlorobenzene	10.72	284	23334	931.19	ug/L		88
69)	Atrazine	10.92	200	3275+	904.98	ug/L		38
70)	Pentachlorophenol	10.92	266	12889	967.59	ug/L		88
71)	Phenanthrene	11.05	178	87225	872.81	ug/L		75
72)	Anthracene	11.10	178	77709	1020.23	ug/L		80
73)	Octadecane	11.01	57	26814	997.38	ug/L		49
74)	Carbazole	11.29	167	72226	876.26	ug/L		81
75)	Di-n-butylphthalate	11.76	149	117267	944.05	ug/L		95
76)	Fluoranthene	12.30	202	82354	846.43	ug/L		83
77)	Pyrene	12.53	202	83577	879.19	ug/L		72
78)	Benzidine	12.47	184	43221	2964.87	ug/L		100
81)	Butylbenzylphthalate	13.30	149	65687	831.68	ug/L		77
82)	Benzo(a)anthracene	13.83	228	86591	623.78	ug/L		54
83)	3,3'-Dichlorobenzidine	13.80	252	44578+	768.94	ug/L		100
84)	Chrysene	13.83	228	89658	989.53	ug/L		82
85)	bis(2-Ethylhexyl)phthalate	13.96	149	111120	762.63	ug/L		99
87)	Di-n-octylphthalate	14.65	149	184522	774.19	ug/L		95
88)	Benzofluoranthenes	15.05	252	208643	1542.88	ug/L		80
89)	Benzo(a)pyrene	15.44	252	96112	704.40	ug/L		78
90)	Indeno(1,2,3-cd)pyrene	17.16	276	114850	767.83	ug/L		99
91)	Dibenz(a,h)anthracene	17.20	278	108083	765.63	ug/L		73
92)	Benzo(g,h,i)perylene	17.62	276	99109	746.30	ug/L		86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00373.D
Acq On : 29 Aug 2002 11:56
Sample : 0.5 NG/UL 8270 ICAL STD NO 0980-54-5
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:22 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00374.D
Acq On : 29 Aug 2002 12:22
Sample : 1.0 NG/UL 8270 ICAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:49:53 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:49:41 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	56831	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	127520	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.49	162	79424	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.03	188	137991	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.81	240	152114	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.51	264	169775	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.42	112	42901	1015.76 ug/L	-0.02
7) Phenol - d5 (S)	5.72	99	50090	989.21 ug/L	-0.01
23) Nitrobenzene - d5 (S)	6.73	82	41961	1026.83 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.80	172	106086	979.85 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.34	330	34980	1137.02 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.73	244	149351	965.99 ug/L	0.00

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.71	74	49020	3822.97 ug/L #	100
3) Pyridine	2.76	79	166890+	4733.11 ug/L	98
5) Cyclohexanone	4.63	55	14146	1060.56 ug/L	96
6) Aniline	5.67	93	20457	1264.30 ug/L	100
8) Phenol	5.74	94	50076	992.22 ug/L	74
9) bis(2-Chloroethyl)ether	5.78	63	52312	966.30 ug/L #	20
10) 2-Chlorophenol	5.78	128	46633	939.31 ug/L	65
11) Decane	5.91	57	22379	960.91 ug/L	97
12) 1,3-Dichlorobenzene	5.94	146	54537	969.77 ug/L	74
13) 1,4-Dichlorobenzene	6.01	146	55615	975.91 ug/L	99
14) Benzyl alcohol	6.28	79	49060	1073.18 ug/L	98
15) 1,2-Dichlorobenzene	6.24	146	52597	983.34 ug/L	98
16) 2-Methylphenol	6.47	108	35424	1002.14 ug/L	94
17) bis(2-chloroisopropyl)ethe	6.47	121	7556+	1070.50 ug/L #	1
18) 3-&4-Methylphenol	6.67	108	74276	1681.45 ug/L #	35
19) n-Nitroso-di-n-propylamine	6.65	70	31788	971.84 ug/L	72
20) Acetophenone	6.57	105	72698	927.28 ug/L	99
21) Hexachloroethane	6.62	166	13110	1056.24 ug/L	85
24) Nitrobenzene	6.75	77	39442	1000.95 ug/L	68
25) Isophorone	7.08	82	74320	1044.31 ug/L	86
26) 2-Nitrophenol	7.15	139	24670	1027.02 ug/L	57
27) 2,4-Dimethylphenol	7.28	107	58274	1058.27 ug/L	87
28) bis(2-Chloroethoxy)methane	7.37	93	38555	988.75 ug/L	82
29) Benzoic Acid	7.49	105	131230	6195.95 ug/L #	8
30) 2,4-Dichlorophenol	7.44	162	45920	1035.49 ug/L	97
31) 1,2,4-Trichlorobenzene	7.51	180	47274	967.12 ug/L	94
32) Naphthalene	7.56	128	147600	998.08 ug/L	79
33) 4-Chloroaniline	7.70	127	27328	1029.00 ug/L	95
34) Hexachlorobutadiene	7.81	225	35930	1001.19 ug/L	90
35) 4-Chloro-3-methylphenol	8.31	107	55924	1008.75 ug/L	72
36) 2-Methylnaphthalene	8.35	141	100916	1004.10 ug/L	74
37) 1-Methylnaphthalene	8.47	141	93587	1002.49 ul/l	66
39) Hexachlorocyclopentadiene	8.62	237	34768	1041.72 ug/L	94
40) 2,3-Dichloroaniline	8.71	161	57627	1018.39 ug/L	93
41) 2,4,6-Trichlorophenol	8.73	196	30076	1001.22 ug/L	98
42) 2,4,5-Trichlorophenol	8.78	196	33627	1131.95 ug/L	48
44) 2-Chloronaphthalene	8.87	162	91699	980.19 ug/L	89
45) Biphenyl	9.52	154	83507	979.87 ug/L #	1

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

Data File : C:\MSDCHEM\1\DATA\A00374.D Vial: 0
Acq On : 29 Aug 2002 12:22 Operator:
Sample : 1.0 NG/UL 8270 ICAL STD NO 0980-54-6 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:49:53 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:49:41 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	2-Nitroaniline	9.05	138	33525	1061.41 ug/L		85
47)	Dimethylphthalate	9.31	163	163052	1008.95 ug/L		97
48)	Acenaphthylene	9.32	152	153318	1023.29 ug/L		92
49)	2,6-Dinitrotoluene	9.36	165	29276	1006.78 ug/L		85
50)	3-Nitroaniline	9.50	138	18645	1122.71 ug/L		79
51)	Acenaphthene	9.52	153	101817	1013.52 ug/L		99
52)	2,4-Dinitrophenol	9.61	184	65714	5376.01 ug/L		79
53)	4-Nitrophenol	9.73	109	229361+	5511.43 ug/L	#	28
54)	Dibenzofuran	9.70	168	148319	1043.24 ug/L	#	1
55)	2,4-Dinitrotoluene	9.36	165	29772	986.60 ug/L		90
56)	2,3,4,6-Tetrachlorophenol	9.84	232	35982	1170.11 ug/L	#	48
57)	2,3,5,6-Tetrachlorophenol	9.89	232	33380	1145.83 ul/l	#	54
58)	Diethylphthalate	10.07	149	129385	1014.80 ug/L		48
59)	Fluorene	10.06	166	106602	1044.19 ug/L		66
60)	4-Chlorophenylphenylether	10.08	204	66875	975.38 ug/L		67
61)	4-Nitroaniline	9.50	138	18645	1122.71 ug/L		76
63)	4,6-Dinitro-2-methylphenol	10.19	198	139037	5233.68 ug/L	#	61
64)	n-Nitrosodiphenylamine	10.22	169	97393	998.22 ug/L	#	1
66)	1,2-Diphenylhydrazine	10.25	182	52524	1002.48 ug/L	#	17
67)	4-Bromophenylphenylether	10.59	248	47373	988.12 ug/L	#	62
68)	Hexachlorobenzene	10.72	284	45141	992.23 ug/L		87
69)	Atrazine	10.92	200	7202+	970.49 ug/L		38
70)	Pentachlorophenol	10.92	266	28849	1160.96 ug/L		88
71)	Phenanthrene	11.05	178	161198	967.36 ug/L		78
72)	Anthracene	11.10	178	161516	1002.48 ug/L		83
73)	Octadecane	11.01	57	56128	1081.65 ug/L		50
74)	Carbazole	11.29	167	148475	1008.14 ug/L		83
75)	Di-n-butylphthalate	11.76	149	220891	1026.50 ug/L		97
76)	Fluoranthene	12.30	202	171285	1050.38 ug/L		81
77)	Pyrene	12.53	202	171809	1045.51 ug/L		69
78)	Benzidine	12.47	184	150691	5950.85 ug/L		100
81)	Butylbenzylphthalate	13.30	149	127894	981.97 ug/L		83
82)	Benzo(a)anthracene	13.79	228	188335	1055.16 ug/L		88
83)	3,3'-Dichlorobenzidine	13.80	252	50521+	661.10 ug/L		98
84)	Chrysene	13.84	228	182657	1072.01 ug/L		84
85)	bis(2-Ethylhexyl)phthalate	13.96	149	211271	942.35 ug/L		97
87)	Di-n-octylphthalate	14.65	149	360174	1022.34 ug/L		96
88)	Benzofluoranthenes	15.05	252	426603	2079.81 ug/L		75
89)	Benzo(a)pyrene	15.44	252	199691	1055.96 ug/L		72
90)	Indeno(1,2,3-cd)pyrene	17.16	276	237394	1063.96 ug/L		92
91)	Dibenz(a,h)anthracene	17.20	278	218145	1069.18 ug/L		74
92)	Benzo(g,h,i)perylene	17.63	276	204343	1049.12 ug/L		93

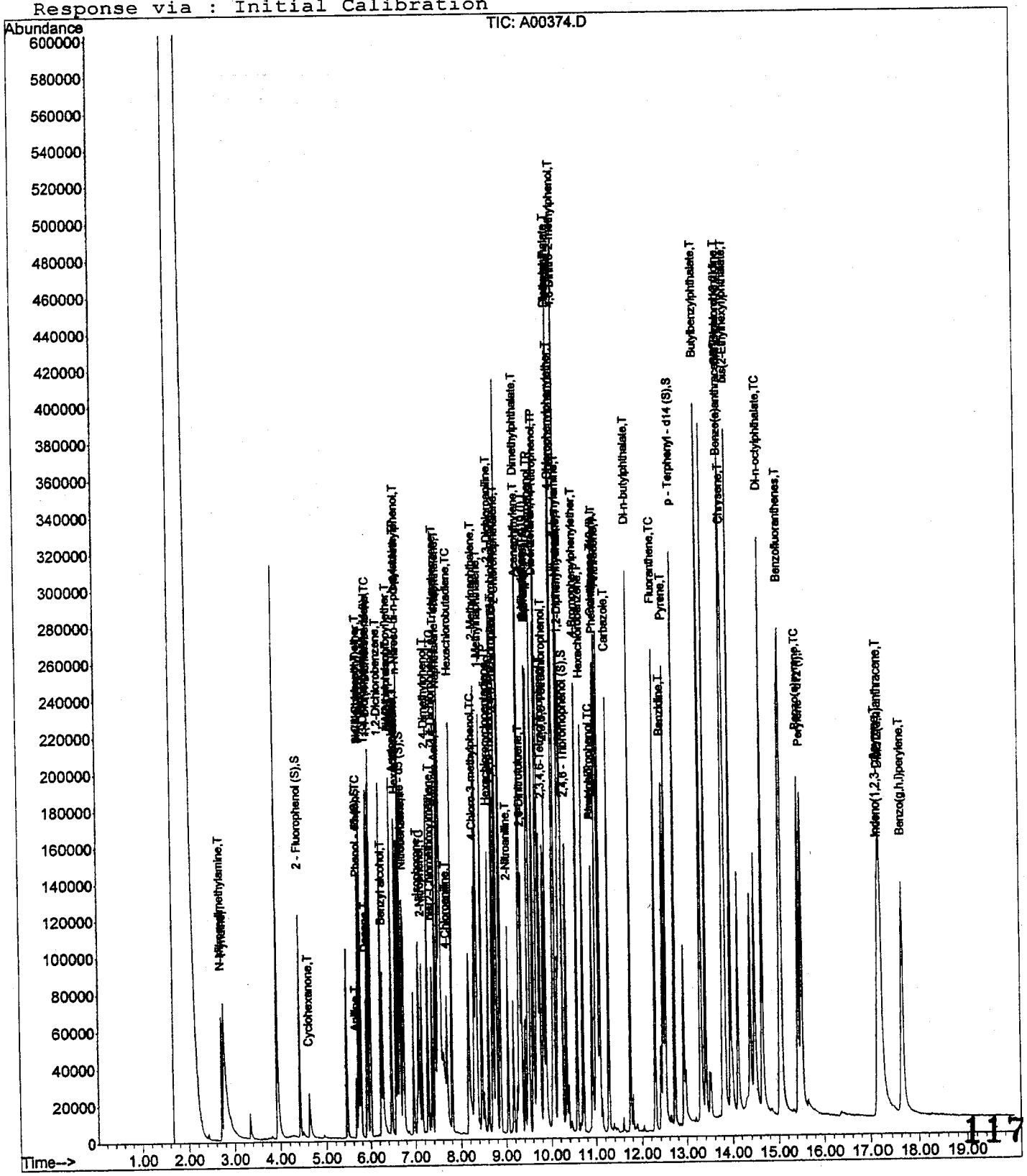
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00374.D
Acq On : 29 Aug 2002 12:22
Sample : 1.0 NG/UL 8270 ICAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:49 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00375.D Vial: 0
Acq On : 29 Aug 2002 12:48 Operator:
Sample : 1.5 NG/UL 8270 ICAL STD NO 0980-54-7 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:46:10 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:46:06 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	52863	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	126294	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.49	162	76717	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.03	188	136704	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.81	240	138673	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.52	264	162054	1000.00 ug/L	0.01
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.42	112	57909	1474.02 ug/L	-0.02
7) Phenol - d5 (S)	5.72	99	71148	1510.54 ug/L	0.00
23) Nitrobenzene - d5 (S)	6.73	82	54466	1345.78 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.80	172	168539	1611.62 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.34	330	50067	1642.75 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.73	244	215652	1407.95 ug/L	0.00

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.72	74	72378	6068.31 ug/L #	100
3) Pyridine	2.74	79	300965+	8866.78 ug/L	97
5) Cyclohexanone	4.63	55	18557	1495.69 ug/L	95
6) Aniline	5.67	93	29682	1972.13 ug/L	99
8) Phenol	5.74	94	69372	1477.73 ug/L	81
9) bis(2-Chloroethyl)ether	5.78	63	74182	1473.13 ug/L #	22
10) 2-Chlorophenol	5.78	128	73207	1585.27 ug/L	61
11) Decane	5.91	57	31021	1431.97 ug/L	94
12) 1,3-Dichlorobenzene	5.94	146	79047	1511.12 ug/L	76
13) 1,4-Dichlorobenzene	6.01	146	79238	1494.80 ug/L	98
14) Benzyl alcohol	6.27	79	67143	1578.99 ug/L	98
15) 1,2-Dichlorobenzene	6.24	146	72222	1451.59 ug/L	98
16) 2-Methylphenol	6.47	108	52366	1592.62 ug/L	93
17) bis(2-chloroisopropyl)ethe	6.46	121	8923+	1359.07 ug/L #	1
18) 3-&4-Methylphenol	6.67	108	107387	2613.49 ug/L #	40
19) n-Nitroso-di-n-propylamine	6.65	70	47325	1555.45 ug/L	70
20) Acetophenone	6.57	105	107964	1480.47 ug/L	95
21) Hexachloroethane	6.61	166	16168	1400.39 ug/L #	84
24) Nitrobenzene	6.75	77	59631	1528.00 ug/L	65
25) Isophorone	7.07	82	105378	1495.10 ug/L	85
26) 2-Nitrophenol	7.14	139	36238	1523.25 ug/L	57
27) 2,4-Dimethylphenol	7.28	107	78356	1436.77 ug/L	88
28) bis(2-Chloroethoxy)methane	7.37	93	54282	1405.58 ug/L	81
29) Benzoic Acid	7.52	105	180949	8626.34 ug/L	81
30) 2,4-Dichlorophenol	7.44	162	66724	1519.22 ug/L	97
31) 1,2,4-Trichlorobenzene	7.51	180	71755	1482.20 ug/L	93
32) Naphthalene	7.56	128	215074	1468.46 ug/L	84
33) 4-Chloroaniline	7.70	127	38507	1464.01 ug/L	98
34) Hexachlorobutadiene	7.81	225	51789	1457.11 ug/L	88
35) 4-Chloro-3-methylphenol	8.32	107	84286	1535.09 ug/L	75
36) 2-Methylnaphthalene	8.35	141	145824	1465.02 ug/L	72
37) 1-Methylnaphthalene	8.47	141	136622	1477.69 ul/l	66
39) Hexachlorocyclopentadiene	8.62	237	51204	1588.31 ug/L	95
40) 2,3-Dichloroaniline	8.71	161	89635	1639.93 ug/L	98
41) 2,4,6-Trichlorophenol	8.73	196	46923	1617.16 ug/L	94
42) 2,4,5-Trichlorophenol	8.78	196	44763	1559.97 ug/L #	34
44) 2-Chloronaphthalene	8.87	162	132682	1468.31 ug/L	96
45) Biphenyl	9.52	154	128458	1560.50 ug/L #	11

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

Data File : C:\MSDCHEM\1\DATA\A00375.D
Acq On : 29 Aug 2002 12:48
Sample : 1.5 NG/UL 8270 ICAL STD NO 0980-54-7
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:46:10 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

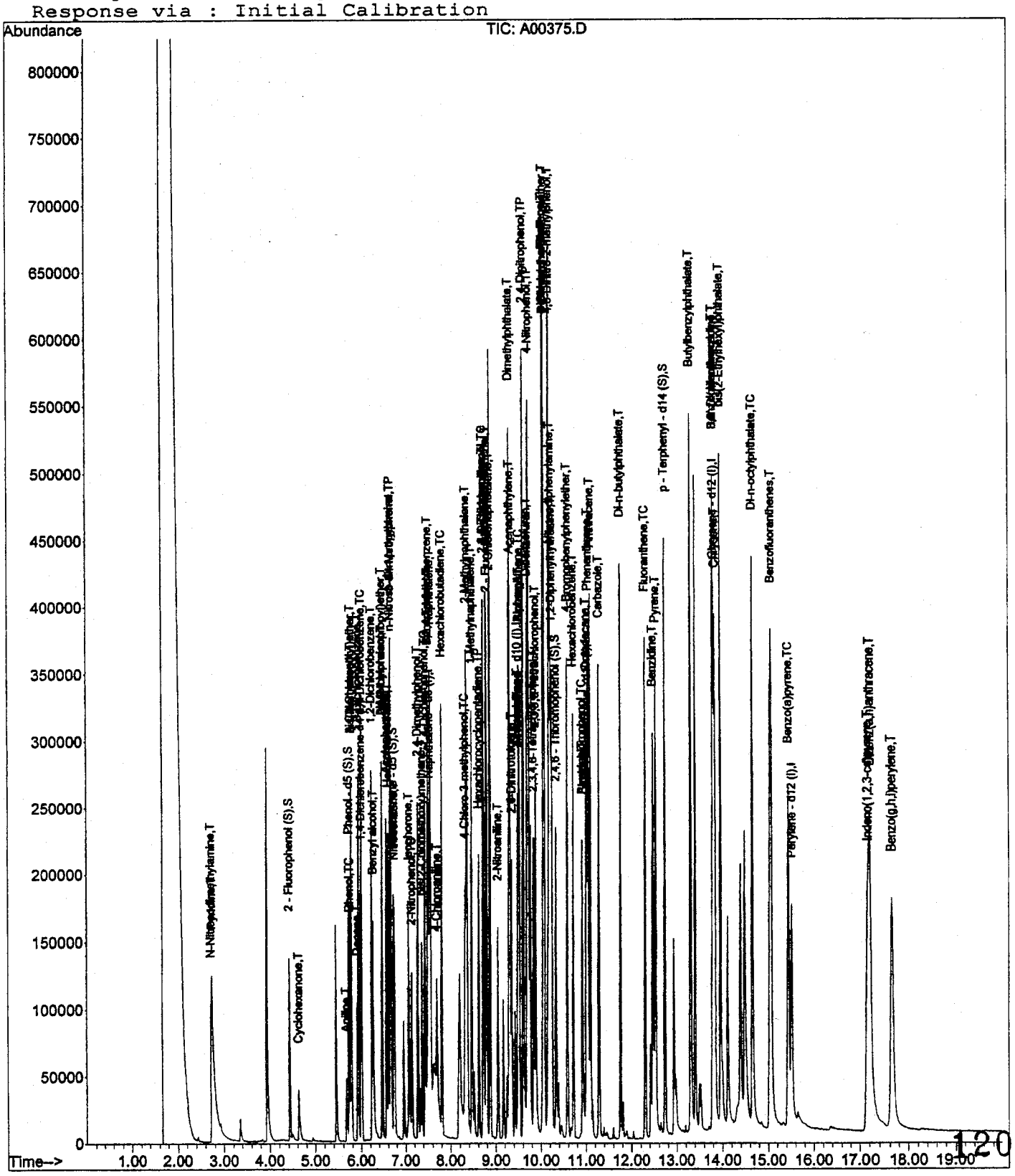
Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:46:06 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	2-Nitroaniline	9.05	138	51786	1697.42 ug/L		80
47)	Dimethylphthalate	9.31	163	249848	1600.58 ug/L		99
48)	Acenaphthylene	9.32	152	224256	1549.57 ug/L		87
49)	2,6-Dinitrotoluene	9.36	165	44779	1594.26 ug/L		86
50)	3-Nitroaniline	9.50	138	25241	1573.52 ug/L		81
51)	Acenaphthene	9.52	153	150310	1549.03 ug/L		99
52)	2,4-Dinitrophenol	9.61	184	119810	10147.41 ug/L		87
53)	4-Nitrophenol	9.73	109	360676+	8972.67 ug/L	#	22
54)	Dibenzofuran	9.70	168	208473	1518.10 ug/L	#	7
55)	2,4-Dinitrotoluene	9.36	165	45143	1548.76 ug/L		91
56)	2,3,4,6-Tetrachlorophenol	9.84	232	50934	1714.79 ug/L	#	49
57)	2,3,5,6-Tetrachlorophenol	9.89	232	50124	1781.31 ul/l	#	54
58)	Diethylphthalate	10.07	149	171998	1396.63 ug/L		16
59)	Fluorene	10.06	166	159428	1616.73 ug/L		72
60)	4-Chlorophenylphenylether	10.08	204	105955	1599.89 ug/L		72
61)	4-Nitroaniline	9.50	138	25241	1573.52 ug/L		69
63)	4,6-Dinitro-2-methylphenol	10.19	198	225050	8551.17 ug/L	#	73
64)	n-Nitrosodiphenylamine	10.22	169	159847	1653.76 ug/L	#	1
66)	1,2-Diphenylhydrazine	10.25	182	86770	1671.70 ug/L	#	40
67)	4-Bromophenylphenylether	10.59	248	74002	1558.09 ug/L	#	67
68)	Hexachlorobenzene	10.72	284	66899	1484.34 ug/L		89
69)	Atrazine	10.92	200	10523+	1431.36 ug/L		38
70)	Pentachlorophenol	10.92	266	41713	1694.45 ug/L		88
71)	Phenanthrene	11.05	178	257976	1562.70 ug/L		86
72)	Anthracene	11.10	178	253005	1585.10 ug/L		87
73)	Octadecane	11.01	57	71107	1383.22 ug/L		45
74)	Carbazole	11.29	167	233135	1597.88 ug/L		87
75)	Di-n-butylphthalate	11.76	149	288370	1352.70 ug/L		97
76)	Fluoranthene	12.30	202	248434	1537.83 ug/L		78
77)	Pyrene	12.53	202	245134	1505.76 ug/L		68
78)	Benzidine	12.47	184	233668	9314.52 ug/L		100
81)	Butylbenzylphthalate	13.30	149	168706	1420.87 ug/L		87
82)	Benzo(a)anthracene	13.79	228	306242	1882.89 ug/L		85
83)	3,3'-Dichlorobenzidine	13.80	252	92065+	1321.50 ug/L		100
84)	Chrysene	13.84	228	230473	1482.92 ug/L		79
85)	bis(2-Ethylhexyl)phthalate	13.96	149	290701	1422.32 ug/L		99
87)	Di-n-octylphthalate	14.65	149	479024	1424.47 ug/L		95
88)	Benzofluoranthenes	15.06	252	613401	3132.99 ug/L		76
89)	Benzo(a)pyrene	15.44	252	291770	1616.38 ug/L		69
90)	Indeno(1,2,3-cd)pyrene	17.17	276	348786	1637.67 ug/L		93
91)	Dibenz(a,h)anthracene	17.21	278	309555	1589.49 ug/L		72
92)	Benzo(g,h,i)perylene	17.64	276	293368	1577.95 ug/L		90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00375.D Vial: 0
Acq On : 29 Aug 2002 12:48 Operator:
Sample : 1.5 NG/UL 8270 ICAL STD NO 0980-54-7 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:46 2002 Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00376.D Vial: 0
Acq On : 29 Aug 2002 13:14 Operator:
Sample : 2.5 NG/UL 8270 ICAL STD NO 0980-55-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:34:22 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:34:16 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	60036	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	131889	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.49	162	82840	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.03	188	150223	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.81	240	133550	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.52	264	161643	1000.00 ug/L	0.01
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.43	112	94909	2235.41 ug/L	-0.01
7) Phenol - d5 (S)	5.73	99	125218	2483.62 ug/L	0.00
23) Nitrobenzene - d5 (S)	6.73	82	87769	2036.54 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.80	172	344083	3477.52 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.34	330	90107	2931.95 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.73	244	387995	2656.60 ug/L	0.00
Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.73	74	205843	17292.35 ug/L #	100
3) Pyridine	2.73	79	457747+	12381.59 ug/L	80
5) Cyclohexanone	4.63	55	31472	2404.97 ug/L	92
6) Aniline	5.67	93	50667	3011.21 ug/L	100
8) Phenol	5.74	94	132290	2624.71 ug/L	98
9) bis(2-Chloroethyl)ether	5.78	63	117798	2245.08 ug/L #	24
10) 2-Chlorophenol	5.78	128	123008	2564.45 ug/L	57
11) Decane	5.91	57	51381	2214.05 ug/L	93
12) 1,3-Dichlorobenzene	5.94	146	129841	2311.04 ug/L	83
13) 1,4-Dichlorobenzene	6.01	146	130840	2290.29 ug/L	95
14) Benzyl alcohol	6.27	79	116927	2580.81 ug/L	94
15) 1,2-Dichlorobenzene	6.24	146	128335	2409.65 ug/L	89
16) 2-Methylphenol	6.47	108	89557	2558.08 ug/L	88
17) bis(2-chloroisopropyl)ethe	6.46	121	16913+	2348.27 ug/L #	1
18) 3-&4-Methylphenol	6.67	108	187040	4832.65 ug/L #	46
19) n-Nitroso-di-n-propylamine	6.65	70	74773	2282.37 ug/L	71
20) Acetophenone	6.57	105	184295	2345.36 ug/L	90
21) Hexachloroethane	6.61	166	29612	2393.23 ug/L	83
24) Nitrobenzene	6.75	77	93315	2525.98 ug/L	59
25) Isophorone	7.07	82	162141	2333.67 ug/L	87
26) 2-Nitrophenol	7.14	139	64904	2778.73 ug/L	63
27) 2,4-Dimethylphenol	7.28	107	139389	2608.32 ug/L	90
28) bis(2-Chloroethoxy)methane	7.37	93	98492	2576.92 ug/L	97
29) Benzoic Acid	7.58	105	295443	14428.50 ug/L #	50
30) 2,4-Dichlorophenol	7.44	162	118165	2720.96 ug/L	92
31) 1,2,4-Trichlorobenzene	7.51	180	123887	2675.37 ug/L	92
32) Naphthalene	7.56	128	367541	2676.30 ug/L	83
33) 4-Chloroaniline	7.70	127	63862	2505.46 ug/L	99
34) Hexachlorobutadiene	7.81	225	85675	2445.86 ug/L	88
35) 4-Chloro-3-methylphenol	8.32	107	147531	2762.99 ug/L	79
36) 2-Methylnaphthalene	8.35	141	255321	2760.24 ug/L	70
37) 1-Methylnaphthalene	8.47	141	236035	2779.55 ul/l	69
39) Hexachlorocyclopentadiene	8.62	237	94358	2947.60 ug/L	92
40) 2,3-Dichloroaniline	8.72	161	173059	3247.68 ug/L	96
41) 2,4,6-Trichlorophenol	8.73	196	80965	2825.75 ug/L	89
42) 2,4,5-Trichlorophenol	8.78	196	59283	1980.32 ug/L #	1
44) 2-Chloronaphthalene	8.87	162	215221	2544.84 ug/L	95
45) Biphenyl	9.52	154	267048	3182.52 ug/L #	1

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

Data File : C:\MSDCHEM\1\DATA\A00376.D Vial: 0
Acq On : 29 Aug 2002 13:14 Operator:
Sample : 2.5 NG/UL 8270 ICAL STD NO 0980-55-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:34:22 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:34:16 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	2-Nitroaniline	9.05	138	93948	3124.59 ug/L	75
47)	Dimethylphthalate	9.31	163	468144	3065.25 ug/L	97
48)	Acenaphthylene	9.32	152	420322	3082.60 ug/L	80
49)	2,6-Dinitrotoluene	9.36	165	80346	2914.67 ug/L	91
50)	3-Nitroaniline	9.50	138	39833	2459.38 ug/L	82
51)	Acenaphthene	9.52	153	271513	2932.10 ug/L	83
52)	2,4-Dinitrophenol	9.62	184	223265	19747.96 ug/L	88
53)	4-Nitrophenol	9.75	109	736129+	19228.73 ug/L #	14
54)	Dibenzofuran	9.70	168	384996	2833.97 ug/L	37
55)	2,4-Dinitrotoluene	9.36	165	90668	3054.93 ug/L	79
56)	2,3,4,6-Tetrachlorophenol	9.85	232	96150	3263.45 ug/L #	45
57)	2,3,5,6-Tetrachlorophenol	9.90	232	90351	3334.28 ul/l #	55
58)	Diethylphthalate	10.08	149	244144	1939.71 ug/L #	1
59)	Fluorene	10.06	166	318601	3408.82 ug/L	80
60)	4-Chlorophenylphenylether	10.08	204	184730	2847.35 ug/L	71
61)	4-Nitroaniline	9.50	138	39833	2206.49 ug/L	72
63)	4,6-Dinitro-2-methylphenol	10.20	198	403002	15426.50 ug/L	74
64)	n-Nitrosodiphenylamine	10.23	169	365308	3774.83 ug/L #	1
66)	1,2-Diphenylhydrazine	10.25	182	184818	3565.92 ug/L	91
67)	4-Bromophenylphenylether	10.59	248	132824	2761.82 ug/L #	65
68)	Hexachlorobenzene	10.72	284	120768	2622.92 ug/L	86
69)	Atrazine	10.92	200	19608+	2631.74 ug/L	38
70)	Pentachlorophenol	10.92	266	79200	3231.38 ug/L	89
71)	Phenanthrene	11.06	178	475000	2999.51 ug/L	90
72)	Anthracene	11.10	178	475998	3218.05 ug/L	96
73)	Octadecane	11.01	57	127280	2432.34 ug/L	46
74)	Carbazole	11.29	167	422131	2858.87 ug/L	89
75)	Di-n-butylphthalate	11.76	149	423659	1894.80 ug/L	97
76)	Fluoranthene	12.30	202	445252	2826.57 ug/L	76
77)	Pyrene	12.53	202	450686	2819.27 ug/L	62
78)	Benzidine	12.47	184	438263	17789.93 ug/L	100
81)	Butylbenzylphthalate	13.30	149	255658	2375.45 ug/L	100
82)	Benzo(a)anthracene	13.80	228	490258m	3256.79 ug/L	
83)	3,3'-Dichlorobenzidine	13.80	252	194764+	3050.28 ug/L	98
84)	Chrysene	13.84	228	424023	3280.56 ug/L	75
85)	bis(2-Ethylhexyl)phthalate	13.96	149	414895	2239.34 ug/L	100
87)	Di-n-octylphthalate	14.65	149	734644	2322.74 ug/L	94
88)	Benzofluoranthenes	15.06	252	1065707	5992.91 ug/L	72
89)	Benzo(a)pyrene	15.45	252	507230	2948.06 ug/L	68
90)	Indeno(1,2,3-cd)pyrene	17.19	276	629149	3334.55 ug/L	83
91)	Dibenz(a,h)anthracene	17.23	278	534756	2974.25 ug/L	69
92)	Benzo(g,h,i)perylene	17.66	276	515343	3102.74 ug/L	99

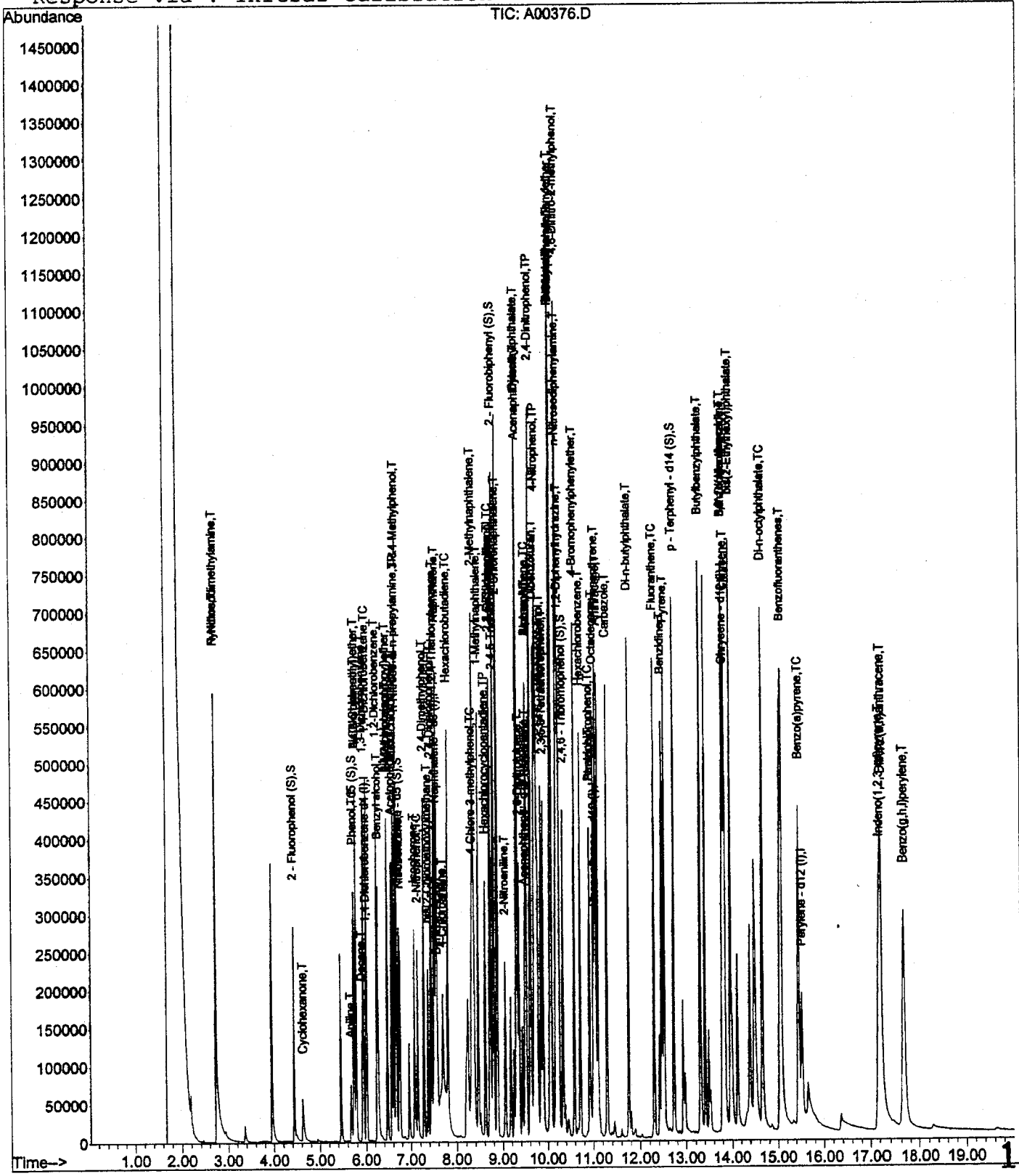
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00376.D
Acq On : 29 Aug 2002 13:14
Sample : 2.5 NG/UL 8270 ICAL STD NO 0980-55-2
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:34 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00377.D Vial: 0
Acq On : 29 Aug 2002 13:40 Operator:
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:52:55 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	44408	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	108768	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.48	162	64639	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.03	188	113273	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.81	240	122554	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.51	264	146956	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	0.00	112	0	0.00 ug/L	
7) Phenol - d5 (S)	5.79	99	2042	51.61 ug/L	0.06
23) Nitrobenzene - d5 (S)	0.00	82	0	0.00 ug/L	
43) 2 - Fluorobiphenyl (S)	0.00	172	0	0.00 ug/L	
65) 2,4,6 - Tribromophenol (S)	0.00	330	0	0.00 ug/L	
79) p - Terphenyl - d14 (S)	12.72	244	672	5.29 ug/L	0.00

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.73	74	46561	4647.02 ug/L #	100
3) Pyridine	2.79	79	102125+	4000.70 ug/L	99
6) Aniline	5.67	93	27435	2169.89 ug/L	100
8) Phenol	5.74	94	35696	905.15 ug/L	51
9) bis(2-Chloroethyl)ether	5.78	63	40558	958.76 ug/L #	21
10) 2-Chlorophenol	5.79	128	38161	983.69 ug/L	68
11) Decane	5.91	57	17351	953.44 ug/L	93
12) 1,3-Dichlorobenzene	5.94	146	44687	1016.92 ug/L	72
13) 1,4-Dichlorobenzene	6.01	146	45251	1016.18 ug/L	99
14) Benzyl alcohol	6.28	79	37370	1046.15 ug/L	98
15) 1,2-Dichlorobenzene	6.24	146	39746	950.95 ug/L	98
16) 2-Methylphenol	6.47	108	27361	990.57 ug/L	95
17) bis(2-chloroisopropyl)ethe	6.46	121	5456+	989.22 ug/L #	1
18) 3-&4-Methylphenol	6.66	108	27282	924.63 ug/L #	26
19) n-Nitroso-di-n-propylamine	6.65	70	23552	921.48 ug/L	71
20) Acetophenone	6.57	105	53354	870.92 ug/L	100
21) Hexachloroethane	6.62	166	8958	923.62 ug/L	84
24) Nitrobenzene	6.75	77	28722	854.57 ug/L	69
25) Isophorone	7.07	82	54684	900.87 ug/L	86
26) 2-Nitrophenol	7.14	139	18913	923.10 ug/L	59
27) 2,4-Dimethylphenol	7.28	107	47703	1015.65 ug/L	85
28) bis(2-Chloroethoxy)methane	7.37	93	31510	947.39 ug/L	78
29) Benzoic Acid	7.54	105	130618	7230.28 ug/L	79
30) 2,4-Dichlorophenol	7.44	162	35709	944.06 ug/L	95
31) 1,2,4-Trichlorobenzene	7.51	180	36999	887.41 ug/L	93
32) Naphthalene	7.56	128	103644	821.67 ug/L	78
33) 4-Chloroaniline	7.70	127	31730	1400.74 ug/L #	98
34) Hexachlorobutadiene	7.81	225	30753	1004.67 ug/L	90
35) 4-Chloro-3-methylphenol	8.29	107	41576	879.23 ug/L	76
36) 2-Methylnaphthalene	8.35	141	74717	871.59 ug/L	72
37) 1-Methylnaphthalene	8.46	141	74781	939.15 ul/l	63
39) Hexachlorocyclopentadiene	8.61	237	26700	982.97 ug/L	96
40) 2,3-Dichloroaniline	8.71	161	43936	954.04 ug/L	95
41) 2,4,6-Trichlorophenol	8.71	196	22198	907.99 ug/L	96
42) 2,4,5-Trichlorophenol	8.75	196	27352	1131.32 ug/L	50
44) 2-Chloronaphthalene	8.87	162	70466	925.51 ug/L	94
45) Biphenyl	9.52	154	63787	919.67 ug/L #	1
46) 2-Nitroaniline	9.04	138	25181	979.59 ug/L	86

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

Data File : C:\MSDCHEM\1\DATA\A00377.D Vial: 0
Acq On : 29 Aug 2002 13:40 Operator:
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:52:55 2002 Quant Results File: SV5-080902.RES

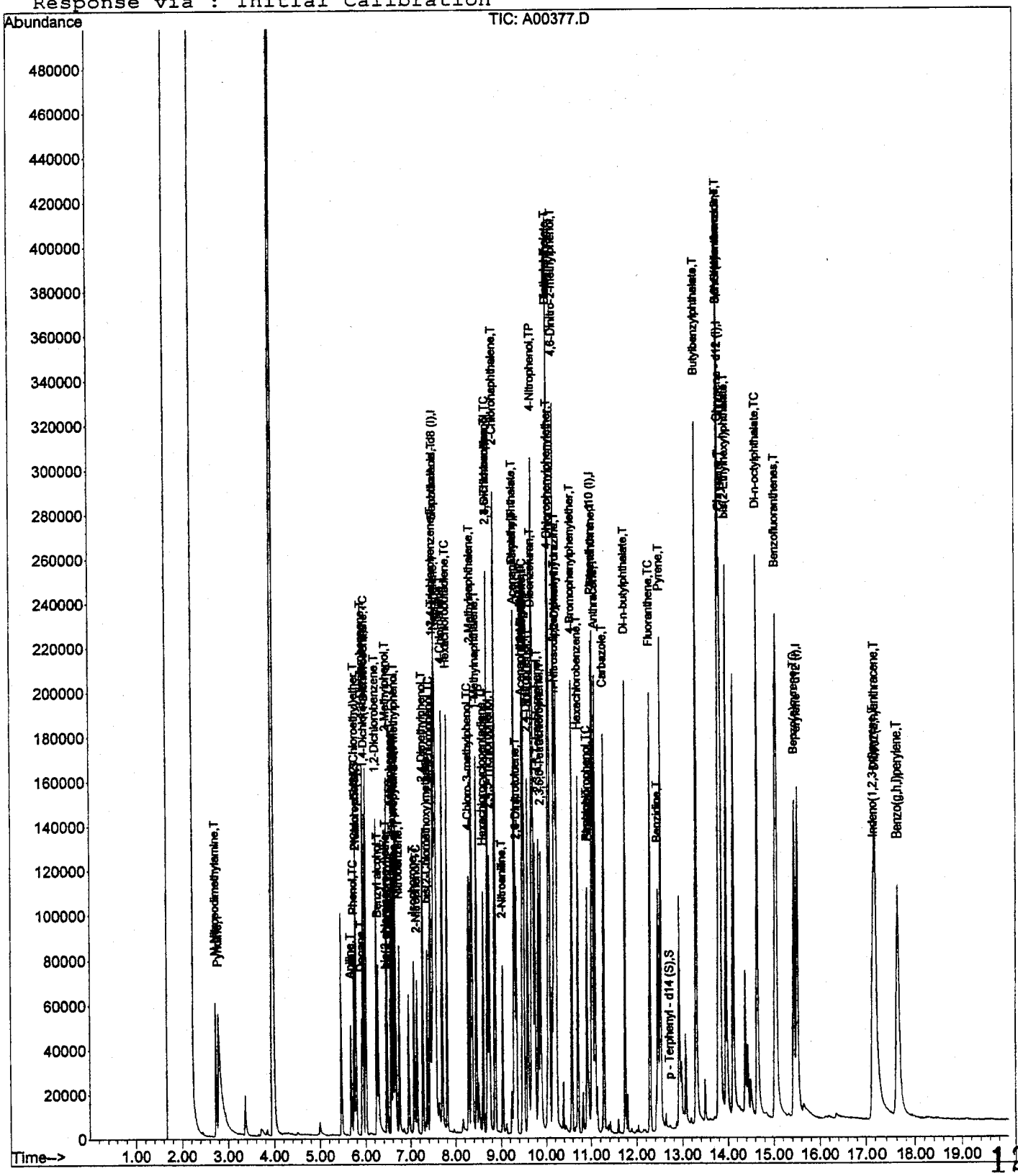
Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
47)	Dimethylphthalate	9.30	163	125191	951.86	ug/L		100
48)	Acenaphthylene	9.32	152	105147	862.30	ug/L		98
49)	2,6-Dinitrotoluene	9.35	165	22594	954.71	ug/L		88
50)	3-Nitroaniline	9.49	138	14754	1091.62	ug/L		84
51)	Acenaphthene	9.52	153	79424	971.45	ug/L		97
52)	2,4-Dinitrophenol	9.60	184	36408	3659.79	ug/L		70
53)	4-Nitrophenol	9.72	109	183642+	5422.18	ug/L	#	28
54)	Dibenzofuran	9.69	168	114774	991.95	ug/L	#	1
55)	2,4-Dinitrotoluene	9.35	165	22679	923.45	ug/L		88
56)	2,3,4,6-Tetrachlorophenol	9.84	232	25923	1035.82	ug/L	#	48
57)	2,3,5,6-Tetrachlorophenol	9.89	232	24438	1030.76	ul/l	#	54
58)	Diethylphthalate	10.06	149	101025	973.61	ug/L		46
59)	Fluorene	10.06	166	79841	960.94	ug/L		63
60)	4-Chlorophenylphenylether	10.08	204	53958	966.99	ug/L		65
61)	4-Nitroaniline	9.49	138	14754	1091.62	ug/L		65
63)	4,6-Dinitro-2-methylphenol	10.19	198	93443	4284.97	ug/L	#	55
64)	n-Nitrosodiphenylamine	10.22	169	68919	860.52	ug/L	#	1
66)	1,2-Diphenylhydrazine	10.24	182	39187	911.14	ug/L	#	26
67)	4-Bromophenylphenylether	10.58	248	40588	1031.34	ug/L	#	66
68)	Hexachlorobenzene	10.72	284	35593	953.09	ug/L		88
69)	Atrazine	10.92	200	5648+	927.17	ug/L		38
70)	Pentachlorophenol	10.92	266	23519	1153.00	ug/L		86
71)	Phenanthrene	11.05	178	129267	945.01	ug/L		77
72)	Anthracene	11.10	178	132071	998.60	ug/L		80
74)	Carbazole	11.28	167	121043	1001.23	ug/L		85
75)	Di-n-butylphthalate	11.76	149	172899	978.81	ug/L		95
76)	Fluoranthene	12.30	202	135894	1015.20	ug/L		80
77)	Pyrene	12.52	202	146666	1087.27	ug/L		68
78)	Benzidine	12.46	184	85815	4128.38	ug/L		100
81)	Butylbenzylphthalate	13.30	149	104564	996.49	ug/L		82
82)	Benzo(a)anthracene	13.79	228	154503	1069.54	ug/L		87
83)	3,3'-Dichlorobenzidine	13.79	252	146133+	2373.48	ug/L		99
84)	Chrysene	13.83	228	130598	951.27	ug/L		82
85)	bis(2-Ethylhexyl)phthalate	13.96	149	162531	899.81	ug/L		99
87)	Di-n-octylphthalate	14.64	149	287250	941.95	ug/L		94
88)	Benzofluoranthenes	15.05	252	343435	1934.33	ug/L		79
89)	Benzo(a)pyrene	15.43	252	155830	951.98	ug/L		74
90)	Indeno(1,2,3-cd)pyrene	17.16	276	197372	1021.94	ug/L		95
91)	Dibenz(a,h)anthracene	17.20	278	179093	1014.08	ug/L		73
92)	Benzo(g,h,i)perylene	17.63	276	168128	997.23	ug/L		89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00377.D Vial: 0
Acq On : 29 Aug 2002 13:40 Operator:
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:52 2002 Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00377.D Vial: 0
Acq On : 29 Aug 2002 13:40 Operator:
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4 (I)	1000.000	1000.000	0.0	78	0.00
2	T	N-Nitrosodimethylamine	5000.000	4647.016	7.1	95	-0.02
3	T	Pyridine	5000.000	4000.701	20.0	61	-0.06
4	S	2 - Fluorophenol (S)	1000.000	0.000	100.0#	0	-4.44#
5	T	Cyclohexanone	1000.000	0.000	100.0#	0	-4.66#
6	T	Aniline	1000.000	2169.889	-117.0#	134	-0.02
7	S	Phenol - d5 (S)	1000.000	51.608	94.8#	4	0.06
8	TC	Phenol	1000.000	905.149	9.5	71	0.00
9	T	bis(2-Chloroethyl)ether	1000.000	958.763	4.1	78	0.02
10	T	2-Chlorophenol	1000.000	983.695	1.6	82	0.00
11	T	Decane	1000.000	953.438	4.7	78	0.00
12	T	1,3-Dichlorobenzene	1000.000	1016.915	-1.7	82	0.01
13	TC	1,4-Dichlorobenzene	1000.000	1016.177	-1.6	81	0.00
14	T	Benzyl alcohol	1000.000	1046.146	-4.6	76	0.00
15	T	1,2-Dichlorobenzene	1000.000	950.951	4.9	76	-0.01
16	T	2-Methylphenol	1000.000	990.569	0.9	77	0.00
17	T	bis(2-chloroisopropyl)ether	1000.000	989.224	1.1	72	-0.01
18	T	3-&4-Methylphenol	2000.000	924.629	53.8#	37	0.00
19	TP	n-Nitroso-di-n-propylamine	1000.000	921.478	7.9	74	0.00
20	T	Acetophenone	1000.000	870.920	12.9	73	0.00
21	T	Hexachloroethane	1000.000	923.621	7.6	68	0.00
22	I	Naphthalene - d8 (I)	1000.000	1000.000	0.0	85	0.00
23	S	Nitrobenzene - d5 (S)	1000.000	0.000	100.0#	0	-6.73#
24	T	Nitrobenzene	1000.000	854.569	14.5	73	-0.01
25	T	Isophorone	1000.000	900.870	9.9	74	-0.01
26	TC	2-Nitrophenol	1000.000	923.101	7.7	77	-0.01
27	T	2,4-Dimethylphenol	1000.000	1015.648	-1.6	82	0.00
28	T	bis(2-Chloroethoxy)methane	1000.000	947.392	5.3	82	0.01
29	T	Benzoic Acid	5000.000	7230.282	-44.6#	100	0.08
30	TC	2,4-Dichlorophenol	1000.000	944.058	5.6	78	0.00
31	T	1,2,4-Trichlorobenzene	1000.000	887.412	11.3	78	0.01
32	T	Naphthalene	1000.000	821.674	17.8	70	0.00
33	T	4-Chloroaniline	1000.000	1400.736	-40.1#	116	0.00
34	TC	Hexachlorobutadiene	1000.000	1004.669	-0.5	86	0.01
35	TC	4-Chloro-3-methylphenol	1000.000	879.233	12.1	74	-0.02
36	T	2-Methylnaphthalene	1000.000	871.594	12.8	74	0.00
37	T	1-Methylnaphthalene	1000.000	939.150	6.1	80	-0.01
38	I	Acenaphthene - d10 (I)	1000.000	1000.000	0.0	81	0.00
39	TP	Hexachlorocyclopentadiene	1000.000	982.968	1.7	77	0.00
40	T	2,3-Dichloroaniline	1000.000	954.039	4.6	76	0.00
41	TC	2,4,6-Trichlorophenol	1000.000	907.985	9.2	74	-0.01
42	T	2,4,5-Trichlorophenol	1000.000	1131.316	-13.1	81	-0.02
43	S	2 - Fluorobiphenyl (S)	1000.000	0.000	100.0#	0	-8.78#
44	T	2-Chloronaphthalene	1000.000	925.514	7.4	77	0.02
45	T	Biphenyl	1000.000	919.671	8.0	76	0.02
46	T	2-Nitroaniline	1000.000	979.594	2.0	75	0.00
47	T	Dimethylphthalate	1000.000	951.858	4.8	77	0.00
48	T	Acenaphthylene	1000.000	862.304	13.8	69	0.00
49	T	2,6-Dinitrotoluene	1000.000	954.715	4.5	77	-0.02
50	T	3-Nitroaniline	1000.000	1091.624	-9.2	79	-0.02
51	TC	Acenaphthene	1000.000	971.452	2.9	78	0.00

(#) = Out of Range

Data File : C:\MSDCHEM\1\DATA\A00377.D Vial: 0
Acq On : 29 Aug 2002 13:40 Operator:
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
52	TP	2,4-Dinitrophenol	5000.000	3659.788	26.8#	55	-0.01
53	TP	4-Nitrophenol	5000.000	5422.177	-8.4	80	0.00
54	T	Dibenzofuran	1000.000	991.951	0.8	77	0.00
55	T	2,4-Dinitrotoluene	1000.000	923.451	7.7	76	-0.01
56	T	2,3,4,6-Tetrachlorophenol	1000.000	1035.821	-3.6	72	-0.02
57	T	2,3,5,6-Tetrachlorophenol	1000.000	1030.756	-3.1	73	0.00
58	T	Diethylphthalate	1000.000	973.606	2.6	78	-0.01
59	T	Fluorene	1000.000	960.939	3.9	75	-0.01
60	T	4-Chlorophenylphenylether	1000.000	966.991	3.3	81	-0.02
61	T	4-Nitroaniline	1000.000	1091.624	-9.2	79	-0.02
62	I	Phenanthrene - d10 (I)	1000.000	1000.000	0.0	82	0.00
63	T	4,6-Dinitro-2-methylphenol	5000.000	4284.974	14.3	67	0.00
64	T	n-Nitrosodiphenylamine	1000.000	860.519	13.9	71	0.02
65	S	2,4,6 - Tribromophenol (S)	1000.000	0.000	100.0#	0	-10.34#
66	T	1,2-Diphenylhydrazine	1000.000	911.139	8.9	75	0.00
67	T	4-Bromophenylphenylether	1000.000	1031.340	-3.1	86	0.00
68	T	Hexachlorobenzene	1000.000	953.085	4.7	79	0.00
69	T	Atrazine	1000.000	927.169	7.3	78	-0.01
70	TC	Pentachlorophenol	1000.000	1153.002	-15.3	82	0.00
71	T	Phenanthrene	1000.000	945.014	5.5	80	0.00
72	T	Anthracene	1000.000	998.599	0.1	82	0.00
73	T	Octadecane	1000.000	0.000	100.0#	0	-11.01#
74	T	Carbazole	1000.000	1001.225	-0.1	82	-0.01
75	T	Di-n-butylphthalate	1000.000	978.809	2.1	78	0.00
76	TC	Fluoranthene	1000.000	1015.200	-1.5	79	0.00
77	T	Pyrene	1000.000	1087.271	-8.7	85	0.00
78	T	Benzidine	5000.000	4128.378	17.4	57	-0.01
79	S	p - Terphenyl - d14 (S)	1000.000	5.295	99.5#	0	0.00
80	I	Chrysene - d12 (I)	1000.000	1000.000	0.0	81	0.00
81	T	Butylbenzylphthalate	1000.000	996.487	0.4	82	0.00
82	T	Benzo(a)anthracene	1000.000	1069.536	-7.0	82	0.01
83	T	3,3'-Dichlorobenzidine	1000.000	2373.485	-137.3#	289	0.00
84	T	Chrysene	1000.000	951.273	4.9	71	0.01
85	T	bis(2-Ethylhexyl)phthalate	1000.000	899.813	10.0	77	0.00
86	I	Perylene - d12 (I)	1000.000	1000.000	0.0	87	0.00
87	TC	Di-n-octylphthalate	1000.000	941.953	5.8	80	-0.01
88	T	Benzofluoranthenes	2000.000	1934.335	3.3	81	0.00
89	TC	Benzo(a)pyrene	1000.000	951.980	4.8	78	0.00
90	T	Indeno(1,2,3-cd)pyrene	1000.000	1021.941	-2.2	83	0.00
91	T	Dibenz(a,h)anthracene	1000.000	1014.078	-1.4	82	0.00
92	T	Benzo(g,h,i)perylene	1000.000	997.227	0.3	82	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
A00377.D SV5-080902.M Thu Aug 29 14:53:56 2002 Page 2

Data File : C:\MSDCHEM\1\DATA\A00377.D Vial: 0
Acq On : 29 Aug 2002 13:40 Operator:
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4 (I)	1.000	1.000	0.0	78	0.00
2	T	N-Nitrosodimethylamine	0.226	0.210#	7.1	95	-0.02
3	T	Pyridine	0.575	0.460#	20.0	61	-0.06
4	S	2 - Fluorophenol (S)	0.743	0.000#	100.0#	0#	-4.44#
5	T	Cyclohexanone	0.235	0.000#	100.0#	0#	-4.66#
6	T	Aniline	0.285	0.618#	-116.8#	134	-0.02
7	S	Phenol - d5 (S)	0.891	0.046#	94.8#	4#	0.06
8	TC	Phenol	0.888	0.804#	9.5	71	0.00
9	T	bis(2-Chloroethyl)ether	0.953	0.913#	4.2	78	0.02
10	T	2-Chlorophenol	0.874	0.859#	1.7	82	0.00
11	T	Decane	0.410	0.391#	4.6	78	0.00
12	T	1,3-Dichlorobenzene	0.990	1.006#	-1.6	82	0.01
13	TC	1,4-Dichlorobenzene	1.003	1.019#	-1.6	81	0.00
14	T	Benzyl alcohol	0.804	0.842#	-4.7	76	0.00
15	T	1,2-Dichlorobenzene	0.941	0.895#	4.9	76	-0.01
16	T	2-Methylphenol	0.622	0.616#	1.0	77	0.00
17	T	bis(2-chloroisopropyl)ether	0.124	0.123#	0.8	72	-0.01
18	T	3-&4-Methylphenol	0.664	0.307#	53.8#	37#	0.00
19	TP	n-Nitroso-di-n-propylamine	0.576	0.530	8.0	74	0.00
20	T	Acetophenone	1.380	1.201#	13.0	73	0.00
21	T	Hexachloroethane	0.218	0.202#	7.3	68	0.00
22	I	Naphthalene - d8 (I)	1.000	1.000	0.0	85	0.00
23	S	Nitrobenzene - d5 (S)	0.320	0.000#	100.0#	0#	-6.73#
24	T	Nitrobenzene	0.309	0.264#	14.6	73	-0.01
25	T	Isophorone	0.558	0.503#	9.9	74	-0.01
26	TC	2-Nitrophenol	0.188	0.174#	7.4	77	-0.01
27	T	2,4-Dimethylphenol	0.432	0.439#	-1.6	82	0.00
28	T	bis(2-Chloroethoxy)methane	0.306	0.290#	5.2	82	0.01
29	T	Benzoic Acid	0.166	0.240#	-44.6#	100	0.08
30	TC	2,4-Dichlorophenol	0.348	0.328#	5.7	78	0.00
31	T	1,2,4-Trichlorobenzene	0.383	0.340#	11.2	78	0.01
32	T	Naphthalene	1.160	0.953#	17.8	70	0.00
33	T	4-Chloroaniline	0.208	0.292#	-40.4#	116	0.00
34	TC	Hexachlorobutadiene	0.281	0.283#	-0.7	86	0.01
35	TC	4-Chloro-3-methylphenol	0.435	0.382#	12.2	74	-0.02
36	T	2-Methylnaphthalene	0.788	0.687#	12.8	74	0.00
37	T	1-Methylnaphthalene	0.732	0.688#	6.0	80	-0.01
38	I	Acenaphthene - d10 (I)	1.000	1.000	0.0	81	0.00
39	TP	Hexachlorocyclopentadiene	0.420	0.413	1.7	77	0.00
40	T	2,3-Dichloroaniline	0.712	0.680#	4.5	76	0.00
41	TC	2,4,6-Trichlorophenol	0.378	0.343#	9.3	74	-0.01
42	T	2,4,5-Trichlorophenol	0.374	0.423#	-13.1	81	-0.02
43	S	2 - Fluorobiphenyl (S)	1.363	0.000#	100.0#	0#	-8.78#
44	T	2-Chloronaphthalene	1.178	1.090#	7.5	77	0.02
45	T	Biphenyl	1.073	0.987#	8.0	76	0.02
46	T	2-Nitroaniline	0.398	0.390#	2.0	75	0.00
47	T	Dimethylphthalate	2.035	1.937#	4.8	77	0.00
48	T	Acenaphthylene	1.886	1.627#	13.7	69	0.00
49	T	2,6-Dinitrotoluene	0.366	0.350#	4.4	77	-0.02
50	T	3-Nitroaniline	0.209	0.228#	-9.1	79	-0.02
51	TC	Acenaphthene	1.265	1.229#	2.8	78	0.00

(#) = Out of Range

Data File : C:\MSDCHEM\1\DATA\A00377.D
Acq On : 29 Aug 2002 13:40
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
52	TP	2,4-Dinitrophenol	0.154	0.113	26.6#	55	-0.01
53	TP	4-Nitrophenol	0.524	0.568	-8.4	80	0.00
54	T	Dibenzofuran	1.790	1.776#	0.8	77	0.00
55	T	2,4-Dinitrotoluene	0.380	0.351#	7.6	76	-0.01
56	T	2,3,4,6-Tetrachlorophenol	0.387	0.401#	-3.6	72	-0.02
57	T	2,3,5,6-Tetrachlorophenol	0.367	0.378#	-3.0	73	0.00
58	T	Diethylphthalate	1.605	1.563#	2.6	78	-0.01
59	T	Fluorene	1.285	1.235#	3.9	75	-0.01
60	T	4-Chlorophenylphenylether	0.863	0.835#	3.2	81	-0.02
61	T	4-Nitroaniline	0.209	0.228#	-9.1	79	-0.02
62	I	Phenanthrene - d10 (I)	1.000	1.000	0.0	82	0.00
63	T	4,6-Dinitro-2-methylphenol	0.193	0.165#	14.5	67	0.00
64	T	n-Nitrosodiphenylamine	0.707	0.608#	14.0	71	0.02
65	S	2,4,6 - Tribromophenol (S)	0.223	0.000#	100.0#	0#	-10.34#
66	T	1,2-Diphenylhydrazine	0.380	0.346#	8.9	75	0.00
67	T	4-Bromophenylphenylether	0.347	0.358#	-3.2	86	0.00
68	T	Hexachlorobenzene	0.330	0.314#	4.8	79	0.00
69	T	Atrazine	0.054	0.050#	7.4	78	-0.01
70	TC	Pentachlorophenol	0.180	0.208#	-15.6	82	0.00
71	T	Phenanthrene	1.208	1.141#	5.5	80	0.00
72	T	Anthracene	1.168	1.166#	0.2	82	0.00
73	T	Octadecane	0.376	0.000#	100.0#	0#	-11.01#
74	T	Carbazole	1.067	1.069#	-0.2	82	-0.01
75	T	Di-n-butylphthalate	1.559	1.526#	2.1	78	0.00
76	TC	Fluoranthene	1.182	1.200#	-1.5	79	0.00
77	T	Pyrene	1.191	1.295#	-8.7	85	0.00
78	T	Benzidine	0.184	0.152#	17.4	57	-0.01
79	S	p - Terphenyl - d14 (S)	1.120	0.006#	99.5#	0#	0.00
80	I	Chrysene - d12 (I)	1.000	1.000	0.0	81	0.00
81	T	Butylbenzylphthalate	0.856	0.853#	0.4	82	0.00
82	T	Benzo(a)anthracene	1.179	1.261#	-7.0	82	0.01
83	T	3,3'-Dichlorobenzidine	0.502	1.192#	-137.5#	289#	0.00
84	T	Chrysene	1.120	1.066#	4.8	71	0.01
85	T	bis(2-Ethylhexyl)phthalate	1.474	1.326#	10.0	77	0.00
86	I	Perylene - d12 (I)	1.000	1.000	0.0	87	0.00
87	TC	Di-n-octylphthalate	2.075	1.955#	5.8	80	-0.01
88	T	Benzofluoranthenes	1.208	1.168#	3.3	81	0.00
89	TC	Benzo(a)pyrene	1.114	1.060#	4.8	78	0.00
90	T	Indeno(1,2,3-cd)pyrene	1.314	1.343#	-2.2	83	0.00
91	T	Dibenz(a,h)anthracene	1.202	1.219#	-1.4	82	0.00
92	T	Benzo(g,h,i)perylene	1.147	1.144#	0.3	82	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
A00377.D SV5-080902.M Thu Aug 29 14:54:09 2002

CONTINUING CALIBRATION

Sequence Log

Directory : c:\MSDchem\1\DATA

#	Filename	Sample Name					Date/Time
1	a00443.d	DFTPP 9/03/02					09/03/02 13:05
2	a00444.d	1.0 NG/UL 8270 CCAL STD NO 0980-54-6					09/03/02 13:18
3	a00445.d	SS0608 MB	#15.0000	&2.0	SOIL		09/03/02 14:19
4	a00446.d	SS0608 BS	#15.0000	&2.0	SOIL		09/03/02 14:45
5	a00448.d	108164-3 MS	SS0608	&2.0	SOIL	1:10	09/03/02 15:36
6	a00449.d	108164-3 MSD	SS0608	&2.0	SOIL	1:10	09/03/02 16:02
7	a00450.d	108164-1	SS0608	&2.0	SOIL	1:10	09/03/02 16:28
8	a00451.d	108164-2	SS0608	&2.0	SOIL	1:10	09/03/02 16:54
9	a00452.d	108164-3	SS0608	&2.0	SOIL	1:10	09/03/02 17:20

Quantitation Report

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 05 16:47:31 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.89	150	68651	1000.00 ul/l	0.00
22) Naphthalene - d8 (I)	7.43	136	148794	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.38	162	107033	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	10.91	188	175341	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.68	240	183905	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.34	264	201063	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.35	112	54561	1069.41 ug/L	0.00
7) Phenol - d5 (S)	5.66	99	60671	991.87 ug/L	-0.02
23) Nitrobenzene - d5 (S)	6.63	82	56832	1191.90 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.69	172	149978	1027.93 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.22	330	42477	1086.60 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.61	244	190200	968.15 ug/L	0.02

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.63	74	75427	4869.60 ug/L #	100
3) Pyridine	2.65	79	119969+	3040.10 ug/L	99
5) Cyclohexanone	4.52	55	15700	974.40 ug/L #	49
6) Aniline	5.57	93	26009	1330.67 ug/L	99
8) Phenol	5.67	94	65909	1081.08 ug/L	54
9) bis(2-Chloroethyl)ether	5.67	63	40406	617.87 ug/L #	44
10) 2-Chlorophenol	5.69	128	64108	1068.97 ug/L	86
11) Decane	5.81	57	27854	990.08 ug/L	92
12) 1,3-Dichlorobenzene	5.84	146	68230	1004.37 ug/L	73
13) 1,4-Dichlorobenzene	5.84	146	69386	1007.92 ug/L	100
14) Benzyl alcohol	6.18	79	60448	1094.63 ug/L	99
15) 1,2-Dichlorobenzene	6.14	146	59475	920.48 ug/L	99
16) 2-Methylphenol	6.39	108	45108	1056.38 ug/L	91
17) bis(2-chloroisopropyl)ethe	6.36	121	10479+	1229.01 ug/L #	17
18) 3-&4-Methylphenol	6.59	108	101531	2225.89 ug/L	95
19) n-Nitroso-di-n-propylamine	6.54	70	41768	1057.10 ug/L	68
20) Acetophenone	6.46	105	98953	1044.85 ug/L	98
21) Hexachloroethane	6.51	166	14315	954.75 ug/L	91
24) Nitrobenzene	6.59	77	100331	2182.14 ug/L #	15
25) Isophorone	6.96	82	96514	1162.27 ug/L	85
26) 2-Nitrophenol	7.04	139	30170	1076.42 ug/L	62
27) 2,4-Dimethylphenol	7.19	107	70337	1094.70 ug/L	98
28) bis(2-Chloroethoxy)methane	7.27	93	51260	1126.62 ug/L	83
29) Benzoic Acid	7.59	105	112820	4565.14 ug/L	96
30) 2,4-Dichlorophenol	7.35	162	55476	1072.12 ug/L	99
31) 1,2,4-Trichlorobenzene	7.40	180	65353	1145.82 ug/L	94
32) Naphthalene	7.45	128	182050	1055.02 ug/L	82
33) 4-Chloroaniline	7.60	127	43731	1411.21 ug/L	100
34) Hexachlorobutadiene	7.70	225	46012	1098.81 ug/L	90
35) 4-Chloro-3-methylphenol	8.23	107	74711	1154.95 ug/L	79
36) 2-Methylnaphthalene	8.24	141	129418	1103.58 ug/L	76
37) 1-Methylnaphthalene	8.36	141	119794	1099.75 ul/l	63
39) Hexachlorocyclopentadiene	8.50	237	43767	973.09 ug/L	92
40) 2,3-Dichloroaniline	8.61	161	78533	1029.85 ug/L	96
41) 2,4,6-Trichlorophenol	8.62	196	39811	983.43 ug/L	93
42) 2,4,5-Trichlorophenol	8.69	196	35202	879.30 ug/L #	23
44) 2-Chloronaphthalene	8.76	162	116167	921.43 ug/L	95

(#) = qualifier out of range (m) = manual integration
A00444.D SV5-082902.M Thu Sep 05 16:48:07 2002

Quantitation Report

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 05 16:47:31 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Initial Calibration
DataAcq Meth :

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45) Biphenyl	9.41	154	107147	932.95 ug/L	#	1
46) 2-Nitroaniline	8.95	138	43448	1020.75 ug/L		85
47) Dimethylphthalate	9.20	163	203918	936.34 ug/L		98
48) Acenaphthylene	9.21	152	194134	961.48 ug/L		90
49) 2,6-Dinitrotoluene	9.25	165	37601	959.53 ug/L		90
50) 3-Nitroaniline	9.39	138	25460	1137.62 ug/L		84
51) Acenaphthene	9.41	153	126132	931.69 ug/L		97
52) 2,4-Dinitrophenol	9.50	184	89841	5453.94 ug/L		81
53) 4-Nitrophenol	9.65	109	311258+	5550.08 ug/L	#	43
54) Dibenzofuran	9.58	168	175562	916.33 ug/L		28
55) 2,4-Dinitrotoluene	9.66	165	45436	1117.29 ug/L		91
56) 2,3,4,6-Tetrachlorophenol	9.74	232	44307	1069.17 ug/L	#	47
57) 2,3,5,6-Tetrachlorophenol	9.78	232	44868	1142.89 ul/l	#	53
58) Diethylphthalate	9.95	149	152828	889.48 ug/L		28
59) Fluorene	9.95	166	135708	986.40 ug/L		69
60) 4-Chlorophenylphenylether	9.97	204	88662	959.58 ug/L		71
61) 4-Nitroaniline	9.39	138	25460	1137.62 ug/L		77
63) 4,6-Dinitro-2-methylphenol	10.08	198	176917	5241.00 ug/L	#	67
64) n-Nitrosodiphenylamine	10.11	169	132750	1070.78 ug/L	#	1
66) 1,2-Diphenylhydrazine	10.13	182	71942	1080.61 ug/L	#	31
67) 4-Bromophenylphenylether	10.47	248	61115	1003.22 ug/L	#	62
68) Hexachlorobenzene	10.60	284	57324	991.62 ug/L		85
69) Atrazine	10.81	200	10125+	1073.75 ug/L		38
70) Pentachlorophenol	10.81	266	37349	1182.86 ug/L		98
71) Phenanthrene	10.94	178	225714	1065.99 ug/L		85
72) Anthracene	10.98	178	206151	1006.96 ug/L		67
73) Octadecane	10.89	57	64138	972.73 ug/L		45
74) Carbazole	11.18	167	198043	1058.27 ug/L		84
75) Di-n-butylphthalate	11.64	149	257510	941.76 ug/L		94
76) Fluoranthene	12.18	202	218661	1055.28 ug/L		78
77) Pyrene	12.40	202	216796	1038.25 ug/L		98
78) Benzidine	12.35	184	212880	6615.98 ug/L		100
81) Butylbenzylphthalate	13.18	149	161577	1026.13 ug/L		85
82) Benzo(a)anthracene	13.66	228	238080	1098.29 ug/L		88
83) 3,3'-Dichlorobenzidine	13.66	252	115427+	1249.34 ug/L		97
84) Chrysene	13.70	228	217239	1054.48 ug/L		81
85) bis(2-Ethylhexyl)phthalate	13.82	149	257055	948.37 ug/L		98
87) Di-n-octylphthalate	14.50	149	395472	947.85 ug/L		95
88) Benzofluoranthenes	14.89	252	511692	2106.45 ug/L		78
89) Benzo(a)pyrene	15.27	252	235829	1053.00 ug/L		77
90) Indeno(1,2,3-cd)pyrene	16.94	276	294590	1114.84 ug/L		93
91) Dibenz(a,h)anthracene	16.98	278	264731	1095.60 ug/L		74
92) Benzo(g,h,i)perylene	17.40	276	244943	1061.88 ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

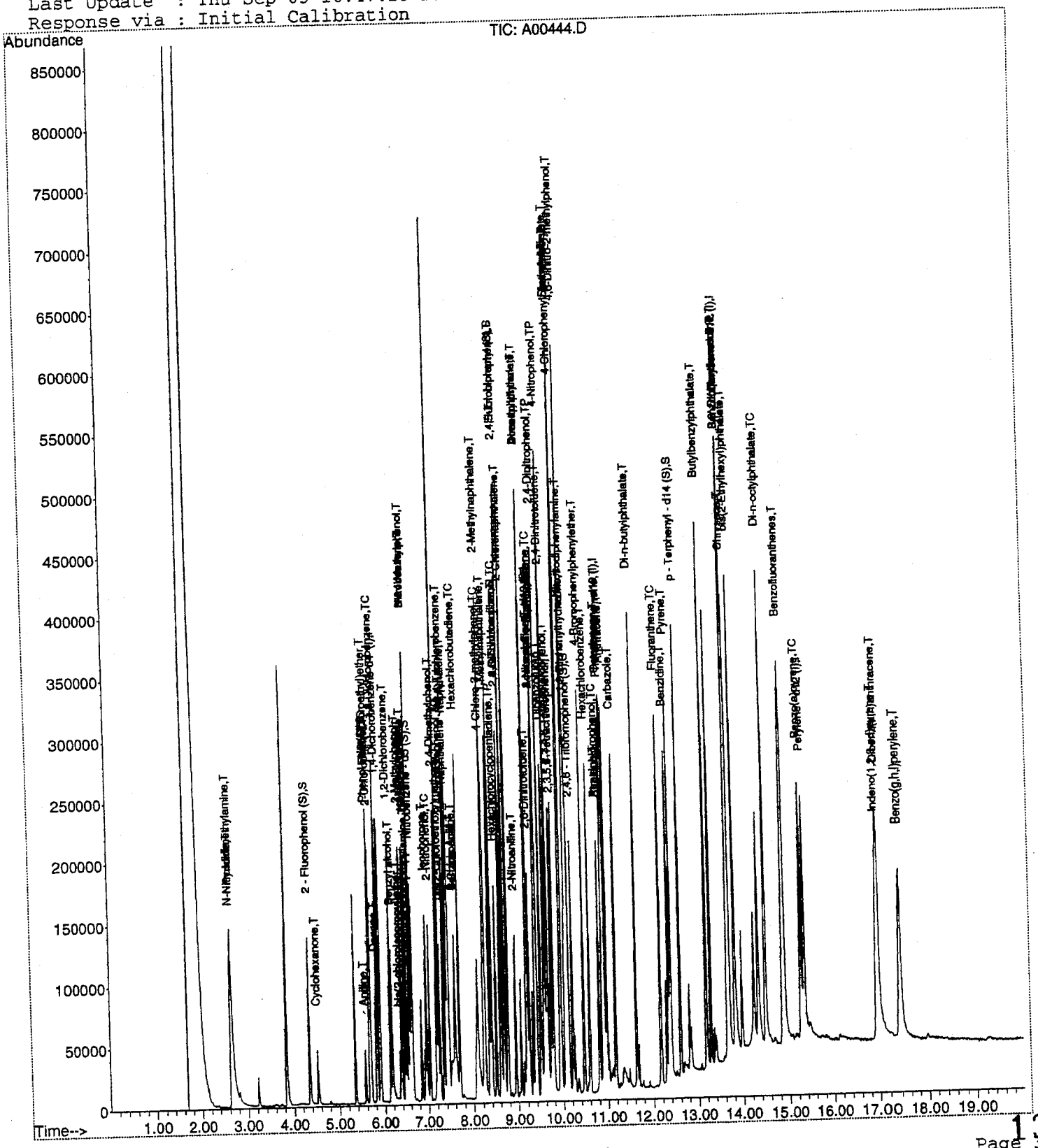
Quantitation Report

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 5 16:47 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Initial Calibration



135

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichorobenzene-d4 (I)	1000.000	1000.000	0.0	121	0.00
2	T	N-Nitrosodimethylamine	5000.000	4869.597	2.6	154	-0.06
3	T	Pyridine	5000.000	3040.097	39.2#	72	0.00
4	S	2 - Fluorophenol (S)	1000.000	1069.408	-6.9	127	0.00
5	T	Cyclohexanone	1000.000	974.402	2.6	111	0.03
6	T	Aniline	1000.000	1330.671	-33.1#	127	0.01
7	S	Phenol - d5 (S)	1000.000	991.872	0.8	121	-0.02
8	TC	Phenol	1000.000	1081.084	-8.1	132	0.00
9	T	bis(2-Chloroethyl)ether	1000.000	617.867	38.2#	77	0.04
10	T	2-Chlorophenol	1000.000	1068.974	-6.9	137	0.00
11	T	Decane	1000.000	990.079	1.0	124	0.04
12	T	1,3-Dichlorobenzene	1000.000	1004.369	-0.4	125	0.05
13	TC	1,4-Dichlorobenzene	1000.000	1007.923	-0.8	125	-0.03
14	T	Benzyl alcohol	1000.000	1094.626	-9.5	123	0.00
15	T	1,2-Dichlorobenzene	1000.000	920.479	8.0	113	0.03
16	T	2-Methylphenol	1000.000	1056.382	-5.6	127	0.00
17	T	bis(2-chloroisopropyl)ether	1000.000	1229.007	-22.9#	139	0.04
18	T	3-&4-Methylphenol	2000.000	2225.894	-11.3	137	0.00
19	TP	n-Nitroso-di-n-propylamine	1000.000	1057.097	-5.7	131	-0.03
20	T	Acetophenone	1000.000	1044.852	-4.5	136	-0.02
21	T	Hexachloroethane	1000.000	954.747	4.5	109	0.00
22	I	Naphthalene - d8 (I)	1000.000	1000.000	0.0	117	0.00
23	S	Nitrobenzene - d5 (S)	1000.000	1191.895	-19.2	135	0.00
24	T	Nitrobenzene	1000.000	2182.143	-118.2#	254	-0.07
25	T	Isophorone	1000.000	1162.272	-16.2	130	-0.02
26	TC	2-Nitrophenol	1000.000	1076.416	-7.6	122	0.00
27	T	2,4-Dimethylphenol	1000.000	1094.705	-9.5	121	0.00
28	T	bis(2-Chloroethoxy)methane	1000.000	1126.615	-12.7	133	0.02
29	T	Benzoic Acid	5000.000	4565.139	8.7	86	0.03
30	TC	2,4-Dichlorophenol	1000.000	1072.116	-7.2	121	0.00
31	T	1,2,4-Trichlorobenzene	1000.000	1145.820	-14.6	138	0.01
32	T	Naphthalene	1000.000	1055.023	-5.5	123	0.00
33	T	4-Chloroaniline	1000.000	1411.209	-41.1#	160	0.02
34	TC	Hexachlorobutadiene	1000.000	1098.810	-9.9	128	0.02
35	TC	4-Chloro-3-methylphenol	1000.000	1154.946	-15.5	134	0.04
36	T	2-Methylnaphthalene	1000.000	1103.584	-10.4	128	0.01
37	T	1-Methylnaphthalene	1000.000	1099.752	-10.0	128	0.02
38	I	Acenaphthene - d10 (I)	1000.000	1000.000	0.0	135	0.00
39	TP	Hexachlorocyclopentadiene	1000.000	973.088	2.7	126	0.00
40	T	2,3-Dichloroaniline	1000.000	1029.851	-3.0	136	0.00
41	TC	2,4,6-Trichlorophenol	1000.000	983.433	1.7	132	0.00
42	T	2,4,5-Trichlorophenol	1000.000	879.304	12.1	105	0.02
43	S	2 - Fluorobiphenyl (S)	1000.000	1027.931	-2.8	141	0.00
44	T	2-Chloronaphthalene	1000.000	921.432	7.9	127	0.00
45	T	Biphenyl	1000.000	932.948	6.7	128	0.02
46	T	2-Nitroaniline	1000.000	1020.751	-2.1	130	0.00
47	T	Dimethylphthalate	1000.000	936.335	6.4	125	0.00
48	T	Acenaphthylene	1000.000	961.484	3.9	127	0.00
49	T	2,6-Dinitrotoluene	1000.000	959.526	4.0	128	0.00
50	T	3-Nitroaniline	1000.000	1137.623	-13.8	137	-0.01

(#) = Out of Range

Evaluate Continuing Calibration

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	TC	Acenaphthene	1000.000	931.691	6.8	124	0.00
2	TP	2,4-Dinitrophenol	5000.000	5453.943	-9.1	137	0.00
3	TP	4-Nitrophenol	5000.000	5550.078	-11.0	136	-0.03
4	T	Dibenzofuran	1000.000	916.335	8.4	118	0.00
5	T	2,4-Dinitrotoluene	1000.000	1117.293	-11.7	153	0.00
6	T	2,3,4,6-Tetrachlorophenol	1000.000	1069.175	-6.9	123	0.00
7	T	2,3,5,6-Tetrachlorophenol	1000.000	1142.888	-14.3	134	0.00
8	T	Diethylphthalate	1000.000	889.476	11.1	118	0.00
9	T	Fluorene	1000.000	986.398	1.4	127	0.00
0	T	4-Chlorophenylphenylether	1000.000	959.580	4.0	133	0.00
1	T	4-Nitroaniline	1000.000	1137.623	-13.8	137	-0.01
2	I	Phenanthrene - d10 (I)	1000.000	1000.000	0.0	127	0.00
3	T	4,6-Dinitro-2-methylphenol	5000.000	5240.997	-4.8	127	0.00
4	T	n-Nitrosodiphenylamine	1000.000	1070.777	-7.1	136	0.02
5	S	2,4,6 - Tribromophenol (S)	1000.000	1086.604	-8.7	121	0.00
6	T	1,2-Diphenylhydrazine	1000.000	1080.607	-8.1	137	0.00
7	T	4-Bromophenylphenylether	1000.000	1003.217	-0.3	129	0.00
8	T	Hexachlorobenzene	1000.000	991.623	0.8	127	0.00
9	T	Atrazine	1000.000	1073.747	-7.4	141	0.00
70	TC	Pentachlorophenol	1000.000	1182.859	-18.3	129	0.00
71	T	Phenanthrene	1000.000	1065.988	-6.6	140	-0.02
72	T	Anthracene	1000.000	1006.959	-0.7	128	-0.03
73	T	Octadecane	1000.000	972.727	2.7	114	0.00
74	T	Carbazole	1000.000	1058.265	-5.8	133	0.01
75	T	Di-n-butylphthalate	1000.000	941.765	5.8	117	0.00
76	TC	Fluoranthene	1000.000	1055.275	-5.5	128	0.01
77	T	Pyrene	1000.000	1038.251	-3.8	126	0.00
78	T	Benzidine	5000.000	6615.978	-32.3#	141	0.02
79	S	p - Terphenyl - d14 (S)	1000.000	968.151	3.2	127	0.02
80	I	Chrysene - d12 (I)	1000.000	1000.000	0.0	121	0.00
81	T	Butylbenzylphthalate	1000.000	1026.131	-2.6	126	0.00
82	T	Benzo(a)anthracene	1000.000	1098.286	-9.8	126	0.00
83	T	3,3'-Dichlorobenzidine	1000.000	1249.337	-24.9#	228	-0.01
84	T	Chrysene	1000.000	1054.485	-5.4	119	0.01
85	T	bis(2-Ethylhexyl)phthalate	1000.000	948.366	5.2	122	0.00
86	I	Perylene - d12 (I)	1000.000	1000.000	0.0	118	0.00
87	TC	Di-n-octylphthalate	1000.000	947.851	5.2	110	0.00
88	T	Benzofluoranthenes	2000.000	2106.448	-5.3	120	0.00
89	TC	Benzo(a)pyrene	1000.000	1053.001	-5.3	118	0.00
90	T	Indeno(1,2,3-cd)pyrene	1000.000	1114.842	-11.5	124	-0.03
91	T	Dibenz(a,h)anthracene	1000.000	1095.602	-9.6	121	-0.03
92	T	Benzo(g,h,i)perylene	1000.000	1061.877	-6.2	120	0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
A00444.D SV5-082902.M Thu Sep 05 16:48:40 2002

Evaluate Continuing Calibration

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichorobenzene-d4 (I)	1.000	1.000	0.0	121	0.00
2	T	N-Nitrosodimethylamine	0.226	0.220#	2.7	154#	-0.06
3	T	Pyridine	0.575	0.350#	39.1#	72	0.00
4	S	2 - Fluorophenol (S)	0.743	0.795#	-7.0	127	0.00
5	T	Cyclohexanone	0.235	0.229#	2.6	111	0.03
6	T	Aniline	0.285	0.379#	-33.0#	127	0.01
7	S	Phenol - d5 (S)	0.891	0.884#	0.8	121	-0.02
8	TC	Phenol	0.888	0.960#	-8.1	132	0.00
9	T	bis(2-Chloroethyl)ether	0.953	0.589#	38.2#	77	0.04
10	T	2-Chlorophenol	0.874	0.934#	-6.9	137	0.00
11	T	Decane	0.410	0.406#	1.0	124	0.04
12	T	1,3-Dichlorobenzene	0.990	0.994#	-0.4	125	0.05
13	TC	1,4-Dichlorobenzene	1.003	1.011#	-0.8	125	-0.03
14	T	Benzyl alcohol	0.804	0.881#	-9.6	123	0.00
15	T	1,2-Dichlorobenzene	0.941	0.866#	8.0	113	0.03
16	T	2-Methylphenol	0.622	0.657#	-5.6	127	0.00
17	T	bis(2-chloroisopropyl)ether	0.124	0.153#	-23.4#	139	0.04
18	T	3-&4-Methylphenol	0.664	0.739#	-11.3	137	0.00
19	TP	n-Nitroso-di-n-propylamine	0.576	0.608	-5.6	131	-0.03
20	T	Acetophenone	1.380	1.441#	-4.4	136	-0.02
21	T	Hexachloroethane	0.218	0.209#	4.1	109	0.00
22	I	Naphthalene - d8 (I)	1.000	1.000	0.0	117	0.00
23	S	Nitrobenzene - d5 (S)	0.320	0.382#	-19.4	135	0.00
24	T	Nitrobenzene	0.309	0.674#	-118.1#	254#	-0.07
25	T	Isophorone	0.558	0.649#	-16.3	130	-0.02
26	TC	2-Nitrophenol	0.188	0.203#	-8.0	122	0.00
27	T	2,4-Dimethylphenol	0.432	0.473#	-9.5	121	0.00
28	T	bis(2-Chloroethoxy)methane	0.306	0.345#	-12.7	133	0.02
29	T	Benzoic Acid	0.166	0.152#	8.4	86	0.03
30	TC	2,4-Dichlorophenol	0.348	0.373#	-7.2	121	0.00
31	T	1,2,4-Trichlorobenzene	0.383	0.439#	-14.6	138	0.01
32	T	Naphthalene	1.160	1.224#	-5.5	123	0.00
33	T	4-Chloroaniline	0.208	0.294#	-41.3#	160#	0.02
34	TC	Hexachlorobutadiene	0.281	0.309#	-10.0	128	0.02
35	TC	4-Chloro-3-methylphenol	0.435	0.502#	-15.4	134	0.04
36	T	2-Methylnaphthalene	0.788	0.870#	-10.4	128	0.01
37	T	1-Methylnaphthalene	0.732	0.805#	-10.0	128	0.02
38	I	Acenaphthene - d10 (I)	1.000	1.000	0.0	135	0.00
39	TP	Hexachlorocyclopentadiene	0.420	0.409	2.6	126	0.00
40	T	2,3-Dichloroaniline	0.712	0.734#	-3.1	136	0.00
41	TC	2,4,6-Trichlorophenol	0.378	0.372#	1.6	132	0.00
42	T	2,4,5-Trichlorophenol	0.374	0.329#	12.0	105	0.02
43	S	2 - Fluorobiphenyl (S)	1.363	1.401#	-2.8	141	0.00
44	T	2-Chloronaphthalene	1.178	1.085#	7.9	127	0.00
45	T	Biphenyl	1.073	1.001#	6.7	128	0.02
46	T	2-Nitroaniline	0.398	0.406#	-2.0	130	0.00
47	T	Dimethylphthalate	2.035	1.905#	6.4	125	0.00
48	T	Acenaphthylene	1.886	1.814#	3.8	127	0.00
49	T	2,6-Dinitrotoluene	0.366	0.351#	4.1	128	0.00
50	T	3-Nitroaniline	0.209	0.238#	-13.9	137	-0.01

(#) = Out of Range
A00444.D SV5-082902.M Thu Sep 05 16:48:48 2002

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Multiple Level Calibration

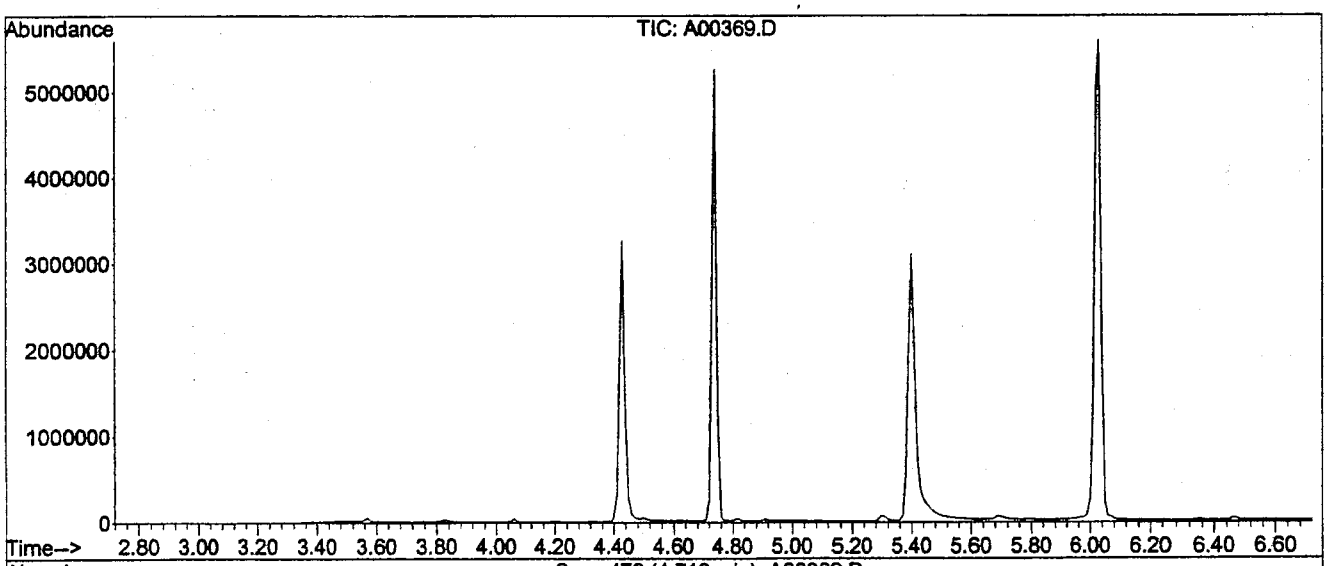
Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

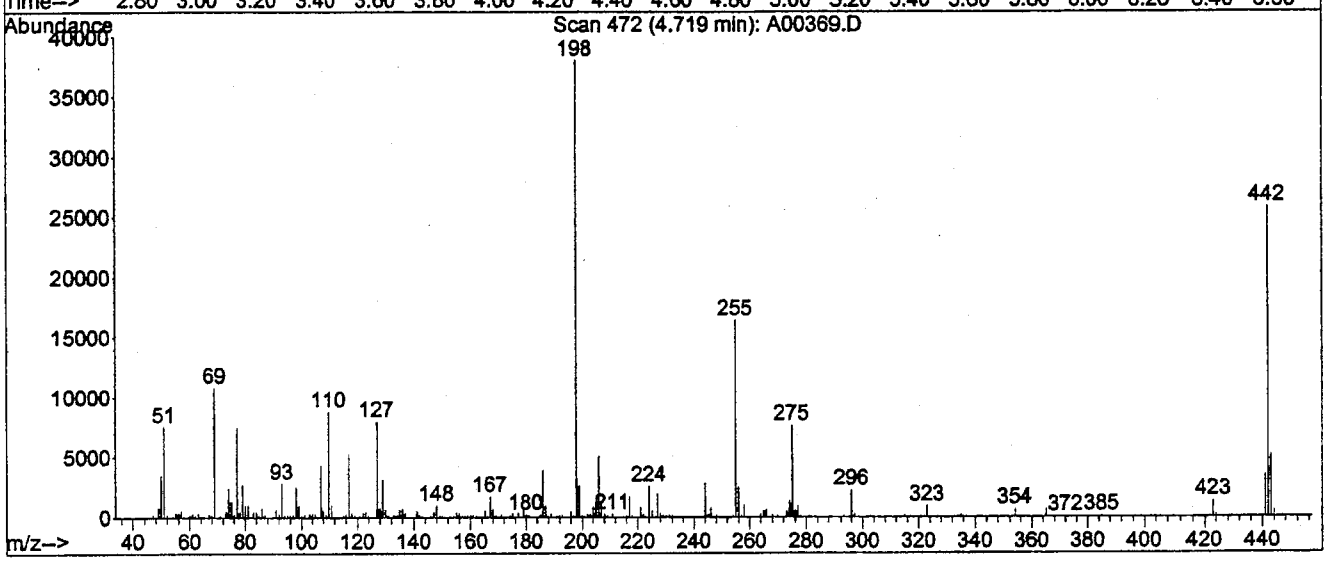
		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
51	TC	Acenaphthene	1.265	1.178#	6.9	124	0.00
52	TP	2,4-Dinitrophenol	0.154	0.168	-9.1	137	0.00
53	TP	4-Nitrophenol	0.524	0.582	-11.1	136	-0.03
54	T	Dibenzofuran	1.790	1.640#	8.4	118	0.00
55	T	2,4-Dinitrotoluene	0.380	0.425#	-11.8	153#	0.00
56	T	2,3,4,6-Tetrachlorophenol	0.387	0.414#	-7.0	123	0.00
57	T	2,3,5,6-Tetrachlorophenol	0.367	0.419#	-14.2	134	0.00
58	T	Diethylphthalate	1.605	1.428#	11.0	118	0.00
59	T	Fluorene	1.285	1.268#	1.3	127	0.00
60	T	4-Chlorophenylphenylether	0.863	0.828#	4.1	133	0.00
61	T	4-Nitroaniline	0.209	0.238#	-13.9	137	-0.01
62	I	Phenanthrene - d10 (I)	1.000	1.000	0.0	127	0.00
63	T	4,6-Dinitro-2-methylphenol	0.193	0.202#	-4.7	127	0.00
64	T	n-Nitrosodiphenylamine	0.707	0.757#	-7.1	136	0.02
65	S	2,4,6 - Tribromophenol (S)	0.223	0.242#	-8.5	121	0.00
66	T	1,2-Diphenylhydrazine	0.380	0.410#	-7.9	137	0.00
67	T	4-Bromophenylphenylether	0.347	0.349#	-0.6	129	0.00
68	T	Hexachlorobenzene	0.330	0.327#	0.9	127	0.00
69	T	Atrazine	0.054	0.058#	-7.4	141	0.00
70	TC	Pentachlorophenol	0.180	0.213#	-18.3	129	0.00
71	T	Phenanthrene	1.208	1.287#	-6.5	140	-0.02
72	T	Anthracene	1.168	1.176#	-0.7	128	-0.03
73	T	Octadecane	0.376	0.366#	2.7	114	0.00
74	T	Carbazole	1.067	1.129#	-5.8	133	0.01
75	T	Di-n-butylphthalate	1.559	1.469#	5.8	117	0.00
76	TC	Fluoranthene	1.182	1.247#	-5.5	128	0.01
77	T	Pyrene	1.191	1.236#	-3.8	126	0.00
78	T	Benzidine	0.184	0.243#	-32.1#	141	0.02
79	S	p - Terphenyl - d14 (S)	1.120	1.085#	3.1	127	0.02
80	I	Chrysene - d12 (I)	1.000	1.000	0.0	121	0.00
81	T	Butylbenzylphthalate	0.856	0.879#	-2.7	126	0.00
82	T	Benzo(a)anthracene	1.179	1.295#	-9.8	126	0.00
83	T	3,3'-Dichlorobenzidine	0.502	0.628#	-25.1#	228#	-0.01
84	T	Chrysene	1.120	1.181#	-5.4	119	0.01
85	T	bis(2-Ethylhexyl)phthalate	1.474	1.398#	5.2	122	0.00
86	I	Perylene - d12 (I)	1.000	1.000	0.0	118	0.00
87	TC	Di-n-octylphthalate	2.075	1.967#	5.2	110	0.00
88	T	Benzofluoranthenes	1.208	1.272#	-5.3	120	0.00
89	TC	Benzo(a)pyrene	1.114	1.173#	-5.3	118	0.00
90	T	Indeno(1,2,3-cd)pyrene	1.314	1.465#	-11.5	124	-0.03
91	T	Dibenz(a,h)anthracene	1.202	1.317#	-9.6	121	-0.03
92	T	Benzo(g,h,i)perylene	1.147	1.218#	-6.2	120	0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
A00444.D SV5-082902.M Thu Sep 05 16:48:49 2002

DFTPP TUNING

Data File : C:\MSDCHEM\1\DATA\A00369.D Vial: 0
Acq On : 29 Aug 2002 9:24 Operator:
Sample : DFTPP 8/29/02 Inst :
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation





Spectrum Information: Scan 472

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	19.8	7555	PASS
68	69	0.00	2	1.8	195	PASS
69	198	0.00	100	28.4	10832	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	21.0	8002	PASS
197	198	0.00	1	0.3	97	PASS
198	198	50	100	100.0	38136	PASS
199	198	5	9	6.9	2639	PASS
275	198	10	60	20.1	7653	PASS
365	198	1	100	1.6	628	PASS
441	443	0.01	100	67.6	3491	PASS
442	198	50	100	67.7	25824	PASS
443	442	15	24	20.0	5167	PASS

A00369.D DFTPP.M Thu Aug 29 14:55:28 2002

DFTPP 8/29/02

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
47.00	209	63.00	363	78.00	432	93.00	2835
49.00	810	65.00	139	79.00	2709	94.00	223
50.00	3519	67.00	279	80.00	1019	95.00	153
51.00	7555	68.00	195	81.00	1033	96.00	153
52.00	265	69.00	10832	83.00	405	97.00	181
55.00	377	71.00	125	84.00	460	98.00	2500
56.00	349	73.00	488	85.00	167	99.00	1005
57.00	530	74.00	2458	86.00	740	100.00	111
60.00	181	75.00	1298	87.00	209	101.00	195
61.00	293	76.00	237	91.00	642	103.00	265
62.00	153	77.00	7486	92.00	265	104.00	321

Scan 472 (4.719 min): A00369.D
DFTPP 8/29/02

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
105.00	307	119.00	195	134.00	209	150.00	111
107.00	4371	121.00	69	135.00	656	153.00	69
108.00	600	122.00	377	136.00	712	154.00	125
109.00	209	123.00	460	137.00	363	155.00	377
110.00	8824	124.00	167	141.00	544	156.00	363
111.00	1019	127.00	8002	142.00	223	157.00	167
112.00	83	128.00	768	143.00	125	158.00	139
115.00	153	129.00	3128	146.00	125	159.00	167
116.00	265	130.00	642	147.00	432	160.00	195
117.00	5265	131.00	167	148.00	991	161.00	209
118.00	363	133.00	237	149.00	167	162.00	125

Scan 472 (4.719 min): A00369.D
DFTPP 8/29/02

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
165.00	530	180.00	251	197.00	97	208.00	307
166.00	111	181.00	195	198.00	38136	209.00	153
167.00	1731	185.00	223	199.00	2639	211.00	279
168.00	712	186.00	3924	200.00	195	216.00	125
169.00	153	187.00	949	201.00	97	217.00	1787
171.00	209	188.00	111	202.00	237	218.00	167
172.00	69	189.00	307	203.00	251	221.00	865
174.00	153	191.00	125	204.00	837	222.00	237
175.00	349	192.00	209	205.00	1620	224.00	2597
177.00	377	193.00	223	206.00	5083	225.00	600
179.00	726	196.00	488	207.00	1368	227.00	1983

Scan 472 (4.719 min): A00369.D
DFTPP 8/29/02

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
228.00	405	255.00	16424	275.00	7653	304.00	97
229.00	167	256.00	2527	276.00	600	315.00	153
230.00	153	257.00	139	277.00	907	323.00	921
231.00	181	258.00	1047	278.00	139	334.00	125
232.00	139	264.00	265	281.00	97	335.00	223
236.00	69	265.00	530	282.00	69	346.00	97
244.00	2863	266.00	614	283.00	83	354.00	670
245.00	251	268.00	223	293.00	111	355.00	111
246.00	768	270.00	167	296.00	2262	365.00	628
248.00	167	273.00	502	297.00	265	366.00	83
254.00	139	274.00	1354	303.00	125	372.00	69

Scan 472 (4.719 min): A00369.D
DFTPP 8/29/02

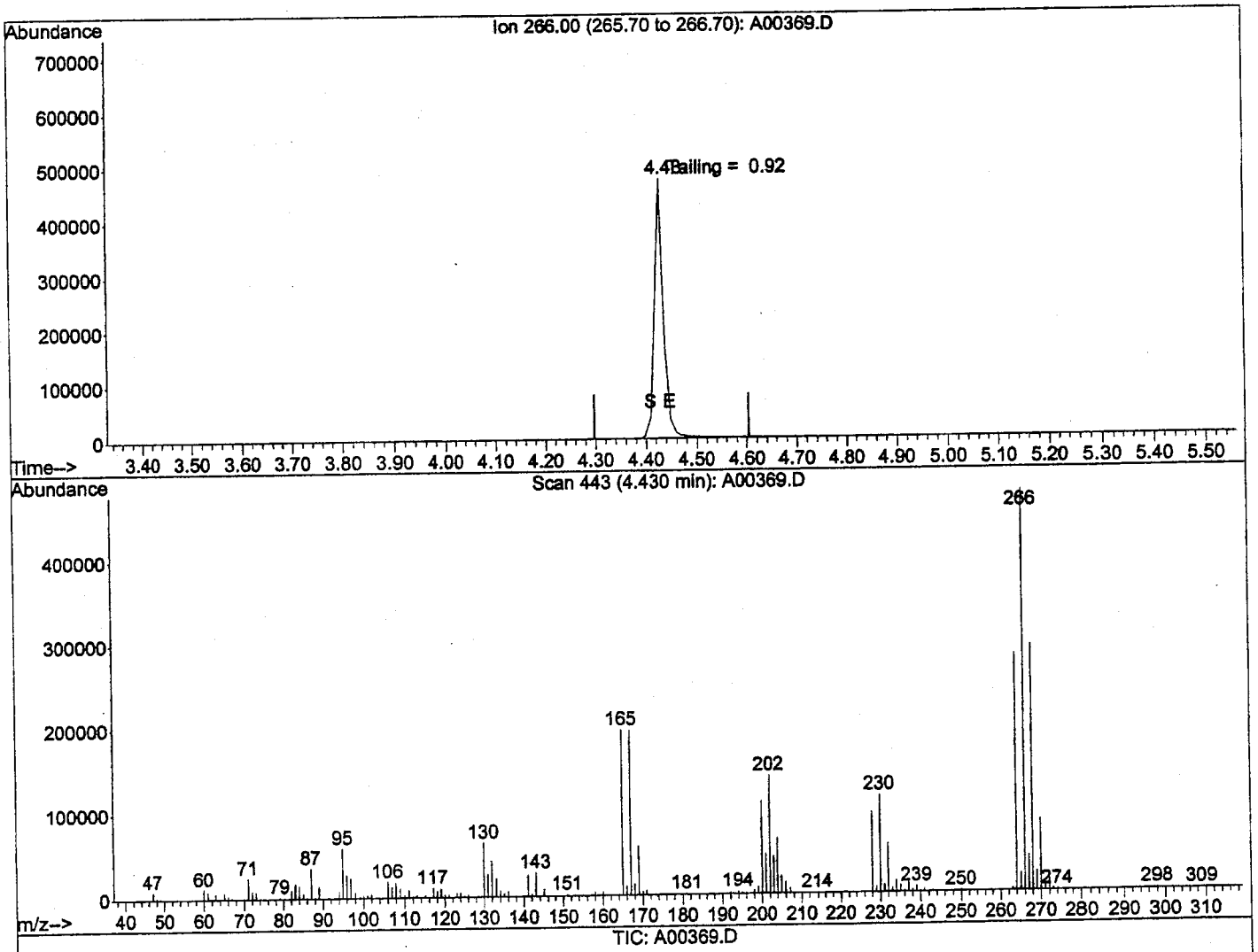
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
385.00	111						
423.00	1368						
424.00	209						
441.00	3491						
442.00	25824						
443.00	5167						
444.00	544						

Data File : C:\MSDCHEM\1\DATA\A00369.D
Acq On : 29 Aug 2002 9:24
Sample : DFTPP 8/29/02
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 29 14:56 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Aug 29 14:56:01 2002
Response via : Single Level Calibration



(1) Pentachlorophenol (T)

4.43min 0.58

response 476992

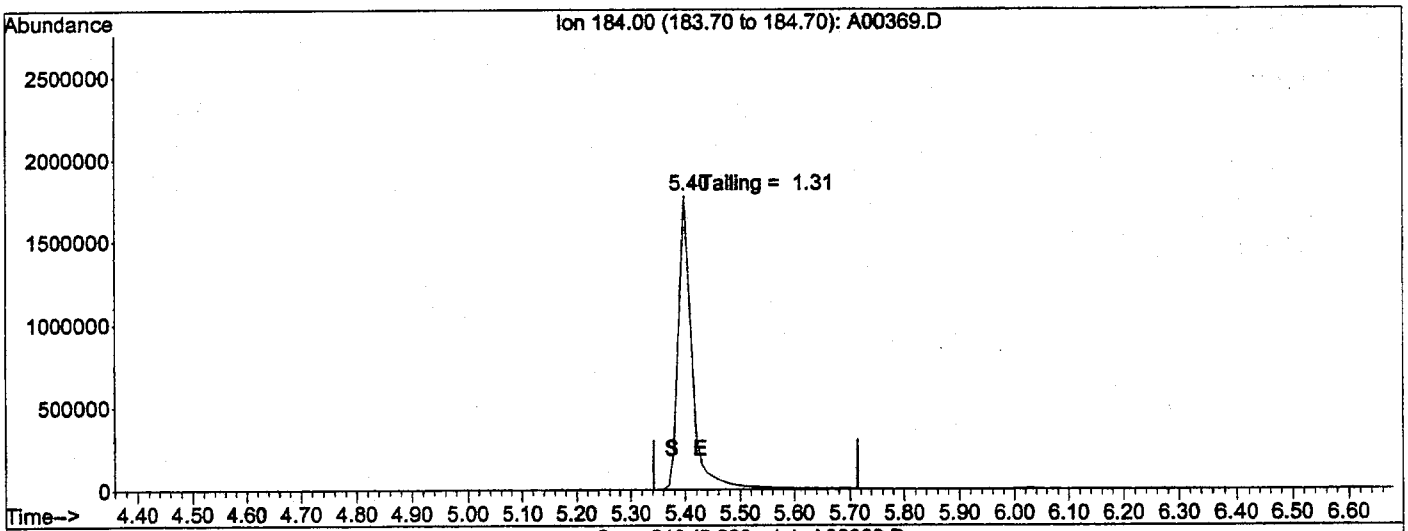
Ion	Exp%	Act%
266.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

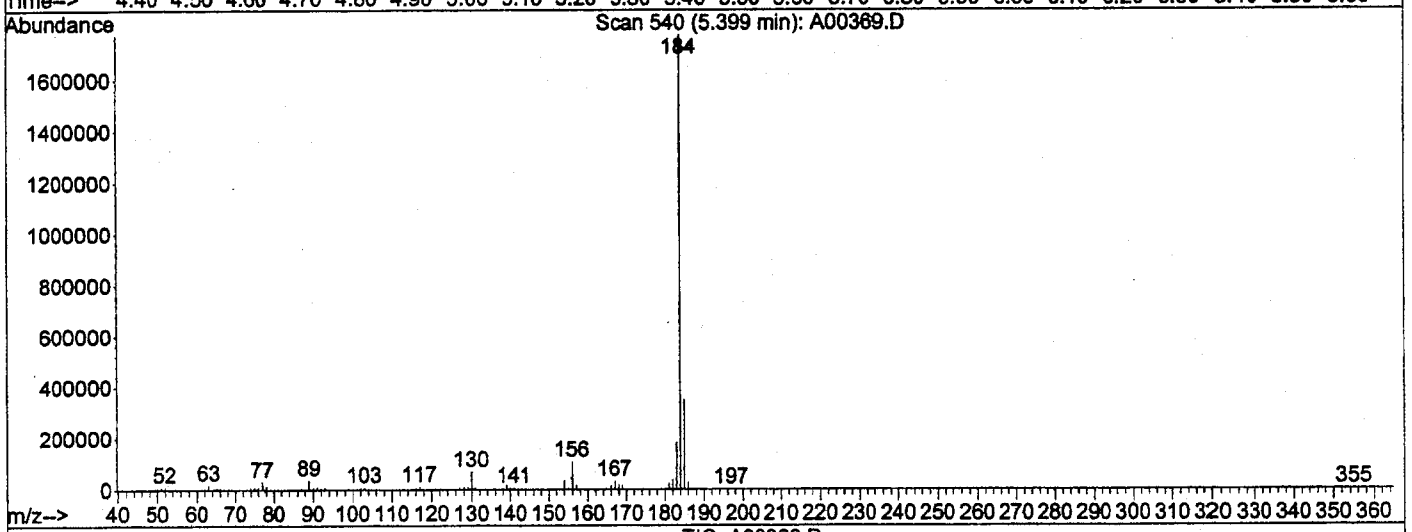
A00369.D DFTPP.M Thu Aug 29 14:56:29 2002

Data File : C:\MSDCHEM\1\DATA\A00369.D
Acq On : 29 Aug 2002 9:24
Sample : DFTPP 8/29/02
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 29 14:56 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Aug 29 14:56:01 2002
Response via : Single Level Calibration





TIC: A00369.D

(3) Benzidine (T)

5.40min 0.83

response 1775377

Ion	Exp%	Act%
184.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

A00369.D DFTPP.M Thu Aug 29 14:56:40 2002

Data File Name **A00369.D**
Data File Path **C:\MSDCHEM\1\DATA**
Operator

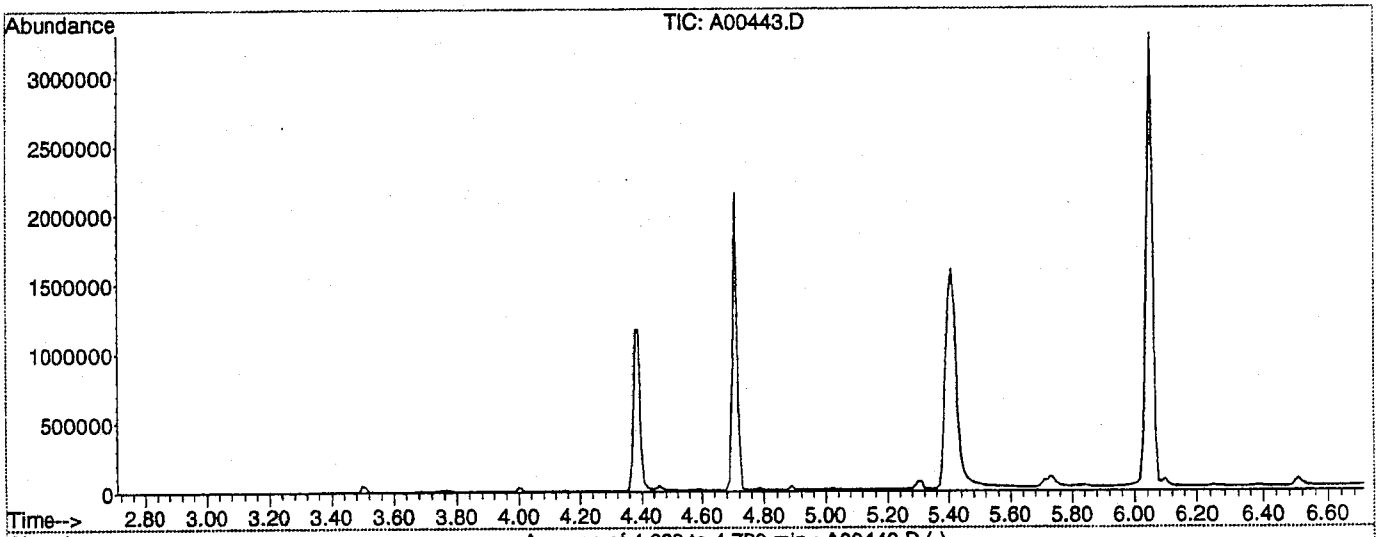
Sample Name **DFTPP 8/29/02**

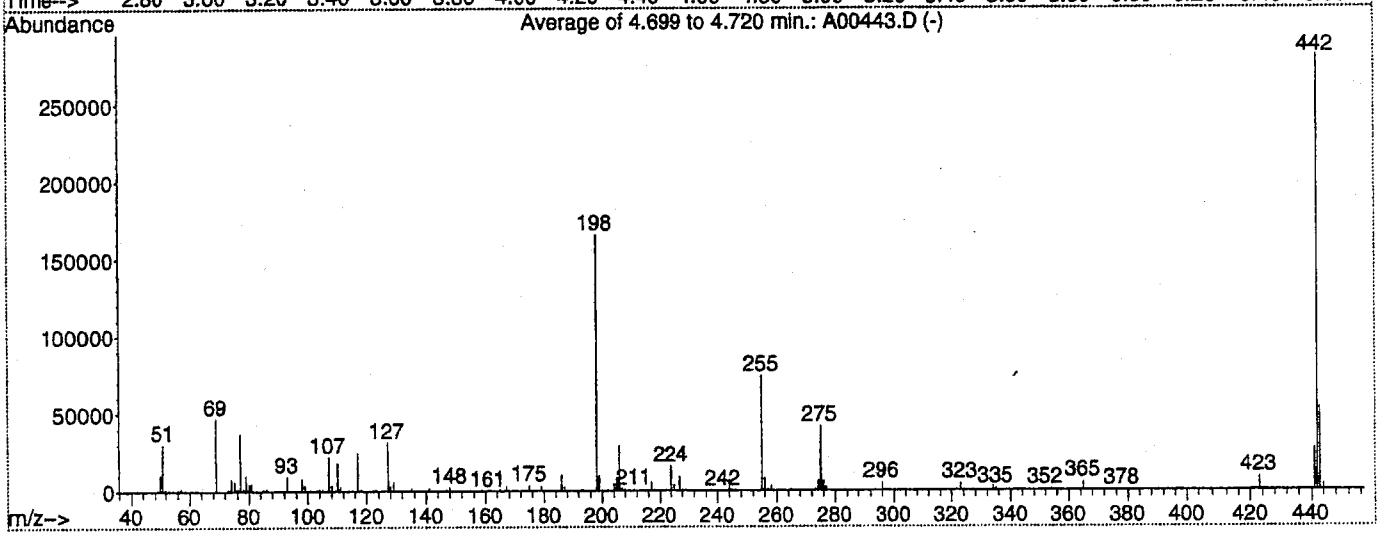
#	Name	Ret Time	Target Response	Percent Breakdown
4)	DDT	6.03	3888762	0.09%
5)	DDD	5.30	166	
6)	DDE	5.79	3287	
		SUM	3892215	

DFTPP

Data File : C:\MSDCHEM\1\DATA\A00443.D
Acq On : 03 Sep 2002 13:05
Sample : DFTPP 9/03/02
Misc :
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation

Vial: 0
Operator:
Inst :
Multiplr: 1.00





AutoFind: Scans 470, 471, 472; Background Corrected with Scan 465

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	442	10	80	10.8	30412	PASS
68	69	0.00	2	0.9	434	PASS
69	198	0.00	100	28.3	46915	PASS
70	69	0.00	2	0.0	0	PASS
127	442	10	80	11.2	31549	PASS
197	198	0.00	1	0.1	166	PASS
198	442	50	100	58.8	165638	PASS
199	198	5	9	6.0	9956	PASS
275	442	10	60	14.8	41746	PASS
365	442	1	100	2.0	5667	PASS
441	443	0.01	100	51.3	27281	PASS
442	442	50	100	100.0	281472	PASS
443	442	15	24	18.9	53216	PASS

erage of 4.699 to 4.720 min.: A00443.D
TPP 9/03/02
dified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
49.00	722	68.00	434	82.00	186	98.00	8029
50.00	10630	69.00	46915	83.00	142	99.00	4023
51.00	30412	73.00	1200	85.00	811	101.00	1074
52.00	1488	74.00	8148	86.00	1829	103.00	1003
55.00	207	75.00	6079	87.00	160	104.00	1429
56.00	1139	76.00	1888	91.00	770	105.00	1108
57.00	1872	77.00	37289	92.00	571	107.00	22223
61.00	489	78.00	1723	93.00	9304	108.00	3625
62.00	98	79.00	9762	94.00	171	109.00	283
63.00	1016	80.00	4298	95.00	105	110.00	18344
67.00	163	81.00	5088	96.00	34	111.00	3028

erage of 4.699 to 4.720 min.: A00443.D
TPP 9/03/02
dified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
113.00	112	130.00	496	148.00	2356	166.00	66
116.00	309	134.00	147	149.00	337	167.00	3335
117.00	24922	135.00	1868	150.00	474	168.00	1388
118.00	1527	136.00	92	151.00	510	169.00	45
122.00	661	137.00	490	154.00	259	170.00	150
123.00	1469	139.00	216	155.00	996	175.00	3413
124.00	94	141.00	2330	156.00	209	177.00	137
125.00	282	142.00	164	157.00	190	179.00	2964
127.00	31549	143.00	502	160.00	111	180.00	333
128.00	3138	146.00	209	161.00	92	181.00	238
129.00	6357	147.00	884	165.00	856	185.00	695

erage of 4.699 to 4.720 min.: A00443.D
TPP 9/03/02
odified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
186.00	10476	200.00	637	215.00	230	229.00	951
187.00	3230	201.00	271	217.00	5480	231.00	227
188.00	276	202.00	844	218.00	807	235.00	46
189.00	187	203.00	134	221.00	513	236.00	119
191.00	134	204.00	4452	222.00	862	242.00	514
192.00	86	205.00	8384	223.00	590	244.00	6999
193.00	1130	206.00	29331	224.00	16055	245.00	597
196.00	129	207.00	2296	225.00	4078	246.00	1129
197.00	166	208.00	1459	226.00	496	247.00	185
198.00	165638	210.00	167	227.00	9256	254.00	227
199.00	9956	211.00	975	228.00	850	255.00	74218

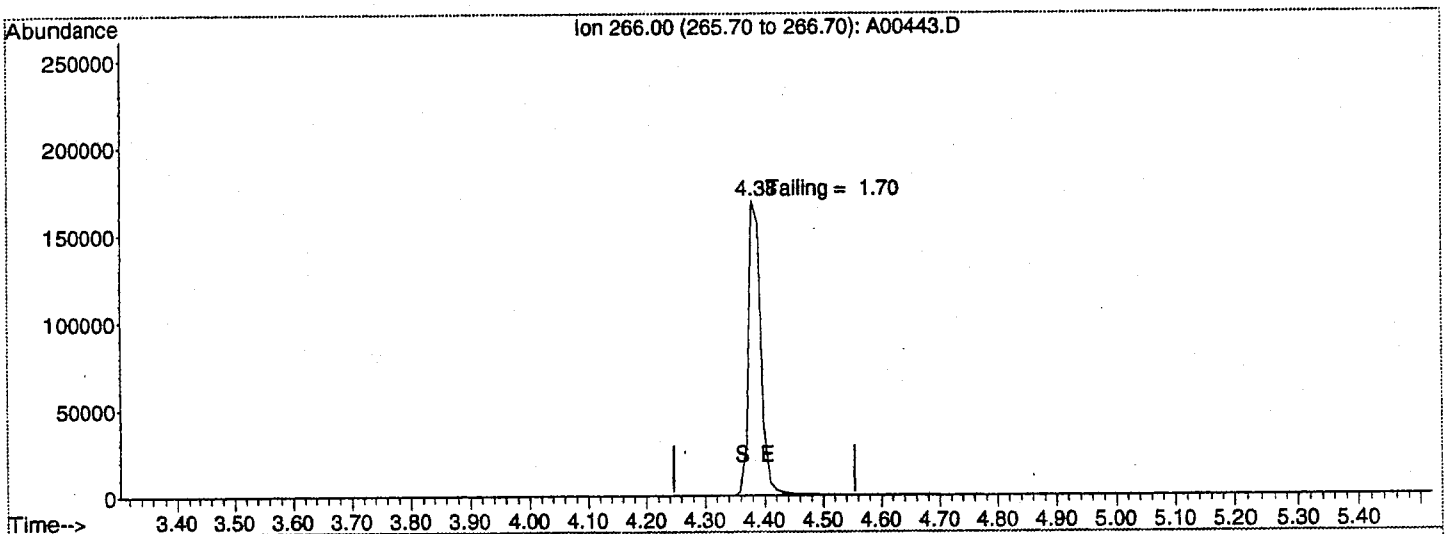
verage of 4.699 to 4.720 min.: A00443.D
FTPP 9/03/02
odified:subtracted

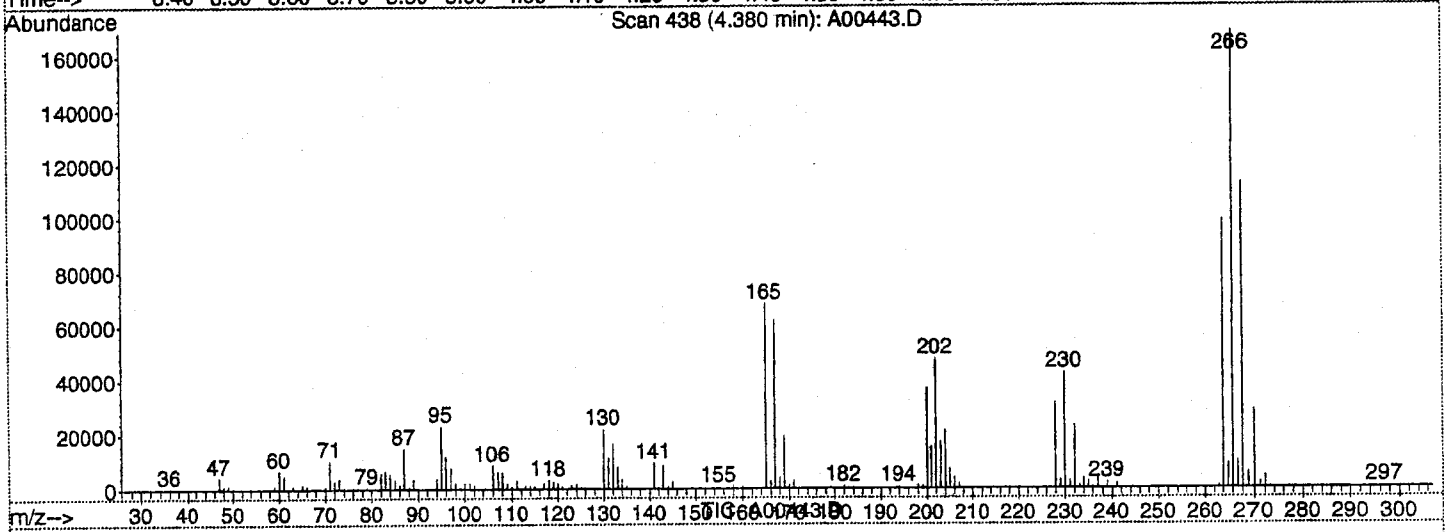
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
256.00	8408	297.00	603	353.00	652	443.00	53216
257.00	1376	303.00	750	354.00	1123	444.00	3982
258.00	3391	315.00	100	365.00	5667		
265.00	1227	316.00	555	366.00	238		
273.00	825	317.00	148	372.00	638		
274.00	6467	323.00	4771	378.00	324		
275.00	41746	324.00	753	421.00	601		
276.00	6257	334.00	2810	423.00	8676		
277.00	2724	335.00	1685	424.00	897		
284.00	168	336.00	277	441.00	27281		
296.00	5198	352.00	1120	442.00	281472		

Data File : C:\MSDCHEM\1\DATA\A00443.D
Acq On : 03 Sep 2002 13:05
Sample : DFTPP 9/03/02
Misc :
MS Integration Params: rteint.p
Quant Time: Sep 4 8:11 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Sep 05 12:14:23 2002
Response via : Single Level Calibration





(1) Pentachlorophenol (T)

4.38min 0.21

response 168955

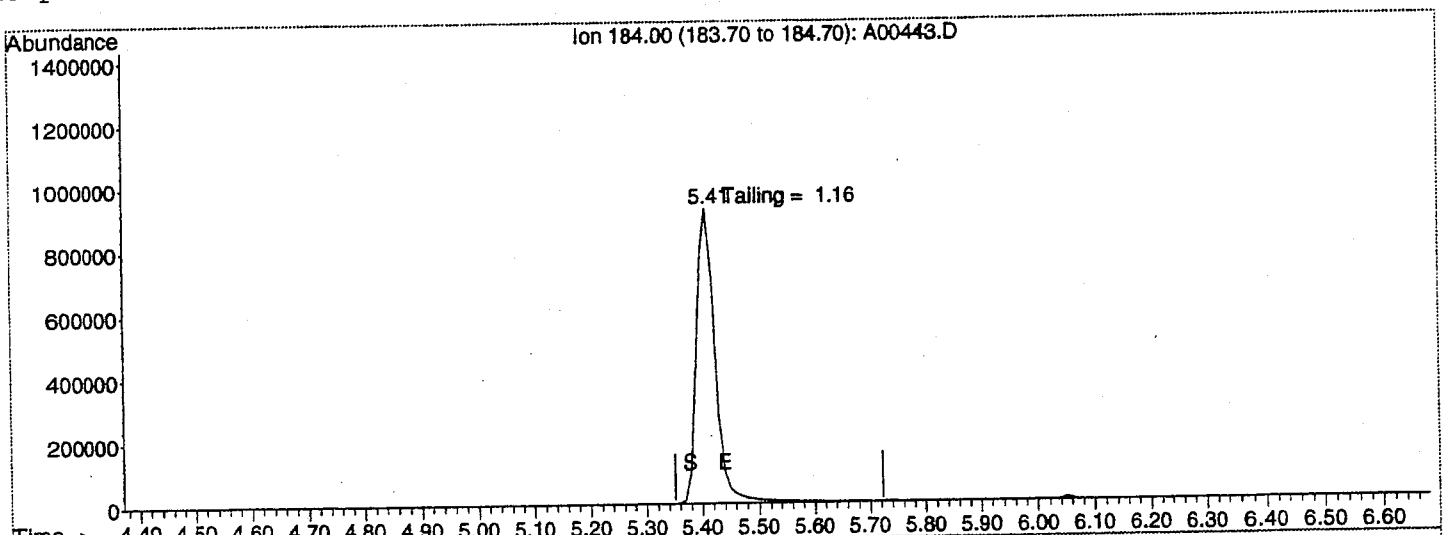
Ion	Exp%	Act%
266.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

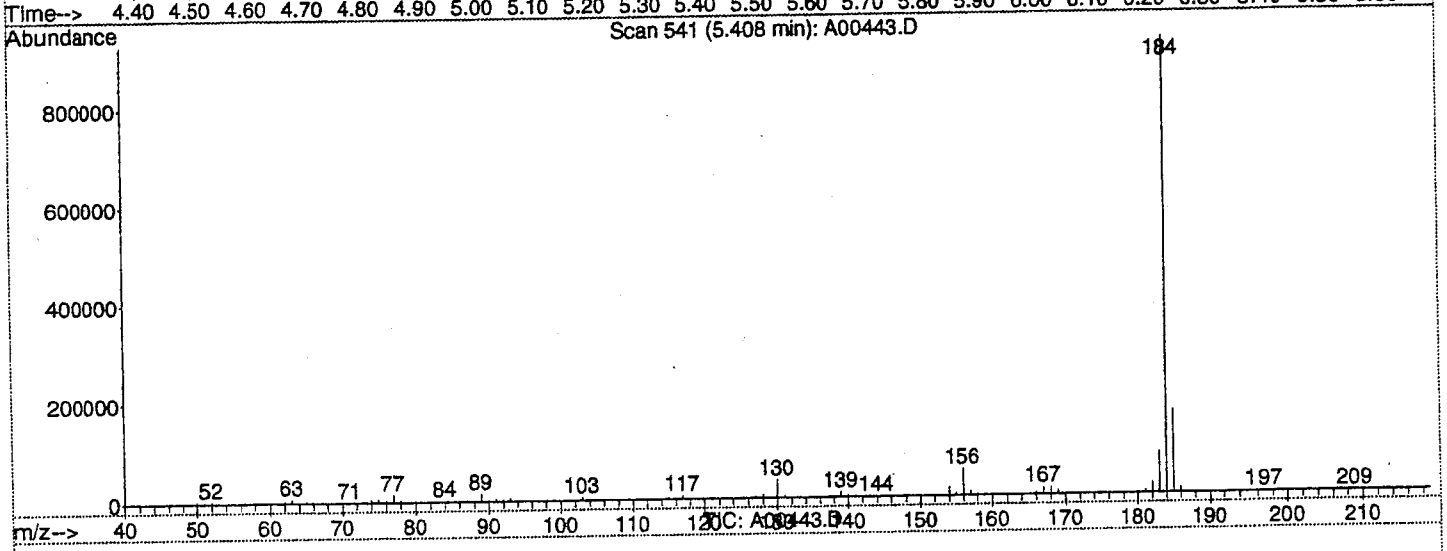
Data File : C:\MSDCHEM\1\DATA\A00443.D
Acq On : 03 Sep 2002 13:05
Sample : DFTPP 9/03/02
Misc :
MS Integration Params: rteint.p
Quant Time: Sep 4 8:11 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Sep 05 12:14:23 2002
Response via : Single Level Calibration





(3) Benzidine (T)

5.41min 0.43

response 925050

Ion	Exp%	Act%
184.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data File Name **A00443.D**
Data File Path **C:\MSDCHEM\1\DATA**
Operator

Sample Name **DFTPP 9/03/02**

#	Name	Ret Time	Target Response	Percent Breakdown
4)	DDT	6.05	2229909	0.00%
5)	DDD	0.00	0	
6)	DDE	5.67	82	
		SUM	2229991	

METHOD BLANK

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00445.D
Acq On : 03 Sep 2002 14:19
Sample : SS0608 MB #15.0000 &2.0 SOIL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 04 09:50:48 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:50:43 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.86	150	46300	1000.00 ul/l	0.00
22) Naphthalene - d8 (I)	7.43	136	107763	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.37	162	73793	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	10.91	188	108978	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.67	240	127801	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.34	264	159971	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.26	112	15967	464.03 ug/L	-0.07
7) Phenol - d5 (S)	5.63	99	17570	425.90 ug/L	0.07
23) Nitrobenzene - d5 (S)	6.63	82	17619	510.20 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.69	172	38723	384.95 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.22	330	10187	419.28 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.60	244	54762	448.49 ug/L	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed
A00445.D DFTPP.M Thu Sep 05 15:11:12 2002

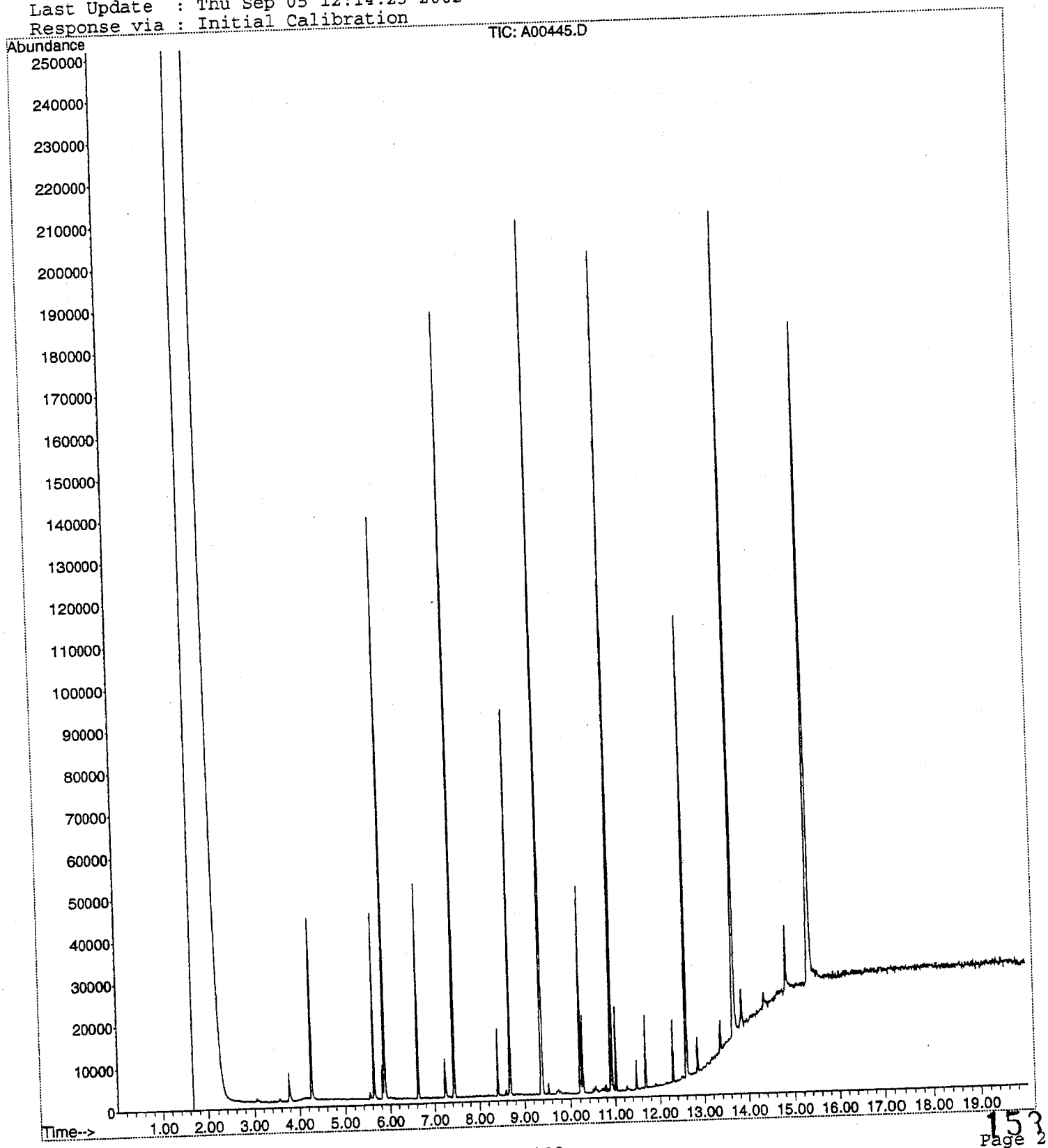
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00445.D
Acq On : 03 Sep 2002 14:19
Sample : SS0608 MB #15.0000 &2.0 SOIL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 4 9:51 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Sep 05 12:14:23 2002
Response via : Initial Calibration



A00445.D DFTPP.M Thu Sep 05 15:11:12 2002

BLANK SPIKE

Data File : C:\MSDCHEM\1\DATA\A00446.D
Acq On : 03 Sep 2002 14:45
Sample : SS0608 BS #15.0000 &2.0 SOIL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 04 09:53:27 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:53:17 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.86	150	48647	1000.00 ul/l	0.00
22) Naphthalene - d8 (I)	7.43	136	105978	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.37	162	72917	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	10.91	188	112619	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.67	240	118210	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.34	264	139894	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.26	112	13155	363.87 ug/L	-0.07
7) Phenol - d5 (S)	5.63	99	16210	373.98 ug/L	0.07
23) Nitrobenzene - d5 (S)	6.63	82	13017	383.29 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.69	172	32676	328.74 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.22	330	8996	358.29 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.60	244	48850	387.14 ug/L	0.00

Target Compounds					Qvalue
8) Phenol	5.64	94	27315	632.28 ug/L	28
10) 2-Chlorophenol	5.66	128	27577	648.92 ug/L	83
13) 1,4-Dichlorobenzene	5.88	146	17828	365.47 ug/L	91
19) n-Nitroso-di-n-propylamine	6.54	70	11752	419.73 ug/L	73
29) Benzoic Acid	7.44	105	703	39.94 ug/L #	65
31) 1,2,4-Trichlorobenzene	7.40	180	16304	401.34 ug/L	96
35) 4-Chloro-3-methylphenol	8.20	107	29453	639.26 ug/L	80
36) 2-Methylnaphthalene	8.20	141	1585	18.98 ug/L	100
45) Biphenyl	9.41	154	28570	365.15 ug/L #	1
51) Acenaphthene	9.41	153	37619	407.89 ug/L	92
53) 4-Nitrophenol	9.63	109	14585+	381.75 ug/L #	39
55) 2,4-Dinitrotoluene	9.65	165	13860	500.29 ug/L	91
69) Atrazine	10.80	200	1299+	214.48 ug/L	38
70) Pentachlorophenol	10.80	266	5057	249.36 ug/L	86
76) Fluoranthene	12.17	202	655	4.92 ug/L #	62
77) Pyrene	12.40	202	59180	441.26 ug/L	70

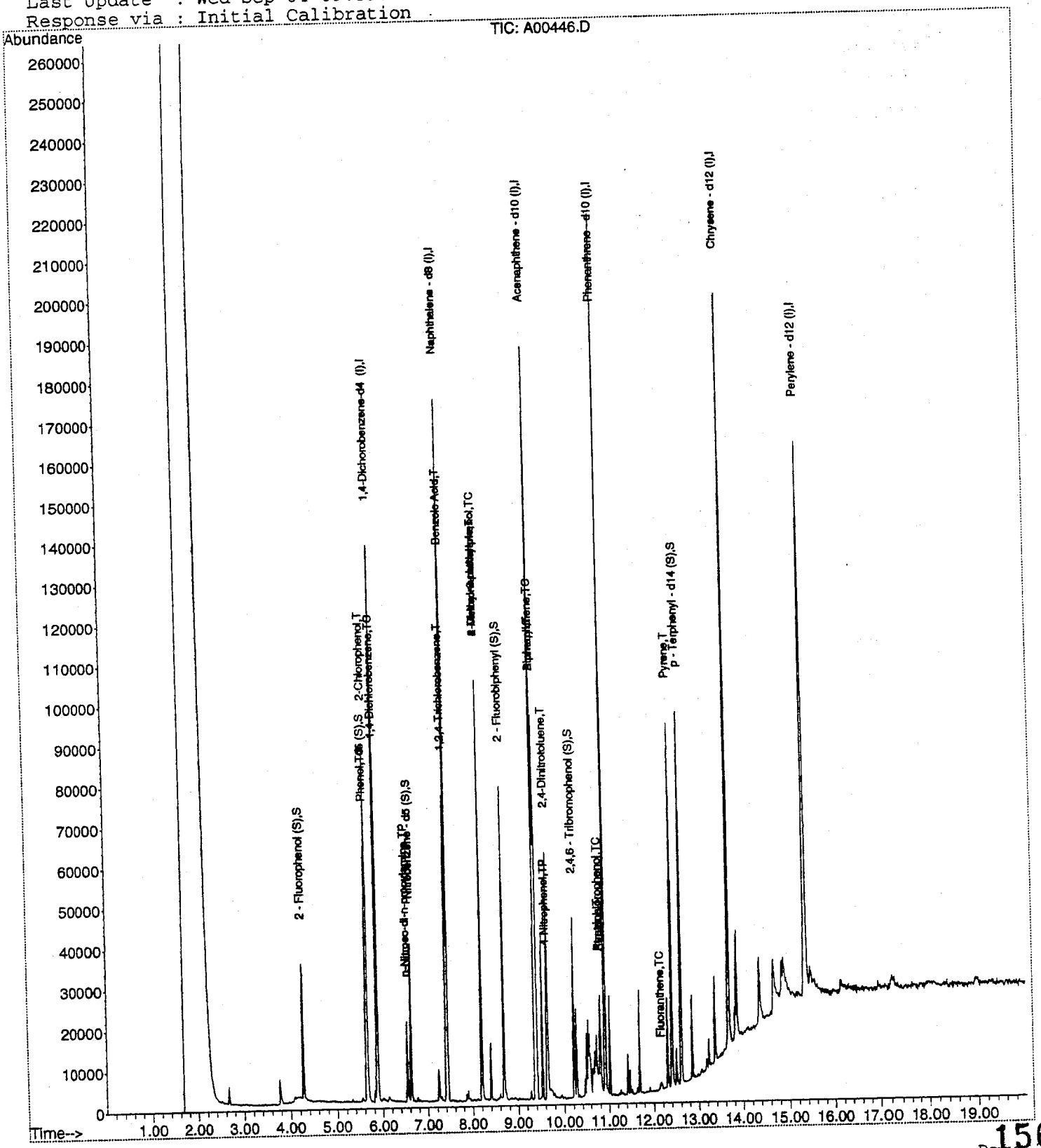
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00446.D
Acq On : 03 Sep 2002 14:45
Sample : SS0608 BS #15.0000 &2.0 SOIL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 4 9:53 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:53:17 2002
Response via : Initial Calibration



MATIX SPIKE / MATRIX SPIKE DUPLICATE

Data File : C:\MSDCHEM\1\DATA\A00448.D Vial: 0
Acq On : 03 Sep 2002 15:36 Operator:
Sample : 108164-3 MS SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 04 09:56:35 2002 Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:55:04 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.87	150	37708	1000.00 ul/l	0.01
22) Naphthalene - d8 (I)	7.45	136	105200	1000.00 ug/L	0.02
38) Acenaphthene - d10 (I)	9.39	162	88776	1000.00 ug/L	0.02
62) Phenanthrene - d10 (I)	10.93	188	176992	1000.00 ug/L	0.02
80) Chrysene - d12 (I)	13.69	240	197337	1000.00 ul/l	0.02
86) Perylene - d12 (I)	15.38	264	220632	1000.00 ug/L	0.04
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.26	112	1367	48.78 ug/L	0.00
7) Phenol - d5 (S)	5.64	99	2067	61.52 ug/L	0.08
23) Nitrobenzene - d5 (S)	6.64	82	1411	41.85 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.70	172	5805	47.97 ug/L	0.03
65) 2,4,6 - Tribromophenol (S)	10.23	330	2331	59.07 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.62	244	11213	56.54 ug/L	0.03
Target Compounds					Qvalue
8) Phenol	5.65	94	3172	94.72 ug/L	22
10) 2-Chlorophenol	5.67	128	2632	79.90 ug/L	77
13) 1,4-Dichlorobenzene	5.89	146	1297	34.30 ug/L	50
19) n-Nitroso-di-n-propylamine	6.56	70	1892	87.18 ug/L #	49
29) Benzoic Acid	7.38	105	1566	89.63 ug/L #	24
31) 1,2,4-Trichlorobenzene	7.41	180	1771	43.92 ug/L	99
35) 4-Chloro-3-methylphenol	8.21	107	6556	143.35 ug/L	91
36) 2-Methylnaphthalene	8.26	141	770	9.29 ug/L #	14
37) 1-Methylnaphthalene	8.37	141	707	9.18 ul/l #	1
45) Biphenyl	9.42	154	5350	56.16 ug/L #	1
48) Acenaphthylene	9.23	152	1561	9.32 ug/L #	1
51) Acenaphthene	9.42	153	8483	75.55 ug/L	79
55) 2,4-Dinitrotoluene	9.67	165	2888	85.62 ug/L	81
58) Diethylphthalate	9.95	149	5486	38.50 ug/L	91
59) Fluorene	9.96	166	1325	11.61 ug/L #	1
70) Pentachlorophenol	10.82	266	2805	88.01 ug/L	37
71) Phenanthrene	10.95	178	10117	47.33 ug/L	49
72) Anthracene	10.99	178	3546m	17.16 ug/L	
76) Fluoranthene	12.19	202	27855	133.18 ug/L	90
77) Pyrene	12.42	202	38522	182.76 ug/L	99
81) Butylbenzylphthalate	13.21	149	6713	39.73 ug/L #	10
82) Benzo(a)anthracene	13.68	228	17215	74.01 ug/L	4
83) 3,3'-Dichlorobenzidine	13.69	252	11455+	115.55 ug/L #	69
84) Chrysene	13.72	228	19599m	88.66 ug/L	
85) bis(2-Ethylhexyl)phthalate	13.85	149	95303	327.67 ug/L	100
88) Benzofluoranthenes	14.91	252	23867	89.54 ug/L #	1
89) Benzo(a)pyrene	15.30	252	13908m	56.59 ug/L	
90) Indeno(1,2,3-cd)pyrene	17.00	276	14851	51.22 ug/L #	1
91) Dibenz(a,h)anthracene	16.98	278	19001	71.66 ug/L #	48
92) Benzo(g,h,i)perylene	17.43	276	16181	63.93 ug/L #	69

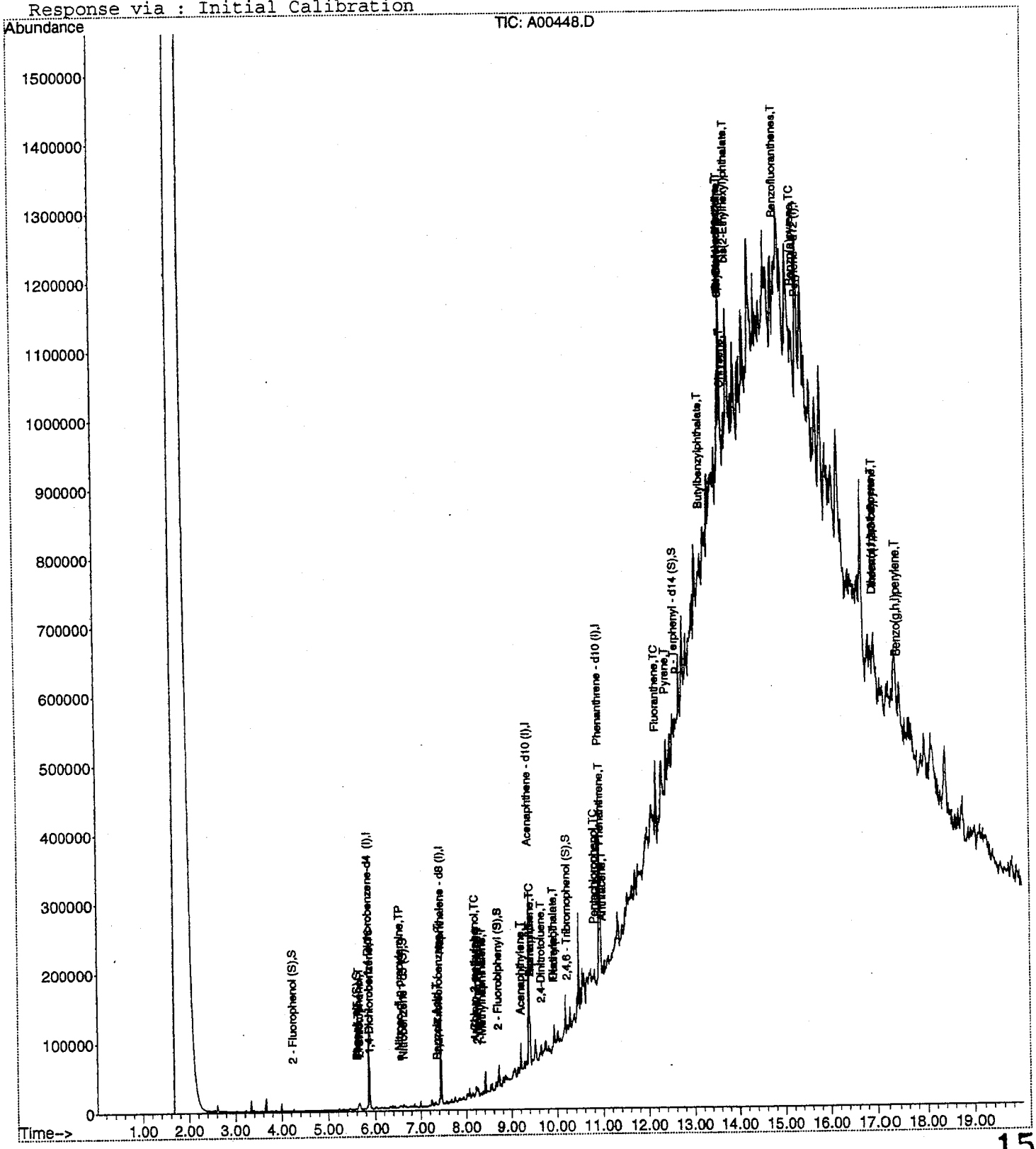
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00448.D
Acq On : 03 Sep 2002 15:36
Sample : 108164-3 MS SS0608 &2.0 SOIL 1:10
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 4 9:58 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 12:10:45 2002
Response via : Initial Calibration



A00448.D SV5-082902.M Thu Sep 05 13:57:13 2002

Data File : C:\MSDCHEM\1\DATA\A00449.D Vial: 0
Acq On : 03 Sep 2002 16:02 Operator:
Sample : 108164-3 MSD SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 04 12:25:54 2002 Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:55:04 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.87	150	39294	1000.00 ul/l	0.01
22) Naphthalene - d8 (I)	7.44	136	107546	1000.00 ug/L	0.01
38) Acenaphthene - d10 (I)	9.39	162	92263	1000.00 ug/L	0.02
62) Phenanthrene - d10 (I)	10.92	188	168398	1000.00 ug/L	0.01
80) Chrysene - d12 (I)	13.69	240	193136	1000.00 ul/l	0.02
86) Perylene - d12 (I)	15.37	264	215580	1000.00 ug/L	0.03
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.27	112	1312	44.93 ug/L	0.01
7) Phenol - d5 (S)	5.65	99	1754	50.10 ug/L	0.09
23) Nitrobenzene - d5 (S)	6.64	82	1233	35.78 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.70	172	4703	37.39 ug/L	0.03
65) 2,4,6 - Tribromophenol (S)	10.24	330	1734	46.19 ug/L	0.02
79) p - Terphenyl - d14 (S)	12.62	244	11307	59.93 ug/L	0.03
Target Compounds					Qvalue
8) Phenol	5.66	94	2643	75.74 ug/L	15
10) 2-Chlorophenol	5.68	128	2564	74.70 ug/L	73
13) 1,4-Dichlorobenzene	5.89	146	1261	32.00 ug/L	62
19) n-Nitroso-di-n-propylamine	6.56	70	1352	59.78 ug/L #	49
29) Benzoic Acid	7.45	105	1136	63.60 ug/L #	1
31) 1,2,4-Trichlorobenzene	7.41	180	1773	43.01 ug/L	95
35) 4-Chloro-3-methylphenol	8.22	107	4883	104.44 ug/L	83
36) 2-Methylnaphthalene	8.25	141	816	9.63 ug/L #	43
45) Biphenyl	9.42	154	4742	47.90 ug/L #	1
50) 3-Nitroaniline	9.41	138	718	37.22 ug/L	85
51) Acenaphthene	9.42	153	6815	58.40 ug/L	85
55) 2,4-Dinitrotoluene	9.67	165	2663	75.97 ug/L	78
57) 2,3,5,6-Tetrachlorophenol	9.76	232	235	6.94 ul/l #	51
61) 4-Nitroaniline	9.41	138	718	37.22 ug/L #	1
64) n-Nitrosodiphenylamine	10.14	169	2021	16.97 ug/L #	1
69) Atrazine	10.83	200	2468+	272.52 ug/L	69
70) Pentachlorophenol	10.82	266	2469	81.42 ug/L	63
71) Phenanthrene	10.95	178	3686	18.13 ug/L	1
72) Anthracene	10.95	178	3686	18.75 ug/L	1
73) Octadecane	10.90	57	7820	123.49 ug/L #	27
76) Fluoranthene	12.19	202	8746	43.95 ug/L	94
77) Pyrene	12.41	202	23407	116.72 ug/L	96
78) Benzidine	12.39	184	2394	77.47 ug/L	100
82) Benzo(a)anthracene	13.58	228	1420	6.24 ug/L	5
83) 3,3'-Dichlorobenzidine	13.71	252	3559+	36.68 ug/L	44
84) Chrysene	13.72	228	4040	18.67 ug/L	16
85) bis(2-Ethylhexyl)phthalate	13.84	149	107561	377.86 ug/L	100
88) Benzofluoranthenes	14.91	252	9931	38.13 ug/L #	1
89) Benzo(a)pyrene	15.23	252	11726	48.83 ug/L #	1
90) Indeno(1,2,3-cd)pyrene	16.98	276	8266	29.18 ug/L #	58
91) Dibenz(a,h)anthracene	16.98	278	4964	19.16 ug/L #	48
92) Benzo(g,h,i)perylene	17.44	276	6794	27.47 ug/L #	69

(#) = qualifier out of range (m) = manual integration (+) = signals summed

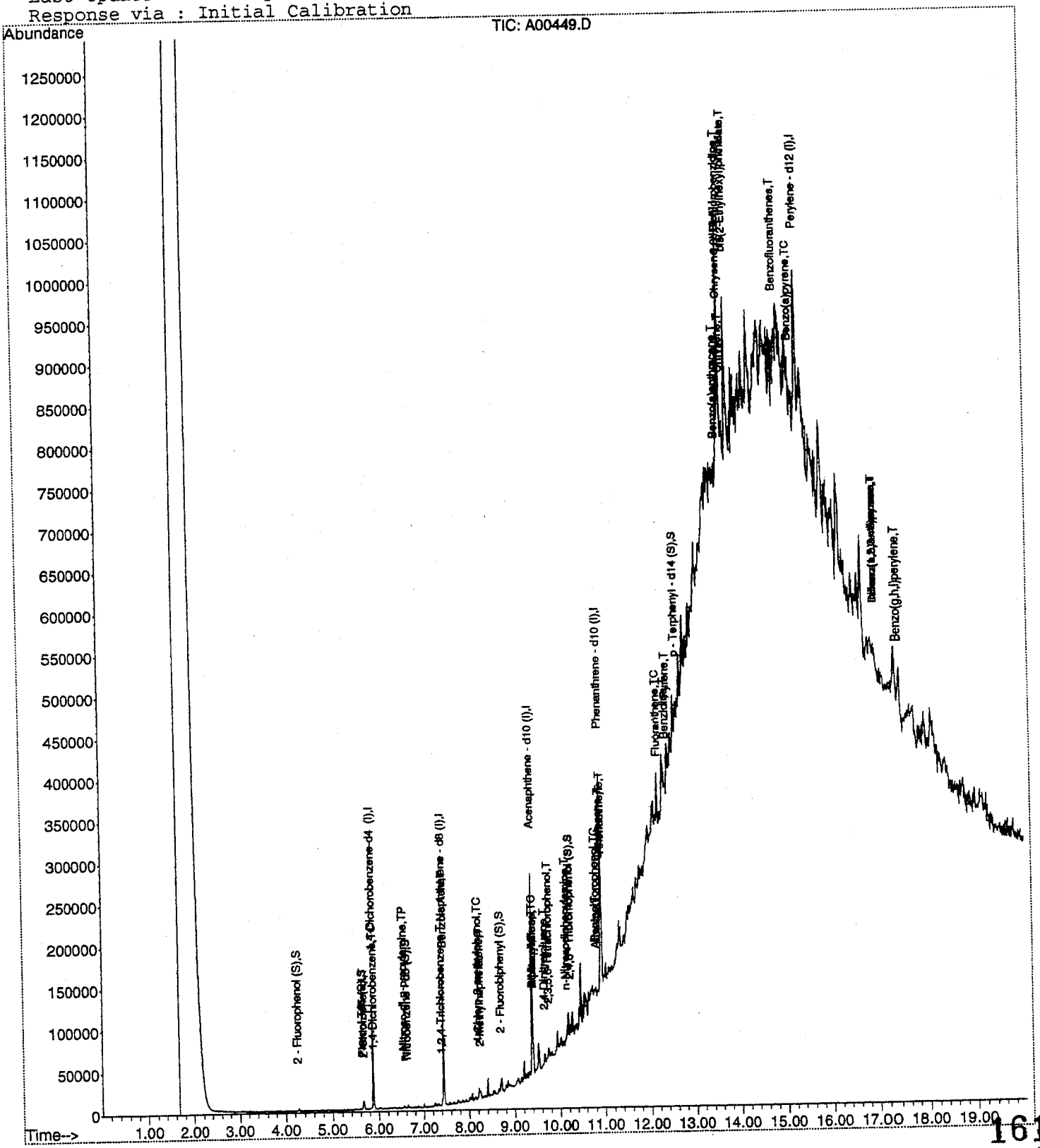
Quantitation Report

Data File : C:\MSDCHEM\1\DATA\A00449.D
Acq On : 03 Sep 2002 16:02
Sample : 108164-3 MSD SS0608 &2.0 SOIL 1:10
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 5 13:58 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 12:10:45 2002
Response via : Initial Calibration



LABORATORY WORKSHEETS

Semivolatile GCMS Worksheet - total

QC Level:Tier IV	Due: 09/04/02	Work Order - 108164
Matrix:solid		
CH2M Hill	Proj. Manager:Katie Downie	

V3

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

See attached for requested DLs

Sample number 108164	Client Sample ID	PP011806
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/21/02 10:30:00 AM**
Full 8270		

Sample number 108164	Client Sample ID	PP011807
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/21/02 11:45:00 AM**
Full 8270		

Sample number 108164	Client Sample ID	PP011808
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/21/02 2:15:00 PM**
Full 8270 MS/MSD		

550608

Analyst _____ Date 9/5/02

Reviewed by _____ Date 9/10/02

Organics worksheet v4.0 If you have suggestions for changes please bring them to me - Dennis

Printed - 8/27/02

Semivolaile Analysis by USEPA Method 8270

[illegible]	SS0608				
[illegible]	Solid				
[illegible]	980-52-06				
[illegible]	8/1/03	Weighed By/Date TM 8-27-02			
[illegible]	01/19/03	Extracted By/Date			
[illegible]	1/19/03	COE - Portland 8270			
[illegible]	980-56-01				
[illegible]	8/15/03				
[illegible]					
[illegible]	V23154				
		Spike Witness Signature/Date			
[illegible]	3550 Sonication				

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	15.0000	2	10	NA
[illegible]					NA
[illegible]					NA
[illegible]	[illegible]	15.0000	2	10	10
[illegible]	[illegible]				
[illegible]	[illegible]	15.3367	2	10	10
[illegible]	[illegible]	15.1042	2	10	10
[illegible]					
[illegible]					

Sample	Client Sample ID	Sample Weight (g)	Final Volume (ml)	Surr Spike (ul)	Comments
108160-1	PP011802	15.5281	2	10	
108160-2	PP011803	15.9643	2	10	
108160-3	PP011804D	15.1734	2	10	
108160-4	PP011805	16.9877	2	10	
108164-1	PP011806	18.8258	2	10	
108164-2	PP011807	17.1898	2	10	
108164-3	PP011808	15.2692	2	10	
108166-1	PP011801	15.4033	2	10	
108166-2	PP011809	15.9869	2	10	
108166-3	PP011810	16.9048	2	10	
108177-1	PP01M105	17.1575	2	10	
108177-2	PP01M106	16.0588	2	10	
108177-3	PP01M107	16.0562	2	10	
108177-4	PP01M108	15.7894	2	10	
108177-5	PP01M109	16.1271	2	10	
108177-6	PP01M110	16.5356	2	10	
108177-8	PP01M101	15.9979	2	10	
108177-9	PP01M102D	15.7006	2	10	
108177-10	PP01M103	16.3232	2	10	
108177-11	PP01M104	15.6354	2	10	

8/27/02

STL Seattle

6a **Sample Information**

Thi Client Name	
Work Order Number	
Sample Number	Related Blank: noblank
QC Batch Number	**ss0608**
Client Sample ID	
Date Received	
Date Prepared	**08-27-02**
Date Analyzed	**09-03-02**
Sample matrix type	**solid**
QC sample type	**blank**

Sample weight (g)	**15**	=	0.015 /kg	Calc. Fact.	0.133333333
Extract volume (ml)	**2**	=	2 ml	Dry Weight	15 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	66.66666667
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	464.0347		92.8	OK		
x	Phenol - d5	425.9043		85.2	OK		
x	Nitrobenzene - d5	510.202		102	OK		
x	2 - Fluorobiphenyl	384.9533		77	OK		
x	2,4,6 - Tribromophenol	419.284		83.9	OK		
x	p - Terphenyl - d14	448.4938		89.7	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Butylbenzylphthalate	5.0263			ND		13.3
x	bis(2-Ethylhexyl)phthalate	7.0397			ND		13.3

Reviewed Previously

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6a **Sample Information**

Thi Client Name	CH2M Hill
Work Order Number	108166
Sample Number	
QC Batch Number	ss0608
Client Sample ID	
Date Received	08-23-02
Date Prepared	08-27-02
Date Analyzed	09-03-02
Sample matrix type	solid
QC sample type	bs

Related Blank: ss0608

Sample weight (g)	15	=	0.015 /kg	Calc. Fact.	0.133333333
Extract volume (ml)	2	=	2 ml	Dry Weight	15 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	66.66666667
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	363.8672		72.8	OK		
x	Phenol - d5	373.9798		74.8	OK		
x	Nitrobenzene - d5	383.2885		76.7	OK		
x	2 - Fluorobiphenyl	328.7413		65.7	OK		
x	2,4,6 - Tribromophenol	358.2933		71.7	OK		
x	p - Terphenyl - d14	387.1407		77.4	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Phenol	632.2762			84.3		13.3
x	2-Chlorophenol	648.9224			86.5		13.3
x	1,4-Dichlorobenzene	365.4676			48.7		13.3
x	N-nitroso-di-n-propylamine	419.7338			56		13.3
x	Benzoic Acid	39.9386			5.33	J	66.7
x	1,2,4-Trichlorobenzene	401.3421			53.5		13.3
x	4-Chloro-3-methylphenol	639.2582			85.2		13.3
x	2-Methylnaphthalene	18.9762			2.53		1.33
x	Acenaphthene	407.8895			54.4		1.33
x	4-Nitrophenol	381.7455			50.9	J	66.7
x	2,4-Dinitrotoluene	500.2868			66.7		13.3
x	Pentachlorophenol	249.3555			33.2		13.3
x	Di-n-butylphthalate	7.6756		ND			33.3
x	Pyrene	441.2636			58.8		1.33
x	Butylbenzylphthalate	9.8999		ND			13.3
x	bis(2-Ethylhexyl)phthalate	34.8859		ND			13.3

reviewed previously

STL Seattle

6a **Sample Information**

Thl Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**3**
QC Batch Number	**ss0608**
Client Sample ID	**PP011808**
Date Received	**08-23-02**
Date Prepared	**08-27-02**
Date Analyzed	**09-03-02**
Sample matrix type	**solid**
QC sample type	**ms**

Related Blank: ss0608

Sample weight (g)	**15.3367**	=	0.01534 /kg	Calc. Fact.	1.676818181
Extract volume (ml)	**2**	=	2 ml	Dry Weight	11.92735159 g
Dilution Factor	**10**	=	10	Sample Units	ug/kg
% Solids	**77.77**	=	0.7777	Spike Factor	83.84090906
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	48.7801		97.6	**OK**		
x	Phenol - d5	61.5217		123	**OK**		
x	Nitrobenzene - d5	41.8545		83.7	**OK**		
x	2 - Fluorobiphenyl	47.969		95.9	**OK**		
x	2,4,6 - Tribromophenol	59.0731		118	**OK**		
x	p - Terphenyl - d14	56.5437		113	**OK**		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Phenol	94.7243			159	J	168
x	2-Chlorophenol	79.9014			134	J	168
x	1,4-Dichlorobenzene	34.3012			57.5	J	168
x	N-nitroso-di-n-propylamine	87.1778			146	J	168
x	Benzoic Acid	89.625			150	J	838
x	1,2,4-Trichlorobenzene	43.9177			73.6	J	168
x	4-Chloro-3-methylphenol	143.346			240		168
x	2-Methylnaphthalene	9.2869			15.6	J	16.8
x	Dimethylphthalate	5.9789			ND		168
x	Acenaphthylene	9.3211			15.6	J	16.8
x	Acenaphthene	75.5471			127		16.8
x	4-Nitrophenol	18.1659			ND		838
x	Dibenzofuran	5.6132			ND		168
x	2,4-Dinitrotoluene	85.6222			144	J	168
x	Diethylphthalate	38.4955			64.5	J	168
x	Fluorene	11.6114			19.5		16.8
x	4,6-Dinitro-2-methylphenol	6.9261			ND		838
x	N-Nitrosodiphenylamine	6.984			ND		168
x	Pentachlorophenol	88.0069			148	J	168
x	Phenanthrene	47.3342			79.4		16.8

reviewed previously

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x	Anthracene	17.1591		28.8		16.8
x	Di-n-butylphthalate	12.7859	ND			419
x	Fluoranthene	133.1764		223		16.8
x	Pyrene	182.7637		306		16.8
x	Butylbenzylphthalate	39.7306		66.6	J	168
x	3,3'-Dichlorobenzidine	115.5453		194		168
x	Benzo(a)anthracene	74.009		124		33.5
x	Chrysene	88.6587		149		33.5
x	bis(2-Ethylhexyl)phthalate	327.6737		549		168
x	Di-n-octylphthalate	19.8782	ND			168
x	Benzofluoranthenes	89.5372		150		33.5
x	Benzo(a)pyrene	56.5927		94.9		16.8
x	Indeno(1,2,3-cd)pyrene	51.2171		85.9		16.8
x	Dibenz(a,h)anthracene	71.6619		120		16.8
x	Benzo(g,h,i)perylene	63.9261		107		16.8

STL Seattle

6a **Sample Information**

Thi Client Name	CH2M Hill
Work Order Number	108164
Sample Number	3
QC Batch Number	ss0608
Client Sample ID	PP011808
Date Received	08-23-02
Date Prepared	08-27-02
Date Analyzed	09-03-02
Sample matrix type	solid
QC sample type	msd

Related Blank: ss0608

Sample weight (g)	15.1042	=	0.0151 /kg	Calc. Fact.	1.70262956
Extract volume (ml)	2	=	2 ml	Dry Weight	11.74653634 g
Dilution Factor	10	=	10	Sample Units	ug/kg
% Solids	77.77	=	0.7777	Spike Factor	85.131478
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	44.9279		89.9	OK		
x	Phenol - d5	50.0985		100	OK		
x	Nitrobenzene - d5	35.7766		71.6	OK		
x	2 - Fluorobiphenyl	37.394		74.8	OK		
x	2,4,6 - Tribromophenol	46.1863		92.4	OK		
x	p - Terphenyl - d14	59.9275		120	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Phenol	75.7413			129	J	170
x	2-Chlorophenol	74.6954			127	J	170
x	1,4-Dichlorobenzene	32.003			54.5	J	170
x	N-nitroso-di-n-propylamine	59.7818			102	J	170
x	Benzoic Acid	63.5971			108	J	851
x	1,2,4-Trichlorobenzene	43.0081			73.2	J	170
x	4-Chloro-3-methylphenol	104.4371			178		170
x	2-Methylnaphthalene	9.627			16.4	J	17
x	3-Nitroaniline	37.2181			63.4	J	170
x	Acenaphthene	58.3986			99.4		17
x	2,4-Dinitrotoluene	75.9676			129	J	170
x	Diethylphthalate	10.0535			ND		170
x	4-Chlorophenylphenylether	10.6471			ND		170
x	4-Nitroaniline	37.2181			63.4	J	170
x	N-Nitrosodiphenylamine	16.9737			28.9	J	170
x	Pentachlorophenol	81.4182			139	J	170
x	Phenanthrene	18.1257			30.9		17
x	Anthracene	18.7468			31.9		17
x	Di-n-butylphthalate	21.18			ND		426
x	Fluoranthene	43.9491			74.8		17

reviewed previously

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x	Pyrene	116.7195		199		17
x	3,3'-Dichlorobenzidine	36.6801		62.5	J	170
x	Benzo(a)anthracene	6.2375		10.6	J	34.1
x	Chrysene	18.673		31.8	J	34.1
x	bis(2-Ethylhexyl)phthalate	377.8637		643		170
x	Di-n-octylphthalate	18.5669	ND			170
x	Benzofluoranthenes	38.1293		64.9		34.1
x	Benzo(a)pyrene	48.8321		83.1		17
x	Indeno(1,2,3-cd)pyrene	29.1753		49.7		17
x	Dibenz(a,h)anthracene	19.1604		32.6		17
x	Benzo(g,h,i)perylene	27.47		46.8		17

STL Seattle

6a **Sample Information**

Thi Client Name	CH2M Hill
Work Order Number	108164
Sample Number	1
QC Batch Number	ss0608
Client Sample ID	PP011806
Date Received	08-23-02
Date Prepared	08-27-02
Date Analyzed	09-03-02
Sample matrix type	solid
QC sample type	sample

Related Blank: ss0608

Sample weight (g)	18.8258	=	0.01883 /kg	Calc. Fact.	1.571788506
Extract volume (ml)	2	=	2 ml	Dry Weight	12.72435822 g
Dilution Factor	10	=	10	Sample Units	ug/kg
% Solids	67.59	=	0.6759	Spike Factor	78.58942531
GPC (Enter 2 If GPC'd)		=	1	Rept. Dil. Fact.	20
Report In PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	26.8148		53.6	OK		
x	Phenol - d5	39.9028		79.8	OK		
x	Nitrobenzene - d5	67.86		136	OK		
x	2 - Fluorobiphenyl	28.2493		56.5	OK		
x	2,4,6 - Tribromophenol	23.14		46.3	OK		
x	p - Terphenyl - d14	90.75	x9	182	HIGH		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	2,4-Dimethylphenol	11.6822			18.4	J	157
x	Naphthalene	84.2548			132		15.7
x	2-Methylnaphthalene	93.3394			147		15.7
x	Acenaphthene	120.4222			189		15.7
x	Phenanthrene	441.9518			695		15.7
x	Anthracene	107.9507			170		15.7
x	Fluoranthene	468.7302			737		15.7
x	Pyrene	502.6575			790		15.7
x	Benzo(a)anthracene	257.8298			405		31.4
x	Chrysene	266.4668			419		31.4
x	bis(2-Ethylhexyl)phthalate	1685.993			2650		157
x	Benzofluoranthenes	252.6931			397		31.4
x	Benzo(a)pyrene	161.588			254		15.7

$$\frac{11.68\ ug/L \times 0.002\ L \times 10}{0.0188258\ Kg \times 0.6759} = 18.4\ ug/Kg$$

STL Seattle

6a **Sample Information**

Th	Client Name	**CH2M Hill**
	Work Order Number	**108164**
	Sample Number	**2**
	QC Batch Number	**ss0608**
	Client Sample ID	**PP011807**
	Date Received	**08-23-02**
	Date Prepared	**08-27-02**
	Date Analyzed	**09-03-02**
	Sample matrix type	**solid**
	QC sample type	**sample**

Related Blank: ss0608

Sample weight (g)	**17.1898**	=	0.01719 /kg	Calc. Fact.	1.528281451
Extract volume (ml)	**2**	=	2 ml	Dry Weight	13.08659474 g
Dilution Factor	**10**	=	10	Sample Units	ug/kg
% Solids	**76.13**	=	0.7613	Spike Factor	76.41407256
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	26.6935		53.4	OK		
x	Phenol - d5	39.2103		78.4	OK		
x	Nitrobenzene - d5	31.95		63.9	OK		
x	2 - Fluorobiphenyl	25.3359	x9	50.7	LOW		
x	2,4,6 - Tribromophenol	34.2154		68.4	OK		
x	p - Terphenyl - d14	60.71		121	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Naphthalene	29.1334			44.5		15.3
x	2-Methylnaphthalene	137.6376			210		15.3
x	Dimethylphthalate	8.064			ND		153
x	Acenaphthylene	10.4919			16		15.3
x	Acenaphthene	29.4651			45		15.3
x	Phenanthrene	110.0628			168		15.3
x	Anthracene	24.2751			37.1		15.3
x	Di-n-butylphthalate	45.4702			ND		382
x	Fluoranthene	168.5428			258		15.3
x	Pyrene	161.7695			247		15.3
x	Di-n-octylphthalate	124.0705			190		153
	Benzidine	123.1342			188	J	764
	Acetophenone	10.6403			ND		153
	2,3-Dichloroaniline	9.3517			ND		153

STL Seattle

6a **Sample Information**

Th	Client Name	**CH2M Hill**
	Work Order Number	**108164**
	Sample Number	**3**
	QC Batch Number	**ss0608**
	Client Sample ID	**PP011808**
	Date Received	**08-23-02**
	Date Prepared	**08-27-02**
	Date Analyzed	**09-03-02**
	Sample matrix type	**solid**
	QC sample type	**sample**

Related Blank: ss0608

Sample weight (g)	**15.2692**	=	0.01527 /kg	Calc. Fact.	1.684230831
Extract volume (ml)	**2**	=	2 ml	Dry Weight	11.87485684 g
Dilution Factor	**10**	=	10	Sample Units	ug/kg
% Solids	**77.77**	=	0.7777	Spike Factor	84.21154153
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	27.0056		54	**OK**		
x	Phenol - d5	32.4762		65	**OK**		
x	Nitrobenzene - d5	30.76		61.5	**OK**		
x	2 - Fluorobiphenyl	29.9922		60	**OK**		
x	2,4,6 - Tribromophenol	45.33		90.7	**OK**		
x	p - Terphenyl - d14	63.8318		128	**OK**		

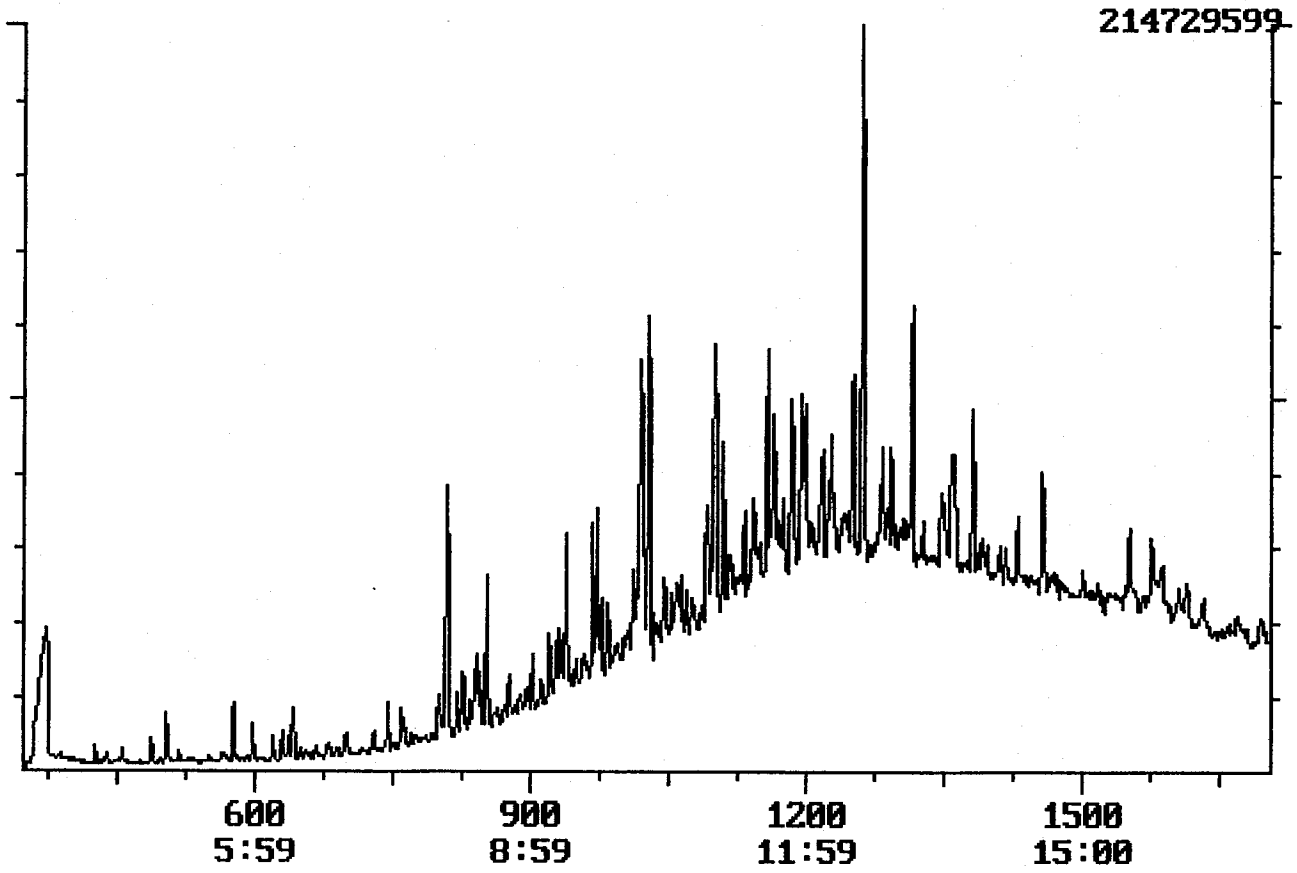
x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	4-Chloro-3-methylphenol	40.376			68	J	168
x	2-Methylnaphthalene	7.3723			12.4	J	16.8
x	Acenaphthylene	7.2954			12.3	J	16.8
x	Acenaphthene	8.0261			13.5	J	16.8
x	4,6-Dinitro-2-methylphenol	23.3273			ND		842
x	Phenanthrene	35.1633			59.2		16.8
x	Anthracene	8.4843			14.3	J	16.8
x	Di-n-butylphthalate	32.8488			ND		421
x	Fluoranthene	85.1112			143		16.8
x	Pyrene	86.2422			145		16.8
x	Benzo(a)anthracene	41.2106			69.4		33.7
x	bis(2-Ethylhexyl)phthalate	237.0001			399		168
x	Benzofluoranthenes	68.9707			116		33.7
	Benzidine	15.4671			26.1	J	842

HERBICIDE DATA PACKAGE

SAMPLE DATA

SAMPLE CHROMATOGRAM

DATAFILE : L4093 ANALYSIS DATE : 08/30/02 00:57
SAMPLE : 108164-1 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4093 ANALYSIS DATE : 08/30/02 00:57
SAMPLE : 108164-1 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.26	1.000	NG/UL	6434874
Phenanthrene D10 (IS)	9.75	1.000	NG/UL	9667384
2,4-Dichlorophenylacetic a	8.35	0.768	NG/UL	3141413
Dalapon			ND	
4-Nitrophenol			ND	
Dicamba			ND	
MCPP			ND	
MCPA			ND	
Dichloroprop			ND	
2,4-D			ND	
Pentachlorophenol	9.48	0.118	NG/UL	500319
Silvex (2,4,5-TP)			ND	
2,4,5-T			ND	
Dinoseb			ND	
2,4-DB			ND	

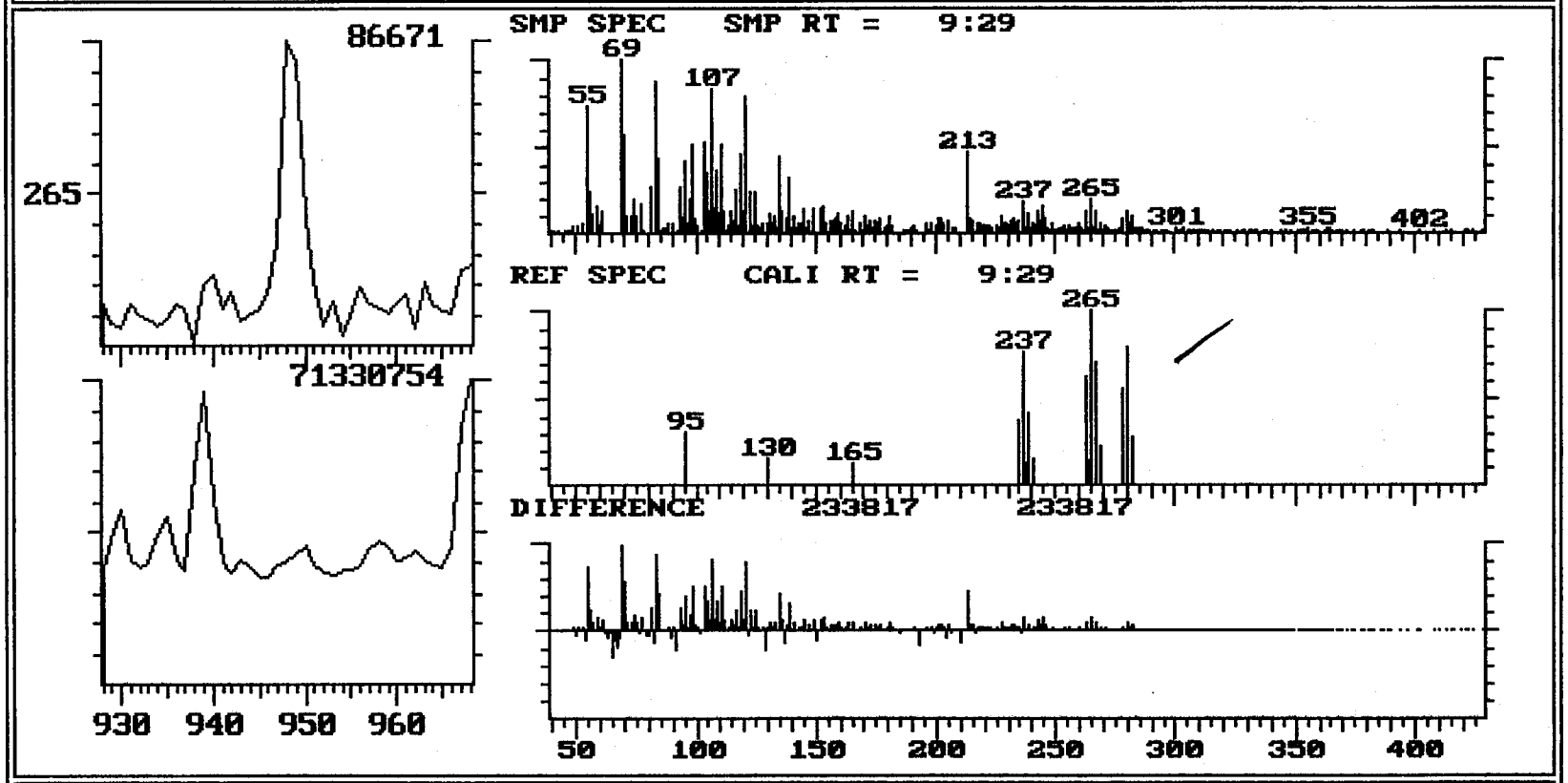
INTERNAL STANDARD QC REPORT

DATAFILE : L4093 ANALYSIS DATE : 08/30/02 00:57
SAMPLE : 108164-1 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.26	0.00	7512438	6434874	14
Phenanthrene D10 (IS)	9.74	9.75	0.01	11413836	9667384	15

SAMPLE QUANTITATION REPORT

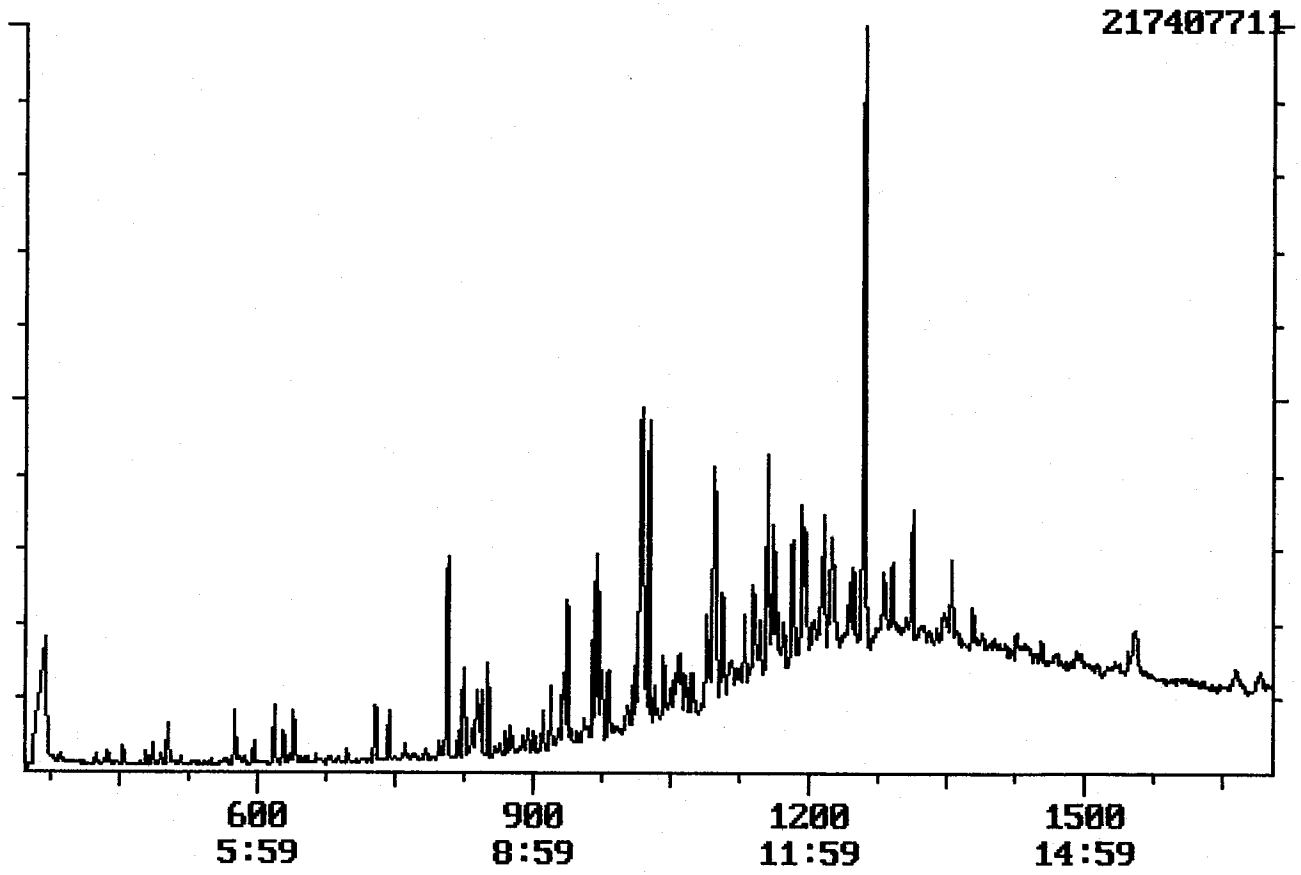
DATAFILE : L4093 ANALYSIS DATE : 08/30/02 00:57
SAMPLE : 108164-1 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



COMPOUND : Pentachlorophenol
AMOUNT : 0.118 NG/UL
FIT S/N : 937

SAMPLE CHROMATOGRAM

DATAFILE : L4094 ANALYSIS DATE : 08/30/02 01:21
SAMPLE : 108164-2 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4094 ANALYSIS DATE : 08/30/02 01:21
SAMPLE : 108164-2 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.25	1.000	NG/UL	6975683
Phenanthrene D10 (IS)	9.74	1.000	NG/UL	10211115
2,4-Dichlorophenylacetic a	8.34	0.713	NG/UL	3168301
Dalapon			ND	
4-Nitrophenol			ND	
Dicamba			ND	
MCPP			ND	
MCPA			ND	
Dichloroprop			ND	
2,4-D			ND	
Pentachlorophenol	9.47	0.050	NG/UL	222269
Silvex (2,4,5-TP)			ND	
2,4,5-T			ND	
Dinoseb			ND	
2,4-DB			ND	

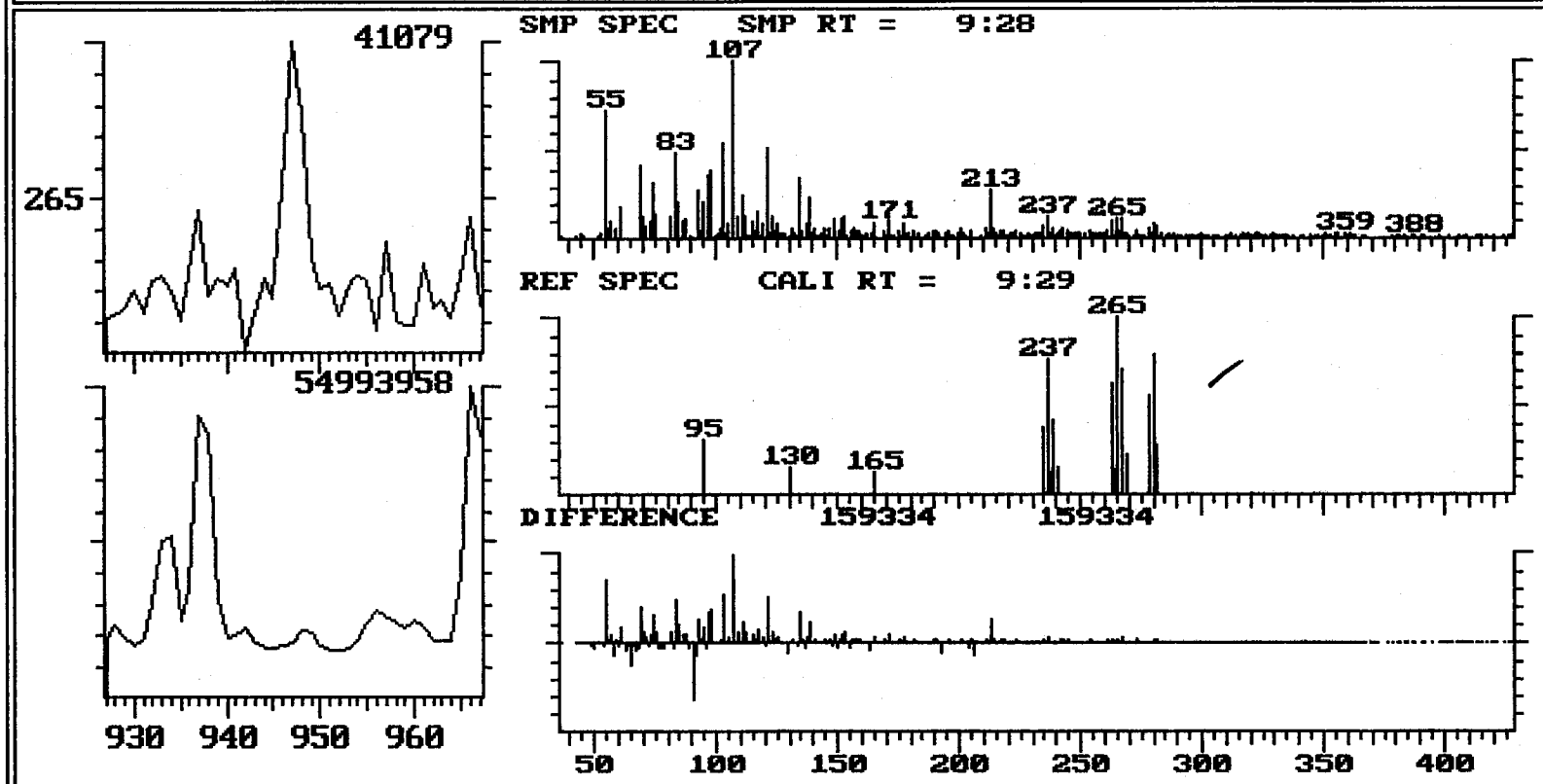
INTERNAL STANDARD QC REPORT

DATAFILE : L4094 ANALYSIS DATE : 08/30/02 01:21
SAMPLE : 108164-2 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.25	0.01	7512438	6975683	7
Phenanthrene D10 (IS)	9.74	9.74	0.00	11413836	10211115	11

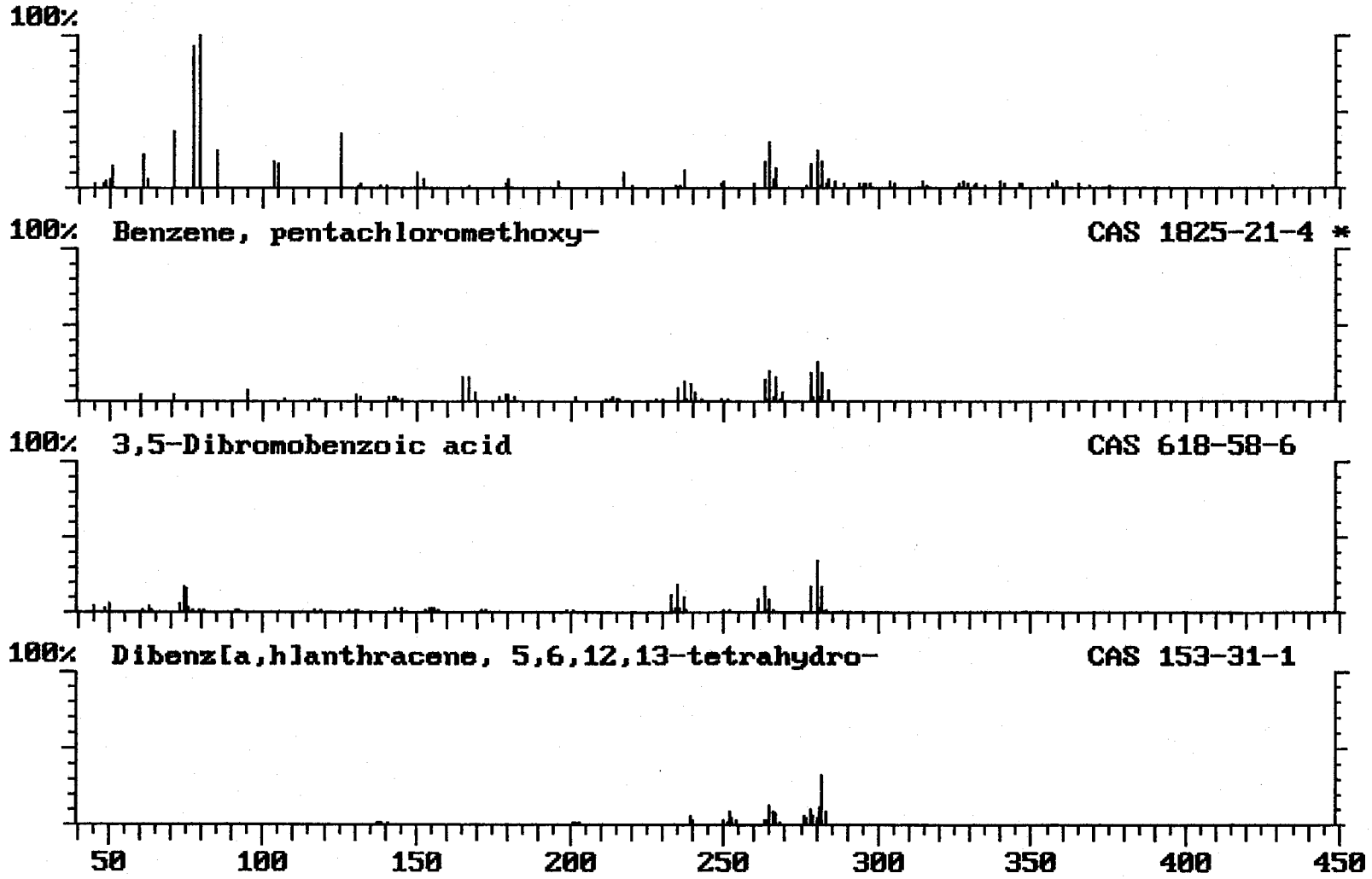
SAMPLE QUANTITATION REPORT

DATAFILE : L4094 ANALYSIS DATE : 08/30/02 01:21
SAMPLE : 108164-2 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



COMPOUND : Pentachlorophenol
AMOUNT : 0.050 NG/UL
FIT S/N : 804

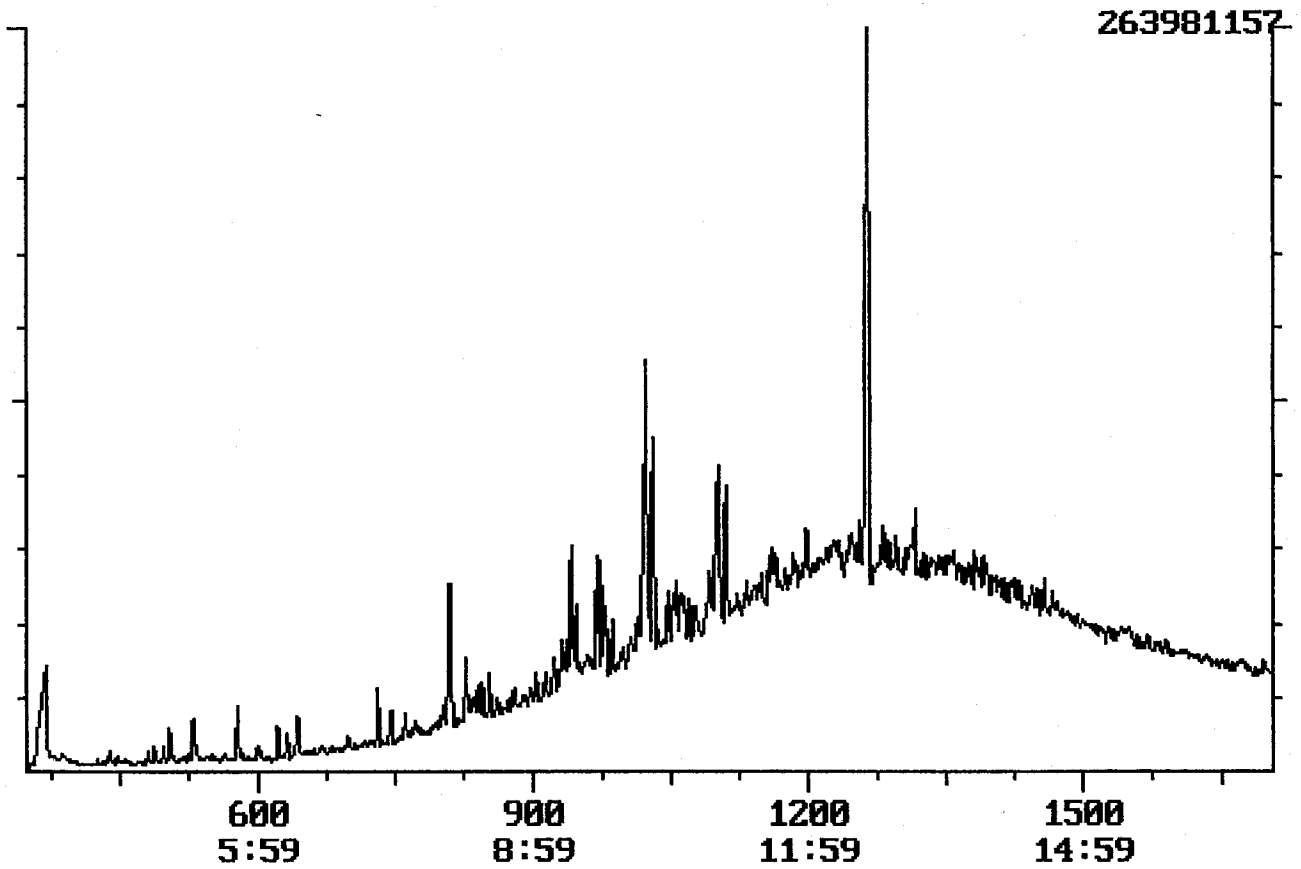
Library Search C:\MAGNUM\DATA\L4093 Acquired: Aug-30-2002 Scan number 948
Comment: 108164-1 &1 SOIL 8151 HS0176



Formula: C7.H3.Cl5.O Rank 1 Index 39010
Molecular weight 278 Purity 269 Fit 624 Rfit 388 Cas# 1825-21-4

SAMPLE CHROMATOGRAM

DATAFILE : L4095 ANALYSIS DATE : 08/30/02 01:44
SAMPLE : 108164-3 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4095 ANALYSIS DATE : 08/30/02 01:44
SAMPLE : 108164-3 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.27	1.000	NG/UL	6096054
Phenanthrene D10 (IS)	9.77	1.000	NG/UL	9001998
2,4-Dichlorophenylacetic a	8.36	0.861	NG/UL	3320844
Dalapon			ND	
4-Nitrophenol			ND	
Dicamba			ND	
MCPP			ND	
MCPA			ND	
Dichloroprop			ND	
2,4-D			ND	
Pentachlorophenol			ND	
Silvex (2,4,5-TP)			ND	
2,4,5-T			ND	
Dinoseb			ND	
2,4-DB			ND	

INTERNAL STANDARD QC REPORT

DATAFILE : L4095 ANALYSIS DATE : 08/30/02 01:44
SAMPLE : 108164-3 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.27	0.01	7512438	6096054	19
Phenanthrene D10 (IS)	9.74	9.77	0.03	11413836	9001998	21

INITIAL CALIBRATION

Initial Calibration Report

INSTRUMENT : ITS40
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner

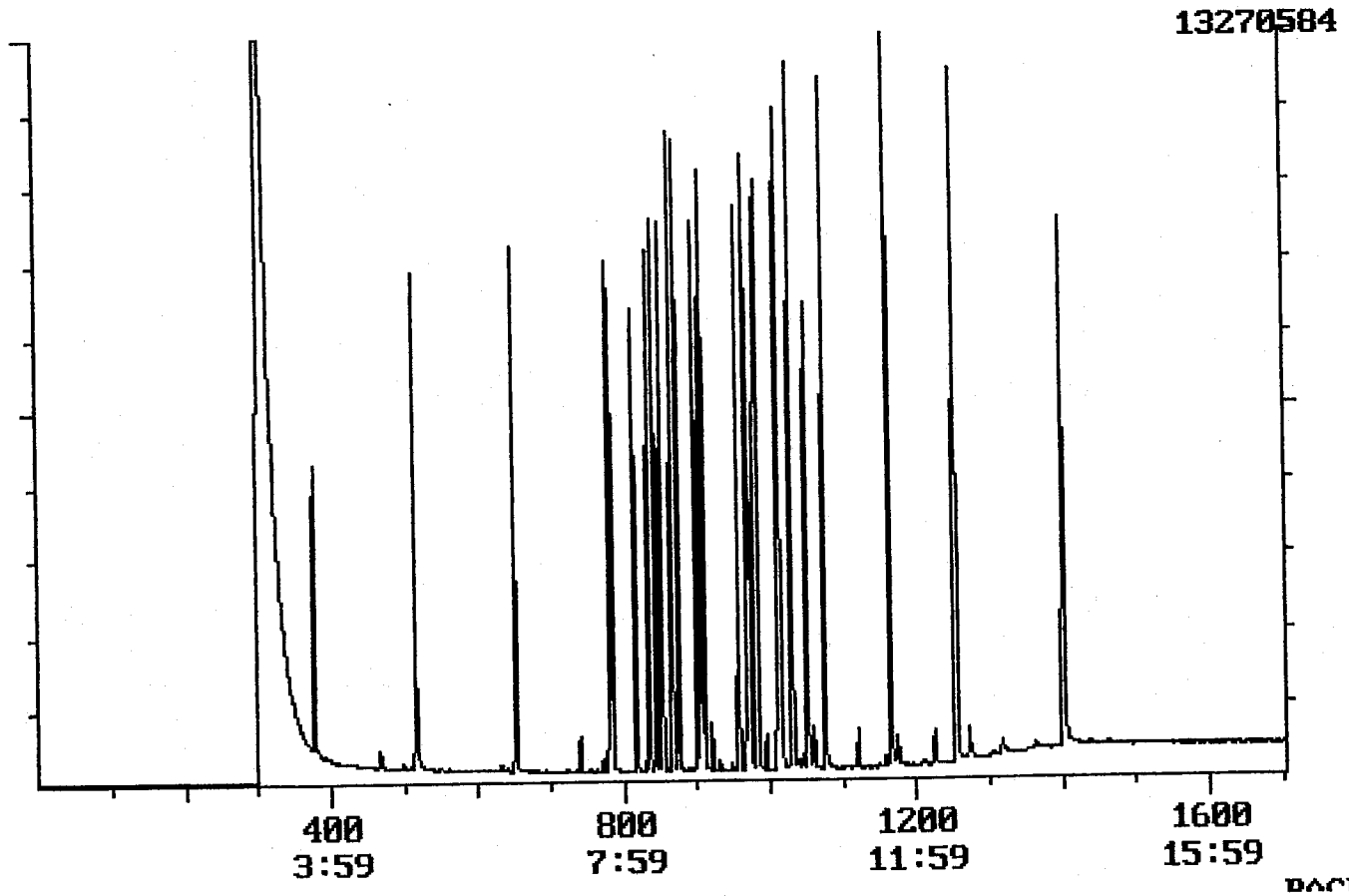
08/22/02

HIT ANY KEY TO CONTINUE

							AVE	RSD
2,4-Dichlorophenylacet	0.596	0.654	0.618	0.655	0.679	0.645	0.641	4.6%
2,4,6-Tribromophenol	0.385	0.412	0.426	0.462	0.406	0.462	0.425	7.3%
Dalapon	0.807	0.881	0.979	0.981	0.964	0.736	0.891	11.5%
4-Nitrophenol	0.578	0.641	0.617	0.558	0.564	0.485	0.574	9.4%
Dicamba	0.733	0.775	0.808	0.814	0.886	0.906	0.820	8.0%
MCPP	0.353	0.381	0.389	0.399	0.362	0.323	0.368	7.5%
MCPA	0.286	0.299	0.312	0.274	0.311	0.265	0.291	6.6%
Dichloroprop	0.344	0.355	0.361	0.324	0.355	0.369	0.351	4.4%
2,4-D	0.381	0.421	0.462	0.416	0.453	0.437	0.428	6.8%
Pentachlorophenol	0.393	0.427	0.442	0.413	0.439	0.461	0.429	5.6%
Silvex (2,4,5-TP)	0.382	0.396	0.427	0.398	0.422	0.388	0.402	4.5%
2,4,5-T	0.461	0.496	0.583	0.545	0.569	0.471	0.521	10.0%
Dinoseb	0.307	0.325	0.335	0.236	0.306	0.248	0.293	14.0%
2,4-DB	0.772	0.831	0.928	0.836	0.927	0.891	0.864	7.1%
Picloram	0.383	0.445	0.497	0.423	0.478	0.498	0.454	10.1%
Clopyralid	0.263	0.279	0.291	0.264	0.268	0.221	0.264	9.0%

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3969
ANALYSIS DATE : 08/22/02 13:52
SAMPLE : 2.0 NG/UL 8151 ICAL STD NO 979-13-2A
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis



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CALIBRATION STANDARD REPORT

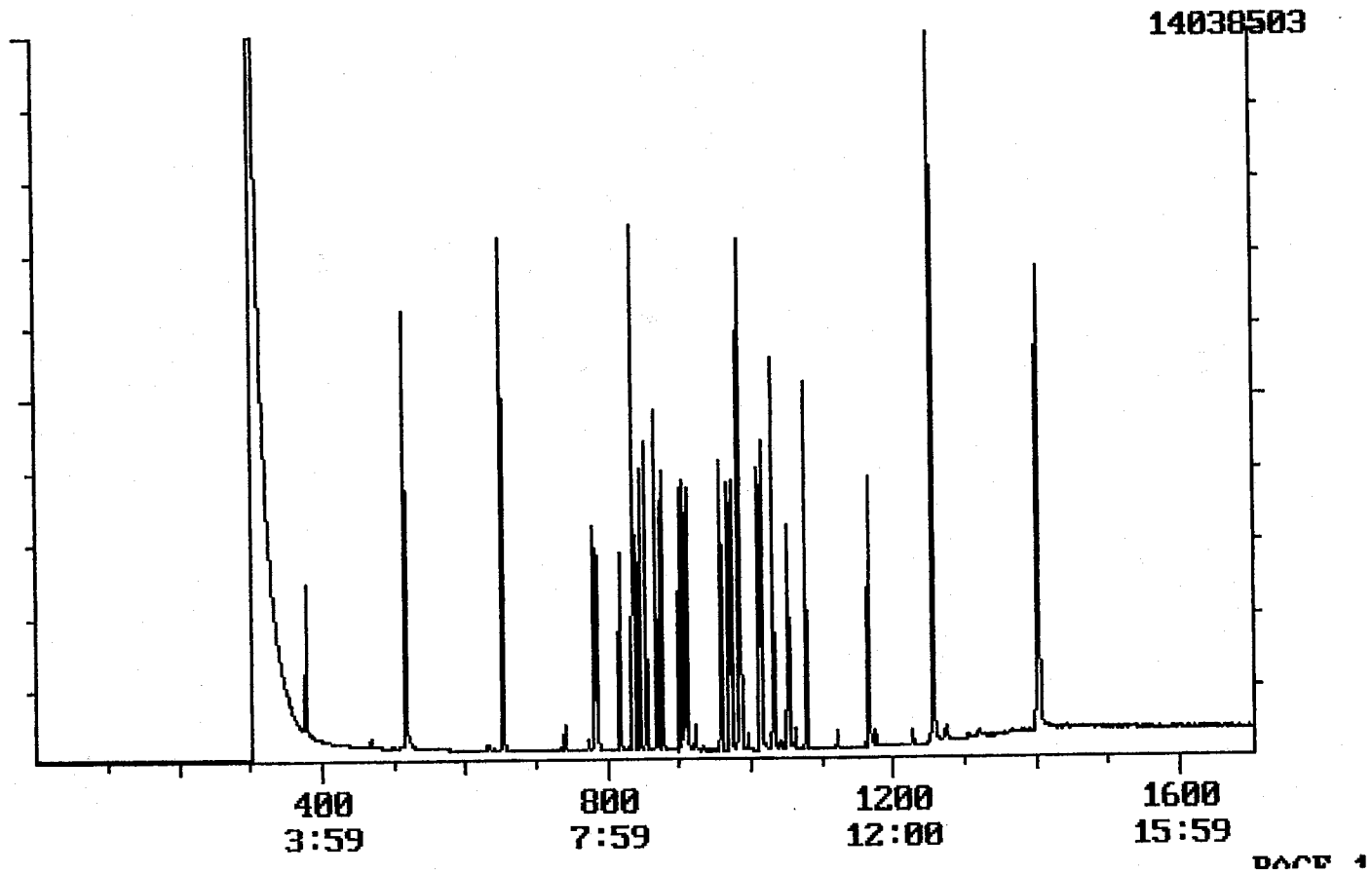
DATAFILE : L3969 ANALYSIS DATE : 08/22/02 13:52
SAMPLE : 2.0 NG/UL 8151 ICAL STD NO 979-13-2A
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.36	1.000	NG/UL	3888623	3888623	1.000
Phenanthrene D10 (IS)	9.85	1.000	NG/UL	6606065	6606065	1.000
2,4-Dichlorophenylacet	8.45	2.000	NG/UL	4633318	3888623	0.596
2,4,6-Tribromophenol	9.06	2.000	NG/UL	5090712	6606065	0.385
Dalapon	3.78	2.000	NG/UL	6277847	3888623	0.807
4-Nitrophenol	7.85	2.000	NG/UL	4496947	3888623	0.578
Dicamba	8.53	2.000	NG/UL	5699831	3888623	0.733
MCPP	8.68	2.000	NG/UL	4666789	6606065	0.353
MCPA	8.76	2.000	NG/UL	3781241	6606065	0.286
Dichloroprop	9.01	2.000	NG/UL	4548844	6606065	0.344
2,4-D	9.11	2.000	NG/UL	5032587	6606065	0.381
Pentachlorophenol	9.58	2.000	NG/UL	5192361	6606065	0.393
Silvex (2,4,5-TP)	9.70	2.000	NG/UL	5043281	6606065	0.382
2,4,5-T	9.82	2.000	NG/UL	6091899	6606065	0.461
Dinoseb	10.15	2.000	NG/UL	4051476	6606065	0.307
2,4-DB	10.12	2.000	NG/UL	10200139	6606065	0.772
Picloram	10.52	2.000	NG/UL	5059242	6606065	0.383
Clopyralid	8.17	2.000	NG/UL	3469638	6606065	0.263

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3970
SAMPLE : 1.0 NG/UL 8151 ICAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

ANALYSIS DATE : 08/22/02 14:15



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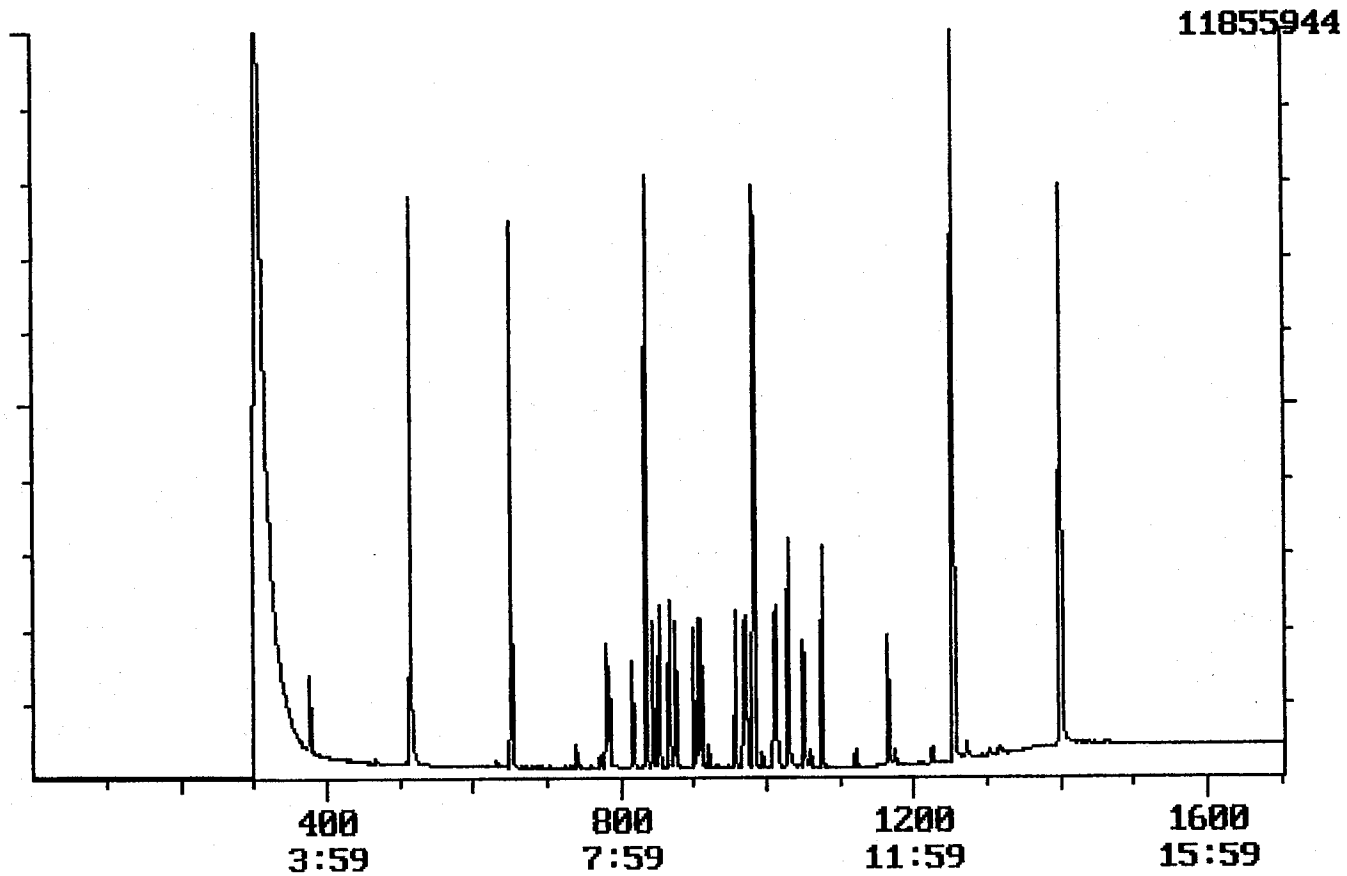
CALIBRATION STANDARD REPORT

DATAFILE : L3970 ANALYSIS DATE : 08/22/02 14:15
SAMPLE : 1.0 NG/UL 8151 ICAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.36	1.000	NG/UL	3916279	3916279	1.000
Phenanthrene D10 (IS)	9.85	1.000	NG/UL	6499037	6499037	1.000
2,4-Dichlorophenylacet	8.45	1.000	NG/UL	2562203	3916279	0.654
2,4,6-Tribromophenol	9.07	1.000	NG/UL	2675599	6499037	0.412
Dalapon	3.79	1.000	NG/UL	3449913	3916279	0.881
4-Nitrophenol	7.85	1.000	NG/UL	2508769	3916279	0.641
Dicamba	8.54	1.000	NG/UL	3034476	3916279	0.775
MCPP	8.68	1.000	NG/UL	2474923	6499037	0.381
MCPA	8.77	1.000	NG/UL	1943297	6499037	0.299
Dichloroprop	9.01	1.000	NG/UL	2306493	6499037	0.355
2,4-D	9.12	1.000	NG/UL	2737717	6499037	0.421
Pentachlorophenol	9.59	1.000	NG/UL	2772646	6499037	0.427
Silvex (2,4,5-TP)	9.70	1.000	NG/UL	2575264	6499037	0.396
2,4,5-T	9.83	1.000	NG/UL	3220473	6499037	0.496
Dinoseb	10.16	1.000	NG/UL	2109291	6499037	0.325
2,4-DB	10.12	1.000	NG/UL	5398488	6499037	0.831
Picloram	10.52	1.000	NG/UL	2892804	6499037	0.445
Clopyralid	8.17	1.000	NG/UL	1814996	6499037	0.279

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3971 ANALYSIS DATE : 08/22/02 14:39
SAMPLE : 0.5 NG/UL 8151 ICAL STD NO 979-13-2C
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis



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CALIBRATION STANDARD REPORT

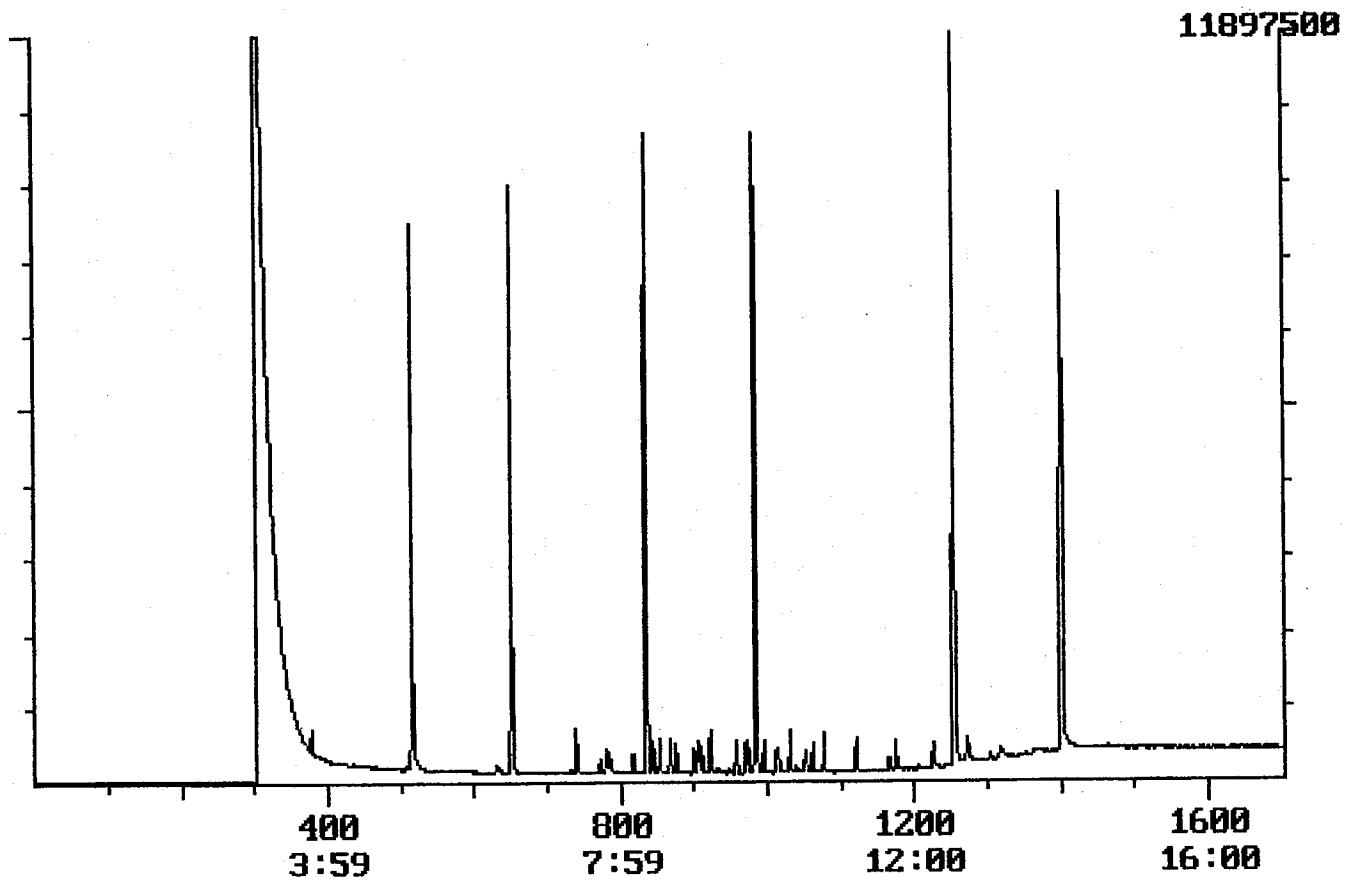
DATAFILE : L3971 ANALYSIS DATE : 08/22/02 14:39
SAMPLE : 0.5 NG/UL 8151 ICAL STD NO 979-13-2C
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.35	1.000	NG/UL	3651621	3651621	1.000
Phenanthrene D10 (IS)	9.84	1.000	NG/UL	5869591	5869591	1.000
2,4-Dichlorophenylacet	8.44	0.500	NG/UL	1128542	3651621	0.618
2,4,6-Tribromophenol	9.06	0.500	NG/UL	1250377	5869591	0.426
Dalapon	3.76	0.500	NG/UL	1787906	3651621	0.979
4-Nitrophenol	7.85	0.500	NG/UL	1126903	3651621	0.617
Dicamba	8.53	0.500	NG/UL	1474778	3651621	0.808
MCPP	8.67	0.500	NG/UL	1142145	5869591	0.389
MCPA	8.76	0.500	NG/UL	914482	5869591	0.312
Dichloroprop	9.00	0.500	NG/UL	1058893	5869591	0.361
2,4-D	9.11	0.500	NG/UL	1356755	5869591	0.462
Pentachlorophenol	9.58	0.500	NG/UL	1296036	5869591	0.442
Silvex (2,4,5-TP)	9.69	0.500	NG/UL	1252602	5869591	0.427
2,4,5-T	9.82	0.500	NG/UL	1712031	5869591	0.583
Dinoseb	10.15	0.500	NG/UL	981800	5869591	0.335
2,4-DB	10.11	0.500	NG/UL	2722425	5869591	0.928
Picloram	10.51	0.500	NG/UL	1457813	5869591	0.497
Clopyralid	8.16	0.500	NG/UL	853192	5869591	0.291

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3972
SAMPLE : 0.1 NG/UL 8151 ICAL STD NO 979-13-2D
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

ANALYSIS DATE : 08/22/02 15:02



PAGE 1

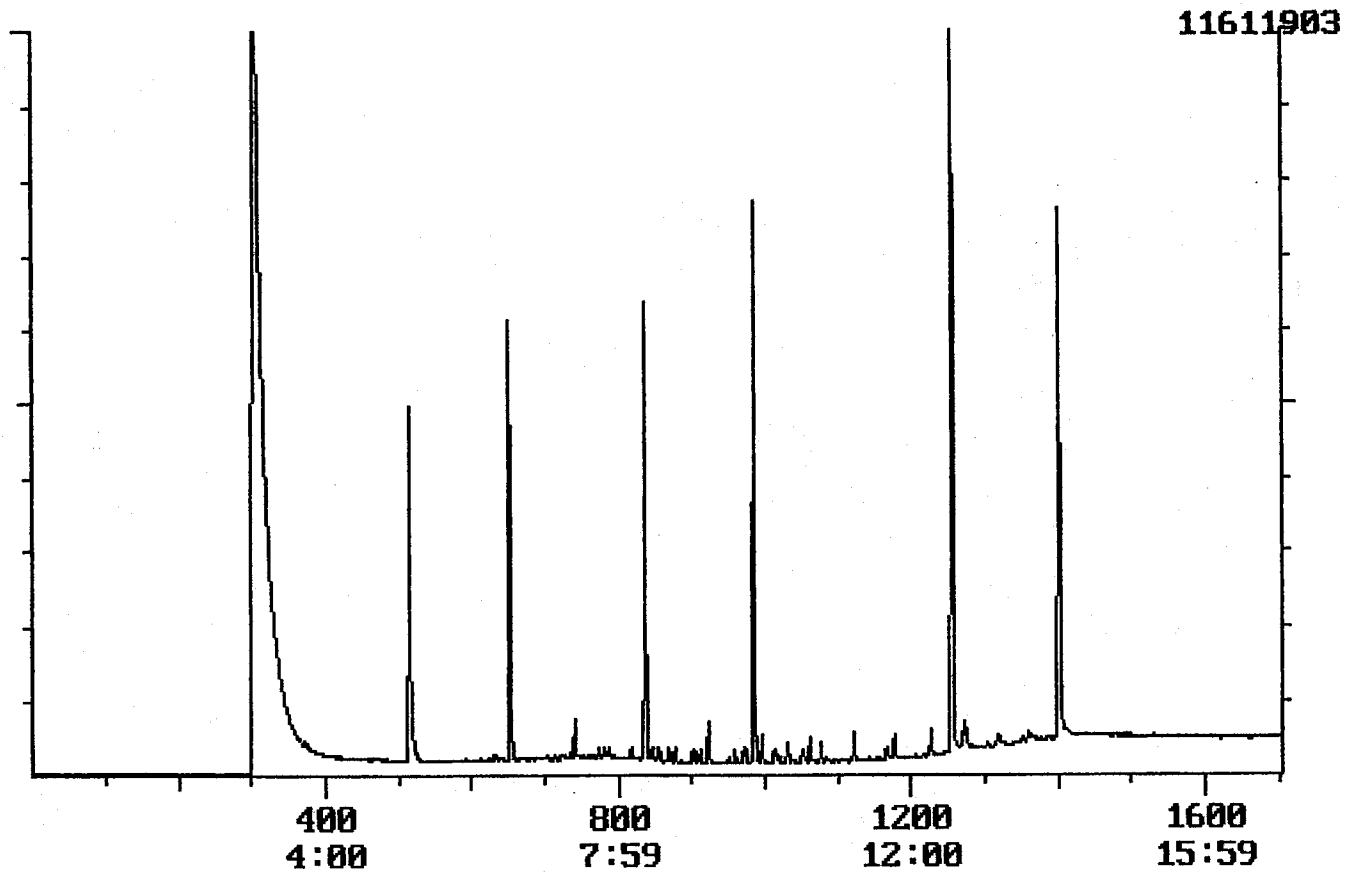
CALIBRATION STANDARD REPORT

DATAFILE : L3972 ANALYSIS DATE : 08/22/02 15:02
SAMPLE : 0.1 NG/UL 8151 ICAL STD NO 979-13-2D
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.35	1.000	NG/UL	3960798	3960798	1.000
Phenanthrene D10 (IS)	9.84	1.000	NG/UL	6303132	6303132	1.000
2,4-Dichlorophenylacet	8.44	0.100	NG/UL	259319	3960798	0.655
2,4,6-Tribromophenol	9.06	0.100	NG/UL	290999	6303132	0.462
Dalapon	3.78	0.100	NG/UL	388397	3960798	0.981
4-Nitrophenol	7.85	0.100	NG/UL	220827	3960798	0.558
Dicamba	8.53	0.100	NG/UL	322580	3960798	0.814
MCPP	8.67	0.100	NG/UL	251711	6303132	0.399
MCPA	8.76	0.100	NG/UL	172611	6303132	0.274
Dichloroprop	9.00	0.100	NG/UL	204432	6303132	0.324
2,4-D	9.11	0.100	NG/UL	262005	6303132	0.416
Pentachlorophenol	9.58	0.100	NG/UL	260595	6303132	0.413
Silvex (2,4,5-TP)	9.69	0.100	NG/UL	250979	6303132	0.398
2,4,5-T	9.82	0.100	NG/UL	343304	6303132	0.545
Dinoseb	10.14	0.100	NG/UL	148472	6303132	0.236
2,4-DB	10.11	0.100	NG/UL	526848	6303132	0.836
Picloram	10.52	0.100	NG/UL	266416	6303132	0.423
Clopyralid	8.17	0.100	NG/UL	166506	6303132	0.264

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3973 ANALYSIS DATE : 08/22/02 17:43
SAMPLE : 0.05 NG/UL 8151 ICAL STD NO 979-13-2E
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis



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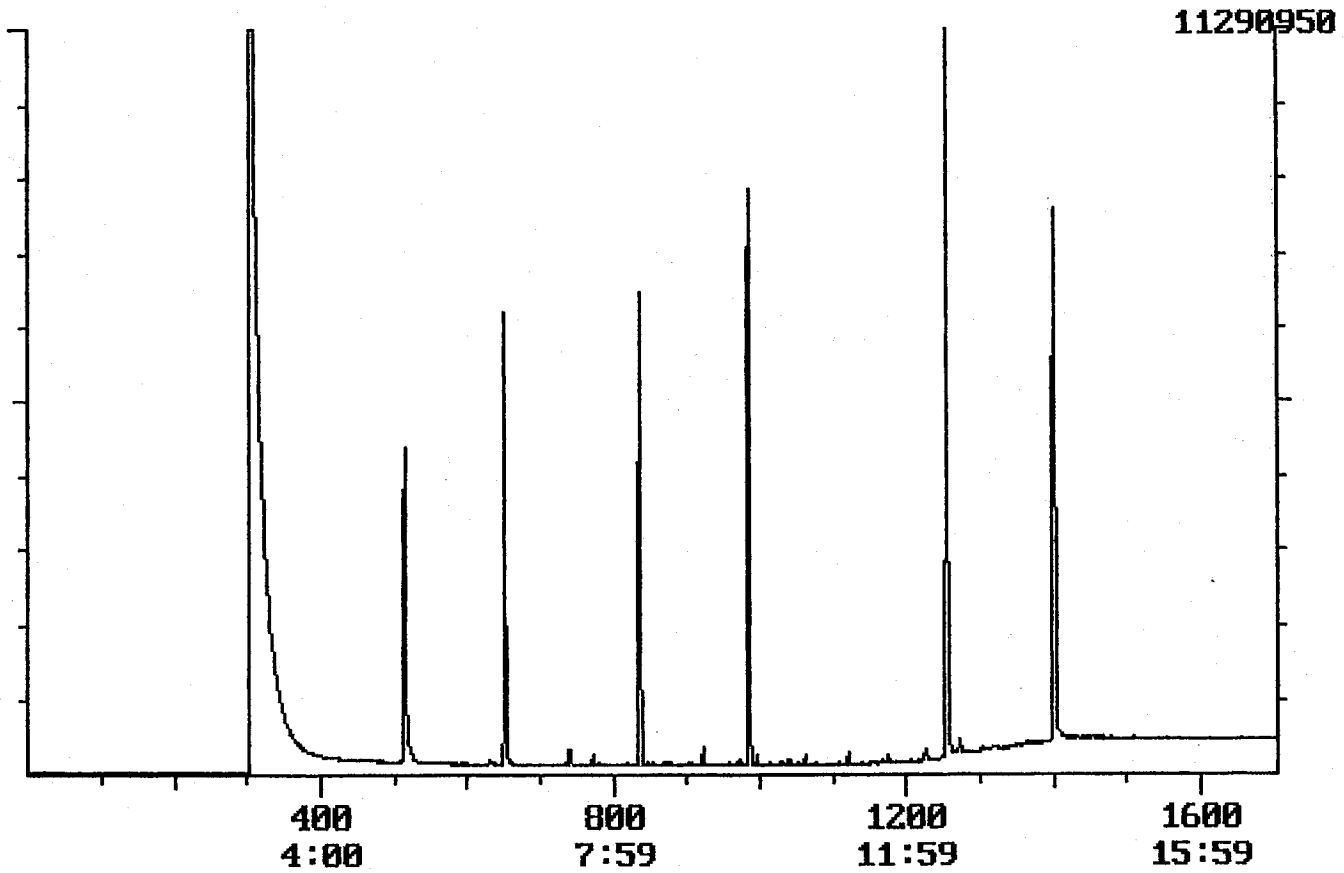
CALIBRATION STANDARD REPORT

DATAFILE : L3973 ANALYSIS DATE : 08/22/02 17:43
SAMPLE : 0.05 NG/UL 8151 ICAL STD NO 979-13-2E
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.37	1.000	NG/UL	3007623	3007623	1.000
Phenanthrene D10 (IS)	9.86	1.000	NG/UL	5306106	5306106	1.000
2,4-Dichlorophenylacet	8.46	0.050	NG/UL	102095	3007623	0.679
2,4,6-Tribromophenol	9.08	0.050	NG/UL	107655	5306106	0.406
Dalapon	3.75	0.050	NG/UL	144935	3007623	0.964
4-Nitrophenol	7.87	0.050	NG/UL	84831	3007623	0.564
Dicamba	8.55	0.050	NG/UL	133299	3007623	0.886
MCPP	8.69	0.050	NG/UL	96157	5306106	0.362
MCPA	8.77	0.050	NG/UL	82462	5306106	0.311
Dichloroprop	9.02	0.050	NG/UL	94148	5306106	0.355
2,4-D	9.12	0.050	NG/UL	120140	5306106	0.453
Pentachlorophenol	9.59	0.050	NG/UL	116546	5306106	0.439
Silvex (2,4,5-TP)	9.71	0.050	NG/UL	111845	5306106	0.422
2,4,5-T	9.84	0.050	NG/UL	151030	5306106	0.569
Dinoseb	10.16	0.050	NG/UL	81146	5306106	0.306
2,4-DB	10.13	0.050	NG/UL	245823	5306106	0.927
Picloram	10.53	0.050	NG/UL	126850	5306106	0.478
Clopyralid	8.18	0.050	NG/UL	71192	5306106	0.268

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3974 ANALYSIS DATE : 08/22/02 18:11
SAMPLE : 0.01 NG/UL 8151 ICAL STD NO 979-13-2F
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis



PAGE 1

CALIBRATION STANDARD REPORT

DATAFILE : L3974 ANALYSIS DATE : 08/22/02 18:11
SAMPLE : 0.01 NG/UL 8151 ICAL STD NO 979-13-2F
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.35	1.000	NG/UL	3101329	3101329	1.000
Phenanthrene D10 (IS)	9.85	1.000	NG/UL	5474825	5474825	1.000
2,4-Dichlorophenylacet	8.45	0.010	NG/UL	20000	3101329	0.645
2,4,6-Tribromophenol	9.06	0.010	NG/UL	25312	5474825	0.462
Dalapon	3.74	0.010	NG/UL	22812	3101329	0.736
4-Nitrophenol	7.87	0.010	NG/UL	15039	3101329	0.485
Dicamba	8.54	0.010	NG/UL	28095	3101329	0.906
MCPP	8.68	0.010	NG/UL	17702	5474825	0.323
MCPA	8.76	0.010	NG/UL	14515	5474825	0.265
Dichloroprop	9.01	0.010	NG/UL	20216	5474825	0.369
2,4-D	9.11	0.010	NG/UL	23927	5474825	0.437
Pentachlorophenol	9.58	0.010	NG/UL	25257	5474825	0.461
Silvex (2,4,5-TP)	9.70	0.010	NG/UL	21235	5474825	0.388
2,4,5-T	9.83	0.010	NG/UL	25773	5474825	0.471
Dinoseb	10.15	0.010	NG/UL	13574	5474825	0.248
2,4-DB	10.12	0.010	NG/UL	48807	5474825	0.891
Picloram	10.52	0.010	NG/UL	27252	5474825	0.498
Clopyralid	8.17	0.010	NG/UL	12091	5474825	0.221

Calibration Check Report

DATAFILE : L3975 ANALYSIS DATE : 08/22/02 18:34
SAMPLE : 1.00 NG/UL 8151 CCAL STD NO 979-13-60CS
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

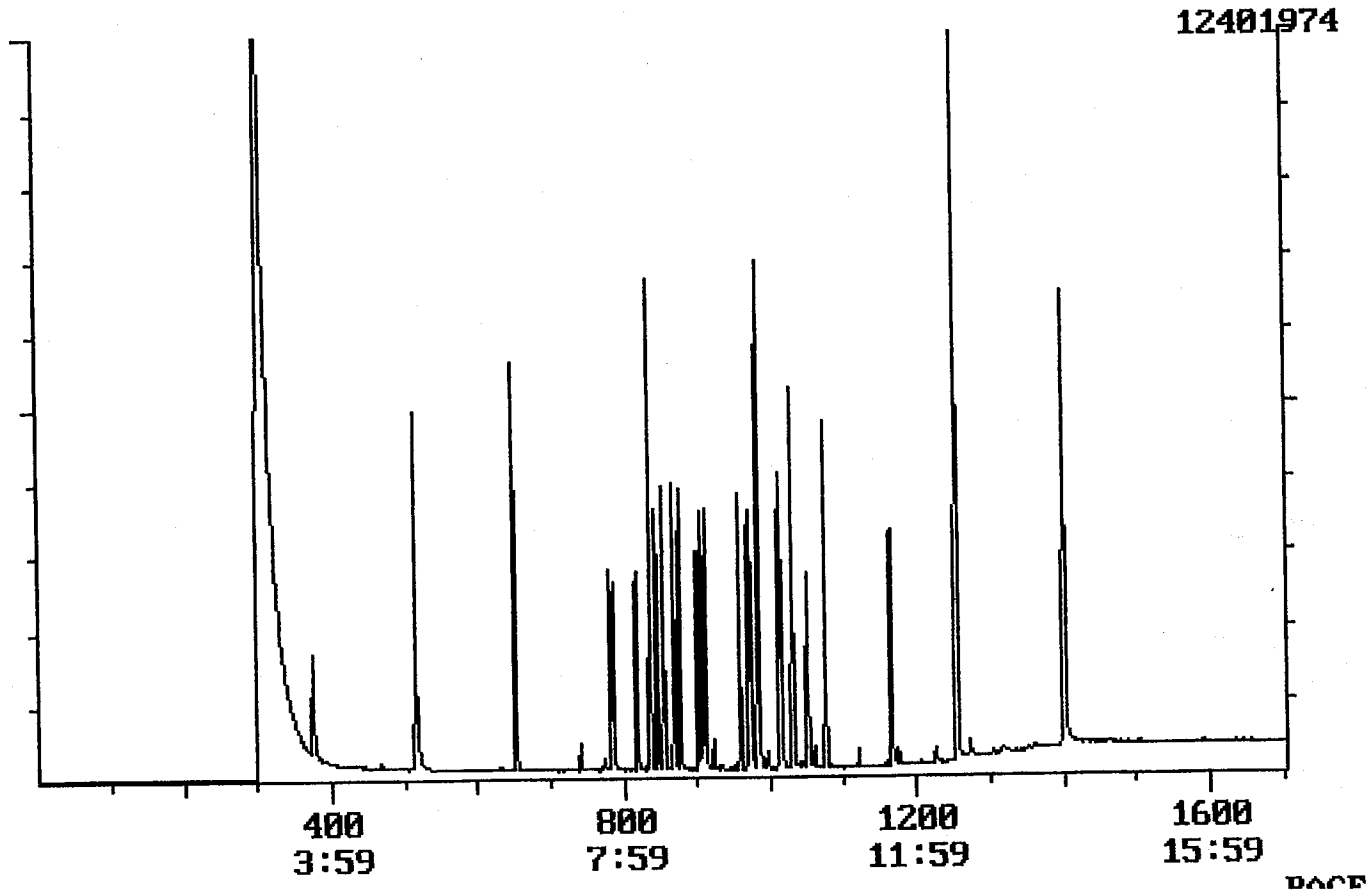
HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
2,4-Dichlorophenylacet	0.641	0.642	0.185	%
2,4,6-Tribromophenol	0.425	0.366	13.874	%
Dalapon	0.891	0.859	3.575	%
4-Nitrophenol	0.574	0.611	6.514	%
Dicamba	0.820	0.770	6.136	%
MCPP	0.368	0.349	5.289	%
MCPA	0.291	0.288	0.921	%
Dichloroprop	0.351	0.345	1.930	%
2,4-D	0.428	0.399	6.757	%
Pentachlorophenol	0.429	0.386	10.056	%
Silvex (2,4,5-TP)	0.402	0.372	7.518	%
2,4,5-T	0.521	0.472	9.380	%
Dinoseb	0.293	0.315	7.657	%
2,4-DB	0.864	0.798	7.694	%
Picloram	0.454	0.406	10.649	%
Clopyralid	0.264	0.258	2.501	%

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3975
SAMPLE : 1.00 NG/UL 8151 CCAL STD NO 979-13-60CS
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

ANALYSIS DATE : 08/22/02 18:34



PAGE 1

CALIBRATION STANDARD REPORT

DATAFILE : L3975 ANALYSIS DATE : 08/22/02 18:34
SAMPLE : 1.00 NG/UL 8151 CCAL STD NO 979-13-60CS
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount	Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.36	1.000 NG/UL	3351180	3351180	1.000
Phenanthrene D10 (IS)	9.85	1.000 NG/UL	5885709	5885709	1.000
2,4-Dichlorophenylacet	8.45	1.000 NG/UL	2152417	3351180	0.642
2,4,6-Tribromophenol	9.07	1.000 NG/UL	2156778	5885709	0.366
Dalapon	3.75	1.000 NG/UL	2879858	3351180	0.859
4-Nitrophenol	7.86	1.000 NG/UL	2048034	3351180	0.611
Dicamba	8.54	1.000 NG/UL	2580498	3351180	0.770
MCPP	8.68	1.000 NG/UL	2051681	5885709	0.349
MCPA	8.77	1.000 NG/UL	1697549	5885709	0.288
Dichloroprop	9.01	1.000 NG/UL	2028366	5885709	0.345
2,4-D	9.12	1.000 NG/UL	2350703	5885709	0.399
Pentachlorophenol	9.59	1.000 NG/UL	2272205	5885709	0.386
Silvex (2,4,5-TP)	9.71	1.000 NG/UL	2188546	5885709	0.372
2,4,5-T	9.83	1.000 NG/UL	2777615	5885709	0.472
Dinoseb	10.16	1.000 NG/UL	1853477	5885709	0.315
2,4-DB	10.12	1.000 NG/UL	4694178	5885709	0.798
Picloram	10.52	1.000 NG/UL	2386990	5885709	0.406
Clopyralid	8.18	1.000 NG/UL	1516834	5885709	0.258

CONTINUING CALIBRATION

Sample Queue Report

INSTRUMENT : ITS40
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner

L4084DF	2.5 NG/UL DFTPP 08/29/02							
L4084CC	1.0 NG/UL 8151 CCAL STD NO 979-13-2B							
L4085	HS0176	MB	#20.0000	&1	SOIL	8151	HS0176	
L4086	HS0176	BS	#20.0000	&1	SOIL	8151	HS0176	
L4087	108164-3	MS	&1	SOIL	8151	HS0176		
L4088	108164-3	MSD	&1	SOIL	8151	HS0176		
L4089	108160-1			&1	SOIL	8151	HS0176	
L4090	108160-2			&1	SOIL	8151	HS0176	
L4091	108160-3			&1	SOIL	8151	HS0176	
L4092	108160-4			&1	SOIL	8151	HS0176	
L4093	108164-1			&1	SOIL	8151	HS0176	
L4094	108164-2			&1	SOIL	8151	HS0176	
L4095	108164-3			&1	SOIL	8151	HS0176	
L4096	108166-1			&1	SOIL	8151	HS0176	
L4097	108166-2			&1	SOIL	8151	HS0176	
L4098	108166-3			&1	SOIL	8151	HS0176	
L4099	108177-1			&1	SOIL	8151	HS0176	
L4100	108177-2			&1	SOIL	8151	HS0176	
L4101	108177-3			&1	SOIL	8151	HS0176	
L4102	108177-4			&1	SOIL	8151	HS0176	
L4103	108177-5			&1	SOIL	8151	HS0176	
L4104	108177-6			&1	SOIL	8151	HS0176	
L4105	108177-8			&1	SOIL	8151	HS0176	
L4106	108177-9			&1	SOIL	8151	HS0176	
L4107	108177-10			&1	SOIL	8151	HS0176	
L4108	108177-11			&1	SOIL	8151	HS0176	

Calibration Check Report

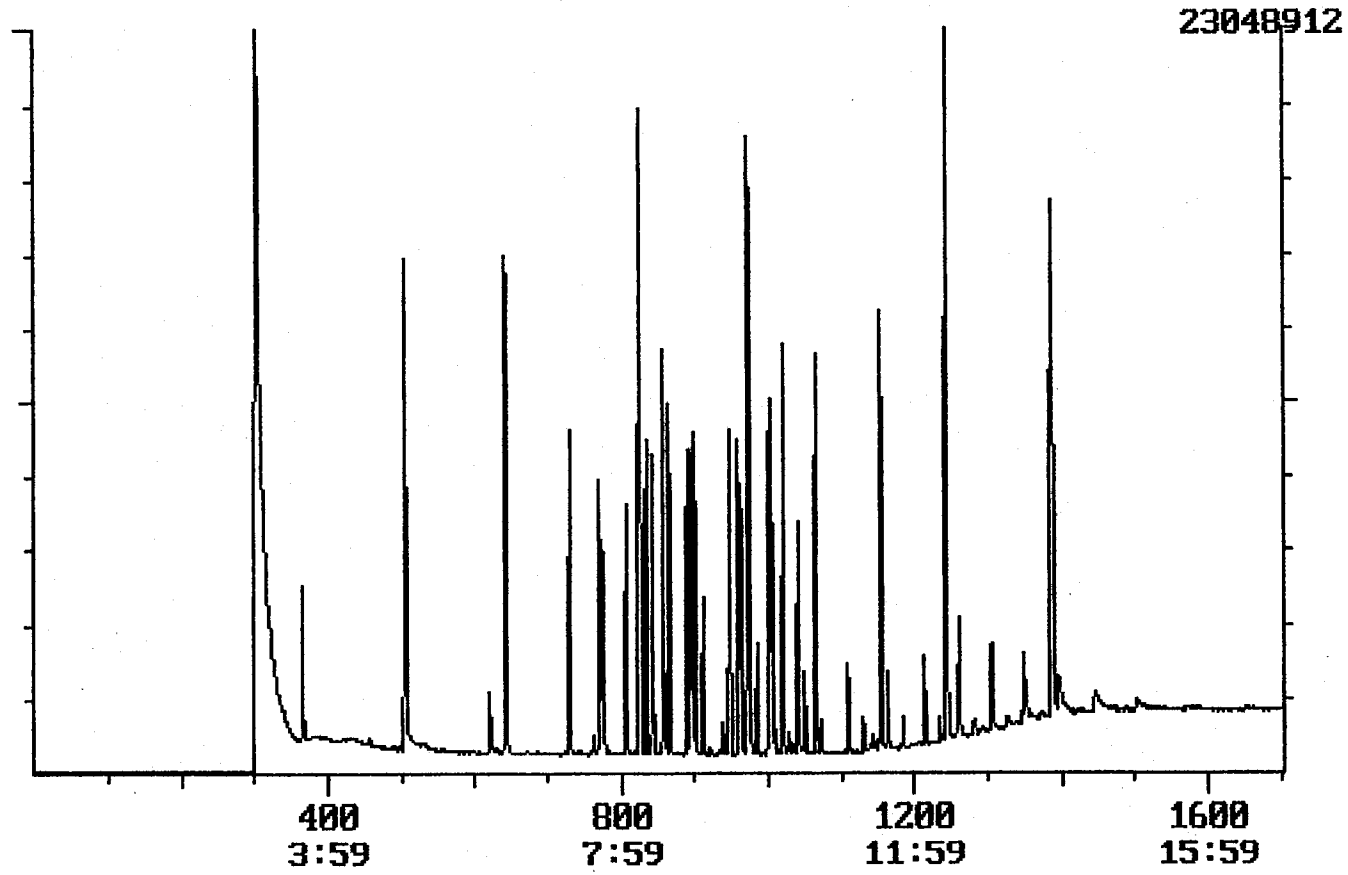
DATAFILE : L4084CC ANALYSIS DATE : 08/29/02 21:28
SAMPLE : 1.0 NG/UL 8151 CCAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
2,4-Dichlorophenylacet	0.641	0.571	10.901	%
Dalapon	0.891	0.792	11.111	%
4-Nitrophenol	0.574	0.560	2.379	%
Dicamba	0.820	0.725	11.681	%
MCPP	0.368	0.365	0.945	%
MCPA	0.291	0.282	3.183	%
Dichloroprop	0.351	0.343	2.446	%
2,4-D	0.428	0.420	1.934	%
Pentachlorophenol	0.429	0.402	6.424	%
Silvex (2,4,5-TP)	0.402	0.383	4.859	%
2,4,5-T	0.521	0.491	5.774	%
Dinoseb	0.293	0.310	6.087	%
2,4-DB	0.864	0.768	11.111	%

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L4084CC
ANALYSIS DATE : 08/29/02 21:28
SAMPLE : 1.0 NG/UL 8151 CCAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis



PAGE 1

CALIBRATION STANDARD REPORT

DATAFILE : L4084CC ANALYSIS DATE : 08/29/02 21:28
SAMPLE : 1.0 NG/UL 8151 CCAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

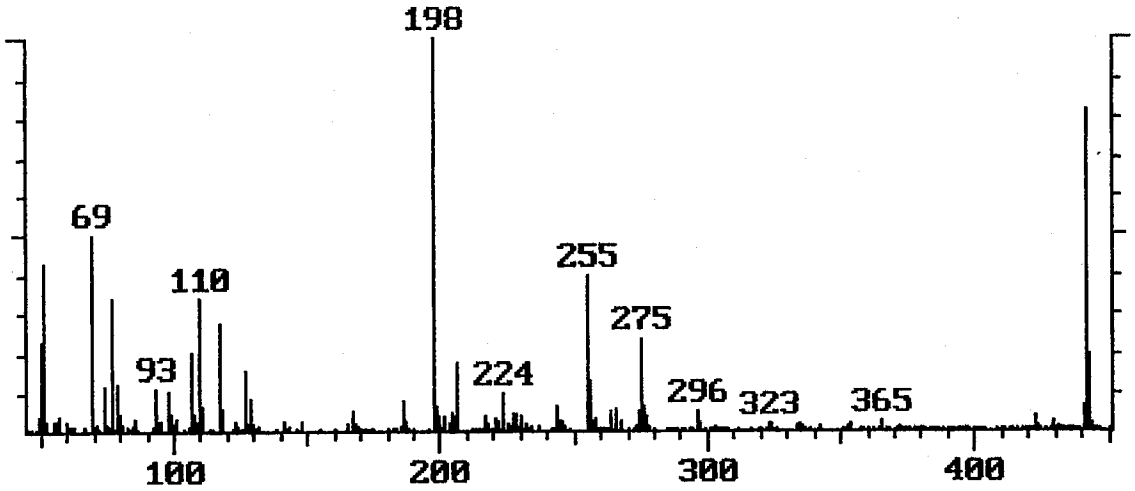
Compound name	Ret. Time	Amount	Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.26	1.000 NG/UL	7512438	7512438	1.000
Phenanthrene D10 (IS)	9.74	1.000 NG/UL	11413836	11413836	1.000
2,4-Dichlorophenylacet	8.35	1.000 NG/UL	4291201	7512438	0.571
Dalapon	3.66	1.000 NG/UL	5951302	7512438	0.792
4-Nitrophenol	7.75	1.000 NG/UL	4207839	7512438	0.560
Dicamba	8.43	1.000 NG/UL	5443062	7512438	0.725
MCPP	8.58	1.000 NG/UL	4161207	11413836	0.365
MCPA	8.66	1.000 NG/UL	3216807	11413836	0.282
Dichloroprop	8.91	1.000 NG/UL	3912795	11413836	0.343
2,4-D	9.01	1.000 NG/UL	4794400	11413836	0.420
Pentachlorophenol	9.48	1.000 NG/UL	4584294	11413836	0.402
Silvex (2,4,5-TP)	9.60	1.000 NG/UL	4366144	11413836	0.383
2,4,5-T	9.72	1.000 NG/UL	5600831	11413836	0.491
Dinoseb	10.05	1.000 NG/UL	3541944	11413836	0.310
2,4-DB	10.01	1.000 NG/UL	8766220	11413836	0.768

DFTPP TUNING

Method 8270 DFTPP Report

Data File: L3968A
Cali File: DFTPP

Acqu Date: 08/22/02
Acqu Time: 13:11

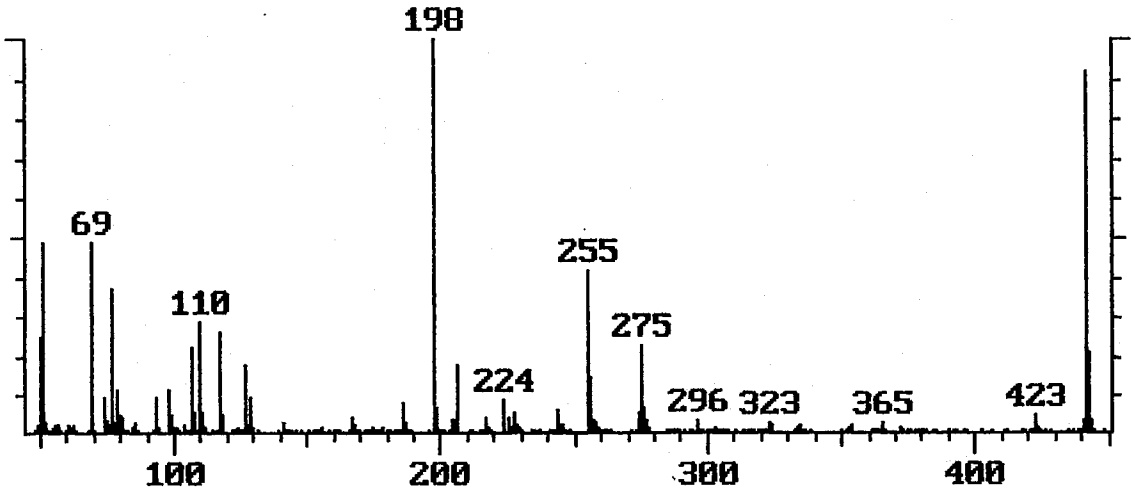


Mass	Acceptance Criterion	Value	Mass Int.	Pass/Fail
51	10-80% of base peak	43.14	32420	Pass
68	<= 2% of Mass 69	0.00	0	Pass
69	Exists Only	50.22	37744	Pass
70	<= 2% of Mass 69	1.45	547	Pass
127	10-80% of base peak	15.15	11390	Pass
197	<= 1% of Mass 198	0.00	0	Pass
198	Base peak or >50% of 442	100.00	75158	Pass
199	5 - 9% of Mass 198	6.36	4779	Pass
275	10-60% of base peak	23.13	17381	Pass
365	>= 1% of Mass 198	2.02	1515	Pass
441	Exists/<= Mass 443	7.49	4598	Pass
442	base peak or >50% of 198	81.73	61428	Pass
443	15-24% of Mass 442	23.87	14663	Pass

Method 8270 DFTPP Report

Data File: L4084DF
Cali File: DFTPP

Acqu Date: 08/29/02
Acqu Time: 21:04

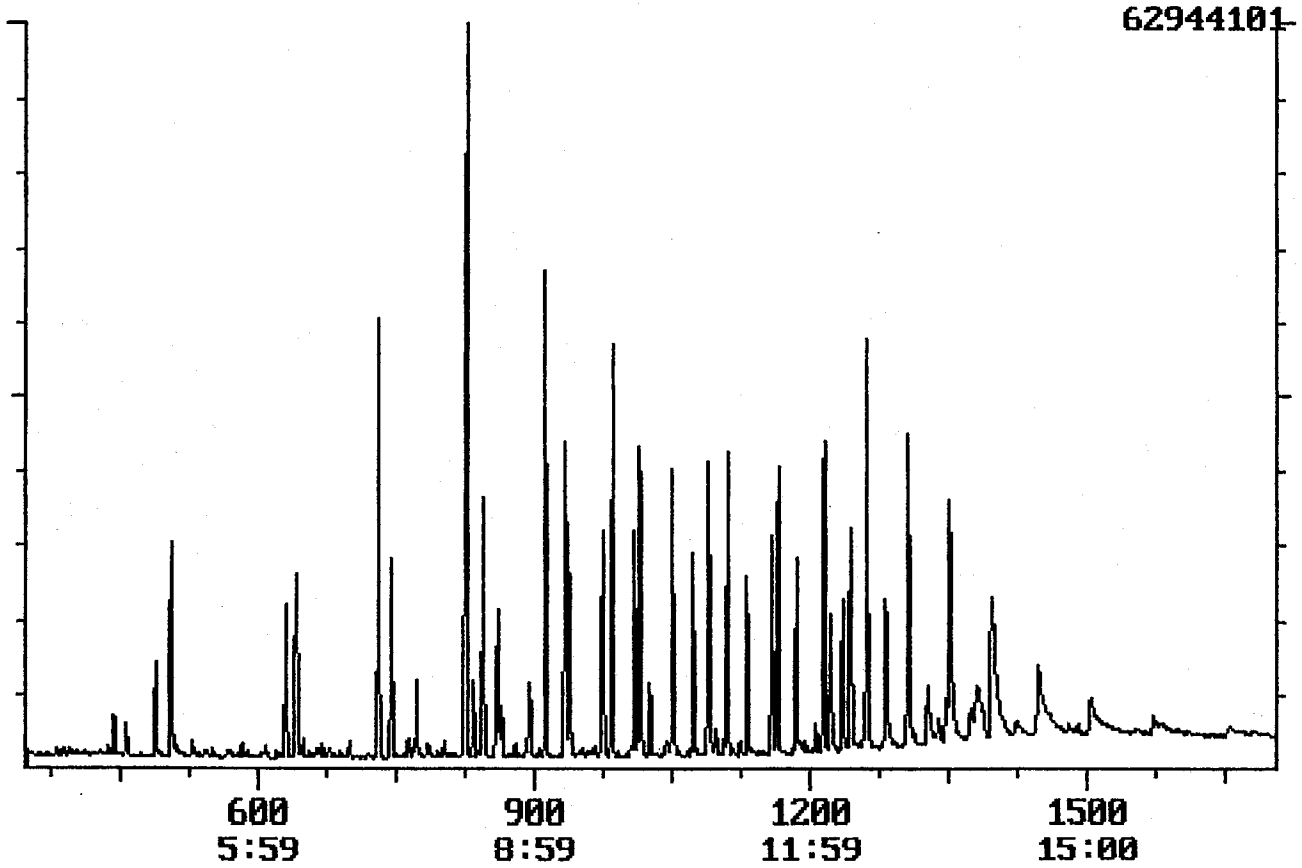


Mass	Acceptance Criterion	Value	Mass Int.	Pass/Fail
51	10-80% of base peak	48.60	320004	Pass
68	<= 2% of Mass 69	0.41	1303	Pass
69	Exists Only	48.66	320385	Pass
70	<= 2% of Mass 69	0.63	2024	Pass
127	10-80% of base peak	17.36	114303	Pass
197	<= 1% of Mass 198	0.00	0	Pass
198	Base peak or >50% of 442	100.00	658378	Pass
199	5 - 9% of Mass 198	6.07	39956	Pass
275	10-60% of base peak	22.63	149007	Pass
365	>= 1% of Mass 198	1.97	12957	Pass
441	Exists/<= Mass 443	2.92	17574	Pass
442	base peak or >50% of 198	91.56	602815	Pass
443	15-24% of Mass 442	22.39	134983	Pass

METHOD BLANK

SAMPLE CHROMATOGRAM

DATAFILE : L4085 ANALYSIS DATE : 08/29/02 21:51
SAMPLE : HS0176 MB #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4085 ANALYSIS DATE : 08/29/02 21:51
SAMPLE : HS0176 MB #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.26	1.000	NG/UL	8008726
Phenanthrene D10 (IS)	9.74	1.000	NG/UL	11721960
2,4-Dichlorophenylacetic a	8.35	0.604	NG/UL	3095195
Dalapon			ND	
4-Nitrophenol			ND	
Dicamba			ND	
MCPP			ND	
MCPA			ND	
Dichloroprop			ND	
2,4-D			ND	
Pentachlorophenol			ND	
Silvex (2,4,5-TP)			ND	
2,4,5-T			ND	
Dinoseb			ND	
2,4-DB			ND	

INTERNAL STANDARD QC REPORT

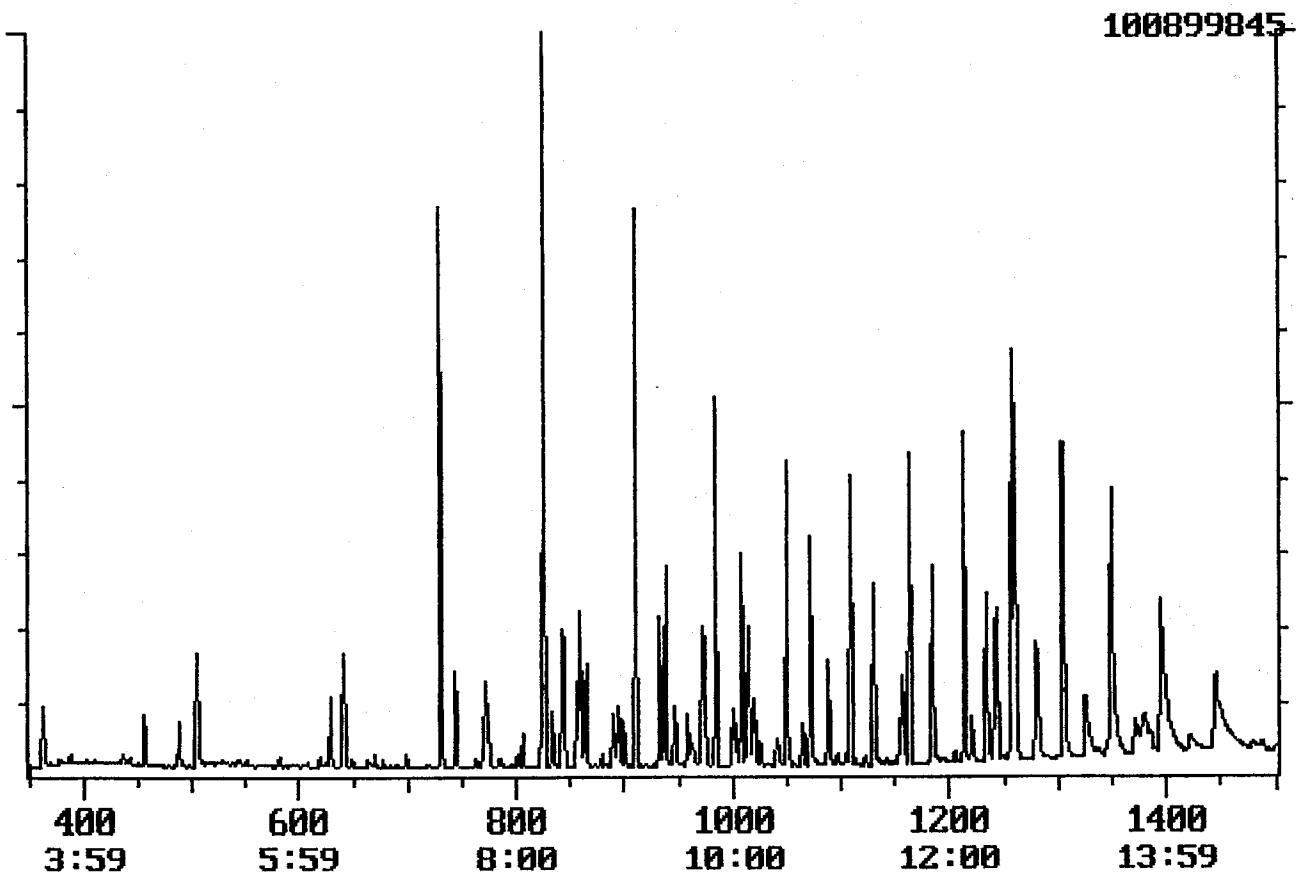
DATAFILE : L4085 ANALYSIS DATE : 08/29/02 21:51
SAMPLE : HS0176 MB #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.26	0.00	7512438	8008726	7
Phenanthrene D10 (IS)	9.74	9.74	0.00	11413836	11721960	3

BLANK SPIKE

SAMPLE CHROMATOGRAM

DATAFILE : L4086 ANALYSIS DATE : 08/29/02 22:15
SAMPLE : HS0176 BS #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4086 ANALYSIS DATE : 08/29/02 22:15
SAMPLE : HS0176 BS #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.25	1.000	NG/UL	7692500
Phenanthrene D10 (IS)	9.73	1.000	NG/UL	10483281
2,4-Dichlorophenylacetic a	8.34	0.673	NG/UL	3303547
Dalapon	3.65	0.411	NG/UL	2834119
4-Nitrophenol	7.74	0.701	NG/UL	3104563
Dicamba	8.43	0.579	NG/UL	3647707
MCPP	8.57	0.865	NG/UL	3335104
MCPA	8.65	0.718	NG/UL	2190519
Dichloroprop	8.90	0.754	NG/UL	2772612
2,4-D	9.00	0.646	NG/UL	2887221
Pentachlorophenol	9.47	0.887	NG/UL	3924416
Silvex (2,4,5-TP)	9.59	0.766	NG/UL	3212057
2,4,5-T	9.71	0.638	NG/UL	3465069
Dinoseb	10.04	0.650	NG/UL	1989618
2,4-DB	10.00	0.815	NG/UL	7251616

INTERNAL STANDARD QC REPORT

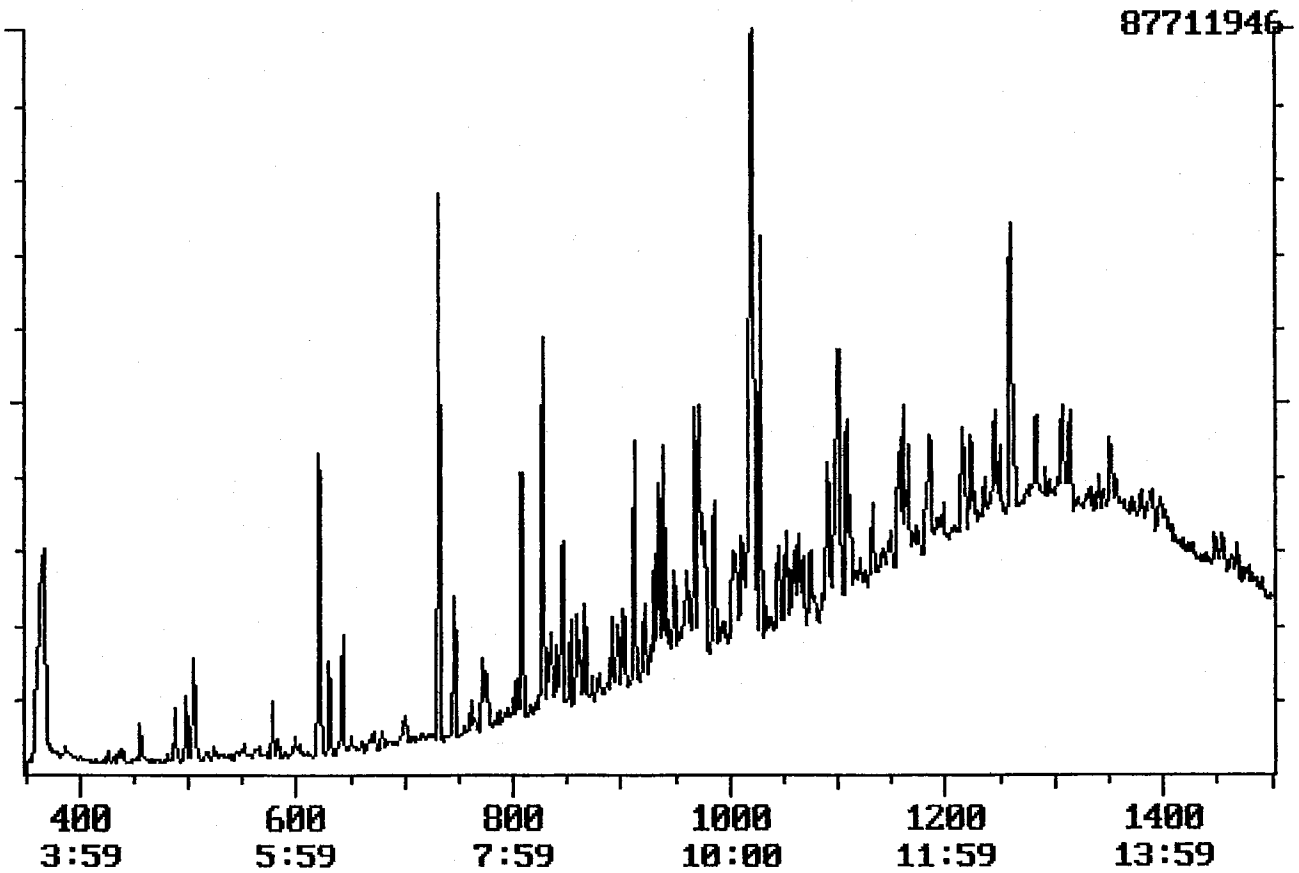
DATAFILE : L4086 ANALYSIS DATE : 08/29/02 22:15
SAMPLE : HS0176 BS #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.25	0.01	7512438	7692500	2
Phenanthrene D10 (IS)	9.74	9.73	0.01	11413836	10483281	8

MATIX SPIKE / MATRIX SPIKE DUPLICATE

SAMPLE CHROMATOGRAM

DATAFILE : L4087 ANALYSIS DATE : 08/29/02 22:38
SAMPLE : 108164-3 MS &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150



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SAMPLE QUANTITATION REPORT

DATAFILE : L4087 ANALYSIS DATE : 08/29/02 22:38
SAMPLE : 108164-3 MS &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.27	1.000	NG/UL	6295836
Phenanthrene D10 (IS)	9.76	1.000	NG/UL	9376959
2,4-Dichlorophenylacetic a	8.36	0.927	NG/UL	3683542
Dalapon	3.70	0.141	NG/UL	804591
4-Nitrophenol	7.76	0.868	NG/UL	3177160
Dicamba	8.44	0.838	NG/UL	4213287
MCPP	8.59	0.973	NG/UL	3353211
MCPA	8.67	0.988	NG/UL	2706775
Dichloroprop	8.92	0.921	NG/UL	3027260
2,4-D	9.02	0.959	NG/UL	3754187
Pentachlorophenol	9.49	0.869	NG/UL	3441085
Silvex (2,4,5-TP)	9.61	0.826	NG/UL	3091346
2,4,5-T	9.73	0.863	NG/UL	4127269
Dinoseb	10.06	0.833	NG/UL	2320279
2,4-DB	10.02	1.167	NG/UL	9060370

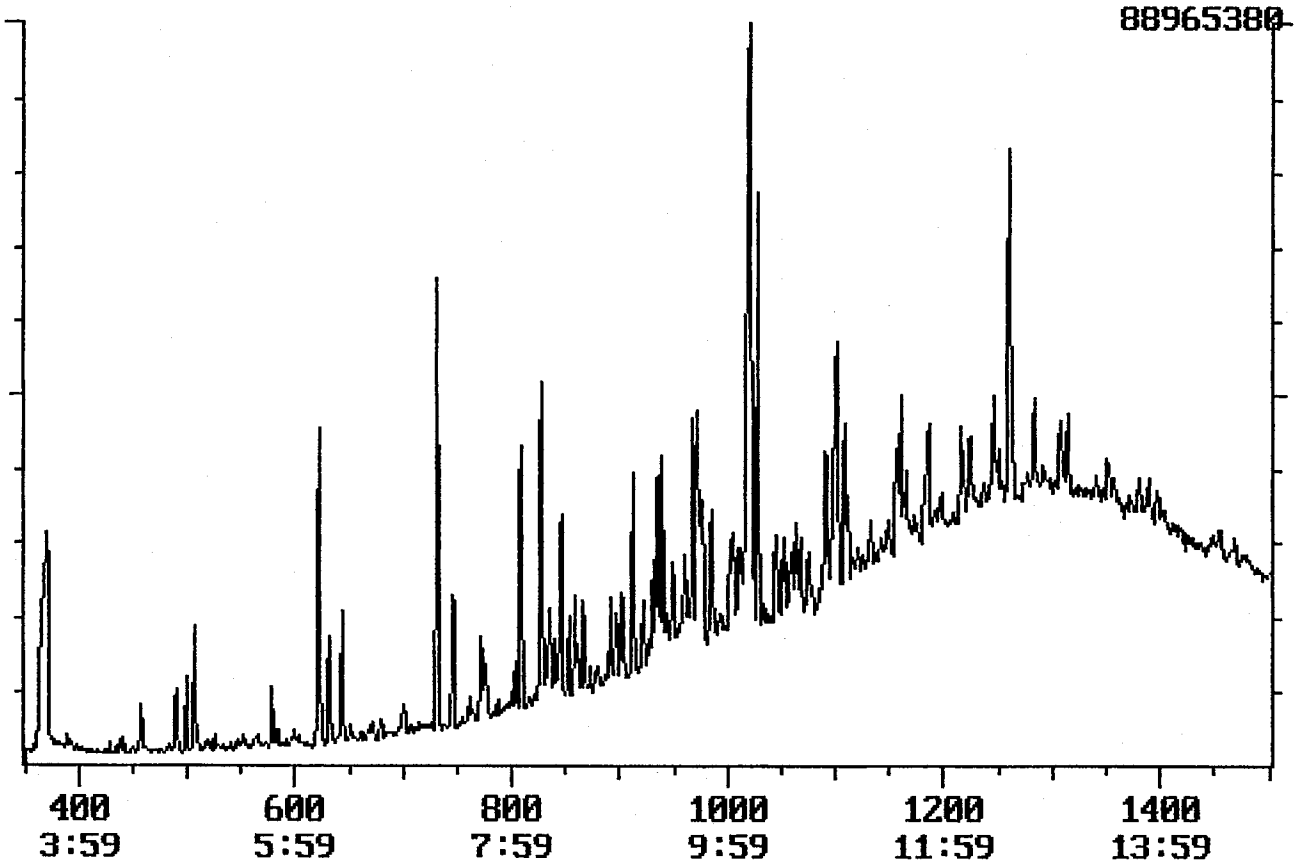
INTERNAL STANDARD QC REPORT

DATAFILE : L4087 ANALYSIS DATE : 08/29/02 22:38
SAMPLE : 108164-3 MS &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.27	0.01	7512438	6295836	16
Phenanthrene D10 (IS)	9.74	9.76	0.02	11413836	9376959	18

SAMPLE CHROMATOGRAM

DATAFILE : L4088 ANALYSIS DATE : 08/29/02 23:01
SAMPLE : 108164-3 MSD &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150



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SAMPLE QUANTITATION REPORT

DATAFILE : L4088 ANALYSIS DATE : 08/29/02 23:01
SAMPLE : 108164-3 MSD &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.27	1.000	NG/UL	7012609
Phenanthrene D10 (IS)	9.76	1.000	NG/UL	10728859
2,4-Dichlorophenylacetic a	8.36	0.931	NG/UL	4122329
Dalapon	3.72	0.156	NG/UL	990079
4-Nitrophenol	7.76	0.917	NG/UL	3749097
Dicamba	8.45	0.849	NG/UL	4752349
MCPP	8.59	0.958	NG/UL	3780270
MCPA	8.67	0.978	NG/UL	3063468
Dichloroprop	8.92	0.928	NG/UL	3489106
2,4-D	9.02	1.002	NG/UL	4473634
Pentachlorophenol	9.49	0.829	NG/UL	3765272
Silvex (2,4,5-TP)	9.61	0.772	NG/UL	3313147
2,4,5-T	9.73	0.855	NG/UL	4684157
Dinoseb	10.06	0.880	NG/UL	2817322
2,4-DB	10.03	1.088	NG/UL	9718009

INTERNAL STANDARD QC REPORT

DATAFILE : L4088 ANALYSIS DATE : 08/29/02 23:01
SAMPLE : 108164-3 MSD &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.27	0.01	7512438	7012609	7
Phenanthrene D10 (IS)	9.74	9.76	0.02	11413836	10728859	6

LABORATORY WORKSHEETS

Herbicides Worksheet - total

QC Level:Tier IV	**Due: 09/04/02**
Matrix:solid	**Work Order - 108164**
CH2M Hill	Proj. Manager:Katie Downie

L-3

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders. See attached for requested RLs

[redacted]	Client Sample ID	PP011806
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/21/02 10:30:00 AM**

Herbicides - EPA 8151

[redacted]	Client Sample ID	PP011807
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/21/02 11:45:00 AM**

Herbicides - EPA 8151

[redacted]	Client Sample ID	PP011808
Sample Weight/Volume MS/MSD	Date Received	8/23/02
	Date Sampled	**8/21/02 2:15:00 PM**

Herbicides - EPA 8151

HS0176

Analyst [signature] Date 09/03/02

Reviewed by [signature] Date 9/4/02

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Organics worksheet v4.0
If you have suggestions for changes please bring them to me - Dennis

Chlorinated Herbicides by USEPA Method 8151

QC Batch ID	HS0176				
Sample Matrix	Solid				
Surrogate Standard No.	979-13-4				
Expiration Date	10/11/02	Weighed By/Date	Brent/Ken 8/28/02		
8151 MS Spike No.	979-13-5	Extracted By/Date	Brent 8/28/02		
Expiration Date	10/11/02	Derivatized By/Date	Brent 8/28/02		
Internal Standard No.	979-13-7	CH2M Hill - Tier IV - low level limits - 8151			
Expiration Date	10/11/02				
MKC Lot Number	X10466				
Millipore Lot Number					
		Spike Witness Signature/Date	8/28/02		
Extraction Method	3550 Sonication				

QC Sample Type	QC Identifier	Sample Weight (g)	Final Volume (ml)	Sur Spike (ul)	MS/BS spike amt (ug)
Method Blank	HS0176	20.0000	1	10	N/A
Duplicate					N/A
Duplicate 2					N/A
Blank Spike	BHS0176	20.0000	1	10	100
Blank Spike Duplicate	BHS0176				
Matrix Spike	108164s3	21.1011	1	10	100
Matrix Spike Duplicate	108164d3	20.7466	1	10	100
Matrix Spike 2					
Matrix Spike Duplicate 2					

Sample	Client Sample ID	Sample Weight (g)	Final Volume (ml)	Sur Spike (ul)	Comments
108160-1	PP011802	20.2011	1	10	
108160-2	PP011803	21.3218	1	10	
108160-3	PP011804D	22.1748	1	10	
108160-4	PP011805	21.0236	1	10	
108164-1	PP011806	20.6698	1	10	
108164-2	PP011807	20.4575	1	10	
108164-3	PP011808	21.0256	1	10	
108166-1	PP011801	20.7463	1	10	
108166-2	PP011809	21.1957	1	10	
108166-3	PP011810	20.4574	1	10	
108177-1	PP01M105	21.4855	1	10	
108177-2	PP01M106	20.2658	1	10	
108177-3	PP01M107	22.0470	1	10	
108177-4	PP01M108	21.0223	1	10	
108177-5	PP01M109	20.4942	1	10	
108177-6	PP01M110	21.3369	1	10	
108177-8	PP01M101	20.5539	1	10	
108177-9	PP01M102D	20.9986	1	10	
108177-10	PP01M103	20.5536	1	10	
108177-11	PP01M104	20.8527	1	10	

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6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**1**
Batch QC ID	**HS0176**
Client Sample ID	**PP011806**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blank: HS0176

Sample weight (g)	**20.6698**		0.02067 /kg	Calc. Fact.	71.57828344
Extract volume (ml)	**1**	=	1 ml	Dry Weight	13.97071782 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**67.59**	=	0.6759	Spike Factor	71.57828344
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	**Quan Value**	**User Flags**	**% Rec.**	**Warning**	**Water Low**	**Water High**
x	2,4-Dichlorophenylacetic acid	0.768		76.8	**OK**	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	**Target Analytes**	**Quan Value**	**User Flag**	**Blank**	**Calculated Amount**	**Total Flags**	**PQL**
x	Pentachlorophenol	0.118			8.45		0.716

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6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**2**
Batch QC ID	**HS0176**
Client Sample ID	**PP011807**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blank: HS0176

Sample weight (g)	**20.4575**	=	0.02046 /kg	Calc. Fact.	64.20836488
Extract volume (ml)	**1**	=	1 ml	Dry Weight	15.57429475 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**76.13**	=	0.7613	Spike Factor	64.20836488
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	**Quan Value**	**User Flags**	**% Rec.**	**Warning**	**Water Low**	**Water High**
x	2,4-Dichlorophenylacetic acid	0.713		71.3	**OK**	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	**Target Analytes**	**Quan Value**	**User Flag**	**Blank**	**Calculated Amount**	**Total Flags**	**PQL**
x	Pentachlorophenol	0.05			3.21		0.642

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6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**3**
Batch QC ID	**HS0176**
Client Sample ID	**PP011808**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blank: HS0176

Sample weight (g)	**21.0256**	=	0.02103 /kg	Calc. Fact.	61.15606071
Extract volume (ml)	**1**	=	1 ml	Dry Weight	16.35160912 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**77.77**	=	0.7777	Spike Factor	61.15606071
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.861		86.1	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL

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6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**3**
Batch QC ID	**HS0176**
Client Sample ID	**PP011808**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-29-02**
Sample matrix type	**solid**
QC sample type	**ms**

Related Blank: HS0176

Sample weight (g)	**21.1011**	=	0.0211 /kg	Calc. Fact.	60.93724356
Extract volume (ml)	**1**	=	1 ml	Dry Weight	16.41032547 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**77.77**	=	0.7777	Spike Factor	60.93724356
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.927		92.7	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Dalapon	0.141			8.59		0.609
x	4-Nitrophenol	0.868			52.9		0.609
x	Dicamba	0.838			51.1		0.609
x	MCPP	0.973			59.3		0.609
x	MCPA	0.988			60.2		0.609
x	Dichloroprop	0.921			56.1		0.609
x	2,4-D	0.959			58.4		0.609
x	Pentachlorophenol	0.869			53		0.609
x	Silvex (2,4,5-TP)	0.826			50.3		0.914
x	2,4,5-T	0.863			52.6		0.914
x	Dinoseb	0.833			50.8		0.609
x	2,4-DB	1.167			71.1		0.609

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6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**3**
Batch QC ID	**HS0176**
Client Sample ID	**PP011808**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-29-02**
Sample matrix type	**solid**
QC sample type	**msd**

Related Blank: HS0176

Sample weight (g)	**20.7466**	=	0.02075 /kg	Calc. Fact.	61.9784866
Extract volume (ml)	**1**	=	1 ml	Dry Weight	16.13463082 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**77.77**	=	0.7777	Spike Factor	61.9784866
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.931		93.1	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Dalapon	0.156			9.67		0.62
x	4-Nitrophenol	0.917			56.8		0.62
x	Dicamba	0.849			52.6		0.62
x	MCPP	0.958			59.4		0.62
x	MCPA	0.978			60.6		0.62
x	Dichloroprop	0.928			57.5		0.62
x	2,4-D	1.002			62.1		0.62
x	Pentachlorophenol	0.829			51.4		0.62
x	Silvex (2,4,5-TP)	0.772			47.8		0.93
x	2,4,5-T	0.855			53		0.93
x	Dinoseb	0.88			54.5		0.62
x	2,4-DB	1.088			67.4		0.62

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6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	
Batch QC ID	**HS0176**
Client Sample ID	
Date Received	
Date Prepared	**08-28-02**
Date Analyzed	**08-29-02**
Sample matrix type	**solid**
QC sample type	**blank**

Related Blank: noblank

Sample weight (g)	**20**	=	0.02 /kg	Calc. Fact.	50
Extract volume (ml)	**1**	=	1 ml	Dry Weight	20 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	50
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.604		60.4	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	
Batch QC ID	**HS0176**
Client Sample ID	
Date Received	
Date Prepared	**08-28-02**
Date Analyzed	**08-29-02**
Sample matrix type	**solid**
QC sample type	**bs**

Related Blank: HS0176

Sample weight (g)	**20**	=	0.02 /kg	Calc. Fact.	50
Extract volume (ml)	**1**	=	1 ml	Dry Weight	20 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	50
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.673		67.3	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Dalapon	0.411			20.6		0.5
x	4-Nitrophenol	0.701			35.1		0.5
x	Dicamba	0.579			29		0.5
x	MCPP	0.865			43.3		0.5
x	MCPA	0.718			35.9		0.5
x	Dichloroprop	0.754			37.7		0.5
x	2,4-D	0.646			32.3		0.5
x	Pentachlorophenol	0.887			44.4		0.5
x	Silvex (2,4,5-TP)	0.766			38.3		0.75
x	2,4,5-T	0.638			31.9		0.75
x	Dinoseb	0.65			32.5		0.5
x	2,4-DB	0.815			40.8		0.5

ORGANOCHLORINE PESTICIDES DATA PACKAGE

SAMPLE DATA

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\025F2501.D\ADC1B.CH Vial: 25
Signal #2 : F:\HPCHEM\1\DATA\PE091102\025F2501.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:00:41 Operator: JDW
Sample : 108164-1 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:56:46 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.85	3.82	4947809	12498015	7.574	9.172	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					37.87%#	45.86%#	
22)	SR	Decachlorobiphen	13.51	14.42	7308135	12215335	17.536	15.869	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					87.68%	79.34%	
		Target Compounds							
2)		alpha-BHC	4.71	4.80	466794	770515	0.396 J	0.370	
3)	M	gamma-BHC (Linda	5.20	5.36	4224132	3145522	4.130 PCB	1.739	#
4)	M	Heptachlor	5.93f	6.09f	3311414	12667258	3.386	~~14.432~~	#
5)	M	Aldrin	6.40	6.54	10861020	28247314	10.980 J	16.473	#
6)		beta-BHC	5.34	5.51	172598	8638448	0.456 J	13.257	#
7)		delta-BHC	5.64	0.00	14682472	0	14.836	N.D.	#
8)		Heptachlor Epoxi	7.38f	7.45	3684758	24286827	4.428 PCB	16.656	#
9)		Endosulfan I	8.04f	8.13	2672483	2669536	2.969	1.902	
10)		gamma-Chlordane	7.54	7.74f	6613096	56465759	7.630	37.498	#
11)		alpha-Chlordane	7.76	8.01	4463766	8234305	5.664	5.920	
12)		4,4'-DDE	7.89	8.34	34729495	76471592	47.758	53.569	
13)	M	Dieldrin	8.43	8.64	7793398	11252411	8.850 PCB	7.602	
14)	M	Endrin	0.00	9.22	0	1489749	N.D.	1.391	#
15)		Endosulfan II	0.00	9.65	0	3494435	N.D.	3.014	#
16)		4,4'-DDD	8.99	9.45	12588116	20863971	20.936	19.833	
17)	M	4,4'-DDT	9.51f	10.05	2469589	8446139	4.008 PCB	8.970	#
18)		Endrin Aldehyde	10.09	10.33	163533	1455468	0.353 PCB	1.661	#
19)		Endosulfan Sulfa	10.93f	0.00	793223	0	1.440 NC	N.D.	#
20)		Methoxychlor	10.50	0.00	785171	0	3.199 NC	N.D.	#
21)		Endrin Ketone	0.00	0.00	0	0	N.D.	N.D.	

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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108164-1 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\025F2501.D
Date Acquired 12-Sep-2002, 06:00:41

CCV File Path F:\HPCHEM\1\DATA\PE091102\016F1601.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.85	3.82	0.2848	0.2650	0.2855	0.2658	OK	OK
alpha-BHC	4.71	4.80	0.3490	0.3328	0.3487	0.3330	OK	OK
gamma-BHC (Lindane)	5.20	5.36	0.3851	0.3718	0.3852	0.3724	OK	OK
Heptachlor	5.93	6.09	0.4391	0.4224	0.4400	0.4194	OK	--
Aldrin	6.40	6.54	0.4740	0.4537	0.4745	0.4543	OK	OK
beta-BHC	5.34	5.51	0.3955	0.3823	0.3953	0.3822	OK	OK
delta-BHC	5.64	0.00	0.4172	0.0000	0.4160	0.4143	OK	--
Heptachlor Epoxide	7.38	7.45	0.5461	0.5168	0.5435	0.5172	OK	OK
Endosulfan I	8.04	8.13	0.5954	0.5637	0.5926	0.5641	OK	OK
gamma-Chlordane	7.54	7.74	0.5579	0.5366	0.5584	0.5385	OK	OK
alpha-Chlordane	7.76	8.01	0.5743	0.5560	0.5747	0.5566	OK	OK
4,4'-DDE	7.89	8.34	0.5839	0.5783	0.5844	0.5791	OK	OK
Dieldrin	8.43	8.64	0.6245	0.5992	0.6251	0.5996	OK	OK
Endrin	0.00	9.22	0.0000	0.6397	0.6568	0.6400	--	OK
Endosulfan II	0.00	9.65	0.0000	0.6697	0.6881	0.6688	--	OK
4,4'-DDD	8.99	9.45	0.6656	0.6554	0.6660	0.6560	OK	OK
4,4'-DDT	9.51	10.05	0.7039	0.6975	0.7050	0.6979	OK	OK
Endrin Aldehyde	10.09	10.33	0.7471	0.7165	0.7473	0.7154	OK	OK
Endosulfan Sulfate	10.93	0.00	0.8091	0.0000	0.8102	0.7535	OK	--
Methoxychlor	10.50	0.00	0.7774	0.0000	0.7751	0.7951	OK	--
Endrin Ketone	0.00	0.00	0.0000	0.0000	0.8509	0.8277	--	--
Decachlorobiphenyl (S)	13.51	14.42	1.0000	1.0000	1.0000	1.0000	OK	OK

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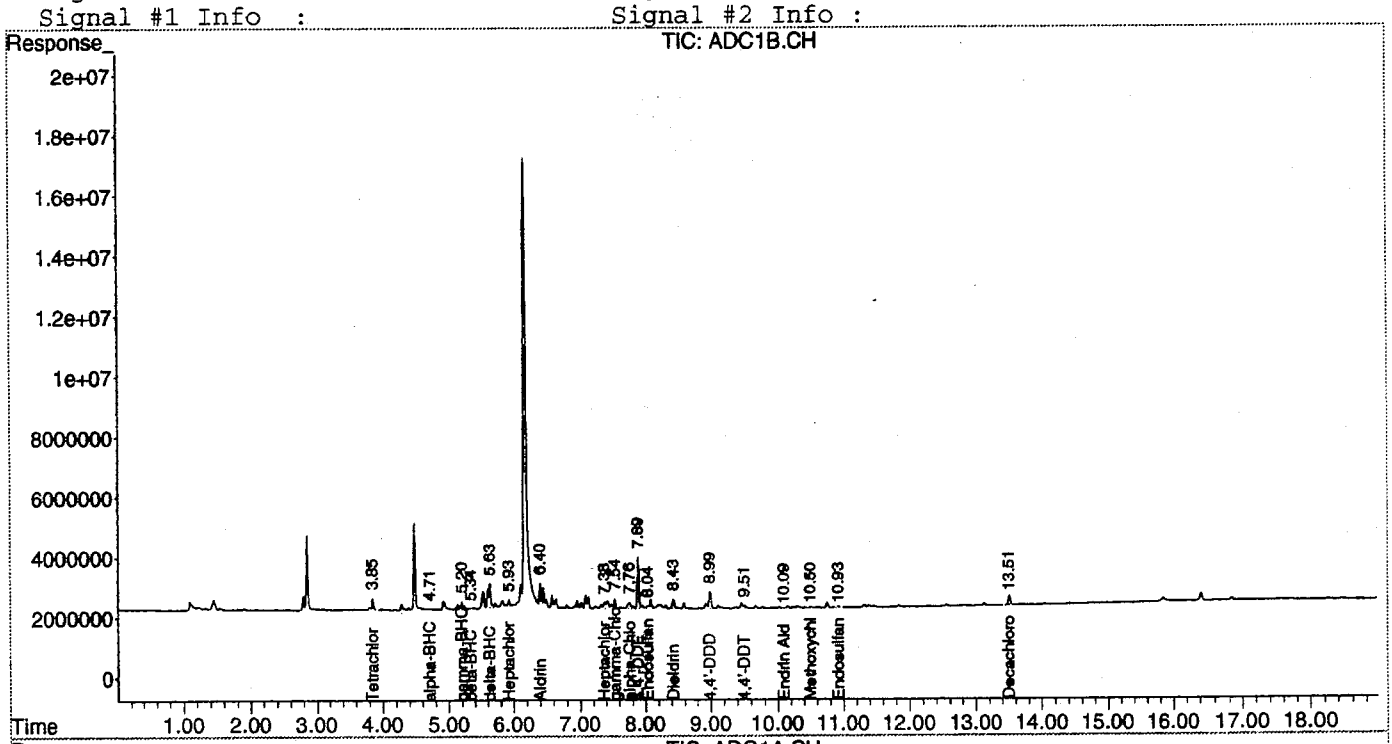
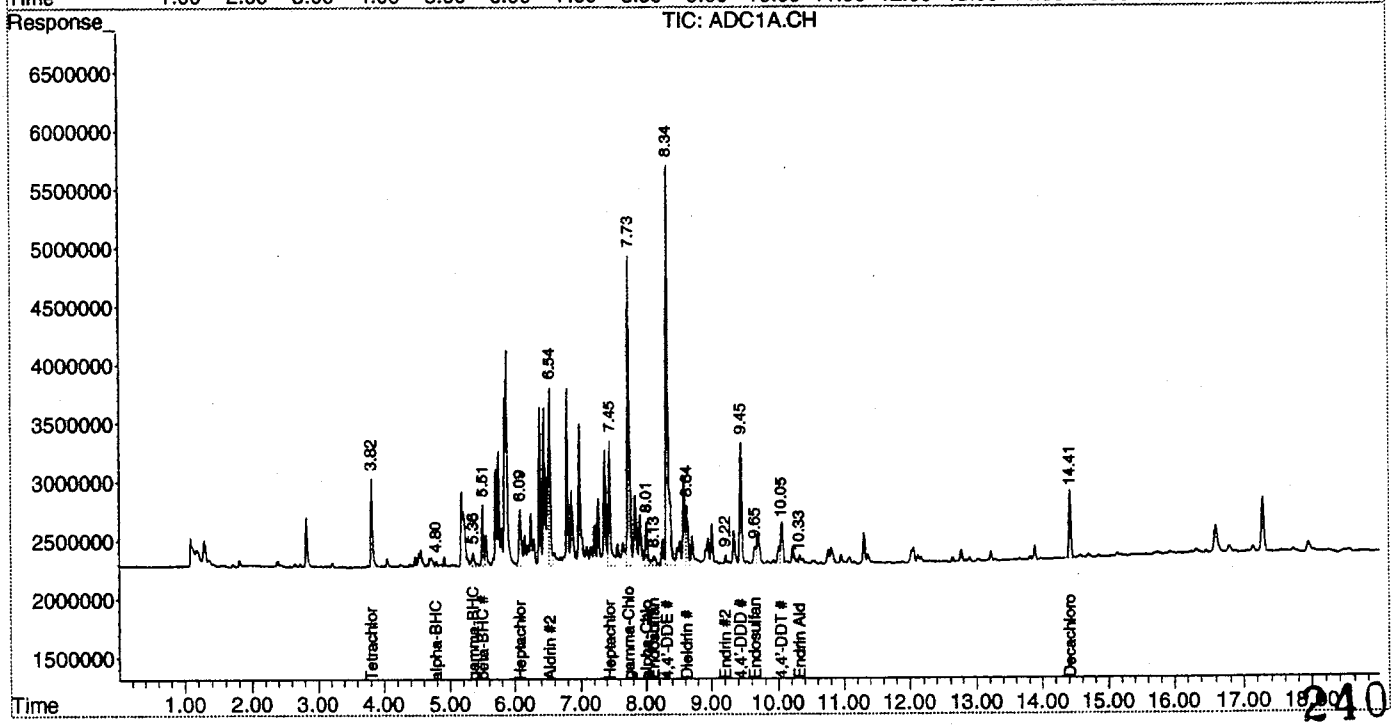
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\025F2501.D\ADC1B.CH Vial: 25
Signal #2 : F:\HPCHEM\1\DATA\PE091102\025F2501.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:00:41 Operator: JDW
Sample : 108164-1 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:56 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\025F2501.D\ADC1B.CH Vial: 25
Signal #2 : F:\HPCHEM\1\DATA\PE091102\025F2501.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:00:41 Operator: JDW
Sample : 108164-1 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:20:51 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
	System Monitoring Compounds							
1)	SR Tetrachloro-m-xy	3.85	3.82	7046347	12632540	10.600	9.697	
	Spiked Amount 20.000 Range 60 - 150 Recovery =					53.00%#	48.48%#	
11)	SR Decachlorobiphen	13.51f	14.42f	7316450	12215335	16.200	16.077	
	Spiked Amount 20.000 Range 60 - 150 Recovery =					81.00%	80.39%	
	Target Compounds							
2)	Hexachloroethane	1.54	0.00	1649316	0	1.071	N.D.	#
3)	Hexachlorobenzen	4.48	4.57	51315212	2956166	49.558	2.088	#
4)	Hexachlorobutadi	1.81	0.00	557610	0	0.263	N.D.	#
5)	Oxychlordane	7.23f	7.27f	2061814	9209887	2.985	7.564	#
6)	cis-Nonachlor	8.93f	0.00	4022879	0	4.969	N.D.	#
7)	trans-Nonachlor	7.76	7.91f	4463766	9542000	5.878	6.951	
8)	2,4'-DDE	7.32	0.00	2727493	0	5.645	N.D.	#
9)	2,4'-DDD	8.24	8.72f	3699988	5519295	9.203	7.530	
10)	2,4'-DDT	0.00	9.34	0	6601402	N.D.	9.637	#

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108164-1 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\025F2501.D
Date Acquired 12-Sep-2002, 06:00:41

CCV File Path F:\HPCHEM\1\DATA\PE091102\017F1701.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.85	3.82	0.2848	0.2650	0.2854	0.2658	OK	OK
Hexachloroethane	1.54	0.00	0.1141	0.0000	0.1130	0.1016	OK	--
Hexachlorobenzene	4.48	4.57	0.3318	0.3170	0.3293	0.3167	OK	OK
Hexachlorobutadiene	1.81	0.00	0.1341	0.0000	0.1344	0.1192	OK	--
Oxychlordane	7.23	7.27	0.5356	0.5046	0.5316	0.5064	--	OK
cis-Nonachlor	8.93	0.00	0.6610	0.0000	0.6612	0.6506	OK	--
trans-Nonachlor	7.76	7.91	0.5743	0.5489	0.5724	0.5494	OK	OK
2,4'-DDE	7.32	0.00	0.5423	0.0000	0.5420	0.5396	OK	--
2,4'-DDD	8.24	8.72	0.6098	0.6048	0.6073	0.6056	OK	OK
2,4'-DDT	0.00	9.34	0.0000	0.6482	0.6420	0.6456	--	OK
Decachlorobiphenyl (S)	13.51	14.42	1.0000	1.0000	1.0000	1.0000	OK	OK

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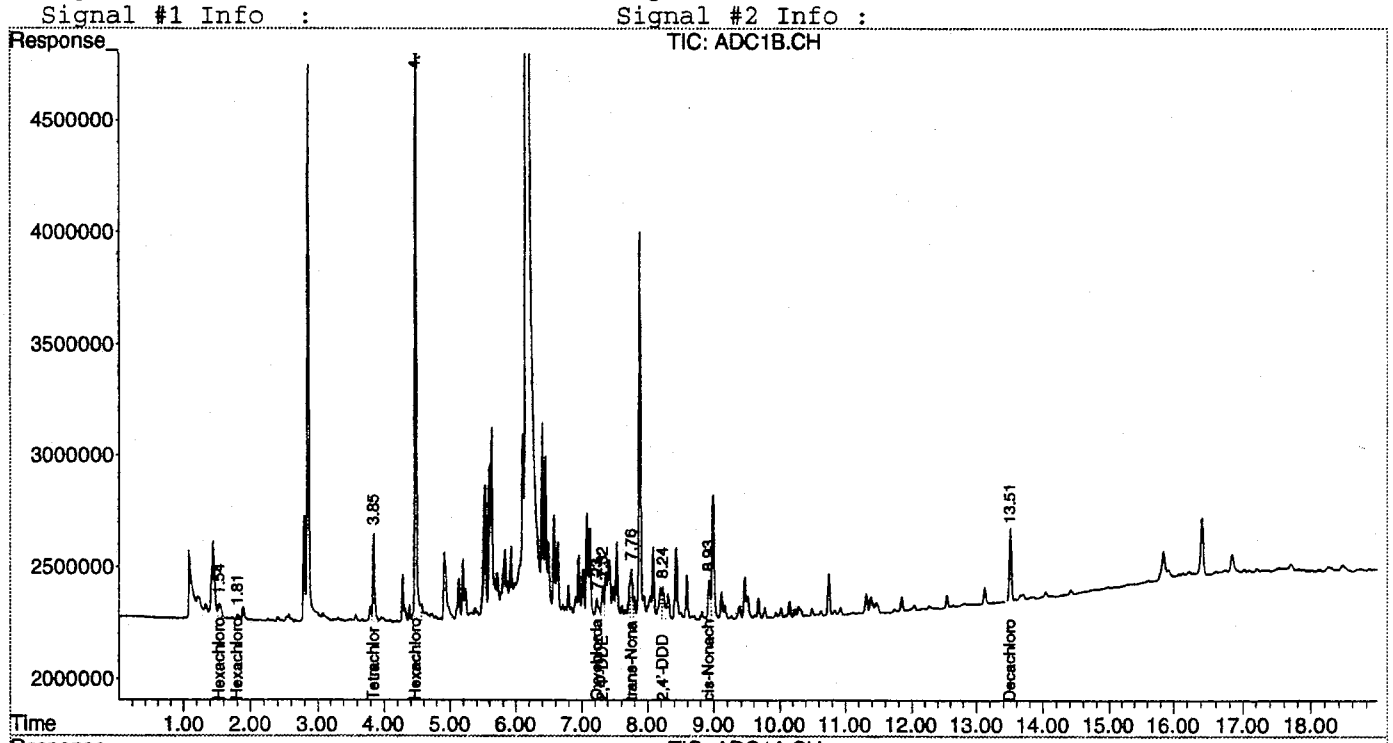
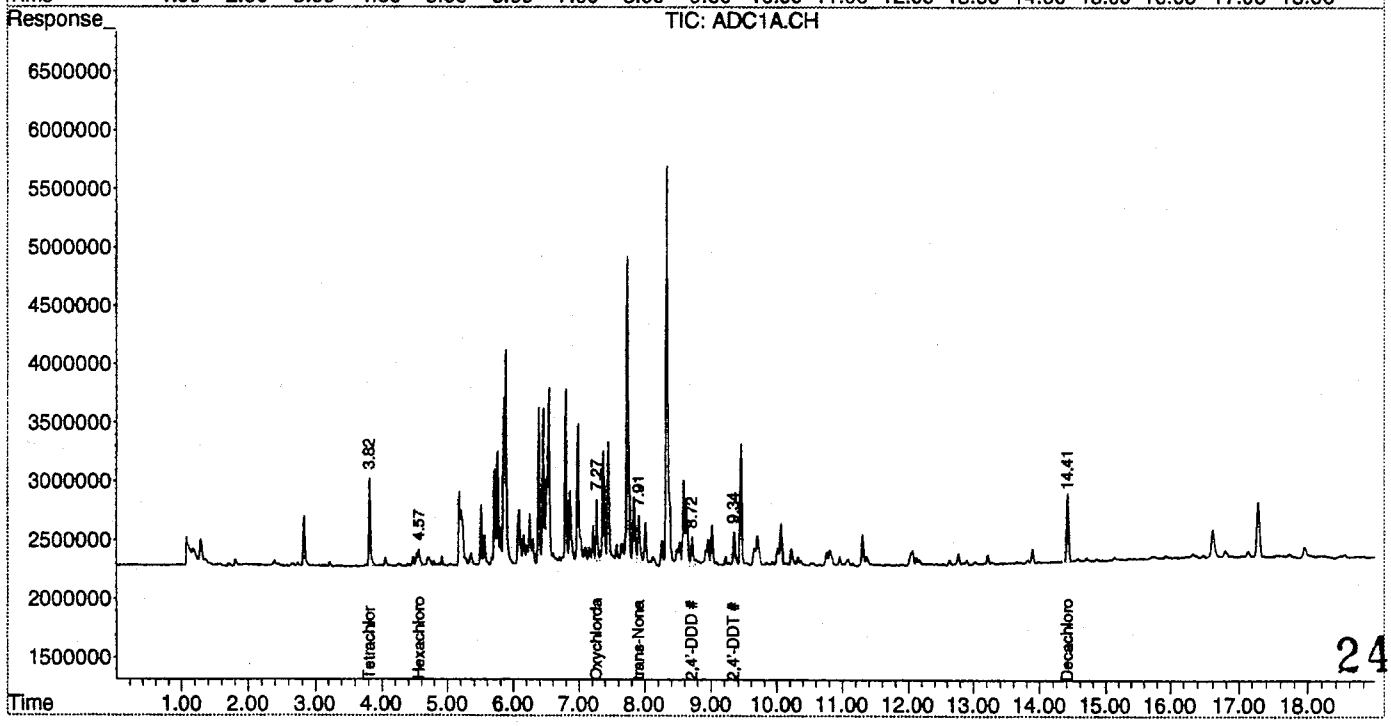
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\025F2501.D\ADC1B.CH Vial: 25
Signal #2 : F:\HPCHEM\1\DATA\PE091102\025F2501.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:00:41 Operator: JDW
Sample : 108164-1 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:20 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\026F2601.D\ADC1B.CH Vial: 26
Signal #2 : F:\HPCHEM\1\DATA\PE091102\026F2601.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:22:36 Operator: JDW
Sample : 108164-2 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:57:38 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

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Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.85	3.83	5861122	13900179	8.972	10.201	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					44.86%#	51.01%#	
22)	SR	Decachlorobiphen	13.51	14.42	6591575	11092336	15.816	14.410	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					79.08%	72.05%	
		Target Compounds							
2)		alpha-BHC	4.72	0.00	664427	0	0.564	N.D.	#
3)	M	gamma-BHC (Linda	5.21	5.37	1358719	1306831	1.329 PCB	0.722	#
4)	M	Heptachlor	5.94	0.00	2717103	0	2.778	N.D.	#
5)	M	Aldrin	6.41	6.55	3539956	14697280	3.579	8.571	#
6)		beta-BHC	5.34	5.52	373848	2319055	0.987 J	3.559	#
7)		delta-BHC	5.64	0.00	4263006	0	4.308	N.D.	#
8)		Heptachlor Epoxi	7.38	7.46	1832691	7815086	2.202 PCB	5.359	#
9)		Endosulfan I	8.05f	8.13	1751864	1990337	1.946	1.418	
10)		gamma-Chlordane	7.55	7.74f	9372435	340.9E6	10.813	226.397	#
11)		alpha-Chlordane	7.76	8.02	11142391	10277887	14.138	7.389	#
12)		4,4'-DDE	7.90	8.35	23431089	49069275	32.221	34.373	
13)	M	Dieldrin	8.44	8.65	6050253	8551810	7.647 PCB	5.777	
14)	M	Endrin	0.00	9.23	0	588292	N.D.	0.549	#
15)		Endosulfan II	0.00	9.66	0	1946217	N.D.	1.679	#
16)		4,4'-DDD	9.00	9.46	21251404	39065458	35.345	37.136	
17)	M	4,4'-DDT	9.51	10.06	1424512	4224216	2.312 PCB	4.486	#
18)		Endrin Aldehyde	10.10	10.34	126244	487954	0.272 PCB	0.557	#
19)		Endosulfan Sulfa	10.94f	0.00	563186	0	1.022 NC	N.D.	#
20)		Methoxychlor	10.51f	0.00	433356	0	1.766	N.D.	#
21)		Endrin Ketone	11.47f	0.00	773926	0	1.188	N.D.	#

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
026F2601.D 8081_910.M Thu Sep 12 11:59:29 2002

Custom Report - Relative Retention Times

Sample Name 108164-2 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\026F2601.D
Date Acquired 12-Sep-2002, 06:22:36

CCV File Path F:\HPCHEM\1\DATA\PE091102\016F1601.D

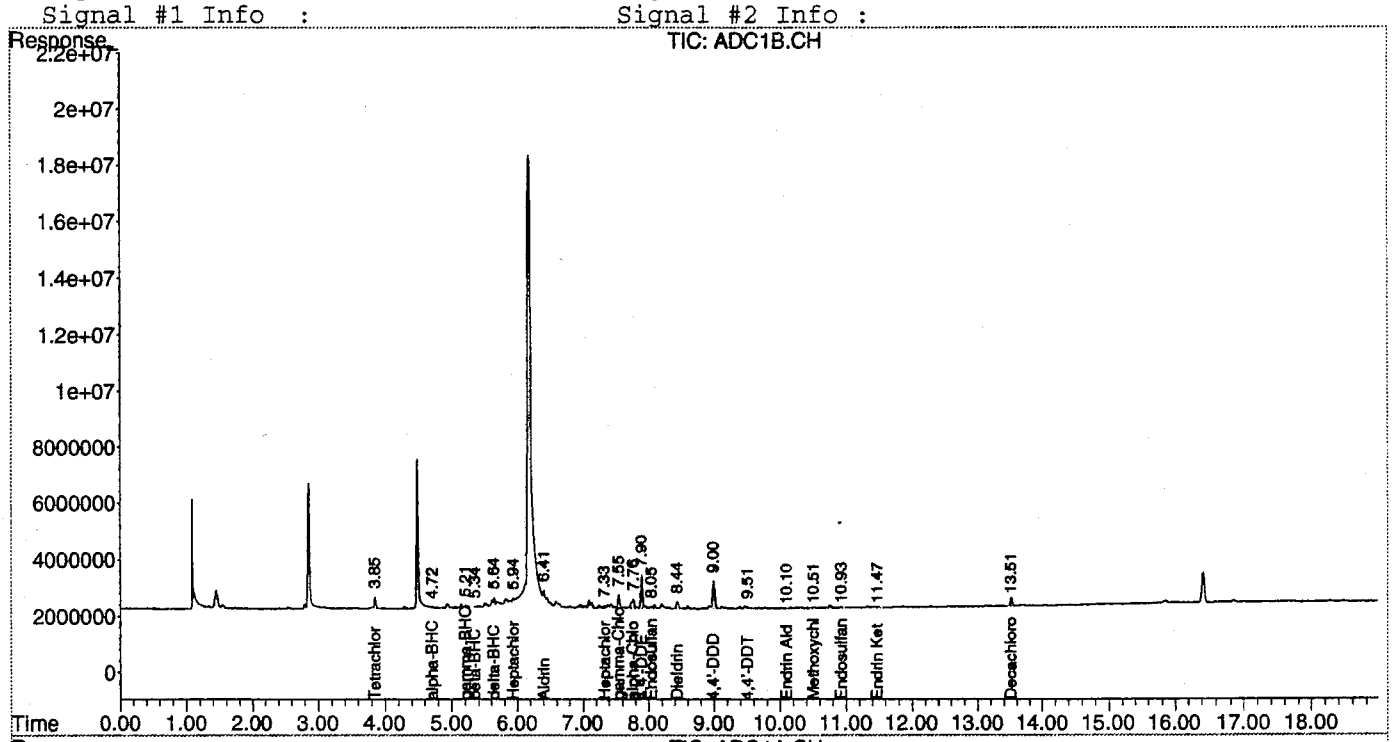
Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.85	3.83	0.2852	0.2654	0.2855	0.2658	OK	OK
alpha-BHC	4.72	0.00	0.3490	0.0000	0.3487	0.3330	OK	--
gamma-BHC (Lindane)	5.21	5.37	0.3857	0.3722	0.3852	0.3724	OK	OK
Heptachlor	5.94	0.00	0.4396	0.0000	0.4400	0.4194	OK	--
Aldrin	6.41	6.55	0.4744	0.4541	0.4745	0.4543	OK	OK
beta-BHC	5.34	5.52	0.3955	0.3828	0.3953	0.3822	OK	OK
delta-BHC	5.64	0.00	0.4177	0.0000	0.4160	0.4143	OK	--
Heptachlor Epoxide	7.33	7.46	0.5427	0.5172	0.5435	0.5172	OK	OK
Endosulfan I	8.05	8.13	0.5958	0.5639	0.5926	0.5641	--	OK
gamma-Chlordane	7.55	7.74	0.5584	0.5369	0.5584	0.5385	OK	OK
alpha-Chlordane	7.76	8.02	0.5746	0.5563	0.5747	0.5566	OK	OK
4,4'-DDE	7.90	8.35	0.5844	0.5786	0.5844	0.5791	OK	OK
Dieldrin	8.44	8.65	0.6249	0.5994	0.6251	0.5996	OK	OK
Endrin	0.00	9.23	0.0000	0.6399	0.6568	0.6400	--	OK
Endosulfan II	0.00	9.66	0.0000	0.6700	0.6881	0.6688	--	OK
4,4'-DDD	9.00	9.46	0.6659	0.6556	0.6660	0.6560	OK	OK
4,4'-DDT	9.51	10.06	0.7041	0.6977	0.7050	0.6979	OK	OK
Endrin Aldehyde	10.10	10.34	0.7473	0.7166	0.7473	0.7154	OK	OK
Endosulfan Sulfate	10.94	0.00	0.8092	0.0000	0.8102	0.7535	OK	--
Methoxychlor	10.51	0.00	0.7776	0.0000	0.7751	0.7951	OK	--
Endrin Ketone	11.47	0.00	0.8486	0.0000	0.8509	0.8277	OK	--
Decachlorobiphenyl (S)	13.51	14.42	1.0000	1.0000	1.0000	1.0000	OK	OK

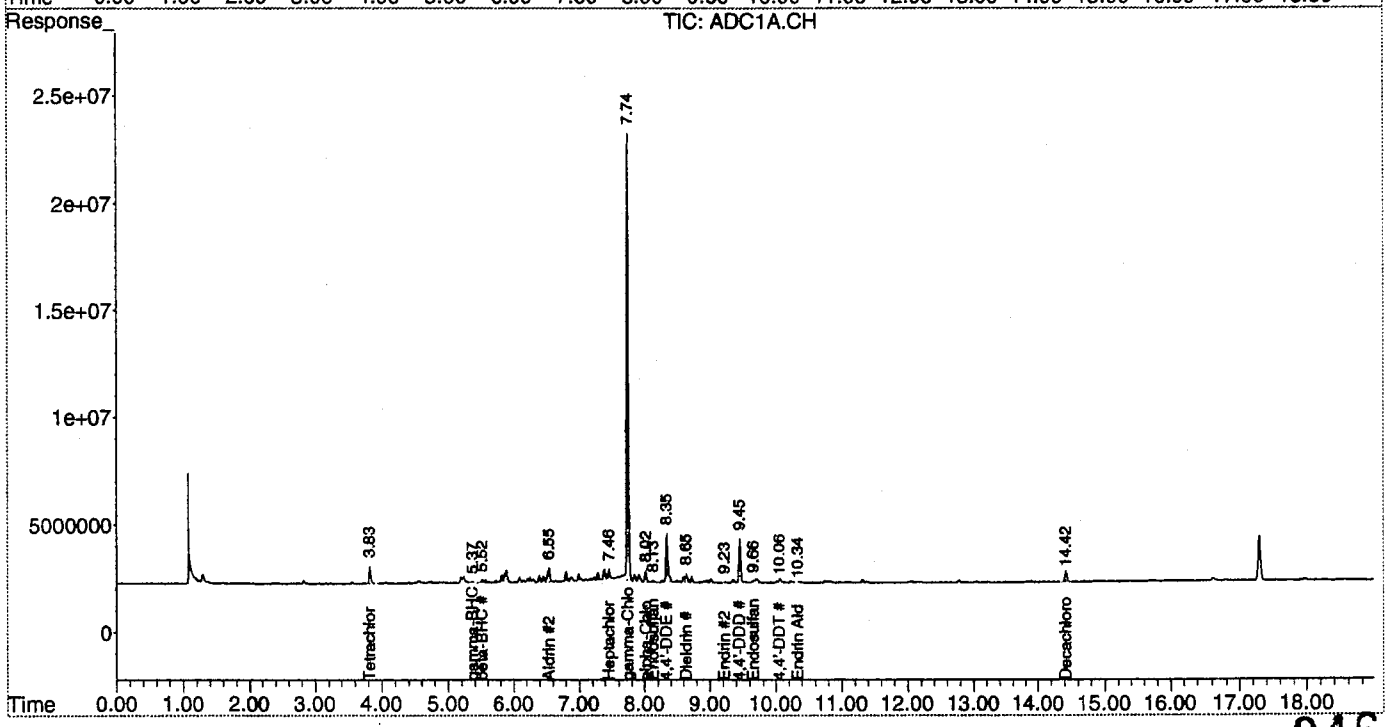
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\026F2601.D\ADC1B.CH Vial: 26
Signal #2 : F:\HPCHEM\1\DATA\PE091102\026F2601.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:22:36 Operator: JDW
Sample : 108164-2 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:57 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\026F2601.D\ADC1B.CH Vial: 26
Signal #2 : F:\HPCHEM\1\DATA\PE091102\026F2601.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:22:36 Operator: JDW
Sample : 108164-2 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:21:22 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
	System Monitoring Compounds							
1)	SR Tetrachloro-m-xy	3.85	3.83	7593096	13913904	11.422	10.681	
	Spiked Amount 20.000 Range 60 - 150 Recovery =					57.11%#	53.40%#	
11)	SR Decachlorobiphen	13.51f	14.42	6584655	11092336	14.580	14.599	
	Spiked Amount 20.000 Range 60 - 150 Recovery =					72.90%	73.00%	
	Target Compounds							
2)	Hexachloroethane	1.54	0.00	3281092	0	2.130	N.D.	#
3)	Hexachlorobenzen	4.49f	4.58	109.3E6	1935502	105.552	1.367	# c2
4)	Hexachlorobutadi	1.83	0.00	153603	0	0.072	N.D.	#
5)	Oxychlordane	0.00	7.29f	0	5753402	N.D.	4.725	#
6)	cis-Nonachlor	8.94	0.00	2343024	0	2.894	N.D.	#
7)	trans-Nonachlor	7.76	7.92	11142932	7930290	14.673	5.777	# c2
8)	2,4'-DDE	7.33	0.00	1826823	0	3.781	N.D.	#
9)	2,4'-DDD	8.21	8.73	5677786	5487677	14.123	7.487	#
10)	2,4'-DDT	8.68	9.35f	342873	3786640	0.740 pcs	5.528	#

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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108164-2 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\026F2601.D
Date Acquired 12-Sep-2002, 06:22:36

CCV File Path F:\HPCHEM\1\DATA\PE091102\017F1701.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.85	3.83	0.2852	0.2654	0.2854	0.2658	OK	OK
Hexachloroethane	1.54	0.00	0.1142	0.0000	0.1130	0.1016	OK	--
Hexachlorobenzene	4.49	4.58	0.3323	0.3175	0.3293	0.3167	OK	OK
Hexachlorobutadiene	1.83	0.00	0.1356	0.0000	0.1344	0.1192	OK	--
Oxychlordane	0.00	7.29	0.0000	0.5053	0.5316	0.5064	--	OK
cis-Nonachlor	8.94	0.00	0.6612	0.0000	0.6612	0.6506	OK	--
trans-Nonachlor	7.76	7.92	0.5746	0.5491	0.5724	0.5494	OK	OK
2,4'-DDE	7.33	0.00	0.5426	0.0000	0.5420	0.5396	OK	--
2,4'-DDD	8.21	8.73	0.6073	0.6051	0.6073	0.6056	OK	OK
2,4'-DDT	8.68	9.35	0.6426	0.6484	0.6420	0.6456	OK	OK
Decachlorobiphenyl (S)	13.51	14.42	1.0000	1.0000	1.0000	1.0000	OK	OK

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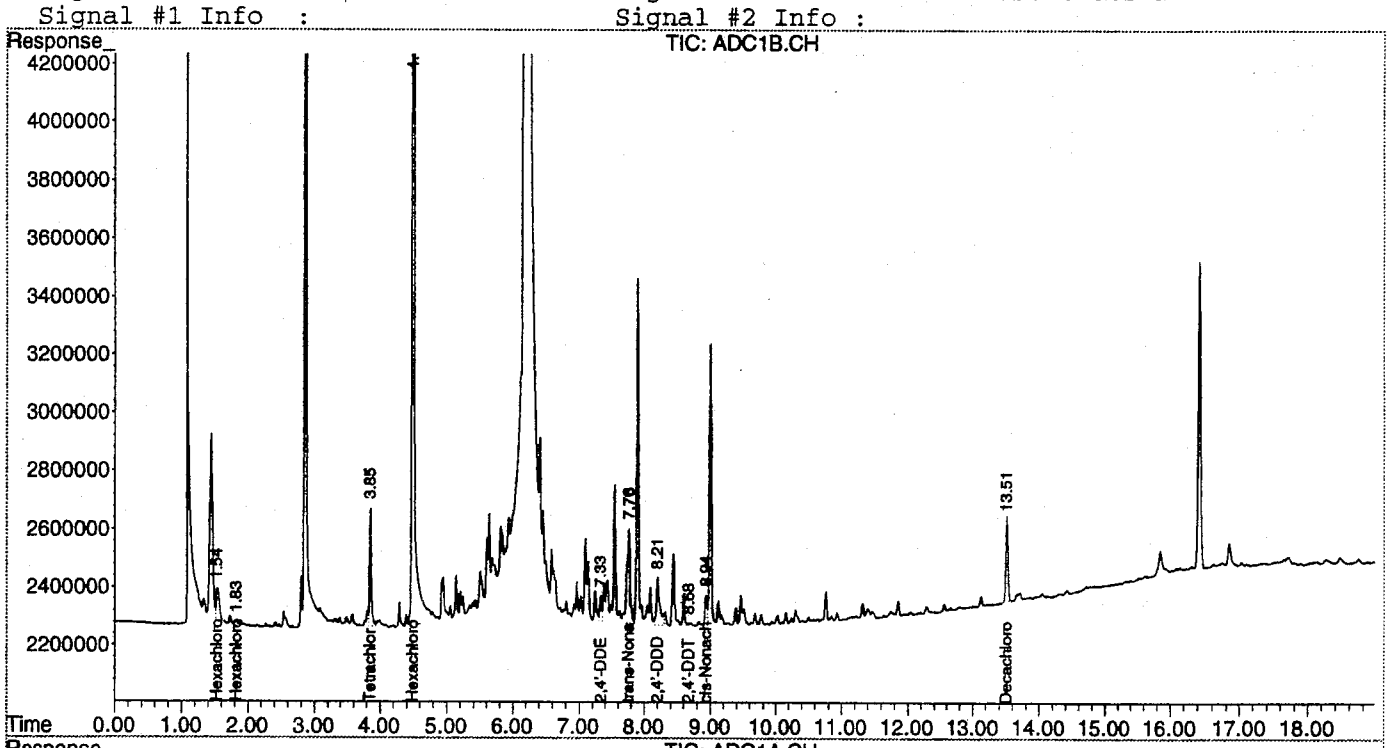
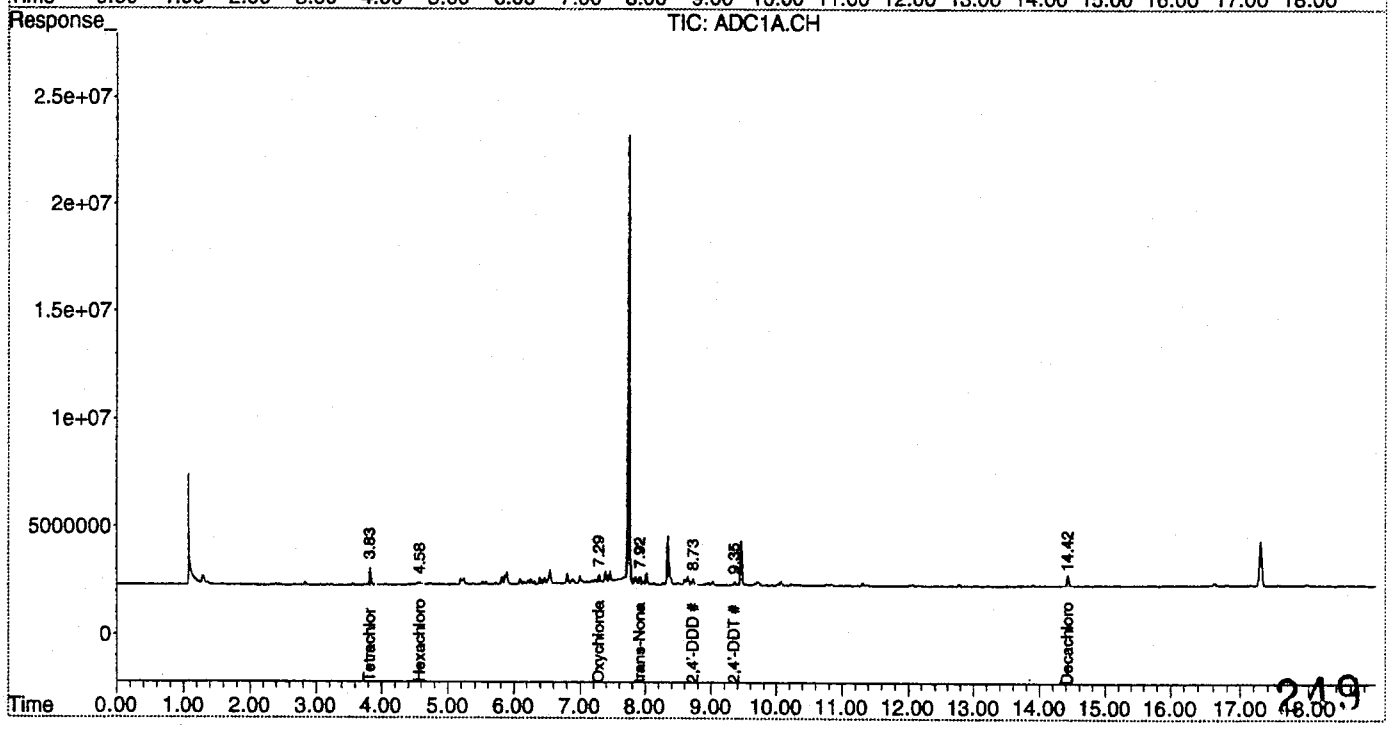
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\026F2601.D\ADC1B.CH Vial: 26
Signal #2 : F:\HPCHEM\1\DATA\PE091102\026F2601.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:22:36 Operator: JDW
Sample : 108164-2 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:21 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1B.CH Vial: 27
Signal #2 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:44:37 Operator: JDW
Sample : 108164-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:58:14 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

OK

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.85	3.82	6721280	14286916	10.289	10.485	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					51.44%#	52.42%#	
22)	SR	Decachlorobiphen	13.50f	14.41	4790714	7510873	11.495	9.757	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					57.48%#	48.79%#	
		Target Compounds							
2)		alpha-BHC	4.67f	0.00	103638	0	0.088	N.D.	#
3)	M	gamma-BHC (Linda	5.20	0.00	369049	0	0.361	N.D.	#
4)	M	Heptachlor	5.93f	6.09f	852774	2065720	0.872	~~2.354~~	#
5)	M	Aldrin	6.40	6.54	2113457	6019785	2.137	3.510	#
6)		beta-BHC	5.33	5.51	232171	707156	0.613 J	1.085	#
7)		delta-BHC	5.63	0.00	2395789	0	2.421	N.D.	#
8)		Heptachlor Epoxi	7.37	7.45	1202877	4746818	1.446 PCB	3.255	#
9)		Endosulfan I	8.04f	8.12	526429	1332635	0.585 J	0.949	#
10)		gamma-Chlordane	7.53	7.75	2661540	6018461	3.071	3.997	
11)		alpha-Chlordane	7.80	8.01	557369	2902832	0.707	2.087	#
12)		4,4'-DDE	7.88f	8.33f	8622143	15556943	11.857	10.898	
13)	M	Dieldrin	8.42f	8.64	1100793	1042389	1.391 NB	0.704	#
14)	M	Endrin	8.92f	0.00	1334857	0	2.308	N.D.	#
15)		Endosulfan II	0.00	9.65	0	1026001	N.D.	0.885	#
16)		4,4'-DDD	8.98f	9.44	2697425	4027152	4.486	3.828	
17)	M	4,4'-DDT	9.50f	10.05	829838	2547338	1.347 PCB	2.705	#
18)		Endrin Aldehyde	10.14f	0.00	479980	0	1.035 MC	N.D.	#
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	10.50	0.00	305272	0	1.244 MC	N.D.	#
21)		Endrin Ketone	0.00	0.00	0	0	N.D.	N.D.	

250

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108164-3 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\027F2701.D
Date Acquired 12-Sep-2002, 06:44:37

CCV File Path F:\HPCHEM\1\DATA\PE091102\016F1601.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.85	3.82	0.2848	0.2650	0.2855	0.2658	OK	OK
alpha-BHC	4.67	0.00	0.3463	0.0000	0.3487	0.3330	OK	--
gamma-BHC (Lindane)	5.20	0.00	0.3851	0.0000	0.3852	0.3724	OK	--
Heptachlor	5.93	6.09	0.4390	0.4225	0.4400	0.4194	OK	--
Aldrin	6.40	6.54	0.4739	0.4536	0.4745	0.4543	OK	OK
beta-BHC	5.33	5.51	0.3946	0.3822	0.3953	0.3822	OK	OK
delta-BHC	5.63	0.00	0.4171	0.0000	0.4160	0.4143	OK	--
Heptachlor Epoxide	7.37	7.45	0.5459	0.5167	0.5435	0.5172	OK	OK
Endosulfan I	8.04	8.12	0.5953	0.5634	0.5926	0.5641	OK	OK
gamma-Chlordane	7.53	7.75	0.5579	0.5378	0.5584	0.5385	OK	OK
alpha-Chlordane	7.80	8.01	0.5774	0.5558	0.5747	0.5566	OK	OK
4,4'-DDE	7.88	8.33	0.5838	0.5782	0.5844	0.5791	OK	OK
Dieldrin	8.42	8.64	0.6238	0.5995	0.6251	0.5996	OK	OK
Endrin	8.92	0.00	0.6609	0.0000	0.6568	0.6400	--	--
Endosulfan II	0.00	9.65	0.0000	0.6696	0.6881	0.6688	--	OK
4,4'-DDD	8.98	9.44	0.6655	0.6552	0.6660	0.6560	OK	OK
4,4'-DDT	9.50	10.05	0.7038	0.6972	0.7050	0.6979	OK	OK
Endrin Aldehyde	10.14	0.00	0.7514	0.0000	0.7473	0.7154	--	--
Endosulfan Sulfate	0.00	0.00	0.0000	0.0000	0.8102	0.7535	--	--
Methoxychlor	10.50	0.00	0.7774	0.0000	0.7751	0.7951	OK	--
Endrin Ketone	0.00	0.00	0.0000	0.0000	0.8509	0.8277	--	--
Decachlorobiphenyl (S)	13.50	14.41	1.0000	1.0000	1.0000	1.0000	OK	OK

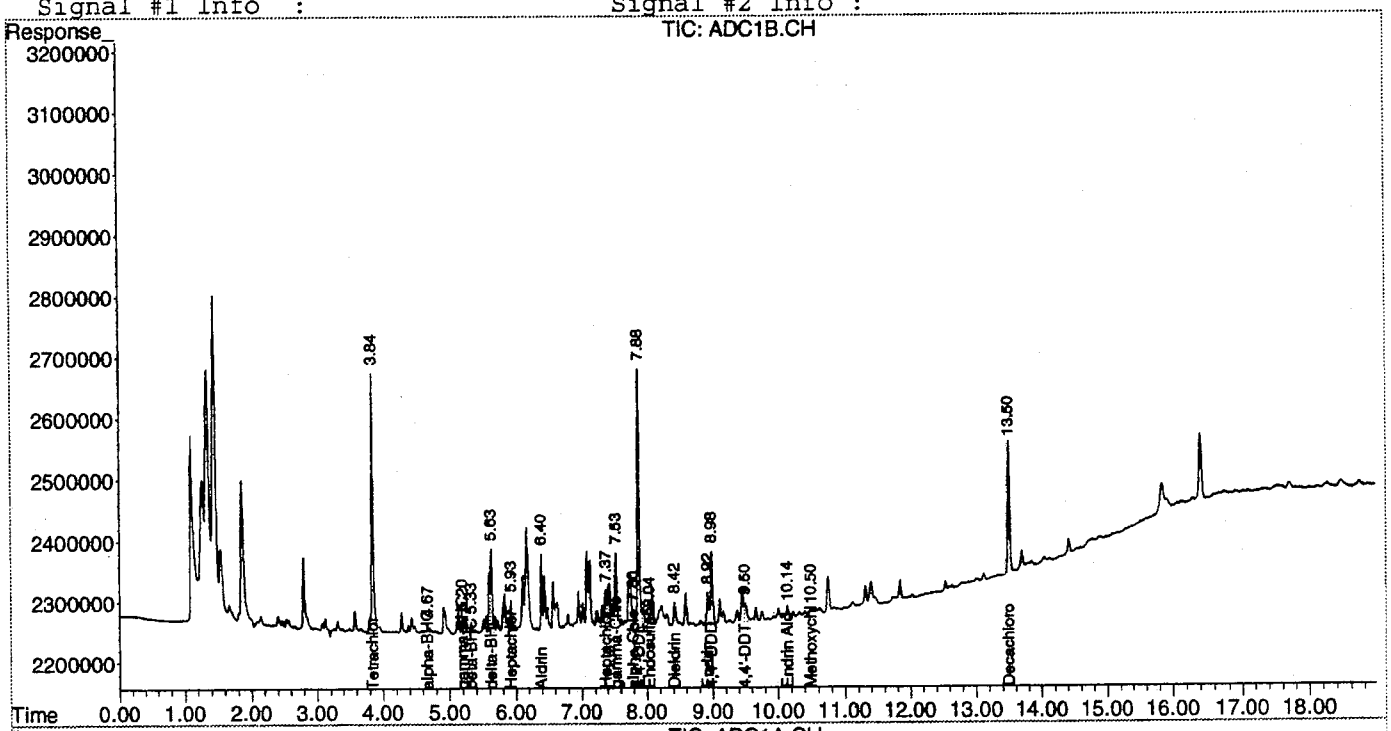
251

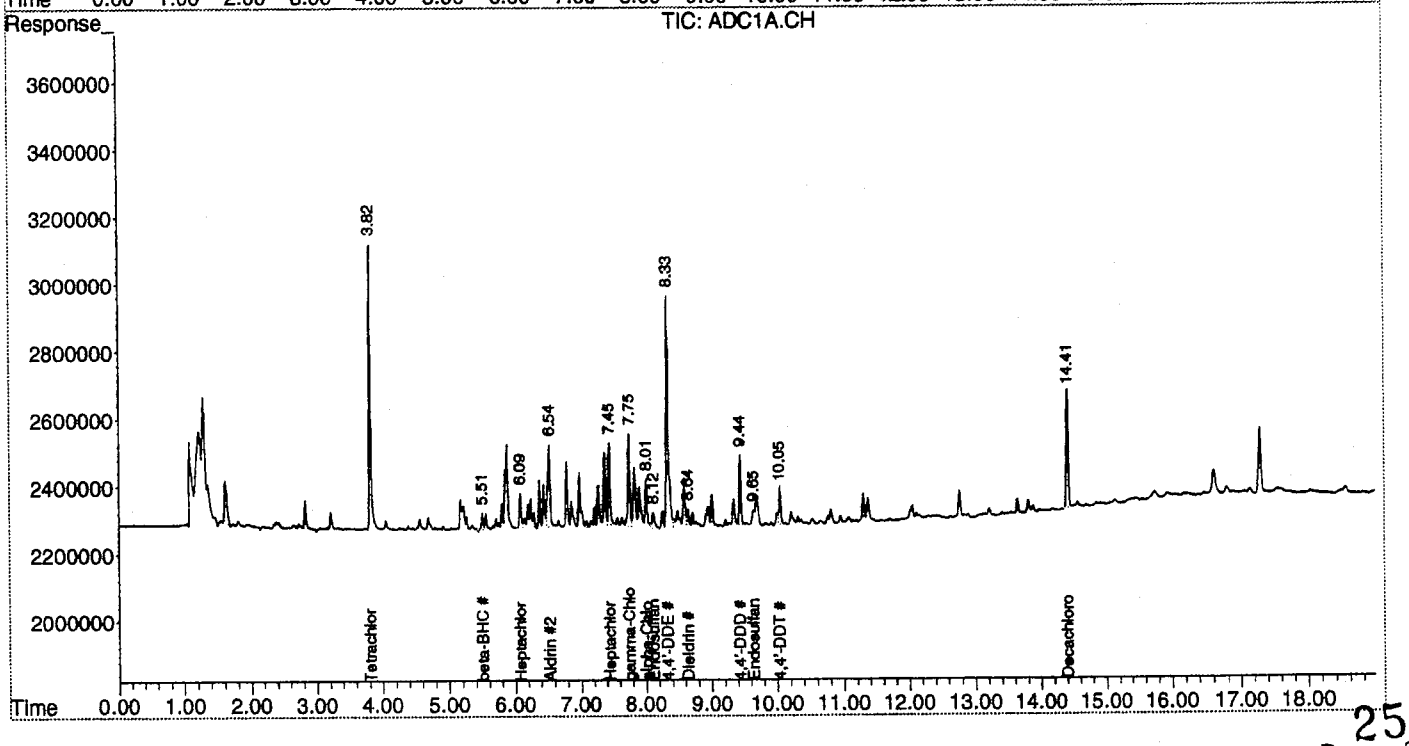
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1B.CH Vial: 27
Signal #2 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:44:37 Operator: JDW
Sample : 108164-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:58 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1B.CH Vial: 27
Signal #2 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:44:37 Operator: JDW
Sample : 108164-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:22:07 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) SR Tetrachloro-m-xy	3.85	3.82	7224796	14275283	10.868	10.958
Spiked Amount 20.000 Range 60 - 150 Recovery =					54.34%#	54.79%#
11) SR Decachlorobiphen	13.50f	14.41f	4787186	7510873	10.600	9.885
Spiked Amount 20.000 Range 60 - 150 Recovery =					53.00%#	49.42%#
Target Compounds						
2) Hexachloroethane	1.55	0.00	2798455	0	1.817	N.D. #
3) Hexachlorobenzen	4.48	4.57	239023	711663	0.231 BOL	0.503 #
4) Hexachlorobutadi	1.81	0.00	185230	0	0.087	N.D. #
5) Oxychlordane	7.23f	7.27f	881555	2445262	1.276	2.008 #
6) cis-Nonachlor	8.98f	9.44f	2620832	4027152	3.237	2.636
7) trans-Nonachlor	7.75	7.91f	2965514	3061766	3.905	2.230 #
8) 2,4'-DDE	7.32	7.83f	840482	4395456	1.739	5.157 #
9) 2,4'-DDD	8.23	8.72f	1793635	594369	4.461	0.811 BOL
10) 2,4'-DDT	0.00	9.34	0	1960748	N.D.	2.862 #

253

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108164-3 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\027F2701.D
Date Acquired 12-Sep-2002, 06:44:37

CCV File Path F:\HPCHEM\1\DATA\PE091102\017F1701.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.85	3.82	0.2848	0.2650	0.2854	0.2658	OK	OK
Hexachloroethane	1.55	0.00	0.1144	0.0000	0.1130	0.1016	OK	--
Hexachlorobenzene	4.48	4.57	0.3316	0.3170	0.3293	0.3167	OK	OK
Hexachlorobutadiene	1.81	0.00	0.1340	0.0000	0.1344	0.1192	OK	--
Oxychlordane	7.23	7.27	0.5357	0.5047	0.5316	0.5064	--	OK
cis-Nonachlor	8.98	9.44	0.6655	0.6552	0.6612	0.6506	--	--
trans-Nonachlor	7.75	7.91	0.5741	0.5487	0.5724	0.5494	OK	OK
2,4'-DDE	7.32	7.83	0.5423	0.5436	0.5420	0.5396	OK	--
2,4'-DDD	8.23	8.72	0.6094	0.6047	0.6073	0.6056	OK	OK
2,4'-DDT	0.00	9.34	0.0000	0.6481	0.6420	0.6456	--	OK
Decachlorobiphenyl (S)	13.50	14.41	1.0000	1.0000	1.0000	1.0000	OK	OK

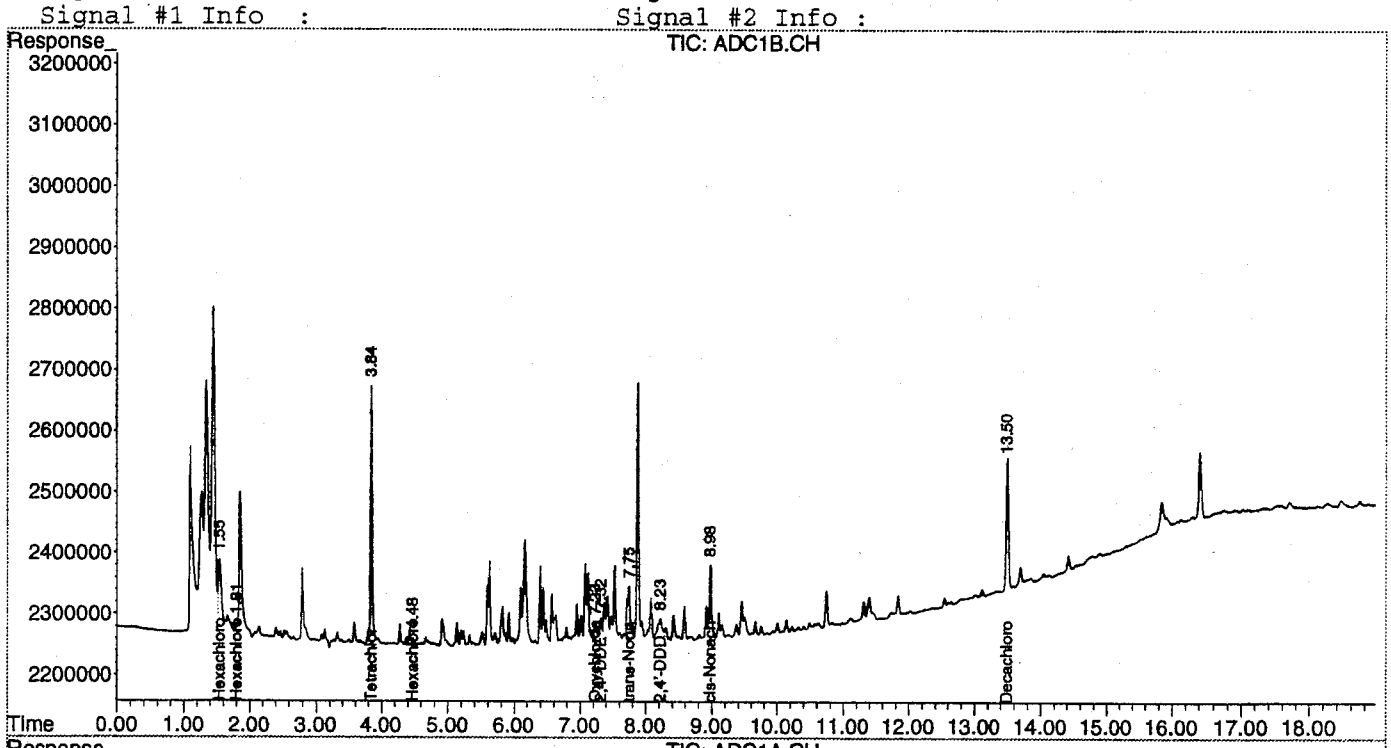
254

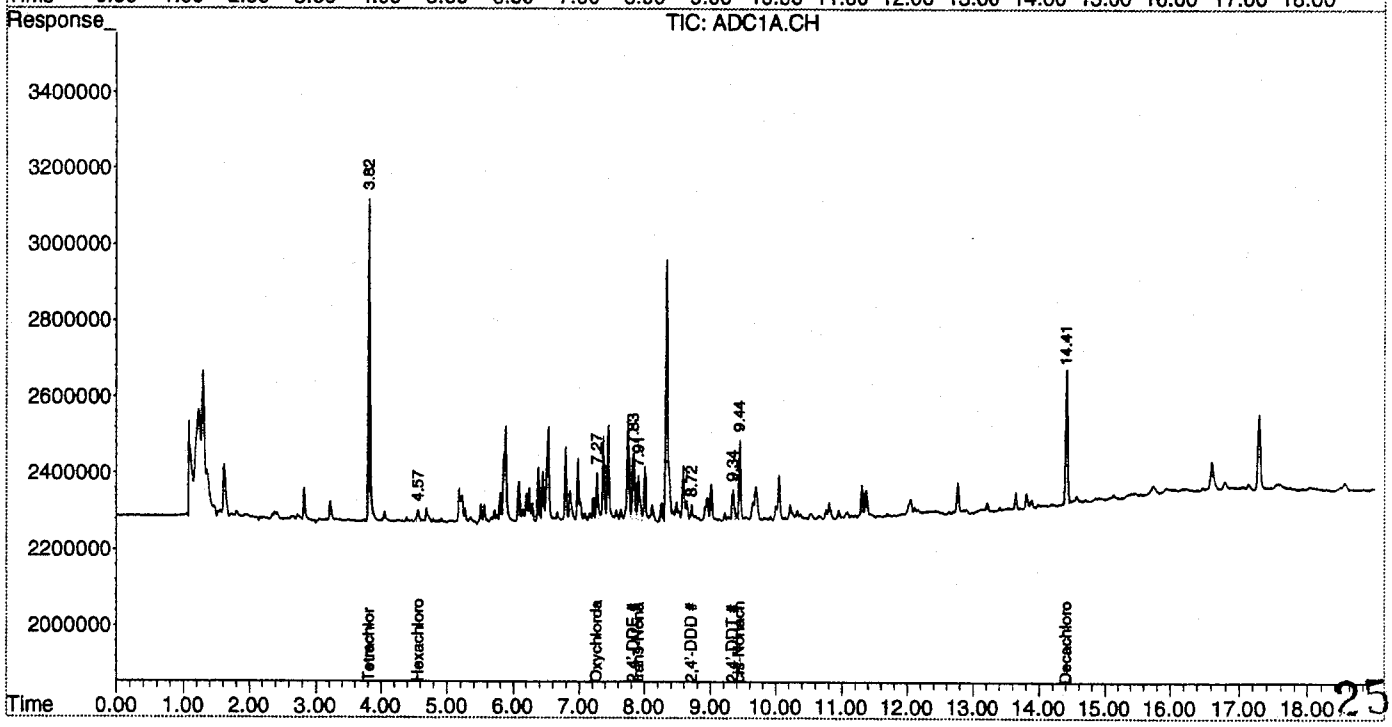
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1B.CH Vial: 27
Signal #2 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:44:37 Operator: JDW
Sample : 108164-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:22 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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INITIAL CALIBRATION

Response Factor Report HP35900C

Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002

Calibration Files
1 =014F1401.D 2 =013F1301.D 3 =012F1201.D
4 =011F1101.D 5 =010F1001.D 6 =009F0901.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)	SR	Tetrachloro-m-xy	8.393	7.005	6.681	6.026	5.659	5.433	6.533	E5	16.68
2)		alpha-BHC	1.511	1.231	1.189	1.097	1.038	1.002	1.178	E6	15.70
3)	M	gamma-BHC (Linda	1.323	1.066	1.021	0.951	0.900	0.875	1.023	E6	15.98
4)	M	Heptachlor	1.250	1.019	0.994	0.909	0.859	0.837	0.978	E6	15.50
5)	M	Aldrin	1.268	1.036	1.005	0.918	0.863	0.846	0.989	E6	15.79
6)		beta-BHC	4.503	3.854	3.739	3.704	3.504	3.411	3.786	E5	10.22
7)		delta-BHC	1.197	0.996	1.048	0.943	0.887	0.868	0.990	E6	12.31
8)		Heptachlor Epoxi	1.066	0.869	0.843	0.776	0.727	0.712	0.832	E6	15.65
9)		Endosulfan I	1.163	0.946	0.896	0.844	0.789	0.763	0.900	E6	16.16
10)		gamma-Chlordane	1.090	0.920	0.881	0.809	0.760	0.741	0.867	E6	14.91
11)		alpha-Chlordane	1.004	0.817	0.797	0.742	0.693	0.675	0.788	E6	15.16
12)		4,4'-DDE	9.648	7.541	7.322	6.759	6.322	6.039	7.272	E5	17.83
13)	M	Dieldrin	1.024	0.830	0.807	0.738	0.689	0.659	0.791	E6	16.60
14)	M	Endrin	7.355	6.060	5.872	5.421	5.058	4.935	5.784	E5	15.33
15)		Endosulfan II	7.598	6.641	6.401	5.807	5.480	5.322	6.208	E5	13.73
16)		4,4'-DDD	6.959	6.479	6.294	5.713	5.383	5.247	6.013	E5	11.19
17)	M	4,4'-DDT	7.399	6.493	6.384	5.728	5.543	5.422	6.161	E5	12.16
18)		Endrin Aldehyde	5.587	5.230	4.993	4.262	3.944	3.806	4.637	E5	15.82
19)		Endosulfan Sulfa	6.830	5.640	5.633	5.270	4.891	4.791	5.509	E5	13.42
20)		Methoxychlor	3.194	2.601	2.579	2.367	2.070	1.913	2.454	E5	18.52
21)		Endrin Ketone	8.177	6.937	6.615	6.137	5.698	5.506	6.512	E5	15.02
22)	SR	Decachlorobiphen	3.602	5.021	4.825	4.287	3.781	3.489	4.168	E5	15.56

Signal #2 Calibration Files
1 =014F1401.D 2 =013F1301.D 3 =012F1201.D
4 =011F1101.D 5 =010F1001.D 6 =009F0901.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)	SR	Tetrachloro-m-xy	1.558	1.306	1.289	1.305	1.342	1.377	1.363	E6	7.40
2)		alpha-BHC	2.252	1.948	1.969	2.011	2.112	2.203	2.083	E6	6.09
3)	M	gamma-BHC (Linda	2.014	1.716	1.729	1.717	1.799	1.880	1.809	E6	6.57
4)	M	Heptachlor	0.767	0.785	0.834	0.857	0.956	1.066	0.878	E6	12.95
5)	M	Aldrin	1.893	1.620	1.622	1.653	1.727	1.774	1.715	E6	6.22
6)		beta-BHC	6.622	6.433	6.773	6.406	6.185	6.679	6.516	E5	3.31
7)		delta-BHC	1.786	1.524	1.550	1.550	1.602	1.677	1.615	E6	6.18
8)		Heptachlor Epoxi	1.624	1.392	1.423	1.397	1.428	1.485	1.458	E6	6.01
9)		Endosulfan I	1.512	1.361	1.379	1.367	1.374	1.430	1.404	E6	4.16
10)		gamma-Chlordane	1.684	1.443	1.464	1.441	1.468	1.536	1.506	E6	6.23
11)		alpha-Chlordane	1.611	1.354	1.356	1.313	1.327	1.386	1.391	E6	7.95
12)		4,4'-DDE	1.523	1.324	1.366	1.409	1.457	1.486	1.428	E6	5.27
13)	M	Dieldrin	1.545	1.400	1.409	1.460	1.517	1.550	1.480	E6	4.52
14)	M	Endrin	1.178	1.039	1.045	1.007	1.085	1.073	1.071	E6	5.54
15)		Endosulfan II	1.200	1.115	1.111	1.116	1.193	1.221	1.159	E6	4.37
16)		4,4'-DDD	1.090	1.021	1.022	1.010	1.069	1.099	1.052	E6	3.70
17)	M	4,4'-DDT	0.977	0.865	0.892	0.922	0.975	1.019	0.942	E6	6.22
18)		Endrin Aldehyde	9.702	8.742	8.412	8.499	8.500	8.728	8.764	E5	5.46
19)		Endosulfan Sulfa	1.225	1.041	1.024	1.002	1.009	1.057	1.060	E6	7.88
20)		Methoxychlor	4.113	3.693	3.836	4.091	4.075	4.044	3.975	E5	4.30
21)		Endrin Ketone	1.474	1.241	1.241	1.232	1.272	1.291	1.292	E6	7.11
22)	SR	Decachlorobiphen	6.277	8.486	8.224	7.862	7.600	7.738	7.698	E5	9.99

(#) = Out of Range

Signal #1 : F:\HPCHEM\1\DATA\PE091002\014F1401.D\ADC1B.CH Vial: 14
Signal #2 : F:\HPCHEM\1\DATA\PE091002\014F1401.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:48:04 Operator: JDW
Sample : 1.0/2.0 ng/ml 8081A ICAL Pest886G Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:35:40 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:34:57 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

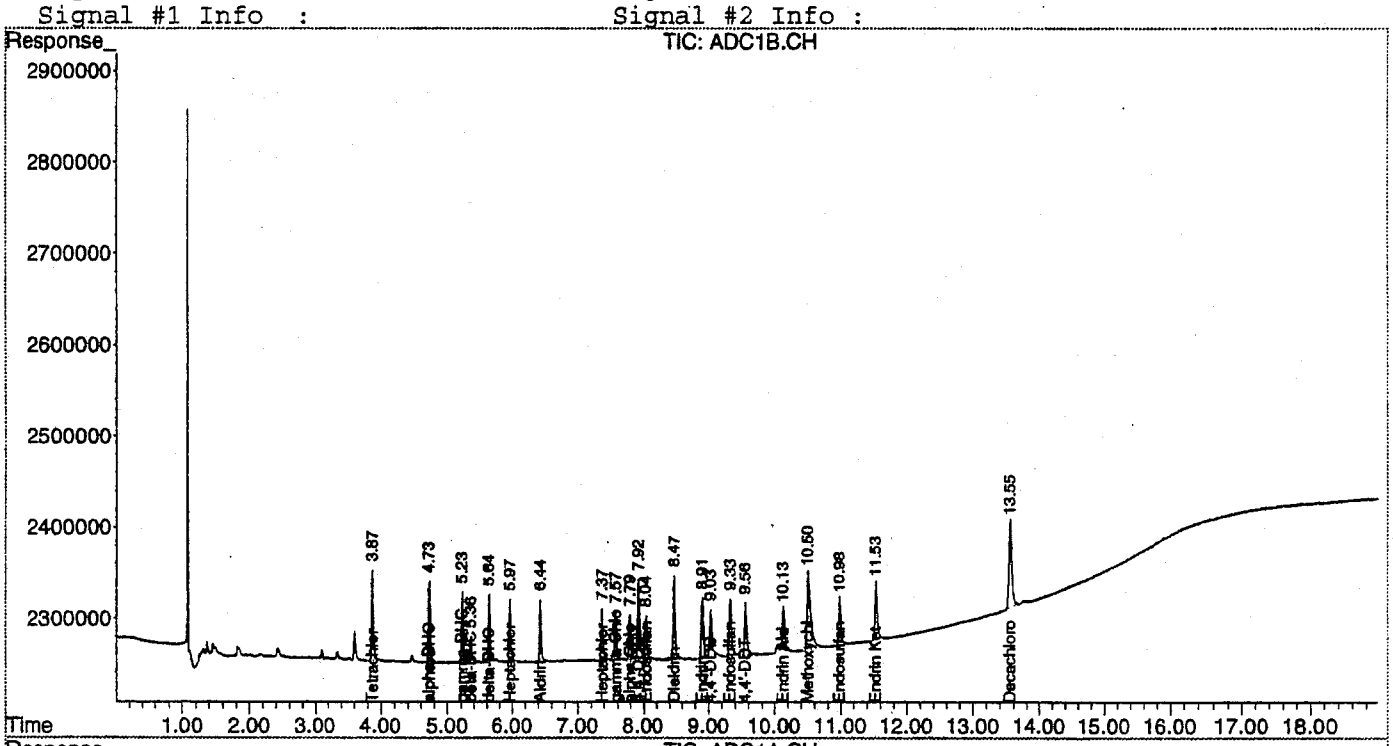
Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

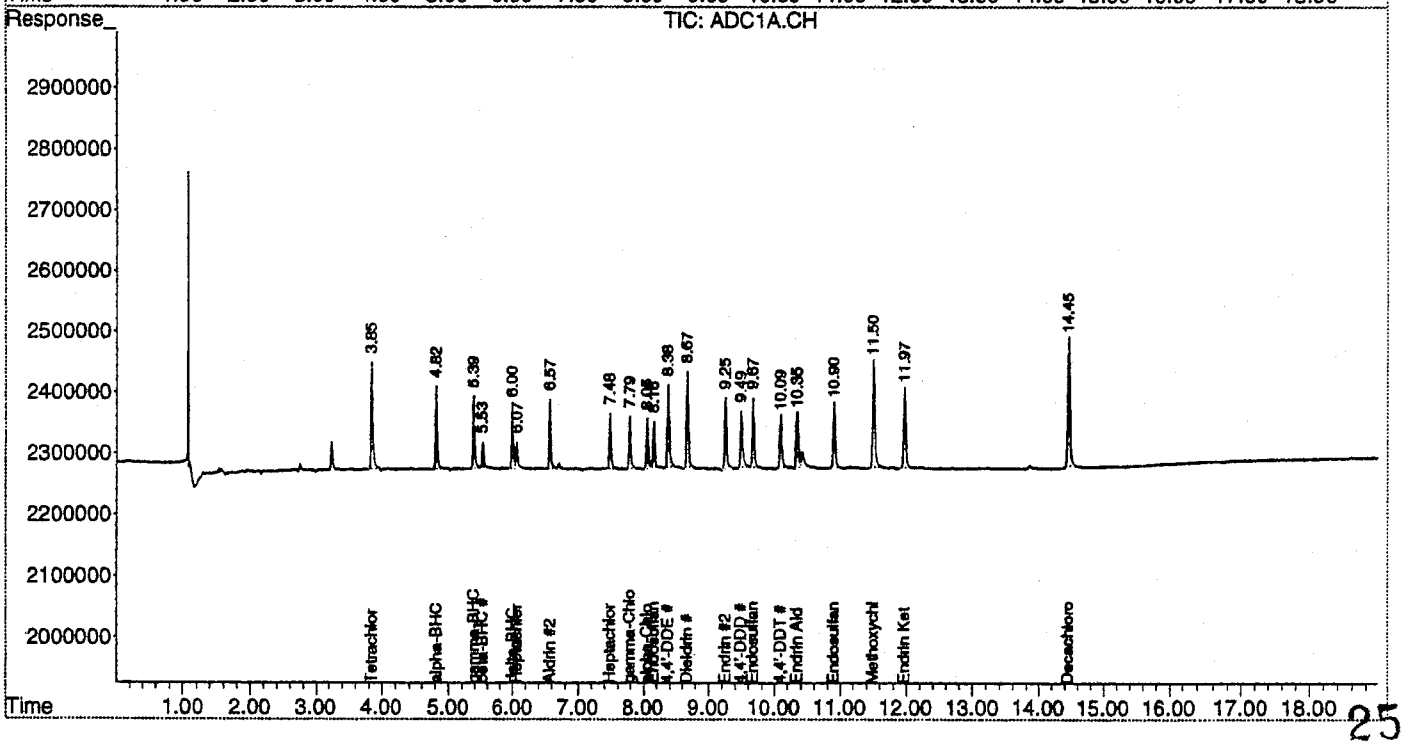
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.85	1678600	3115677	2.570	2.287
Spiked Amount		20.000 Range	60 - 150		Recovery	=	12.85%#	11.43%#
22)	SR	Decachlorobiphen	13.55	14.45	2881852	5021535	6.915	6.523
Spiked Amount		20.000 Range	60 - 150		Recovery	=	34.58%#	32.62%#
		Target Compounds						
2)		alpha-BHC	4.73	4.82	1511387	2251969	1.283	1.081
3)	M	gamma-BHC (Linda	5.23	5.39	1322597	2014155	1.293	1.113
4)	M	Heptachlor	5.97	6.07	1250363	767472	1.279	0.874
5)	M	Aldrin	6.44	6.57	1268388	1892894	1.282	1.104
6)		beta-BHC	5.36	5.53	450334	662194	1.190	1.016
7)		delta-BHC	5.64	6.00	1197067	1785595	1.210	1.106
8)		Heptachlor Epoxi	7.37	7.48	1065999	1623734	1.281	1.114
9)		Endosulfan I	8.04	8.16	1163262	1511741	1.292	1.077
10)		gamma-Chlordane	7.57	7.79	1090114	1683978	1.258	1.118
11)		alpha-Chlordane	7.79	8.05	1003922	1610594	1.274	1.158
12)		4,4'-DDE	7.92	8.38	1929643	3046632	2.654	2.134
13)	M	Dieldrin	8.48	8.67	2047393	3089145	2.588	2.087
14)	M	Endrin	8.91	9.26	1471041	2356297	2.543	2.200
15)		Endosulfan II	9.33	9.67	1519692	2399429	2.448	2.070
16)		4,4'-DDD	9.03	9.49	1391836	2180577	2.315	2.073
17)	M	4,4'-DDT	9.56	10.09	1479738	1953092	2.402	2.074
18)		Endrin Aldehyde	10.13	10.35	1117324	1940496	2.268	2.208
19)		Endosulfan Sulfa	10.98	10.90	1366081	2450422	2.480	2.312
20)		Methoxychlor	10.50	11.50	3194422	4113223	13.017	10.346
21)		Endrin Ketone	11.53	11.97	1635488	2947200	2.502	2.281

Signal #1 : F:\HPCHEM\1\DATA\PE091002\014F1401.D\ADC1B.CH Vial: 14
Signal #2 : F:\HPCHEM\1\DATA\PE091002\014F1401.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:48:04 Operator: JDW
Sample : 1.0/2.0 ng/ml 8081A ICAL Pest886G Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:35 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:34:57 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Signal #1 : F:\HPCHEM\1\DATA\PE091002\013F1301.D\ADC1B.CH Vial: 13
Signal #2 : F:\HPCHEM\1\DATA\PE091002\013F1301.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:26:02 Operator: JDW
Sample : 5/10 ng/ml 8081A ICAL Pest886F Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:34:05 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

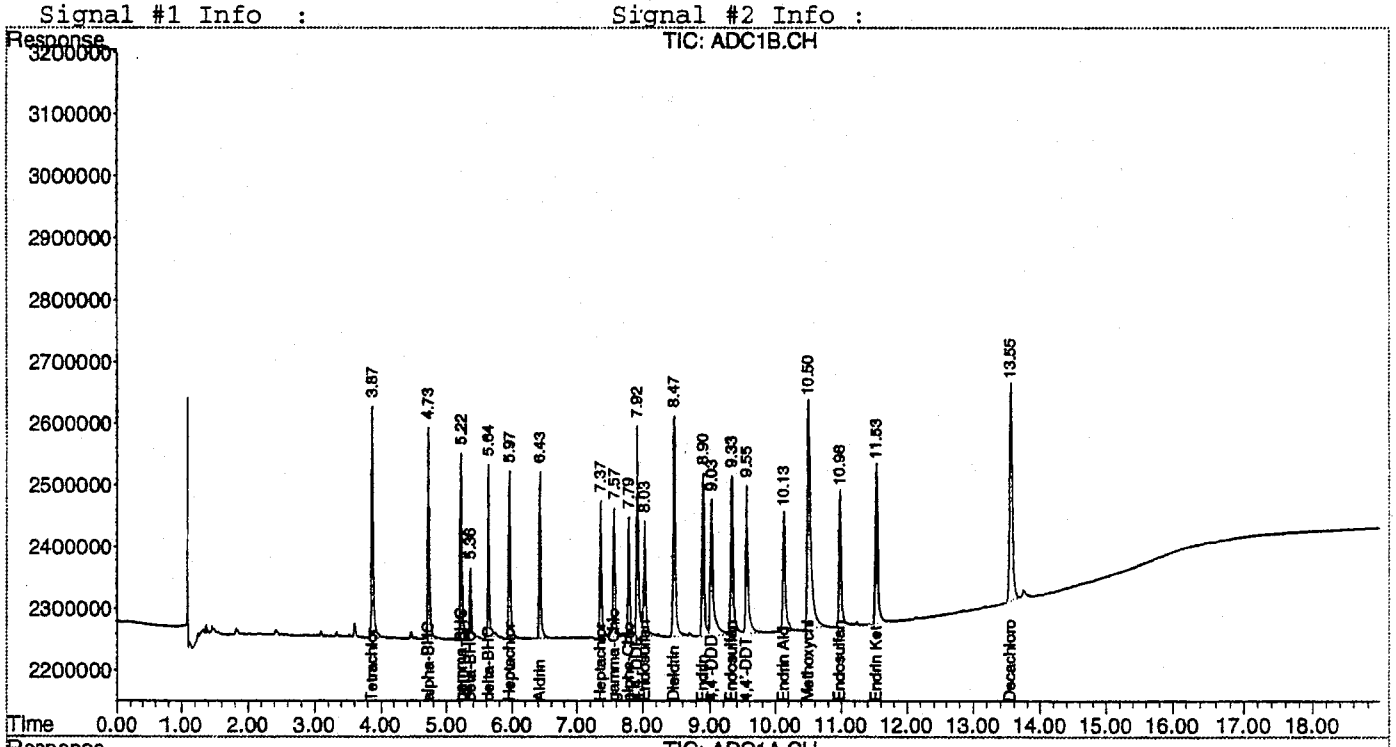
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.84	7004674	13057142	12.831	9.689
		Spiked Amount 20.000 Range 60 - 150 Recovery =					64.16%	48.45%#
22)	SR	Decachlorobiphen	13.55	14.45	10041469	16972080	32.514	24.380
		Spiked Amount 20.000 Range 60 - 150 Recovery =					162.57%#	121.90%
		Target Compounds						
2)		alpha-BHC	4.73	4.82	6153353	9737722	6.513	4.776
3)	M	gamma-BHC (Linda	5.22	5.39	5328448	8579187	6.539	4.887
4)	M	Heptachlor	5.97	6.07	5093262	3924858	6.407	3.871
5)	M	Aldrin	6.43	6.57	5177547	8098193	6.486	4.823
6)		beta-BHC	5.36	5.53	1927011	3216622	6.470	5.010
7)		delta-BHC	5.64	5.99	4982180	7619170	6.520	4.842
8)		Heptachlor Epoxi	7.37	7.48	4342655	6961614	6.483	4.811
9)		Endosulfan I	8.03	8.16	4728489	6805234	6.681	4.890
10)		gamma-Chlordane	7.57	7.79	4598949	7215219	6.649	4.835
11)		alpha-Chlordane	7.79	8.05	4086715	6767675	6.475	4.912
12)		4,4'-DDE	7.92	8.37	7541139	13240484	12.490	9.367
13)	M	Dieldrin	8.47	8.67	8295508	14000056	13.193	9.835
14)	M	Endrin	8.90	9.25	6059826	10386043	13.502	10.353
15)		Endosulfan II	9.33	9.67	6640799	11147463	14.067	10.233
16)		4,4'-DDD	9.03	9.49	6479306	10210574	13.705	10.045
17)	M	4,4'-DDT	9.56	10.09	6492845	8646068	13.529	11.672
18)		Endrin Aldehyde	10.13	10.34	5230288	8741878	13.594	10.756
19)		Endosulfan Sulfa	10.98	10.89	5639802	10406961	13.367	10.329
20)		Methoxychlor	10.50	11.49	13003144	18467329	68.466	67.821
21)		Endrin Ketone	11.53	11.96	6937419	12411291	14.108	10.441

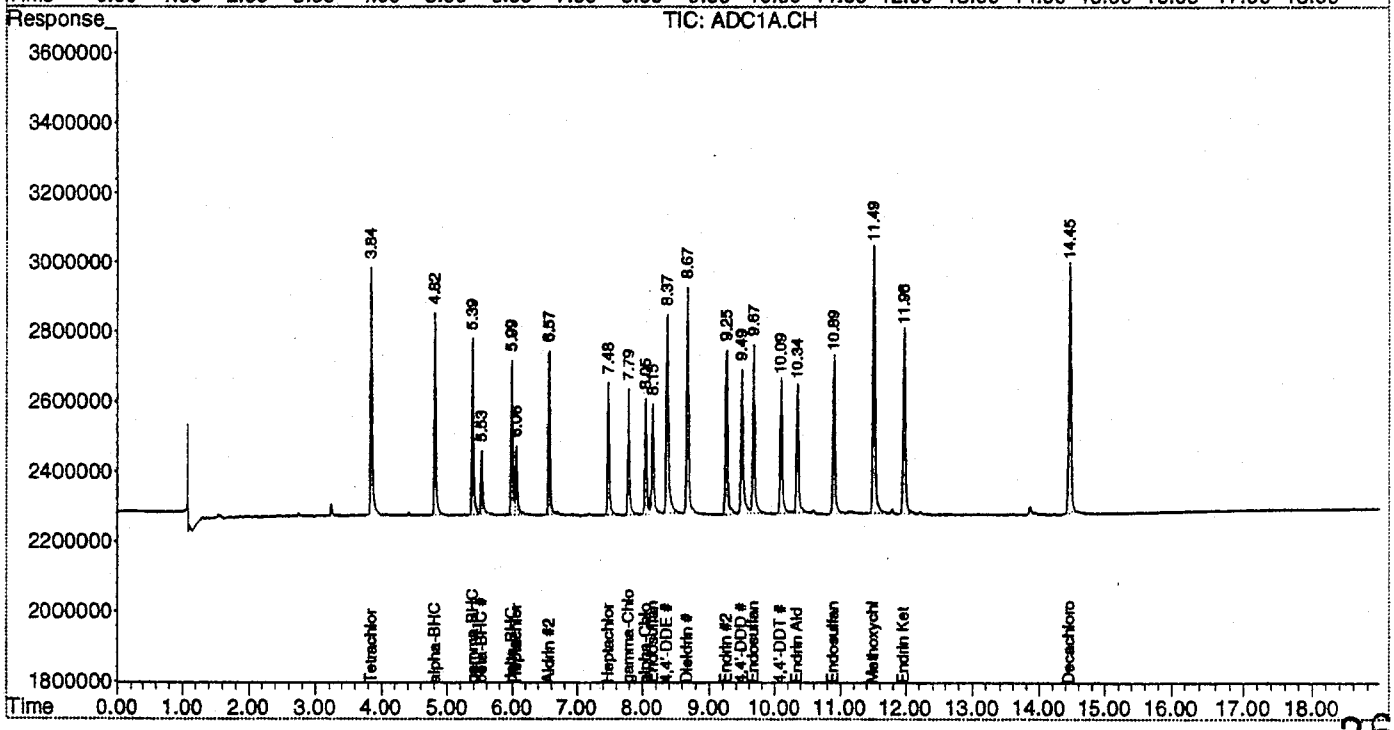
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
013F1301.D 8081_910.M Wed Sep 11 10:58:47 2002

Signal #1 : F:\HPCHEM\1\DATA\PE091002\013F1301.D\ADC1B.CH Vial: 13
Signal #2 : F:\HPCHEM\1\DATA\PE091002\013F1301.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:26:02 Operator: JDW
Sample : 5/10 ng/ml 8081A ICAL Pest886F Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:34 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Signal #1 : F:\HPCHEM\1\DATA\PE091002\012F1201.D\ADC1B.CH Vial: 12
Signal #2 : F:\HPCHEM\1\DATA\PE091002\012F1201.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:04:05 Operator: JDW
Sample : 10/20 ng/ml 8081A ICAL Pest886E Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33:56 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

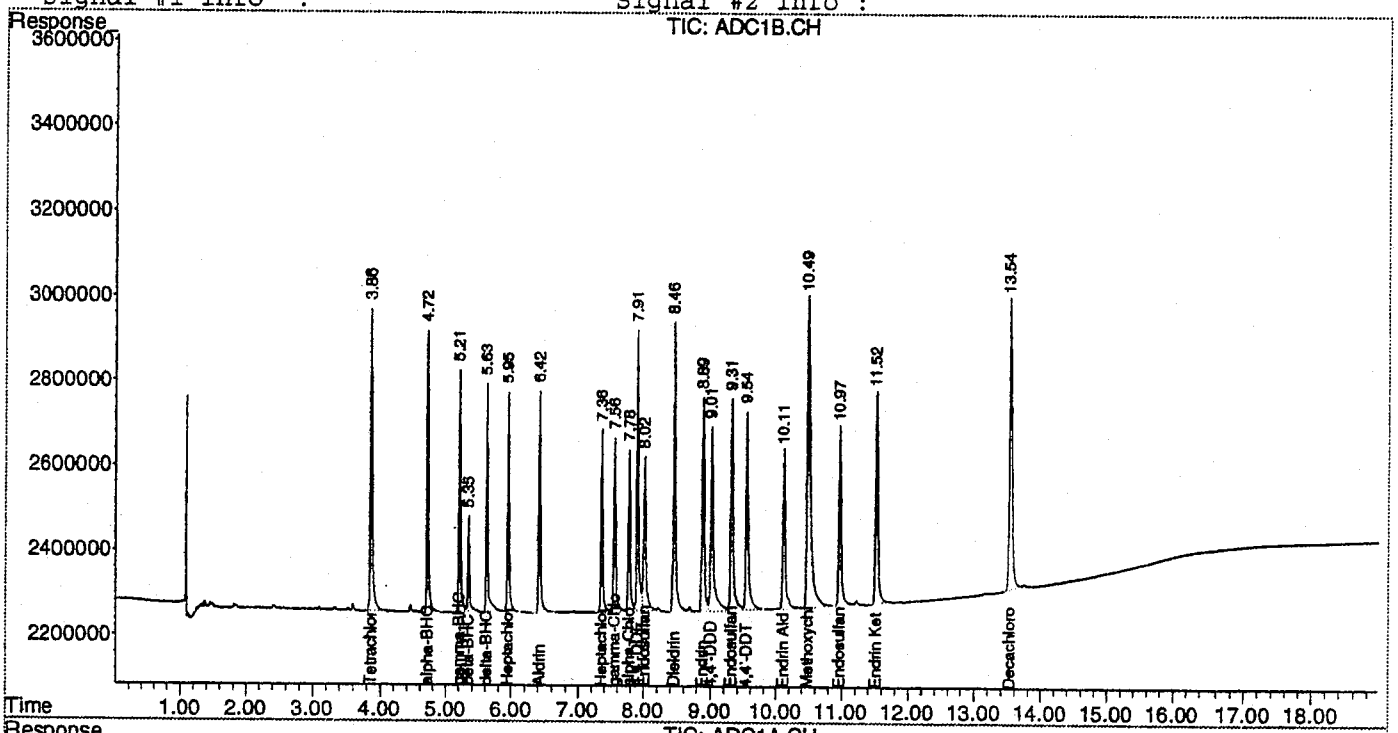
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.86	3.84	13362254	25771447	24.476	19.123
		Spiked Amount 20.000 Range 60 - 150 Recovery =					122.38%	95.62%
22)	SR	Decachlorobiphen	13.54	14.44	19298669	32897645	62.489	47.257
		Spiked Amount 20.000 Range 60 - 150 Recovery =					312.44%#	236.29%#
		Target Compounds						
2)		alpha-BHC	4.72	4.81	11892662	19692267	12.587	9.659
3)	M	gamma-BHC (Linda	5.21	5.38	10211973	17294647	12.532	9.852
4)	M	Heptachlor	5.95	6.05	9939053	8342763	12.503	8.228
5)	M	Aldrin	6.42	6.56	10050666	16222132	12.590	9.661
6)		beta-BHC	5.35	5.52	3739008	6772581	12.554	10.549
7)		delta-BHC	5.63	5.98	10476350	15495794	13.710	9.847
8)		Heptachlor Epoxi	7.36	7.47	8433960	14229275	12.591	9.834
9)		Endosulfan I	8.02	8.14	8956618	13785318	12.656	9.906
10)		gamma-Chlordane	7.56	7.77	8807773	14637180	12.734	9.809
11)		alpha-Chlordane	7.78	8.04	7972559	13562542	12.632	9.845
12)		4,4'-DDE	7.91	8.36	14644195	27319436	24.255	19.327
13)	M	Dieldrin	8.46	8.66	16138276	28172726	25.667	19.791
14)	M	Endrin	8.89	9.24	11744946	20892099	26.168	20.825
15)		Endosulfan II	9.31	9.66	12801375	22227681	27.118	20.404
16)		4,4'-DDD	9.01	9.47	12587211	20446678	26.624	20.115
17)	M	4,4'-DDT	9.54	10.08	12767396	17849806	26.603	24.096
18)		Endrin Aldehyde	10.11	10.33	9985348	16823444	25.953	20.699
19)		Endosulfan Sulfa	10.97	10.88	11265343	20475119	26.700	20.322
20)		Methoxychlor	10.49	11.48	25793092	38359440	135.809	140.874
21)		Endrin Ketone	11.52	11.95	13230747	24820234	26.906	20.879

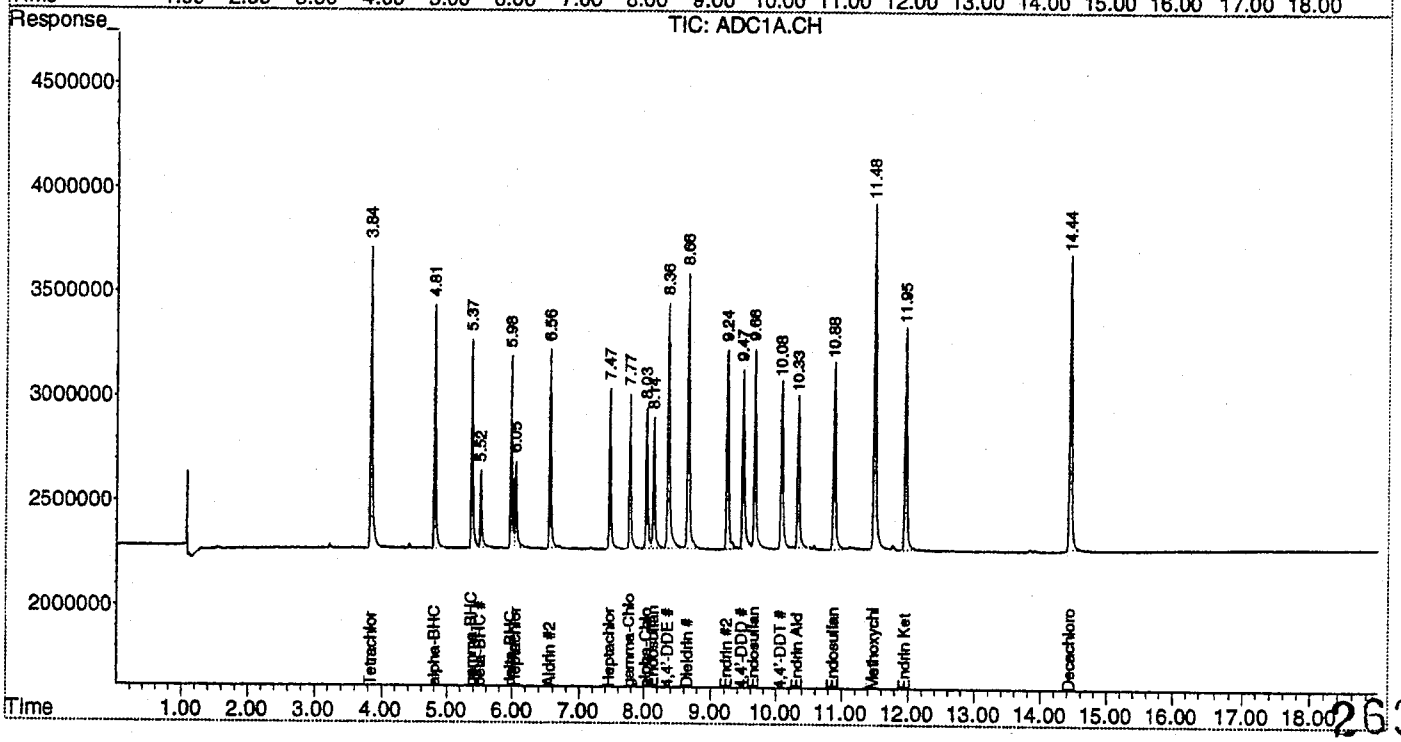
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
012F1201.D 8081_910.M Wed Sep 11 10:58:43 2002

Signal #1 : F:\HPCHEM\1\DATA\PE091002\012F1201.D\ADC1B.CH Vial: 12
Signal #2 : F:\HPCHEM\1\DATA\PE091002\012F1201.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:04:05 Operator: JDW
Sample : 10/20 ng/ml 8081A ICAL Pest886E Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Signal #1 : F:\HPCHEM\1\DATA\PE091002\011F1101.D\ADC1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\PE091002\011F1101.D\ADC1A.CH
Acq On : 11-Sep-2002, 00:42:08 Operator: JDW
Sample : 25/50 ng/ml 8081A ICAL Pest886D Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33:48 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

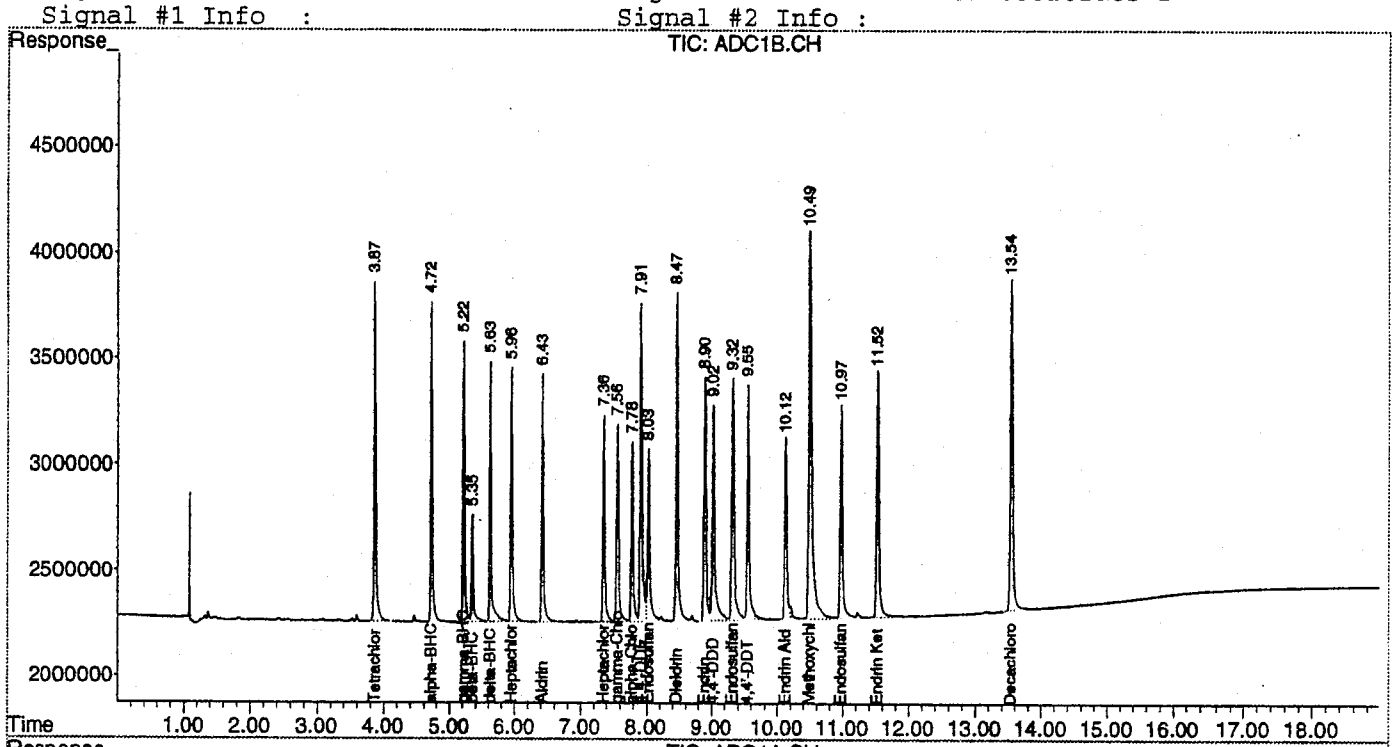
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.84	30128264	65228995	55.187	48.401
		Spiked Amount 20.000 Range 60 - 150 Recovery =					275.94%#	242.01%#
22)	SR	Decachlorobiphen	13.54	14.45	42867605	78618579	138.804	112.935
		Spiked Amount 20.000 Range 60 - 150 Recovery =					694.02%#	564.67%#
		Target Compounds						
2)		alpha-BHC	4.72	4.81	27415349	50276558	29.017	24.659
3)	M	gamma-BHC (Linda	5.22	5.38	23777035	42919296	29.180	24.450
4)	M	Heptachlor	5.96	6.06	22717106	21435365	28.577	21.141
5)	M	Aldrin	6.43	6.56	22946949	41320033	28.745	24.608
6)		beta-BHC	5.36	5.52	9258928	16015871	31.086	24.946
7)		delta-BHC	5.64	5.98	23564773	38760917	30.838	24.630
8)		Heptachlor Epoxi	7.36	7.47	19391451	34923056	28.950	24.136
9)		Endosulfan I	8.03	8.15	21109630	34185183	29.828	24.566
10)		gamma-Chlordane	7.56	7.78	20233286	36020697	29.253	24.138
11)		alpha-Chlordane	7.78	8.04	18537729	32816216	29.372	23.820
12)		4,4'-DDE	7.92	8.37	33793374	70444071	55.972	49.836
13)	M	Dieldrin	8.47	8.66	36923830	73020327	58.724	51.296
14)	M	Endrin	8.90	9.25	27107285	50326046	60.397	50.164
15)		Endosulfan II	9.32	9.66	29036211	55783432	61.508	51.207
16)		4,4'-DDD	9.02	9.48	28567359	50498931	60.425	49.680
17)	M	4,4'-DDT	9.55	10.08	28641562	46077654	59.680	62.202
18)		Endrin Aldehyde	10.12	10.34	21311823	42492866	55.393	52.282
19)		Endosulfan Sulfa	10.97	10.89	26350182	50116849	62.452	49.741
20)		Methoxychlor	10.50	11.49	59177497	102.3E6	311.588	375.591
21)		Endrin Ketone	11.52	11.96	30684690	61590584	62.401	51.812

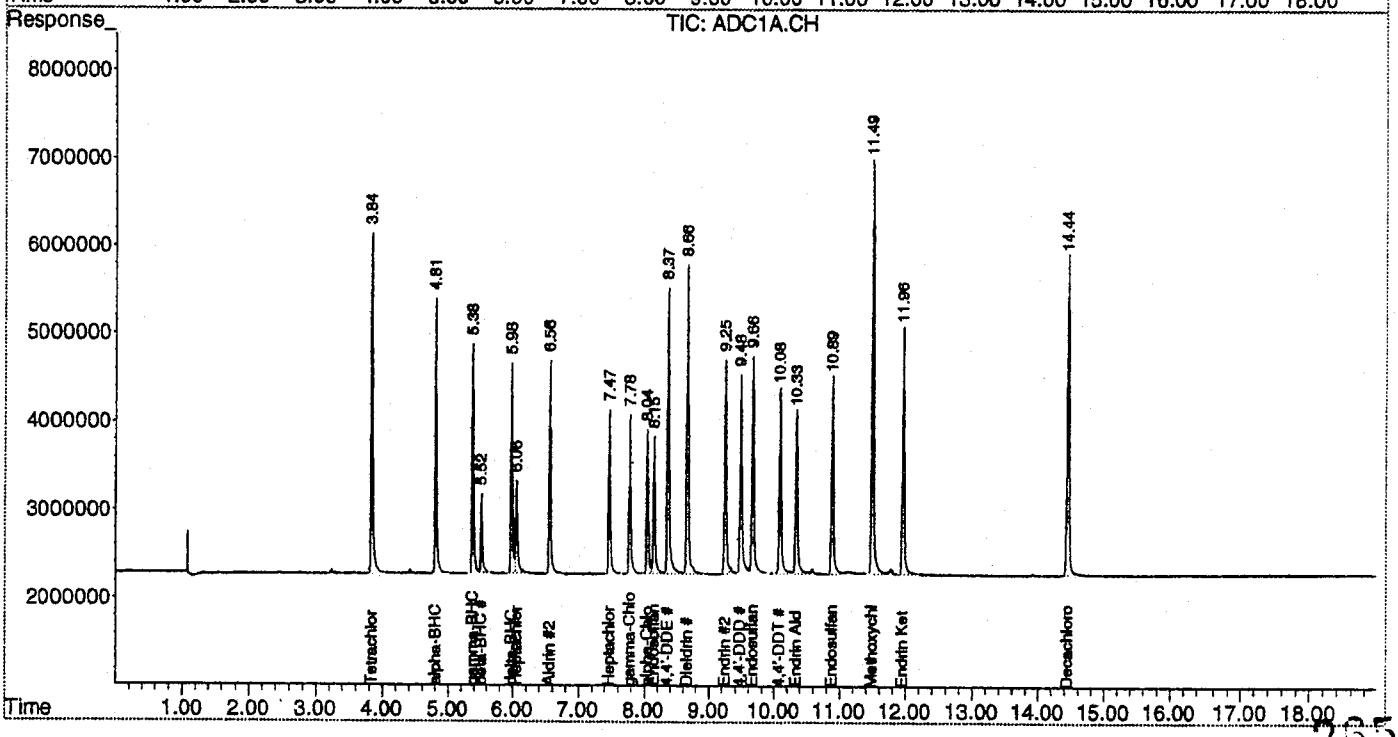
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
011F1101.D 8081_910.M Wed Sep 11 10:58:40 2002

Signal #1 : F:\HPCHEM\1\DATA\PE091002\011F1101.D\ADC1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\PE091002\011F1101.D\ADC1A.CH
Acq On : 11-Sep-2002, 00:42:08 Operator: JDW
Sample : 25/50 ng/ml 8081A ICAL Pest886D Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Signal #1 : F:\HPCHEM\1\DATA\PE091002\010F1001.D\ADC1B.CH Vial: 10
Signal #2 : F:\HPCHEM\1\DATA\PE091002\010F1001.D\ADC1A.CH
Acq On : 11-Sep-2002, 00:20:12 Operator: JDW
Sample : 50/100 ng/ml 8081A ICAL Pest886C Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33:35 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

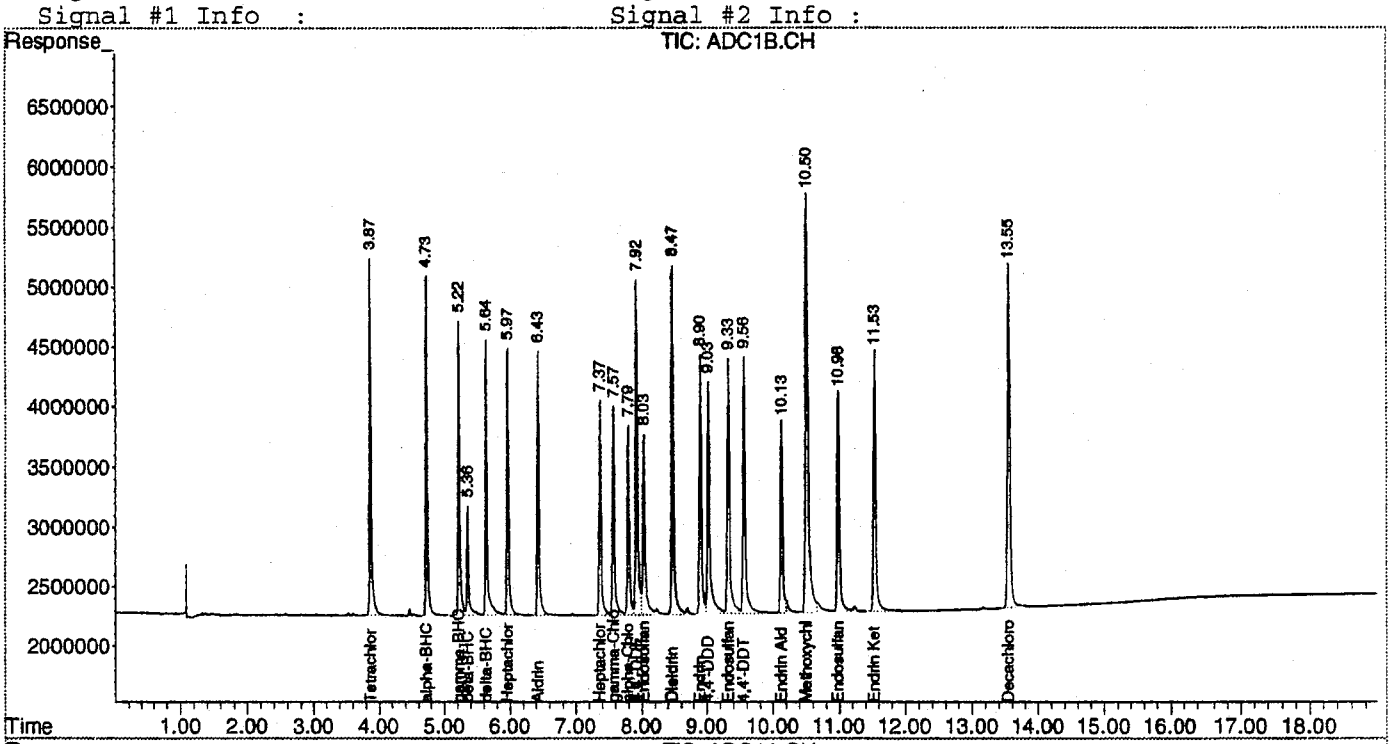
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.85	56588164	134.2E6	103.654	99.570
		Spiked Amount 20.000 Range 60 - 150 Recovery =					518.27%#	497.85%#
22)	SR	Decachlorobiphen	13.55	14.45	75626748	152.0E6	244.877	218.333
		Spiked Amount 20.000 Range 60 - 150 Recovery =					1224.39%#	1091.67%#
		Target Compounds						
2)		alpha-BHC	4.73	4.82	51918844	105.6E6	54.952	51.797
3)	M	gamma-BHC (Linda	5.22	5.39	45010682	89956048	55.238	51.245
4)	M	Heptachlor	5.97	6.07	42945230	47812415	54.024	47.157
5)	M	Aldrin	6.43	6.57	43128772	86357660	54.027	51.430
6)		beta-BHC	5.36	5.53	17519200	30923135	58.820	48.165
7)		delta-BHC	5.64	5.99	44327758	80081017	58.010	50.887
8)		Heptachlor Epoxi	7.37	7.48	36364342	71382952	54.290	49.334
9)		Endosulfan I	8.03	8.16	39436071	68681680	55.723	49.355
10)		gamma-Chlordane	7.57	7.79	37991641	73378157	54.927	49.172
11)		alpha-Chlordane	7.79	8.05	34651164	66341358	54.903	48.155
12)		4,4'-DDE	7.92	8.37	63224921	145.7E6	104.719	103.075
13)	M	Dieldrin	8.47	8.67	68933618	151.7E6	109.634	106.595
14)	M	Endrin	8.90	9.25	50575897	108.5E6	112.686	108.162
15)		Endosulfan II	9.33	9.67	54797081	119.3E6	116.078	109.524
16)		4,4'-DDD	9.03	9.48	53825626	106.9E6	113.851	105.170
17)	M	4,4'-DDT	9.56	10.09	55425526	97472697	115.490	131.583
18)		Endrin Aldehyde	10.13	10.34	39439109	85001520	102.508	104.584
19)		Endosulfan Sulfa	10.98	10.89	48911520	100.9E6	115.924	100.183
20)		Methoxychlor	10.50	11.49	103.5E6	203.8E6	545.051	748.346
21)		Endrin Ketone	11.53	11.96	56984355	127.2E6	115.885	106.987

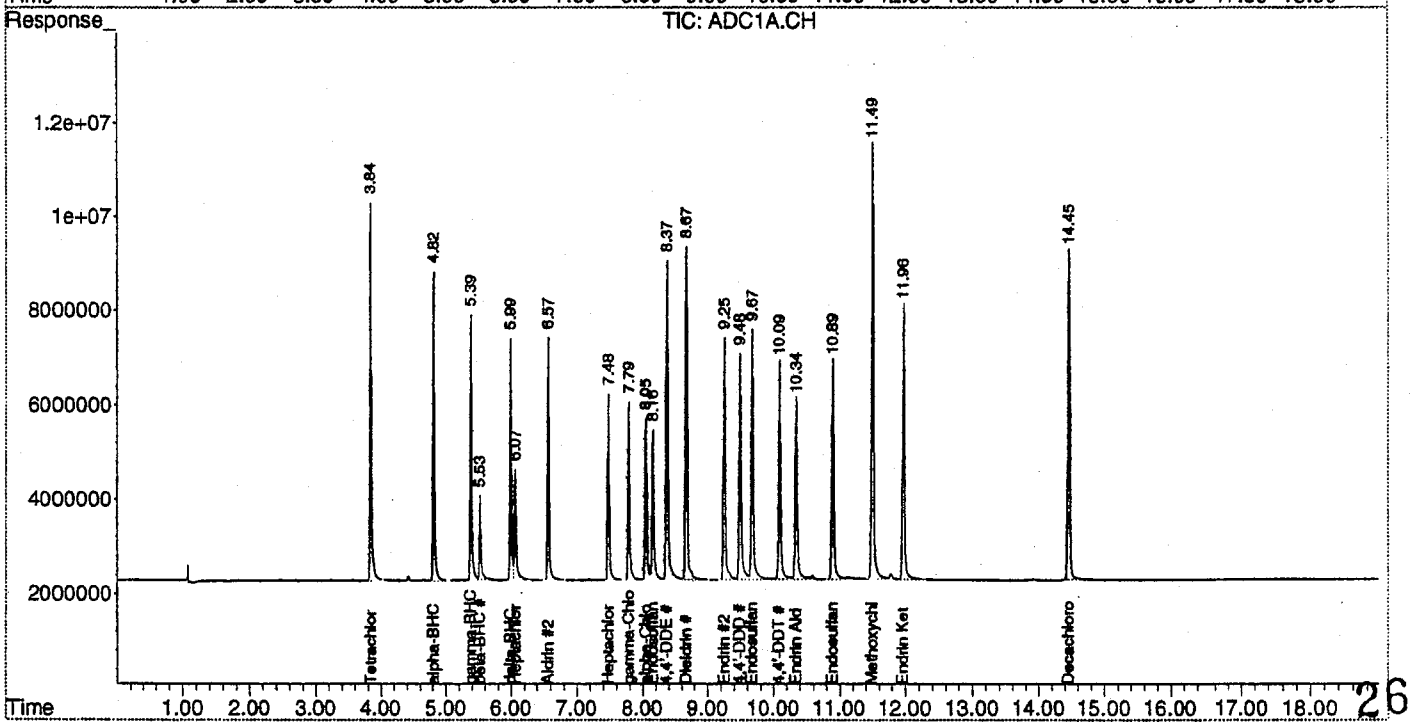
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
010F1001.D 8081_910.M Wed Sep 11 10:58:35 2002

Signal #1 : F:\HPCHEM\1\DATA\PE091002\010F1001.D\ADC1B.CH Vial: 10
Signal #2 : F:\HPCHEM\1\DATA\PE091002\010F1001.D\ADC1A.CH
Acq On : 11-Sep-2002, 00:20:12 Operator: JDW
Sample : 50/100 ng/ml 8081A ICAL Pest886C Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Signal #1 : F:\HPCHEM\1\DATA\PE091002\009F0901.D\ADC1B.CH Vial: 9
Signal #2 : F:\HPCHEM\1\DATA\PE091002\009F0901.D\ADC1A.CH
Acq On : 10-Sep-2002, 23:58:09 Operator: JDW
Sample : 75/150 ng/ml 8081A ICAL Pest886B Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33:27 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

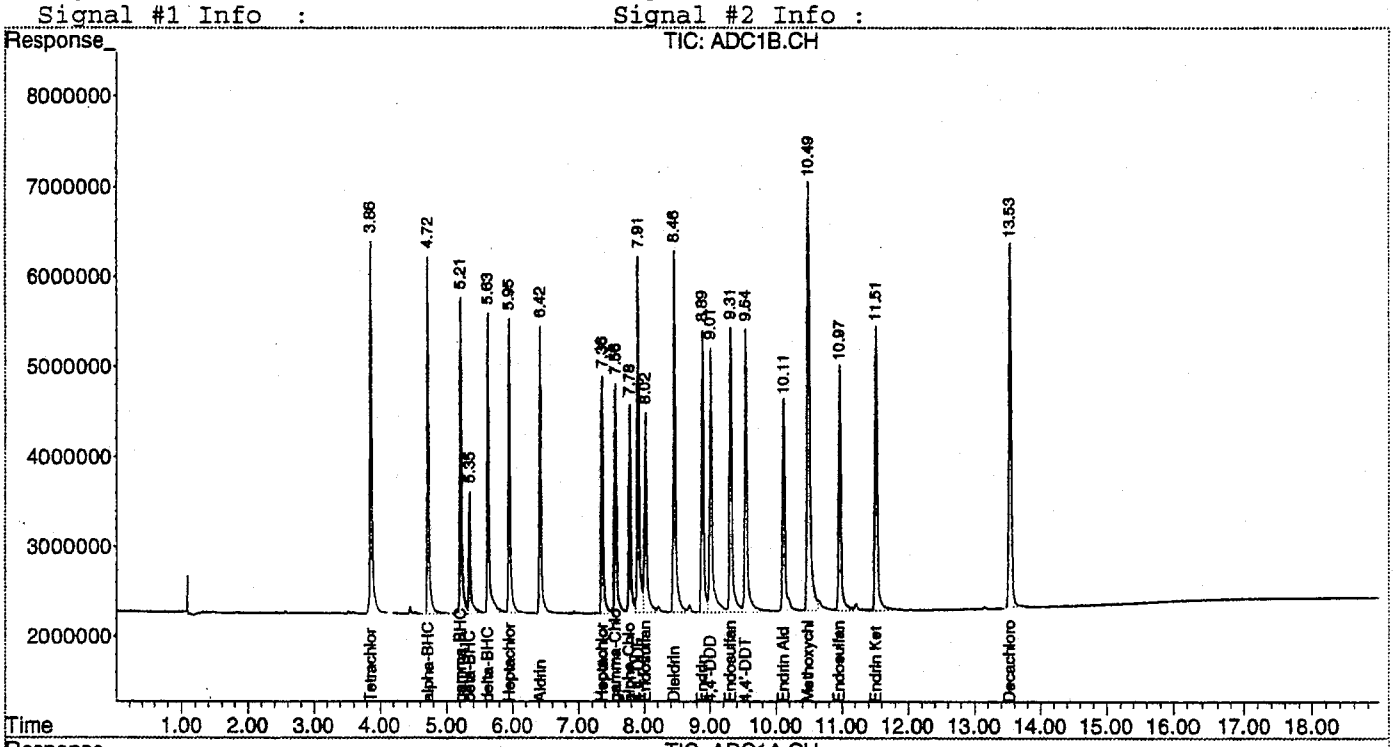
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.84	81493468	206.5E6	149.274	153.246	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					746.37%#	766.23%#	
22)	SR	Decachlorobiphen	13.53	14.44	104.7E6	232.1E6	338.966	333.472	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					1694.83%#	1667.36%#	
		Target Compounds							
2)		alpha-BHC	4.72	4.81	75154761	165.2E6	79.546	81.051	
3)	M	gamma-BHC (Linda	5.21	5.38	65657952	141.0E6	80.577	80.303	
4)	M	Heptachlor	5.95	6.05	62805311	79933455	79.007	78.838	
5)	M	Aldrin	6.42	6.56	63427539	133.1E6	79.454	79.241	
6)		beta-BHC	5.35	5.51	25583455	50092251	85.895	78.022	
7)		delta-BHC	5.63	5.98	65073779	125.8E6	85.159	79.909	
8)		Heptachlor Epoxi	7.36	7.47	53395002	111.4E6	79.716	76.997	
9)		Endosulfan I	8.02	8.14	57187727	107.2E6	80.807	77.068	
10)		gamma-Chlordane	7.56	7.77	55551485	115.2E6	80.315	77.188	
11)		alpha-Chlordane	7.78	8.03	50661612	104.0E6	80.271	75.471	
12)		4,4'-DDE	7.91	8.36	90581893	222.9E6	150.031	157.697	
13)	M	Dieldrin	8.46	8.66	98916141	232.5E6	157.318	163.359	
14)	M	Endrin	8.89	9.24	74027787	160.9E6	164.938	160.388	
15)		Endosulfan II	9.31	9.65	79831580	183.2E6	169.110	168.187	
16)		4,4'-DDD	9.01	9.47f	78706249	164.9E6	166.478	162.195	
17)	M	4,4'-DDT	9.54	10.07	81336418	152.9E6	169.481	206.433	
18)		Endrin Aldehyde	10.11	10.33	57091923	130.9E6	148.390	161.073	
19)		Endosulfan Sulfa	10.97	10.88	71865775	158.6E6	170.327	157.392	
20)		Methoxychlor	10.49	11.48	143.5E6	303.3E6	755.311	1113.866	#
21)		Endrin Ketone	11.52	11.95	82585099	193.7E6	167.947	162.948	

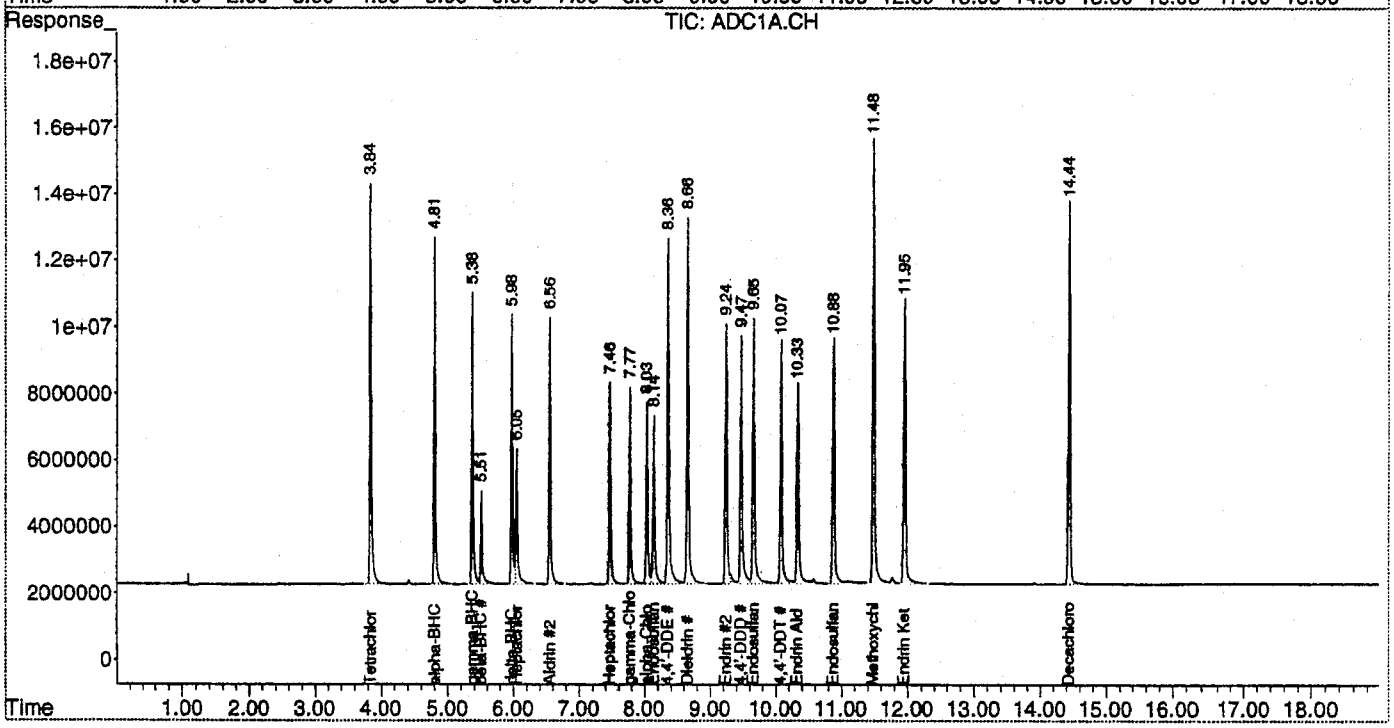
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Signal #1 : F:\HPCHEM\1\DATA\PE091002\009F0901.D\ADC1B.CH Vial: 9
Signal #2 : F:\HPCHEM\1\DATA\PE091002\009F0901.D\ADC1A.CH
Acq On : 10-Sep-2002, 23:58:09 Operator: JDW
Sample : 75/150 ng/ml 8081A ICAL Pest886B Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Response Factor Report HP35900C

Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002

Calibration Files
1 =013F1301.D 2 =012F1201.D 3 =011F1101.D
4 =010F1001.D 5 =009F0901.D 6 =008F0801.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)	SR	Tetrachloro-m-xy	6.615	6.581	6.406	6.679	6.807	6.798	6.648	E5	2.26
2)		Hexachloroethane	1.630	1.679	1.626	1.503	1.439	1.366	1.540	E6	8.03
3)		Hexachlorobenzen	1.267	1.195	1.045	0.957	0.892	0.856	1.035	E6	16.05
4)		Hexachlorobutadi	2.453	2.457	2.186	2.011	1.885	1.730	2.120	E6	14.12
5)		Oxychlordane	8.133	7.469	7.061	6.561	6.200	6.020	6.907	E5	11.67
6)		cis-Nonachlor	8.887	8.916	8.203	7.917	7.473	7.178	8.096	E5	8.86
7)		trans-Nonachlor	8.576	8.276	7.465	7.411	7.000	6.839	7.594	E5	9.13
8)		2,4'-DDE	5.287	4.898	5.039	4.664	4.615	4.490	4.832	E5	6.18
9)		2,4'-DDD	3.878	4.084	4.373	4.108	3.911	3.767	4.020	E5	5.36
10)		2,4'-DDT	4.799	5.006	4.857	4.577	4.371	4.206	4.636	E5	6.62
11)	SR	Decachlorobiphen	4.478	4.563	4.380	4.569	4.553	4.554	4.516	E5	1.65

Signal #2 Calibration Files
1 =013F1301.D 2 =012F1201.D 3 =011F1101.D
4 =010F1001.D 5 =009F0901.D 6 =008F0801.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)	SR	Tetrachloro-m-xy	1.300	1.300	1.260	1.309	1.324	1.323	1.303	E6	1.81
2)		Hexachloroethane	2.458	2.598	2.726	2.768	2.937	3.015	2.751	E6	7.53
3)		Hexachlorobenzen	1.295	1.502	1.413	1.391	1.423	1.469	1.416	E6	5.06
4)		Hexachlorobutadi	4.370	3.749	3.818	4.036	4.191	4.275	4.073	E6	6.15
5)		Oxychlordane	1.230	1.207	1.212	1.189	1.210	1.257	1.218	E6	1.92
6)		cis-Nonachlor	1.466	1.498	1.505	1.502	1.565	1.631	1.528	E6	3.92
7)		trans-Nonachlor	1.326	1.332	1.354	1.366	1.395	1.463	1.373	E6	3.71
8)		2,4'-DDE	8.376	8.352	8.757	8.511	8.476	8.664	8.523	E5	1.88
9)		2,4'-DDD	7.082	6.812	7.521	7.531	7.488	7.544	7.330	E5	4.22
10)		2,4'-DDT	6.622	6.965	6.898	6.843	6.831	6.944	6.850	E5	1.81
11)	SR	Decachlorobiphen	7.697	7.562	7.398	7.599	7.664	7.670	7.598	E5	1.45

(#) = Out of Range

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\013F1301.D\ADC1B.CH Vial: 13
Signal #2 : F:\HPCHEM\1\DATA\PE091102\013F1301.D\ADC1A.CH
Acq On : 12-Sep-2002, 01:36:38 Operator: JDW
Sample : 1.0 ng/ml 8081A Plus Pest902F Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:02:54 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:00:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	SR Tetrachloro-m-xy	3.86	3.84	13229614	26002163	19.890	19.960
	Spiked Amount 20.000 Range 60 - 150 Recovery =					99.45%	99.80%
1)	SR Decachlorobiphen	13.54	14.44	8956605	15394531	19.856	20.261
	Spiked Amount 20.000 Range 60 - 150 Recovery =					99.28%	101.31%
	Target Compounds						
2)	Hexachloroethane	1.53	1.47	1629844	2458011	0.977	0.892
3)	Hexachlorobenzen	4.46	4.57	1267338	1294734	1.155	0.915
4)	Hexachlorobutadi	1.82	1.72	2453338	4369564	1.102	1.065
5)	Oxychlordane	7.19	7.31	813295	1229527	1.166	1.010
6)	cis-Nonachlor	8.95	9.39	888672	1466336	1.098	0.960
7)	trans-Nonachlor	7.75	7.93	857554	1325568	1.129	0.966
8)	2,4'-DDE	7.34	7.79	528685	837567	1.072	0.983
9)	2,4'-DDD	8.22	8.74	387780	708240	0.965	0.966
10)	2,4'-DDT	8.69	9.32	479904	662156	1.035	0.967

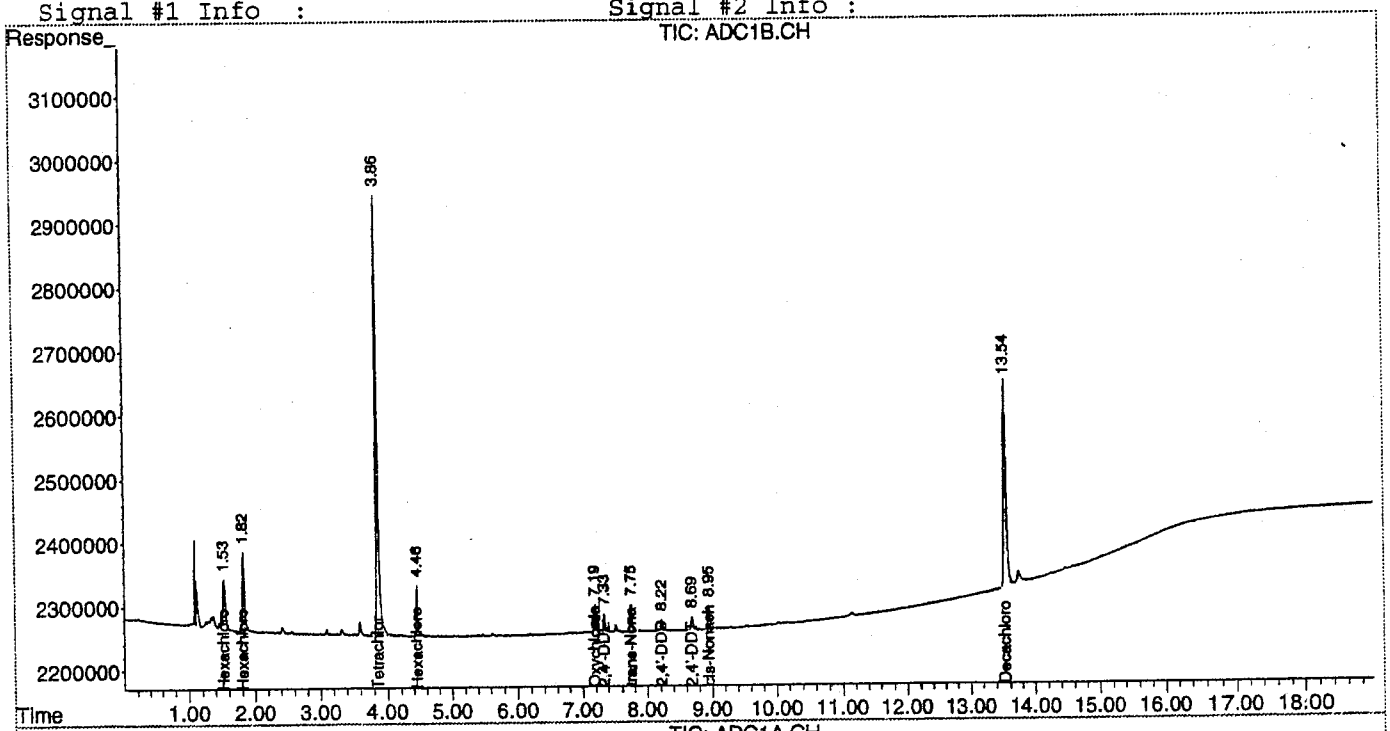
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
013F1301.D +CPDS_910.M Thu Sep 12 10:23:49 2002

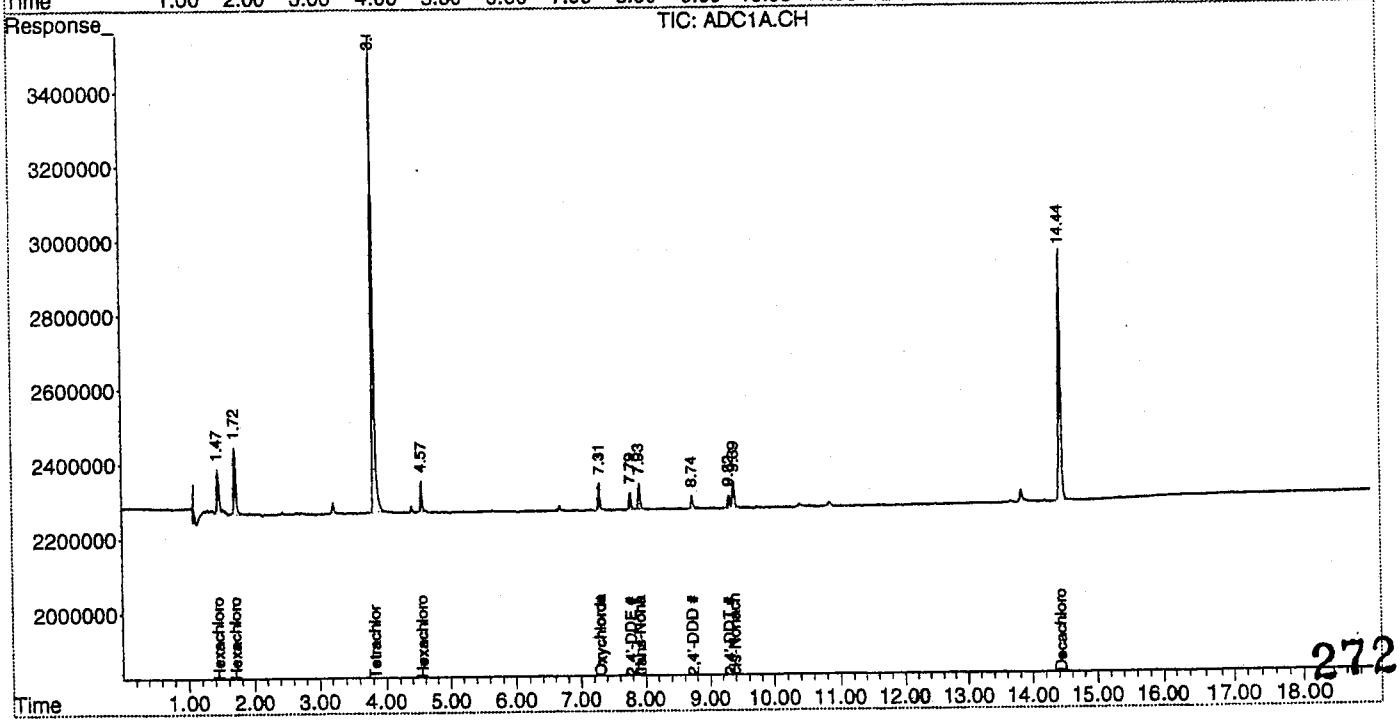
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\013F1301.D\ADC1B.CH Vial: 13
Signal #2 : F:\HPCHEM\1\DATA\PE091102\013F1301.D\ADC1A.CH
Acq On : 12-Sep-2002, 01:36:38 Operator: JDW
Sample : 1.0 ng/ml 8081A Plus Pest902F Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:02 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:00:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\012F1201.D\ADC1B.CH Vial: 12
Signal #2 : F:\HPCHEM\1\DATA\PE091102\012F1201.D\ADC1A.CH
Acq On : 12-Sep-2002, 01:14:31 Operator: JDW
Sample : 2.0 ng/ml 8081A Plus Pest902E Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:02:20 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:00:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	SR Tetrachloro-m-xy	3.86	3.84	13162791	25992458	19.789	19.953
	Spiked Amount 20.000 Range 60 - 150 Recovery =					98.95%	99.76%
11)	SR Decachlorobiphen	13.53	14.44	9126070	15123340	20.231	19.904
	Spiked Amount 20.000 Range 60 - 150 Recovery =					101.16%	99.52%
	Target Compounds						
2)	Hexachloroethane	1.53	1.47	3357281	5196294	2.013	1.886
3)	Hexachlorobenzen	4.46	4.57	2389147	3003977	2.177	2.122
4)	Hexachlorobutadi	1.82	1.72	4913644	7497624	2.207	1.828
5)	Oxychlordane	7.19	7.31	1493705	2414447	2.141	1.983
6)	cis-Nonachlor	8.95	9.39	1783196	2996820	2.203	1.961
7)	trans-Nonachlor	7.75	7.93	1655137	2663317	2.179	1.940
8)	2,4'-DDE	7.33	7.79	979533	1670452	1.987	1.960
9)	2,4'-DDD	8.22	8.74	816897	1362381	2.032	1.859
10)	2,4'-DDT	8.69	9.32	1001255	1392967	2.160	2.033

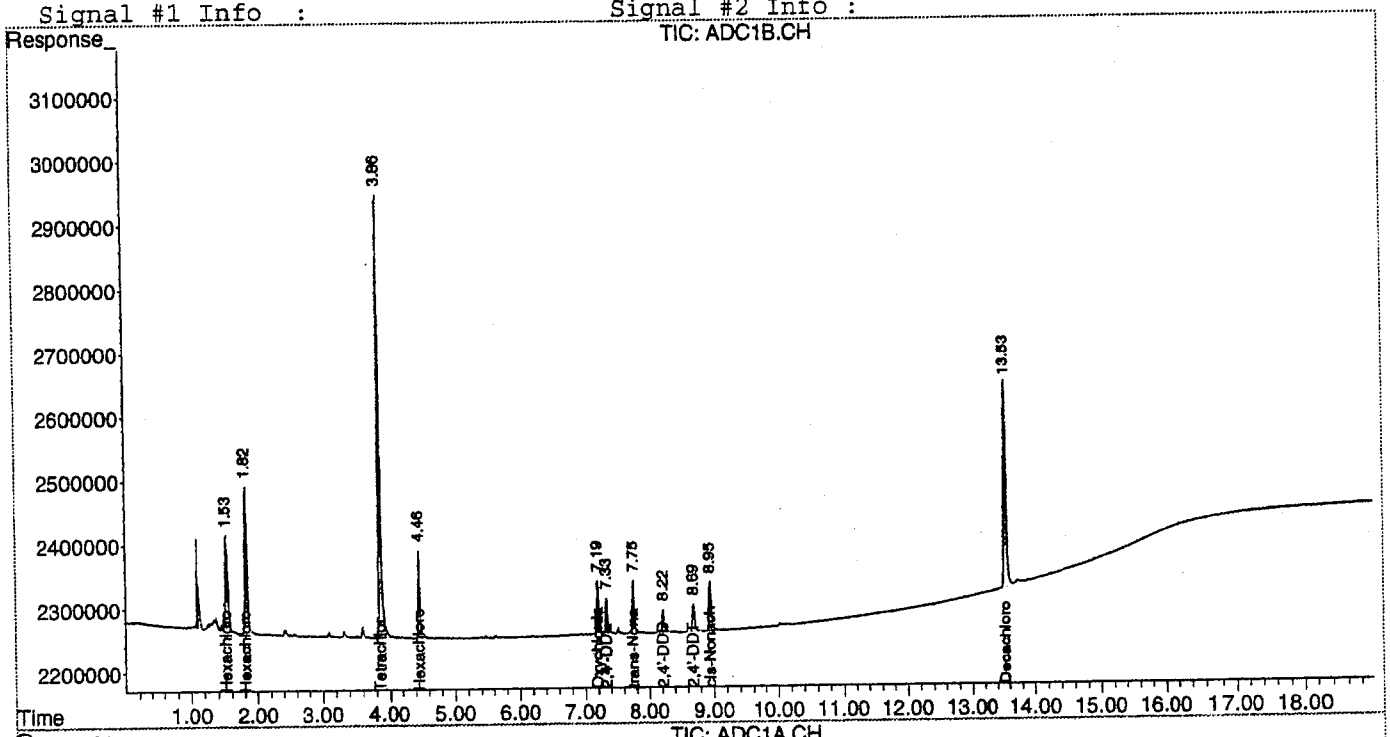
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
012F1201.D +CPDS_910.M Thu Sep 12 10:23:46 2002

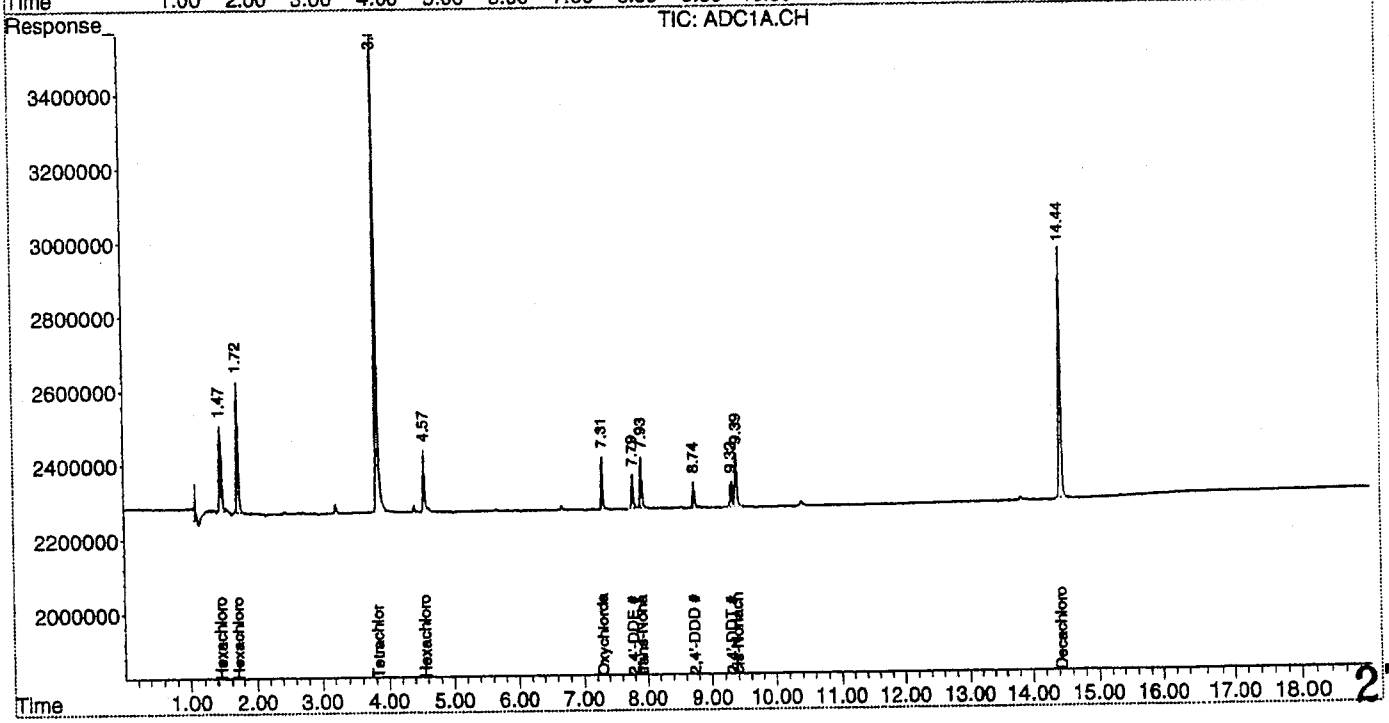
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\012F1201.D\ADC1B.CH Vial: 12
Signal #2 : F:\HPCHEM\1\DATA\PE091102\012F1201.D\ADC1A.CH
Acq On : 12-Sep-2002, 01:14:31 Operator: JDW
Sample : 2.0 ng/ml 8081A Plus Pest902E Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:02 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:00:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\011F1101.D\ADC1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\PE091102\011F1101.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:52:23 Operator: JDW
Sample : 10 ng/ml 8081A Plus Pest902D Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 09:49:14 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.87	3.84	12812709	25195401	25.000	18.635	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					125.00%	93.18%	
1)	SR	Decachlorobiphen	13.54	14.45	8760414	14795004	30.113	21.332	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					150.57%#	106.66%	
		Target Compounds							
2)		Hexachloroethane	1.53	1.47	16262121	27263017	18.825	13.421	
3)	M	Hexachlorobenzen	4.46	4.58	10454687	14125772	14.119	8.060	#
4)	M	Hexachlorobutadi	1.82	1.72	21856286	38183259	30.012	36.279	
5)	M	Oxychlordane	7.20	7.32	7061408	12123673	9.653	7.255	
6)		cis-Nonachlor	8.96	9.40	8202571	15047065	30.484	23.424	
7)		trans-Nonachlor	7.75	7.94	7464691	13543577	10.565	8.608	
8)		2,4'-DDE	7.34	7.80	5038576	8756980	8.939	6.176	
9)		2,4'-DDD	8.23	8.75	4372852	7520767	9.896	7.368	
10)	M	2,4'-DDT	8.70	9.33	4857362	6897805	10.935	9.922	

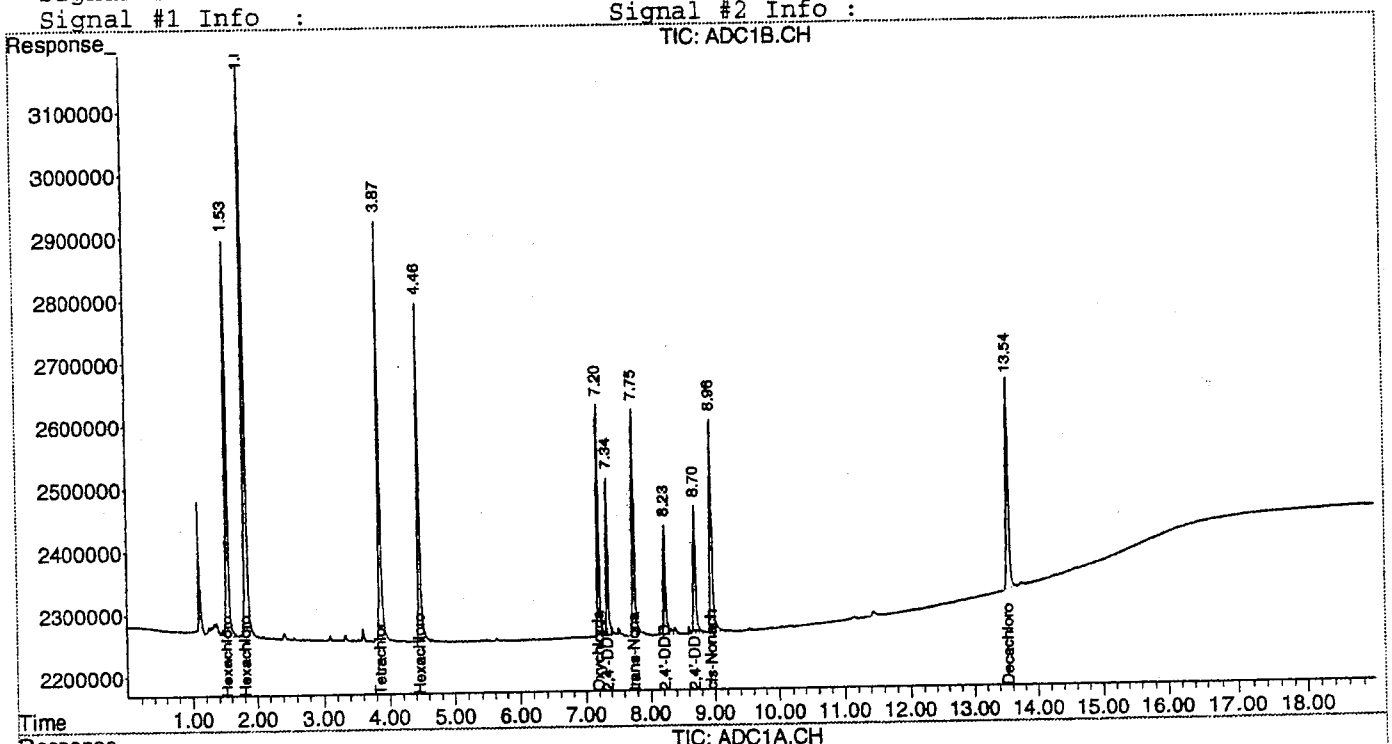
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
011F1101.D +CPDS_910.M Thu Sep 12 10:23:43 2002

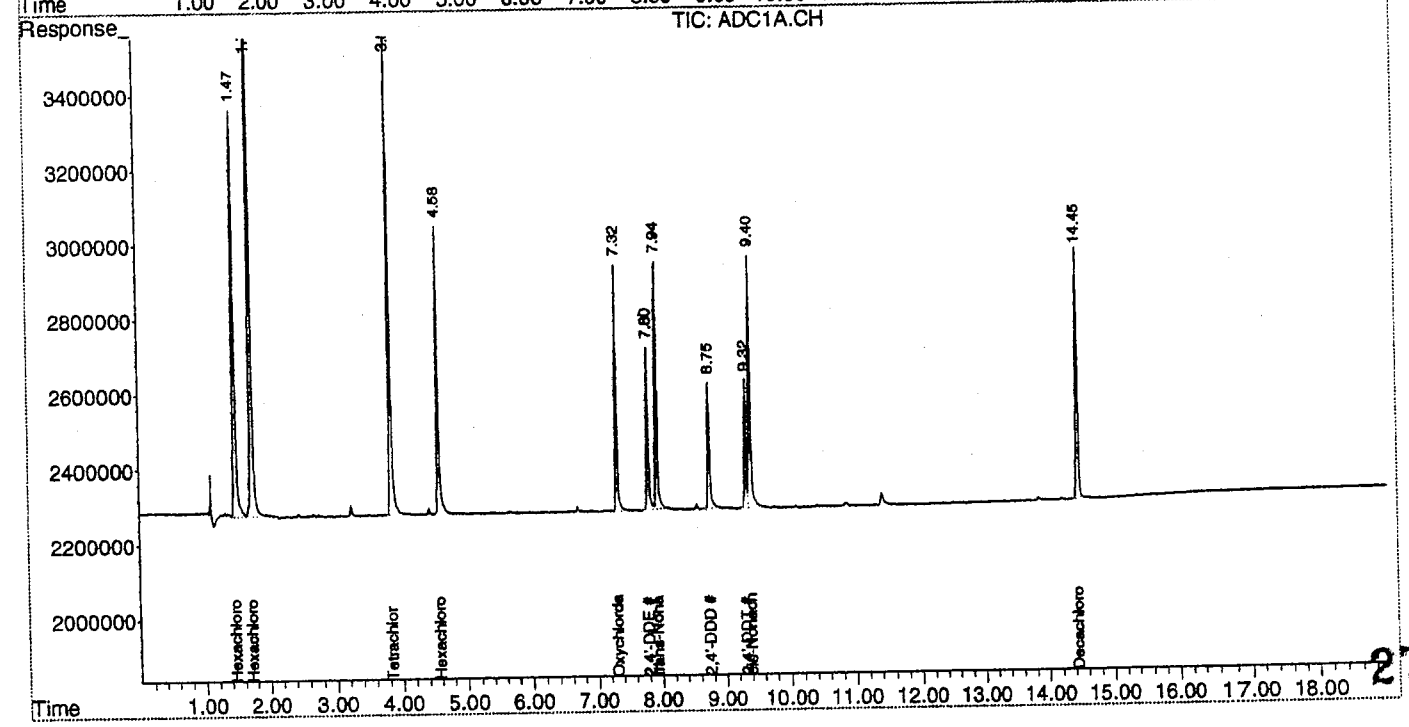
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\011F1101.D\ADC1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\PE091102\011F1101.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:52:23 Operator: JDW
Sample : 10 ng/ml 8081A Plus Pest902D Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 9:49 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\010F1001.D\ADC1B.CH Vial: 10
Signal #2 : F:\HPCHEM\1\DATA\PE091102\010F1001.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:30:29 Operator: JDW
Sample : 25 ng/ml 8081A Plus Pest902C Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 09:49:05 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) SR Tetrachloro-m-xy	3.87	3.84	13357338	26183722	26.062	19.366
Spiked Amount 20.000 Range 60 - 150 Recovery =					130.31%	96.83%
1) SR Decachlorobiphen	13.55	14.45	9137174	15198026	31.408	21.913
Spiked Amount 20.000 Range 60 - 150 Recovery =					157.04%#	109.57%
Target Compounds						
2) Hexachloroethane	1.53	1.47	37575422	69204682	43.496	34.068
3) M Hexachlorobenzen	4.47	4.58	23935294	34777819	32.324	19.843
4) M Hexachlorobutadi	1.82	1.73	50267287	100.9E6	69.025	95.877
5) M Oxychlordane	7.21	7.32	16402191	29728152	22.421	17.789
6) cis-Nonachlor	8.96	9.40	19792906	37552667	73.558	58.460
7) trans-Nonachlor	7.76	7.94	18528181	34161954	26.223	21.714
8) 2,4'-DDE	7.35	7.80	11659791	21277495	20.685	15.005
9) 2,4'-DDD	8.23	8.75	10269003	18828633	23.238	18.446
10) M 2,4'-DDT	8.70	9.33	11443155	17106451	25.762	24.607

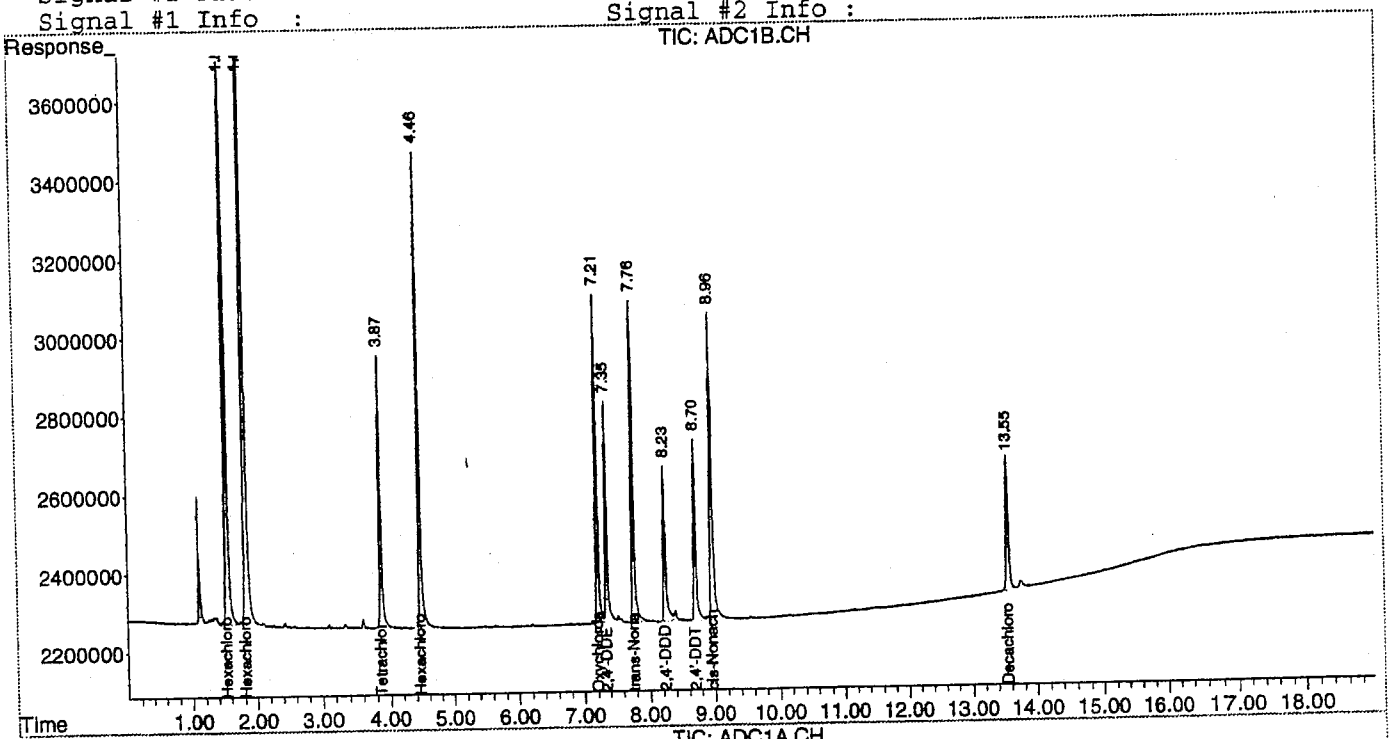
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
010F1001.D +CPDS_910.M Thu Sep 12 10:23:41 2002

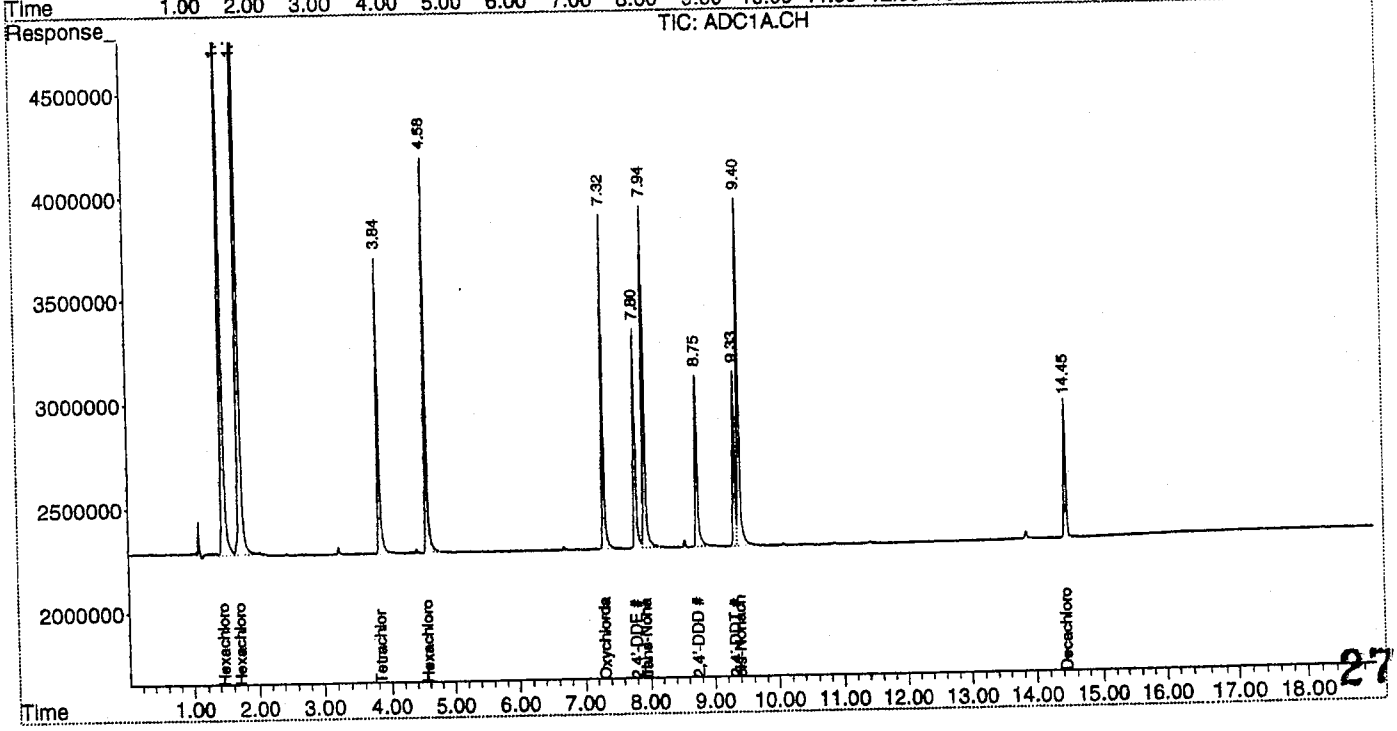
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\010F1001.D\ADC1B.CH Vial: 10
Signal #2 : F:\HPCHEM\1\DATA\PE091102\010F1001.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:30:29 Operator: JDW
Sample : 25 ng/ml 8081A Plus Pest902C Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 9:49 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\009F0901.D\ADC1B.CH Vial: 9
Signal #2 : F:\HPCHEM\1\DATA\PE091102\009F0901.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:08:33 Operator: JDW
Sample : 50 ng/ml 8081A Plus Pest902B Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 09:48:46 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.87	3.84	13613432	26488474	26.562	19.591	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	132.81%	97.95%	
11)	SR	Decachlorobiphen	13.55	14.45	9106601	15327549	31.302	22.100	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	156.51%#	110.50%	
		Target Compounds							
2)		Hexachloroethane	1.53	1.47	71933279	146.9E6	83.268	72.298	
3)	M	Hexachlorobenzen	4.46	4.58	44614383	71163876	60.250	40.604	
4)	M	Hexachlorobutadi	1.82	1.73	94265872	209.5E6	129.441	199.089	#
5)	M	Oxychlordane	7.20	7.32	31001808	60494354	42.379	36.200	
6)		cis-Nonachlor	8.96	9.40	37364322	78253207	138.860	121.820	
7)		trans-Nonachlor	7.76	7.94	34998528	69749250	49.534	44.333	
8)		2,4'-DDE	7.34	7.80	23076334	42381949	40.938	29.889	
9)		2,4'-DDD	8.23	8.75	19556628	37439665	44.256	36.679	
10)	M	2,4'-DDT	8.70	9.33	21857154	34156025	49.207	49.132	

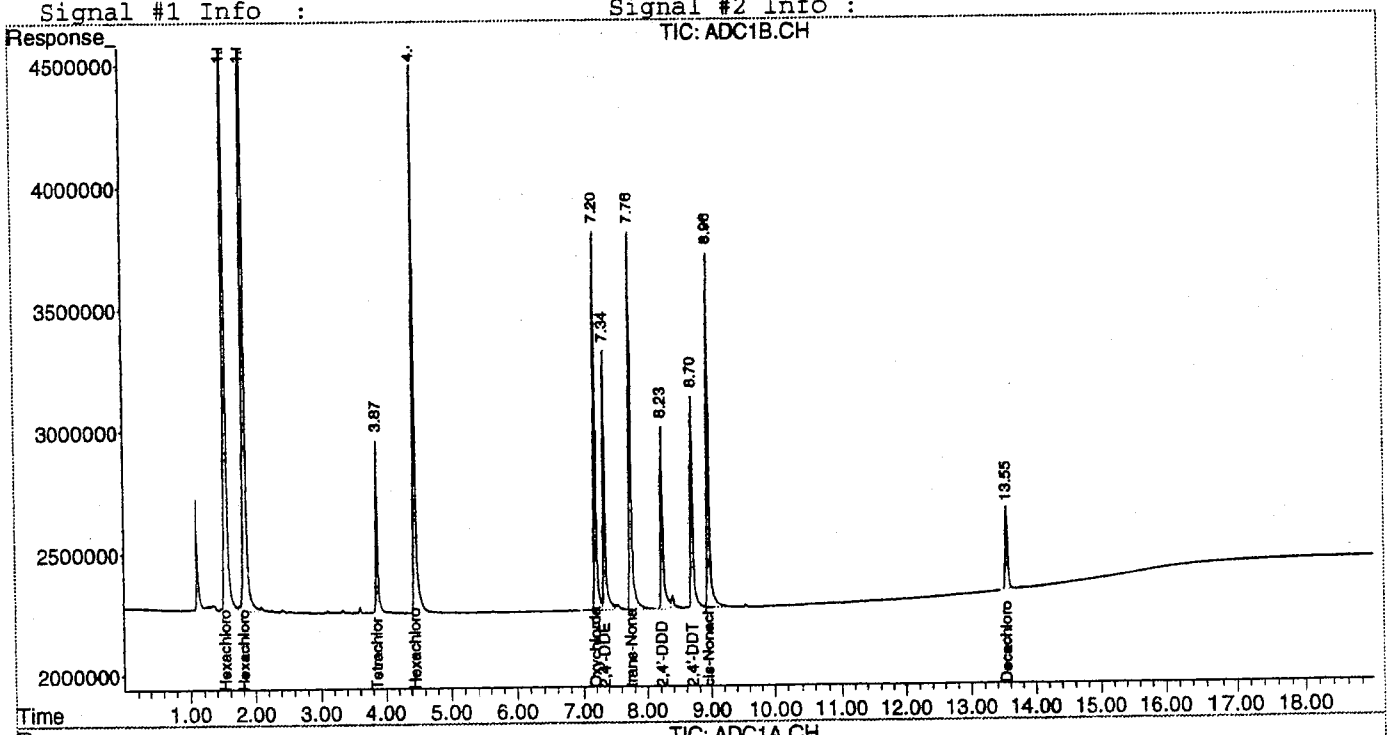
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
009F0901.D +CPDS_910.M Thu Sep 12 10:23:38 2002

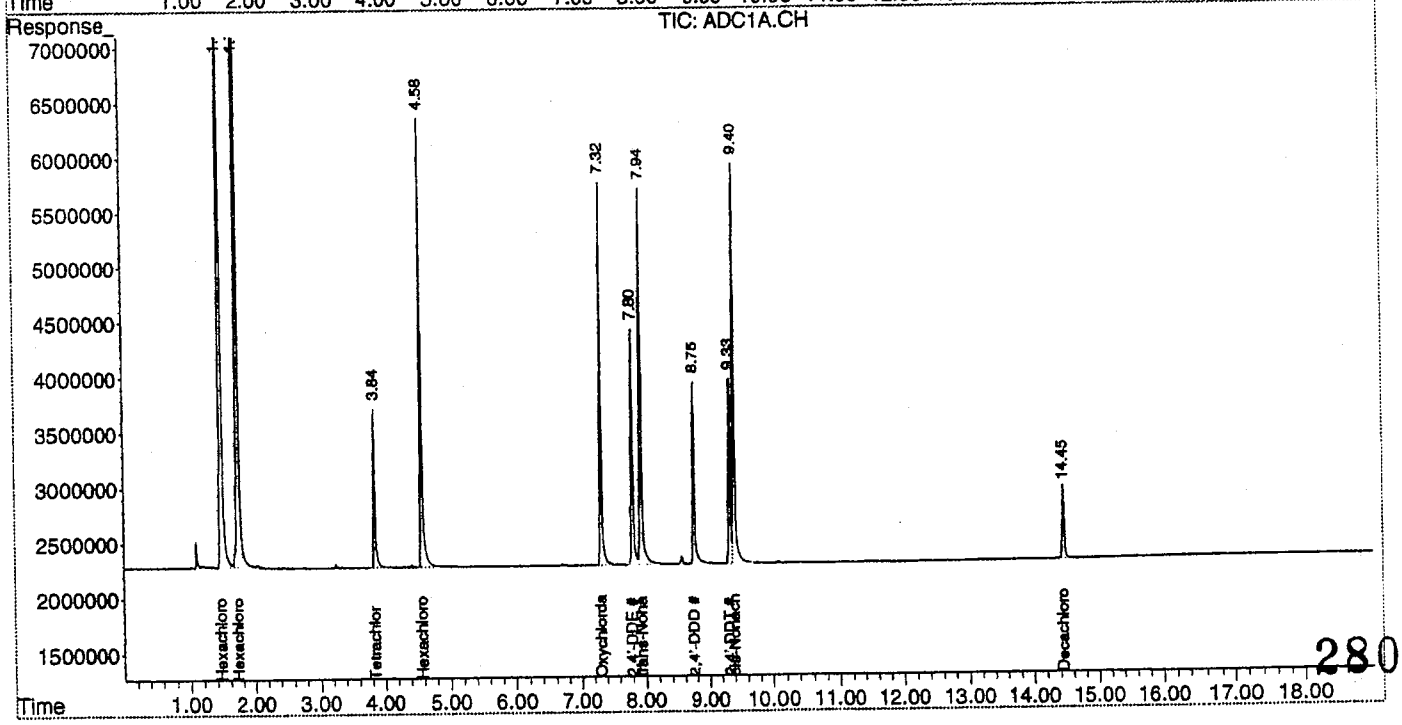
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\009F0901.D\ADC1B.CH Vial: 9
Signal #2 : F:\HPCHEM\1\DATA\PE091102\009F0901.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:08:33 Operator: JDW
Sample : 50 ng/ml 8081A Plus Pest902B Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 9:48 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\008F0801.D\ADC1B.CH Vial: 8
Signal #2 : F:\HPCHEM\1\DATA\PE091102\008F0801.D\ADC1A.CH
Acq On : 11-Sep-2002, 23:46:30 Operator: JDW
Sample : 75 ng/ml 8081A Plus Pest902A Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 09:48:36 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.87	3.84	13595189	26461211	26.526	19.571	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	132.63%	97.86%	
1)	SR	Decachlorobiphen	13.54	14.44	9107525	15339014	31.306	22.116	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	156.53%#	110.58%	
		Target Compounds							
2)		Hexachloroethane	1.53	1.47	102.5E6	226.2E6	118.622	111.334	
3)	M	Hexachlorobenzen	4.46	4.57	64173186	110.2E6	86.663	62.880	
4)	M	Hexachlorobutadi	1.82	1.73	129.7E6	320.6E6	178.137	304.612	#
5)	M	Oxychlordane	7.20	7.32	45152340	94308339	61.722	56.434	
6)		cis-Nonachlor	8.96	9.40	53836919	122.3E6	200.078	190.454	
7)		trans-Nonachlor	7.75	7.94	51292966	109.7E6	72.595	69.754	
8)		2,4'-DDE	7.34	7.80	33677299	64980969	59.744	45.826	
9)		2,4'-DDD	8.23	8.75	28256105	56577502	63.943	55.428	
0)	M	2,4'-DDT	8.70	9.32	31544930	52077481	71.017	74.911	

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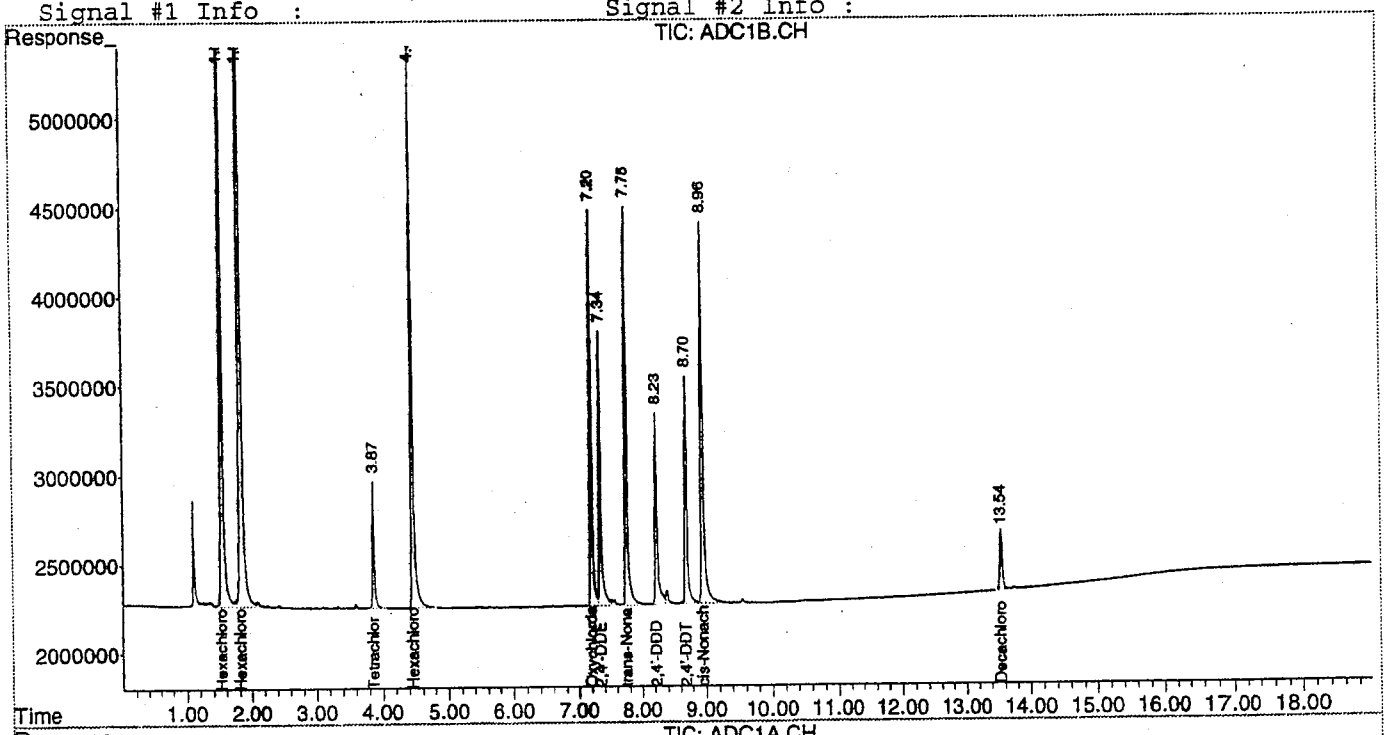
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

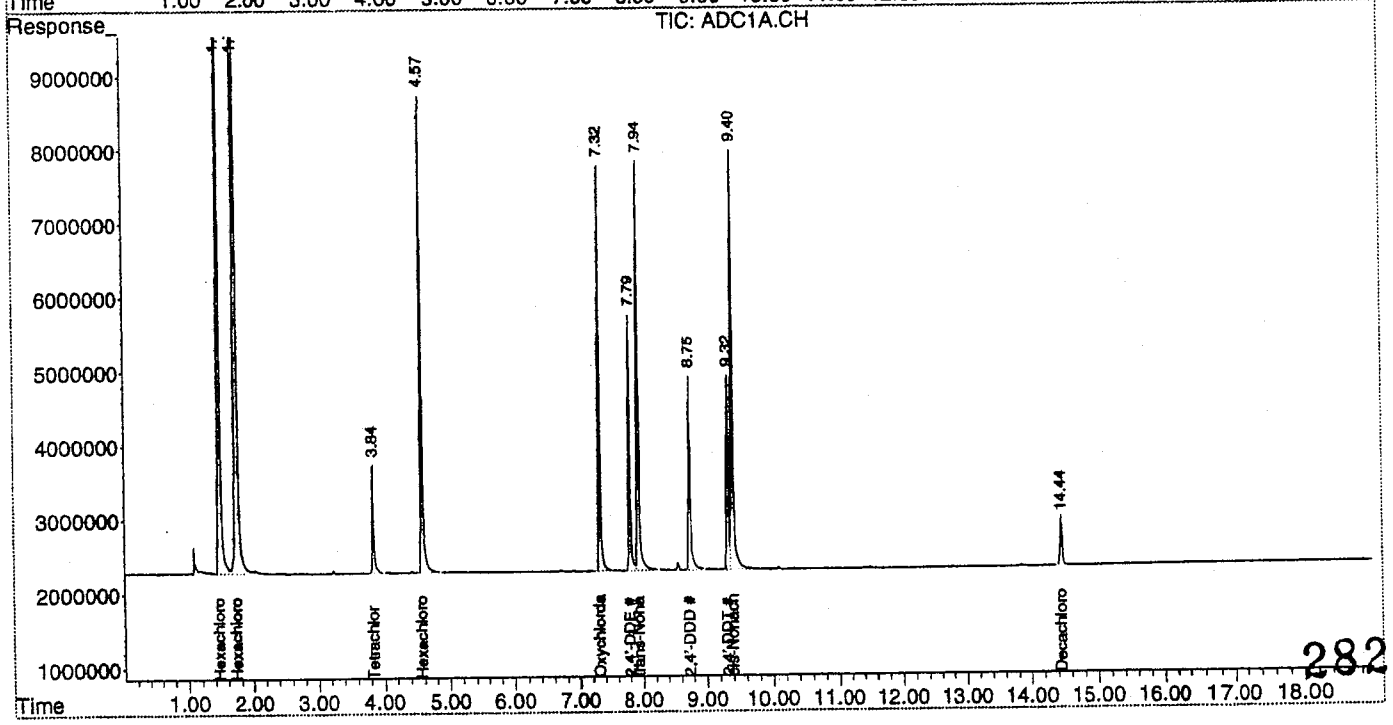
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\008F0801.D\ADC1B.CH Vial: 8
Signal #2 : F:\HPCHEM\1\DATA\PE091102\008F0801.D\ADC1A.CH
Acq On : 11-Sep-2002, 23:46:30 Operator: JDW
Sample : 75 ng/ml 8081A Plus Pest902A Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 9:48 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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CONTINUING CALIBRATION

Sequence Log

Directory : f:\HPCHEM\1\DATA\PE091102

#	Filename	Sample Name		Date/Time
1	008f0801.d	75 ng/ml 8081A Plus Pest902A		09/11/02 23:46
2	009f0901.d	50 ng/ml 8081A Plus Pest902B	QuantFile: P	09/12/02 00:08
3	010f1001.d	25 ng/ml 8081A Plus Pest902C	QuantFile: P	09/12/02 00:30
4	011f1101.d	10 ng/ml 8081A Plus Pest902D	QuantFile: P	09/12/02 00:52
5	012f1201.d	2.0 ng/ml 8081A Plus Pest902E	QuantFile: P	09/12/02 01:14
6	013f1301.d	1.0 ng/ml 8081A Plus Pest902F	QuantFile: P	09/12/02 01:36
7	014f1401.d	Hexane blank	QuantFile: P	09/12/02 01:58
8	015f1501.d	Eval Pest889		09/12/02 02:20
9	016f1601.d	10/20 ng/ml 80810A CCV Pest888		09/12/02 02:42
10	017f1701.d	15 ng/ml 8081A Plus CCV Pest903		09/12/02 03:04
11	018f1801.d	mb pe1511		09/12/02 03:26
12	019f1901.d	bs pe1511		09/12/02 03:48
13	020f2001.d	bsd pe1511		09/12/02 04:10
14	021f2101.d	108160-1 1:2	QuantFile: 8	09/12/02 04:32
15	022f2201.d	108160-2 1:2	QuantFile: P	09/12/02 04:54
16	023f2301.d	108160-3 1:2	QuantFile: +	09/12/02 05:16
17	024f2401.d	108160-4 1:2	QuantFile: P	09/12/02 05:38
18	025f2501.d	108164-1 1:2	QuantFile: P	09/12/02 06:00
19	026f2601.d	108164-2 1:2	QuantFile: P	09/12/02 06:22
20	027f2701.d	108164-3 1:2	QuantFile: +	09/12/02 06:44
21	028f2801.d	108164-3 ms 1:2		09/12/02 07:06
22	029f2901.d	108164-3 msd 1:2		09/12/02 07:28
23	030f3001.d	Hexane blank		09/12/02 07:50
24	031f3101.d	Eval Pest889		09/12/02 08:12
25	032f3201.d	10/20 ng/ml 8081A CCV Pest888		09/12/02 08:34
26	033f3301.d	15 ng/ml 8081A Plus CCV Pest903		09/12/02 08:56
27	034f3401.d	108166-1		09/12/02 09:18
28	035f3501.d	108166-2		09/12/02 09:40
29	036f3601.d	108166-3		09/12/02 10:02
30	037f3701.d	108177-1		09/12/02 10:24
31	038f3801.d	108177-2		09/12/02 10:46
32	039f3901.d	108177-3 1:2	QuantFile: P	09/12/02 11:08
33	040f4001.d	108177-4 1:2		09/12/02 11:30
34	041f4101.d	108177-5 1:2	QuantFile: P	09/12/02 11:52
35	042f4201.d	108177-6 1:2		09/12/02 12:14
36	043f4301.d	108177-8 1:2		09/12/02 12:36
37	044f4401.d	108177-9 1:2	QuantFile: 8	09/12/02 12:58
38	045f4501.d	108177-10 1:2		09/12/02 13:20
39	046f4601.d	108177-11 1:2	QuantFile: 8	09/12/02 13:42
40	047f4701.d	108164-3 msd 1:2	QuantFile: P	09/12/02 14:04
41	048f4801.d	Hexane blank		09/12/02 14:26
42	049f4901.d	Eval Pest889		09/12/02 14:49
43	050f5001.d	10/20 ng/ml 8081A CCV Pest888		09/12/02 15:10
44	051f5101.d	15 ng/ml 8081A Plus Pest903		09/12/02 15:32
45	052f5201.d	100 ng/ml 1242/1260 561-102-5		09/12/02 15:54

Custom Report - DDT/Endrin Breakdown Evaluation

Sample Name Eval Pest889

Data File Name F:\HPCHEM\1\DATA\PE091102\015F1501.D
Date Acquired 12-Sep-2002, 02:20:40

Compound Name	RT #1	RT #2	Resp. #1	Resp. #2	Amt. #1	Amt. #2	% Breakdown Column #1	% Breakdown Column #2
Endrin	8.89	9.24	24593363	46719088	42.52	43.62	**13.97%**	**13.34%**
Endrin Aldehyde	10.11	10.33	1643730	2635544	6.91	6.29		
Endrin Ketone	11.51	11.95	2350407	4558785	6.17	5.55		
4,4'-DDT	9.54	10.07	50366261	88456539	81.74	93.95	**5.66%**	**4.59%**
4,4'-DDD	9.02	9.47	2749678	4254444	4.57	4.04		
4,4'-DDE	7.91	0.00	272969	0	0.38	0.00		

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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\015F1501.D\ADC1B.CH Vial: 15
Signal #2 : F:\HPCHEM\1\DATA\PE091102\015F1501.D\ADC1A.CH
Acq On : 12-Sep-2002, 02:20:40 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:50:22 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.83	12948690	25161596	19.821	18.466	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					99.11%	92.33%	
22)	SR	Decachlorobiphen	13.53	14.44	9596338	16300358	23.026	21.175	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					115.13%	105.88%	
		Target Compounds							
2)		alpha-BHC	4.72	4.80	11818744	19806748	10.032	9.511	
3)	M	gamma-BHC (Linda	5.21	5.37	10224665	17529774	9.998	9.690	
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.	
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.	
6)		beta-BHC	5.35	5.51	3687237	6721104	9.740	10.314	
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.	
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.	
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
10)		gamma-Chlordane	7.51f	0.00	124052	0	0.143	N.D.	#
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
12)		4,4'-DDE	7.91	0.00	272969	0	0.375	N.D.	#
13)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.	
14)	M	Endrin	8.89	9.24	24593363	46719088	42.522	43.624	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	9.02	9.47	2749678	4254444	4.573	4.044	
17)	M	4,4'-DDT	9.54	10.07	50366261	88456539	81.745	93.946	
18)		Endrin Aldehyde	10.12	10.33	1643730	2635544	3.545	3.007	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	10.49	11.48	51935865	87265318	211.631	219.508	
21)		Endrin Ketone	11.51	11.95	2350407	4558785	3.609	3.529	

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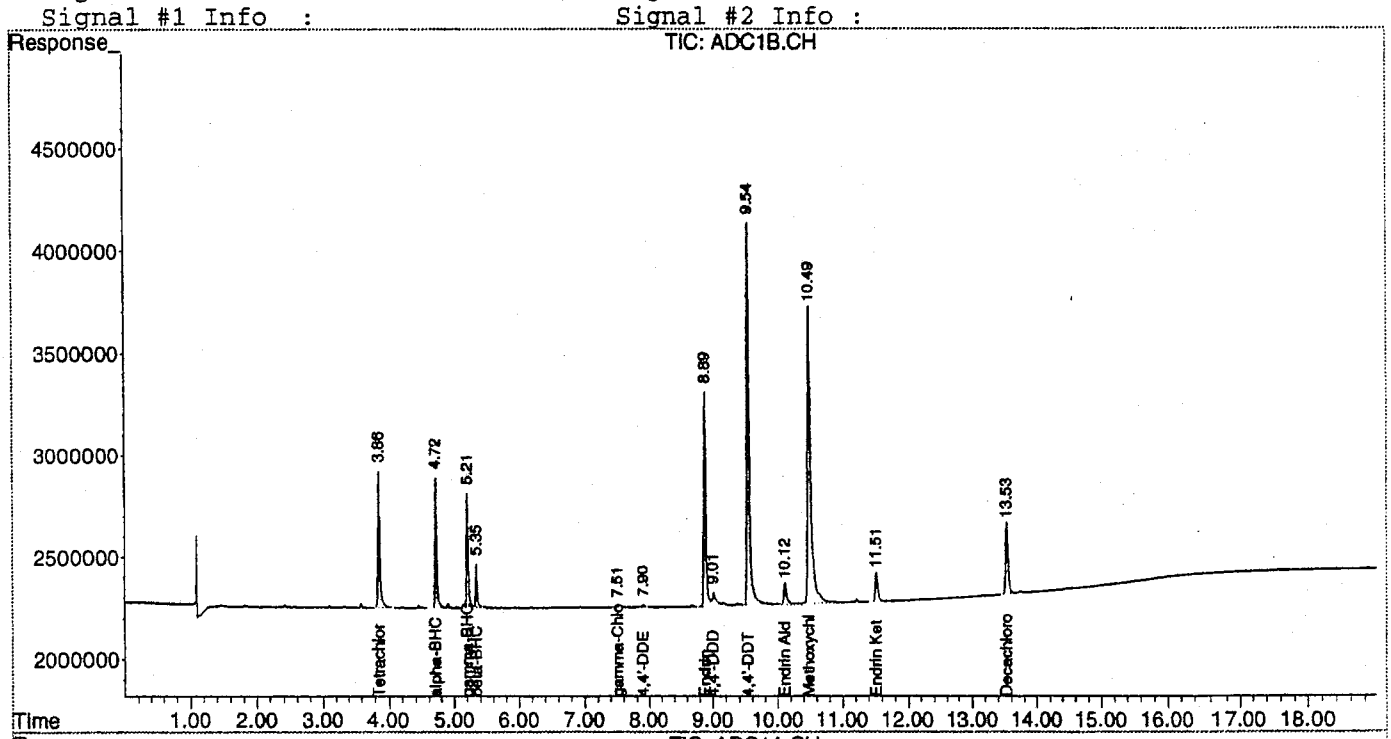
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

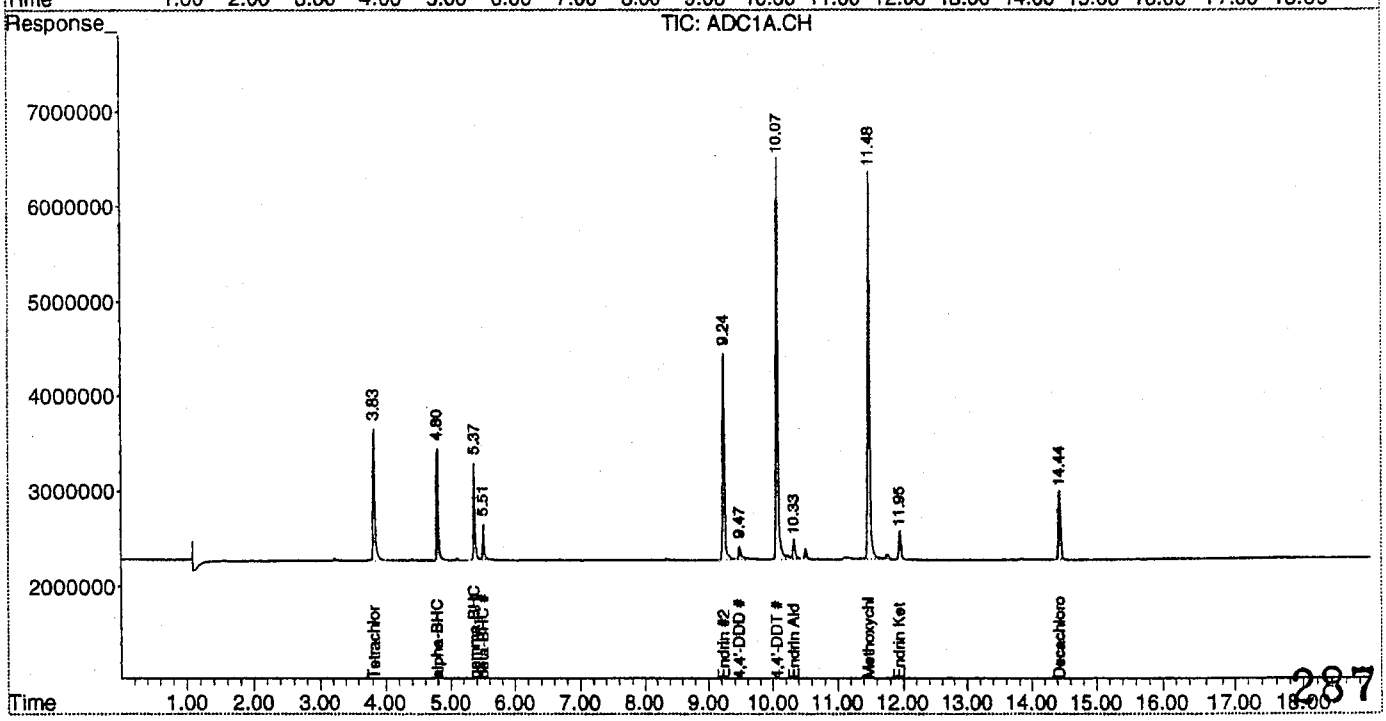
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\015F1501.D\ADC1B.CH Vial: 15
Signal #2 : F:\HPCHEM\1\DATA\PE091102\015F1501.D\ADC1A.CH
Acq On : 12-Sep-2002, 02:20:40 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:50 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\016F1601.D\ADC1B.CH Vial: 16
Signal #2 : F:\HPCHEM\1\DATA\PE091102\016F1601.D\ADC1A.CH
Acq On : 12-Sep-2002, 02:42:42 Operator: JDW
Sample : 10/20 ng/ml 80810A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:45:59 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.86	3.84	13891721	27159130	21.265	19.932
Spiked Amount		20.000 Range	60 - 150		Recovery	=	106.33%	99.66%
22)	SR	Decachlorobiphen	13.53	14.44	18885484	32515580	45.316	42.240
Spiked Amount		20.000 Range	60 - 150		Recovery	=	226.58%#	211.20%#
		Target Compounds						
2)		alpha-BHC	4.72	4.81	12571342	21162046	10.671	10.162
3)	M	gamma-BHC (Linda	5.21	5.38	11260070	18874797	11.010	10.433
4)	M	Heptachlor	5.95	6.06	10445233	7677423	10.680	8.747
5)	M	Aldrin	6.42	6.56	10673320	17750538	10.790	10.351
6)		beta-BHC	5.35	5.52	3951415	7257510	10.437	11.137
7)		delta-BHC	5.63	5.98	10703494	17077378	10.815	10.577
8)		Heptachlor Epoxi	7.36	7.47	9279572	15836620	11.152	10.861
9)		Endosulfan I	8.02	8.14	9398700	15071147	10.443	10.737
10)		gamma-Chlordane	7.56	7.78	9901757	16615357	11.424	11.034
11)		alpha-Chlordane	7.78	8.04	8557275	14831191	10.858	10.662
12)		4,4'-DDE	7.91	8.36	16125278	30572992	22.175	21.416
13)	M	Dieldrin	8.46	8.66	17177676	30915699	21.710	20.886
14)	M	Endrin	8.89	9.24	11309801	19627249	19.555	18.327
15)		Endosulfan II	9.31	9.66	14238090	24862448	22.934	21.445
16)		4,4'-DDD	9.01	9.47	13264390	23724157	22.061	22.552
17)	M	4,4'-DDT	9.54	10.08	12288530	18279262	19.944	19.414
18)		Endrin Aldehyde	10.11	10.33	10534852	19317864	22.719	22.043
19)		Endosulfan Sulfa	10.96	10.88	12455656	23461618	22.609	22.139
20)		Methoxychlor	10.49	11.48	25293593	37619159	103.068	94.628
21)		Endrin Ketone	11.51	11.95	14807519	28520416	22.739	22.078

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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 80810A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 016F1601.D
Date Acquired 12-Sep-2002, 02:42:42

Column #1

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation
Tetrachloro-m-xylene (S)	20	21.26	6.3
alpha-BHC	10	10.67	6.7
gamma-BHC (Lindane)	10	11.01	10.1
Heptachlor	10	10.68	6.8
Aldrin	10	10.79	7.9
beta-BHC	10	10.44	4.4
delta-BHC	10	10.82	8.2
Heptachlor Epoxide	10	11.15	11.5
Endosulfan I	10	10.44	4.4
gamma-Chlordane	10	11.42	14.2
alpha-Chlordane	10	10.86	8.6
4,4'-DDE	20	22.17	10.9
Dieldrin	20	21.71	8.5
Endrin	20	19.55	2.2
Endosulfan II	20	22.93	14.7
4,4'-DDD	20	22.06	10.3
4,4'-DDT	20	19.94	0.3
Endrin Aldehyde	20	22.72	13.6
Endosulfan Sulfate	20	22.61	13.0
Methoxychlor	100	103.07	3.1
Endrin Ketone	20	22.74	13.7
Decachlorobiphenyl (S)	40	45.32	13.3

Average Percent Difference of All Compounds 8.76

(#) = Out of Range

289

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 80810A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 016F1601.D
Date Acquired 12-Sep-2002, 02:42:42

Column #2

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation
Tetrachloro-m-xylene (S)	20	19.93	0.3
alpha-BHC	10	10.16	1.6
gamma-BHC (Lindane)	10	10.43	4.3
Heptachlor	10	8.75	12.5
Aldrin	10	10.35	3.5
beta-BHC	10	11.14	11.4
delta-BHC	10	10.58	5.8
Heptachlor Epoxide	10	10.86	8.6
Endosulfan I	10	10.74	7.4
gamma-Chlordane	10	11.03	10.3
alpha-Chlordane	10	10.66	6.6
4,4'-DDE	20	21.42	7.1
Dieldrin	20	20.89	4.4
Endrin	20	18.33	8.4
Endosulfan II	20	21.45	7.2
4,4'-DDD	20	22.55	12.8
4,4'-DDT	20	19.41	2.9
Endrin Aldehyde	20	22.04	10.2
Endosulfan Sulfate	20	22.14	10.7
Methoxychlor	100	94.63	5.4
Endrin Ketone	20	22.08	10.4
Decachlorobiphenyl (S)	40	42.24	5.6

Average Percent Difference of All Compounds 7.16

(#) = Out of Range

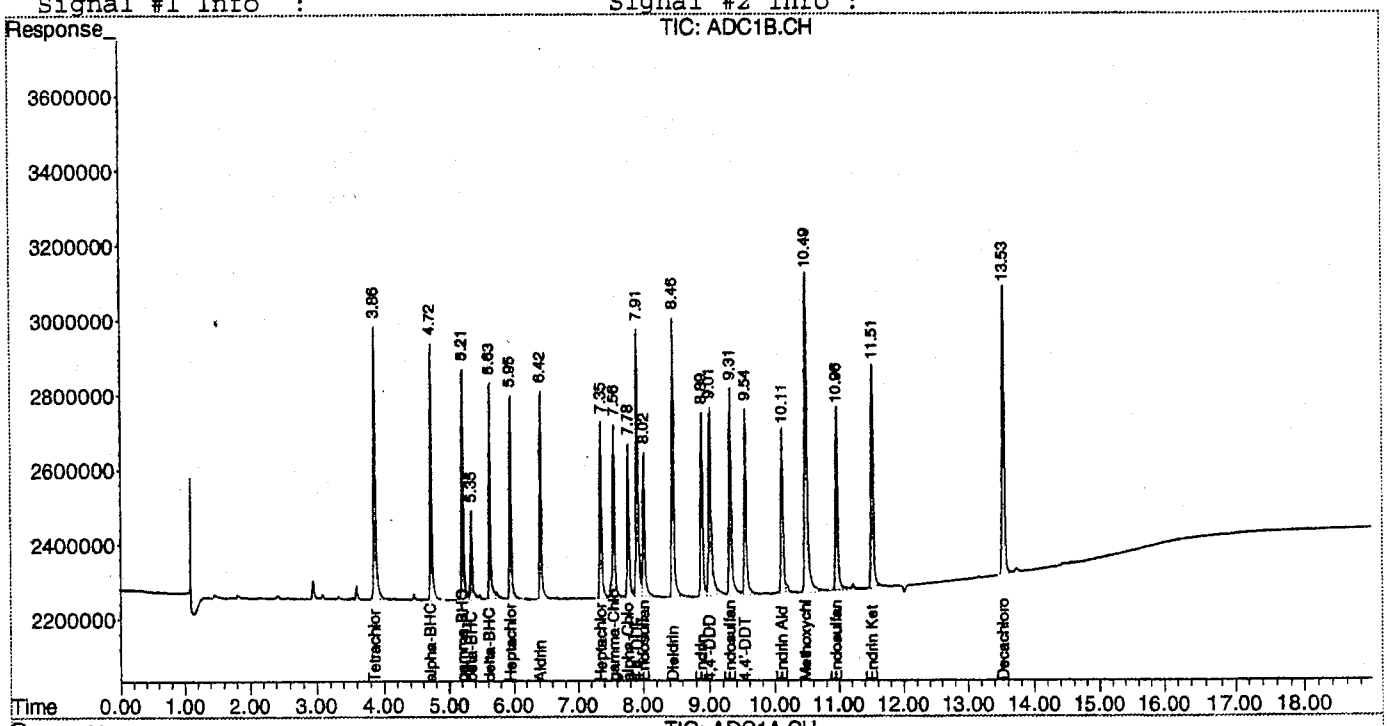
290

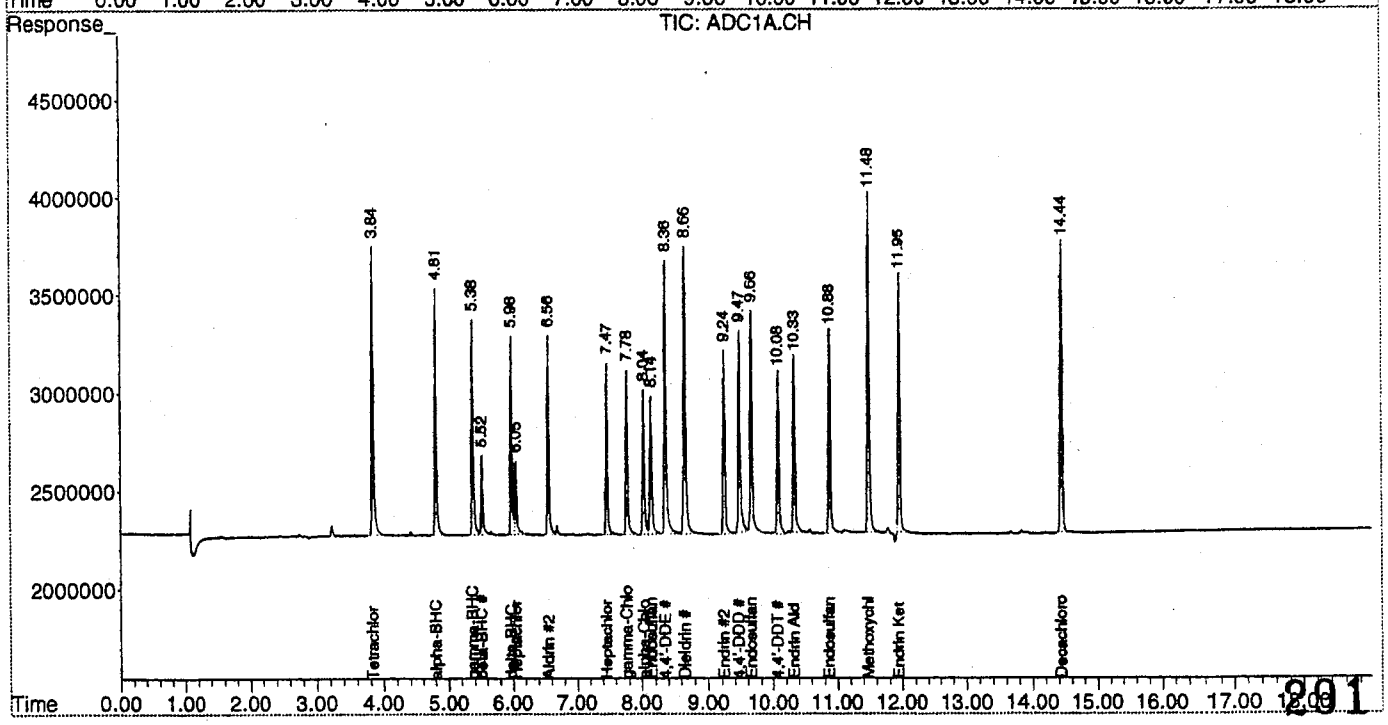
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\016F1601.D\ADC1B.CH Vial: 16
Signal #2 : F:\HPCHEM\1\DATA\PE091102\016F1601.D\ADC1A.CH
Acq On : 12-Sep-2002, 02:42:42 Operator: JDW
Sample : 10/20 ng/ml 80810A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:46 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1B.CH Vial: 17
Signal #2 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:04:39 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:03:35 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	SR Tetrachloro-m-xy	3.86	3.84	13170457	25861534	19.812	19.852
	Spiked Amount 20.000 Range 60 - 150 Recovery =					99.06%	99.26%
1)	SR Decachlorobiphen	13.54	14.44	8941593	15401658	19.799	20.270
	Spiked Amount 20.000 Range 60 - 150 Recovery =					99.00%	101.35%
	Target Compounds						
2)	Hexachloroethane	1.53	1.47	22933323	39786160	14.887	14.465
3)	Hexachlorobenzen	4.46	4.57	14507226	20200765	14.011	14.271
4)	Hexachlorobutadi	1.82	1.72	30911024	56434333	14.579	13.855
5)	Oxychlordane	7.20	7.31	9931660	17412829	14.378	14.301
6)	cis-Nonachlor	8.95	9.40	11699705	21761944	14.452	14.242
7)	trans-Nonachlor	7.75	7.93	10601024	19544276	13.959	14.238
8)	2,4'-DDE	7.34	7.79	7087536	12539886	14.668	14.713
9)	2,4'-DDD	8.22	8.75	6080104	10742326	15.124	14.656
10)	2,4'-DDT	8.69	9.32	6934342	9888594	14.957	14.435

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1B.CH Vial: 17
Signal #2 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:04:39 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E

Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	SR	Tetrachloro-m-xylene (S)	20.000	19.812	0.9	0	0.00
2		Hexachloroethane	15.000	14.887	0.8	0	0.00
3		Hexachlorobenzene	15.000	14.011	6.6	0	0.00
4		Hexachlorobutadiene	15.000	14.579	2.8	0	0.00
5		Oxychlordane	15.000	14.378	4.1	0	0.00
6		cis-Nonachlor	15.000	14.452	3.7	0	0.00
7		trans-Nonachlor	15.000	13.959	6.9	0	0.00
8		2,4'-DDE	15.000	14.668	2.2	0	0.00
9		2,4'-DDD	15.000	15.124	-0.8	0	0.00
10		2,4'-DDT	15.000	14.957	0.3	0	0.00
11	SR	Decachlorobiphenyl (S)	20.000	19.799	1.0	0	0.00

Signal #2

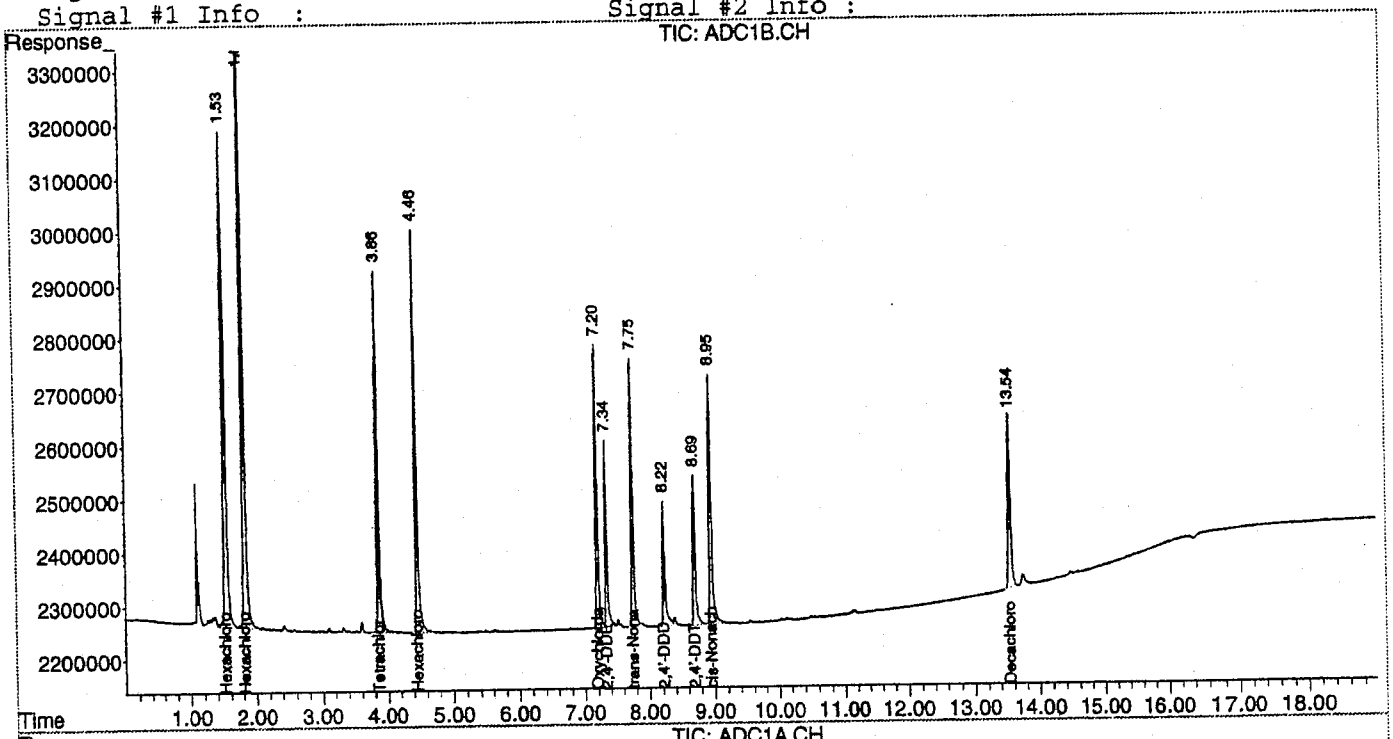
1	SR	Tetrachloro-m-xylene (S)	20.000	19.852	0.7	0	0.00
2		Hexachloroethane	15.000	14.465	3.6	0	0.00
3		Hexachlorobenzene	15.000	14.271	4.9	0	0.00
4		Hexachlorobutadiene	15.000	13.855	7.6	0	0.00
5		Oxychlordane	15.000	14.301	4.7	0	0.00
6		cis-Nonachlor	15.000	14.242	5.1	0	0.00
7		trans-Nonachlor	15.000	14.238	5.1	0	0.00
8		2,4'-DDE	15.000	14.713	1.9	0	0.00
9		2,4'-DDD	15.000	14.656	2.3	0	0.00
10		2,4'-DDT	15.000	14.435	3.8	0	0.00
11	SR	Decachlorobiphenyl (S)	20.000	20.270	-1.3	0	0.00

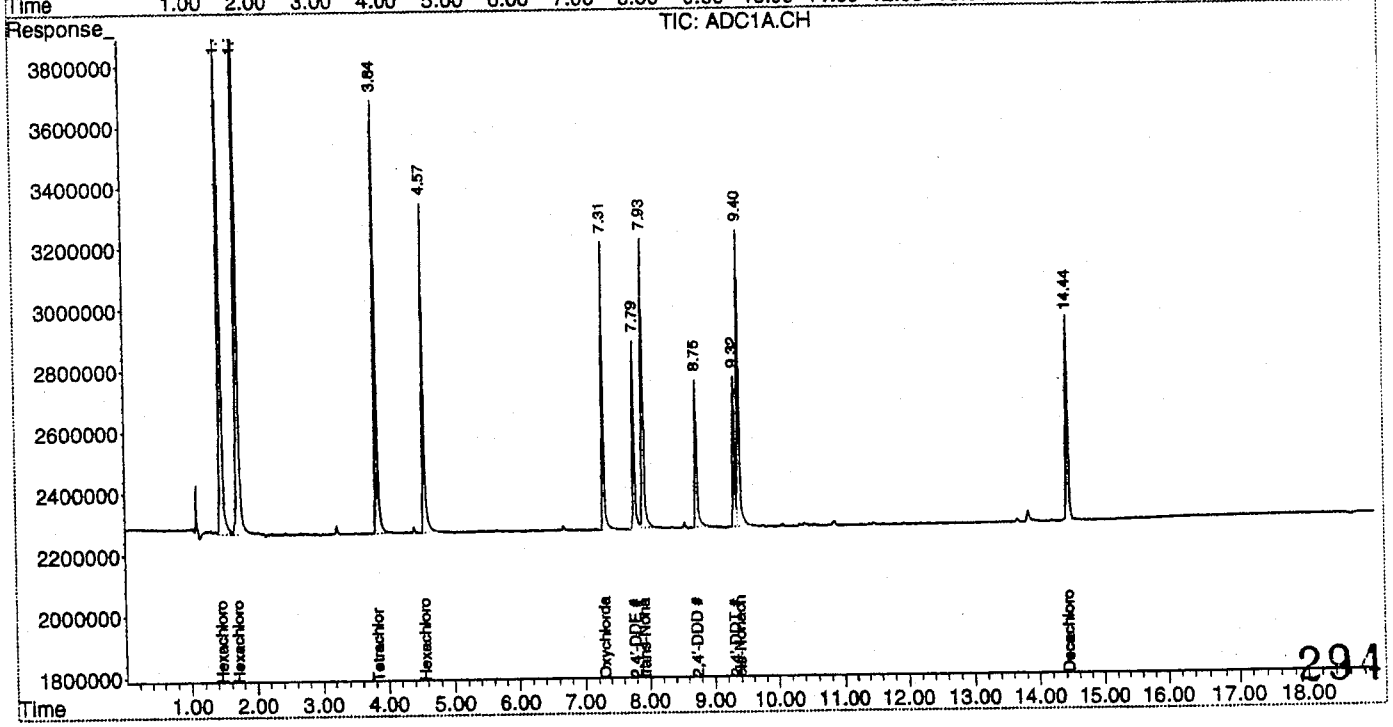
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1B.CH Vial: 17
Signal #2 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:04:39 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:03 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Custom Report - DDT/Endrin Breakdown Evaluation

Sample Name Eval Pest889

Data File Name F:\HPCHEM\1\DATA\PE091102\031F3101.D
Date Acquired 12-Sep-2002, 08:12:39

Compound Name	RT #1	RT #2	Resp. #1	Resp. #2	Amt. #1	Amt. #2	% Breakdown Column #1	% Breakdown Column #2
Endrin	8.88	9.23	24654933	48314513	42.63	45.11	**10.76%**	**9.13%**
Endrin Aldehyde	10.10	10.32	1171508	2049160	5.89	4.96		
Endrin Ketone	11.50	11.94	1800134	2807264	5.61	4.97		
4,4'-DDT	9.53	10.07	46307894	91058093	75.16	96.71	**7.19%**	**5.11%**
4,4'-DDD	9.01	9.46	3268158	4903095	5.44	4.66		
4,4'-DDE	7.90	0.00	317553	0	0.44	0.00		

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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\031F3101.D\ADC1B.CH Vial: 31
Signal #2 : F:\HPCHEM\1\DATA\PE091102\031F3101.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:12:39 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 09:27:18 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.83	12626377	24771123	19.328	18.180	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	96.64%	90.90%	
22)	SR	Decachlorobiphen	13.52	14.43	9474509	15565258	22.734	20.220	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	113.67%	101.10%	
		Target Compounds							
2)		alpha-BHC	4.71	4.80	11701025	19612886	9.932	9.418	
3)	M	gamma-BHC (Linda	5.21	5.37	10161112	17465937	9.936	9.654	
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.	
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.	
6)		beta-BHC	5.34	5.51	3784855	6764730	9.997	10.381	
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.	
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.	
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
10)		gamma-Chlordane	7.51f	0.00	164914	0	0.190	N.D.	#
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
12)		4,4'-DDE	7.90	0.00	317553	0	0.437	N.D.	#
13)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.	
14)	M	Endrin	8.88	9.23	24654933	48314513	42.629	45.114	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	9.01	9.46	3268158	4903095	5.436	4.661	
17)	M	4,4'-DDT	9.53	10.07	46307894	91058093	75.158	96.709	
18)		Endrin Aldehyde	10.10	10.32	1171508	2049160	2.526	2.338	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	10.48	11.47	46537722	94667551	189.634	238.127	
21)		Endrin Ketone	11.50	11.94	1800134	2807264	2.764	2.173	

296

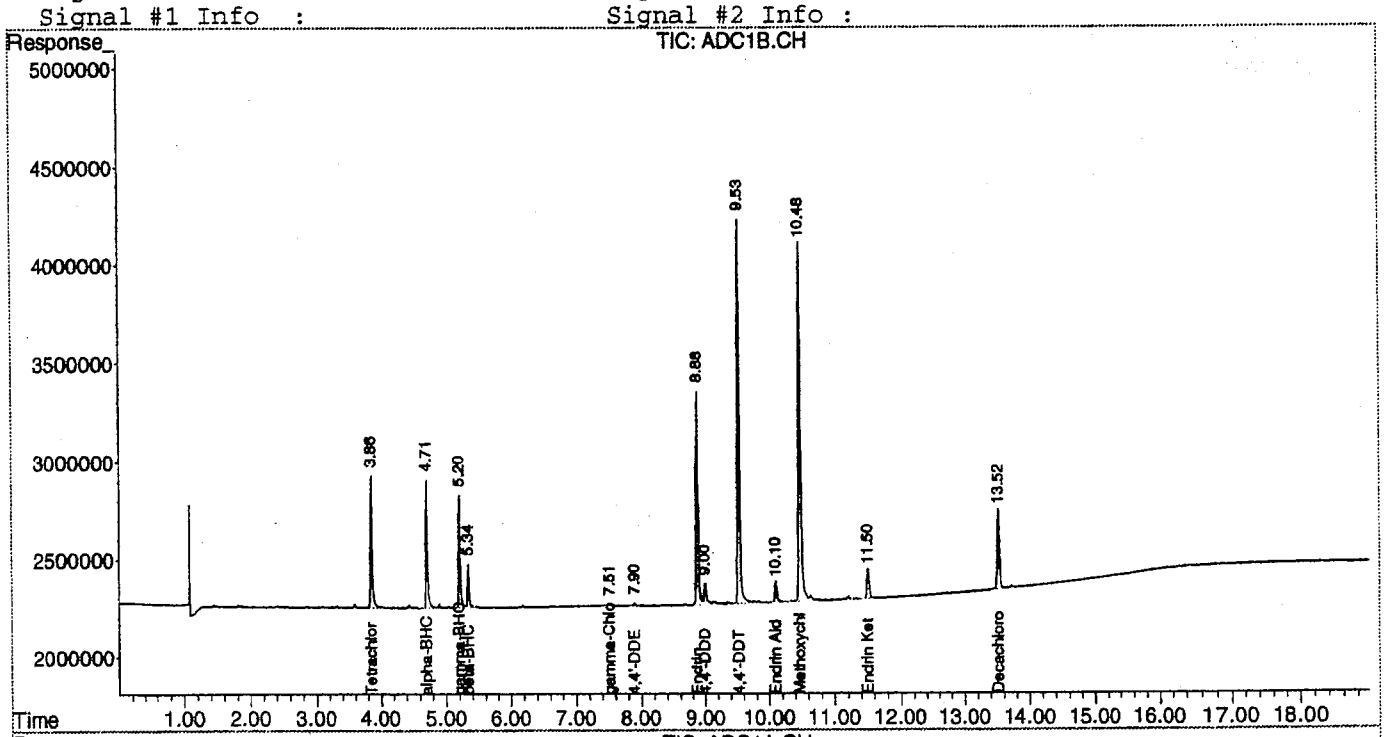
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

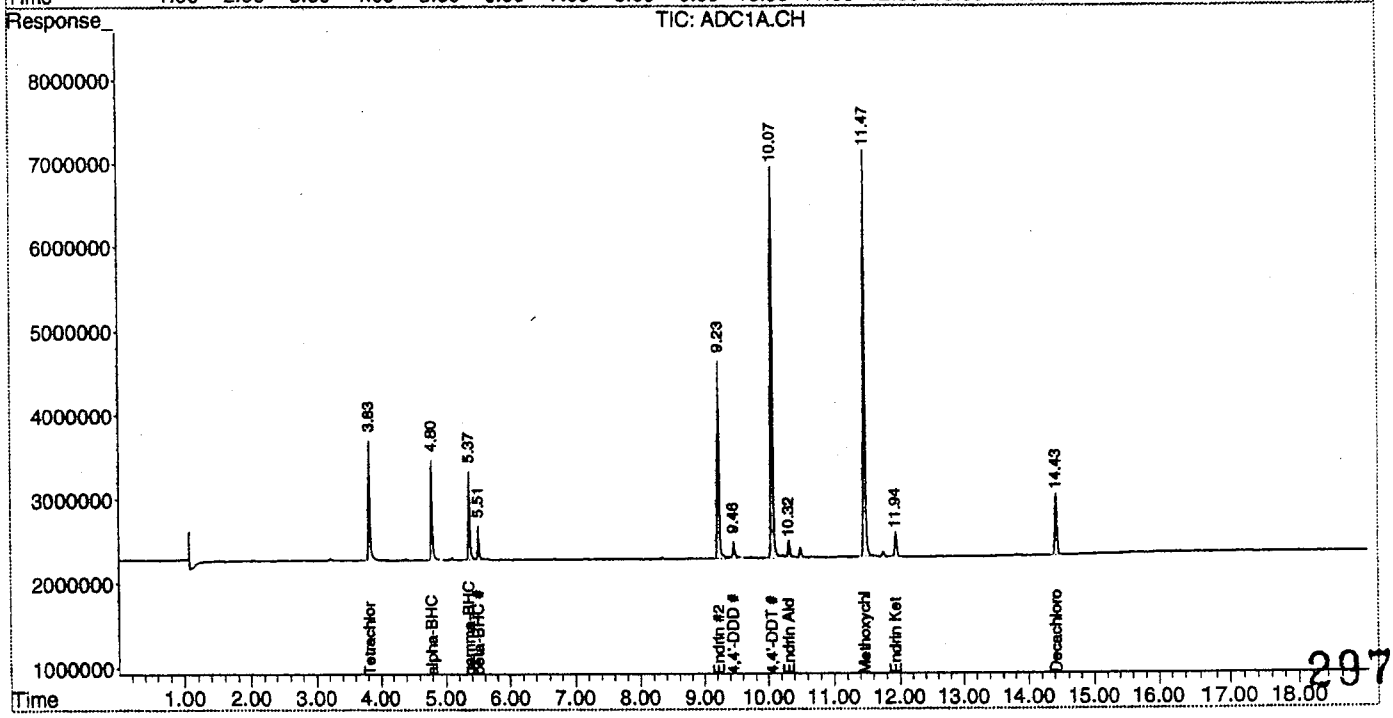
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\031F3101.D\ADC1B.CH Vial: 31
Signal #2 : F:\HPCHEM\1\DATA\PE091102\031F3101.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:12:39 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 9:27 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\032F3201.D\ADC1B.CH Vial: 32
Signal #2 : F:\HPCHEM\1\DATA\PE091102\032F3201.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:34:39 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:48:23 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.85	3.83	13652822	27113778	20.899	19.899
		Spiked Amount 20.000 Range 60 - 150 Recovery =					104.50%	99.50%
22)	SR	Decachlorobiphen	13.52	14.42	19129981	32259401	45.902	41.907
		Spiked Amount 20.000 Range 60 - 150 Recovery =					229.51%#	209.53%#
		Target Compounds						
2)		alpha-BHC	4.71	4.80	12499400	21318448	10.610	10.237
3)	M	gamma-BHC (Linda	5.20	5.37	11216674	19094341	10.968	10.554
4)	M	Heptachlor	5.94	6.05	10265307	14205956	10.496	16.186 #
5)	M	Aldrin	6.41	6.55	10594854	17864704	10.711	10.418
6)		beta-BHC	5.34	5.51	4143892	7395909	10.946	11.350
7)		delta-BHC	5.62	5.97	10803565	17689262	10.916	10.956
8)		Heptachlor Epoxi	7.34	7.46	9217520	15887883	11.077	10.896
9)		Endosulfan I	8.01	8.13	9072154	14983811	10.080	10.674
10)		gamma-Chlordane	7.54	7.76	9903951	16598889	11.426	11.023
11)		alpha-Chlordane	7.77	8.02	8534508	14915039	10.829	10.722
12)		4,4'-DDE	7.90	8.35	16128536	30565757	22.179	21.411
13)	M	Dieldrin	8.44	8.65	16940424	30941471	21.410	20.903
14)	M	Endrin	8.87	9.23	11116653	20078791	19.221	18.749
15)		Endosulfan II	9.30	9.64	14011087	25598446	22.569	22.080
16)		4,4'-DDD	9.00	9.46	13471850	23803473	22.406	22.628
17)	M	4,4'-DDT	9.53	10.06	11260465	19098447	18.276	20.284
18)		Endrin Aldehyde	10.10	10.32	10604426	19935961	22.869	22.748
19)		Endosulfan Sulfa	10.95	10.87	12126772	23498848	22.012	22.174
20)		Methoxychlor	10.47	11.47	22689515	40343830	92.456	101.481
21)		Endrin Ketone	11.50	11.94	14474748	28825517	22.228	22.314

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
032F3201.D 8081_910.M Fri Sep 13 09:21:14 2002

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 032F3201.D
Date Acquired 12-Sep-2002, 08:34:39

Column #1

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation
Tetrachloro-m-xylene (S)	20	20.90	4.5
alpha-BHC	10	10.61	6.1
gamma-BHC (Lindane)	10	10.97	9.7
Heptachlor	10	10.50	5.0
Aldrin	10	10.71	7.1
beta-BHC	10	10.95	9.5
delta-BHC	10	10.92	9.2
Heptachlor Epoxide	10	11.08	10.8
Endosulfan I	10	10.08	0.8
gamma-Chlordane	10	11.43	14.3
alpha-Chlordane	10	10.83	8.3
4,4'-DDE	20	22.18	10.9
Dieldrin	20	21.41	7.1
Endrin	20	19.22	3.9
Endosulfan II	20	22.57	12.8
4,4'-DDD	20	22.41	12.0
4,4'-DDT	20	18.28	8.6
Endrin Aldehyde	20	22.87	14.3
Endosulfan Sulfate	20	22.01	10.1
Methoxychlor	100	92.46	7.5
Endrin Ketone	20	22.23	11.1
Decachlorobiphenyl (S)	40	45.90	14.8

Average Percent Difference of All Compounds 9.01

(#) = Out of Range

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 032F3201.D
Date Acquired 12-Sep-2002, 08:34:39

Column #2

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation	
Tetrachloro-m-xylene (S)	20	19.90	0.5	
alpha-BHC	10	10.24	2.4	
gamma-BHC (Lindane)	10	10.55	5.5	
Heptachlor	10	16.19	61.9	#
Aldrin	10	10.42	4.2	
beta-BHC	10	11.35	13.5	
delta-BHC	10	10.96	9.6	
Heptachlor Epoxide	10	10.90	9.0	
Endosulfan I	10	10.67	6.7	
gamma-Chlordane	10	11.02	10.2	
alpha-Chlordane	10	10.72	7.2	
4,4'-DDE	20	21.41	7.1	
Dieldrin	20	20.90	4.5	
Endrin	20	18.75	6.3	
Endosulfan II	20	22.08	10.4	
4,4'-DDD	20	22.63	13.1	
4,4'-DDT	20	20.28	1.4	
Endrin Aldehyde	20	22.75	13.7	
Endosulfan Sulfate	20	22.17	10.9	
Methoxychlor	100	101.48	1.5	
Endrin Ketone	20	22.31	11.6	
Decachlorobiphenyl (S)	40	41.91	4.8	

Average Percent Difference of All Compounds 9.81

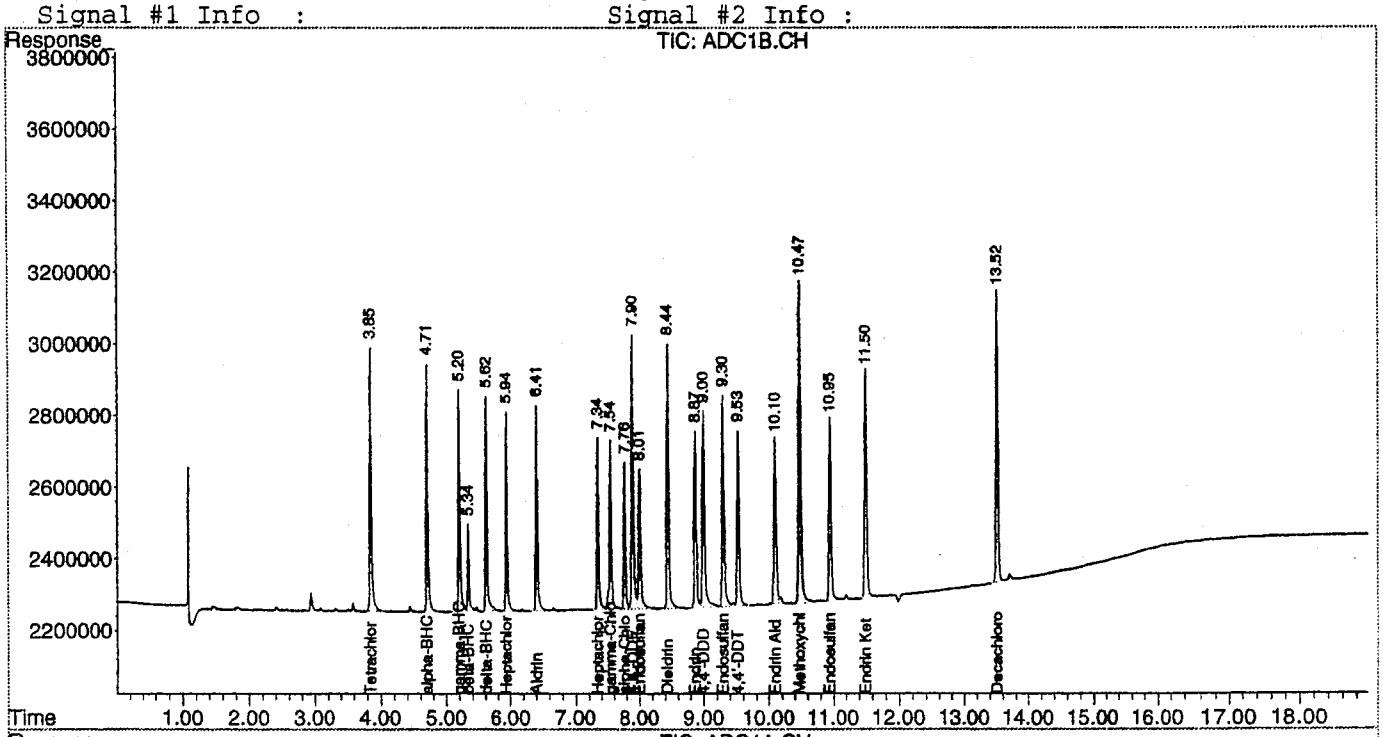
(#) = Out of Range

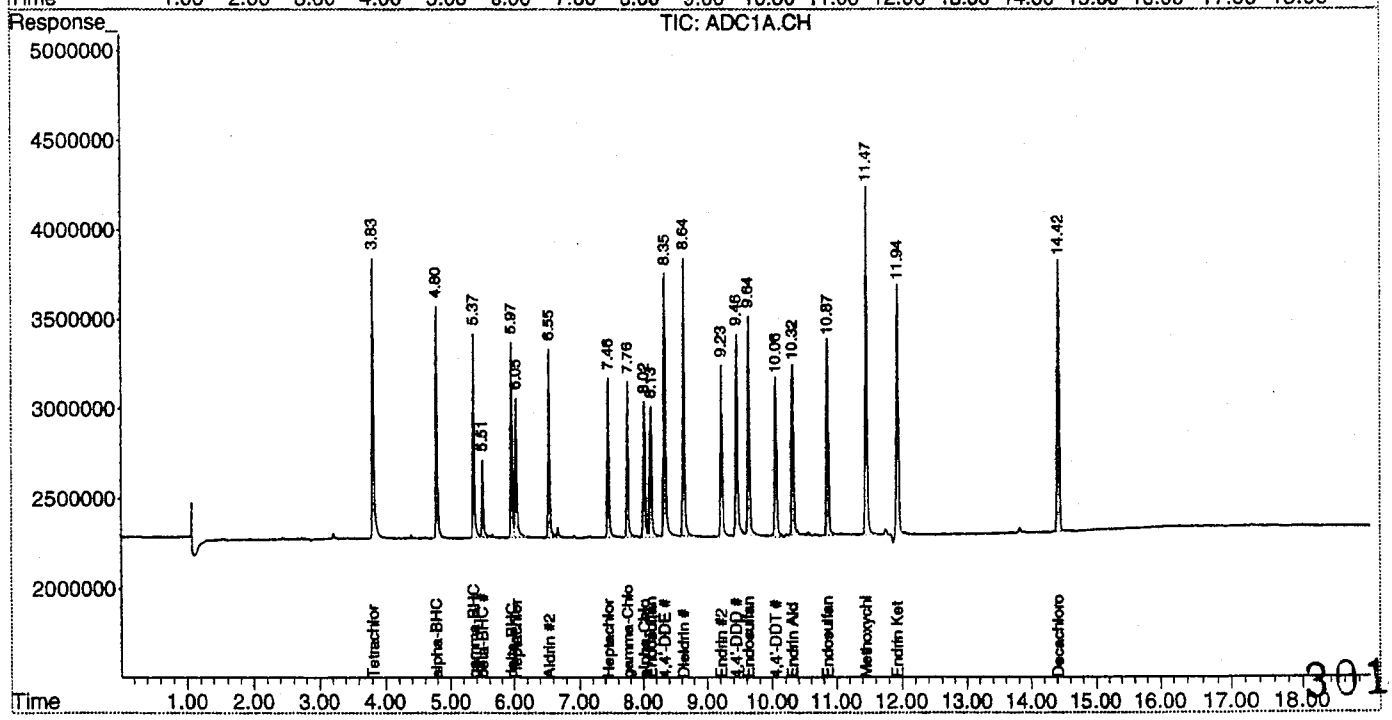
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\032F3201.D\ADC1B.CH Vial: 32
Signal #2 : F:\HPCHEM\1\DATA\PE091102\032F3201.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:34:39 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:48 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





301

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1B.CH Vial: 33
Signal #2 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:56:42 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:05:43 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	SR Tetrachloro-m-xy	3.85	3.83	13230663	25872140	19.903	19.860
	Spiked Amount 20.000 Range 60 - 150 Recovery =					99.52%	99.30%
1)	SR Decachlorobiphen	13.51f	14.42f	8938812	14952908	19.793	19.680
	Spiked Amount 20.000 Range 60 - 150 Recovery =					98.96%	98.40%
	Target Compounds						
2)	Hexachloroethane	1.53	1.46	23147585	39468723	15.026	14.349
3)	Hexachlorobenzen	4.45	4.56	14396139	20120834	13.903	14.214
4)	Hexachlorobutadi	1.81	1.72	30892685	55931338	14.570	13.732
5)	Oxychlordane	7.18	7.30	9838748	17210654	14.244	14.135
6)	cis-Nonachlor	8.93f	9.38	11454236	21291492	14.149	13.934
7)	trans-Nonachlor	7.73	7.92	10424342	19458208	13.726	14.175
8)	2,4'-DDE	7.33	7.78	7107683	12604904	14.709	14.790
9)	2,4'-DDD	8.20	8.73	6193449	11080118	15.406	15.117
10)	2,4'-DDT	8.67f	9.30	6460276	10316748	13.934	15.060

302

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1B.CH Vial: 33
Signal #2 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:56:42 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E

Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	SR	Tetrachloro-m-xylene (S)	20.000	19.903	0.5	0	-0.01
2		Hexachloroethane	15.000	15.026	-0.2	0	0.00
3		Hexachlorobenzene	15.000	13.903	7.3	0	-0.01
4		Hexachlorobutadiene	15.000	14.570	2.9	0	0.00
5		Oxychlordane	15.000	14.244	5.0	0	-0.02
6		cis-Nonachlor	15.000	14.149	5.7	0	-0.02
7		trans-Nonachlor	15.000	13.726	8.5	0	-0.02
8		2,4'-DDE	15.000	14.709	1.9	0	-0.02
9		2,4'-DDD	15.000	15.406	-2.7	0	-0.02
10		2,4'-DDT	15.000	13.934	7.1	0	-0.02
11	SR	Decachlorobiphenyl (S)	20.000	19.793	1.0	0	-0.03

Signal #2

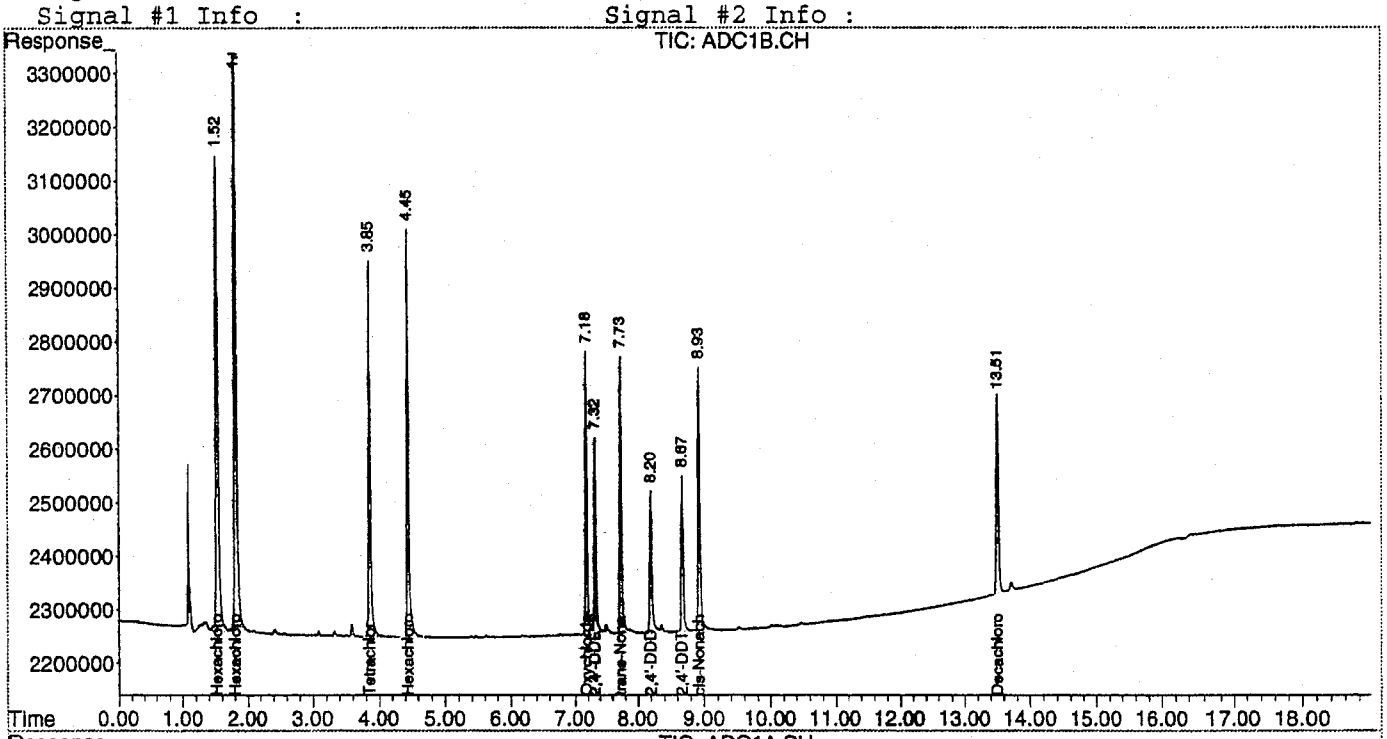
1	SR	Tetrachloro-m-xylene (S)	20.000	19.860	0.7	0	-0.01
2		Hexachloroethane	15.000	14.349	4.3	0	0.00
3		Hexachlorobenzene	15.000	14.214	5.2	0	-0.01
4		Hexachlorobutadiene	15.000	13.732	8.5	0	0.00
5		Oxychlordane	15.000	14.135	5.8	0	-0.01
6		cis-Nonachlor	15.000	13.934	7.1	0	-0.02
7		trans-Nonachlor	15.000	14.175	5.5	0	-0.02
8		2,4'-DDE	15.000	14.790	1.4	0	-0.02
9		2,4'-DDD	15.000	15.117	-0.8	0	-0.02
10		2,4'-DDT	15.000	15.060	-0.4	0	-0.02
11	SR	Decachlorobiphenyl (S)	20.000	19.680	1.6	0	-0.02

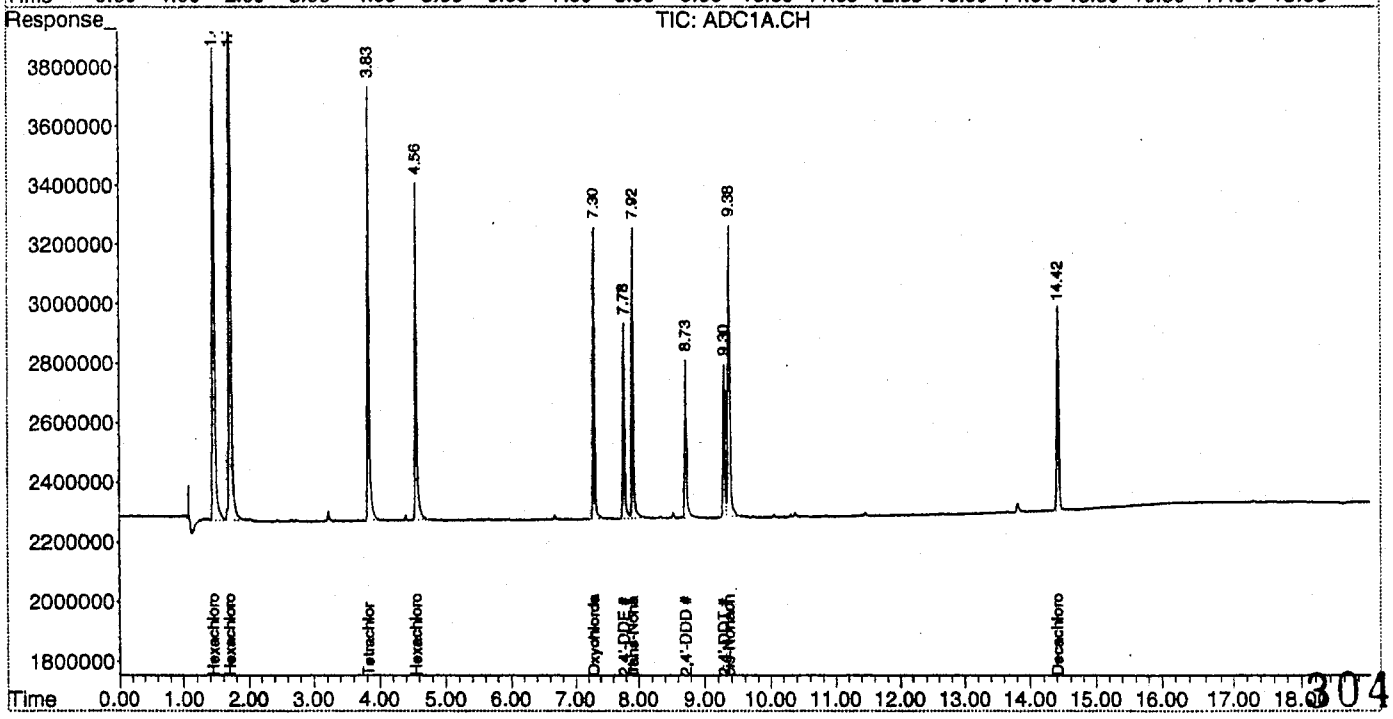
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1B.CH Vial: 33
Signal #2 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:56:42 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:05 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Custom Report - DDT/Endrin Breakdown Evaluation

Sample Name Eval Pest889

Data File Name F:\HPCHEM\1\DATA\PE091102\049F4901.D
Date Acquired 12-Sep-2002, 14:49:00

Compound Name	RT #1	RT #2	Resp. #1	Resp. #2	Amt. #1	Amt. #2	% Breakdown Column #1	% Breakdown Column #2
Endrin	8.88	9.23	24201480	48040196	41.84	44.86	**21.42%**	**18.74%**
Endrin Aldehyde	10.10	10.32	2806773	4467514	6.05	5.10		
Endrin Ketone	11.50	11.94	3789509	6613633	5.82	5.12		
4,4'-DDT	9.53	10.07	42968002	85946765	69.74	91.28	**10.71%**	**8.14%**
4,4'-DDD	9.01	9.46	4844567	7617712	8.06	7.24		
4,4'-DDE	7.90	0.00	308655	0	0.42	0.00		

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\049F4901.D\ADC1B.CH Vial: 49
Signal #2 : F:\HPCHEM\1\DATA\PE091102\049F4901.D\ADC1A.CH
Acq On : 12-Sep-2002, 14:49:00 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 08:21:41 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.85	3.83	12995136	25561800	19.892	18.760	
Spiked Amount			20.000	Range	60 - 150	Recovery	=	99.46%	93.80%
2)	SR	Decachlorobiphen	13.52	14.43	9114806	14944900	21.871	19.414	
Spiked Amount			20.000	Range	60 - 150	Recovery	=	109.36%	97.07%
		Target Compounds							
2)		alpha-BHC	4.71	4.80	11765112	19908102	9.987	9.560	
3)	M	gamma-BHC (Linda	5.20	5.37	10178575	17587871	9.953	9.722	
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.	
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.	
6)		beta-BHC	5.34	5.51	3854441	6909619	10.181	10.604	
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.	
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.	
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
10)		gamma-Chlordane	7.50f	0.00	130171	0	0.150	N.D.	#
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
12)		4,4'-DDE	7.90	0.00	308655	0	0.424	N.D.	#
13)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.	
14)	M	Endrin	8.88	9.23	24201480	48040196	41.845	44.858	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	9.01	9.46	4844567	7617712	8.057	7.241	
17)	M	4,4'-DDT	9.53	10.07	42968002	85946765	69.737	91.281	
18)		Endrin Aldehyde	10.10	10.32	2806773	4467514	6.053	5.098	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	10.48	11.47	43160025	88317609	175.871	222.155	
21)		Endrin Ketone	11.50	11.94	3789509	6613633	5.819	5.120	

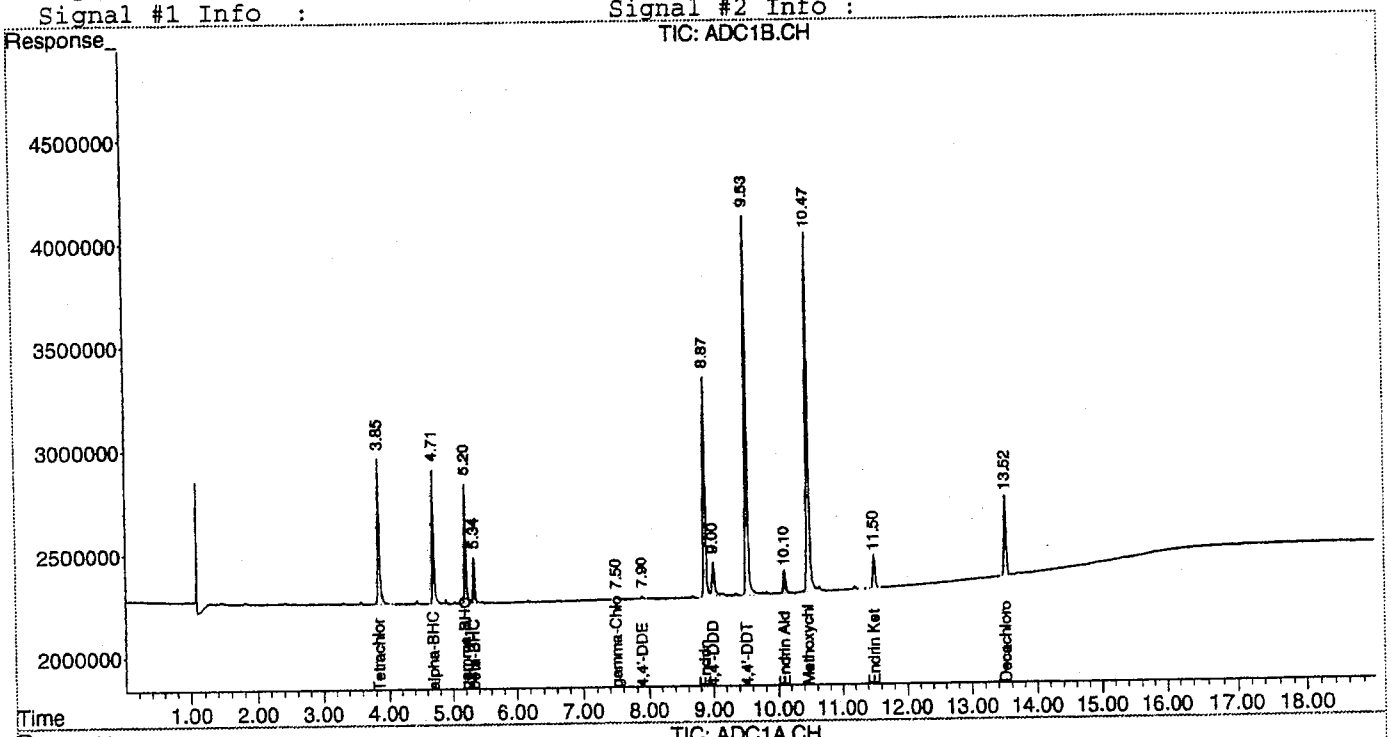
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

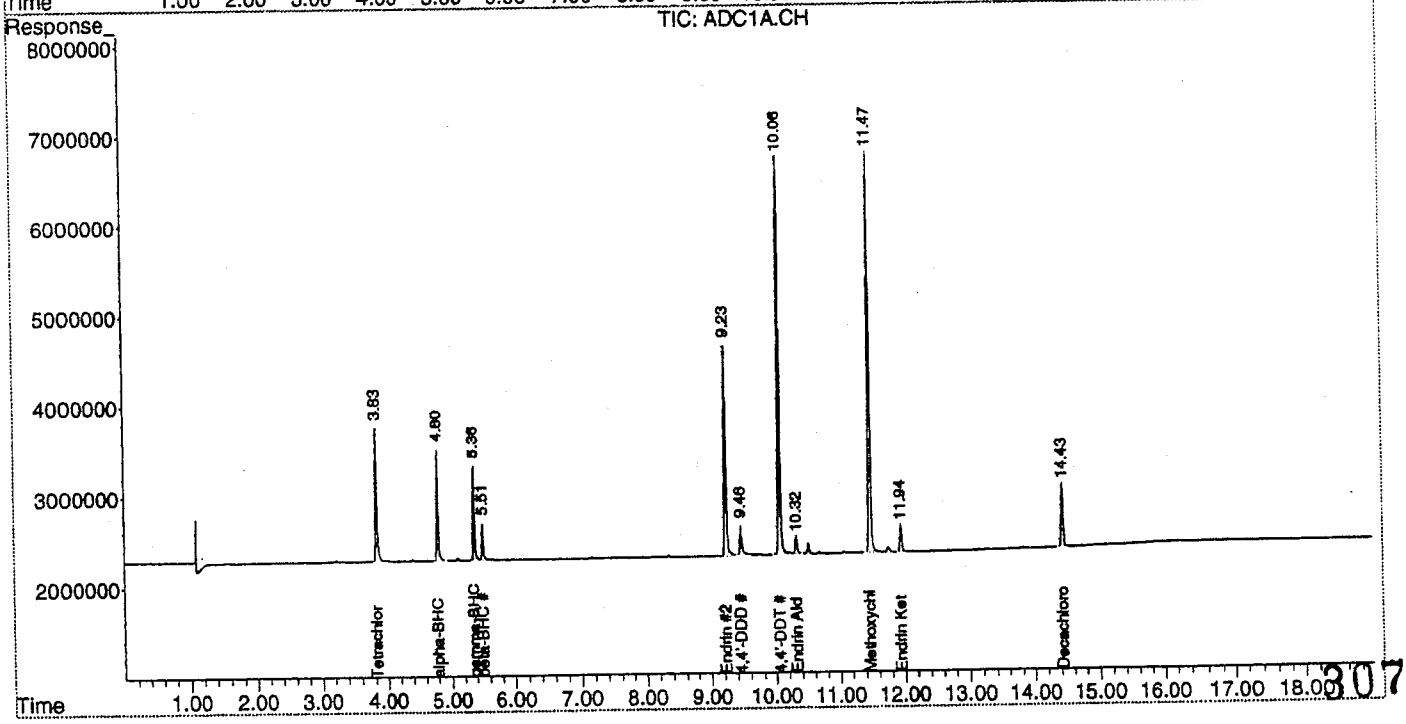
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\049F4901.D\ADC1B.CH Vial: 49
Signal #2 : F:\HPCHEM\1\DATA\PE091102\049F4901.D\ADC1A.CH
Acq On : 12-Sep-2002, 14:49:00 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 8:21 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\050F5001.D\ADC1B.CH Vial: 50
Signal #2 : F:\HPCHEM\1\DATA\PE091102\050F5001.D\ADC1A.CH
Acq On : 12-Sep-2002, 15:10:57 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 08:23:55 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.83	13869422	27787344	21.231	20.393	
Spiked Amount		20.000	Range	60 - 150	Recovery	=	106.16%	101.96%	
22)	SR	Decachlorobiphen	13.52	14.43	19069615	32229787	45.757	41.869	
Spiked Amount		20.000	Range	60 - 150	Recovery	=	228.78%#	209.34%#	
		Target Compounds							
2)		alpha-BHC	4.71	4.80	12528256	21598802	10.635	10.371	
3)	M	gamma-BHC (Linda	5.21	5.37	11189000	19249873	10.941	10.640	
4)	M	Heptachlor	5.95	6.05	9922631	13512862	10.146	15.396	#
5)	M	Aldrin	6.42	6.55	10463621	18139653	10.578	10.578	
6)		beta-BHC	5.34	5.51	4081558	6995994	10.781	10.736	
7)		delta-BHC	5.62	5.98	10846229	18167654	10.960	11.252	
8)		Heptachlor Epoxi	7.35	7.46	9136008	15960591	10.979	10.946	
9)		Endosulfan I	8.01	8.14	8918888	15021259	9.909	10.701	
10)		gamma-Chlordane	7.55	7.77	9821219	16723534	11.331	11.106	
11)		alpha-Chlordane	7.77	8.03	8499610	15154172	10.785	10.894	
12)		4,4'-DDE	7.90	8.35	16149399	30966408	22.208	21.692	
13)	M	Dieldrin	8.45	8.65	16836619	31057897	21.279	20.982	
14)	M	Endrin	8.88	9.23	10958419	19891582	18.947	18.574	
15)		Endosulfan II	9.30	9.65	13790654	25466936	22.214	21.967	
16)		4,4'-DDD	9.00	9.46	13932590	25799234	23.173	24.525	
17)	M	4,4'-DDT	9.53	10.07	10588895	18224017	17.186	19.355	
18)		Endrin Aldehyde	10.10	10.32	10635001	20222755	22.935	23.076	
19)		Endosulfan Sulfa	10.95	10.87	11580771	23449079	21.021	22.127	
20)		Methoxychlor	10.48	11.47	21126321	38276950	86.087	96.282	
21)		Endrin Ketone	11.50	11.94	14850412	28915739	22.805	22.384	

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
050F5001.D 8081_910.M Fri Sep 13 08:24:56 2002

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 050F5001.D
Date Acquired 12-Sep-2002, 15:10:57

Column #1

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation	
Tetrachloro-m-xylene (S)	20	21.23	6.2	
alpha-BHC	10	10.63	6.3	
gamma-BHC (Lindane)	10	10.94	9.4	
Heptachlor	10	10.15	1.5	
Aldrin	10	10.58	5.8	
beta-BHC	10	10.78	7.8	
delta-BHC	10	10.96	9.6	
Heptachlor Epoxide	10	10.98	9.8	
Endosulfan I	10	9.91	0.9	
gamma-Chlordane	10	11.33	13.3	
alpha-Chlordane	10	10.79	7.9	
4,4'-DDE	20	22.21	11.0	
Dieldrin	20	21.28	6.4	
Endrin	20	18.95	5.3	
Endosulfan II	20	22.21	11.1	
4,4'-DDD	20	23.17	15.9	#
4,4'-DDT	20	17.19	14.1	
Endrin Aldehyde	20	22.94	14.7	
Endosulfan Sulfate	20	21.02	5.1	
Methoxychlor	100	86.09	13.9	
Endrin Ketone	20	22.81	14.0	
Decachlorobiphenyl (S)	40	45.76	14.4	
Average Percent Difference of All Compounds			9.28	

(#) = Out of Range

309

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 050F5001.D
Date Acquired 12-Sep-2002, 15:10:57

Column #2

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation	
Tetrachloro-m-xylene (S)	20	20.39	2.0	
alpha-BHC	10	10.37	3.7	
gamma-BHC (Lindane)	10	10.64	6.4	
Heptachlor	10	15.40	54.0	#
Aldrin	10	10.58	5.8	
beta-BHC	10	10.74	7.4	
delta-BHC	10	11.25	12.5	
Heptachlor Epoxide	10	10.95	9.5	
Endosulfan I	10	10.70	7.0	
gamma-Chlordane	10	11.11	11.1	
alpha-Chlordane	10	10.89	8.9	
4,4'-DDE	20	21.69	8.5	
Dieldrin	20	20.98	4.9	
Endrin	20	18.57	7.1	
Endosulfan II	20	21.97	9.8	
4,4'-DDD	20	24.52	22.6	#
4,4'-DDT	20	19.36	3.2	
Endrin Aldehyde	20	23.08	15.4	#
Endosulfan Sulfate	20	22.13	10.6	
Methoxychlor	100	96.28	3.7	
Endrin Ketone	20	22.38	11.9	
Decachlorobiphenyl (S)	40	41.87	4.7	

Average Percent Difference of All Compounds 10.49

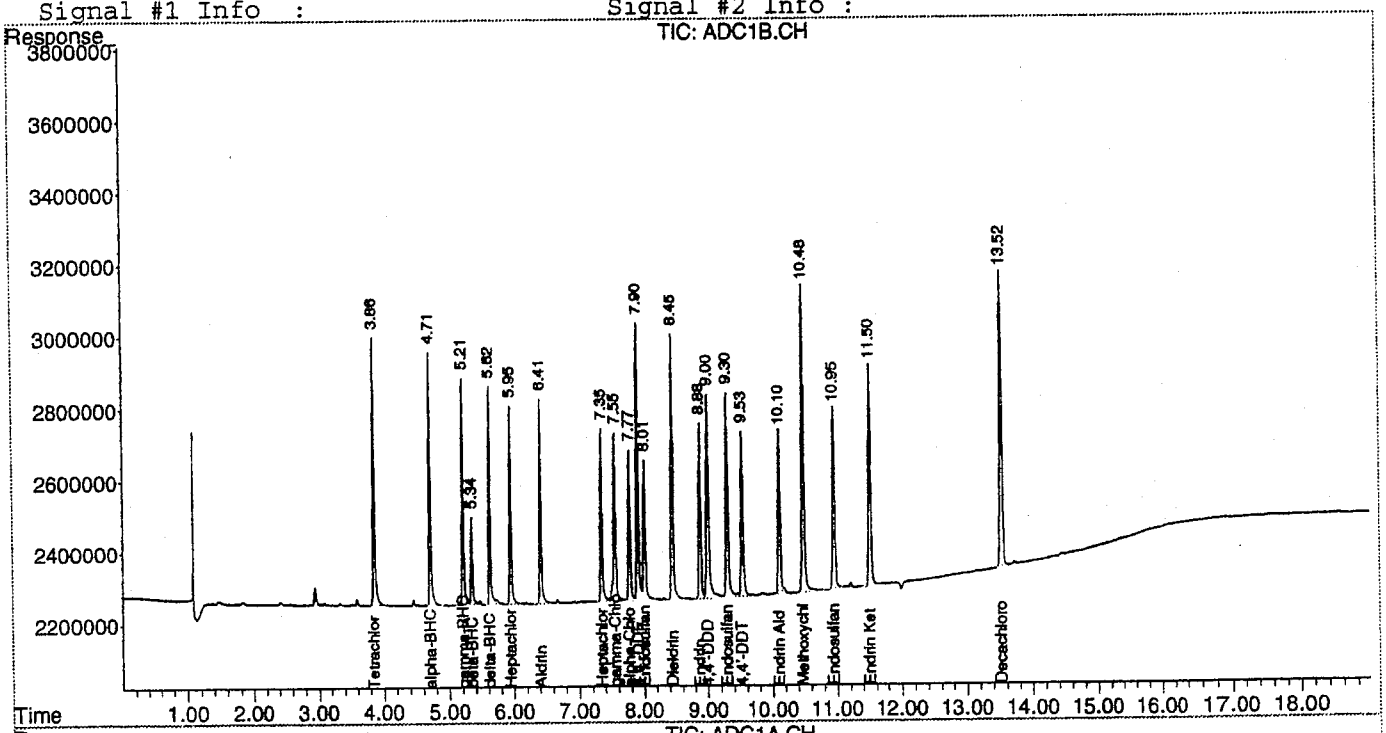
(#) = Out of Range

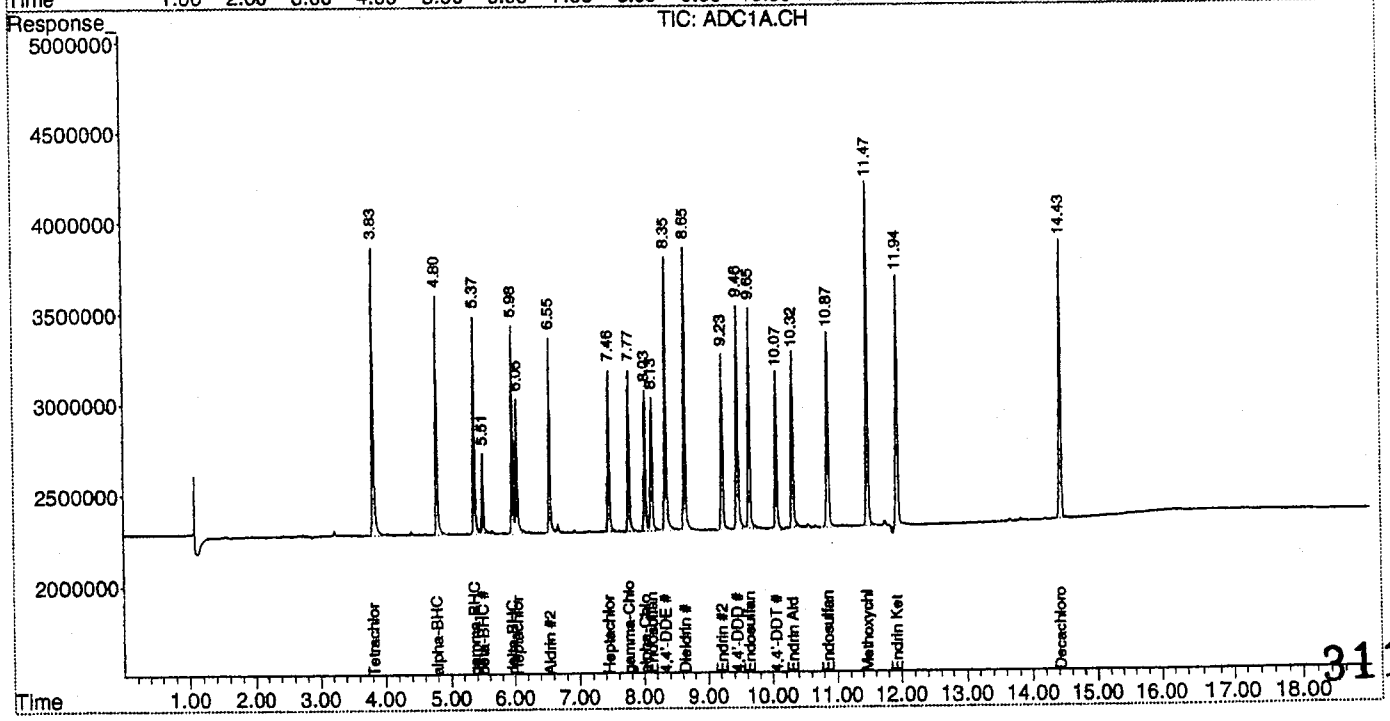
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\050F5001.D\ADC1B.CH Vial: 50
Signal #2 : F:\HPCHEM\1\DATA\PE091102\050F5001.D\ADC1A.CH
Acq On : 12-Sep-2002, 15:10:57 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 8:24 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





311

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1B.CH Vial: 51
Signal #2 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1A.CH
Acq On : 12-Sep-2002, 15:32:53 Operator: JDW
Sample : 15 ng/ml 8081A Plus Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 08:29:57 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	SR Tetrachloro-m-xy	3.86	3.84	13412257	26733691	20.176	20.522
	Spiked Amount 20.000 Range 60 - 150 Recovery =					100.88%	102.61%
1)	SR Decachlorobiphen	13.53	14.44	8934823	14550144	19.784	19.150
	Spiked Amount 20.000 Range 60 - 150 Recovery =					98.92%	95.75%
	Target Compounds						
2)	Hexachloroethane	1.53	1.46	23519038	40311511	15.268	14.656
3)	Hexachlorobenzen	4.46	4.57	14580497	20719122	14.081	14.637
4)	Hexachlorobutadi	1.82	1.72	31030935	56850637	14.635	13.958
5)	Oxychlordane	7.19	7.31	9972031	17673098	14.437	14.515
6)	cis-Nonachlor	8.95	9.39	11638831	21716170	14.377	14.212
7)	trans-Nonachlor	7.75	7.93	10682930	19872625	14.067	14.477
8)	2,4'-DDE	7.34	7.79	7247972	12970850	15.000	15.219
9)	2,4'-DDD	8.22	8.74	6396830	11512243	15.911	15.706
10)	2,4'-DDT	8.69	9.32	6216168	10199534	13.408	14.889

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1B.CH Vial: 51
Signal #2 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1A.CH
Acq On : 12-Sep-2002, 15:32:53 Operator: JDW
Sample : 15 ng/ml 8081A Plus Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E

Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	SR	Tetrachloro-m-xylene (S)	20.000	20.176	-0.9	0	0.00
2		Hexachloroethane	15.000	15.268	-1.8	0	0.00
3		Hexachlorobenzene	15.000	14.081	6.1	0	0.00
4		Hexachlorobutadiene	15.000	14.635	2.4	0	0.00
5		Oxychlordane	15.000	14.437	3.8	0	0.00
6		cis-Nonachlor	15.000	14.377	4.2	0	0.00
7		trans-Nonachlor	15.000	14.067	6.2	0	0.00
8		2,4'-DDE	15.000	15.000	0.0	0	0.00
9		2,4'-DDD	15.000	15.911	-6.1	0	0.00
10		2,4'-DDT	15.000	13.408	10.6	0	0.00
11	SR	Decachlorobiphenyl (S)	20.000	19.784	1.1	0	0.00

Signal #2

1	SR	Tetrachloro-m-xylene (S)	20.000	20.522	-2.6	0	0.00
2		Hexachloroethane	15.000	14.656	2.3	0	0.00
3		Hexachlorobenzene	15.000	14.637	2.4	0	0.00
4		Hexachlorobutadiene	15.000	13.958	6.9	0	0.00
5		Oxychlordane	15.000	14.515	3.2	0	0.00
6		cis-Nonachlor	15.000	14.212	5.3	0	0.00
7		trans-Nonachlor	15.000	14.477	3.5	0	0.00
8		2,4'-DDE	15.000	15.219	-1.5	0	0.00
9		2,4'-DDD	15.000	15.706	-4.7	0	0.00
10		2,4'-DDT	15.000	14.889	0.7	0	0.00
11	SR	Decachlorobiphenyl (S)	20.000	19.150	4.3	0	0.00

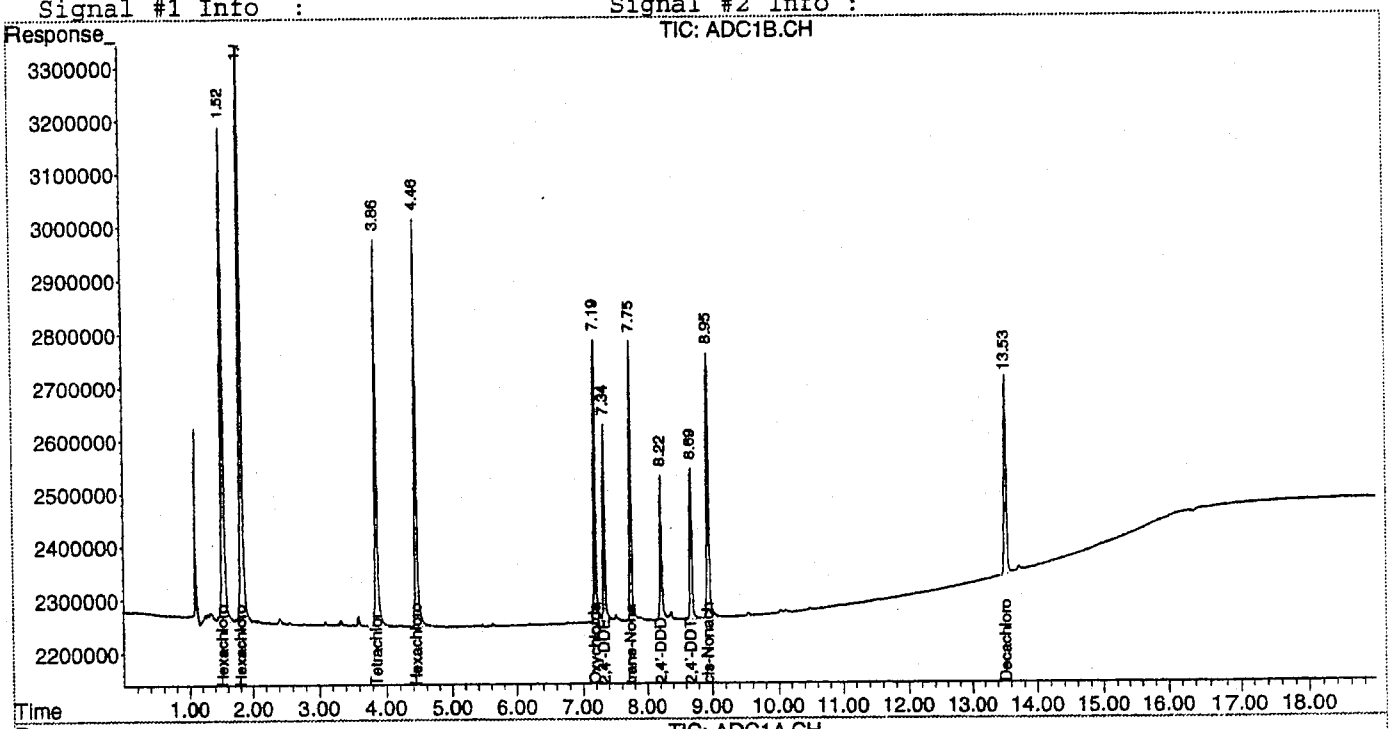
(#) = Out of Range SPCC's out = 0 CCC's out = 0
051F5101.D +CPDS_910.M Fri Sep 13 08:30:03 2002

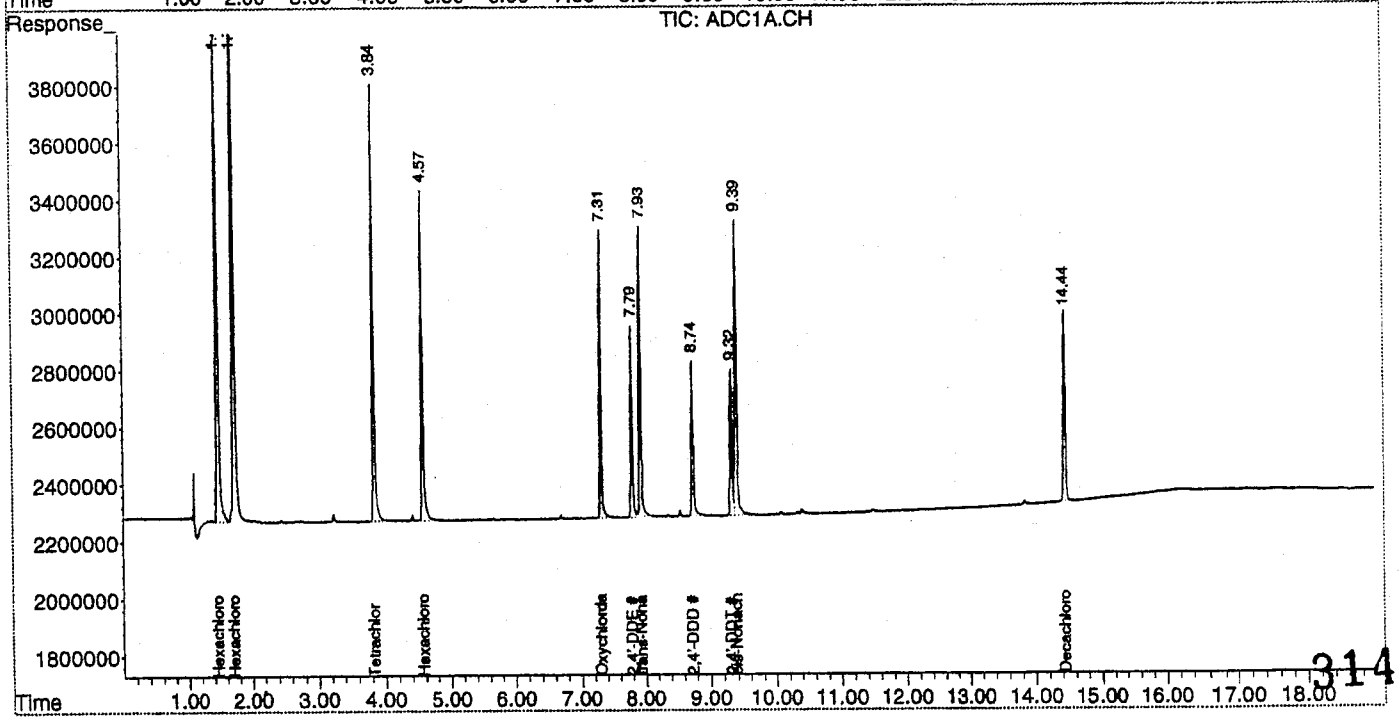
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1B.CH Vial: 51
Signal #2 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1A.CH
Acq On : 12-Sep-2002, 15:32:53 Operator: JDW
Sample : 15 ng/ml 8081A Plus Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 8:30 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





METHOD BLANK

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1B.CH Vial: 18
Signal #2 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:26:46 Operator: JDW
Sample : mb pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:50:44 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

NID

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

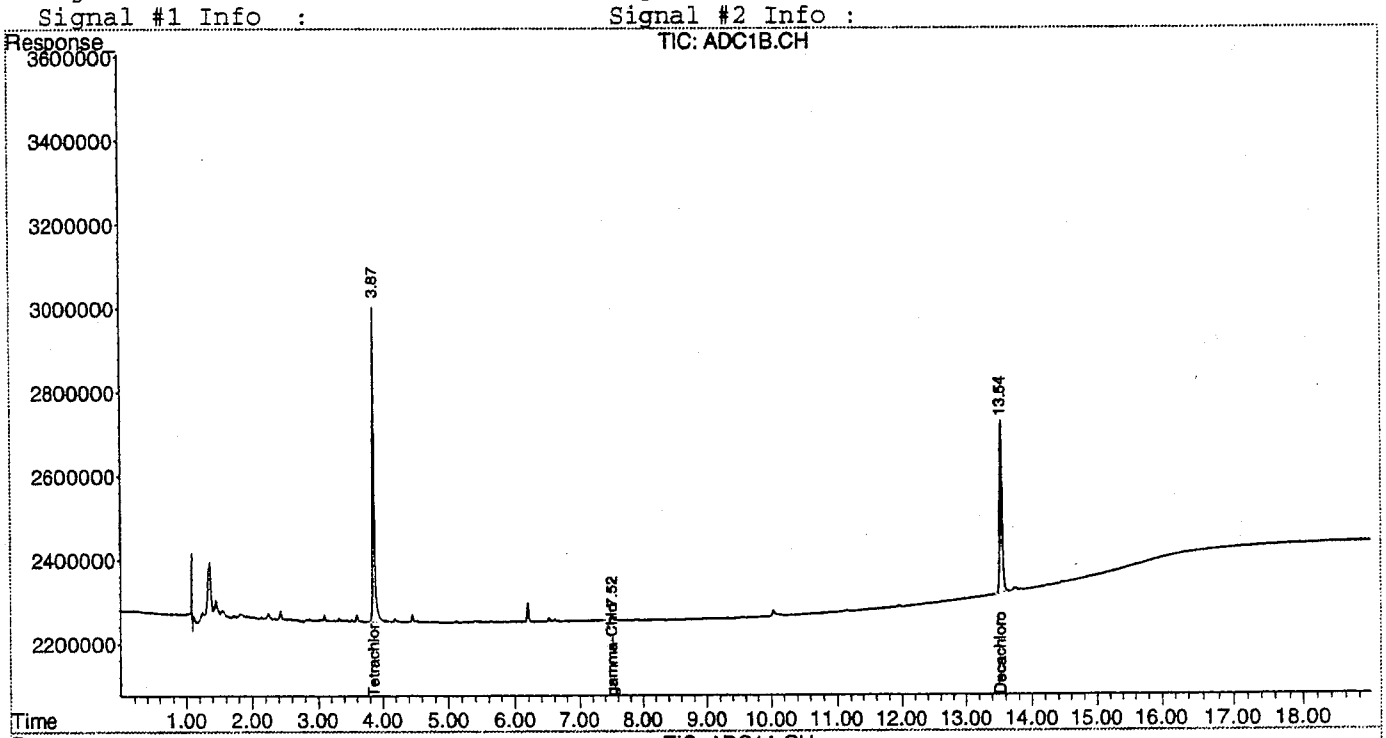
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.87	3.84	14504615	28288968	22.203	20.761	
Spiked Amount			20.000	Range	60 - 150	Recovery	= 111.02%	103.80%	
2)	SR	Decachlorobiphen	13.54	14.44	10706901	18165006	25.691	23.598	
Spiked Amount			20.000	Range	60 - 150	Recovery	= 128.45%	117.99%	
		Target Compounds							
2)		alpha-BHC	0.00	0.00	0	0	N.D.	N.D.	
3)	M	gamma-BHC (Linda	0.00	0.00	0	0	N.D.	N.D.	
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.	
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.	
6)		beta-BHC	0.00	0.00	0	0	N.D.	N.D.	
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.	
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.	
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
10)		gamma-Chlordane	7.52f	0.00	265634	0	0.306	N.D.	#
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
12)		4,4'-DDE	0.00	0.00	0	0	N.D.	N.D.	
13)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.	
14)	M	Endrin	0.00	0.00	0	0	N.D.	N.D.	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	0.00	0.00	0	0	N.D.	N.D.	
17)	M	4,4'-DDT	0.00	0.00	0	0	N.D.	N.D.	
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D.	N.D.	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	0.00	0.00	0	0	N.D.	N.D.	
21)		Endrin Ketone	0.00	0.00	0	0	N.D.	N.D.	

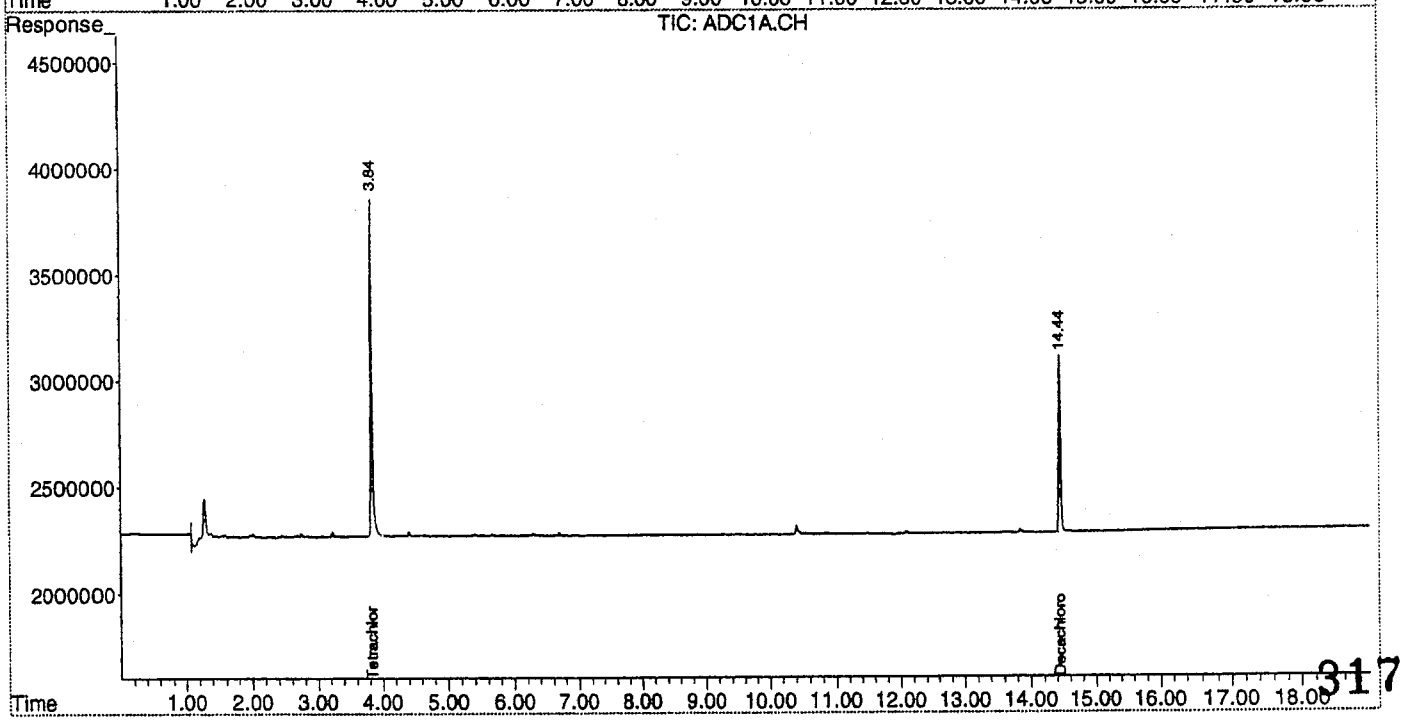
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
018F1801.D 8081_910.M Thu Sep 12 11:58:57 2002

Signal #1 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1B.CH Vial: 18
Signal #2 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:26:46 Operator: JDW
Sample : mb pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:50 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





317

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1B.CH Vial: 18
Signal #2 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:26:46 Operator: JDW
Sample : mb pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:06:05 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

ND

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
System Monitoring Compounds							
1) SR Tetrachloro-m-xy	3.87	3.84	14487177	28288968	21.793	21.716	
Spiked Amount 20.000 Range 60 - 150 Recovery =					108.97%	108.58%	
11) SR Decachlorobiphen	13.54	14.44	10585758	18165006	23.440	23.907	
Spiked Amount 20.000 Range 60 - 150 Recovery =					117.20%	119.54%	
Target Compounds							
2) Hexachloroethane	1.56f	0.00	994262	0	0.645	N.D.	#
3) Hexachlorobenzen	4.46	0.00	294453	0	0.284	N.D.	#
4) Hexachlorobutadi	1.82	0.00	150117	0	0.071	N.D.	#
5) Oxychlordane	0.00	0.00	0	0	N.D.	N.D.	
6) cis-Nonachlor	0.00	0.00	0	0	N.D.	N.D.	
7) trans-Nonachlor	0.00	0.00	0	0	N.D.	N.D.	
8) 2,4'-DDE	0.00	0.00	0	0	N.D.	N.D.	
9) 2,4'-DDD	0.00	0.00	0	0	N.D.	N.D.	
10) 2,4'-DDT	0.00	0.00	0	0	N.D.	N.D.	

318

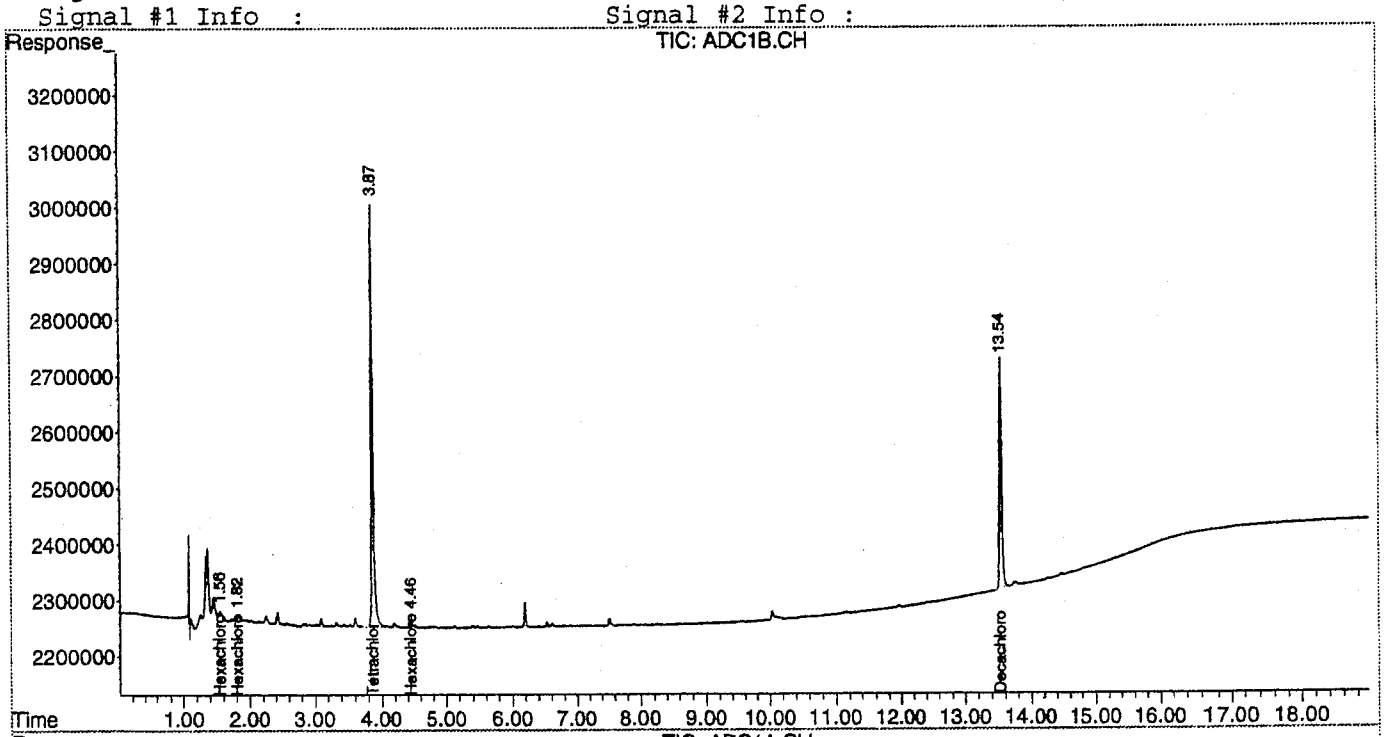
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

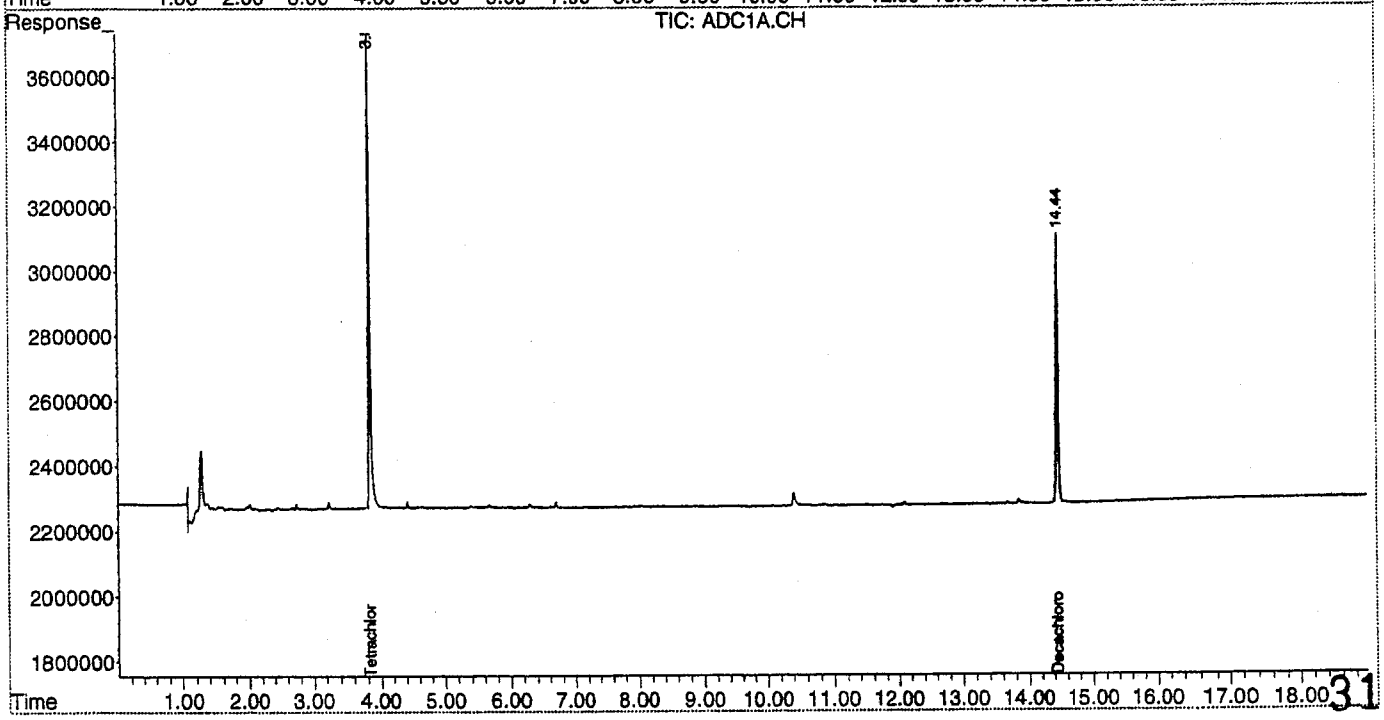
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1B.CH Vial: 18
Signal #2 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:26:46 Operator: JDW
Sample : mb pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:06 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





BLANK SPIKE

Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\019F1901.D\ADC1B.CH Vial: 19
Signal #2 : F:\HPCHEM\1\DATA\PE091102\019F1901.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:48:44 Operator: JDW
Sample : bs pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:50:53 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

OK

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.84	14913287	28802273	22.829	21.138
Spiked Amount		20.000 Range	60 - 150		Recovery	=	114.15%	105.69%
22)	SR	Decachlorobiphen	13.54	14.45	10813526	18334980	25.947	23.818
Spiked Amount		20.000 Range	60 - 150		Recovery	=	129.74%	119.09%
		Target Compounds						
2)		alpha-BHC	0.00	0.00	0	0	N.D.	N.D.
3)	M	gamma-BHC (Linda	5.22	5.39	21699575	39520020	21.218	21.845
4)	M	Heptachlor	5.96	6.06	21864029	13436325	22.356	15.309
5)	M	Aldrin	6.43	6.57	21022375	36598102	21.252	21.342
6)		beta-BHC	0.00	0.00	0	0	N.D.	N.D.
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D. d	N.D. d
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.
10)		gamma-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.
12)		4,4'-DDE	0.00	0.00	0	0	N.D. d	N.D. d
13)	M	Dieldrin	8.47	8.67	38158739	74011297	48.227	50.000
14)	M	Endrin	8.90	9.25	26132199	50914687	45.183	47.542
15)		Endosulfan II	0.00	0.00	0	0	N.D. d	N.D. d
16)		4,4'-DDD	0.00	0.00	0	0	N.D. d	N.D. d
17)	M	4,4'-DDT	9.55	10.09	26168375	47732260	42.471	50.695
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D. d	N.D. d
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D. d	N.D. d
20)		Methoxychlor	0.00	0.00	0	0	N.D.	N.D.
21)		Endrin Ketone	0.00	0.00	0	0	N.D. d	N.D. d

321

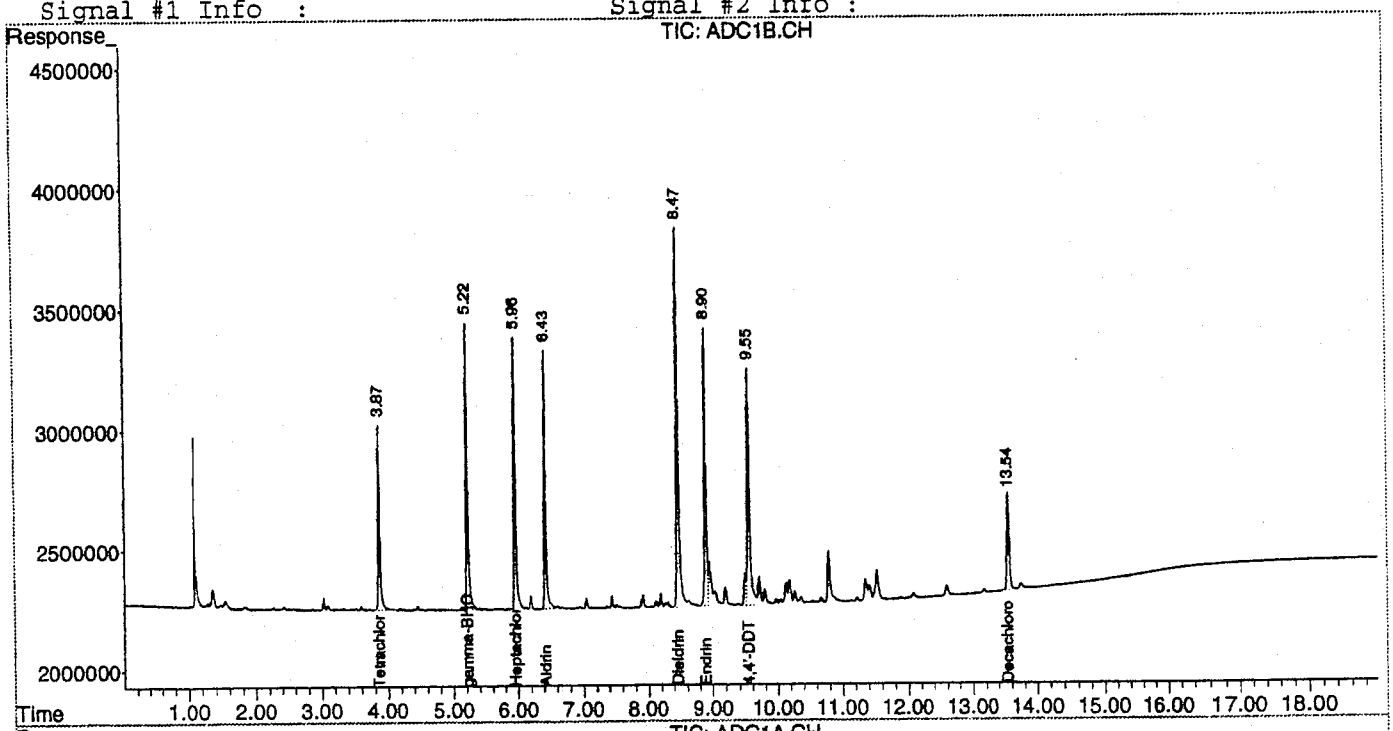
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

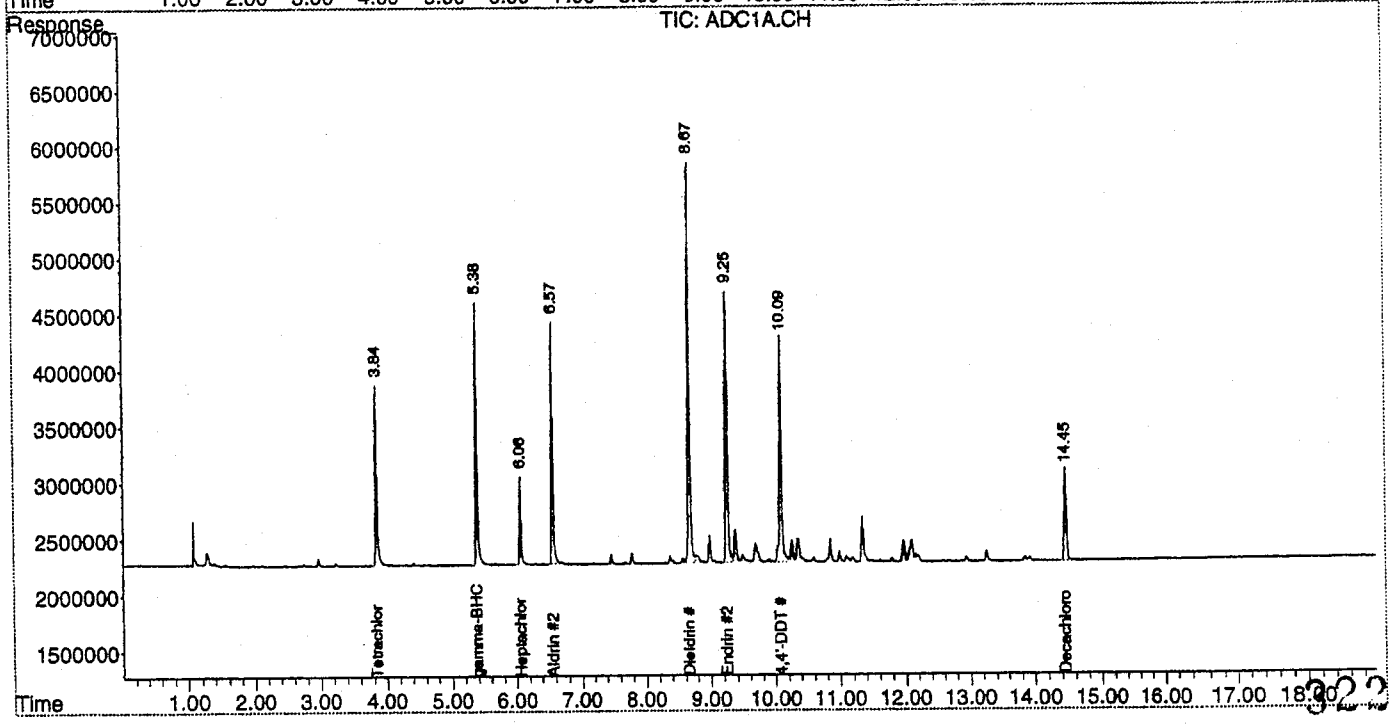
Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\019F1901.D\ADC1B.CH Vial: 19
Signal #2 : F:\HPCHEM\1\DATA\PE091102\019F1901.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:48:44 Operator: JDW
Sample : bs pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:51 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\020F2001.D\ADC1B.CH Vial: 20
Signal #2 : F:\HPCHEM\1\DATA\PE091102\020F2001.D\ADC1A.CH
Acq On : 12-Sep-2002, 04:10:35 Operator: JDW
Sample : bsd pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:51:23 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Ok

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	SR Tetrachloro-m-xy	3.86	3.83	14713974	28936584	22.524	21.237
	Spiked Amount 20.000 Range 60 - 150 Recovery =					112.62%	106.19%
22)	SR Decachlorobiphen	13.53	14.43	10898963	18490269	26.152	24.020
	Spiked Amount 20.000 Range 60 - 150 Recovery =					130.76%	120.10%
	Target Compounds						
2)	alpha-BHC	0.00	0.00	0	0	N.D.	N.D.
3) M	gamma-BHC (Linda	5.21	5.37	22361987	40411742	21.866	22.337
4) M	Heptachlor	5.95	6.05	22289961	13529526	22.792	15.415
5) M	Aldrin	6.42	6.55	21294280	37322333	21.527	21.765
6)	beta-BHC	0.00	0.00	0	0	N.D.	N.D.
7)	delta-BHC	0.00	0.00	0	0	N.D.	N.D.
8)	Heptachlor Epoxi	0.00	0.00	0	0	N.D. d	N.D. d
9)	Endosulfan I	0.00	0.00	0	0	N.D.	N.D.
10)	gamma-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
11)	alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.
12)	4,4'-DDE	0.00	0.00	0	0	N.D. d	N.D. d
13) M	Dieldrin	8.45	8.65	38819332	75660901	49.062	51.115
14) M	Endrin	8.88	9.23	26639259	52098890	46.060	48.647
15)	Endosulfan II	0.00	0.00	0	0	N.D. d	N.D. d
16)	4,4'-DDD	0.00	0.00	0	0	N.D. d	N.D. d
17) M	4,4'-DDT	9.54	10.07	26601811	48870486	43.175	51.903
18)	Endrin Aldehyde	0.00	0.00	0	0	N.D. d	N.D. d
19)	Endosulfan Sulfa	0.00	0.00	0	0	N.D. d	N.D. d
20)	Methoxychlor	0.00	0.00	0	0	N.D. d	N.D. d
21)	Endrin Ketone	0.00	0.00	0	0	N.D. d	N.D. d

323

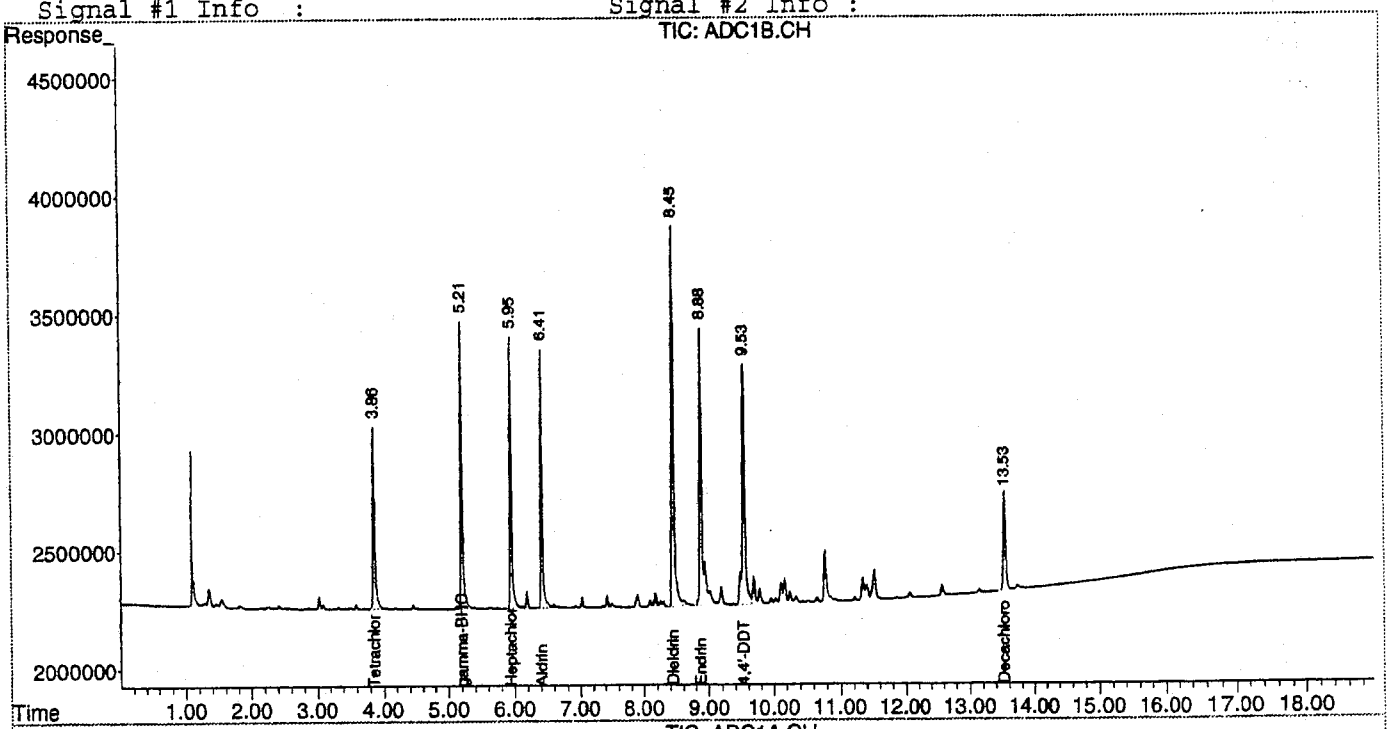
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

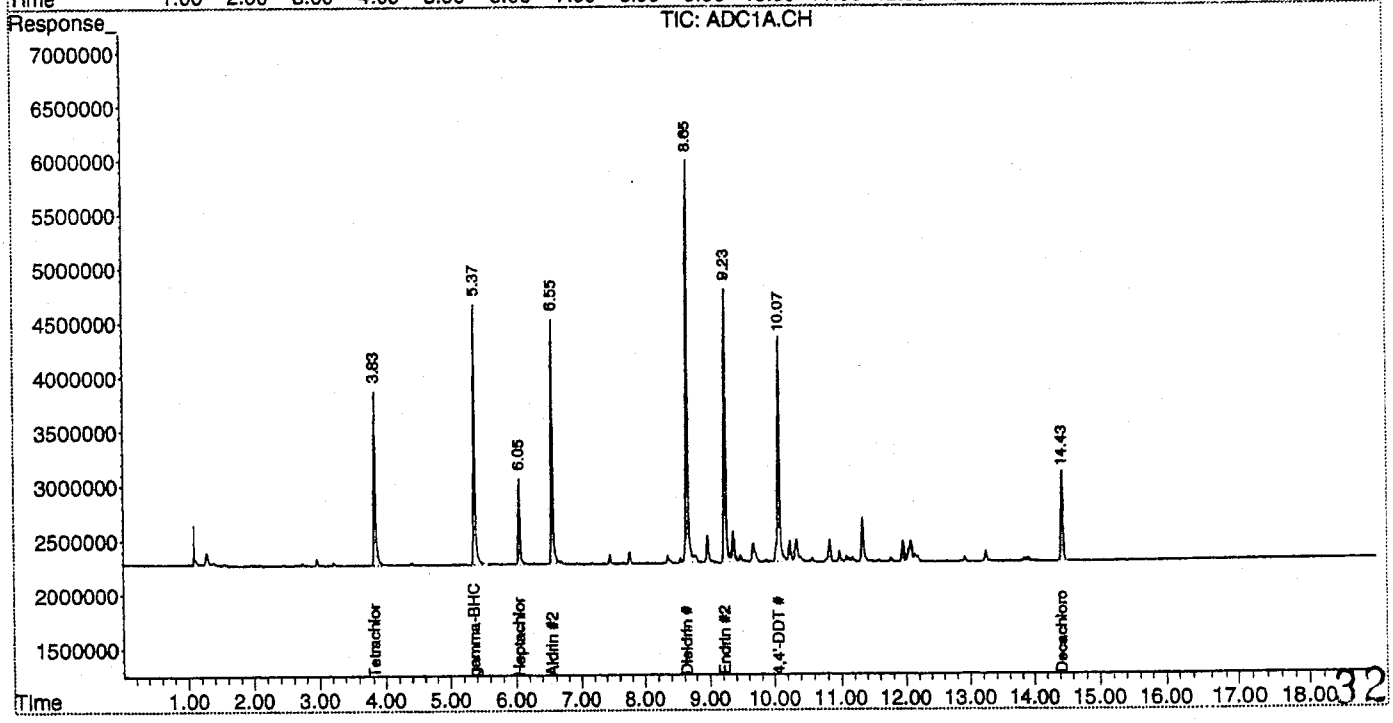
Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\020F2001.D\ADC1B.CH Vial: 20
Signal #2 : F:\HPCHEM\1\DATA\PE091102\020F2001.D\ADC1A.CH
Acq On : 12-Sep-2002, 04:10:35 Operator: JDW
Sample : bsd pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:51 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





324

MATIX SPIKE / MATRIX SPIKE DUPLICATE

Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\028F2801.D\ADC1B.CH Vial: 28
Signal #2 : F:\HPCHEM\1\DATA\PE091102\028F2801.D\ADC1A.CH
Acq On : 12-Sep-2002, 07:06:39 Operator: JDW
Sample : 108164-3 ms 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:58:45 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

OK

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.85	3.82	6384842	14215377	9.774	10.433
		Spiked Amount 20.000 Range 60 - 150 Recovery =					48.87%#	52.16%#
22)	SR	Decachlorobiphen	13.51	14.41	5836774	11667859	14.005	15.157
		Spiked Amount 20.000 Range 60 - 150 Recovery =					70.03%	75.78%
		Target Compounds						
2)		alpha-BHC	0.00	0.00	0	0	N.D. d	N.D. d
3)	M	gamma-BHC (Linda	5.20	5.36	8201707	14721868	8.020	8.137
4)	M	Heptachlor	5.94	6.04	10827379	14643534	11.071	16.684 #
5)	M	Aldrin	6.40	6.54	9219414	22367612	9.320	13.044
6)		beta-BHC	0.00	0.00	0	0	N.D. d	N.D. d
7)		delta-BHC	0.00	0.00	0	0	N.D. d	N.D. d
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D. d	N.D. d
9)		Endosulfan I	0.00	0.00	0	0	N.D. d	N.D. d
10)		gamma-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
11)		alpha-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
12)		4,4'-DDE	0.00	0.00	0	0	N.D. d	N.D. d
13)	M	Dieldrin	8.44	8.64	18153911	28708196	22.944	19.395
14)	M	Endrin	8.87	9.22	13059077	21826790	22.579	20.381
15)		Endosulfan II	0.00	0.00	0	0	N.D. d	N.D. d
16)		4,4'-DDD	0.00	0.00	0	0	N.D. d	N.D. d
17)	M	4,4'-DDT	9.52	10.06	12837897	24329744	20.836	25.840
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D. d	N.D. d
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D. d	N.D. d
20)		Methoxychlor	0.00	0.00	0	0	N.D. d	N.D. d
21)		Endrin Ketone	0.00	0.00	0	0	N.D. d	N.D. d

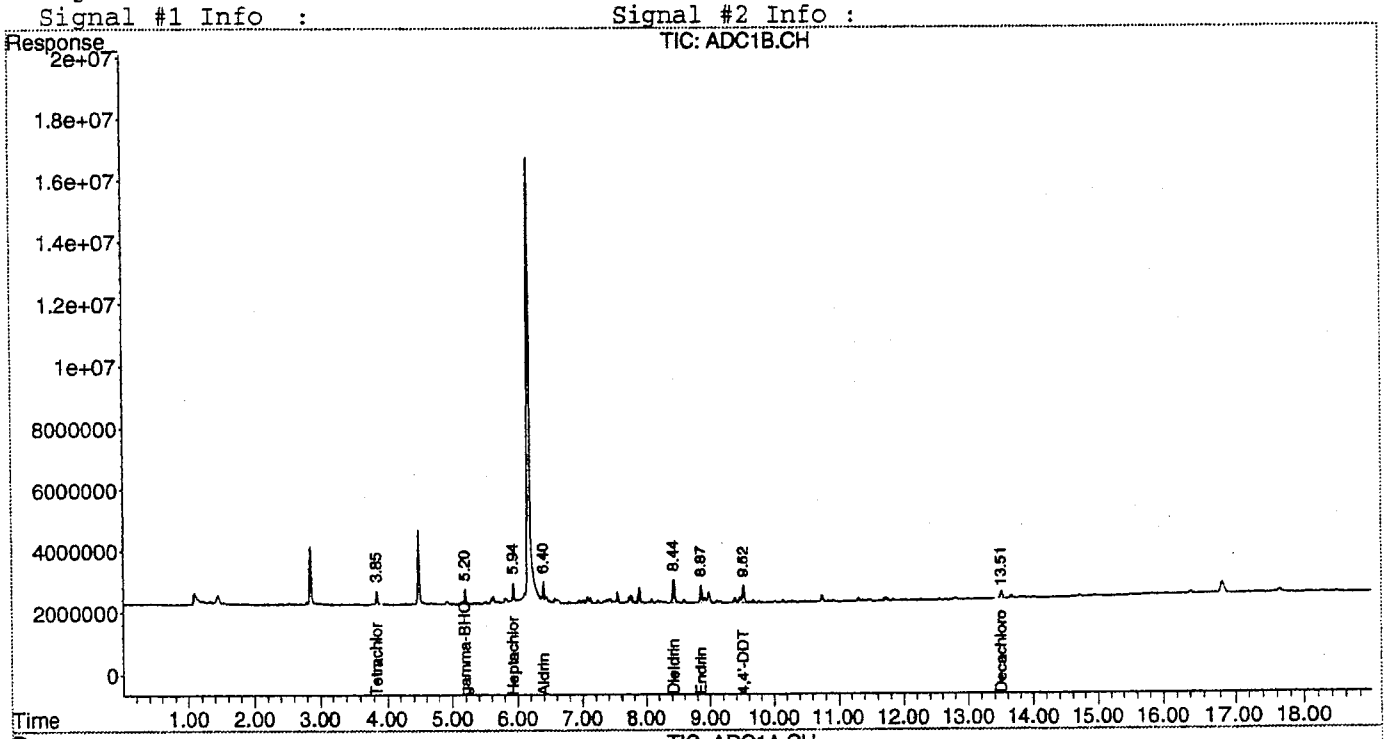
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
028F2801.D 8081_910.M Thu Sep 12 11:59:36 2002

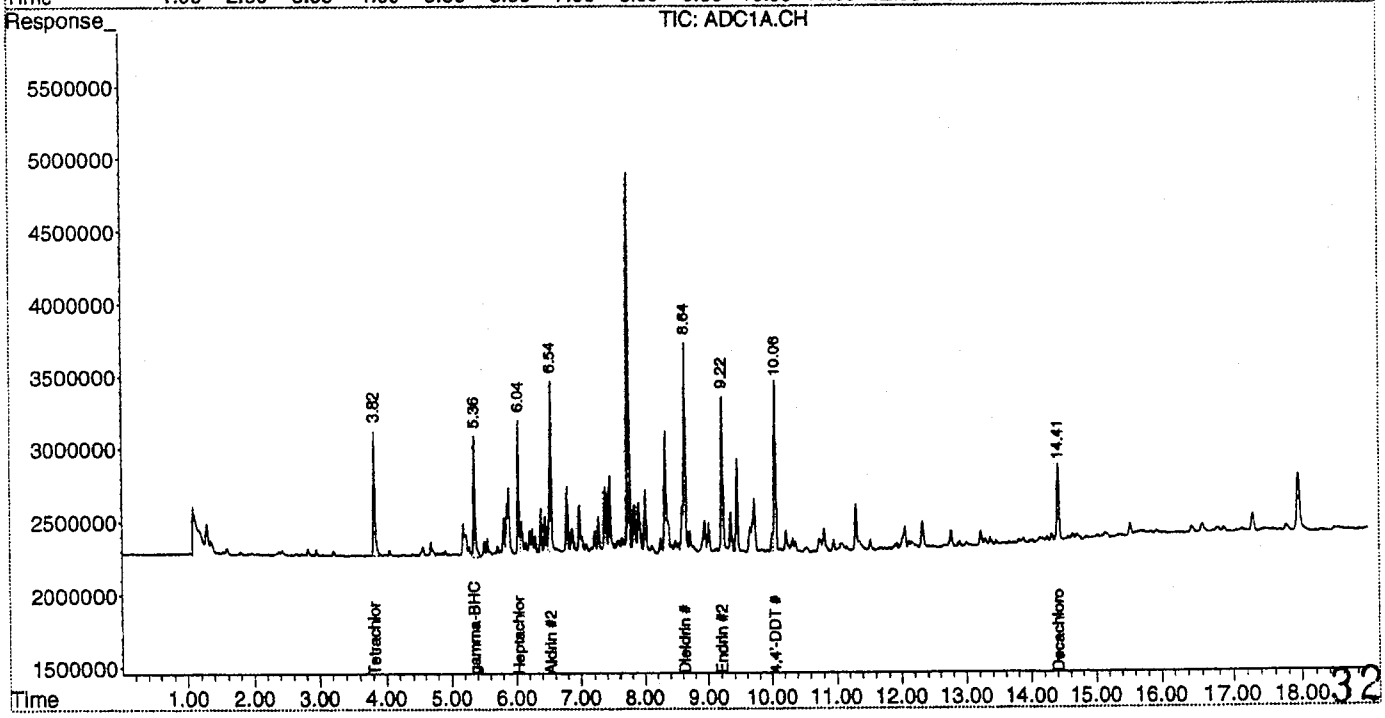
Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\028F2801.D\ADC1B.CH Vial: 28
Signal #2 : F:\HPCHEM\1\DATA\PE091102\028F2801.D\ADC1A.CH
Acq On : 12-Sep-2002, 07:06:39 Operator: JDW
Sample : 108164-3 ms 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:59 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\047F4701.D\ADC1B.CH Vial: 47
Signal #2 : F:\HPCHEM\1\DATA\PE091102\047F4701.D\ADC1A.CH
Acq On : 12-Sep-2002, 14:04:40 Operator: JDW
Sample : 108164-3 msd 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 15:20:14 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

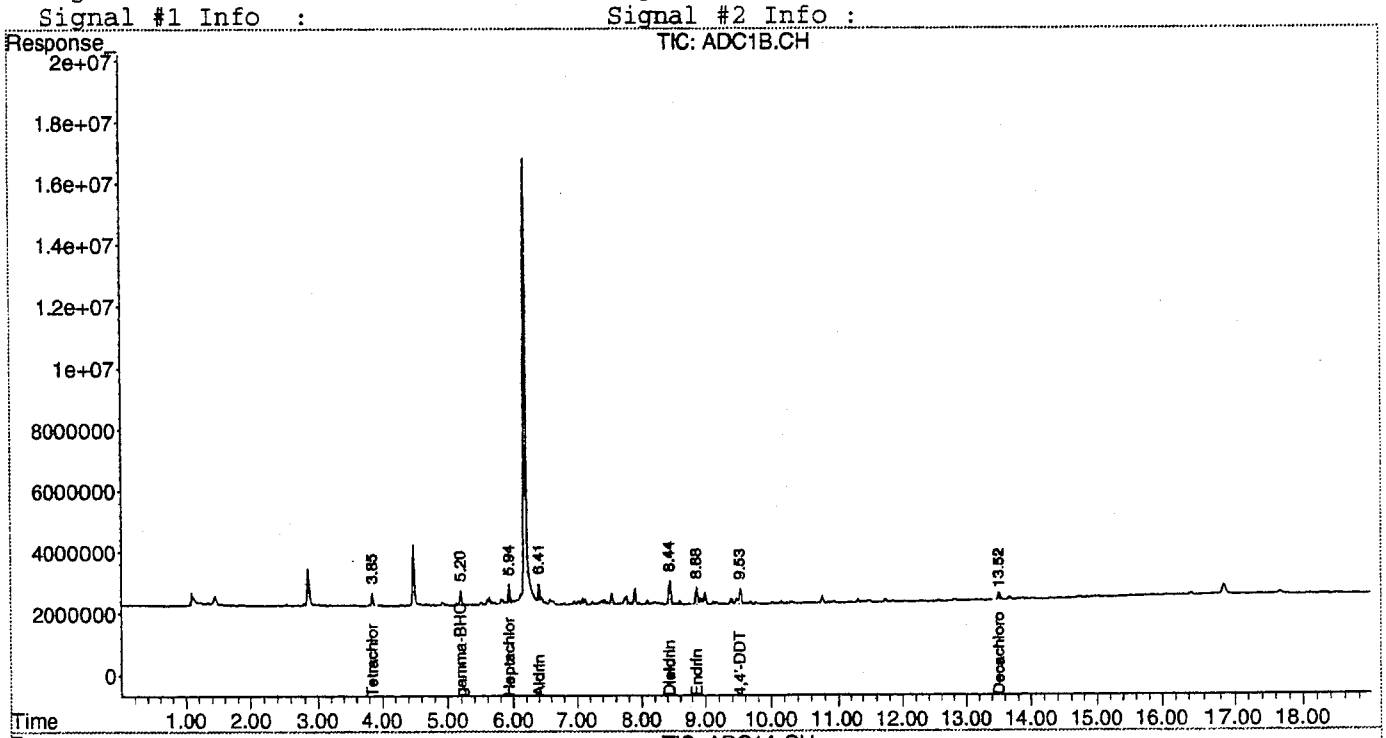
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.85	3.83	6450532	14520996	9.874	10.657
		Spiked Amount 20.000 Range 60 - 150 Recovery =					49.37%#	53.29%#
22)	SR	Decachlorobiphen	13.52	14.43	5626613	11664204	13.501	15.153
		Spiked Amount 20.000 Range 60 - 150 Recovery =					67.50%	75.77%
		Target Compounds						
2)		alpha-BHC	0.00	0.00	0	0	N.D. d	N.D. d
3)	M	gamma-BHC (Linda	5.20	5.37	8275053	15263575	8.091	8.437
4)	M	Heptachlor	5.94	6.04	10899388	13496261	11.145	15.377
5)	M	Aldrin	6.41	6.55	9992496	23135311	10.102	13.492
6)		beta-BHC	0.00	0.00	0	0	N.D. d	N.D. d
7)		delta-BHC	0.00	0.00	0	0	N.D. d	N.D. d
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D. d	N.D. d
9)		Endosulfan I	0.00	0.00	0	0	N.D. d	N.D. d
10)		gamma-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
11)		alpha-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
12)		4,4'-DDE	0.00	0.00	0	0	N.D. d	N.D. d
13)	M	Dieldrin	8.45	8.65	18308715	29938240	23.139	20.226
14)	M	Endrin	8.88	9.23	12849903	22116457	22.218	20.651
15)		Endosulfan II	0.00	0.00	0	0	N.D. d	N.D. d
16)		4,4'-DDD	0.00	0.00	0	0	N.D. d	N.D. d
17)	M	4,4'-DDT	9.53	10.07	11791177	23507002	19.137	24.966
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D. d	N.D. d
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D. d	N.D. d
20)		Methoxychlor	0.00	0.00	0	0	N.D. d	N.D. d
21)		Endrin Ketone	0.00	0.00	0	0	N.D. d	N.D. d

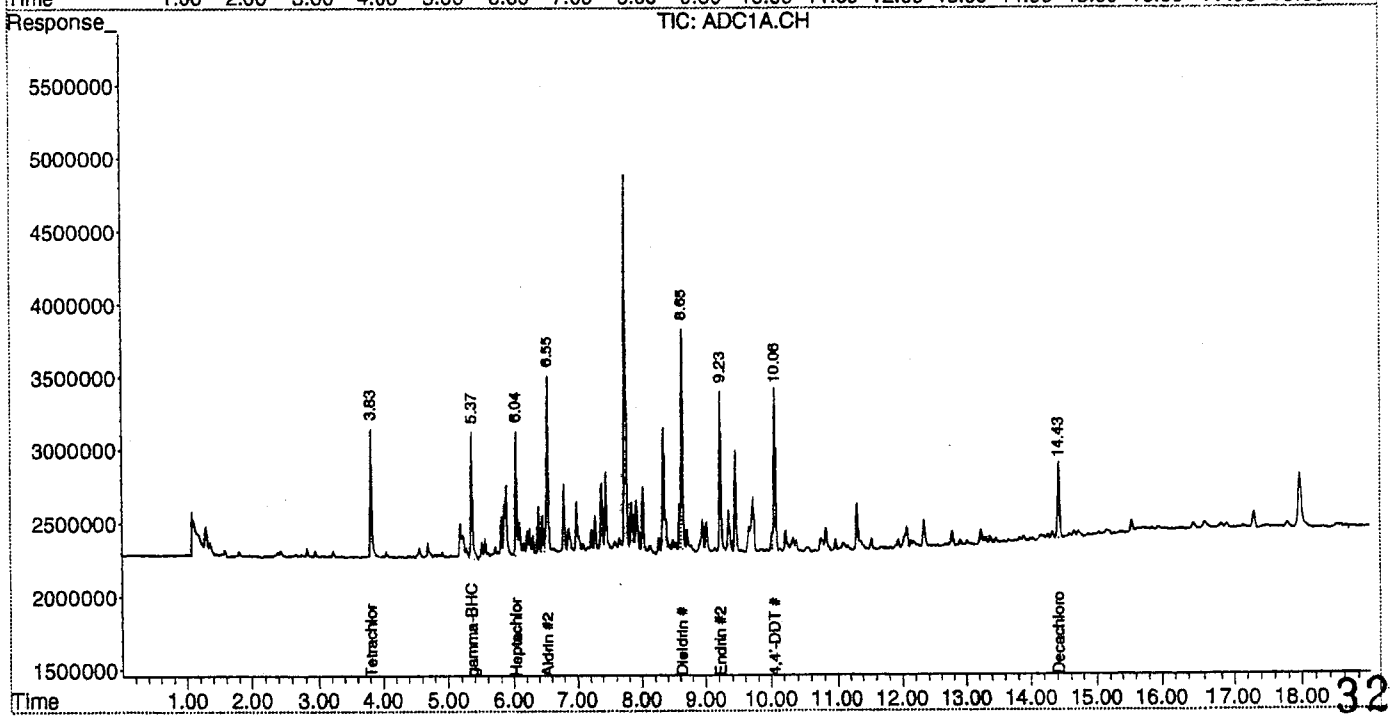
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
047F4701.D 8081_910.M Thu Sep 12 15:20:44 2002

Signal #1 : F:\HPCHEM\1\DATA\PE091102\047F4701.D\ADC1B.CH Vial: 47
Signal #2 : F:\HPCHEM\1\DATA\PE091102\047F4701.D\ADC1A.CH
Acq On : 12-Sep-2002, 14:04:40 Operator: JDW
Sample : 108164-3 msd 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 15:20 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





LABORATORY WORKSHEETS

Chlorinated Pesticides Worksheet - total

QC Level:Tier IV	Due: 09/04/02
Matrix:solid	Work Order - 108164
CH2M Hill	Proj. Manager:Katie Downie

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders. See attached for requested RL & analyte list

Sample number 108164-1	Client Sample ID	PP011806
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/21/02 10:30:00 AM**
Chlor. Pest. - EPA 8081		

Sample number 108164-2	Client Sample ID	PP011807
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/21/02 11:45:00 AM**
Chlor. Pest. - EPA 8081		

Sample number 108164-3	Client Sample ID	PP011808
Sample Weight/Volume MS/MSD	Date Received	8/23/02
	Date Sampled	**8/21/02 2:15:00 PM**
Chlor. Pest. - EPA 8081		

Analyst _____ Date 9/12/2002

Reviewed by _____ Date 9/13/2002

Organics worksheet v4.01
If you have suggestions for changes please bring them to me - Dennis

Sample Prep Log Sheet 9/3/02

Organochlorine Pesticide Analysis by USEPA Method 8081A

[redacted]	pe1511				
	561-80-4				
	Pest889	Weighed By/Date			
		Extracted By/Date	JW 9/3/02		
	012691	Florisil & sulfur cleanups performed.			
	3550				
	9/3/2002				
		Spike Witness Signature/Date	[signature] 9/3/02		

[redacted]					
		10.0000	10.0	100	
		10.0000	10.0	100	100
		10.0000	10.0	100	100
		10.2092	10.0	100	100
		11.9823	10.0	100	100

[redacted]					
108160-1	PP011802	10.2202	10.0	100	☐ No ☑ Yes
108160-2	PP011803	10.1058	10.0	100	☐ No ☑ Yes
108160-3	PP011804D	11.0424	10.0	100	☐ No ☑ Yes
108160-4	PP011805	10.6777	10.0	100	☐ No ☑ Yes
108164-1	PP011806	11.3644	10.0	100	☐ No ☑ Yes
108164-2	PP011807	11.2222	10.0	100	☐ No ☑ Yes
108164-3	PP011808	10.9277	10.0	100	☐ No ☑ Yes
108166-1	PP011801	10.3754	10.0	100	☐ No ☑ Yes
108166-2	PP011809	11.1500	10.0	100	☐ No ☑ Yes
108166-3	PP011810	10.2683	10.0	100	☐ No ☑ Yes
108177-1	PP01M105	10.2935	10.0	100	☐ No ☑ Yes
108177-2	PP01M106	11.1652	10.0	100	☐ No ☑ Yes
108177-3	PP01M107	10.4641	10.0	100	☐ No ☑ Yes
108177-4	PP01M108	10.3117	10.0	100	☐ No ☑ Yes
108177-5	PP01M109	10.7173	10.0	100	☐ No ☑ Yes
108177-6	PP01M110	10.6280	10.0	100	☐ No ☑ Yes
108177-8	PP01M101	10.9303	10.0	100	☐ No ☑ Yes
108177-9	PP01M102D	10.5377	10.0	100	☐ No ☑ Yes
108177-10	PP01M103	10.2493	10.0	100	☐ No ☑ Yes
108177-11	PP01M104	10.3729	10.0	100	☐ No ☑ Yes

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108164
Sample Number	1
Data Filename	pe1511
Client Sample ID	PP011806
Date Received	08-23-02
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	sample

Related Blank: pe1511

Sample weight (g)	11.3644	=	0.01136 /kg	Calc. Fact.	2.603760521
Extract volume (ml)	10	=	10 ml	Dry Weight	7.68119796 g
Dilution Factor	2	=	2	Sample Units	ug/kg
% Solids	67.59	=	0.6759	Spike Factor	130.188026
GPC (Enter 2 If GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	7.5739		75.7	OK	70	122
x	Decachlorobiphenyl	17.5358	X9	175	HIGH	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	10.9802	C2		28.6	C2	2.6
x	alpha-BHC	0.3962	C1		1.03	J C1	2.6
x	beta-BHC	0.456	C2		1.19	J C2	2.6
x	4,4'-DDD	20.9365	C1		54.5	C1	5.21
x	4,4'-DDE	47.7585	C1		124	C1	5.21
x	Endosulfan I	1.902	C2		4.95	C2	2.6
x	alpha-Chlordane	5.664	C1		14.7	C1	2.6
x	gamma-Chlordane	7.6297	C2		19.9	C2	2.6
x	Hexachlorobenzene	2.088	C2		5.44	C2	2.6
x	trans-Nonachlor	5.878	C1		15.3	C1	5.21
x	2,4'-DDD	9.203	C1		24	C1	5.21

$$\frac{10.980\ \text{ug/L} \times 0.01\text{L} \times 2}{0.0113644\text{Kg} \times 0.6759} = 28.6\ \text{ug/Kg}$$

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**2**
Data Filename	**pe1511**
Client Sample ID	**PP011807**
Date Received	**08-23-02**
Date Prepared	**09-03-02**
Date Analyzed	**09-12-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blank: pe1511

Sample weight (g)	**11.2222**	=	0.01122 /kg	Calc. Fact.	2.340971689
Extract volume (ml)	**10**	=	10 ml	Dry Weight	8.54346086 g
Dilution Factor	**2**	=	2	Sample Units	ug/kg
% Solids	**76.13**	=	0.7613	Spike Factor	117.0485845
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	8.972		89.7	OK	70	122
x	Decachlorobiphenyl	15.8164	X9	158	HIGH	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	3.579	C2		8.38	C2	2.34
x	beta-BHC	0.987	C2		2.31	J C2	2.34
x	4,4'-DDD	35.3452	C1		82.7	C1	4.68
x	4,4'-DDE	32.2214	C1		75.4	C1	4.68
x	alpha-Chlordane	7.3887	C2		17.3	C2	2.34
x	gamma-Chlordane	10.813	C2		25.3	C2	2.34
x	Hexachlorobenzene	1.367	C2		3.2	C2	2.34
x	trans-Nonachlor	5.777	C2		13.5	C2	4.68
x	2,4'-DDD	7.487	C2		17.5	C2	4.68

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108164
Sample Number	3
Data Filename	pe1511
Client Sample ID	PP011808
Date Received	08-23-02
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	sample

Related Blank: pe1511

Sample weight (g)	10.9277	=	0.01093 /kg	Calc. Fact.	2.353364148
Extract volume (ml)	10	=	10 ml	Dry Weight	8.49847229 g
Dilution Factor	2	=	2	Sample Units	ug/kg
% Solids	77.77	=	0.7777	Spike Factor	117.6682074
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	10.2887		103	OK	70	122
x	Decachlorobiphenyl	11.4953		115	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	2.137	C2		5.03	C2	2.35
x	beta-BHC	0.613	C2		1.44	J C2	2.35
x	4,4'-DDD	4.4863	C1		10.6	C1	4.71
x	4,4'-DDE	11.8568	C1		27.9	C1	4.71
x	Endosulfan I	0.585	C2		1.38	J C2	2.35
x	alpha-Chlordane	0.707	C2		1.66	J C2	2.35
x	gamma-Chlordane	3.0707	C1		7.23	C1	2.35
x	trans-Nonachlor	3.905	C2		9.19	C2	4.71

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blank: noblank
Data Filename	pe1511
Client Sample ID	
Date Received	
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	blank

Sample weight (g)	10	=	0.01 /kg	Calc. Fact.	1
Extract volume (ml)	10	=	10 ml	Dry Weight	10 g
Dilution Factor	1	=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	100
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	22.2031		111	OK	70	122
x	Decachlorobiphenyl	25.6911		128	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	
Data Filename	pe1511
Client Sample ID	
Date Received	
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	bs

Related Blank: pe1511

Sample weight (g)	10	=	0.01 /kg	Calc. Fact.	1
Extract volume (ml)	10	=	10 ml	Dry Weight	10 g
Dilution Factor	1	=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	100
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	22.8287		114	OK	70	122
x	Decachlorobiphenyl	25.947		130	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	21.2522	C1		21.3	C1	1
x	gamma-BHC (Lindane)	21.2179	C1		21.2	C1	1
x	4,4'-DDT	42.4713	C1		42.5	C1	2
x	Dieldrin	48.2268	C1		48.2	C1	2
x	Endrin	45.1831	C1		45.2	C1	2
x	Heptachlor	22.3562	C1		22.4	C1	1

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blank: pe1511
Data Filename	**pe1511**
Client Sample ID	
Date Received	
Date Prepared	**09-03-02**
Date Analyzed	**09-12-02**
Sample matrix type	**solid**
QC sample type	**bsd**

Sample weight (g)	**10**	=	0.01 /kg	Calc. Fact.	1
Extract volume (ml)	**10**	=	10 ml	Dry Weight	10 g
Dilution Factor	**1**	=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	100
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	22.5236		113	OK	70	122
x	Decachlorobiphenyl	26.152		131	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	21.5271	C1		21.5	C1	1
x	gamma-BHC (Lindane)	21.8656	C1		21.9	C1	1
x	4,4'-DDT	43.1748	C1		43.2	C1	2
x	Dieldrin	49.0616	C1		49.1	C1	2
x	Endrin	46.0598	C1		46.1	C1	2
x	Heptachlor	22.7917	C1		22.8	C1	1

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108164
Sample Number	3
Data Filename	pe1511
Client Sample ID	PP011808
Date Received	08-23-02
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	ms

Related Blank: pe1511

Sample weight (g)	10.2092	=	0.01021 /kg	Calc. Fact.	2.518988501
Extract volume (ml)	10	=	10 ml	Dry Weight	7.93969484 g
Dilution Factor	2	=	2	Sample Units	ug/kg
% Solids	77.77	=	0.7777	Spike Factor	125.949425
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	9.7737		97.7	OK	70	122
x	Decachlorobiphenyl	14.0053		140	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	9.3202	C1		23.5	C1	2.52
x	gamma-BHC (Lindane)	8.0196	C1		20.2	C1	2.52
x	4,4'-DDT	20.8359	C1		52.5	C1	5.04
x	Dieldrin	22.9437	C1		57.8	C1	5.04
x	Endrin	22.5794	C1		56.9	C1	5.04
x	Heptachlor	11.071	C2		27.9	C2	2.52

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108164
Sample Number	3
Data Filename	pe1511
Client Sample ID	PP011808
Date Received	08-23-02
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	msd

Related Blank: pe1511

Sample weight (g)	11.9823	=	0.01198 /kg	Calc. Fact.	2.14623715
Extract volume (ml)	10	=	10 ml	Dry Weight	9.31863471 g
Dilution Factor	2	=	2	Sample Units	ug/kg
% Solids	77.77	=	0.7777	Spike Factor	107.3118575
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	9.8742		98.7	OK	70	122
x	Decachlorobiphenyl	13.501		135	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	10.1017	C1		21.7	C1	2.15
x	gamma-BHC (Lindane)	8.0914	C1		17.4	C1	2.15
x	4,4'-DDT	19.1371	C1		41.1	C1	4.29
x	Dieldrin	23.1394	C1		49.7	C1	4.29
x	Endrin	22.2177	C1		47.7	C1	4.29
x	Heptachlor	11.1447	C1		23.9	C1	2.15

TOTAL METALS DATA PACKAGE

Mean Data

ID: Calib Blank 1 Seq. No.: 1 A/S Pos: 1

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 10:57:04

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	261,646.5	[0.00]	2,740.52	%				1.05 %
Sc 361.383	654,711.1	[0.00]	7,923.84	%				1.21 %
Al 308.215	2,672.0	[0.00]	74.19	mg/L				2.78 %

Mean Data

ID: High Standard Seq. No.: 2 A/S Pos: 2

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 11:12:44

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	265,598.0	101.5	5,514.92	%				2.08 %
Sc 361.383	678,072.3	103.6	5,466.76	%				0.81 %
Al 308.215	43,369.7	[2.00]	613.62	mg/L				1.41 %

Mean Data

ID: ICV Seq. No.: 3 A/S Pos: 3

2002/09/03 07:43:11 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 11:17:18

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	267,383.4	102.2	1.81	%				1.77 %
Sc 361.383	670,983.6	102.5	1.87	%				1.83 %
Al 308.215	39,278.9	1.811	0.0083	mg/L	1.811			0.46 %

2002/09/03 07:43:11 QC value within limits for Al 308.215 Recovery = 90.57%

Mean Data

ID: ICB Seq. No.: 4 A/S Pos: 1

2002/09/03 07:43:14 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 11:23:05

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	269,904.0	103.2	0.91	%				0.88 %
Sc 361.383	674,113.6	103.0	0.89	%				0.86 %
Al 308.215	-181.7	-0.0084	0.00298	mg/L	-0.0084			35.61 %

2002/09/03 07:43:14 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: ICSA Seq. No.: 5 A/S Pos: 7

2002/09/03 07:43:19 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 11:43:57

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	256,246.2	97.94	0.510	%				0.52 %

Sc 361.383	616,162.1	94.11	0.749	%					0.80 %
Al 308.215	2,730,993.3	125.9	0.99	mg/L	125.9				0.78 %

2002/09/03 07:43:19 QC value within limits for Al 308.215 Recovery = 104.95%

Mean Data

ID: ICSAB **Seq. No.:** 6 **A/S Pos:** 8

2002/09/03 07:43:19 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 11:48:31

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	256,963.6	98.21	0.546	%				0.56 %
Sc 361.383	616,792.8	94.21	0.544	%				0.58 %
Al 308.215	2,826,940.6	130.4	1.19	mg/L	130.4			0.92 %

2002/09/03 07:43:19 QC value within limits for Al 308.215 Recovery = 108.64%

Mean Data

ID: CCV **Seq. No.:** 7 **A/S Pos:** 5

2002/09/03 07:44:46 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 20:17:34

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	188,891.6	102.1	7.37	%				7.21 %
Sc 361.383	500,904.7	106.9	7.84	%				7.33 %
Al 308.215	10,731.1	0.4608	0.04646	mg/L	0.4608			10.08 %

2002/09/03 07:44:46 QC value within limits for Al 308.215 Recovery = 92.16%

Mean Data

ID: CCB **Seq. No.:** 8 **A/S Pos:** 6

2002/09/03 07:44:46 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 20:18:58

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	181,898.4	98.35	6.125	%				6.23 %
Sc 361.383	459,275.0	97.98	6.308	%				6.44 %
Al 308.215	122.4	0.0053	0.00358	mg/L	0.0053			68.05 %

2002/09/03 07:44:46 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: mb sp883 **Seq. No.:** 9 **A/S Pos:** 93

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 20:20:21

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	180,208.9	97.44	6.296	%			%	6.46 %
Sc 361.383	459,118.0	97.95	6.381	%			%	6.51 %
Al 308.215	-52.8	-0.0023	0.00818	mg/L	-0.0023	0.00818	mg/L	361.06 %

Mean Data

ID: 108164-3-1/5 Seq. No.: 10 A/S Pos: 94

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:21:41

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	178,976.0	96.77	2.598	%			%	2.68 %
Sc 361.383	475,601.0	101.5	2.85	%			%	2.81 %
Al 308.215	142,228.7	6.108	0.1871	mg/L	6.108	0.1871	mg/L	3.06 %

Mean Data

ID: 108164-3 Seq. No.: 11 A/S Pos: 95

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:23:53

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	177,847.4	96.16	4.508	%			%	4.69 %
Sc 361.383	489,683.5	104.5	2.98	%			%	2.86 %
Al 308.215	674,432.1	28.96	1.244	mg/L	28.96	1.244	mg/L	4.29 %

Mean Data

ID: 108164-3d Seq. No.: 12 A/S Pos: 96

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:26:04

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	181,112.5	97.93	1.291	%			%	1.32 %
Sc 361.383	500,471.2	106.8	1.51	%			%	1.41 %
Al 308.215	561,214.2	24.10	0.364	mg/L	24.10	0.364	mg/L	1.51 %

Mean Data

ID: 108164-3dd Seq. No.: 13 A/S Pos: 97

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:28:14

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	173,670.6	93.90	2.670	%			%	2.84 %
Sc 361.383	486,277.1	103.7	3.00	%			%	2.90 %
Al 308.215	673,315.5	28.91	0.660	mg/L	28.91	0.660	mg/L	2.28 %

Mean Data

ID: 108164-3s Seq. No.: 14 A/S Pos: 98

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:30:25

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	177,035.3	95.72	0.677	%			%	0.71 %

Sc 361.383	481,808.0	102.8	0.73	%			%	0.71 %
Al 308.215	664,639.1	28.54	0.417	mg/L	28.54	0.417	mg/L	1.46 %

Mean Data

ID: 108164-3sd Seq. No.: 15 A/S Pos: 99

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:32:36

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	174,680.3	94.45	1.991	%			%	2.11 %
Sc 361.383	472,495.9	100.8	2.06	%			%	2.04 %
Al 308.215	608,269.4	26.12	0.822	mg/L	26.12	0.822	mg/L	3.15 %

Mean Data

ID: 108164-3ps Seq. No.: 16 A/S Pos: 100

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:34:48

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	164,879.0	89.15	2.211	%			%	2.48 %
Sc 361.383	461,169.7	98.39	2.379	%			%	2.42 %
Al 308.215	796,116.9	34.19	1.220	mg/L	34.19	1.220	mg/L	3.57 %

Mean Data

ID: lcs-soil Seq. No.: 17 A/S Pos: 101

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:37:00

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	174,578.0	94.40	2.205	%			%	2.34 %
Sc 361.383	467,141.6	99.66	2.315	%			%	2.32 %
Al 308.215	501,128.5	21.52	0.539	mg/L	21.52	0.539	mg/L	2.50 %

Mean Data

ID: CCV Seq. No.: 18 A/S Pos: 5

2002/09/03 07:44:49 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:39:14

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	175,294.7	94.78	3.776	%				3.98 %
Sc 361.383	470,979.8	100.5	6.27	%				6.24 %
Al 308.215	11,652.1	0.5004	0.04124	mg/L	0.5004			8.24 %

2002/09/03 07:44:49 QC value within limits for Al 308.215 Recovery = 100.07%

Mean Data

ID: CCB Seq. No.: 19 A/S Pos: 6

2002/09/03 07:44:49 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:40:39

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	181,119.0	97.93	5.319	%				5.43 %
Sc 361.383	458,188.4	97.75	5.428	%				5.55 %
Al 308.215	199.1	0.0086	0.00822	mg/L	0.0086			96.12 %

2002/09/03 07:44:49 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: mb sp883 Seq. No.: 20 A/S Pos: 102

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:42:00

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	189,987.9	102.7	3.46	%			%	3.37 %
Sc 361.383	480,791.3	102.6	3.18	%			%	3.10 %
Al 308.215	193.9	0.0083	0.00287	mg/L	0.0083	0.00287	mg/L	34.51 %

Mean Data

ID: 180164-1 Seq. No.: 21 A/S Pos: 103

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:43:16

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	175,425.6	94.85	0.933	%			%	0.98 %
Sc 361.383	496,779.8	106.0	1.41	%			%	1.33 %
Al 308.215	690,489.7	29.65	0.298	mg/L	29.65	0.298	mg/L	1.01 %

Mean Data

ID: 108164-2 Seq. No.: 22 A/S Pos: 104

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:45:23

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	167,399.1	90.51	3.705	%			%	4.09 %
Sc 361.383	457,757.0	97.66	3.956	%			%	4.05 %
Al 308.215	576,539.2	24.76	1.027	mg/L	24.76	1.027	mg/L	4.15 %

Mean Data

ID: 108160-1 Seq. No.: 23 A/S Pos: 105

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:47:29

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	168,386.0	91.05	2.954	%			%	3.24 %

Sc 361.383	468,350.5	99.92	3.124	%			%	3.13 %
Al 308.215	664,538.6	28.54	1.099	mg/L	28.54	1.099	mg/L	3.85 %

Mean Data

ID: 108160-2 Seq. No.: 24 A/S Pos: 106

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:49:36

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	173,155.8	93.63	3.132	%			%	3.35 %
Sc 361.383	473,391.8	101.0	3.34	%			%	3.31 %
Al 308.215	577,440.1	24.80	0.766	mg/L	24.80	0.766	mg/L	3.09 %

Mean Data

ID: 108160-3 Seq. No.: 25 A/S Pos: 107

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:51:46

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	180,005.0	97.33	2.650	%			%	2.72 %
Sc 361.383	512,429.9	109.3	1.47	%			%	1.34 %
Al 308.215	883,236.7	37.93	0.767	mg/L	37.93	0.767	mg/L	2.02 %

Mean Data

ID: 108160-4 Seq. No.: 26 A/S Pos: 108

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:53:55

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	170,794.4	92.35	2.223	%			%	2.41 %
Sc 361.383	465,325.7	99.27	2.436	%			%	2.45 %
Al 308.215	554,089.1	23.79	0.531	mg/L	23.79	0.531	mg/L	2.23 %

Mean Data

ID: 108166-1 Seq. No.: 27 A/S Pos: 109

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:56:03

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	162,007.7	87.60	4.202	%			%	4.80 %
Sc 361.383	455,094.2	97.09	4.388	%			%	4.52 %
Al 308.215	716,277.4	30.76	1.182	mg/L	30.76	1.182	mg/L	3.84 %

Mean Data

ID: bs sp883 **Seq. No.:** 28 **A/S Pos:** 110

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 20:58:11

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	182,646.4	98.76	0.986	%			%	1.00 %
Sc 361.383	461,422.5	98.44	0.794	%			%	0.81 %
Al 308.215	80,671.1	3.464	0.0306	mg/L	3.464	0.0306	mg/L	0.88 %

Mean Data

ID: bsd sp883 **Seq. No.:** 29 **A/S Pos:** 111

Sample Qty g Prep. Vol.: Dilution: : **Date:** 2002/08/30 21:00:19

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	166,520.2	90.04	4.194	%			%	4.66 %
Sc 361.383	426,339.3	90.96	4.429	%			%	4.87 %
Al 308.215	88,977.9	3.821	0.1819	mg/L	3.821	0.1819	mg/L	4.76 %

Mean Data

ID: CCV **Seq. No.:** 30 **A/S Pos:** 5

2002/09/03 07:44:52 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:02:32

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	171,220.0	92.58	7.294	%				7.88 %
Sc 361.383	469,454.5	100.2	8.71	%				8.70 %
Al 308.215	11,497.5	0.4937	0.05301	mg/L	0.4937			10.74 %

2002/09/03 07:44:52 QC value within limits for Al 308.215 Recovery = 98.75%

Mean Data

ID: CCB **Seq. No.:** 31 **A/S Pos:** 6

2002/09/03 07:44:53 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:03:55

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	190,911.7	103.2	4.80	%				4.65 %
Sc 361.383	482,277.1	102.9	4.67	%				4.54 %
Al 308.215	30.0	0.0013	0.00563	mg/L	0.0013			436.58 %

2002/09/03 07:44:53 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: mb sp883 **Seq. No.:** 32 **A/S Pos:** 112

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:05:19

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	164,798.3	89.11	4.643	%			%	5.21 %

Sc 361.383	424,073.0	90.47	5.218	%			%	5.77 %
Al 308.215	576.7	0.0248	0.01032	mg/L	0.0248	0.01032	mg/L	41.69 %

Mean Data

ID: 108166-2 Seq. No.: 33 A/S Pos: 113

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:06:41

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	180,074.4	97.37	1.386	%			%	1.42 %
Sc 361.383	503,782.9	107.5	1.74	%			%	1.61 %
Al 308.215	592,283.7	25.43	0.509	mg/L	25.43	0.509	mg/L	2.00 %

Mean Data

ID: 108166-3 Seq. No.: 34 A/S Pos: 114

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:08:51

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	163,832.8	88.59	3.009	%			%	3.40 %
Sc 361.383	482,397.0	102.9	3.28	%			%	3.19 %
Al 308.215	951,346.8	40.85	1.352	mg/L	40.85	1.352	mg/L	3.31 %

Mean Data

ID: 108177-1 Seq. No.: 35 A/S Pos: 115

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:11:05

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	182,510.2	98.68	7.236	%			%	7.33 %
Sc 361.383	459,286.1	97.99	5.414	%			%	5.53 %
Al 308.215	291,840.5	12.53	0.689	mg/L	12.53	0.689	mg/L	5.50 %

Mean Data

ID: 108177-2 Seq. No.: 36 A/S Pos: 116

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:13:18

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	169,397.4	91.59	4.530	%			%	4.95 %
Sc 361.383	455,607.7	97.20	4.999	%			%	5.14 %
Al 308.215	477,497.7	20.51	1.161	mg/L	20.51	1.161	mg/L	5.66 %

Mean Data

ID: 108177-3 Seq. No.: 37 A/S Pos: 117

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:15:27

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	178,697.1	96.62	2.540	%			%	2.63 %
Sc 361.383	481,286.5	102.7	2.61	%			%	2.54 %
Al 308.215	484,312.0	20.80	0.539	mg/L	20.80	0.539	mg/L	2.59 %

Mean Data

ID: 108177-4 Seq. No.: 38 A/S Pos: 118

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:17:34

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	182,425.3	98.64	1.946	%			%	1.97 %
Sc 361.383	539,975.7	115.2	1.31	%			%	1.13 %
Al 308.215	709,171.8	30.45	0.472	mg/L	30.45	0.472	mg/L	1.55 %

Mean Data

ID: 108177-5 Seq. No.: 39 A/S Pos: 119

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:19:41

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	161,736.8	87.45	2.723	%			%	3.11 %
Sc 361.383	450,743.9	96.16	2.876	%			%	2.99 %
Al 308.215	695,999.1	29.89	1.126	mg/L	29.89	1.126	mg/L	3.77 %

Mean Data

ID: lcs-soil Seq. No.: 40 A/S Pos: 120

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:21:48

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	192,382.5	104.0	2.55	%			%	2.45 %
Sc 361.383	509,318.5	108.7	2.81	%			%	2.59 %
Al 308.215	451,115.5	19.37	0.691	mg/L	19.37	0.691	mg/L	3.57 %

Mean Data

ID: CCV Seq. No.: 41 A/S Pos: 5

2002/09/03 07:44:55 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:23:59

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	170,640.8	92.27	7.220	%				7.83 %

Sc 361.383	466,134.4	99.45	10.702	%					10.76 %
Al 308.215	11,798.0	0.5066	0.06245	mg/L	0.5066				12.33 %

2002/09/03 07:44:55 QC value within limits for Al 308.215 Recovery = 101.33%

Mean Data

ID: CCB **Seq. No.:** 42 **A/S Pos:** 6

2002/09/03 07:44:56 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:25:24

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	176,540.2	95.46	5.678	%				5.95 %
Sc 361.383	446,724.8	95.31	5.638	%				5.92 %
Al 308.215	292.5	0.0126	0.00697	mg/L	0.0126			55.52 %

2002/09/03 07:44:56 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: mb sp883 **Seq. No.:** 43 **A/S Pos:** 121

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:26:46

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	187,412.5	101.3	7.09	%			%	7.00 %
Sc 361.383	477,730.4	101.9	6.93	%			%	6.80 %
Al 308.215	-110.1	-0.0047	0.00343	mg/L	-0.0047	0.00343	mg/L	72.46 %

Mean Data

ID: 108177-6 **Seq. No.:** 44 **A/S Pos:** 122

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:28:04

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	170,370.7	92.12	2.662	%			%	2.89 %
Sc 361.383	472,779.5	100.9	2.99	%			%	2.96 %
Al 308.215	541,426.2	23.25	1.085	mg/L	23.25	1.085	mg/L	4.67 %

Mean Data

ID: 108177-8 **Seq. No.:** 45 **A/S Pos:** 123

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:30:11

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	177,938.0	96.21	4.300	%			%	4.47 %
Sc 361.383	489,366.5	104.4	4.69	%			%	4.50 %
Al 308.215	585,861.9	25.16	1.055	mg/L	25.16	1.055	mg/L	4.19 %

Mean Data

ID: 108177-9 Seq. No.: 46 A/S Pos: 124

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:32:19

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	167,802.1	90.73	2.770	%			%	3.05 %
Sc 361.383	460,840.9	98.32	3.008	%			%	3.06 %
Al 308.215	541,320.8	23.25	0.876	mg/L	23.25	0.876	mg/L	3.77 %

Mean Data

ID: 108177-10 Seq. No.: 47 A/S Pos: 125

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:34:30

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	168,420.2	91.07	3.606	%			%	3.96 %
Sc 361.383	472,595.4	100.8	1.64	%			%	1.63 %
Al 308.215	935,035.2	40.15	0.726	mg/L	40.15	0.726	mg/L	1.81 %

Mean Data

ID: 108177-11 Seq. No.: 48 A/S Pos: 126

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:36:40

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	179,536.0	97.08	2.985	%			%	3.07 %
Sc 361.383	483,322.0	103.1	3.22	%			%	3.12 %
Al 308.215	470,036.5	20.18	0.618	mg/L	20.18	0.618	mg/L	3.06 %

Mean Data

ID: bs sp883 Seq. No.: 49 A/S Pos: 127

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:38:49

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	190,589.4	103.1	0.87	%			%	0.84 %
Sc 361.383	511,215.6	109.1	1.12	%			%	1.02 %
Al 308.215	459,475.8	19.73	0.335	mg/L	19.73	0.335	mg/L	1.70 %

Mean Data

ID: bsd sp883 Seq. No.: 50 A/S Pos: 128

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:40:59

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	176,902.1	95.65	4.742	%			%	4.96 %

Sc 361.383	451,208.5	96.26	5.038	%			%	5.23 %
Al 308.215	81,882.8	3.516	0.1546	mg/L	3.516	0.1546	mg/L	4.40 %

Mean Data

ID: mb sp883 Seq. No.: 51 A/S Pos: 129

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:43:08

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	176,471.9	95.42	1.139	%			%	1.19 %
Sc 361.383	453,955.0	96.85	1.432	%			%	1.48 %
Al 308.215	82,052.7	3.524	0.0640	mg/L	3.524	0.0640	mg/L	1.82 %

Mean Data

ID: CCV Seq. No.: 52 A/S Pos: 5

2002/09/03 07:44:59 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:45:22

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	177,911.0	96.20	5.538	%				5.76 %
Sc 361.383	483,746.3	103.2	5.95	%				5.76 %
Al 308.215	11,113.4	0.4772	0.03229	mg/L	0.4772			6.77 %

2002/09/03 07:44:59 QC value within limits for Al 308.215 Recovery = 95.45%

Mean Data

ID: CCB Seq. No.: 53 A/S Pos: 6

2002/09/03 07:44:59 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:46:47

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	180,210.8	97.44	5.304	%				5.44 %
Sc 361.383	456,745.5	97.44	5.400	%				5.54 %
Al 308.215	253.6	0.0109	0.00329	mg/L	0.0109			30.17 %

2002/09/03 07:44:59 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: ICSA Seq. No.: 54 A/S Pos: 7

2002/09/03 07:44:59 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:48:16

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	161,133.9	87.13	5.618	%				6.45 %
Sc 361.383	387,499.2	82.67	4.920	%				5.95 %
Al 308.215	3,036,263.0	130.4	7.60	mg/L	130.4			5.83 %

2002/09/03 07:44:59 QC value within limits for Al 308.215 Recovery = 108.65%

Mean Data

ID: ICSAB **Seq. No.:** 55 **A/S Pos:** 8

2002/09/03 07:44:59 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:50:36

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	167,911.0	90.79	7.261	%				8.00 %
Sc 361.383	389,696.4	83.14	7.528	%				9.06 %
Al 308.215	3,103,632.3	133.3	12.66	mg/L	133.3			9.50 %

2002/09/03 07:44:59 QC value within limits for Al 308.215 Recovery = 111.07%

STL Seattle Perkin-Elmer Elan 6100 ICP-MS
Quantitative Analysis Calibration Report

File Name:
File Path:
Calibration Type: External Calibration

(Dual Detector Mode)

Analyte	Mass	Curve Type	Slope	Intercept	Corr. Coeff.
Cr	51.941	Linear Thru Zero	0.01	0.00	1.000000
Ni	59.933	Linear Thru Zero	0.00	0.00	0.999961
Cu	64.928	Linear Thru Zero	0.00	0.00	0.999989
Zn	67.925	Linear Thru Zero	0.00	0.00	0.999931
As	74.922	Linear Thru Zero	0.00	0.00	0.999989
Se	81.917	Linear Thru Zero	0.00	0.00	0.999931
Ge	73.922	Linear Thru Zero	0.00	0.00	0.000000
Ag	106.905	Linear Thru Zero	0.01	0.00	0.999987
Cd	113.904	Linear Thru Zero	0.01	0.00	0.999949
Sb	122.904	Linear Thru Zero	0.01	0.00	0.999987
Rh	102.905	Linear Thru Zero	0.00	0.00	0.000000
Pb	207.977	Linear Thru Zero	0.04	0.00	0.999828
Ho	164.930	Linear Thru Zero	0.00	0.00	0.000000

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Blank

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:35:09
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Blank.003

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52		ug/L			7828.4	3.6
|	Ni	60		ug/L			111.1	4.6
|	Cu	65		ug/L			137.8	12.4
|	Zn	68		ug/L			941.9	9.2
|	As	75		ug/L			185.4	20.6
|	Se	82		ug/L			-10.9	355.5
⌊>	Ge	74		ug/L			1206756.4	0.9
⌈	Ag	107		ug/L			606.7	3.6
|	Cd	114		ug/L			9.8	206.9
|	Sb	123		ug/L			320.1	3.5
⌊>	Rh	103		ug/L			1149578.7	1.2
⌈	Pb	208		ug/L			746.7	7.8
⌊>	Ho	165		ug/L			1062362.2	2.0

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 1

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:37:28
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Standard 1.004

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**5.000**	ug/L	1.8	7828.421	58358.4	1.6
|	Ni	60	**5.000**	ug/L	1.2	111.112	12476.6	1.0
|	Cu	65	**5.000**	ug/L	2.0	137.778	13906.8	1.8
|	Zn	68	**5.000**	ug/L	1.1	941.907	8623.0	1.0
|	As	75	**5.000**	ug/L	1.8	185.412	11028.4	1.7
|	Se	82	**5.000**	ug/L	3.0	-10.889	1379.2	3.0
⌊>	Ge	74		ug/L		1206756.445	1206813.3	0.4
⌈	Ag	107	**5.000**	ug/L	2.8	606.680	51021.0	2.7
|	Cd	114	**5.000**	ug/L	2.9	9.798	29550.0	1.9
|	Sb	123	**5.000**	ug/L	2.4	320.125	35419.1	1.0
⌊>	Rh	103		ug/L		1149578.700	1146041.7	1.4
⌈	Pb	208	**5.000**	ug/L	2.4	746.675	200783.1	2.2
⌊>	Ho	165		ug/L		1062362.244	1054504.1	0.7

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 2

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:40:18
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Standard 2.005

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**9.990**	ug/L	1.7	7828.421	107204.4	2.0
|	Ni	60	**10.069**	ug/L	1.1	111.112	25436.0	1.1
|	Cu	65	**10.058**	ug/L	1.8	137.778	28186.7	0.9
|	Zn	68	**10.024**	ug/L	3.0	941.907	16317.1	4.9
|	As	75	**9.999**	ug/L	0.4	185.412	21626.9	2.6
|	Se	82	**9.884**	ug/L	2.3	-10.889	2586.1	2.1
L>	Ge	74		ug/L		1206756.445	1193843.4	2.2
Γ	Ag	107	**10.013**	ug/L	1.6	606.680	102534.5	1.5
|	Cd	114	**10.011**	ug/L	2.3	9.798	59673.3	2.4
|	Sb	123	**9.973**	ug/L	1.5	320.125	69886.9	1.6
L>	Rh	103		ug/L		1149578.700	1150728.5	0.1
Γ	Pb	208	**10.027**	ug/L	0.6	746.675	403693.2	1.2
L>	Ho	165		ug/L		1062362.244	1047893.2	1.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 3

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:43:38
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Standard 3.006

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**24.964**	ug/L	1.6	7828.421	257084.5	1.2
│	Ni	60	**24.789**	ug/L	2.2	111.112	60544.7	2.3
│	Cu	65	**24.857**	ug/L	2.9	137.778	68210.3	2.3
│	Zn	68	**24.629**	ug/L	1.6	941.907	36467.8	1.2
│	As	75	**24.952**	ug/L	1.7	185.412	53721.1	2.2
│	Se	82	**24.794**	ug/L	1.3	-10.889	6310.5	2.0
└>	Ge	74		ug/L		1206756.445	1205776.2	0.6
┌	Ag	107	**24.989**	ug/L	1.9	606.680	260274.4	1.6
│	Cd	114	**24.935**	ug/L	1.5	9.798	150076.8	1.4
│	Sb	123	**24.886**	ug/L	2.0	320.125	173937.2	1.8
└>	Rh	103		ug/L		1149578.700	1177198.1	0.3
┌	Pb	208	**24.944**	ug/L	2.5	746.675	999377.2	2.1
└>	Ho	165		ug/L		1062362.244	1055705.1	0.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 4

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:47:29
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Standard 4.007

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**50.014**	ug/L	2.5	7828.421	506925.2	2.1
|	Ni	60	**50.082**	ug/L	2.2	111.112	122697.0	1.9
|	Cu	65	**50.044**	ug/L	4.7	137.778	137409.7	4.6
|	Zn	68	**49.682**	ug/L	2.5	941.907	71013.7	2.0
|	As	75	**49.831**	ug/L	1.8	185.412	105743.2	1.2
|	Se	82	**49.561**	ug/L	1.6	-10.889	12246.6	0.9
⌊>	Ge	74		ug/L		1206756.445	1204110.7	1.1
⌈	Ag	107	**49.860**	ug/L	1.9	606.680	504086.1	1.4
|	Cd	114	**50.156**	ug/L	3.0	9.798	299189.4	2.4
|	Sb	123	**49.997**	ug/L	2.3	320.125	342390.2	2.3
⌊>	Rh	103		ug/L		1149578.700	1155082.3	3.0
⌈	Pb	208	**49.483**	ug/L	0.6	746.675	1943503.0	0.8
⌊>	Ho	165		ug/L		1062362.244	1070849.7	0.7

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 5

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:53:21
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Standard 5.008

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**100.020**	ug/L	2.8	7828.421	991565.7	0.8
|	Ni	60	**100.420**	ug/L	0.4	111.112	245518.3	2.6
|	Cu	65	**99.819**	ug/L	0.7	137.778	268454.0	2.1
|	Zn	68	**99.650**	ug/L	0.5	941.907	137964.9	2.2
|	As	75	**100.187**	ug/L	0.7	185.412	210523.4	1.6
|	Se	82	**100.406**	ug/L	2.1	-10.889	24766.1	1.9
L>	Ge	74		ug/L		1206756.445	1186522.2	2.2
Γ	Ag	107	**99.748**	ug/L	1.2	606.680	1002001.2	1.8
|	Cd	114	**99.452**	ug/L	3.1	9.798	584408.6	2.2
|	Sb	123	**99.746**	ug/L	1.1	320.125	678703.6	1.8
L>	Rh	103		ug/L		1149578.700	1156941.3	2.0
Γ	Pb	208	**99.098**	ug/L	2.2	746.675	3767149.1	1.0
L>	Ho	165		ug/L		1062362.244	1065925.7	3.3

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MSICV

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:03:29
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\MSICV.010

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**9.933**	ug/L	1.8	7828.421	108323.5	1.9
|	Ni	60	**10.085**	ug/L	2.4	111.112	25424.8	1.6
|	Cu	65	**9.881**	ug/L	2.5	137.778	27421.9	1.1
|	Zn	68	**10.699**	ug/L	1.1	941.907	16069.8	2.8
|	As	75	**9.907**	ug/L	2.4	185.412	21552.8	1.3
|	Se	82	**9.785**	ug/L	1.8	-10.889	2470.3	2.8
⌊>	Ge	74		ug/L		1206756.445	1219377.1	3.6
⌈	Ag	107	**10.255**	ug/L	0.8	606.680	105578.7	1.0
|	Cd	114	**10.083**	ug/L	1.0	9.798	60428.6	1.4
|	Sb	123	**10.218**	ug/L	2.6	320.125	71176.9	2.5
⌊>	Rh	103		ug/L		1149578.700	1179410.1	0.4
⌈	Pb	208	**10.559**	ug/L	0.7	746.675	405378.0	0.4
⌊>	Ho	165		ug/L		1062362.244	1074260.9	0.7

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: ICB

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:11:18
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\ICB.011

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**-0.007**	ug/L	319.8	7828.421	7889.3	2.5
|	Ni	60	**-0.012**	ug/L	51.3	111.112	82.2	18.3
|	Cu	65	**-0.010**	ug/L	98.5	137.778	113.3	22.2
|	Zn	68	**-0.014**	ug/L	230.3	941.907	937.4	4.0
|	As	75	**0.060**	ug/L	22.6	185.412	319.1	10.0
|	Se	82	**0.102**	ug/L	122.0	-10.889	14.8	214.1
L>	Ge	74		ug/L		1206756.445	1227567.0	1.0
Γ	Ag	107	**-0.041**	ug/L	7.6	606.680	206.7	14.8
|	Cd	114	**0.001**	ug/L	53.8	9.798	18.2	23.9
|	Sb	123	**-0.023**	ug/L	11.2	320.125	169.0	12.4
L>	Rh	103		ug/L		1149578.700	1197506.2	1.7
Γ	Pb	208	**0.000**	ug/L	970.8	746.675	761.1	2.7
L>	Ho	165		ug/L		1062362.244	1079171.7	2.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 0.5 PPB (MDL VERIFICATION STANDARD)

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:15:53
Number of Replicates: 3
Batch ID: 08-30-02
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\0.5 PPB (MDL VERIFICATION STANDARD).013

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**0.502**	ug/L	7.8	7828.421	13073.6	1.3
│	Ni	60	**0.464**	ug/L	9.4	111.112	1286.7	7.4
│	Cu	65	**0.480**	ug/L	5.3	137.778	1475.6	3.1
│	Zn	68	**0.481**	ug/L	4.7	941.907	1642.6	0.8
│	As	75	**0.445**	ug/L	16.7	185.412	1155.7	14.5
│	Se	82	**0.396**	ug/L	32.6	-10.889	90.3	37.9
└>	Ge	74		ug/L		1206756.445	1227838.7	1.9
┌	Ag	107	**0.459**	ug/L	1.5	606.680	5305.4	1.7
│	Cd	114	**0.503**	ug/L	5.4	9.798	3013.0	4.5
│	Sb	123	**0.471**	ug/L	2.0	320.125	3582.1	2.8
└>	Rh	103		ug/L		1149578.700	1175934.1	1.2
┌	Pb	208	**0.522**	ug/L	1.3	746.675	20503.6	1.9
└>	Ho	165		ug/L		1062362.244	1060991.2	2.3

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MSICSA

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:22:49
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\MSICSA.016

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**1.855**	ug/L	4.0	7828.421	26221.1	3.4
|	Ni	60	**3.607**	ug/L	1.2	111.112	9016.2	0.6
|	Cu	65	**4.410**	ug/L	3.2	137.778	12112.9	2.6
|	Zn	68	**4.684**	ug/L	4.3	941.907	7444.3	4.1
|	As	75	**0.476**	ug/L	18.0	185.412	1194.7	15.9
|	Se	82	**-0.528**	ug/L	24.2	-10.889	-142.2	21.8
⌊>	Ge	74		ug/L		1206756.445	1198803.8	0.6
⌈	Ag	107	**0.129**	ug/L	2.3	606.680	1874.6	2.6
|	Cd	114	**0.334**	ug/L	24.4	9.798	1938.8	24.5
|	Sb	123	**1.826**	ug/L	2.4	320.125	12522.9	1.8
⌊>	Rh	103		ug/L		1149578.700	1137009.2	1.4
⌈	Pb	208	**0.649**	ug/L	2.2	746.675	24718.4	1.3
⌊>	Ho	165		ug/L		1062362.244	1036835.1	2.1

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MSICSAB

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:25:09
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\MSICSAB.017

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**21.714**	ug/L	1.1	7828.421	220116.5	2.2
│	Ni	60	**40.026**	ug/L	1.1	111.112	97358.5	1.9
│	Cu	65	**21.264**	ug/L	2.0	137.778	56971.2	2.9
│	Zn	68	**21.557**	ug/L	0.1	941.907	30394.9	1.1
│	As	75	**20.335**	ug/L	2.9	185.412	42621.2	1.8
│	Se	82	**18.539**	ug/L	3.2	-10.889	4537.4	2.0
└>	Ge	74		ug/L		1206756.445	1179656.0	1.2
┌	Ag	107	**19.326**	ug/L	1.6	606.680	184278.1	2.5
│	Cd	114	**10.218**	ug/L	2.9	9.798	56854.9	1.8
│	Sb	123	**1.777**	ug/L	4.8	320.125	11747.7	4.6
└>	Rh	103		ug/L		1149578.700	1095256.4	1.1
┌	Pb	208	**0.668**	ug/L	2.6	746.675	24839.6	2.1
└>	Ho	165		ug/L		1062362.244	1012160.0	1.5

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 3

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:32:56
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 3.018

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**51.221**	ug/L	0.8	7828.421	536768.8	2.3
|	Ni	60	**49.970**	ug/L	1.6	111.112	128205.3	3.0
|	Cu	65	**49.847**	ug/L	0.6	137.778	140688.5	2.1
|	Zn	68	**50.493**	ug/L	1.1	941.907	73805.0	2.4
|	As	75	**49.628**	ug/L	0.7	185.412	109482.7	1.9
|	Se	82	**50.229**	ug/L	1.2	-10.889	12989.7	0.5
⌊>	Ge	74		ug/L		1206756.445	1244435.8	1.5
⌈	Ag	107	**50.637**	ug/L	2.6	606.680	527166.6	2.5
|	Cd	114	**50.394**	ug/L	0.8	9.798	306799.7	0.7
|	Sb	123	**50.094**	ug/L	0.7	320.125	353217.3	0.5
⌊>	Rh	103		ug/L		1149578.700	1198315.1	1.2
⌈	Pb	208	**50.592**	ug/L	0.9	746.675	1969365.9	1.7
⌊>	Ho	165		ug/L		1062362.244	1090717.9	0.9

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 4

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:38:50
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 4.019

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**-0.006**	ug/L	409.5	7828.421	8156.4	3.2
|	Ni	60	**0.087**	ug/L	18.8	111.112	342.2	12.1
|	Cu	65	**0.115**	ug/L	5.8	137.778	474.5	3.9
|	Zn	68	**0.088**	ug/L	57.1	941.907	1117.4	6.6
|	As	75	**-0.027**	ug/L	191.3	185.412	135.1	84.1
|	Se	82	**-0.040**	ug/L	66.0	-10.889	-22.0	31.7
⌊>	Ge	74		ug/L		1206756.445	1266357.9	0.3
⌈	Ag	107	**-0.046**	ug/L	3.0	606.680	161.1	9.3
|	Cd	114	**-0.001**	ug/L	266.3	9.798	1.8	1258.7
|	Sb	123	**-0.023**	ug/L	24.4	320.125	177.8	22.7
⌊>	Rh	103		ug/L		1149578.700	1215831.5	1.8
⌈	Pb	208	**0.006**	ug/L	15.5	746.675	1000.0	5.8
⌊>	Ho	165		ug/L		1062362.244	1076791.1	2.9

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MB

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:41:14
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\MB.020

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**-0.012**	ug/L	248.1	7828.421	8288.1	3.4
|	Ni	60	**0.036**	ug/L	4.1	111.112	215.6	2.4
|	Cu	65	**0.055**	ug/L	11.1	137.778	311.1	5.3
|	Zn	68	**1.823**	ug/L	4.3	941.907	3755.1	2.9
|	As	75	**0.056**	ug/L	117.7	185.412	329.2	46.4
|	Se	82	**0.069**	ug/L	134.2	-10.889	6.9	362.2
⌊>	Ge	74		ug/L		1206756.445	1298089.8	0.6
⌈	Ag	107	**-0.052**	ug/L	0.8	606.680	100.0	3.3
|	Cd	114	**0.001**	ug/L	182.2	9.798	14.1	44.5
|	Sb	123	**-0.023**	ug/L	16.4	320.125	176.2	15.1
⌊>	Rh	103		ug/L		1149578.700	1252811.0	1.4
⌈	Pb	208	**0.032**	ug/L	8.6	746.675	2110.1	5.5
⌊>	Ho	165		ug/L		1062362.244	1151963.7	0.3

MB

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3 (25X)

Sample Description: 25X
Sample Date/Time: Friday, August 30, 2002 11:43:37
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3 (25X).021

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**5.348**	ug/L	1.7	7828.421	67661.7	0.8
|	Ni	60	**2.986**	ug/L	3.3	111.112	8305.7	3.2
|	Cu	65	**12.760**	ug/L	0.9	137.778	38624.4	0.9
|	Zn	68	**48.175**	ug/L	0.9	941.907	75354.1	2.1
|	As	75	**0.995**	ug/L	9.7	185.412	2549.3	10.2
|	Se	82	**0.073**	ug/L	51.0	-10.889	8.0	126.4
⌊>	Ge	74		ug/L		1206756.445	1330936.7	1.8
⌈	Ag	107	**-0.009**	ug/L	14.1	606.680	575.6	0.9
|	Cd	114	**0.139**	ug/L	1.5	9.798	913.9	2.9
|	Sb	123	**0.167**	ug/L	1.5	320.125	1612.7	2.5
⌊>	Rh	103		ug/L		1149578.700	1277787.7	1.6
⌈	Pb	208	**25.926**	ug/L	0.9	746.675	1107238.7	2.3
⌊>	Ho	165		ug/L		1062362.244	1196191.8	1.5

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 11:46:00
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3.022

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**27.391**	ug/L	2.0	7828.421	303540.6	0.5
│	Ni	60	**15.527**	ug/L	1.3	111.112	41666.2	0.8
│	Cu	65	**63.634**	ug/L	2.9	137.778	187421.7	1.9
│	Zn	68	**216.062**	ug/L	2.5	941.907	326331.2	1.7
│	As	75	**4.669**	ug/L	1.0	185.412	10934.1	1.4
│	Se	82	**0.307**	ug/L	18.0	-10.889	71.2	19.5
└>	Ge	74		ug/L		1206756.445	1299361.8	1.8
┌	Ag	107	**0.146**	ug/L	6.3	606.680	2204.6	5.0
│	Cd	114	**0.599**	ug/L	7.7	9.798	3744.2	6.0
│	Sb	123	**0.923**	ug/L	4.9	320.125	6999.6	3.0
└>	Rh	103		ug/L		1149578.700	1227724.0	1.8
┌	Pb	208	**124.231**	ug/L	1.7	746.675	5147803.1	0.5
└>	Ho	165		ug/L		1062362.244	1161555.1	1.2

Sample

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3D

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 11:48:23
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3D.023

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**27.876**	ug/L	0.8	7828.421	307024.5	1.0
|	Ni	60	**15.565**	ug/L	2.9	111.112	41523.6	2.5
|	Cu	65	**64.973**	ug/L	1.0	137.778	190300.5	1.7
|	Zn	68	**220.313**	ug/L	1.9	941.907	330857.4	2.3
|	As	75	**4.718**	ug/L	3.0	185.412	10982.8	3.1
|	Se	82	**0.184**	ug/L	41.2	-10.889	37.7	53.6
L>	Ge	74		ug/L		1206756.445	1291711.4	0.8
Γ	Ag	107	**0.139**	ug/L	7.2	606.680	2093.5	3.8
|	Cd	114	**0.555**	ug/L	5.1	9.798	3419.4	6.0
|	Sb	123	**0.976**	ug/L	4.8	320.125	7268.1	3.4
L>	Rh	103		ug/L		1149578.700	1208455.1	1.2
Γ	Pb	208	**125.009**	ug/L	1.7	746.675	5268258.7	1.8
L>	Ho	165		ug/L		1062362.244	1181614.8	3.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3DD

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 11:50:48
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3DD.024

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**26.876**	ug/L	2.3	7828.421	294819.8	1.3
│	Ni	60	**16.298**	ug/L	2.2	111.112	43258.7	1.0
│	Cu	65	**110.892**	ug/L	2.1	137.778	323030.3	0.4
│	Zn	68	**238.935**	ug/L	1.4	941.907	356943.4	0.7
│	As	75	**5.306**	ug/L	4.7	185.412	12260.1	2.9
│	Se	82	**0.226**	ug/L	83.4	-10.889	48.7	104.0
└>	Ge	74		ug/L		1206756.445	1285504.6	1.9
┌	Ag	107	**0.166**	ug/L	4.2	606.680	2406.9	1.8
│	Cd	114	**0.654**	ug/L	2.4	9.798	4084.5	2.4
│	Sb	123	**2.433**	ug/L	2.8	320.125	17867.8	1.1
└>	Rh	103		ug/L		1149578.700	1225776.4	1.8
┌	Pb	208	**155.828**	ug/L	0.4	746.675	6519843.9	2.1
└>	Ho	165		ug/L		1062362.244	1172764.2	2.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3S

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 11:53:11
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3S.025

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**27.281**	ug/L	2.0	7828.421	310464.3	1.7
│	Ni	60	**57.448**	ug/L	2.3	111.112	157954.3	2.5
│	Cu	65	**41.466**	ug/L	2.6	137.778	125472.2	2.8
│	Zn	68	**111.966**	ug/L	1.7	941.907	174148.0	1.8
│	As	75	**198.735**	ug/L	1.7	185.412	469330.1	1.9
│	Se	82	**184.684**	ug/L	3.1	-10.889	51233.4	3.1
└>	Ge	74		ug/L		1206756.445	1333923.9	0.3
┌	Ag	107	**31.638**	ug/L	2.3	606.680	353248.1	1.6
│	Cd	114	**5.266**	ug/L	2.2	9.798	34397.0	5.2
│	Sb	123	**138.104**	ug/L	3.7	320.125	1042608.4	0.4
└>	Rh	103		ug/L		1149578.700	1284937.0	3.9
┌	Pb	208	**75.806**	ug/L	0.3	746.675	3251014.7	0.8
└>	Ho	165		ug/L		1062362.244	1201893.5	1.0

Spike

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3SD

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 11:55:32
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3SD.026

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**26.625**	ug/L	1.5	7828.421	292137.5	1.8
|	Ni	60	**53.560**	ug/L	1.0	111.112	141881.1	0.9
|	Cu	65	**40.605**	ug/L	2.6	137.778	118395.7	3.6
|	Zn	68	**102.507**	ug/L	0.2	941.907	153707.1	1.9
|	As	75	**191.079**	ug/L	1.4	185.412	434859.1	3.1
|	Se	82	**180.399**	ug/L	2.9	-10.889	48228.5	4.1
⌊>	Ge	74		ug/L		1206756.445	1285261.6	1.7
⌈	Ag	107	**30.199**	ug/L	1.1	606.680	319331.9	2.3
|	Cd	114	**5.170**	ug/L	1.2	9.798	31960.2	3.2
|	Sb	123	**139.004**	ug/L	0.4	320.125	994057.8	1.6
⌊>	Rh	103		ug/L		1149578.700	1216066.2	2.0
⌈	Pb	208	**75.449**	ug/L	1.4	746.675	3060860.1	2.4
⌊>	Ho	165		ug/L		1062362.244	1136877.9	1.5

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3PS

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 11:57:49
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3PS.027

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**27.168**	ug/L	1.2	7828.421	270153.9	1.0
│	Ni	60	**55.634**	ug/L	1.1	111.112	133663.7	2.4
│	Cu	65	**41.862**	ug/L	1.4	137.778	110662.6	1.1
│	Zn	68	**115.234**	ug/L	2.9	941.907	156620.3	4.4
│	As	75	**197.589**	ug/L	2.0	185.412	407629.6	0.6
│	Se	82	**186.960**	ug/L	2.9	-10.889	45304.5	1.5
└>	Ge	74		ug/L		1206756.445	1165512.7	1.5
┌	Ag	107	**31.408**	ug/L	0.8	606.680	303026.8	2.2
│	Cd	114	**5.237**	ug/L	1.7	9.798	29533.7	2.5
│	Sb	123	**145.068**	ug/L	1.8	320.125	946519.6	1.8
└>	Rh	103		ug/L		1149578.700	1109569.0	1.6
┌	Pb	208	**76.182**	ug/L	1.3	746.675	2840045.7	2.4
└>	Ho	165		ug/L		1062362.244	1045012.3	3.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: BS-SP883

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 12:00:07
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\BS-SP883.028

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**20.895**	ug/L	3.9	7828.421	216176.2	2.0
│	Ni	60	**50.222**	ug/L	3.3	111.112	124490.2	1.9
│	Cu	65	**25.351**	ug/L	0.8	137.778	69225.1	1.6
│	Zn	68	**56.626**	ug/L	3.0	941.907	79860.9	1.5
│	As	75	**198.308**	ug/L	0.5	185.412	422380.1	2.8
│	Se	82	**202.911**	ug/L	2.1	-10.889	50765.1	3.1
└>	Ge	74		ug/L		1206756.445	1202994.8	2.3
┌	Ag	107	**30.227**	ug/L	1.1	606.680	300759.4	2.0
│	Cd	114	**5.037**	ug/L	2.3	9.798	29299.0	3.7
│	Sb	123	**150.488**	ug/L	1.0	320.125	1012597.1	1.1
└>	Rh	103		ug/L		1149578.700	1144262.7	1.5
┌	Pb	208	**51.627**	ug/L	1.8	746.675	1933536.7	1.8
└>	Ho	165		ug/L		1062362.244	1049468.2	0.1

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: BSD-SP883

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 12:02:26
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\BSD-SP883.029

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**21.371**	ug/L	3.4	7828.421	217471.1	1.6
│	Ni	60	**50.009**	ug/L	2.9	111.112	122023.5	1.5
│	Cu	65	**25.366**	ug/L	2.1	137.778	68164.5	0.6
│	Zn	68	**56.844**	ug/L	0.8	941.907	78925.5	1.2
│	As	75	**200.065**	ug/L	1.5	185.412	419296.9	0.3
│	Se	82	**202.503**	ug/L	1.8	-10.889	49854.1	0.3
└>	Ge	74		ug/L		1206756.445	1184002.0	1.6
┌	Ag	107	**30.308**	ug/L	1.7	606.680	297907.3	2.2
│	Cd	114	**5.031**	ug/L	4.2	9.798	28887.8	1.5
│	Sb	123	**149.168**	ug/L	1.6	320.125	991517.2	1.1
└>	Rh	103		ug/L		1149578.700	1130605.4	2.7
┌	Pb	208	**52.087**	ug/L	4.2	746.675	1919356.0	1.6
└>	Ho	165		ug/L		1062362.244	1034224.4	5.7

BSD

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 3

Sample Description:
Sample Date/Time: Friday, August 30, 2002 12:07:18
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 3.030

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**51.249**	ug/L	2.0	7828.421	525689.7	1.8
│	Ni	60	**49.981**	ug/L	3.1	111.112	125531.9	3.7
│	Cu	65	**50.807**	ug/L	1.9	137.778	140375.5	2.5
│	Zn	68	**52.231**	ug/L	1.9	941.907	74706.0	2.6
│	As	75	**50.061**	ug/L	0.9	185.412	108113.7	1.7
│	Se	82	**51.042**	ug/L	0.6	-10.889	12924.0	1.4
└>	Ge	74		ug/L		1206756.445	1218236.3	0.8
┌	Ag	107	**50.250**	ug/L	0.7	606.680	511857.3	1.9
│	Cd	114	**49.910**	ug/L	0.8	9.798	297307.4	2.4
│	Sb	123	**50.626**	ug/L	1.1	320.125	349275.6	2.4
└>	Rh	103		ug/L		1149578.700	1172345.8	1.6
┌	Pb	208	**52.063**	ug/L	1.9	746.675	1951846.3	0.7
└>	Ho	165		ug/L		1062362.244	1050873.7	2.6

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 4

Sample Description:
Sample Date/Time: Friday, August 30, 2002 12:13:12
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 4.031

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**0.011**	ug/L	352.9	7828.421	8357.1	2.6
│	Ni	60	**0.126**	ug/L	8.5	111.112	445.6	4.6
│	Cu	65	**0.122**	ug/L	0.6	137.778	496.7	1.8
│	Zn	68	**0.265**	ug/L	27.6	941.907	1384.0	8.3
│	As	75	**-0.031**	ug/L	116.3	185.412	126.1	66.1
│	Se	82	**0.108**	ug/L	14.4	-10.889	17.1	23.1
└>	Ge	74		ug/L		1206756.445	1271907.8	2.0
┌	Ag	107	**-0.045**	ug/L	1.1	606.680	171.1	1.1
│	Cd	114	**-0.001**	ug/L	168.8	9.798	3.4	340.5
│	Sb	123	**0.121**	ug/L	12.5	320.125	1200.3	10.6
└>	Rh	103		ug/L		1149578.700	1209920.0	2.7
┌	Pb	208	**0.008**	ug/L	8.4	746.675	1052.2	3.0
└>	Ho	165		ug/L		1062362.244	1072312.8	2.1

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-1

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 12:15:35
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-1.032

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**51.038**	ug/L	2.0	7828.421	547175.5	1.6
│	Ni	60	**14.249**	ug/L	0.8	111.112	37484.7	1.9
│	Cu	65	**71.098**	ug/L	0.8	137.778	205244.2	1.7
│	Zn	68	**193.598**	ug/L	0.8	941.907	286692.0	1.4
│	As	75	**7.013**	ug/L	1.3	185.412	15998.5	2.6
│	Se	82	**0.441**	ug/L	14.8	-10.889	105.4	16.7
└>	Ge	74		ug/L		1206756.445	1273290.6	1.6
┌	Ag	107	**0.251**	ug/L	3.2	606.680	3287.0	4.5
│	Cd	114	**0.645**	ug/L	2.0	9.798	3987.2	3.6
│	Sb	123	**4.932**	ug/L	1.9	320.125	35510.2	1.1
└>	Rh	103		ug/L		1149578.700	1213324.9	2.7
┌	Pb	208	**150.681**	ug/L	0.8	746.675	6222095.8	1.7
└>	Ho	165		ug/L		1062362.244	1157340.8	1.1

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-2

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 12:17:53
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-2.033

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**19.882**	ug/L	2.0	7828.421	218944.6	0.3
│	Ni	60	**15.186**	ug/L	2.6	111.112	40068.3	0.6
│	Cu	65	**66.478**	ug/L	2.1	137.778	192552.5	1.2
│	Zn	68	**205.134**	ug/L	1.0	941.907	304777.9	1.6
│	As	75	**6.212**	ug/L	3.8	185.412	14249.9	5.7
│	Se	82	**0.277**	ug/L	33.0	-10.889	62.4	40.4
└>	Ge	74		ug/L		1206756.445	1277818.1	2.1
┌	Ag	107	**0.138**	ug/L	6.7	606.680	2064.6	3.6
│	Cd	114	**0.557**	ug/L	6.6	9.798	3396.0	7.3
│	Sb	123	**2.183**	ug/L	4.8	320.125	15683.2	2.7
└>	Rh	103		ug/L		1149578.700	1196920.8	2.0
┌	Pb	208	**81.883**	ug/L	0.4	746.675	3418546.0	2.1
└>	Ho	165		ug/L		1062362.244	1170092.4	2.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: SOIL LCS

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 12:39:13
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\SOIL LCS.041

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**21.932**	ug/L	2.1	7828.421	238360.1	0.4
|	Ni	60	**22.405**	ug/L	1.7	111.112	58504.0	0.5
|	Cu	65	**32.639**	ug/L	1.7	137.778	93724.3	1.9
|	Zn	68	**71.884**	ug/L	0.4	941.907	106434.8	2.0
|	As	75	**47.170**	ug/L	0.5	185.412	105837.4	1.9
|	Se	82	**27.921**	ug/L	2.9	-10.889	7336.6	0.8
L>	Ge	74		ug/L		1206756.445	1265643.5	2.1
Γ	Ag	107	**42.024**	ug/L	0.6	606.680	444087.9	1.6
|	Cd	114	**17.259**	ug/L	1.7	9.798	106617.9	0.6
|	Sb	123	**38.557**	ug/L	4.0	320.125	275831.9	1.9
L>	Rh	103		ug/L		1149578.700	1216071.2	2.2
Γ	Pb	208	**25.070**	ug/L	2.6	746.675	1021292.1	2.3
L>	Ho	165		ug/L		1062362.244	1141418.9	2.8

LCS

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 3

Sample Description:
Sample Date/Time: Friday, August 30, 2002 12:42:37
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 3.042

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**51.669**	ug/L	0.9	7828.421	517721.4	1.0
|	Ni	60	**51.437**	ug/L	0.0	111.112	126199.5	1.8
|	Cu	65	**50.531**	ug/L	3.0	137.778	136429.2	4.4
|	Zn	68	**51.915**	ug/L	1.6	941.907	72553.4	2.9
|	As	75	**49.768**	ug/L	0.9	185.412	105013.0	2.4
|	Se	82	**50.799**	ug/L	0.8	-10.889	12566.1	1.8
L>	Ge	74		ug/L		1206756.445	1190235.9	1.8
Γ	Ag	107	**50.756**	ug/L	1.5	606.680	504449.5	1.9
|	Cd	114	**50.441**	ug/L	1.0	9.798	293156.5	1.3
|	Sb	123	**51.478**	ug/L	2.0	320.125	346504.9	2.2
L>	Rh	103		ug/L		1149578.700	1143873.2	0.4
Γ	Pb	208	**51.459**	ug/L	2.0	746.675	1930634.3	1.1
L>	Ho	165		ug/L		1062362.244	1051463.3	1.1

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 4

Sample Description:
Sample Date/Time: Friday, August 30, 2002 12:48:32
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 4.043

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**-0.027**	ug/L	49.6	7828.421	7761.7	0.3
|	Ni	60	**0.108**	ug/L	26.6	111.112	388.9	18.5
|	Cu	65	**0.107**	ug/L	24.9	137.778	441.1	18.1
|	Zn	68	**0.367**	ug/L	16.4	941.907	1492.8	4.2
|	As	75	**0.015**	ug/L	195.8	185.412	222.6	27.3
|	Se	82	**0.073**	ug/L	120.6	-10.889	7.9	285.7
⌊>	Ge	74		ug/L		1206756.445	1239001.0	2.0
⌈	Ag	107	**-0.050**	ug/L	1.6	606.680	113.3	7.8
|	Cd	114	**-0.004**	ug/L	21.1	9.798	-14.9	35.8
|	Sb	123	**0.171**	ug/L	8.4	320.125	1542.9	6.4
⌊>	Rh	103		ug/L		1149578.700	1199698.4	0.3
⌈	Pb	208	**0.008**	ug/L	10.6	746.675	1040.0	2.3
⌊>	Ho	165		ug/L		1062362.244	1068517.8	2.0

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 3

Sample Description:
Sample Date/Time: Friday, August 30, 2002 13:16:38
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 3.054

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**50.944**	ug/L	2.8	7828.421	544368.5	2.0
│	Ni	60	**49.580**	ug/L	1.9	111.112	129698.4	1.6
│	Cu	65	**49.116**	ug/L	0.7	137.778	141374.0	1.9
│	Zn	68	**50.431**	ug/L	0.4	941.907	75175.2	1.8
│	As	75	**50.240**	ug/L	2.3	185.412	113033.9	3.0
│	Se	82	**49.653**	ug/L	3.2	-10.889	13097.5	3.7
└>	Ge	74		ug/L		1206756.445	1269146.6	1.6
┌	Ag	107	**50.820**	ug/L	1.4	606.680	530276.0	0.6
│	Cd	114	**50.408**	ug/L	0.7	9.798	307633.4	2.0
│	Sb	123	**49.396**	ug/L	1.3	320.125	349102.6	1.0
└>	Rh	103		ug/L		1149578.700	1201119.3	1.5
┌	Pb	208	**50.279**	ug/L	1.5	746.675	1926443.8	2.1
└>	Ho	165		ug/L		1062362.244	1073565.7	0.6

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 4

Sample Description:
Sample Date/Time: Friday, August 30, 2002 13:22:31
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 4.055

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**-0.026**	ug/L	107.0	7828.421	8267.7	2.1
|	Ni	60	**0.108**	ug/L	31.0	111.112	414.5	20.4
|	Cu	65	**0.111**	ug/L	5.9	137.778	482.2	3.9
|	Zn	68	**0.423**	ug/L	8.6	941.907	1675.0	2.8
|	As	75	**-0.014**	ug/L	573.4	185.412	172.2	109.8
|	Se	82	**-0.024**	ug/L	426.9	-10.889	-18.7	149.2
⌊>	Ge	74		ug/L		1206756.445	1318121.7	1.7
⌈	Ag	107	**-0.050**	ug/L	3.8	606.680	115.6	18.3
|	Cd	114	**-0.007**	ug/L	57.9	9.798	-33.2	77.3
|	Sb	123	**0.023**	ug/L	21.4	320.125	519.4	5.9
⌊>	Rh	103		ug/L		1149578.700	1257458.1	1.3
⌈	Pb	208	**0.006**	ug/L	17.6	746.675	1006.7	2.8
⌊>	Ho	165		ug/L		1062362.244	1095329.6	1.3

Sample Prep Log Sheet - 8/30/02

Metals Digestion Log

Extraction Date					
QC Batch ID	SP883				
Sample Matrix	solid				
	Soil Microwave (206.13)				
MS Spike No.	GPS#1 : 1001-04-21	Weighed By/Date			
	GPS#2 : 1001-03-24	FJ 8/30/02			
HCL Lot No.	S003				
Nitric Acid Lot No.	S005				
H202 Lot No.	N/A	Spike Witness Signature/Date			

QC Sample Type	QC Identifier	Sample Weight	Final Volume		MS/BS spike
Method Blank	SP883	0.5000	100		NA
Duplicate	108164-1D	0.5336	100		NA
Duplicate-2	108164-2D	0.5714			NA
Blank Spike	sSP883	0.5000	100		2 ml
Blank Spike Duplicate	dSP883	0.5000	100		2 ml
Matrix Spike	108164-3S	0.5704	100		2 ml
Matrix Spike Duplicate	108164-3D	0.5562	100		2 ml
Matrix Spike-2					
Matrix Spike Duplicate-2					
LCS					
ERA		0.5216	100		

Sample	Client Sample ID	Sample Weight (g)	Final Volume (ml)		
108164-1	PP011806	0.5317	100		
108164-2	PP011807	0.5509	100		
108164-3	PP011808	0.5405	100		
108160-1	PP011802	0.5176	100		
108160-2	PP011803	0.5951	100		
108160-3	PP011804D	0.5993	100		
108160-4	PP011805	0.5578	100		
108166-1	PP011801	0.5466	100		
108166-2	PP011809	0.5821	100		
108166-3	PP011810	0.5593	100		
108177-1	PP01M105	0.5377	100		
108177-2	PP01M106	0.5286	100		
108177-3	PP01M107	0.5130	100		
108177-4	PP01M108	0.5592	100		
108177-5	PP01M109	0.5257	100		
108177-6	PP01M110	0.5984	100		
108177-8	PP01M101	0.5735	100		
108177-9	PP01M102D	0.5230	100		
108177-10	PP01M103	0.5656	100		
108177-11	PP01M104	0.5588	100		

metals Worksheet - total

QC Level:Tier IV	**Due: 09/04/02**
Matrix:solid	**Work Order - 108164**
CH2M Hill	Proj. Manager:Katie Downie

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

MS/MSD on 108164-3
Sent attached for requested RLs

Sample number: [illegible]	%Solids	Client Sample ID	PP011806
Sample Weight/Volume	QA/QC Batch SP883	Date Received	8/23/02
		Date Sampled	**8/21/02 10:30:00 AM**

Analyte Name	ICP	ICPMS	Result	PQL	Units
Aluminum	X				
Antimony					
Arsenic					
Cadmium					
Chromium					
Copper					
Lead					
Nickel					
Selenium					
Silver					
Zinc					

Sample number: 108164-2	%Solids	Client Sample ID	PP011807
Sample Weight/Volume	QA/QC Batch	Date Received	8/23/02
		Date Sampled	**8/21/02 11:45:00 AM**

Analyte Name	ICP	ICPMS	Result	PQL	Units
Aluminum					
Antimony					
Arsenic					
Cadmium					
Chromium					
Copper					
Lead					
Nickel					
Selenium					
Silver					
Zinc					

Analyst [signature] Date 8/30/02

Reviewed by KM Date 9-7-02

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Organics worksheet v4.0
If you have suggestions for changes please bring them to me - Dennis

metals Worksheet - total

QC Level:Tier IV	
Matrix:solid	
CH2M Hill	

Due: 09/04/02 | **Work Order - 108164**

Proj. Manager:Katie Downie

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

ms/msd on 108164-3

Sample Number		%Solids	Client Sample ID: PP011808
Sample Weight/Volume	ms/msd	QA/QC Batch	Date Received: 8/23/02
			Date Sampled: 8/21/02 2:15:00 PM

Analyte Name	ICP	ICPMS	Result	PQL	Units
Aluminum					
Antimony					
Arsenic					
Cadmium					
Chromium					
Copper					
Lead					
Nickel					
Selenium					
Silver					
Zinc					

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Analyst _____ Date 8/30/02

Reviewed by _____ Date 9-3-02

Organics worksheet v4.0
If you have suggestions for changes please bring them to me - Dennis

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**	
Work Order Number	**108164**	
Sample Number	**1**	Related Blan SP883
Data Filename	**SP883**	
Client Sample ID	**PP011806**	
Date Received	**08-23-02**	
Date Prepared	**08-30-02**	
Date Analyzed	**08-30-02**	
Sample matrix type	**solid**	
QC sample type	**sample**	

Sample weight (g)	**0.5317**	=	0.00053 /kg	Calc. Fact.	278.260072
Digest volume		=	100 ml	Dry Weight	0.35937603 g
Dilution Factor		=	1	Sample Units	mg/kg
% Solids	**67.59**	=	0.6759	Spike Factor	2.78260072
		=	1	Rept. Dil. Fac	1
blank= PPB, 1=PPM, 2=%	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aluminum	29.65158			8250		27.8

29.65 × 1L / .00530 kg × .6759 = 8250 mg/kg

STL Seattle

6a Sample Information

Client Name	CH2M Hill	
Work Order Number	108164	
Sample Number	2	Related Blan SP883
Data Filename	SP883	
Client Sample ID	PP011807	
Date Received	08-23-02	
Date Prepared	08-30-02	
Date Analyzed	08-30-02	
Sample matrix type	solid	
QC sample type	sample	

Sample weight (g)	0.5509	=	0.00055 /kg	Calc. Fact.	238.435764
Digest volume		=	100 ml	Dry Weight	0.41940017 g
Dilution Factor		=	1	Sample Units	mg/kg
% Solids	76.13	=	0.7613	Spike Factor	2.38435764
		=	1	Rept. Dil. Fac	1
blank= PPB, 1=PPM, 2=%	1	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aluminum	24.75823			5900		23.8

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill				
Work Order Number	108164				
Sample Number	3			Related Blan	SP883
Data Filename	SP883				
Client Sample ID	PP011808				
Date Received	08-23-02				
Date Prepared	08-30-02				
Date Analyzed	08-30-02				
Sample matrix type	solid				
QC sample type	sample				

Sample weight (g)	0.5336	=	0.00053 /kg	Calc. Fact.	240.975051
Digest volume		=	100 ml	Dry Weight	0.41498072 g
Dilution Factor		=	1	Sample Units	mg/kg
% Solids	77.77	=	0.7777	Spike Factor	2.40975051
		=	1	Rept. Dil. Fac	1
blank= PPB, 1=PPM, 2=%	1	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aluminum	24.10013			5810		24.1

STL Seattle

6a **Sample Information**

Client Name					
Work Order Number					
Sample Number				Related Blan	noblank
Data Filename	SP883				
Client Sample ID					
Date Received					
Date Prepared	08-30-02				
Date Analyzed	08-30-02				
Sample matrix type	solid				
QC sample type	blank				

Sample weight (g)		=	0.0005 /kg	Calc. Fact.	200
Digest volume		=	100 ml	Dry Weight	0 g
Dilution Factor		=	1	Sample Units	mg/kg
% Solids		=	1	Spike Factor	2
		=	1	Rept. Dil. Fac	1
blank= PPB, 1=PPM, 2=%	1	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**1**
Data Filename	**sp883**
Client Sample ID	**PP011806**
Date Received	**08-23-02**
Date Prepared	**08-30-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blan sp883

Sample weight (g)	**0.5317**	=	0.00053 /kg	Calc. Fact.	1391.30036
Digest volume		=	100 ml	Dry Weight	.35937603 g
Dilution Factor	**5**	=	5	Sample Unit	mg/kg
% Solids	**67.59**	=	0.6759	Spike Factor	2.78260072
		=	1	Rept. Dil. Fa	5
Report in PPM	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Arsenic	0.007013			9.76		1.39
x	Antimony	0.004932			6.86		4.17
x	Cadmium	0.000645			0.897		0.696
x	Chromium	0.051038			71		1.39
x	Copper	0.071098		5.5E-05	98.9	B2	1.39
x	Lead	0.150681		3.2E-05	210	B2	0.696
x	Nickel	0.014249		3.6E-05	19.8	B2	1.39
x	Selenium	0.000441			0.614	J	4.17
x	Silver	0.000251			0.349	J	0.696
x	Zinc	0.193598		0.00182	269	B2	4.17

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**2**
Data Filename	**sp883**
Client Sample ID	**PP011807**
Date Received	**08-23-02**
Date Prepared	**08-30-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blan sp883

Sample weight (g)	**0.5509**	=	0.00055 /kg	Calc. Fact.	1192.17882
Digest volume		=	100 ml	Dry Weight	.41940017 g
Dilution Factor	**5**	=	5	Sample Unit	mg/kg
% Solids	**76.13**	=	0.7613	Spike Factor	2.38435764
		=	1	Rept. Dil. Fa	5
Report in PPM	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Arsenic	0.006212			7.41		1.19
x	Antimony	0.002183			2.6	J	3.58
x	Cadmium	0.000557			0.664		0.596
x	Chromium	0.019882			23.7		1.19
x	Copper	0.066478		5.5E-05	79.3	B2	1.19
x	Lead	0.081883		3.2E-05	97.6	B2	0.596
x	Nickel	0.015186		3.6E-05	18.1	B2	1.19
x	Silver	0.000138			0.165	J	0.596
x	Zinc	0.205134		0.00182	245	B2	3.58

$\frac{2.183 \text{ ug/L} \times .1 \text{ L} \times 5}{.00[illegible] \text{ kg} \times .7613} \times \frac{1 \text{ mg}}{1 \text{ ug}} = 2.60 \text{ mg/kg}$

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**3**
Data Filename	**sp883**
Client Sample ID	**PP011808**
Date Received	**08-23-02**
Date Prepared	**08-30-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blan sp883

Sample weight (g)	**0.5405**	=	0.00054 /kg	Calc. Fact.	1189.49387
Digest volume		=	100 ml	Dry Weight	.42034685 g
Dilution Factor	**5**	=	5	Sample Unit	mg/kg
% Solids	**77.77**	=	0.7777	Spike Factor	2.37898773
		=	1	Rept. Dil. Fa	5
Report in PPM	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Arsenic	0.004669			5.55		1.19
x	Antimony	0.000923			1.1	J	3.57
x	Cadmium	0.000599			0.713		0.595
x	Chromium	0.027391			32.6		1.19
x	Copper	0.063634		5.5E-05	75.7	B2	1.19
x	Lead	0.124231		3.2E-05	148	B2	0.595
x	Nickel	0.015527		3.6E-05	18.5	B2	1.19
x	Silver	0.000146			0.174	J	0.595
x	Zinc	0.216062		0.00182	257	B2	3.57

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blan noblank
Data Filename	**sp883**
Client Sample ID	
Date Received	
Date Prepared	**08-30-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**blank**

Sample weight (g)		=	0.0005 /kg	Calc. Fact.	200
Digest volume		=	100 ml	Dry Weight	0 g
Dilution Factor		=	1	Sample Unit	mg/kg
% Solids		=	1	Spike Factor	2
		=	1	Rept. Dil. Fa	1
Report in PPM	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Copper	0.000055			0.011	J	0.2
x	Lead	0.000032			0.0064	J	0.1
x	Nickel	0.000036			0.0072	J	0.2
x	Zinc	0.001823			0.365	J	0.6

METHOD DETECTION STUDY SUMMARIES

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Soil Metals
Method 6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	4.93E+00	4.92E+00	4.89E+00	4.71E+00	4.78E+00	4.82E+00	4.87E+00	0.0812	0.2437
As	193.696	4.95E+00	4.95E+00	4.88E+00	4.71E+00	4.78E+00	4.77E+00	4.82E+00	0.0907	0.2722
Ba	233.527	4.94E-01	4.92E-01	4.93E-01	4.84E-01	4.86E-01	4.95E-01	4.94E-01	0.0042	0.0127
Cd	226.502	4.93E-01	4.92E-01	4.92E-01	4.85E-01	4.89E-01	4.92E-01	4.89E-01	0.0029	0.0086
Cr	283.563	4.89E-01	4.89E-01	4.88E-01	4.83E-01	4.84E-01	4.92E-01	4.91E-01	0.0034	0.0103
Pb	220.353	5.00E+00	4.99E+00	4.96E+00	4.85E+00	4.89E+00	4.88E+00	4.90E+00	0.0593	0.1778
Se	196.026	5.06E+00	5.06E+00	5.00E+00	4.81E+00	4.87E+00	4.84E+00	4.93E+00	0.1042	0.3127
Ag	338.289	4.87E-01	4.86E-01	4.87E-01	4.80E-01	4.80E-01	4.86E-01	4.91E-01	0.0039	0.0117
Cu	324.752	4.80E-01	4.80E-01	4.80E-01	4.70E-01	4.68E-01	4.73E-01	4.81E-01	0.0055	0.0164
Cu	327.393	4.88E-01	4.88E-01	4.88E-01	4.74E-01	4.71E-01	4.73E-01	4.82E-01	0.0079	0.0236
Ni	232.003	4.96E-01	4.96E-01	4.93E-01	4.82E-01	4.86E-01	4.87E-01	4.90E-01	0.0054	0.0161
Zn	213.857	4.93E-01	4.93E-01	4.89E-01	4.84E-01	4.89E-01	4.96E-01	4.91E-01	0.0039	0.0118
Be	313.107	4.89E-01	4.89E-01	4.89E-01	4.76E-01	4.81E-01	4.91E-01	4.91E-01	0.0057	0.0172
Sb	206.836	4.87E+00	4.85E+00	4.82E+00	4.68E+00	4.70E+00	4.80E+00	4.88E+00	0.0818	0.2453
Tl	190.801	5.10E+00	5.12E+00	5.06E+00	4.90E+00	4.94E+00	4.96E+00	4.99E+00	0.0838	0.2515
Co	228.616	5.02E-01	5.01E-01	4.97E-01	4.85E-01	4.90E-01	4.89E-01	4.92E-01	0.0064	0.0191
Mn	257.61	5.21E+00	5.22E+00	5.22E+00	5.11E+00	5.16E+00	5.18E+00	5.19E+00	0.0401	0.1203
Mn	294.92	4.98E+00	4.98E+00	4.97E+00	4.91E+00	4.92E+00	5.01E+00	5.01E+00	0.0409	0.1226
V	292.402	4.83E-01	4.83E-01	4.83E-01	4.76E-01	4.77E-01	4.86E-01	4.88E-01	0.0043	0.0128
K	766.49	9.49E+00	9.55E+00	9.18E+00	9.35E+00	8.92E+00	9.21E+00	9.49E+00	0.2271	0.6812
Na	330.237	1.41E+01	1.40E+01	1.41E+01	1.33E+01	1.35E+01	1.32E+01	1.36E+01	0.3788	1.1364
Al	308.215	4.80E-01	4.84E-01	4.80E-01	4.66E-01	4.69E-01	4.72E-01	4.70E-01	0.0070	0.0209
Al	237.313	4.87E-01	4.92E-01	4.78E-01	4.63E-01	4.66E-01	4.67E-01	4.81E-01	0.0112	0.0335
Fe	273.955	4.95E-01	4.97E-01	4.93E-01	4.82E-01	4.85E-01	4.87E-01	4.90E-01	0.0057	0.0170
Ca	315.887	4.73E+00	4.67E+00	4.74E+00	4.79E+00	4.67E+00	4.87E+00	4.91E+00	0.0931	0.2794
Mg	279.077	4.80E+00	4.74E+00	4.79E+00	4.86E+00	4.76E+00	4.88E+00	4.91E+00	0.0648	0.1945
Mo	202.031	0.4915	0.4917	0.4886	0.4736	0.4766	0.4732	0.4778	0.0084	0.0252
Si	251.611	4.9360	4.9370	4.9370	4.8340	4.8370	4.8610	4.8880	0.0471	0.1414
Sr	232.235	4.9560	4.9720	4.9580	4.8410	4.8840	4.9440	4.9180	0.0473	0.1418
B	249.677	4.7930	4.8760	4.9070	4.6610	4.7350	4.7450	4.8500	0.0877	0.2632
Ti	336.121	4.9570	4.9830	4.9690	4.8090	4.8420	4.9040	4.9460	0.0670	0.2011
Sn	189.927	4.9730	4.9870	4.9450	4.8460	4.9000	4.9140	4.9450	0.0479	0.1437

MDL 0.5 Soil

400

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Soil Metals
Method 6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	5.05E-01	4.97E-01	5.02E-01	4.84E-01	4.88E-01	4.77E-01	4.80E-01	0.0109	0.0326
As	193.696	5.03E-01	4.97E-01	4.96E-01	4.82E-01	4.87E-01	4.74E-01	4.77E-01	0.0111	0.0333
Ba	233.527	5.05E-02	4.98E-02	5.02E-02	4.98E-02	5.01E-02	5.01E-02	5.06E-02	0.0003	0.0009
Cd	226.502	4.96E-02	4.88E-02	4.91E-02	4.88E-02	4.93E-02	4.87E-02	4.90E-02	0.0003	0.0010
Cr	283.563	4.96E-02	4.89E-02	4.92E-02	4.94E-02	4.99E-02	5.01E-02	4.98E-02	0.0004	0.0013
Pb	220.353	5.16E-01	5.07E-01	5.11E-01	5.02E-01	5.07E-01	4.97E-01	4.99E-01	0.0069	0.0206
Se	196.026	5.21E-01	5.14E-01	5.16E-01	4.95E-01	5.02E-01	4.83E-01	4.85E-01	0.0150	0.0449
Ag	338.289	4.98E-02	4.95E-02	4.97E-02	4.85E-02	4.94E-02	4.86E-02	4.91E-02	0.0005	0.0015
Cu	324.752	4.91E-02	4.94E-02	4.96E-02	4.80E-02	4.85E-02	4.73E-02	4.77E-02	0.0009	0.0027
Cu	327.393	5.00E-02	5.11E-02	5.16E-02	4.67E-02	4.80E-02	4.72E-02	4.74E-02	0.0020	0.0060
Ni	232.003	5.11E-02	5.03E-02	5.06E-02	4.99E-02	5.04E-02	4.91E-02	4.96E-02	0.0007	0.0020
Zn	213.857	5.07E-02	4.98E-02	5.02E-02	4.97E-02	5.04E-02	4.91E-02	4.94E-02	0.0006	0.0017
Be	313.107	5.00E-02	4.97E-02	5.00E-02	4.88E-02	4.93E-02	4.92E-02	4.95E-02	0.0004	0.0013
Sb	206.836	4.89E-01	4.83E-01	4.88E-01	4.60E-01	4.81E-01	4.71E-01	4.76E-01	0.0102	0.0305
Tl	190.801	5.28E-01	5.24E-01	5.25E-01	5.08E-01	5.14E-01	4.86E-01	4.89E-01	0.0174	0.0523
Co	228.616	5.18E-02	5.11E-02	5.14E-02	5.07E-02	5.10E-02	5.01E-02	5.00E-02	0.0007	0.0020
Mn	257.61	5.49E-01	5.46E-01	5.50E-01	5.42E-01	5.48E-01	5.41E-01	5.44E-01	0.0036	0.0109
Mn	294.92	5.18E-01	5.14E-01	5.18E-01	5.12E-01	5.17E-01	5.17E-01	5.19E-01	0.0025	0.0074
V	292.402	4.89E-02	4.88E-02	4.90E-02	4.85E-02	4.92E-02	4.89E-02	4.87E-02	0.0002	0.0007
K	766.49	8.63E-01	8.55E-01	8.50E-01	9.45E-01	9.49E-01	9.03E-01	9.12E-01	0.0415	0.1244
Na	330.237	1.37E+00	1.31E+00	1.34E+00	1.26E+00	1.34E+00	1.22E+00	1.25E+00	0.0566	0.1698
Al	308.215	4.48E-02	4.23E-02	4.31E-02	5.22E-02	5.20E-02	4.74E-02	4.91E-02	0.0040	0.0121
Al	237.313	4.99E-02	4.99E-02	4.96E-02	4.70E-02	4.74E-02	4.64E-02	4.63E-02	0.0017	0.0050
Fe	273.955	5.08E-02	5.04E-02	5.06E-02	4.92E-02	4.99E-02	4.89E-02	4.30E-02	0.0027	0.0082
Ca	315.887	4.73E-01	4.67E-01	4.75E-01	4.85E-01	4.92E-01	4.92E-01	4.94E-01	0.0109	0.0328
Mg	279.077	4.88E-01	4.84E-01	4.98E-01	4.96E-01	5.03E-01	4.96E-01	4.94E-01	0.0064	0.0191
Mo	202.031	0.0499	0.0495	0.0503	0.0477	0.0494	0.0483	0.0485	0.0009	0.0028
Si	251.611	0.4900	0.4886	0.4901	0.4783	0.4830	0.4738	0.4778	0.0066	0.0199
Sr	232.235	0.5050	0.4959	0.5008	0.4961	0.4978	0.4985	0.5016	0.0033	0.0098
B	249.677	0.4725	0.4802	0.4872	0.4748	0.4926	0.4887	0.4944	0.0086	0.0258
Ti	336.121	0.5070	0.5059	0.5096	0.4914	0.4956	0.4961	0.4988	0.0069	0.0206
Sn	189.927	0.4950	0.4925	0.4965	0.4848	0.4961	0.4763	0.4854	0.0076	0.0227

MDL 0.05 Soil

401

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Soil Metals
Method 6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	5.16E-02	5.10E-02	5.00E-02	5.02E-02	4.98E-02	4.59E-02	4.48E-02	0.0026	0.0078
As	193.696	5.03E-02	4.97E-02	4.97E-02	5.18E-02	4.91E-02	4.55E-02	4.72E-02	0.0021	0.0062
Ba	233.527	5.10E-03	5.10E-03	5.10E-03	5.00E-03	5.00E-03	4.70E-03	4.80E-03	0.0002	0.0005
Cd	226.502	5.00E-03	4.90E-03	4.90E-03	5.10E-03	4.90E-03	4.70E-03	4.60E-03	0.0002	0.0005
Cr	283.563	4.90E-03	5.00E-03	4.70E-03	5.30E-03	5.30E-03	4.70E-03	4.70E-03	0.0003	0.0008
Pb	220.353	5.35E-02	5.31E-02	5.28E-02	5.27E-02	5.09E-02	4.92E-02	4.77E-02	0.0022	0.0067
Se	196.026	5.16E-02	5.13E-02	5.04E-02	5.35E-02	5.22E-02	4.40E-02	4.69E-02	0.0033	0.0100
Ag	338.289	4.70E-03	5.00E-03	4.90E-03	5.20E-03	4.70E-03	4.70E-03	4.70E-03	0.0002	0.0006
Cu	324.752	4.60E-03	4.50E-03	4.50E-03	3.50E-03	4.70E-03	2.60E-03	3.80E-03	0.0008	0.0023
Cu	327.393	5.40E-03	5.20E-03	5.20E-03	2.50E-03	3.90E-03	1.70E-03	2.90E-03	0.0015	0.0045
Ni	232.003	4.90E-03	5.10E-03	5.00E-03	5.10E-03	5.20E-03	4.90E-03	4.70E-03	0.0002	0.0005
Zn	213.857	5.00E-03	5.00E-03	5.00E-03	5.10E-03	4.80E-03	4.90E-03	4.60E-03	0.0002	0.0005
Be	313.107	5.00E-03	5.00E-03	5.00E-03	5.00E-03	4.90E-03	4.80E-03	4.70E-03	0.0001	0.0004
Sb	206.836	4.72E-02	4.67E-02	4.59E-02	4.88E-02	4.91E-02	4.40E-02	4.34E-02	0.0022	0.0066
Tl	190.801	5.12E-02	5.16E-02	5.21E-02	5.19E-02	5.09E-02	2.82E-02	2.41E-02	0.0125	0.0374
Co	228.616	5.30E-03	5.30E-03	5.50E-03	5.10E-03	5.20E-03	4.60E-03	4.70E-03	0.0003	0.0010
Mn	257.61	5.59E-02	5.54E-02	5.56E-02	5.48E-02	5.49E-02	5.14E-02	5.16E-02	0.0019	0.0057
Mn	294.92	5.24E-02	5.19E-02	5.19E-02	5.14E-02	5.13E-02	4.88E-02	4.87E-02	0.0015	0.0046
V	292.402	4.90E-03	5.00E-03	4.90E-03	5.00E-03	5.00E-03	4.70E-03	4.40E-03	0.0002	0.0007
K	766.49	1.91E-02	-9.30E-03	-1.55E-02	1.75E-01	1.09E-01	1.07E-01	5.48E-02	0.0707	0.2120
Na	330.237	1.80E-01	1.36E-01	2.29E-01	2.39E-01	1.35E-01	-1.31E-02	1.21E-01	0.0844	0.2533
Al	308.215	1.00E-03	2.70E-03	2.50E-03	1.38E-02	9.40E-03	1.38E-02	9.30E-03	0.0054	0.0163
Al	237.313	3.80E-03	3.70E-03	3.10E-03	2.30E-03	3.80E-03	-1.80E-03	5.10E-03	0.0022	0.0067
Fe	273.955	5.10E-03	4.80E-03	4.90E-03	5.20E-03	4.80E-03	4.60E-03	4.50E-03	0.0003	0.0008
Ca	315.887	4.69E-02	4.57E-02	4.66E-02	5.49E-02	5.00E-02	5.80E-02	5.06E-02	0.0046	0.0138
Mg	279.077	5.15E-02	5.48E-02	5.47E-02	5.23E-02	5.03E-02	3.59E-02	4.39E-02	0.0069	0.0206
Mo	202.031	0.0046	0.0046	0.0047	0.0048	0.0049	0.0049	0.0047	0.0001	0.0004
Si	251.611	0.0414	0.0406	0.0401	0.0419	0.0379	0.0363	0.0340	0.0029	0.0088
Sr	232.235	0.0510	0.0488	0.0511	0.0506	0.0465	0.0539	0.0522	0.0024	0.0071
B	249.677	0.0472	0.0359	0.0320	0.0604	0.0559	0.0622	0.0573	0.0121	0.0362
Ti	336.121	0.0515	0.0508	0.0508	0.0502	0.0503	0.0486	0.0474	0.0014	0.0043
Sn	189.927	0.0494	0.0495	0.0488	0.0511	0.0503	0.0461	0.0462	0.0019	0.0058

MDL 0.005 Soil

402

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Water Metals
Method 200.7/6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	4.95E+00	5.01E+00	4.96E+00	4.85E+00	4.82E+00	4.85E+00	4.85E+00	0.0744	0.2231
As	193.696	4.97E+00	4.98E+00	4.95E+00	4.85E+00	4.80E+00	4.75E+00	4.83E+00	0.0903	0.2709
Ba	233.527	4.95E-01	4.98E-01	4.92E-01	4.87E-01	4.89E-01	4.96E-01	4.92E-01	0.0038	0.0115
Cd	226.502	4.95E-01	4.99E-01	4.92E-01	4.87E-01	4.91E-01	4.93E-01	4.90E-01	0.0040	0.0120
Cr	283.563	4.92E-01	4.93E-01	4.91E-01	4.85E-01	4.86E-01	4.95E-01	4.92E-01	0.0035	0.0105
Pb	220.353	5.02E+00	5.05E+00	4.99E+00	4.91E+00	4.92E+00	4.88E+00	4.89E+00	0.0696	0.2087
Se	196.026	5.07E+00	5.09E+00	5.05E+00	4.94E+00	4.93E+00	4.87E+00	4.93E+00	0.0848	0.2545
Ag	338.289	4.89E-01	4.90E-01	4.91E-01	4.84E-01	4.84E-01	4.90E-01	4.88E-01	0.0030	0.0091
Cu	324.752	4.79E-01	4.80E-01	4.83E-01	4.76E-01	4.71E-01	4.82E-01	4.78E-01	0.0040	0.0119
Cu	327.393	4.83E-01	4.86E-01	4.90E-01	4.79E-01	4.73E-01	4.81E-01	4.78E-01	0.0054	0.0162
Ni	232.003	5.00E-01	5.04E-01	4.98E-01	4.88E-01	4.91E-01	4.87E-01	4.87E-01	0.0069	0.0207
Zn	213.857	5.00E-01	5.04E-01	4.94E-01	4.89E-01	4.93E-01	4.92E-01	4.92E-01	0.0053	0.0159
Be	313.107	4.92E-01	4.96E-01	4.94E-01	4.85E-01	4.89E-01	4.93E-01	4.92E-01	0.0036	0.0108
Sb	206.836	4.90E+00	4.94E+00	4.91E+00	4.80E+00	4.79E+00	4.79E+00	4.84E+00	0.0635	0.1905
Tl	190.801	5.15E+00	5.17E+00	5.14E+00	4.99E+00	5.00E+00	4.92E+00	4.96E+00	0.1035	0.3105
Co	228.616	5.04E-01	5.07E-01	5.01E-01	4.93E-01	4.94E-01	4.90E-01	4.88E-01	0.0072	0.0217
Mn	257.61	5.23E+00	5.28E+00	5.26E+00	5.19E+00	5.24E+00	5.20E+00	5.18E+00	0.0368	0.1104
Mn	294.92	5.01E+00	5.03E+00	5.01E+00	4.94E+00	4.96E+00	5.03E+00	4.99E+00	0.0354	0.1063
V	292.402	4.85E-01	4.86E-01	4.86E-01	4.80E-01	4.80E-01	4.90E-01	4.87E-01	0.0036	0.0109
K	766.49	9.37E+00	9.61E+00	9.79E+00	9.38E+00	9.31E+00	9.48E+00	9.33E+00	0.1739	0.5218
Na	330.237	1.39E+01	1.40E+01	1.41E+01	1.36E+01	1.36E+01	1.35E+01	1.36E+01	0.2346	0.7039
Al	308.215	4.78E-01	4.83E-01	4.79E-01	4.65E-01	4.70E-01	4.71E-01	4.72E-01	0.0061	0.0182
Al	237.313	4.88E-01	4.89E-01	4.86E-01	4.74E-01	4.68E-01	4.68E-01	4.75E-01	0.0092	0.0277
Fe	273.955	4.99E-01	5.04E-01	4.99E-01	4.86E-01	4.90E-01	4.84E-01	4.88E-01	0.0076	0.0228
Ca	315.887	4.70E+00	4.78E+00	4.76E+00	4.80E+00	4.83E+00	4.76E+00	4.79E+00	0.0422	0.1266
Mg	279.077	4.76E+00	4.84E+00	4.91E-01	4.85E+00	4.89E+00	4.76E+00	4.80E+00	1.6354	4.9061
Mo	202.031	0.4921	0.4943	0.4911	0.4788	0.4824	0.4751	0.4784	0.0077	0.0232
Si	251.611	4.9370	4.9630	4.9570	4.8870	4.8720	4.9170	4.8750	0.0383	0.1148
Sr	232.235	4.9930	5.0560	4.9660	4.8880	4.9010	4.9160	4.8980	0.0623	0.1869
B	249.677	4.7850	4.8750	4.9100	4.7450	4.7800	4.8180	4.8550	0.0587	0.1762
Ti	336.121	4.9560	5.0120	5.0210	4.9010	4.9290	4.9370	4.9220	0.0458	0.1375
Sn	189.927	5.0200	5.0730	4.9920	4.9230	4.9440	4.8810	4.9300	0.0657	0.1971

403

MDL 0.5 Water

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Water Metals
Method 200.7/6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	5.11E-01	5.00E-01	5.03E-01	4.88E-01	4.85E-01	4.78E-01	4.87E-01	0.0118	0.0353
As	193.696	5.10E-01	4.98E-01	5.02E-01	4.89E-01	4.87E-01	4.78E-01	4.82E-01	0.0113	0.0340
Ba	233.527	5.12E-02	5.02E-02	5.04E-02	5.05E-02	5.00E-02	5.02E-02	5.10E-02	0.0004	0.0013
Cd	226.502	5.06E-02	4.98E-02	4.97E-02	4.95E-02	4.87E-02	4.86E-02	4.94E-02	0.0007	0.0020
Cr	283.563	5.07E-02	4.99E-02	4.97E-02	5.00E-02	4.94E-02	4.98E-02	5.07E-02	0.0005	0.0015
Pb	220.353	5.26E-01	5.17E-01	5.15E-01	5.00E-01	5.00E-01	4.95E-01	5.03E-01	0.0113	0.0339
Se	196.026	5.22E-01	5.12E-01	5.15E-01	5.05E-01	5.02E-01	4.86E-01	4.93E-01	0.0127	0.0381
Ag	338.289	5.07E-02	5.00E-02	5.05E-02	4.94E-02	4.89E-02	4.89E-02	4.98E-02	0.0007	0.0022
Cu	324.752	4.90E-02	4.74E-02	4.86E-02	5.06E-02	5.04E-02	4.91E-02	4.96E-02	0.0011	0.0033
Cu	327.393	4.88E-02	4.72E-02	4.90E-02	5.20E-02	5.09E-02	4.97E-02	4.96E-02	0.0015	0.0046
Ni	232.003	5.20E-02	5.10E-02	5.10E-02	5.02E-02	4.99E-02	4.95E-02	5.01E-02	0.0009	0.0026
Zn	213.857	5.23E-02	5.15E-02	5.11E-02	4.94E-02	4.92E-02	4.87E-02	4.95E-02	0.0014	0.0041
Be	313.107	5.11E-02	5.04E-02	5.04E-02	4.95E-02	4.90E-02	4.94E-02	5.01E-02	0.0007	0.0022
Sb	206.836	4.84E-01	4.78E-01	4.89E-01	4.79E-01	4.82E-01	4.71E-01	4.81E-01	0.0055	0.0166
Tl	190.801	5.35E-01	5.24E-01	5.26E-01	5.14E-01	5.13E-01	4.88E-01	4.97E-01	0.0167	0.0501
Co	228.616	5.24E-02	5.15E-02	5.17E-02	5.09E-02	5.08E-02	4.99E-02	5.07E-02	0.0008	0.0024
Mn	257.61	5.58E-01	5.50E-01	5.51E-01	5.51E-01	5.46E-01	5.45E-01	5.51E-01	0.0044	0.0131
Mn	294.92	5.27E-01	5.20E-01	5.21E-01	5.21E-01	5.16E-01	5.20E-01	5.27E-01	0.0040	0.0120
V	292.402	4.98E-02	4.91E-02	4.91E-02	4.94E-02	4.87E-02	4.90E-02	4.99E-02	0.0004	0.0013
K	766.49	9.65E-01	9.03E-01	9.12E-01	9.82E-01	9.58E-01	9.62E-01	9.30E-01	0.0295	0.0886
Na	330.237	1.34E+00	1.29E+00	1.40E+00	1.26E+00	1.26E+00	1.27E+00	1.27E+00	0.0532	0.1597
Al	308.215	5.11E-02	5.39E-02	4.89E-02	4.10E-02	4.18E-02	4.26E-02	4.49E-02	0.0050	0.0151
Al	237.313	4.91E-02	4.85E-02	4.87E-02	4.85E-02	4.89E-02	4.57E-02	4.58E-02	0.0015	0.0044
Fe	273.955	5.21E-02	5.12E-02	5.13E-02	4.96E-02	4.89E-02	4.89E-02	4.96E-02	0.0013	0.0039
Ca	315.887	4.85E-01	4.76E-01	4.72E-01	4.93E-01	4.91E-01	4.92E-01	4.98E-01	0.0096	0.0288
Mg	279.077	4.95E-01	4.86E-01	4.82E-01	5.10E-01	5.09E-01	4.96E-01	5.04E-01	0.0107	0.0322
Mo	202.031	0.0500	0.0494	0.0501	0.0488	0.0492	0.0477	0.0493	0.0008	0.0024
Si	251.611	0.5027	0.4946	0.4970	0.4955	0.4886	0.4830	0.4864	0.0068	0.0205
Sr	232.235	0.5171	0.5070	0.5061	0.4933	0.4917	0.4933	0.5031	0.0094	0.0281
B	249.677	0.4729	0.4732	0.4828	0.5052	0.5059	0.4928	0.5005	0.0143	0.0429
Ti	336.121	0.5132	0.5047	0.5079	0.5037	0.4982	0.5019	0.5072	0.0048	0.0144
Sn	189.927	0.4995	0.4974	0.5011	0.4883	0.4907	0.4742	0.4882	0.0092	0.0277

MDL 0.05 Water

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Water Metals
Method 200.7/6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	5.06E-02	5.06E-02	5.20E-02	4.66E-02	4.94E-02	4.77E-02	4.52E-02	0.0025	0.0074
As	193.696	5.20E-02	4.87E-02	5.04E-02	4.86E-02	5.05E-02	4.64E-02	4.62E-02	0.0022	0.0065
Ba	233.527	5.00E-03	5.10E-03	5.10E-03	4.90E-03	5.00E-03	4.80E-03	4.80E-03	0.0001	0.0004
Cd	226.502	5.00E-03	5.00E-03	5.00E-03	4.80E-03	4.90E-03	4.60E-03	4.50E-03	0.0002	0.0006
Cr	283.563	5.00E-03	4.90E-03	5.00E-03	4.90E-03	5.00E-03	4.80E-03	4.70E-03	0.0001	0.0003
Pb	220.353	5.34E-02	5.39E-02	5.32E-02	4.99E-02	4.96E-02	4.75E-02	4.71E-02	0.0029	0.0086
Se	196.026	5.05E-02	5.26E-02	5.15E-02	5.00E-02	5.08E-02	4.64E-02	4.49E-02	0.0028	0.0084
Ag	338.289	5.00E-03	5.00E-03	4.70E-03	4.30E-03	4.20E-03	4.40E-03	4.50E-03	0.0003	0.0010
Cu	324.752	4.20E-03	4.20E-03	4.00E-03	6.00E-03	5.70E-03	4.50E-03	4.60E-03	0.0008	0.0024
Cu	327.393	4.00E-03	4.10E-03	3.70E-03	5.70E-03	6.10E-03	4.00E-03	4.40E-03	0.0009	0.0028
Ni	232.003	5.10E-03	5.00E-03	5.20E-03	5.00E-03	5.00E-03	4.80E-03	4.80E-03	0.0001	0.0004
Zn	213.857	5.10E-03	5.20E-03	5.20E-03	4.70E-03	4.80E-03	4.60E-03	4.40E-03	0.0003	0.0009
Be	313.107	5.10E-03	5.10E-03	5.10E-03	4.80E-03	4.90E-03	4.70E-03	4.70E-03	0.0002	0.0006
Sb	206.836	4.67E-02	4.73E-02	4.72E-02	4.65E-02	4.85E-02	4.14E-02	4.11E-02	0.0030	0.0090
Tl	190.801	5.20E-02	5.22E-02	5.18E-02	4.84E-02	4.86E-02	2.81E-02	2.69E-02	0.0114	0.0342
Co	228.616	5.20E-03	5.20E-03	5.30E-03	5.10E-03	5.10E-03	4.50E-03	4.80E-03	0.0003	0.0008
Mn	257.61	5.55E-02	5.58E-02	5.57E-02	5.45E-02	5.51E-02	5.21E-02	5.20E-02	0.0017	0.0050
Mn	294.92	5.23E-02	5.19E-02	5.25E-02	5.16E-02	5.23E-02	4.97E-02	4.88E-02	0.0015	0.0044
V	292.402	5.10E-03	4.90E-03	5.00E-03	4.90E-03	4.80E-03	4.50E-03	4.60E-03	0.0002	0.0006
K	766.49	4.11E-02	7.07E-02	5.91E-02	1.30E-01	1.09E-01	9.97E-02	1.11E-01	0.0320	0.0961
Na	330.237	1.50E-01	1.49E-01	1.18E-01	1.15E-01	1.47E-01	7.43E-02	6.47E-02	0.0356	0.1068
Al	308.215	6.10E-03	7.60E-03	8.10E-03	1.90E-03	3.00E-04	5.00E-03	4.10E-03	0.0029	0.0086
Al	237.313	2.90E-03	3.60E-03	3.00E-03	4.20E-03	3.70E-03	2.30E-03	1.70E-03	0.0009	0.0026
Fe	273.955	5.10E-03	5.50E-03	5.20E-03	4.50E-03	4.40E-03	4.40E-03	4.30E-03	0.0005	0.0014
Ca	315.887	4.87E-02	5.04E-02	4.94E-02	4.49E-02	4.48E-02	4.54E-02	4.48E-02	0.0025	0.0074
Mg	279.077	4.95E-02	5.12E-02	5.25E-02	5.20E-02	5.31E-02	5.04E-02	4.54E-02	0.0026	0.0078
Mo	202.031	0.0046	0.0046	0.0047	0.0046	0.0048	0.0047	0.0048	0.0001	0.0003
Si	251.611	0.0474	0.0460	0.0469	0.0444	0.0446	0.0388	0.0385	0.0037	0.0111
Sr	232.235	0.0531	0.0535	0.0534	0.0468	0.0449	0.0434	0.0435	0.0048	0.0143
B	249.677	0.0550	0.0443	0.0379	0.0680	0.0637	0.0626	0.0551	0.0109	0.0326
Ti	336.121	0.0513	0.0511	0.0508	0.0503	0.0506	0.0488	0.0486	0.0011	0.0033
Sn	189.927	0.0490	0.0488	0.0490	0.0474	0.0491	0.0440	0.0454	0.0021	0.0062

MDL 0.005 Water

STL Seattle Perkin - Elmer Elan 6100 ICP-MS
2/15/2002
FCW

AVERAGE SOIL MDL (mg / kg) ANNUALLY

ELEMENT	MASS	RUN #1	RUN #2	RUN #3	NEW MDL	CURRENT MDL
Lithium	7	0.01095	0.01158	0.00898	**0.0105**	********
Beryllium	9	0.01171	0.0106	0.01068	**0.0110**	0.044
Magnesium	24	0.03216	0.04357	0.07977	**0.0518**	********
Aluminum	27	0.14472	0.06699	1.78178	**0.6645**	5
Titanium	47	0.07776	0.09294	0.10461	**0.0918**	0.1248
Vanadium	51	0.1016	0.09801	0.06504	**0.0882**	0.1454
Chromium	52	0.05538	0.03263	0.02943	**0.0391**	0.0477
Manganese	55	0.03088	0.0364	0.02732	**0.0315**	0.0225
Cobalt	59	0.00364	0.00334	0.00424	**0.0037**	0.0377
Nickel	60	0.00791	0.00567	0.00424	**0.0059**	0.0735
Copper	65	0.0068	0.01141	0.01119	**0.0098**	0.0812
Zinc	68	0.05438	0.06108	0.06446	**0.0600**	0.1818
Arsenic	75	0.09764	0.10609	0.11282	**0.1055**	0.1537
Selenium	82	0.36309	0.20149	0.42598	**0.3302**	0.3864
Strontium	88	0.04385	0.00285	0.00285	**0.0165**	0.0177
Molybdenum	95	0.01301	0.02365	0.0268	**0.0212**	0.0488
Silver	107	0.00334	0.00574	0.00454	**0.0045**	0.0485
Cadmium	114	0.0069	0.0068	0.0069	**0.0069**	0.0833
Indium	115	0.00236	0.00227	0.00113	**0.0019**	********
Tin	118	0.02784	0.03907	0.03249	**0.0331**	0.0642
Antimony	123	0.01629	0.01856	0.02386	**0.0196**	0.0201
Barium	137	0.00611	0.00849	0.00898	**0.0079**	0.0933
Thallium	205	0.01406	0.00532	0.00763	**0.0090**	0.0473
Lead	208	0.00113	0.0034	0.00207	**0.0022**	0.0232
Bismuth	209	0.0218	0.01301	0.04173	**0.0255**	********
Uranium	238	0.00207	0.00236	0.0001	**0.0015**	********

STL Seattle Perkin - Elmer Elan 6100 ICP-MS
2/11/2002
FCW

SOIL / OIL / WIPE / FILTER / PAINT CHIP'S MDL #1 (mg / kg)

ELEMENT	MASS	spike (ug/l)	Result	Result	Result	Result	Result	Result	Result	Std Dev	MDL	CURRENT MDL
Lithium	7	0.01	-0.074	-0.083	-0.079	-0.078	-0.085	-0.082	-0.079	0.0037	**0.01095**	********
Beryllium	9	0.01	0.01	0.003	0.013	0.013	0.008	0.006	0.005	0.0039	**0.01171**	0.044
Magnesium	24	0.5	0.386	0.396	0.403	0.4	0.412	0.4	0.419	0.0107	**0.03216**	********
Aluminum	27	0.5	0.328	0.367	0.341	0.372	0.474	0.389	0.405	0.0482	**0.14472**	5
Titanium	47	0.5	0.198	0.202	0.241	0.203	0.218	0.172	0.165	0.0259	**0.07776**	0.1248
Vanadium	51	0.5	0.477	0.425	0.375	0.463	0.452	0.425	0.419	0.0339	**0.1016**	0.1454
Chromium	52	0.05	-0.031	0.007	0.019	0.003	-0.016	-0.012	-0.027	0.0185	**0.05538**	0.0477
Manganese	55	0.5	0.51	0.508	0.523	0.514	0.534	0.532	0.523	0.0103	**0.03088**	0.0225
Cobalt	59	0.01	0.009	0.01	0.011	0.009	0.009	0.007	0.009	0.0012	**0.00364**	0.0377
Nickel	60	0.01	0.007	0.011	0.011	0.008	0.004	0.008	0.011	0.0026	**0.00791**	0.0735
Copper	65	0.01	-0.009	-0.006	-0.012	-0.007	-0.008	-0.008	-0.005	0.0023	**0.0068**	0.0812
Zinc	68	0.5	0.374	0.356	0.347	0.379	0.38	0.344	0.336	0.0181	**0.05438**	0.1818
Arsenic	75	0.5	0.541	0.636	0.558	0.606	0.579	0.576	0.557	0.0325	**0.09764**	0.1537
Selenium	82	0.5	0.794	0.886	0.697	0.75	0.594	0.685	0.525	0.1210	**0.36309**	0.3864
Strontium	88	0.01	0.011	0.01	-0.027	0.014	0.012	0.01	0.012	0.0146	**0.04385**	0.0177
Molybdenum	95	0.05	0.066	0.057	0.059	0.055	0.055	0.055	0.053	0.0043	**0.01301**	0.0488
Silver	107	0.01	0.012	0.014	0.013	0.011	0.013	0.011	0.012	0.0011	**0.00334**	0.0485
Cadmium	114	0.01	0.003	0.007	0.009	0.003	0.007	0.004	0.005	0.0023	**0.0069**	0.0833
Indium	115	0.01	0.01	0.011	0.01	0.012	0.01	0.011	0.01	0.0008	**0.00236**	********
Tin	118	0.05	0.091	0.084	0.079	0.073	0.072	0.071	0.063	0.0093	**0.02784**	0.0642
Antimony	123	0.05	0.077	0.077	0.067	0.073	0.067	0.066	0.064	0.0054	**0.01629**	0.0201
Barium	137	0.01	0.008	0.009	0.009	0.011	0.009	0.014	0.009	0.0020	**0.00611**	0.0933
Thallium	205	0.05	0.093	0.093	0.083	0.086	0.082	0.085	0.083	0.0047	**0.01406**	0.0473
Lead	208	0.01	0.013	0.013	0.013	0.014	0.013	0.013	0.013	0.0004	**0.00113**	0.0232
Bismuth	209	0.05	0.075	0.083	0.071	0.069	0.064	0.063	0.064	0.0073	**0.0218**	********
Uranium	238	0.01	0.01	0.01	0.011	0.01	0.01	0.011	0.009	0.0007	**0.00207**	********

STL Seattle Perkin - Elmer Elan 6100 ICP-MS
2/13/2002
FCW

SOIL / OIL / WIPE / FILTER / PAINT CHIP'S MDL #2

ELEMENT	MASS	spike (ug/l)	Result	Result	Result	Result	Result	Result	Result	Std Dev	(mg / kg) MDL	CURRENT MDL
Lithium	7	0.01	-0.008	-0.009	-0.017	-0.015	-0.016	-0.015	-0.009	0.0039	**0.01158**	********
Beryllium	9	0.01	0.012	0.009	0.016	0.008	0.008	0.015	0.015	0.0035	**0.0106**	0.044
Magnesium	24	0.5	0.444	0.433	0.427	0.413	0.408	0.404	0.415	0.0145	**0.04357**	********
Aluminum	27	0.5	-0.492	-0.493	-0.55	-0.52	-0.531	-0.539	-0.51	0.0223	**0.06699**	5
Titanium	47	0.5	0.407	0.355	0.404	0.364	0.392	0.443	0.422	0.0310	**0.09294**	0.1248
Vanadium	51	0.5	0.399	0.489	0.485	0.468	0.466	0.471	0.498	0.0327	**0.09801**	0.1454
Chromium	52	0.05	-0.016	0.01	-0.003	0.011	-0.013	0.006	-0.006	0.0109	**0.03263**	0.0477
Manganese	55	0.5	0.507	0.509	0.51	0.499	0.514	0.488	0.527	0.0121	**0.0364**	0.0225
Cobalt	59	0.01	0.01	0.009	0.012	0.011	0.009	0.011	0.01	0.0011	**0.00334**	0.0377
Nickel	60	0.01	-0.005	-0.005	-0.009	-0.005	-0.004	-0.006	-0.003	0.0019	**0.00567**	0.0735
Copper	65	0.01	0.006	0.003	0.011	0.007	0.012	0.014	0.009	0.0038	**0.01141**	0.0812
Zinc	68	0.5	0.347	0.383	0.39	0.362	0.379	0.388	0.41	0.0204	**0.06108**	0.1818
Arsenic	75	0.5	0.613	0.656	0.564	0.629	0.555	0.611	0.612	0.0354	**0.10609**	0.1537
Selenium	82	0.5	0.34	0.307	0.292	0.346	0.395	0.414	0.214	0.0672	**0.20149**	0.3864
Strontium	88	0.01	0.006	0.007	0.007	0.005	0.007	0.007	0.008	0.0010	**0.00285**	0.0177
Molybdenum	95	0.05	0.071	0.069	0.062	0.061	0.054	0.051	0.053	0.0079	**0.02365**	0.0488
Silver	107	0.01	0.013	0.015	0.016	0.012	0.011	0.013	0.011	0.0019	**0.00574**	0.0485
Cadmium	114	0.01	0.01	0.009	0.007	0.006	0.008	0.003	0.007	0.0023	**0.0068**	0.0833
Indium	115	0.01	0.009	0.011	0.01	0.009	0.01	0.01	0.009	0.0008	**0.00227**	********
Tin	118	0.05	0.095	0.079	0.07	0.071	0.062	0.061	0.057	0.0130	**0.03907**	0.0642
Antimony	123	0.05	0.084	0.084	0.078	0.075	0.072	0.075	0.067	0.0062	**0.01856**	0.0201
Barium	137	0.01	0.003	0.005	0.008	0.004	0.011	0.004	0.007	0.0028	**0.00849**	0.0933
Thallium	205	0.05	0.057	0.053	0.055	0.055	0.058	0.054	0.054	0.0018	**0.00532**	0.0473
Lead	208	0.01	0.008	0.007	0.007	0.01	0.009	0.009	0.009	0.0011	**0.0034**	0.0232
Bismuth	209	0.05	0.061	0.055	0.058	0.059	0.057	0.053	0.048	0.0043	**0.01301**	********
Uranium	238	0.01	0.011	0.012	0.011	0.01	0.01	0.01	0.01	0.0008	**0.00236**	********

STL Seattle Perkin - Elmer Elan 6100 ICP-MS
2/15/2002
FCW

SOIL / OIL / WIPE / FILTER / PAINT CHIP'S MDL #3

ELEMENT	MASS	spike (ug/l)	Result	Result	Result	Result	Result	Result	Result	Std Dev	(mg / kg) MDL	CURRENT MDL
Lithium	7	0.01	0.019	0.023	0.02	0.017	0.024	0.018	0.016	0.0030	**0.00898**	********
Beryllium	9	0.01	0.016	0.009	0.013	0.008	0.015	0.008	0.008	0.0036	**0.01068**	0.044
Magnesium	24	0.5	0.659	0.705	0.675	0.74	0.693	0.69	0.672	0.0266	**0.07977**	********
Aluminum	27	0.5	0.427	1.295	1.75	1.016	1.873	1.815	0.598	0.5939	**1.78178**	5
Titanium	47	0.5	0.382	0.442	0.475	0.435	0.466	0.391	0.431	0.0349	**0.10461**	0.1248
Vanadium	51	0.5	0.374	0.351	0.386	0.403	0.361	0.338	0.37	0.0217	**0.06504**	0.1454
Chromium	52	0.05	-0.034	-0.043	-0.038	-0.021	-0.015	-0.035	-0.033	0.0098	**0.02943**	0.0477
Manganese	55	0.5	0.524	0.523	0.518	0.541	0.525	0.511	0.522	0.0091	**0.02732**	0.0225
Cobalt	59	0.01	0.012	0.011	0.009	0.01	0.009	0.011	0.008	0.0014	**0.00424**	0.0377
Nickel	60	0.01	0.004	0.005	0.001	0.002	0.004	0.002	0.003	0.0014	**0.00424**	0.0735
Copper	65	0.01	0.018	0.016	0.009	0.008	0.015	0.012	0.011	0.0037	**0.01119**	0.0812
Zinc	68	0.5	0.854	0.892	0.887	0.865	0.837	0.867	0.895	0.0215	**0.06446**	0.1818
Arsenic	75	0.5	0.551	0.564	0.506	0.579	0.559	0.609	0.505	0.0376	**0.11282**	0.1537
Selenium	82	0.5	0.396	0.477	0.474	0.333	0.413	0.665	0.204	0.1420	**0.42598**	0.3864
Strontium	88	0.01	0.011	0.011	0.011	0.011	0.012	0.009	0.01	0.0010	**0.00285**	0.0177
Molybdenum	95	0.05	0.076	0.065	0.079	0.068	0.06	0.054	0.061	0.0089	**0.0268**	0.0488
Silver	107	0.01	0.013	0.012	0.014	0.01	0.011	0.011	0.01	0.0015	**0.00454**	0.0485
Cadmium	114	0.01	0.011	0.01	0.008	0.006	0.012	0.008	0.012	0.0023	**0.0069**	0.0833
Indium	115	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.009	0.0004	**0.00113**	********
Tin	118	0.05	0.108	0.098	0.088	0.084	0.079	0.078	0.085	0.0108	**0.03249**	0.0642
Antimony	123	0.05	0.1	0.08	0.085	0.079	0.084	0.083	0.075	0.0080	**0.02386**	0.0201
Barium	137	0.01	0.012	0.01	0.012	0.011	0.011	0.019	0.012	0.0030	**0.00898**	0.0933
Thallium	205	0.05	0.048	0.043	0.047	0.041	0.044	0.046	0.047	0.0025	**0.00763**	0.0473
Lead	208	0.01	0.015	0.015	0.016	0.015	0.014	0.015	0.014	0.0007	**0.00207**	0.0232
Bismuth	209	0.05	0.117	0.11	0.101	0.095	0.085	0.085	0.08	0.0139	**0.04173**	********
Uranium	238	0.01	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.0000	**7E-10**	********

STL Seattle Perkin - Elmer Elan 6100 ICP-MS
2/13/2002
FCW

WATER MDL

ELEMENT	MASS	spike (ug/l)	Result	Result	Result	Result	Result	Result	Result	Std Dev	(ug / l) MDL	CURRENT MDL
Lithium	7	0.05	0.026	0.03	0.034	0.03	0.028	0.021	0.026	0.0041	**0.0123**	********
Beryllium	9	0.05	0.062	0.05	0.057	0.054	0.057	0.045	0.054	0.0055	**0.01638**	0.044
Magnesium	24	0.05	-0.062	-0.064	-0.072	-0.066	-0.075	-0.063	-0.068	0.0048	**0.01454**	********
Aluminum	27	0.5	-0.618	-0.61	-0.588	-0.595	-0.517	-0.561	-0.615	0.0363	**0.10894**	5
Titanium	47	0.05	-0.024	-0.012	-0.015	-0.004	-0.033	0.006	-0.03	0.0141	**0.04232**	0.1248
Vanadium	51	0.5	0.505	0.459	0.45	0.55	0.486	0.447	0.473	0.0366	**0.10972**	0.1454
Chromium	52	0.05	-0.016	-0.044	-0.016	-0.007	-0.013	-0.014	-0.003	0.0132	**0.03963**	0.0477
Manganese	55	0.05	0.07	0.069	0.073	0.067	0.066	0.075	0.074	0.0035	**0.01052**	0.0225
Cobalt	59	0.01	0.012	0.01	0.011	0.009	0.011	0.011	0.007	0.0017	**0.00503**	0.0377
Nickel	60	0.05	0.031	0.038	0.038	0.027	0.032	0.034	0.032	0.0039	**0.0118**	0.0735
Copper	65	0.05	0.052	0.045	0.045	0.052	0.047	0.04	0.047	0.0042	**0.01266**	0.0812
Zinc	68	0.05	-0.041	-0.055	-0.064	-0.065	-0.053	-0.06	-0.051	0.0084	**0.02509**	0.1818
Arsenic	75	0.5	0.632	0.696	0.665	0.598	0.56	0.585	0.632	0.0471	**0.14117**	0.1537
Selenium	82	0.5	0.518	0.447	0.569	0.312	0.263	0.179	0.418	0.1409	**0.42269**	0.3864
Strontium	88	0.01	0.008	0.006	0.007	0.005	0.008	0.006	0.006	0.0011	**0.0034**	0.0177
Molybdenum	95	0.05	0.08	0.067	0.061	0.057	0.06	0.051	0.049	0.0105	**0.0314**	0.0488
Silver	107	0.01	0.019	0.016	0.014	0.014	0.012	0.014	0.013	0.0023	**0.0069**	0.0485
Cadmium	114	0.01	0.009	0.007	0.004	0.006	0.003	0.007	0.006	0.0020	**0.006**	0.0833
Indium	115	0.01	0.009	0.01	0.01	0.008	0.009	0.01	0.009	0.0008	**0.00227**	********
Tin	118	0.05	0.092	0.089	0.082	0.071	0.071	0.066	0.057	0.0127	**0.03814**	0.0642
Antimony	123	0.05	0.095	0.094	0.091	0.081	0.078	0.081	0.078	0.0076	**0.02277**	0.0201
Barium	137	0.01	0.006	0.005	0.009	0.005	0.005	0.003	0.003	0.0020	**0.00611**	0.0933
Thallium	205	0.5	0.47	0.473	0.506	0.511	0.5	0.504	0.507	0.0170	**0.05095**	0.0473
Lead	208	0.01	0.014	0.01	0.012	0.01	0.008	0.008	0.009	0.0022	**0.00658**	0.0232
Bismuth	209	0.05	0.077	0.07	0.068	0.065	0.062	0.06	0.054	0.0074	**0.02234**	********
Uranium	238	0.01	0.012	0.011	0.01	0.011	0.01	0.009	0.011	0.0010	**0.00293**	********

SOUND ANALYTICAL SERVICES

Instrument:	3400-II
Method:	8081A
Matrix:	liquid
Analyst:	JDW
Date Prepared:	4/29/2002
Date Analyzed:	5/3/2002
Units:	ug/L

Sample Amount:	125 ml
Final Volume:	1.0 ml
Cleanup Used:	Restek CLP1 Column

Data Filenames: ->	025F2501	026F2601	027F2701	028F2801	029F2901	030F3001	031F3101	**Spiked**	**Ave.**			
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	Pass/Fail
Aldrin	0.008459	0.007771	0.008585	0.009053	0.008817	0.008777	0.00898	0.008	108	**0.00126**	0.008	This MDL passes
alpha-BHC	0.008727	0.007246	0.008714	0.009075	0.008573	0.008714	0.008718	0.008	107	**0.00172**	0.008	This MDL passes
beta-BHC	0.012942	0.008159	0.010009	0.012978	0.010705	0.010793	0.011174	0.008	137	**0.00488**	0.008	amount OR PQL is
delta-BHC	0.00981	0.007276	0.009685	0.010879	0.010503	0.010597	0.010764	0.008	121	**0.00366**	0.008	amount OR PQL is
gamma-BHC (Lindane)	0.009967	0.00866	0.009994	0.010873	0.01035	0.010534	0.010255	0.008	123	**0.00205**	0.008	This MDL passes
Chlordane (technical)	0.094256	0.083472	0.091448	0.092624	0.09556	0.09728	0.09864	0.08	117	**0.01459**	0.08	This MDL passes
4,4'-DDD	0.017773	0.018962	0.019078	0.024366	0.018498	0.019209	0.019809	0.016	123	**0.00630**	0.016	amount OR PQL is
4,4'-DDE	0.019765	0.01863	0.01744	0.020326	0.020094	0.019655	0.01995	0.016	121	**0.00298**	0.016	This MDL passes
4,4'-DDT	0.019098	0.017768	0.018862	0.025954	0.020425	0.019902	0.019726	0.016	127	**0.00773**	0.016	amount OR PQL is
Dieldrin	0.021022	0.018319	0.019487	0.021295	0.020859	0.020848	0.020637	0.016	127	**0.00310**	0.016	This MDL passes
Endosulfan I	0.009485	0.009639	0.009602	0.009491	0.010159	0.008907	0.010005	0.008	120	**0.00118**	0.008	This MDL passes
Endosulfan II	0.018096	0.01779	0.01813	0.020942	0.01856	0.01937	0.019416	0.016	118	**0.00320**	0.016	This MDL passes
Endosulfan sulfate	0.018622	0.016966	0.017831	0.018878	0.019268	0.018921	0.01898	0.016	116	**0.00236**	0.016	This MDL passes
Endrin	0.023056	0.022177	0.022081	0.026383	0.022985	0.024836	0.024798	0.016	148	**0.00468**	0.016	This MDL passes
Endrin aldehyde	0.018316	0.016406	0.017201	0.018484	0.016866	0.01692	0.016341	0.016	108	**0.00251**	0.016	This MDL passes
Heptachlor	0.0086	0.007026	0.008996	0.011828	0.008673	0.009594	0.010038	0.008	116	**0.00431**	0.008	amount OR PQL is
Heptachlor epoxide	0.009517	0.00893	0.009486	0.009728	0.009754	0.009993	0.00993	0.008	120	**0.00104**	0.008	This MDL passes
Methoxychlor	0.141483	0.168251	0.158623	0.169802	0.257762	0.494244	0.346882	0.08	310	**0.37999**	0.08	amount OR PQL is
Endrin ketone	0.01939	0.0183	0.01855	0.019737	0.018557	0.023458	0.019586	0.016	123	**0.00515**	0.016	This MDL passes
Toxaphene	0.614768	0.753064	0.706544	0.612616	0.577904	0.575392	0.572672	0.8	79	**0.20753**	0.8	This MDL passes
alpha-Chlordane	0.010324	0.010101	0.010718	0.010657	0.01073	0.010042	0.010572	0.008	131	**0.00085**	0.008	This MDL passes
gamma-Chlordane	0.00934	0.008622	0.010161	0.009502	0.009159	0.009078	0.009281	0.008	116	**0.00136**	0.016	This MDL passes

SOUND ANALYTICAL SERVICES

Instrument:	3400-II
Method:	8081A
Matrix:	liquid
Analyst:	JDW
Date Prepared:	4/29/2002
Date Analyzed:	5/3/2002
Units:	ug/L

Sample Amount:	125 ml
Final Volume:	1.0 ml
Cleanup Used:	Restek CLP2 Column

Data Filenames: ->	025F2501	026F2601	027F2701	028F2801	029F2901	030F3001	031F3101	**Spiked**	**Ave.**			
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	Pass/Fail
Aldrin	0.008839	0.00804	0.008758	0.009967	0.008845	0.00874	0.009485	0.008	112	**0.00178**	0.008	This MDL passes
alpha-BHC	0.00779	0.007894	0.007926	0.008557	0.007663	0.008075	0.007698	0.008	99	**0.00089**	0.008	This MDL passes
beta-BHC	0.009919	0.008444	0.009651	0.010886	0.009758	0.010316	0.009846	0.008	123	**0.00216**	0.008	This MDL passes
delta-BHC	0.00906	0.007506	0.008115	0.00945	0.008993	0.008974	0.008653	0.008	107	**0.00192**	0.008	This MDL passes
gamma-BHC (Lindane)	0.008949	0.00801	0.008864	0.009633	0.00901	0.008992	0.009009	0.008	110	**0.00139**	0.008	This MDL passes
Chlordane (technical)	0.0846	0.094344	0.098744	0.092536	0.083368	0.09092	0.092792	0.08	114	**0.01576**	0.08	This MDL passes
4,4'-DDD	0.015626	0.01679	0.015652	0.016393	0.015582	0.016414	0.016232	0.016	101	**0.00139**	0.016	amount OR PQL is
4,4'-DDE	0.017803	0.017435	0.017646	0.01861	0.017842	0.018396	0.018769	0.016	113	**0.00150**	0.016	amount OR PQL is
4,4'-DDT	0.019066	0.017779	0.018624	0.019529	0.018768	0.019326	0.018702	0.016	118	**0.00166**	0.016	This MDL passes
Dieldrin	0.018067	0.017411	0.017766	0.018521	0.017963	0.018264	0.017983	0.016	112	**0.00103**	0.016	amount OR PQL is
Endosulfan I	0.008729	0.008799	0.008656	0.009079	0.008684	0.008902	0.008751	0.008	110	**0.00043**	0.008	amount OR PQL is
Endosulfan II	0.017724	0.016658	0.017208	0.01829	0.017778	0.018024	0.017962	0.016	110	**0.00161**	0.016	This MDL passes
Endosulfan sulfate	0.018864	0.016735	0.017898	0.018845	0.019363	0.019401	0.018984	0.016	116	**0.00278**	0.016	This MDL passes
Endrin	0.020956	0.020058	0.021194	0.021548	0.020917	0.021459	0.021029	0.016	131	**0.00143**	0.016	amount OR PQL is
Endrin aldehyde	0.017294	0.016879	0.017007	0.017786	0.016989	0.017095	0.017286	0.016	107	**0.00089**	0.016	amount OR PQL is
Heptachlor	0.009337	0.008904	0.008992	0.008672	0.010232	0.009592	0.01004	0.008	117	**0.00172**	0.008	This MDL passes
Heptachlor epoxide	0.009702	0.00897	0.009558	0.009922	0.00914	0.009626	0.009253	0.008	118	**0.00099**	0.008	This MDL passes
Methoxychlor	0.141483	0.08148	0.082162	0.087646	0.086502	0.087635	0.086519	0.08	117	**0.08220**	0.08	amount OR PQL is
Endrin ketone	0.017344	0.016786	0.016995	0.017933	0.017277	0.018352	0.018303	0.016	110	**0.00183**	0.016	This MDL passes
Toxaphene	0.583968	0.574464	0.535904	0.593216	0.569888	0.501312	0.470032	0.8	68	**0.13500**	0.8	This MDL passes
alpha-Chlordane	0.009526	0.009168	0.009474	0.009899	0.009569	0.010038	0.009786	0.008	120	**0.00085**	0.008	This MDL passes
gamma-Chlordane	0.008266	0.007485	0.008844	0.008492	0.008226	0.008764	0.008302	0.008	104	**0.00131**	0.016	This MDL passes

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SOUND ANALYTICAL SERVICES

Instrument:	3400-II
Method:	8081A
Matrix:	solid
Analyst:	JDW
Date Prepared:	4/17/2002
Date Analyzed:	4/18/2002
Units:	ug/kg

Sample Amount:	10 g
Final Volume:	10 g
Cleanup Used:	Restek CLP2 Column

Data Filenames: ->	025F2501	026F2601	027F2701	028F2801	029F2901	030F3001	031F3101	Spiked	Ave.			
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	Pass/Fail
Aldrin	0.804	0.7155	0.7488	0.6983	0.7152	0.7273	0.7304	0.75	98	**0.1004**	1	This MDL passes
alpha-BHC	0.7345	0.7293	0.7368	0.7373	0.6987	0.7522	0.7453	0.75	98	**0.0496**	1	amount OR PQL is
beta-BHC	0.9522	0.6633	0.5821	0.9598	0.7736	0.6971	0.7403	0.75	102	**0.4150**	1	amount OR PQL is
delta-BHC	0.8459	0.8513	0.8877	1.0285	1.0245	1.0262	1.0149	0.75	124	**0.2550**	1	This MDL passes
gamma-BHC (Lindane)	0.8095	0.824	0.8377	0.9487	0.8021	0.7881	0.8225	0.75	110	**0.1554**	1	This MDL passes
Chlordane (technical)	5.218	5.955	5.488	5.351	5.042	5.88	5.663	7.5	74	**0.9856**	10	This MDL passes
4,4'-DDD	1.6382	1.5212	1.5414	1.6387	1.4994	1.4205	1.4857	1.5	102	**0.2329**	2	This MDL passes
4,4'-DDE	1.5898	1.4919	1.6176	1.5728	1.481	1.4717	1.4903	1.5	102	**0.1758**	2	This MDL passes
4,4'-DDT	1.8447	1.5487	1.6574	1.8711	1.5881	1.5341	1.5345	1.5	110	**0.4243**	2	This MDL passes
Dieldrin	1.6498	1.8768	1.6675	1.7414	1.4826	1.4383	1.473	1.5	108	**0.3712**	2	This MDL passes
Endosulfan I	0.8179	0.7605	0.835	0.8223	0.7587	0.7634	0.8194	0.75	106	**0.0990**	1	This MDL passes
Endosulfan II	1.6533	1.525	1.5815	1.4453	1.5658	1.5691	1.5598	1.5	104	**0.1825**	2	This MDL passes
Endosulfan sulfate	1.7852	1.6551	1.7141	1.7043	1.703	1.5416	1.6196	1.5	112	**0.2272**	2	This MDL passes
Endrin	1.6347	1.5837	1.5591	1.6005	1.5637	1.4971	1.5076	1.5	104	**0.1425**	2	amount OR PQL is
Endrin aldehyde	1.7033	1.2798	1.6139	1.513	1.5407	1.5014	1.3995	1.5	100	**0.4017**	2	This MDL passes
Heptachlor	0.8564	0.8237	0.9226	1.1021	0.8482	0.916	0.8413	0.75	120	**0.2797**	1	This MDL passes
Heptachlor epoxide	0.8116	0.8977	0.8148	0.8446	0.8285	0.8766	0.8333	0.75	113	**0.0936**	1	This MDL passes
Methoxychlor	7.4469	6.6056	6.8177	7.0078	6.8246	6.5638	6.5753	7.5	91	**0.9189**	10	This MDL passes
Endrin ketone	1.7205	1.4524	1.6409	1.5329	1.514	1.4307	1.4392	1.5	102	**0.3208**	2	This MDL passes
Toxaphene	86.401	85.665	86.359	86.849	88.055	101.4	87.96	75	119	**16.1665**	100	This MDL passes
alpha-Chlordane	0.8862	0.7397	0.8472	0.8422	0.7942	0.8027	0.8302	0.75	109	**0.1361**	1	This MDL passes
gamma-Chlordane	0.8609	0.7845	0.8921	0.8967	0.7743	0.8095	0.8197	0.75	111	**0.1448**	2	This MDL passes

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SOUND ANALYTICAL SERVICES

Instrument:	3400-II
Method:	8081A
Matrix:	solid
Analyst:	JDW
Date Prepared:	4/17/2002
Date Analyzed:	4/18/2002
Units:	ug/kg

Sample Amount:	10 g
Final Volume:	10 g
Cleanup Used:	Restek CLP1 Column

Data Filenames: ->	025F2501	026F2601	027F2701	028F2801	029F2901	030F3001	031F3101	Spiked	Ave.			
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	Pass/Fail
Aldrin	0.8566	0.8669	0.9	0.8458	0.8352	0.8384	0.8492	0.75	114	**0.0645**	1	amount OR PQL is
alpha-BHC	0.7762	0.787	0.8002	0.7806	0.766	0.7608	0.7795	0.75	104	**0.0380**	1	amount OR PQL is
beta-BHC	0.9522	0.7583	0.7272	0.9598	0.798	0.7277	0.7348	0.75	108	**0.3023**	1	This MDL passes
delta-BHC	1.0038	0.902	0.9861	1.2687	0.9122	1.0921	0.8966	0.75	130	**0.3910**	1	amount OR PQL is
gamma-BHC (Lindane)	0.8619	0.8618	0.8531	0.8961	0.8628	0.8473	0.8758	0.75	113	**0.0469**	1	amount OR PQL is
Chlordane (technical)	6.723	6.374	6.18	6.409	6.443	8.671	7.194	7.5	91	**2.5160**	10	This MDL passes
4,4'-DDD	1.5385	1.6346	1.489	1.5234	1.4574	1.3657	1.4397	1.5	100	**0.2474**	2	This MDL passes
4,4'-DDE	1.669	1.4958	1.6402	1.6988	1.6097	1.4681	1.4684	1.5	105	**0.2876**	2	This MDL passes
4,4'-DDT	1.8614	1.6375	1.8243	1.9681	1.7224	1.5744	1.656	1.5	117	**0.4091**	2	This MDL passes
Dieldrin	1.7451	1.6199	1.6701	1.6403	1.6339	1.627	1.5849	1.5	110	**0.1472**	2	amount OR PQL is
Endosulfan I	0.7302	0.7324	0.7424	0.7593	0.7538	0.7539	0.7507	0.75	99	**0.0330**	1	amount OR PQL is
Endosulfan II	1.5441	1.4968	1.5121	1.5927	1.5295	1.4295	1.4709	1.5	101	**0.1529**	2	This MDL passes
Endosulfan sulfate	1.8649	2.3917	1.7623	1.9622	2.0454	2.2083	1.9184	1.5	135	**0.6268**	2	This MDL passes
Endrin	1.6878	1.6912	1.5138	1.7058	1.633	1.5512	1.5536	1.5	108	**0.2304**	2	This MDL passes
Endrin aldehyde	1.7033	1.3814	1.652	1.5261	1.5987	1.5262	1.6413	1.5	105	**0.3134**	2	This MDL passes
Heptachlor	0.9305	0.9668	0.9501	1.0279	0.9863	0.997	0.9928	0.75	131	**0.0943**	1	This MDL passes
Heptachlor epoxide	0.8568	0.8232	0.8111	0.7817	0.7884	0.7818	0.7949	0.75	107	**0.0798**	1	This MDL passes
Methoxychlor	9.5247	8.054	8.407	8.8792	8.5595	8.193	8.3413	7.5	114	**1.4522**	10	This MDL passes
Endrin ketone	1.7887	1.5974	1.6461	1.6913	1.6257	1.4599	1.5575	1.5	108	**0.3010**	2	This MDL passes
Toxaphene	86.398	90.652	83.573	75.451	89.386	85.271	84.762	75	113	**14.3761**	100	This MDL passes
alpha-Chlordane	1.0196	0.9021	1.0437	1.0462	0.9345	0.9023	0.9039	0.75	129	**0.1999**	1	This MDL passes
gamma-Chlordane	0.7528	0.718	0.7374	0.7342	0.7059	0.6868	0.7363	0.75	97	**0.0652**	2	amount OR PQL is

SOUND ANALYTICAL SERVICES

Instrument:	ITS-40 3	its_40__
Method:	8151A	8151a
Matrix:	SOIL	soil
Analyst:	BRENT HEPNER	brent_he
Date Prepared:	4/4/02	1
Date Analyzed:	4/4/02	its_40__.xls
Units:	UG/KG	e:\mdl\soil\8151a

Sample Amount: 15.0000 GRAMS
Final Volume: 2.0 ML
Cleanup Used:

Data Filenames: ->	L1917	L1918	L1919	L1920	L1921	L1922	L1923	Spiked	Ave.			factor	133.3333
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	base PQL	base mdl
Dalapon	1.2	1.47	1.33	1.47	1.47	1.33	1.33	1.3	105	**0.30**	0.32	0.01	0.002248
4-Nitrophenol	1.6	1.73	1.73	1.73	1.47	1.73	1.73	1.3	129	**0.30**	0.42	0.01	0.002232
Dicamba	1.6	1.6	1.6	1.47	1.47	1.33	1.6	1.3	117	**0.31**	0.37	0.01	0.002299
MCPP	1.2	1.2	1.33	1.33	1.2	1.07	1.2	1.3	94	**0.26**	0.28	0.01	0.001958
MCPA	1.47	1.33	1.73	1.6	1.2	1.33	1.2	1.3	108	**0.59**	0.64	0.01	0.004393
Dichloroprop	1.33	1.2	1.47	1.73	1.33	1.33	1.47	1.3	108	**0.49**	0.54	0.01	0.003705
2,4-D	1.6	1.73	1.73	1.2	1.6	1.6	1.6	1.3	122	**0.52**	0.66	0.01	0.003894
Pentachlorophenol	1.6	1.33	1.47	1.47	1.33	1.2	1.33	1.3	107	**0.38**	0.41	0.01	0.00287
Silvex (2,4,5-TP)	1.47	1.73	1.6	1.47	1.47	1.33	1.2	1.3	113	**0.50**	0.57	0.015	0.003748
2,4,5-T	1.6	1.33	1.47	1.2	1.33	0.933	1.33	1.3	101	**0.61**	0.62	0.015	0.004587
Dinoseb	1.33	1.2	1.33	1.47	1.2	1.07	1.07	1.3	95	**0.43**	0.45	0.01	0.003213
2,4-DB	1.33	0.933	1.07	1.07	1.2	1.07	1.2	1.3	87	**0.37**	0.43	0.01	0.002806
Picloram	1.6	1.6	1.6	1.33	1.47	1.47	1.33	1.3	113	**0.38**	0.44	0.01	0.002867
Clopyralid	1.73	1.47	1.73	1.6	1.33	1.33	1.47	1.3	115	**0.52**	0.61	0.015	0.003866

SOUND ANALYTICAL SERVICES

Instrument:	ITS40-3
Method:	8270
Matrix:	liquid
Analyst:	B. HEPNER
Date Prepared:	5/4/01
Date Analyzed:	5/5/01
Units:	ug/l

its40_3
8270
liquid
b__hepne
0
its40_3.xls
e:\mdl\liquid\8270

Sample Amount: 1000
Final Volume: 1
Cleanup Used:

factor 1

Data Filenames: ->	E7124	E7125	E7126	E7127	E7128	E7129	E7130	Spiked	Ave.				
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	base PQL	base mdl
Phenol	0.024	0.027	0.026	0.024	0.027	0.024	0.026	0.05	57	0.026	0.05	0.045302	0.025822
bis(2-Chloroethyl)ether	0.009	0.011	0.009	0.041	0.01	0.009	0.01	0.05	37	0.049	0.13	0.132401	0.04932
2-Chlorophenol	0.038	0.048	0.046	0.043	0.049	0.042	0.048	0.05	91	0.012	0.01	0.013377	0.012173
1,3-Dichlorobenzene	0.046	0.056	0.049	0.049	0.049	0.048	0.054	0.05	100	0.010	0.01	0.00964	0.009615
1,4-Dichlorobenzene	0.046	0.063	0.057	0.046	0.058	0.048	0.059	0.05	107	0.019	0.02	0.020909	0.019498
Benzyl Alcohol	0.026	0.027	0.024	0.028	0.025	0.025	0.029	0.05	59	0.025	0.04	0.04296	0.025132
1,2-Dichlorobenzene	0.049	0.052	0.053	0.048	0.054	0.047	0.054	0.05	102	0.008	0.01	0.008224	0.00808
2-Methylphenol	0.039	0.042	0.043	0.04	0.044	0.038	0.045	0.05	85	0.011	0.01	0.013285	0.011325
bis(2-Chloroisopropyl)ether	0.043	0.046	0.047	0.042	0.05	0.042	0.048	0.05	92	0.010	0.01	0.010667	0.009814
3- & 4-Methylphenol	0.032	0.04	0.035	0.034	0.038	0.034	0.039	0.05	76	0.017	0.02	0.022102	0.016687
N-nitroso-di-n-propylamine	0.034	0.04	0.037	0.033	0.039	0.032	0.043	0.05	77	0.018	0.02	0.022818	0.01757
Hexachloroethane	0.05	0.059	0.054	0.049	0.054	0.05	0.057	0.05	106	0.011	0.01	0.011604	0.010937
Nitrobenzene	0.047	0.05	0.048	0.051	0.05	0.051	0.045	0.05	98	0.006	0.01	0.006414	0.006286
Isophorone	0.033	0.037	0.033	0.035	0.039	0.037	0.037	0.05	75	0.016	0.02	0.021188	0.015944
2-Nitrophenol	0.035	0.035	0.033	0.034	0.034	0.035	0.034	0.05	73	0.016	0.02	0.022708	0.016463
2,4-Dimethylphenol	0.045	0.043	0.043	0.042	0.042	0.044	0.043	0.05	88	0.008	0.01	0.008749	0.007699
Benzoic Acid	0.017	0.022	0.025	0.027	0.021	0.026	0.021	0.05	52	0.030	0.06	0.057259	0.029918
bis(2-Chloroethoxy)methane	0.04	0.042	0.042	0.039	0.038	0.038	0.038	0.05	82	0.012	0.01	0.014569	0.01191
2,4-Dichlorophenol	0.034	0.042	0.032	0.035	0.039	0.034	0.041	0.05	77	0.017	0.02	0.022703	0.017424
1,2,4-Trichlorobenzene	0.045	0.047	0.047	0.044	0.045	0.047	0.046	0.05	93	0.005	0.01	0.005854	0.00543
Naphthalene	0.045	0.047	0.051	0.047	0.044	0.047	0.045	0.05	94	0.007	0.01	0.007661	0.007202
4-Chloroaniline	0.023	0.032	0.026	0.027	0.025	0.025	0.025	0.05	58	0.026	0.04	0.044612	0.025986
Hexachlorobutadiene	0.049	0.046	0.044	0.045	0.047	0.044	0.045	0.05	93	0.007	0.01	0.007158	0.006621
4-Chloro-3-methylphenol	0.038	0.039	0.038	0.039	0.039	0.043	0.039	0.05	81	0.012	0.01	0.014849	0.012065
2-Methylnaphthalene	0.049	0.049	0.049	0.047	0.046	0.047	0.047	0.05	96	0.004	0.00	0.004331	0.004158
Hexachlorocyclopentadiene	0.034	0.036	0.037	0.039	0.037	0.036	0.034	0.05	76	0.015	0.02	0.020054	0.015191
2,4,6-Trichlorophenol	0.037	0.037	0.037	0.037	0.038	0.037	0.039	0.05	78	0.013	0.02	0.016977	0.013242
2,4,5-Trichlorophenol	0.044	0.045	0.039	0.042	0.04	0.042	0.041	0.05	86	0.010	0.01	0.011939	0.010237
2-Chloronaphthalene	0.048	0.046	0.048	0.048	0.047	0.047	0.046	0.05	95	0.004	0.00	0.004052	0.003849
2-Nitroaniline	0.038	0.037	0.038	0.036	0.037	0.035	0.037	0.05	77	0.014	0.02	0.01814	0.013968
Dimethylphthalate	0.048	0.05	0.049	0.047	0.047	0.047	0.048	0.05	97	0.004	0.00	0.003905	0.003768
Acenaphthylene	0.046	0.047	0.044	0.044	0.044	0.044	0.045	0.05	91	0.006	0.01	0.006908	0.006286
2,6-Dinitrotoluene	0.041	0.042	0.039	0.039	0.038	0.04	0.04	0.05	82	0.011	0.01	0.013569	0.011161
3-Nitroaniline	0.03	0.035	0.032	0.033	0.036	0.034	0.03	0.05	70	0.019	0.03	0.027033	0.018923
Acenaphthene	0.048	0.05	0.049	0.048	0.048	0.048	0.048	0.05	97	0.003	0.00	0.00277	0.002693
2,4-Dinitrophenol	0.011	0.011	0.009	0.009	0.008	0.007	0.005	0.05	28	0.043	0.16	0.158031	0.043458
4-Nitrophenol	0.017	0.017	0.018	0.019	0.019	0.015	0.017	0.05	43	0.034	0.08	0.079231	0.034069
Dibenzofuran	0.045	0.049	0.048	0.048	0.048	0.047	0.045	0.05	95	0.005	0.01	0.005486	0.005212
2,4-Dinitrotoluene	0.036	0.035	0.034	0.033	0.034	0.033	0.034	0.05	72	0.017	0.02	0.023166	0.016738
Diethylphthalate	0.048	0.044	0.046	0.047	0.044	0.045	0.045	0.05	92	0.006	0.01	0.006693	0.006175
4-Chlorophenylphenylether	0.043	0.044	0.044	0.044	0.044	0.044	0.043	0.05	89	0.007	0.01	0.007491	0.006667
Fluorene	0.049	0.048	0.049	0.047	0.048	0.047	0.047	0.05	96	0.003	0.00	0.003439	0.00331
4-Nitroaniline	0.035	0.035	0.03	0.032	0.032	0.029	0.029	0.05	68	0.020	0.03	0.029776	0.020247
4,6-Dinitro-2-methylphenol	0.008	0.009	0.008	0.007	0.009	0.008	0.007	0.05	27	0.044	0.16	0.164956	0.043713
N-Nitrosodiphenylamine	0.045	0.048	0.045	0.041	0.049	0.046	0.047	0.05	93	0.008	0.01	0.008956	0.008306
4-Bromophenylphenylether	0.048	0.05	0.048	0.036	0.05	0.049	0.048	0.05	95	0.014	0.01	0.014548	0.013784
Hexachlorobenzene	0.046	0.048	0.044	0.042	0.045	0.045	0.043	0.05	91	0.008	0.01	0.008472	0.007689
Pentachlorophenol	0.027	0.027	0.027	0.025	0.028	0.027	0.024	0.05	59	0.025	0.04	0.042204	0.024795
Phenanthrene	0.048	0.05	0.05	0.043	0.051	0.049	0.048	0.05	97	0.007	0.01	0.007669	0.007361
Anthracene	0.05	0.051	0.048	0.043	0.05	0.045	0.051	0.05	97	0.009	0.01	0.00902	0.00875
Di-n-butylphthalate	0.059	0.061	0.062	0.055	0.062	0.057	0.058	0.05	116	0.012	0.01	0.014148	0.011968
Fluoranthene	0.047	0.05	0.048	0.043	0.049	0.046	0.046	0.05	95	0.007	0.01	0.007406	0.007017
Pyrene	0.047	0.049	0.048	0.045	0.048	0.047	0.049	0.05	96	0.005	0.00	0.004767	0.004565
Butylbenzylphthalate	0.044	0.039	0.046	0.042	0.042	0.042	0.041	0.05	87	0.010	0.01	0.011597	0.010036
3,3'-Dichlorobenzidine	0.029	0.028	0.028	0.024	0.024	0.023	0.023	0.05	57	0.026	0.05	0.046091	0.026387

SOUND ANALYTICAL SERVICES

Benzo(a)anthracene	0.029	0.026	0.039	0.035	0.03	0.043	0.041	0.05	73	0.024	0.03	0.032603	0.023882
Chrysene	0.043	0.039	0.05	0.044	0.042	0.045	0.044	0.05	89	0.011	0.01	0.012443	0.011105
bis(2-Ethylhexyl)phthalate	0.062	0.053	0.052	0.054	0.048	0.051	0.05	0.05	105	0.013	0.01	0.013234	0.012572
Di-n-octylphthalate	0.055	0.042	0.05	0.047	0.05	0.043	0.043	0.05	95	0.013	0.01	0.014134	0.013427
Benzo(b)fluoranthene	0.061	0.042	0.039	0.035	0.05	0.039	0.041	0.05	89	0.025	0.03	0.027893	0.024894
Benzo(k)fluoranthene	0.057	0.05	0.052	0.048	0.06	0.046	0.048	0.05	103	0.014	0.01	0.014538	0.014138
Benzo(a)pyrene	0.048	0.039	0.04	0.036	0.045	0.038	0.038	0.05	84	0.015	0.02	0.01832	0.015297
Indeno(1,2,3-cd)pyrene	0.05	0.04	0.042	0.04	0.049	0.037	0.04	0.05	87	0.016	0.02	0.017882	0.015557
Dibenz(a,h)anthracene	0.049	0.038	0.041	0.029	0.044	0.034	0.037	0.05	81	0.021	0.03	0.026463	0.021302
Benzo(g,h,i)perylene	0.049	0.04	0.041	0.038	0.045	0.035	0.037	0.05	84	0.016	0.02	0.01954	0.016365
Carbazole	0.05	0.052	0.049	0.047	0.051	0.051	0.051	0.05	100	0.005	0.00	0.004576	0.004565
N-nitrosodimethylamine	0.005	0.013	0.007	0.011	0.011	0.01	0.013	0.05	30	0.042	0.14	0.141241	0.042372
Pyridine	ND	ND	ND	ND	ND	ND	ND	0.05	100	0.000	0.00	0	0
Benzidine	0.009	0.012	0.007	0.009	0.01	0.006	0.011	0.05	29	0.043	0.15	0.150378	0.042858
1,2-Diphenylhydrazine	0.04	0.043	0.043	0.039	0.042	0.043	0.044	0.05	86	0.010	0.01	0.011264	0.009687
2,3,4,6-Tetrachlorophenol	0.036	0.037	0.034	0.034	0.038	0.035	0.037	0.05	75	0.015	0.02	0.020348	0.015312

SOUND ANALYTICAL SERVICES

Instrument:	ITS40-III
Method:	8270
Matrix:	solid
Analyst:	BRENT HEPNER
Date Prepared:	5/5/01
Date Analyzed:	5/30/01
Units:	ug/kg

Sample Amount:	15
Final Volume:	2
Cleanup Used:	

Data Filenames: ->	LV7765	LV7766	LV7767	LV7768	LV7769	LV7770	LV7771	Spiked	Ave.	
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**
Phenol	5.3	6	5.5	5.6	6	4.5	5.1	5	108	**1.51**
bis(2-Chloroethyl)ether	5.1	5.2	4.5	5.1	5.1	4.5	5.1	5	99	**0.83**
2-Chlorophenol	5.6	6.1	5.9	6.1	5.9	5.6	6.4	5	119	**0.84**
1,3-Dichlorobenzene	6.3	7.1	6.4	6.9	6.7	6.1	7.3	5	134	**1.28**
1,4-Dichlorobenzene	7.2	7.6	6	7.7	8	6.1	7.7	5	144	**2.36**
Benzyl Alcohol	5.1	4.9	4.5	4.7	5.1	4.4	4.9	5	96	**0.81**
1,2-Dichlorobenzene	6.5	7.1	6.7	6.8	7.5	6.1	6.9	5	136	**1.29**
2-Methylphenol	5.2	5.2	4.7	4.7	4.9	3.9	4.7	5	95	**1.28**
bis(2-Chloroisopropyl)ether	5.6	6	5.6	5.6	5.6	4.9	5.6	5	111	**0.95**
3- & 4-Methylphenol	5.6	5.3	5.6	4.9	5.2	4.9	5.5	5	106	**0.88**
N-nitroso-di-n-propylamine	4.4	4.3	4.3	4.3	4.1	4.1	4.7	5	86	**0.59**
Hexachloroethane	11	11	12	13	13	11	9	5	229	**4.07**
Nitrobenzene	6.3	6.4	5.5	5.6	5.7	6.1	5.9	5	119	**1.02**
Isophorone	6	5.2	4.9	5.6	5.6	5.9	5.3	5	110	**1.14**
2-Nitrophenol	5.3	5.5	5.1	4.7	5.1	5.6	5.3	5	105	**0.87**
2,4-Dimethylphenol	6	6	5.3	5.5	5.5	5.9	5.6	5	114	**0.81**
Benzoic Acid	1.5	1.2	3.9	1.1	2.1	1.6	1.6	5	37	**2.79**
bis(2-Chloroethoxy)methane	5.5	5.3	4.8	4.9	4.9	5.2	5.2	5	102	**0.74**
2,4-Dichlorophenol	4.9	5.6	4.5	4	4.8	5.2	4.8	5	97	**1.47**
1,2,4-Trichlorobenzene	6	6.7	5.9	6	5.7	6.3	6.7	5	124	**1.14**
Naphthalene	8.4	8.7	8.4	7.5	7.9	8.7	8.3	5	165	**1.27**
4-Chloroaniline	5.6	5.5	4.7	4.7	5.1	5.2	4.8	5	102	**1.08**
Hexachlorobutadiene	5.9	5.9	5.9	5.1	5.9	5.9	6.1	5	116	**0.94**
4-Chloro-3-methylphenol	6.3	6.1	5.5	5.3	5.6	5.9	5.5	5	115	**1.06**
2-Methylnaphthalene	6.8	7.1	6.9	6.3	7.6	7.2	6.7	5	139	**1.20**
Hexachlorocyclopentadiene	2.8	3.5	2.7	3.3	2.7	3.1	2.9	5	60	**0.90**
2,4,6-Trichlorophenol	4.9	4.4	4	4	4.3	4.5	4.4	5	87	**0.90**
2,4,5-Trichlorophenol	4.8	4.4	4.3	3.9	4.5	4.8	4.5	5	89	**0.90**
2-Chloronaphthalene	6	5.5	5.1	4.8	5.3	6.1	5.9	5	111	**1.43**
2-Nitroaniline	4.8	4.7	4.7	4	4.5	5.1	4.4	5	92	**1.01**
Dimethylphthalate	7.3	7.2	7.1	6.8	7.3	8.1	7.3	5	146	**1.15**
Acenaphthylene	5.5	5.5	5.1	4.5	5.3	5.6	5.5	5	106	**1.12**
2,6-Dinitrotoluene	5.9	5.1	4.8	4.7	5.2	5.2	4.9	5	102	**1.16**
3-Nitroaniline	5.9	4.8	4.8	4.3	5.3	5.1	4.9	5	100	**1.45**
Acenaphthene	5.1	5.3	4.9	5.1	5.7	5.3	5.6	5	106	**0.83**
2,4-Dinitrophenol	1.5	1.5	1.2	1.3	1.9	1.3	1.7	5	30	**0.72**
4-Nitrophenol	3.9	3.5	4.1	3.5	3.1	4.5	2.7	5	72	**1.77**
Dibenzofuran	6.8	6.4	6.1	5.5	6.7	6.5	6.4	5	127	**1.27**
2,4-Dinitrotoluene	6.4	6.4	5.6	5.6	6.1	6.1	6.1	5	121	**0.96**
Diethylphthalate	6.1	6.3	5.5	5.1	6.7	6.7	6.1	5	121	**1.73**

4-Chlorophenylphenylether	5.6	4.7	4.5	4.4	5.1	5.3	5.3	5	100	**1.33**
Fluorene	6.1	6.1	5.2	5.5	5.9	5.9	5.9	5	116	**0.97**
4-Nitroaniline	5.6	5.3	4.7	4.4	4.9	5.2	4.7	5	99	**1.21**
4,6-Dinitro-2-methylphenol	3.2	3.1	2.9	2.7	2.7	2.5	3.1	5	58	**0.76**
N-Nitrosodiphenylamine	5.7	4.8	5.2	5.5	5.2	5.5	5.3	5	106	**0.85**
4-Bromophenylphenylether	5.2	4.9	4.9	4.7	4.7	5.2	4.7	5	98	**0.65**
Hexachlorobenzene	5.2	5.2	5.2	5.1	4.8	5.2	4.9	5	102	**0.49**
Pentachlorophenol	3.5	3.1	2.9	2.9	2.5	3.1	2.8	5	59	**0.90**
Phenanthrene	7.9	7.1	7.5	7.1	7.1	8.1	7.2	5	149	**1.22**
Anthracene	7.3	6.8	6.9	6.9	6	6.9	6.8	5	136	**1.14**
Di-n-butylphthalate	13	12	13	14	13	12	12	5	254	**2.20**
Fluoranthene	6.4	6.3	6.1	6.3	5.6	6.1	5.9	5	122	**0.81**
Pyrene	7.1	5.7	6.8	6.3	5.9	6.1	7.1	5	129	**1.67**
Butylbenzylphthalate	6.4	5.9	6.1	6.4	6.3	5.9	5.1	5	120	**1.33**
3,3'-Dichlorobenzidine	5.3	4.9	5.1	5.2	4.7	4.9	4.7	5	99	**0.69**
Benzo(a)anthracene	6.9	6.4	7.2	8	6.9	7.2	6.3	5	140	**1.66**
Chrysene	7.3	8.3	6.8	7.7	7.5	8.3	7.5	5	153	**1.56**
bis(2-Ethylhexyl)phthalate	6.9	6.4	6.1	7.3	6.8	6.7	6	5	132	**1.34**
Di-n-octylphthalate	8.5	9.3	8.3	8.7	8.1	8	8.7	5	170	**1.28**
Benzo(b)fluoranthene	7.2	6.8	6.4	6.1	6.8	7.1	7.2	5	136	**1.22**
Benzo(k)fluoranthene	7.5	6.5	6.9	7.1	6.4	6.4	6.8	5	136	**1.19**
Benzo(a)pyrene	5.7	6	6.9	6.1	6	6.1	6.1	5	123	**1.07**
Indeno(1,2,3-cd)pyrene	5.9	6	5.9	5.6	5.6	5.6	5.7	5	115	**0.50**
Dibenz(a,h)anthracene	6	6.1	6.1	5.9	6.1	5.5	6.4	5	120	**0.80**
Benzo(g,h,i)perylene	5.9	5.9	5.9	5.6	5.7	5.6	5.9	5	116	**0.43**
Carbazole	6.9	6.7	6.9	6.5	6	7.1	6.5	5	133	**1.06**
N-nitrosodimethylamine	11	16	15	17	15	10	11	5	271	**8.21**
Pyridine	13	12	15	11	17	15	17	5	286	**6.87**
Benzidine	8.8	14	10	10	9.6	8.4	6.1	5	191	**6.93**
1,2-Diphenylhydrazine	5.1	5.2	5.2	5.3	4.7	4.9	5.1	5	101	**0.60**
2,3,4,6-Tetrachlorophenol	4.4	4.1	3.9	3.6	4.3	4.1	4.1	5	81	**0.76**

108164

SEVERN TRENT SERVICES

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

TRANSMITTAL MEMORANDUM

DATE: September 17, 2002

TO: Kathy McKinley
CH2M Hill
2300 NW Walnut Blvd
Corvallis, OR 97330-3538

PROJECT: Portland Harbor 163160.AS.OS

REPORT NUMBER: 108164 Addendum

TOTAL NUMBER OF PAGES: 30

Enclosed are the additional test results for three samples receive
2002, and submitted to STL Burlington for analysis of grain size.
package to the previously submitted report.

original Inv & copy COC to Kathy, copy Inv & coc to A/P

The report consists of this transmittal memo, analytical results, q
the chain-of-custody, a list of data qualifiers and analytical narrat
of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Katie Downie
Project Manager

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender immediately at 253-922-2310 and destroy this report immediately.

STL Seattle

Sample Identification:

Lab. No.	Client ID	Date/Time Sampled	Matrix
108160-1	PP011802	08-20-02 16:35	solid
108160-2	PP011803	08-20-02 17:10	solid
108160-3	PP011804D	08-20-02 00:01	solid
108160-4	PP011805	08-21-02 09:45	solid

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender immediately at 253-922-2310 and destroy this report immediately.

PHYSICAL ANALYSIS DATA PACKAGE

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Severn Trent Laboratories, Inc.

NARRATIVE

4

0001

SEVERN
TRENT
SERVICES

STL Burlington
208 South Park Drive
Suite 1
Colchester, VT 05446

Tel: 802 655 1203
Fax: 802 655 1248
www.stl-inc.com

September 16, 2002

Ms. Katie Downie
STL Seattle
5755 8th Street East
Tacoma, WA 98424

Re: Laboratory Project No. 22029
Case: 22029; SDG: 89517

Dear Ms. Downie:

Enclosed are the analytical results of samples received intact by Severn Trent Laboratories on August 27, 2002. Laboratory numbers have been assigned and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 08/27/02	ETR No: 89517	
499886	108160-1	08/20/02	Soil
499887	108160-2	08/20/02	Soil
499888	108160-3	08/20/02	Soil
499889	108160-4	08/21/02	Soil
499890	108164-1	08/21/02	Soil
499891	108164-2	08/21/02	Soil
499892	108164-3	08/21/02	Soil
499893	108166-1	08/20/02	Soil
499894	108166-2	08/21/02	Soil
499895	108166-3	08/21/02	Soil

There were no exceptions noted during the analysis of samples in this delivery group. If there are any questions regarding this submittal, please contact Jeannine McCrumb at (802) 655-1203.

This report shall not be reproduced, except in full, without the written approval of the laboratory. This report is sequentially numbered starting with page 0001 and ending with page 0026.

I certify that this package is in compliance with the NELAC requirements, both technically and for completeness, for other than the conditions detailed above. The release of the data contained in this hardcopy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Sincerely,

Michael F. Wheeler, Ph.D.
Laboratory Director

mfw/jta/jmm
Enclosure

STL Burlington is a part of Severn Trent Laboratories, Inc.

0001-A LAST ALPHA

Chain of Custody Record

STL-8274 (0102)

STL Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.stl-inc.com

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc.

Client: STL - SEATTLE	Project Manager: KATIE DOWNIE	Date: 8/26/02	Chain of Custody Number: 005412
Address: 5755 8TH STREET EAST	Telephone Number (Area Code)/Fax Number: 253-922-2310 / 253-922-5047	Lab Number:	Page 1 of 2
City: TACOMA State: WA Zip Code: 98424	Site Contact:	Lab Contact:	
Project Name and Location (State): CH2M HILL	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): GRAIN SIZE	Special Instructions/ Conditions of Receipt
108160-1	8/20/02	4:35PM				X							X	
108160-2	8/20/02	5:10PM				X							X	
108160-3	8/20/02	12:01AM				X							X	
108160-4	8/21/02	9:45AM				X							X	
108164-1	8/21/02	10:30AM				X							X	
108164-2	8/21/02	11:45AM				X							X	
108164-3	8/21/02	2:15PM				X							X	
108166-1	8/20/02	4:10PM				X							X	
108166-2	8/21/02	3:00PM				X							X	
108166-3	8/21/02	4:00PM				X							X	

Cooler: ☐ Yes ☐ No Cooler Temp: _____

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days): ☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☐ 15 Days ☐ Other STD

QC Requirements (Specify): TIER IV DELIVERABLE

	Date	Time
1. Relinquished By: [signature]	8/26/02	4:15pm
2. Relinquished By:		
3. Relinquished By:		

	Date	Time
1. Received By:		
2. Received By:		
3. Received By: [signature]	8-27-02	0930

Comments: 8

DISTRIBUTION: WHITE - Stays with the Samples; CANARY - Returned to Client with Report; PINK - Field Copy

SEVERN
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SERVICES

Severn Trent Laboratories, Inc.

PARTICLE SIZE ANALYSIS

Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

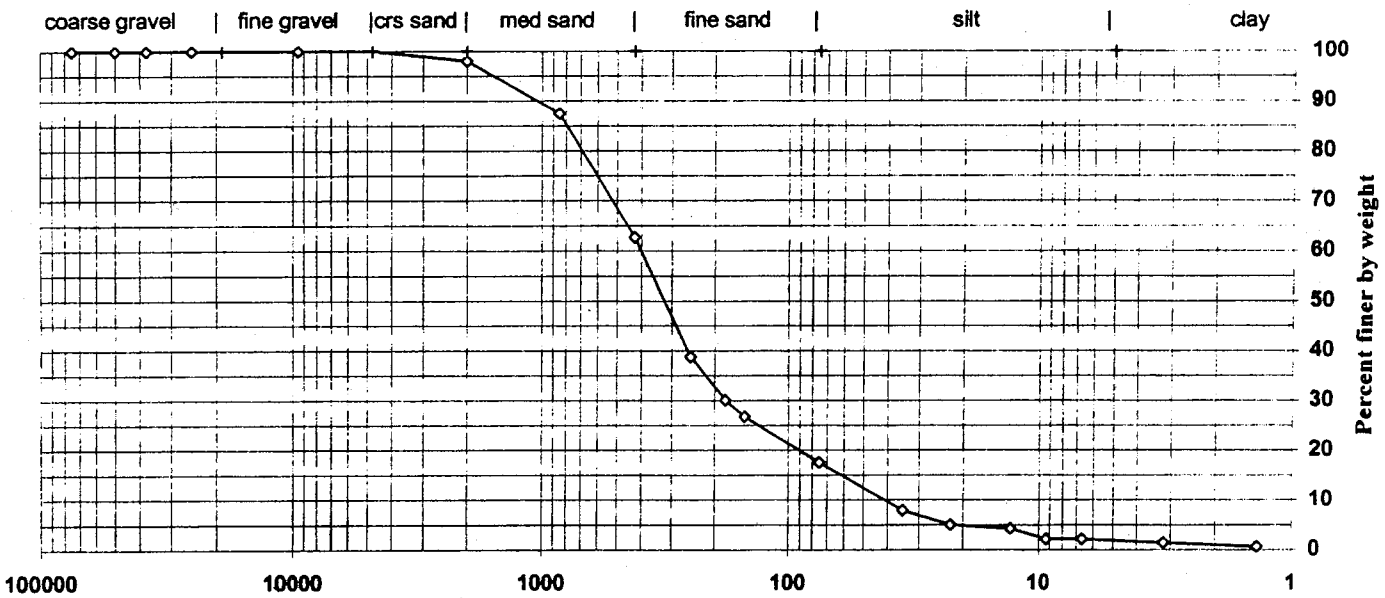
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499886 **Sample ID:** 108160-1

Percent Solids: 71.0% **Maximum Particle Size:** Crs sand

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	98.1	1.9
#20	850	87.5	10.6
#40	425	62.8	24.7
#60	250	38.8	24.0
#80	180	30.0	8.7
#100	150	26.7	3.3
#200	75	17.6	9.1
Hydrometer	34.7	7.9	9.7
|	22.3	5.0	2.9
|	13.0	4.3	0.7
|	9.3	2.1	2.1
|	6.6	2.1	0.0
|	3.2	1.4	0.7
V	1.4	0.7	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: _____ **Date: 09/13/02** **STL - Burlington 89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

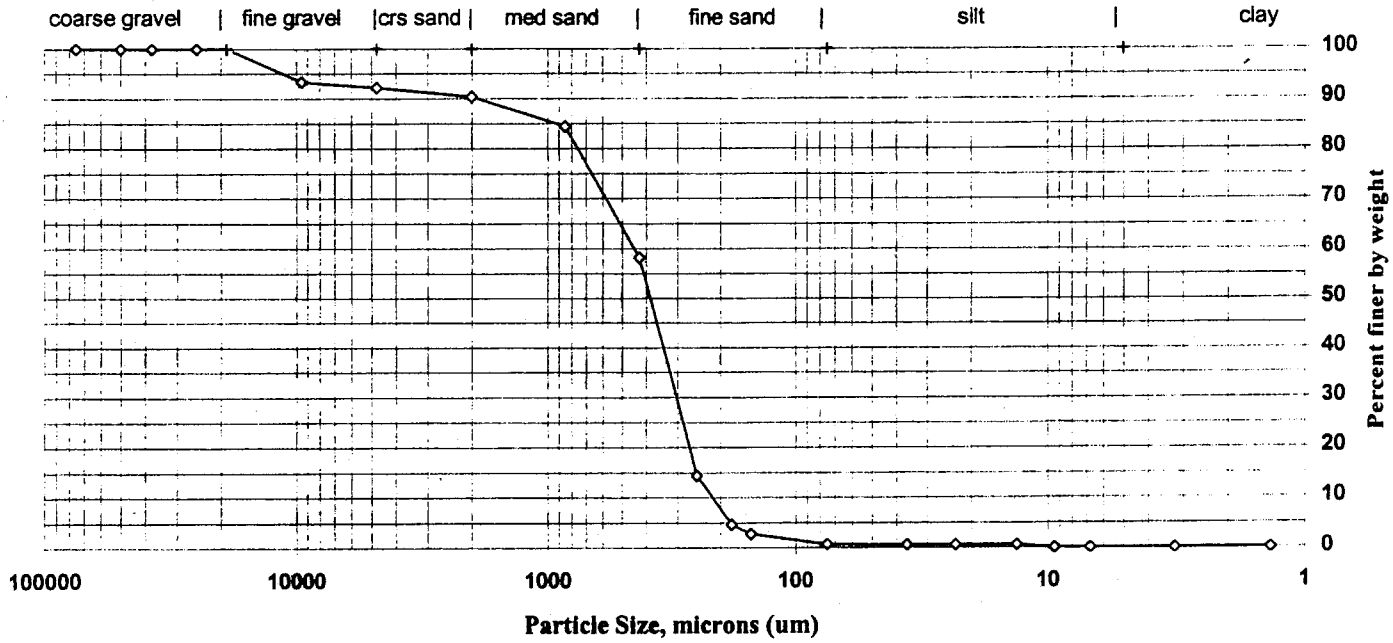
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499887 **Sample ID:** 108160-2

Percent Solids: 70.7% **Maximum Particle Size:** 19 mm

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	93.4	6.6
#4	4750	92.2	1.2
#10	2000	90.3	1.9
#20	850	84.5	5.9
#40	425	58.2	26.3
#60	250	14.4	43.8
#80	180	4.6	9.8
#100	150	2.8	1.8
#200	75	0.7	2.1
Hydrometer	36.3	0.6	0.1
|	22.9	0.6	0.0
|	13.2	0.6	0.0
|	9.4	0.0	0.6
|	6.8	0.0	0.0
|	3.2	0.0	0.0
V	1.4	0.0	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

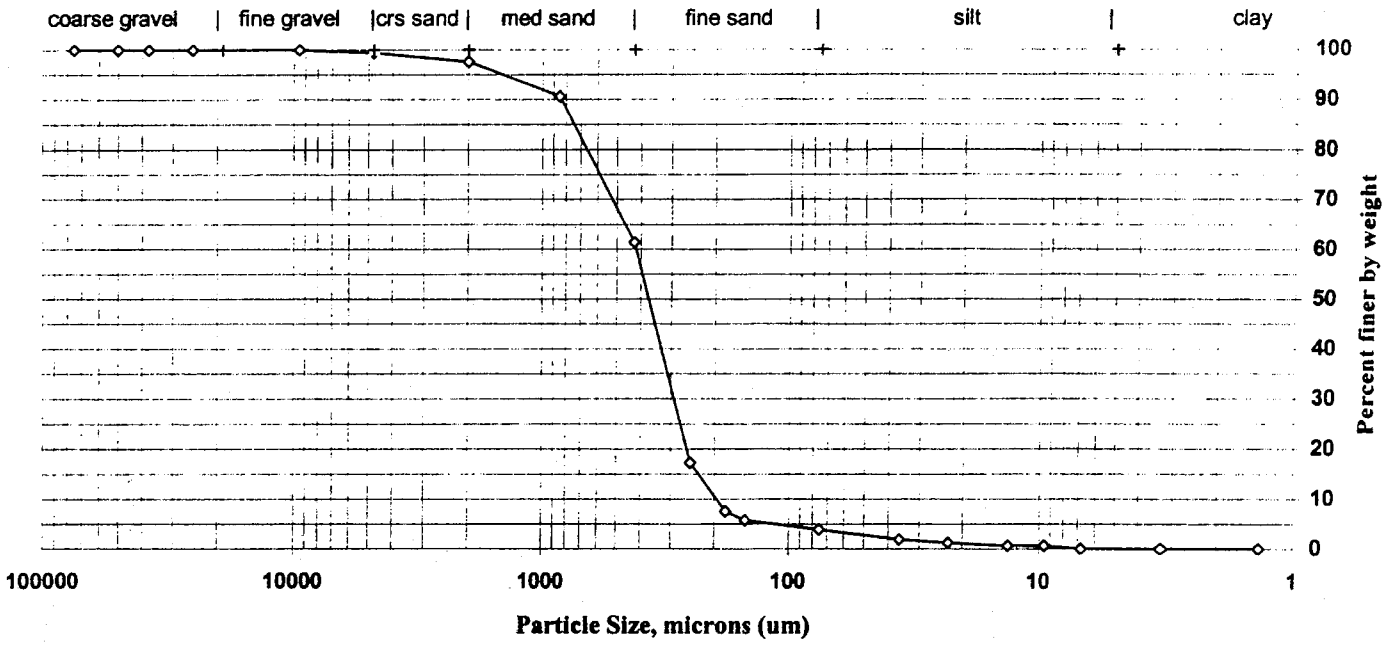
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499888 **Sample ID:** 108160-3

Percent Solids: 69.0% **Maximum Particle Size:** 9.5 mm

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	99.4	0.6
#10	2000	97.6	1.9
#20	850	90.6	7.0
#40	425	61.4	29.2
#60	250	17.3	44.1
#80	180	7.6	9.7
#100	150	5.8	1.8
#200	75	3.9	1.9
Hydrometer	36.0	1.8	2.0
|	22.8	1.2	0.6
|	13.2	0.6	0.6
|	9.5	0.6	0.0
|	6.8	0.0	0.6
|	3.3	0.0	0.0
V	1.4	0.0	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

10

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

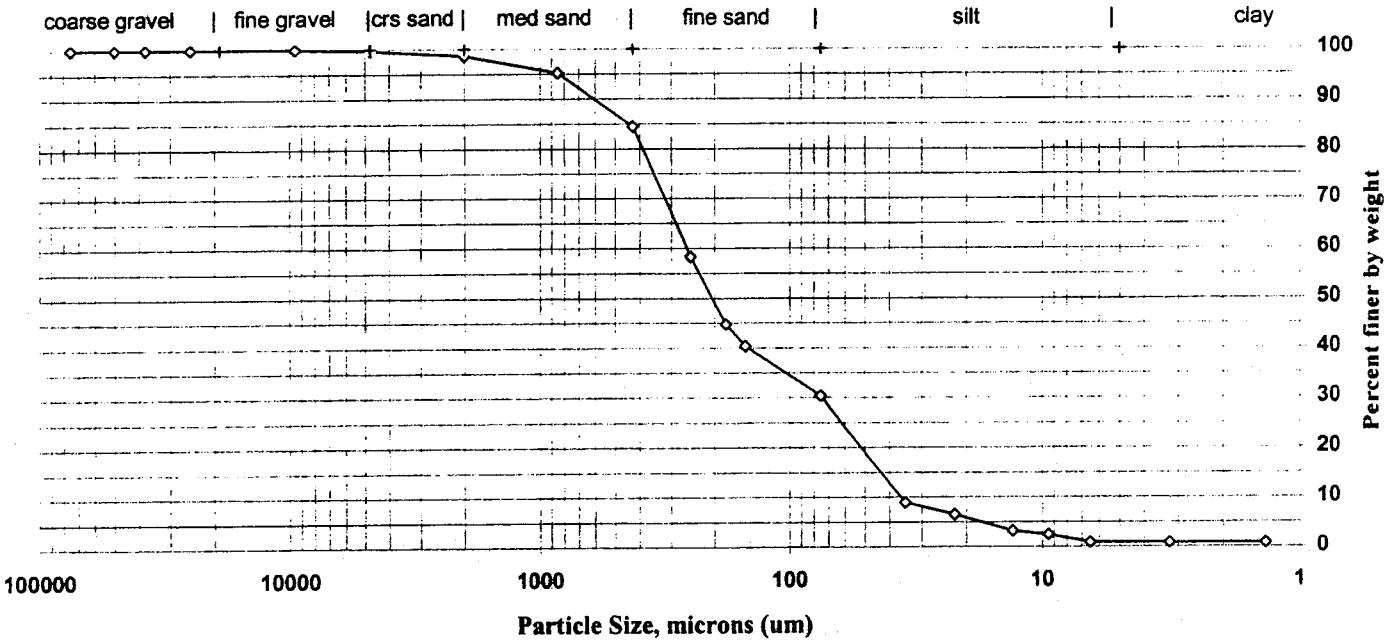
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499889 **Sample ID:** 108160-4

Percent Solids: 58.2% **Maximum Particle Size:** 9.5 mm

Specific Gravity: 2.65 **Shape (> #10):** subrounded

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	99.7	0.3
#10	2000	98.7	1.0
#20	850	95.3	3.4
#40	425	84.5	10.7
#60	250	58.3	26.2
#80	180	44.8	13.5
#100	150	40.4	4.4
#200	75	30.3	10.0
Hydrometer	34.7	8.9	21.4
|	22.2	6.5	2.4
|	13.1	3.2	3.2
|	9.4	2.4	0.8
|	6.5	0.8	1.6
|	3.2	0.8	0.0
V	1.4	0.7	0.1

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: _____ **Date: 09/13/02** **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

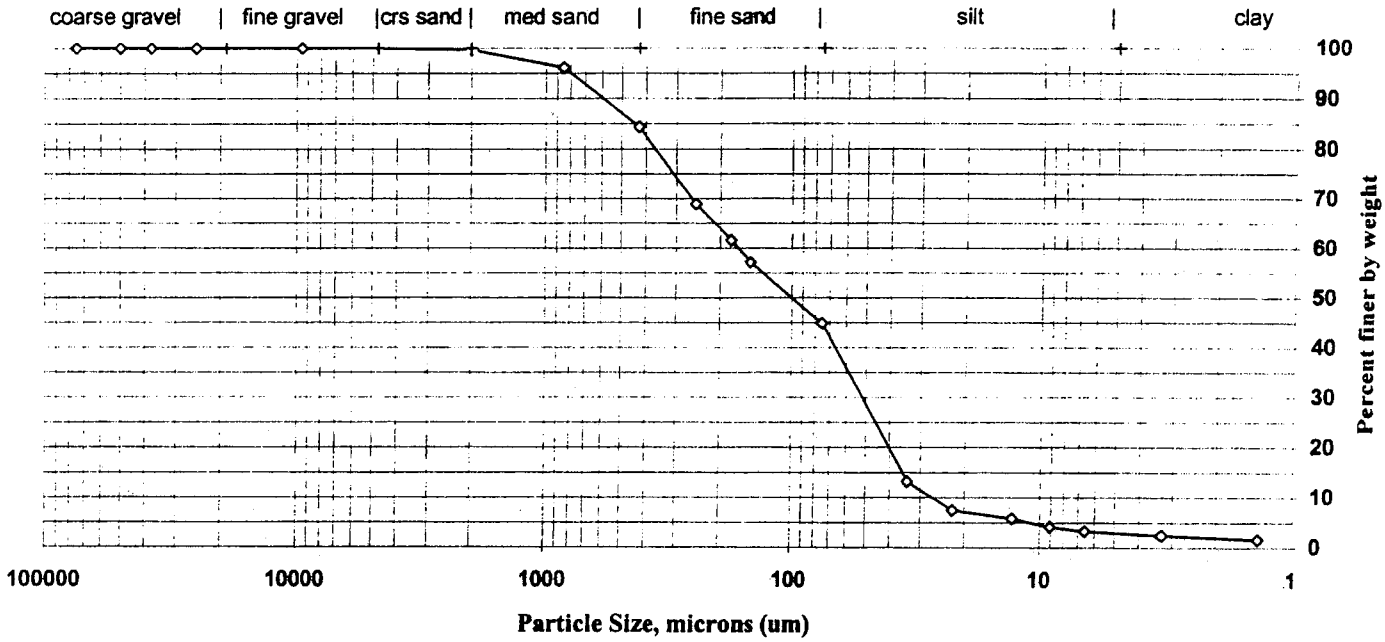
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499890 **Sample ID:** 108164-1

Percent Solids: 59.4% **Maximum Particle Size:** Crs sand

Specific Gravity: 2.65 **Shape (> #10):** subrounded

Hardness (> #10): brittle



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.7	0.3
#20	850	96.1	3.5
#40	425	84.4	11.8
#60	250	69.0	15.4
#80	180	61.6	7.3
#100	150	57.2	4.5
#200	75	44.9	12.3
Hydrometer	33.8	13.2	31.7
|	22.1	7.5	5.8
|	12.9	5.8	1.7
|	9.1	4.1	1.7
|	6.5	3.3	0.8
|	3.3	2.5	0.8
V	1.4	1.6	0.9

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

12

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

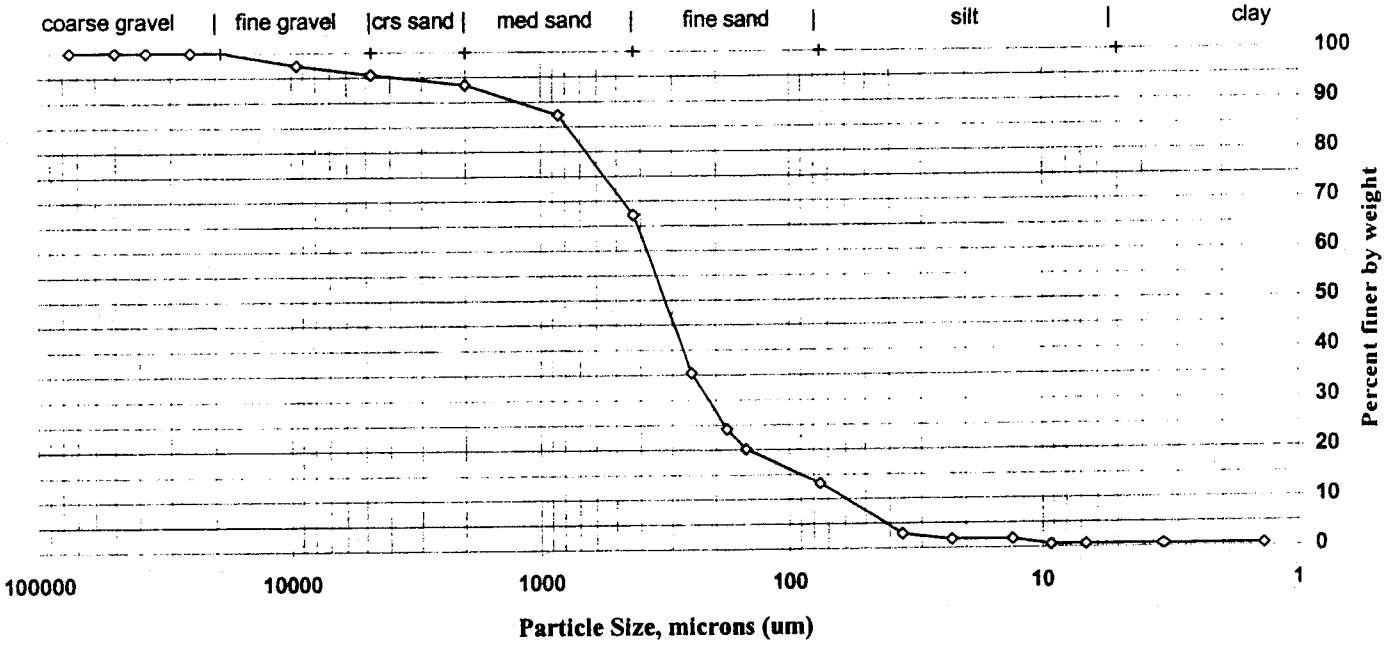
Sample preparation by: **D2217**

Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499891 **Sample ID:** 108164-2

Percent Solids: 71.9%
Specific Gravity: 2.65

Maximum Particle Size: 19 mm
Shape (> #10): subangular
Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	97.4	2.6
#4	4750	95.5	1.9
#10	2000	93.5	2.0
#20	850	87.4	6.1
#40	425	67.2	20.2
#60	250	35.4	31.7
#80	180	24.2	11.2
#100	150	20.2	4.0
#200	75	13.3	6.9
Hydrometer	35.6	2.9	10.4
|	22.7	1.7	1.2
|	13.1	1.7	0.0
|	9.2	0.6	1.2
|	6.7	0.6	0.0
|	3.4	0.6	0.0
V	1.4	0.5	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

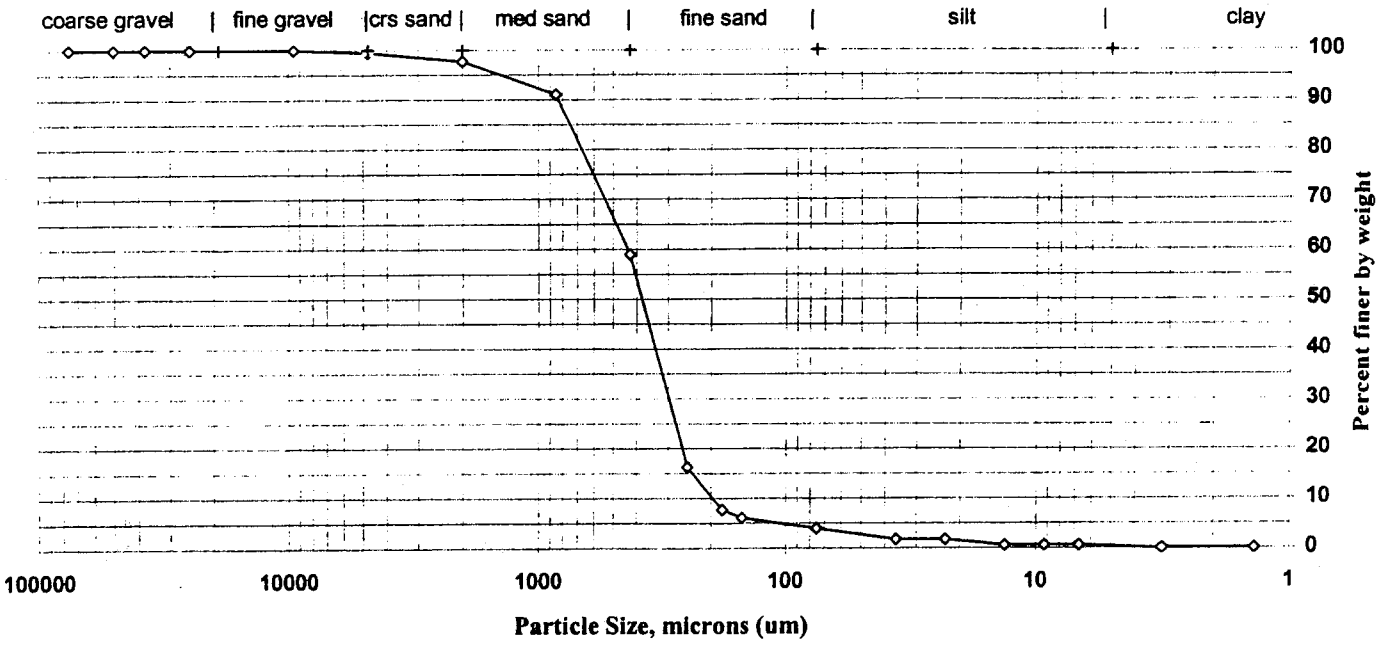
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499892 **Sample ID:** 108164-3

Percent Solids: 68.7% **Maximum Particle Size:** 9.5 mm

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	99.5	0.5
#10	2000	97.8	1.7
#20	850	91.0	6.7
#40	425	59.0	32.1
#60	250	16.3	42.7
#80	180	7.7	8.6
#100	150	6.1	1.6
#200	75	3.9	2.1
Hydrometer	36.0	1.7	2.2
|	22.7	1.7	0.0
|	13.2	0.6	1.2
|	9.2	0.6	0.0
|	6.7	0.6	0.0
|	3.2	0.0	0.6
V	1.4	0.0	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: _____ **Date: 09/13/02** **STL - Burlington 89517PS.xls::Report**

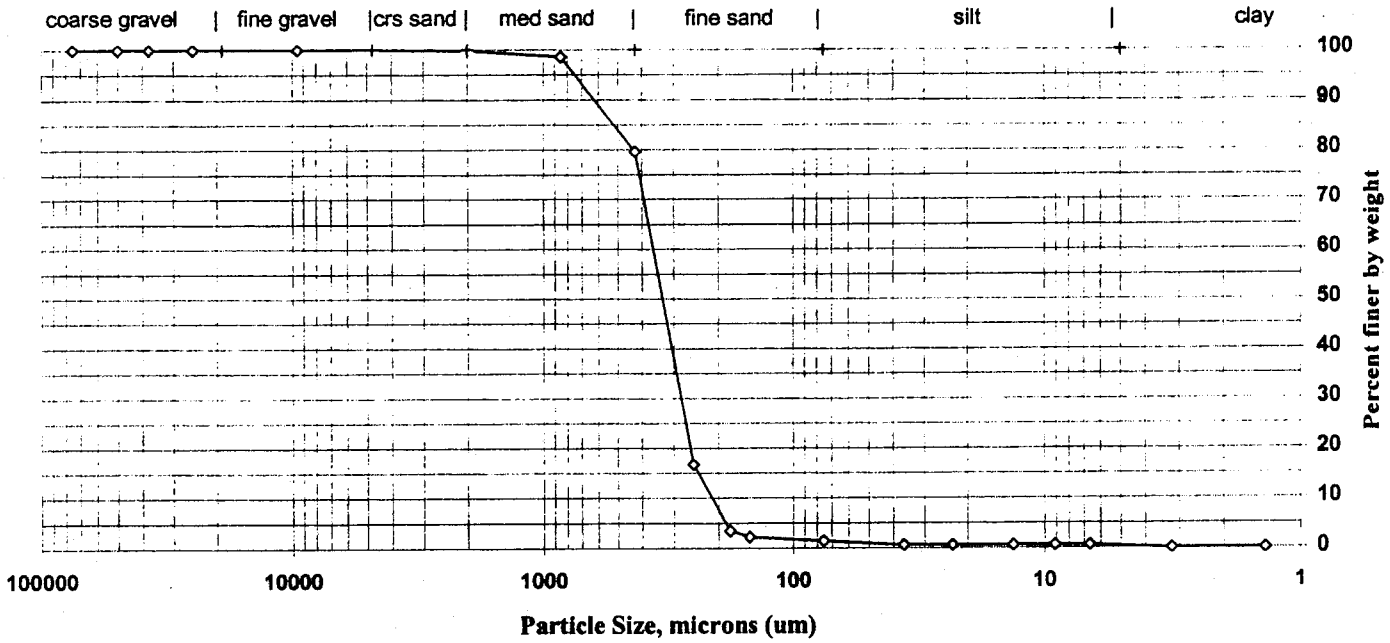
Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499893 **Sample ID:** 108166-1

Percent Solids: 70.7% **Maximum Particle Size:** Crs sand
Specific Gravity: 2.65 **Shape (> #10):** subangular
Hardness (> #10): brittle



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.8	0.2
#20	850	98.6	1.2
#40	425	79.6	19.0
#60	250	16.8	62.8
#80	180	3.4	13.4
#100	150	2.2	1.2
#200	75	1.4	0.8
Hydrometer	36.3	0.5	0.9
|	22.9	0.5	0.0
|	13.2	0.5	0.0
|	9.1	0.5	0.0
|	6.6	0.5	0.0
|	3.2	0.0	0.5
V	1.4	0.0	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: Jeff 22 **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

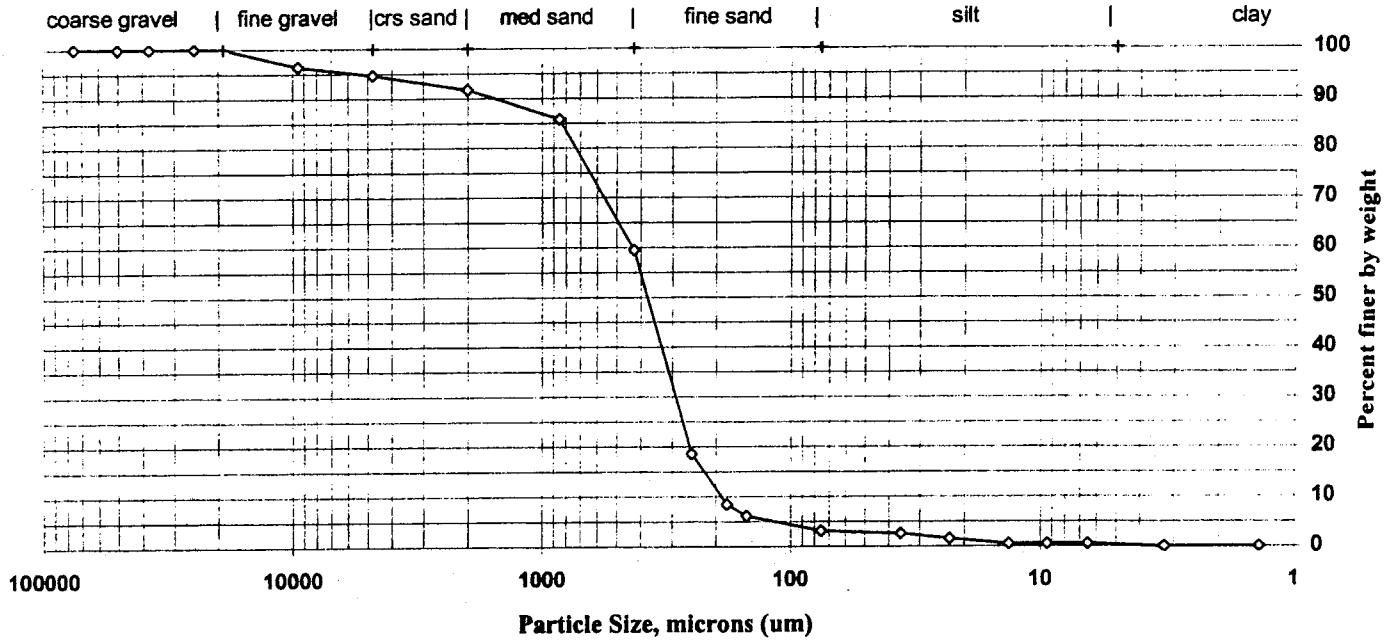
Sample preparation by: D2217

Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499894 **Sample ID:** 108166-2

Percent Solids: 71.4%
Specific Gravity: 2.65

Maximum Particle Size: 19 mm
Shape (> #10): subangular
Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	96.5	3.5
#4	4750	94.7	1.7
#10	2000	91.7	3.0
#20	850	85.8	5.9
#40	425	59.5	26.3
#60	250	18.6	40.9
#80	180	8.5	10.2
#100	150	6.1	2.4
#200	75	3.1	3.0
Hydrometer	35.6	2.6	0.5
|	22.7	1.6	1.0
|	13.2	0.5	1.0
|	9.4	0.5	0.0
|	6.5	0.5	0.0
|	3.2	0.0	0.5
V	1.4	0.0	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

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Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** 89517PS.xls::Report

Particle Size of Soils by ASTM D422

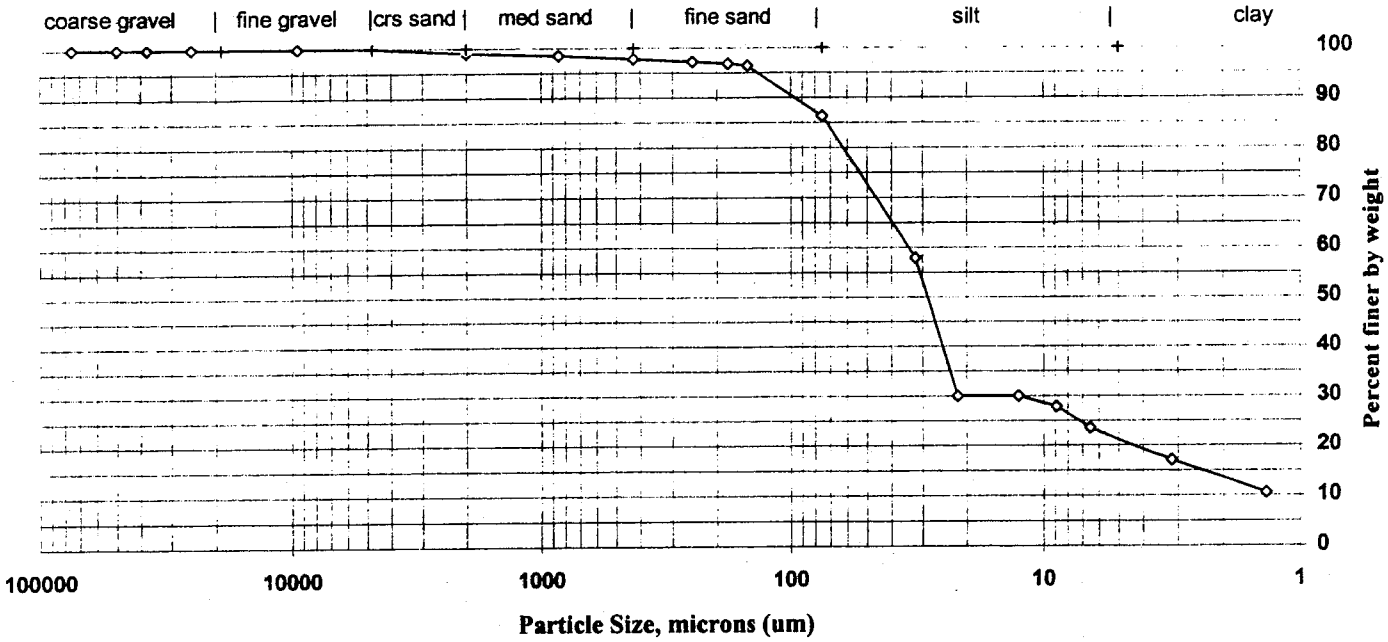
Sample preparation by: **D2217**

Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499895 **Sample ID:** 108166-3

Percent Solids: 46.7%
Specific Gravity: 2.65

Maximum Particle Size: Crs sand
Shape (> #10): subangular
Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.0	1.0
#20	850	98.5	0.5
#40	425	97.8	0.7
#60	250	97.2	0.6
#80	180	96.8	0.4
#100	150	96.4	0.4
#200	75	86.3	10.1
Hydrometer	31.9	57.9	28.5
|	21.6	30.0	27.9
|	12.5	30.0	0.0
|	8.9	27.9	2.1
|	6.5	23.6	4.3
|	3.2	17.1	6.4
V	1.4	10.5	6.6

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

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Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

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Severn Trent Laboratories, Inc.

SAMPLE PREPARATION

Particle Size Analysis
Sieve Data

Client:	STLWAS	**ETR(s):**	89517	**Project:**	22029	**Date Rec:** 27-Aug-02	**Start Date:** 06-Sep-02
Client Code:	STLWAS	**SDG(s):**	89517	**Case:**	22029		**End Date:** 13-Sep-02

SET: 89517

Dry prep = D421
Wet prep = D2217

Standard Values	
Sieve	Opening, um
3 inch	75000
2 inch	50000
1.5 inch	37500
1 inch	25000
3/4 inch	19000
3/8 inch	9500
#4	4750
#10	2000
#20	850
#40	425
#60	250
#80	180
#100	150
#200	75

Sieve (tares)	
Sieve	Mass, g
3 inch	
2 inch	
1.5 inch	
1 inch	
3/4 inch	
3/8 inch	447.98
#4	443.02
#10	437.39
#20	387.02
#40	345.91
#60	328.19
#80	306.55
#100	306.25
#200	303.17

Test	1	2	3	4	5	6	7	8	9	10	11	12
Laboratory No	499886	499887	499888	499889	499890	499891	499892	499893	499894	499895		
Sample ID	108160-1	108160-2	108160-3	108160-4	108164-1	108164-2	108164-3	108166-1	108166-2	108166-3		
Sample Prep Method	D2217	D2217	D2217	D2217	D2217	D2217	D2217	D2217	D2217	D2217		
Pan, g												
Pan/sample, g	158.22	193.91	189.56	171.33	165.67	191.88	202.33	206.81	215.30	80.19		
Pan/dry sampl, g												
Non-soil material												
Description	wood	wood/glass	n/a	wood	wood	wood	wood/glass	n/a	n/a	n/a		
Pan, g	3.68	3.68		3.68	3.68	3.68	3.68					
Pan/dry sampl, g	3.85	3.83		4.43	5.07	3.83	3.78					
Non-soil, g	0.17	0.15		0.75	1.39	0.15	0.10					
Hydroscopic Moisture correction factor (HMCF) for dry prep / Percent Solids for dry and wet prep												
Pan, g	1.27	1.27	1.26	1.28	1.27	1.28	1.28	1.27	1.28	1.28		
Pan/sample, g	40.38	34.15	41.33	39.87	35.24	39.46	35.37	37.49	45.20	34.49		
Pan/dry sampl, g	29.04	24.52	28.91	23.73	21.44	28.75	24.70	26.88	32.64	16.80		
HMCF	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		
Sample % Solids	71.0%	70.7%	69.0%	58.2%	59.4%	71.9%	68.7%	70.7%	71.4%	46.7%		
Sample used, g	112.17	136.97	130.80	98.92	96.98	137.91	138.90	146.23	153.73	37.48		
Sieve + Sample Weights												
Size	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g
3 inch												
2 inch												
1.5 inch												
1 inch												
3/4 inch												
3/8 inch		457.08				451.57			453.41			
#4		444.60	443.75	443.35		445.62	443.72		445.70			
#10	439.54	439.93	439.83	438.39	437.71	440.19	439.79	437.66	442.02	437.76		
#20	398.92	395.09	396.12	390.39	390.44	395.46	396.37	388.80	396.11	387.21		
#40	373.64	381.90	384.12	356.52	357.34	373.77	390.46	373.67	386.33	346.17		
#60	355.11	388.13	385.87	354.12	343.13	371.95	387.52	420.02	391.05	328.41		
#80	316.32	319.95	319.27	319.93	313.66	322.06	318.45	326.15	322.16	306.70		
#100	309.99	308.78	308.62	310.63	310.58	311.79	308.51	308.04	309.87	306.40		
#200	313.43	306.02	305.64	313.09	315.05	312.67	306.12	304.31	307.80	306.96		
Maximum Particle size												
	Crs sand	19 mm	9.5 mm	9.5 mm	Crs sand	19 mm	9.5 mm	Crs sand	19 mm	Crs sand		
Description of >#10 particles												
Shape	subangular	subangular	subangular	subrounded	subrounded	subangular	subangular	subangular	subangular	subangular	N/A	N/A
Hardness	hard	hard	hard	hard	brittle	hard	hard	brittle	hard	hard	N/A	N/A
Sample Mass Parameters												
Pan/sample, g	158.22	193.91	189.56	171.33	165.67	191.88	202.33	206.81	215.30	80.19		
Mass removed, g	2.32	13.37	3.17	2.08	1.71	9.14	3.20	0.27	12.74	0.37	0.00	0.00
Sample mass, g	110.02	123.75	127.64	97.59	96.66	128.92	135.80	145.96	140.99	37.11		

Particle Size Analysis
Hydrometer Data

Set Number: **89517**

Client: STLWAS
Client Code: STLWAS
Date Received: 27-Aug-02

Project No.: 22029
Job No.: N/A
Start Date: 06-Sep-02

ETR(s) #: 89517
SDG(s): 89517
End Date: 13-Sep-02

Date and Analyst

Percent Solids	Weighed/Mixed	Hydrometer	Large sieves	Non-soil	Small sieves
JTE 9/10/02	JTE 9/10/02	ERB 9/10/02	MRD 9/10/02	MRD 9/10/02	ERB 9/12/02
DJP 9/11/02	MRD 9/10/02	ERB 9/11/02	JTE 9/11/02	JTE 9/11/02	MRD 9/13/02

Test number	1	2	3	4	5	6	7	8	9	10	11	12
Lab number	**499886**	**499887**	**499888**	**499889**	**499890**	**499891**	**499892**	**499893**	**499894**	**499895**		
Time, min. (2)	2	2	2	2	2	2	2	2	2	2	2	2
Reading	1.0090	1.0040	1.0050	1.0090	1.0115	1.0060	1.0050	1.0040	1.0060	1.0170		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (5)	5	5	5	5	5	5	5	5	5	5	5	5
Reading	1.0070	1.0040	1.0045	1.0075	1.0080	1.0050	1.0050	1.0040	1.0050	1.0105		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (15)	15	15	15	15	15	15	15	15	15	15	15	15
Reading	1.0065	1.0040	1.0040	1.0055	1.0070	1.0050	1.0040	1.0040	1.0040	1.0105		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (30)	30	30	29	29	31	31	31	32	30	30	30	31
Reading	1.0050	1.0035	1.0040	1.0050	1.0060	1.0040	1.0040	1.0040	1.0040	1.0100		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (60)	59	58	58	63	60	59	59	60	63	57	63	57
Reading	1.0050	1.0035	1.0035	1.0040	1.0055	1.0040	1.0040	1.0040	1.0040	1.0090		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (250)	256	256	250	250	240	234	265	259	253	247	241	235
Reading	1.0045	1.0035	1.0035	1.0040	1.0050	1.0040	1.0035	1.0035	1.0035	1.0075		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (1440)	1440	1440	1434	1434	1424	1418	1412	1406	1400	1394	1388	1382
Reading	1.0040	1.0035	1.0035	1.0040	1.0045	1.0040	1.0035	1.0035	1.0035	1.0060		
Temperature, C	22.5	23.0	23.0	22.5	22.5	22.5	23.0	23.0	23.0	22.5		

Hydrometer used: 548343 **Model #:** ASTM 151H **Manufacturer:** CHASE **Hydrometer start time:** 20:10

Calibrations:

L temp, C	L read	H Temp, C	H read
17.0	1.0040	23.0	1.0035

Cal. Date: 18-Feb-02 **Hydrometer data entered:** MRD 9/13/02

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Particle Size Analysis
Hydrometer Data

Set Number	Client:	Project No.:	ETR(s) #:
89517	STLWAS	22029	89517
	Client Code: STLWAS	Job No.: N/A	SDG(s): 89517
	Date Received: 27-Aug-02	Start Date: 6-Sep-02	End Date: 0-Jan-00

Date and Analyst

Percent Solids	Weighed/Mixed	Hydrometer	Large sieves	Non-soil	Small sieves
JC 9/10/02	JC 9/10/02	EKB 9/10/02	MRD 9/10/02	MRD 9/10/02	EKB 9/12/02
DSP 9/11/02	MRD 9/10/02	EKB 9/11/02	JC 9/11/02	JC 9/11/02	MRD 9/13/02

Test number	1	2	3	4	5	6	7	8	9	10	11	12
Lab number	499886	499887	499888	499889	499890	499891	499892	499893	499894	499895		
Time, min. (2)	2	2	2	2	2	2	2	2	2	2	2	2
Reading	1.0070	1.0040	1.0050	1.0070	1.0115	1.0060	1.0050	1.0040	1.0060	1.0170		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (5)	5	5	5	5	5	5	5	5	5	5	5	5
Reading	1.0070	1.0040	1.0045	1.0075	1.0080	1.0050	1.0050	1.0040	1.0050	1.0105		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (15)	15	15	15	15	15	15	15	15	15	15	15	15
Reading	1.0065	1.0040	1.0040	1.0055	1.0070	1.0050	1.0040	1.0040	1.0040	1.0105		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (30)	30	30	29	29	31	31	31	32	30	30	30	31
Reading	1.0050	1.0030	1.0040	1.0050	1.0060	1.0040	1.0040	1.0040	1.0040	1.0100		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (60)	59	58	58	63	60	59	59	60	63	57	63	57
Reading	1.0050	1.0035	1.0035	1.0040	1.0055	1.0040	1.0040	1.0040	1.0040	1.0090		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (250)	256	256	250	250	240	234	265	259	253	247	241	235
Reading	1.0045	1.0035	1.0035	1.0040	1.0050	1.0040	1.0035	1.0035	1.0035	1.0075		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (1440)	1440	1440	1434	1434	1424	1418	1412	1406	1400	1394	1388	1382
Reading	1.0040	1.0035	1.0035	1.0040	1.0045	1.0040	1.0035	1.0035	1.0035	1.0060		
Temperature, C	22.5 ~~21.3~~	~~21.0~~ 23.0	~~21.0~~ 23.0	~~21.0~~ 22.5	~~21.0~~ 22.5	~~21.0~~ 22.5	~~21.0~~ 23.0	~~21.0~~ 23.0	~~21.0~~ 23.0	~~21.0~~ 22.5	22.5	

Hydrometer used: 548343 **Model #:** ASTM 151H **Manufacturer:** **Hydrometer start time:**

Calibrations:

L temp, C	L read	H Temp, C	H read
17.0		23.0	

Cal. Date: 18-Feb-02 **Hydrometer data entered:** 20:10 MRD 9/13/02

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STL Burlington

Balance Calibration Log

Type:	Mettler PB3002-S
Serial #:	1120173088
Asset #:	n/a
Location:	Soils Lab
Calibrate to:	2000g

Date	Time	Calibration Weight	Initials
01-Sep-02	13:58	2000.00	SLH
02-Sep-02			
03-Sep-02	08:39	2000.00	DJT
04-Sep-02	07:00	2000.00	DJT
05-Sep-02	07:50	2000.00	DJT
06-Sep-02	07:50	2000.00	DJT
07-Sep-02			
08-Sep-02			
09-Sep-02	08:00	2000.00	DJT
10-Sep-02	08:00	2000.00	DJT
11-Sep-02	08:03	2000.00	DJT
12-Sep-02	07:50	2000.00	DJT
13-Sep-02	07:50	2000.00	DJT
14-Sep-02			
15-Sep-02			
16-Sep-02			

Date	Time	Calibration Weight	Initials
17-Sep-02			
18-Sep-02			
19-Sep-02			
20-Sep-02			
21-Sep-02			
22-Sep-02			
23-Sep-02			
24-Sep-02			
25-Sep-02			
26-Sep-02			
27-Sep-02			
28-Sep-02			
29-Sep-02			
30-Sep-02			
01-Oct-02			

Balance Calibration Log

Type:	Mettler Toledo PB3002
Serial #:	1116283195
Asset #:	N/A
Location:	Soils Lab
Calibrate to:	2000g

Date	Time	Calibration Weight	Initials
01-Sep-02	[illegible]	2000.00	[illegible]
02-Sep-02	[illegible]	[illegible]	[illegible]
03-Sep-02	08:40	2000.00	DJP
04-Sep-02	07:01	2000.00	DJP
05-Sep-02	07:51	2000.00	DJP
06-Sep-02	07:51	2000.00	DJP
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
09-Sep-02	08:01	2000.00	DJP
10-Sep-02	08:02	2000.00	DJP
11-Sep-02	08:04	2000.00	DJP
12-Sep-02	07:55	2000.00	DJP
13-Sep-02	07:51	2000.00	DJP
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
16-Sep-02			

Date	Time	Calibration Weight	Initials
17-Sep-02			
18-Sep-02			
19-Sep-02			
20-Sep-02			
21-Sep-02	[illegible]	[illegible]	[illegible]
22-Sep-02	[illegible]	[illegible]	[illegible]
23-Sep-02			
24-Sep-02			
25-Sep-02			
26-Sep-02			
27-Sep-02			
28-Sep-02	[illegible]	[illegible]	[illegible]
29-Sep-02	[illegible]	[illegible]	[illegible]
30-Sep-02			
01-Oct-02			

Oven #1 Quality Control Log

Type:	Baxter/Scientific Products (H6620-13A)
Serial #:	1090-0313
Asset #:	N/A
Location:	Soils Lab
Calibration Range:	110°C ±5

Date	Temperature	Oven Setting	Initials
01-Sep-02			
02-Sep-02			
03-Sep-02	114°	5.4	DJP
04-Sep-02	115°	5.1	DJP
05-Sep-02	110°	5.1	DJP
06-Sep-02	105°	5.1	DJP
07-Sep-02			
08-Sep-02			
09-Sep-02	110°	5.1	DJP
10-Sep-02	109°	5.1	DJP
11-Sep-02	108	5.1	DJP
12-Sep-02	107°	5.1	DJP
13-Sep-02	115°	5.1	DJP
14-Sep-02			
15-Sep-02			
16-Sep-02			

Date	Temperature	Oven Setting	Initials
17-Sep-02			
18-Sep-02			
19-Sep-02			
20-Sep-02			
21-Sep-02			
22-Sep-02			
23-Sep-02			
24-Sep-02			
25-Sep-02			
26-Sep-02			
27-Sep-02			
28-Sep-02			
29-Sep-02			
30-Sep-02			
01-Oct-02			

Sodium Hexametaphosphate
Quality Control Log

Date	Amount	Concentration	Mfg./Supplier	Lot #	Exp. Date*	Initials
6/18/02	3L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	MRO
6/20/02	3L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	MRO
6/24/02	3L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	DJP
7/1/02	3L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	DJP
7/9/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	DJP
7/19/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	DJP
7/24/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	DJP
7/29/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	DJP
7/30/02	3L	120g / 3L H20	Em Science	41285146	4/17/03	DJP
8/7/02	3L	120g / 3L H20	Em Science	41285146	4/17/03	DJP
8/9/02	3L	120g / 3L H20	Em Science	41285146	4/17/03	ERB
8/14/02	3L	120g / 3L H20	Em Science	41285146	4/17/03	DJP
8/16/02	3L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	DJP
8/19/02	6L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	MRO
8/19/02	6L	120g / 3L H20	Em Science	41285146	4/17/03	JCH
8/20/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	JKZ
8/22/02	6L	120g / 3L H20	EM Science	41285146	7/18/02	JKZ
8/28/02	3L	120g / 3L H20	EM Science	42193230	8/28/03	SAC
9/12/02	9L	120g / 3L H20	EM SCIENCE	42193230	9/29/03	MRO
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				

Note: * No expiration date noted on container. Date is one year from opening.

Oven #2 Quality Control Log

Type:	Baxter/Scientific Products (H6620-13A)
Serial #:	0292-0485
Asset #:	3333
Location:	Soils Lab
Calibration Range:	110°C ±5

Date	Temperature	Oven Setting	Initials
02-Sep-02			
03-Sep-02	115°	4.5	DJP
04-Sep-02	105°	4.5	DJP
05-Sep-02	115°	4.5	DJP
06-Sep-02	105°	4.5	DJP
09-Sep-02	112°	4.8	DJP
10-Sep-02	105°	4.8	DJP
11-Sep-02	115°	4.8	DJP
12-Sep-02	105°	4.8	DJP
13-Sep-02	106°	4.8	DJP
16-Sep-02			

Date	Temperature	Oven Setting	Initials
17-Sep-02			
18-Sep-02			
19-Sep-02			
20-Sep-02			
21-Sep-02			
22-Sep-02			
23-Sep-02			
24-Sep-02			
25-Sep-02			
26-Sep-02			
27-Sep-02			
28-Sep-02			
29-Sep-02			
30-Sep-02			
01-Oct-02			

SEVERN
TRENT
SERVICES

Severn Trent Laboratories, Inc.

SAMPLE HANDLING

0023

From: KIM A PRESLEY (253)922-2310
STL-Seattle
5755 8TH STREET EAST

Tacoma, WA, 98424

REVENUE BARCODE

FedEx.

To: Sample Receiving (802)655-1203
STL-Burlington
208 South Park Drive
Suite 1
Colchester, VT, 05446

SHIP DATE: 26AUG02
WEIGHT: 78 LBS

COPY - ORIGINAL ON FILE
SDG # ~~108177~~ ETR # 89513
8-27-02 89513

Ref:

DELIVERY ADDRESS BARCODE(FEDEX-EDK)

TRK # 7900 3537 3495 FORM 0201

FedEx STANDARD OVERNIGHT

BTV

TUE
AA
Deliver by:
27AUG02

05446-VT-US

XB BTVA

8-27-02 0930

Please fold this document in half and place it in the waybill pouch affixed to your shipment so that the barcode portion of the label can be read and scanned.
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View Guides

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2. Fold the printed page along the horizontal line.
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28

SEVERN TRENT LABORATORIES LOG-IN SHEET - Form DC-1

Lab Name: STL Burlington

Log-in Date: 08/28/02

Received By (Print or Type Name): Frank N. Bessette

Received By (Signature):

Case Number:	22029
Sample Delivery Group No.:	89517
ETR Number:	89517

REMARKS:

1. Custody Seal	Present and Intact
2. Custody Seal Nos:	339198,339758
3. Chain-of-Custody Records	Present
4. Sample Information Sheets	Absent*
5. Airbill Present	As Airbill
6. Airbill Number(s):	7900-3537-3495
7. Sample Tags	Absent*
8. Tag Nos. Listed on COC	N/A
9. Sample Condition:	Intact
10. VOA Vial Bubbles	N/A
11. Does info on the custody records, sample info sheets, sample tags and labels agree?	Yes
12. Date Received at Lab:	08/27/02
13. Time Received at Lab:	0930
14. Cooler Temperature(s):	5 C

SAMPLE TRANSFER:

Fraction(s):	ALL
Area Number:	Level 4 Storage
Transferred By:	FNB
Transferred On:	08/27/02

CORRESPONDING

CLIENT SAMPLE #	SAMPLE TAG #	ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT ETC.
108160-1	NA	499886	
108160-2	NA	499887	
108160-3	NA	499888	
108160-4	NA	499889	
108164-1	NA	499890	
108164-2	NA	499891	
108164-3	NA	499892	
108166-1	NA	499893	
108166-2	NA	499894	
108166-3	NA	499895	

8-28-02
29

0025

* *Contact Project Director*

Reviewed By:_____ Date:_____

** COOLER RECEIPT CHECKLIST **

List ETR 89517

WERE CUSTODY SEALS PRESENT ON THE COOLERS?

YES NO

WERE THE CUSTODY SEALS SIGNED?

YES NO

COPY - ORIGINAL ON FILE
SDG # 108177 ETR # 89513
89513
8-27-02

WERE THERE CUSTODY SEAL NUMBERS?

YES NO

LIST THE CUSTODY SEAL NUMBERS. 339198 339758

WHAT TYPE OF COOLING WAS UTILIZED?

ICE MELTED ICE PACKS NONE

COOLER TEMPERATURE (degrees c): 5 (2-6 °C Acceptable)

DATE AND TIME COOLER RECEIVED: 08-27-02 0930

DO SAMPLES APPEAR TO BE INTACT: YES NO

DO ANY SAMPLES HAVE SHORT HOLDING TIMES?
(less than seven days)

WET CHEM YES NO

EXTRACTABLES YES NO

UNPRES VOA YES NO

RADIATION SCREEN RESULTS <0.05 MR/HR YES NO

30

0026

SM02 Cooler Rpt Chklist
STL Burlington

108166

SEVERN TRENT SERVICES

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

TRANSMITTAL MEMORANDUM

DATE: September 16, 2002

TO: Kathy McKinley
CH2M Hill
2300 NW Walnut Blvd
Corvallis, OR 97330-3538

PROJECT: Portland Harbor 163160.AS.OS

REPORT NUMBER: 108166

TOTAL NUMBER OF PAGES: 614

Enclosed are the test results for four samples received at STL Seattle on August 23, 2002.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Katie Downie
Project Manager

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STL Seattle

Sample Identification:

Lab. No.	Client ID	Date/Time Sampled	Matrix
108166-1	PP011801	08-20-02 16:00	solid
108166-2	PP011809	08-21-02 15:00	solid
108166-3	PP011810	08-21-02 16:00	solid
108166-4	PP0118EB01	08-21-02 13:15	liquid

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SEVERN TRENT SERVICES

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

ANALYTICAL NARRATIVE

Client: CH2M Hill

Date: September 16, 2002

Project: Portland Harbor 163160.AS.OS

Lab No.: 108166

Delivered By: Federal Express

Condition of samples upon receipt: Samples were received in good condition. Chain of custody was in order. A second chain of custody was received on August 26, 2002, adding the semivolatile organic compound analyses to these samples. Both sets of chain of custodies are included in the chain of custody section of the data report.

Sample Identification:

Lab. No.	Client ID	Date Sampled	Matrix
108166-1	PP011801	08-20-02	solid
108166-2	PP011809	08-21-02	solid
108166-3	PP011810	08-21-02	solid
108166-4	PP0118EB01	08-21-02	liquid

SAMPLE EXTRACTION AND ANALYSIS

SEMIVOLATILE ORGANIC COMPOUNDS

Samples 108166-1 through 108166-3 were analyzed for semivolatile organic compounds in accordance with EPA SW-846 Method 8270C. Samples 108166-1, 108166-2 and 108166-3 were extracted in accordance with EPA SW-846 Method 3550B on 08-27-02 and analyzed on 09-03-02. Sample 108166-4 was extracted in accordance with EPA SW-846 Method 3510C on 08-28-02 and analyzed on 08-28-02. The samples were extracted and analyzed within the required holding time.

Benzo(b)fluoranthene and benzo(k)fluoranthene are not well resolved, and the reported results are for the combined benzofluoranthenes. The three tetrachlorophenols are also not well resolved, and have been reported as the combined tetrachlorophenols.

The requested detection limits were not met, due to the high levels of organics in the samples (target analytes and non-target analytes), requiring dilution prior to analysis.

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STL Seattle

ANALYTICAL NARRATIVE

Client: CH2M Hill | Date: September 16, 2002

Project: Portland Harbor 163160.AS.OS | Lab No.: 108166

SEMIVOLATILE ORGANIC COMPOUNDS, cont.

Various analytes were detected in the samples at levels that were above the method detection limit (MDL) but below the practical quantitation limit (PQL). The values should be considered as estimates, and have been flagged "J".

No extra volume was submitted for project-specific QC for the water sample.

2-Methylnaphthalene was detected in the water method blank (SW0431) at a level that was above the MDL but below the PQL. The value should be considered as an estimate, and has been flagged "J". The associated sample results have been flagged "B1" or "B2", as appropriate.

The percent recoveries (%Rs) of the surrogates nitrobenzene-d5 in sample 108166-4, 2-fluorobiphenyl in sample 108166-2 and 108166-4, and p-terphenyl-d14 in the batch quality control (QC) sample 108164-1 exceeded the QC acceptance limits, due to matrix interference. The %Rs have been flagged "X9".

The %R of the surrogate 2-fluorobiphenyl in the blank spike duplicate associated with the water sample exceeded the QC limits, and has been flagged "N". No corrective action was taken, as the recoveries of the other surrogates were acceptable, and there was no remaining sample volume for reextraction.

The %Rs of N-nitroso-di-n-propylamine, acenaphthene, 2,4-dinitrotoluene and pyrene in the matrix spike (MS) analysis of batch QC sample 108164-3 and 4-nitrophenol and 2,4-dinitrophenol in the matrix spike duplicate (MSD) exceeded the QC acceptance. Matrix interference is indicated by the acceptable recoveries for these analytes in the blank spike (BS). The %Rs have been flagged "X7".

The relative percent differences (RPDs) between the MS and MSD for 4-nitrophenol and pyrene exceeded the QC acceptance limits, due to the difficulties in recovering these compounds. The RPDs have been flagged "X7".

All other quality control parameters were within the acceptance limits.

No other difficulties were encountered during the semivolatile organic compounds analyses.

ORGANOCHLORINE HERBICIDES

Samples 108166-1 through 108166-4 were analyzed for organochlorine herbicides in accordance with EPA SW-846 Method 8151A GC/MS Modified. Samples 108166-1, 108166-2 and 108166-3 were extracted in accordance with EPA SW-846 Method 3550B on 08-28-02 and analyzed on 08-30-02. Sample 108166-4 was extracted in accordance with EPA SW-846 Method 3510C on 08-27-02 and analyzed on 08-28-02. The samples were extracted and analyzed within the required holding time.

No extra volume was submitted for project-specific QC for the water sample.

The %Rs for Dalapon in the MS and MSD analysis of batch QC sample 108164-3 exceeded the QC acceptance limits. No corrective action was taken, as the %R for Dalapon was within acceptance limits for the blank spike, and the %Rs of the other spike analytes were within the QC limits. The %Rs for Dalapon have been flagged "X7".

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STL Seattle

ANALYTICAL NARRATIVE

Client: CH2M Hill | Date: September 16, 2002

Project: Portland Harbor 163160.AS.OS | Lab No.: 108166

ORGANOCHLORINE HERBICIDES, cont.
All other quality control parameters were within the acceptance limits.

No other difficulties were encountered during the organochlorine herbicide analyses.

CHLORINATED PESTICIDES
Samples 108166-1 through 108166-4 were analyzed for chlorinated pesticides in accordance with EPA SW-846 Method 8081. Samples 108166-1, 108166-2 and 108166-3 were extracted in accordance with EPA SW-846 Method 3550B on 09-03-02 and analyzed on 09-12-02. Sample 108166-4 was extracted in accordance with EPA SW-846 Method 3510C on 08-27-02 and analyzed on 08-29-02. The samples were extracted and analyzed within the required holding time.

Results were confirmed using a second column. Results are flagged "C1" or "C2", as appropriate.

Two compounds that were requested, alpha-chlordene and gamma-chlordene, are apparently no longer available. The laboratory contacted four suppliers who had the compounds listed in their catalogs and none of the contacted suppliers have these compounds currently in stock. The requested analyte list also had two compounds listed under synonyms: alpha-chlordane has the same CAS number as cis-chlordane, and gamma-chlordane has the same CAS number as trans-chlordane.

Florisil and sulfur cleanup, in accordance with EPA SW-846 Method 3620B and 3660B, respectively, were used on the extracts to remove some of the non-target analyte interferences, but the samples still required a two-fold dilution.

Various analytes were detected in the samples at levels that were above the MDL but below the PQL. The values should be considered as estimates, and have been flagged "J".

The continuing calibration verification drift values for several analytes exceeded 15%. In these instances, the alternate criteria was used: the average percent drift for all analytes was less than 15%. The end-of-run Endrin breakdown on 09-12-02 exceeded QC limits, and machine maintenance was performed before additional samples were analyzed.

The %Rs of the surrogate decachlorobiphenyl in samples 108166-2 and batch QC sample 108164-3 exceeded the QC acceptance limits, and the %Rs have been flagged "X9".

No extra volume was submitted for project-specific QC for the water sample.

The %Rs of Aldrin in the MS and MSD analysis of batch QC sample 108164-3 exceeded the QC acceptance limits. Matrix interference is indicated by the acceptable recoveries of this compound in the BS and BSD. The %Rs have been flagged "X7".

All other quality control parameters were within acceptance limits.

No other difficulties were encountered during the chlorinated pesticide analyses.

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STL Seattle

ANALYTICAL NARRATIVE

Client: CH2M Hill | Date: September 16, 2002

Project: Portland Harbor 163160.AS.OS | Lab No.: 108166

METALS

Samples 108166-1 through 108166-4 were analyzed for aluminum in accordance with EPA SW-846 Method 6010B (ICP) or 6020 (sample 108166-4 only), antimony, arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, and zinc in accordance with EPA SW-846 Method 6020 (ICP-MS). Samples 108166-1, 108166-2 and 108166-3 were digested in accordance with EPA SW-846 Method 3051 on 08-30-02 and analyzed by ICP and ICP-MS on 08-30-02. Sample 108166-4 was digested in accordance with EPA SW-846 Method 3005 on 08-29-02 and analyzed by ICP and ICP-MS on 08-29-02. All samples were analyzed within the required holding time.

Copper, lead, nickel and zinc were detected in the ICP-MS method blank for the soil samples (SP883) at levels that were above the MDL but below the PQL. Aluminum, antimony, chromium, copper, lead and zinc were detected in the water method blank (TP880) at levels that were above the MDL but below the PQL. The sample results have been flagged "B1" or "B2" as appropriate.

Various analytes were detected at levels that were above the MDL but below the PQL. The values should be considered as estimates, and have been flagged "J".

Selenium was not detected in samples 108166-1, 108166-2 and 108166-3. The MDL for these samples was below the requested reporting limit (RL), although the PQL for each was above the requested RL. The other analytes were detected at or above the requested RLs.

The %R of aluminum in the MS analysis of batch QC sample 108164-3 exceeded the QC limits, due to the high concentration of this analyte in the original sample, and the %R has been flagged "X7a". The %R of aluminum in the blank spike and blank spike duplicate were within the QC limits.

The RPDs between the results for sample 108166-4 and its duplicate exceeded the QC acceptance limits for antimony and zinc, due to analyte concentrations near the PQL. The RPDs have been flagged "X4a".

All other quality control parameters were within the acceptance limits.

No other difficulties were encountered during the metals analyses.

GRAIN SIZE

Samples 108166-1, 108166-2 and 108166-3 were submitted to STL Burlington for analysis of grain size in accordance with ASTM D422-PSEP. The grain size data package will be submitted separately.

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STL Seattle

Client Name	CH2M Hill
Client ID:	PP011801
Lab ID:	108166-01
Date Received:	8/23/2002
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
% Solids	71.72
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	37.2		37	160
Phenol - d5	57.3		43	157
Nitrobenzene - d5	48.1		42	154
2 - Fluorobiphenyl	31.3	X9	51	142
2,4,6 - Tribromophenol	93.5		36	159
p - Terphenyl - d14	83.2		44	144

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	ND		181	36.2	
bis(2-Chloroethyl)ether	ND		181	34.6	
2-Chlorophenol	ND		181	27.2	
1,3-Dichlorobenzene	ND		181	25.3	
1,4-Dichlorobenzene	ND		181	29	
Benzyl Alcohol	ND		181	38	
1,2-Dichlorobenzene	ND		181	18.6	
2-Methylphenol	ND		181	21.7	
bis(2-Chloroisopropyl)ether	ND		181	47.1	
3-&4-Methylphenol	ND		362	26.8	
N-nitroso-di-n-propylamine	ND		181	19.9	
Hexachloroethane	ND		181	34.4	
Nitrobenzene	ND		181	24.8	
Isophorone	ND		181	25.3	
2-Nitrophenol	ND		181	25.3	
2,4-Dimethylphenol	ND		181	19.9	
Benzoic Acid		276	905	61.6	J
bis(2-Chloroethoxy)methane	ND		181	21.7	
2,4-Dichlorophenol	ND		181	19.9	
1,2,4-Trichlorobenzene	ND		181	15	
Naphthalene		8.93	18.1	8.47	J
4-Chloroaniline	ND		181	16.8	
Hexachlorobutadiene	ND		181	16.3	
4-Chloro-3-methylphenol	ND		181	19.9	
2-Methylnaphthalene	ND		18.1	2.82	
Hexachlorocyclopentadiene	ND		181	25.5	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 108166-01 continued...

Analyte		Result (ug/kg)	PQL	MDL	
2,4,6-Trichlorophenol	ND		453	24.1	
2,4,5-Trichlorophenol	ND		181	32.6	
2-Chloronaphthalene	ND		18.1	5.43	
2-Nitroaniline	ND		181	23.5	
Dimethylphthalate	ND		181	19.9	
Acenaphthylene	ND		18.1	7.89	
2,6-Dinitrotoluene	ND		181	32.6	
3-Nitroaniline	ND		181	30.8	
Acenaphthene	ND		18.1	8.96	
2,4-Dinitrophenol	ND		905	43.4	
4-Nitrophenol	ND		905	34.4	
Dibenzofuran	ND		181	21	
2,4-Dinitrotoluene	ND		181	23.5	
Diethylphthalate	ND		181	30.8	
4-Chlorophenylphenylether	ND		181	30.4	
Fluorene		9.02	18.1	8.45	J
4-Nitroaniline	ND		181	30.8	
4,6-Dinitro-2-methylphenol	ND		905	67	
N-Nitrosodiphenylamine	ND		181	14.5	
4-Bromophenylphenylether	ND		181	24.1	
Hexachlorobenzene	ND		181	19.9	
Pentachlorophenol	ND		181	38	
Phenanthrene		70.5	18.1	3.86	
Anthracene		15.8	18.1	4.56	J
Di-n-butylphthalate	ND		453	158	
Fluoranthene		155	18.1	8.45	
Pyrene		127	18.1	5.97	
Butylbenzylphthalate	ND		181	34.4	
3,3'-Dichlorobenzidine	ND		181	19.9	
Benzo(a)anthracene		73.2	36.2	11	
Chrysene		51.4	36.2	10.6	
bis(2-Ethylhexyl)phthalate		138	181	74.2	J
Di-n-octylphthalate	ND		181	47.1	
Benzofluoranthenes		110	36.2	7.97	
Benzo(a)pyrene		59.2	18.1	10.6	
Indeno(1,2,3-cd)pyrene		52.5	18.1	4.22	
Dibenz(a,h)anthracene	ND		18.1	4.22	
Benzo(g,h,i)perylene		42	18.1	2.99	
Carbazole	ND		181	70.6	
N-nitrosodimethylamine	ND		905	19.9	
Aniline	ND		181	0	
Tetrachlorophenols	ND		181	34.2	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011809
Lab ID:	108166-02
Date Received:	8/23/2002
Date Prepared:	8/27/2002
Date Analyzed:	9/4/2002
% Solids	78.39
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	52.3		37	160
Phenol - d5	80.3		43	157
Nitrobenzene - d5	64.7		42	154
2 - Fluorobiphenyl	57.6		51	142
2,4,6 - Tribromophenol	99.1		36	159
p - Terphenyl - d14	88.4		44	144

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	ND		160	31.9	
bis(2-Chloroethyl)ether	ND		160	30.5	
2-Chlorophenol	ND		160	23.9	
1,3-Dichlorobenzene	ND		160	22.3	
1,4-Dichlorobenzene	ND		160	25.5	
Benzyl Alcohol	ND		160	33.5	
1,2-Dichlorobenzene	ND		160	16.4	
2-Methylphenol	ND		160	19.2	
bis(2-Chloroisopropyl)ether	ND		160	41.5	
3-&4-Methylphenol	ND		319	23.6	
N-nitroso-di-n-propylamine	ND		160	17.6	
Hexachloroethane	ND		160	30.3	
Nitrobenzene	ND		160	21.9	
Isophorone	ND		160	22.3	
2-Nitrophenol	ND		160	22.3	
2,4-Dimethylphenol	ND		160	17.6	
Benzoic Acid	ND		798	54.3	
bis(2-Chloroethoxy)methane	ND		160	19.2	
2,4-Dichlorophenol	ND		160	17.6	
1,2,4-Trichlorobenzene	ND		160	13.2	
Naphthalene		17.1	16	7.47	
4-Chloroaniline	ND		160	14.8	
Hexachlorobutadiene	ND		160	14.4	
4-Chloro-3-methylphenol	ND		160	17.6	
2-Methylnaphthalene		26.7	16	2.49	
Hexachlorocyclopentadiene	ND		160	22.5	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 108166-02 continued...

Analyte		Result (ug/kg)	PQL	MDL	
2,4,6-Trichlorophenol	ND		399	21.2	
2,4,5-Trichlorophenol	ND		160	28.7	
2-Chloronaphthalene	ND		16	4.79	
2-Nitroaniline	ND		160	20.7	
Dimethylphthalate	ND		160	17.6	
Acenaphthylene		16.5	16	6.96	
2,6-Dinitrotoluene	ND		160	28.7	
3-Nitroaniline	ND		160	27.1	
Acenaphthene		24.5	16	7.9	
2,4-Dinitrophenol	ND		798	38.3	
4-Nitrophenol	ND		798	30.3	
Dibenzofuran	ND		160	18.5	
2,4-Dinitrotoluene	ND		160	20.7	
Diethylphthalate	ND		160	27.1	
4-Chlorophenylphenylether	ND		160	26.8	
Fluorene		37.6	16	7.45	
4-Nitroaniline	ND		160	27.1	
4,6-Dinitro-2-methylphenol	ND		798	59	
N-Nitrosodiphenylamine	ND		160	12.8	
4-Bromophenylphenylether	ND		160	21.2	
Hexachlorobenzene	ND		160	17.6	
Pentachlorophenol	ND		160	33.5	
Phenanthrene		59.1	16	3.4	
Anthracene		17.5	16	4.02	
Di-n-butylphthalate	ND		399	139	
Fluoranthene		101	16	7.45	
Pyrene		140	16	5.27	
Butylbenzylphthalate		153	160	30.3	J
3,3'-Dichlorobenzidine	ND		160	17.6	
Benzo(a)anthracene		60.1	31.9	9.73	
Chrysene		83.2	31.9	9.37	
bis(2-Ethylhexyl)phthalate		477	160	65.4	
Di-n-octylphthalate	ND		160	41.5	
Benzofluoranthenes	ND		31.9	7.02	
Benzo(a)pyrene	ND		16	9.37	
Indeno(1,2,3-cd)pyrene	ND		16	3.72	
Dibenz(a,h)anthracene	ND		16	3.72	
Benzo(g,h,i)perylene	ND		16	2.63	
Carbazole	ND		160	62.2	
N-nitrosodimethylamine	ND		798	17.6	
Aniline	ND		160	0	
Tetrachlorophenols	ND		160	30.2	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011810
Lab ID:	108166-03
Date Received:	8/23/2002
Date Prepared:	8/27/2002
Date Analyzed:	9/4/2002
% Solids	52.25
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	96.2		37	160
Phenol - d5	100		43	157
Nitrobenzene - d5	96.9		42	154
2 - Fluorobiphenyl	66.3		51	142
2,4,6 - Tribromophenol	92.4		36	159
p - Terphenyl - d14	96		44	144

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**		**PQL**	**MDL**	**Flags**
Phenol	ND		226	45.3	
bis(2-Chloroethyl)ether	ND		226	43.2	
2-Chlorophenol	ND		226	34	
1,3-Dichlorobenzene	ND		226	31.7	
1,4-Dichlorobenzene	ND		226	36.2	
Benzyl Alcohol	ND		226	47.6	
1,2-Dichlorobenzene	ND		226	23.3	
2-Methylphenol	ND		226	27.2	
bis(2-Chloroisopropyl)ether	ND		226	58.9	
3-&4-Methylphenol		69.3	453	33.5	J
N-nitroso-di-n-propylamine	ND		226	24.9	
Hexachloroethane	ND		226	43	
Nitrobenzene	ND		226	31	
Isophorone	ND		226	31.7	
2-Nitrophenol	ND		226	31.7	
2,4-Dimethylphenol	ND		226	24.9	
Benzoic Acid	ND		1130	77	
bis(2-Chloroethoxy)methane	ND		226	27.2	
2,4-Dichlorophenol	ND		226	24.9	
1,2,4-Trichlorobenzene	ND		226	18.8	
Naphthalene		12.7	22.6	10.6	J
4-Chloroaniline	ND		226	21.1	
Hexachlorobutadiene	ND		226	20.4	
4-Chloro-3-methylphenol	ND		226	24.9	
2-Methylnaphthalene	ND		22.6	3.53	
Hexachlorocyclopentadiene	ND		226	31.9	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 108166-03 continued...

Analyte		Result (ug/kg)	PQL	MDL	
2,4,6-Trichlorophenol	ND		566	30.1	
2,4,5-Trichlorophenol	ND		226	40.8	
2-Chloronaphthalene	ND		22.6	6.79	
2-Nitroaniline	ND		226	29.4	
Dimethylphthalate	ND		226	24.9	
Acenaphthylene	ND		22.6	9.87	
2,6-Dinitrotoluene	ND		226	40.8	
3-Nitroaniline	ND		226	38.5	
Acenaphthene	ND		22.6	11.2	
2,4-Dinitrophenol	ND		1130	54.3	
4-Nitrophenol	ND		1130	43	
Dibenzofuran	ND		226	26.3	
2,4-Dinitrotoluene	ND		226	29.4	
Diethylphthalate	ND		226	38.5	
4-Chlorophenylphenylether	ND		226	38	
Fluorene	ND		22.6	10.6	
4-Nitroaniline	ND		226	38.5	
4,6-Dinitro-2-methylphenol	ND		1130	83.8	
N-Nitrosodiphenylamine	ND		226	18.1	
4-Bromophenylphenylether	ND		226	30.1	
Hexachlorobenzene	ND		226	24.9	
Pentachlorophenol	ND		226	47.6	
Phenanthrene		46	22.6	4.82	
Anthracene	ND		22.6	5.71	
Di-n-butylphthalate	ND		566	197	
Fluoranthene		37.6	22.6	10.6	
Pyrene		54.6	22.6	7.47	
Butylbenzylphthalate	ND		226	43	
3,3'-Dichlorobenzidine	ND		226	24.9	
Benzo(a)anthracene	ND		45.3	13.8	
Chrysene	ND		45.3	13.3	
bis(2-Ethylhexyl)phthalate		166	226	92.8	J
Di-n-octylphthalate	ND		226	58.9	
Benzofluoranthenes	ND		45.3	9.96	
Benzo(a)pyrene	ND		22.6	13.3	
Indeno(1,2,3-cd)pyrene	ND		22.6	5.28	
Dibenz(a,h)anthracene	ND		22.6	5.28	
Benzo(g,h,i)perylene	ND		22.6	3.74	
Carbazole	ND		226	88.3	
N-nitrosodimethylamine	ND		1130	24.9	
Aniline	ND		226	0	
Tetrachlorophenols	ND		226	42.8	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP0118EB01
Lab ID:	108166-04
Date Received:	8/23/2002
Date Prepared:	8/28/2002
Date Analyzed:	8/28/2002
% Solids	-
Dilution Factor	0.1

Semivolatile Organics by USEPA Method 8270

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
2 - Fluorophenol	27.1		10	117
Phenol - d5	21.6		10	90
Nitrobenzene - d5	39.3	X9	50	145
2 - Fluorobiphenyl	47.1	X9	55	130
2,4,6 - Tribromophenol	54.8		46	156
p - Terphenyl - d14	92.1		54	139

Analyte		Result (ug/L)	PQL	MDL	Flags
Phenol	ND		0.177	0.0565	
bis(2-Chloroethyl)ether	ND		0.177	0.0336	
2-Chlorophenol	ND		0.177	0.03	
1,3-Dichlorobenzene	ND		0.177	0.03	
1,4-Dichlorobenzene	ND		0.177	0.0265	
Benzyl Alcohol	ND		0.177	0.0565	
1,2-Dichlorobenzene	ND		0.177	0.0283	
2-Methylphenol	ND		0.177	0.0424	
bis(2-Chloroisopropyl)ether	ND		0.177	0.0371	
3-&4-Methylphenol	ND		0.353	0.0406	
N-nitroso-di-n-propylamine	ND		0.177	0.0371	
Hexachloroethane	ND		0.177	0.0707	
Nitrobenzene	ND		0.177	0.0795	
Isophorone	ND		0.177	0.0318	
2-Nitrophenol	ND		0.177	0.0389	
2,4-Dimethylphenol	ND		0.177	0.0265	
Benzoic Acid		0.166	0.883	0.0353	J
bis(2-Chloroethoxy)methane	ND		0.177	0.0318	
2,4-Dichlorophenol	ND		0.177	0.0265	
1,2,4-Trichlorobenzene	ND		0.177	0.0283	
Naphthalene		0.0709	0.0177	0.00389	
4-Chloroaniline	ND		0.177	0.0689	
Hexachlorobutadiene	ND		0.177	0.0512	
4-Chloro-3-methylphenol		0.204	0.177	0.0954	
2-Methylnaphthalene	ND		0.177	0.0265	
Hexachlorocyclopentadiene	ND		0.177	0.0459	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 108166-04 continued...

Analyte		Result (ug/L)	PQL	MDL
2,4,6-Trichlorophenol	ND		0.177	0.0212
2,4,5-Trichlorophenol	ND		0.177	0.0194
2-Chloronaphthalene	ND		0.0177	0.00265
2-Nitroaniline	ND		0.177	0.0318
Dimethylphthalate	ND		0.177	0.0283
Acenaphthylene	ND		0.0177	0.00265
2,6-Dinitrotoluene	ND		0.177	0.0353
3-Nitroaniline	ND		0.177	0.0583
Acenaphthene	ND		0.0177	0.00283
2,4-Dinitrophenol	ND		0.883	0.053
4-Nitrophenol	ND		0.883	0.0512
Dibenzofuran	ND		0.177	0.0247
2,4-Dinitrotoluene	ND		0.177	0.023
Diethylphthalate	ND		0.177	0.102
4-Chlorophenylphenylether	ND		0.177	0.0265
Fluorene	ND		0.0177	0.00247
4-Nitroaniline	ND		0.177	0.0371
4,6-Dinitro-2-methylphenol	ND		0.883	0.0389
N-Nitrosodiphenylamine	ND		0.177	0.0177
4-Bromophenylphenylether	ND		0.177	0.0212
Hexachlorobenzene	ND		0.177	0.0353
Pentachlorophenol	ND		0.177	0.03
Phenanthrene	ND		0.0177	0.00389
Anthracene	ND		0.0177	0.00265
Di-n-butylphthalate	ND		0.883	0.408
Fluoranthene	ND		0.0177	0.00336
Pyrene	ND		0.0177	0.00247
Butylbenzylphthalate	ND		0.883	0.33
3,3'-Dichlorobenzidine	ND		0.177	0.0636
Benzo(a)anthracene	ND		0.0177	0.00777
Chrysene	ND		0.0177	0.00442
bis(2-Ethylhexyl)phthalate		0.634	0.177	0.115
Di-n-octylphthalate		0.222	0.177	0.0601
Benzofluoranthenes	ND		0.0353	0.00671
Benzo(a)pyrene	ND		0.0177	0.0083
Indeno(1,2,3-cd)pyrene	ND		0.0177	0.0053
Dibenz(a,h)anthracene	ND		0.0177	0.00477
Benzo(g,h,i)perylene	ND		0.0177	0.00601
Carbazole	ND		0.0177	0.00495
N-nitrosodimethylamine	ND		0.883	0.0583
Aniline	ND		0.177	0.0495
Tetrachlorophenols	ND		0.177	0.0883

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011801
Lab ID:	108166-01
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/30/02
% Solids	71.72
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2,4-Dichlorophenylacetic acid	70.1		48	128

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Dalapon	ND	0.672	0.151	
4-Nitrophenol	ND	0.672	0.15	
Dicamba	ND	0.672	0.154	
MCPP	ND	0.672	0.132	
MCPA	ND	0.672	0.295	
Dichloroprop	ND	0.672	0.249	
2,4-D	ND	0.672	0.262	
Pentachlorophenol	3.9	0.672	0.193	
Silvex (2,4,5-TP)	ND	1.01	0.252	
2,4,5-T	ND	1.01	0.308	
Dinoseb	ND	0.672	0.216	
2,4-DB	ND	0.672	0.189	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011809
Lab ID:	108166-02
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/30/02
% Solids	78.39
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2,4-Dichlorophenylacetic acid	66.3		48	128

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Dalapon	ND	0.602	0.135	
4-Nitrophenol	ND	0.602	0.134	
Dicamba	ND	0.602	0.138	
MCPP	ND	0.602	0.118	
MCPA	ND	0.602	0.264	
Dichloroprop	ND	0.602	0.223	
2,4-D	ND	0.602	0.234	
Pentachlorophenol	2.59	0.602	0.173	
Silvex (2,4,5-TP)	ND	0.903	0.226	
2,4,5-T	ND	0.903	0.276	
Dinoseb	ND	0.602	0.193	
2,4-DB	ND	0.602	0.169	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011810
Lab ID:	108166-03
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/30/02
% Solids	52.25
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2,4-Dichlorophenylacetic acid	68.8		48	128

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Dalapon	ND	0.936	0.21	
4-Nitrophenol	ND	0.936	0.209	
Dicamba	ND	0.936	0.215	
MCPP	ND	0.936	0.183	
MCPA	ND	0.936	0.411	
Dichloroprop	ND	0.936	0.347	
2,4-D	ND	0.936	0.364	
Pentachlorophenol	ND	0.936	0.269	
Silvex (2,4,5-TP)	ND	1.4	0.351	
2,4,5-T	ND	1.4	0.429	
Dinoseb	ND	0.936	0.301	
2,4-DB	ND	0.936	0.263	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP0118EB01
Lab ID:	108166-04
Date Received:	8/23/02
Date Prepared:	8/27/02
Date Analyzed:	8/28/02
% Solids	-
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2,4-Dichlorophenylacetic acid	58.8		50	127

Analyte	Result (ug/L)	PQL	MDL	Flags
Dalapon	ND	0.16	0.0474	
4-Nitrophenol	ND	0.12	0.0373	
Dicamba	ND	0.12	0.039	
Dichloroprop	ND	0.08	0.0161	
2,4-D	ND	0.12	0.0377	
Pentachlorophenol	ND	0.08	0.0233	
Silvex (2,4,5-TP)	ND	0.08	0.0161	
2,4,5-T	ND	0.16	0.0479	
Dinoseb	ND	0.16	0.0463	
2,4-DB	ND	0.12	0.0434	
MCPP	ND	0.08	0.0296	
MCPA	ND	0.08	0.0221	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011801
Lab ID:	108166-01
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	71.72
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	102		54	129
Decachlorobiphenyl	131		54	140

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	ND	2.69	1.16	
alpha-BHC	ND	2.69	0.835	
beta-BHC	ND	2.69	1.14	
delta-BHC	ND	2.69	1.03	
gamma-BHC (Lindane)	ND	2.69	1.03	
Chlordane (technical)	ND	26.9	3.78	
4,4'-DDD	7.13	5.38	0.523	C1
4,4'-DDE	13	5.38	0.619	C1
4,4'-DDT	ND	5.38	0.696	
Dieldrin	ND	5.38	0.882	
Endosulfan I	ND	2.69	1.14	
Endosulfan II	ND	5.38	1.04	
Endosulfan sulfate	ND	5.38	0.978	
Endrin	ND	5.38	0.97	
Endrin aldehyde	ND	5.38	1.1	
Heptachlor	ND	2.69	0.925	
Heptachlor epoxide	ND	2.69	0.982	
Methoxychlor	ND	26.9	3.7	
Endrin ketone	ND	5.38	0.755	
Toxaphene	ND	269	16.8	
alpha-Chlordane	2.39	2.69	1.07	J C1
gamma-Chlordane	3.46	2.69	1.09	C2
Hexachlorobenzene	ND	2.69	2.69	
Hexachlorobutadiene	ND	2.69	2.69	
Hexachloroethane	ND	2.69	2.69	
Oxychlordane	ND	5.38	5.38	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for 108166-01 continued...

Analyte	Result (ug/kg)	PQL	MDL	Flags
cis-Nonachlor	ND	5.38	5.38	
trans-Nonachlor	ND	5.38	5.38	
2,4'-DDE	ND	5.38	5.38	
2,4'-DDD	ND	5.38	5.38	
2,4'-DDT	ND	5.38	5.38	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011809
Lab ID:	108166-02
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	78.39
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	104		54	129
Decachlorobiphenyl	162	X9	54	140

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	13.6	2.29	0.987	C2
alpha-BHC	ND	2.29	0.711	
beta-BHC	2.92	2.29	0.968	C2
delta-BHC	ND	2.29	0.878	
gamma-BHC (Lindane)	ND	2.29	0.874	
Chlordane (technical)	ND	22.9	3.22	
4,4'-DDD	45.5	4.58	0.445	C1
4,4'-DDE	78.9	4.58	0.527	C1
4,4'-DDT	ND	4.58	0.593	
Dieldrin	ND	4.58	0.751	
Endosulfan I	3.91	2.29	0.974	C1
Endosulfan II	ND	4.58	0.884	
Endosulfan sulfate	3.88	4.58	0.833	J C2
Endrin	ND	4.58	0.826	
Endrin aldehyde	ND	4.58	0.933	
Heptachlor	ND	2.29	0.788	
Heptachlor epoxide	ND	2.29	0.836	
Methoxychlor	ND	22.9	3.15	
Endrin ketone	ND	4.58	0.643	
Toxaphene	ND	229	14.3	
alpha-Chlordane	15	2.29	0.91	C2
gamma-Chlordane	13.6	2.29	0.929	C2
Hexachlorobenzene	ND	2.29	2.29	
Hexachlorobutadiene	ND	2.29	2.29	
Hexachloroethane	ND	2.29	2.29	
Oxychlordane	ND	4.58	4.58	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for 108166-02 continued...

Analyte	Result (ug/kg)	PQL	MDL	Flags
cis-Nonachlor	ND	4.58	4.58	
trans-Nonachlor	8.64	4.58	4.58	C2
2,4'-DDE	ND	4.58	4.58	
2,4'-DDD	12.3	4.58	4.58	C2
2,4'-DDT	ND	4.58	4.58	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011810
Lab ID:	108166-03
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	52.25
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Tetrachloro-m-xylene	92.3		54	129
Decachlorobiphenyl	136		54	140

Sample results are on a dry weight basis.

Analyte		Result (ug/kg)	PQL	MDL	Flags
Aldrin		6.48	3.73	1.61	C2
alpha-BHC	ND		3.73	1.16	
beta-BHC	ND		3.73	1.58	
delta-BHC	ND		3.73	1.43	
gamma-BHC (Lindane)	ND		3.73	1.42	
Chlordane (technical)	ND		37.3	5.25	
4,4'-DDD		14.1	7.46	0.725	C1
4,4'-DDE		65.1	7.46	0.858	C1
4,4'-DDT	ND		7.46	0.966	
Dieldrin	ND		7.46	1.22	
Endosulfan I	ND		3.73	1.59	
Endosulfan II	ND		7.46	1.44	
Endosulfan sulfate	ND		7.46	1.36	
Endrin	ND		7.46	1.35	
Endrin aldehyde	ND		7.46	1.52	
Heptachlor	ND		3.73	1.28	
Heptachlor epoxide	ND		3.73	1.36	
Methoxychlor	ND		37.3	5.13	
Endrin ketone	ND		7.46	1.05	
Toxaphene	ND		373	23.4	
alpha-Chlordane		4.87	3.73	1.48	C2
gamma-Chlordane		4.43	3.73	1.51	C2
Hexachlorobenzene	ND		3.73	3.73	
Hexachlorobutadiene	ND		3.73	3.73	
Hexachloroethane	ND		3.73	3.73	
Oxychlordane	ND		7.46	7.46	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for 108166-03 continued...

Analyte	Result (ug/kg)	PQL	MDL	Flags
cis-Nonachlor	ND	7.46	7.46	
trans-Nonachlor	ND	7.46	7.46	
2,4'-DDE	ND	7.46	7.46	
2,4'-DDD	ND	7.46	7.46	
2,4'-DDT	ND	7.46	7.46	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP0118EB01
Lab ID:	108166-04
Date Received:	8/23/2002
Date Prepared:	8/27/2002
Date Analyzed:	8/29/2002
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081A

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Tetrachloro-m-xylene	79.8		53	127
Decachlorobiphenyl	81.6		57	121

Analyte	Result (ug/L)	PQL	MDL	Flags
Aldrin	ND	0.008	0.000916	
alpha-BHC	ND	0.008	0.00294	
beta-BHC	ND	0.008	0.00342	
delta-BHC	ND	0.008	0.00188	
gamma-BHC (Lindane)	ND	0.008	0.00576	
Chlordane (technical)	ND	0.08	0.0256	
4,4'-DDD	ND	0.016	0.00377	
4,4'-DDE	ND	0.016	0.00312	
4,4'-DDT	ND	0.016	0.004	
Dieldrin	ND	0.016	0.00241	
Endosulfan I	ND	0.008	0.00399	
Endosulfan II	ND	0.016	0.00303	
Endosulfan sulfate	ND	0.016	0.0043	
Endrin	ND	0.016	0.00248	
Endrin aldehyde	ND	0.016	0.00779	
Heptachlor	ND	0.008	0.00603	
Heptachlor epoxide	ND	0.008	0.00299	
Methoxychlor	ND	0.08	0.0043	
Endrin ketone	ND	0.016	0.00276	
Toxaphene	ND	0.8	0.0933	
alpha-Chlordane	ND	0.008	0.00282	
gamma-Chlordane	ND	0.008	0.00383	
Hexachlorobenzene	ND	0.008	0.008	
Hexachlorobutadiene	ND	0.008	0.008	
Hexachloroethane	ND	0.008	0.008	
Oxychlordane	ND	0.016	0.016	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for 108166-04 continued...

Analyte	Result (ug/L)	PQL	MDL	Flags
cis-Nonachlor	ND	0.016	0.016	
trans-Nonachlor	ND	0.016	0.016	
2,4'-DDE	ND	0.016	0.016	
2,4'-DDD	ND	0.016	0.016	
2,4'-DDT	ND	0.016	0.016	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011801
Lab ID:	108166-01
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1
% Solids	71.72

Metals by ICP - USEPA Method 6010

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Aluminum	7850	25.5	2.3	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011801
Lab ID:	108166-01
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	5
% Solids	71.72

Metals by ICP-MS - USEPA Method 6020

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Arsenic	5.65	1.28	0.139	
Antimony	1.16	3.83	0.0286	J
Cadmium	0.0638	0.638	0.00906	J
Chromium	22	1.28	0.0452	
Copper	41	1.28	0.0184	B2
Lead	60.6	0.638	0.00574	B2
Nickel	16.3	1.28	0.0361	B2
Selenium	ND	3.83	0.491	
Silver	0.0855	0.638	0.00765	J
Zinc	199	3.83	0.0417	B2

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011809
Lab ID:	108166-02
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1
% Solids	78.39

Metals by ICP - USEPA Method 6010

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Aluminum	5570	21.9	1.97	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011809
Lab ID:	108166-02
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	5
% Solids	78.39

Metals by ICP-MS - USEPA Method 6020

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Arsenic	5.66	1.1	0.119	
Antimony	2.17	3.29	0.0245	J
Cadmium	0.759	0.548	0.00778	
Chromium	32.5	1.1	0.0388	
Copper	75.6	1.1	0.0158	B2
Lead	168	0.548	0.00493	B2
Nickel	16.8	1.1	0.031	B2
Selenium	ND	3.29	0.421	
Silver	0.337	0.548	0.00657	J
Zinc	272	3.29	0.0358	B2

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011810
Lab ID:	108166-03
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1
% Solids	52.25

Metals by ICP - USEPA Method 6010

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Aluminum	14000	34.2	3.08	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011810
Lab ID:	108166-03
Date Received:	8/23/02
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	5
% Solids	52.25

Metals by ICP-MS - USEPA Method 6020

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Arsenic	4.36	1.71	0.186	
Antimony	1	5.13	0.0383	J
Cadmium	0.077	0.855	0.0121	J
Chromium	35.9	1.71	0.0606	
Copper	48.2	1.71	0.0246	B2
Lead	67.3	0.855	0.0077	B2
Nickel	23.9	1.71	0.0484	B2
Selenium	ND	5.13	0.658	
Silver	0.387	0.855	0.0103	J
Zinc	119	5.13	0.0559	B2

STL Seattle

Client Name	CH2M Hill
Client ID:	PP0118EB01
Lab ID:	108166-04
Date Received:	8/23/02
Date Prepared:	8/29/02
Date Analyzed:	8/29/02
Dilution Factor	1

Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	PQL	MDL	Flags
Arsenic	ND	0.0015	0.0015	
Aluminum	0.0181	0.01	0.002	B1
Antimony	0.00095	0.003	0.0000224	J B2
Cadmium	ND	0.0005	0.0000071	
Chromium	0.00879	0.001	0.0000354	B2
Copper	0.00239	0.001	0.0000144	B2
Lead	0.000368	0.0005	0.0000045	J B2
Nickel	0.00753	0.001	0.0000283	
Selenium	ND	0.003	0.000385	
Silver	ND	0.01	0.01	
Zinc	0.00677	0.003	0.0000327	B1

STL Seattle

Lab ID:	Method Blank - SW0431
Date Received:	-
Date Prepared:	8/28/02
Date Analyzed:	8/28/02
% Solids	-
Dilution Factor	0.1

Semivolatile Organics by USEPA Method 8270

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2 - Fluorophenol	30		10	117
Phenol - d5	20.8		10	90
Nitrobenzene - d5	60.7		50	145
2 - Fluorobiphenyl	58.3		55	130
2,4,6 - Tribromophenol	50.3		46	156
p - Terphenyl - d14	55.7		54	139

Analyte	Result (ug/L)	PQL	MDL	Flags
Phenol	ND	0.1	0.032	
bis(2-Chloroethyl)ether	ND	0.1	0.019	
2-Chlorophenol	ND	0.1	0.017	
1,3-Dichlorobenzene	ND	0.1	0.017	
1,4-Dichlorobenzene	ND	0.1	0.015	
Benzyl Alcohol	ND	0.1	0.032	
1,2-Dichlorobenzene	ND	0.1	0.016	
2-Methylphenol	ND	0.1	0.024	
bis(2-Chloroisopropyl)ether	ND	0.1	0.021	
3-&4-Methylphenol	ND	0.2	0.023	
N-nitroso-di-n-propylamine	ND	0.1	0.021	
Hexachloroethane	ND	0.1	0.04	
Nitrobenzene	ND	0.1	0.045	
Isophorone	ND	0.1	0.018	
2-Nitrophenol	ND	0.1	0.022	
2,4-Dimethylphenol	ND	0.1	0.015	
Benzoic Acid	ND	0.5	0.02	
bis(2-Chloroethoxy)methane	ND	0.1	0.018	
2,4-Dichlorophenol	ND	0.1	0.015	
1,2,4-Trichlorobenzene	ND	0.1	0.016	
Naphthalene	ND	0.01	0.0022	
4-Chloroaniline	ND	0.1	0.039	
Hexachlorobutadiene	ND	0.1	0.029	
4-Chloro-3-methylphenol	ND	0.1	0.054	
2-Methylnaphthalene	0.0228	0.1	0.015	J
Hexachlorocyclopentadiene	ND	0.1	0.026	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for SW0431 continued...

Analyte	Result (ug/L)	PQL	MDL
2,4,6-Trichlorophenol	ND	0.1	0.012
2,4,5-Trichlorophenol	ND	0.1	0.011
2-Chloronaphthalene	ND	0.01	0.0015
2-Nitroaniline	ND	0.1	0.018
Dimethylphthalate	ND	0.1	0.016
Acenaphthylene	ND	0.01	0.0015
2,6-Dinitrotoluene	ND	0.1	0.02
3-Nitroaniline	ND	0.1	0.033
Acenaphthene	ND	0.01	0.0016
2,4-Dinitrophenol	ND	0.5	0.03
4-Nitrophenol	ND	0.5	0.029
Dibenzofuran	ND	0.1	0.014
2,4-Dinitrotoluene	ND	0.1	0.013
Diethylphthalate	ND	0.1	0.058
4-Chlorophenylphenylether	ND	0.1	0.015
Fluorene	ND	0.01	0.0014
4-Nitroaniline	ND	0.1	0.021
4,6-Dinitro-2-methylphenol	ND	0.5	0.022
N-Nitrosodiphenylamine	ND	0.1	0.01
4-Bromophenylphenylether	ND	0.1	0.012
Hexachlorobenzene	ND	0.1	0.02
Pentachlorophenol	ND	0.1	0.017
Phenanthrene	ND	0.01	0.0022
Anthracene	ND	0.01	0.0015
Di-n-butylphthalate	ND	0.5	0.231
Fluoranthene	ND	0.01	0.0019
Pyrene	ND	0.01	0.0014
Butylbenzylphthalate	ND	0.5	0.187
3,3'-Dichlorobenzidine	ND	0.1	0.036
Benzo(a)anthracene	ND	0.01	0.0044
Chrysene	ND	0.01	0.0025
bis(2-Ethylhexyl)phthalate	ND	0.1	0.065
Di-n-octylphthalate	ND	0.1	0.034
Benzofluoranthenes	ND	0.02	0.0038
Benzo(a)pyrene	ND	0.01	0.0047
Indeno(1,2,3-cd)pyrene	ND	0.01	0.003
Dibenz(a,h)anthracene	ND	0.01	0.0027
Benzo(g,h,i)perylene	ND	0.01	0.0034
Carbazole	ND	0.01	0.0028
N-nitrosodimethylamine	ND	0.5	0.033
Aniline	ND	0.1	0.028
Tetrachlorophenols	ND	0.1	0.05

STL Seattle

Lab ID:	Method Blank - SS0608
Date Received:	-
Date Prepared:	8/27/02
Date Analyzed:	9/3/02
% Solids	
Dilution Factor	2

Semivolatile Organics by USEPA Method 8270

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2 - Fluorophenol	92.8		37	160
Phenol - d5	85.2		43	157
Nitrobenzene - d5	102		42	154
2 - Fluorobiphenyl	77		51	142
2,4,6 - Tribromophenol	83.9		36	159
p - Terphenyl - d14	89.7		44	144

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Phenol	ND	13.3	2.67	
bis(2-Chloroethyl)ether	ND	13.3	2.55	
2-Chlorophenol	ND	13.3	2	
1,3-Dichlorobenzene	ND	13.3	1.87	
1,4-Dichlorobenzene	ND	13.3	2.13	
Benzyl Alcohol	ND	13.3	2.8	
1,2-Dichlorobenzene	ND	13.3	1.37	
2-Methylphenol	ND	13.3	1.6	
bis(2-Chloroisopropyl)ether	ND	13.3	3.47	
3-&4-Methylphenol	ND	26.7	1.97	
N-nitroso-di-n-propylamine	ND	13.3	1.47	
Hexachloroethane	ND	13.3	2.53	
Nitrobenzene	ND	13.3	1.83	
Isophorone	ND	13.3	1.87	
2-Nitrophenol	ND	13.3	1.87	
2,4-Dimethylphenol	ND	13.3	1.47	
Benzoic Acid	ND	66.7	4.53	
bis(2-Chloroethoxy)methane	ND	13.3	1.6	
2,4-Dichlorophenol	ND	13.3	1.47	
1,2,4-Trichlorobenzene	ND	13.3	1.11	
Naphthalene	ND	1.33	0.624	
4-Chloroaniline	ND	13.3	1.24	
Hexachlorobutadiene	ND	13.3	1.2	
4-Chloro-3-methylphenol	ND	13.3	1.47	
2-Methylnaphthalene	ND	1.33	0.208	
Hexachlorocyclopentadiene	ND	13.3	1.88	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for SS0608 continued...

Analyte	Result (ug/kg)	PQL	MDL
2,4,6-Trichlorophenol	ND	33.3	1.77
2,4,5-Trichlorophenol	ND	13.3	2.4
2-Chloronaphthalene	ND	1.33	0.4
2-Nitroaniline	ND	13.3	1.73
Dimethylphthalate	ND	13.3	1.47
Acenaphthylene	ND	1.33	0.581
2,6-Dinitrotoluene	ND	13.3	2.4
3-Nitroaniline	ND	13.3	2.27
Acenaphthene	ND	1.33	0.66
2,4-Dinitrophenol	ND	66.7	3.2
4-Nitrophenol	ND	66.7	2.53
Dibenzofuran	ND	13.3	1.55
2,4-Dinitrotoluene	ND	13.3	1.73
Diethylphthalate	ND	13.3	2.27
4-Chlorophenylphenylether	ND	13.3	2.24
Fluorene	ND	1.33	0.623
4-Nitroaniline	ND	13.3	2.27
4,6-Dinitro-2-methylphenol	ND	66.7	4.93
N-Nitrosodiphenylamine	ND	13.3	1.07
4-Bromophenylphenylether	ND	13.3	1.77
Hexachlorobenzene	ND	13.3	1.47
Pentachlorophenol	ND	13.3	2.8
Phenanthrene	ND	1.33	0.284
Anthracene	ND	1.33	0.336
Di-n-butylphthalate	ND	33.3	11.6
Fluoranthene	ND	1.33	0.623
Pyrene	ND	1.33	0.44
Butylbenzylphthalate	ND	13.3	2.53
3,3'-Dichlorobenzidine	ND	13.3	1.47
Benzo(a)anthracene	ND	2.67	0.813
Chrysene	ND	2.67	0.783
bis(2-Ethylhexyl)phthalate	ND	13.3	5.47
Di-n-octylphthalate	ND	13.3	3.47
Benzofluoranthenes	ND	2.67	0.587
Benzo(a)pyrene	ND	1.33	0.783
Indeno(1,2,3-cd)pyrene	ND	1.33	0.311
Dibenz(a,h)anthracene	ND	1.33	0.311
Benzo(g,h,i)perylene	ND	1.33	0.22
Carbazole	ND	13.3	5.2
N-nitrosodimethylamine	ND	66.7	1.47
Aniline	ND	13.3	0
Tetrachlorophenols	ND	13.3	2.52

STL Seattle

Blank Spike Report

Lab ID:	SS0608
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
QC Batch ID:	SS0608

Semivolatile Organics by USEPA Method 8270

Compound Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Phenol	0	100	84.3	84.3	
2-Chlorophenol	0	100	86.5	86.5	
1,4-Dichlorobenzene	0	66.7	48.7	73.1	
N-nitroso-di-n-propylamine	0	66.7	56	83.9	
1,2,4-Trichlorobenzene	0	66.7	53.5	80.3	
4-Chloro-3-methylphenol	0	100	85.2	85.2	
Acenaphthene	0	66.7	54.4	81.6	
4-Nitrophenol	0	100	50.9	50.9	
2,4-Dinitrotoluene	0	66.7	66.7	100	
Pentachlorophenol	0	100	33.2	33.2	
Pyrene	0	66.7	58.8	88.3	

STL Seattle

Client Name	CH2M Hill
Client ID:	
Lab ID:	SSS0608
Date Received:	-
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
% Solids	
Dilution Factor	2

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	72.8		37	160
Phenol - d5	74.8		43	157
Nitrobenzene - d5	76.7		42	154
2 - Fluorobiphenyl	65.7		51	142
2,4,6 - Tribromophenol	71.7		36	159
p - Terphenyl - d14	77.4		44	144

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	84.3	13.3	2.67	
2-Chlorophenol	86.5	13.3	2	
1,4-Dichlorobenzene	48.7	13.3	2.13	
N-nitroso-di-n-propylamine	56	13.3	1.47	
1,2,4-Trichlorobenzene	53.5	13.3	1.11	
4-Chloro-3-methylphenol	85.2	13.3	1.47	
Acenaphthene	54.4	1.33	0.66	
4-Nitrophenol	50.9	66.7	2.53	J
2,4-Dinitrotoluene	66.7	13.3	1.73	
Pentachlorophenol	33.2	13.3	2.8	
Pyrene	58.8	1.33	0.44	

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	SW0431
Date Prepared:	8/28/2002
Date Analyzed:	8/28/2002
QC Batch ID:	SW0431

Semivolatile Organics by USEPA Method 8270

Compound Name	Blank Result (ug/L)	Spike Amount (ug/L)	BS Result (ug/L)	BS % Rec.	BSD Result (ug/L)	BSD % Rec.	RPD	Flag
Phenol	0	1.5	0.346	23	0.247	16.5	-33	
2-Chlorophenol	0	1.5	1.23	81.8	1.09	73	-11	
1,4-Dichlorobenzene	0	1	0.694	69.4	0.597	59.7	-15	
N-nitroso-di-n-propylamine	0	1	0.885	88.5	0.819	81.9	-7.7	
1,2,4-Trichlorobenzene	0	1	0.747	74.7	0.633	63.3	-17	
4-Chloro-3-methylphenol	0	1.5	1.19	79.5	1	67	-17	
Acenaphthene	0	1	0.904	90.4	0.712	71.2	-24	
4-Nitrophenol	0	1.5	0.315	21	0.219	14.6	-36	
2,4-Dinitrotoluene	0	1	0.741	74.1	0.579	57.9	-25	
Pentachlorophenol	0	1.5	1.25	83.5	0.944	62.9	-28	
Pyrene	0	1	0.875	87.5	0.699	69.9	-22	

STL Seattle

Client Name	CH2M Hill
Client ID:	
Lab ID:	SSW0431
Date Received:	-
Date Prepared:	8/28/2002
Date Analyzed:	8/28/2002
% Solids	-
Dilution Factor	0.1

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	40		10	117
Phenol - d5	35.5		10	90
Nitrobenzene - d5	64.3		50	145
2 - Fluorobiphenyl	77.8		55	130
2,4,6 - Tribromophenol	75		46	156
p - Terphenyl - d14	95.1		54	139

Analyte	**Result (ug/L)**	**PQL**	**MDL**	**Flags**
Phenol	0.346	0.1	0.032	
2-Chlorophenol	1.23	0.1	0.017	
1,4-Dichlorobenzene	0.694	0.1	0.015	
N-nitroso-di-n-propylamine	0.885	0.1	0.021	
1,2,4-Trichlorobenzene	0.747	0.1	0.016	
4-Chloro-3-methylphenol	1.19	0.1	0.054	
Acenaphthene	0.904	0.01	0.0016	
4-Nitrophenol	0.315	0.5	0.029	J
2,4-Dinitrotoluene	0.741	0.1	0.013	
Pentachlorophenol	1.25	0.1	0.017	
Pyrene	0.875	0.01	0.0014	

STL Seattle

Client Name	CH2M Hill
Client ID:	
Lab ID:	DSW0431
Date Received:	-
Date Prepared:	8/28/2002
Date Analyzed:	8/28/2002
% Solids	-
Dilution Factor	0.1

Semivolatile Organics by USEPA Method 8270

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
2 - Fluorophenol	31.4		10	117
Phenol - d5	28.3		10	90
Nitrobenzene - d5	51.1		50	145
2 - Fluorobiphenyl	51.6	N	55	130
2,4,6 - Tribromophenol	50.4		46	156
p - Terphenyl - d14	66.9		54	139

Analyte	Result (ug/L)	PQL	MDL	Flags
Phenol	0.247	0.1	0.032	
2-Chlorophenol	1.09	0.1	0.017	
1,4-Dichlorobenzene	0.597	0.1	0.015	
N-nitroso-di-n-propylamine	0.819	0.1	0.021	
1,2,4-Trichlorobenzene	0.633	0.1	0.016	
4-Chloro-3-methylphenol	1	0.1	0.054	
Acenaphthene	0.712	0.01	0.0016	
4-Nitrophenol	0.219	0.5	0.029	J
2,4-Dinitrotoluene	0.579	0.1	0.013	
Pentachlorophenol	0.944	0.1	0.017	
Pyrene	0.699	0.01	0.0014	

STL Seattle

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
QC Batch ID:	SS0608

Semivolatile Organics by USEPA Method 8270

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Phenol	0	126	159	126	129	101	-22	
2-Chlorophenol	0	126	134	107	127	99.6	-7.2	
1,4-Dichlorobenzene	0	83.8	57.5	68.6	54.5	64	-6.9	
N-nitroso-di-n-propylamine	0	83.8	146	174	102	120	-37	X7
1,2,4-Trichlorobenzene	0	83.8	73.6	87.8	73.2	86	-2.1	
4-Chloro-3-methylphenol	68	126	240	137	178	86	-46	
Acenaphthene	14	83.8	127	135	99.4	101	-29	X7
4-Nitrophenol	0	126	30.5	24.2	0	0	-200	X7
2,4-Dinitrotoluene	0	83.8	144	171	129	152	-12	X7
Pentachlorophenol	0	126	148	117	139	109	-7.1	
Pyrene	150	83.8	306	192	199	62.8	-100	X7a

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808
Lab ID:	108164-03
Date Received:	8/23/2002
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
% Solids	77.77
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	54		37	160
Phenol - d5	65		43	157
Nitrobenzene - d5	61.5		42	154
2 - Fluorobiphenyl	60		51	142
2,4,6 - Tribromophenol	90.7		36	159
p - Terphenyl - d14	128		44	144

Sample results are on a dry weight basis.

Analyte		**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	ND		168	33.7	
bis(2-Chloroethyl)ether	ND		168	32.2	
2-Chlorophenol	ND		168	25.3	
1,3-Dichlorobenzene	ND		168	23.6	
1,4-Dichlorobenzene	ND		168	26.9	
Benzyl Alcohol	ND		168	35.4	
1,2-Dichlorobenzene	ND		168	17.3	
2-Methylphenol	ND		168	20.2	
bis(2-Chloroisopropyl)ether	ND		168	43.8	
3-&4-Methylphenol	ND		337	24.9	
N-nitroso-di-n-propylamine	ND		168	18.5	
Hexachloroethane	ND		168	32	
Nitrobenzene	ND		168	23.1	
Isophorone	ND		168	23.6	
2-Nitrophenol	ND		168	23.6	
2,4-Dimethylphenol	ND		168	18.5	
Benzoic Acid	ND		842	57.3	
bis(2-Chloroethoxy)methane	ND		168	20.2	
2,4-Dichlorophenol	ND		168	18.5	
1,2,4-Trichlorobenzene	ND		168	14	
Naphthalene	ND		16.8	7.88	
4-Chloroaniline	ND		168	15.7	
Hexachlorobutadiene	ND		168	15.2	
4-Chloro-3-methylphenol		68	168	18.5	J
2-Methylnaphthalene		12.4	16.8	2.63	J
Hexachlorocyclopentadiene	ND		168	23.7	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 108164-03 continued...

Analyte	Result (ug/kg)	PQL	MDL	
2,4,6-Trichlorophenol	ND	421	22.4	
2,4,5-Trichlorophenol	ND	168	30.3	
2-Chloronaphthalene	ND	16.8	5.05	
2-Nitroaniline	ND	168	21.9	
Dimethylphthalate	ND	168	18.5	
Acenaphthylene	12.3	16.8	7.34	J
2,6-Dinitrotoluene	ND	168	30.3	
3-Nitroaniline	ND	168	28.6	
Acenaphthene	13.5	16.8	8.34	J
2,4-Dinitrophenol	ND	842	40.4	
4-Nitrophenol	ND	842	32	
Dibenzofuran	ND	168	19.5	
2,4-Dinitrotoluene	ND	168	21.9	
Diethylphthalate	ND	168	28.6	
4-Chlorophenylphenylether	ND	168	28.3	
Fluorene	ND	16.8	7.87	
4-Nitroaniline	ND	168	28.6	
4,6-Dinitro-2-methylphenol	ND	842	62.3	
N-Nitrosodiphenylamine	ND	168	13.5	
4-Bromophenylphenylether	ND	168	22.4	
Hexachlorobenzene	ND	168	18.5	
Pentachlorophenol	ND	168	35.4	
Phenanthrene	59.2	16.8	3.59	
Anthracene	14.3	16.8	4.24	J
Di-n-butylphthalate	ND	421	147	
Fluoranthene	143	16.8	7.87	
Pyrene	145	16.8	5.56	
Butylbenzylphthalate	ND	168	32	
3,3'-Dichlorobenzidine	ND	168	18.5	
Benzo(a)anthracene	69.4	33.7	10.3	
Chrysene	ND	33.7	9.89	
bis(2-Ethylhexyl)phthalate	399	168	69.1	
Di-n-octylphthalate	ND	168	43.8	
Benzofluoranthenes	116	33.7	7.41	
Benzo(a)pyrene	ND	16.8	9.89	
Indeno(1,2,3-cd)pyrene	ND	16.8	3.92	
Dibenz(a,h)anthracene	ND	16.8	3.92	
Benzo(g,h,i)perylene	ND	16.8	2.78	
Carbazole	ND	842	65.7	
N-nitrosodimethylamine	ND	842	18.5	
Aniline	ND	168	0	
2,3,4,6-Tetrachlorophenol	ND	168	84.2	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - ms
Lab ID:	108164S03
Date Received:	8/23/2002
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
% Solids	77.77
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	97.6		37	160
Phenol - d5	123		43	157
Nitrobenzene - d5	83.7		42	154
2 - Fluorobiphenyl	95.9		51	142
2,4,6 - Tribromophenol	118		36	159
p - Terphenyl - d14	113		44	144

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	159	168	33.5	J
2-Chlorophenol	134	168	25.2	J
1,4-Dichlorobenzene	57.5	168	26.8	J
N-nitroso-di-n-propylamine	146	168	18.4	J
1,2,4-Trichlorobenzene	73.6	168	13.9	J
4-Chloro-3-methylphenol	240	168	18.4	
Acenaphthene	127	16.8	8.3	
4-Nitrophenol	ND	838	31.9	
2,4-Dinitrotoluene	144	168	21.8	J
Pentachlorophenol	148	168	35.2	J
Pyrene	306	16.8	5.53	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - msd
Lab ID:	108164D03
Date Received:	8/23/2002
Date Prepared:	8/27/2002
Date Analyzed:	9/3/2002
% Solids	77.77
Dilution Factor	20

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	89.9		37	160
Phenol - d5	100		43	157
Nitrobenzene - d5	71.6		42	154
2 - Fluorobiphenyl	74.8		51	142
2,4,6 - Tribromophenol	92.4		36	159
p - Terphenyl - d14	120		44	144

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Phenol	129	170	34.1	J
2-Chlorophenol	127	170	25.5	J
1,4-Dichlorobenzene	54.5	170	27.2	J
N-nitroso-di-n-propylamine	102	170	18.7	J
1,2,4-Trichlorobenzene	73.2	170	14.1	J
4-Chloro-3-methylphenol	178	170	18.7	
Acenaphthene	99.4	17	8.43	
4-Nitrophenol	ND	851	32.3	
2,4-Dinitrotoluene	129	170	22.1	J
Pentachlorophenol	139	170	35.8	J
Pyrene	199	17	5.62	

STL Seattle

Lab ID:	Method Blank - HW0171
Date Received:	-
Date Prepared:	8/27/02
Date Analyzed:	8/28/02
% Solids	-
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2,4-Dichlorophenylacetic acid	68.5		50	127

Analyte	Result (ug/L)	PQL	MDL	Flags
Dalapon	ND	0.16	0.0474	
4-Nitrophenol	ND	0.12	0.0373	
Dicamba	ND	0.12	0.039	
Dichloroprop	ND	0.08	0.0161	
2,4-D	ND	0.12	0.0377	
Pentachlorophenol	ND	0.08	0.0233	
Silvex (2,4,5-TP)	ND	0.08	0.0161	
2,4,5-T	ND	0.16	0.0479	
Dinoseb	ND	0.16	0.0463	
2,4-DB	ND	0.12	0.0434	
MCPP	ND	0.08	0.0296	
MCPA	ND	0.08	0.0221	

STL Seattle

Lab ID:	Method Blank - HS0176
Date Received:	-
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
% Solids	
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2,4-Dichlorophenylacetic acid	60.4		48	128

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dalapon	ND	0.5	0.112	
4-Nitrophenol	ND	0.5	0.112	
Dicamba	ND	0.5	0.115	
MCPP	ND	0.5	0.0979	
MCPA	ND	0.5	0.22	
Dichloroprop	ND	0.5	0.185	
2,4-D	ND	0.5	0.195	
Pentachlorophenol	ND	0.5	0.144	
Silvex (2,4,5-TP)	ND	0.75	0.187	
2,4,5-T	ND	0.75	0.229	
Dinoseb	ND	0.5	0.161	
2,4-DB	ND	0.5	0.14	

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	HW0171
Date Prepared:	8/27/02
Date Analyzed:	8/28/02
QC Batch ID:	HW0171

Chlorinated Herbicides by USEPA Method 8151GC/MS Modified

Compound Name	Blank Result (ug/L)	Spike Amount (ug/L)	BS Result (ug/L)	BS % Rec.	BSD Result (ug/L)	BSD % Rec.	RPD	Flag
Dalapon	0	8	3.95	49.4	3.81	47.6	-3.7	
Dicamba	0	8	4.55	56.9	4.78	59.8	5	
Pentachlorophenol	0	8	7.18	89.8	6.98	87.3	-2.8	
Silvex (2,4,5-TP)	0	8	6.54	81.7	6.14	76.8	-6.2	
Dinoseb	0	8	7.06	88.3	6.69	83.6	-5.5	
MCPP	0	8	6.75	84.4	6.67	83.4	-1.2	

STL Seattle

Client Name	0
Client ID:	
Lab ID:	SHW0171
Date Received:	-
Date Prepared:	8/27/02
Date Analyzed:	8/28/02
% Solids	-
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2,4-Dichlorophenylacetic acid	67.9		50	127

Analyte	Result (ug/L)	PQL	MDL	Flags
Dalapon	3.95	0.16	0.0474	
Dicamba	4.55	0.12	0.039	
Pentachlorophenol	7.18	0.08	0.0233	
Silvex (2,4,5-TP)	6.54	0.08	0.0161	
Dinoseb	7.06	0.16	0.0463	
MCPP	6.75	0.08	0.0296	

STL Seattle

Client Name	0
Client ID:	
Lab ID:	DHW0171
Date Received:	-
Date Prepared:	8/27/02
Date Analyzed:	8/28/02
% Solids	-
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151GC/MS Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2,4-Dichlorophenylacetic acid	70.1		50	127

Analyte	**Result (ug/L)**	**PQL**	**MDL**	**Flags**
Dalapon	3.81	0.16	0.0474	
Dicamba	4.78	0.12	0.039	
Pentachlorophenol	6.98	0.08	0.0233	
Silvex (2,4,5-TP)	6.14	0.08	0.0161	
Dinoseb	6.69	0.16	0.0463	
MCPP	6.67	0.08	0.0296	

STL Seattle

Blank Spike Report

Lab ID:	HS0176
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
QC Batch ID:	HS0176

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Compound Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	Flag
Dalapon	0	50	20.6	41.1	
Dicamba	0	50	29	57.9	
MCPP	0	50	43.3	86.5	
2,4-D	0	50	32.3	64.6	
Silvex (2,4,5-TP)	0	50	38.3	76.6	
Dinoseb	0	50	32.5	65	

STL Seattle

Client Name	0
Client ID:	
Lab ID:	SHS0176
Date Received:	-
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
% Solids	
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2,4-Dichlorophenylacetic acid	67.3		48	128

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Dalapon	20.6	0.5	0.112	
Dicamba	29	0.5	0.115	
MCPP	43.3	0.5	0.0979	
2,4-D	32.3	0.5	0.195	
Silvex (2,4,5-TP)	38.3	0.75	0.187	
Dinoseb	32.5	0.5	0.161	

STL Seattle

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
QC Batch ID:	HS0176

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Dalapon	0	60.9	8.59	14.1	9.67	15.6	10	X7
Dicamba	0	60.9	51.1	83.8	52.6	84.9	1.3	
MCPP	0	60.9	59.3	97.3	59.4	95.8	-1.6	
2,4-D	0	60.9	58.4	95.9	62.1	100	4.2	
Silvex (2,4,5-TP)	0	60.9	50.3	82.6	47.8	77.2	-6.8	
Dinoseb	0	60.9	50.8	83.3	54.5	88	5.5	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - ms
Lab ID:	108164S03
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
% Solids	77.77
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2,4-Dichlorophenylacetic acid	92.7		48	128

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Dalapon	8.59	0.609	0.137	
Dicamba	51.1	0.609	0.14	
MCPP	59.3	0.609	0.119	
2,4-D	58.4	0.609	0.237	
Silvex (2,4,5-TP)	50.3	0.914	0.228	
Dinoseb	50.8	0.609	0.196	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - msd
Lab ID:	108164D03
Date Received:	8/23/02
Date Prepared:	8/28/02
Date Analyzed:	8/29/02
% Solids	77.77
Dilution Factor	1

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
2,4-Dichlorophenylacetic acid	93.1		48	128

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Dalapon	9.67	0.62	0.139	
Dicamba	52.6	0.62	0.142	
MCPP	59.4	0.62	0.121	
2,4-D	62.1	0.62	0.241	
Silvex (2,4,5-TP)	47.8	0.93	0.232	
Dinoseb	54.5	0.62	0.199	

STL Seattle

Lab ID:	Method Blank - PW0112
Date Received:	-
Date Prepared:	8/27/2002
Date Analyzed:	8/29/2002
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081A

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Tetrachloro-m-xylene	56.8		53	127
Decachlorobiphenyl	69.3		57	121

Analyte	Result (ug/L)	PQL	MDL	Flags
Aldrin	ND	0.008	0.000916	
alpha-BHC	ND	0.008	0.00294	
beta-BHC	ND	0.008	0.00342	
delta-BHC	ND	0.008	0.00188	
gamma-BHC (Lindane)	ND	0.008	0.00576	
Chlordane (technical)	ND	0.08	0.0256	
4,4'-DDD	ND	0.016	0.00377	
4,4'-DDE	ND	0.016	0.00312	
4,4'-DDT	ND	0.016	0.004	
Dieldrin	ND	0.016	0.00241	
Endosulfan I	ND	0.008	0.00399	
Endosulfan II	ND	0.016	0.00303	
Endosulfan sulfate	ND	0.016	0.0043	
Endrin	ND	0.016	0.00248	
Endrin aldehyde	ND	0.016	0.00779	
Heptachlor	ND	0.008	0.00603	
Heptachlor epoxide	ND	0.008	0.00299	
Methoxychlor	ND	0.08	0.0043	
Endrin ketone	ND	0.016	0.00276	
Toxaphene	ND	0.8	0.0933	
alpha-Chlordane	ND	0.008	0.00282	
gamma-Chlordane	ND	0.008	0.00383	
Hexachlorobenzene	ND	0.008	0.008	
Hexachlorobutadiene	ND	0.008	0.008	
Hexachloroethane	ND	0.008	0.008	
Oxychlordane	ND	0.016	0.016	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for PW0112 continued...

Analyte	Result (ug/L)	PQL	MDL	Flags
cis-Nonachlor	ND	0.016	0.016	
trans-Nonachlor	ND	0.016	0.016	
2,4'-DDE	ND	0.016	0.016	
2,4'-DDD	ND	0.016	0.016	
2,4'-DDT	ND	0.016	0.016	

STL Seattle

Lab ID:	Method Blank - PE1511
Date Received:	-
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081A

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Tetrachloro-m-xylene	111		54	129
Decachlorobiphenyl	128		54	140

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	ND	1	0.431	
alpha-BHC	ND	1	0.311	
beta-BHC	ND	1	0.423	
delta-BHC	ND	1	0.384	
gamma-BHC (Lindane)	ND	1	0.382	
Chlordane (technical)	ND	10	1.41	
4,4'-DDD	ND	2	0.194	
4,4'-DDE	ND	2	0.23	
4,4'-DDT	ND	2	0.259	
Dieldrin	ND	2	0.328	
Endosulfan I	ND	1	0.426	
Endosulfan II	ND	2	0.386	
Endosulfan sulfate	ND	2	0.364	
Endrin	ND	2	0.361	
Endrin aldehyde	ND	2	0.408	
Heptachlor	ND	1	0.344	
Heptachlor epoxide	ND	1	0.365	
Methoxychlor	ND	10	1.38	
Endrin ketone	ND	2	0.281	
Toxaphene	ND	100	6.27	
alpha-Chlordane	ND	1	0.398	
gamma-Chlordane	ND	1	0.406	
Hexachlorobenzene	ND	1	1	
Hexachlorobutadiene	ND	1	1	
Hexachloroethane	ND	1	1	
Oxychlordane	ND	2	2	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for PE1511 continued...

Analyte	Result (ug/kg)	PQL	MDL	Flags
cis-Nonachlor	ND	2	2	
trans-Nonachlor	ND	2	2	
2,4'-DDE	ND	2	2	
2,4'-DDD	ND	2	2	
2,4'-DDT	ND	2	2	

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	PW0112
Date Prepared:	8/27/2002
Date Analyzed:	8/29/2002
QC Batch ID:	PW0112

Organochlorine Pesticides by USEPA Method 8081A

Compound Name	Blank Result (ug/L)	Spike Amount (ug/L)	BS Result (ug/L)	BS % Rec.	BSD Result (ug/L)	BSD % Rec.	RPD	Flag
Aldrin	0	0.2	0.145	72.5	0.146	72.8	0.41	
gamma-BHC (Lindane)	0	0.2	0.156	78.1	0.146	73.2	-6.5	
4,4'-DDT	0	0.4	0.329	82.2	0.32	80	-2.7	
Dieldrin	0	0.4	0.366	91.5	0.355	88.7	-3.1	
Endrin	0	0.4	0.41	102	0.4	100	-2	
Heptachlor	0	0.2	0.159	79.4	0.158	79	-0.51	

STL Seattle

Client Name	0
Client ID:	
Lab ID:	SPW0112
Date Received:	-
Date Prepared:	8/27/2002
Date Analyzed:	8/29/2002
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081A

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Tetrachloro-m-xylene	71		53	127
Decachlorobiphenyl	87.9		57	121

Analyte	Result (ug/L)	PQL	MDL	Flags
Aldrin	0.145	0.008	0.000916	C1
gamma-BHC (Lindane)	0.156	0.008	0.00576	C1
4,4'-DDT	0.329	0.016	0.004	C1
Dieldrin	0.366	0.016	0.00241	C1
Endrin	0.41	0.016	0.00248	C1
Heptachlor	0.159	0.008	0.00603	C1

STL Seattle

Client Name	0
Client ID:	
Lab ID:	DPW0112
Date Received:	-
Date Prepared:	8/27/2002
Date Analyzed:	8/29/2002
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	73.4		53	127
Decachlorobiphenyl	86.3		57	121

Analyte	**Result (ug/L)**	**PQL**	**MDL**	**Flags**
Aldrin	0.146	0.008	0.000916	C1
gamma-BHC (Lindane)	0.146	0.008	0.00576	C1
4,4'-DDT	0.32	0.016	0.004	C1
Dieldrin	0.355	0.016	0.00241	C1
Endrin	0.4	0.016	0.00248	C1
Heptachlor	0.158	0.008	0.00603	C1

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	PE1511
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
QC Batch ID:	PE1511

Organochlorine Pesticides by USEPA Method 8081A

Compound Name	Blank Result (ug/kg)	Spike Amount (ug/kg)	BS Result (ug/kg)	BS % Rec.	BSD Result (ug/kg)	BSD % Rec.	RPD	Flag
Aldrin	0	25	21.3	85	21.5	86.1	1.3	
gamma-BHC (Lindane)	0	25	21.2	84.9	21.9	87.5	3	
4,4'-DDT	0	50	42.5	84.9	43.2	86.3	1.6	
Dieldrin	0	50	48.2	96.5	49.1	98.1	1.6	
Endrin	0	50	45.2	90.4	46.1	92.1	1.9	
Heptachlor	0	25	22.4	89.4	22.8	91.2	2	

STL Seattle

Client Name	0
Client ID:	
Lab ID:	SPE1511
Date Received:	-
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	114		54	129
Decachlorobiphenyl	130		54	140

Sample results are on an as received basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	21.3	1	0.431	C1
gamma-BHC (Lindane)	21.2	1	0.382	C1
4,4'-DDT	42.5	2	0.259	C1
Dieldrin	48.2	2	0.328	C1
Endrin	45.2	2	0.361	C1
Heptachlor	22.4	1	0.344	C1

STL Seattle

Client Name	0
Client ID:	
Lab ID:	DPE1511
Date Received:	-
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	
Dilution Factor	1

Organochlorine Pesticides by USEPA Method 8081A

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Tetrachloro-m-xylene	113		54	129
Decachlorobiphenyl	131		54	140

Sample results are on an as received basis.

Analyte	Result (ug/kg)	PQL	MDL	Flags
Aldrin	21.5	1	0.431	C1
gamma-BHC (Lindane)	21.9	1	0.382	C1
4,4'-DDT	43.2	2	0.259	C1
Dieldrin	49.1	2	0.328	C1
Endrin	46.1	2	0.361	C1
Heptachlor	22.8	1	0.344	C1

STL Seattle

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
QC Batch ID:	PE1511

Organochlorine Pesticides by USEPA Method 8081A

Compound Name	Sample Result (ug/kg)	Spike Amount (ug/kg)	MS Result (ug/kg)	MS % Rec.	MSD Result (ug/kg)	MSD % Rec.	RPD	Flag
Aldrin	5	31.5	23.5	58.6	21.7	62.1	5.8	X7
gamma-BHC (Lindane)	0	31.5	20.2	64.2	17.4	64.7	0.78	
4,4'-DDT	0	63	52.5	83.3	41.1	76.5	-8.5	
Dieldrin	0	63	57.8	91.8	49.7	92.6	0.87	
Endrin	0	63	56.9	90.3	47.7	88.9	-1.6	
Heptachlor	0	31.5	27.9	88.6	23.9	89.2	0.67	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808
Lab ID:	108164-03
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	77.77
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	103		54	129
Decachlorobiphenyl	115		54	140

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	5.03	2.35	1.02	C2
alpha-BHC	ND	2.35	0.731	
beta-BHC	1.44	2.35	0.996	J C2
delta-BHC	ND	2.35	0.903	
gamma-BHC (Lindane)	ND	2.35	0.899	
Chlordane (technical)	ND	23.5	3.31	
4,4'-DDD	10.6	4.71	0.458	C1
4,4'-DDE	27.9	4.71	0.542	C1
4,4'-DDT	ND	4.71	0.61	
Dieldrin	ND	4.71	0.772	
Endosulfan I	1.38	2.35	1	J C2
Endosulfan II	ND	4.71	0.91	
Endosulfan sulfate	ND	4.71	0.856	
Endrin	ND	4.71	0.849	
Endrin aldehyde	ND	4.71	0.959	
Heptachlor	ND	2.35	0.81	
Heptachlor epoxide	ND	2.35	0.86	
Methoxychlor	ND	23.5	3.24	
Endrin ketone	ND	4.71	0.661	
Toxaphene	ND	235	14.7	
alpha-Chlordane	1.66	2.35	0.935	J C2
gamma-Chlordane	7.23	2.35	0.955	C1
Hexachlorobenzene	ND	2.35	2.35	
Hexachlorobutadiene	ND	2.35	2.35	
Hexachloroethane	ND	2.35	2.35	
Oxychlordane	ND	4.71	4.71	

STL Seattle

Organochlorine Pesticides by USEPA Method 8081A data for 108164-03 continued...

Analyte	Result (ug/kg)	PQL	MDL	Flags
cis-Nonachlor	ND	4.71	4.71	
trans-Nonachlor	9.19	4.71	4.71	C2
2,4'-DDE	ND	4.71	4.71	
2,4'-DDD	ND	4.71	4.71	
2,4'-DDT	ND	4.71	4.71	

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - ms
Lab ID:	108164S03
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	77.77
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	97.7		54	129
Decachlorobiphenyl	140		54	140

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	23.5	2.52	1.09	C1
gamma-BHC (Lindane)	20.2	2.52	0.963	C1
4,4'-DDT	52.5	5.04	0.653	C1
Dieldrin	57.8	5.04	0.826	C1
Endrin	56.9	5.04	0.909	C1
Heptachlor	27.9	2.52	0.867	C2

STL Seattle

Client Name	CH2M Hill
Client ID:	PP011808 - msd
Lab ID:	108164D03
Date Received:	8/23/2002
Date Prepared:	9/3/2002
Date Analyzed:	9/12/2002
% Solids	77.77
Dilution Factor	2

Organochlorine Pesticides by USEPA Method 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	98.7		54	129
Decachlorobiphenyl	135		54	140

Sample results are on a dry weight basis.

Analyte	**Result (ug/kg)**	**PQL**	**MDL**	**Flags**
Aldrin	21.7	2.15	0.926	C1
gamma-BHC (Lindane)	17.4	2.15	0.82	C1
4,4'-DDT	41.1	4.29	0.556	C1
Dieldrin	49.7	4.29	0.704	C1
Endrin	47.7	4.29	0.774	C1
Heptachlor	23.9	2.15	0.739	C1

STL Seattle

Lab ID:	Method Blank - TP880
Date Received:	-
Date Prepared:	8/29/02
Date Analyzed:	8/29/02
Dilution Factor	1

Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	PQL	MDL	Flags
Arsenic	ND	0.0015	0.0015	
Aluminum	0.00698	0.01	0.002	J
Antimony	0.00003	0.003	0.0000224	J
Cadmium	ND	0.0005	0.0000071	
Chromium	0.00085	0.001	0.0000354	J
Copper	0.000039	0.001	0.0000144	J
Lead	0.000018	0.0005	0.0000045	J
Nickel	ND	0.001	0.0000283	
Selenium	ND	0.003	0.000385	
Silver	ND	0.01	0.01	
Zinc	0.0015	0.003	0.0000327	J

STL Seattle

Lab ID:	Method Blank - SP883
Date Received:	-
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Sample results are on an as received basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Aluminum	ND	20	1.8	

STL Seattle

Lab ID:	Method Blank - SP883
Date Received:	-
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
Dilution Factor	1

Metals by ICP-MS - USEPA Method 6020

Sample results are on an as received basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Arsenic	ND	0.2	0.0217	
Antimony	ND	0.6	0.00448	
Cadmium	ND	0.1	0.00142	
Chromium	ND	0.2	0.00708	
Copper	0.011	0.2	0.00288	J
Lead	0.0064	0.1	0.0009	J
Nickel	0.0072	0.2	0.00566	J
Selenium	ND	0.6	0.0769	
Silver	ND	0.1	0.0012	
Zinc	0.365	0.6	0.00654	J

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	SP883
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP - USEPA Method 6010

Compound Name	Blank Result (mg/kg)	Spike Amount (mg/kg)	BS Result (mg/kg)	BS % Rec.	BSD Result (mg/kg)	BSD % Rec.	RPD	Flag
Aluminum	0	800	693	86.6	764	95.5	9.8	

STL Seattle

Matrix Spike Report

Client Sample ID:	PP0118EB01
Lab ID:	108166-04
Date Prepared:	8/29/02
Date Analyzed:	8/29/02
QC Batch ID:	TP880

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/L)	Spike Amount (mg/L)	MS Result (mg/L)	MS % Rec.	Flag
Arsenic	0	4	4.13	103	
Aluminum	0.018	4	4.3	107	
Antimony	0.00095	3	2.91	97	
Cadmium	0	0.1	0.0998	100	
Chromium	0.0088	0.4	0.434	106	
Copper	0.0024	0.5	0.518	103	
Lead	0.00037	1	1.02	102	
Nickel	0.0075	1	1.03	102	
Selenium	0	4	4.09	102	
Silver	0	0.6	0.619	103	
Zinc	0.0068	1	1.11	110	

STL Seattle

Matrix Spike Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	Flag
Aluminum	5800	902	6430	70	X7a

STL Seattle

Matrix Spike Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	Flag
Arsenic	5.55	902	896	99	
Antimony	1.1	676	623	92	
Cadmium	0.71	22.5	23.7	102	
Chromium	33	90.2	123	100	
Copper	76	113	187	99	
Lead	150	225	342	86	
Nickel	18	225	259	107	
Selenium	0	902	833	92	
Silver	0.17	135	143	105	
Zinc	260	225	505	110	

STL Seattle

Duplicate Report

Client Sample ID:	PP0118EB01
Lab ID:	108166-04
Date Prepared:	8/29/02
Date Analyzed:	8/29/02
QC Batch ID:	TP880

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD %	Flag
Arsenic	0	0	NC	
Aluminum	0.018	0.018	0.0	
Antimony	0.00095	0.00052	59.0	X4a
Cadmium	0	0	NC	
Chromium	0.0088	0.0084	4.7	
Copper	0.0024	0.0024	0.0	
Lead	0.00037	0.00038	-2.7	
Nickel	0.0075	0.0072	4.1	
Selenium	0	0	NC	
Silver	0	0	NC	
Zinc	0.0068	0.0087	-25.0	X4a

STL Seattle

Duplicate Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD %	Flag
Aluminum	5800	6500	-11.0	

STL Seattle

Duplicate Report

Client Sample ID:	PP011808
Lab ID:	108164-03
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD %	Flag
Arsenic	5.6	5.7	-1.8	
Antimony	1.1	1.2	-8.7	
Cadmium	0.71	0.67	5.8	
Chromium	33	34	-3.0	
Copper	76	78	-2.6	
Lead	150	150	0.0	
Nickel	18	19	-5.4	
Selenium	0	0	NC	
Silver	0.17	0.17	0.0	
Zinc	260	270	-3.8	

STL Seattle

Laboratory Control Sample

Lab ID:	RTP880
Date Prepared:	8/29/02
Date Analyzed:	8/29/02
QC Batch ID:	TP880

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/L)	True Value (mg/L)	Lower Limit (mg/L)	Upper Limit (mg/L)	Flag
Arsenic	4.1	4	3.2	4.8	Pass
Aluminum	4	4	3.2	4.8	Pass
Antimony	3	3	2.4	3.6	Pass
Cadmium	0.1	0.1	0.08	0.12	Pass
Chromium	0.43	0.4	0.32	0.48	Pass
Copper	0.51	0.5	0.4	0.6	Pass
Lead	1	1	0.8	1.2	Pass
Nickel	0.99	1	0.8	1.2	Pass
Selenium	4.2	4	3.2	4.8	Pass
Silver	0.6	0.6	0.48	0.72	Pass
Zinc	1.1	1	0.8	1.2	Pass

STL Seattle

Laboratory Control Sample

Lab ID:	RSP883
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/kg)	True Value (mg/kg)	Lower Limit (mg/kg)	Upper Limit (mg/kg)	Flag
Aluminum	4100	7050	2790	11300	Pass

STL Seattle

Laboratory Control Sample

Lab ID:	RSP883
Date Prepared:	8/30/02
Date Analyzed:	8/30/02
QC Batch ID:	SP883

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/kg)	True Value (mg/kg)	Lower Limit (mg/kg)	Upper Limit (mg/kg)	Flag
Arsenic	180	195	155	235	Pass
Antimony	150	138	42.1	234	Pass
Cadmium	66	68.6	55.2	82	Pass
Chromium	84	86.5	63.4	110	Pass
Copper	130	127	92.7	161	Pass
Lead	96	94.5	73	116	Pass
Nickel	86	83.6	65.5	101	Pass
Selenium	110	114	84.4	144	Pass
Silver	160	119	26.1	212	Pass
Zinc	280	265	204	326	Pass

DATA QUALIFIER DEFINITIONS

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Tacoma, WA 98424

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SEVERN TRENT SERVICES

DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).

B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).

C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be $\leq$ 40%.

C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted.

M: GC/MS confirmation was performed. The result derived from the original analysis was reported.

D: The reported result for this analyte was calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

N: See analytical narrative.

ND: Not Detected

PQL: Practical Quantitation Limit

X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be _____ .

X2: Contaminant does not appear to be "typical" product.

X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.

X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.

X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.

X5: Matrix spike recovery was not determined due to the required dilution.

X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was re-analyzed with similar results.

X7: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.

X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.

X8: Surrogate recovery was not determined due to the required dilution.

X9: Surrogate recovery outside advisory QC limits due to matrix interference.

QC ACCEPTANCE LIMITS

STL Seattle - Method QC Limits

Total Metals by ICP - USEPA Method 6010

Record Number : 537
Analysis Method : 6010
Matrix : Sediment
Preparation Method : TOTREC
Expires: 08/01/2002

Blank Spike Recovery

Aluminum	80 - 120%

Duplicate RPD

Aluminum	=<35% RPD

Matrix Spike Recovery

Aluminum	75 - 125%

Metals by ICP-MS - USEPA Method 6020

Record Number : 540
Analysis Method : 6020
Matrix : Sediment
Preparation Method : 3005
Expires: 08/01/2002

Blank Spike Recovery

Antimony	80 - 120%
Arsenic	80 - 120%
Cadmium	80 - 120%
Chromium	80 - 120%
Copper	80 - 120%
Lead	80 - 120%
Nickel	80 - 120%
Selenium	80 - 120%
Silver	80 - 120%
Zinc	80 - 120%

Duplicate RPD

Antimony	=<35% RPD
Arsenic	=<35% RPD
Cadmium	=<35% RPD
Chromium	=<35% RPD
Copper	=<35% RPD
Lead	=<35% RPD
Nickel	=<35% RPD
Selenium	=<35% RPD
Silver	=<35% RPD
Zinc	=<35% RPD

Matrix Spike Recovery

Antimony	75 - 125%
Arsenic	75 - 125%
Cadmium	75 - 125%
Chromium	75 - 125%
Copper	75 - 125%
Lead	75 - 125%
Selenium	75 - 125%
Silver	75 - 125%
Zinc	75 - 125%

Organochlorine Pesticides by USEPA Method 8081A

Record Number : 566
Analysis Method : 8081A
Matrix : Soil
Preparation Method : 3550C
Expires: 08/01/2002

Blank Spike Recovery

4,4'-DDT	67 - 122%	=<10% RPD
Aldrin	63 - 112%	=<8% RPD
Dieldrin	77 - 119%	=<10% RPD
Endrin	75 - 128%	=<11% RPD
gamma-BHC (Lindane)	60 - 115%	=<8% RPD
Heptachlor	65 - 120%	=<8% RPD

Matrix Spike Recovery

4,4'-DDT	67 - 122%	=<10% RPD
Aldrin	63 - 112%	=<8% RPD
Dieldrin	77 - 119%	=<10% RPD
Endrin	75 - 128%	=<11% RPD
gamma-BHC (Lindane)	60 - 115%	=<8% RPD
Heptachlor	65 - 120%	=<8% RPD

Surrogate Recovery

Decachlorobiphenyl	64 - 130%
TCMX	70 - 122%

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

Record Number : 647
Analysis Method : 8151A
Matrix : Soil
Expires: 02/12/2003

Blank Spike Recovery

2,4-Dichlorophenoxyacetic acid	50 - 119%	=<27% RPD
Dalapon	19 - 57%	=<33% RPD
Dicamba	46 - 121%	=<30% RPD
Dinoseb	38 - 146%	=<40% RPD
MCPP	62 - 129%	=<26% RPD
Pentachlorophenol	53 - 134%	=<20% RPD
Silvex (2,4,5-TP)	59 - 127%	=<23% RPD

Surrogate Recovery

2,4-Dichlorophenylacetic acid	48 - 128%

Semivolatile Organics by USEPA Method 8270C

Record Number : 623
Analysis Method : 8270
Matrix : Soil
Preparation Method : 3550B Modified
Expires: 08/01/2002

Blank Spike Recovery

1,2,4-Trichlorobenzene	53 - 139%
1,4-Dichlorobenzene	48 - 133%
2,4-Dinitrotoluene	45 - 140%
2-Chlorophenol	59 - 123%
4-Chloro-3-methylphenol	47 - 149%
4-Nitrophenol	22 - 160%
Acenaphthene	58 - 127%
N-nitroso-di-n-propylamine	38 - 135%
Pentachlorophenol	D - 136%
Phenol	46 - 127%
Pyrene	54 - 136%

Matrix Spike Recovery

1,2,4-Trichlorobenzene	53 - 139%	=<60% RPD
1,4-Dichlorobenzene	48 - 133%	=<60% RPD
2,4-Dinitrotoluene	45 - 140%	=<60% RPD
2-Chlorophenol	59 - 123%	=<60% RPD
4-Chloro-3-methylphenol	47 - 149%	=<60% RPD
4-Nitrophenol	22 - 160%	=<60% RPD
Acenaphthene	58 - 127%	=<60% RPD
N-nitroso-di-n-propylamine	38 - 135%	=<60% RPD
Pentachlorophenol	D - 136%	=<60% RPD
Phenol	46 - 127%	=<60% RPD
Pyrene	54 - 136%	=<60% RPD

Surrogate Recovery

2 - Fluorobiphenyl	51 - 142%
2 - Fluorophenol	37 - 160%
2,4,6 - Tribromophenol	36 - 159%
Nitrobenzene - d5	42 - 154%
p - Terphenyl - d14	44 - 144%
Phenol - d5	43 - 157%

CHAIN OF CUSTODY

CH2MHILL
Applied Sciences Group

2300 NW Walnut Blvd
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

SUBCONTRACT REQUEST

Laboratory Information:
STL
Attn: Sample Receiving
5755 8th ST E
Tacoma, WA 98427
Phone: (253) 922-2374

Sample Batch Information:
Client: Portland Harbor
Batch Code: 8006
Date Received: 08/22/2002
Contact: Kathy McKinley
Hazardous: No

Billing Information:
Reference Project Number: 163160.AS.OS

Report Information:
Reporting Address: CH2M HILL Applied Sciences Group, 2300 NW Walnut Blvd., Corvallis, OR 97330
Attention: Kathy McKinley **Report Due:** ~~09/03/2002~~ 9/11/02 **QA Level:** ~~3~~ 4 + EDD

Sample Information
Corvallis Laboratory ID: 800601
Client ID: PP011801
Sample Matrix: Other
Sample Collection Date: 08/20/2002
Sample Collection Time: 16:00

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Sample Information
Corvallis Laboratory ID: 800602
Client ID: PP011809
Sample Matrix: Other
Sample Collection Date: 08/21/2002
Sample Collection Time: 15:00

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Relinquished By	Date	Time	Received By	Date	Time
[illegible]	8/22/02	12:30	[illegible]	8/23/02	[illegible]

CH2MHILL
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Fax 541.752.0276

SUBCONTRACT REQUEST

Sample Information

Corvallis Laboratory ID: 800603
Client ID: PP011810

Sample Matrix: Other
Sample Collection Date: 08/21/2002
Sample Collection Time: 16:00

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Sample Information

Corvallis Laboratory ID: 800604EB
Client ID: PP0118EB01

Sample Matrix: Water
Sample Collection Date: 08/21/2002
Sample Collection Time: 13:15

Requested Test	Requested Method	Holding Time Expires	Requested Completion
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002

Relinquished By	Date	Time	Received By	Date	Time
[illegible]	8/22/02	12:30	[illegible]	8/23/02	

CH2MHILL
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Fax 541.752.0276

SUBCONTRACT COST DETAIL

Laboratory Information:
STL
5755 8th ST E
Tacoma, WA 98427
Phone: (253) 922-2374

Sample Batch Information:
Client: Portland Harbor
CH2M HILL Applied Sciences Group Reference: 8006
Invoice: A02-1582
Invoice Date: 08/22/02

Billing Information:
Reference Project Number: 163160.AS.OS

Qty	Description	Trans. Date	Unit Cost	Subtotal
4	ICP-MS (11 metals)-Performed by STL	08/22/2002	$176.40	$705.60
4	Sample Digestion (ICP-MS) Performed by STL	08/22/2002	$9.45	$37.80
4	Pesticides-Performed by STL	08/22/2002	$141.75	$567.00
4	Chlorinated Herbicides-Performed by STL	08/22/2002	$162.75	$651.00
3	Particle Size--Performed by STL	08/22/2002	$115.50	$346.50

TOTAL SUBCONTRACT AMOUNT: **$2,307.90**

please note. This is a replacement to previous.
1) Added SVOC on all 4 samples
2) Have soil already so adding #4 EB water sample
New Chain 8/26/02 2.7°C

CH2MHILL
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Fax 541.752.0276

SUBCONTRACT REQUEST

Laboratory Information:
STL
Attn: Sample Receiving
5755 8th ST E
Tacoma, WA 98427
Phone: (253) 922-2374

Sample Batch Information:
Client: Portland Harbor
Batch Code: 8006
Date Received: 08/22/2002
Contact: Kathy McKinley
Hazardous: No

Billing Information:
Reference Project Number: 163160.AS.OS

Report Information:
Reporting Address: CH2M HILL Applied Sciences Group, 2300 NW Walnut Blvd., Corvallis, OR 97330
Attention: Kathy McKinley **Report Due:** 09/03/2002 **QA Level:** ~~3~~4 + EDD

Sample Information
Corvallis Laboratory ID: 800601
Client ID: PP011801
Sample Matrix: Other
Sample Collection Date: 08/20/2002
Sample Collection Time: 16:00

Requested Test	Requested Method	Holding Time Expires	Requested Completion
~~163160~~SVOCs	SW 8270	08/27/2002	08/27/2002
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Shipped previously

Sample Information
Corvallis Laboratory ID: 800602
Client ID: PP011809
Sample Matrix: Other
Sample Collection Date: 08/21/2002
Sample Collection Time: 15:00

Requested Test	Requested Method	Holding Time Expires	Requested Completion
~~163160~~SVOCs	SW 8270	08/27/2002	08/27/2002
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

Shipped previously

Relinquished By	Date	Time	Received By	Date	Time
Kathy McKinley	8/23/02	1025	[illegible]	~~8/23/02~~ 8/24/02	9am

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Fax 541.752.0276

SUBCONTRACT REQUEST

Sample Information

Corvallis Laboratory ID: 800603
Client ID: PP011810

Sample Matrix: Other
Sample Collection Date: 08/21/2002
Sample Collection Time: 16:00

Requested Test	Requested Method	Holding Time Expires	Requested Completion
~~160160~~SVOCs	SW 8270	08/27/2002	08/27/2002
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002
particle size	ASTM D422-PSEP	09/04/2002	09/03/2002

shipped previously

Sample Information

Corvallis Laboratory ID: 800604EB
Client ID: PP0118EB01

Sample Matrix: Water
Sample Collection Date: 08/21/2002
Sample Collection Time: 13:15

Requested Test	Requested Method	Holding Time Expires	Requested Completion
~~160160~~SVOCs	SW 8270	08/27/2002	08/27/2002
ICP-MS 11 metals	SW 6020	09/04/2002	09/03/2002
ICPMS digestion		09/04/2002	09/03/2002
Pesticides	SW8081A	09/04/2002	09/03/2002
chlor-herbicides	SW8151A	09/04/2002	09/03/2002

shipped previously

This is the only new sample being shipped

Relinquished By	Date	Time	Received By	Date	Time
Kathy McKinley	8/23/02	1025	[illegible]	8/26/02	9 AM

CH2MHILL
Applied Sciences Group

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97339-0428
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Fax 541.752.0276

SUBCONTRACT COST DETAIL

Laboratory Information:
STL
5755 8th ST E
Tacoma, WA 98427
Phone: (253) 922-2374

Sample Batch Information:
Client: Portland Harbor
CH2M HILL Applied Sciences Group Reference: 8006
Invoice: A02-1582
Invoice Date: 08/23/02

Billing Information:
Reference Project Number: 163160.AS.OS

Qty	Description	Trans. Date	Unit Cost	Subtotal
4	SVOCs--Performed by STL	08/22/2002	$315.00	$1,260.00
4	ICP-MS (11 metals)-Performed by STL	08/22/2002	$194.00	$776.00
4	Sample Digestion (ICP-MS) Performed by STL	08/22/2002	$10.40	$41.60
4	Pesticides-Performed by STL	08/22/2002	$156.00	$624.00
4	Chlorinated Herbicides-Performed by STL	08/22/2002	$190.00	$760.00
3	Particle Size--Performed by STL	08/22/2002	$127.00	$381.00

TOTAL SUBCONTRACT AMOUNT: **$3,842.60**

PERCENT SOLIDS DATA

Sample Receiving Login

Full Client Name	**CH2M Hill**
Work Order	**108166**
Date Received	**8/23/02**

Individual Sample Information

SAS Lab ID	Sample No.	Client Sample ID	Date Sampled	**% Solid**	Sample+Tin	Final Wt.	Sample Wt.
108166-1	1	PP011801	8/20/02	71.72	10.687	7.8689	9.9649
108166-2	2	PP011809	8/21/02	78.39	12.3215	9.8164	11.593
108166-3	3	PP011810	8/21/02	52.25	11.0965	6.1432	10.373
108166-4	4	PP0118EB01	8/21/02	not done			

DATA DELIVERABLES

SEMIVOLATILE DATA PACKAGE

SAMPLE DATA

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00467.D Vial: 0
Acq On : 03 Sep 2002 23:50 Operator:
Sample : 108166-1 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 05 08:31:12 2002 Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 07:51:31 2002
Response via : Initial Calibration
DataAcq Meth :

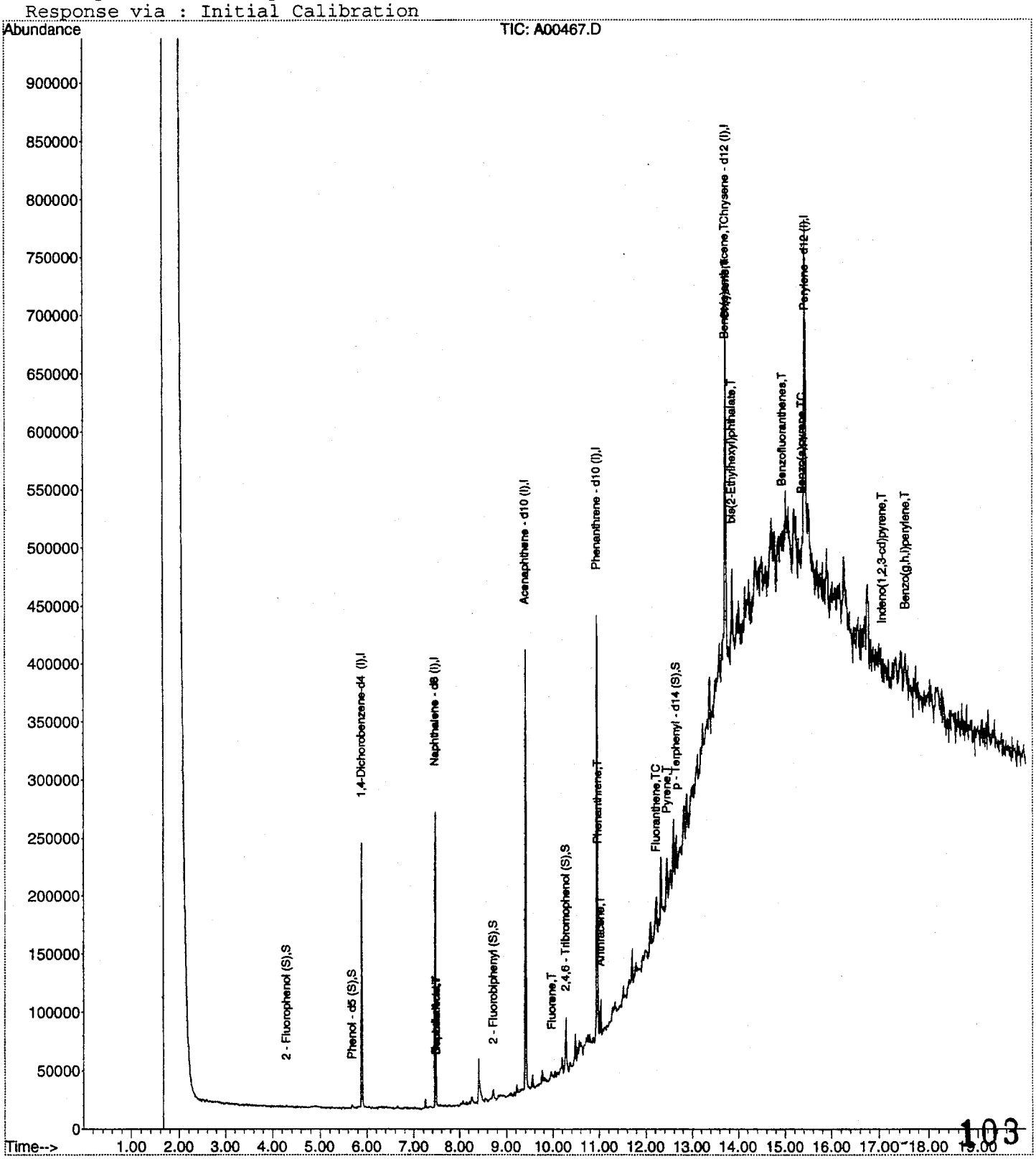
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.89	150	67909	1000.00	ul/l	0.00
22) Naphthalene - d8 (I)	7.46	136	176242	1000.00	ug/L	0.00
38) Acenaphthene - d10 (I)	9.41	162	139186	1000.00	ug/L	0.00
62) Phenanthrene - d10 (I)	10.95	188	247229	1000.00	ug/L	0.00
80) Chrysene - d12 (I)	13.73	240	276138	1000.00	ul/l	0.00
86) Perylene - d12 (I)	15.43	264	288569	1000.00	ug/L	-0.04
System Monitoring Compounds						
4) 2 - Fluorophenol (S)	4.30	112	939	18.61	ug/L	0.02
7) Phenol - d5 (S)	5.69	99	1733	28.64	ug/L	0.01
23) Nitrobenzene - d5 (S)	6.66	82	1357	24.03	ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.72	172	2974	15.67	ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.27	330	2577	46.75	ug/L	0.00
79) p - Terphenyl - d14 (S)	12.65	244	11517	41.58	ug/L	0.00
Target Compounds						Qvalue
29) Benzoic Acid	7.50	105	4455m	152.19	ug/L	
32) Naphthalene	7.49	128	1008m	4.93	ug/L	
59) Fluorene	9.98	166	891	4.98	ug/L	76
71) Phenanthrene	10.98	178	11630	38.95	ug/L	98
72) Anthracene	11.02	178	2523	8.74	ug/L	75
76) Fluoranthene	12.22	202	24977	85.49	ug/L	84
77) Pyrene	12.45	202	20722	70.38	ug/L	86
82) Benzo(a)anthracene	13.71	228	13154	40.41	ug/L	65
84) Chrysene	13.75	228	8780	28.38	ug/L	85
85) bis(2-Ethylhexyl)phthalate	13.87	149	31016	76.21	ug/L	92
88) Benzofluoranthenes	14.95	252	21276m	61.03	ug/L	
89) Benzo(a)pyrene	15.36	252	10502m	32.67	ug/L	
90) Indeno(1,2,3-cd)pyrene	17.07	276	10994m	28.99	ug/L	
92) Benzo(g,h,i)perylene	17.53	276	7677m	23.19	ug/L	

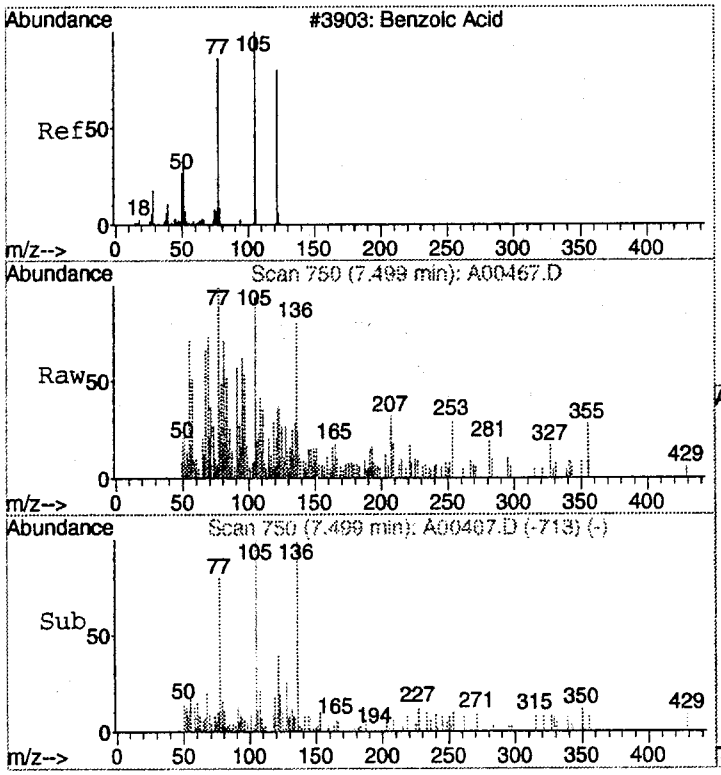
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00467.D Vial: 0
Acq On : 03 Sep 2002 23:50 Operator:
Sample : 108166-1 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 5 8:34 2002 Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 07:51:31 2002
Response via : Initial Calibration

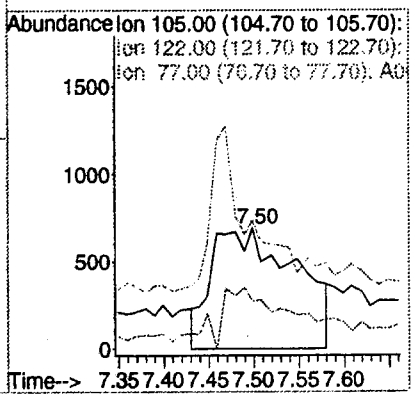


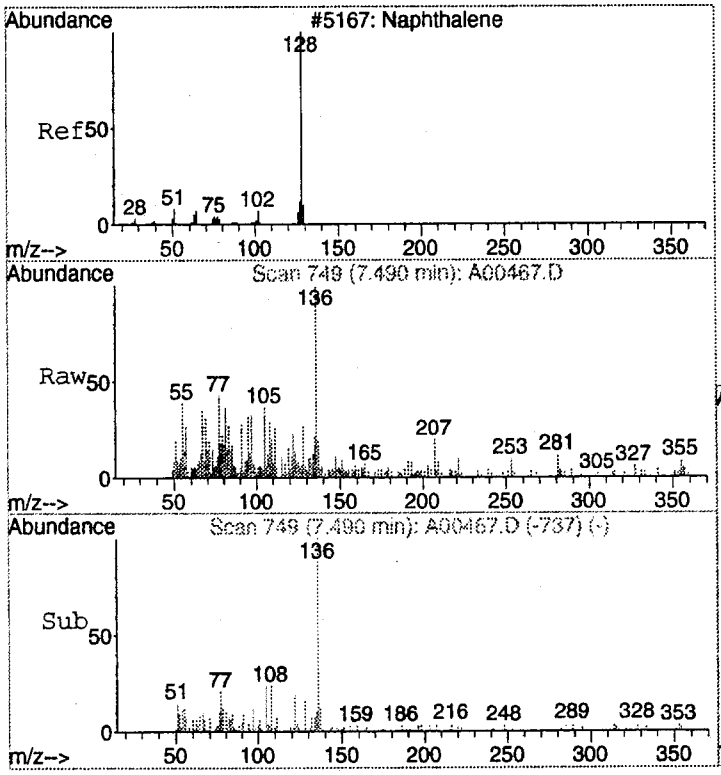


#29
Benzoic Acid
Concen: 152.19 ug/L m
RT: 7.50 min Scan# 750
Delta R.T. 0.12 min
Lab File: A00467.D
Acq: 03 Sep 2002 23:50

Tgt Ion:105 Resp: 4455

Ion	Ratio	Lower	Upper
105	100		
122	39.1	40.3	120.3#
77	0.0	46.4	126.4#

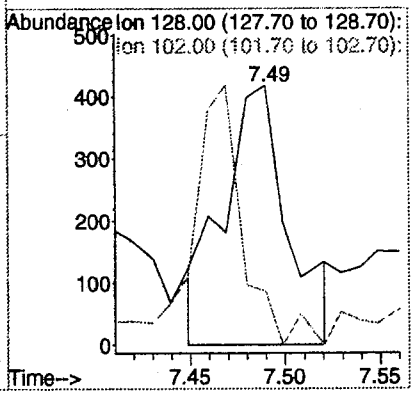


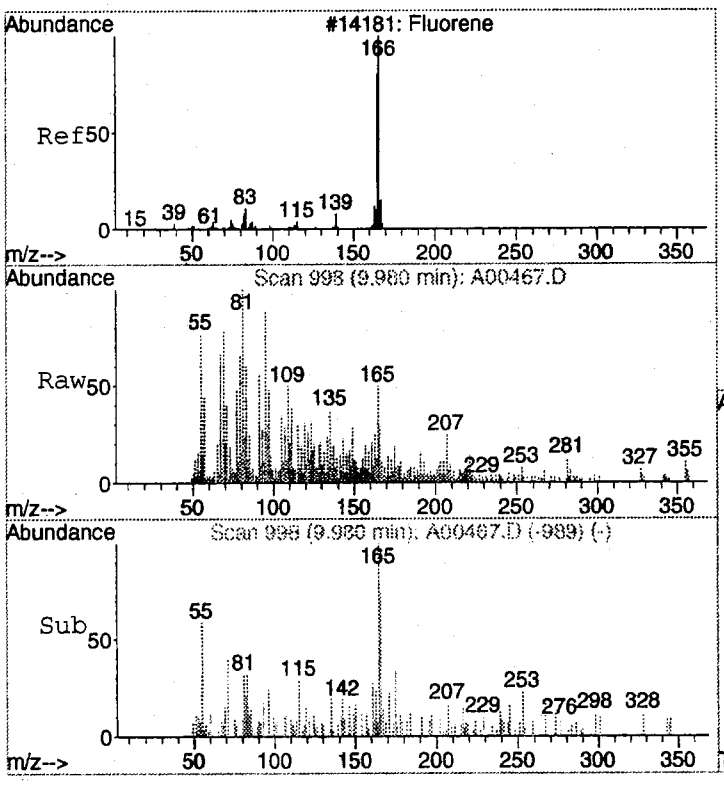


#32
Naphthalene
Concen: 4.93 ug/L m
RT: 7.49 min Scan# 749
Delta R.T. 0.02 min
Lab File: A00467.D
Acq: 03 Sep 2002 23:50

Tgt Ion:128 Resp: 1008

Ion	Ratio	Lower	Upper
128	100		
102	71.7	0.0	47.0#

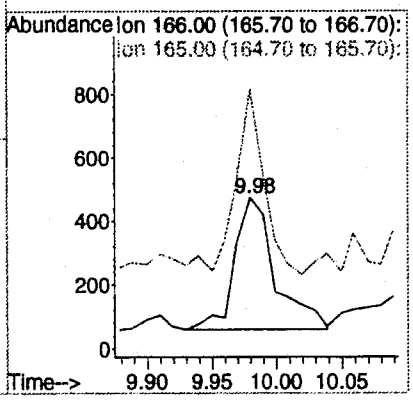


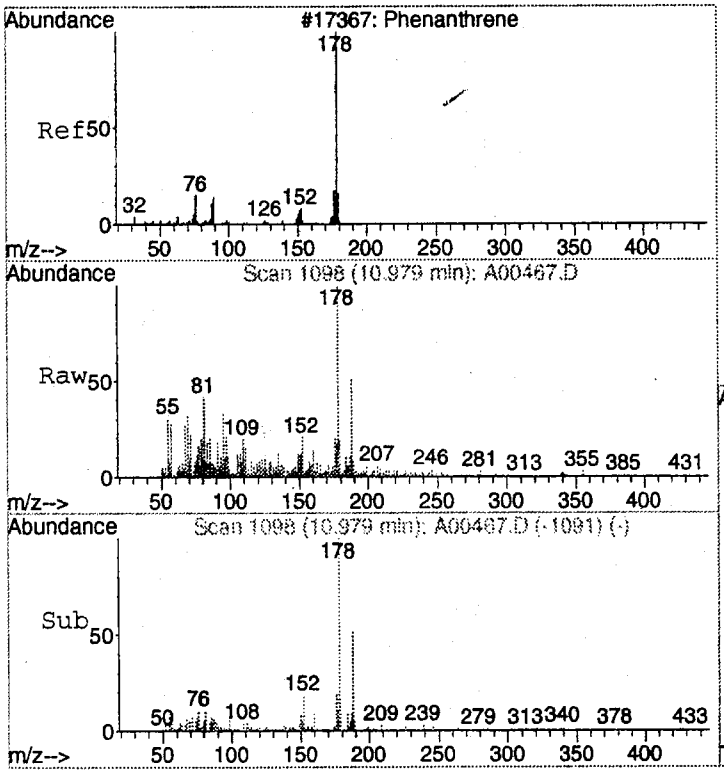


#59
Fluorene
Concen: 4.98 ug/L
RT: 9.98 min Scan# 998
Delta R.T. -0.01 min
Lab File: A00467.D
Acq: 03 Sep 2002 23:50

Tgt Ion:166 Resp: 891

Ion	Ratio	Lower	Upper
166	100		
165	101.5	40.4	120.4

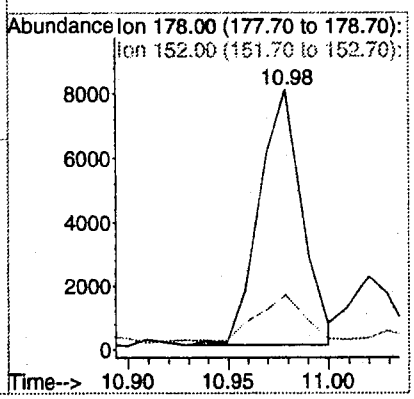


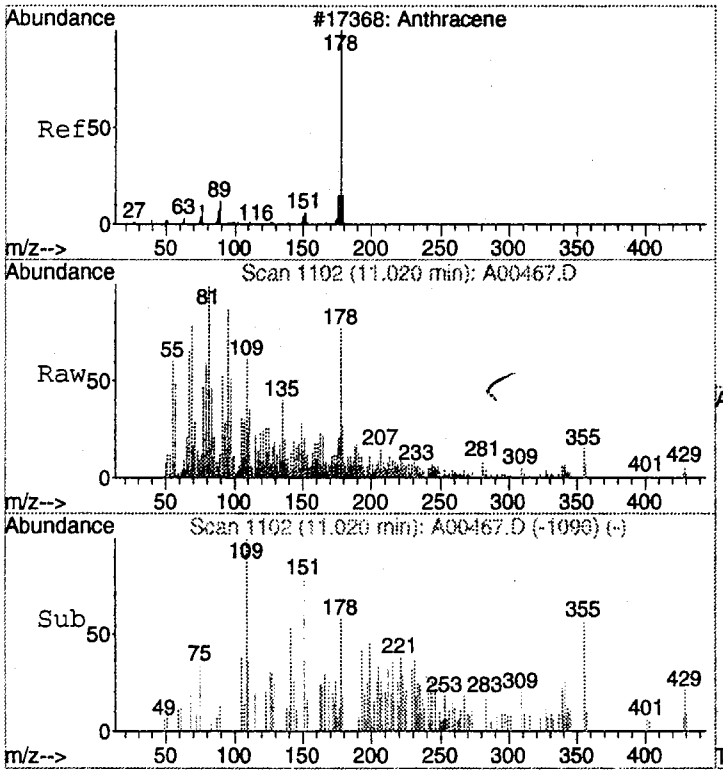


#71
Phenanthrene
Concen: 38.95 ug/L
RT: 10.98 min Scan# 1098
Delta R.T. -0.03 min
Lab File: A00467.D
Acq: 03 Sep 2002 23:50

Tgt Ion:178 Resp: 11630

Ion	Ratio	Lower	Upper
178	100		
152	19.6	0.0	60.6

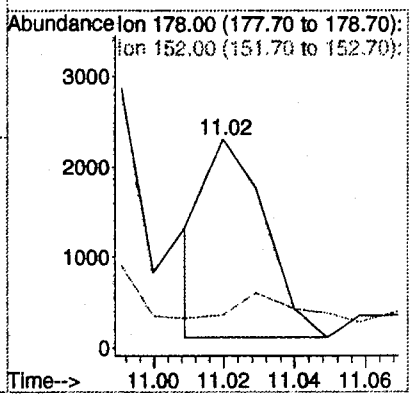


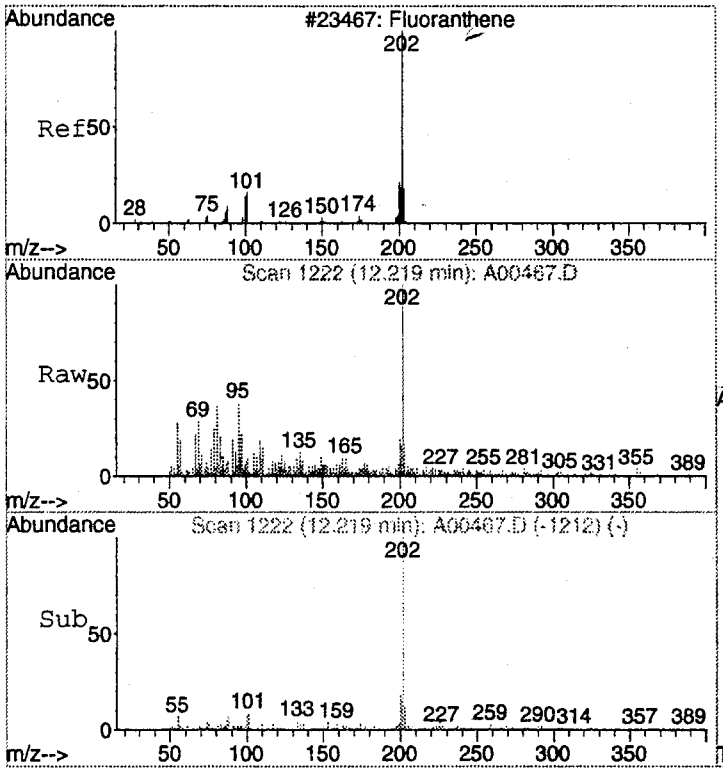


#72
Anthracene
Concen: 8.74 ug/L
RT: 11.02 min Scan# 1102
Delta R.T. -0.04 min
Lab File: A00467.D
Acq: 03 Sep 2002 23:50

Tgt Ion:178 Resp: 2523

Ion	Ratio	Lower	Upper
178	100		
152	15.5	0.0	68.8

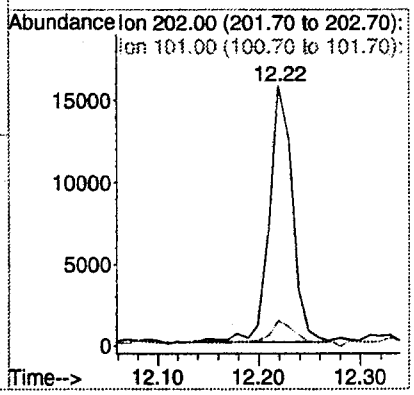


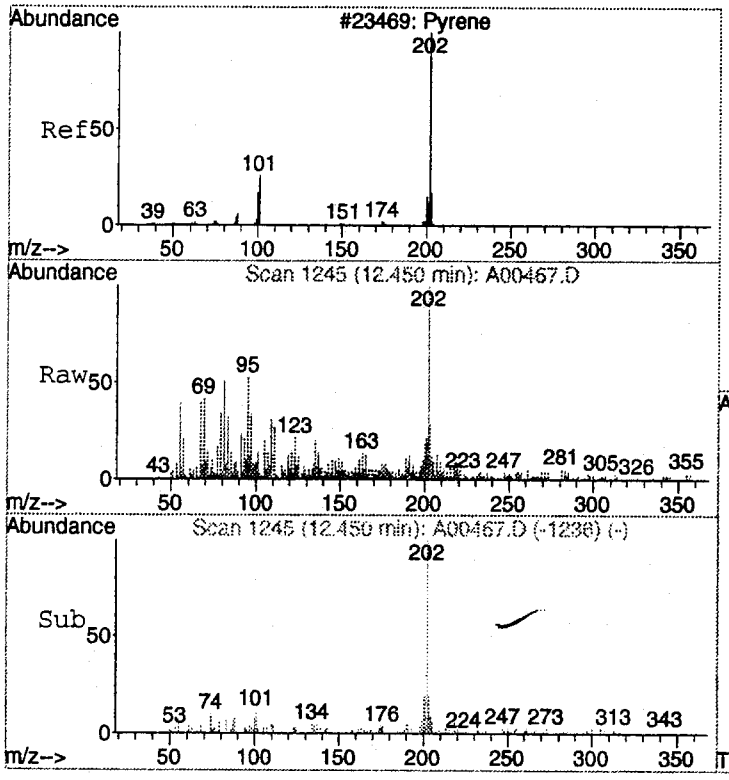


#76
Fluoranthene
Concen: 85.49 ug/L
RT: 12.22 min Scan# 1222
Delta R.T. -0.00 min
Lab File: A00467.D
Acq: 03 Sep 2002 23:50

Tgt Ion:202 Resp: 24977

Ion	Ratio	Lower	Upper
202	100		
101	9.7	0.0	56.4

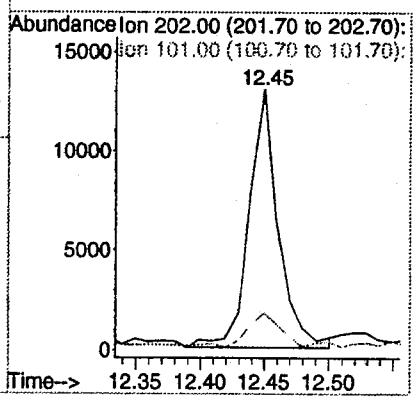


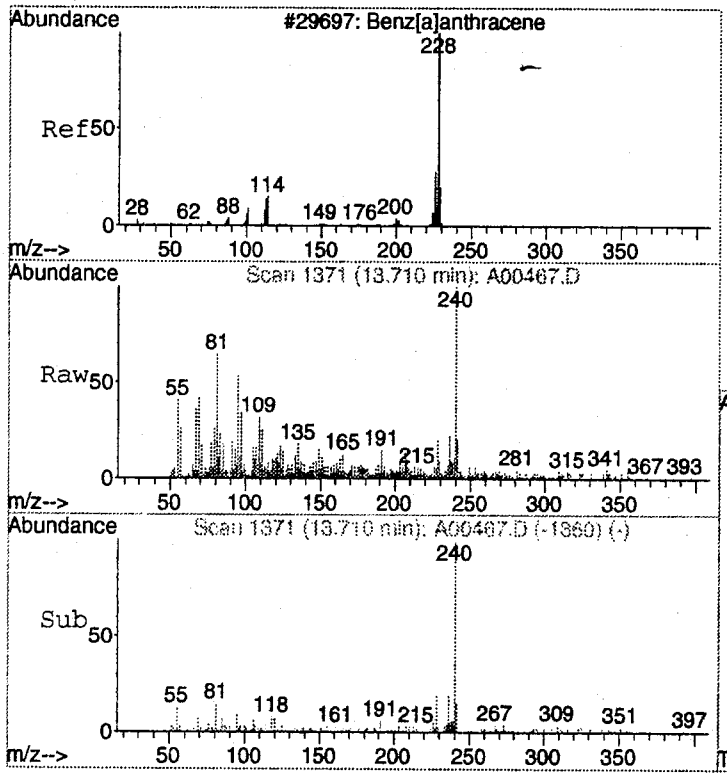


#77
Pyrene
Concen: 70.38 ug/L
RT: 12.45 min Scan# 1245
Delta R.T. -0.01 min
Lab File: A00467.D
Acq: 03 Sep 2002 23:50

Tgt Ion:202 Resp: 20722

Ion	Ratio	Lower	Upper
202	100		
101	15.9	0.0	50.6

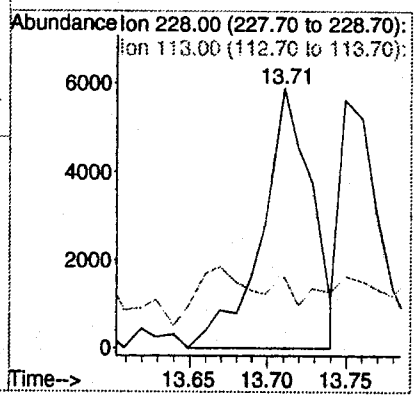


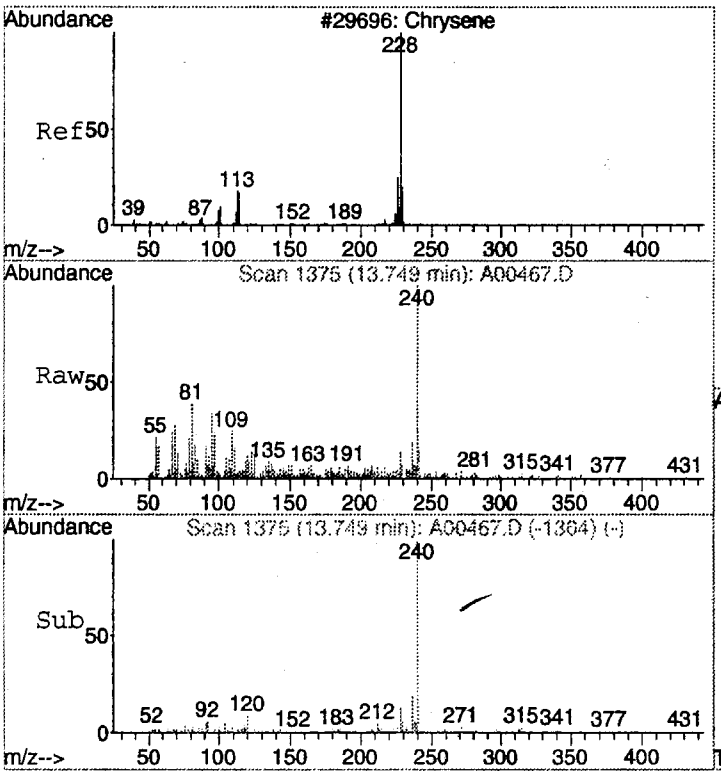


#82
Benzo(a)anthracene
Concen: 40.41 ug/L
RT: 13.71 min Scan# 1371
Delta R.T. 0.01 min
Lab File: A00467.D
Acq: 03 Sep 2002 23:50

Tgt Ion:228 Resp: 13154

Ion	Ratio	Lower	Upper
228	100		
113	24.6	0.0	51.2

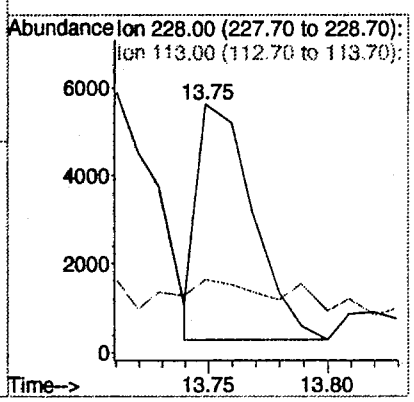


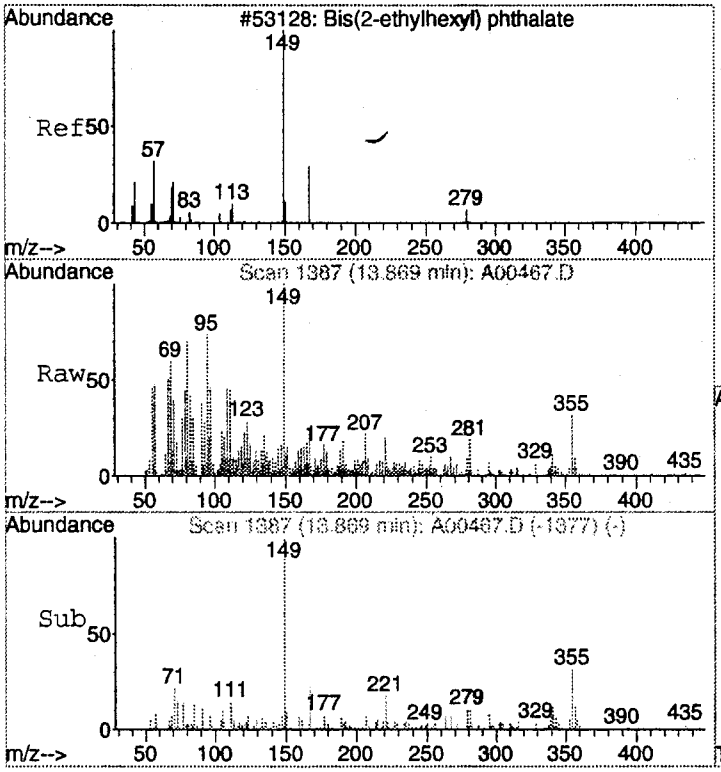


#84
Chrysene
Concen: 28.38 ug/L
RT: 13.75 min Scan# 1375
Delta R.T. 0.01 min
Lab File: A00467.D
Acq: 03 Sep 2002 23:50

Tgt Ion:228 Resp: 8780

Ion	Ratio	Lower	Upper
228	100		
113	23.0	0.0	56.4

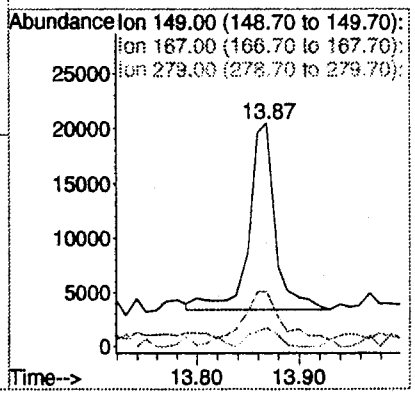


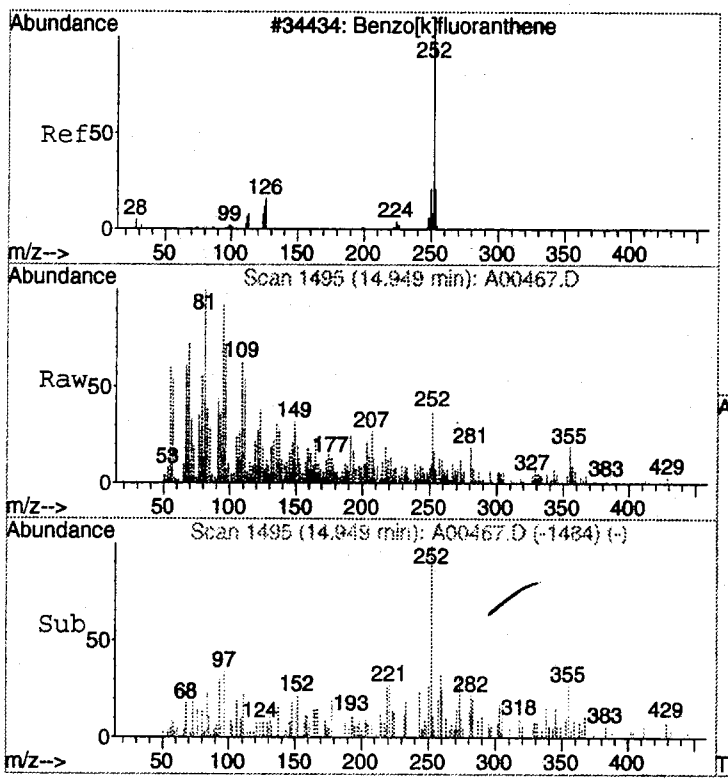


#85
bis(2-Ethylhexyl)phthalate
Concen: 76.21 ug/L
RT: 13.87 min Scan# 1387
Delta R.T. -0.00 min
Lab File: A00467.D
Acq: 03 Sep 2002 23:50

Tgt Ion:149 Resp: 31016

Ion	Ratio	Lower	Upper
149	100		
167	32.8	0.0	68.8
279	10.8	0.0	46.8

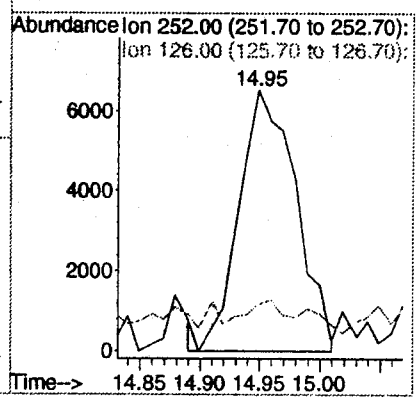


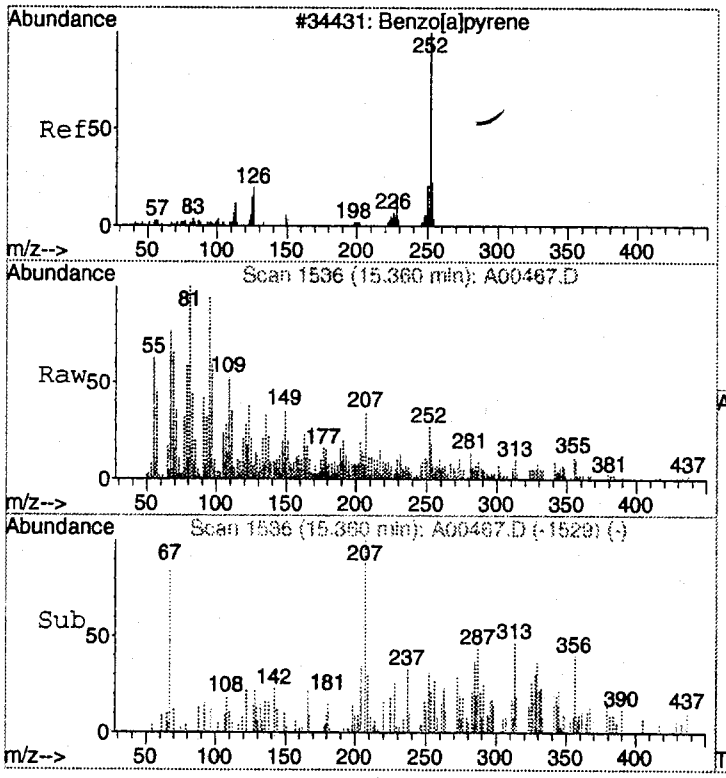


#88
Benzofluoranthenes
Concen: 61.03 ug/L m
RT: 14.95 min Scan# 1495
Delta R.T. -0.07 min
Lab File: A00467.D
Acq: 03 Sep 2002 23:50

Tgt Ion:252 Resp: 21276

Ion	Ratio	Lower	Upper
252	100		
126	0.0	0.0	56.5

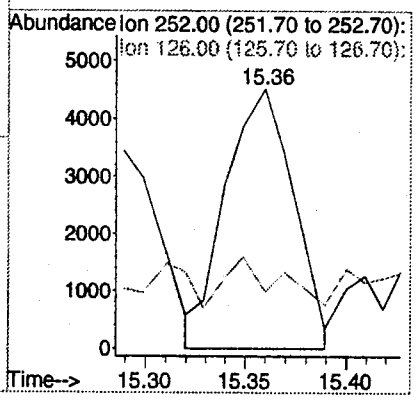


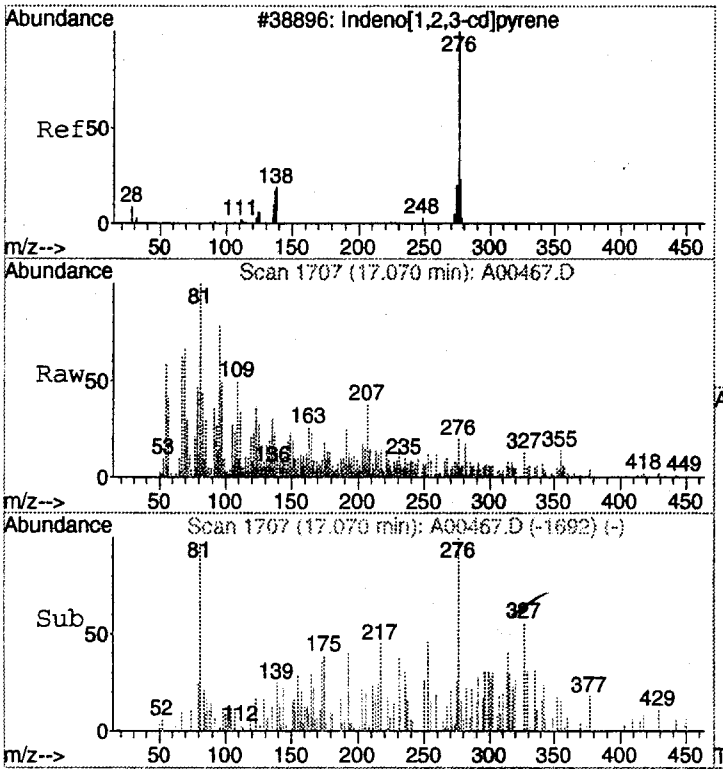


#89
Benzo(a)pyrene
Concen: 32.67 ug/L m
RT: 15.36 min Scan# 1536
Delta R.T. -0.04 min
Lab File: A00467.D
Acq: 03 Sep 2002 23:50

Tgt Ion:252 Resp: 10502

Ion	Ratio	Lower	Upper
252	100		
126	0.0	0.0	59.8

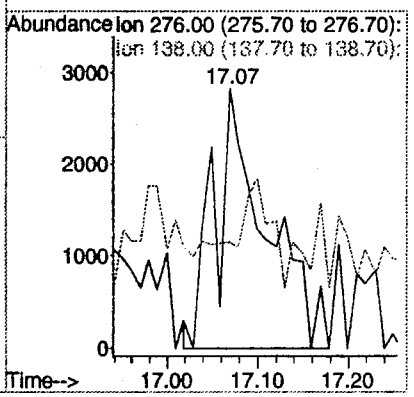


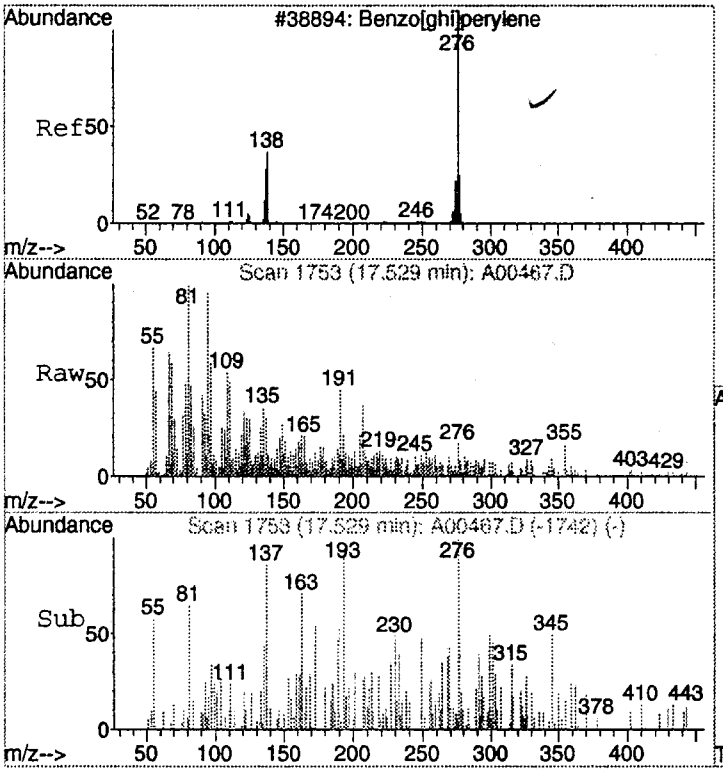


#90
Indeno(1,2,3-cd)pyrene
Concen: 28.99 ug/L m
RT: 17.07 min Scan# 1707
Delta R.T. -0.05 min
Lab File: A00467.D
Acq: 03 Sep 2002 23:50

Tgt Ion:276 Resp: 10994

Ion	Ratio	Lower	Upper
276	100		
138	65.6	0.0	59.0#

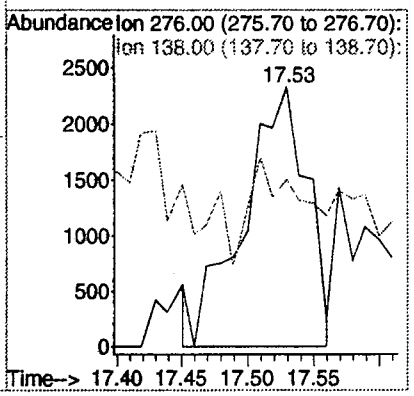




#92
Benzo(g,h,i)perylene
Concen: 23.19 ug/L m
RT: 17.53 min Scan# 1753
Delta R.T. -0.05 min
Lab File: A00467.D
Acq: 03 Sep 2002 23:50

Tgt Ion:276 Resp: 7677

Ion	Ratio	Lower	Upper
276	100		
138	0.0	0.0	52.0



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00468.D Vial: 0
Acq On : 04 Sep 2002 0:16 Operator:
Sample : 108166-2 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 05 08:34:37 2002 Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 07:51:31 2002
Response via : Initial Calibration
DataAcq Meth :

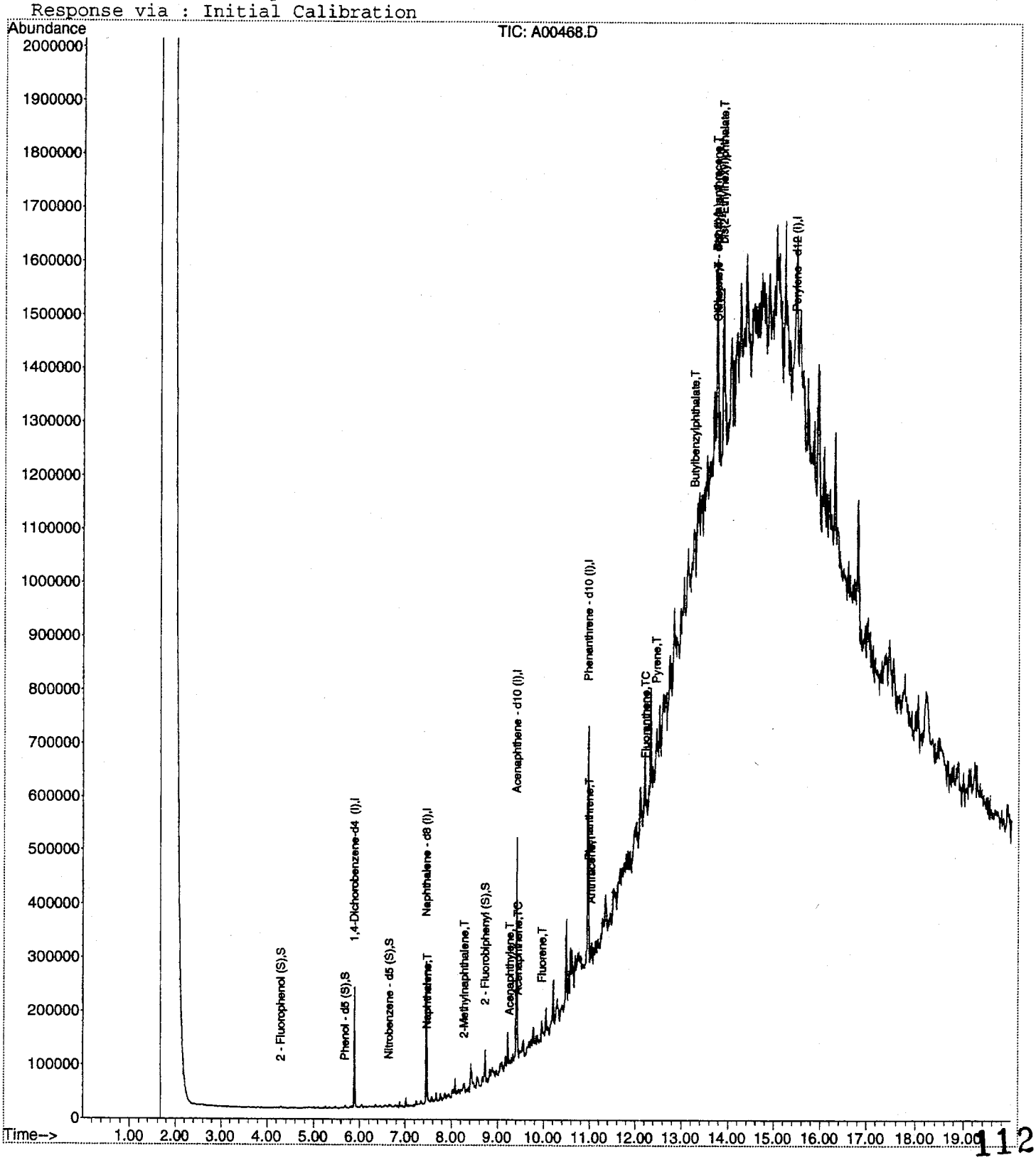
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.89	150	68427	1000.00 ul/l	0.00
22) Naphthalene - d8 (I)	7.46	136	185361	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.41	162	146124	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	10.96	188	266367	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.74	240	284301	1000.00 ul/l	0.01
86) Perylene - d12 (I)	15.45	264	310197	1000.00 ug/L	-0.02
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.30	112	1331	26.17 ug/L	0.02
7) Phenol - d5 (S)	5.69	99	2448	40.15 ug/L	0.00
23) Nitrobenzene - d5 (S)	6.66	82	1921	32.34 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.72	172	5733	28.78 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.27	330	2943	49.56 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.65	244	13185	44.18 ug/L	0.00
Target Compounds					Qvalue
32) Naphthalene	7.48	128	2305	10.72 ug/L	38
36) 2-Methylnaphthalene	8.27	141	2442	16.72 ug/L	32
48) Acenaphthylene	9.26	152	2853	10.35 ug/L	41
51) Acenaphthene	9.44	153	2832	15.32 ug/L	82
59) Fluorene	9.98	166	4421m	23.54 ug/L	
71) Phenanthrene	10.98	178	11911m	37.03 ug/L	
72) Anthracene	11.03	178	3403	10.94 ug/L	92
76) Fluoranthene	12.23	202	19989	63.50 ug/L	100
77) Pyrene	12.46	202	27807	87.66 ug/L	75
81) Butylbenzylphthalate	13.26	149	23300	95.72 ug/L	80
82) Benzo(a)anthracene	13.73	228	12622	37.66 ug/L	96
84) Chrysene	13.76	228	16607m	52.14 ug/L	
85) bis(2-Ethylhexyl)phthalate	13.87	149	125239	298.89 ug/L	96

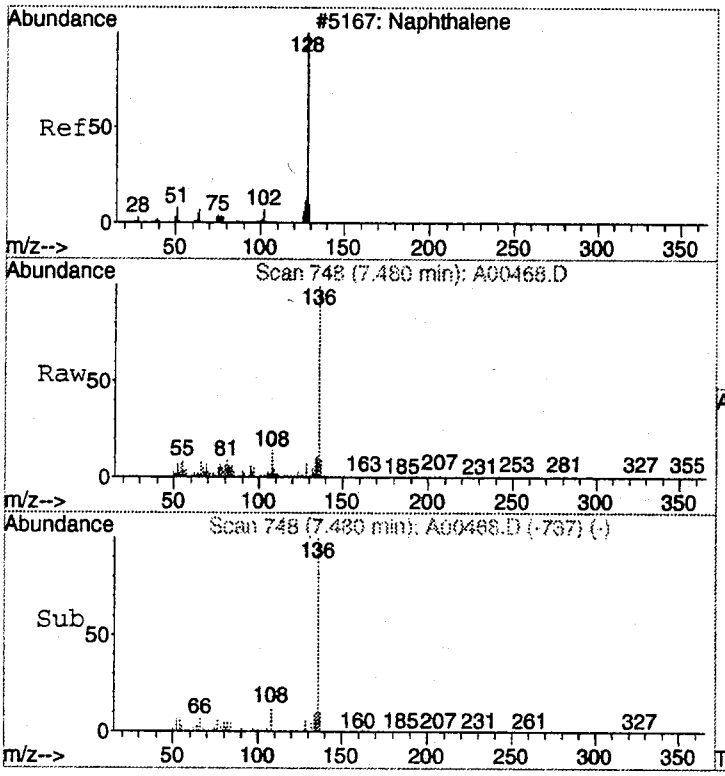
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00468.D Vial: 0
Acq On : 04 Sep 2002 0:16 Operator:
Sample : 108166-2 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 5 8:36 2002 Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 07:51:31 2002
Response via : Initial Calibration

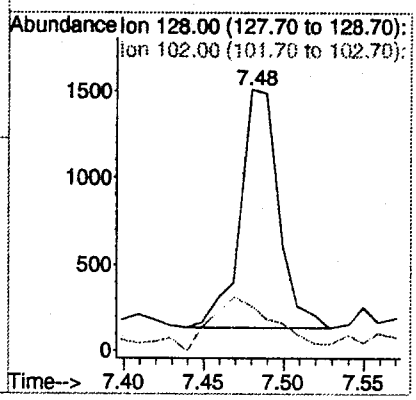


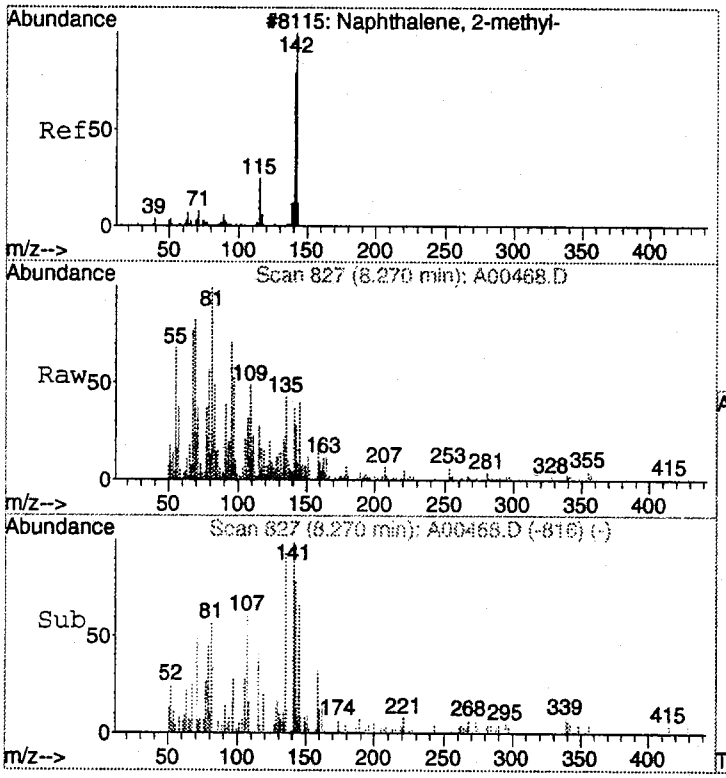


#32
Naphthalene
Concen: 10.72 ug/L
RT: 7.48 min Scan# 748
Delta R.T. 0.01 min
Lab File: A00468.D
Acq: 04 Sep 2002 0:16

Tgt Ion:128 Resp: 2305

Ion	Ratio	Lower	Upper
128	100		
102	28.5	0.0	47.0

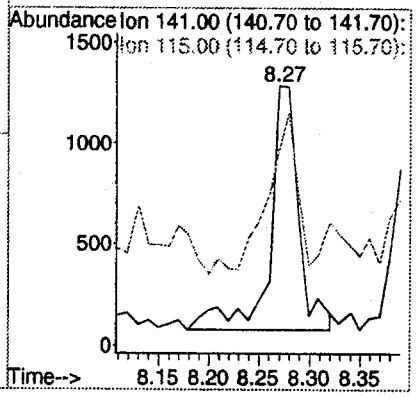


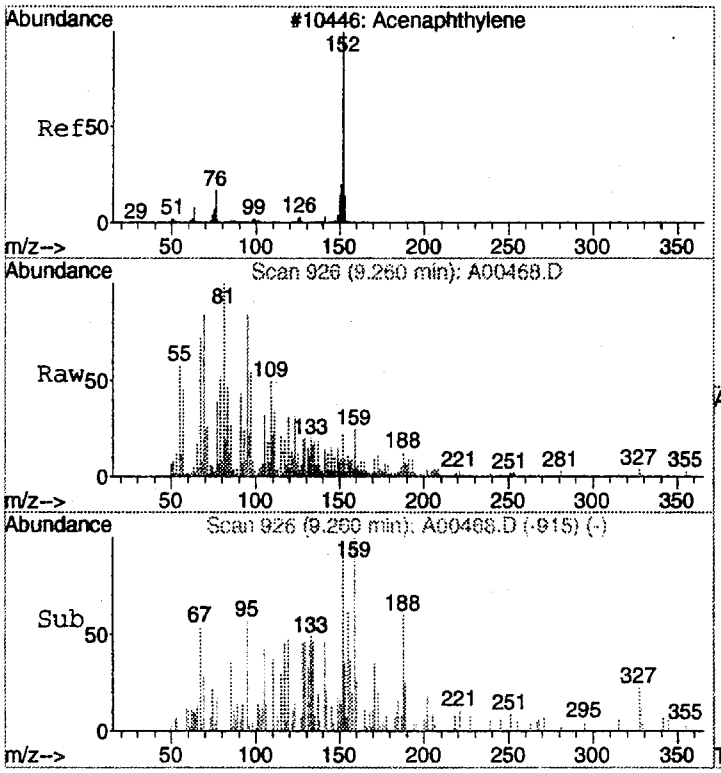


#36
2-Methylnaphthalene
Concen: 16.72 ug/L
RT: 8.27 min Scan# 827
Delta R.T. 0.01 min
Lab File: A00468.D
Acq: 04 Sep 2002 0:16

Tgt Ion:141 Resp: 2442

Ion	Ratio	Lower	Upper
141	100		
115	69.8	0.0	71.8

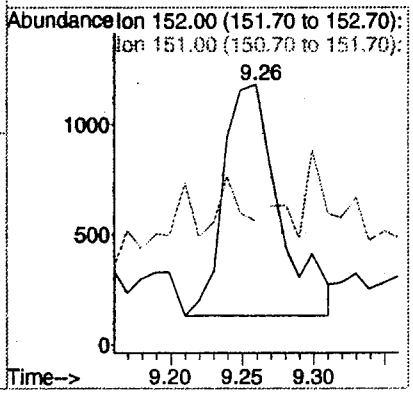


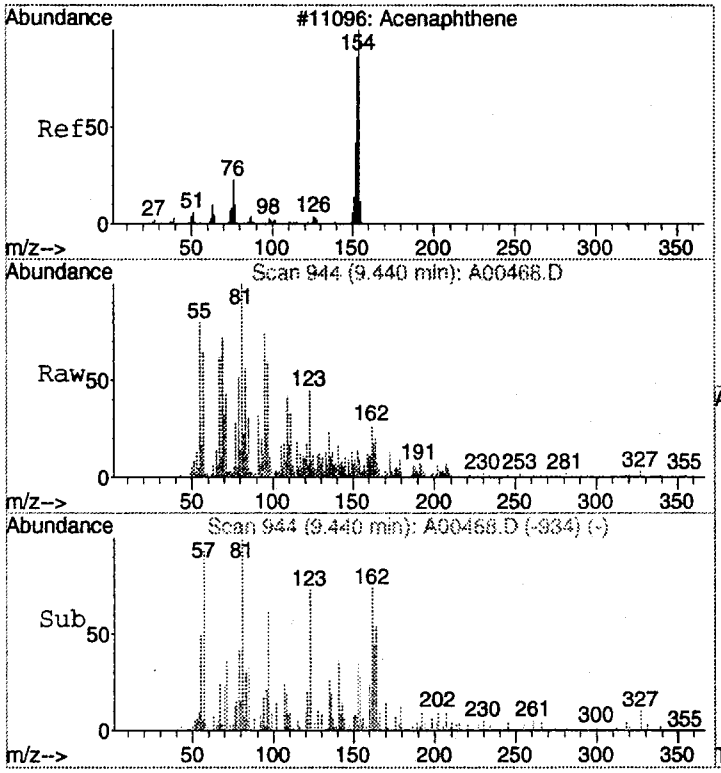


#48
Acenaphthylene
Concen: 10.35 ug/L
RT: 9.26 min Scan# 926
Delta R.T. 0.01 min
Lab File: A00468.D
Acq: 04 Sep 2002 0:16

Tgt Ion:152 Resp: 2853

Ion	Ratio	Lower	Upper
152	100		
151	46.6	0.0	59.7

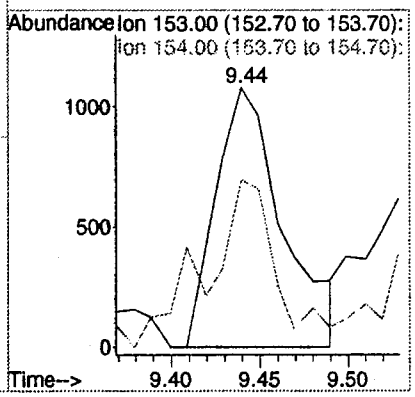


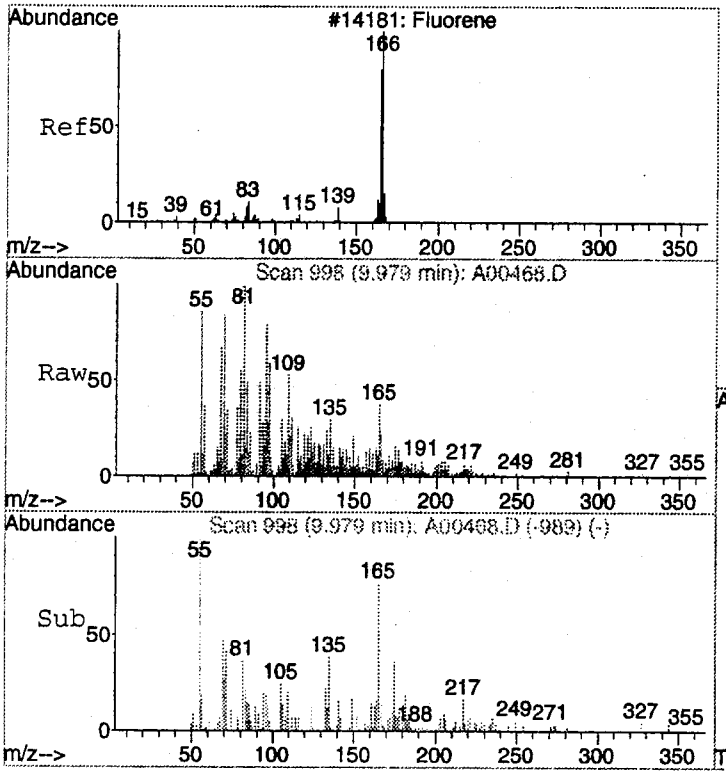


#51
Acenaphthene
Concen: 15.32 ug/L
RT: 9.44 min Scan# 944
Delta R.T. -0.00 min
Lab File: A00468.D
Acq: 04 Sep 2002 0:16

Tgt Ion:153 Resp: 2832

Ion	Ratio	Lower	Upper
153	100		
154	66.7	43.3	123.3

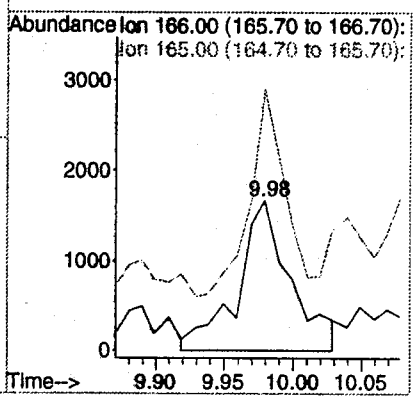


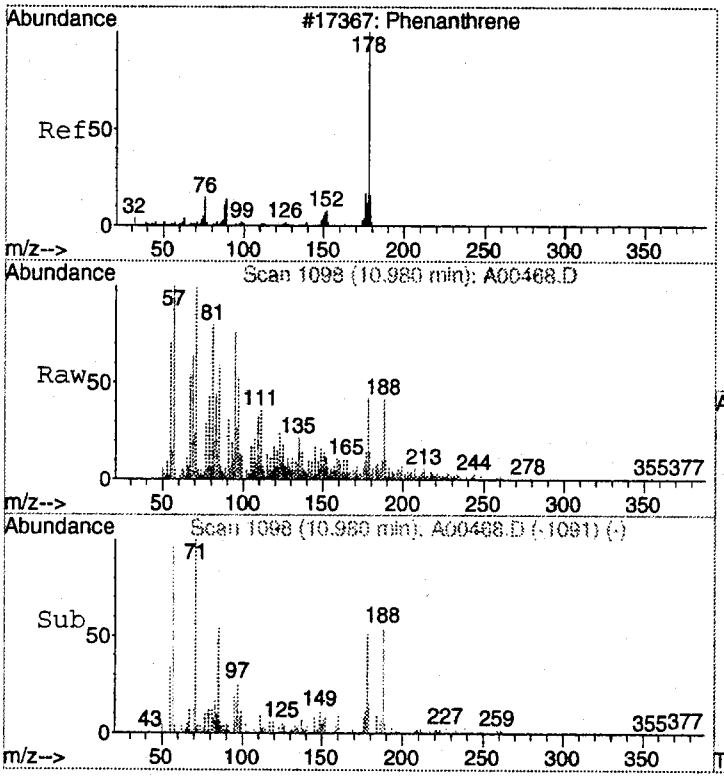


#59
Fluorene
Concen: 23.54 ug/L m
RT: 9.98 min Scan# 998
Delta R.T. -0.01 min
Lab File: A00468.D
Acq: 04 Sep 2002 0:16

Tgt Ion:166 Resp: 4421

Ion	Ratio	Lower	Upper
166	100		
165	123.8	40.4	120.4#

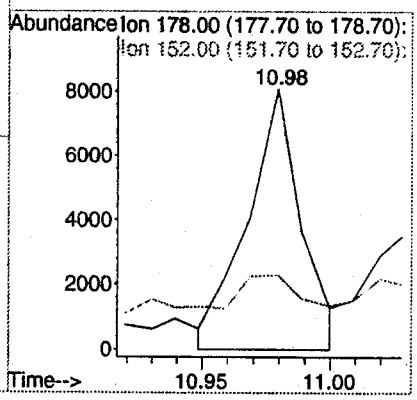


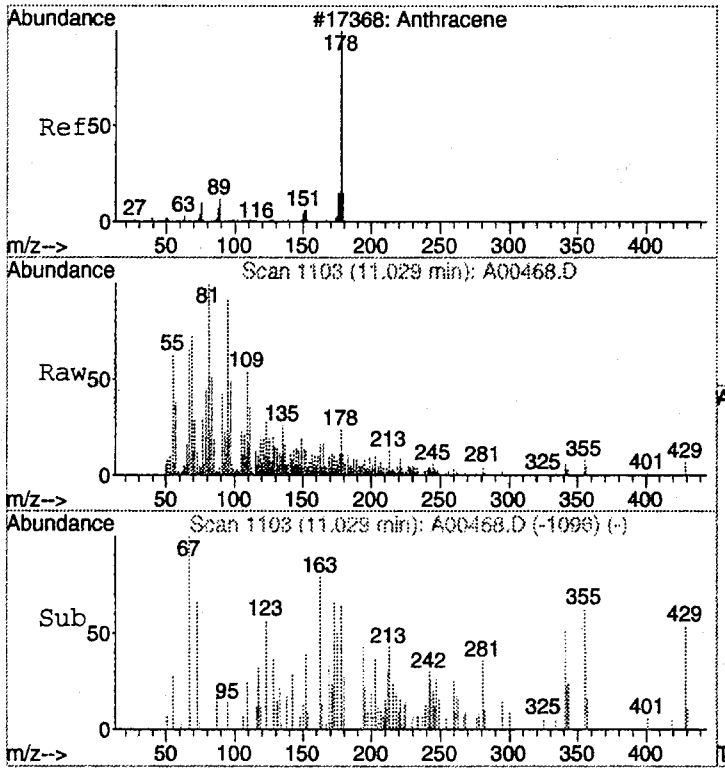


#71
Phenanthrene
Concen: 37.03 ug/L m
RT: 10.98 min Scan# 1098
Delta R.T. -0.03 min
Lab File: A00468.D
Acq: 04 Sep 2002 0:16

Tgt Ion:178 Resp: 11911

Ion	Ratio	Lower	Upper
178	100		
152	9.4	0.0	60.6

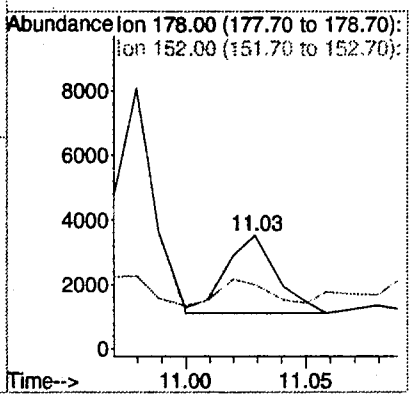


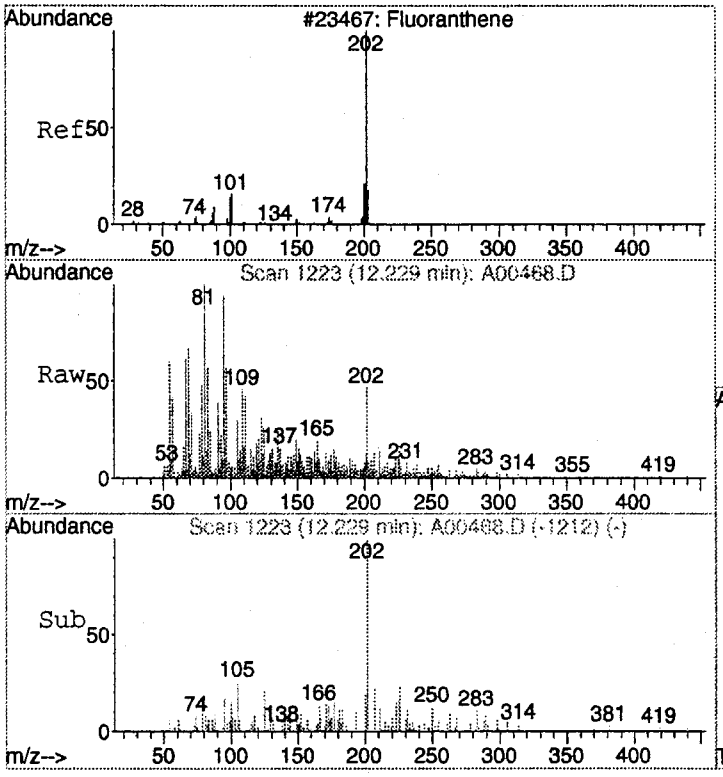


#72
Anthracene
Concen: 10.94 ug/L
RT: 11.03 min Scan# 1103
Delta R.T. -0.03 min
Lab File: A00468.D
Acq: 04 Sep 2002 0:16

Tgt Ion:178 Resp: 3403

Ion	Ratio	Lower	Upper
178	100		
152	33.0	0.0	68.8

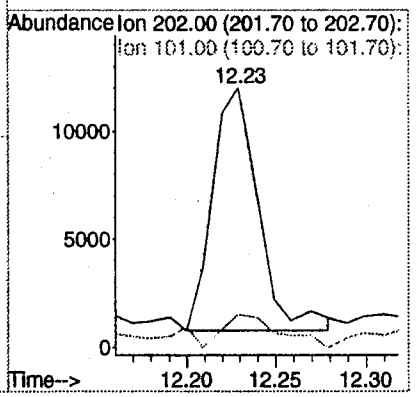


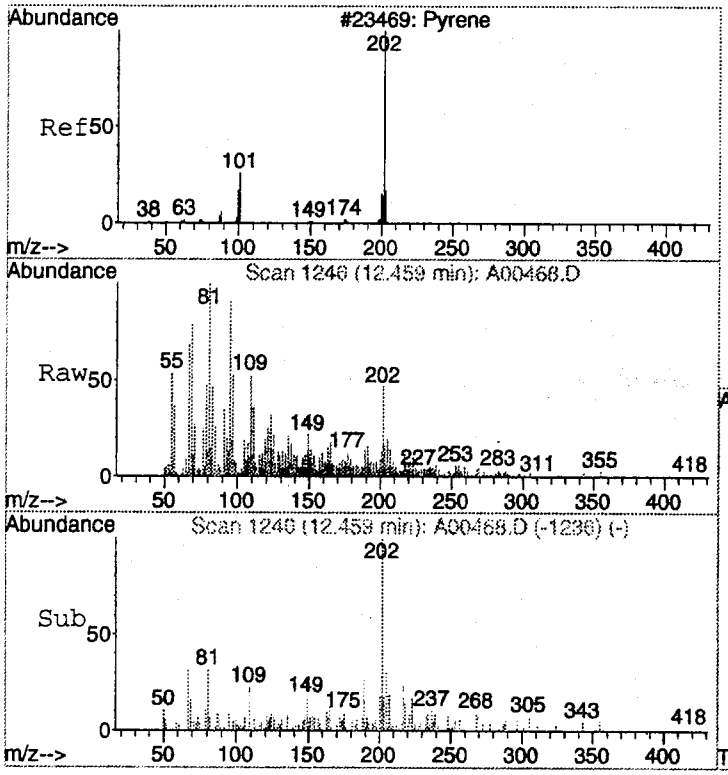


#76
Fluoranthene
Concen: 63.50 ug/L
RT: 12.23 min Scan# 1223
Delta R.T. 0.01 min
Lab File: A00468.D
Acq: 04 Sep 2002 0:16

Tgt Ion:202 Resp: 19989

Ion	Ratio	Lower	Upper
202	100		
101	16.4	0.0	56.4

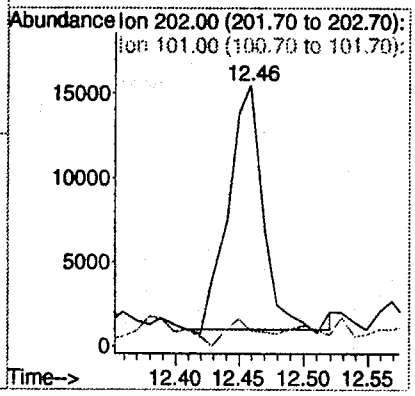


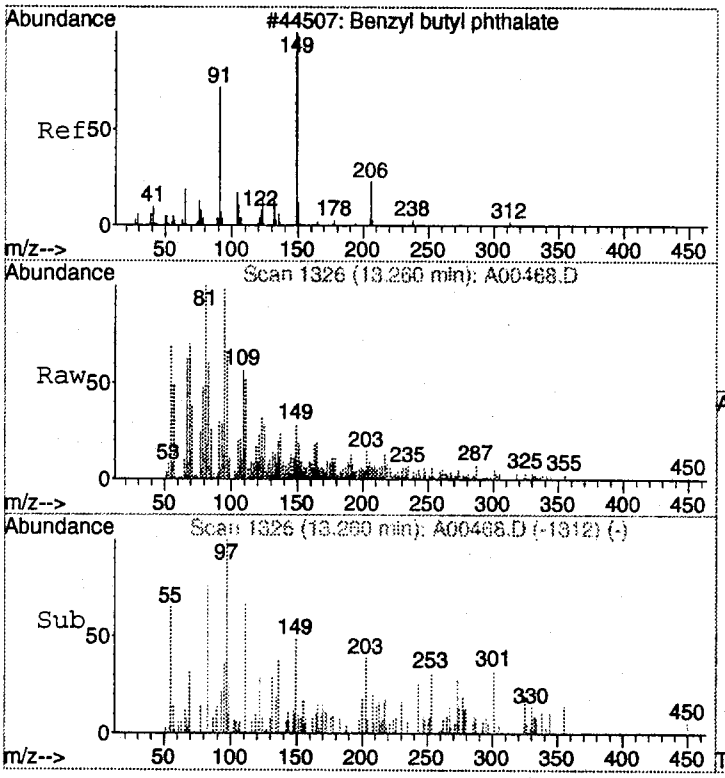


#77
Pyrene
Concen: 87.66 ug/L
RT: 12.46 min Scan# 1246
Delta R.T. -0.00 min
Lab File: A00468.D
Acq: 04 Sep 2002 0:16

Tgt Ion:202 Resp: 27807

Ion	Ratio	Lower	Upper
202	100		
101	19.8	0.0	50.6

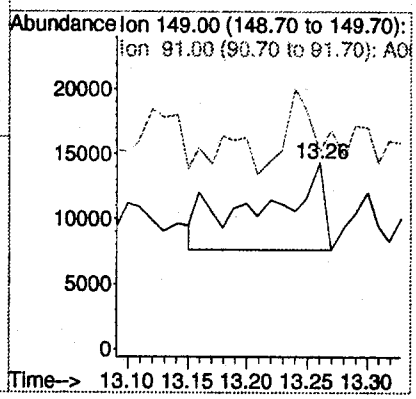


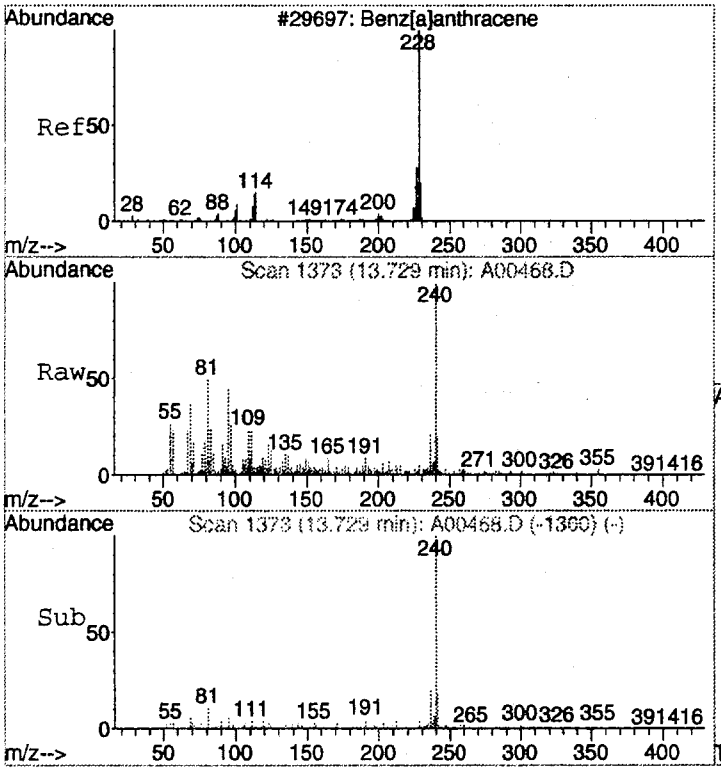


#81
Butylbenzylphthalate
Concen: 95.72 ug/L
RT: 13.26 min Scan# 1326
Delta R.T. 0.04 min
Lab File: A00468.D
Acq: 04 Sep 2002 0:16

Tgt Ion:149 Resp: 23300

Ion	Ratio	Lower	Upper
149	100		
91	55.3	32.2	112.2

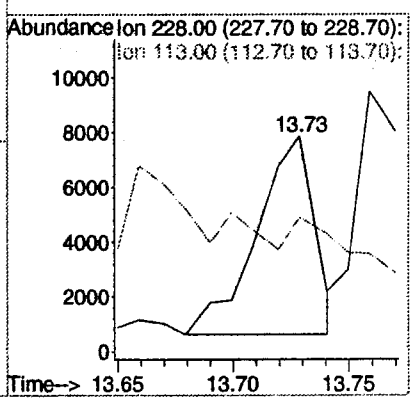


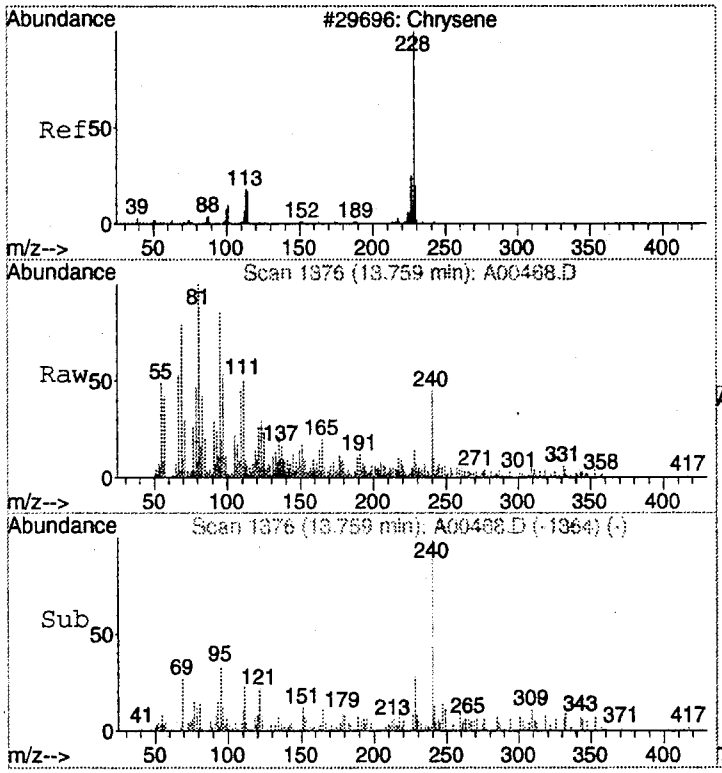


#82
Benzo(a)anthracene
Concen: 37.66 ug/L
RT: 13.73 min Scan# 1373
Delta R.T. 0.03 min
Lab File: A00468.D
Acq: 04 Sep 2002 0:16

Tgt Ion:228 Resp: 12622

Ion	Ratio	Lower	Upper
228	100		
113	9.8	0.0	51.2

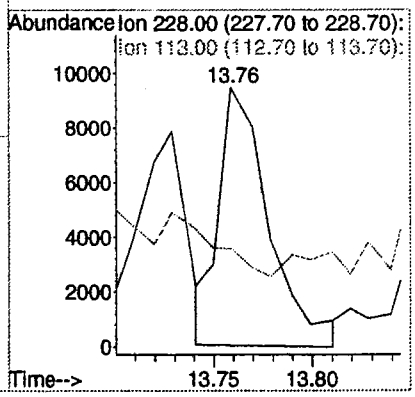


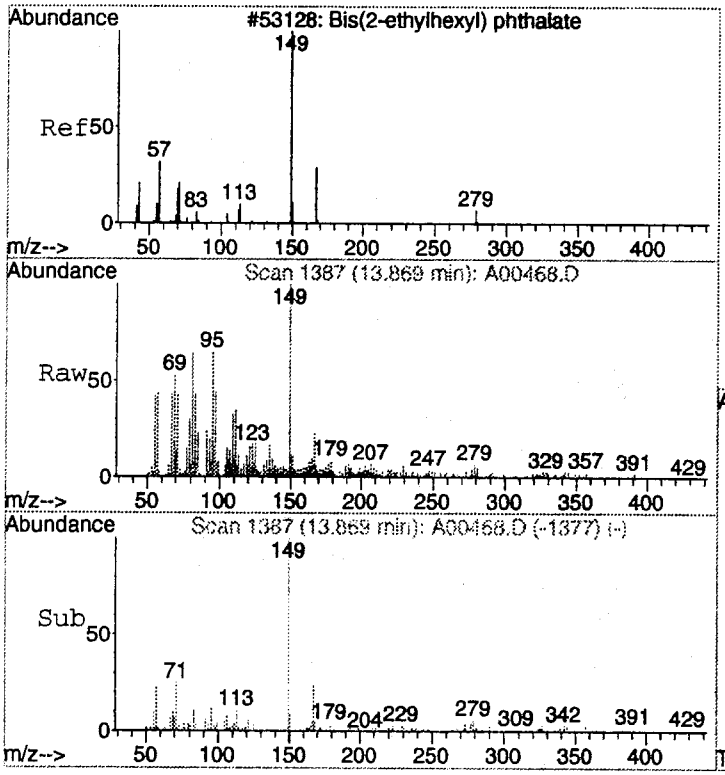


#84
Chrysene
Concen: 52.14 ug/L m
RT: 13.76 min Scan# 1376
Delta R.T. 0.02 min
Lab File: A00468.D
Acq: 04 Sep 2002 0:16

Tgt Ion:228 Resp: 16607

Ion	Ratio	Lower	Upper
228	100		
113	23.1	0.0	56.4

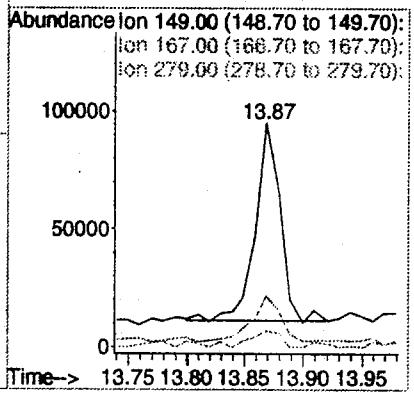




#85
bis(2-Ethylhexyl)phthalate
Concen: 298.89 ug/L
RT: 13.87 min Scan# 1387
Delta R.T. -0.00 min
Lab File: A00468.D
Acq: 04 Sep 2002 0:16

Tgt Ion:149 Resp: 125239

Ion	Ratio	Lower	Upper
149	100		
167	27.9	0.0	68.8
279	10.7	0.0	46.8



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00469.D Vial: 0
Acq On : 04 Sep 2002 0:42 Operator:
Sample : 108166-3 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 05 08:37:23 2002 Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 07:51:31 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.89	150	68615	1000.00 ul/l	0.00
22) Naphthalene - d8 (I)	7.46	136	174380	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.41	162	133741	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	10.96	188	257760	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.74	240	265645	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.44	264	276128	1000.00 ug/L	-0.03
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.30	112	2452	48.08 ug/L	0.02
7) Phenol - d5 (S)	5.68	99	3057	50.00 ug/L	0.00
23) Nitrobenzene - d5 (S)	6.66	82	2707	48.44 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.72	172	6045	33.16 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.27	330	2656	46.22 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.65	244	13863	48.00 ug/L	0.00
Target Compounds					Qvalue
18) 3-&4-Methylphenol	6.62	108	1395m	30.60 ug/L	
32) Naphthalene	7.49	128	1132m	5.60 ug/L	
71) Phenanthrene	10.98	178	6320m	20.30 ug/L	
72) Anthracene	11.02	178	1380	4.59 ug/L	67
76) Fluoranthene	12.22	202	5061	16.61 ug/L	65
77) Pyrene	12.45	202	7397m	24.10 ug/L	
78) Benzidine	12.41	184	1108	23.42 ug/L	100
85) bis(2-Ethylhexyl)phthalate	13.87	149	28778	73.50 ug/L	81

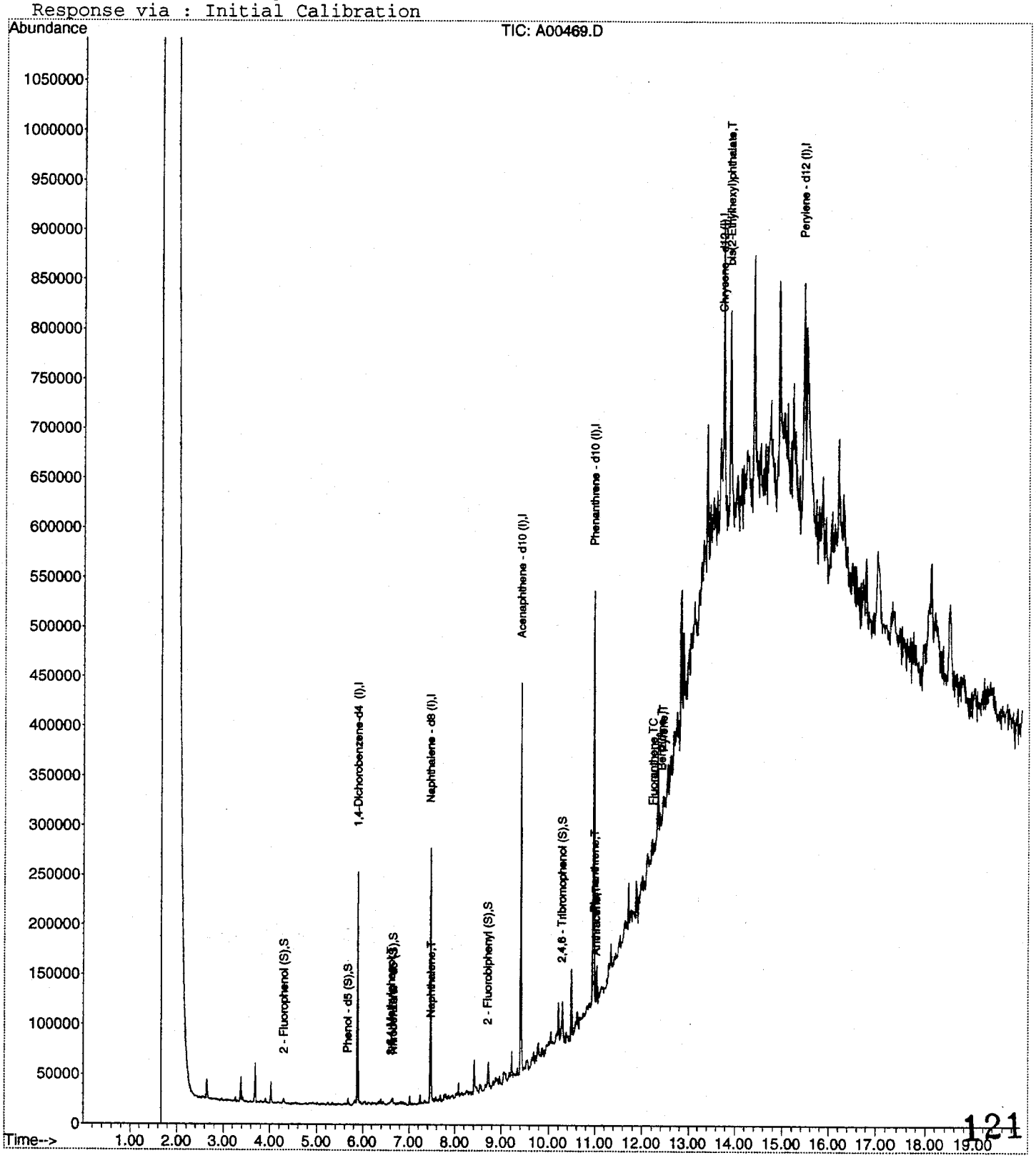
120

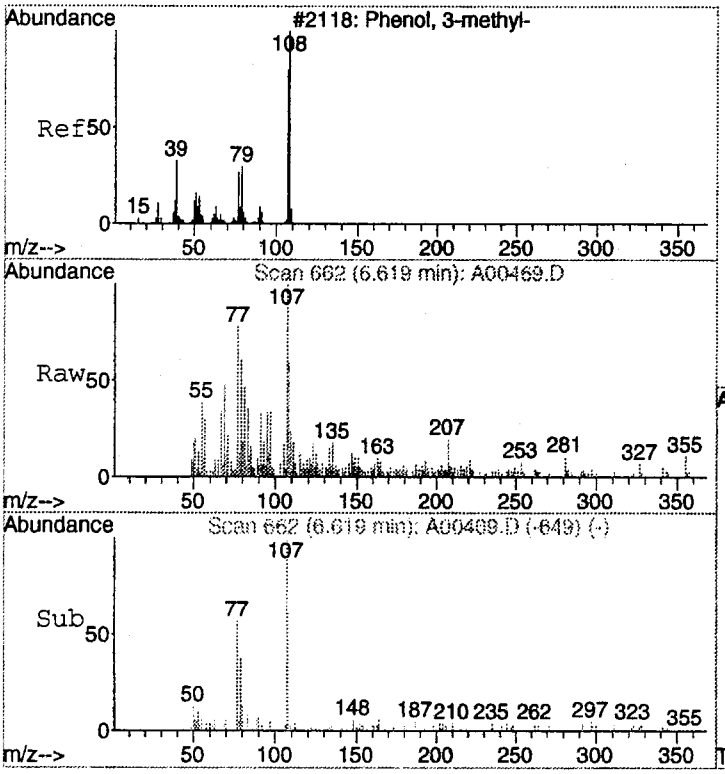
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00469.D Vial: 0
Acq On : 04 Sep 2002 0:42 Operator:
Sample : 108166-3 SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 5 8:39 2002 Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 07:51:31 2002
Response via : Initial Calibration

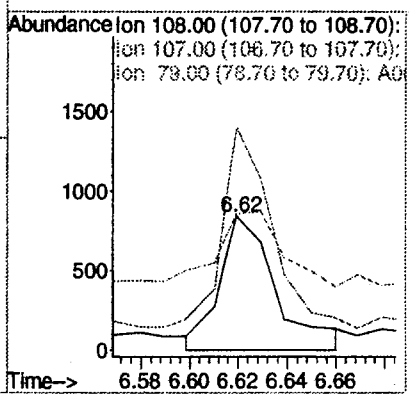


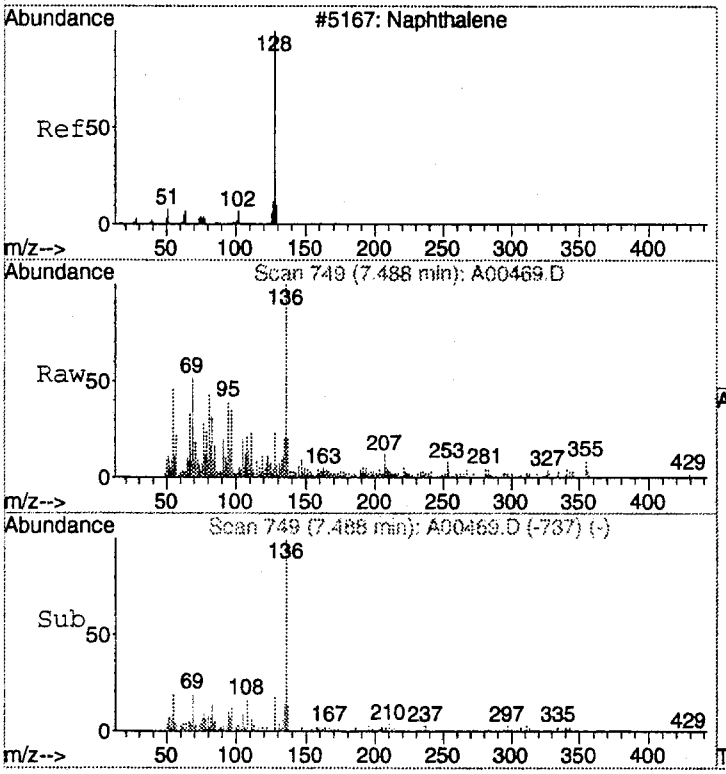


#18
3-&4-Methylphenol
Concen: 30.60 ug/L m
RT: 6.62 min Scan# 662
Delta R.T. 0.03 min
Lab File: A00469.D
Acq: 04 Sep 2002 0:42

Tgt Ion:108 Resp: 1395

Ion	Ratio	Lower	Upper
108	100		
107	140.6	85.7	165.7
79	95.3	18.9	98.9

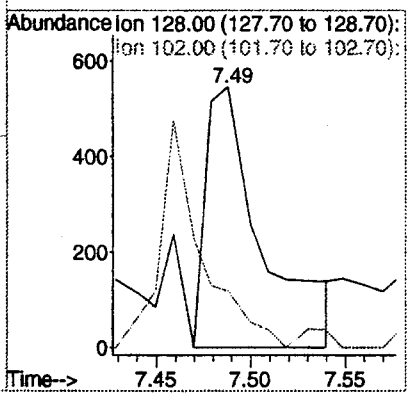


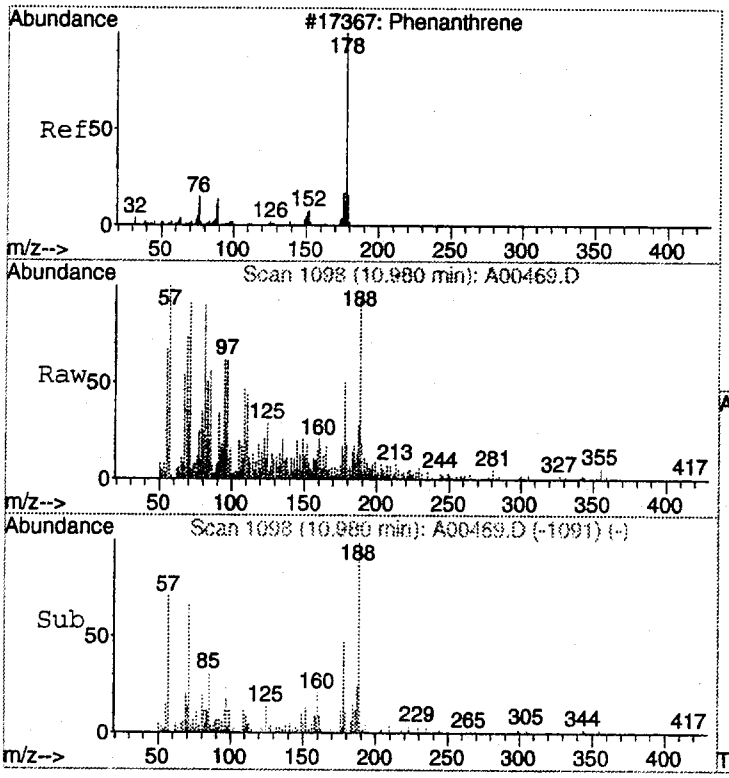


#32
Naphthalene
Concen: 5.60 ug/L m
RT: 7.49 min Scan# 749
Delta R.T. 0.02 min
Lab File: A00469.D
Acq: 04 Sep 2002 0:42

Tgt Ion:128 Resp: 1132

Ion	Ratio	Lower	Upper
128	100		
102	65.0	0.0	47.0#

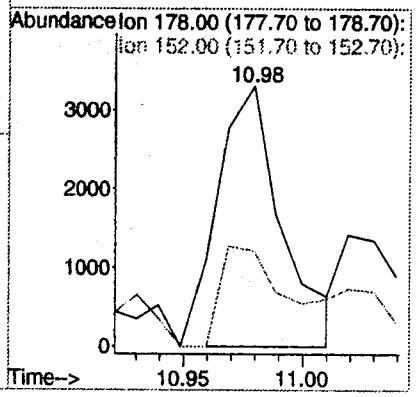


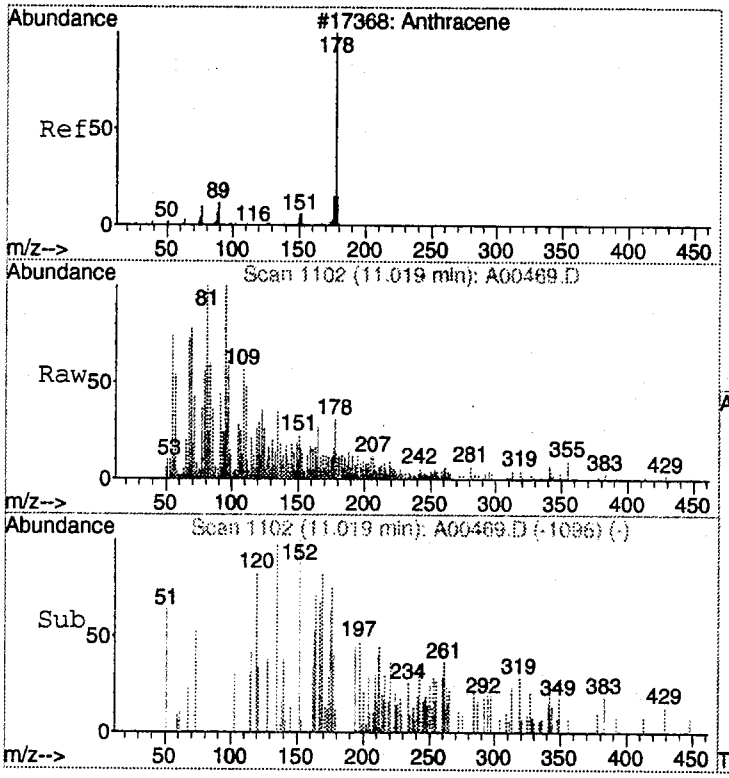


#71
Phenanthrene
Concen: 20.30 ug/L m
RT: 10.98 min Scan# 1098
Delta R.T. -0.03 min
Lab File: A00469.D
Acq: 04 Sep 2002 0:42

Tgt Ion:178 Resp: 6320

Ion	Ratio	Lower	Upper
178	100		
152	13.1	0.0	60.6

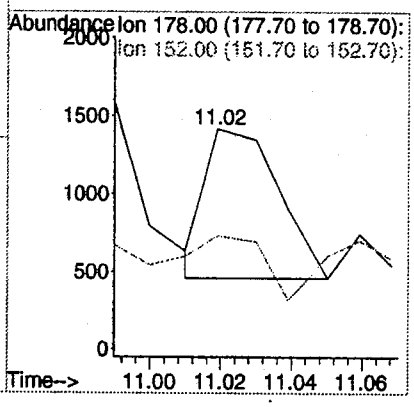


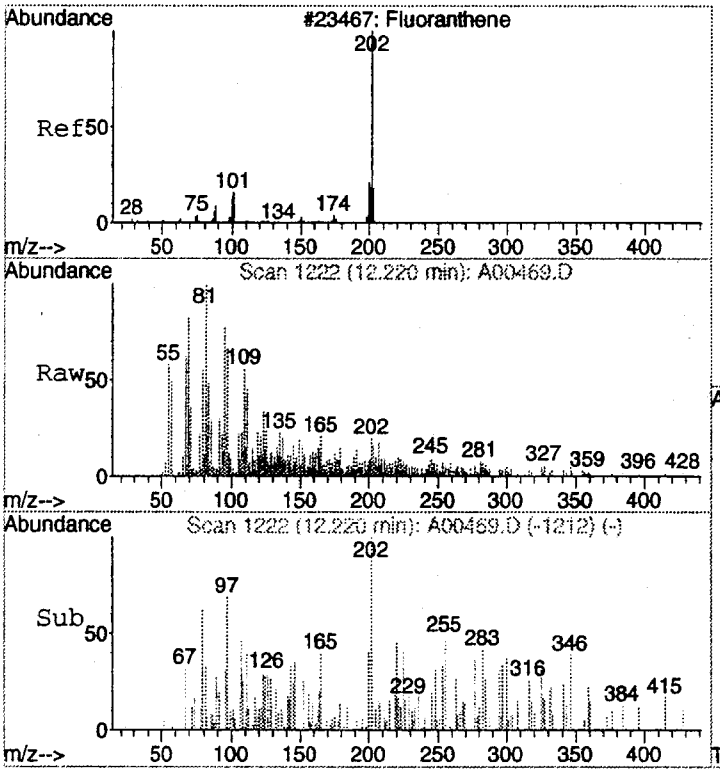


#72
Anthracene
Concen: 4.59 ug/L
RT: 11.02 min Scan# 1102
Delta R.T. -0.04 min
Lab File: A00469.D
Acq: 04 Sep 2002 0:42

Tgt Ion:178 Resp: 1380

Ion	Ratio	Lower	Upper
178	100		
152	46.2	0.0	68.8

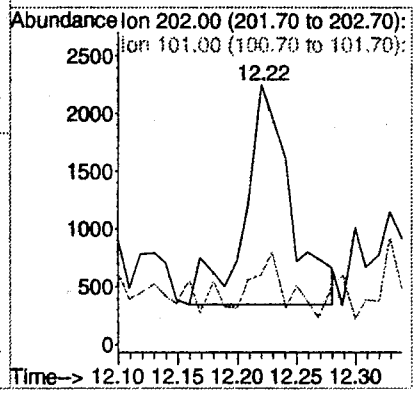


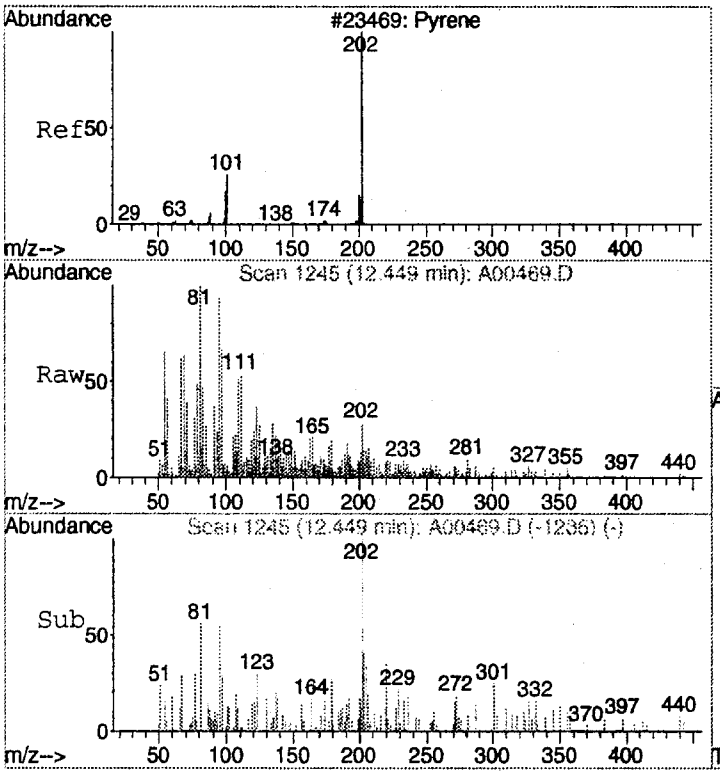


#76
Fluoranthene
Concen: 16.61 ug/L
RT: 12.22 min Scan# 1222
Delta R.T. -0.00 min
Lab File: A00469.D
Acq: 04 Sep 2002 0:42

Tgt Ion:202 Resp: 5061

Ion	Ratio	Lower	Upper
202	100		
101	31.2	0.0	56.4

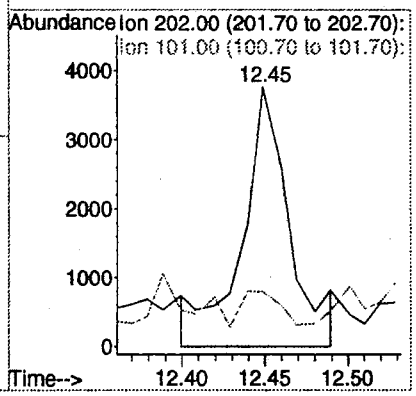


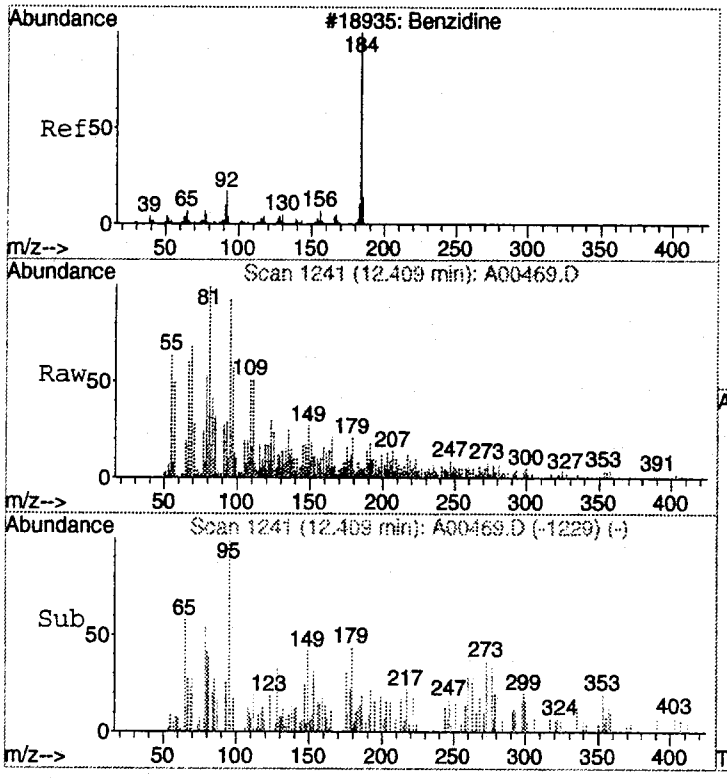


#77
Pyrene
Concen: 24.10 ug/L m
RT: 12.45 min Scan# 1245
Delta R.T. -0.01 min
Lab File: A00469.D
Acq: 04 Sep 2002 0:42

Tgt Ion:202 Resp: 7397

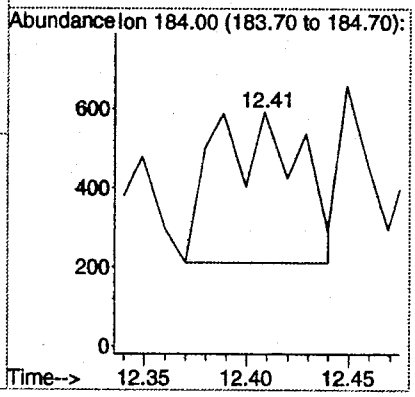
Ion	Ratio	Lower	Upper
202	100		
101	0.0	0.0	50.6

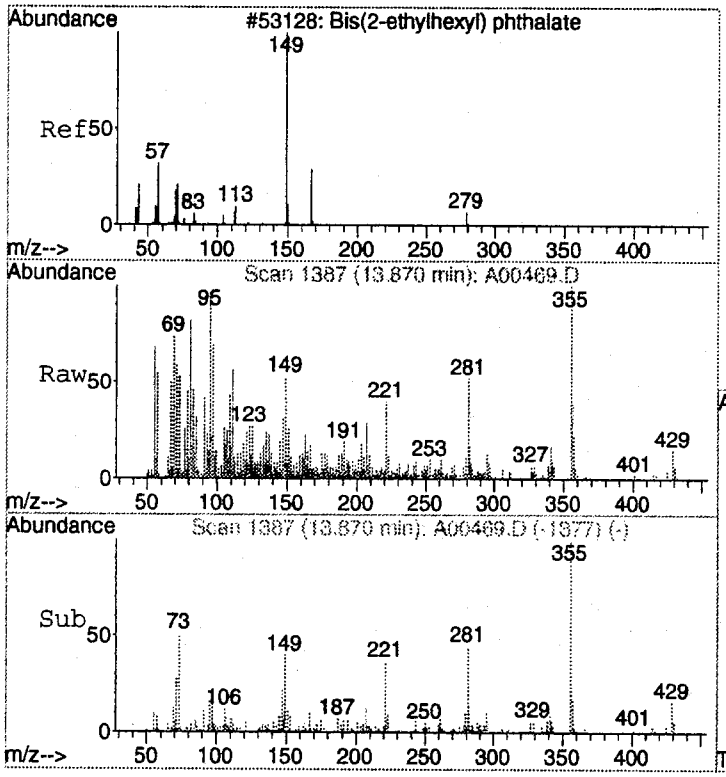




#78
Benzidine
Concen: 23.42 ug/L
RT: 12.41 min Scan# 1241
Delta R.T. 0.02 min
Lab File: A00469.D
Acq: 04 Sep 2002 0:42

Tgt Ion:184 Resp: 1108

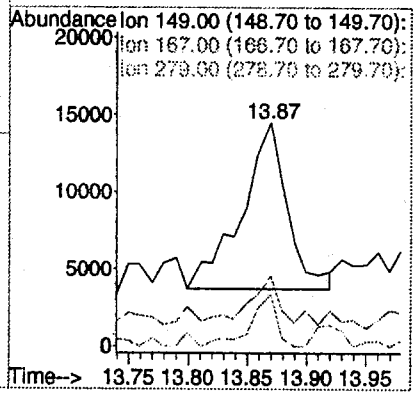




#85
bis(2-Ethylhexyl)phthalate
Concen: 73.50 ug/L
RT: 13.87 min Scan# 1387
Delta R.T. -0.00 min
Lab File: A00469.D
Acq: 04 Sep 2002 0:42

Tgt Ion:149 Resp: 28778

Ion	Ratio	Lower	Upper
149	100		
167	20.3	0.0	68.8
279	17.2	0.0	46.8



125

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00351.D Vial: 0
Acq On : 28 Aug 2002 17:31 Operator:
Sample : 108166-4 SW0431 &1.0 WATER Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 10:34:28 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 10:30:27 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.36	150	63094	1000.00	ug/L	0.00
22) Naphthalene - d8 (I)	6.94	136	160624	1000.00	ug/L	0.01
38) Acenaphthene - d10 (I)	8.85	162	133720	1000.00	ug/L	0.01
62) Phenanthrene - d10 (I)	10.36	188	171885	1000.00	ug/L	0.02
80) Chrysene - d12 (I)	13.08	240	326355	1000.00	ul/l	0.02
86) Perylene - d12 (I)	14.56	264	342578	1000.00	ug/L	0.01
System Monitoring Compounds						
4) 2 - Fluorophenol (S)	3.63	112	8229	270.93	ug/L	-0.07
7) Phenol - d5 (S)	5.17	99	6869	215.61	ug/L	0.02
23) Nitrobenzene - d5 (S)	6.14	82	19567	393.26	ug/L	-0.06
43) 2 - Fluorobiphenyl (S)	8.18	172	47469	470.55	ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	9.68	330	11705	547.67	ug/L	-0.01
79) p - Terphenyl - d14 (S)	12.04	244	95402	920.53	ug/L	0.04
Target Compounds						Qvalue
29) Benzoic Acid	6.87	105	1274	93.68	ug/L #	22
32) Naphthalene	6.96	128	4500	40.15	ug/L	59
35) 4-Chloro-3-methylphenol	7.72	107	5136	115.74	ug/L	98
58) Diethylphthalate	9.42	149	1239	10.75	ug/L #	55
75) Di-n-butylphthalate	11.10	149	4518	29.94	ug/L	88
81) Butylbenzylphthalate	12.61	149	3317	19.85	ug/L	83
85) bis(2-Ethylhexyl)phthalate	13.25	149	110613m	358.76	ug/L	
87) Di-n-octylphthalate	13.87	149	59416	125.64	ug/L	98

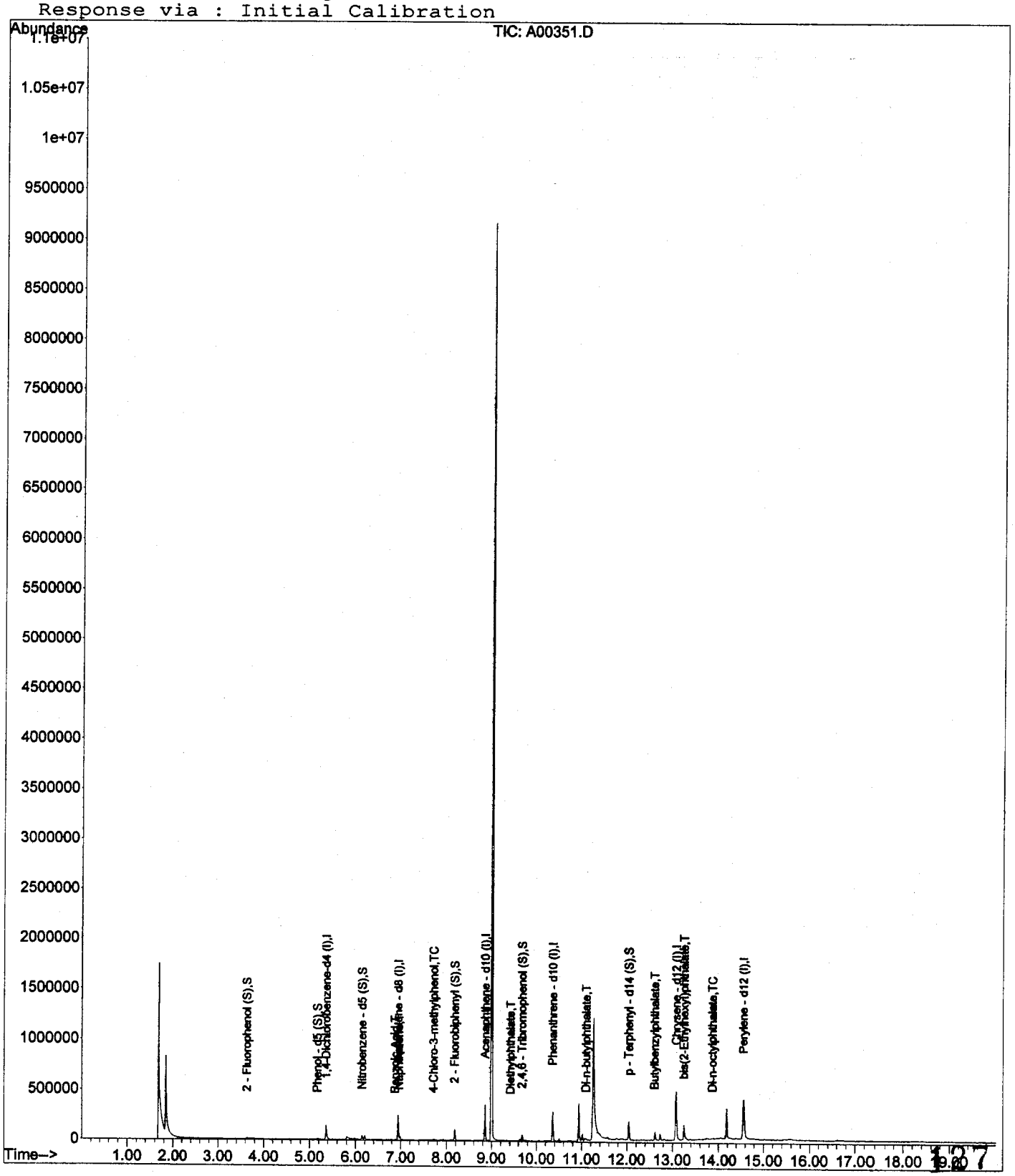
(#) = qualifier out of range (m) = manual integration (+) = signals summed

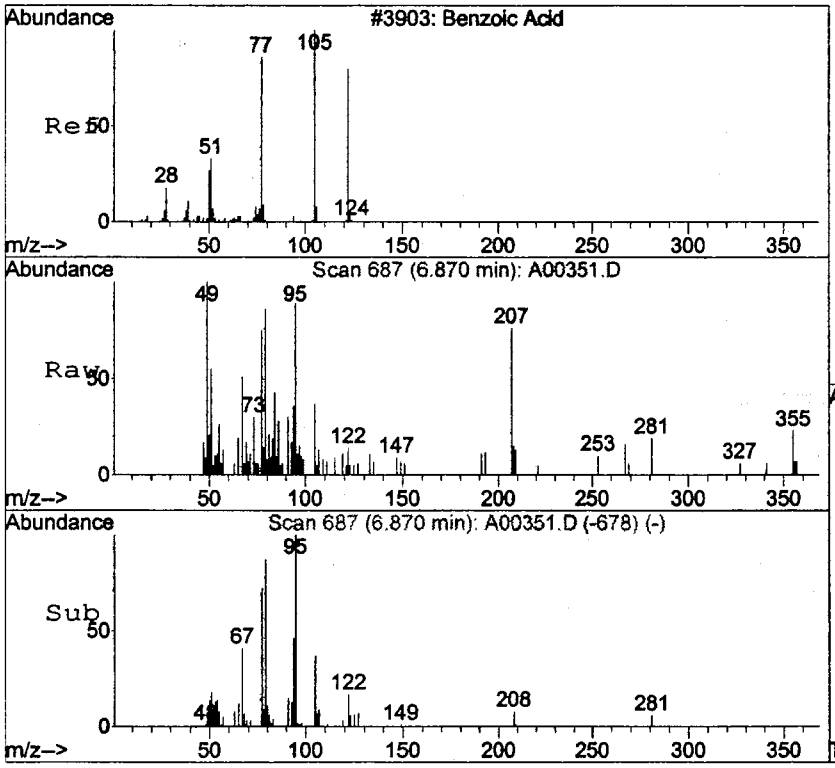
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00351.D
Acq On : 28 Aug 2002 17:31
Sample : 108166-4 SW0431 &1.0 WATER
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 10:52 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RE

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 10:30:27 2002
Response via : Initial Calibration

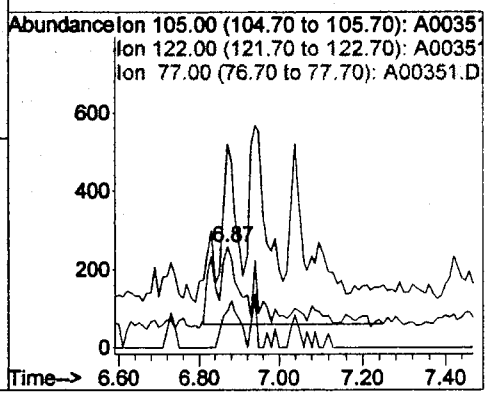


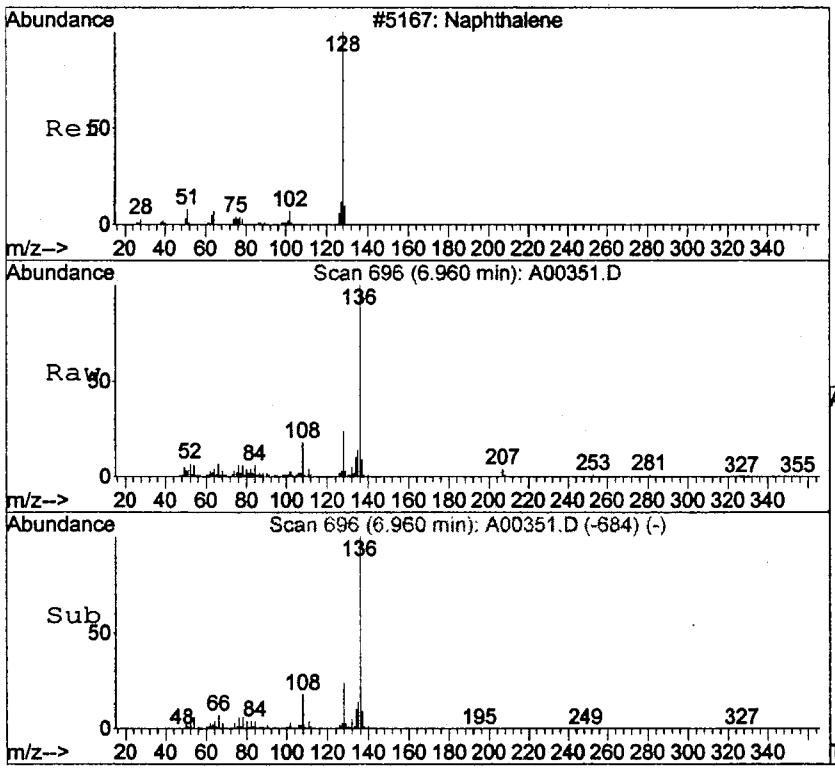


#29
Benzoic Acid
Concen: 93.68 ug/L
RT: 6.87 min Scan# 687
Delta R.T. -0.15 min
Lab File: A00351.D
Acq: 28 Aug 2002 17:31

Tgt Ion:105 Resp: 1274

Ion	Ratio	Lower	Upper
105	100		
122	26.1	40.3	120.3#
77	0.0	46.4	126.4#

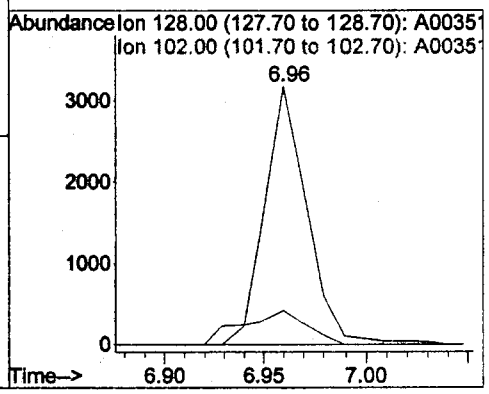


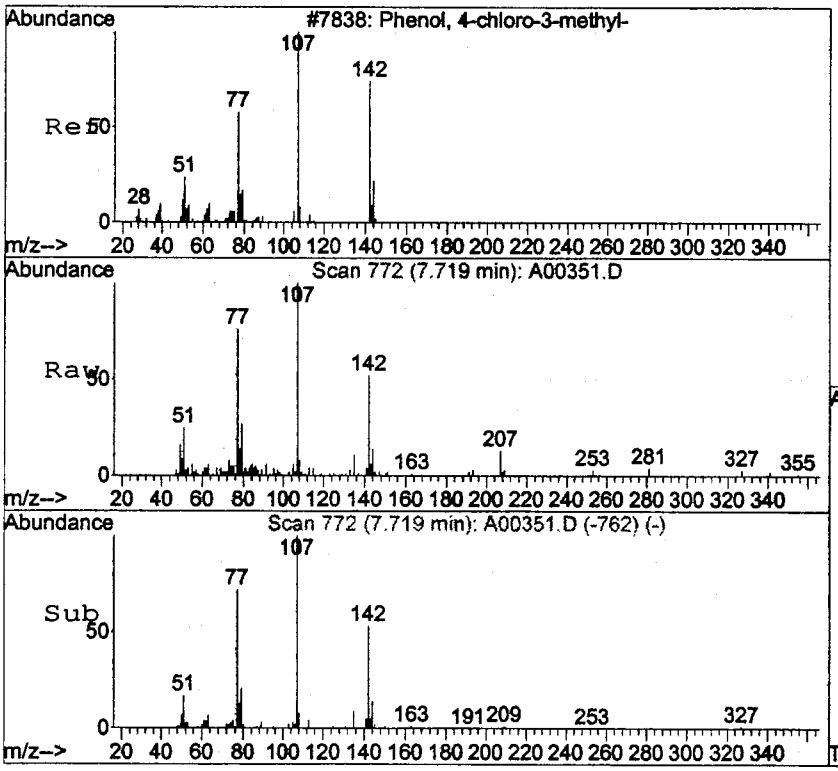


#32
Naphthalene
Concen: 40.15 ug/L
RT: 6.96 min Scan# 696
Delta R.T. 0.02 min
Lab File: A00351.D
Acq: 28 Aug 2002 17:31

Tgt Ion:128 Resp: 4500

Ion	Ratio	Lower	Upper
128	100		
102	21.0	0.0	47.0

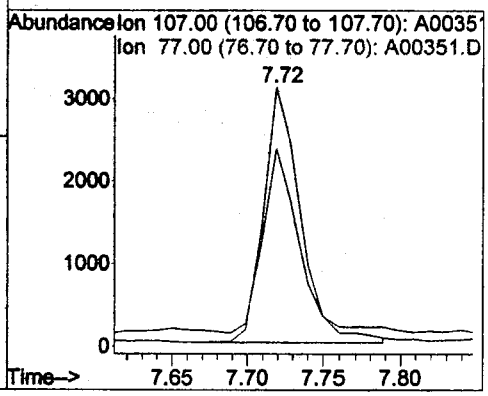


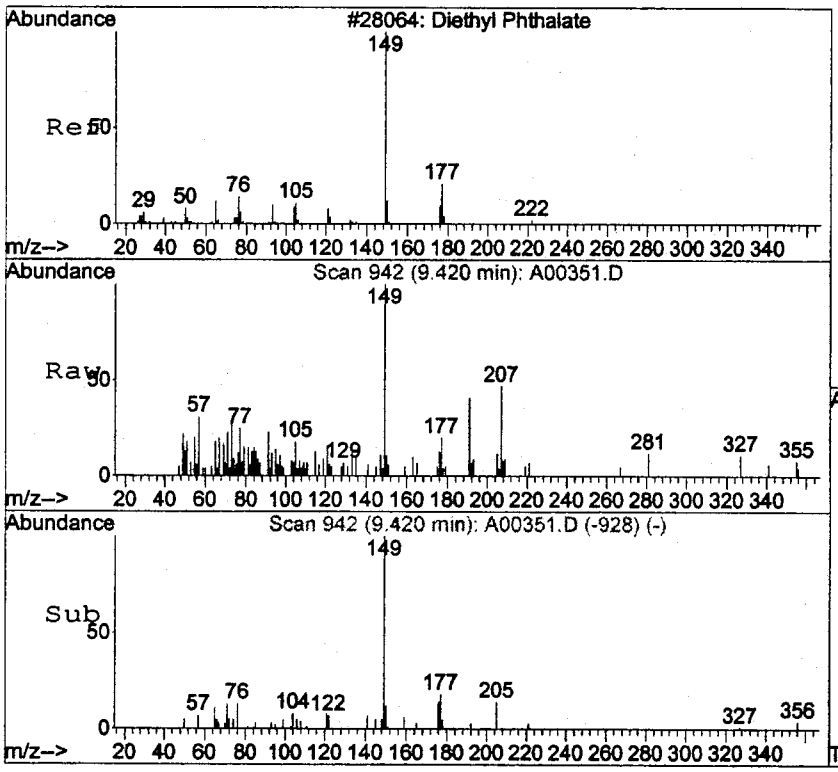


#35
4-Chloro-3-methylphenol
Concen: 115.74 ug/L
RT: 7.72 min Scan# 772
Delta R.T. -0.00 min
Lab File: A00351.D
Acq: 28 Aug 2002 17:31

Tgt Ion:107 Resp: 5136

Ion	Ratio	Lower	Upper
107	100		
77	69.0	30.9	110.9

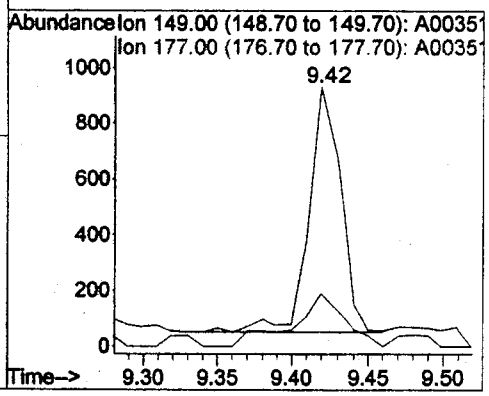


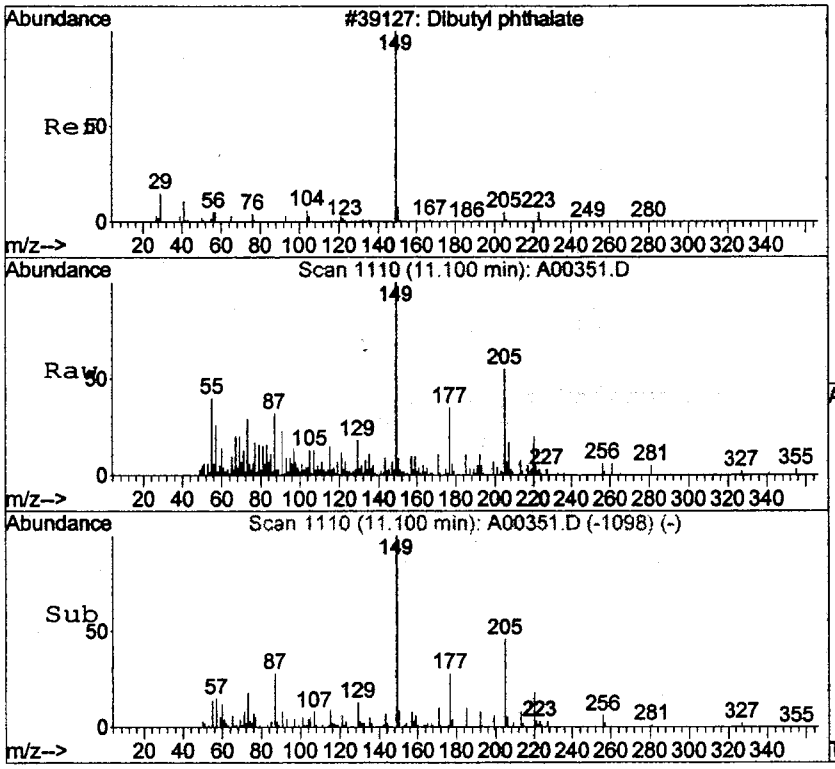


#58
Diethylphthalate
Concen: 10.75 ug/L
RT: 9.42 min Scan# 942
Delta R.T. 0.04 min
Lab File: A00351.D
Acq: 28 Aug 2002 17:31

Tgt Ion:149 Resp: 1239

Ion	Ratio	Lower	Upper
149	100		
177	0.0	0.0	61.2

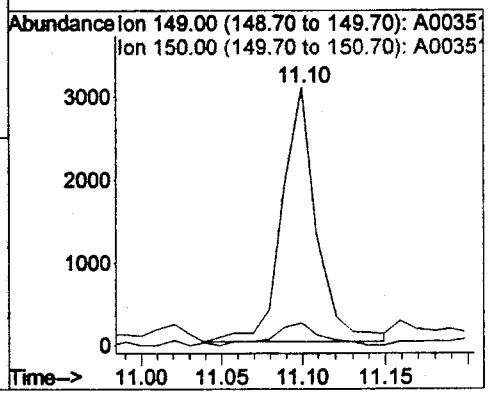


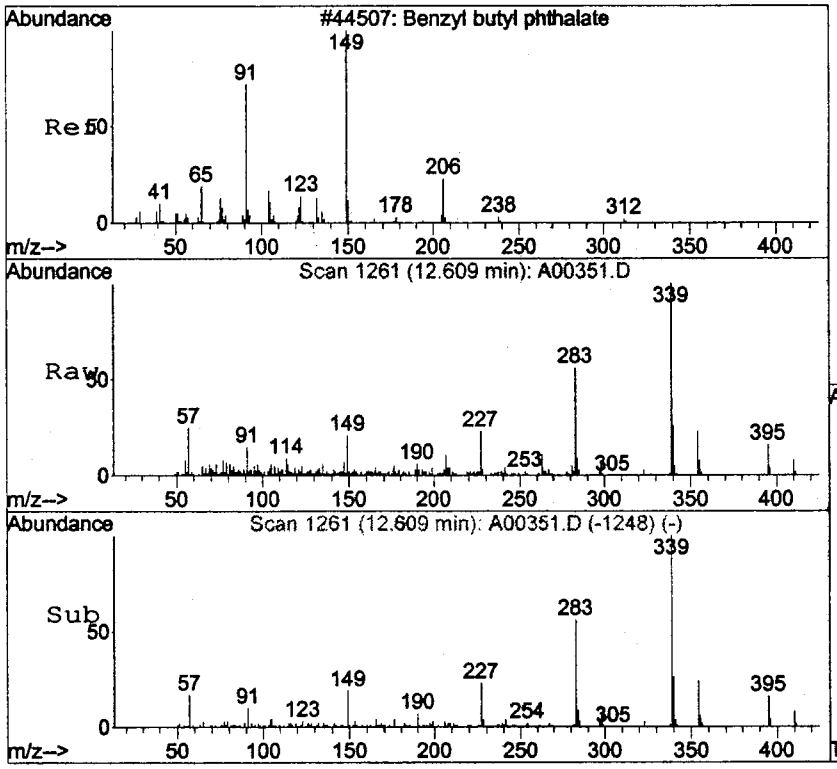


#75
Di-n-butylphthalate
Concen: 29.94 ug/L
RT: 11.10 min Scan# 1110
Delta R.T. 0.02 min
Lab File: A00351.D
Acq: 28 Aug 2002 17:31

Tgt Ion:149 Resp: 4518

Ion	Ratio	Lower	Upper
149	100		
150	12.3	0.0	48.0

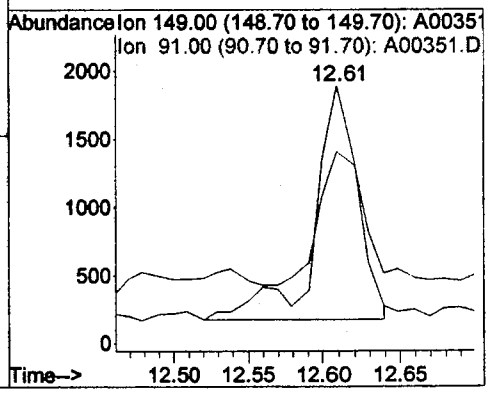


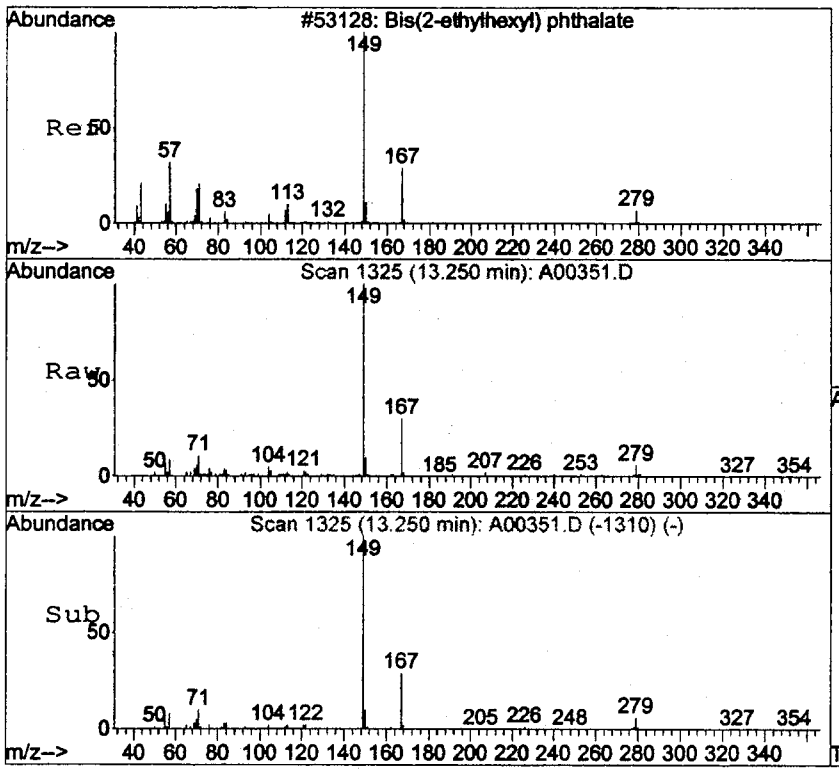


#81
Butylbenzylphthalate
Concen: 19.85 ug/L
RT: 12.61 min Scan# 1261
Delta R.T. 0.03 min
Lab File: A00351.D
Acq: 28 Aug 2002 17:31

Tgt Ion:149 Resp: 3317

Ion	Ratio	Lower	Upper
149	100		
91	57.6	32.2	112.2

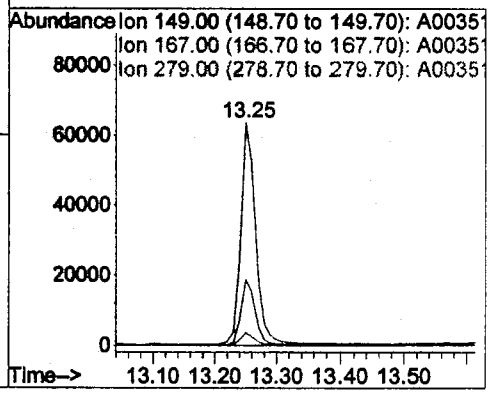


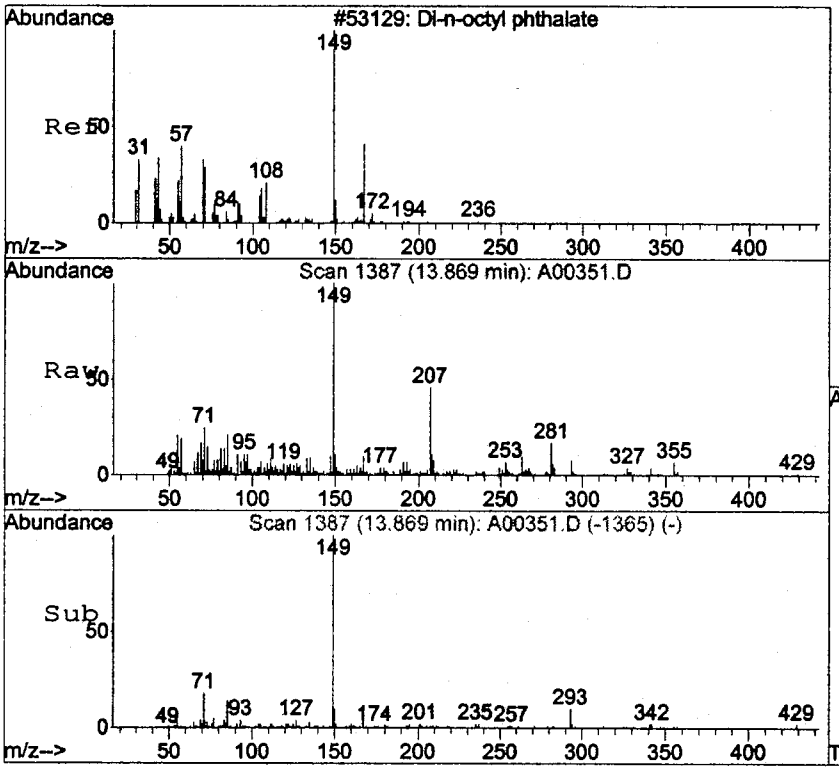


#85
bis(2-Ethylhexyl)phthalate
Concen: 358.76 ug/L m
RT: 13.25 min Scan# 1325
Delta R.T. 0.06 min
Lab File: A00351.D
Acq: 28 Aug 2002 17:31

Tgt Ion:149 Resp: 110613

Ion	Ratio	Lower	Upper
149	100		
167	22.6	0.0	68.8
279	4.3	0.0	46.8

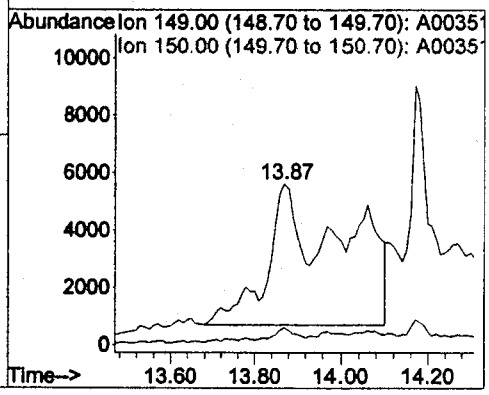




#87
Di-n-octylphthalate
Concen: 125.64 ug/L
RT: 13.87 min Scan# 1387
Delta R.T. 0.05 min
Lab File: A00351.D
Acq: 28 Aug 2002 17:31

Tgt Ion:149 Resp: 59416

Ion	Ratio	Lower	Upper
149	100		
150	10.2	0.0	51.0



INITIAL CALIBRATION

Response Factor Report

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 19 14:10:04 2002
Response via : Initial Calibration

Calibration Files
100 =A00099.D 10 =A00096.D 250 =A00100.D
500 =A00101.D 1500 =A00102.D 1000 =A00095.D

		Compound	100	10	250	500	1500	1000	Avg	%RSD
1)	I	1,4-Dichlorobenzene-d	----------ISTD----------							
2)	T	N-Nitrosodimeth	0.146		0.146	0.141	0.095	0.144	0.13#	16.8
3)	T	Pyridine	0.329		0.251	0.367	0.439	0.446	0.38#	21.2
4)	S	2 - Fluoropheno	0.489		0.527	0.507	0.460	0.490	0.48#	8.1
5)	T	Cyclohexanone	0.128		0.139	0.136	0.126	0.148	0.13#	10.3
6)	T	Aniline	0.220		0.277	0.270	0.339	0.341	0.29#	16.0
7)	S	Phenol - d5 (S)	0.374		0.508	0.524	0.531	0.565	0.50#	13.2
8)	TC	Phenol	0.371		0.462	0.504	0.582	0.595	0.52#	17.3
9)	T	bis(2-Chloroeth	0.248		0.293	0.267	0.308	0.259	0.28#	9.6
10)	T	2-Chlorophenol	0.418		0.483	0.468	0.419	0.472	0.44#	9.8
11)	T	Decane	0.235		0.234	0.232	0.235	0.243	0.23#	6.0
12)	T	1,3-Dichloroben	0.598		0.622	0.555	0.565	0.625	0.58#	6.0
13)	TC	1,4-Dichloroben	0.549		0.635	0.631	0.609	0.633	0.60#	6.3
14)	T	Benzyl alcohol	0.280		0.407	0.436	0.504	0.545	0.44#	21.1
15)	T	1,2-Dichloroben	0.531		0.602	0.590	0.552	0.633	0.57#	7.3
16)	T	2-Methylphenol	0.313		0.349	0.380	0.379	0.425	0.37#	10.1
17)	T	bis(2-chloroiso	0.080		0.083	0.087	0.083	0.099	0.09#	7.6
18)	T	3-&4-Methylphen	0.316		0.375	0.414	0.467	0.489	0.43#	17.1
19)	TP	n-Nitroso-di-n-	0.300		0.361	0.361	0.342	0.399	0.35	10.1
20)	T	Acetophenone	0.777		0.840	0.860	0.838	0.913	0.84#	5.6
21)	T	Hexachloroethan	0.139		0.141	0.135	0.122	0.143	0.13#	6.8
22)	I	Naphthalene - d8 (I)	----------ISTD----------							
23)	S	Nitrobenzene -	0.331		0.344	0.356	0.330	0.194	0.31#	19.1
24)	T	Nitrobenzene	0.177		0.206	0.192	0.135	0.281	0.18#	32.8
25)	T	Isophorone	0.331		0.344	0.356	0.330	0.345	0.33#	5.4
26)	TC	2-Nitrophenol	0.099		0.111	0.127	0.138	0.135	0.12#	12.1
27)	T	2,4-Dimethylphe	0.252		0.271	0.290	0.278	0.285	0.27#	5.1
28)	T	bis(2-Chloroeth	0.194		0.207	0.220	0.208	0.218	0.21#	4.6
29)	T	Benzoic Acid	0.058		0.067	0.076	0.099	0.094	0.08#	25.2
30)	TC	2,4-Dichlorophe	0.167		0.195	0.231	0.244	0.230	0.22#	14.3
31)	T	1,2,4-Trichloro	0.226		0.221	0.229	0.214	0.210	0.21#	7.9
32)	T	Naphthalene	0.657	0.777	0.679	0.716	0.699	0.695	0.70#	5.9
33)	T	4-Chloroaniline	0.086		0.103	0.109	0.114	0.114	0.10#	10.2
34)	TC	Hexachlorobutad	0.179		0.165	0.176	0.176	0.175	0.17#	3.6
35)	TC	4-Chloro-3-meth	0.254		0.262	0.295	0.287	0.292	0.28#	6.3
36)	T	2-Methylnaphtha	0.482	0.493	0.478	0.510	0.495	0.494	0.49#	3.4
37)	T	1-Methylnaphtha	0.423	0.418	0.437	0.483	0.481	0.470	0.45#	6.1
38)	I	Acenaphthene - d10 (I	----------ISTD----------							
39)	TP	Hexachlorocyclo	0.184		0.228	0.240	0.239	0.259	0.23	11.5
40)	T	2,3-Dichloroani	0.293		0.326	0.354	0.379	0.396	0.36#	12.9
41)	TC	2,4,6-Trichloro	0.177		0.218	0.223	0.211	0.233	0.21#	9.6
42)	T	2,4,5-Trichloro	0.180		0.194	0.221	0.233	0.240	0.21#	10.9
43)	S	2 - Fluorobiphe	0.616	0.999	0.746	0.713	0.720	0.741	0.75#	15.5
44)	T	2-Chloronaphtha	0.568	0.581	0.637	0.617	0.614	0.665	0.62#	5.4
45)	T	Biphenyl	0.662		0.784	0.779	0.861	0.870	0.81#	11.5
46)	T	2-Nitroaniline	0.181		0.211	0.217	0.226	0.269	0.22#	13.5
47)	T	Dimethylphthala	0.848		0.937	0.991	1.029	1.076	1.00#	9.7
48)	T	Acenaphthylene	0.862	0.984	0.961	1.006	1.050	1.072	1.01#	8.0
49)	T	2,6-Dinitrotolu	0.157		0.181	0.179	0.186	0.195	0.18#	7.3
50)	T	3-Nitroaniline	0.087		0.117	0.117	0.116	0.121	0.11#	11.3
51)	TC	Acenaphthene	0.578	0.695	0.698	0.691	0.672	0.729	0.68#	7.1
52)	TP	2,4-Dinitrophen	0.062		0.071	0.080	0.108	0.115	0.09	25.2
53)	TP	4-Nitrophenol	0.152		0.209	0.235	0.301	0.308	0.26	27.5

(#) = Out of Range ### Number of calibration levels exceeded format ###

Response Factor Report

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 19 14:10:04 2002
Response via : Initial Calibration

Calibration Files
100 =A00099.D 10 =A00096.D 250 =A00100.D
500 =A00101.D 1500 =A00102.D 1000 =A00095.D

		Compound	100	10	250	500	1500	1000	Avg	%RSD
54)	T	Dibenzofuran	0.770		0.893	0.907	0.905	0.984	0.90#	8.2
55)	T	2,4-Dinitrotolu	0.264		0.294	0.311	0.315	0.327	0.30#	7.3
56)	T	2,3,4,6-Tetrach	0.182		0.195	0.214	0.256	0.257	0.23#	16.5
57)	T	2,3,5,6-Tetrach	0.118		0.198	0.188	0.193	0.217	0.19#	18.6
58)	T	Diethylphthalat	0.888		0.964	0.976	0.762	0.919	0.86#	14.4
59)	T	Fluorene	0.574	0.652	0.635	0.701	0.761	0.750	0.71#	14.0
60)	T	4-Chlorophenylp	0.370		0.423	0.442	0.409	0.438	0.42#	6.3
61)	T	4-Nitroaniline	0.181		0.211	0.217	0.226	0.269	0.22#	13.5
62)	I	Phenanthrene - d10 (I	----------ISTD----------							
63)	T	4,6-Dinitro-2-m	0.087		0.099	0.096	0.100	0.106	0.10#	6.8
64)	T	n-Nitrosodiphen	0.306		0.350	0.363	0.465	0.414	0.42#	25.0
65)	S	2,4,6 - Tribrom	0.105		0.131	0.125	0.125	0.130	0.12#	7.9
66)	T	1,2-Diphenylhyd	0.158		0.171	0.179	0.229	0.206	0.20#	22.8
67)	T	4-Bromophenylph	0.167		0.182	0.182	0.177	0.180	0.18#	4.1
68)	T	Hexachlorobenze	0.168		0.182	0.178	0.176	0.176	0.18#	2.8
69)	T	Atrazine	0.022		0.025	0.025	0.026	0.028	0.03#	7.5
70)	TC	Pentachlorophen	0.069		0.094	0.092	0.106	0.095	0.09#	15.1
71)	T	Phenanthrene	0.644	0.569	0.751	0.693	0.749	0.724	0.71#	11.4
72)	T	Anthracene	0.498	0.576	0.500	0.582	0.509	0.541	0.54#	6.7
73)	T	Octadecane	0.223		0.206	0.196	0.167	0.176	0.19#	11.6
74)	T	Carbazole	0.563		0.593	0.588	0.556	0.578	0.58#	3.8
75)	T	Di-n-butylphtha	0.978		0.995	0.959	0.758	0.876	0.88#	14.0
76)	TC	Fluoranthene	0.639	0.747	0.714	0.693	0.652	0.681	0.69#	5.3
77)	T	Pyrene	0.631	0.771	0.690	0.656	0.622	0.666	0.67#	7.3
78)	T	Benzidine			0.071	0.086	0.115	0.107	0.10#	24.7
79)	S	p - Terphenyl -	0.529	0.781	0.639	0.589	0.558	0.558	0.60#	14.2
80)	I	Chrysene - d12 (I)	----------ISTD----------							
81)	T	Butylbenzylphth	0.538		0.550	0.510	0.462	0.549	0.51#	8.0
82)	T	Benzo(a)anthrac	0.857	1.122	0.850	0.824	0.835	0.867	0.90#	11.7
83)	T	3,3'-Dichlorobe	0.363		0.302	0.313	0.348	0.492	0.38#	19.8
84)	T	Chrysene	0.456	0.558	0.547	0.573	0.650	0.645	0.59#	13.3
85)	T	bis(2-Ethylhexy	1.291		1.109	0.922	0.761	0.862	0.94#	23.1
86)	I	Perylene - d12 (I)	----------ISTD----------							
87)	TC	Di-n-octylphtha	1.535		1.499	1.470	1.323	1.348	1.38#	11.4
88)	T	Benzofluoranthe	0.630	0.864	0.770	0.810	0.784	0.826	0.78#	9.5
89)	TC	Benzo(a)pyrene	0.651	1.078	0.726	0.742	0.778	0.790	0.79#	17.1
90)	T	Indeno(1,2,3-cd	0.796	0.612	0.888	0.959	0.898	0.999	0.87#	14.9
91)	T	Dibenz(a,h)anth	0.747	0.749	0.816	0.850	0.862	0.863	0.82#	6.1
92)	T	Benzo(g,h,i)per	0.760	0.627	0.744	0.809	0.835	0.829	0.77#	9.3

(#) = Out of Range ### Number of calibration levels exceeded format ###

Data File : C:\MSDCHEM\1\DATA\A00096.D
Acq On : 09 Aug 2002 15:46
Sample : 980-53-6 0.01 NG/UL 8270 ICAL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:15:35 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	6.11	150	226593	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.61	136	481371	1000.00 ug/L	0.01
38) Acenaphthene - d10 (I)	9.54	162	357110	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.09	188	530652	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.87	240	581527	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.62	264	532985	1000.00 ug/L	-0.14
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.74	112	1094	10.06 ug/L	-0.05
7) Phenol - d5 (S)	5.97	99	734	6.57 ug/L	0.05
23) Nitrobenzene - d5 (S)	7.16	82	1525	9.52 ug/L	0.02
43) 2 - Fluorobiphenyl (S)	8.85	172	3566	13.20 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.40	330	751	11.49 ug/L	0.01
79) p - Terphenyl - d14 (S)	12.78	244	4147	12.80 ug/L	0.00
Target Compounds					Qvalue
2) N-Nitrosodimethylamine	3.08	74	3586	124.10 ug/L #	16
3) Pyridine	3.15	79	3081+	36.98 ug/L	42
5) Cyclohexanone	4.86	55	767	26.49 ug/L #	1
9) bis(2-Chloroethyl)ether	5.89	63	746	11.52 ug/L #	46
10) 2-Chlorophenol	5.96	128	1041	10.63 ug/L #	28
11) Decane	6.02	57	822	15.92 ug/L #	25
12) 1,3-Dichlorobenzene	6.06	146	1420	10.87 ug/L #	1
18) 3-&4-Methylphenol	6.83	108	1057	11.23 ug/L #	32
29) Benzoic Acid	7.61	105	2924	73.37 ug/L #	64
31) 1,2,4-Trichlorobenzene	7.58	180	1240	12.01 ug/L	81
32) Naphthalene	7.63	128	3741	11.13 ug/L #	1
34) Hexachlorobutadiene	7.86	225	969	11.70 ug/L #	35
36) 2-Methylnaphthalene	8.41	141	2374	10.15 ug/L	63
40) 2,3-Dichloroaniline	8.78	161	1402	11.07 ug/L	94
45) Biphenyl	8.94	154	2901	10.12 ug/L	90
46) 2-Nitroaniline	9.12	138	825	10.71 ug/L #	27
50) 3-Nitroaniline	9.56	138	672	17.19 ug/L #	3
51) Acenaphthene	9.57	153	2483	10.33 ug/L	82
52) 2,4-Dinitrophenol	9.68	184	879	28.46 ug/L #	48
53) 4-Nitrophenol	9.90	109	2049+	23.19 ug/L #	46
58) Diethylphthalate	10.10	149	3369	11.09 ug/L	94
61) 4-Nitroaniline	9.12	138	825	10.71 ug/L #	33
63) 4,6-Dinitro-2-methylphenol	10.25	198	2071	40.22 ug/L #	25
68) Hexachlorobenzene	10.77	284	1280	13.60 ug/L #	37
70) Pentachlorophenol	10.99	266	1219	24.43 ug/L #	69
72) Anthracene	11.16	178	3055	10.71 ug/L	38
73) Octadecane	11.04	57	1908	18.64 ug/L #	1
75) Di-n-butylphthalate	11.80	149	7768	16.67 ug/L	92
76) Fluoranthene	12.36	202	3965	10.85 ug/L	87
77) Pyrene	12.58	202	4089	11.45 ug/L	69
78) Benzidine	12.52	184	2045	37.80 ug/L	100
81) Butylbenzylphthalate	13.34	149	4803	16.36 ug/L	85
82) Benzo(a)anthracene	13.85	228	6555m	12.45 ug/L	
83) 3,3'-Dichlorobenzidine	13.85	252	5484+	26.74 ug/L	80
84) Chrysene	13.89	228	3676m	10.94 ug/L	
85) bis(2-Ethylhexyl)phthalate	14.00	149	28363	50.74 ug/L	66
87) Di-n-octylphthalate	14.69	149	13987	18.92 ug/L	84
88) Benzofluoranthenes	15.11	252	9214	22.27 ug/L	72

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

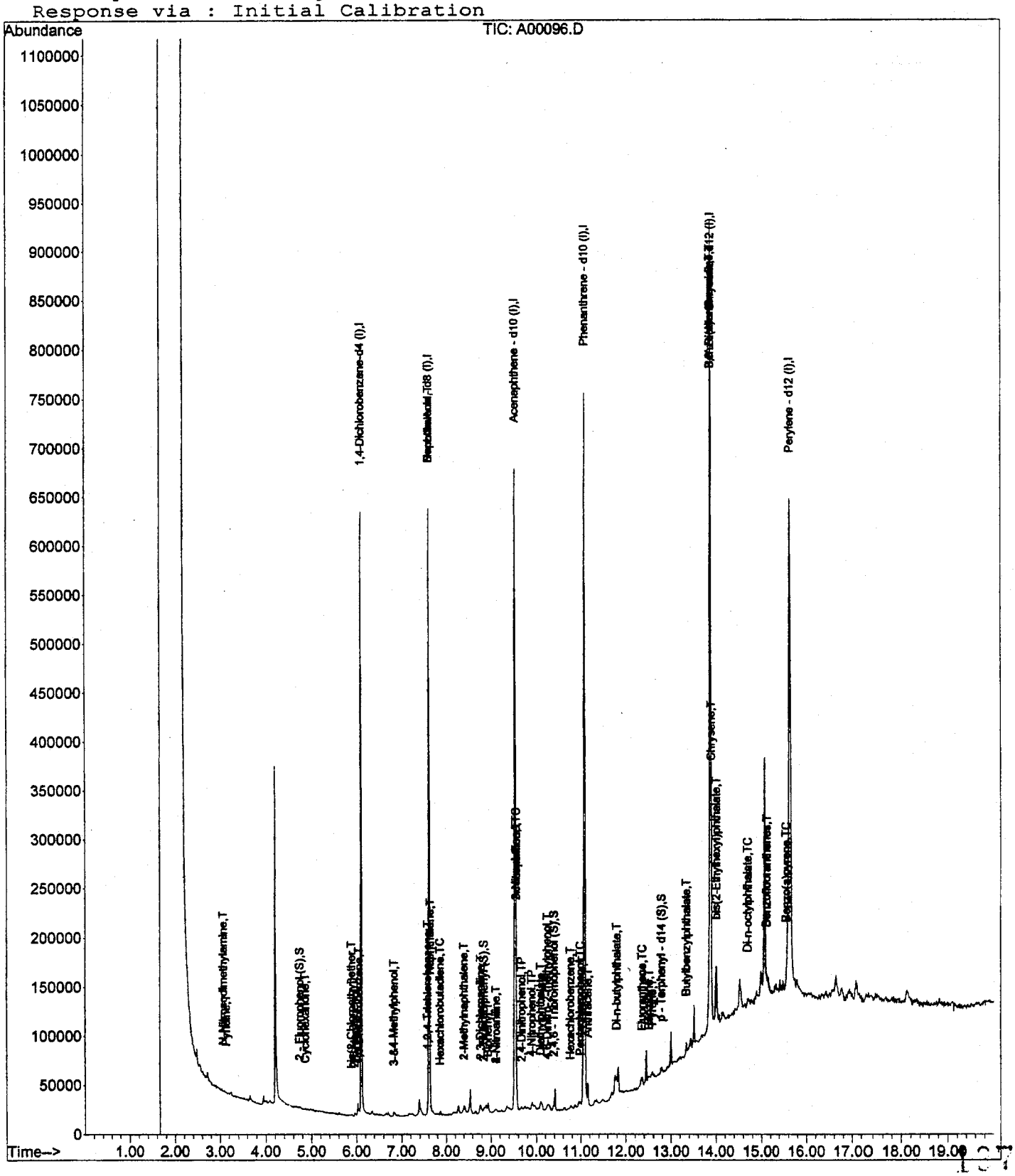
Data File : C:\MSDCHEM\1\DATA\A00096.D Vial: 0
Acq On : 09 Aug 2002 15:46 Operator:
Sample : 980-53-6 0.01 NG/UL 8270 ICAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:15:35 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration
DataAcq Meth :

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
89) Benzo(a)pyrene	15.54	252	5748	13.65 ug/L #	67

Data File : C:\MSDCHEM\1\DATA\A00096.D Vial: 0
Acq On : 09 Aug 2002 15:46 Operator:
Sample : 980-53-6 0.01 NG/UL 8270 ICAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:16 2002 Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00099.D Vial: 0
Acq On : 09 Aug 2002 17:04 Operator:
Sample : 980-54-3 0.1 NG/UL 8270 ICAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:16:30 2002 Quant Results File: SV5-080902.RES

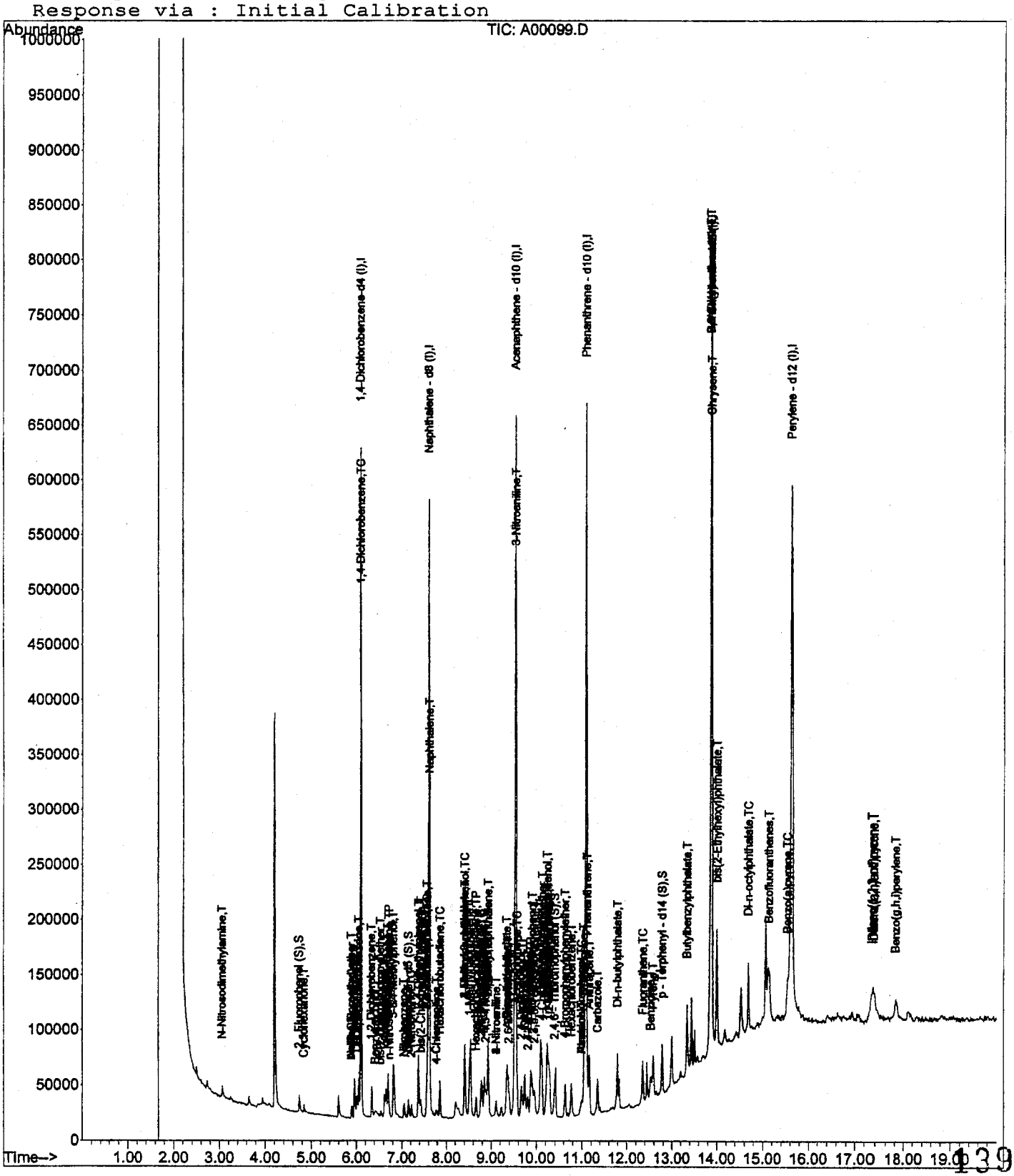
Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
47)	Dimethylphthalate	9.35	163	28705	86.24 ug/L		97
48)	Acenaphthylene	9.37	152	29169	86.73 ug/L		88
49)	2,6-Dinitrotoluene	9.40	165	5297	87.99 ug/L		78
50)	3-Nitroaniline	9.56	138	2932	79.15 ug/L	#	64
51)	Acenaphthene	9.57	153	19548	85.83 ug/L		69
52)	2,4-Dinitrophenol	9.67	184	10513	359.34 ug/L		73
53)	4-Nitrophenol	9.88	109	25770+	307.91 ug/L	#	35
54)	Dibenzofuran	9.74	168	26042	86.81 ug/L		95
55)	2,4-Dinitrotoluene	9.82	165	8924	88.40 ug/L		95
56)	2,3,4,6-Tetrachlorophenol	9.91	232	6153	81.00 ug/L	#	49
57)	2,3,5,6-Tetrachlorophenol	9.96	232	3980	65.76 ul/l		66
58)	Diethylphthalate	10.10	149	30026	104.35 ug/L		99
59)	Fluorene	10.11	166	19422	82.06 ug/L		62
60)	4-Chlorophenylphenylether	10.13	204	12511	89.98 ug/L		57
61)	4-Nitroaniline	9.11	138	6109	83.68 ug/L		85
63)	4,6-Dinitro-2-methylphenol	10.24	198	22111	446.29 ug/L	#	41
64)	n-Nitrosodiphenylamine	10.27	169	15644	73.66 ug/L	#	1
66)	1,2-Diphenylhydrazine	10.29	182	8082	77.47 ug/L	#	1
67)	4-Bromophenylphenylether	10.63	248	8551	93.11 ug/L	#	55
68)	Hexachlorobenzene	10.77	284	8603	95.01 ug/L		82
69)	Atrazine	10.99	200	1143+	89.04 ug/L		38
70)	Pentachlorophenol	10.99	266	3512	73.14 ug/L		89
71)	Phenanthrene	11.11	178	32860	91.51 ug/L		79
72)	Anthracene	11.16	178	25406	92.53 ug/L		70
73)	Octadecane	11.04	57	11371	115.49 ug/L		51
74)	Carbazole	11.35	167	28731	96.45 ug/L		78
75)	Di-n-butylphthalate	11.80	149	49923	111.32 ug/L		83
76)	Fluoranthene	12.36	202	32623	92.78 ug/L		96
77)	Pyrene	12.58	202	32211	93.77 ug/L		59
78)	Benzidine	12.53	184	19246	369.78 ug/L		100
81)	Butylbenzylphthalate	13.34	149	28348	106.51 ug/L		80
82)	Benzo(a)anthracene	13.85	228	45192	94.64 ug/L		80
83)	3,3'-Dichlorobenzidine	13.86	252	19160+	103.01 ug/L		97
84)	Chrysene	13.89	228	24060	78.96 ug/L		81
85)	bis(2-Ethylhexyl)phthalate	14.00	149	68091	134.32 ug/L		70
87)	Di-n-octylphthalate	14.69	149	79933	110.70 ug/L		95
88)	Benzofluoranthenes	15.13	252	65596	162.34 ug/L		88
89)	Benzo(a)pyrene	15.54	252	33915	82.43 ug/L		97
90)	Indeno(1,2,3-cd)pyrene	17.35	276	41462	94.34 ug/L		86
91)	Dibenz(a,h)anthracene	17.38	278	38913	92.27 ug/L		26
92)	Benzo(g,h,i)perylene	17.83	276	39545	100.04 ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00099.D Vial: 0
Acq On : 09 Aug 2002 17:04 Operator:
Sample : 980-54-3 0.1 NG/UL 8270 ICAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:16 2002 Quant Results File: SV5-080902.RE:

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00100.D Vial: 0
Acq On : 09 Aug 2002 17:30 Operator:
Sample : 980-54-4 0.25 NG/UL 8270 ICAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:16:38 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	6.11	150	195770	1000.00	ug/L	0.01
22) Naphthalene - d8 (I)	7.61	136	414395	1000.00	ug/L	0.01
38) Acenaphthene - d10 (I)	9.54	162	299505	1000.00	ug/L	0.00
62) Phenanthrene - d10 (I)	11.09	188	460127	1000.00	ug/L	0.00
80) Chrysene - d12 (I)	13.87	240	508134	1000.00	ul/l	0.00
86) Perylene - d12 (I)	15.63	264	479506	1000.00	ug/L	-0.13
System Monitoring Compounds						
4) 2 - Fluorophenol (S)	4.74	112	25782	274.54	ug/L	-0.05
7) Phenol - d5 (S)	5.95	99	24885	257.85	ug/L	0.03
23) Nitrobenzene - d5 (S)	7.15	82	35619	258.20	ug/L	0.01
43) 2 - Fluorobiphenyl (S)	8.85	172	55837	246.37	ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.40	330	15031	265.11	ug/L	0.01
79) p - Terphenyl - d14 (S)	12.78	244	73510	261.72	ug/L	0.00
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	3.06	74	35648	1427.94	ug/L #	16
3) Pyridine	2.99	79	2314+	32.15	ug/L	42
5) Cyclohexanone	4.84	55	6817	272.46	ug/L #	1
6) Aniline	5.89	93	13559	244.31	ug/L	91
8) Phenol	5.97	94	22598	230.09	ug/L	64
9) bis(2-Chloroethyl)ether	5.89	63	14322	256.02	ug/L	68
10) 2-Chlorophenol	5.96	128	23656	279.68	ug/L	67
11) Decane	6.02	57	11460	256.88	ug/L #	25
12) 1,3-Dichlorobenzene	6.06	146	30447	269.78	ug/L	56
13) 1,4-Dichlorobenzene	6.12	146	31101	265.64	ug/L #	48
14) Benzyl alcohol	6.42	79	19912	241.34	ug/L #	41
15) 1,2-Dichlorobenzene	6.35	146	29458	268.12	ug/L	75
16) 2-Methylphenol	6.62	108	17077	244.36	ug/L	88
17) bis(2-chloroisopropyl)ethe	6.55	121	4066+	246.63	ug/L #	8
18) 3-&4-Methylphenol	6.81	108	36658	450.93	ug/L #	37
19) n-Nitroso-di-n-propylamine	6.72	70	17683	268.34	ug/L #	43
20) Acetophenone	6.65	105	41092	254.84	ug/L #	50
21) Hexachloroethane	6.70	166	6891	266.50	ug/L	87
24) Nitrobenzene	7.05	77	21344	314.48	ug/L #	30
25) Isophorone	7.15	82	35619	258.20	ug/L	89
26) 2-Nitrophenol	7.22	139	11541	230.24	ug/L	48
27) 2,4-Dimethylphenol	7.38	107	28061	250.15	ug/L	80
28) bis(2-Chloroethoxy)methane	7.43	93	21453	250.77	ug/L	85
29) Benzoic Acid	7.63	105	34672	1010.59	ug/L	84
30) 2,4-Dichlorophenol	7.56	162	20245	225.26	ug/L	95
31) 1,2,4-Trichlorobenzene	7.57	180	22847	257.16	ug/L	98
32) Naphthalene	7.63	128	70369	243.22	ug/L	95
33) 4-Chloroaniline	7.78	127	10657	249.32	ug/L	100
34) Hexachlorobutadiene	7.86	225	17066	239.30	ug/L	91
35) 4-Chloro-3-methylphenol	8.41	107	27098	239.48	ug/L	77
36) 2-Methylnaphthalene	8.41	141	49494	245.80	ug/L	70
37) 1-Methylnaphthalene	8.53	141	45231	244.28	ul/l	62
39) Hexachlorocyclopentadiene	8.67	237	17080	249.30	ug/L	96
40) 2,3-Dichloroaniline	8.78	161	24440	230.06	ug/L	96
41) 2,4,6-Trichlorophenol	8.79	196	16333	265.87	ug/L	65
42) 2,4,5-Trichlorophenol	8.88	196	14492	233.22	ug/L	46
44) 2-Chloronaphthalene	8.93	162	47712	262.05	ug/L	78
45) Biphenyl	8.94	154	58682	244.05	ug/L	89

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

Data File : C:\MSDCHEM\1\DATA\A00100.D Vial: 0
Acq On : 09 Aug 2002 17:30 Operator:
Sample : 980-54-4 0.25 NG/UL 8270 ICAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:16:38 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration
DataAcq Meth :

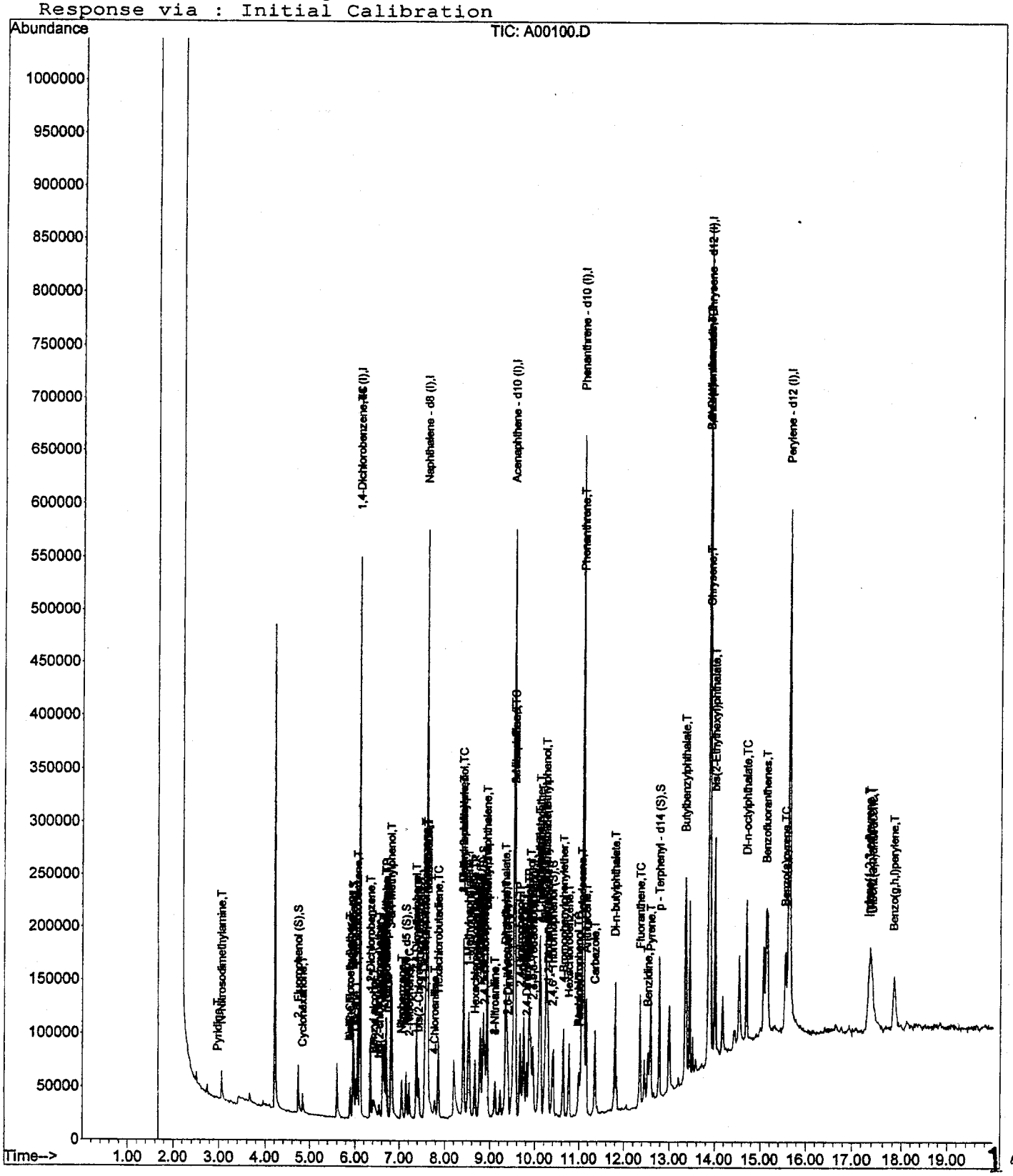
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	2-Nitroaniline	9.11	138	15789	244.30	ug/L		88
47)	Dimethylphthalate	9.35	163	70170	238.13	ug/L		99
48)	Acenaphthylene	9.38	152	71930	241.58	ug/L		87
49)	2,6-Dinitrotoluene	9.41	165	13559	254.42	ug/L		76
50)	3-Nitroaniline	9.56	138	8733	266.30	ug/L		91
51)	Acenaphthene	9.57	153	52291	259.35	ug/L	#	63
52)	2,4-Dinitrophenol	9.67	184	26654	1029.10	ug/L	#	68
53)	4-Nitrophenol	9.87	109	78324+	1057.09	ug/L	#	31
54)	Dibenzofuran	9.75	168	66887	251.86	ug/L		94
55)	2,4-Dinitrotoluene	9.82	165	22020	246.39	ug/L		99
56)	2,3,4,6-Tetrachlorophenol	9.91	232	14630	217.54	ug/L	#	60
57)	2,3,5,6-Tetrachlorophenol	9.96	232	14813	276.48	ul/l	#	48
58)	Diethylphthalate	10.10	149	72151	283.22	ug/L		90
59)	Fluorene	10.11	166	47557	226.98	ug/L	#	54
60)	4-Chlorophenylphenylether	10.13	204	31642	257.07	ug/L		61
61)	4-Nitroaniline	9.11	138	15789	244.30	ug/L		80
63)	4,6-Dinitro-2-methylphenol	10.24	198	57167	1280.36	ug/L	#	42
64)	n-Nitrosodiphenylamine	10.27	169	40274	210.41	ug/L	#	1
66)	1,2-Diphenylhydrazine	10.30	182	19672	209.25	ug/L	#	1
67)	4-Bromophenylphenylether	10.64	248	20951	253.13	ug/L	#	60
68)	Hexachlorobenzene	10.77	284	20881	255.89	ug/L		87
69)	Atrazine	11.00	200	2857+	246.96	ug/L		38
70)	Pentachlorophenol	10.99	266	10844	250.59	ug/L		89
71)	Phenanthrene	11.11	178	86442	267.11	ug/L		76
72)	Anthracene	11.16	178	57556	232.59	ug/L		71
73)	Octadecane	11.05	57	23699	267.08	ug/L	#	35
74)	Carbazole	11.35	167	68161	253.90	ug/L		76
75)	Di-n-butylphthalate	11.80	149	114457	283.20	ug/L		85
76)	Fluoranthene	12.36	202	82116	259.14	ug/L		97
77)	Pyrene	12.59	202	79364	256.37	ug/L		60
78)	Benzidine	12.53	184	40779	869.40	ug/L		100
81)	Butylbenzylphthalate	13.34	149	69879	272.47	ug/L		76
82)	Benzo(a)anthracene	13.86	228	107977	234.67	ug/L		84
83)	3,3'-Dichlorobenzidine	13.86	252	38325+	213.83	ug/L		94
84)	Chrysene	13.90	228	69449	236.53	ug/L		80
85)	bis(2-Ethylhexyl)phthalate	14.00	149	140884	288.41	ug/L		71
87)	Di-n-octylphthalate	14.70	149	179642	270.13	ug/L		98
88)	Benzofluoranthenes	15.13	252	184622	496.09	ug/L		88
89)	Benzo(a)pyrene	15.54	252	87067	229.75	ug/L		87
90)	Indeno(1,2,3-cd)pyrene	17.35	276	106429	262.92	ug/L		89
91)	Dibenz(a,h)anthracene	17.39	278	97835	251.87	ug/L		74
92)	Benzo(g,h,i)perylene	17.84	276	89214	245.05	ug/L		91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00100.D
Acq On : 09 Aug 2002 17:30
Sample : 980-54-4 0.25 NG/UL 8270 ICAL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:16 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration



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Data File : C:\MSDCHEM\1\DATA\A00101.D Vial: 0
Acq On : 09 Aug 2002 17:55 Operator:
Sample : 980-54-5 0.5 NG/UL 8270 ICAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:16:46 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	6.10	150	190913	1000.00	ug/L	0.00
22) Naphthalene - d8 (I)	7.61	136	394602	1000.00	ug/L	0.01
38) Acenaphthene - d10 (I)	9.54	162	297483	1000.00	ug/L	0.00
62) Phenanthrene - d10 (I)	11.09	188	476163	1000.00	ug/L	0.01
80) Chrysene - d12 (I)	13.87	240	505726	1000.00	ul/l	0.00
86) Perylene - d12 (I)	15.63	264	454645	1000.00	ug/L	-0.13
System Monitoring Compounds						
4) 2 - Fluorophenol (S)	4.73	112	48366	528.14	ug/L	-0.06
7) Phenol - d5 (S)	5.94	99	50036	531.65	ug/L	0.02
23) Nitrobenzene - d5 (S)	7.14	82	70303	535.19	ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.85	172	105992	470.85	ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.40	330	29846	508.68	ug/L	0.00
79) p - Terphenyl - d14 (S)	12.78	244	140115	482.05	ug/L	0.00
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	3.04	74	67134	2757.59	ug/L #	17
3) Pyridine	3.20	79	175198+	2496.07	ug/L	87
5) Cyclohexanone	4.83	55	13021	533.66	ug/L #	1
6) Aniline	5.88	93	25803	476.76	ug/L	96
8) Phenol	5.96	94	48119	502.41	ug/L	80
9) bis(2-Chloroethyl)ether	5.89	63	25449	466.50	ug/L	74
10) 2-Chlorophenol	5.95	128	44700	541.92	ug/L	69
11) Decane	6.01	57	22192	510.09	ug/L #	25
12) 1,3-Dichlorobenzene	6.05	146	52949	481.10	ug/L	66
13) 1,4-Dichlorobenzene	6.12	146	60277	527.94	ug/L	48
14) Benzyl alcohol	6.40	79	41646	517.61	ug/L #	40
15) 1,2-Dichlorobenzene	6.34	146	56319	525.65	ug/L	74
16) 2-Methylphenol	6.62	108	36289	532.48	ug/L	95
17) bis(2-chloroisopropyl)ethe	6.54	121	8337+	518.57	ug/L #	10
18) 3-&4-Methylphenol	6.81	108	79051	997.14	ug/L #	41
19) n-Nitroso-di-n-propylamine	6.72	70	34452	536.10	ug/L #	44
20) Acetophenone	6.65	105	82061	521.86	ug/L #	55
21) Hexachloroethane	6.70	166	12917	512.25	ug/L	85
24) Nitrobenzene	7.04	77	37842	585.52	ug/L #	29
25) Isophorone	7.14	82	70303	535.19	ug/L	90
26) 2-Nitrophenol	7.22	139	24998	523.72	ug/L	53
27) 2,4-Dimethylphenol	7.38	107	57207	535.56	ug/L	81
28) bis(2-Chloroethoxy)methane	7.43	93	43422	533.03	ug/L	85
29) Benzoic Acid	7.67	105	74746	2287.91	ug/L	81
30) 2,4-Dichlorophenol	7.56	162	45498	531.63	ug/L	98
31) 1,2,4-Trichlorobenzene	7.57	180	45231	534.64	ug/L	97
32) Naphthalene	7.63	128	141285	512.83	ug/L	99
33) 4-Chloroaniline	7.77	127	21603	530.74	ug/L	94
34) Hexachlorobutadiene	7.86	225	34808	512.56	ug/L	89
35) 4-Chloro-3-methylphenol	8.41	107	58118	539.38	ug/L	71
36) 2-Methylnaphthalene	8.41	141	100542	524.37	ug/L	71
37) 1-Methylnaphthalene	8.52	141	95331	540.67	ul/l	59
39) Hexachlorocyclopentadiene	8.67	237	35743	525.26	ug/L	94
40) 2,3-Dichloroaniline	8.78	161	52725	499.69	ug/L	100
41) 2,4,6-Trichlorophenol	8.79	196	33123	542.84	ug/L	67
42) 2,4,5-Trichlorophenol	8.88	196	32869	532.56	ug/L	52
44) 2-Chloronaphthalene	8.93	162	91764	507.42	ug/L	83
45) Biphenyl	8.94	154	115845	485.05	ug/L	84

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

Data File : C:\MSDCHEM\1\DATA\A00101.D Vial: 0
Acq On : 09 Aug 2002 17:55 Operator:
Sample : 980-54-5 0.5 NG/UL 8270 ICAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:16:46 2002 Quant Results File: SV5-080902.RES

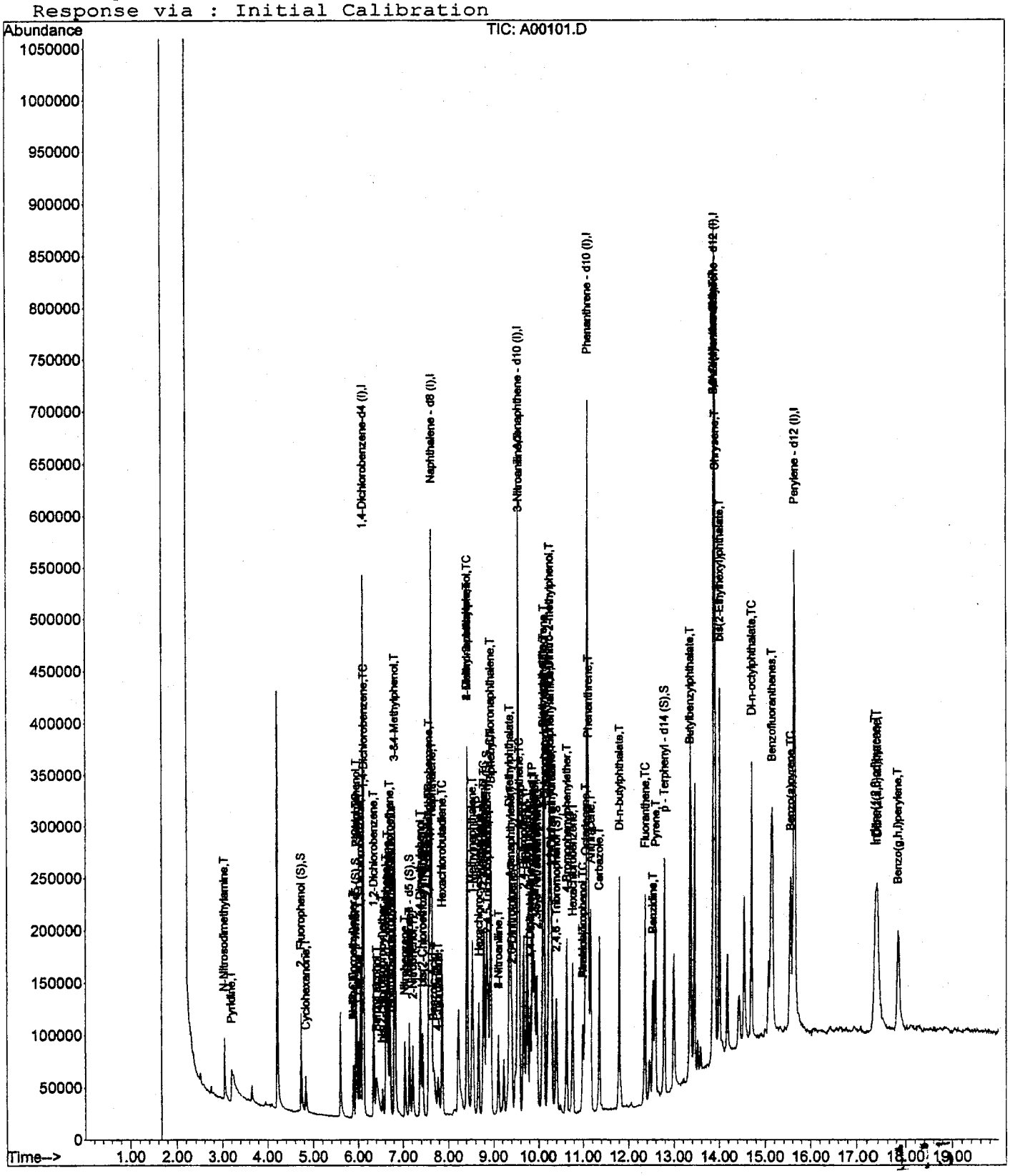
Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	2-Nitroaniline	9.11	138	32226	502.02 ug/L		91
47)	Dimethylphthalate	9.35	163	147346	503.43 ug/L		99
48)	Acenaphthylene	9.38	152	149619	505.91 ug/L		86
49)	2,6-Dinitrotoluene	9.41	165	26564	501.83 ug/L		80
50)	3-Nitroaniline	9.56	138	17395	534.05 ug/L		89
51)	Acenaphthene	9.57	153	102781	513.23 ug/L		66
52)	2,4-Dinitrophenol	9.67	184	59358	2307.37 ug/L		74
53)	4-Nitrophenol	9.86	109	174772+	2374.82 ug/L	#	25
54)	Dibenzofuran	9.75	168	134954	511.62 ug/L		92
55)	2,4-Dinitrotoluene	9.82	165	46250	521.02 ug/L		90
56)	2,3,4,6-Tetrachlorophenol	9.91	232	31814	476.27 ug/L	#	58
57)	2,3,5,6-Tetrachlorophenol	9.96	232	27946	525.15 ul/l	#	50
58)	Diethylphthalate	10.10	149	145193	573.82 ug/L		83
59)	Fluorene	10.11	166	104321	501.28 ug/L		65
60)	4-Chlorophenylphenylether	10.13	204	65804	538.24 ug/L		59
61)	4-Nitroaniline	9.11	138	32226	502.02 ug/L		82
63)	4,6-Dinitro-2-methylphenol	10.24	198	114625	2480.78 ug/L	#	46
64)	n-Nitrosodiphenylamine	10.27	169	86306	435.71 ug/L	#	1
66)	1,2-Diphenylhydrazine	10.30	182	42643	438.31 ug/L	#	1
67)	4-Bromophenylphenylether	10.64	248	43430	507.05 ug/L	#	58
68)	Hexachlorobenzene	10.77	284	42403	502.14 ug/L		87
69)	Atrazine	10.99	200	6004+	501.51 ug/L		38
70)	Pentachlorophenol	10.99	266	21940	489.92 ug/L		87
71)	Phenanthrene	11.11	178	164958	492.57 ug/L		74
72)	Anthracene	11.16	178	138673	541.53 ug/L		82
73)	Octadecane	11.04	57	46739	508.99 ug/L	#	19
74)	Carbazole	11.35	167	140061	504.15 ug/L		77
75)	Di-n-butylphthalate	11.80	149	228378	546.05 ug/L		84
76)	Fluoranthene	12.36	202	164976	503.10 ug/L		98
77)	Pyrene	12.59	202	156222	487.65 ug/L		59
78)	Benzidine	12.53	184	101907	2099.46 ug/L		100
81)	Butylbenzylphthalate	13.34	149	128994	505.36 ug/L		81
82)	Benzo(a)anthracene	13.86	228	208296	454.84 ug/L		75
83)	3,3'-Dichlorobenzidine	13.86	252	79097+	443.41 ug/L		99
84)	Chrysene	13.90	228	144925	495.93 ug/L		93
85)	bis(2-Ethylhexyl)phthalate	14.00	149	233201	479.67 ug/L		71
87)	Di-n-octylphthalate	14.70	149	334181	529.98 ug/L		100
88)	Benzofluoranthenes	15.14	252	368467	1044.23 ug/L		85
89)	Benzo(a)pyrene	15.55	252	168616	469.28 ug/L		93
90)	Indeno(1,2,3-cd)pyrene	17.36	276	217987	567.96 ug/L		94
91)	Dibenz(a,h)anthracene	17.40	278	193271	524.78 ug/L		75
92)	Benzo(g,h,i)perylene	17.85	276	183930	532.85 ug/L		88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00101.D Vial: 0
Acq On : 09 Aug 2002 17:55 Operator:
Sample : 980-54-5 0.5 NG/UL 8270 ICAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:16 2002 Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00095.D Vial: 0
Acq On : 09 Aug 2002 14:09 Operator:
Sample : 980-54-6 1.0 NG/UL 8270 CCAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 19 14:08:57 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 19 14:08:24 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	6.09	150	242602	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.60	136	550783	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.54	162	382667	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.08	188	675434	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.87	240	601474	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.62	264	598777	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.71	112	118846	1018.59 ug/L	0.00
7) Phenol - d5 (S)	5.93	99	137001	1107.72 ug/L	0.07
23) Nitrobenzene - d5 (S)	6.81	82	106927	626.93 ug/L	-0.02
43) 2 - Fluorobiphenyl (S)	8.84	172	283451	981.85 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.39	330	87767	1048.16 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.77	244	376937	925.56 ug/L	0.00

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.99	74	175177	5540.12 ug/L #	100
3) Pyridine	3.09	79	540459+	5852.75 ug/L	99
5) Cyclohexanone	4.80	55	35998	1161.02 ug/L #	1
6) Aniline	5.87	93	82848	1348.35 ug/L	80
8) Phenol	5.95	94	144250	1149.73 ug/L	98
9) bis(2-Chloroethyl)ether	5.87	63	62875	921.27 ug/L	97
10) 2-Chlorophenol	5.94	128	114462	1075.53 ug/L	64
11) Decane	6.00	57	58845	1053.09 ug/L #	25
12) 1,3-Dichlorobenzene	6.04	146	151671	1069.42 ug/L	74
13) 1,4-Dichlorobenzene	6.11	146	153555	1048.17 ug/L	56
14) Benzyl alcohol	6.39	79	132119	1232.21 ug/L #	41
15) 1,2-Dichlorobenzene	6.33	146	153642	1104.82 ug/L	80
16) 2-Methylphenol	6.62	108	103218	1154.92 ug/L	99
17) bis(2-chloroisopropyl)ethe	6.69	121	23967+	1140.24 ug/L	71
18) 3-&4-Methylphenol	6.81	108	237079	2287.89 ug/L	57
19) n-Nitroso-di-n-propylamine	6.71	70	96732	1149.15 ug/L #	96
20) Acetophenone	6.64	105	221377	1086.39 ug/L	72
21) Hexachloroethane	6.69	166	34708	1068.92 ug/L	86
24) Nitrobenzene	6.82	77	154952m	1280.05 ug/L	
25) Isophorone	7.14	82	189872	1026.80 ug/L	92
26) 2-Nitrophenol	7.21	139	74312	1093.74 ug/L	56
27) 2,4-Dimethylphenol	7.37	107	156712	1044.71 ug/L	85
28) bis(2-Chloroethoxy)methane	7.42	93	119962	1045.44 ug/L	90
29) Benzoic Acid	7.75	105	259000	5610.17 ug/L	85
30) 2,4-Dichlorophenol	7.55	162	126570	1056.32 ug/L	92
31) 1,2,4-Trichlorobenzene	7.57	180	115568	982.17 ug/L	94
32) Naphthalene	7.62	128	383063	996.71 ug/L	98
33) 4-Chloroaniline	7.77	127	62756	1087.46 ug/L	98
34) Hexachlorobutadiene	7.85	225	96573	1015.64 ug/L	90
35) 4-Chloro-3-methylphenol	8.42	107	161041	1080.00 ug/L	73
36) 2-Methylnaphthalene	8.40	141	271835	1013.44 ug/L	73
37) 1-Methylnaphthalene	8.52	141	258963	1044.45 ul/l	61
39) Hexachlorocyclopentadiene	8.66	237	99079	1107.54 ug/L	95
40) 2,3-Dichloroaniline	8.77	161	151638	1095.79 ug/L	97
41) 2,4,6-Trichlorophenol	8.79	196	89281	1116.44 ug/L	68
42) 2,4,5-Trichlorophenol	8.88	196	91905	1142.77 ug/L #	30
44) 2-Chloronaphthalene	8.93	162	254423	1079.25 ug/L	84
45) Biphenyl	8.93	154	332880	1068.65 ug/L	90

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

Data File : C:\MSDCHEM\1\DATA\A00095.D
Acq On : 09 Aug 2002 14:09
Sample : 980-54-6 1.0 NG/UL 8270 CCAL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 19 14:08:57 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

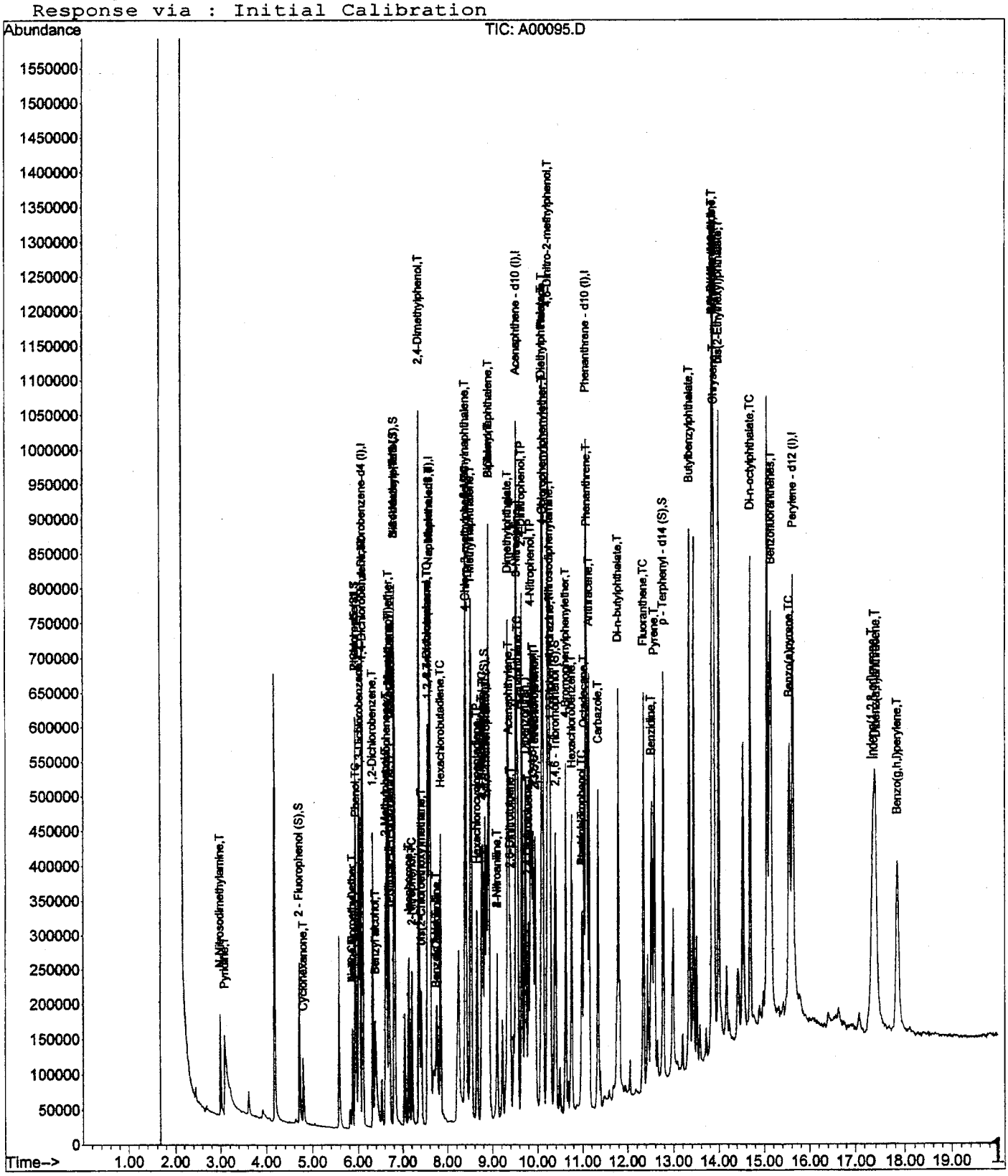
Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 19 14:08:24 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	2-Nitroaniline	9.11	138	102997	1197.95	ug/L		84
47)	Dimethylphthalate	9.35	163	411783	1076.90	ug/L		98
48)	Acenaphthylene	9.37	152	410219	1066.39	ug/L		82
49)	2,6-Dinitrotoluene	9.40	165	74742	1080.08	ug/L		76
50)	3-Nitroaniline	9.56	138	46387	1090.64	ug/L		86
51)	Acenaphthene	9.57	153	279090	1071.76	ug/L		75
52)	2,4-Dinitrophenol	9.66	184	220561	6316.33	ug/L		85
53)	4-Nitrophenol	9.86	109	589038+	7369.76	ug/L	#	15
54)	Dibenzofuran	9.74	168	376441	1089.56	ug/L		90
55)	2,4-Dinitrotoluene	9.81	165	125149	1078.74	ug/L		96
56)	2,3,4,6-Tetrachlorophenol	9.91	232	98312	1117.30	ug/L	#	51
57)	2,3,5,6-Tetrachlorophenol	9.95	232	82933	1174.70	ul/l	#	57
58)	Diethylphthalate	10.10	149	351482	1068.25	ug/L		56
59)	Fluorene	10.11	166	286910	1061.39	ug/L		71
60)	4-Chlorophenylphenylether	10.12	204	167418	1053.23	ug/L		63
61)	4-Nitroaniline	9.11	138	102997	1197.95	ug/L		81
63)	4,6-Dinitro-2-methylphenol	10.24	198	357941	5378.56	ug/L	#	61
64)	n-Nitrosodiphenylamine	10.27	169	279708	996.24	ug/L	#	1
66)	1,2-Diphenylhydrazine	10.29	182	139289	1005.91	ug/L	#	18
67)	4-Bromophenylphenylether	10.63	248	121823	1002.24	ug/L	#	59
68)	Hexachlorobenzene	10.77	284	118787	993.06	ug/L		87
69)	Atrazine	10.98	200	18740+	1086.06	ug/L		38
70)	Pentachlorophenol	10.98	266	63906	984.75	ug/L		91
71)	Phenanthrene	11.10	178	489088	1026.36	ug/L		78
72)	Anthracene	11.15	178	365702	1005.45	ug/L		79
73)	Octadecane	11.04	57	118740	925.12	ug/L	#	23
74)	Carbazole	11.35	167	390382	994.86	ug/L		81
75)	Di-n-butylphthalate	11.79	149	591426	997.41	ug/L		84
76)	Fluoranthene	12.35	202	460235	993.19	ug/L		99
77)	Pyrene	12.58	202	449941	991.53	ug/L		55
78)	Benzidine	12.52	184	362636	5211.19	ug/L		100
81)	Butylbenzylphthalate	13.34	149	330202	1072.03	ug/L		83
82)	Benzo(a)anthracene	13.85	228	521637	963.56	ug/L		79
83)	3,3'-Dichlorobenzidine	13.85	252	295763+	1314.16	ug/L		99
84)	Chrysene	13.89	228	388169	1098.52	ug/L		79
85)	bis(2-Ethylhexyl)phthalate	13.99	149	518338	908.28	ug/L		73
87)	Di-n-octylphthalate	14.69	149	807267	983.83	ug/L		99
88)	Benzofluoranthenes	15.13	252	989102	2134.03	ug/L		98
89)	Benzo(a)pyrene	15.54	252	473103	1007.07	ug/L		99
90)	Indeno(1,2,3-cd)pyrene	17.35	276	598295	1153.36	ug/L		92
91)	Dibenz(a,h)anthracene	17.39	278	516809	1055.61	ug/L		100
92)	Benzo(g,h,i)perylene	17.85	276	496218	1064.76	ug/L		90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00095.D Vial: 0
Acq On : 09 Aug 2002 14:09 Operator:
Sample : 980-54-6 1.0 NG/UL 8270 CCAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 19 14:09 2002 Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 19 14:10:04 2002
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00102.D Vial: 0
Acq On : 09 Aug 2002 18:21 Operator:
Sample : 980-54-7 1.5 NG/UL 8270 ICAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:16:55 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	6.10	150	210543	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.60	136	439422	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.54	162	327436	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.08	188	547094	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.87	240	509983	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.62	264	488511	1000.00 ug/L	-0.14
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.72	112	145156	1437.26 ug/L	-0.07
7) Phenol - d5 (S)	5.92	99	167852	1617.19 ug/L	0.00
23) Nitrobenzene - d5 (S)	7.13	82	217343	1485.80 ug/L	-0.01
43) 2 - Fluorobiphenyl (S)	8.84	172	353475	1426.62 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.39	330	102891	1526.26 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.77	244	457523	1369.98 ug/L	0.00

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	3.03	74	150755	5615.04 ug/L #	16
3) Pyridine	3.07	79	765749+	9892.57 ug/L	82
5) Cyclohexanone	4.81	55	39707	1475.65 ug/L #	1
6) Aniline	5.88	93	107212	1796.24 ug/L	82
8) Phenol	5.94	94	183684	1739.04 ug/L	100
9) bis(2-Chloroethyl)ether	5.88	63	97273	1616.86 ug/L	83
10) 2-Chlorophenol	5.94	128	132178	1453.06 ug/L	64
11) Decane	6.01	57	74247	1547.49 ug/L	89
12) 1,3-Dichlorobenzene	6.05	146	178468	1470.38 ug/L	74
13) 1,4-Dichlorobenzene	6.11	146	192454	1528.46 ug/L	58
14) Benzyl alcohol	6.39	79	159064	1792.66 ug/L #	40
15) 1,2-Dichlorobenzene	6.34	146	174462	1476.51 ug/L	80
16) 2-Methylphenol	6.61	108	119615	1591.49 ug/L	96
17) bis(2-chloroisopropyl)ethe	6.54	121	26213+	1478.45 ug/L #	12
18) 3-&4-Methylphenol	6.80	108	295170	3376.10 ug/L	57
19) n-Nitroso-di-n-propylamine	6.71	70	107953	1523.22 ug/L #	44
20) Acetophenone	6.64	105	264724	1526.54 ug/L	61
21) Hexachloroethane	6.69	166	38478	1383.65 ug/L	88
24) Nitrobenzene	7.03	77	88740	1233.01 ug/L #	27
25) Isophorone	7.13	82	217343	1485.80 ug/L	91
26) 2-Nitrophenol	7.21	139	91008	1712.18 ug/L	62
27) 2,4-Dimethylphenol	7.37	107	183008	1538.52 ug/L	86
28) bis(2-Chloroethoxy)methane	7.42	93	137147	1511.84 ug/L	90
29) Benzoic Acid	7.78	105	326427	8972.52 ug/L	84
30) 2,4-Dichlorophenol	7.55	162	160614	1685.30 ug/L	95
31) 1,2,4-Trichlorobenzene	7.57	180	140997	1496.61 ug/L	89
32) Naphthalene	7.62	128	460557	1501.21 ug/L	100
33) 4-Chloroaniline	7.77	127	75243	1660.02 ug/L	98
34) Hexachlorobutadiene	7.85	225	115903	1532.63 ug/L	92
35) 4-Chloro-3-methylphenol	8.42	107	189263	1577.35 ug/L	76
36) 2-Methylnaphthalene	8.40	141	326438	1528.86 ug/L	69
37) 1-Methylnaphthalene	8.52	141	317149	1615.25 ul/l	62
39) Hexachlorocyclopentadiene	8.66	237	117205	1564.82 ug/L	96
40) 2,3-Dichloroaniline	8.77	161	186076	1602.16 ug/L	98
41) 2,4,6-Trichlorophenol	8.79	196	103659	1543.41 ug/L	58
42) 2,4,5-Trichlorophenol	8.87	196	114297	1682.49 ug/L	36
44) 2-Chloronaphthalene	8.92	162	301529	1514.83 ug/L	89
45) Biphenyl	8.93	154	422676	1607.88 ug/L	96

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

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00102.D Vial: 0
Acq On : 09 Aug 2002 18:21 Operator:
Sample : 980-54-7 1.5 NG/UL 8270 ICAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:16:55 2002 Quant Results File: SV5-080902.RES

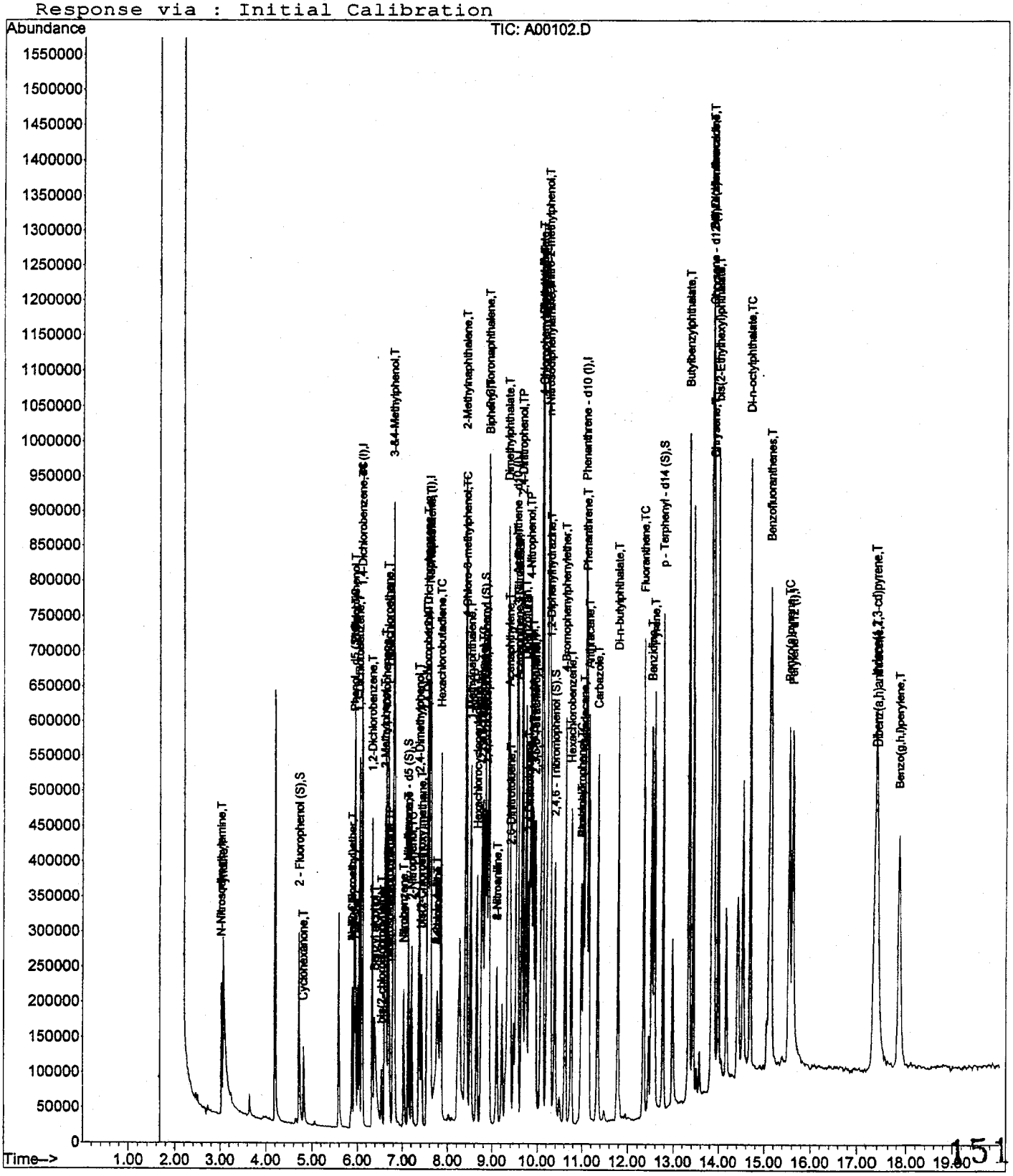
Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	2-Nitroaniline	9.11	138	110765	1567.67 ug/L		84
47)	Dimethylphthalate	9.35	163	505523	1569.19 ug/L		99
48)	Acenaphthylene	9.37	152	515685	1584.20 ug/L		78
49)	2,6-Dinitrotoluene	9.40	165	91182	1564.97 ug/L		78
50)	3-Nitroaniline	9.55	138	57151	1594.10 ug/L		83
51)	Acenaphthene	9.57	153	330099	1497.53 ug/L		83
52)	2,4-Dinitrophenol	9.66	184	265644	9381.54 ug/L		88
53)	4-Nitrophenol	9.84	109	738005+	9110.76 ug/L	#	10
54)	Dibenzofuran	9.74	168	444389	1530.60 ug/L		93
55)	2,4-Dinitrotoluene	9.81	165	154909	1585.45 ug/L		89
56)	2,3,4,6-Tetrachlorophenol	9.90	232	125934	1712.82 ug/L	#	50
57)	2,3,5,6-Tetrachlorophenol	9.95	232	94736	1617.39 ul/l	#	55
58)	Diethylphthalate	10.10	149	374270	1343.85 ug/L		27
59)	Fluorene	10.11	166	373643	1631.18 ug/L		79
60)	4-Chlorophenylphenylether	10.12	204	200665	1491.20 ug/L		58
61)	4-Nitroaniline	9.11	138	110765	1567.67 ug/L		78
63)	4,6-Dinitro-2-methylphenol	10.24	198	410203	7726.83 ug/L	#	63
64)	n-Nitrosodiphenylamine	10.27	169	381859	1677.86 ug/L	#	1
66)	1,2-Diphenylhydrazine	10.29	182	188039	1682.19 ug/L	#	49
67)	4-Bromophenylphenylether	10.63	248	145598	1479.50 ug/L	#	62
68)	Hexachlorobenzene	10.76	284	144565	1490.00 ug/L		87
69)	Atrazine	10.98	200	21460+	1560.14 ug/L		38
70)	Pentachlorophenol	10.98	266	86737	1685.72 ug/L		89
71)	Phenanthrene	11.10	178	614583	1597.22 ug/L		85
72)	Anthracene	11.15	178	417318	1418.37 ug/L		80
73)	Octadecane	11.03	57	136660	1295.29 ug/L	#	25
74)	Carbazole	11.35	167	456196	1429.18 ug/L		82
75)	Di-n-butylphthalate	11.79	149	621999	1294.37 ug/L		82
76)	Fluoranthene	12.35	202	535383	1420.99 ug/L		99
77)	Pyrene	12.58	202	510397	1386.65 ug/L		57
78)	Benzidine	12.52	184	473664	8493.14 ug/L		100
81)	Butylbenzylphthalate	13.34	149	353514	1373.40 ug/L		88
82)	Benzo(a)anthracene	13.85	228	638781	1383.23 ug/L		80
83)	3,3'-Dichlorobenzidine	13.85	252	266286+	1480.32 ug/L		99
84)	Chrysene	13.89	228	497012	1686.58 ug/L		77
85)	bis(2-Ethylhexyl)phthalate	13.99	149	581994	1187.11 ug/L		72
87)	Di-n-octylphthalate	14.69	149	969667	1431.20 ug/L		98
88)	Benzofluoranthenes	15.13	252	1148427	3029.01 ug/L		84
89)	Benzo(a)pyrene	15.54	252	570173	1476.85 ug/L		84
90)	Indeno(1,2,3-cd)pyrene	17.37	276	657759	1594.97 ug/L		99
91)	Dibenz(a,h)anthracene	17.40	278	631594	1596.05 ug/L		85
92)	Benzo(g,h,i)perylene	17.86	276	612008	1650.08 ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00102.D Vial: 0
Acq On : 09 Aug 2002 18:21 Operator:
Sample : 980-54-7 1.5 NG/UL 8270 ICAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:16 2002 Quant Results File: SV5-080902.RE

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00103.D Vial: 0
Acq On : 09 Aug 2002 18:47 Operator:
Sample : 980-55-2 2.5 NG/UL 8270 ICAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:17:02 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	6.11	150	228429	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.61	136	483836	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.54	162	333748	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.09	188	550460	1000.00 ug/L	0.01
80) Chrysene - d12 (I)	13.88	240	480418	1000.00 ul/l	0.01
86) Perylene - d12 (I)	15.63	264	512956	1000.00 ug/L	-0.13
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.72	112	237828	2170.47 ug/L	-0.07
7) Phenol - d5 (S)	5.93	99	300954	2672.55 ug/L	0.00
23) Nitrobenzene - d5 (S)	7.14	82	367792	2283.49 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.85	172	623431	2468.57 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.40	330	178542	2632.25 ug/L	0.01
79) p - Terphenyl - d14 (S)	12.78	244	779967	2321.20 ug/L	0.00
Target Compounds					Qvalue
2) N-Nitrosodimethylamine	3.06	74	314661	10802.24 ug/L #	16
3) Pyridine	3.07	79	1291145+	15374.02 ug/L	76
5) Cyclohexanone	4.82	55	62429	2138.41 ug/L #	1
6) Aniline	5.88	93	177551	2741.79 ug/L	79
8) Phenol	5.94	94	337078	2941.42 ug/L	95
9) bis(2-Chloroethyl)ether	5.89	63	178819	2739.58 ug/L	78
10) 2-Chlorophenol	5.95	128	212394	2152.07 ug/L	63
11) Decane	6.02	57	115831	2225.16 ug/L	90
12) 1,3-Dichlorobenzene	6.05	146	309948	2353.68 ug/L	86
13) 1,4-Dichlorobenzene	6.12	146	322401	2360.00 ug/L	61
14) Benzyl alcohol	6.39	79	274456	2850.94 ug/L #	39
15) 1,2-Dichlorobenzene	6.34	146	303029	2363.80 ug/L	87
16) 2-Methylphenol	6.62	108	207627	2546.20 ug/L	98
17) bis(2-chloroisopropyl)ethe	6.54	121	49849+	2591.41 ug/L #	13
18) 3-&4-Methylphenol	6.81	108	576265	6075.11 ug/L	68
19) n-Nitroso-di-n-propylamine	6.73	70	182200	2369.56 ug/L #	42
20) Acetophenone	6.65	105	459099	2440.12 ug/L	68
21) Hexachloroethane	6.69	166	70508	2336.91 ug/L	87
24) Nitrobenzene	7.04	77	132544	1672.60 ug/L #	28
25) Isophorone	7.14	82	367792	2283.49 ug/L	90
26) 2-Nitrophenol	7.21	139	156308	2670.76 ug/L	58
27) 2,4-Dimethylphenol	7.38	107	318095	2428.70 ug/L	88
28) bis(2-Chloroethoxy)methane	7.43	93	245269	2455.53 ug/L	99
29) Benzoic Acid	7.67	105	690591	17239.82 ug/L	77
30) 2,4-Dichlorophenol	7.56	162	299340	2852.61 ug/L	90
31) 1,2,4-Trichlorobenzene	7.57	180	220641	2127.01 ug/L	95
32) Naphthalene	7.63	128	799596	2367.08 ug/L	98
33) 4-Chloroaniline	7.78	127	125404	2512.71 ug/L	99
34) Hexachlorobutadiene	7.86	225	199386	2394.54 ug/L	90
35) 4-Chloro-3-methylphenol	8.45	107	324245	2454.26 ug/L	75
36) 2-Methylnaphthalene	8.41	141	553687	2355.13 ug/L	72
37) 1-Methylnaphthalene	8.52	141	531652	2459.17 ul/l	65
39) Hexachlorocyclopentadiene	8.66	237	210985	2763.61 ug/L	96
40) 2,3-Dichloroaniline	8.78	161	350753	2962.96 ug/L	96
41) 2,4,6-Trichlorophenol	8.80	196	164300	2400.05 ug/L #	54
42) 2,4,5-Trichlorophenol	8.89	196	175452	2533.86 ug/L #	31
44) 2-Chloronaphthalene	8.93	162	525940	2592.26 ug/L	97
45) Biphenyl	8.93	154	775087	2892.70 ug/L	90

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

Data File : C:\MSDCHEM\1\DATA\A00103.D Vial: 0
Acq On : 09 Aug 2002 18:47 Operator:
Sample : 980-55-2 2.5 NG/UL 8270 ICAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:17:02 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration
DataAcq Meth :

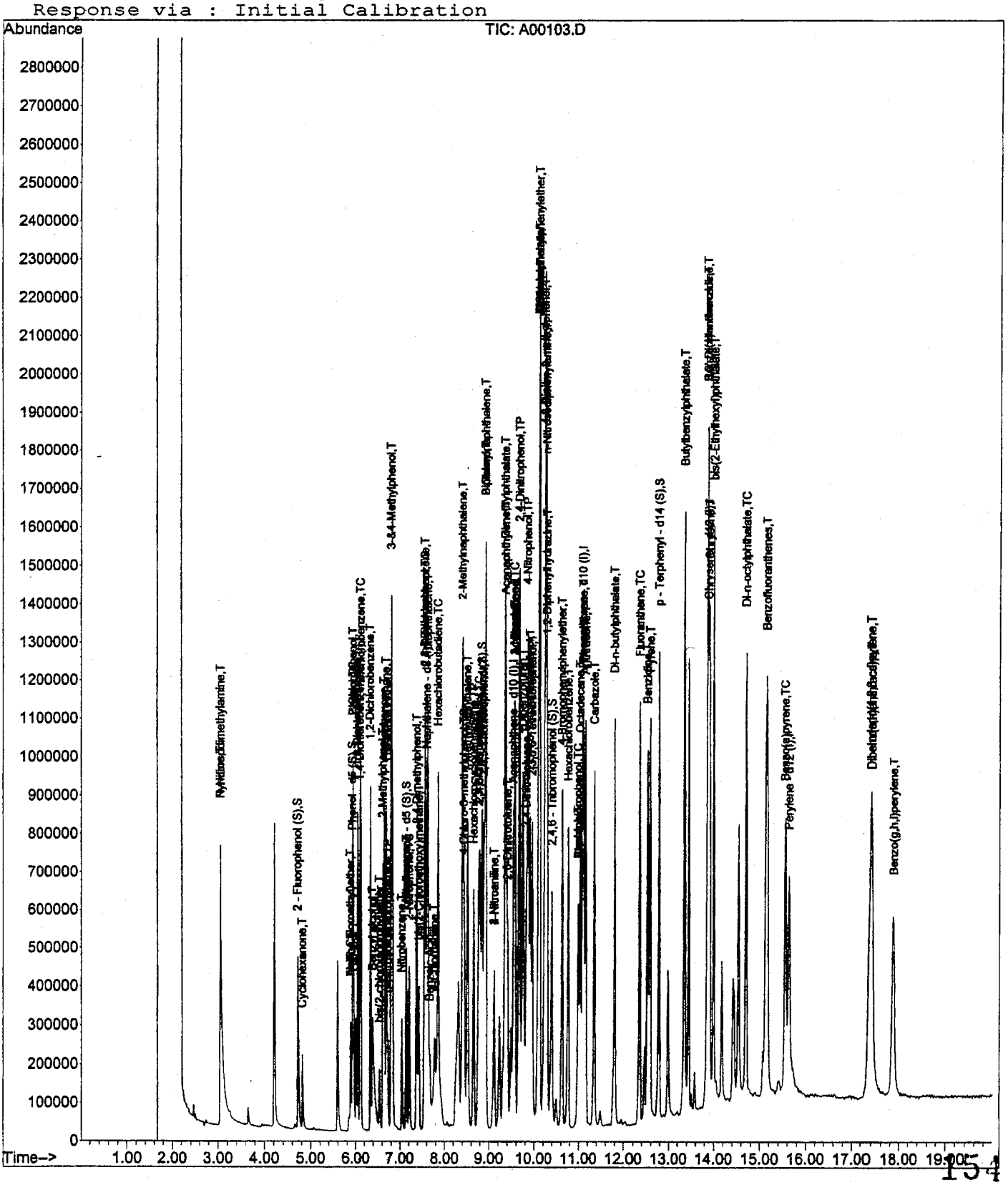
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	2-Nitroaniline	9.12	138	204674	2842.00 ug/L	79
47)	Dimethylphthalate	9.36	163	929370	2830.29 ug/L	100
48)	Acenaphthylene	9.38	152	919604	2771.62 ug/L	71
49)	2,6-Dinitrotoluene	9.41	165	156702	2638.63 ug/L	76
50)	3-Nitroaniline	9.57	138	92492	2531.07 ug/L	78
51)	Acenaphthene	9.57	153	587899	2616.63 ug/L	85
52)	2,4-Dinitrophenol	9.67	184	463302	16052.62 ug/L	96
53)	4-Nitrophenol	9.87	109	1417868+	17172.70 ug/L #	4
54)	Dibenzofuran	9.75	168	799608	2701.98 ug/L	90
55)	2,4-Dinitrotoluene	9.83	165	256808	2578.65 ug/L	88
56)	2,3,4,6-Tetrachlorophenol	9.91	232	229596	3063.66 ug/L #	47
57)	2,3,5,6-Tetrachlorophenol	9.96	232	165358	2769.69 ul/l #	54
58)	Diethylphthalate	10.12	149	553641	1950.30 ug/L #	1
59)	Fluorene	10.12	166	729371	3123.93 ug/L	90
60)	4-Chlorophenylphenylether	10.13	204	343336	2503.17 ug/L	57
61)	4-Nitroaniline	9.12	138	204674	2842.00 ug/L	76
63)	4,6-Dinitro-2-methylphenol	10.25	198	708127	13257.14 ug/L #	70
64)	n-Nitrosodiphenylamine	10.28	169	819673	3579.55 ug/L #	1
66)	1,2-Diphenylhydrazine	10.30	182	390892	3475.51 ug/L	91
67)	4-Bromophenylphenylether	10.63	248	261392	2639.90 ug/L #	63
68)	Hexachlorobenzene	10.77	284	251049	2571.69 ug/L	90
69)	Atrazine	10.99	200	37320+	2696.57 ug/L	38
70)	Pentachlorophenol	10.99	266	150473	2906.54 ug/L	89
71)	Phenanthrene	11.11	178	1120945	2895.38 ug/L	90
72)	Anthracene	11.16	178	773545	2613.04 ug/L	88
73)	Octadecane	11.04	57	237597	2238.23 ug/L #	21
74)	Carbazole	11.36	167	850150	2647.09 ug/L	84
75)	Di-n-butylphthalate	11.80	149	965759	1997.44 ug/L	85
76)	Fluoranthene	12.36	202	944981	2492.79 ug/L	94
77)	Pyrene	12.59	202	918217	2479.37 ug/L	54
78)	Benzidine	12.53	184	934483	16653.49 ug/L	100
81)	Butylbenzylphthalate	13.35	149	556936	2296.85 ug/L	99
82)	Benzo(a)anthracene	13.86	228	1135441	2610.01 ug/L	77
83)	3,3'-Dichlorobenzidine	13.86	252	525690+	3102.24 ug/L	99
84)	Chrysene	13.90	228	820755	2956.59 ug/L	74
85)	bis(2-Ethylhexyl)phthalate	14.00	149	868802	1881.17 ug/L	72
87)	Di-n-octylphthalate	14.70	149	1419957	1995.94 ug/L	100
88)	Benzofluoranthenes	15.14	252	2047298	5142.48 ug/L	79
89)	Benzo(a)pyrene	15.55	252	982049	2422.46 ug/L	81
90)	Indeno(1,2,3-cd)pyrene	17.39	276	1169947	2701.76 ug/L	97
91)	Dibenz(a,h)anthracene	17.42	278	1072121	2580.17 ug/L	91
92)	Benzo(g,h,i)perylene	17.88	276	1001108	2570.54 ug/L	99

153

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00103.D Vial: 0
Acq On : 09 Aug 2002 18:47 Operator:
Sample : 980-55-2 2.5 NG/UL 8270 ICAL Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 15:17 2002 Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00104.D
Acq On : 09 Aug 2002 19:13
Sample : 980-52-2 1.0 NG/UL 8270 OCS
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4 (I)	1000.000	1000.000	0.0	0	0.00
2	T	N-Nitrosodimethylamine	5000.000	4369.724	12.6	0	0.06
3	T	Pyridine	5000.000	5125.366	-2.5	0	0.05
4	S	2 - Fluorophenol (S)	1000.000	28.238	97.2#	0	-0.04
5	T	Cyclohexanone	1000.000	0.000	100.0#	0	-4.81#
6	T	Aniline	1000.000	1457.870	-45.8#	0	0.00
7	S	Phenol - d5 (S)	1000.000	55.712	94.4#	0	0.02
8	TC	Phenol	1000.000	994.143	0.6	0	0.01
9	T	bis(2-Chloroethyl)ether	1000.000	910.971	8.9	0	0.00
10	T	2-Chlorophenol	1000.000	1103.370	-10.3	0	0.00
11	T	Decane	1000.000	949.371	5.1	0	0.00
12	T	1,3-Dichlorobenzene	1000.000	980.868	1.9	0	0.00
13	TC	1,4-Dichlorobenzene	1000.000	1040.403	-4.0	0	0.00
14	T	Benzyl alcohol	1000.000	1012.463	-1.2	0	0.00
15	T	1,2-Dichlorobenzene	1000.000	910.779	8.9	0	0.00
16	T	2-Methylphenol	1000.000	1097.017	-9.7	0	-0.02
17	T	bis(2-chloroisopropyl)ether	1000.000	1085.392	-8.5	0	0.00
18	T	3-&4-Methylphenol	2000.000	932.368	53.4#	0	-0.04
19	TP	n-Nitroso-di-n-propylamine	1000.000	1040.160	-4.0	0	0.00
20	T	Acetophenone	1000.000	1015.196	-1.5	0	0.00
21	T	Hexachloroethane	1000.000	977.074	2.3	0	0.00
22	I	Naphthalene - d8 (I)	1000.000	1000.000	0.0	0	0.00
23	S	Nitrobenzene - d5 (S)	1000.000	961.059	3.9	0	0.00
24	T	Nitrobenzene	1000.000	997.546	0.2	0	0.00
25	T	Isophorone	1000.000	961.059	3.9	0	0.00
26	TC	2-Nitrophenol	1000.000	988.696	1.1	0	0.00
27	T	2,4-Dimethylphenol	1000.000	1100.151	-10.0	0	0.00
28	T	bis(2-Chloroethoxy)methane	1000.000	986.148	1.4	0	0.00
29	T	Benzoic Acid	5000.000	4936.770	1.3	0	-0.16
30	TC	2,4-Dichlorophenol	1000.000	968.331	3.2	0	-0.04
31	T	1,2,4-Trichlorobenzene	1000.000	944.449	5.6	0	0.00
32	T	Naphthalene	1000.000	944.330	5.6	0	0.01
33	T	4-Chloroaniline	1000.000	1437.279	-43.7#	0	-0.01
34	TC	Hexachlorobutadiene	1000.000	1107.448	-10.7	0	0.00
35	TC	4-Chloro-3-methylphenol	1000.000	936.233	6.4	0	-0.05
36	T	2-Methylnaphthalene	1000.000	992.667	0.7	0	0.00
37	T	1-Methylnaphthalene	1000.000	1024.821	-2.5	0	0.00
38	I	Acenaphthene - d10 (I)	1000.000	1000.000	0.0	0	-0.01
39	TP	Hexachlorocyclopentadiene	1000.000	1021.888	-2.2	0	0.00
40	T	2,3-Dichloroaniline	1000.000	1002.655	-0.3	0	0.00
41	TC	2,4,6-Trichlorophenol	1000.000	1004.185	-0.4	0	-0.01
42	T	2,4,5-Trichlorophenol	1000.000	1046.940	-4.7	0	-0.02
43	S	2 - Fluorobiphenyl (S)	1000.000	9.867	99.0#	0	0.00
44	T	2-Chloronaphthalene	1000.000	1033.146	-3.3	0	-0.01
45	T	Biphenyl	1000.000	991.729	0.8	0	0.00
46	T	2-Nitroaniline	1000.000	957.203	4.3	0	0.00
47	T	Dimethylphthalate	1000.000	947.146	5.3	0	0.00
48	T	Acenaphthylene	1000.000	964.824	3.5	0	0.01
49	T	2,6-Dinitrotoluene	1000.000	980.077	2.0	0	0.00
50	T	3-Nitroaniline	1000.000	1040.345	-4.0	0	-0.02
51	TC	Acenaphthene	1000.000	1014.531	-1.5	0	-0.02

(#) = Out of Range

Data File : C:\MSDCHEM\1\DATA\A00104.D Vial: 0
Acq On : 09 Aug 2002 19:13 Operator:
Sample : 980-52-2 1.0 NG/UL 8270 OCS Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
52	TP	2,4-Dinitrophenol	5000.000	4342.977	13.1	0	0.00
53	TP	4-Nitrophenol	5000.000	5357.852	-7.2	0	-0.02
54	T	Dibenzofuran	1000.000	963.826	3.6	0	0.01
55	T	2,4-Dinitrotoluene	1000.000	1031.625	-3.2	0	0.01
56	T	2,3,4,6-Tetrachlorophenol	1000.000	1109.015	-10.9	0	0.00
57	T	2,3,5,6-Tetrachlorophenol	1000.000	882.258	11.8	0	0.00
58	T	Diethylphthalate	1000.000	1020.710	-2.1	0	0.00
59	T	Fluorene	1000.000	1009.786	-1.0	0	-0.01
60	T	4-Chlorophenylphenylether	1000.000	998.993	0.1	0	-0.01
61	T	4-Nitroaniline	1000.000	957.203	4.3	0	0.00
62	I	Phenanthrene - d10 (I)	1000.000	1000.000	0.0	0	0.00
63	T	4,6-Dinitro-2-methylphenol	5000.000	4620.057	7.6	0	0.00
64	T	n-Nitrosodiphenylamine	1000.000	881.099	11.9	0	0.00
65	S	2,4,6 - Tribromophenol (S)	1000.000	0.000	100.0#	0	-10.39#
66	T	1,2-Diphenylhydrazine	1000.000	948.543	5.1	0	0.00
67	T	4-Bromophenylphenylether	1000.000	1023.549	-2.4	0	0.00
68	T	Hexachlorobenzene	1000.000	1048.350	-4.8	0	0.00
69	T	Atrazine	1000.000	906.837	9.3	0	0.00
70	TC	Pentachlorophenol	1000.000	955.405	4.5	0	0.00
71	T	Phenanthrene	1000.000	1109.203	-10.9	0	0.00
72	T	Anthracene	1000.000	937.207	6.3	0	0.00
73	T	Octadecane	1000.000	21.367	97.9#	0	0.01
74	T	Carbazole	1000.000	910.301	9.0	0	0.00
75	T	Di-n-butylphthalate	1000.000	933.094	6.7	0	0.02
76	TC	Fluoranthene	1000.000	950.868	4.9	0	0.01
77	T	Pyrene	1000.000	960.002	4.0	0	0.02
78	T	Benzidine	5000.000	4046.864	19.1	0	0.00
79	S	p - Terphenyl - d14 (S)	1000.000	8.303	99.2#	0	0.00
80	I	Chrysene - d12 (I)	1000.000	1000.000	0.0	0	-0.01
81	T	Butylbenzylphthalate	1000.000	1051.960	-5.2	0	-0.02
82	T	Benzo(a)anthracene	1000.000	948.023	5.2	0	-0.01
83	T	3,3'-Dichlorobenzidine	1000.000	2265.726	-126.6#	0	0.00
84	T	Chrysene	1000.000	1122.512	-12.3	0	0.00
85	T	bis(2-Ethylhexyl)phthalate	1000.000	859.924	14.0	0	-0.04
86	I	Perylene - d12 (I)	1000.000	1000.000	0.0	0	-0.14
87	TC	Di-n-octylphthalate	1000.000	1008.920	-0.9	0	0.00
88	T	Benzofluoranthenes	2000.000	2117.555	-5.9	0	0.00
89	TC	Benzo(a)pyrene	1000.000	970.052	3.0	0	0.00
90	T	Indeno(1,2,3-cd)pyrene	1000.000	1079.974	-8.0	0	0.00
91	T	Dibenz(a,h)anthracene	1000.000	1022.476	-2.2	0	-0.01
92	T	Benzo(g,h,i)perylene	1000.000	993.857	0.6	0	0.00

Data File : C:\MSDCHEM\1\DATA\A00104.D Vial: 0
Acq On : 09 Aug 2002 19:13 Operator:
Sample : 980-52-2 1.0 NG/UL 8270 OCS Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 13:16:31 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	6.10	150	211144	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.60	136	467146	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.53	162	316234	1000.00 ug/L	-0.01
62) Phenanthrene - d10 (I)	11.08	188	514739	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.86	240	458543	1000.00 ul/l	-0.01
86) Perylene - d12 (I)	15.62	264	454228	1000.00 ug/L	-0.14
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.75	112	2860	28.24 ug/L	-0.04
7) Phenol - d5 (S)	5.94	99	5799	55.71 ug/L	0.02
23) Nitrobenzene - d5 (S)	7.13	82	149454	961.06 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.84	172	2361	9.87 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	0.00	330	0	0.00 ug/L	
79) p - Terphenyl - d14 (S)	12.77	244	2609	8.30 ug/L	0.00
Target Compounds					Qvalue
2) N-Nitrosodimethylamine	3.05	74	117655m	4369.72 ug/L	
3) Pyridine	3.14	79	397869+	5125.37 ug/L	86
6) Aniline	5.88	93	87264	1457.87 ug/L	70
8) Phenol	5.95	94	105305	994.14 ug/L	95
9) bis(2-Chloroethyl)ether	5.88	63	54962	910.97 ug/L	73
10) 2-Chlorophenol	5.94	128	100655	1103.37 ug/L	62
11) Decane	6.01	57	45680	949.37 ug/L	94
12) 1,3-Dichlorobenzene	6.05	146	119393	980.87 ug/L	71
13) 1,4-Dichlorobenzene	6.12	146	131375	1040.40 ug/L	57
14) Benzyl alcohol	6.40	79	90093	1012.46 ug/L #	39
15) 1,2-Dichlorobenzene	6.34	146	107923	910.78 ug/L	77
16) 2-Methylphenol	6.61	108	82686	1097.02 ug/L	96
17) bis(2-chloroisopropyl)ethe	6.54	121	19299+	1085.39 ug/L #	11
18) 3-&4-Methylphenol	6.79	108	81749	932.37 ug/L #	32
19) n-Nitroso-di-n-propylamine	6.71	70	73928	1040.16 ug/L #	45
20) Acetophenone	6.64	105	176552	1015.20 ug/L #	54
21) Hexachloroethane	6.69	166	27249	977.07 ug/L	88
24) Nitrobenzene	7.03	77	76323	997.55 ug/L #	28
25) Isophorone	7.13	82	149454	961.06 ug/L	91
26) 2-Nitrophenol	7.21	139	55868	988.70 ug/L	53
27) 2,4-Dimethylphenol	7.37	107	139120	1100.15 ug/L	83
28) bis(2-Chloroethoxy)methane	7.42	93	95103	986.15 ug/L	92
29) Benzoic Acid	7.60	105	190935	4936.77 ug/L	79
30) 2,4-Dichlorophenol	7.55	162	98107	968.33 ug/L	96
31) 1,2,4-Trichlorobenzene	7.56	180	94591	944.45 ug/L	94
32) Naphthalene	7.62	128	307990	944.33 ug/L	100
33) 4-Chloroaniline	7.76	127	69257	1437.28 ug/L #	96
34) Hexachlorobutadiene	7.85	225	89033	1107.45 ug/L	89
35) 4-Chloro-3-methylphenol	8.39	107	119424	936.23 ug/L	76
36) 2-Methylnaphthalene	8.40	141	225324	992.67 ug/L	68
37) 1-Methylnaphthalene	8.51	141	213915	1024.82 ul/l	62
39) Hexachlorocyclopentadiene	8.66	237	73921	1021.89 ug/L	94
40) 2,3-Dichloroaniline	8.77	161	112465	1002.66 ug/L	98
41) 2,4,6-Trichlorophenol	8.78	196	65136	1004.18 ug/L	61
42) 2,4,5-Trichlorophenol	8.86	196	68689	1046.94 ug/L	43
44) 2-Chloronaphthalene	8.92	162	198614	1033.15 ug/L	84
45) Biphenyl	8.93	154	251785	991.73 ug/L	85
46) 2-Nitroaniline	9.10	138	65318	957.20 ug/L	88

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

Data File : C:\MSDCHEM\1\DATA\A00104.D Vial: 0
Acq On : 09 Aug 2002 19:13 Operator:
Sample : 980-52-2 1.0 NG/UL 8270 OCS Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 12 13:16:31 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
47)	Dimethylphthalate	9.34	163	294689	947.15	ug/L		100
48)	Acenaphthylene	9.37	152	303323	964.82	ug/L		85
49)	2,6-Dinitrotoluene	9.40	165	55150	980.08	ug/L		77
50)	3-Nitroaniline	9.55	138	36022	1040.35	ug/L		88
51)	Acenaphthene	9.56	153	215981	1014.53	ug/L		70
52)	2,4-Dinitrophenol	9.66	184	118767	4342.98	ug/L		76
53)	4-Nitrophenol	9.84	109	419158+	5357.85	ug/L	#	17
54)	Dibenzofuran	9.74	168	270261	963.83	ug/L		92
55)	2,4-Dinitrotoluene	9.81	165	97348	1031.62	ug/L		96
56)	2,3,4,6-Tetrachlorophenol	9.90	232	78750	1109.01	ug/L	#	50
57)	2,3,5,6-Tetrachlorophenol	9.95	232	49909	882.26	ul/l	#	60
58)	Diethylphthalate	10.10	149	274549	1020.71	ug/L		63
59)	Fluorene	10.10	166	223391	1009.79	ug/L		74
60)	4-Chlorophenylphenylether	10.12	204	129832	998.99	ug/L		59
61)	4-Nitroaniline	9.10	138	65318	957.20	ug/L		80
63)	4,6-Dinitro-2-methylphenol	10.23	198	230765	4620.06	ug/L	#	51
64)	n-Nitrosodiphenylamine	10.26	169	188668	881.10	ug/L	#	1
66)	1,2-Diphenylhydrazine	10.29	182	99760	948.54	ug/L	#	21
67)	4-Bromophenylphenylether	10.63	248	94771	1023.55	ug/L	#	64
68)	Hexachlorobenzene	10.76	284	95699	1048.35	ug/L		86
69)	Atrazine	10.98	200	11736+	906.84	ug/L		38
70)	Pentachlorophenol	10.98	266	46252	955.41	ug/L		91
71)	Phenanthrene	11.10	178	401561	1109.20	ug/L		79
72)	Anthracene	11.15	178	259440	937.21	ug/L		76
73)	Octadecane	11.04	57	2121	21.37	ug/L	#	27
74)	Carbazole	11.34	167	273384	910.30	ug/L		80
75)	Di-n-butylphthalate	11.79	149	421873	933.09	ug/L		85
76)	Fluoranthene	12.35	202	337069	950.87	ug/L		98
77)	Pyrene	12.58	202	332459	960.00	ug/L		58
78)	Benzidine	12.52	184	212347	4046.86	ug/L		100
81)	Butylbenzylphthalate	13.33	149	243463	1051.96	ug/L		85
82)	Benzo(a)anthracene	13.84	228	393642	948.02	ug/L		82
83)	3,3'-Dichlorobenzidine	13.85	252	366457+	2265.73	ug/L		99
84)	Chrysene	13.89	228	297423	1122.51	ug/L		77
85)	bis(2-Ethylhexyl)phthalate	13.99	149	379065	859.92	ug/L		73
87)	Di-n-octylphthalate	14.69	149	635591	1008.92	ug/L		99
88)	Benzofluoranthenes	15.13	252	746512	2117.56	ug/L		85
89)	Benzo(a)pyrene	15.54	252	348229	970.05	ug/L		86
90)	Indeno(1,2,3-cd)pyrene	17.34	276	414120	1079.97	ug/L		93
91)	Dibenz(a,h)anthracene	17.38	278	376221	1022.48	ug/L		79
92)	Benzo(g,h,i)perylene	17.84	276	342748	993.86	ug/L		92

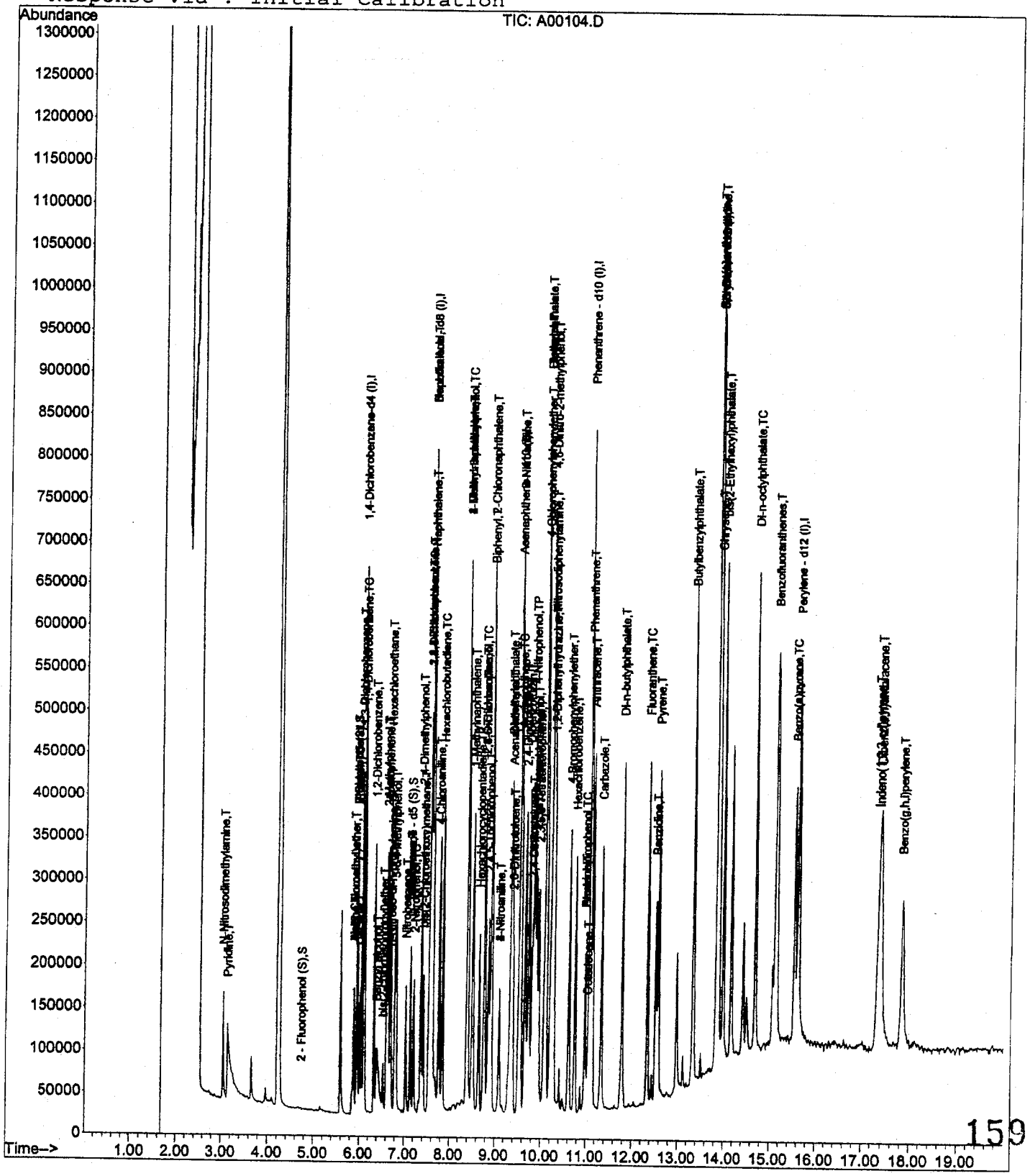
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00104.D
Acq On : 09 Aug 2002 19:13
Sample : 980-52-2 1.0 NG/UL 8270 OCS
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 12 13:18 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RE

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Mon Aug 12 13:01:56 2002
Response via : Initial Calibration



Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:23 2002
Response via : Initial Calibration

Calibration Files
100 =A00371.D 10 =A00370.D 250 =A00372.D
500 =A00373.D 1500 =A00375.D 1000 =A00374.D

		Compound	100	10	250	500	1500	1000	Avg	%RSD
1)	I	1,4-Dichlorobenzene-d	----------			ISTD			----------	
2)	T	N-Nitrosodimeth	0.263		0.267	0.194	0.183	0.173	0.23#	20.9
3)	T	Pyridine	0.172		0.543	0.778	0.759	0.587	0.57#	38.1
4)	S	2 - Fluorophenol	0.819		0.806	0.717	0.730	0.755	0.74#	9.1
5)	T	Cyclohexanone	0.208		0.271	0.236	0.234	0.249	0.23#	10.2
6)	T	Aniline	0.148		0.223	0.265	0.374	0.360	0.28#	31.1
7)	S	Phenol - d5 (S)	0.930		0.911	0.892	0.897	0.881	0.89#	3.6
8)	TC	Phenol	0.951		0.980	0.759	0.875	0.881	0.89#	8.6
9)	T	bis(2-Chloroeth	1.122		1.084	0.869	0.936	0.920	0.95#	13.5
10)	T	2-Chlorophenol	0.922		0.896	0.860	0.923	0.821	0.87#	5.4
11)	T	Decane	0.461		0.482	0.389	0.391	0.394	0.41#	12.7
12)	T	1,3-Dichloroben	1.119		1.016	0.980	0.997	0.960	0.99#	8.3
13)	TC	1,4-Dichloroben	1.141		1.094	0.932	0.999	0.979	1.00#	10.0
14)	T	Benzyl alcohol	0.776		0.788	0.774	0.847	0.863	0.80#	5.0
15)	T	1,2-Dichloroben	1.032		1.005	0.919	0.911	0.925	0.94#	6.9
16)	T	2-Methylphenol	0.660		0.597	0.594	0.660	0.623	0.62#	5.0
17)	T	bis(2-chloroiso	0.141		0.129	0.117	0.113	0.133	0.12#	9.5
18)	T	3-&4-Methylphen	0.703		0.677	0.653	0.677	0.653	0.66#	4.2
19)	TP	n-Nitroso-di-n-	0.661		0.589	0.549	0.597	0.559	0.58	9.5
20)	T	Acetophenone	1.610		1.458	1.340	1.362	1.279	1.38#	10.0
21)	T	Hexachloroethan	0.238		0.227	0.213	0.204	0.231	0.22#	7.4
22)	I	Naphthalene - d8 (I)	----------			ISTD			----------	
23)	S	Nitrobenzene -	0.357		0.339	0.345	0.288	0.329	0.32#	11.1
24)	T	Nitrobenzene	0.310		0.314	0.323	0.315	0.309	0.31#	4.4
25)	T	Isophorone	0.560		0.575	0.582	0.556	0.583	0.56#	6.2
26)	TC	2-Nitrophenol	0.173		0.176	0.199	0.191	0.193	0.19#	5.7
27)	T	2,4-Dimethylphe	0.443		0.421	0.434	0.414	0.457	0.43#	3.7
28)	T	bis(2-Chloroeth	0.317		0.317	0.313	0.287	0.302	0.31#	4.0
29)	T	Benzoic Acid	0.045		0.162	0.214	0.191	0.206	0.17#	37.3
30)	TC	2,4-Dichlorophe	0.335		0.326	0.355	0.352	0.360	0.35#	4.0
31)	T	1,2,4-Trichloro	0.407		0.409	0.358	0.379	0.371	0.38#	5.3
32)	T	Naphthalene	1.236	1.152	1.159	1.163	1.135	1.157	1.16#	3.2
33)	T	4-Chloroaniline	0.209		0.213	0.216	0.203	0.214	0.21#	4.1
34)	TC	Hexachlorobutad	0.299		0.282	0.293	0.273	0.282	0.28#	4.9
35)	TC	4-Chloro-3-meth	0.410		0.423	0.445	0.445	0.439	0.43#	3.4
36)	T	2-Methylnaphtha	0.807	0.784	0.780	0.810	0.770	0.791	0.79#	2.0
37)	T	1-Methylnaphtha	0.727	0.759	0.740	0.727	0.721	0.734	0.73#	2.0
38)	I	Acenaphthene - d10 (I	----------			ISTD			----------	
39)	TP	Hexachlorocyclo	0.377		0.374	0.432	0.445	0.438	0.42	8.5
40)	T	2,3-Dichloroani	0.615		0.630	0.689	0.779	0.726	0.71#	12.0
41)	TC	2,4,6-Trichloro	0.300		0.388	0.405	0.408	0.379	0.38#	10.6
42)	T	2,4,5-Trichloro	0.349		0.369	0.427	0.389	0.423	0.37#	14.0
43)	S	2 - Fluorobiphe	1.238	1.266	1.316	1.261	1.465	1.336	1.36#	11.1
44)	T	2-Chloronaphtha	1.217	1.271	1.194	1.217	1.153	1.155	1.18#	6.2
45)	T	Biphenyl	0.999		0.964	1.017	1.116	1.051	1.07#	11.0
46)	T	2-Nitroaniline	0.325		0.353	0.382	0.450	0.422	0.40#	13.3
47)	T	Dimethylphthala	1.824		1.902	1.998	2.171	2.053	2.03	8.0
48)	T	Acenaphthylene	1.898	1.740	1.844	1.815	1.949	1.930	1.89#	5.1
49)	T	2,6-Dinitrotolu	0.338		0.342	0.371	0.389	0.369	0.37#	6.0
50)	T	3-Nitroaniline	0.176		0.219	0.213	0.219	0.235	0.21#	10.1
51)	TC	Acenaphthene	1.260	1.118	1.274	1.303	1.306	1.282	1.26#	5.3
52)	TP	2,4-Dinitrophen	0.107		0.104	0.124	0.208	0.165	0.15	32.6
53)	TP	4-Nitrophenol	0.355		0.399	0.474	0.627	0.578	0.52	26.3

(#) = Out of Range ### Number of calibration levels exceeded format ###

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:23 2002
Response via : Initial Calibration

Calibration Files
100 =A00371.D 10 =A00370.D 250 =A00372.D
500 =A00373.D 1500 =A00375.D 1000 =A00374.D

		Compound	100	10	250	500	1500	1000	Avg	%RSD
54)	T	Dibenzofuran	1.724		1.719	1.759	1.812	1.867	1.79#	3.7
55)	T	2,4-Dinitrotolu	0.343		0.346	0.386	0.392	0.375	0.38#	9.2
56)	T	2,3,4,6-Tetrach	0.265		0.303	0.395	0.443	0.453	0.39#	21.7
57)	T	2,3,5,6-Tetrach	0.202		0.334	0.373	0.436	0.420	0.37#	24.6
58)	T	Diethylphthalat	1.699		1.870	1.759	1.495	1.629	1.61#	15.2
59)	T	Fluorene	1.106	1.088	1.254	1.284	1.385	1.342	1.29#	12.3
60)	T	4-Chlorophenylp	0.819		0.824	0.882	0.921	0.842	0.86#	4.8
61)	T	4-Nitroaniline	0.176		0.219	0.213	0.219	0.235	0.21#	10.1
62)	I	Phenanthrene - d10 (I	----------ISTD----------							
63)	T	4,6-Dinitro-2-m	0.154		0.180	0.185	0.220	0.202	0.19#	12.7
64)	T	n-Nitrosodiphen	0.569		0.583	0.632	0.780	0.706	0.71#	21.5
65)	S	2,4,6 - Tribrom	0.148		0.222	0.229	0.244	0.253	0.22#	17.1
66)	T	1,2-Diphenylhyd	0.327		0.319	0.336	0.423	0.381	0.38#	17.8
67)	T	4-Bromophenylph	0.355		0.330	0.341	0.361	0.343	0.35#	3.3
68)	T	Hexachlorobenze	0.345		0.329	0.330	0.326	0.327	0.33#	2.4
69)	T	Atrazine	0.085		0.036	0.046	0.051	0.052	0.05#	30.4
70)	TC	Pentachlorophen	0.132		0.142	0.182	0.203	0.209	0.18#	19.3
71)	T	Phenanthrene	1.168	1.192	1.169	1.233	1.258	1.168	1.21#	3.6
72)	T	Anthracene	1.159	1.151	1.093	1.098	1.234	1.170	1.17#	5.5
73)	T	Octadecane	0.388		0.397	0.379	0.347	0.407	0.38#	7.3
74)	T	Carbazole	1.040		1.006	1.021	1.137	1.076	1.07#	5.1
75)	T	Di-n-butylphtha	1.836		1.728	1.658	1.406	1.601	1.56#	16.4
76)	TC	Fluoranthene	1.139	1.180	1.151	1.164	1.212	1.241	1.18#	3.0
77)	T	Pyrene	1.239	1.125	1.151	1.181	1.195	1.245	1.19#	3.7
78)	T	Benzidine			0.116	0.122	0.228	0.218	0.18#	32.3
79)	S	p - Terphenyl -	1.061	1.353	1.174	1.089	1.052	1.082	1.12#	10.0
80)	I	Chrysene - d12 (I)	----------ISTD----------							
81)	T	Butylbenzylphth	0.975		0.893	0.852	0.811	0.841	0.86#	8.4
82)	T	Benzo(a)anthrac	0.948	0.919	1.083	1.123	1.472	1.238	1.18#	19.2
83)	T	3,3'-Dichlorobe	0.613		0.465	0.578	0.443	0.332	0.50#	21.5
84)	T	Chrysene	0.974	1.042	1.084	1.163	1.108	1.201	1.12#	8.9
85)	T	bis(2-Ethylhexy	1.761		1.613	1.441	1.398	1.389	1.47#	12.5
86)	I	Perylene - d12 (I)	----------ISTD----------							
87)	TC	Di-n-octylphtha	2.331		2.072	2.137	1.971	2.121	2.08	8.3
88)	T	Benzofluoranthe	1.181	1.100	1.130	1.208	1.262	1.256	1.21#	6.4
89)	TC	Benzo(a)pyrene	1.103	0.935	1.014	1.113	1.200	1.176	1.11#	9.9
90)	T	Indeno(1,2,3-cd	1.243	0.996	1.240	1.330	1.435	1.398	1.31#	13.6
91)	T	Dibenz(a,h)anth	1.213	0.888	1.178	1.252	1.273	1.285	1.20#	12.2
92)	T	Benzo(g,h,i)per	1.139	0.970	1.088	1.148	1.207	1.204	1.15#	8.6

(#) = Out of Range ### Number of calibration levels exceeded format ###

Data File : C:\MSDCHEM\1\DATA\A00370.D Vial: 0
Acq On : 29 Aug 2002 9:42 Operator:
Sample : 0.01 NG/UL 8270 ICAL STD NO 0980-53-6 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:38:24 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:38:20 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	51087	1000.00	ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	115923	1000.00	ug/L	0.00
38) Acenaphthene - d10 (I)	9.49	162	72538	1000.00	ug/L	0.00
62) Phenanthrene - d10 (I)	11.02	188	99214	1000.00	ug/L	0.00
80) Chrysene - d12 (I)	13.80	240	122975	1000.00	ul/l	0.00
86) Perylene - d12 (I)	15.51	264	140602	1000.00	ug/L	0.00
System Monitoring Compounds						
4) 2 - Fluorophenol (S)	0.00	112	0	0.00	ug/L	
7) Phenol - d5 (S)	0.00	99	0	0.00	ug/L	
23) Nitrobenzene - d5 (S)	6.74	82	558	15.02	ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.80	172	918	9.55	ug/L	0.01
65) 2,4,6 - Tribromophenol (S)	0.00	330	0	0.00	ug/L	
79) p - Terphenyl - d14 (S)	12.73	244	1342	13.02	ug/L	0.00

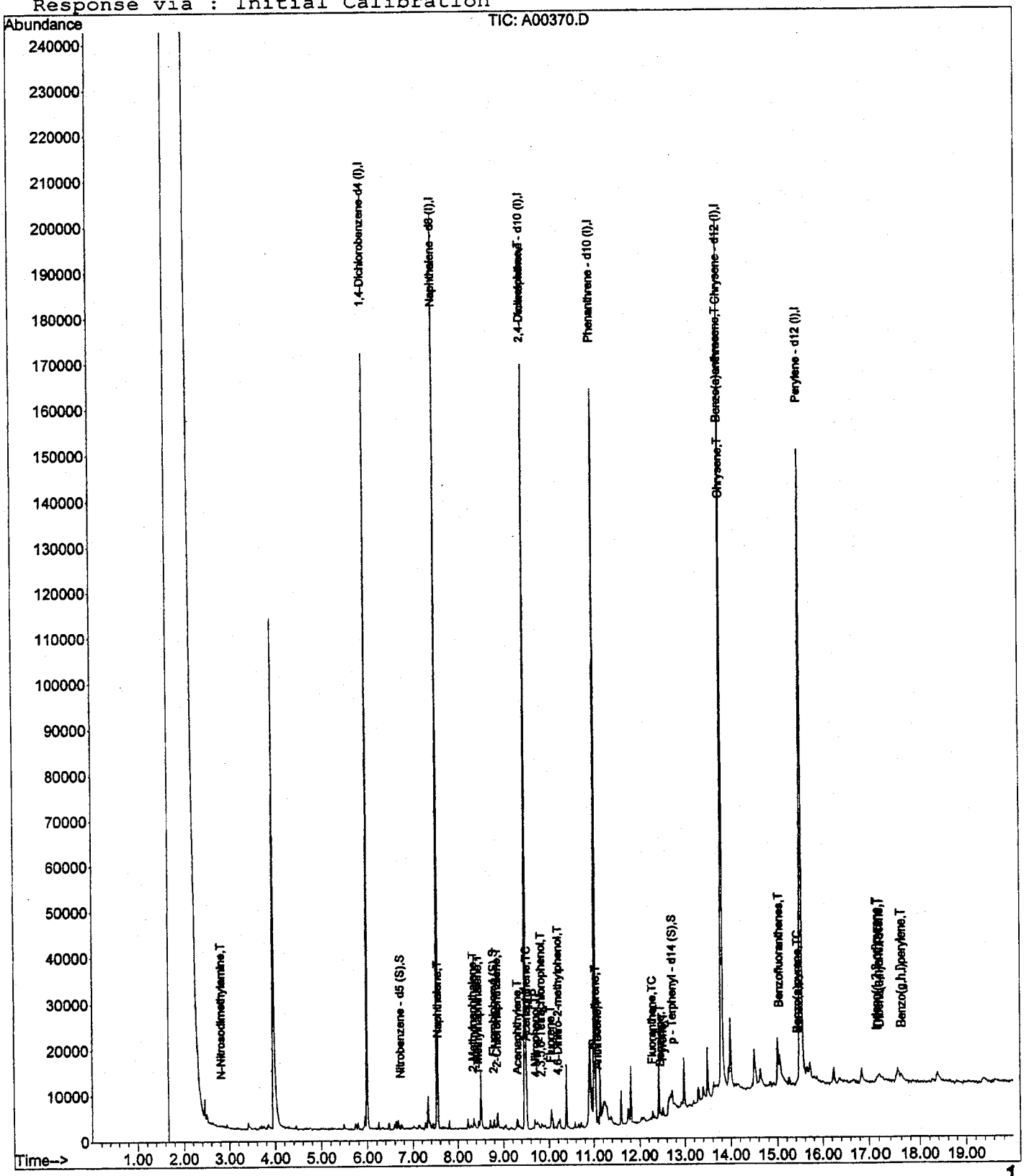
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	2.83	74	755	65.50	ug/L #	100
32) Naphthalene	7.56	128	1336	10.42	ug/L #	1
36) 2-Methylnaphthalene	8.35	141	909	10.50	ug/L	58
37) 1-Methylnaphthalene	8.46	141	880	11.11	ul/l #	6
44) 2-Chloronaphthalene	8.87	162	922	11.78	ug/L	92
48) Acenaphthylene	9.32	152	1262	9.78	ug/L #	57
51) Acenaphthene	9.52	153	811	9.28	ug/L	84
53) 4-Nitrophenol	9.72	109	1246+	32.78	ug/L #	26
55) 2,4-Dinitrotoluene	9.48	165	7186	260.74	ug/L #	18
57) 2,3,5,6-Tetrachlorophenol	9.84	232	102	3.83	ul/l #	68
59) Fluorene	10.05	166	789	8.89	ug/L #	54
63) 4,6-Dinitro-2-methylphenol	10.20	198	439	22.98	ug/L #	1
71) Phenanthrene	11.05	178	1183	10.66	ug/L	79
72) Anthracene	11.09	178	1142	10.60	ug/L	65
76) Fluoranthene	12.29	202	1171	10.54	ug/L #	62
77) Pyrene	12.52	202	1116	9.86	ug/L #	49
78) Benzidine	12.47	184	1191	65.42	ug/L	100
82) Benzo(a)anthracene	13.78	228	1130m	7.65	ug/L	
84) Chrysene	13.82	228	1281	9.91	ug/L	61
88) Benzofluoranthenes	15.04	252	3094	18.74	ug/L	84
89) Benzo(a)pyrene	15.43	252	1315	8.25	ug/L #	57
90) Indeno(1,2,3-cd)pyrene	17.16	276	1401	7.91	ug/L	47
91) Dibenz(a,h)anthracene	17.20	278	1248	7.51	ug/L #	48
92) Benzo(g,h,i)perylene	17.62	276	1364	8.83	ug/L #	1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00370.D
Acq On : 29 Aug 2002 9:42
Sample : 0.01 NG/UL 8270 ICAL STD NO 0980-53-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:38 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00371.D Vial: 0
Acq On : 29 Aug 2002 10:08 Operator:
Sample : 0.1 NG/UL 8270 ICAL STD NO 0980-54-3 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:25:49 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:25:45 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.98	150	55976	1000.00 ug/L	-0.01
22) Naphthalene - d8 (I)	7.53	136	132353	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.47	162	85236	1000.00 ug/L	-0.02
62) Phenanthrene - d10 (I)	11.02	188	134966	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.79	240	151178	1000.00 ul/l	-0.02
86) Perylene - d12 (I)	15.49	264	169585	1000.00 ug/L	-0.02
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.44	112	4582	170.04 ug/L	0.00
7) Phenol - d5 (S)	5.72	99	5207	184.23 ug/L	-0.01
23) Nitrobenzene - d5 (S)	6.73	82	4720	115.13 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.79	172	10549	164.05 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.32	330	2001	119.24 ug/L	-0.02
79) p - Terphenyl - d14 (S)	12.72	244	14315	175.91 ug/L	-0.01

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.78	74	7359	1008.68 ug/L #	100
3) Pyridine	2.70	79	4807m+	225.61 ug/L	
5) Cyclohexanone	4.69	55	1166	158.73 ug/L	92
6) Aniline	5.70	93	830	50.58 ug/L #	85
8) Phenol	5.74	94	5326	183.98 ug/L	71
9) bis(2-Chloroethyl)ether	5.78	63	6278	398.68 ug/L #	37
10) 2-Chlorophenol	5.78	128	5159	210.10 ug/L	69
11) Decane	5.91	57	2579	200.03 ug/L	100
12) 1,3-Dichlorobenzene	5.94	146	6266	191.48 ug/L	69
13) 1,4-Dichlorobenzene	6.00	146	6389	189.01 ug/L #	27
14) Benzyl alcohol	6.29	79	4342	175.51 ug/L	94
15) 1,2-Dichlorobenzene	6.24	146	5777	180.04 ug/L	93
16) 2-Methylphenol	6.46	108	3694	179.14 ug/L	95
17) bis(2-chloroisopropyl)ethe	6.46	121	789+	162.69 ug/L #	1
18) 3-&4-Methylphenol	6.66	108	7875	329.10 ug/L #	31
19) n-Nitroso-di-n-propylamine	6.66	70	3701	190.56 ug/L #	49
20) Acetophenone	6.57	105	9014	192.06 ug/L	99
21) Hexachloroethane	6.61	166	1332	177.70 ug/L	85
24) Nitrobenzene	6.75	77	4106	169.18 ug/L #	74
25) Isophorone	7.09	82	7413	167.26 ug/L	91
26) 2-Nitrophenol	7.14	139	2296	140.71 ug/L	49
27) 2,4-Dimethylphenol	7.27	107	5866	162.35 ug/L	81
28) bis(2-Chloroethoxy)methane	7.36	93	4201	152.35 ug/L	75
29) Benzoic Acid	7.52	105	3001	267.80 ug/L	69
30) 2,4-Dichlorophenol	7.43	162	4436	153.02 ug/L	97
31) 1,2,4-Trichlorobenzene	7.50	180	5389	190.59 ug/L	97
32) Naphthalene	7.55	128	16354	177.08 ug/L	72
33) 4-Chloroaniline	7.70	127	2766	199.13 ug/L #	97
34) Hexachlorobutadiene	7.80	225	3952	172.96 ug/L	90
35) 4-Chloro-3-methylphenol	8.28	107	5430	148.50 ug/L	82
36) 2-Methylnaphthalene	8.34	141	10685	165.77 ug/L	73
37) 1-Methylnaphthalene	8.46	141	9623	161.51 ul/l	56
39) Hexachlorocyclopentadiene	8.61	237	3213	161.25 ug/L	96
40) 2,3-Dichloroaniline	8.70	161	5246	170.19 ug/L	97
41) 2,4,6-Trichlorophenol	8.71	196	2553	142.75 ug/L	94
42) 2,4,5-Trichlorophenol	8.75	196	2977	164.04 ug/L	52
44) 2-Chloronaphthalene	8.86	162	10371	197.51 ug/L	89
45) Biphenyl	9.51	154	8519	122.78 ug/L #	1

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

Data File : C:\MSDCHEM\1\DATA\A00371.D Vial: 0
Acq On : 29 Aug 2002 10:08 Operator:
Sample : 0.1 NG/UL 8270 ICAL STD NO 0980-54-3 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:25:49 2002 Quant Results File: SV5-080902.RES

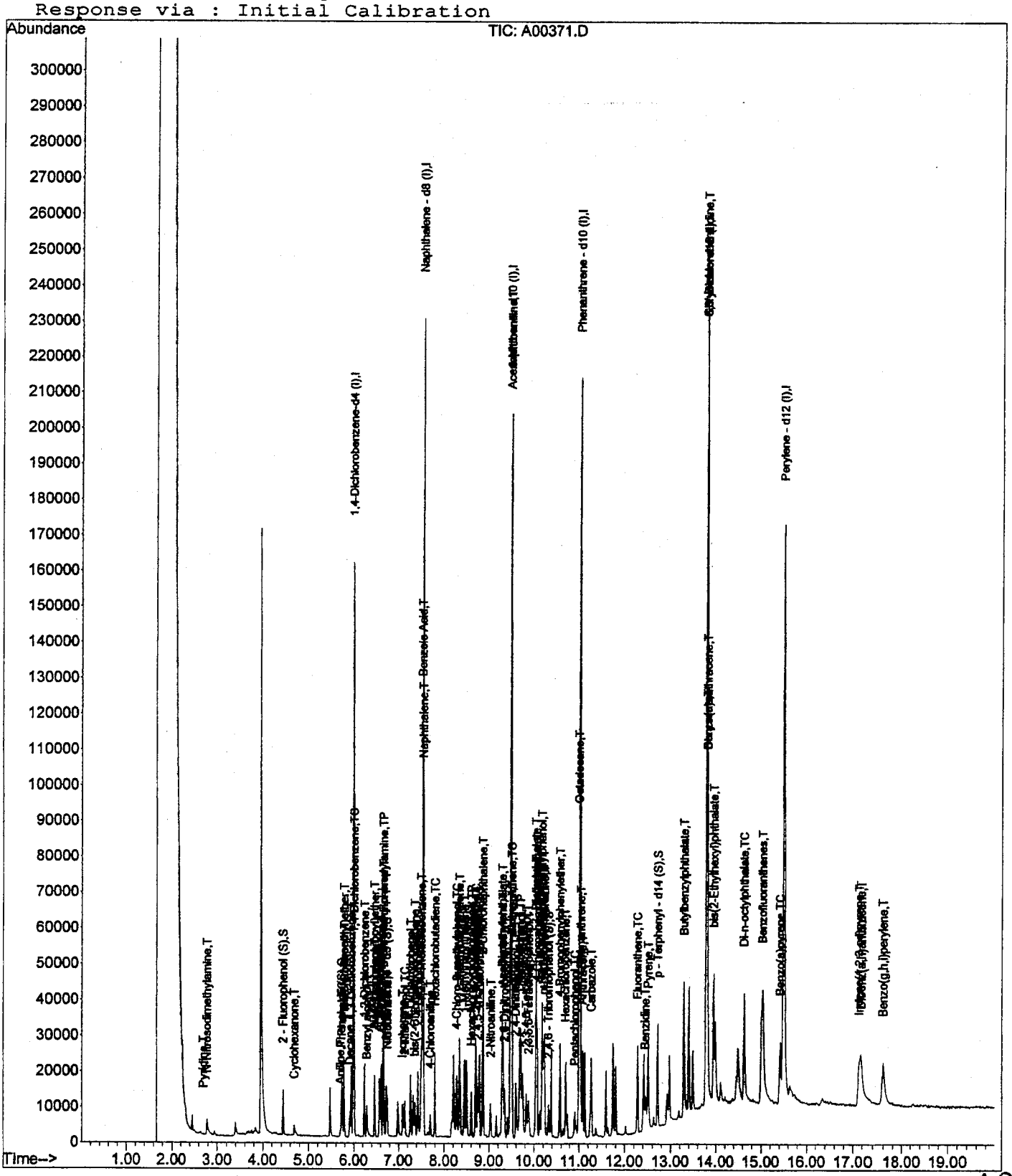
Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:25:45 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	2-Nitroaniline	9.04	138	2769	144.59 ug/L		94
47)	Dimethylphthalate	9.29	163	15543	182.49 ug/L		94
48)	Acenaphthylene	9.31	152	16174	188.76 ug/L		99
49)	2,6-Dinitrotoluene	9.34	165	2882	186.97 ug/L		85
50)	3-Nitroaniline	9.48	138	1504	158.33 ug/L	#	45
51)	Acenaphthene	9.51	153	10737	184.92 ug/L		94
52)	2,4-Dinitrophenol	9.59	184	4544	584.06 ug/L		68
53)	4-Nitrophenol	9.70	109	15137+	689.76 ug/L	#	54
54)	Dibenzofuran	9.68	168	14695	190.95 ug/L	#	1
55)	2,4-Dinitrotoluene	9.34	165	2927	113.27 ug/L		91
56)	2,3,4,6-Tetrachlorophenol	9.83	232	2258	115.21 ug/L	#	52
57)	2,3,5,6-Tetrachlorophenol	9.88	232	1720	108.96 ul/l	#	56
58)	Diethylphthalate	10.04	149	14484	197.16 ug/L		100
59)	Fluorene	10.04	166	9429	156.53 ug/L		59
60)	4-Chlorophenylphenylether	10.07	204	6977	197.05 ug/L		66
61)	4-Nitroaniline	9.48	138	1504	78.53 ug/L	#	1
63)	4,6-Dinitro-2-methylphenol	10.18	198	10387	781.09 ug/L	#	43
64)	n-Nitrosodiphenylamine	10.20	169	7682	136.93 ug/L	#	1
66)	1,2-Diphenylhydrazine	10.23	182	4420	160.03 ug/L	#	1
67)	4-Bromophenylphenylether	10.57	248	4796	197.46 ug/L	#	65
68)	Hexachlorobenzene	10.70	284	4654	194.71 ug/L		87
70)	Pentachlorophenol	10.91	266	1788	140.72 ug/L		89
71)	Phenanthrene	11.04	178	15764	165.37 ug/L		76
72)	Anthracene	11.09	178	15645	215.34 ug/L		74
73)	Octadecane	10.99	57	5241	204.37 ug/L		54
74)	Carbazole	11.27	167	14037	178.54 ug/L		81
76)	Fluoranthene	12.28	202	15368	165.59 ug/L		83
77)	Pyrene	12.51	202	16718	184.37 ug/L		72
78)	Benzidine	12.45	184	9306	669.25 ug/L		100
81)	Butylbenzylphthalate	13.29	149	14744	190.45 ug/L		76
82)	Benzo(a)anthracene	13.82	228	14326	105.28 ug/L		57
83)	3,3'-Dichlorobenzidine	13.78	252	9271+	163.15 ug/L		95
84)	Chrysene	13.82	228	14731	165.86 ug/L		90
85)	bis(2-Ethylhexyl)phthalate	13.95	149	26615	186.35 ug/L		98
87)	Di-n-octylphthalate	14.63	149	39536	168.88 ug/L		92
88)	Benzofluoranthenes	15.03	252	40072	301.69 ug/L		79
89)	Benzo(a)pyrene	15.42	252	18703	139.55 ug/L		87
90)	Indeno(1,2,3-cd)pyrene	17.14	276	21075	143.45 ug/L		92
91)	Dibenz(a,h)anthracene	17.18	278	20568	148.34 ug/L		71
92)	Benzo(g,h,i)perylene	17.60	276	19309	148.03 ug/L		84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00371.D Vial: 0
Acq On : 29 Aug 2002 10:08 Operator:
Sample : 0.1 NG/UL 8270 ICAL STD NO 0980-54-3 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:26 2002 Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00372.D Vial: 0
Acq On : 29 Aug 2002 10:34 Operator:
Sample : 0.25 NG/UL 8270 ICAL STD NO 0980-54-4 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:30:52 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:30:43 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	53109	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	125598	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.48	162	76662	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.02	188	126765	1000.00 ug/L	-0.01
80) Chrysene - d12 (I)	13.80	240	146131	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.50	264	170837	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.44	112	10695	375.47 ug/L	0.00
7) Phenol - d5 (S)	5.72	99	12091	380.92 ug/L	0.00
23) Nitrobenzene - d5 (S)	6.73	82	10632	269.49 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.79	172	25219	390.16 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.33	330	7051	422.80 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.72	244	37202	432.30 ug/L	-0.01
Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.75	74	17739	2228.35 ug/L #	100
3) Pyridine	2.99	79	36030+	1914.07 ug/L	96
5) Cyclohexanone	4.67	55	3601	469.00 ug/L	96
6) Aniline	5.69	93	2964	198.43 ug/L #	85
8) Phenol	5.74	94	13015	399.15 ug/L	72
9) bis(2-Chloroethyl)ether	5.78	63	14397	635.08 ug/L #	38
10) 2-Chlorophenol	5.78	128	11903	428.87 ug/L	69
11) Decane	5.91	57	6402	449.83 ug/L	95
12) 1,3-Dichlorobenzene	5.94	146	13490	378.24 ug/L	67
13) 1,4-Dichlorobenzene	6.01	146	14522	389.22 ug/L	92
14) Benzyl alcohol	6.29	79	10456	375.28 ug/L	99
15) 1,2-Dichlorobenzene	6.24	146	13339	382.45 ug/L	98
16) 2-Methylphenol	6.47	108	7932	350.49 ug/L	98
17) bis(2-chloroisopropyl)ethe	6.47	121	1708+	332.43 ug/L #	1
18) 3-&4-Methylphenol	6.66	108	17975	687.81 ug/L #	34
19) n-Nitroso-di-n-propylamine	6.65	70	7816	361.45 ug/L	74
20) Acetophenone	6.57	105	19364	373.05 ug/L	100
21) Hexachloroethane	6.61	166	3019	377.94 ug/L #	81
24) Nitrobenzene	6.75	77	9866	382.07 ug/L #	72
25) Isophorone	7.09	82	18060	385.37 ug/L	88
26) 2-Nitrophenol	7.15	139	5538	325.09 ug/L	60
27) 2,4-Dimethylphenol	7.27	107	13208	344.95 ug/L	81
28) bis(2-Chloroethoxy)methane	7.37	93	9947	346.04 ug/L	71
29) Benzoic Acid	7.44	105	25361	2445.89 ug/L	84
30) 2,4-Dichlorophenol	7.44	162	10242	330.12 ug/L	96
31) 1,2,4-Trichlorobenzene	7.50	180	12849	419.53 ug/L	95
32) Naphthalene	7.56	128	36388	371.20 ug/L	79
33) 4-Chloroaniline	7.70	127	6695	424.68 ug/L	98
34) Hexachlorobutadiene	7.81	225	8855	366.01 ug/L	90
35) 4-Chloro-3-methylphenol	8.29	107	13271	349.49 ug/L	81
36) 2-Methylnaphthalene	8.35	141	24490	365.50 ug/L	71
37) 1-Methylnaphthalene	8.46	141	23246	374.91 ul/l	66
39) Hexachlorocyclopentadiene	8.61	237	7167	351.51 ug/L	94
40) 2,3-Dichloroaniline	8.71	161	12079	379.39 ug/L	93
41) 2,4,6-Trichlorophenol	8.71	196	7427	420.72 ug/L	96
42) 2,4,5-Trichlorophenol	8.76	196	7079	382.90 ug/L	50
44) 2-Chloronaphthalene	8.87	162	22875	421.02 ug/L	89
45) Biphenyl	9.52	154	18482	277.03 ug/L #	1

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

Data File : C:\MSDCHEM\1\DATA\A00372.D Vial: 0
Acq On : 29 Aug 2002 10:34 Operator:
Sample : 0.25 NG/UL 8270 ICAL STD NO 0980-54-4 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:30:52 2002 Quant Results File: SV5-080902.RES

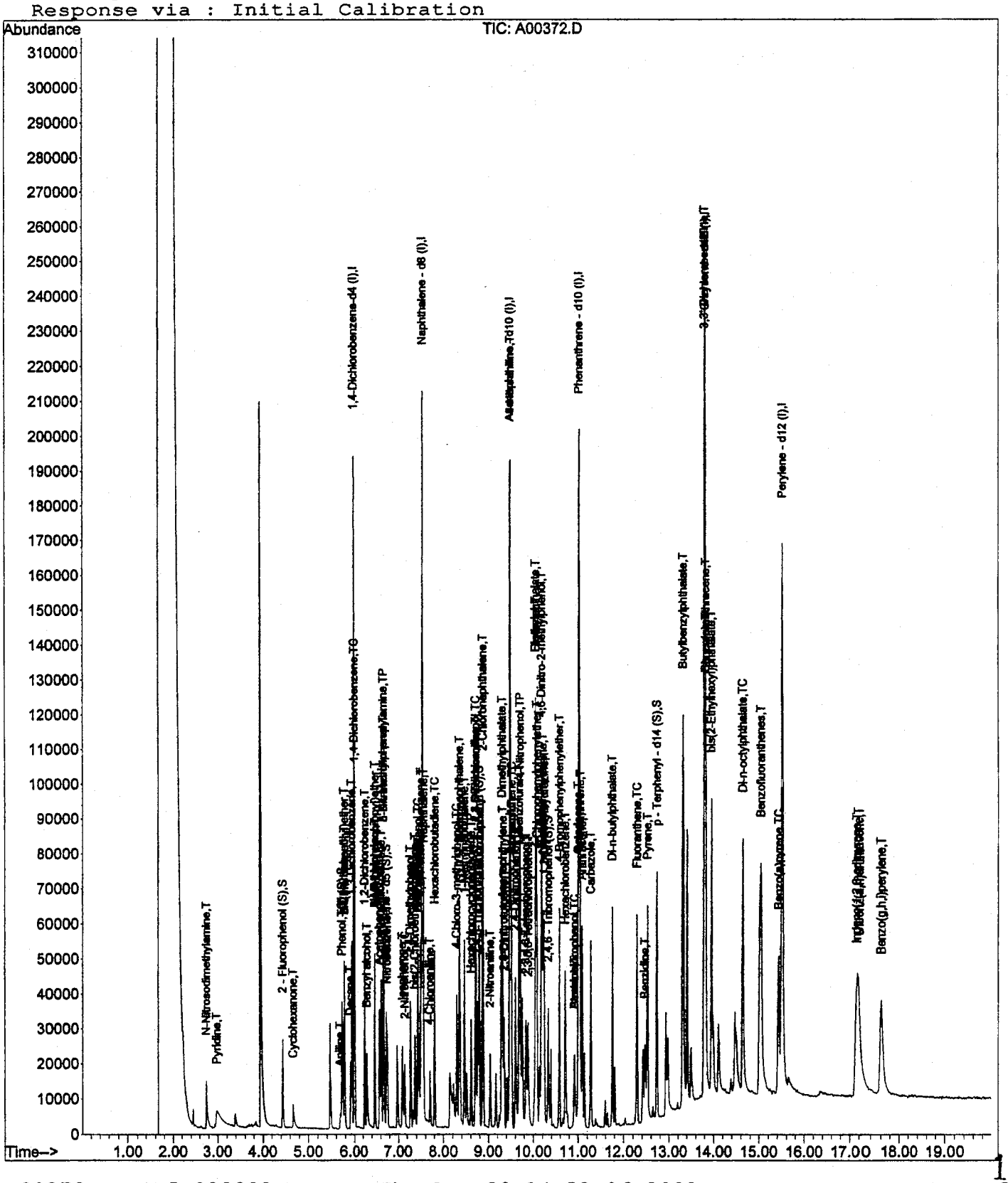
Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:30:43 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	2-Nitroaniline	9.04	138	6775	355.31 ug/L		92
47)	Dimethylphthalate	9.30	163	36458	409.36 ug/L		97
48)	Acenaphthylene	9.32	152	35343	399.79 ug/L		96
49)	2,6-Dinitrotoluene	9.35	165	6549	404.68 ug/L		91
50)	3-Nitroaniline	9.49	138	4190	432.36 ug/L		87
51)	Acenaphthene	9.52	153	24410	408.94 ug/L		93
52)	2,4-Dinitrophenol	9.60	184	9951	1315.28 ug/L	#	61
53)	4-Nitrophenol	9.71	109	38241+	1712.58 ug/L	#	48
54)	Dibenzofuran	9.69	168	32951	404.76 ug/L	#	1
55)	2,4-Dinitrotoluene	9.35	165	6625	273.09 ug/L		85
56)	2,3,4,6-Tetrachlorophenol	9.84	232	5811	310.94 ug/L	#	49
57)	2,3,5,6-Tetrachlorophenol	9.89	232	6405	419.39 ul/l	#	54
58)	Diethylphthalate	10.05	149	35848	468.93 ug/L		91
59)	Fluorene	10.05	166	24027	400.40 ug/L		61
60)	4-Chlorophenylphenylether	10.08	204	15789	420.16 ug/L		69
61)	4-Nitroaniline	9.49	138	4190	244.01 ug/L		46
63)	4,6-Dinitro-2-methylphenol	10.18	198	28580	2054.34 ug/L	#	49
64)	n-Nitrosodiphenylamine	10.21	169	18475	317.19 ug/L	#	1
66)	1,2-Diphenylhydrazine	10.24	182	10109	342.50 ug/L	#	1
67)	4-Bromophenylphenylether	10.58	248	10457	390.45 ug/L	#	60
68)	Hexachlorobenzene	10.71	284	10412	397.78 ug/L		86
69)	Atrazine	10.92	200	1140+	250.09 ug/L		38
70)	Pentachlorophenol	10.92	266	4514	339.92 ug/L		88
71)	Phenanthrene	11.05	178	37043	374.06 ug/L		76
72)	Anthracene	11.09	178	34630	431.69 ug/L		76
73)	Octadecane	11.00	57	12566	455.54 ug/L		49
74)	Carbazole	11.28	167	31877	379.81 ug/L		81
75)	Di-n-butylphthalate	11.75	149	54755	423.07 ug/L		95
76)	Fluoranthene	12.29	202	36470	379.04 ug/L		81
77)	Pyrene	12.52	202	36466	379.17 ug/L		71
78)	Benzidine	12.46	184	18326	1403.19 ug/L		100
81)	Butylbenzylphthalate	13.30	149	32611	381.44 ug/L		77
82)	Benzo(a)anthracene	13.83	228	39563	296.53 ug/L		53
83)	3,3'-Dichlorobenzidine	13.79	252	16984+	278.35 ug/L		95
84)	Chrysene	13.83	228	39602	409.68 ug/L		81
85)	bis(2-Ethylhexyl)phthalate	13.95	149	58912	394.10 ug/L		96
87)	Di-n-octylphthalate	14.64	149	88488	342.32 ug/L		95
88)	Benzofluoranthenes	15.04	252	96546	655.59 ug/L		80
89)	Benzo(a)pyrene	15.43	252	43305	296.56 ug/L		81
90)	Indeno(1,2,3-cd)pyrene	17.14	276	52961	333.31 ug/L		97
91)	Dibenz(a,h)anthracene	17.19	278	50321	333.16 ug/L		71
92)	Benzo(g,h,i)perylene	17.61	276	46478	330.45 ug/L		84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00372.D Vial: 0
Acq On : 29 Aug 2002 10:34 Operator:
Sample : 0.25 NG/UL 8270 ICAL STD NO 0980-54-4 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:30 2002 Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00373.D Vial: 0
Acq On : 29 Aug 2002 11:56 Operator:
Sample : 0.5 NG/UL 8270 ICAL STD NO 0980-54-5 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:22:12 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:22:04 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	60002	1000.00	ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	132492	1000.00	ug/L	0.00
38) Acenaphthene - d10 (I)	9.49	162	82099	1000.00	ug/L	0.00
62) Phenanthrene - d10 (I)	11.03	188	141494	1000.00	ug/L	0.00
80) Chrysene - d12 (I)	13.81	240	154229	1000.00	ul/l	0.00
86) Perylene - d12 (I)	15.51	264	172655	1000.00	ug/L	0.00
System Monitoring Compounds						
4) 2 - Fluorophenol (S)	4.44	112	21524	745.18	ug/L	0.00
7) Phenol - d5 (S)	5.73	99	26767	883.49	ug/L	0.00
23) Nitrobenzene - d5 (S)	6.73	82	22839	556.48	ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.80	172	51778	835.98	ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.33	330	16225	922.21	ug/L	-0.01
79) p - Terphenyl - d14 (S)	12.73	244	77024	902.83	ug/L	0.00
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	2.75	74	29138	3725.89	ug/L #	100
3) Pyridine	2.85	79	116714+	5110.32	ug/L	97
5) Cyclohexanone	4.66	55	7082	899.38	ug/L	96
6) Aniline	5.69	93	7947	451.79	ug/L #	85
8) Phenol	5.74	94	22776	733.98	ug/L	98
9) bis(2-Chloroethyl)ether	5.78	63	26064	1544.12	ug/L #	22
10) 2-Chlorophenol	5.79	128	25799	980.15	ug/L	67
11) Decane	5.91	57	11657	843.48	ug/L	99
12) 1,3-Dichlorobenzene	5.94	146	29408	838.38	ug/L	71
13) 1,4-Dichlorobenzene	6.01	146	27955	771.54	ug/L	96
14) Benzyl alcohol	6.28	79	23224	875.76	ug/L	100
15) 1,2-Dichlorobenzene	6.25	146	27572	801.64	ug/L	98
16) 2-Methylphenol	6.47	108	17827	806.50	ug/L	98
17) bis(2-chloroisopropyl)ethe	6.47	121	3523+	677.68	ug/L #	1
18) 3-&4-Methylphenol	6.67	108	39152	1526.40	ug/L #	37
19) n-Nitroso-di-n-propylamine	6.65	70	16473	791.26	ug/L	71
20) Acetophenone	6.57	105	40192	798.90	ug/L	98
21) Hexachloroethane	6.62	166	6396	796.01	ug/L	86
24) Nitrobenzene	6.76	77	21365	879.38	ug/L	72
25) Isophorone	7.08	82	38582	869.61	ug/L	87
26) 2-Nitrophenol	7.15	139	13168	806.14	ug/L	64
27) 2,4-Dimethylphenol	7.28	107	28732	794.35	ug/L	85
28) bis(2-Chloroethoxy)methane	7.37	93	20730	751.01	ug/L	74
29) Benzoic Acid	7.56	105	70751	6306.99	ug/L #	55
30) 2,4-Dichlorophenol	7.44	162	23485	809.26	ug/L	99
31) 1,2,4-Trichlorobenzene	7.51	180	23738	838.65	ug/L	95
32) Naphthalene	7.56	128	77070	833.63	ug/L	80
33) 4-Chloroaniline	7.70	127	14317	1029.64	ug/L	98
34) Hexachlorobutadiene	7.81	225	19408	848.51	ug/L	88
35) 4-Chloro-3-methylphenol	8.31	107	29457	804.73	ug/L	73
36) 2-Methylnaphthalene	8.35	141	53666	831.73	ug/L	73
37) 1-Methylnaphthalene	8.47	141	48164	807.54	ul/l	63
39) Hexachlorocyclopentadiene	8.62	237	17737	924.15	ug/L	94
40) 2,3-Dichloroaniline	8.71	161	28280	952.54	ug/L	95
41) 2,4,6-Trichlorophenol	8.72	196	16620	964.84	ug/L	99
42) 2,4,5-Trichlorophenol	8.77	196	17526	1002.60	ug/L	51
44) 2-Chloronaphthalene	8.87	162	49960	987.80	ug/L	91
45) Biphenyl	9.52	154	41752	624.75	ug/L #	1

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

Data File : C:\MSDCHEM\1\DATA\A00373.D Vial: 0
Acq On : 29 Aug 2002 11:56 Operator:
Sample : 0.5 NG/UL 8270 ICAL STD NO 0980-54-5 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:22:12 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:22:04 2002
Response via : Initial Calibration
DataAcq Meth :

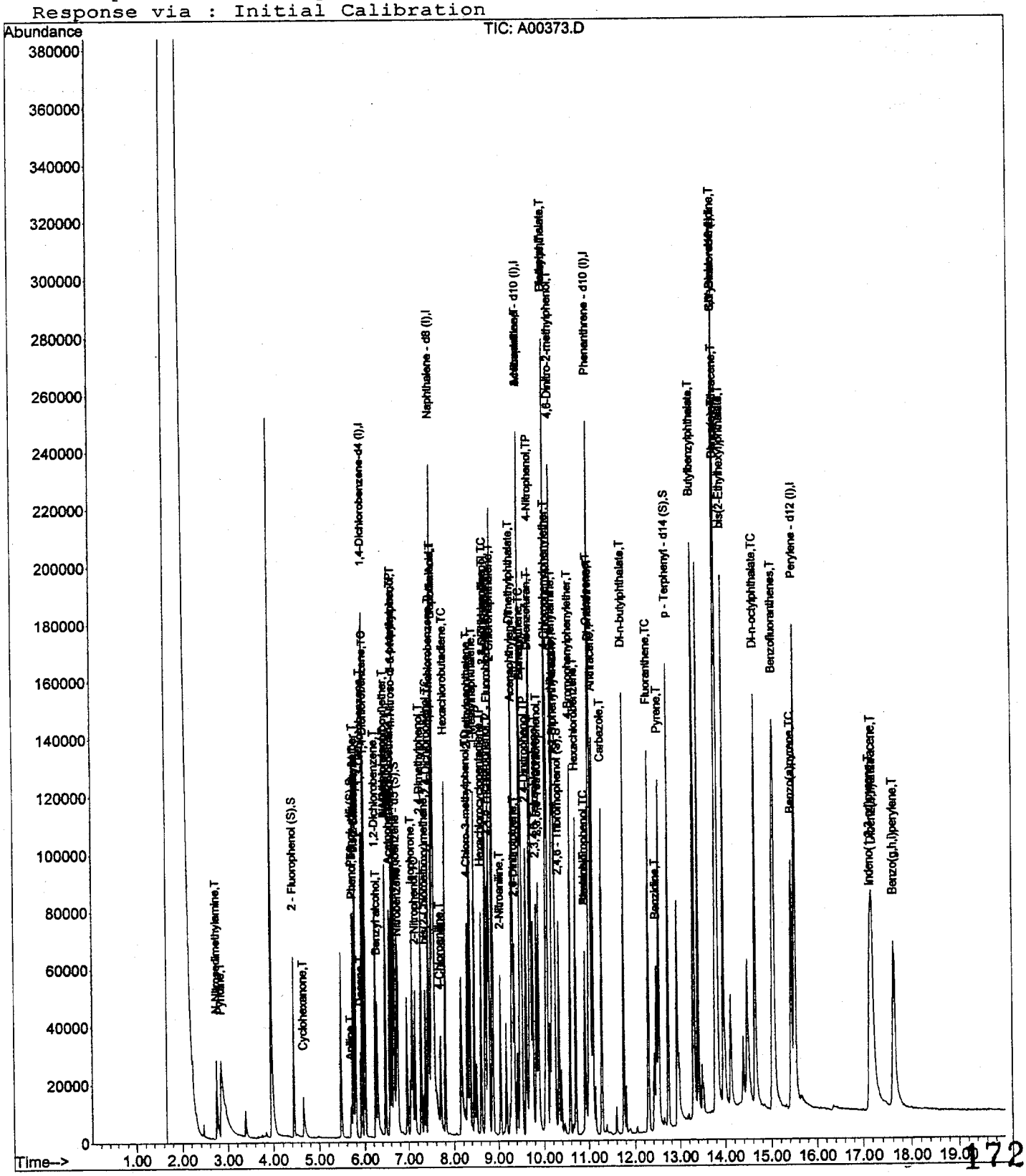
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	2-Nitroaniline	9.05	138	15679	850.00	ug/L		90
47)	Dimethylphthalate	9.30	163	82017	999.76	ug/L		100
48)	Acenaphthylene	9.32	152	74501	902.70	ug/L		96
49)	2,6-Dinitrotoluene	9.36	165	15238	1026.36	ug/L		86
50)	3-Nitroaniline	9.49	138	8746	955.88	ug/L		84
51)	Acenaphthene	9.52	153	53503	956.66	ug/L		94
52)	2,4-Dinitrophenol	9.61	184	25376	3386.30	ug/L	#	68
53)	4-Nitrophenol	9.72	109	97340+	4605.03	ug/L	#	40
54)	Dibenzofuran	9.70	168	72197	973.99	ug/L	#	1
55)	2,4-Dinitrotoluene	9.36	165	15830	635.99	ug/L		88
56)	2,3,4,6-Tetrachlorophenol	9.84	232	16215	858.94	ug/L	#	51
57)	2,3,5,6-Tetrachlorophenol	9.89	232	15296	1006.05	ul/l	#	56
58)	Diethylphthalate	10.06	149	72222	1020.66	ug/L		74
59)	Fluorene	10.06	166	52714	908.51	ug/L		64
60)	4-Chlorophenylphenylether	10.08	204	36223	1062.15	ug/L		73
61)	4-Nitroaniline	9.49	138	8746	474.14	ug/L		59
63)	4,6-Dinitro-2-methylphenol	10.19	198	65509	4698.95	ug/L	#	53
64)	n-Nitrosodiphenylamine	10.22	169	44722	760.37	ug/L	#	1
66)	1,2-Diphenylhydrazine	10.25	182	23755	820.41	ug/L	#	1
67)	4-Bromophenylphenylether	10.59	248	24154	948.59	ug/L	#	63
68)	Hexachlorobenzene	10.72	284	23334	931.19	ug/L		88
69)	Atrazine	10.92	200	3275+	904.98	ug/L		38
70)	Pentachlorophenol	10.92	266	12889	967.59	ug/L		88
71)	Phenanthrene	11.05	178	87225	872.81	ug/L		75
72)	Anthracene	11.10	178	77709	1020.23	ug/L		80
73)	Octadecane	11.01	57	26814	997.38	ug/L		49
74)	Carbazole	11.29	167	72226	876.26	ug/L		81
75)	Di-n-butylphthalate	11.76	149	117267	944.05	ug/L		95
76)	Fluoranthene	12.30	202	82354	846.43	ug/L		83
77)	Pyrene	12.53	202	83577	879.19	ug/L		72
78)	Benzidine	12.47	184	43221	2964.87	ug/L		100
81)	Butylbenzylphthalate	13.30	149	65687	831.68	ug/L		77
82)	Benzo(a)anthracene	13.83	228	86591	623.78	ug/L		54
83)	3,3'-Dichlorobenzidine	13.80	252	44578+	768.94	ug/L		100
84)	Chrysene	13.83	228	89658	989.53	ug/L		82
85)	bis(2-Ethylhexyl)phthalate	13.96	149	111120	762.63	ug/L		99
87)	Di-n-octylphthalate	14.65	149	184522	774.19	ug/L		95
88)	Benzofluoranthenes	15.05	252	208643	1542.88	ug/L		80
89)	Benzo(a)pyrene	15.44	252	96112	704.40	ug/L		78
90)	Indeno(1,2,3-cd)pyrene	17.16	276	114850	767.83	ug/L		99
91)	Dibenz(a,h)anthracene	17.20	278	108083	765.63	ug/L		73
92)	Benzo(g,h,i)perylene	17.62	276	99109	746.30	ug/L		86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00373.D
Acq On : 29 Aug 2002 11:56
Sample : 0.5 NG/UL 8270 ICAL STD NO 0980-54-5
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:22 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00374.D Vial: 0
Acq On : 29 Aug 2002 12:22 Operator:
Sample : 1.0 NG/UL 8270 ICAL STD NO 0980-54-6 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:49:53 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:49:41 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	56831	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	127520	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.49	162	79424	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.03	188	137991	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.81	240	152114	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.51	264	169775	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.42	112	42901	1015.76 ug/L	-0.02
7) Phenol - d5 (S)	5.72	99	50090	989.21 ug/L	-0.01
23) Nitrobenzene - d5 (S)	6.73	82	41961	1026.83 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.80	172	106086	979.85 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.34	330	34980	1137.02 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.73	244	149351	965.99 ug/L	0.00

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.71	74	49020	3822.97 ug/L #	100
3) Pyridine	2.76	79	166890+	4733.11 ug/L	98
5) Cyclohexanone	4.63	55	14146	1060.56 ug/L	96
6) Aniline	5.67	93	20457	1264.30 ug/L	100
8) Phenol	5.74	94	50076	992.22 ug/L	74
9) bis(2-Chloroethyl)ether	5.78	63	52312	966.30 ug/L #	20
10) 2-Chlorophenol	5.78	128	46633	939.31 ug/L	65
11) Decane	5.91	57	22379	960.91 ug/L	97
12) 1,3-Dichlorobenzene	5.94	146	54537	969.77 ug/L	74
13) 1,4-Dichlorobenzene	6.01	146	55615	975.91 ug/L	99
14) Benzyl alcohol	6.28	79	49060	1073.18 ug/L	98
15) 1,2-Dichlorobenzene	6.24	146	52597	983.34 ug/L	98
16) 2-Methylphenol	6.47	108	35424	1002.14 ug/L	94
17) bis(2-chloroisopropyl)ethe	6.47	121	7556+	1070.50 ug/L #	1
18) 3-&4-Methylphenol	6.67	108	74276	1681.45 ug/L #	35
19) n-Nitroso-di-n-propylamine	6.65	70	31788	971.84 ug/L	72
20) Acetophenone	6.57	105	72698	927.28 ug/L	99
21) Hexachloroethane	6.62	166	13110	1056.24 ug/L	85
24) Nitrobenzene	6.75	77	39442	1000.95 ug/L	68
25) Isophorone	7.08	82	74320	1044.31 ug/L	86
26) 2-Nitrophenol	7.15	139	24670	1027.02 ug/L	57
27) 2,4-Dimethylphenol	7.28	107	58274	1058.27 ug/L	87
28) bis(2-Chloroethoxy)methane	7.37	93	38555	988.75 ug/L	82
29) Benzoic Acid	7.49	105	131230	6195.95 ug/L #	8
30) 2,4-Dichlorophenol	7.44	162	45920	1035.49 ug/L	97
31) 1,2,4-Trichlorobenzene	7.51	180	47274	967.12 ug/L	94
32) Naphthalene	7.56	128	147600	998.08 ug/L	79
33) 4-Chloroaniline	7.70	127	27328	1029.00 ug/L	95
34) Hexachlorobutadiene	7.81	225	35930	1001.19 ug/L	90
35) 4-Chloro-3-methylphenol	8.31	107	55924	1008.75 ug/L	72
36) 2-Methylnaphthalene	8.35	141	100916	1004.10 ug/L	74
37) 1-Methylnaphthalene	8.47	141	93587	1002.49 ul/l	66
39) Hexachlorocyclopentadiene	8.62	237	34768	1041.72 ug/L	94
40) 2,3-Dichloroaniline	8.71	161	57627	1018.39 ug/L	93
41) 2,4,6-Trichlorophenol	8.73	196	30076	1001.22 ug/L	98
42) 2,4,5-Trichlorophenol	8.78	196	33627	1131.95 ug/L	48
44) 2-Chloronaphthalene	8.87	162	91699	980.19 ug/L	89
45) Biphenyl	9.52	154	83507	979.87 ug/L #	71

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

Data File : C:\MSDCHEM\1\DATA\A00374.D Vial: 0
Acq On : 29 Aug 2002 12:22 Operator:
Sample : 1.0 NG/UL 8270 ICAL STD NO 0980-54-6 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:49:53 2002 Quant Results File: SV5-080902.RES

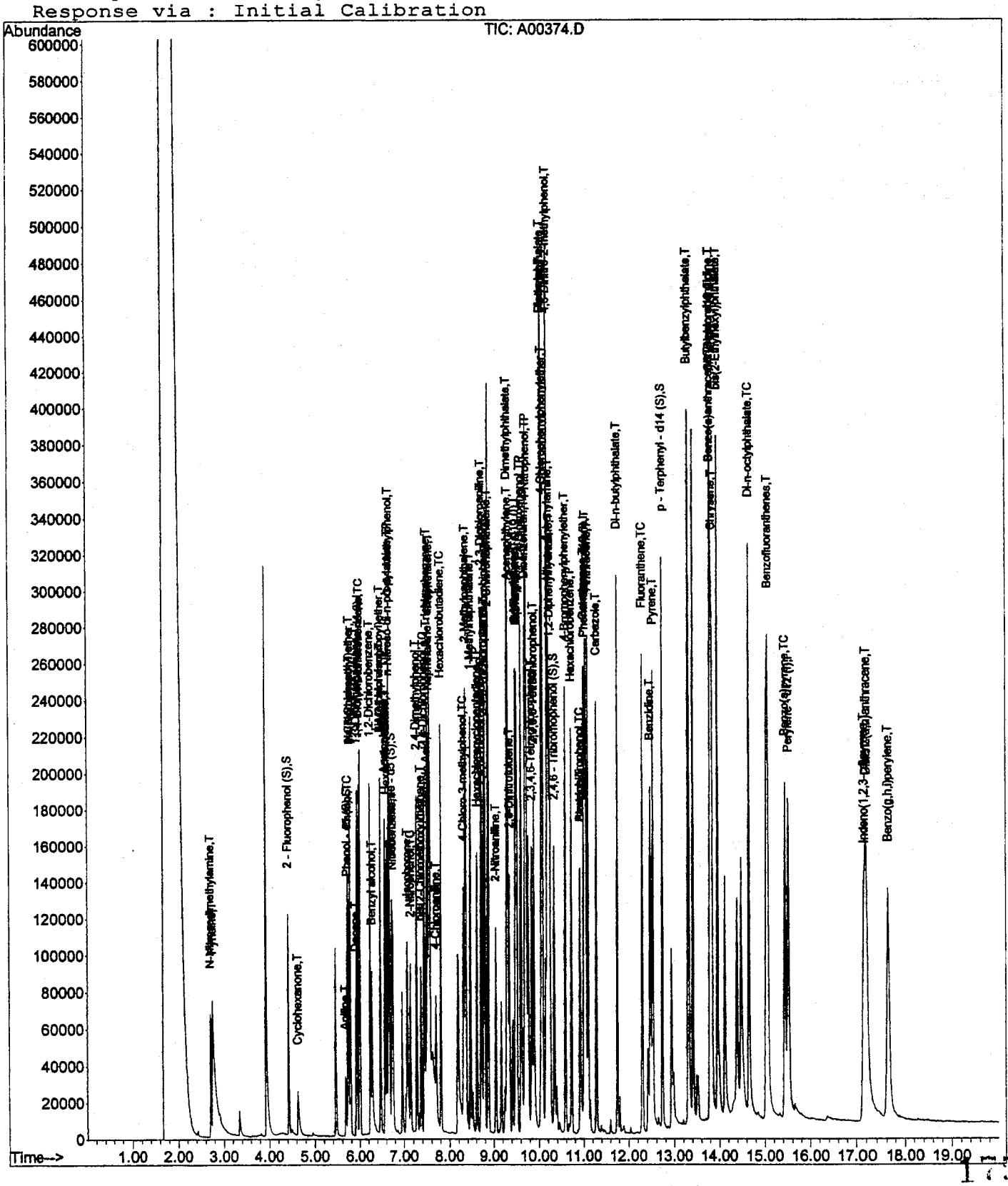
Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:49:41 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	2-Nitroaniline	9.05	138	33525	1061.41 ug/L		85
47)	Dimethylphthalate	9.31	163	163052	1008.95 ug/L		97
48)	Acenaphthylene	9.32	152	153318	1023.29 ug/L		92
49)	2,6-Dinitrotoluene	9.36	165	29276	1006.78 ug/L		85
50)	3-Nitroaniline	9.50	138	18645	1122.71 ug/L		79
51)	Acenaphthene	9.52	153	101817	1013.52 ug/L		99
52)	2,4-Dinitrophenol	9.61	184	65714	5376.01 ug/L		79
53)	4-Nitrophenol	9.73	109	229361+	5511.43 ug/L	#	28
54)	Dibenzofuran	9.70	168	148319	1043.24 ug/L	#	1
55)	2,4-Dinitrotoluene	9.36	165	29772	986.60 ug/L		90
56)	2,3,4,6-Tetrachlorophenol	9.84	232	35982	1170.11 ug/L	#	48
57)	2,3,5,6-Tetrachlorophenol	9.89	232	33380	1145.83 ul/l	#	54
58)	Diethylphthalate	10.07	149	129385	1014.80 ug/L		48
59)	Fluorene	10.06	166	106602	1044.19 ug/L		66
60)	4-Chlorophenylphenylether	10.08	204	66875	975.38 ug/L		67
61)	4-Nitroaniline	9.50	138	18645	1122.71 ug/L		76
63)	4,6-Dinitro-2-methylphenol	10.19	198	139037	5233.68 ug/L	#	61
64)	n-Nitrosodiphenylamine	10.22	169	97393	998.22 ug/L	#	1
66)	1,2-Diphenylhydrazine	10.25	182	52524	1002.48 ug/L	#	17
67)	4-Bromophenylphenylether	10.59	248	47373	988.12 ug/L	#	62
68)	Hexachlorobenzene	10.72	284	45141	992.23 ug/L		87
69)	Atrazine	10.92	200	7202+	970.49 ug/L		38
70)	Pentachlorophenol	10.92	266	28849	1160.96 ug/L		88
71)	Phenanthrene	11.05	178	161198	967.36 ug/L		78
72)	Anthracene	11.10	178	161516	1002.48 ug/L		83
73)	Octadecane	11.01	57	56128	1081.65 ug/L		50
74)	Carbazole	11.29	167	148475	1008.14 ug/L		83
75)	Di-n-butylphthalate	11.76	149	220891	1026.50 ug/L		97
76)	Fluoranthene	12.30	202	171285	1050.38 ug/L		81
77)	Pyrene	12.53	202	171809	1045.51 ug/L		69
78)	Benzidine	12.47	184	150691	5950.85 ug/L		100
81)	Butylbenzylphthalate	13.30	149	127894	981.97 ug/L		83
82)	Benzo(a)anthracene	13.79	228	188335	1055.16 ug/L		88
83)	3,3'-Dichlorobenzidine	13.80	252	50521+	661.10 ug/L		98
84)	Chrysene	13.84	228	182657	1072.01 ug/L		84
85)	bis(2-Ethylhexyl)phthalate	13.96	149	211271	942.35 ug/L		97
87)	Di-n-octylphthalate	14.65	149	360174	1022.34 ug/L		96
88)	Benzofluoranthenes	15.05	252	426603	2079.81 ug/L		75
89)	Benzo(a)pyrene	15.44	252	199691	1055.96 ug/L		72
90)	Indeno(1,2,3-cd)pyrene	17.16	276	237394	1063.96 ug/L		92
91)	Dibenz(a,h)anthracene	17.20	278	218145	1069.18 ug/L		74
92)	Benzo(g,h,i)perylene	17.63	276	204343	1049.12 ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00374.D Vial: 0
Acq On : 29 Aug 2002 12:22 Operator:
Sample : 1.0 NG/UL 8270 ICAL STD NO 0980-54-6 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:49 2002 Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00375.D Vial: 0
Acq On : 29 Aug 2002 12:48 Operator:
Sample : 1.5 NG/UL 8270 ICAL STD NO 0980-54-7 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:46:10 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:46:06 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	52863	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	126294	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.49	162	76717	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.03	188	136704	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.81	240	138673	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.52	264	162054	1000.00 ug/L	0.01
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.42	112	57909	1474.02 ug/L	-0.02
7) Phenol - d5 (S)	5.72	99	71148	1510.54 ug/L	0.00
23) Nitrobenzene - d5 (S)	6.73	82	54466	1345.78 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.80	172	168539	1611.62 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.34	330	50067	1642.75 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.73	244	215652	1407.95 ug/L	0.00
Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.72	74	72378	6068.31 ug/L #	100
3) Pyridine	2.74	79	300965+	8866.78 ug/L	97
5) Cyclohexanone	4.63	55	18557	1495.69 ug/L	95
6) Aniline	5.67	93	29682	1972.13 ug/L	99
8) Phenol	5.74	94	69372	1477.73 ug/L	81
9) bis(2-Chloroethyl)ether	5.78	63	74182	1473.13 ug/L #	22
10) 2-Chlorophenol	5.78	128	73207	1585.27 ug/L	61
11) Decane	5.91	57	31021	1431.97 ug/L	94
12) 1,3-Dichlorobenzene	5.94	146	79047	1511.12 ug/L	76
13) 1,4-Dichlorobenzene	6.01	146	79238	1494.80 ug/L	98
14) Benzyl alcohol	6.27	79	67143	1578.99 ug/L	98
15) 1,2-Dichlorobenzene	6.24	146	72222	1451.59 ug/L	98
16) 2-Methylphenol	6.47	108	52366	1592.62 ug/L	93
17) bis(2-chloroisopropyl)ethe	6.46	121	8923+	1359.07 ug/L #	1
18) 3-&4-Methylphenol	6.67	108	107387	2613.49 ug/L #	40
19) n-Nitroso-di-n-propylamine	6.65	70	47325	1555.45 ug/L	70
20) Acetophenone	6.57	105	107964	1480.47 ug/L	95
21) Hexachloroethane	6.61	166	16168	1400.39 ug/L #	84
24) Nitrobenzene	6.75	77	59631	1528.00 ug/L	65
25) Isophorone	7.07	82	105378	1495.10 ug/L	85
26) 2-Nitrophenol	7.14	139	36238	1523.25 ug/L	57
27) 2,4-Dimethylphenol	7.28	107	78356	1436.77 ug/L	88
28) bis(2-Chloroethoxy)methane	7.37	93	54282	1405.58 ug/L	81
29) Benzoic Acid	7.52	105	180949	8626.34 ug/L	81
30) 2,4-Dichlorophenol	7.44	162	66724	1519.22 ug/L	97
31) 1,2,4-Trichlorobenzene	7.51	180	71755	1482.20 ug/L	93
32) Naphthalene	7.56	128	215074	1468.46 ug/L	84
33) 4-Chloroaniline	7.70	127	38507	1464.01 ug/L	98
34) Hexachlorobutadiene	7.81	225	51789	1457.11 ug/L	88
35) 4-Chloro-3-methylphenol	8.32	107	84286	1535.09 ug/L	75
36) 2-Methylnaphthalene	8.35	141	145824	1465.02 ug/L	72
37) 1-Methylnaphthalene	8.47	141	136622	1477.69 ul/l	66
39) Hexachlorocyclopentadiene	8.62	237	51204	1588.31 ug/L	95
40) 2,3-Dichloroaniline	8.71	161	89635	1639.93 ug/L	98
41) 2,4,6-Trichlorophenol	8.73	196	46923	1617.16 ug/L	94
42) 2,4,5-Trichlorophenol	8.78	196	44763	1559.97 ug/L #	34
44) 2-Chloronaphthalene	8.87	162	132682	1468.31 ug/L	96
45) Biphenyl	9.52	154	128458	1560.50 ug/L #	1

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

Data File : C:\MSDCHEM\1\DATA\A00375.D Vial: 0
Acq On : 29 Aug 2002 12:48 Operator:
Sample : 1.5 NG/UL 8270 ICAL STD NO 0980-54-7 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:46:10 2002 Quant Results File: SV5-080902.RES

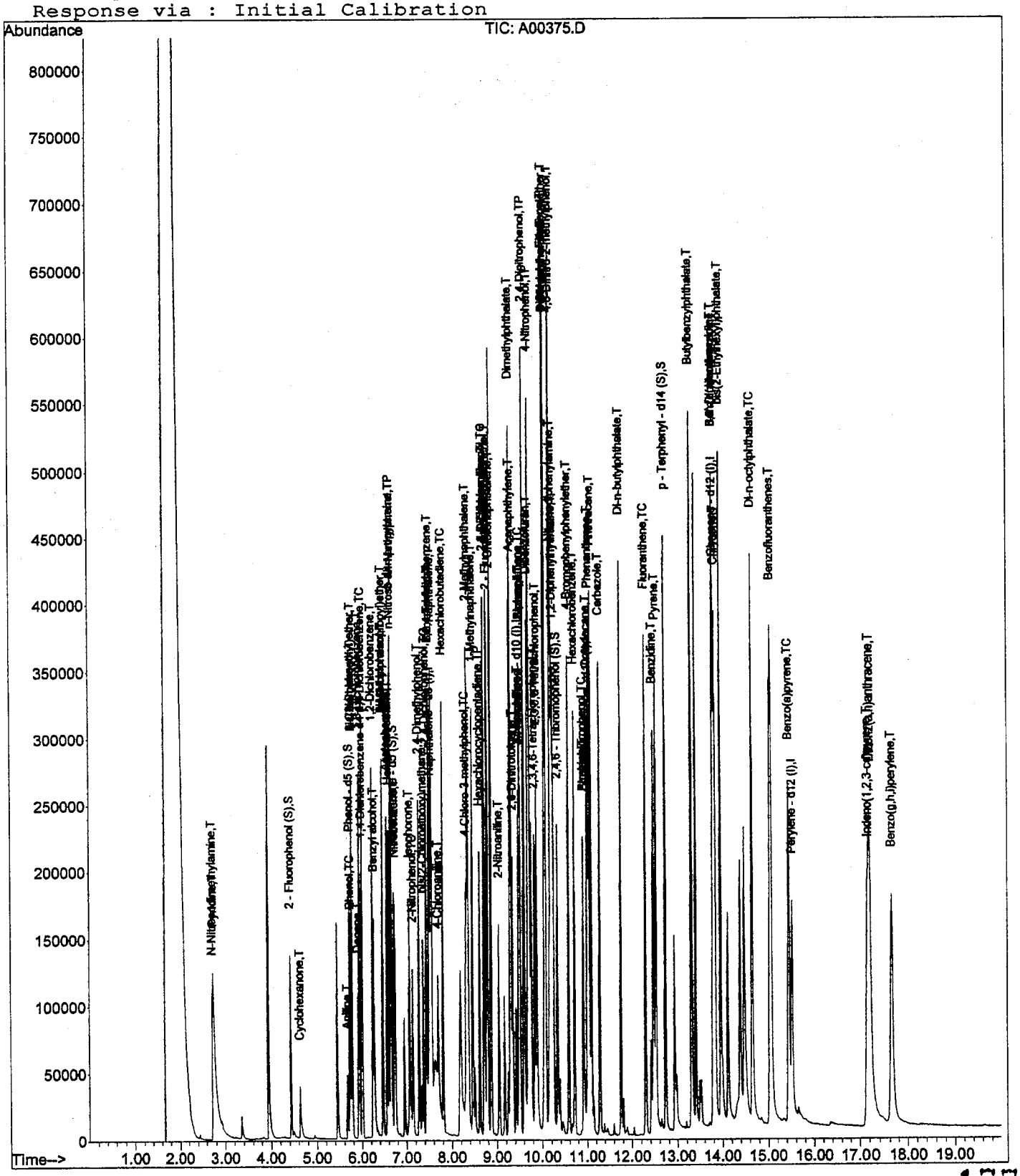
Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:46:06 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	2-Nitroaniline	9.05	138	51786	1697.42 ug/L	80
47)	Dimethylphthalate	9.31	163	249848	1600.58 ug/L	99
48)	Acenaphthylene	9.32	152	224256	1549.57 ug/L	87
49)	2,6-Dinitrotoluene	9.36	165	44779	1594.26 ug/L	86
50)	3-Nitroaniline	9.50	138	25241	1573.52 ug/L	81
51)	Acenaphthene	9.52	153	150310	1549.03 ug/L	99
52)	2,4-Dinitrophenol	9.61	184	119810	10147.41 ug/L	87
53)	4-Nitrophenol	9.73	109	360676+	8972.67 ug/L #	22
54)	Dibenzofuran	9.70	168	208473	1518.10 ug/L #	7
55)	2,4-Dinitrotoluene	9.36	165	45143	1548.76 ug/L	91
56)	2,3,4,6-Tetrachlorophenol	9.84	232	50934	1714.79 ug/L #	49
57)	2,3,5,6-Tetrachlorophenol	9.89	232	50124	1781.31 ul/l #	54
58)	Diethylphthalate	10.07	149	171998	1396.63 ug/L	16
59)	Fluorene	10.06	166	159428	1616.73 ug/L	72
60)	4-Chlorophenylphenylether	10.08	204	105955	1599.89 ug/L	72
61)	4-Nitroaniline	9.50	138	25241	1573.52 ug/L	69
63)	4,6-Dinitro-2-methylphenol	10.19	198	225050	8551.17 ug/L #	73
64)	n-Nitrosodiphenylamine	10.22	169	159847	1653.76 ug/L #	1
66)	1,2-Diphenylhydrazine	10.25	182	86770	1671.70 ug/L #	40
67)	4-Bromophenylphenylether	10.59	248	74002	1558.09 ug/L #	67
68)	Hexachlorobenzene	10.72	284	66899	1484.34 ug/L	89
69)	Atrazine	10.92	200	10523+	1431.36 ug/L	38
70)	Pentachlorophenol	10.92	266	41713	1694.45 ug/L	88
71)	Phenanthrene	11.05	178	257976	1562.70 ug/L	86
72)	Anthracene	11.10	178	253005	1585.10 ug/L	87
73)	Octadecane	11.01	57	71107	1383.22 ug/L	45
74)	Carbazole	11.29	167	233135	1597.88 ug/L	87
75)	Di-n-butylphthalate	11.76	149	288370	1352.70 ug/L	97
76)	Fluoranthene	12.30	202	248434	1537.83 ug/L	78
77)	Pyrene	12.53	202	245134	1505.76 ug/L	68
78)	Benzidine	12.47	184	233668	9314.52 ug/L	100
81)	Butylbenzylphthalate	13.30	149	168706	1420.87 ug/L	87
82)	Benzo(a)anthracene	13.79	228	306242	1882.89 ug/L	85
83)	3,3'-Dichlorobenzidine	13.80	252	92065+	1321.50 ug/L	100
84)	Chrysene	13.84	228	230473	1482.92 ug/L	79
85)	bis(2-Ethylhexyl)phthalate	13.96	149	290701	1422.32 ug/L	99
87)	Di-n-octylphthalate	14.65	149	479024	1424.47 ug/L	95
88)	Benzofluoranthenes	15.06	252	613401	3132.99 ug/L	76
89)	Benzo(a)pyrene	15.44	252	291770	1616.38 ug/L	69
90)	Indeno(1,2,3-cd)pyrene	17.17	276	348786	1637.67 ug/L	93
91)	Dibenz(a,h)anthracene	17.21	278	309555	1589.49 ug/L	72
92)	Benzo(g,h,i)perylene	17.64	276	293368	1577.95 ug/L	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00375.D Vial: 0
Acq On : 29 Aug 2002 12:48 Operator:
Sample : 1.5 NG/UL 8270 ICAL STD NO 0980-54-7 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:46 2002 Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00376.D
Acq On : 29 Aug 2002 13:14
Sample : 2.5 NG/UL 8270 ICAL STD NO 0980-55-2
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:34:22 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:34:16 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	60036	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	131889	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.49	162	82840	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.03	188	150223	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.81	240	133550	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.52	264	161643	1000.00 ug/L	0.01
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.43	112	94909	2235.41 ug/L	-0.01
7) Phenol - d5 (S)	5.73	99	125218	2483.62 ug/L	0.00
23) Nitrobenzene - d5 (S)	6.73	82	87769	2036.54 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.80	172	344083	3477.52 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.34	330	90107	2931.95 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.73	244	387995	2656.60 ug/L	0.00
Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.73	74	205843	17292.35 ug/L #	100
3) Pyridine	2.73	79	457747+	12381.59 ug/L	80
5) Cyclohexanone	4.63	55	31472	2404.97 ug/L	92
6) Aniline	5.67	93	50667	3011.21 ug/L	100
8) Phenol	5.74	94	132290	2624.71 ug/L	98
9) bis(2-Chloroethyl)ether	5.78	63	117798	2245.08 ug/L #	24
10) 2-Chlorophenol	5.78	128	123008	2564.45 ug/L	57
11) Decane	5.91	57	51381	2214.05 ug/L	93
12) 1,3-Dichlorobenzene	5.94	146	129841	2311.04 ug/L	83
13) 1,4-Dichlorobenzene	6.01	146	130840	2290.29 ug/L	95
14) Benzyl alcohol	6.27	79	116927	2580.81 ug/L	94
15) 1,2-Dichlorobenzene	6.24	146	128335	2409.65 ug/L	89
16) 2-Methylphenol	6.47	108	89557	2558.08 ug/L	88
17) bis(2-chloroisopropyl)ethe	6.46	121	16913+	2348.27 ug/L #	1
18) 3-&4-Methylphenol	6.67	108	187040	4832.65 ug/L #	46
19) n-Nitroso-di-n-propylamine	6.65	70	74773	2282.37 ug/L	71
20) Acetophenone	6.57	105	184295	2345.36 ug/L	90
21) Hexachloroethane	6.61	166	29612	2393.23 ug/L	83
24) Nitrobenzene	6.75	77	93315	2525.98 ug/L	59
25) Isophorone	7.07	82	162141	2333.67 ug/L	87
26) 2-Nitrophenol	7.14	139	64904	2778.73 ug/L	63
27) 2,4-Dimethylphenol	7.28	107	139389	2608.32 ug/L	90
28) bis(2-Chloroethoxy)methane	7.37	93	98492	2576.92 ug/L	97
29) Benzoic Acid	7.58	105	295443	14428.50 ug/L #	50
30) 2,4-Dichlorophenol	7.44	162	118165	2720.96 ug/L	92
31) 1,2,4-Trichlorobenzene	7.51	180	123887	2675.37 ug/L	92
32) Naphthalene	7.56	128	367541	2676.30 ug/L	83
33) 4-Chloroaniline	7.70	127	63862	2505.46 ug/L	99
34) Hexachlorobutadiene	7.81	225	85675	2445.86 ug/L	88
35) 4-Chloro-3-methylphenol	8.32	107	147531	2762.99 ug/L	79
36) 2-Methylnaphthalene	8.35	141	255321	2760.24 ug/L	70
37) 1-Methylnaphthalene	8.47	141	236035	2779.55 ul/l	69
39) Hexachlorocyclopentadiene	8.62	237	94358	2947.60 ug/L	92
40) 2,3-Dichloroaniline	8.72	161	173059	3247.68 ug/L	96
41) 2,4,6-Trichlorophenol	8.73	196	80965	2825.75 ug/L	89
42) 2,4,5-Trichlorophenol	8.78	196	59283	1980.32 ug/L #	1
44) 2-Chloronaphthalene	8.87	162	215221	2544.84 ug/L	95
45) Biphenyl	9.52	154	267048	3182.52 ug/L #	1

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

Data File : C:\MSDCHEM\1\DATA\A00376.D Vial: 0
Acq On : 29 Aug 2002 13:14 Operator:
Sample : 2.5 NG/UL 8270 ICAL STD NO 0980-55-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:34:22 2002 Quant Results File: SV5-080902.RES

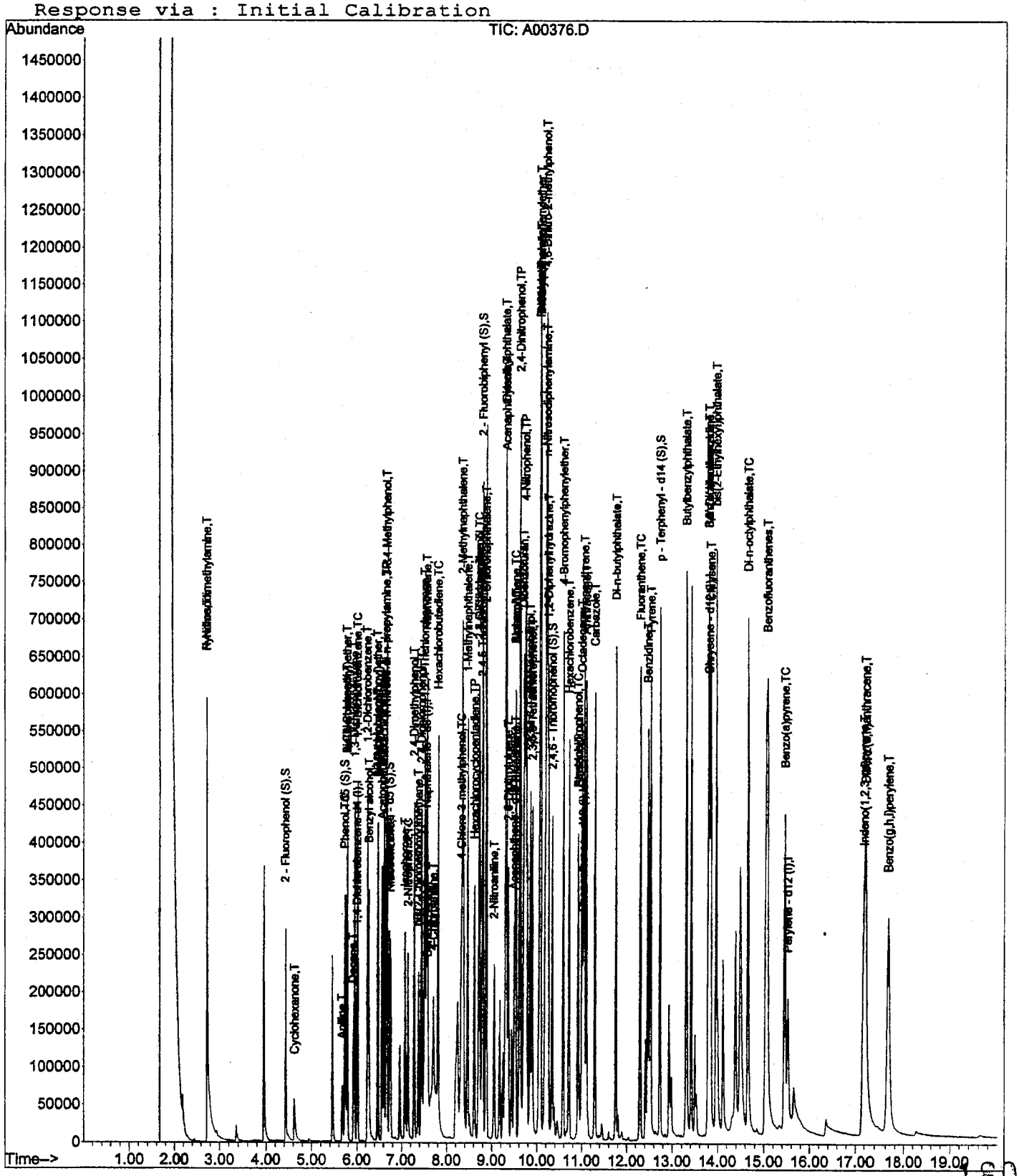
Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:34:16 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	2-Nitroaniline	9.05	138	93948	3124.59 ug/L	75
47)	Dimethylphthalate	9.31	163	468144	3065.25 ug/L	97
48)	Acenaphthylene	9.32	152	420322	3082.60 ug/L	80
49)	2,6-Dinitrotoluene	9.36	165	80346	2914.67 ug/L	91
50)	3-Nitroaniline	9.50	138	39833	2459.38 ug/L	82
51)	Acenaphthene	9.52	153	271513	2932.10 ug/L	83
52)	2,4-Dinitrophenol	9.62	184	223265	19747.96 ug/L	88
53)	4-Nitrophenol	9.75	109	736129+	19228.73 ug/L #	14
54)	Dibenzofuran	9.70	168	384996	2833.97 ug/L	37
55)	2,4-Dinitrotoluene	9.36	165	90668	3054.93 ug/L	79
56)	2,3,4,6-Tetrachlorophenol	9.85	232	96150	3263.45 ug/L #	45
57)	2,3,5,6-Tetrachlorophenol	9.90	232	90351	3334.28 ul/l #	55
58)	Diethylphthalate	10.08	149	244144	1939.71 ug/L #	1
59)	Fluorene	10.06	166	318601	3408.82 ug/L	80
60)	4-Chlorophenylphenylether	10.08	204	184730	2847.35 ug/L	71
61)	4-Nitroaniline	9.50	138	39833	2206.49 ug/L	72
63)	4,6-Dinitro-2-methylphenol	10.20	198	403002	15426.50 ug/L	74
64)	n-Nitrosodiphenylamine	10.23	169	365308	3774.83 ug/L #	1
66)	1,2-Diphenylhydrazine	10.25	182	184818	3565.92 ug/L	91
67)	4-Bromophenylphenylether	10.59	248	132824	2761.82 ug/L #	65
68)	Hexachlorobenzene	10.72	284	120768	2622.92 ug/L	86
69)	Atrazine	10.92	200	19608+	2631.74 ug/L	38
70)	Pentachlorophenol	10.92	266	79200	3231.38 ug/L	89
71)	Phenanthrene	11.06	178	475000	2999.51 ug/L	90
72)	Anthracene	11.10	178	475998	3218.05 ug/L	96
73)	Octadecane	11.01	57	127280	2432.34 ug/L	46
74)	Carbazole	11.29	167	422131	2858.87 ug/L	89
75)	Di-n-butylphthalate	11.76	149	423659	1894.80 ug/L	97
76)	Fluoranthene	12.30	202	445252	2826.57 ug/L	76
77)	Pyrene	12.53	202	450686	2819.27 ug/L	62
78)	Benzidine	12.47	184	438263	17789.93 ug/L	100
81)	Butylbenzylphthalate	13.30	149	255658	2375.45 ug/L	100
82)	Benzo(a)anthracene	13.80	228	490258m	3256.79 ug/L	
83)	3,3'-Dichlorobenzidine	13.80	252	194764+	3050.28 ug/L	98
84)	Chrysene	13.84	228	424023	3280.56 ug/L	75
85)	bis(2-Ethylhexyl)phthalate	13.96	149	414895	2239.34 ug/L	100
87)	Di-n-octylphthalate	14.65	149	734644	2322.74 ug/L	94
88)	Benzofluoranthenes	15.06	252	1065707	5992.91 ug/L	72
89)	Benzo(a)pyrene	15.45	252	507230	2948.06 ug/L	68
90)	Indeno(1,2,3-cd)pyrene	17.19	276	629149	3334.55 ug/L	83
91)	Dibenz(a,h)anthracene	17.23	278	534756	2974.25 ug/L	69
92)	Benzo(g,h,i)perylene	17.66	276	515343	3102.74 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00376.D Vial: 0
Acq On : 29 Aug 2002 13:14 Operator:
Sample : 2.5 NG/UL 8270 ICAL STD NO 0980-55-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:34 2002 Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00377.D Vial: 0
Acq On : 29 Aug 2002 13:40 Operator:
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:52:55 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.99	150	44408	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	7.54	136	108768	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.48	162	64639	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	11.03	188	113273	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.81	240	122554	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.51	264	146956	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	0.00	112	0	0.00 ug/L	
7) Phenol - d5 (S)	5.79	99	2042	51.61 ug/L	0.06
23) Nitrobenzene - d5 (S)	0.00	82	0	0.00 ug/L	
43) 2 - Fluorobiphenyl (S)	0.00	172	0	0.00 ug/L	
65) 2,4,6 - Tribromophenol (S)	0.00	330	0	0.00 ug/L	
79) p - Terphenyl - d14 (S)	12.72	244	672	5.29 ug/L	0.00

Target Compounds						Qvalue
2) N-Nitrosodimethylamine	2.73	74	46561	4647.02 ug/L	#	100
3) Pyridine	2.79	79	102125+	4000.70 ug/L		99
6) Aniline	5.67	93	27435	2169.89 ug/L		100
8) Phenol	5.74	94	35696	905.15 ug/L		51
9) bis(2-Chloroethyl)ether	5.78	63	40558	958.76 ug/L	#	21
10) 2-Chlorophenol	5.79	128	38161	983.69 ug/L		68
11) Decane	5.91	57	17351	953.44 ug/L		93
12) 1,3-Dichlorobenzene	5.94	146	44687	1016.92 ug/L		72
13) 1,4-Dichlorobenzene	6.01	146	45251	1016.18 ug/L		99
14) Benzyl alcohol	6.28	79	37370	1046.15 ug/L		98
15) 1,2-Dichlorobenzene	6.24	146	39746	950.95 ug/L		98
16) 2-Methylphenol	6.47	108	27361	990.57 ug/L		95
17) bis(2-chloroisopropyl)ethe	6.46	121	5456+	989.22 ug/L	#	1
18) 3-&4-Methylphenol	6.66	108	27282	924.63 ug/L	#	26
19) n-Nitroso-di-n-propylamine	6.65	70	23552	921.48 ug/L		71
20) Acetophenone	6.57	105	53354	870.92 ug/L		100
21) Hexachloroethane	6.62	166	8958	923.62 ug/L		84
24) Nitrobenzene	6.75	77	28722	854.57 ug/L		69
25) Isophorone	7.07	82	54684	900.87 ug/L		86
26) 2-Nitrophenol	7.14	139	18913	923.10 ug/L		59
27) 2,4-Dimethylphenol	7.28	107	47703	1015.65 ug/L		85
28) bis(2-Chloroethoxy)methane	7.37	93	31510	947.39 ug/L		78
29) Benzoic Acid	7.54	105	130618	7230.28 ug/L		79
30) 2,4-Dichlorophenol	7.44	162	35709	944.06 ug/L		95
31) 1,2,4-Trichlorobenzene	7.51	180	36999	887.41 ug/L		93
32) Naphthalene	7.56	128	103644	821.67 ug/L		78
33) 4-Chloroaniline	7.70	127	31730	1400.74 ug/L	#	98
34) Hexachlorobutadiene	7.81	225	30753	1004.67 ug/L		90
35) 4-Chloro-3-methylphenol	8.29	107	41576	879.23 ug/L		76
36) 2-Methylnaphthalene	8.35	141	74717	871.59 ug/L		72
37) 1-Methylnaphthalene	8.46	141	74781	939.15 ul/l		63
39) Hexachlorocyclopentadiene	8.61	237	26700	982.97 ug/L		96
40) 2,3-Dichloroaniline	8.71	161	43936	954.04 ug/L		95
41) 2,4,6-Trichlorophenol	8.71	196	22198	907.99 ug/L		96
42) 2,4,5-Trichlorophenol	8.75	196	27352	1131.32 ug/L		50
44) 2-Chloronaphthalene	8.87	162	70466	925.51 ug/L		94
45) Biphenyl	9.52	154	63787	919.67 ug/L	#	1
46) 2-Nitroaniline	9.04	138	25181	979.59 ug/L		86

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

Data File : C:\MSDCHEM\1\DATA\A00377.D Vial: 0
Acq On : 29 Aug 2002 13:40 Operator:
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:52:55 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration
DataAcq Meth :

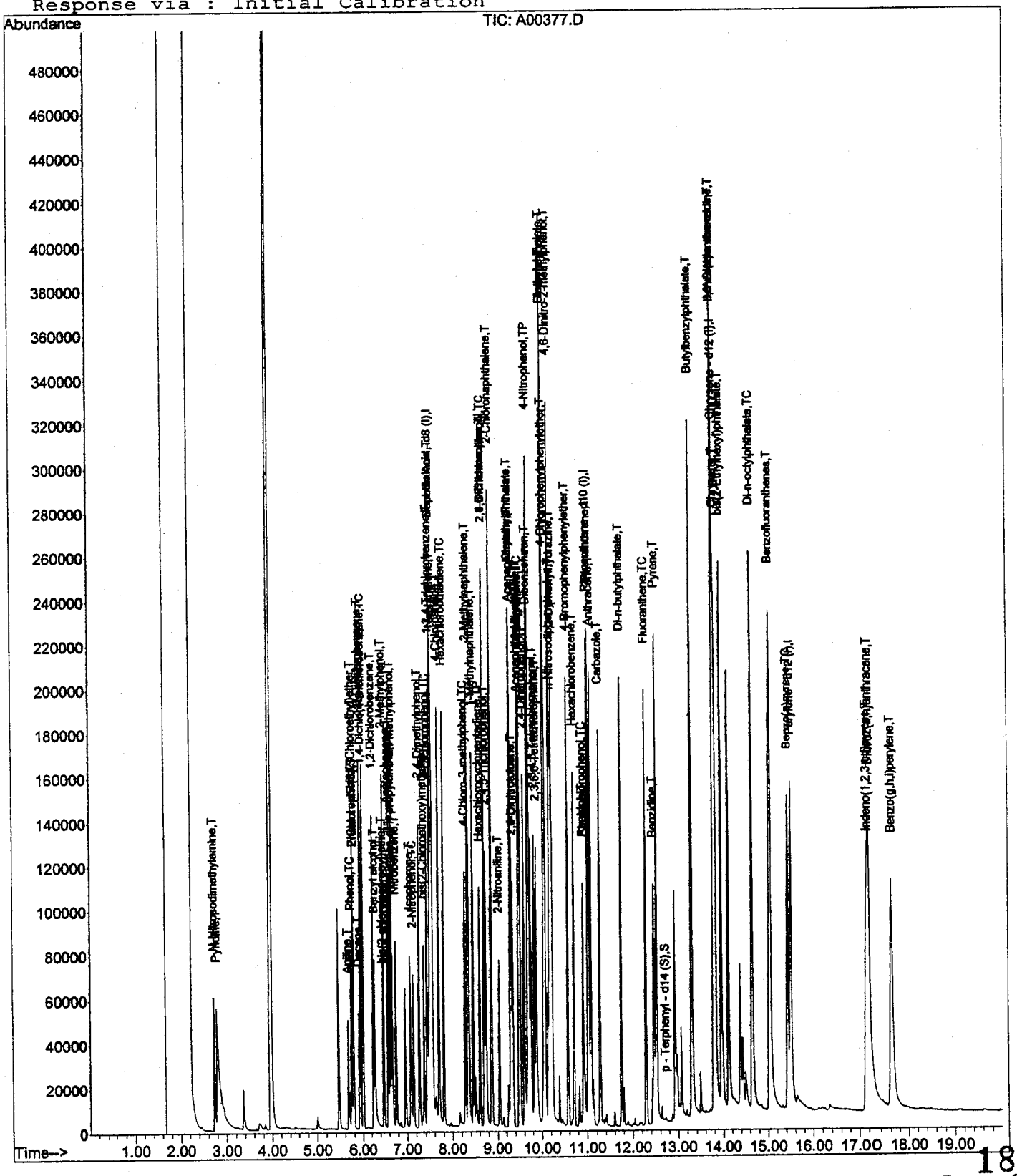
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
47)	Dimethylphthalate	9.30	163	125191	951.86	ug/L		100
48)	Acenaphthylene	9.32	152	105147	862.30	ug/L		98
49)	2,6-Dinitrotoluene	9.35	165	22594	954.71	ug/L		88
50)	3-Nitroaniline	9.49	138	14754	1091.62	ug/L		84
51)	Acenaphthene	9.52	153	79424	971.45	ug/L		97
52)	2,4-Dinitrophenol	9.60	184	36408	3659.79	ug/L		70
53)	4-Nitrophenol	9.72	109	183642+	5422.18	ug/L	#	28
54)	Dibenzofuran	9.69	168	114774	991.95	ug/L	#	1
55)	2,4-Dinitrotoluene	9.35	165	22679	923.45	ug/L		88
56)	2,3,4,6-Tetrachlorophenol	9.84	232	25923	1035.82	ug/L	#	48
57)	2,3,5,6-Tetrachlorophenol	9.89	232	24438	1030.76	ul/l	#	54
58)	Diethylphthalate	10.06	149	101025	973.61	ug/L		46
59)	Fluorene	10.06	166	79841	960.94	ug/L		63
60)	4-Chlorophenylphenylether	10.08	204	53958	966.99	ug/L		65
61)	4-Nitroaniline	9.49	138	14754	1091.62	ug/L		65
63)	4,6-Dinitro-2-methylphenol	10.19	198	93443	4284.97	ug/L	#	55
64)	n-Nitrosodiphenylamine	10.22	169	68919	860.52	ug/L	#	1
66)	1,2-Diphenylhydrazine	10.24	182	39187	911.14	ug/L	#	26
67)	4-Bromophenylphenylether	10.58	248	40588	1031.34	ug/L	#	66
68)	Hexachlorobenzene	10.72	284	35593	953.09	ug/L		88
69)	Atrazine	10.92	200	5648+	927.17	ug/L		38
70)	Pentachlorophenol	10.92	266	23519	1153.00	ug/L		86
71)	Phenanthrene	11.05	178	129267	945.01	ug/L		77
72)	Anthracene	11.10	178	132071	998.60	ug/L		80
74)	Carbazole	11.28	167	121043	1001.23	ug/L		85
75)	Di-n-butylphthalate	11.76	149	172899	978.81	ug/L		95
76)	Fluoranthene	12.30	202	135894	1015.20	ug/L		80
77)	Pyrene	12.52	202	146666	1087.27	ug/L		68
78)	Benzidine	12.46	184	85815	4128.38	ug/L		100
81)	Butylbenzylphthalate	13.30	149	104564	996.49	ug/L		82
82)	Benzo(a)anthracene	13.79	228	154503	1069.54	ug/L		87
83)	3,3'-Dichlorobenzidine	13.79	252	146133+	2373.48	ug/L		99
84)	Chrysene	13.83	228	130598	951.27	ug/L		82
85)	bis(2-Ethylhexyl)phthalate	13.96	149	162531	899.81	ug/L		99
87)	Di-n-octylphthalate	14.64	149	287250	941.95	ug/L		94
88)	Benzofluoranthenes	15.05	252	343435	1934.33	ug/L		79
89)	Benzo(a)pyrene	15.43	252	155830	951.98	ug/L		74
90)	Indeno(1,2,3-cd)pyrene	17.16	276	197372	1021.94	ug/L		95
91)	Dibenz(a,h)anthracene	17.20	278	179093	1014.08	ug/L		73
92)	Benzo(g,h,i)perylene	17.63	276	168128	997.23	ug/L		89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00377.D
Acq On : 29 Aug 2002 13:40
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 14:52 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00377.D Vial: 0
Acq On : 29 Aug 2002 13:40 Operator:
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4 (I)	1000.000	1000.000	0.0	78	0.00
2	T	N-Nitrosodimethylamine	5000.000	4647.016	7.1	95	-0.02
3	T	Pyridine	5000.000	4000.701	20.0	61	-0.06
4	S	2 - Fluorophenol (S)	1000.000	0.000	100.0#	0	-4.44#
5	T	Cyclohexanone	1000.000	0.000	100.0#	0	-4.66#
6	T	Aniline	1000.000	2169.889	-117.0#	134	-0.02
7	S	Phenol - d5 (S)	1000.000	51.608	94.8#	4	0.06
8	TC	Phenol	1000.000	905.149	9.5	71	0.00
9	T	bis(2-Chloroethyl)ether	1000.000	958.763	4.1	78	0.02
10	T	2-Chlorophenol	1000.000	983.695	1.6	82	0.00
11	T	Decane	1000.000	953.438	4.7	78	0.00
12	T	1,3-Dichlorobenzene	1000.000	1016.915	-1.7	82	0.01
13	TC	1,4-Dichlorobenzene	1000.000	1016.177	-1.6	81	0.00
14	T	Benzyl alcohol	1000.000	1046.146	-4.6	76	0.00
15	T	1,2-Dichlorobenzene	1000.000	950.951	4.9	76	-0.01
16	T	2-Methylphenol	1000.000	990.569	0.9	77	0.00
17	T	bis(2-chloroisopropyl)ether	1000.000	989.224	1.1	72	-0.01
18	T	3-&4-Methylphenol	2000.000	924.629	53.8#	37	0.00
19	TP	n-Nitroso-di-n-propylamine	1000.000	921.478	7.9	74	0.00
20	T	Acetophenone	1000.000	870.920	12.9	73	0.00
21	T	Hexachloroethane	1000.000	923.621	7.6	68	0.00
22	I	Naphthalene - d8 (I)	1000.000	1000.000	0.0	85	0.00
23	S	Nitrobenzene - d5 (S)	1000.000	0.000	100.0#	0	-6.73#
24	T	Nitrobenzene	1000.000	854.569	14.5	73	-0.01
25	T	Isophorone	1000.000	900.870	9.9	74	-0.01
26	TC	2-Nitrophenol	1000.000	923.101	7.7	77	-0.01
27	T	2,4-Dimethylphenol	1000.000	1015.648	-1.6	82	0.00
28	T	bis(2-Chloroethoxy)methane	1000.000	947.392	5.3	82	0.01
29	T	Benzoic Acid	5000.000	7230.282	-44.6#	100	0.08
30	TC	2,4-Dichlorophenol	1000.000	944.058	5.6	78	0.00
31	T	1,2,4-Trichlorobenzene	1000.000	887.412	11.3	78	0.01
32	T	Naphthalene	1000.000	821.674	17.8	70	0.00
33	T	4-Chloroaniline	1000.000	1400.736	-40.1#	116	0.00
34	TC	Hexachlorobutadiene	1000.000	1004.669	-0.5	86	0.01
35	TC	4-Chloro-3-methylphenol	1000.000	879.233	12.1	74	-0.02
36	T	2-Methylnaphthalene	1000.000	871.594	12.8	74	0.00
37	T	1-Methylnaphthalene	1000.000	939.150	6.1	80	-0.01
38	I	Acenaphthene - d10 (I)	1000.000	1000.000	0.0	81	0.00
39	TP	Hexachlorocyclopentadiene	1000.000	982.968	1.7	77	0.00
40	T	2,3-Dichloroaniline	1000.000	954.039	4.6	76	0.00
41	TC	2,4,6-Trichlorophenol	1000.000	907.985	9.2	74	-0.01
42	T	2,4,5-Trichlorophenol	1000.000	1131.316	-13.1	81	-0.02
43	S	2 - Fluorobiphenyl (S)	1000.000	0.000	100.0#	0	-8.78#
44	T	2-Chloronaphthalene	1000.000	925.514	7.4	77	0.02
45	T	Biphenyl	1000.000	919.671	8.0	76	0.02
46	T	2-Nitroaniline	1000.000	979.594	2.0	75	0.00
47	T	Dimethylphthalate	1000.000	951.858	4.8	77	0.00
48	T	Acenaphthylene	1000.000	862.304	13.8	69	0.00
49	T	2,6-Dinitrotoluene	1000.000	954.715	4.5	77	-0.02
50	T	3-Nitroaniline	1000.000	1091.624	-9.2	79	-0.02
51	TC	Acenaphthene	1000.000	971.452	2.9	78	0.00

(#) = Out of Range

Data File : C:\MSDCHEM\1\DATA\A00377.D Vial: 0
Acq On : 29 Aug 2002 13:40 Operator:
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
52	TP	2,4-Dinitrophenol	5000.000	3659.788	26.8#	55	-0.01
53	TP	4-Nitrophenol	5000.000	5422.177	-8.4	80	0.00
54	T	Dibenzofuran	1000.000	991.951	0.8	77	0.00
55	T	2,4-Dinitrotoluene	1000.000	923.451	7.7	76	-0.01
56	T	2,3,4,6-Tetrachlorophenol	1000.000	1035.821	-3.6	72	-0.02
57	T	2,3,5,6-Tetrachlorophenol	1000.000	1030.756	-3.1	73	0.00
58	T	Diethylphthalate	1000.000	973.606	2.6	78	-0.01
59	T	Fluorene	1000.000	960.939	3.9	75	-0.01
60	T	4-Chlorophenylphenylether	1000.000	966.991	3.3	81	-0.02
61	T	4-Nitroaniline	1000.000	1091.624	-9.2	79	-0.02
62	I	Phenanthrene - d10 (I)	1000.000	1000.000	0.0	82	0.00
63	T	4,6-Dinitro-2-methylphenol	5000.000	4284.974	14.3	67	0.00
64	T	n-Nitrosodiphenylamine	1000.000	860.519	13.9	71	0.02
65	S	2,4,6 - Tribromophenol (S)	1000.000	0.000	100.0#	0	-10.34#
66	T	1,2-Diphenylhydrazine	1000.000	911.139	8.9	75	0.00
67	T	4-Bromophenylphenylether	1000.000	1031.340	-3.1	86	0.00
68	T	Hexachlorobenzene	1000.000	953.085	4.7	79	0.00
69	T	Atrazine	1000.000	927.169	7.3	78	-0.01
70	TC	Pentachlorophenol	1000.000	1153.002	-15.3	82	0.00
71	T	Phenanthrene	1000.000	945.014	5.5	80	0.00
72	T	Anthracene	1000.000	998.599	0.1	82	0.00
73	T	Octadecane	1000.000	0.000	100.0#	0	-11.01#
74	T	Carbazole	1000.000	1001.225	-0.1	82	-0.01
75	T	Di-n-butylphthalate	1000.000	978.809	2.1	78	0.00
76	TC	Fluoranthene	1000.000	1015.200	-1.5	79	0.00
77	T	Pyrene	1000.000	1087.271	-8.7	85	0.00
78	T	Benzidine	5000.000	4128.378	17.4	57	-0.01
79	S	p - Terphenyl - d14 (S)	1000.000	5.295	99.5#	0	0.00
80	I	Chrysene - d12 (I)	1000.000	1000.000	0.0	81	0.00
81	T	Butylbenzylphthalate	1000.000	996.487	0.4	82	0.00
82	T	Benzo(a)anthracene	1000.000	1069.536	-7.0	82	0.01
83	T	3,3'-Dichlorobenzidine	1000.000	2373.485	-137.3#	289	0.00
84	T	Chrysene	1000.000	951.273	4.9	71	0.01
85	T	bis(2-Ethylhexyl)phthalate	1000.000	899.813	10.0	77	0.00
86	I	Perylene - d12 (I)	1000.000	1000.000	0.0	87	0.00
87	TC	Di-n-octylphthalate	1000.000	941.953	5.8	80	-0.01
88	T	Benzofluoranthenes	2000.000	1934.335	3.3	81	0.00
89	TC	Benzo(a)pyrene	1000.000	951.980	4.8	78	0.00
90	T	Indeno(1,2,3-cd)pyrene	1000.000	1021.941	-2.2	83	0.00
91	T	Dibenz(a,h)anthracene	1000.000	1014.078	-1.4	82	0.00
92	T	Benzo(g,h,i)perylene	1000.000	997.227	0.3	82	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
A00377.D SV5-080902.M Thu Aug 29 14:53:56 2002

Data File : C:\MSDCHEM\1\DATA\A00377.D Vial: 0
Acq On : 29 Aug 2002 13:40 Operator:
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4 (I)	1.000	1.000	0.0	78	0.00
2	T	N-Nitrosodimethylamine	0.226	0.210#	7.1	95	-0.02
3	T	Pyridine	0.575	0.460#	20.0	61	-0.06
4	S	2 - Fluorophenol (S)	0.743	0.000#	100.0#	0#	-4.44#
5	T	Cyclohexanone	0.235	0.000#	100.0#	0#	-4.66#
6	T	Aniline	0.285	0.618#	-116.8#	134	-0.02
7	S	Phenol - d5 (S)	0.891	0.046#	94.8#	4#	0.06
8	TC	Phenol	0.888	0.804#	9.5	71	0.00
9	T	bis(2-Chloroethyl)ether	0.953	0.913#	4.2	78	0.02
10	T	2-Chlorophenol	0.874	0.859#	1.7	82	0.00
11	T	Decane	0.410	0.391#	4.6	78	0.00
12	T	1,3-Dichlorobenzene	0.990	1.006#	-1.6	82	0.01
13	TC	1,4-Dichlorobenzene	1.003	1.019#	-1.6	81	0.00
14	T	Benzyl alcohol	0.804	0.842#	-4.7	76	0.00
15	T	1,2-Dichlorobenzene	0.941	0.895#	4.9	76	-0.01
16	T	2-Methylphenol	0.622	0.616#	1.0	77	0.00
17	T	bis(2-chloroisopropyl)ether	0.124	0.123#	0.8	72	-0.01
18	T	3-&4-Methylphenol	0.664	0.307#	53.8#	37#	0.00
19	TP	n-Nitroso-di-n-propylamine	0.576	0.530	8.0	74	0.00
20	T	Acetophenone	1.380	1.201#	13.0	73	0.00
21	T	Hexachloroethane	0.218	0.202#	7.3	68	0.00
22	I	Naphthalene - d8 (I)	1.000	1.000	0.0	85	0.00
23	S	Nitrobenzene - d5 (S)	0.320	0.000#	100.0#	0#	-6.73#
24	T	Nitrobenzene	0.309	0.264#	14.6	73	-0.01
25	T	Isophorone	0.558	0.503#	9.9	74	-0.01
26	TC	2-Nitrophenol	0.188	0.174#	7.4	77	-0.01
27	T	2,4-Dimethylphenol	0.432	0.439#	-1.6	82	0.00
28	T	bis(2-Chloroethoxy)methane	0.306	0.290#	5.2	82	0.01
29	T	Benzoic Acid	0.166	0.240#	-44.6#	100	0.08
30	TC	2,4-Dichlorophenol	0.348	0.328#	5.7	78	0.00
31	T	1,2,4-Trichlorobenzene	0.383	0.340#	11.2	78	0.01
32	T	Naphthalene	1.160	0.953#	17.8	70	0.00
33	T	4-Chloroaniline	0.208	0.292#	-40.4#	116	0.00
34	TC	Hexachlorobutadiene	0.281	0.283#	-0.7	86	0.01
35	TC	4-Chloro-3-methylphenol	0.435	0.382#	12.2	74	-0.02
36	T	2-Methylnaphthalene	0.788	0.687#	12.8	74	0.00
37	T	1-Methylnaphthalene	0.732	0.688#	6.0	80	-0.01
38	I	Acenaphthene - d10 (I)	1.000	1.000	0.0	81	0.00
39	TP	Hexachlorocyclopentadiene	0.420	0.413	1.7	77	0.00
40	T	2,3-Dichloroaniline	0.712	0.680#	4.5	76	0.00
41	TC	2,4,6-Trichlorophenol	0.378	0.343#	9.3	74	-0.01
42	T	2,4,5-Trichlorophenol	0.374	0.423#	-13.1	81	-0.02
43	S	2 - Fluorobiphenyl (S)	1.363	0.000#	100.0#	0#	-8.78#
44	T	2-Chloronaphthalene	1.178	1.090#	7.5	77	0.02
45	T	Biphenyl	1.073	0.987#	8.0	76	0.02
46	T	2-Nitroaniline	0.398	0.390#	2.0	75	0.00
47	T	Dimethylphthalate	2.035	1.937#	4.8	77	0.00
48	T	Acenaphthylene	1.886	1.627#	13.7	69	0.00
49	T	2,6-Dinitrotoluene	0.366	0.350#	4.4	77	-0.02
50	T	3-Nitroaniline	0.209	0.228#	-9.1	79	-0.02
51	TC	Acenaphthene	1.265	1.229#	2.8	78	0.00

(#) = Out of Range

Data File : C:\MSDCHEM\1\DATA\A00377.D
Acq On : 29 Aug 2002 13:40
Sample : 1.0 NG/UL 8270 OCS STD NO 0980-52-2
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 14:50:56 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
52	TP	2,4-Dinitrophenol	0.154	0.113	26.6#	55	-0.01
53	TP	4-Nitrophenol	0.524	0.568	-8.4	80	0.00
54	T	Dibenzofuran	1.790	1.776#	0.8	77	0.00
55	T	2,4-Dinitrotoluene	0.380	0.351#	7.6	76	-0.01
56	T	2,3,4,6-Tetrachlorophenol	0.387	0.401#	-3.6	72	-0.02
57	T	2,3,5,6-Tetrachlorophenol	0.367	0.378#	-3.0	73	0.00
58	T	Diethylphthalate	1.605	1.563#	2.6	78	-0.01
59	T	Fluorene	1.285	1.235#	3.9	75	-0.01
60	T	4-Chlorophenylphenylether	0.863	0.835#	3.2	81	-0.02
61	T	4-Nitroaniline	0.209	0.228#	-9.1	79	-0.02
62	I	Phenanthrene - d10 (I)	1.000	1.000	0.0	82	0.00
63	T	4,6-Dinitro-2-methylphenol	0.193	0.165#	14.5	67	0.00
64	T	n-Nitrosodiphenylamine	0.707	0.608#	14.0	71	0.02
65	S	2,4,6 - Tribromophenol (S)	0.223	0.000#	100.0#	0#	-10.34#
66	T	1,2-Diphenylhydrazine	0.380	0.346#	8.9	75	0.00
67	T	4-Bromophenylphenylether	0.347	0.358#	-3.2	86	0.00
68	T	Hexachlorobenzene	0.330	0.314#	4.8	79	0.00
69	T	Atrazine	0.054	0.050#	7.4	78	-0.01
70	TC	Pentachlorophenol	0.180	0.208#	-15.6	82	0.00
71	T	Phenanthrene	1.208	1.141#	5.5	80	0.00
72	T	Anthracene	1.168	1.166#	0.2	82	0.00
73	T	Octadecane	0.376	0.000#	100.0#	0#	-11.01#
74	T	Carbazole	1.067	1.069#	-0.2	82	-0.01
75	T	Di-n-butylphthalate	1.559	1.526#	2.1	78	0.00
76	TC	Fluoranthene	1.182	1.200#	-1.5	79	0.00
77	T	Pyrene	1.191	1.295#	-8.7	85	0.00
78	T	Benzidine	0.184	0.152#	17.4	57	-0.01
79	S	p - Terphenyl - d14 (S)	1.120	0.006#	99.5#	0#	0.00
80	I	Chrysene - d12 (I)	1.000	1.000	0.0	81	0.00
81	T	Butylbenzylphthalate	0.856	0.853#	0.4	82	0.00
82	T	Benzo(a)anthracene	1.179	1.261#	-7.0	82	0.01
83	T	3,3'-Dichlorobenzidine	0.502	1.192#	-137.5#	289#	0.00
84	T	Chrysene	1.120	1.066#	4.8	71	0.01
85	T	bis(2-Ethylhexyl)phthalate	1.474	1.326#	10.0	77	0.00
86	I	Perylene - d12 (I)	1.000	1.000	0.0	87	0.00
87	TC	Di-n-octylphthalate	2.075	1.955#	5.8	80	-0.01
88	T	Benzofluoranthenes	1.208	1.168#	3.3	81	0.00
89	TC	Benzo(a)pyrene	1.114	1.060#	4.8	78	0.00
90	T	Indeno(1,2,3-cd)pyrene	1.314	1.343#	-2.2	83	0.00
91	T	Dibenz(a,h)anthracene	1.202	1.219#	-1.4	82	0.00
92	T	Benzo(g,h,i)perylene	1.147	1.144#	0.3	82	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
A00377.D SV5-080902.M Thu Aug 29 14:54:09 2002

CONTINUING CALIBRATION

Sequence Log

Directory : c:\MSDchem\1\DATA

#	Filename	Sample Name	Date/Time
1	a00344.d	DFTPP 8/28/02(2)	08/28/02 14:30
2	a00345.d	1.0 NG/UL 8270 CCAL STD NO 0980-54-6	08/28/02 14:45
3	a00346.d	SS0606 MB &15.0000 &20 SOIL	08/28/02 15:13
4	a00347.d	SS0606 BS &15.0000 &20 SOIL	08/28/02 15:49
5	a00348.d	SW0431 MB #1000 &1.0 WATER	08/28/02 16:13
6	a00349.d	SW0431 BS #1000 &1.0 WATER	08/28/02 16:39
7	a00350.d	SW0431 BSD #1000 &1.0 WATER	08/28/02 17:05
8	a00351.d	108166-4 SW0431 &1.0 WATER	08/28/02 17:31

Data File : C:\MSDCHEM\1\DATA\A00345.D Vial: 0
Acq On : 28 Aug 2002 14:45 Operator:
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 28 15:28:08 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Aug 28 15:28:04 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.39	150	212324	1000.00 ug/L	0.00
22) Naphthalene - d8 (I)	6.93	136	534857	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	8.84	162	375444	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	10.35	188	655767	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.07	240	561504	1000.00 ul/l	0.00
86) Perylene - d12 (I)	14.56	264	534827	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	3.76	112	96990	948.93 ug/L	0.08
7) Phenol - d5 (S)	5.18	99	136772	1275.75 ug/L	0.00
23) Nitrobenzene - d5 (S)	6.14	82	103018	621.79 ug/L	-0.06
43) 2 - Fluorobiphenyl (S)	8.17	172	295325	1042.66 ug/L	-0.01
65) 2,4,6 - Tribromophenol (S)	9.67	330	72410	888.04 ug/L	-0.03
79) p - Terphenyl - d14 (S)	12.03	244	328049	829.67 ug/L	0.02
Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.08	74	165633	5985.28 ug/L #	100
3) Pyridine	2.09	79	515493+	6378.45 ug/L	98
6) Aniline	5.06	93	59542	956.58 ug/L	100
8) Phenol	5.19	94	115256	1049.64 ug/L	94
9) bis(2-Chloroethyl)ether	5.18	63	65901m	1103.31 ug/L	
10) 2-Chlorophenol	5.19	128	90219	968.62 ug/L	74
11) Decane	5.33	57	53307	1090.03 ug/L	93
12) 1,3-Dichlorobenzene	5.33	146	118302	953.09 ug/L	80
13) 1,4-Dichlorobenzene	5.41	146	126313	985.17 ug/L	52
14) Benzyl alcohol	5.69	79	122416	1304.53 ug/L	66
15) 1,2-Dichlorobenzene	5.64	146	123782	1017.03 ug/L	77
16) 2-Methylphenol	5.93	108	85516	1093.30 ug/L	96
17) bis(2-chloroisopropyl)ethe	5.88	121	18321+	995.92 ug/L #	16
18) 3-&4-Methylphenol	6.12	108	204281	2250.66 ug/L	92
19) n-Nitroso-di-n-propylamine	6.06	70	74544	1011.88 ug/L	99
20) Acetophenone	5.98	105	190623	1070.76 ug/L	64
21) Hexachloroethane	6.01	166	29948	1053.29 ug/L	92
24) Nitrobenzene	6.16	77	102552m	1045.60 ug/L	
25) Isophorone	6.47	82	174113	972.13 ug/L	89
26) 2-Nitrophenol	6.55	139	61489	932.48 ug/L	55
27) 2,4-Dimethylphenol	6.71	107	132370	906.54 ug/L	87
28) bis(2-Chloroethoxy)methane	6.79	93	96818	868.87 ug/L	75
29) Benzoic Acid	6.95	105	371502	8203.57 ug/L #	54
30) 2,4-Dichlorophenol	6.85	162	101063	862.66 ug/L	99
31) 1,2,4-Trichlorobenzene	6.91	180	116221	1017.13 ug/L	93
32) Naphthalene	6.95	128	361900	969.68 ug/L	80
33) 4-Chloroaniline	7.10	127	83334	1484.60 ug/L	98
34) Hexachlorobutadiene	7.20	225	79671	862.83 ug/L	92
35) 4-Chloro-3-methylphenol	7.73	107	135672	918.13 ug/L	94
36) 2-Methylnaphthalene	7.73	141	241012	925.28 ug/L	96
37) 1-Methylnaphthalene	7.84	141	223093	926.57 ul/l	96
39) Hexachlorocyclopentadiene	7.99	237	81981	934.05 ug/L	94
40) 2,3-Dichloroaniline	8.09	161	136219	1003.31 ug/L	93
41) 2,4,6-Trichlorophenol	8.11	196	73276	930.21 ug/L	92
42) 2,4,5-Trichlorophenol	8.18	196	66648	833.73 ug/L	95
44) 2-Chloronaphthalene	8.24	162	203728	880.83 ug/L	92
45) Biphenyl	8.88	154	234004	765.68 ug/L #	1
46) 2-Nitroaniline	8.42	138	87877	1041.76 ug/L	81

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

Data File : C:\MSDCHEM\1\DATA\A00345.D Vial: 0
Acq On : 28 Aug 2002 14:45 Operator:
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 28 15:28:08 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Aug 28 15:28:04 2002
Response via : Initial Calibration
DataAcq Meth :

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
47)	Dimethylphthalate	8.68	163	374790	999.02	ug/L		97
48)	Acenaphthylene	8.68	152	383125	1015.11	ug/L		83
49)	2,6-Dinitrotoluene	8.73	165	67917	1000.33	ug/L		82
50)	3-Nitroaniline	8.86	138	39780	950.72	ug/L		84
51)	Acenaphthene	8.88	153	267514	1045.97	ug/L		96
52)	2,4-Dinitrophenol	8.97	184	179647	5242.22	ug/L		75
53)	4-Nitrophenol	9.13	109	577449+	5973.76	ug/L	#	51
54)	Dibenzofuran	9.05	168	326561	963.37	ug/L		53
55)	2,4-Dinitrotoluene	9.13	165	86530	760.21	ug/L		66
56)	2,3,4,6-Tetrachlorophenol	9.20	232	75943	879.69	ug/L	#	50
57)	2,3,5,6-Tetrachlorophenol	9.25	232	81516	1172.40	ul/l	#	55
58)	Diethylphthalate	9.43	149	270102	834.70	ug/L		21
59)	Fluorene	9.40	166	245219	924.17	ug/L		66
60)	4-Chlorophenylphenylether	9.43	204	156190	1001.50	ug/L		65
61)	4-Nitroaniline	8.86	138	39780	471.58	ug/L	#	56
63)	4,6-Dinitro-2-methylphenol	9.55	198	296244	4584.98	ug/L	#	55
64)	n-Nitrosodiphenylamine	9.57	169	247390	907.55	ug/L	#	1
66)	1,2-Diphenylhydrazine	9.59	182	129292	963.47	ug/L	#	41
67)	4-Bromophenylphenylether	9.92	248	104762	887.73	ug/L	#	61
68)	Hexachlorobenzene	10.05	284	107368	924.51	ug/L		88
69)	Atrazine	10.25	200	16575+	988.26	ug/L		38
70)	Pentachlorophenol	10.25	266	72012	1166.45	ug/L		89
71)	Phenanthrene	10.37	178	444107	958.86	ug/L		85
72)	Anthracene	10.42	178	382234	1082.79	ug/L		84
73)	Octadecane	10.36	57	131395	1054.54	ug/L		53
74)	Carbazole	10.61	167	340886	892.36	ug/L		82
75)	Di-n-butylphthalate	11.09	149	501367	870.89	ug/L		99
76)	Fluoranthene	11.59	202	379156	840.84	ug/L		79
77)	Pyrene	11.81	202	340329	772.47	ug/L		68
78)	Benzidine	11.77	184	180891	2677.42	ug/L		100
81)	Butylbenzylphthalate	12.60	149	292475	1017.14	ug/L		83
82)	Benzo(a)anthracene	13.05	228	517615	1024.19	ug/L		79
83)	3,3'-Dichlorobenzidine	13.07	252	289170+	1370.05	ug/L		100
84)	Chrysene	13.09	228	312584	947.59	ug/L		80
85)	bis(2-Ethylhexyl)phthalate	13.24	149	443589	836.21	ug/L		99
87)	Di-n-octylphthalate	13.85	149	754090	1021.38	ug/L		97
88)	Benzofluoranthenes	14.16	252	868529	2073.38	ug/L		90
89)	Benzo(a)pyrene	14.49	252	407045	963.05	ug/L		96
90)	Indeno(1,2,3-cd)pyrene	15.92	276	505114	1090.16	ug/L		87
91)	Dibenz(a,h)anthracene	15.95	278	458646	1048.83	ug/L		74
92)	Benzo(g,h,i)perylene	16.30	276	420729	1022.75	ug/L		95

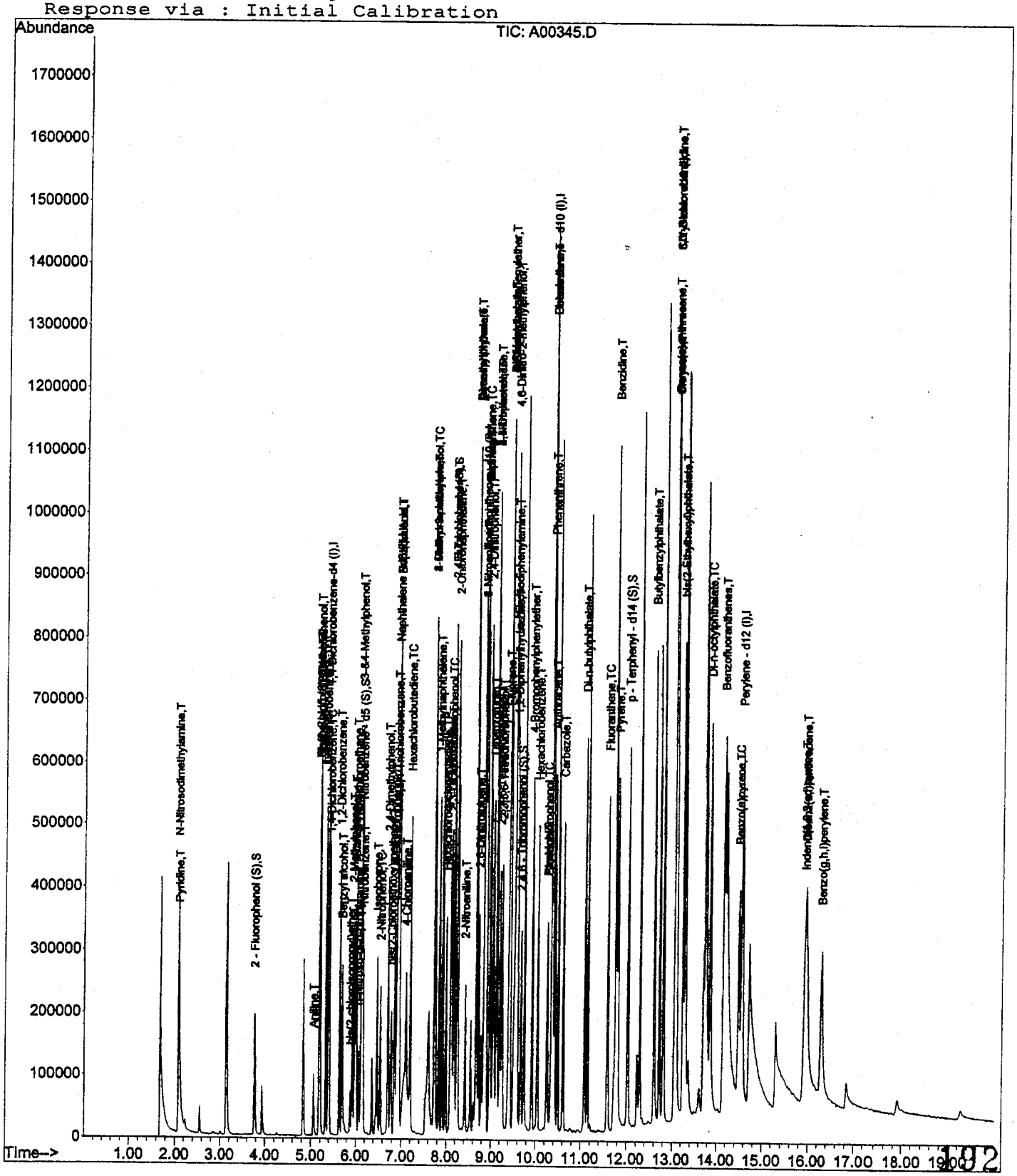
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00345.D
Acq On : 28 Aug 2002 14:45
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 28 15:29 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-080902.RE

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Aug 28 15:28:04 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00345.D Vial: 0
Acq On : 28 Aug 2002 14:45 Operator:
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Aug 28 15:28:04 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4 (I)	1.000	1.000	0.0	88	0.00
2	T	N-Nitrosodimethylamine	0.130	0.156#	-20.0	95	-0.11
3	T	Pyridine	0.381	0.486#	-27.6#	95	-0.22
4	S	2 - Fluorophenol (S)	0.481	0.457#	5.0	82	0.08
5	T	Cyclohexanone	0.131	0.000#	100.0#	0#	-4.11#
6	T	Aniline	0.293	0.280#	4.4	72	-0.04
7	S	Phenol - d5 (S)	0.505	0.644#	-27.5#	100	0.00
8	TC	Phenol	0.517	0.543#	-5.0	80	-0.01
9	T	bis(2-Chloroethyl)ether	0.281	0.310#	-10.3	105	0.00
10	T	2-Chlorophenol	0.439	0.425#	3.2	79	-0.01
11	T	Decane	0.230	0.251#	-9.1	91	0.02
12	T	1,3-Dichlorobenzene	0.585	0.557#	4.8	78	0.00
13	TC	1,4-Dichlorobenzene	0.604	0.595#	1.5	82	0.01
14	T	Benzyl alcohol	0.442	0.577#	-30.5#	93	-0.02
15	T	1,2-Dichlorobenzene	0.573	0.583#	-1.7	81	0.03
16	T	2-Methylphenol	0.368	0.403#	-9.5	83	0.02
17	T	bis(2-chloroisopropyl)ether	0.087	0.086#	1.1	76	0.05
18	T	3-&4-Methylphenol	0.427	0.481#	-12.6	86	0.01
19	TP	n-Nitroso-di-n-propylamine	0.347	0.351	-1.2	77	0.01
20	T	Acetophenone	0.838	0.898#	-7.2	86	0.00
21	T	Hexachloroethane	0.134	0.141#	-5.2	86	0.00
22	I	Naphthalene - d8 (I)	1.000	1.000	0.0	97	0.00
23	S	Nitrobenzene - d5 (S)	0.310	0.193#	37.7#	96	-0.06
24	T	Nitrobenzene	0.183	0.192#	-4.9	66	-0.03
25	T	Isophorone	0.335	0.326#	2.7	92	0.00
26	TC	2-Nitrophenol	0.123	0.115#	6.5	83	0.00
27	T	2,4-Dimethylphenol	0.273	0.247#	9.5	84	0.02
28	T	bis(2-Chloroethoxy)methane	0.208	0.181#	13.0	81	0.03
29	T	Benzoic Acid	0.085	0.139#	-63.5#	143	-0.08
30	TC	2,4-Dichlorophenol	0.219	0.189#	13.7	80	0.00
31	T	1,2,4-Trichlorobenzene	0.214	0.217#	-1.4	101	0.02
32	T	Naphthalene	0.698	0.677#	3.0	94	0.00
33	T	4-Chloroaniline	0.105	0.156#	-48.6#	133	0.03
34	TC	Hexachlorobutadiene	0.173	0.149#	13.9	82	0.03
35	TC	4-Chloro-3-methylphenol	0.276	0.254#	8.0	84	0.00
36	T	2-Methylnaphthalene	0.487	0.451#	7.4	89	0.02
37	T	1-Methylnaphthalene	0.450	0.417#	7.3	86	0.01
38	I	Acenaphthene - d10 (I)	1.000	1.000	0.0	98	0.00
39	TP	Hexachlorocyclopentadiene	0.234	0.218	6.8	83	-0.02
40	T	2,3-Dichloroaniline	0.362	0.363#	-0.3	90	-0.02
41	TC	2,4,6-Trichlorophenol	0.210	0.195#	7.1	82	-0.01
42	T	2,4,5-Trichlorophenol	0.213	0.178#	16.4	73	-0.01
43	S	2 - Fluorobiphenyl (S)	0.754	0.787#	-4.4	104	-0.01
44	T	2-Chloronaphthalene	0.616	0.543#	11.9	80	0.00
45	T	Biphenyl	0.814	0.623#	23.5#	70	0.03
46	T	2-Nitroaniline	0.225	0.234#	-4.0	85	-0.01
47	T	Dimethylphthalate	0.999	0.998#	0.1	91	0.01
48	T	Acenaphthylene	1.005	1.020#	-1.5	93	0.00
49	T	2,6-Dinitrotoluene	0.181	0.181#	0.0	91	0.00
50	T	3-Nitroaniline	0.111	0.106#	4.5	86	0.00
51	TC	Acenaphthene	0.681	0.713#	-4.7	96	0.01

(#) = Out of Range

Data File : C:\MSDCHEM\1\DATA\A00345.D Vial: 0
Acq On : 28 Aug 2002 14:45 Operator:
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Aug 28 15:28:04 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
52	TP	2,4-Dinitrophenol	0.091	0.096	-5.5	81	0.01
53	TP	4-Nitrophenol	0.257	0.308	-19.8	98	0.01
54	T	Dibenzofuran	0.903	0.870#	3.7	87	0.00
55	T	2,4-Dinitrotoluene	0.303	0.230#	24.1#	69	0.03
56	T	2,3,4,6-Tetrachlorophenol	0.230	0.202#	12.2	77	0.02
57	T	2,3,5,6-Tetrachlorophenol	0.185	0.217#	-17.3	98	0.02
58	T	Diethylphthalate	0.862	0.719#	16.6	77	0.05
59	T	Fluorene	0.707	0.653#	7.6	85	0.02
60	T	4-Chlorophenylphenylether	0.415	0.416#	-0.2	93	0.03
61	T	4-Nitroaniline	0.225	0.106#	52.9#	39#	0.00
62	I	Phenanthrene - d10 (I)	1.000	1.000	0.0	97	0.00
63	T	4,6-Dinitro-2-methylphenol	0.099	0.090#	9.1	83	-0.01
64	T	n-Nitrosodiphenylamine	0.416	0.377#	9.4	88	0.00
65	S	2,4,6 - Tribromophenol (S)	0.124	0.110#	11.3	83	-0.03
66	T	1,2-Diphenylhydrazine	0.205	0.197#	3.9	93	-0.02
67	T	4-Bromophenylphenylether	0.180	0.160#	11.1	86	-0.01
68	T	Hexachlorobenzene	0.177	0.164#	7.3	90	0.00
69	T	Atrazine	0.026	0.025#	3.8	88	0.00
70	TC	Pentachlorophenol	0.094	0.110#	-17.0	113	0.00
71	T	Phenanthrene	0.706	0.677#	4.1	91	0.00
72	T	Anthracene	0.538	0.583#	-8.4	105	0.00
73	T	Octadecane	0.190	0.200#	-5.3	111	0.03
74	T	Carbazole	0.583	0.520#	10.8	87	0.00
75	T	Di-n-butylphthalate	0.878	0.765#	12.9	85	0.00
76	TC	Fluoranthene	0.688	0.578#	16.0	82	0.04
77	T	Pyrene	0.672	0.519#	22.8#	76	0.05
78	T	Benzidine	0.103	0.055#	46.6#	50#	0.05
79	S	p - Terphenyl - d14 (S)	0.603	0.500#	17.1	87	0.02
80	I	Chrysene - d12 (I)	1.000	1.000	0.0	93	0.00
81	T	Butylbenzylphthalate	0.512	0.521#	-1.8	89	0.01
82	T	Benzo(a)anthracene	0.900	0.922#	-2.4	99	0.00
83	T	3,3'-Dichlorobenzidine	0.376	0.515#	-37.0#	98	0.00
84	T	Chrysene	0.587	0.557#	5.1	81	0.00
85	T	bis(2-Ethylhexyl)phthalate	0.945	0.790#	16.4	86	0.04
86	I	Perylene - d12 (I)	1.000	1.000	0.0	89	0.00
87	TC	Di-n-octylphthalate	1.380	1.410#	-2.2	93	0.02
88	T	Benzofluoranthenes	0.783	0.812#	-3.7	88	0.05
89	TC	Benzo(a)pyrene	0.790	0.761#	3.7	86	0.02
90	T	Indeno(1,2,3-cd)pyrene	0.866	0.944#	-9.0	84	0.00
91	T	Dibenz(a,h)anthracene	0.818	0.858#	-4.9	89	-0.16
92	T	Benzo(g,h,i)perylene	0.769	0.787#	-2.3	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
A00345.D SV5-080902.M Wed Aug 28 15:29:42 2002 Page 2

Data File : C:\MSDCHEM\1\DATA\A00345.D
Acq On : 28 Aug 2002 14:45
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Aug 28 15:28:04 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4 (I)	1000.000	1000.000	0.0	88	0.00
2	T	N-Nitrosodimethylamine	5000.000	5985.279	-19.7	95	-0.11
3	T	Pyridine	5000.000	6378.447	-27.6#	95	-0.22
4	S	2 - Fluorophenol (S)	1000.000	948.930	5.1	82	0.08
5	T	Cyclohexanone	1000.000	0.000	100.0#	0	-4.11#
6	T	Aniline	1000.000	956.583	4.3	72	-0.04
7	S	Phenol - d5 (S)	1000.000	1275.753	-27.6#	100	0.00
8	TC	Phenol	1000.000	1049.637	-5.0	80	-0.01
9	T	bis(2-Chloroethyl)ether	1000.000	1103.312	-10.3	105	0.00
10	T	2-Chlorophenol	1000.000	968.620	3.1	79	-0.01
11	T	Decane	1000.000	1090.027	-9.0	91	0.02
12	T	1,3-Dichlorobenzene	1000.000	953.085	4.7	78	0.00
13	TC	1,4-Dichlorobenzene	1000.000	985.172	1.5	82	0.01
14	T	Benzyl alcohol	1000.000	1304.527	-30.5#	93	-0.02
15	T	1,2-Dichlorobenzene	1000.000	1017.032	-1.7	81	0.03
16	T	2-Methylphenol	1000.000	1093.300	-9.3	83	0.02
17	T	bis(2-chloroisopropyl)ether	1000.000	995.923	0.4	76	0.05
18	T	3-&4-Methylphenol	2000.000	2250.659	-12.5	86	0.01
19	TP	n-Nitroso-di-n-propylamine	1000.000	1011.878	-1.2	77	0.01
20	T	Acetophenone	1000.000	1070.762	-7.1	86	0.00
21	T	Hexachloroethane	1000.000	1053.287	-5.3	86	0.00
22	I	Naphthalene - d8 (I)	1000.000	1000.000	0.0	97	0.00
23	S	Nitrobenzene - d5 (S)	1000.000	621.785	37.8#	96	-0.06
24	T	Nitrobenzene	1000.000	1045.605	-4.6	66	-0.03
25	T	Isophorone	1000.000	972.125	2.8	92	0.00
26	TC	2-Nitrophenol	1000.000	932.478	6.8	83	0.00
27	T	2,4-Dimethylphenol	1000.000	906.537	9.3	84	0.02
28	T	bis(2-Chloroethoxy)methane	1000.000	868.869	13.1	81	0.03
29	T	Benzoic Acid	5000.000	8203.570	-64.1#	143	-0.08
30	TC	2,4-Dichlorophenol	1000.000	862.662	13.7	80	0.00
31	T	1,2,4-Trichlorobenzene	1000.000	1017.126	-1.7	101	0.02
32	T	Naphthalene	1000.000	969.681	3.0	94	0.00
33	T	4-Chloroaniline	1000.000	1484.597	-48.5#	133	0.03
34	TC	Hexachlorobutadiene	1000.000	862.834	13.7	82	0.03
35	TC	4-Chloro-3-methylphenol	1000.000	918.130	8.2	84	0.00
36	T	2-Methylnaphthalene	1000.000	925.285	7.5	89	0.02
37	T	1-Methylnaphthalene	1000.000	926.570	7.3	86	0.01
38	I	Acenaphthene - d10 (I)	1000.000	1000.000	0.0	98	0.00
39	TP	Hexachlorocyclopentadiene	1000.000	934.047	6.6	83	-0.02
40	T	2,3-Dichloroaniline	1000.000	1003.308	-0.3	90	-0.02
41	TC	2,4,6-Trichlorophenol	1000.000	930.207	7.0	82	-0.01
42	T	2,4,5-Trichlorophenol	1000.000	833.728	16.6	73	-0.01
43	S	2 - Fluorobiphenyl (S)	1000.000	1042.660	-4.3	104	-0.01
44	T	2-Chloronaphthalene	1000.000	880.829	11.9	80	0.00
45	T	Biphenyl	1000.000	765.678	23.4#	70	0.03
46	T	2-Nitroaniline	1000.000	1041.756	-4.2	85	-0.01
47	T	Dimethylphthalate	1000.000	999.017	0.1	91	0.01
48	T	Acenaphthylene	1000.000	1015.114	-1.5	93	0.00
49	T	2,6-Dinitrotoluene	1000.000	1000.334	-0.0	91	0.00
50	T	3-Nitroaniline	1000.000	950.720	4.9	86	0.00
51	TC	Acenaphthene	1000.000	1045.965	-4.6	96	0.01

(#) = Out of Range

Data File : C:\MSDCHEM\1\DATA\A00345.D Vial: 0
Acq On : 28 Aug 2002 14:45 Operator:
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Aug 28 15:28:04 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
52	TP	2,4-Dinitrophenol	5000.000	5242.220	-4.8	81	0.01
53	TP	4-Nitrophenol	5000.000	5973.760	-19.5	98	0.01
54	T	Dibenzofuran	1000.000	963.371	3.7	87	0.00
55	T	2,4-Dinitrotoluene	1000.000	760.206	24.0#	69	0.03
56	T	2,3,4,6-Tetrachlorophenol	1000.000	879.686	12.0	77	0.02
57	T	2,3,5,6-Tetrachlorophenol	1000.000	1172.401	-17.2	98	0.02
58	T	Diethylphthalate	1000.000	834.700	16.5	77	0.05
59	T	Fluorene	1000.000	924.169	7.6	85	0.02
60	T	4-Chlorophenylphenylether	1000.000	1001.496	-0.1	93	0.03
61	T	4-Nitroaniline	1000.000	471.580	52.8#	39	0.00
62	I	Phenanthrene - d10 (I)	1000.000	1000.000	0.0	97	0.00
63	T	4,6-Dinitro-2-methylphenol	5000.000	4584.985	8.3	83	-0.01
64	T	n-Nitrosodiphenylamine	1000.000	907.555	9.2	88	0.00
65	S	2,4,6 - Tribromophenol (S)	1000.000	888.038	11.2	83	-0.03
66	T	1,2-Diphenylhydrazine	1000.000	963.467	3.7	93	-0.02
67	T	4-Bromophenylphenylether	1000.000	887.728	11.2	86	-0.01
68	T	Hexachlorobenzene	1000.000	924.515	7.5	90	0.00
69	T	Atrazine	1000.000	988.259	1.2	88	0.00
70	TC	Pentachlorophenol	1000.000	1166.446	-16.6	113	0.00
71	T	Phenanthrene	1000.000	958.859	4.1	91	0.00
72	T	Anthracene	1000.000	1082.793	-8.3	105	0.00
73	T	Octadecane	1000.000	1054.544	-5.5	111	0.03
74	T	Carbazole	1000.000	892.356	10.8	87	0.00
75	T	Di-n-butylphthalate	1000.000	870.887	12.9	85	0.00
76	TC	Fluoranthene	1000.000	840.839	15.9	82	0.04
77	T	Pyrene	1000.000	772.473	22.8#	76	0.05
78	T	Benzidine	5000.000	2677.421	46.5#	50	0.05
79	S	p - Terphenyl - d14 (S)	1000.000	829.672	17.0	87	0.02
80	I	Chrysene - d12 (I)	1000.000	1000.000	0.0	93	0.00
81	T	Butylbenzylphthalate	1000.000	1017.139	-1.7	89	0.01
82	T	Benzo(a)anthracene	1000.000	1024.191	-2.4	99	0.00
83	T	3,3'-Dichlorobenzidine	1000.000	1370.052	-37.0#	98	0.00
84	T	Chrysene	1000.000	947.589	5.2	81	0.00
85	T	bis(2-Ethylhexyl)phthalate	1000.000	836.210	16.4	86	0.04
86	I	Perylene - d12 (I)	1000.000	1000.000	0.0	89	0.00
87	TC	Di-n-octylphthalate	1000.000	1021.381	-2.1	93	0.02
88	T	Benzofluoranthenes	2000.000	2073.379	-3.7	88	0.05
89	TC	Benzo(a)pyrene	1000.000	963.048	3.7	86	0.02
90	T	Indeno(1,2,3-cd)pyrene	1000.000	1090.164	-9.0	84	0.00
91	T	Dibenz(a,h)anthracene	1000.000	1048.828	-4.9	89	-0.16
92	T	Benzo(g,h,i)perylene	1000.000	1022.753	-2.3	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
A00345.D SV5-080902.M Wed Aug 28 15:29:53 2002 Page 2

Sequence Log

Directory : c:\MSDchem\1\DATA

#	Filename	Sample Name					Date/Time
1	a00443.d	DFTPP 9/03/02					09/03/02 13:05
2	a00444.d	1.0 NG/UL 8270 CCAL STD NO 0980-54-6					09/03/02 13:18
3	a00445.d	SS0608 MB	#15.0000	&2.0	SOIL		09/03/02 14:19
4	a00446.d	SS0608 BS	#15.0000	&2.0	SOIL		09/03/02 14:45
5	a00448.d	108164-3 MS	SS0608	&2.0	SOIL	1:10	09/03/02 15:36
6	a00449.d	108164-3 MSD	SS0608	&2.0	SOIL	1:10	09/03/02 16:02
7	a00450.d	108164-1	SS0608	&2.0	SOIL	1:10	09/03/02 16:28
8	a00451.d	108164-2	SS0608	&2.0	SOIL	1:10	09/03/02 16:54
9	a00452.d	108164-3	SS0608	&2.0	SOIL	1:10	09/03/02 17:20
10	a00453.d	108160-1	SS0608	&2.0	SOIL	1:10	09/03/02 17:46
11	a00454.d	108160-2	SS0608	&2.0	SOIL	1:10	09/03/02 18:12
12	a00455.d	108160-3	SS0608	&2.0	SOIL	1:10	09/03/02 18:38
13	a00456.d	108160-4	SS0608	&2.0	SOIL	1:10	09/03/02 19:04
14	a00457.d	108177-1	SS0608	&2.0	SOIL	1:100	09/03/02 19:29
15	a00458.d	108177-2	SS0608	&2.0	SOIL	1:100	09/03/02 19:55
16	a00459.d	108177-3	SS0608	&2.0	SOIL	1:10	09/03/02 20:21
17	a00460.d	108177-4	SS0608	&2.0	SOIL	1:10	09/03/02 20:47
18	a00461.d	108177-5	SS0608	&2.0	SOIL	1:10	09/03/02 21:13
19	a00462.d	108177-6	SS0608	&2.0	SOIL	1:10	09/03/02 21:39
20	a00463.d	108177-8	SS0608	&2.0	SOIL	1:100	09/03/02 22:06
21	a00464.d	108177-9	SS0608	&2.0	SOIL	1:100	09/03/02 22:32
22	a00465.d	108177-10	SS0608	&2.0	SOIL	1:100	09/03/02 22:58
23	a00466.d	108177-11	SS0608	&2.0	SOIL	1:10	09/03/02 23:24
24	a00467.d	108166-1	SS0608	&2.0	SOIL	1:10	09/03/02 23:50
25	a00468.d	108166-2	SS0608	&2.0	SOIL	1:10	09/04/02 00:16
26	a00469.d	108166-3	SS0608	&2.0	SOIL	1:10	09/04/02 00:42

Quantitation Report

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 05 16:47:31 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.89	150	68651	1000.00 ul/l	0.00
22) Naphthalene - d8 (I)	7.43	136	148794	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.38	162	107033	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	10.91	188	175341	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.68	240	183905	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.34	264	201063	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.35	112	54561	1069.41 ug/L	0.00
7) Phenol - d5 (S)	5.66	99	60671	991.87 ug/L	-0.02
23) Nitrobenzene - d5 (S)	6.63	82	56832	1191.90 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.69	172	149978	1027.93 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	10.22	330	42477	1086.60 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.61	244	190200	968.15 ug/L	0.02

Target Compounds					Qvalue
2) N-Nitrosodimethylamine	2.63	74	75427	4869.60 ug/L #	100
3) Pyridine	2.65	79	119969+	3040.10 ug/L	99
5) Cyclohexanone	4.52	55	15700	974.40 ug/L #	49
6) Aniline	5.57	93	26009	1330.67 ug/L	99
8) Phenol	5.67	94	65909	1081.08 ug/L	54
9) bis(2-Chloroethyl)ether	5.67	63	40406	617.87 ug/L #	44
10) 2-Chlorophenol	5.69	128	64108	1068.97 ug/L	86
11) Decane	5.81	57	27854	990.08 ug/L	92
12) 1,3-Dichlorobenzene	5.84	146	68230	1004.37 ug/L	73
13) 1,4-Dichlorobenzene	5.84	146	69386	1007.92 ug/L	100
14) Benzyl alcohol	6.18	79	60448	1094.63 ug/L	99
15) 1,2-Dichlorobenzene	6.14	146	59475	920.48 ug/L	99
16) 2-Methylphenol	6.39	108	45108	1056.38 ug/L	91
17) bis(2-chloroisopropyl)ethe	6.36	121	10479+	1229.01 ug/L #	17
18) 3-&4-Methylphenol	6.59	108	101531	2225.89 ug/L	95
19) n-Nitroso-di-n-propylamine	6.54	70	41768	1057.10 ug/L	68
20) Acetophenone	6.46	105	98953	1044.85 ug/L	98
21) Hexachloroethane	6.51	166	14315	954.75 ug/L	91
24) Nitrobenzene	6.59	77	100331	2182.14 ug/L #	15
25) Isophorone	6.96	82	96514	1162.27 ug/L	85
26) 2-Nitrophenol	7.04	139	30170	1076.42 ug/L	62
27) 2,4-Dimethylphenol	7.19	107	70337	1094.70 ug/L	98
28) bis(2-Chloroethoxy)methane	7.27	93	51260	1126.62 ug/L	83
29) Benzoic Acid	7.59	105	112820	4565.14 ug/L	96
30) 2,4-Dichlorophenol	7.35	162	55476	1072.12 ug/L	99
31) 1,2,4-Trichlorobenzene	7.40	180	65353	1145.82 ug/L	94
32) Naphthalene	7.45	128	182050	1055.02 ug/L	82
33) 4-Chloroaniline	7.60	127	43731	1411.21 ug/L	100
34) Hexachlorobutadiene	7.70	225	46012	1098.81 ug/L	90
35) 4-Chloro-3-methylphenol	8.23	107	74711	1154.95 ug/L	79
36) 2-Methylnaphthalene	8.24	141	129418	1103.58 ug/L	76
37) 1-Methylnaphthalene	8.36	141	119794	1099.75 ul/l	63
39) Hexachlorocyclopentadiene	8.50	237	43767	973.09 ug/L	92
40) 2,3-Dichloroaniline	8.61	161	78533	1029.85 ug/L	96
41) 2,4,6-Trichlorophenol	8.62	196	39811	983.43 ug/L	93
42) 2,4,5-Trichlorophenol	8.69	196	35202	879.30 ug/L #	23
44) 2-Chloronaphthalene	8.76	162	116167	921.43 ug/L	95

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

Quantitation Report

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 05 16:47:31 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Initial Calibration
DataAcq Meth :

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) Biphenyl	9.41	154	107147	932.95 ug/L #	1
46) 2-Nitroaniline	8.95	138	43448	1020.75 ug/L	85
47) Dimethylphthalate	9.20	163	203918	936.34 ug/L	98
48) Acenaphthylene	9.21	152	194134	961.48 ug/L	90
49) 2,6-Dinitrotoluene	9.25	165	37601	959.53 ug/L	90
50) 3-Nitroaniline	9.39	138	25460	1137.62 ug/L	84
51) Acenaphthene	9.41	153	126132	931.69 ug/L	97
52) 2,4-Dinitrophenol	9.50	184	89841	5453.94 ug/L	81
53) 4-Nitrophenol	9.65	109	311258+	5550.08 ug/L #	43
54) Dibenzofuran	9.58	168	175562	916.33 ug/L	28
55) 2,4-Dinitrotoluene	9.66	165	45436	1117.29 ug/L	91
56) 2,3,4,6-Tetrachlorophenol	9.74	232	44307	1069.17 ug/L #	47
57) 2,3,5,6-Tetrachlorophenol	9.78	232	44868	1142.89 ul/l #	53
58) Diethylphthalate	9.95	149	152828	889.48 ug/L	28
59) Fluorene	9.95	166	135708	986.40 ug/L	69
60) 4-Chlorophenylphenylether	9.97	204	88662	959.58 ug/L	71
61) 4-Nitroaniline	9.39	138	25460	1137.62 ug/L	77
63) 4,6-Dinitro-2-methylphenol	10.08	198	176917	5241.00 ug/L #	67
64) n-Nitrosodiphenylamine	10.11	169	132750	1070.78 ug/L #	1
66) 1,2-Diphenylhydrazine	10.13	182	71942	1080.61 ug/L #	31
67) 4-Bromophenylphenylether	10.47	248	61115	1003.22 ug/L #	62
68) Hexachlorobenzene	10.60	284	57324	991.62 ug/L	85
69) Atrazine	10.81	200	10125+	1073.75 ug/L	38
70) Pentachlorophenol	10.81	266	37349	1182.86 ug/L	98
71) Phenanthrene	10.94	178	225714	1065.99 ug/L	85
72) Anthracene	10.98	178	206151	1006.96 ug/L	67
73) Octadecane	10.89	57	64138	972.73 ug/L	45
74) Carbazole	11.18	167	198043	1058.27 ug/L	84
75) Di-n-butylphthalate	11.64	149	257510	941.76 ug/L	94
76) Fluoranthene	12.18	202	218661	1055.28 ug/L	78
77) Pyrene	12.40	202	216796	1038.25 ug/L	98
78) Benzidine	12.35	184	212880	6615.98 ug/L	100
81) Butylbenzylphthalate	13.18	149	161577	1026.13 ug/L	85
82) Benzo(a)anthracene	13.66	228	238080	1098.29 ug/L	88
83) 3,3'-Dichlorobenzidine	13.66	252	115427+	1249.34 ug/L	97
84) Chrysene	13.70	228	217239	1054.48 ug/L	81
85) bis(2-Ethylhexyl)phthalate	13.82	149	257055	948.37 ug/L	98
87) Di-n-octylphthalate	14.50	149	395472	947.85 ug/L	95
88) Benzofluoranthenes	14.89	252	511692	2106.45 ug/L	78
89) Benzo(a)pyrene	15.27	252	235829	1053.00 ug/L	77
90) Indeno(1,2,3-cd)pyrene	16.94	276	294590	1114.84 ug/L	93
91) Dibenz(a,h)anthracene	16.98	278	264731	1095.60 ug/L	74
92) Benzo(g,h,i)perylene	17.40	276	244943	1061.88 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

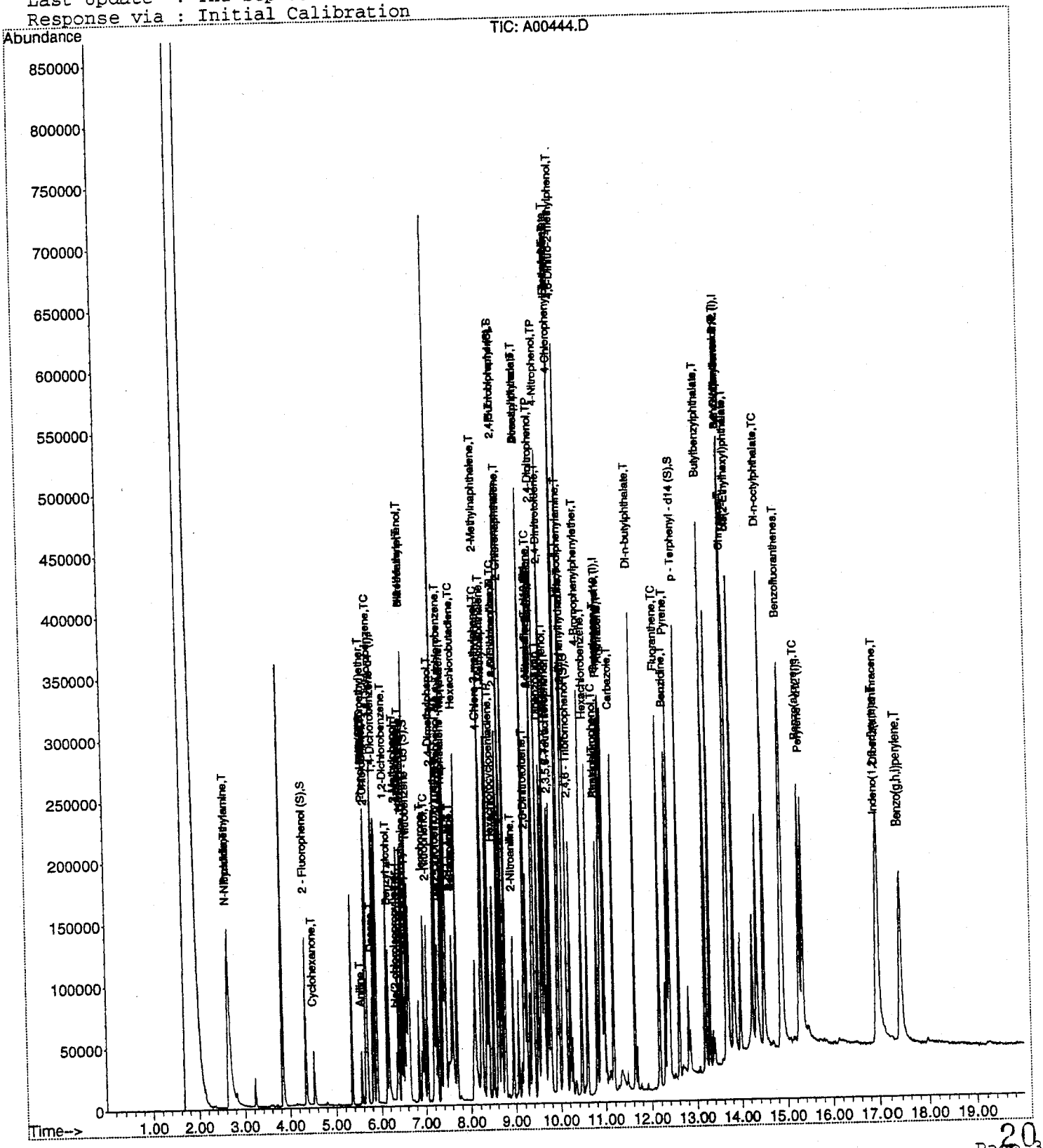
Quantitation Rep

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 5 16:47 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Initial Calibration



200

Evaluate Continuing Calibration

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichorobenzene-d4 (I)	1000.000	1000.000	0.0	121	0.00
2	T	N-Nitrosodimethylamine	5000.000	4869.597	2.6	154	-0.06
3	T	Pyridine	5000.000	3040.097	39.2#	72	0.00
4	S	2 - Fluorophenol (S)	1000.000	1069.408	-6.9	127	0.00
5	T	Cyclohexanone	1000.000	974.402	2.6	111	0.03
6	T	Aniline	1000.000	1330.671	-33.1#	127	0.01
7	S	Phenol - d5 (S)	1000.000	991.872	0.8	121	-0.02
8	TC	Phenol	1000.000	1081.084	-8.1	132	0.00
9	T	bis(2-Chloroethyl)ether	1000.000	617.867	38.2#	77	0.04
10	T	2-Chlorophenol	1000.000	1068.974	-6.9	137	0.00
11	T	Decane	1000.000	990.079	1.0	124	0.04
12	T	1,3-Dichlorobenzene	1000.000	1004.369	-0.4	125	0.05
13	TC	1,4-Dichlorobenzene	1000.000	1007.923	-0.8	125	-0.03
14	T	Benzyl alcohol	1000.000	1094.626	-9.5	123	0.00
15	T	1,2-Dichlorobenzene	1000.000	920.479	8.0	113	0.03
16	T	2-Methylphenol	1000.000	1056.382	-5.6	127	0.00
17	T	bis(2-chloroisopropyl)ether	1000.000	1229.007	-22.9#	139	0.04
18	T	3-&4-Methylphenol	2000.000	2225.894	-11.3	137	0.00
19	TP	n-Nitroso-di-n-propylamine	1000.000	1057.097	-5.7	131	-0.03
20	T	Acetophenone	1000.000	1044.852	-4.5	136	-0.02
21	T	Hexachloroethane	1000.000	954.747	4.5	109	0.00
22	I	Naphthalene - d8 (I)	1000.000	1000.000	0.0	117	0.00
23	S	Nitrobenzene - d5 (S)	1000.000	1191.895	-19.2	135	0.00
24	T	Nitrobenzene	1000.000	2182.143	-118.2#	254	-0.07
25	T	Isophorone	1000.000	1162.272	-16.2	130	-0.02
26	TC	2-Nitrophenol	1000.000	1076.416	-7.6	122	0.00
27	T	2,4-Dimethylphenol	1000.000	1094.705	-9.5	121	0.00
28	T	bis(2-Chloroethoxy)methane	1000.000	1126.615	-12.7	133	0.02
29	T	Benzoic Acid	5000.000	4565.139	8.7	86	0.03
30	TC	2,4-Dichlorophenol	1000.000	1072.116	-7.2	121	0.00
31	T	1,2,4-Trichlorobenzene	1000.000	1145.820	-14.6	138	0.01
32	T	Naphthalene	1000.000	1055.023	-5.5	123	0.00
33	T	4-Chloroaniline	1000.000	1411.209	-41.1#	160	0.02
34	TC	Hexachlorobutadiene	1000.000	1098.810	-9.9	128	0.02
35	TC	4-Chloro-3-methylphenol	1000.000	1154.946	-15.5	134	0.04
36	T	2-Methylnaphthalene	1000.000	1103.584	-10.4	128	0.01
37	T	1-Methylnaphthalene	1000.000	1099.752	-10.0	128	0.02
38	I	Acenaphthene - d10 (I)	1000.000	1000.000	0.0	135	0.00
39	TP	Hexachlorocyclopentadiene	1000.000	973.088	2.7	126	0.00
40	T	2,3-Dichloroaniline	1000.000	1029.851	-3.0	136	0.00
41	TC	2,4,6-Trichlorophenol	1000.000	983.433	1.7	132	0.00
42	T	2,4,5-Trichlorophenol	1000.000	879.304	12.1	105	0.02
43	S	2 - Fluorobiphenyl (S)	1000.000	1027.931	-2.8	141	0.00
44	T	2-Chloronaphthalene	1000.000	921.432	7.9	127	0.00
45	T	Biphenyl	1000.000	932.948	6.7	128	0.02
46	T	2-Nitroaniline	1000.000	1020.751	-2.1	130	0.00
47	T	Dimethylphthalate	1000.000	936.335	6.4	125	0.00
48	T	Acenaphthylene	1000.000	961.484	3.9	127	0.00
49	T	2,6-Dinitrotoluene	1000.000	959.526	4.0	128	0.00
50	T	3-Nitroaniline	1000.000	1137.623	-13.8	137	-0.01

(#) = Out of Range
A00444.D SV5-082902.M Thu Sep 05 16:48:40 2002

Evaluate Continuing Calibration

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	TC	Acenaphthene	1000.000	931.691	6.8	124	0.00
2	TP	2,4-Dinitrophenol	5000.000	5453.943	-9.1	137	0.00
3	TP	4-Nitrophenol	5000.000	5550.078	-11.0	136	-0.03
4	T	Dibenzofuran	1000.000	916.335	8.4	118	0.00
5	T	2,4-Dinitrotoluene	1000.000	1117.293	-11.7	153	0.00
6	T	2,3,4,6-Tetrachlorophenol	1000.000	1069.175	-6.9	123	0.00
7	T	2,3,5,6-Tetrachlorophenol	1000.000	1142.888	-14.3	134	0.00
8	T	Diethylphthalate	1000.000	889.476	11.1	118	0.00
9	T	Fluorene	1000.000	986.398	1.4	127	0.00
0	T	4-Chlorophenylphenylether	1000.000	959.580	4.0	133	0.00
1	T	4-Nitroaniline	1000.000	1137.623	-13.8	137	-0.01
2	I	Phenanthrene - d10 (I)	1000.000	1000.000	0.0	127	0.00
3	T	4,6-Dinitro-2-methylphenol	5000.000	5240.997	-4.8	127	0.00
4	T	n-Nitrosodiphenylamine	1000.000	1070.777	-7.1	136	0.02
65	S	2,4,6 - Tribromophenol (S)	1000.000	1086.604	-8.7	121	0.00
66	T	1,2-Diphenylhydrazine	1000.000	1080.607	-8.1	137	0.00
67	T	4-Bromophenylphenylether	1000.000	1003.217	-0.3	129	0.00
68	T	Hexachlorobenzene	1000.000	991.623	0.8	127	0.00
69	T	Atrazine	1000.000	1073.747	-7.4	141	0.00
70	TC	Pentachlorophenol	1000.000	1182.859	-18.3	129	0.00
71	T	Phenanthrene	1000.000	1065.988	-6.6	140	-0.02
72	T	Anthracene	1000.000	1006.959	-0.7	128	-0.03
73	T	Octadecane	1000.000	972.727	2.7	114	0.00
74	T	Carbazole	1000.000	1058.265	-5.8	133	0.01
75	T	Di-n-butylphthalate	1000.000	941.765	5.8	117	0.00
76	TC	Fluoranthene	1000.000	1055.275	-5.5	128	0.01
77	T	Pyrene	1000.000	1038.251	-3.8	126	0.00
78	T	Benzidine	5000.000	6615.978	-32.3#	141	0.02
79	S	p - Terphenyl - d14 (S)	1000.000	968.151	3.2	127	0.02
80	I	Chrysene - d12 (I)	1000.000	1000.000	0.0	121	0.00
81	T	Butylbenzylphthalate	1000.000	1026.131	-2.6	126	0.00
82	T	Benzo(a)anthracene	1000.000	1098.286	-9.8	126	0.00
83	T	3,3'-Dichlorobenzidine	1000.000	1249.337	-24.9#	228	-0.01
84	T	Chrysene	1000.000	1054.485	-5.4	119	0.01
85	T	bis(2-Ethylhexyl)phthalate	1000.000	948.366	5.2	122	0.00
86	I	Perylene - d12 (I)	1000.000	1000.000	0.0	118	0.00
87	TC	Di-n-octylphthalate	1000.000	947.851	5.2	110	0.00
88	T	Benzofluoranthenes	2000.000	2106.448	-5.3	120	0.00
89	TC	Benzo(a)pyrene	1000.000	1053.001	-5.3	118	0.00
90	T	Indeno(1,2,3-cd)pyrene	1000.000	1114.842	-11.5	124	-0.03
91	T	Dibenz(a,h)anthracene	1000.000	1095.602	-9.6	121	-0.03
92	T	Benzo(g,h,i)perylene	1000.000	1061.877	-6.2	120	0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
A00444.D SV5-082902.M Thu Sep 05 16:48:40 2002

Evaluate Continuing Calib

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichorobenzene-d4 (I)	1.000	1.000	0.0	121	0.00
2	T	N-Nitrosodimethylamine	0.226	0.220#	2.7	154#	-0.06
3	T	Pyridine	0.575	0.350#	39.1#	72	0.00
4	S	2 - Fluorophenol (S)	0.743	0.795#	-7.0	127	0.00
5	T	Cyclohexanone	0.235	0.229#	2.6	111	0.03
6	T	Aniline	0.285	0.379#	-33.0#	127	0.01
7	S	Phenol - d5 (S)	0.891	0.884#	0.8	121	-0.02
8	TC	Phenol	0.888	0.960#	-8.1	132	0.00
9	T	bis(2-Chloroethyl)ether	0.953	0.589#	38.2#	77	0.04
10	T	2-Chlorophenol	0.874	0.934#	-6.9	137	0.00
11	T	Decane	0.410	0.406#	1.0	124	0.04
12	T	1,3-Dichlorobenzene	0.990	0.994#	-0.4	125	0.05
13	TC	1,4-Dichlorobenzene	1.003	1.011#	-0.8	125	-0.03
14	T	Benzyl alcohol	0.804	0.881#	-9.6	123	0.00
15	T	1,2-Dichlorobenzene	0.941	0.866#	8.0	113	0.03
16	T	2-Methylphenol	0.622	0.657#	-5.6	127	0.00
17	T	bis(2-chloroisopropyl)ether	0.124	0.153#	-23.4#	139	0.04
18	T	3-&4-Methylphenol	0.664	0.739#	-11.3	137	0.00
19	TP	n-Nitroso-di-n-propylamine	0.576	0.608	-5.6	131	-0.03
20	T	Acetophenone	1.380	1.441#	-4.4	136	-0.02
21	T	Hexachloroethane	0.218	0.209#	4.1	109	0.00
22	I	Naphthalene - d8 (I)	1.000	1.000	0.0	117	0.00
23	S	Nitrobenzene - d5 (S)	0.320	0.382#	-19.4	135	0.00
24	T	Nitrobenzene	0.309	0.674#	-118.1#	254#	-0.07
25	T	Isophorone	0.558	0.649#	-16.3	130	-0.02
26	TC	2-Nitrophenol	0.188	0.203#	-8.0	122	0.00
27	T	2,4-Dimethylphenol	0.432	0.473#	-9.5	121	0.00
28	T	bis(2-Chloroethoxy)methane	0.306	0.345#	-12.7	133	0.02
29	T	Benzoic Acid	0.166	0.152#	8.4	86	0.03
30	TC	2,4-Dichlorophenol	0.348	0.373#	-7.2	121	0.00
31	T	1,2,4-Trichlorobenzene	0.383	0.439#	-14.6	138	0.01
32	T	Naphthalene	1.160	1.224#	-5.5	123	0.00
33	T	4-Chloroaniline	0.208	0.294#	-41.3#	160#	0.02
34	TC	Hexachlorobutadiene	0.281	0.309#	-10.0	128	0.02
35	TC	4-Chloro-3-methylphenol	0.435	0.502#	-15.4	134	0.04
36	T	2-Methylnaphthalene	0.788	0.870#	-10.4	128	0.01
37	T	1-Methylnaphthalene	0.732	0.805#	-10.0	128	0.02
38	I	Acenaphthene - d10 (I)	1.000	1.000	0.0	135	0.00
39	TP	Hexachlorocyclopentadiene	0.420	0.409	2.6	126	0.00
40	T	2,3-Dichloroaniline	0.712	0.734#	-3.1	136	0.00
41	TC	2,4,6-Trichlorophenol	0.378	0.372#	1.6	132	0.00
42	T	2,4,5-Trichlorophenol	0.374	0.329#	12.0	105	0.02
43	S	2 - Fluorobiphenyl (S)	1.363	1.401#	-2.8	141	0.00
44	T	2-Chloronaphthalene	1.178	1.085#	7.9	127	0.00
45	T	Biphenyl	1.073	1.001#	6.7	128	0.02
46	T	2-Nitroaniline	0.398	0.406#	-2.0	130	0.00
47	T	Dimethylphthalate	2.035	1.905#	6.4	125	0.00
48	T	Acenaphthylene	1.886	1.814#	3.8	127	0.00
49	T	2,6-Dinitrotoluene	0.366	0.351#	4.1	128	0.00
50	T	3-Nitroaniline	0.209	0.238#	-13.9	137	-0.01

(#) = Out of Range
A00444.D SV5-082902.M Thu Sep 05 16:48:48 2002

Evaluate continuing

Data File : C:\MSDCHEM\1\DATA\A00444.D
Acq On : 03 Sep 2002 13:18
Sample : 1.0 NG/UL 8270 CCAL STD NO 0980-54-6
Misc :
MS Integration Params: RTEINT.P

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 16:47:28 2002
Response via : Multiple Level Calibration

Min. RRF : 2.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
51	TC	Acenaphthene	1.265	1.178#	6.9	124	0.00
52	TP	2,4-Dinitrophenol	0.154	0.168	-9.1	137	0.00
53	TP	4-Nitrophenol	0.524	0.582	-11.1	136	-0.03
54	T	Dibenzofuran	1.790	1.640#	8.4	118	0.00
55	T	2,4-Dinitrotoluene	0.380	0.425#	-11.8	153#	0.00
56	T	2,3,4,6-Tetrachlorophenol	0.387	0.414#	-7.0	123	0.00
57	T	2,3,5,6-Tetrachlorophenol	0.367	0.419#	-14.2	134	0.00
58	T	Diethylphthalate	1.605	1.428#	11.0	118	0.00
59	T	Fluorene	1.285	1.268#	1.3	127	0.00
60	T	4-Chlorophenylphenylether	0.863	0.828#	4.1	133	0.00
61	T	4-Nitroaniline	0.209	0.238#	-13.9	137	-0.01
62	I	Phenanthrene - d10 (I)	1.000	1.000	0.0	127	0.00
63	T	4,6-Dinitro-2-methylphenol	0.193	0.202#	-4.7	127	0.00
64	T	n-Nitrosodiphenylamine	0.707	0.757#	-7.1	136	0.02
65	S	2,4,6 - Tribromophenol (S)	0.223	0.242#	-8.5	121	0.00
66	T	1,2-Diphenylhydrazine	0.380	0.410#	-7.9	137	0.00
67	T	4-Bromophenylphenylether	0.347	0.349#	-0.6	129	0.00
68	T	Hexachlorobenzene	0.330	0.327#	0.9	127	0.00
69	T	Atrazine	0.054	0.058#	-7.4	141	0.00
70	TC	Pentachlorophenol	0.180	0.213#	-18.3	129	0.00
71	T	Phenanthrene	1.208	1.287#	-6.5	140	-0.02
72	T	Anthracene	1.168	1.176#	-0.7	128	-0.03
73	T	Octadecane	0.376	0.366#	2.7	114	0.00
74	T	Carbazole	1.067	1.129#	-5.8	133	0.01
75	T	Di-n-butylphthalate	1.559	1.469#	5.8	117	0.00
76	TC	Fluoranthene	1.182	1.247#	-5.5	128	0.01
77	T	Pyrene	1.191	1.236#	-3.8	126	0.00
78	T	Benzidine	0.184	0.243#	-32.1#	141	0.02
79	S	p - Terphenyl - d14 (S)	1.120	1.085#	3.1	127	0.02
80	I	Chrysene - d12 (I)	1.000	1.000	0.0	121	0.00
81	T	Butylbenzylphthalate	0.856	0.879#	-2.7	126	0.00
82	T	Benzo(a)anthracene	1.179	1.295#	-9.8	126	0.00
83	T	3,3'-Dichlorobenzidine	0.502	0.628#	-25.1#	228#	-0.01
84	T	Chrysene	1.120	1.181#	-5.4	119	0.01
85	T	bis(2-Ethylhexyl)phthalate	1.474	1.398#	5.2	122	0.00
86	I	Perylene - d12 (I)	1.000	1.000	0.0	118	0.00
87	TC	Di-n-octylphthalate	2.075	1.967#	5.2	110	0.00
88	T	Benzofluoranthenes	1.208	1.272#	-5.3	120	0.00
89	TC	Benzo(a)pyrene	1.114	1.173#	-5.3	118	0.00
90	T	Indeno(1,2,3-cd)pyrene	1.314	1.465#	-11.5	124	-0.03
91	T	Dibenz(a,h)anthracene	1.202	1.317#	-9.6	121	-0.03
92	T	Benzo(g,h,i)perylene	1.147	1.218#	-6.2	120	0.02

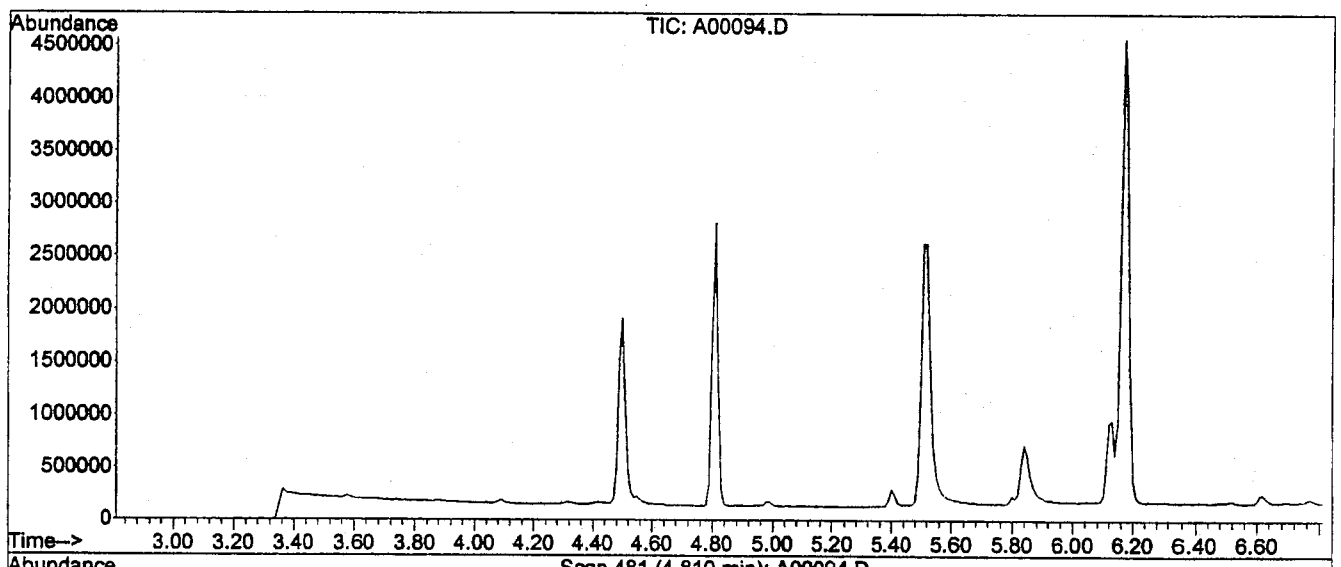
(#) = Out of Range SPCC's out = 0 CCC's out = 0
A00444.D SV5-082902.M Thu Sep 05 16:48:49 2002

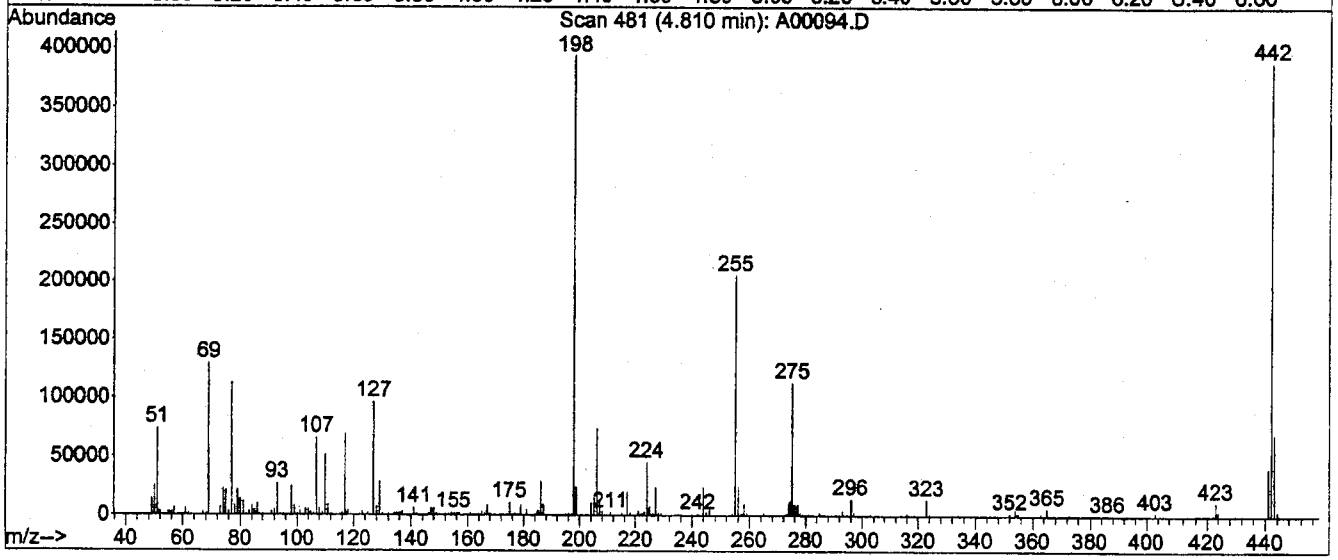
DFTPP TUNING

DFTPP

Data File : C:\MSDCHEM\1\DATA\A00094.D
Acq On : 09 Aug 2002 13:29
Sample : DFTPP 2.5 8/9/02
Misc :
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation

Vial: 0
Operator:
Inst :
Multiplr: 1.00





Spectrum Information: Scan 481

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	18.8	73920	PASS
68	69	0.00	2	1.3	1710	PASS
69	198	0.00	100	32.9	129600	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	24.4	96256	PASS
197	198	0.00	1	0.3	1184	PASS
198	198	50	100	100.0	394048	PASS
199	198	5	9	6.2	24600	PASS
275	198	10	60	28.7	113280	PASS
365	198	1	100	1.6	6315	PASS
441	443	0.01	100	58.9	41048	PASS
442	198	50	100	98.7	388928	PASS
443	442	15	24	17.9	69696	PASS

A00094.D DFTPP.M Fri Aug 09 14:35:59 2002

DFTPP 2.5 8/9/02

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
49.00	14208	67.00	3026	81.00	12232	93.00	27624
50.00	25784	68.00	1710	82.00	1315	94.00	1842
51.00	73920	69.00	129600	83.00	3815	95.00	1184
52.00	3552	73.00	7105	84.00	8026	97.00	1184
53.00	1052	74.00	23288	85.00	4473	98.00	25256
55.00	3421	75.00	21704	86.00	10656	99.00	8157
56.00	3289	76.00	4078	87.00	1315	100.00	1184
57.00	7894	77.00	113408	88.00	1578	101.00	3684
61.00	6052	78.00	8552	90.00	657	103.00	5526
62.00	2236	79.00	21968	91.00	3026	104.00	5000
63.00	1052	80.00	14208	92.00	5263	105.00	2631

Scan 481 (4.810 min): A00094.D
DFTPP 2.5 8/9/02

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
106.00	1973	119.00	789	135.00	2236	153.00	1184
107.00	65920	122.00	1052	136.00	2500	154.00	2236
108.00	5789	123.00	3157	137.00	3289	155.00	2368
109.00	2631	125.00	2236	141.00	6578	156.00	2105
110.00	51576	126.00	789	142.00	1710	157.00	2368
111.00	9472	127.00	96256	146.00	1447	161.00	2105
112.00	1315	128.00	7894	147.00	6052	162.00	1184
115.00	1052	129.00	28808	148.00	6447	165.00	3157
116.00	2368	130.00	2236	149.00	2236	166.00	1973
117.00	69056	132.00	1447	150.00	1052	167.00	9072
118.00	4342	134.00	2105	152.00	1184	168.00	2236

Scan 481 (4.810 min): A00094.D
DFTPP 2.5 8/9/02

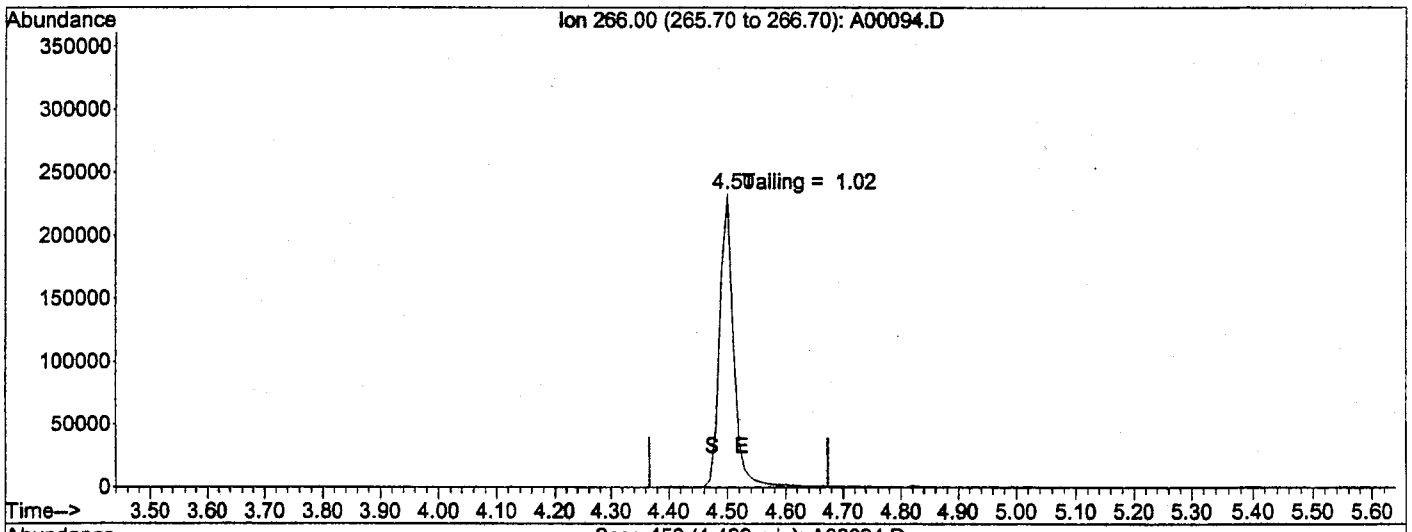
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
172.00	657	187.00	9336	206.00	74048	225.00	7631
174.00	1184	189.00	789	207.00	11440	226.00	1842
175.00	11184	192.00	789	208.00	3815	227.00	23944
176.00	921	195.00	1315	211.00	2500	228.00	2368
177.00	1973	196.00	1842	215.00	1973	229.00	2105
178.00	1315	197.00	1184	217.00	20520	234.00	657
179.00	9208	198.00	394048	218.00	2500	235.00	1315
181.00	4868	199.00	24600	221.00	3815	236.00	1184
184.00	1184	203.00	1052	222.00	1315	240.00	1315
185.00	4210	204.00	10656	223.00	3026	242.00	1447
186.00	29472	205.00	15520	224.00	45256	244.00	24336

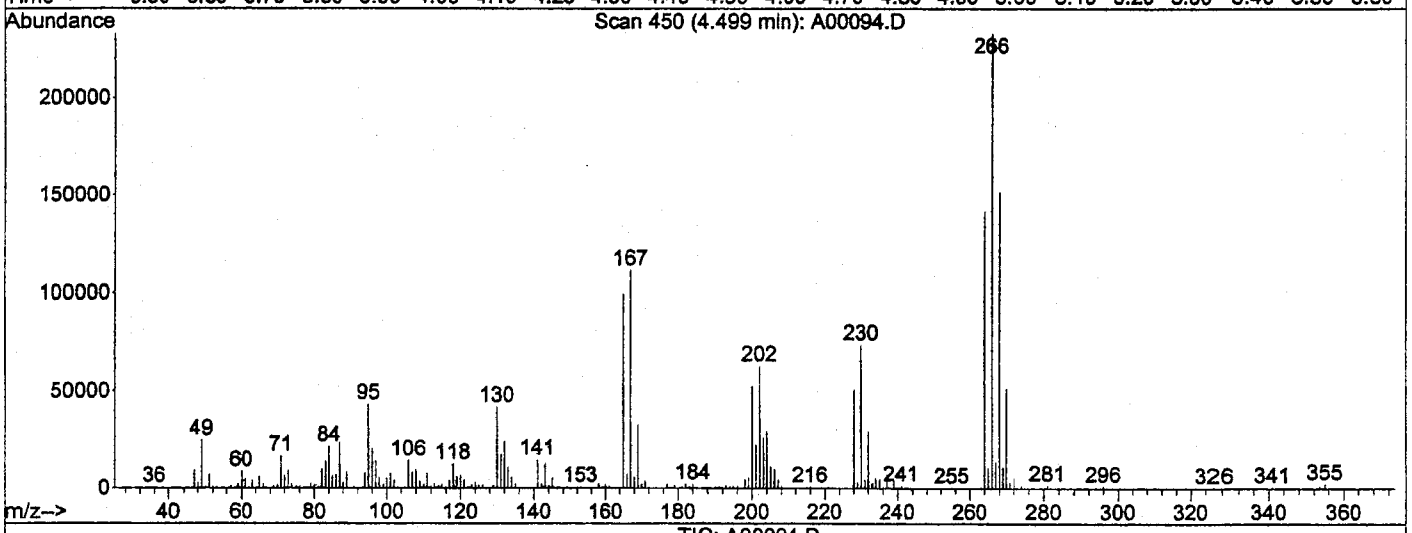
Scan 481 (4.810 min): A00094.D
DFTPP 2.5 8/9/02

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
245.00	2631	275.00	113280	316.00	1973	386.00	789
246.00	5263	276.00	10000	323.00	13944	393.00	1052
254.00	1447	277.00	9864	324.00	1842	403.00	2763
255.00	205888	281.00	1184	334.00	1184	422.00	1052
256.00	24072	282.00	657	352.00	2236	423.00	11840
257.00	1842	285.00	2894	354.00	6052	424.00	3684
258.00	10392	291.00	921	355.00	2105	441.00	41048
259.00	2500	293.00	4078	362.00	1052	442.00	388928
265.00	1842	296.00	14336	363.00	2236	443.00	69696
273.00	1842	297.00	2631	365.00	6315	444.00	4342
274.00	11968	303.00	1315	373.00	1578	445.00	1052

Data File : C:\MSDCHEM\1\DATA\A00094.D Vial: 0
Acq On : 09 Aug 2002 13:29 Operator:
Sample : DFTPP 2.5 8/9/02 Inst :
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 9 14:36 2002 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Fri Aug 09 14:36:35 2002
Response via : Single Level Calibration





TIC: A00094.D

(1) Pentachlorophenol (T)

4.50min 0.28

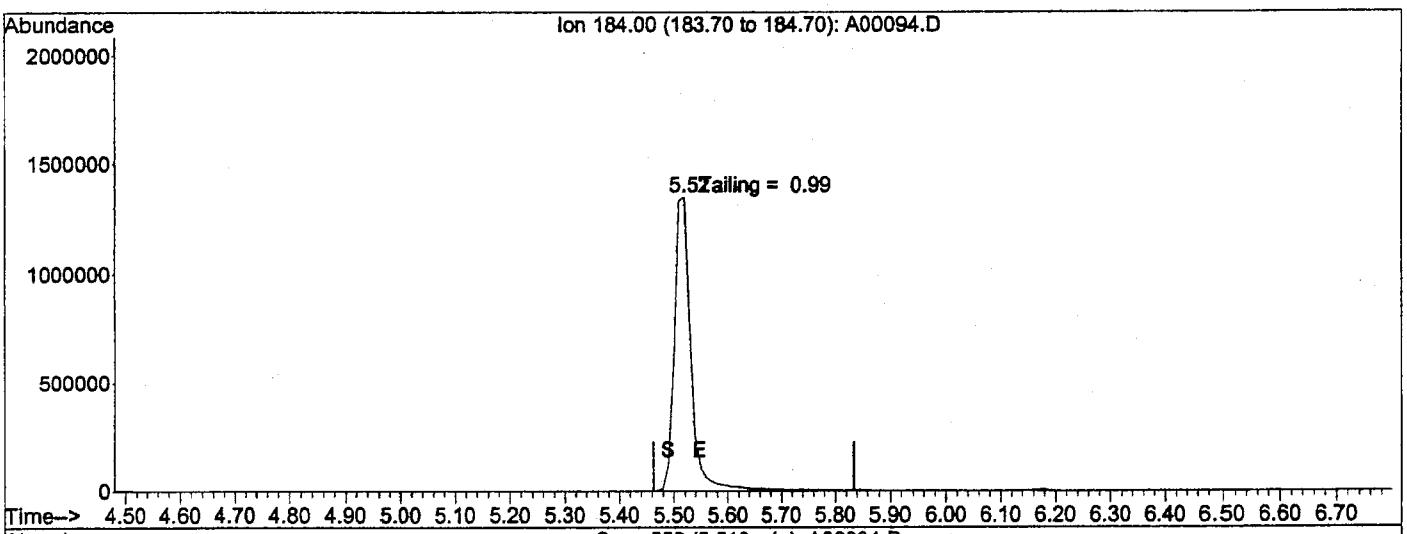
response 233014

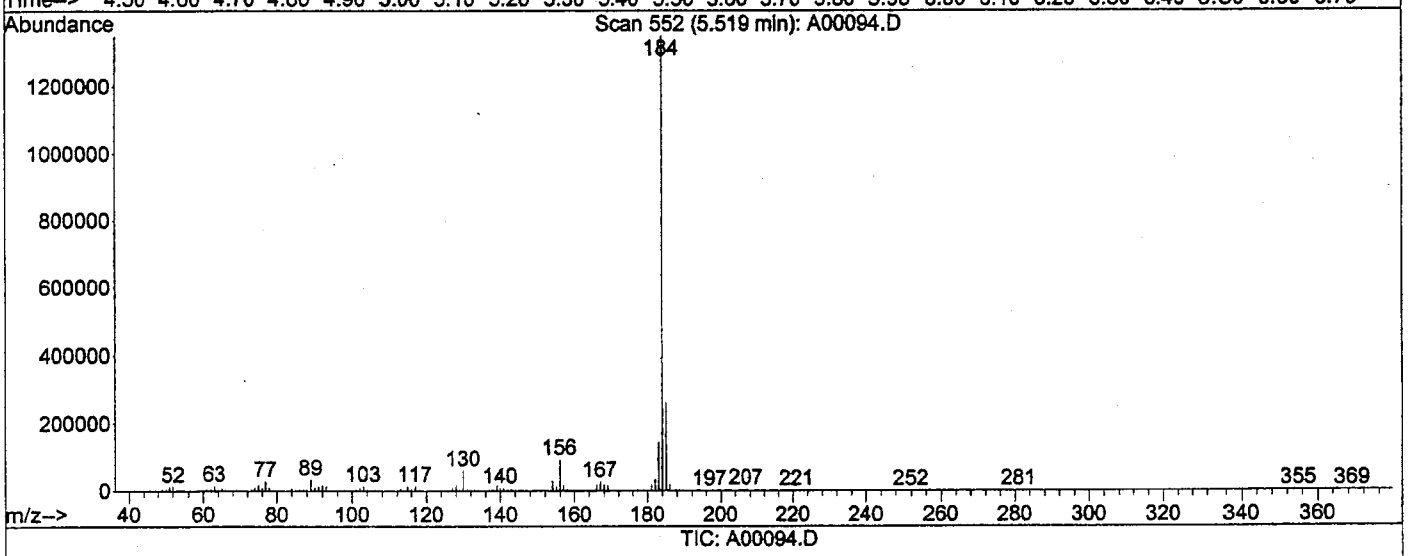
Ion	Exp%	Act%
266.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

A00094.D DFTPP.M Fri Aug 09 14:37:00 2002

Data File : C:\MSDCHEM\1\DATA\A00094.D Vial: 0
Acq On : 09 Aug 2002 13:29 Operator:
Sample : DFTPP 2.5 8/9/02 Inst :
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 9 14:36 2002 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Fri Aug 09 14:36:35 2002
Response via : Single Level Calibration





(3) Benzidine (T)

5.52min 0.63

response 1343317

Ion	Exp%	Act%
184.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data File Name **A00094.D**
Data File Path **C:\MSDCHEM\1\DATA**
Operator

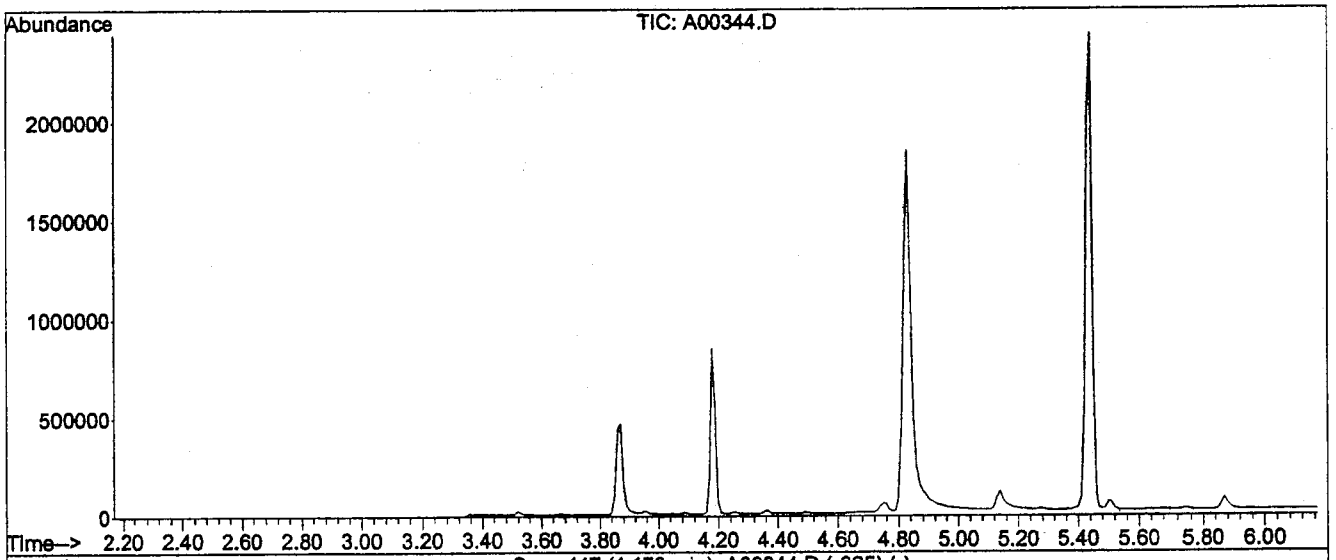
Sample Name **DFTPP 2.5 8/9/02**

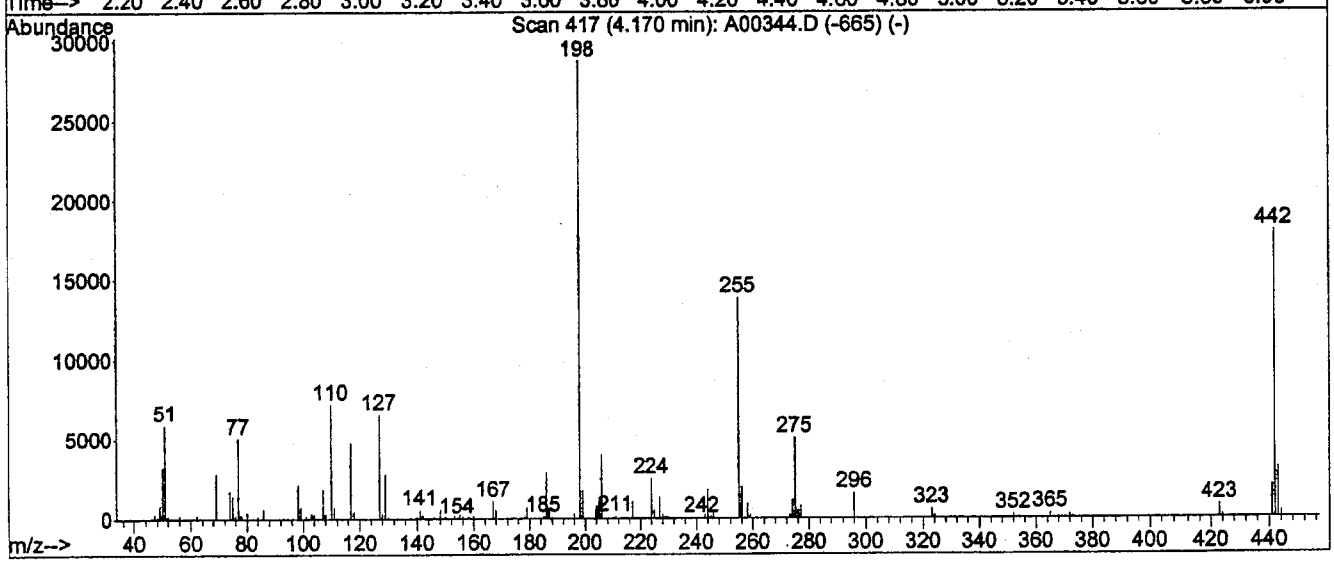
#	Name	Ret Time	Target Response	Percent Breakdown
4)	DDT	6.17	3428431	0.05%
5)	DDD	0.00	0	
6)	DDE	5.99	1747	
		SUM	3430178	

DFTPP

Data File : C:\MSDCHEM\1\DATA\A00344.D
Acq On : 28 Aug 2002 14:30
Sample : DFTPP 8/28/02(2)
Misc :
MS Integration Params: RTEINT.P
Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration

Vial: 0
Operator:
Inst :
Multiplr: 1.00





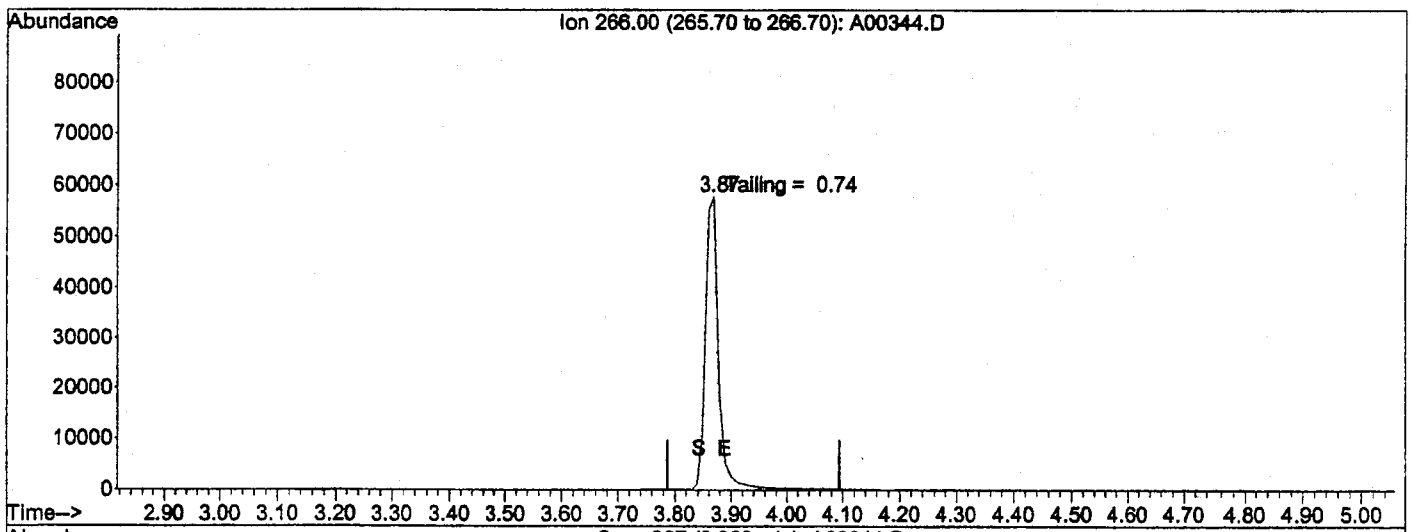
Spectrum Information: Scan 417

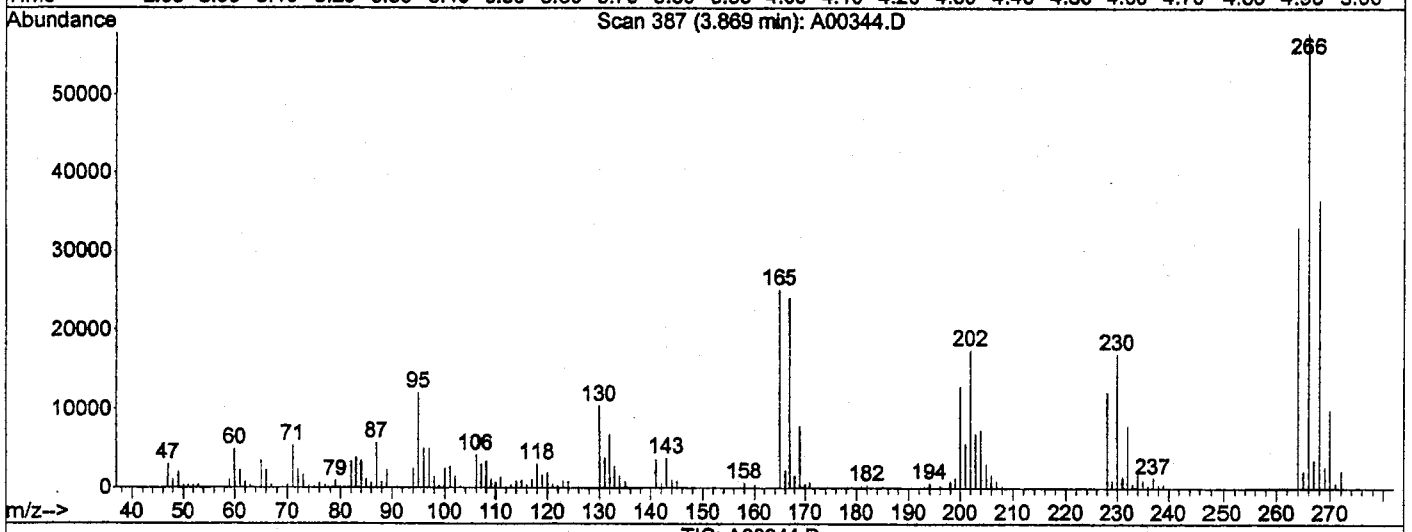
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	20.5	5896	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	9.8	2835	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	22.8	6578	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	28806	PASS
199	198	5	9	6.1	1760	PASS
275	198	10	60	17.6	5067	PASS
365	198	1	100	1.1	313	PASS
441	443	0.01	100	64.0	2017	PASS
442	198	40	100	62.5	18000	PASS
443	442	15	24	17.5	3150	PASS

A00344.D SV5-080902.M Thu Aug 29 13:21:25 2002

Data File : C:\MSDCHEM\1\DATA\A00344.D Vial: 0
Acq On : 28 Aug 2002 14:30 Operator:
Sample : DFTPP 8/28/02(2) Inst :
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 29 13:23 2002 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Aug 29 13:22:22 2002
Response via : Single Level Calibration





(1) Pentachlorophenol (T)

3.87min 0.07 m

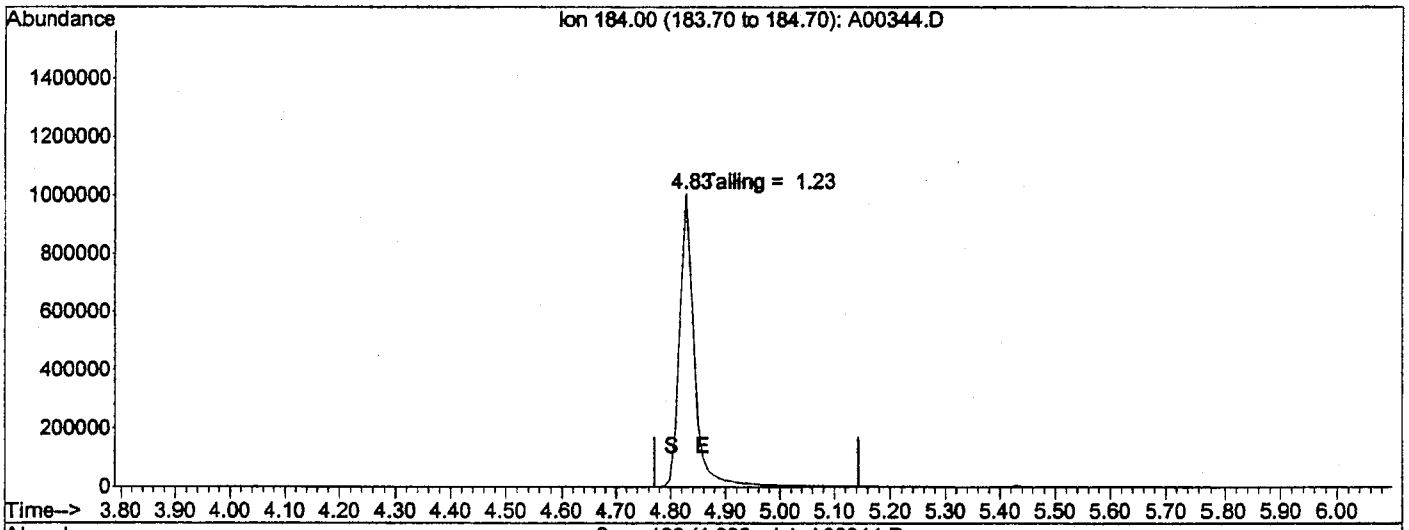
response 57816

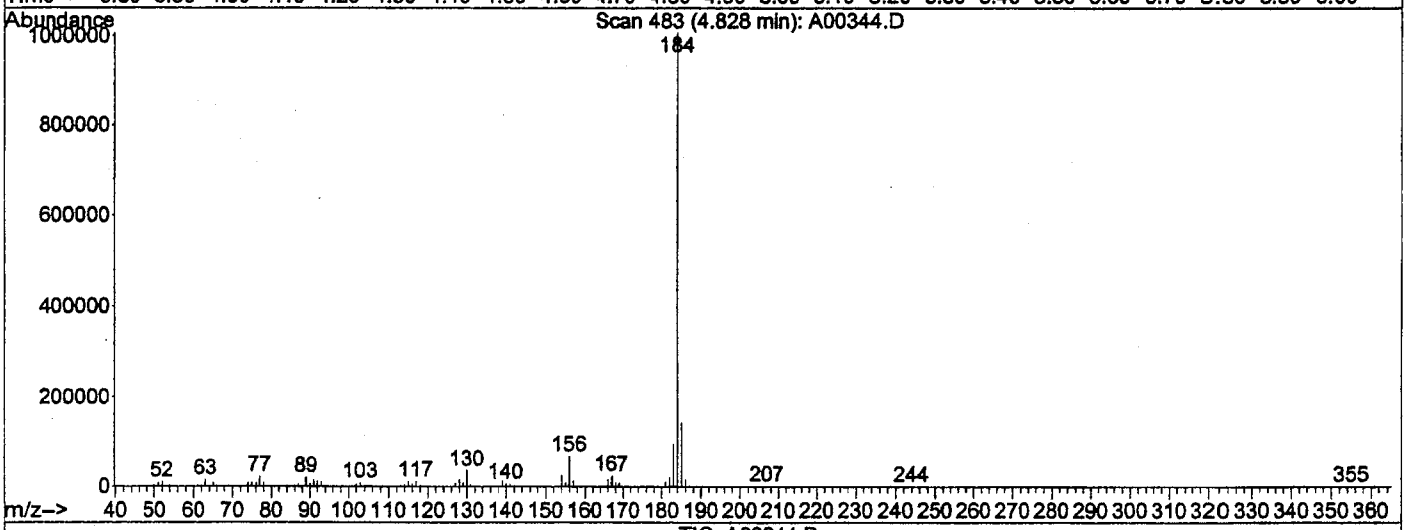
Ion	Exp%	Act%
266.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

A00344.D DFTPP.M Thu Aug 29 13:23:48 2002

Data File : C:\MSDCHEM\1\DATA\A00344.D Vial: 0
Acq On : 28 Aug 2002 14:30 Operator:
Sample : DFTPP 8/28/02(2) Inst :
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 29 13:23 2002 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Aug 29 13:22:22 2002
Response via : Single Level Calibration





TIC: A00344.D

(3) Benzidine (T)

4.83min 0.47

response 1003625

Ion	Exp%	Act%
184.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

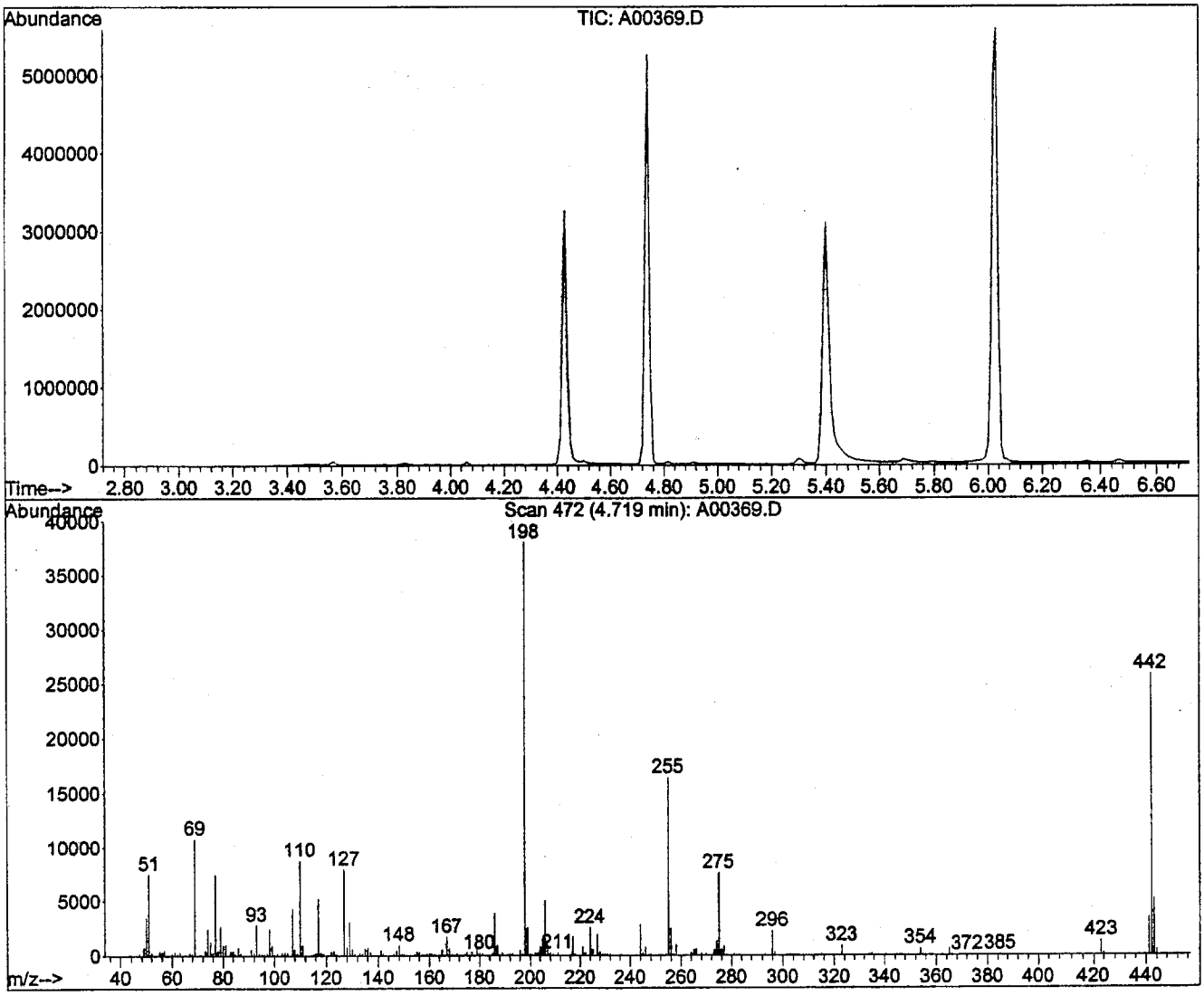
A00344.D DFTPP.M Thu Aug 29 13:24:00 2002

Data File Name **A00344.D**
Data File Path **C:\MSDCHEM\1\DATA**
Operator

Sample Name **DFTPP 8/28/02(2)**

#	Name	Ret Time	Target Response	Percent Breakdown
4)	DDT	5.44	1493309	0.07%
5)	DDD	0.00	0	
6)	DDE	5.22	1096	
		SUM	1494405	

Data File : C:\MSDCHEM\1\DATA\A00369.D Vial: 0
Acq On : 29 Aug 2002 9:24 Operator:
Sample : DFTPP 8/29/02 Inst :
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation



Spectrum Information: Scan 472

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	19.8	7555	PASS
68	69	0.00	2	1.8	195	PASS
69	198	0.00	100	28.4	10832	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	21.0	8002	PASS
197	198	0.00	1	0.3	97	PASS
198	198	50	100	100.0	38136	PASS
199	198	5	9	6.9	2639	PASS
275	198	10	60	20.1	7653	PASS
365	198	1	100	1.6	628	PASS
441	443	0.01	100	67.6	3491	PASS
442	198	50	100	67.7	25824	PASS
443	442	15	24	20.0	5167	PASS

A00369.D DFTPP.M Thu Aug 29 14:55:28 2002

DFTPP 8/29/02

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
47.00	209	63.00	363	78.00	432	93.00	2835
49.00	810	65.00	139	79.00	2709	94.00	223
50.00	3519	67.00	279	80.00	1019	95.00	153
51.00	7555	68.00	195	81.00	1033	96.00	153
52.00	265	69.00	10832	83.00	405	97.00	181
55.00	377	71.00	125	84.00	460	98.00	2500
56.00	349	73.00	488	85.00	167	99.00	1005
57.00	530	74.00	2458	86.00	740	100.00	111
60.00	181	75.00	1298	87.00	209	101.00	195
61.00	293	76.00	237	91.00	642	103.00	265
62.00	153	77.00	7486	92.00	265	104.00	321

Scan 472 (4.719 min): A00369.D
DFTPP 8/29/02

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
105.00	307	119.00	195	134.00	209	150.00	111
107.00	4371	121.00	69	135.00	656	153.00	69
108.00	600	122.00	377	136.00	712	154.00	125
109.00	209	123.00	460	137.00	363	155.00	377
110.00	8824	124.00	167	141.00	544	156.00	363
111.00	1019	127.00	8002	142.00	223	157.00	167
112.00	83	128.00	768	143.00	125	158.00	139
115.00	153	129.00	3128	146.00	125	159.00	167
116.00	265	130.00	642	147.00	432	160.00	195
117.00	5265	131.00	167	148.00	991	161.00	209
118.00	363	133.00	237	149.00	167	162.00	125

Scan 472 (4.719 min): A00369.D
DFTPP 8/29/02

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
165.00	530	180.00	251	197.00	97	208.00	307
166.00	111	181.00	195	198.00	38136	209.00	153
167.00	1731	185.00	223	199.00	2639	211.00	279
168.00	712	186.00	3924	200.00	195	216.00	125
169.00	153	187.00	949	201.00	97	217.00	1787
171.00	209	188.00	111	202.00	237	218.00	167
172.00	69	189.00	307	203.00	251	221.00	865
174.00	153	191.00	125	204.00	837	222.00	237
175.00	349	192.00	209	205.00	1620	224.00	2597
177.00	377	193.00	223	206.00	5083	225.00	600
179.00	726	196.00	488	207.00	1368	227.00	1983

Scan 472 (4.719 min): A00369.D
DFTPP 8/29/02

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
228.00	405	255.00	16424	275.00	7653	304.00	97
229.00	167	256.00	2527	276.00	600	315.00	153
230.00	153	257.00	139	277.00	907	323.00	921
231.00	181	258.00	1047	278.00	139	334.00	125
232.00	139	264.00	265	281.00	97	335.00	223
236.00	69	265.00	530	282.00	69	346.00	97
244.00	2863	266.00	614	283.00	83	354.00	670
245.00	251	268.00	223	293.00	111	355.00	111
246.00	768	270.00	167	296.00	2262	365.00	628
248.00	167	273.00	502	297.00	265	366.00	83
254.00	139	274.00	1354	303.00	125	372.00	69

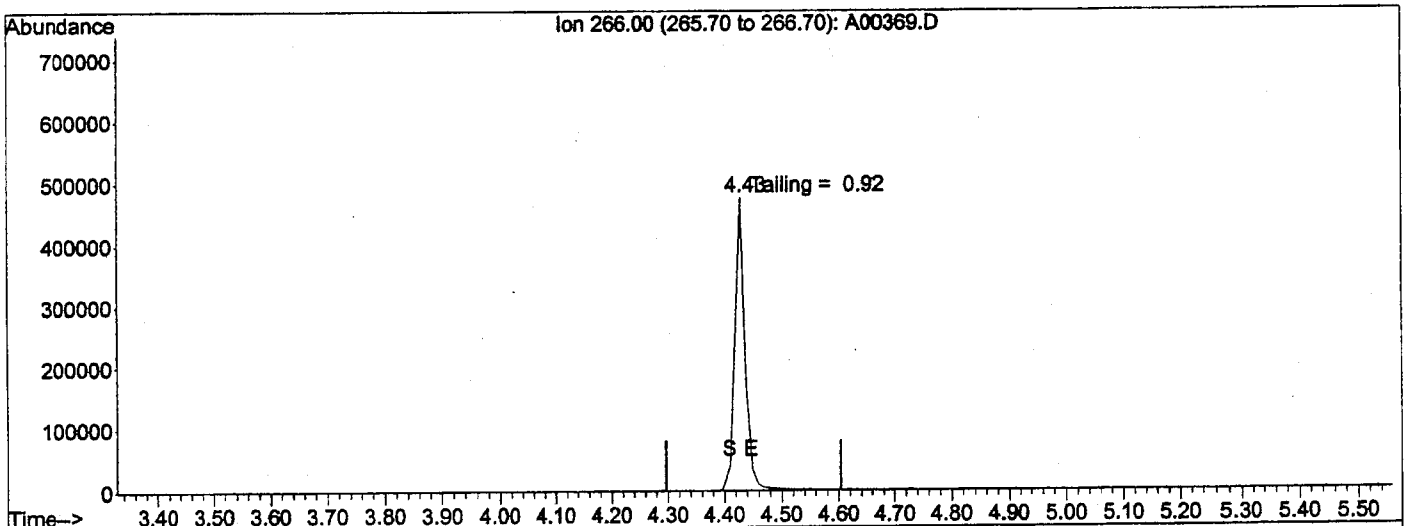
Scan 472 (4.719 min): A00369.D
DFTPP 8/29/02

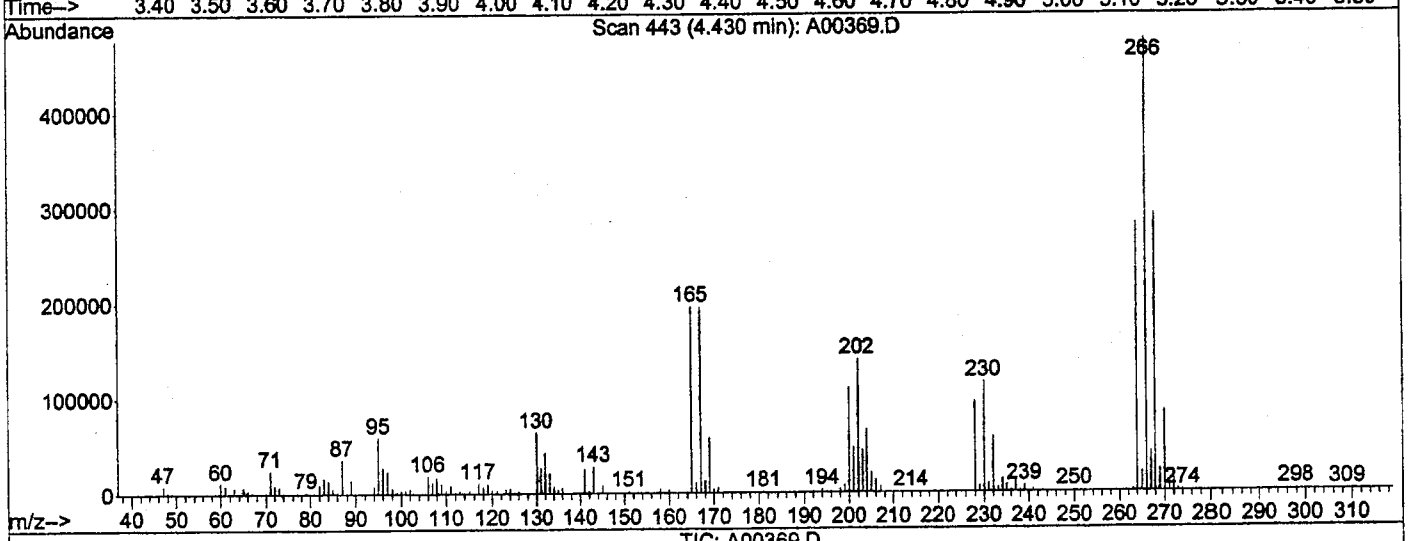
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
385.00	111						
423.00	1368						
424.00	209						
441.00	3491						
442.00	25824						
443.00	5167						
444.00	544						

Data File : C:\MSDCHEM\1\DATA\A00369.D
Acq On : 29 Aug 2002 9:24
Sample : DFTPP 8/29/02
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 29 14:56 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Aug 29 14:56:01 2002
Response via : Single Level Calibration





TIC: A00369.D

(1) Pentachlorophenol (T)

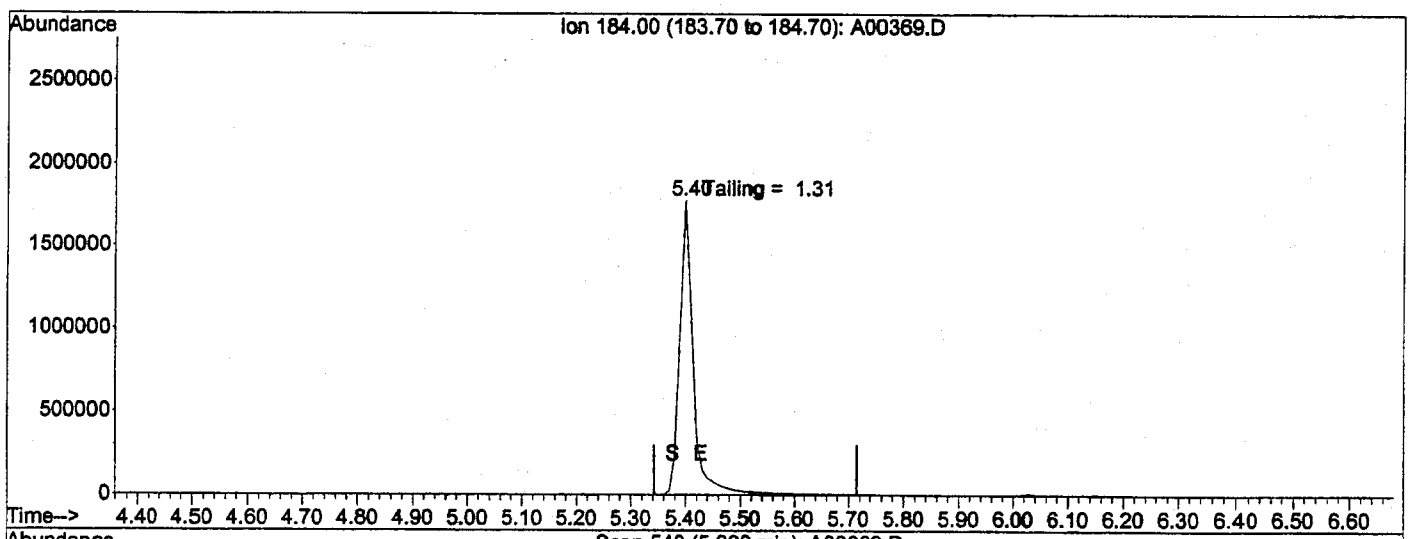
4.43min 0.58

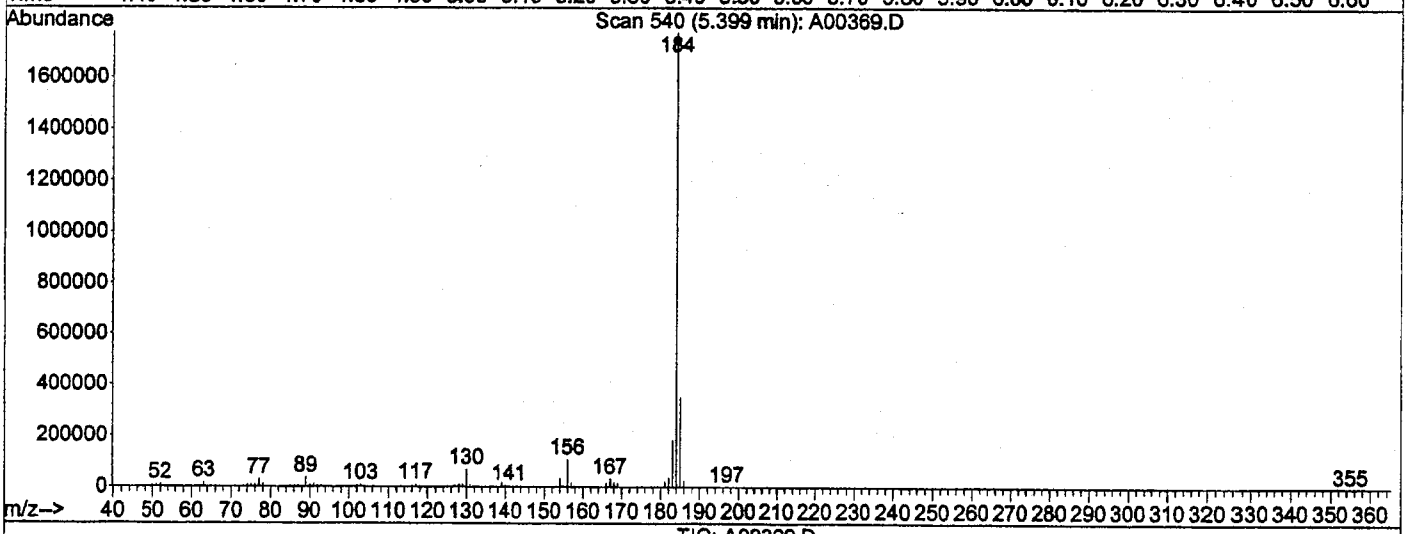
response 476992

Ion	Exp%	Act%
266.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data File : C:\MSDCHEM\1\DATA\A00369.D Vial: 0
Acq On : 29 Aug 2002 9:24 Operator:
Sample : DFTPP 8/29/02 Inst :
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 29 14:56 2002 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Aug 29 14:56:01 2002
Response via : Single Level Calibration





TIC: A00369.D

(3) Benzidine (T)

5.40min 0.83

response 1775377

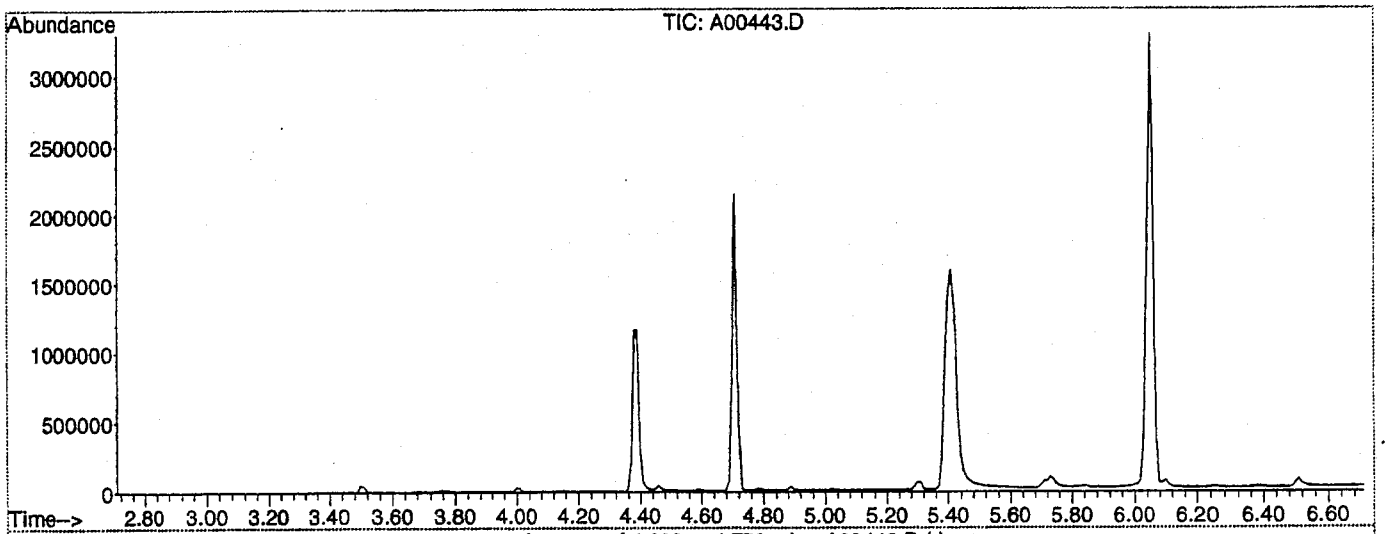
Ion	Exp%	Act%
184.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

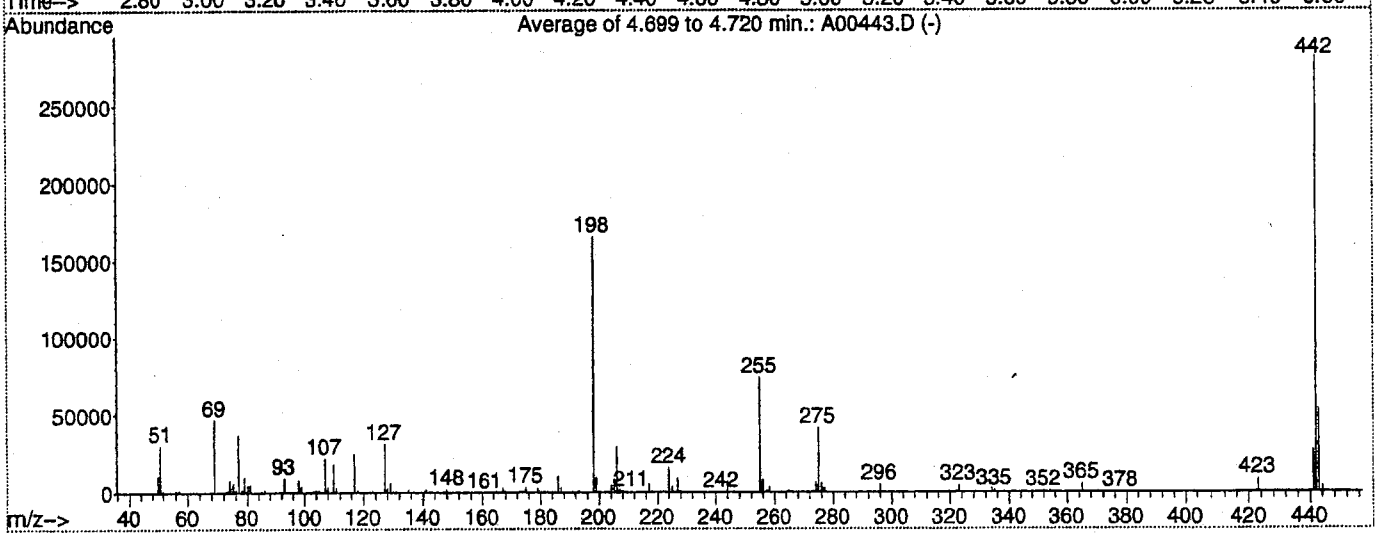
Data File Name **A00369.D**
Data File Path **C:\MSDCHEM\1\DATA**
Operator

Sample Name **DFTPP 8/29/02**

#	Name	Ret Time	Target Response	Percent Breakdown
4)	DDT	6.03	3888762	0.09%
5)	DDD	5.30	166	
6)	DDE	5.79	3287	
		SUM	3892215	

Data File : C:\MSDCHEM\1\DATA\A00443.D Vial: 0
Acq On : 03 Sep 2002 13:05 Operator:
Sample : DFTPP 9/03/02 Inst :
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation





AutoFind: Scans 470, 471, 472; Background Corrected with Scan 465

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	442	10	80	10.8	30412	PASS
68	69	0.00	2	0.9	434	PASS
69	198	0.00	100	28.3	46915	PASS
70	69	0.00	2	0.0	0	PASS
127	442	10	80	11.2	31549	PASS
197	198	0.00	1	0.1	166	PASS
198	442	50	100	58.8	165638	PASS
199	198	5	9	6.0	9956	PASS
275	442	10	60	14.8	41746	PASS
365	442	1	100	2.0	5667	PASS
441	443	0.01	100	51.3	27281	PASS
442	442	50	100	100.0	281472	PASS
443	442	15	24	18.9	53216	PASS

TPP 9/03/02
dified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
49.00	722	68.00	434	82.00	186	98.00	8029
50.00	10630	69.00	46915	83.00	142	99.00	4023
51.00	30412	73.00	1200	85.00	811	101.00	1074
52.00	1488	74.00	8148	86.00	1829	103.00	1003
55.00	207	75.00	6079	87.00	160	104.00	1429
56.00	1139	76.00	1888	91.00	770	105.00	1108
57.00	1872	77.00	37289	92.00	571	107.00	22223
61.00	489	78.00	1723	93.00	9304	108.00	3625
62.00	98	79.00	9762	94.00	171	109.00	283
63.00	1016	80.00	4298	95.00	105	110.00	18344
67.00	163	81.00	5088	96.00	34	111.00	3028

erage of 4.699 to 4.720 min.: A00443.D
TPP 9/03/02
dified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
113.00	112	130.00	496	148.00	2356	166.00	66
116.00	309	134.00	147	149.00	337	167.00	3335
117.00	24922	135.00	1868	150.00	474	168.00	1388
118.00	1527	136.00	92	151.00	510	169.00	45
122.00	661	137.00	490	154.00	259	170.00	150
123.00	1469	139.00	216	155.00	996	175.00	3413
124.00	94	141.00	2330	156.00	209	177.00	137
125.00	282	142.00	164	157.00	190	179.00	2964
127.00	31549	143.00	502	160.00	111	180.00	333
128.00	3138	146.00	209	161.00	92	181.00	238
129.00	6357	147.00	884	165.00	856	185.00	695

verage of 4.699 to 4.720 min.: A00443.D
FTPP 9/03/02
odified:subtracted

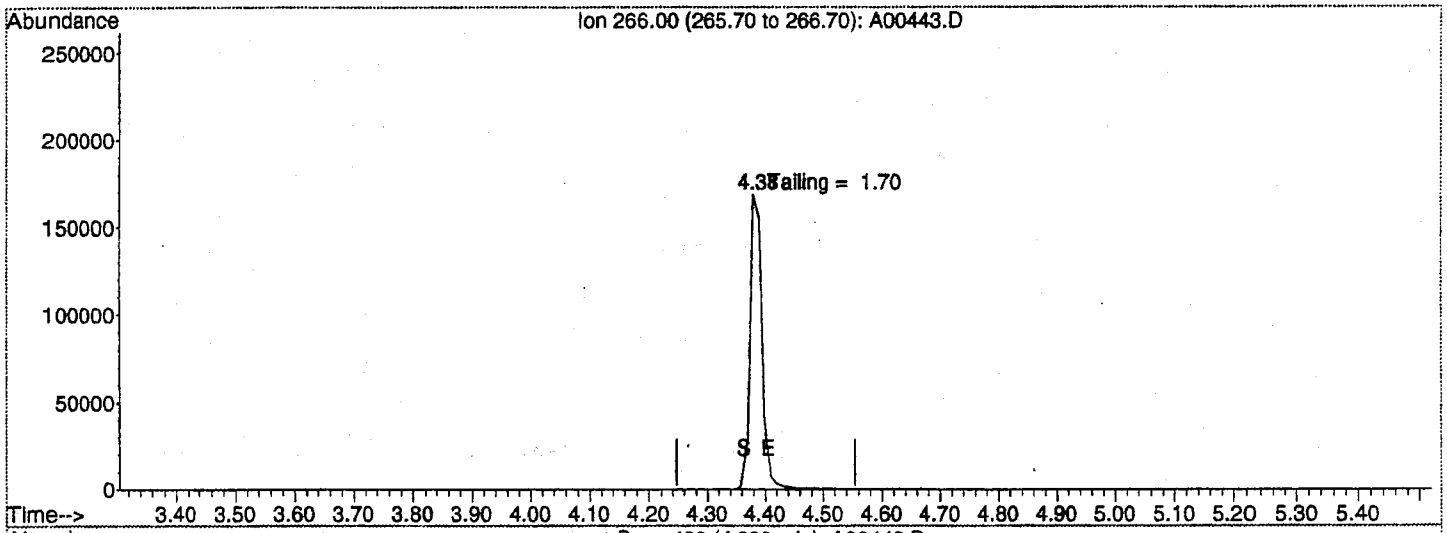
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
186.00	10476	200.00	637	215.00	230	229.00	951
187.00	3230	201.00	271	217.00	5480	231.00	227
188.00	276	202.00	844	218.00	807	235.00	46
189.00	187	203.00	134	221.00	513	236.00	119
191.00	134	204.00	4452	222.00	862	242.00	514
192.00	86	205.00	8384	223.00	590	244.00	6999
193.00	1130	206.00	29331	224.00	16055	245.00	597
196.00	129	207.00	2296	225.00	4078	246.00	1129
197.00	166	208.00	1459	226.00	496	247.00	185
198.00	165638	210.00	167	227.00	9256	254.00	227
199.00	9956	211.00	975	228.00	850	255.00	74218

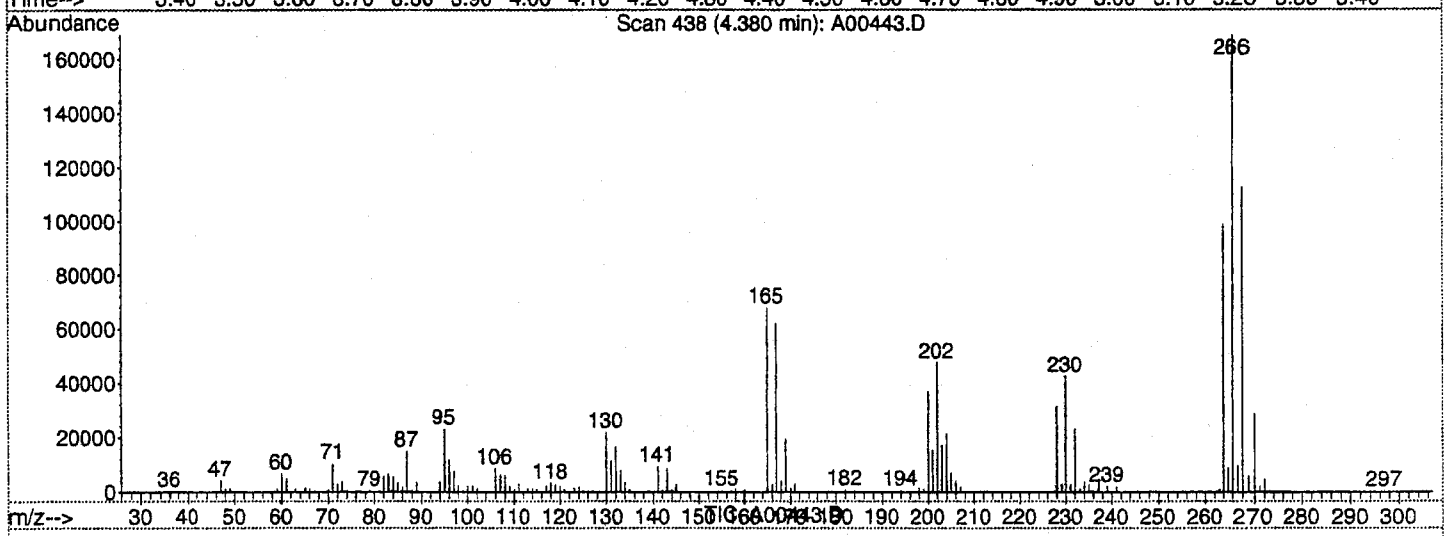
verage of 4.699 to 4.720 min.: A00443.D
FTPP 9/03/02
odified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
256.00	8408	297.00	603	353.00	652	443.00	53216
257.00	1376	303.00	750	354.00	1123	444.00	3982
258.00	3391	315.00	100	365.00	5667		
265.00	1227	316.00	555	366.00	238		
273.00	825	317.00	148	372.00	638		
274.00	6467	323.00	4771	378.00	324		
275.00	41746	324.00	753	421.00	601		
276.00	6257	334.00	2810	423.00	8676		
277.00	2724	335.00	1685	424.00	897		
284.00	168	336.00	277	441.00	27281		
296.00	5198	352.00	1120	442.00	281472		

Data File : C:\MSDCHEM\1\DATA\A00443.D Vial: 0
Acq On : 03 Sep 2002 13:05 Operator:
Sample : DFTPP 9/03/02 Inst :
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Sep 4 8:11 2002 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Sep 05 12:14:23 2002
Response via : Single Level Calibration





(1) Pentachlorophenol (T)

4.38min 0.21

response 168955

Ion	Exp%	Act%
266.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

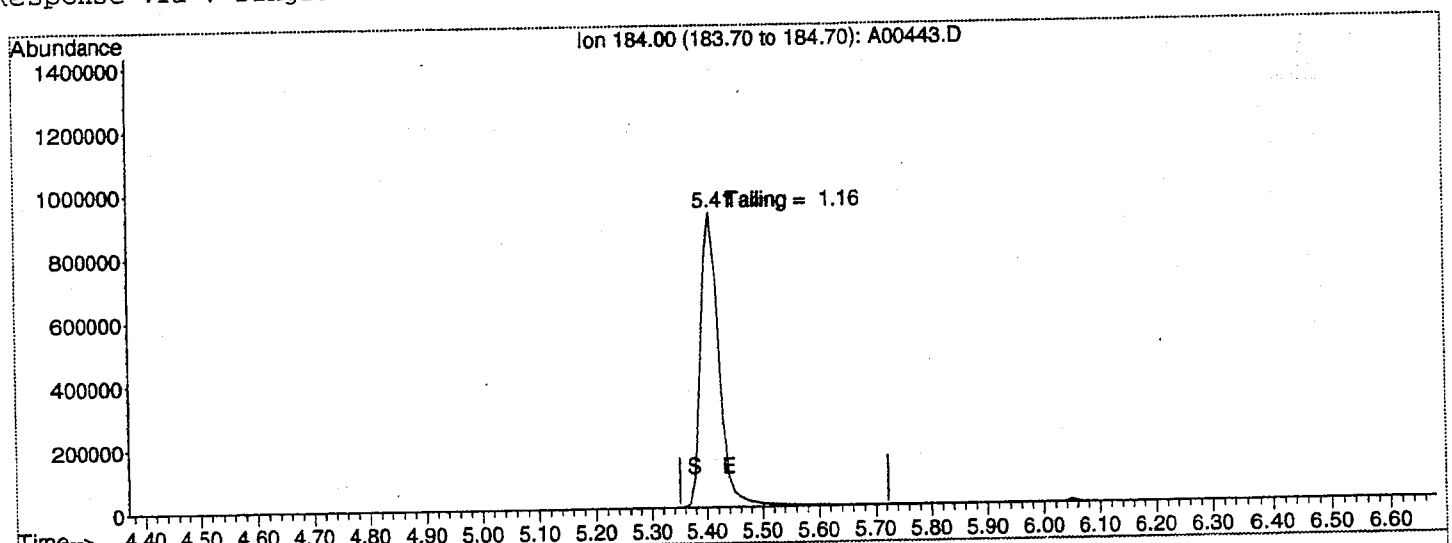
222

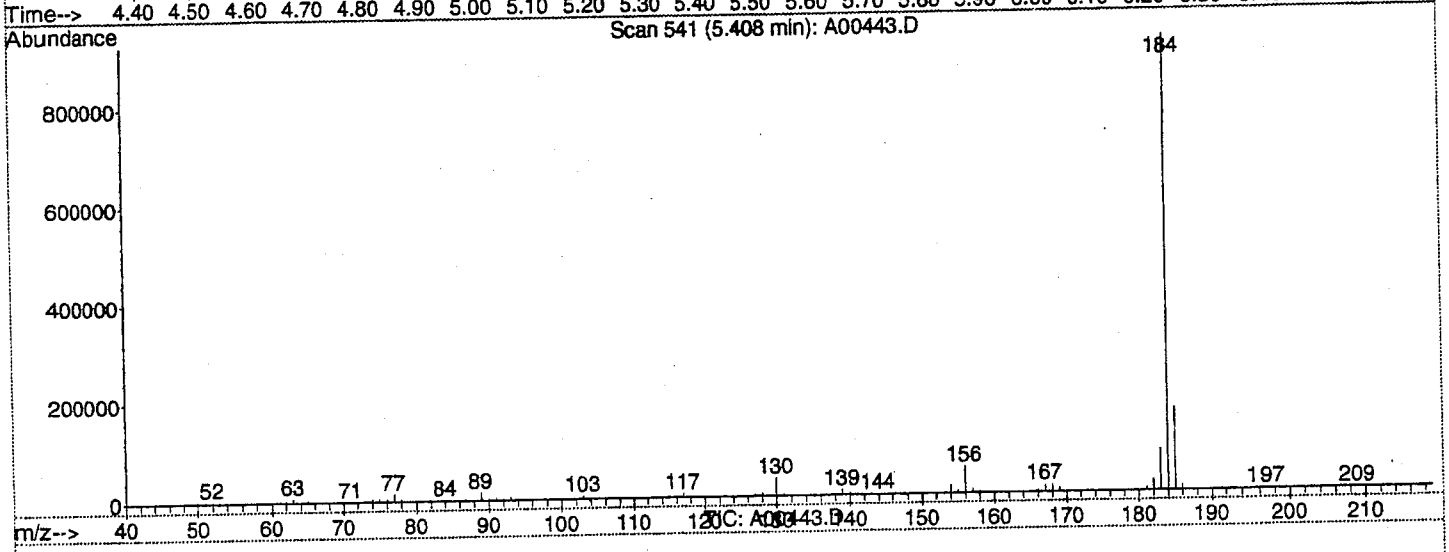
Data File : C:\MSDCHEM\1\DATA\A00443.D
Acq On : 03 Sep 2002 13:05
Sample : DFTPP 9/03/02
Misc :
MS Integration Params: rteint.p
Quant Time: Sep 4 8:11 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Sep 05 12:14:23 2002
Response via : Single Level Calibration





(3) Benzidine (T)

5.41min 0.43

response 925050

Ion	Exp%	Act%
184.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data File Name **A00443.D**
Data File Path **C:\MSDCHEM\1\DATA**
Operator

Sample Name **DFTPP 9/03/02**

#	Name	Ret Time	Target Response	Percent Breakdown
4)	DDT	6.05	2229909	0.00%
5)	DDD	0.00	0	
6)	DDE	5.67	82	
		SUM	2229991	

METHOD BLANK

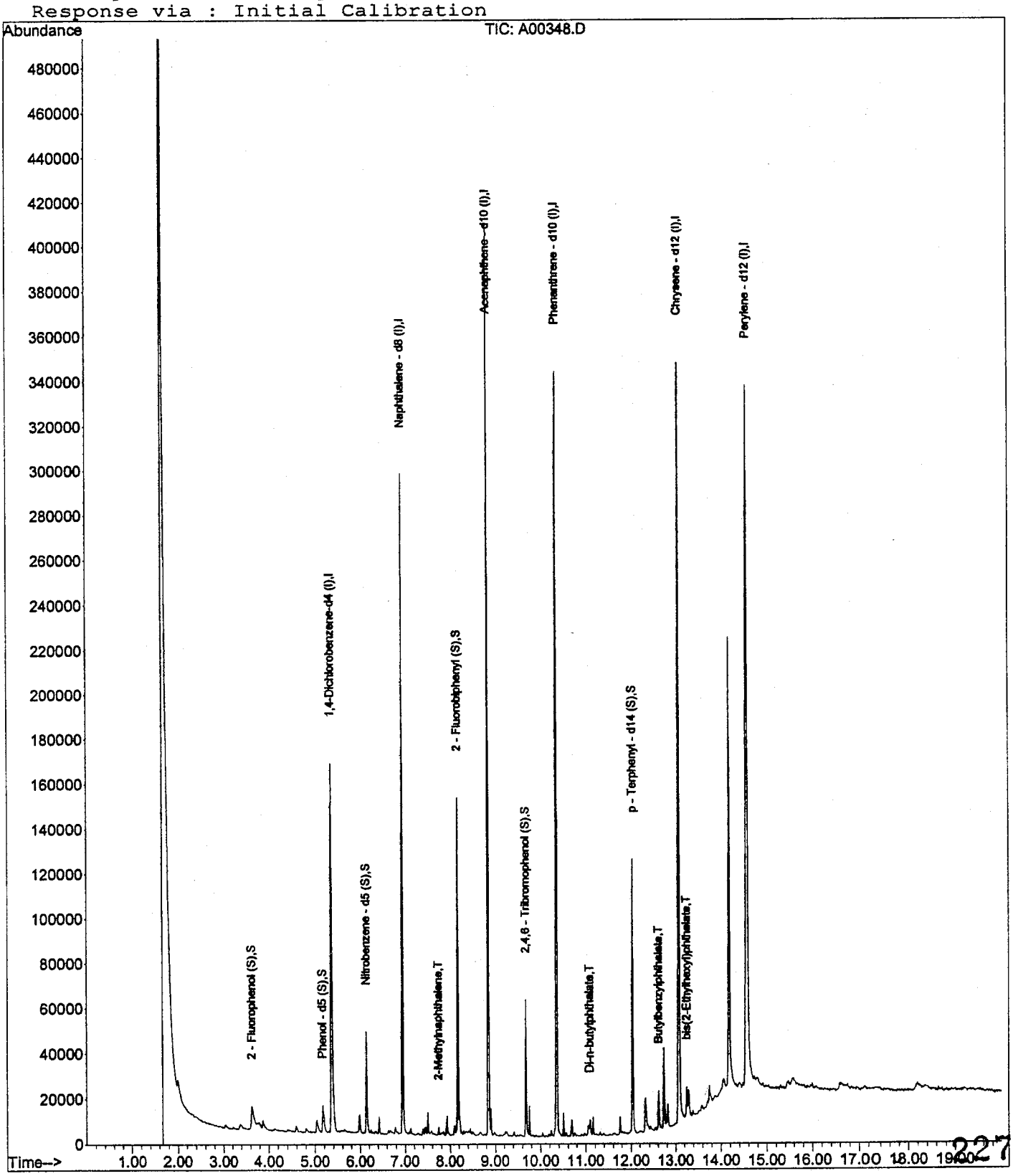
Data File : C:\MSDCHEM\1\DATA\A00348.D Vial: 0
Acq On : 28 Aug 2002 16:13 Operator:
Sample : SW0431 MB #1000 &1.0 WATER Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 13:07:38 2002 Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 13:07:34 2002
Response via : Initial Calibration
DataAcq Meth :

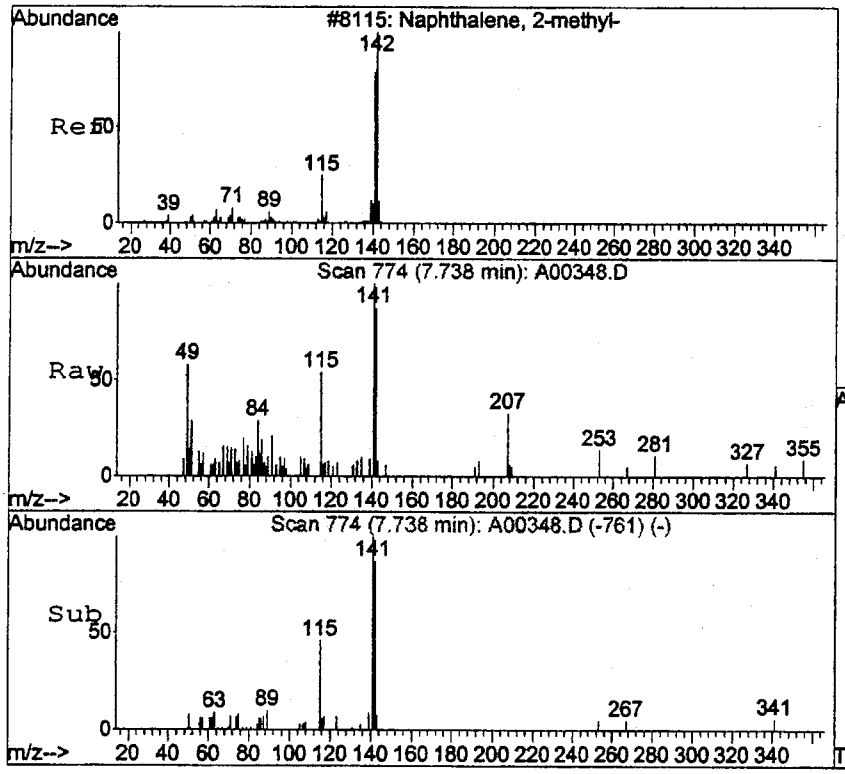
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.36	150	80057	1000.00 ug/L	0.01
22) Naphthalene - d8 (I)	6.94	136	117148	1000.00 ug/L	0.01
38) Acenaphthene - d10 (I)	8.85	162	134772	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	10.36	188	188449	1000.00 ug/L	0.02
80) Chrysene - d12 (I)	13.07	240	215820	1000.00 ul/l	0.01
86) Perylene - d12 (I)	14.56	264	272976	1000.00 ug/L	0.01
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	3.63	112	11567	300.14 ug/L	-0.07
7) Phenol - d5 (S)	5.17	99	8407	207.97 ug/L	0.02
23) Nitrobenzene - d5 (S)	6.14	82	22045	607.49 ug/L	-0.06
43) 2 - Fluorobiphenyl (S)	8.18	172	59263	582.87 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	9.68	330	11786	502.99 ug/L	-0.01
79) p - Terphenyl - d14 (S)	12.04	244	63332	557.37 ug/L	0.04
Target Compounds					Qvalue
36) 2-Methylnaphthalene	7.74	141	1300	22.79 ug/L	94
75) Di-n-butylphthalate	11.09	149	5643	34.11 ug/L #	77
81) Butylbenzylphthalate	12.61	149	7505	67.91 ug/L	78
85) bis(2-Ethylhexyl)phthalate	13.25	149	7282	35.71 ug/L #	96

Data File : C:\MSDCHEM\1\DATA\A00348.D Vial: 0
Acq On : 28 Aug 2002 16:13 Operator:
Sample : SW0431 MB #1000 &1.0 WATER Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 13:10 2002 Quant Results File: SV5-080902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 13:07:34 2002
Response via : Initial Calibration



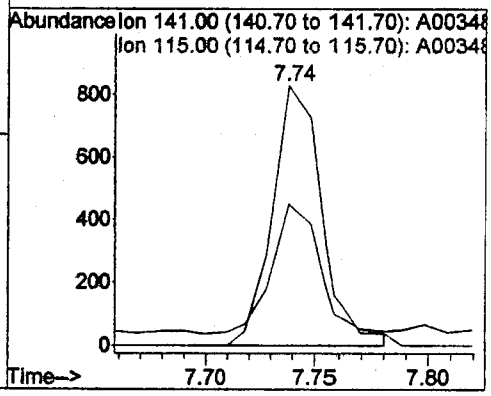
227

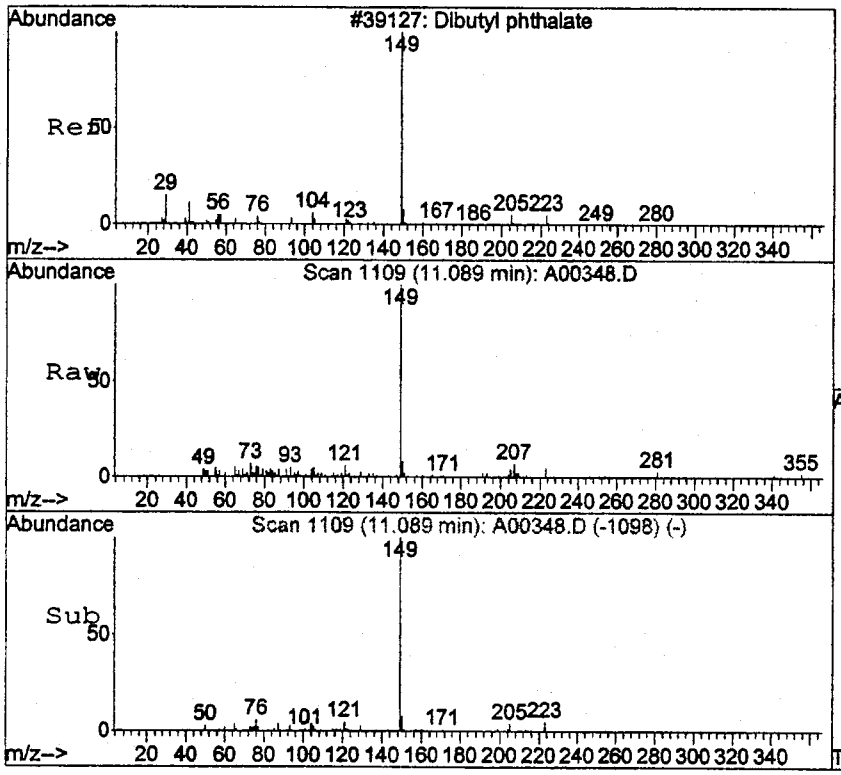


#36
2-Methylnaphthalene
Concen: 22.79 ug/L
RT: 7.74 min Scan# 774
Delta R.T. 0.03 min
Lab File: A00348.D
Acq: 28 Aug 2002 16:13

Tgt Ion:141 Resp: 1300

Ion	Ratio	Lower	Upper
141	100		
115	48.0	4.0	84.0

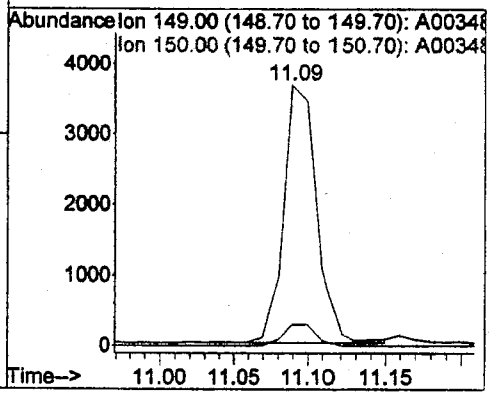


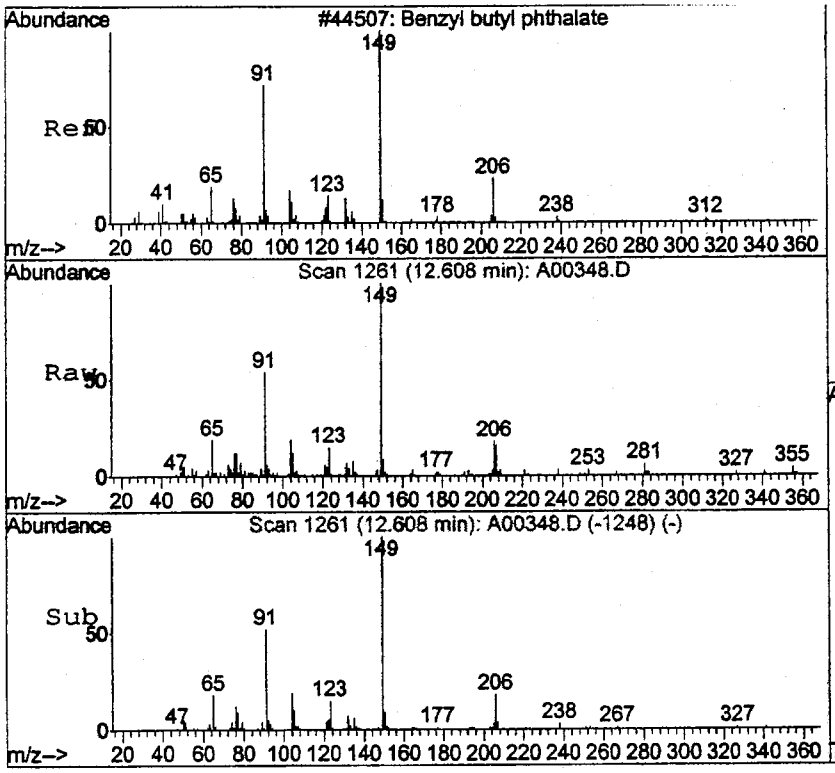


#75
Di-n-butylphthalate
Concen: 34.11 ug/L
RT: 11.09 min Scan# 1109
Delta R.T. 0.01 min
Lab File: A00348.D
Acq: 28 Aug 2002 16:13

Tgt Ion:149 Resp: 5643

Ion	Ratio	Lower	Upper
149	100		
150	0.0	0.0	48.0

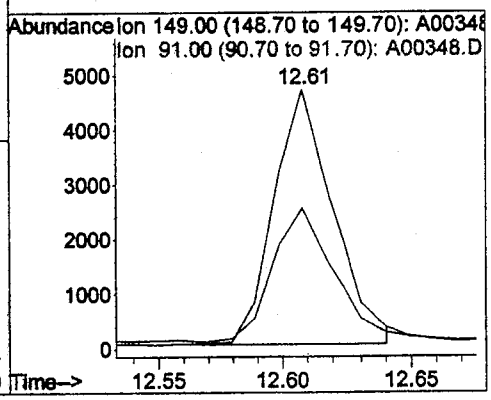


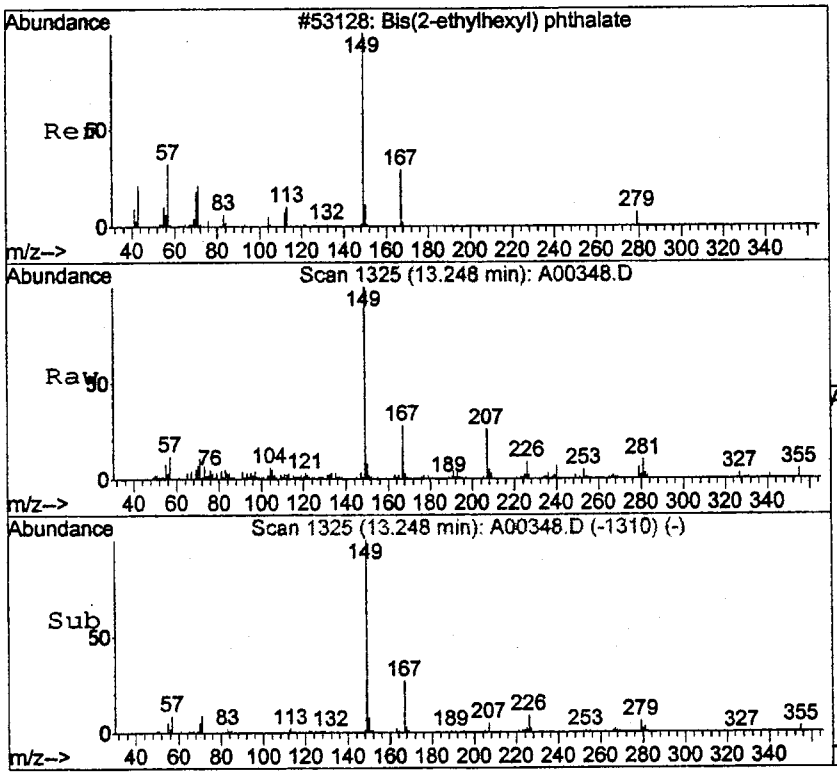


#81
Butylbenzylphthalate
Concen: 67.91 ug/L
RT: 12.61 min Scan# 1261
Delta R.T. 0.03 min
Lab File: A00348.D
Acq: 28 Aug 2002 16:13

Tgt Ion:149 Resp: 7505

Ion	Ratio	Lower	Upper
149	100		
91	54.0	32.2	112.2

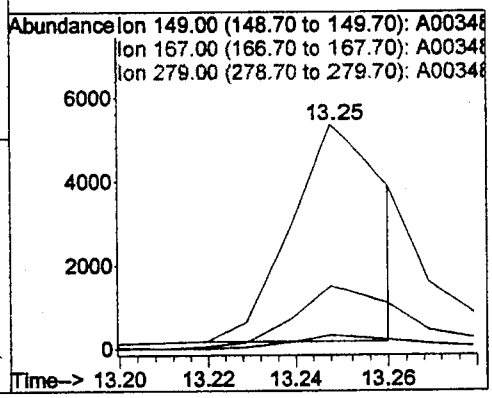




#85
bis(2-Ethylhexyl)phthalate
Concen: 35.71 ug/L
RT: 13.25 min Scan# 1325
Delta R.T. 0.05 min
Lab File: A00348.D
Acq: 28 Aug 2002 16:13

Tgt Ion:149 Resp: 7282

Ion	Ratio	Lower	Upper
149	100		
167	29.1	0.0	68.8
279	0.0	0.0	46.8



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00445.D
Acq On : 03 Sep 2002 14:19
Sample : SS0608 MB #15.0000 &2.0 SOIL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 04 09:50:48 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:50:43 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.86	150	46300	1000.00 ul/l	0.00
22) Naphthalene - d8 (I)	7.43	136	107763	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.37	162	73793	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	10.91	188	108978	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.67	240	127801	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.34	264	159971	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.26	112	15967	464.03 ug/L	-0.07
7) Phenol - d5 (S)	5.63	99	17570	425.90 ug/L	0.07
23) Nitrobenzene - d5 (S)	6.63	82	17619	510.20 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.69	172	38723	384.95 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.22	330	10187	419.28 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.60	244	54762	448.49 ug/L	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed
A00445.D DFTPP.M Thu Sep 05 15:11:12 2002

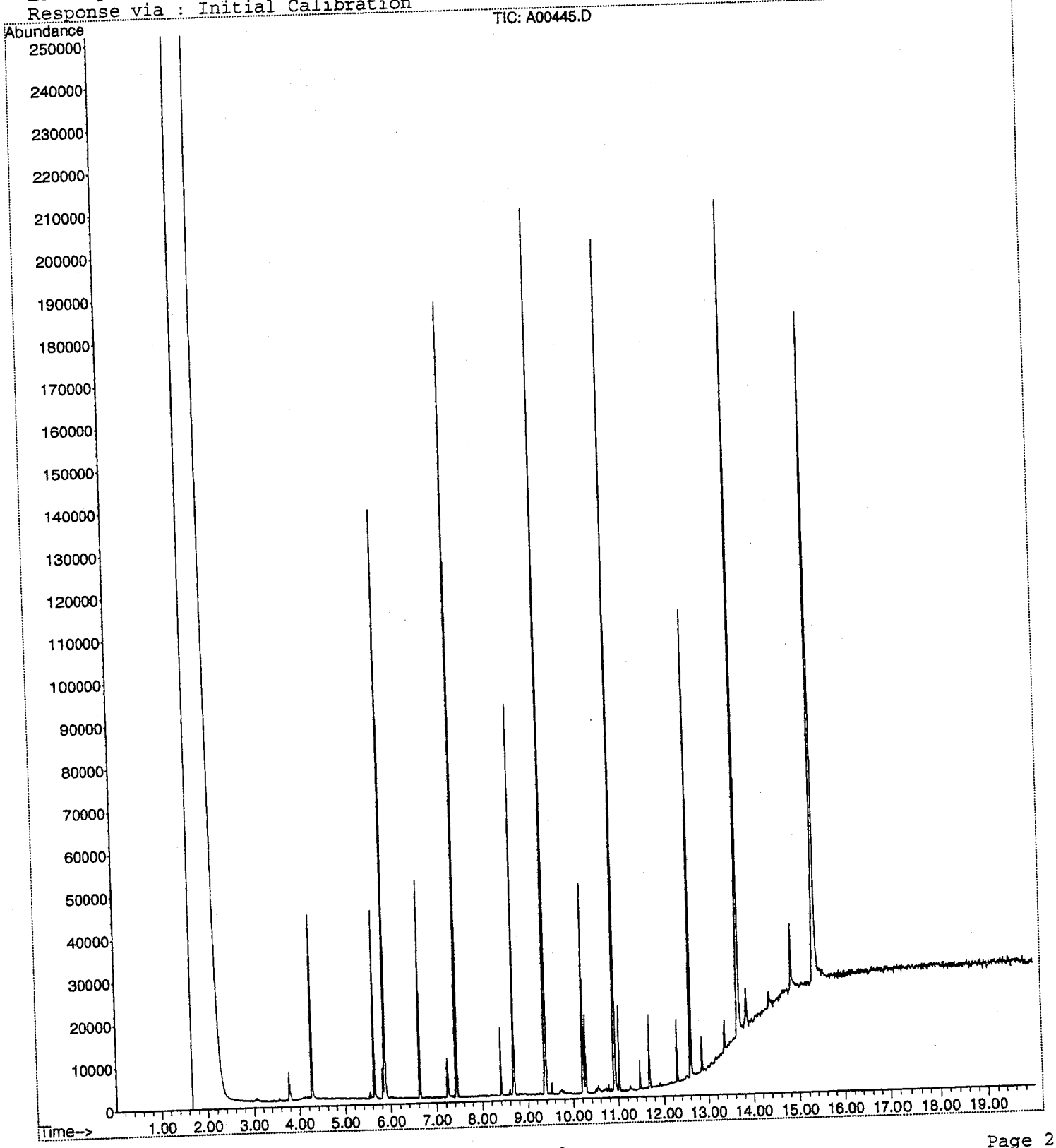
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00445.D
Acq On : 03 Sep 2002 14:19
Sample : SS0608 MB #15.0000 &2.0 SOIL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 4 9:51 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : DFTPP8270; PCP; Benzidine and DDT evaluation
Last Update : Thu Sep 05 12:14:23 2002
Response via : Initial Calibration



A00445.D DFTPP.M Thu Sep 05 15:11:12 2002

BLANK SPIKE

Data File : C:\MSDCHEM\1\DATA\A00349.D
Acq On : 28 Aug 2002 16:39
Sample : SW0431 BS #1000 &1.0 WATER
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 10:30:39 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 10:30:27 2002
Response via : Initial Calibration
DataAcq Meth :

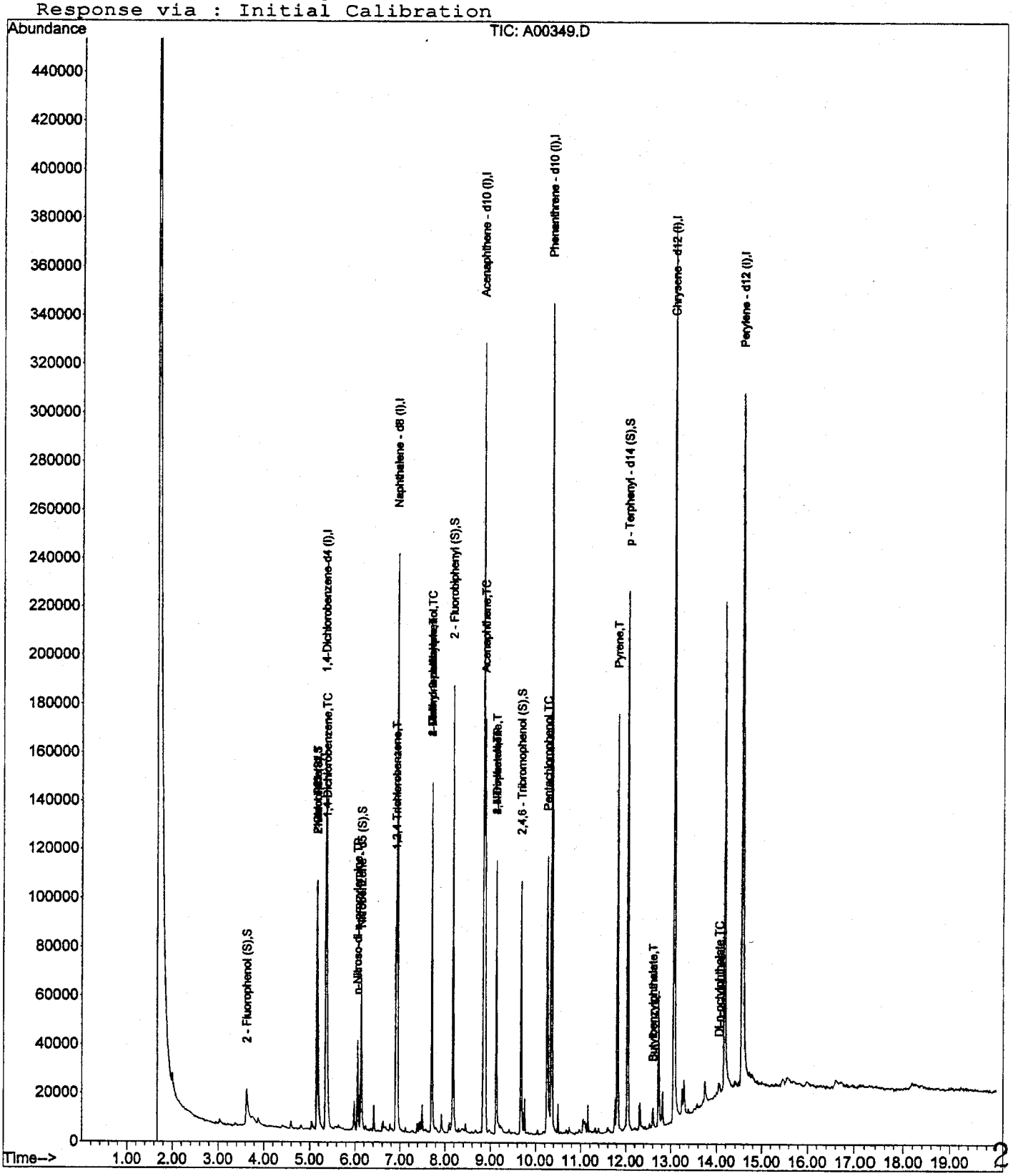
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.36	150	69367	1000.00 ug/L	0.01
22) Naphthalene - d8 (I)	6.94	136	160822	1000.00 ug/L	0.01
38) Acenaphthene - d10 (I)	8.85	162	124099	1000.00 ug/L	0.01
62) Phenanthrene - d10 (I)	10.35	188	211533	1000.00 ug/L	0.01
80) Chrysene - d12 (I)	13.07	240	243991	1000.00 ul/l	0.00
86) Perylene - d12 (I)	14.56	264	252766	1000.00 ug/L	0.01
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	3.62	112	13351	399.82 ug/L	-0.08
7) Phenol - d5 (S)	5.16	99	12430	354.88 ug/L	0.01
23) Nitrobenzene - d5 (S)	6.14	82	32018	642.71 ug/L	-0.06
43) 2 - Fluorobiphenyl (S)	8.18	172	72819	777.79 ug/L	0.00
65) 2,4,6 - Tribromophenol (S)	9.68	330	19727	750.01 ug/L	-0.01
79) p - Terphenyl - d14 (S)	12.04	244	121254	950.68 ug/L	0.04
Target Compounds					Qvalue
8) Phenol	5.17	94	12403	345.74 ug/L	75
10) 2-Chlorophenol	5.16	128	37336	1226.96 ug/L	75
13) 1,4-Dichlorobenzene	5.38	146	29070	693.99 ug/L	43
19) n-Nitroso-di-n-propylamine	6.06	70	21302	885.08 ug/L	94
31) 1,2,4-Trichlorobenzene	6.91	180	25650	746.57 ug/L	98
35) 4-Chloro-3-methylphenol	7.71	107	52958	1191.89 ug/L	95
36) 2-Methylnaphthalene	7.71	141	2909	37.14 ug/L	84
51) Acenaphthene	8.88	153	76426	904.04 ug/L	88
53) 4-Nitrophenol	9.13	109	10077+	315.39 ug/L	99
55) 2,4-Dinitrotoluene	9.13	165	27888	741.24 ug/L	93
70) Pentachlorophenol	10.26	266	24935	1252.10 ug/L	92
77) Pyrene	11.82	202	124310	874.71 ug/L	98
81) Butylbenzylphthalate	12.61	149	3659	29.28 ug/L	80
87) Di-n-octylphthalate	14.06	149	7304	20.93 ug/L	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00349.D
Acq On : 28 Aug 2002 16:39
Sample : SW0431 BS #1000 &1.0 WATER
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 10:31 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RE

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 10:30:27 2002
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\A00350.D Vial: 0
Acq On : 28 Aug 2002 17:05 Operator:
Sample : SW0431 BSD #1000 &1.0 WATER Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 29 10:31:45 2002 Quant Results File: SV5-080902.RES

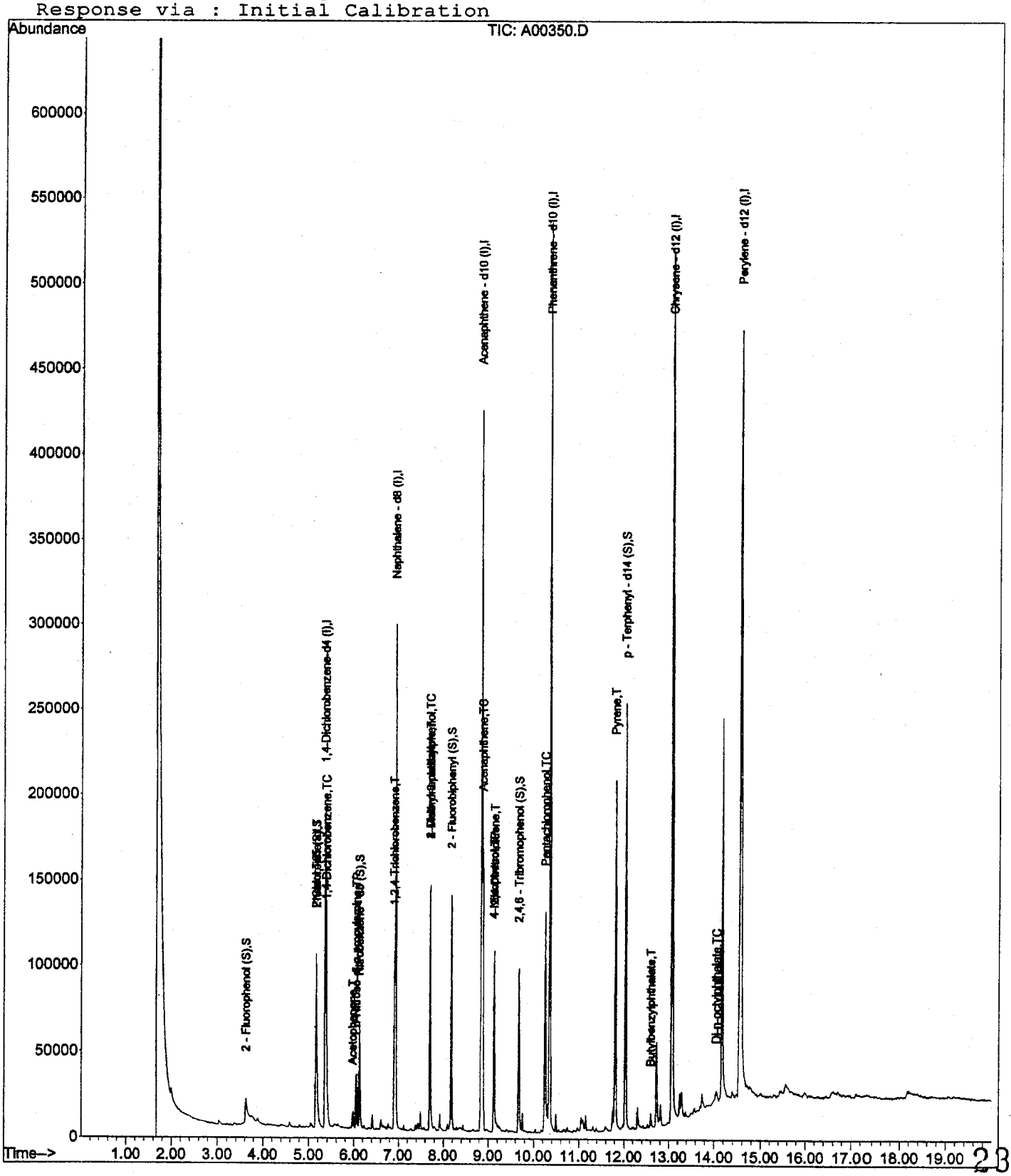
Quant Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 10:30:27 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4 (I)	5.36	150	82937	1000.00 ug/L	0.01
22) Naphthalene - d8 (I)	6.93	136	195195	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	8.84	162	166279	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	10.35	188	297735	1000.00 ug/L	0.01
80) Chrysene - d12 (I)	13.07	240	352310	1000.00 ul/l	0.01
86) Perylene - d12 (I)	14.56	264	401503	1000.00 ug/L	0.01
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	3.63	112	12536	313.99 ug/L	-0.07
7) Phenol - d5 (S)	5.16	99	11866	283.35 ug/L	0.01
23) Nitrobenzene - d5 (S)	6.13	82	30917	511.32 ug/L	-0.07
43) 2 - Fluorobiphenyl (S)	8.17	172	64668	515.51 ug/L	-0.01
65) 2,4,6 - Tribromophenol (S)	9.67	330	18670	504.31 ug/L	-0.02
79) p - Terphenyl - d14 (S)	12.03	244	120074	668.86 ug/L	0.03
Target Compounds					Qvalue
8) Phenol	5.17	94	10600	247.13 ug/L	73
10) 2-Chlorophenol	5.16	128	39830	1094.75 ug/L	73
13) 1,4-Dichlorobenzene	5.38	146	29897	596.96 ug/L	38
19) n-Nitroso-di-n-propylamine	6.06	70	23560	818.73 ug/L	95
20) Acetophenone	5.98	105	5421	77.96 ug/L	93
31) 1,2,4-Trichlorobenzene	6.90	180	26397	633.01 ug/L	97
35) 4-Chloro-3-methylphenol	7.71	107	54194	1004.93 ug/L	90
36) 2-Methylnaphthalene	7.71	141	3219	33.86 ug/L	72
51) Acenaphthene	8.87	153	80645	711.96 ug/L	92
53) 4-Nitrophenol	9.12	109	9359+	218.61 ug/L	85
55) 2,4-Dinitrotoluene	9.13	165	29177	578.78 ug/L	94
70) Pentachlorophenol	10.25	266	26455	943.82 ug/L	93
77) Pyrene	11.81	202	139752	698.65 ug/L	99
81) Butylbenzylphthalate	12.60	149	3799	21.06 ug/L	85
87) Di-n-octylphthalate	14.04	149	10416	18.79 ug/L	88

Data File : C:\MSDCHEM\1\DATA\A00350.D
Acq On : 28 Aug 2002 17:05
Sample : SW0431 BSD #1000 &1.0 WATER
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 29 10:31 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00
Quant Results File: SV5-080902.RE

Method : C:\MSDCHEM\1\METHODS\SV5-080902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Aug 29 10:30:27 2002
Response via : Initial Calibration



Quantitation Report

Data File : C:\MSDCHEM\1\DATA\A00446.D
Acq On : 03 Sep 2002 14:45
Sample : SS0608 BS #15.0000 &2.0 SOIL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 04 09:53:27 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:53:17 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.86	150	48647	1000.00 ul/l	0.00
22) Naphthalene - d8 (I)	7.43	136	105978	1000.00 ug/L	0.00
38) Acenaphthene - d10 (I)	9.37	162	72917	1000.00 ug/L	0.00
62) Phenanthrene - d10 (I)	10.91	188	112619	1000.00 ug/L	0.00
80) Chrysene - d12 (I)	13.67	240	118210	1000.00 ul/l	0.00
86) Perylene - d12 (I)	15.34	264	139894	1000.00 ug/L	0.00
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.26	112	13155	363.87 ug/L	-0.07
7) Phenol - d5 (S)	5.63	99	16210	373.98 ug/L	0.07
23) Nitrobenzene - d5 (S)	6.63	82	13017	383.29 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.69	172	32676	328.74 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.22	330	8996	358.29 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.60	244	48850	387.14 ug/L	0.00
Target Compounds					Qvalue
8) Phenol	5.64	94	27315	632.28 ug/L	28
10) 2-Chlorophenol	5.66	128	27577	648.92 ug/L	83
13) 1,4-Dichlorobenzene	5.88	146	17828	365.47 ug/L	91
19) n-Nitroso-di-n-propylamine	6.54	70	11752	419.73 ug/L	73
29) Benzoic Acid	7.44	105	703	39.94 ug/L #	65
31) 1,2,4-Trichlorobenzene	7.40	180	16304	401.34 ug/L	96
35) 4-Chloro-3-methylphenol	8.20	107	29453	639.26 ug/L	80
36) 2-Methylnaphthalene	8.20	141	1585	18.98 ug/L	100
45) Biphenyl	9.41	154	28570	365.15 ug/L #	1
51) Acenaphthene	9.41	153	37619	407.89 ug/L	92
53) 4-Nitrophenol	9.63	109	14585+	381.75 ug/L #	39
55) 2,4-Dinitrotoluene	9.65	165	13860	500.29 ug/L	91
69) Atrazine	10.80	200	1299+	214.48 ug/L	38
70) Pentachlorophenol	10.80	266	5057	249.36 ug/L	86
76) Fluoranthene	12.17	202	655	4.92 ug/L #	62
77) Pyrene	12.40	202	59180	441.26 ug/L	70

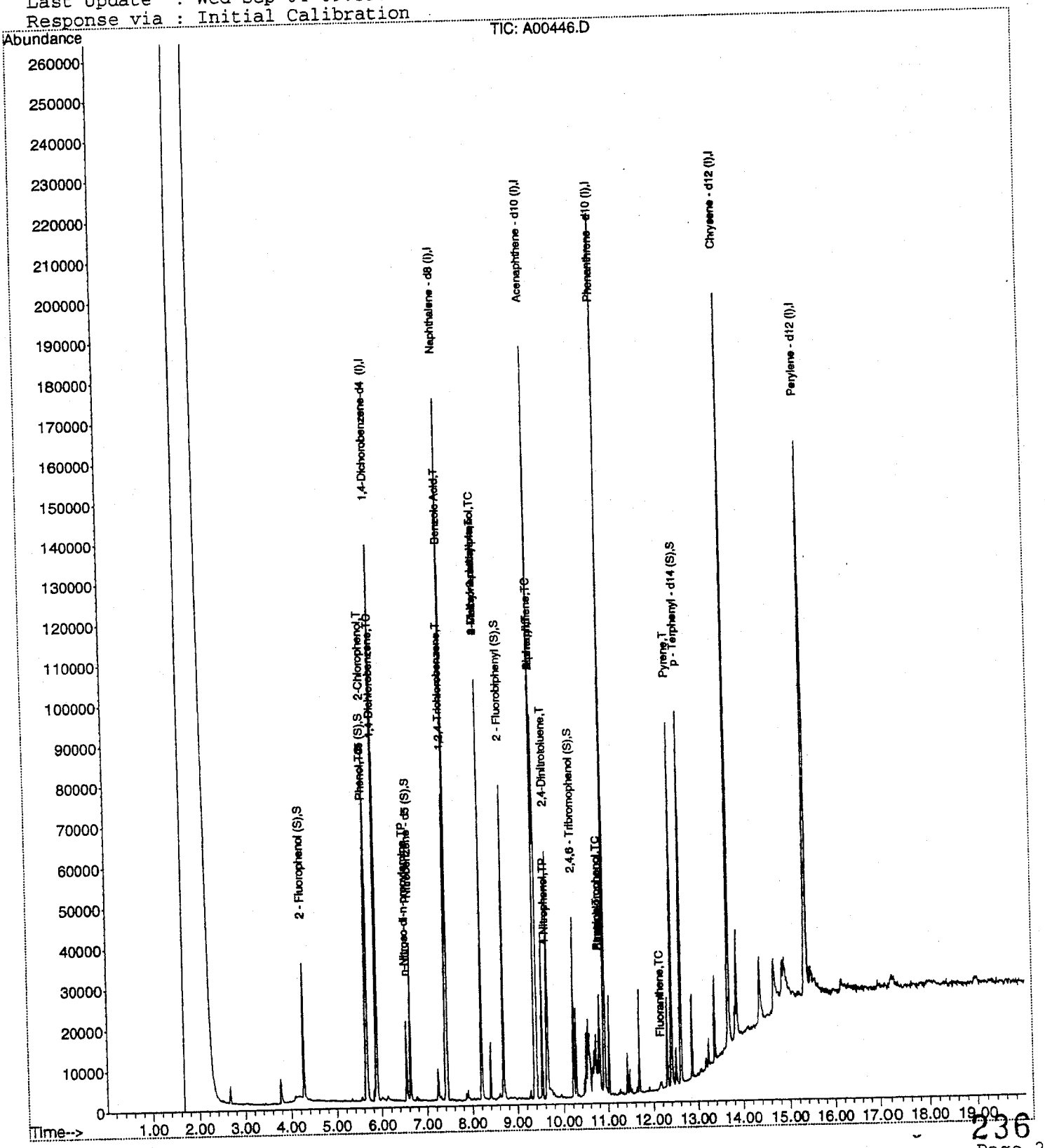
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00446.D
Acq On : 03 Sep 2002 14:45
Sample : SS0608 BS #15.0000 &2.0 SOIL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 4 9:53 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:53:17 2002
Response via : Initial Calibration



A00446.D SV5-082902.M Wed Sep 04 09:53:47 2002

MATIX SPIKE / MATRIX SPIKE DUPLICATE

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\A00452.D
Acq On : 03 Sep 2002 17:20
Sample : 108164-3 SS0608 &2.0 SOIL 1:10
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 05 07:34:45 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 12:34:06 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.87	150	56054	1000.00 ul/l	0.01
22) Naphthalene - d8 (I)	7.45	136	147493	1000.00 ug/L	0.02
38) Acenaphthene - d10 (I)	9.40	162	119093	1000.00 ug/L	0.03
62) Phenanthrene - d10 (I)	10.94	188	214209	1000.00 ug/L	0.03
80) Chrysene - d12 (I)	13.71	240	257225	1000.00 ul/l	0.04
86) Perylene - d12 (I)	15.41	264	274866	1000.00 ug/L	0.07
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.28	112	1125	27.01 ug/L	0.02
7) Phenol - d5 (S)	5.66	99	1622	32.48 ug/L	0.10
23) Nitrobenzene - d5 (S)	6.64	82	1454	30.76 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.70	172	4869	29.99 ug/L	0.02
65) 2,4,6 - Tribromophenol (S)	10.25	330	2165	45.33 ug/L	0.03
79) p - Terphenyl - d14 (S)	12.63	244	15320	63.83 ug/L	0.04
Target Compounds					Qvalue
35) 4-Chloro-3-methylphenol	8.25	107	2589	40.38 ug/L	70
36) 2-Methylnaphthalene	8.26	141	857	7.37 ug/L	44
48) Acenaphthylene	9.24	152	1639	7.30 ug/L	65
51) Acenaphthene	9.43	153	1209	8.03 ug/L	99
71) Phenanthrene	10.96	178	9096m	35.16 ug/L	
72) Anthracene	11.00	178	2122	8.48 ug/L	92
76) Fluoranthene	12.21	202	21545m	85.11 ug/L	
77) Pyrene	12.43	202	22000	86.24 ug/L	67
82) Benzo(a)anthracene	13.69	228	12495	41.21 ug/L	12
85) bis(2-Ethylhexyl)phthalate	13.86	149	89850	237.00 ug/L	86
88) Benzofluoranthenes	14.94	252	22904	68.97 ug/L	33

(#) = qualifier out of range (m) = manual integration (+) = signals summed

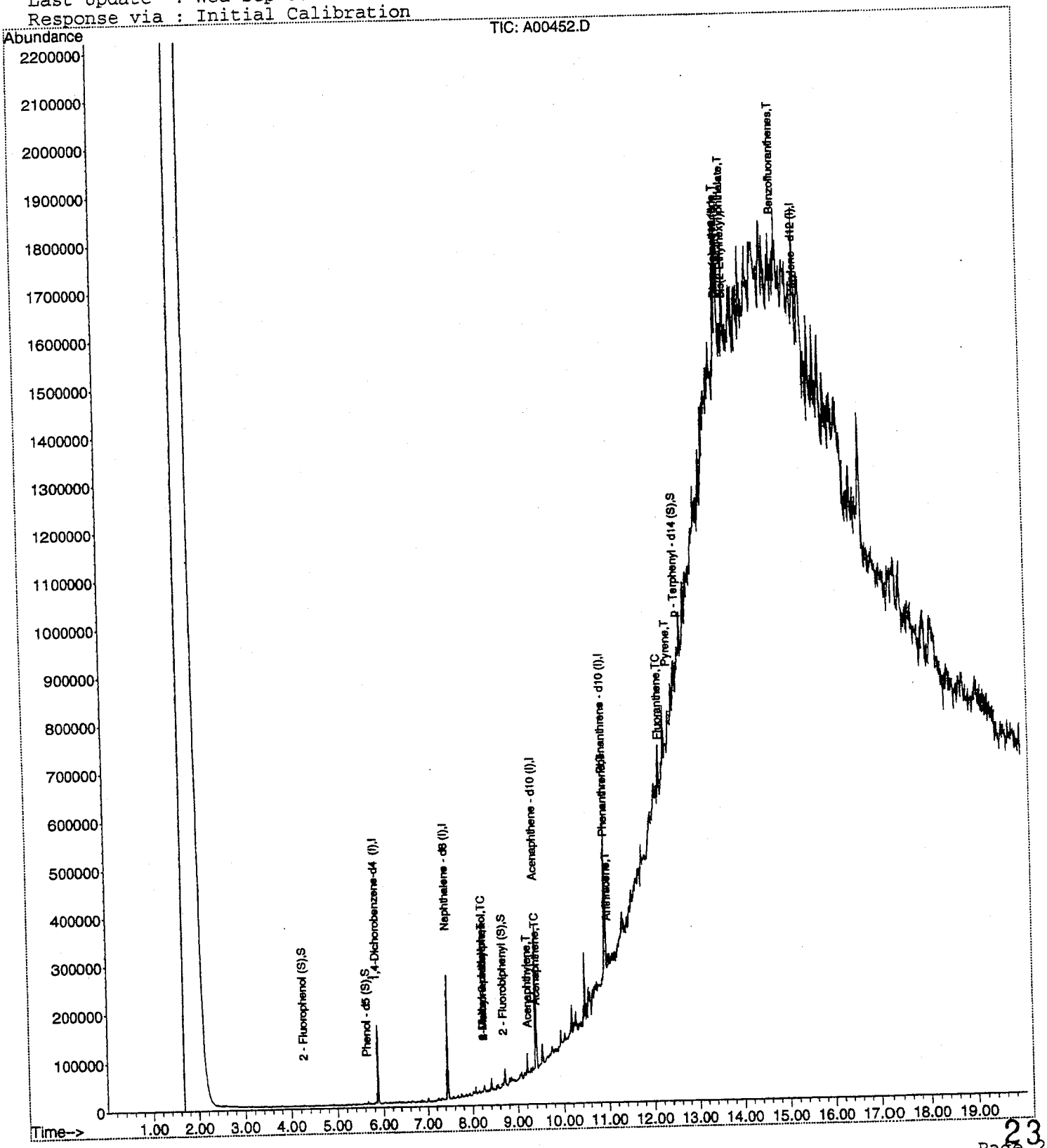
Quantitation Report (QT Reviewed)

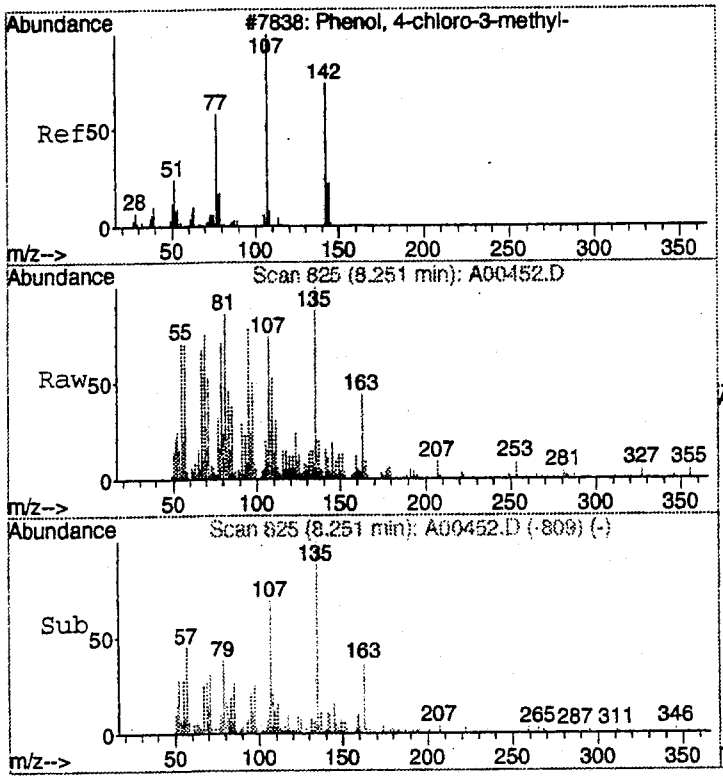
Data File : C:\MSDCHEM\1\DATA\A00452.D
Acq On : 03 Sep 2002 17:20
Sample : 108164-3 SS0608 &2.0 SOIL 1:10
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 5 7:37 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 12:34:06 2002
Response via : Initial Calibration

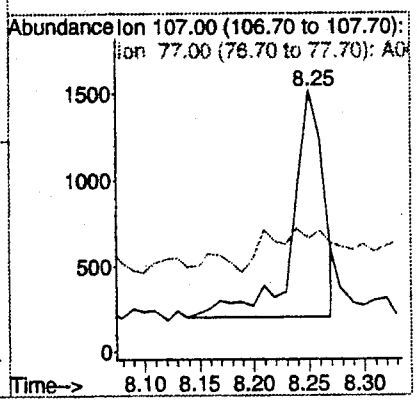


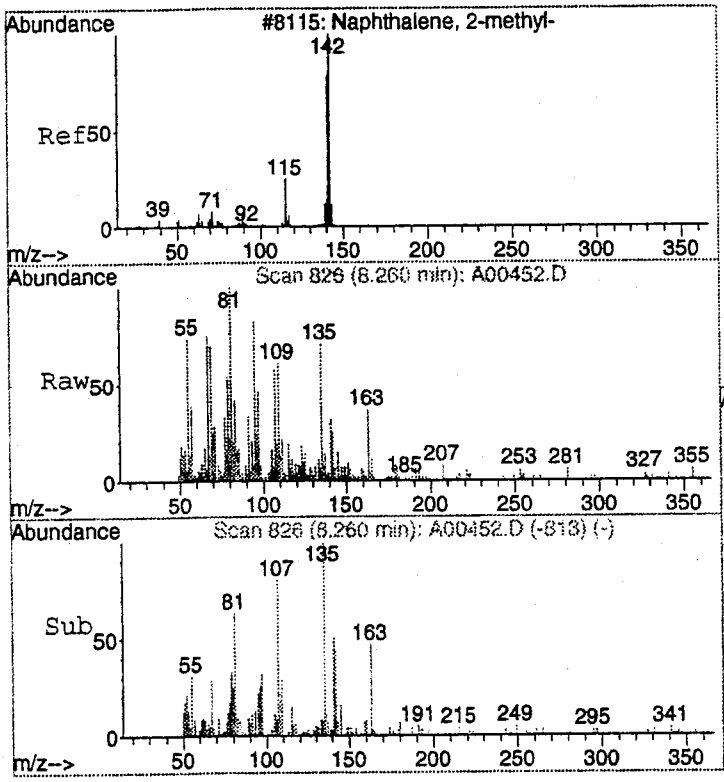


#35
4-Chloro-3-methylphenol
Concen: 40.38 ug/L
RT: 8.25 min Scan# 825
Delta R.T. 0.06 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:107 Resp: 2589

Ion	Ratio	Lower	Upper
107	100		
77	35.9	18.0	98.0

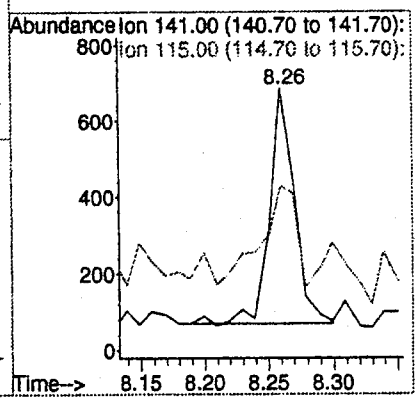


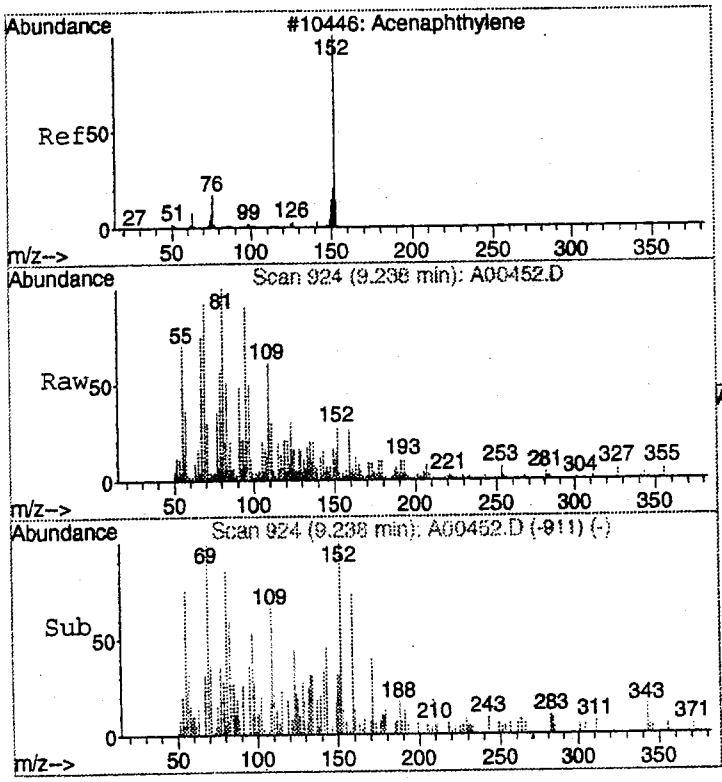


#36
2-Methylnaphthalene
Concen: 7.37 ug/L
RT: 8.26 min Scan# 826
Delta R.T. 0.03 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:141 Resp: 857

Ion	Ratio	Lower	Upper
141	100		
115	62.8	0.0	71.8

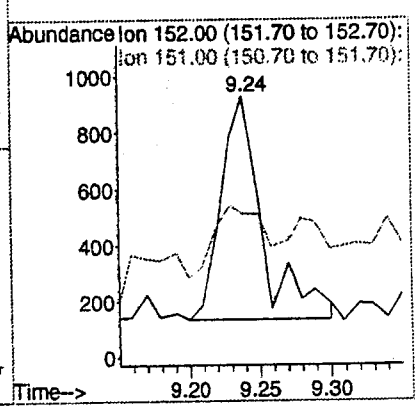


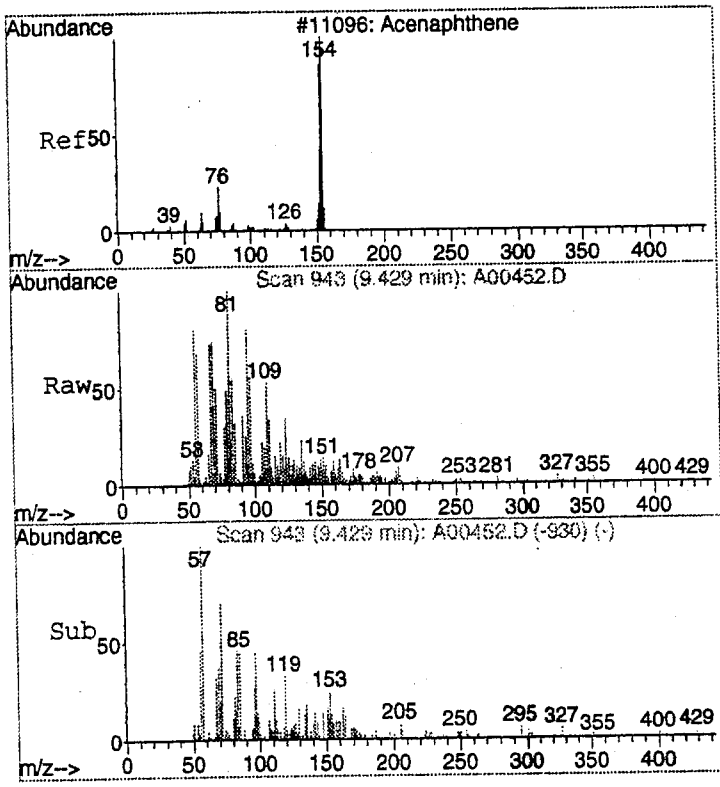


#48
Acenaphthylene
Concen: 7.30 ug/L
RT: 9.24 min Scan# 924
Delta R.T. 0.03 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:152 Resp: 1639

Ion	Ratio	Lower	Upper
152	100		
151	35.6	0.0	59.7

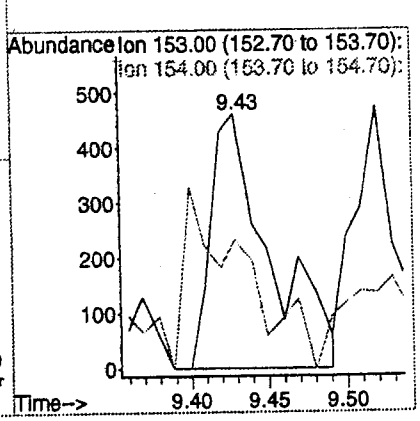


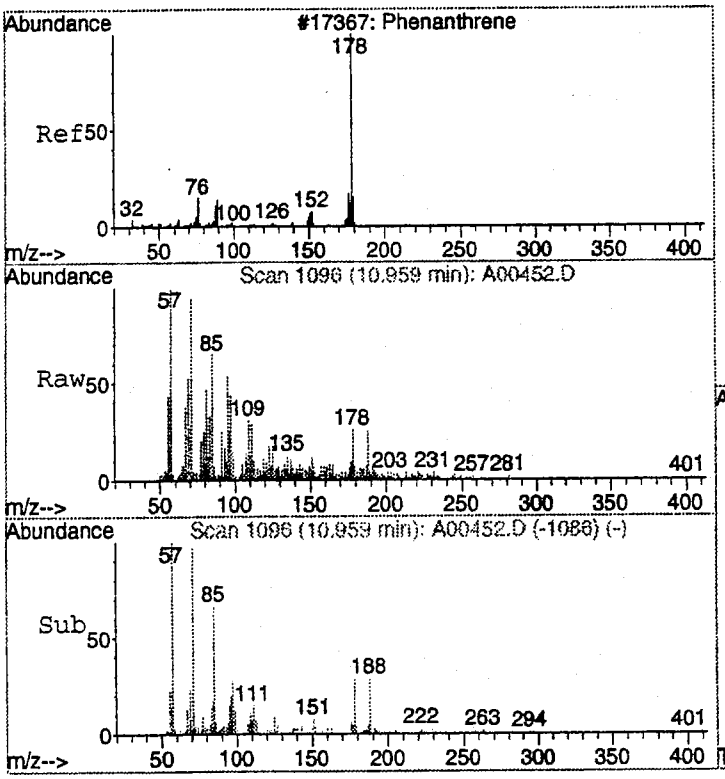


#51
Acenaphthene
Concen: 8.03 ug/L
RT: 9.43 min Scan# 943
Delta R.T. 0.03 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:153 Resp: 1209

Ion	Ratio	Lower	Upper
153	100		
154	84.6	43.3	123.3

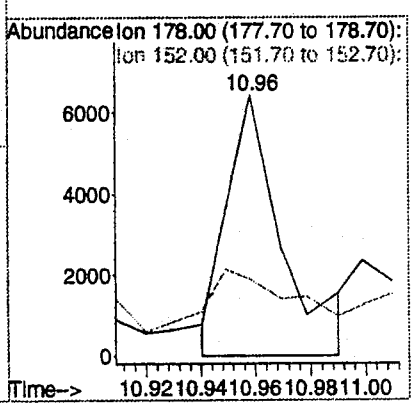


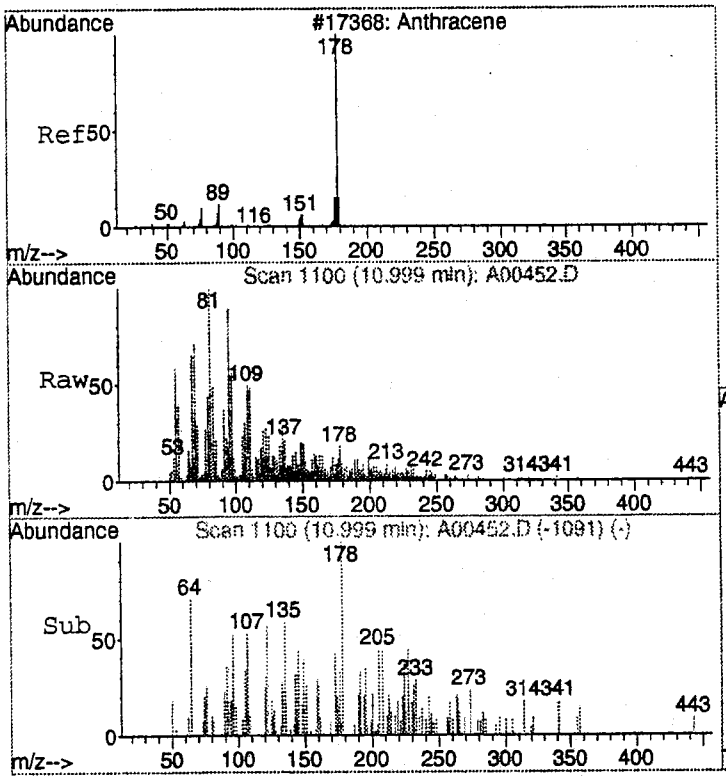


#71
Phenanthrene
Concen: 35.16 ug/L m
RT: 10.96 min Scan# 1096
Delta R.T. -0.00 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:178 Resp: 9096

Ion	Ratio	Lower	Upper
178	100		
152	7.7	0.0	60.6

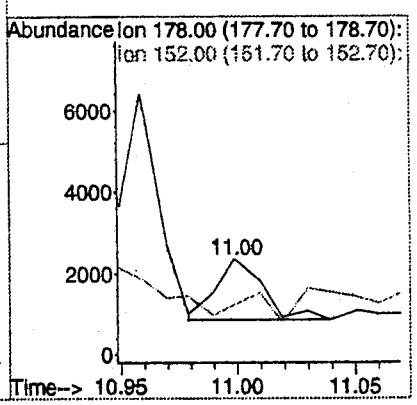


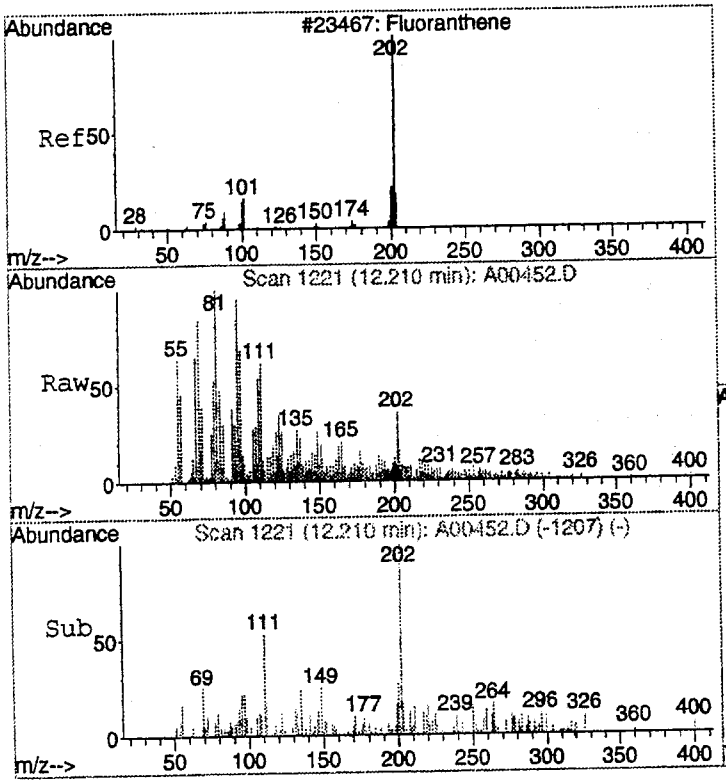


#72
Anthracene
Concen: 8.48 ug/L
RT: 11.00 min Scan# 1100
Delta R.T. -0.01 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:178 Resp: 2122

Ion	Ratio	Lower	Upper
178	100		
152	32.8	0.0	68.8

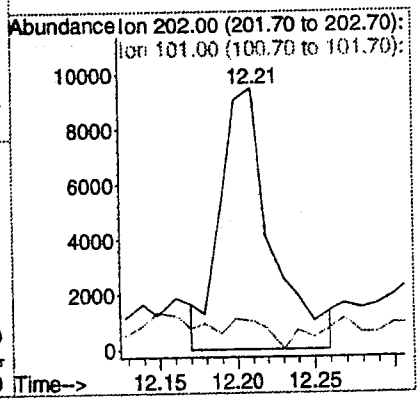


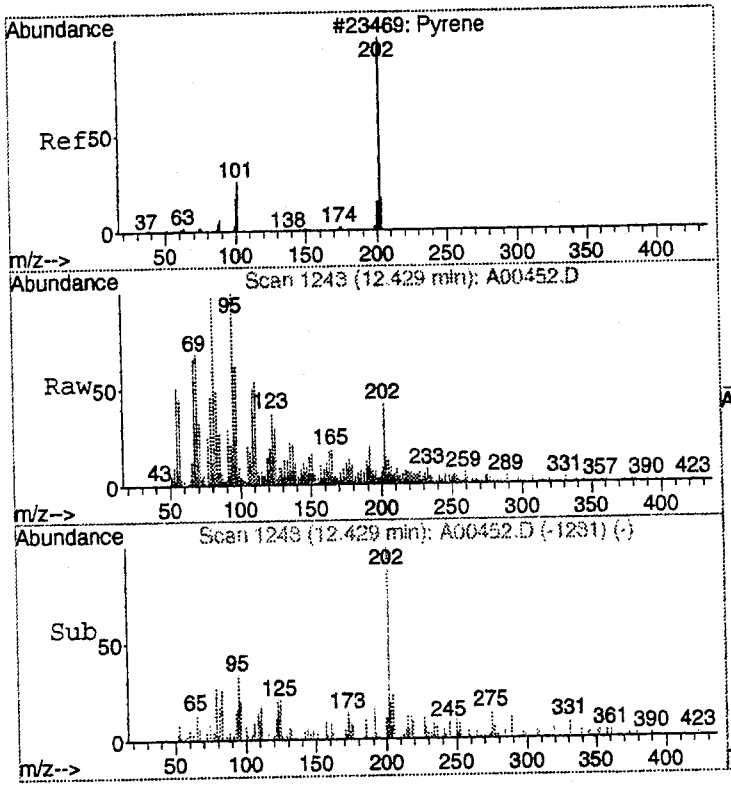


#76
Fluoranthene
Concen: 85.11 ug/L m
RT: 12.21 min Scan# 1221
Delta R.T. 0.04 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:202 Resp: 21545

Ion	Ratio	Lower	Upper
202	100		
101	0.0	0.0	56.4

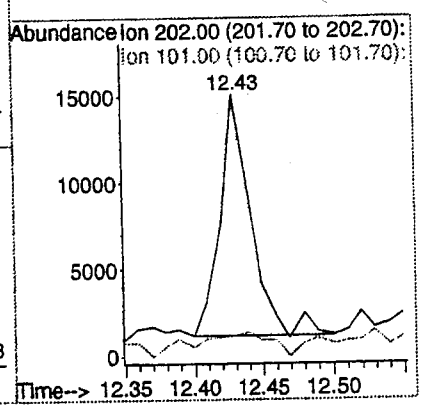


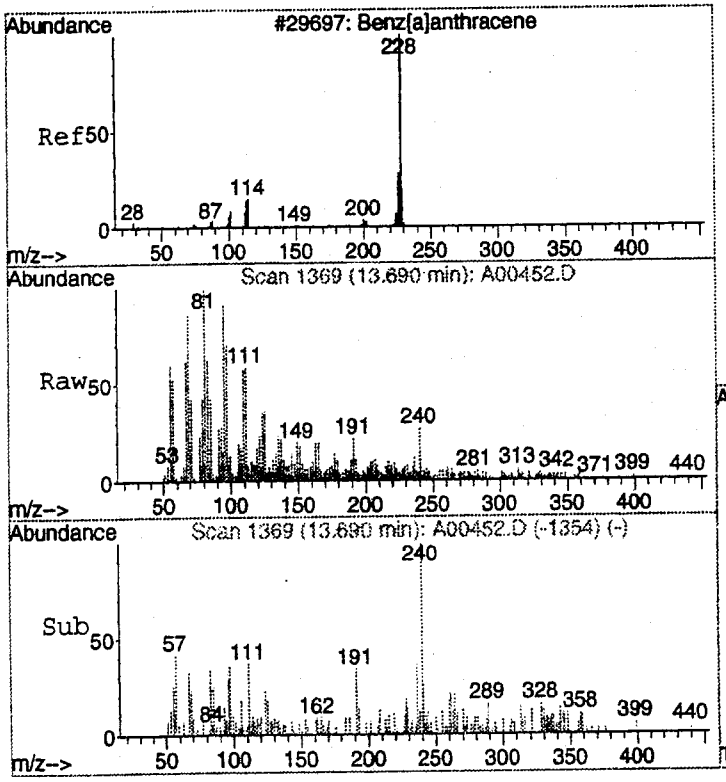


#77
Pyrene
Concen: 86.24 ug/L
RT: 12.43 min Scan# 1243
Delta R.T. 0.02 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:202 Resp: 22000

Ion	Ratio	Lower	Upper
202	100		
101	23.1	0.0	50.6

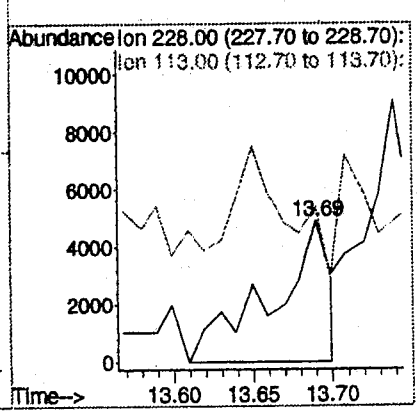


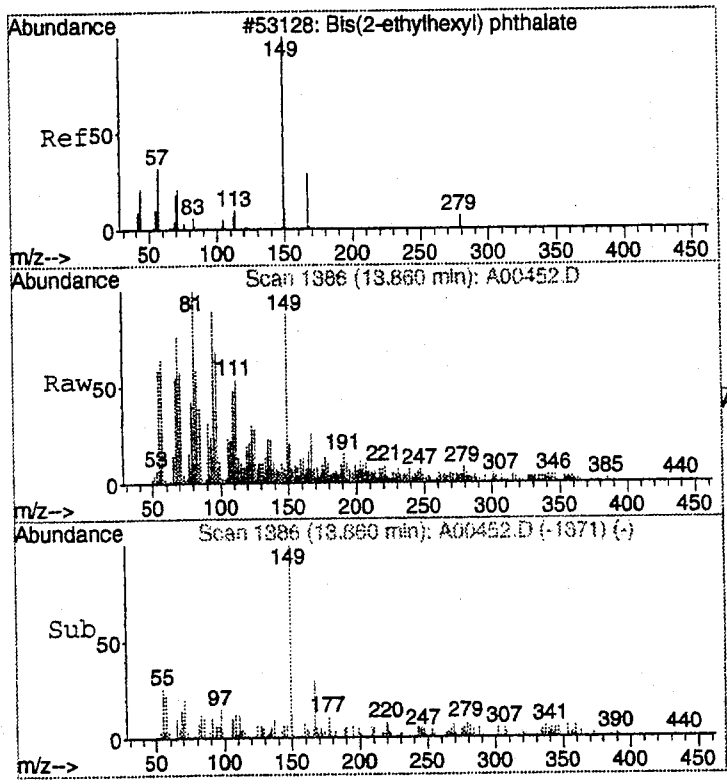


#82
Benzo(a)anthracene
Concen: 41.21 ug/L
RT: 13.69 min Scan# 1369
Delta R.T. 0.05 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:228 Resp: 12495

Ion	Ratio	Lower	Upper
228	100		
113	44.9	0.0	51.2

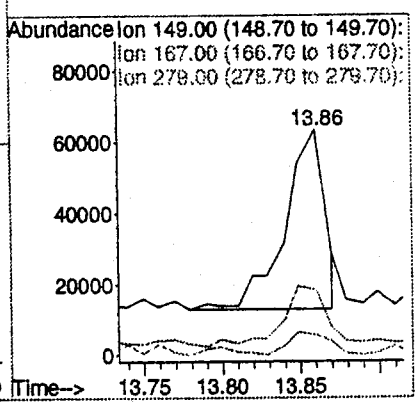


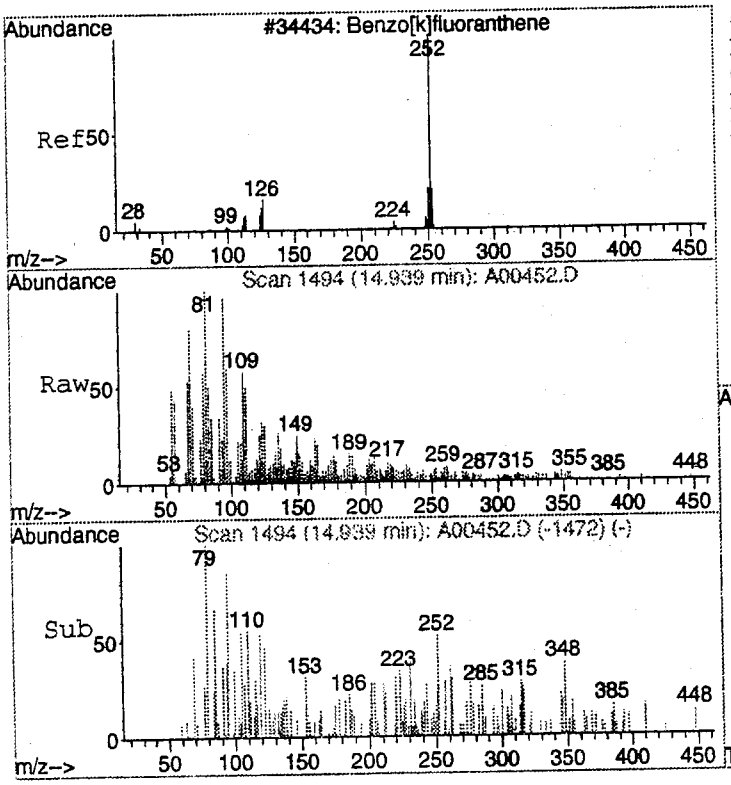


#85
bis(2-Ethylhexyl)phthalate
Concen: 237.00 ug/L
RT: 13.86 min Scan# 1386
Delta R.T. 0.05 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:149 Resp: 89850

Ion	Ratio	Lower	Upper
149	100		
167	35.8	0.0	68.8
279	12.8	0.0	46.8

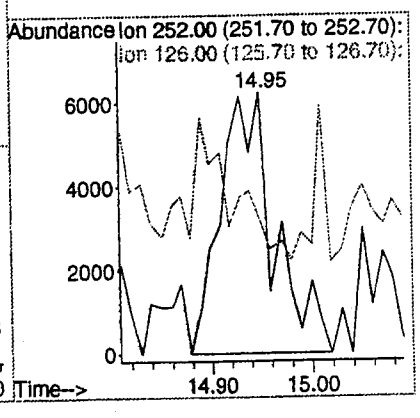




#88
Benzofluoranthenes
Concen: 68.97 ug/L
RT: 14.94 min Scan# 1494
Delta R.T. 0.05 min
Lab File: A00452.D
Acq: 03 Sep 2002 17:20

Tgt Ion:252 Resp: 22904

Ion	Ratio	Lower	Upper
252	100		
126	45.5	0.0	56.5



Quantitation Report

Data File : C:\MSDCHEM\1\DATA\A00448.D
Acq On : 03 Sep 2002 15:36
Sample : 108164-3 MS SS0608 &2.0 SOIL 1:10
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 04 09:56:35 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:55:04 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.87	150	37708	1000.00 ul/l	0.01
22) Naphthalene - d8 (I)	7.45	136	105200	1000.00 ug/L	0.02
38) Acenaphthene - d10 (I)	9.39	162	88776	1000.00 ug/L	0.02
62) Phenanthrene - d10 (I)	10.93	188	176992	1000.00 ug/L	0.02
80) Chrysene - d12 (I)	13.69	240	197337	1000.00 ul/l	0.02
86) Perylene - d12 (I)	15.38	264	220632	1000.00 ug/L	0.04
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.26	112	1367	48.78 ug/L	0.00
7) Phenol - d5 (S)	5.64	99	2067	61.52 ug/L	0.08
23) Nitrobenzene - d5 (S)	6.64	82	1411	41.85 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.70	172	5805	47.97 ug/L	0.03
65) 2,4,6 - Tribromophenol (S)	10.23	330	2331	59.07 ug/L	0.00
79) p - Terphenyl - d14 (S)	12.62	244	11213	56.54 ug/L	0.03

Target Compounds					Qvalue
8) Phenol	5.65	94	3172	94.72 ug/L	22
10) 2-Chlorophenol	5.67	128	2632	79.90 ug/L	77
13) 1,4-Dichlorobenzene	5.89	146	1297	34.30 ug/L	50
19) n-Nitroso-di-n-propylamine	6.56	70	1892	87.18 ug/L #	49
29) Benzoic Acid	7.38	105	1566	89.63 ug/L #	24
31) 1,2,4-Trichlorobenzene	7.41	180	1771	43.92 ug/L	99
35) 4-Chloro-3-methylphenol	8.21	107	6556	143.35 ug/L	91
36) 2-Methylnaphthalene	8.26	141	770	9.29 ug/L #	14
37) 1-Methylnaphthalene	8.37	141	707	9.18 ul/l #	1
45) Biphenyl	9.42	154	5350	56.16 ug/L #	1
48) Acenaphthylene	9.23	152	1561	9.32 ug/L #	1
51) Acenaphthene	9.42	153	8483	75.55 ug/L	79
55) 2,4-Dinitrotoluene	9.67	165	2888	85.62 ug/L	81
58) Diethylphthalate	9.95	149	5486	38.50 ug/L	91
59) Fluorene	9.96	166	1325	11.61 ug/L #	1
70) Pentachlorophenol	10.82	266	2805	88.01 ug/L	37
71) Phenanthrene	10.95	178	10117	47.33 ug/L	49
72) Anthracene	10.99	178	3546m	17.16 ug/L	
76) Fluoranthene	12.19	202	27855	133.18 ug/L	90
77) Pyrene	12.42	202	38522	182.76 ug/L	99
81) Butylbenzylphthalate	13.21	149	6713	39.73 ug/L #	10
82) Benzo(a)anthracene	13.68	228	17215	74.01 ug/L	4
83) 3,3'-Dichlorobenzidine	13.69	252	11455+	115.55 ug/L #	69
84) Chrysene	13.72	228	19599m	88.66 ug/L	
85) bis(2-Ethylhexyl)phthalate	13.85	149	95303	327.67 ug/L	100
88) Benzofluoranthenes	14.91	252	23867	89.54 ug/L #	1
89) Benzo(a)pyrene	15.30	252	13908m	56.59 ug/L	
90) Indeno(1,2,3-cd)pyrene	17.00	276	14851	51.22 ug/L #	1
91) Dibenz(a,h)anthracene	16.98	278	19001	71.66 ug/L #	48
92) Benzo(g,h,i)perylene	17.43	276	16181	63.93 ug/L #	69

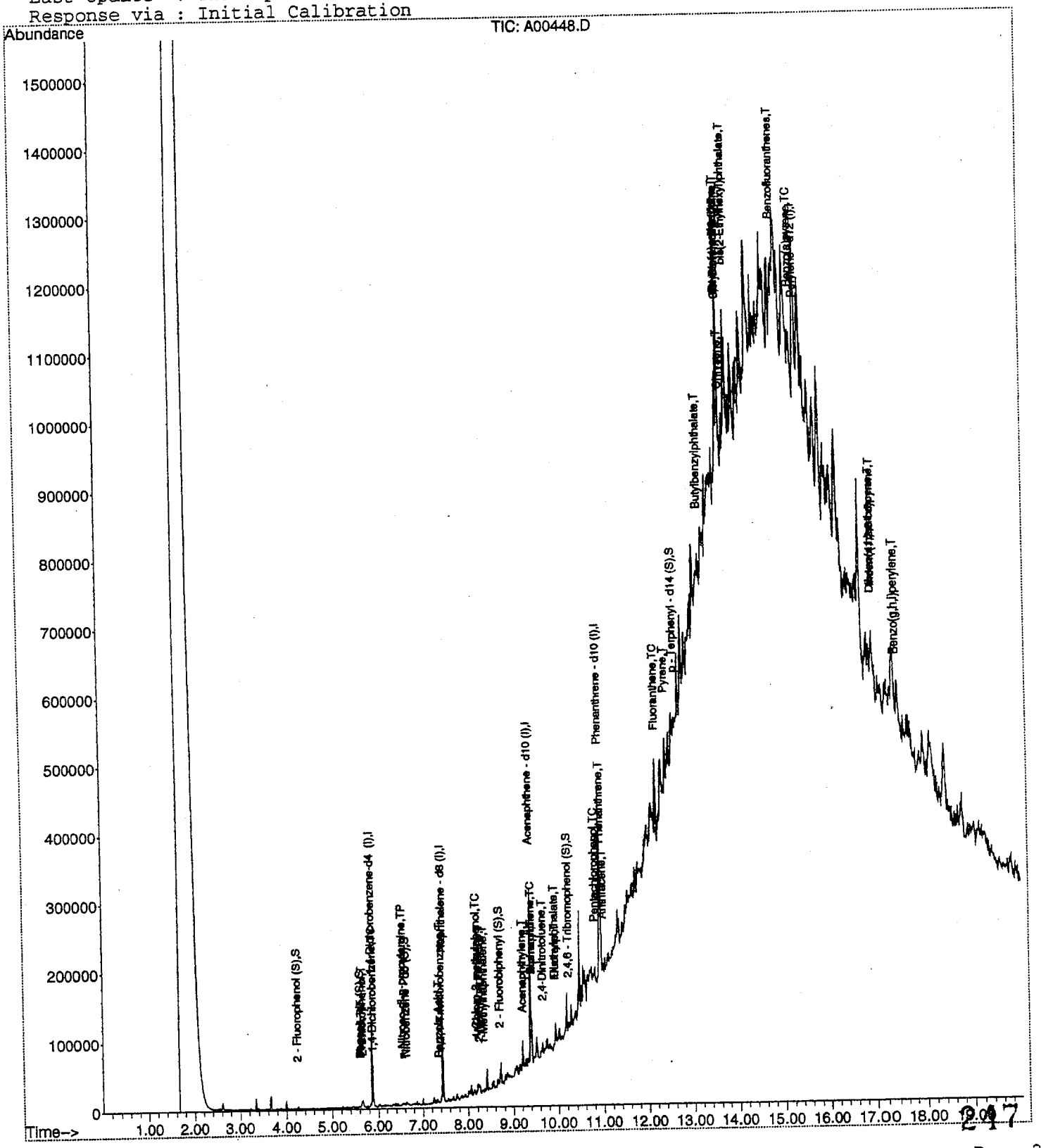
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00448.D
Acq On : 03 Sep 2002 15:36
Sample : 108164-3 MS SS0608 &2.0 SOIL 1:10
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 4 9:58 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 12:10:45 2002
Response via : Initial Calibration



A00448.D SV5-082902.M Thu Sep 05 13:57:13 2002

Data File : C:\MSDCHEM\1\DATA\A00449.D Vial: 0
Acq On : 03 Sep 2002 16:02 Operator:
Sample : 108164-3 MSD SS0608 &2.0 SOIL 1:10 Inst :
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 04 12:25:54 2002 Quant Results File: SV5-082902.RES

Quant Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Wed Sep 04 09:55:04 2002
Response via : Initial Calibration
DataAcq Meth :

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichorobenzene-d4 (I)	5.87	150	39294	1000.00 ul/l	0.01
22) Naphthalene - d8 (I)	7.44	136	107546	1000.00 ug/L	0.01
38) Acenaphthene - d10 (I)	9.39	162	92263	1000.00 ug/L	0.02
62) Phenanthrene - d10 (I)	10.92	188	168398	1000.00 ug/L	0.01
80) Chrysene - d12 (I)	13.69	240	193136	1000.00 ul/l	0.02
86) Perylene - d12 (I)	15.37	264	215580	1000.00 ug/L	0.03
System Monitoring Compounds					
4) 2 - Fluorophenol (S)	4.27	112	1312	44.93 ug/L	0.01
7) Phenol - d5 (S)	5.65	99	1754	50.10 ug/L	0.09
23) Nitrobenzene - d5 (S)	6.64	82	1233	35.78 ug/L	0.00
43) 2 - Fluorobiphenyl (S)	8.70	172	4703	37.39 ug/L	0.03
65) 2,4,6 - Tribromophenol (S)	10.24	330	1734	46.19 ug/L	0.02
79) p - Terphenyl - d14 (S)	12.62	244	11307	59.93 ug/L	0.03

Target Compounds					Qvalue
8) Phenol	5.66	94	2643	75.74 ug/L	15
10) 2-Chlorophenol	5.68	128	2564	74.70 ug/L	73
13) 1,4-Dichlorobenzene	5.89	146	1261	32.00 ug/L	62
19) n-Nitroso-di-n-propylamine	6.56	70	1352	59.78 ug/L #	49
29) Benzoic Acid	7.45	105	1136	63.60 ug/L #	1
31) 1,2,4-Trichlorobenzene	7.41	180	1773	43.01 ug/L	95
35) 4-Chloro-3-methylphenol	8.22	107	4883	104.44 ug/L	83
36) 2-Methylnaphthalene	8.25	141	816	9.63 ug/L #	43
45) Biphenyl	9.42	154	4742	47.90 ug/L #	1
50) 3-Nitroaniline	9.41	138	718	37.22 ug/L	85
51) Acenaphthene	9.42	153	6815	58.40 ug/L	85
55) 2,4-Dinitrotoluene	9.67	165	2663	75.97 ug/L	78
57) 2,3,5,6-Tetrachlorophenol	9.76	232	235	6.94 ul/l #	51
61) 4-Nitroaniline	9.41	138	718	37.22 ug/L #	1
64) n-Nitrosodiphenylamine	10.14	169	2021	16.97 ug/L #	1
69) Atrazine	10.83	200	2468+	272.52 ug/L	69
70) Pentachlorophenol	10.82	266	2469	81.42 ug/L	63
71) Phenanthrene	10.95	178	3686	18.13 ug/L	1
72) Anthracene	10.95	178	3686	18.75 ug/L	1
73) Octadecane	10.90	57	7820	123.49 ug/L #	27
76) Fluoranthene	12.19	202	8746	43.95 ug/L	94
77) Pyrene	12.41	202	23407	116.72 ug/L	96
78) Benzidine	12.39	184	2394	77.47 ug/L	100
82) Benzo(a)anthracene	13.58	228	1420	6.24 ug/L	5
83) 3,3'-Dichlorobenzidine	13.71	252	3559+	36.68 ug/L	44
84) Chrysene	13.72	228	4040	18.67 ug/L	16
85) bis(2-Ethylhexyl)phthalate	13.84	149	107561	377.86 ug/L	100
88) Benzofluoranthenes	14.91	252	9931	38.13 ug/L #	1
89) Benzo(a)pyrene	15.23	252	11726	48.83 ug/L #	1
90) Indeno(1,2,3-cd)pyrene	16.98	276	8266	29.18 ug/L #	58
91) Dibenz(a,h)anthracene	16.98	278	4964	19.16 ug/L #	48
92) Benzo(g,h,i)perylene	17.44	276	6794	27.47 ug/L #	69

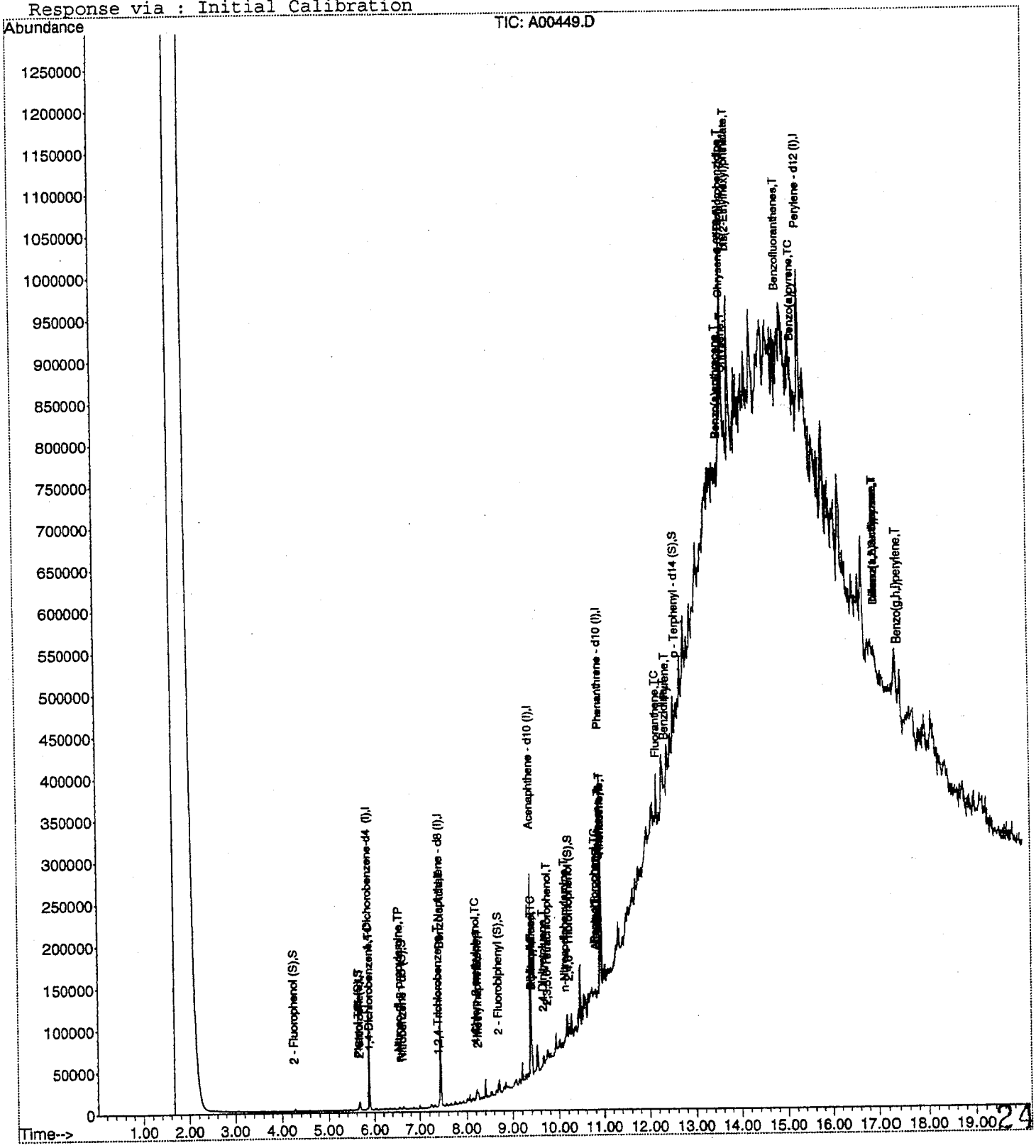
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\MSDCHEM\1\DATA\A00449.D
Acq On : 03 Sep 2002 16:02
Sample : 108164-3 MSD SS0608 &2.0 SOIL 1:10
Misc :
MS Integration Params: RTEINT.P
Quant Time: Sep 5 13:58 2002

Vial: 0
Operator:
Inst :
Multiplr: 1.00

Quant Results File: SV5-082902.RES

Method : C:\MSDCHEM\1\METHODS\SV5-082902.M (RTE Integrator)
Title : USEPA Method 8270 Calibration
Last Update : Thu Sep 05 12:10:45 2002
Response via : Initial Calibration



LABORATORY WORKSHEETS

Semivolatile GCMS Worksheet - total

QC Level:Tier IV	Due: 09/04/02	Work Order - 108166
Matrix:solid		
CH2M Hill	Proj. Manager:Katie Downie	

LL

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

See attached for requested DL

Sample number 108166-1		
Sample Weight/Volume	Client Sample ID	PP011801
	Date Received	8/23/02
	Date Sampled	**8/20/02 4:00:00 PM**
Full 8270		

Sample number 108166-2		
Sample Weight/Volume	Client Sample ID	PP011809
	Date Received	8/23/02
	Date Sampled	**8/21/02 3:00:00 PM**
Full 8270		

Sample number 108166-3		
Sample Weight/Volume	Client Sample ID	PP011810
	Date Received	8/23/02
	Date Sampled	**8/21/02 4:00:00 PM**
Full 8270		

550608

Analyst _____ Date 9/5/02

Reviewed by _____ Date 9/10/02

Organics worksheet v4.0 51
If you have suggestions for changes please bring them to me - Dennis

Semivolatile GCMS Worksheet - total

QC Level:Tier IV	**Due: 09/04/02**
Matrix:liquid	**Work Order - 108166**
CH2M Hill	Proj. Manager:Katie Downie

L-3

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

per C-O-C Low Level - please take extract down to 1ml

Thanks Ad

Sample number: 108166		Client Sample ID	PP0118EB01
Sample Weight/Volume	566mL	Date Received	8/23/02
		Date Sampled	**8/21/02 1:15:00 PM**

Full 8270

10ml AS Per Katie

Analyst [signature] Date 8/29/02

Reviewed by [signature] Date 9/3/02

Organics worksheet v4.0 252
If you have suggestions for changes please bring them to me - Dennis

Printed - 8/27/02

Semivolaile Analysis by USEPA Method 8270

QC Batch ID	SS0608	
Sample Matrix	Solid	
Surrogate Std. No.	980-52-06	
Expiration date	8/1/03	Weighed By/Date TM 8-27-02
8270 Matrix Spike No.	01/19/03	Extracted By/Date
Expiration date	1/19/03	COE - Portland 8270
Internal Standard No.	980-56-01	
Expiration date	8/15/03	
MeCl2 Lot No.		
NH2SO4 Lot No.	V23154	
		Spike Witness Signature/Date
Extraction Method	3550 Sonication	

8/27/02

QC Sample Type	QC Identifier	Sample Weight (g)	Final Volume (ml)	Dry Spike (ug)	MS/BS spike amt (ug)
Method Blank	SS0608	15.0000	2	10	NA
Duplicate					NA
Duplicate 2					NA
Blank Spike	SS0608	15.0000	2	10	10
Blank Spike Duplicate	SS0608				
Matrix Spike	[illegible]	15.3367	2	10	10
Matrix Spike Duplicate	[illegible]	15.1042	2	10	10
Matrix Spike 2					
Matrix Spike Duplicate 2					

Sample	Client Sample ID	Sample Weight (g)	Final Volume (ml)	Dry Spike (ug)	Comments
108160-1	PP011802	15.5281	2	10	
108160-2	PP011803	15.9643	2	10	
108160-3	PP011804D	15.1734	2	10	
108160-4	PP011805	16.9877	2	10	
108164-1	PP011806	18.8258	2	10	
108164-2	PP011807	17.1898	2	10	
108164-3	PP011808	15.2692	2	10	
108166-1	PP011801	15.4033	2	10	
108166-2	PP011809	15.9869	2	10	
108166-3	PP011810	16.9048	2	10	
108177-1	PP01M105	17.1575	2	10	
108177-2	PP01M106	16.0588	2	10	
108177-3	PP01M107	16.0562	2	10	
108177-4	PP01M108	15.7894	2	10	
108177-5	PP01M109	16.1271	2	10	
108177-6	PP01M110	16.5356	2	10	
108177-8	PP01M101	15.9979	2	10	
108177-9	PP01M102D	15.7006	2	10	
108177-10	PP01M103	16.3232	2	10	
108177-11	PP01M104	15.6354	2	10	

Printed - 8/28/02

Semivolatile Analysis by USEPA Method 8270

QCBatch ID	SW0431	pH2	pH7	pH12	
Sample Matrix	Liquid	X	X	X	
Surrogate Standard No.	980-35-01				
Expiration Date	1/8/03	Volume Measured By/Date			
8270 MS Spike No.	980-49-03	Extracted By/Date			
Expiration Date	11/29/02				
Internal Standard No.	980-34-07				
Expiration Date	12/21/02				
MeCl2 Lot Number	X10466				
Na2SO4 Lot Number	V23154				
		Spike Witness Signature/Date			
Extraction Method	3510 Separatory Funnel				

QC Sample Type	Sample Volume (ml)	Final Volume (ml)	Surr Spike (ul)	MS/BS spike amt (ul)
Method Blank	1000	1	10	N/A
Duplicate				N/A
Duplicate-2				N/A
Blank Spike	1000	1	10	10
Blank Spike Duplicate	1000	1	10	10
Matrix Spike				
Matrix Spike Duplicate				
Matrix Spike-2				
Matrix Spike Duplicate-2				

Sample		Sample Volume (ml)	Final Volume (ml)	Surr Spike (ul)	Comments
108166-4	PP0118EB01	566	1	10	
108177-7	PP01M1EB02	499	1	10	

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6a **Sample Information**

Th Client Name	
Work Order Number	
Sample Number	
QC Batch Number	ss0608
Client Sample ID	
Date Received	
Date Prepared	08-27-02
Date Analyzed	09-03-02
Sample matrix type	solid
QC sample type	blank

Related Blank: noblank

Sample weight (g)	15	=	0.015 /kg	Calc. Fact.	0.133333333
Extract volume (ml)	2	=	2 ml	Dry Weight	15 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	66.66666667
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	464.0347		92.8	OK		
x	Phenol - d5	425.9043		85.2	OK		
x	Nitrobenzene - d5	510.202		102	OK		
x	2 - Fluorobiphenyl	384.9533		77	OK		
x	2,4,6 - Tribromophenol	419.284		83.9	OK		
x	p - Terphenyl - d14	448.4938		89.7	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Butylbenzylphthalate	5.0263			ND		13.3
x	bis(2-Ethylhexyl)phthalate	7.0397			ND		13.3

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6a **Sample Information**

Th Client Name	CH2M Hill	
Work Order Number	108166	
Sample Number	1	Related Blank: ss0608
QC Batch Number	ss0608	
Client Sample ID	PP011801	
Date Received	08-23-02	
Date Prepared	08-27-02	
Date Analyzed	09-03-02	
Sample matrix type	solid	
QC sample type	sample	

Sample weight (g)	15.4033	=	0.0154 /kg	Calc. Fact.	1.810405835
Extract volume (ml)	2	=	2 ml	Dry Weight	11.04724676 g
Dilution Factor	10	=	10	Sample Units	ug/kg
% Solids	71.72	=	0.7172	Spike Factor	90.52029177
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	18.6057		37.2	OK		
x	Phenol - d5	28.6413		57.3	OK		
x	Nitrobenzene - d5	24.03		48.1	OK		
x	2 - Fluorobiphenyl	15.6747	x9	31.3	LOW		
x	2,4,6 - Tribromophenol	46.7537		93.5	OK		
x	p - Terphenyl - d14	41.5773		83.2	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Benzoic Acid	152.1919			276	J	905
x	Naphthalene	4.93			~~8.93~~	J	18.1
x	Fluorene	4.98			9.02	J	18.1
x	Phenanthrene	38.9545			70.5		18.1
x	Anthracene	8.7403			15.8	J	18.1
x	Fluoranthene	85.4907			155		18.1
x	Pyrene	70.3829			127		18.1
x	Benzo(a)anthracene	40.4127			73.2		36.2
x	Chrysene	28.3834			51.4		36.2
x	bis(2-Ethylhexyl)phthalate	76.2085			138	J	181
x	Benzofluoranthenes	61.026			110		36.2
x	Benzo(a)pyrene	32.6728			59.2		18.1
x	Indeno(1,2,3-cd)pyrene	28.989			52.5		18.1
x	Benzo(g,h,i)perylene	23.1891			42		18.1

$$\frac{152.19\ ug/L \times 0.002L \times 10}{0.0154033\ Kg \times 0.7172} = 276\ ug/Kg$$

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6a **Sample Information**

Th Client Name	CH2M Hill
Work Order Number	108166
Sample Number	2
QC Batch Number	ss0608
Client Sample ID	PP011809
Date Received	08-23-02
Date Prepared	08-27-02
Date Analyzed	09-04-02
Sample matrix type	solid
QC sample type	sample

Related Blank: ss0608

Sample weight (g)	15.9869	=	0.01599 /kg	Calc. Fact.	1.595897788
Extract volume (ml)	2	=	2 ml	Dry Weight	12.53213091 g
Dilution Factor	10	=	10	Sample Units	ug/kg
% Solids	78.39	=	0.7839	Spike Factor	79.79488941
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	26.1733		52.3	OK		
x	Phenol - d5	40.1518		80.3	OK		
x	Nitrobenzene - d5	32.34		64.7	OK		
x	2 - Fluorobiphenyl	28.7816		57.6	OK		
x	2,4,6 - Tribromophenol	49.56		99.1	OK		
x	p - Terphenyl - d14	44.18		88.4	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Naphthalene	10.7228			17.1		16
x	2-Methylnaphthalene	16.7157			26.7		16
x	Acenaphthylene	10.35			16.5		16
x	Acenaphthene	15.3227			24.5		16
x	Fluorene	23.5377			37.6		16
x	Phenanthrene	37.0293			59.1		16
x	Anthracene	10.9419			17.5		16
x	Fluoranthene	63.5022			101		16
x	Pyrene	87.6614			140		16
x	Butylbenzylphthalate	95.7182			153	J	160
x	Benzo(a)anthracene	37.6648			60.1		31.9
x	Chrysene	52.1445			83.2		31.9
x	bis(2-Ethylhexyl)phthalate	298.8855			477		160

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6a **Sample Information**

Th	Client Name	CH2M Hill
	Work Order Number	108166
	Sample Number	3
	QC Batch Number	ss0608
	Client Sample ID	PP011810
	Date Received	08-23-02
	Date Prepared	08-27-02
	Date Analyzed	09-04-02
	Sample matrix type	solid
	QC sample type	sample

Related Blank: ss0608

Sample weight (g)	16.9048	=	0.0169 /kg	Calc. Fact.	2.264298422
Extract volume (ml)	2	=	2 ml	Dry Weight	8.832758 g
Dilution Factor	10	=	10	Sample Units	ug/kg
% Solids	52.25	=	0.5225	Spike Factor	113.2149211
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	48.085		96.2	OK		
x	Phenol - d5	50.0032		100	OK		
x	Nitrobenzene - d5	48.442		96.9	OK		
x	2 - Fluorobiphenyl	33.1578		66.3	OK		
x	2,4,6 - Tribromophenol	46.2182		92.4	OK		
x	p - Terphenyl - d14	48		96	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	3-&4-Methylphenol	30.599			69.3	J	453
x	Naphthalene	5.5977			12.7	J	22.6
x	Phenanthrene	20.3039			46		22.6
x	Fluoranthene	16.6149			37.6		22.6
x	Pyrene	24.0977			54.6		22.6
x	bis(2-Ethylhexyl)phthalate	73.5026			166	J	226
	Benzidine	23.4243			53	J	1130

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6a **Sample Information**

Thi Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**3**
QC Batch Number	**ss0608**
Client Sample ID	**PP011808**
Date Received	**08-23-02**
Date Prepared	**08-27-02**
Date Analyzed	**09-03-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blank: ss0608

Sample weight (g)	**15.2692**	=	0.01527 /kg	Calc. Fact.	1.684230831
Extract volume (ml)	**2**	=	2 ml	Dry Weight	11.87485684 g
Dilution Factor	**10**	=	10	Sample Units	ug/kg
% Solids	**77.77**	=	0.7777	Spike Factor	84.21154153
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	27.0056		54	**OK**		
x	Phenol - d5	32.4762		65	**OK**		
x	Nitrobenzene - d5	30.76		61.5	**OK**		
x	2 - Fluorobiphenyl	29.9922		60	**OK**		
x	2,4,6 - Tribromophenol	45.33		90.7	**OK**		
x	p - Terphenyl - d14	63.8318		128	**OK**		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	4-Chloro-3-methylphenol	40.376			68	J	168
x	2-Methylnaphthalene	7.3723			12.4	J	16.8
x	Acenaphthylene	7.2954			12.3	J	16.8
x	Acenaphthene	8.0261			13.5	J	16.8
x	Phenanthrene	35.1633			59.2		16.8
x	Anthracene	8.4843			14.3	J	16.8
x	Fluoranthene	85.1112			143		16.8
x	Pyrene	86.2422			145		16.8
x	Benzo(a)anthracene	41.2106			69.4		33.7
x	bis(2-Ethylhexyl)phthalate	237.0001			399		168
x	Benzofluoranthenes	68.9707			116		33.7

reviewed previously

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6a **Sample Information**

Thi Client Name	CH2M Hill
Work Order Number	108164
Sample Number	3
QC Batch Number	ss0608
Client Sample ID	PP011808
Date Received	08-23-02
Date Prepared	08-27-02
Date Analyzed	09-03-02
Sample matrix type	solid
QC sample type	ms

Related Blank: ss0608

Sample weight (g)	15.3367	=	0.01534 /kg	Calc. Fact.	1.676818181
Extract volume (ml)	2	=	2 ml	Dry Weight	11.92735159 g
Dilution Factor	10	=	10	Sample Units	ug/kg
% Solids	77.77	=	0.7777	Spike Factor	83.84090906
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	48.7801		97.6	OK		
x	Phenol - d5	61.5217		123	OK		
x	Nitrobenzene - d5	41.8545		83.7	OK		
x	2 - Fluorobiphenyl	47.969		95.9	OK		
x	2,4,6 - Tribromophenol	59.0731		118	OK		
x	p - Terphenyl - d14	56.5437		113	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Phenol	94.7243			159	J	168
x	2-Chlorophenol	79.9014			134	J	168
x	1,4-Dichlorobenzene	34.3012			57.5	J	168
x	N-nitroso-di-n-propylamine	87.1778			146	J	168
x	Benzoic Acid	89.625			150	J	838
x	1,2,4-Trichlorobenzene	43.9177			73.6	J	168
x	4-Chloro-3-methylphenol	143.346			240		168
x	2-Methylnaphthalene	9.2869			15.6	J	16.8
x	Dimethylphthalate	5.9789			ND		168
x	Acenaphthylene	9.3211			15.6	J	16.8
x	Acenaphthene	75.5471			127		16.8
x	4-Nitrophenol	18.1659			ND		838
x	Dibenzofuran	5.6132			ND		168
x	2,4-Dinitrotoluene	85.6222			144	J	168
x	Diethylphthalate	38.4955			64.5	J	168
x	Fluorene	11.6114			19.5		16.8
x	4,6-Dinitro-2-methylphenol	6.9261			ND		838
x	N-Nitrosodiphenylamine	6.984			ND		168
x	Pentachlorophenol	88.0069			148	J	168
x	Phenanthrene	47.3342			79.4		16.8

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x	Anthracene	17.1591		28.8		16.8
x	Di-n-butylphthalate	12.7859	ND			419
x	Fluoranthene	133.1764		223		16.8
x	Pyrene	182.7637		306		16.8
x	Butylbenzylphthalate	39.7306		66.6	J	168
x	3,3'-Dichlorobenzidine	115.5453		194		168
x	Benzo(a)anthracene	74.009		124		33.5
x	Chrysene	88.6587		149		33.5
x	bis(2-Ethylhexyl)phthalate	327.6737		549		168
x	Di-n-octylphthalate	19.8782	ND			168
x	Benzofluoranthenes	89.5372		150		33.5
x	Benzo(a)pyrene	56.5927		94.9		16.8
x	Indeno(1,2,3-cd)pyrene	51.2171		85.9		16.8
x	Dibenz(a,h)anthracene	71.6619		120		16.8
x	Benzo(g,h,i)perylene	63.9261		107		16.8

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6a **Sample Information**

Thi Client Name	CH2M Hill
Work Order Number	108164
Sample Number	3
QC Batch Number	ss0608
Client Sample ID	PP011808
Date Received	08-23-02
Date Prepared	08-27-02
Date Analyzed	09-03-02
Sample matrix type	solid
QC sample type	msd

Related Blank: ss0608

Sample weight (g)	15.1042	=	0.0151 /kg	Calc. Fact.	1.70262956
Extract volume (ml)	2	=	2 ml	Dry Weight	11.74653634 g
Dilution Factor	10	=	10	Sample Units	ug/kg
% Solids	77.77	=	0.7777	Spike Factor	85.131478
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	20
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	44.9279		89.9	OK		
x	Phenol - d5	50.0985		100	OK		
x	Nitrobenzene - d5	35.7766		71.6	OK		
x	2 - Fluorobiphenyl	37.394		74.8	OK		
x	2,4,6 - Tribromophenol	46.1863		92.4	OK		
x	p - Terphenyl - d14	59.9275		120	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Phenol	75.7413			129	J	170
x	2-Chlorophenol	74.6954			127	J	170
x	1,4-Dichlorobenzene	32.003			54.5	J	170
x	N-nitroso-di-n-propylamine	59.7818			102	J	170
x	Benzoic Acid	63.5971			108	J	851
x	1,2,4-Trichlorobenzene	43.0081			73.2	J	170
x	4-Chloro-3-methylphenol	104.4371			178		170
x	2-Methylnaphthalene	9.627			16.4	J	17
x	3-Nitroaniline	37.2181			63.4	J	170
x	Acenaphthene	58.3986			99.4		17
x	2,4-Dinitrotoluene	75.9676			129	J	170
x	Diethylphthalate	10.0535			ND		170
x	4-Chlorophenylphenylether	10.6471			ND		170
x	4-Nitroaniline	37.2181			63.4	J	170
x	N-Nitrosodiphenylamine	16.9737			28.9	J	170
x	Pentachlorophenol	81.4182			139	J	170
x	Phenanthrene	18.1257			30.9		17
x	Anthracene	18.7468			31.9		17
x	Di-n-butylphthalate	21.18			ND		426
x	Fluoranthene	43.9491			74.8		17

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x	Pyrene	116.7195		199		17
x	3,3'-Dichlorobenzidine	36.6801		62.5	J	170
x	Benzo(a)anthracene	6.2375		10.6	J	34.1
x	Chrysene	18.673		31.8	J	34.1
x	bis(2-Ethylhexyl)phthalate	377.8637		643		170
x	Di-n-octylphthalate	18.5669	ND			170
x	Benzofluoranthenes	38.1293		64.9		34.1
x	Benzo(a)pyrene	48.8321		83.1		17
x	Indeno(1,2,3-cd)pyrene	29.1753		49.7		17
x	Dibenz(a,h)anthracene	19.1604		32.6		17
x	Benzo(g,h,i)perylene	27.47		46.8		17

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6a **Sample Information**

Thi Client Name	CH2M Hill
Work Order Number	108166
Sample Number	
QC Batch Number	ss0608
Client Sample ID	
Date Received	08-23-02
Date Prepared	08-27-02
Date Analyzed	09-03-02
Sample matrix type	solid
QC sample type	bs

Related Blank: ss0608

Sample weight (g)	15	=	0.015 /kg	Calc. Fact.	0.133333333
Extract volume (ml)	2	=	2 ml	Dry Weight	15 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	66.66666667
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	363.8672		72.8	OK		
x	Phenol - d5	373.9798		74.8	OK		
x	Nitrobenzene - d5	383.2885		76.7	OK		
x	2 - Fluorobiphenyl	328.7413		65.7	OK		
x	2,4,6 - Tribromophenol	358.2933		71.7	OK		
x	p - Terphenyl - d14	387.1407		77.4	OK		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Phenol	632.2762			84.3		13.3
x	2-Chlorophenol	648.9224			86.5		13.3
x	1,4-Dichlorobenzene	365.4676			48.7		13.3
x	N-nitroso-di-n-propylamine	419.7338			56		13.3
x	Benzoic Acid	39.9386			5.33	J	66.7
x	1,2,4-Trichlorobenzene	401.3421			53.5		13.3
x	4-Chloro-3-methylphenol	639.2582			85.2		13.3
x	2-Methylnaphthalene	18.9762			2.53		1.33
x	Acenaphthene	407.8895			54.4		1.33
x	4-Nitrophenol	381.7455			50.9	J	66.7
x	2,4-Dinitrotoluene	500.2868			66.7		13.3
x	Pentachlorophenol	249.3555			33.2		13.3
x	Di-n-butylphthalate	7.6756		ND			33.3
x	Pyrene	441.2636			58.8		1.33
x	Butylbenzylphthalate	9.8999		ND			13.3
x	bis(2-Ethylhexyl)phthalate	34.8859		ND			13.3

reviewed
previously

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6a **Sample Information**

Th Client Name	
Work Order Number	
Sample Number	Related Blank: noblank
QC Batch Number	sw0431
Client Sample ID	
Date Received	
Date Prepared	08-28-02
Date Analyzed	08-28-02
Sample matrix type	liquid
QC sample type	blank

Sample volume (ml)	1000	=	1 /L	Calc. Fact.	0.001
Extract volume (ml)	1	=	1 ml	Dry Weight	-
Dilution Factor		=	1	Sample Units	ug/L
% Solids		=	1	Spike Factor	1
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	0.1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	300.1425		30	OK	10	117
x	Phenol - d5	207.9745		20.8	OK	10	90
x	Nitrobenzene - d5	607.4913		60.7	OK	50	145
x	2 - Fluorobiphenyl	582.8701		58.3	OK	55	130
x	2,4,6 - Tribromophenol	502.9854		50.3	OK	46	156
x	p - Terphenyl - d14	557.374		55.7	OK	54	139

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	2-Methylnaphthalene	22.7868			0.0228	J	0.1
x	Di-n-butylphthalate	34.1092			ND		0.5
x	Butylbenzylphthalate	67.9053			ND		0.5
x	bis(2-Ethylhexyl)phthalate	35.7147			ND		0.1

STL Seattle

6a **Sample Information**

Th	Client Name	CH2M Hill
	Work Order Number	
	Sample Number	Related Blank: sw0431
	QC Batch Number	sw0431
	Client Sample ID	
	Date Received	
	Date Prepared	08-28-02
	Date Analyzed	08-28-02
	Sample matrix type	liquid
	QC sample type	bs

Sample volume (ml)	1000	=	1 /L	Calc. Fact.	0.001
Extract volume (ml)	1	=	1 ml	Dry Weight	-
Dilution Factor		=	1	Sample Units	ug/L
% Solids		=	1	Spike Factor	1
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	0.1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	399.5223		40	OK	10	117
x	Phenol - d5	354.8843		35.5	OK	10	90
x	Nitrobenzene - d5	642.7078		64.3	OK	50	145
x	2 - Fluorobiphenyl	777.7934		77.8	OK	55	130
x	2,4,6 - Tribromophenol	750.0077		75	OK	46	156
x	p - Terphenyl - d14	950.682		95.1	OK	54	139

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Phenol	345.739			0.346		0.1
x	2-Chlorophenol	1226.957			1.23		0.1
x	1,4-Dichlorobenzene	693.993			0.694		0.1
x	N-nitroso-di-n-propylamine	885.0791			0.885		0.1
x	1,2,4-Trichlorobenzene	746.5683			0.747		0.1
x	4-Chloro-3-methylphenol	1191.894			1.19		0.1
x	2-Methylnaphthalene	37.1426		22.7868	0.0371	J B1	0.1
x	Acenaphthene	904.0421			0.904		0.01
x	4-Nitrophenol	315.3859			0.315	J	0.5
x	2,4-Dinitrotoluene	741.2398			0.741		0.1
x	Pentachlorophenol	1252.104			1.25		0.1
x	Pyrene	874.705			0.875		0.01
x	Butylbenzylphthalate	29.2842		ND			0.5
x	Di-n-octylphthalate	20.9324		ND			0.1

$\frac{1\,ml}{1000\,ml} \times 904\ ug/L$ Acenaphthene $= 0.904\ ug/L$

STL Seattle

6a **Sample Information**

Th Client Name	CH2M Hill
Work Order Number	
Sample Number	Related Blank: sw0431
QC Batch Number	sw0431
Client Sample ID	
Date Received	
Date Prepared	08-28-02
Date Analyzed	08-28-02
Sample matrix type	liquid
QC sample type	bsd

Sample volume (ml)	1000	=	1 /L	Calc. Fact.	0.001
Extract volume (ml)	1	=	1 ml	Dry Weight	-
Dilution Factor		=	1	Sample Units	ug/L
% Solids		=	1	Spike Factor	1
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	0.1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	313.9907		31.4	OK	10	117
x	Phenol - d5	283.3509		28.3	OK	10	90
x	Nitrobenzene - d5	511.3208		51.1	OK	50	145
x	2 - Fluorobiphenyl	515.5133	n	51.6	LOW	55	130
x	2,4,6 - Tribromophenol	504.3096		50.4	OK	46	156
x	p - Terphenyl - d14	668.8619		66.9	OK	54	139

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Phenol	247.1337			0.247		0.1
x	2-Chlorophenol	1094.754			1.09		0.1
x	1,4-Dichlorobenzene	596.9559			0.597		0.1
x	N-nitroso-di-n-propylamine	818.7316			0.819		0.1
x	1,2,4-Trichlorobenzene	633.0143			0.633		0.1
x	4-Chloro-3-methylphenol	1004.926			1		0.1
x	2-Methylnaphthalene	33.8631		22.7868	0.0339	J B1	0.1
x	Acenaphthene	711.9604			0.712		0.01
x	4-Nitrophenol	218.6107			0.219	J	0.5
x	2,4-Dinitrotoluene	578.7792			0.579		0.1
x	Pentachlorophenol	943.8157			0.944		0.1
x	Pyrene	698.6535			0.699		0.01
x	Butylbenzylphthalate	21.0566		ND			0.5
x	Di-n-octylphthalate	18.7927		ND			0.1
x	Acetophenone	77.9557			0.078	J	0.1

STL Seattle

6a **Sample Information**

Th	Client Name	CH2M Hill
	Work Order Number	108166
	Sample Number	4
	QC Batch Number	sw0431
	Client Sample ID	PP0118EB01
	Date Received	08-23-02
	Date Prepared	08-28-02
	Date Analyzed	08-28-02
	Sample matrix type	liquid
	QC sample type	sample

Related Blank: sw0431

Sample volume (ml)	566	=	0.566 /L	Calc. Fact.	0.001766784
Extract volume (ml)	1	=	1 ml	Dry Weight	-
Dilution Factor		=	1	Sample Units	ug/L
% Solids		=	1	Spike Factor	1.766784452
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	0.1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2 - Fluorophenol	270.935		27.1	OK	10	117
x	Phenol - d5	215.6125		21.6	OK	10	90
x	Nitrobenzene - d5	393.259	x9	39.3	LOW	50	145
x	2 - Fluorobiphenyl	470.5454	x9	47.1	LOW	55	130
x	2,4,6 - Tribromophenol	547.6568		54.8	OK	46	156
x	p - Terphenyl - d14	920.5277		92.1	OK	54	139

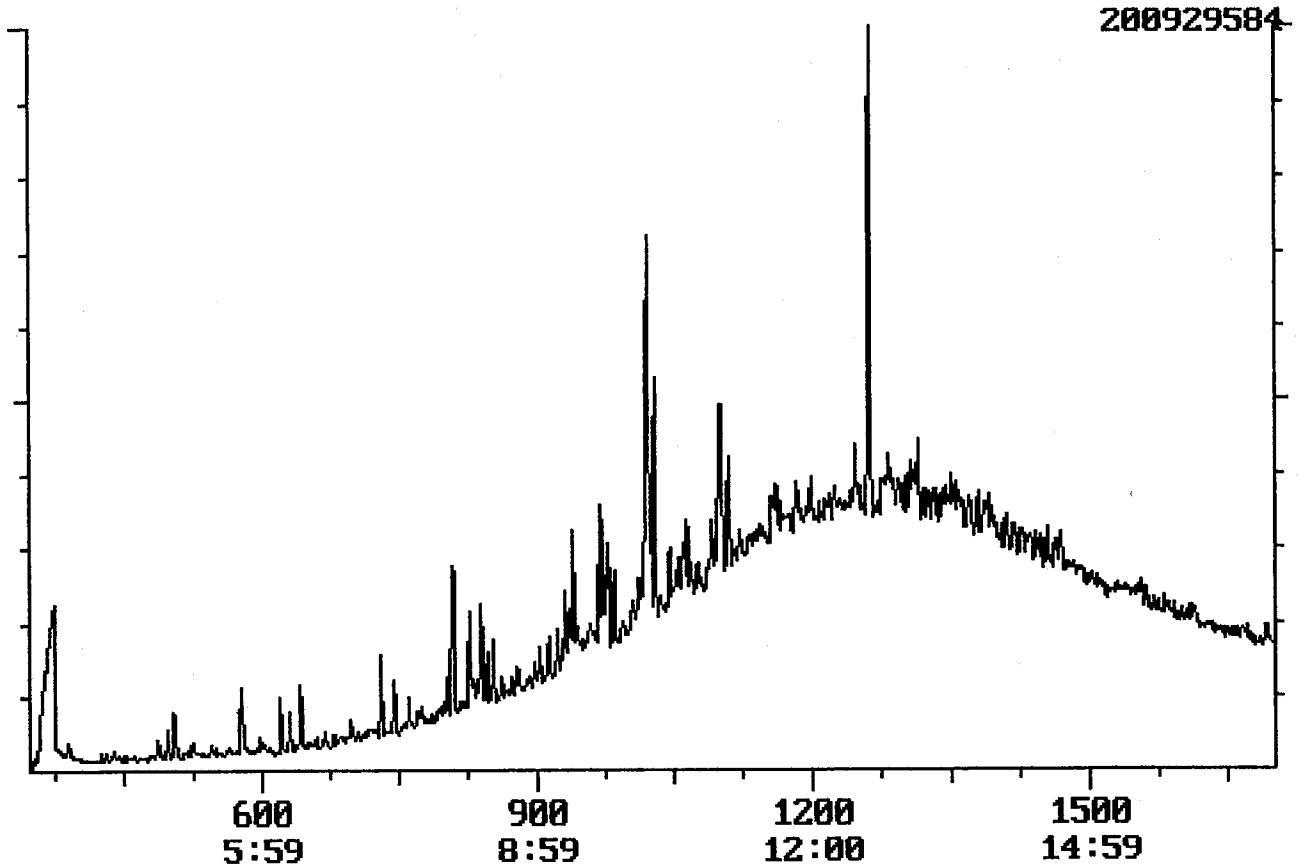
x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Benzoic Acid	93.6782			0.166	J	0.883
x	Naphthalene	40.1495			0.0709		0.0177
x	4-Chloro-3-methylphenol	115.7354			0.204		0.177
x	Diethylphthalate	10.7504			ND		0.177
x	Di-n-butylphthalate	29.9408			ND		0.883
x	Butylbenzylphthalate	19.8472			ND		0.883
x	bis(2-Ethylhexyl)phthalate	358.7595			0.634		0.177
x	Di-n-octylphthalate	125.6382			0.222		0.177

HERBICIDE DATA PACKAGE

SAMPLE DATA

SAMPLE CHROMATOGRAM

DATAFILE : L4096 ANALYSIS DATE : 08/30/02 02:07
SAMPLE : 108166-1 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



SAMPLE QUANTITATION REPORT

DATAFILE : L4096 ANALYSIS DATE : 08/30/02 02:07
SAMPLE : 108166-1 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.27	1.000	NG/UL	6657288
Phenanthrene D10 (IS)	9.76	1.000	NG/UL	9738054
2,4-Dichlorophenylacetic a	8.36	0.701	NG/UL	2975906
Dalapon			ND	
4-Nitrophenol			ND	
Dicamba			ND	
MCPP			ND	
MCPA			ND	
Dichloroprop			ND	
2,4-D			ND	
Pentachlorophenol	9.49	0.058	NG/UL	245487
Silvex (2,4,5-TP)			ND	
2,4,5-T			ND	
Dinoseb			ND	
2,4-DB			ND	

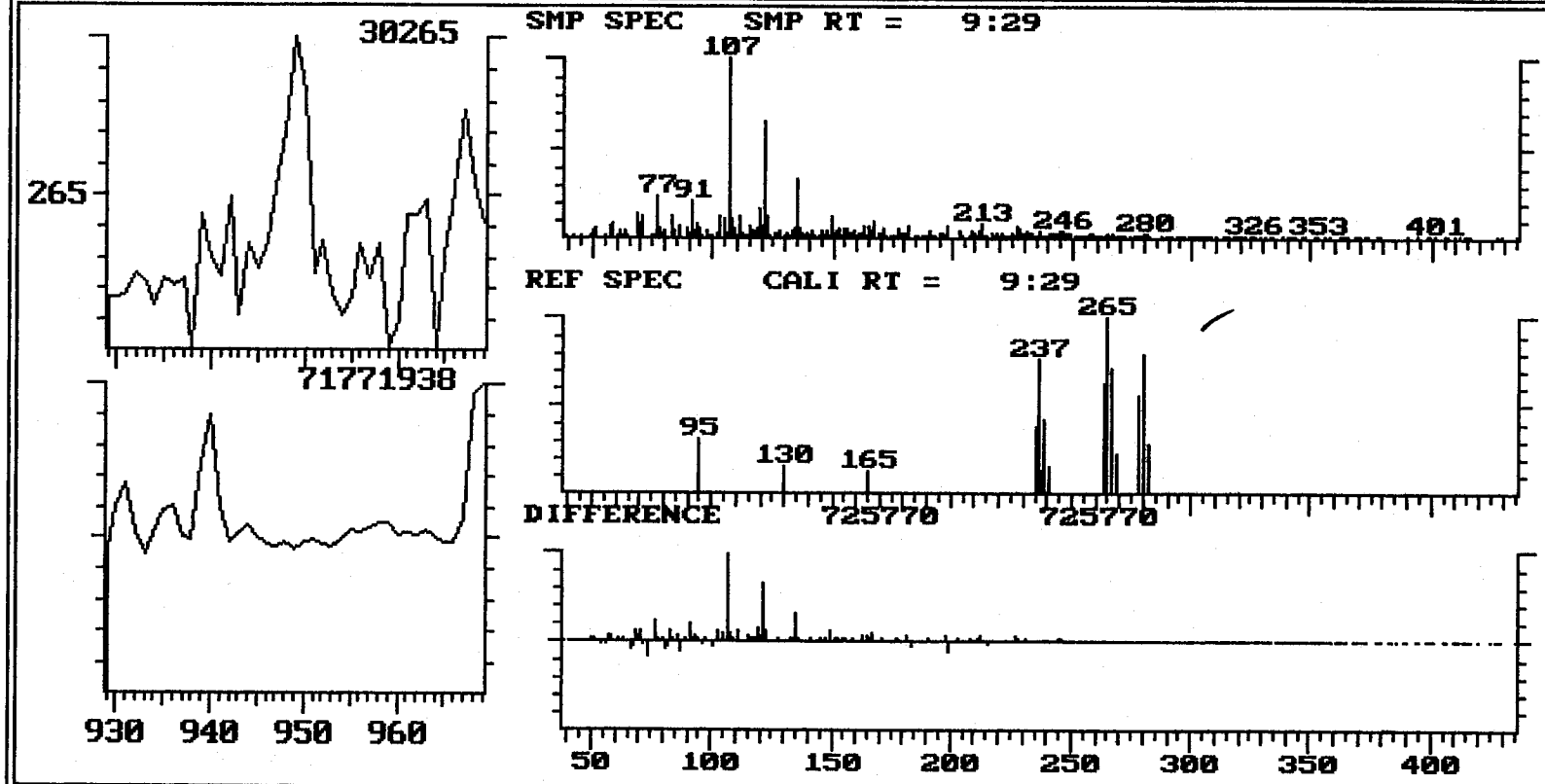
INTERNAL STANDARD QC REPORT

DATAFILE : L4096 ANALYSIS DATE : 08/30/02 02:07
SAMPLE : 108166-1 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.27	0.01	7512438	6657288	11
Phenanthrene D10 (IS)	9.74	9.76	0.02	11413836	9738054	15

SAMPLE QUANTITATION REPORT

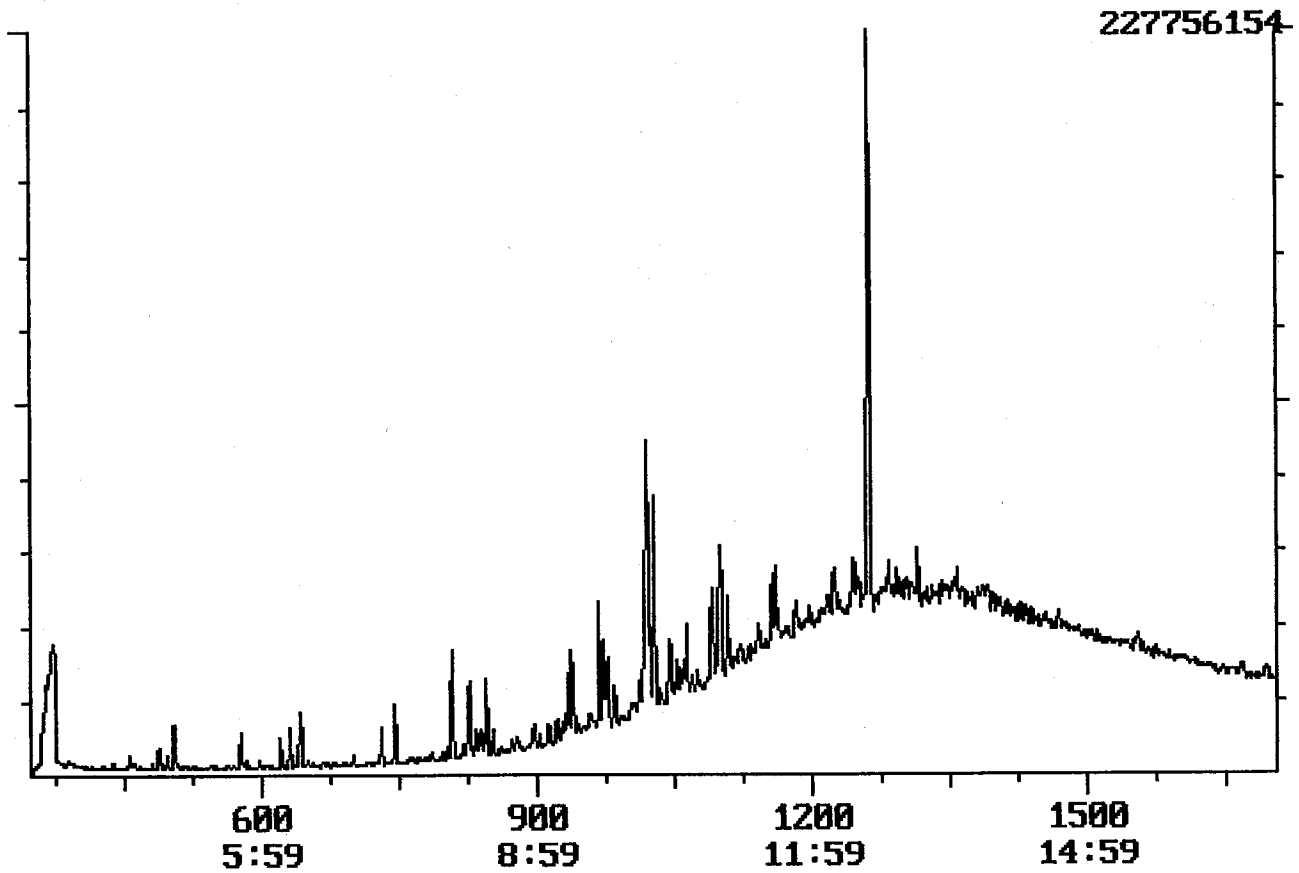
DATAFILE : L4096 ANALYSIS DATE : 08/30/02 02:07
SAMPLE : 108166-1 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



COMPOUND : Pentachlorophenol
AMOUNT : 0.058 NG/UL
FIT S/N : 796

SAMPLE CHROMATOGRAM

DATAFILE : L4097 ANALYSIS DATE : 08/30/02 02:30
SAMPLE : 108166-2 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4097 ANALYSIS DATE : 08/30/02 02:30
SAMPLE : 108166-2 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.26	1.000	NG/UL	7734367
Phenanthrene D10 (IS)	9.76	1.000	NG/UL	11907404
2,4-Dichlorophenylacetic a	8.35	0.663	NG/UL	3272293
Dalapon			ND	
4-Nitrophenol			ND	
Dicamba			ND	
MCPP			ND	
MCPA			ND	
Dichloroprop			ND	
2,4-D			ND	
Pentachlorophenol	9.49	0.043	NG/UL	221328
Silvex (2,4,5-TP)			ND	
2,4,5-T			ND	
Dinoseb			ND	
2,4-DB			ND	

INTERNAL STANDARD QC REPORT

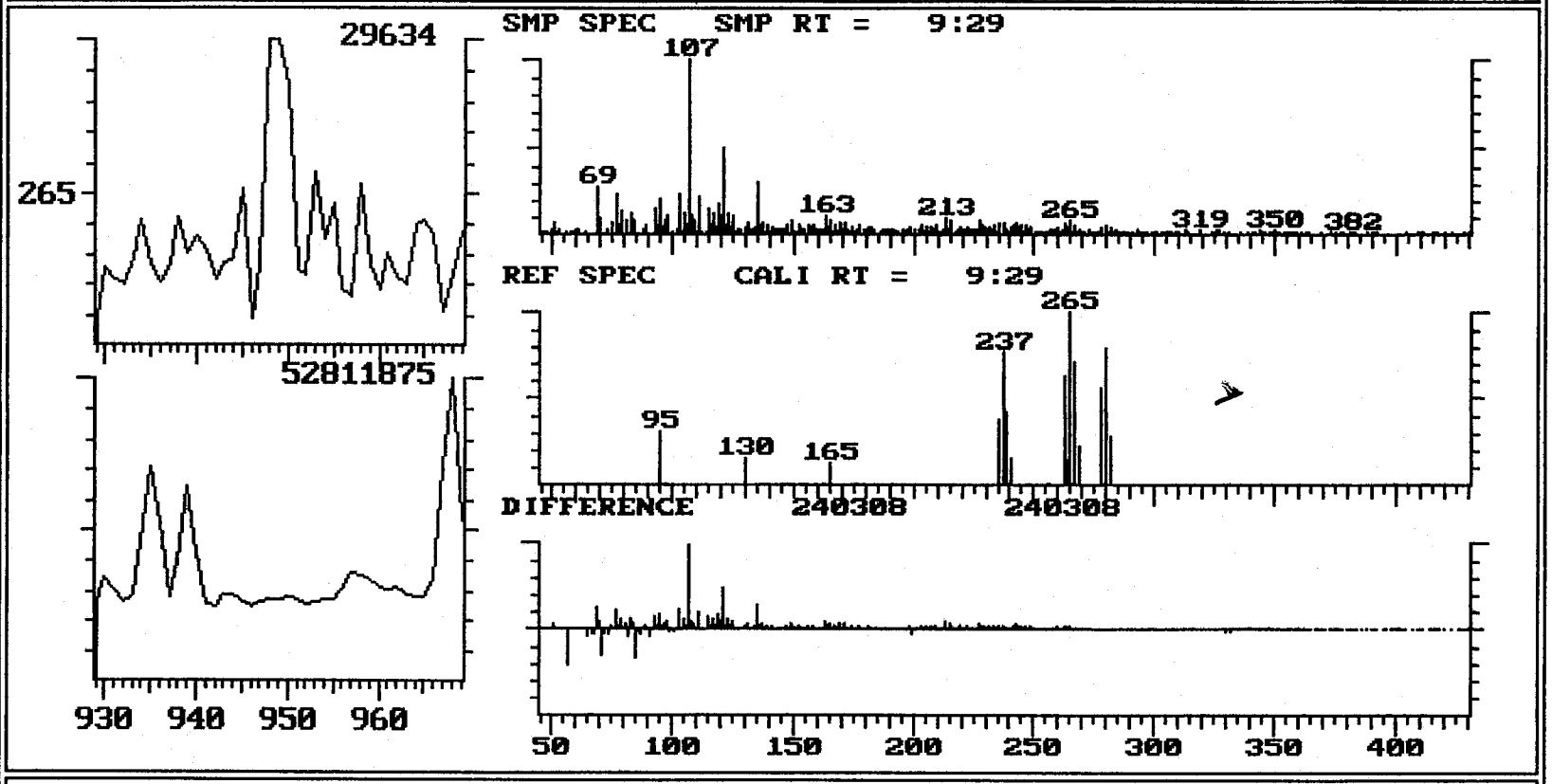
DATAFILE : L4097
SAMPLE : 108166-2 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

ANALYSIS DATE : 08/30/02 02:30

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.26	0.00	7512438	7734367	3
Phenanthrene D10 (IS)	9.74	9.76	0.02	11413836	11907404	4

SAMPLE QUANTITATION REPORT

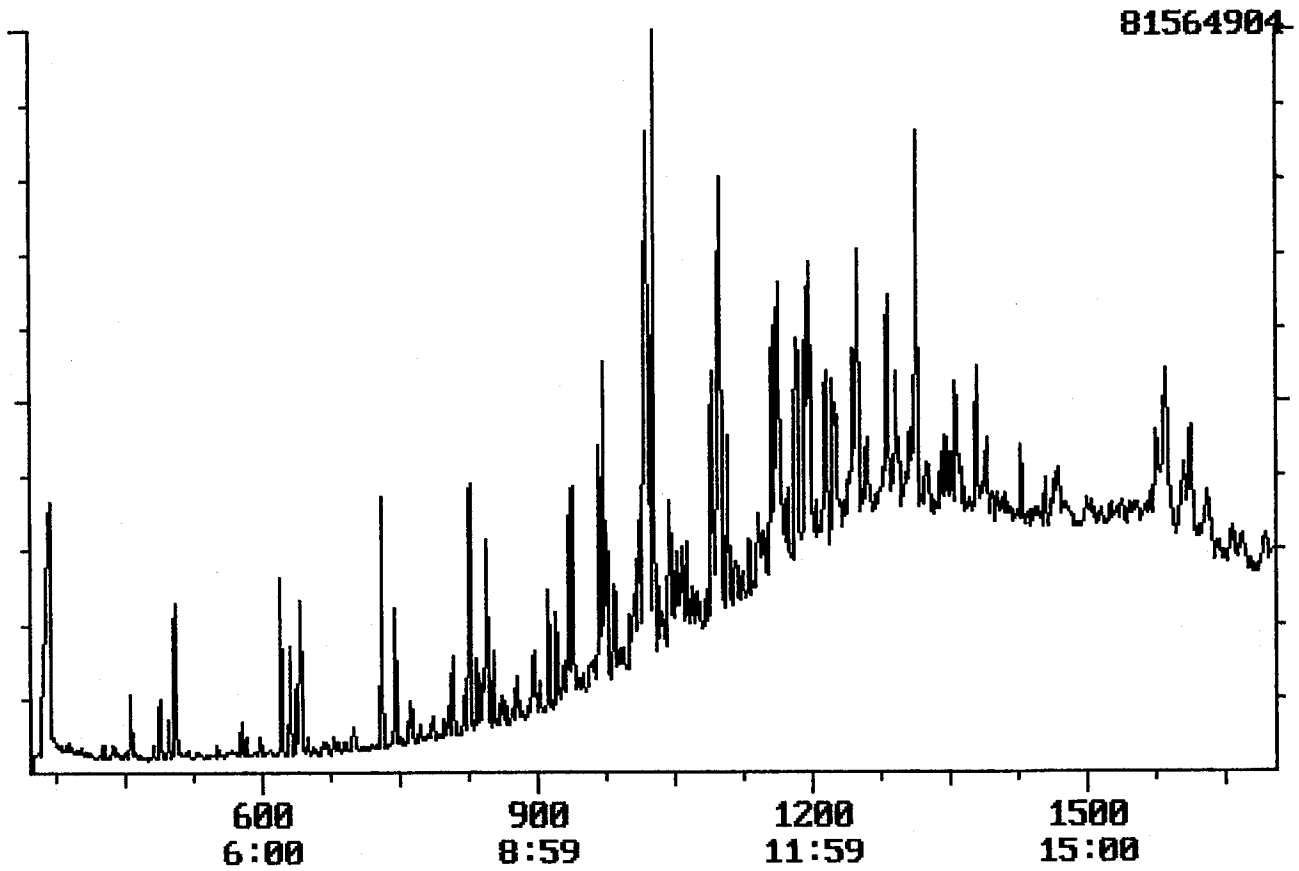
DATAFILE : L4097 ANALYSIS DATE : 08/30/02 02:30
SAMPLE : 108166-2 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



COMPOUND : Pentachlorophenol
AMOUNT : 0.043 NG/UL
FIT S/N : 842

SAMPLE CHROMATOGRAM

DATAFILE : L4098 ANALYSIS DATE : 08/30/02 02:54
SAMPLE : 108166-3 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4098 ANALYSIS DATE : 08/30/02 02:54
SAMPLE : 108166-3 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.26	1.000	NG/UL	8012545
Phenanthrene D10 (IS)	9.75	1.000	NG/UL	11411206
2,4-Dichlorophenylacetic a	8.35	0.688	NG/UL	3513593
Dalapon			ND	
4-Nitrophenol			ND	
Dicamba			ND	
MCPP			ND	
MCPA			ND	
Dichloroprop			ND	
2,4-D			ND	
Pentachlorophenol			ND	
Silvex (2,4,5-TP)			ND	
2,4,5-T			ND	
Dinoseb			ND	
2,4-DB			ND	

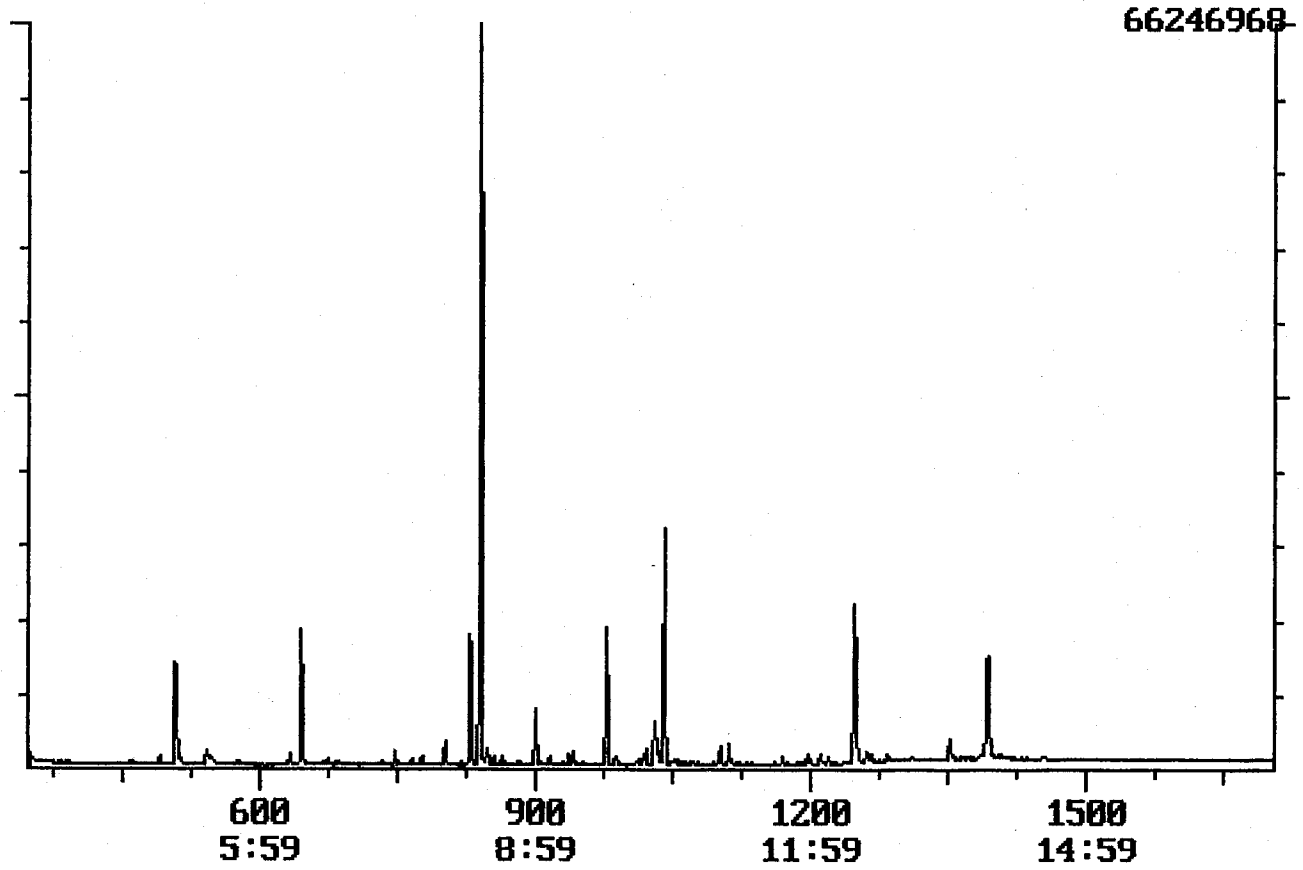
INTERNAL STANDARD QC REPORT

DATAFILE : L4098 ANALYSIS DATE : 08/30/02 02:54
SAMPLE : 108166-3 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.26	0.00	7512438	8012545	7
Phenanthrene D10 (IS)	9.74	9.75	0.01	11413836	11411206	0

SAMPLE CHROMATOGRAM

DATAFILE : L4067 ANALYSIS DATE : 08/28/02 19:57
SAMPLE : 108166-4 &1 WATER 8151 HW0171
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4067 ANALYSIS DATE : 08/28/02 19:57
SAMPLE : 108166-4 &1 WATER 8151 HW0171
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.29	1.000	NG/UL	5096439
Phenanthrene D10 (IS)	9.78	1.000	NG/UL	6995646
2,4-Dichlorophenylacetic a	8.39	0.588	NG/UL	1918201
Dalapon			ND	
4-Nitrophenol			ND	
Dicamba			ND	
MCPP			ND	
MCPA			ND	
Dichloroprop			ND	
2,4-D			ND	
Pentachlorophenol			ND	
Silvex (2,4,5-TP)			ND	
2,4,5-T			ND	
Dinoseb			ND	
2,4-DB			ND	

INTERNAL STANDARD QC REPORT

DATAFILE : L4067 ANALYSIS DATE : 08/28/02 19:57
SAMPLE : 108166-4 &1 WATER 8151 HW0171
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.30	8.29	0.01	5187643	5096439	2
Phenanthrene D10 (IS)	9.80	9.78	0.02	7304235	6995646	4

INITIAL CALIBRATION

Initial Calibration Report

INSTRUMENT : ITS40
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner

08/22/02

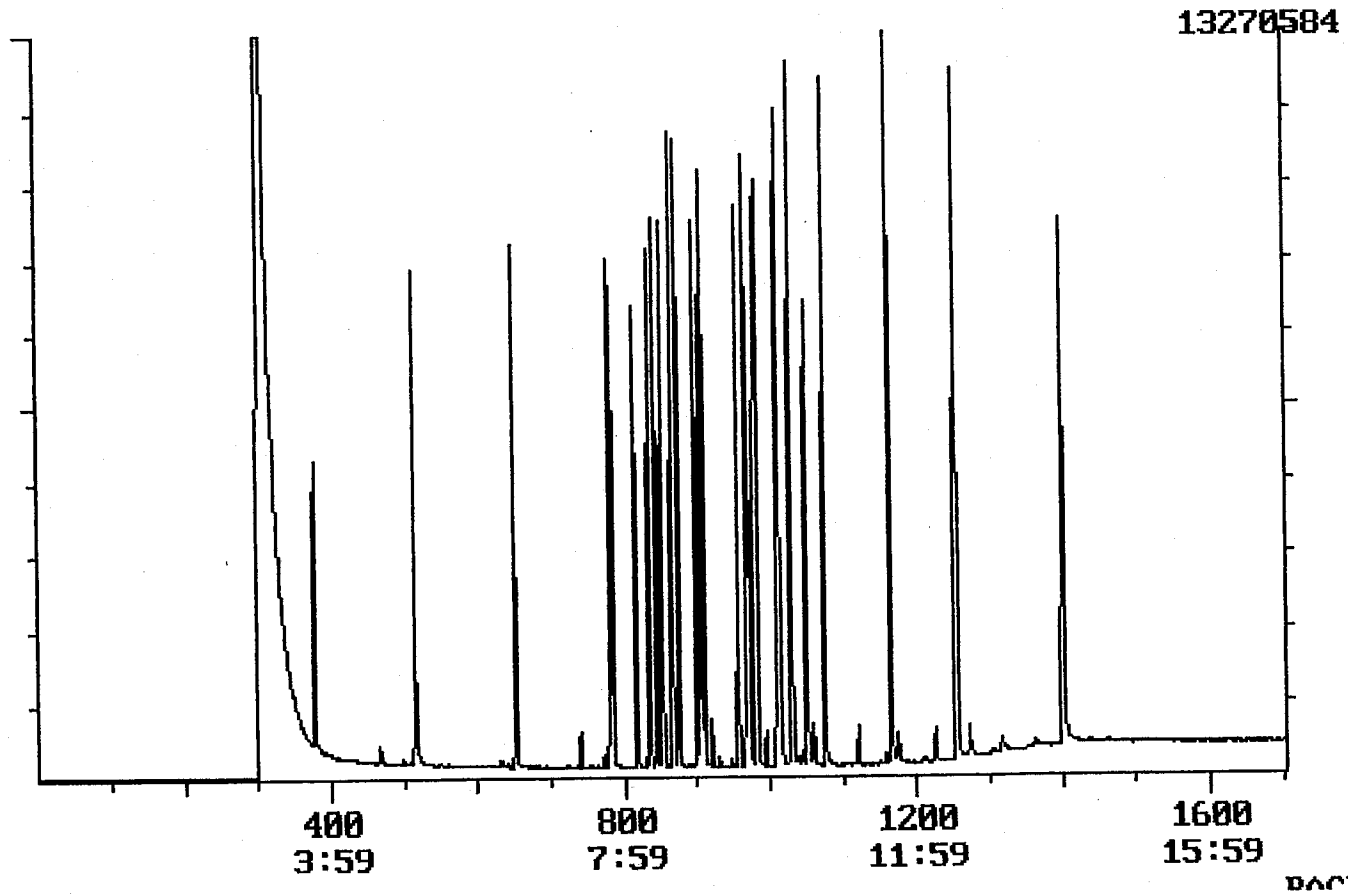
HIT ANY KEY TO CONTINUE

							AVE	RSD
2,4-Dichlorophenylacet	0.596	0.654	0.618	0.655	0.679	0.645	0.641	4.6%
2,4,6-Tribromophenol	0.385	0.412	0.426	0.462	0.406	0.462	0.425	7.3%
Dalapon	0.807	0.881	0.979	0.981	0.964	0.736	0.891	11.5%
4-Nitrophenol	0.578	0.641	0.617	0.558	0.564	0.485	0.574	9.4%
Dicamba	0.733	0.775	0.808	0.814	0.886	0.906	0.820	8.0%
MCPP	0.353	0.381	0.389	0.399	0.362	0.323	0.368	7.5%
MCPA	0.286	0.299	0.312	0.274	0.311	0.265	0.291	6.6%
Dichloroprop	0.344	0.355	0.361	0.324	0.355	0.369	0.351	4.4%
2,4-D	0.381	0.421	0.462	0.416	0.453	0.437	0.428	6.8%
Pentachlorophenol	0.393	0.427	0.442	0.413	0.439	0.461	0.429	5.6%
Silvex (2,4,5-TP)	0.382	0.396	0.427	0.398	0.422	0.388	0.402	4.5%
2,4,5-T	0.461	0.496	0.583	0.545	0.569	0.471	0.521	10.0%
Dinoseb	0.307	0.325	0.335	0.236	0.306	0.248	0.293	14.0%
2,4-DB	0.772	0.831	0.928	0.836	0.927	0.891	0.864	7.1%
Picloram	0.383	0.445	0.497	0.423	0.478	0.498	0.454	10.1%
Clopyralid	0.263	0.279	0.291	0.264	0.268	0.221	0.264	9.0%

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3969
SAMPLE : 2.0 NG/UL 8151 ICAL STD NO 979-13-2A
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

ANALYSIS DATE : 08/22/02 13:52



PAGE 1

CALIBRATION STANDARD REPORT

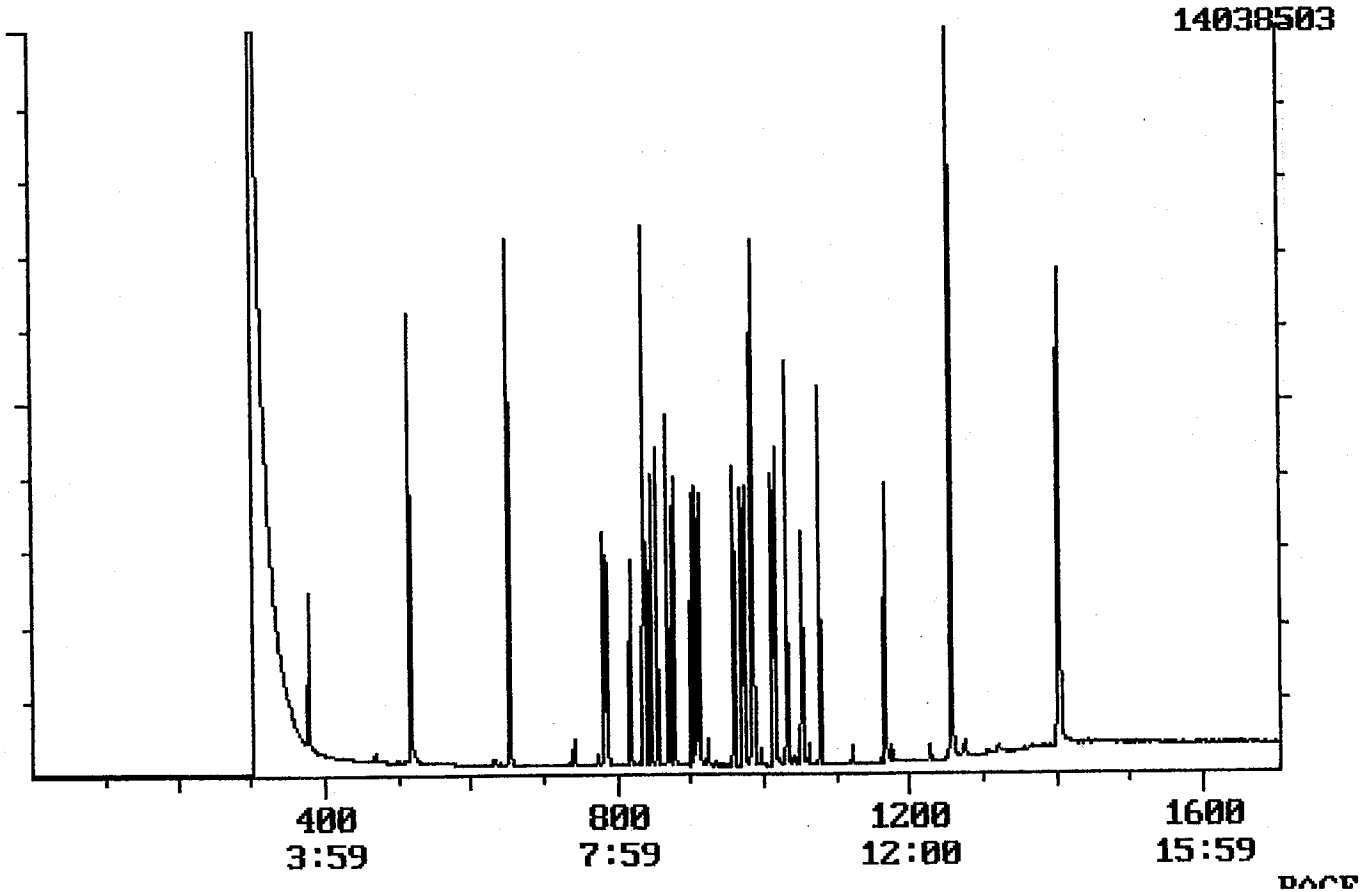
DATAFILE : L3969 ANALYSIS DATE : 08/22/02 13:52
SAMPLE : 2.0 NG/UL 8151 ICAL STD NO 979-13-2A
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.36	1.000	NG/UL	3888623	3888623	1.000
Phenanthrene D10 (IS)	9.85	1.000	NG/UL	6606065	6606065	1.000
2,4-Dichlorophenylacet	8.45	2.000	NG/UL	4633318	3888623	0.596
2,4,6-Tribromophenol	9.06	2.000	NG/UL	5090712	6606065	0.385
Dalapon	3.78	2.000	NG/UL	6277847	3888623	0.807
4-Nitrophenol	7.85	2.000	NG/UL	4496947	3888623	0.578
Dicamba	8.53	2.000	NG/UL	5699831	3888623	0.733
MCPP	8.68	2.000	NG/UL	4666789	6606065	0.353
MCPA	8.76	2.000	NG/UL	3781241	6606065	0.286
Dichloroprop	9.01	2.000	NG/UL	4548844	6606065	0.344
2,4-D	9.11	2.000	NG/UL	5032587	6606065	0.381
Pentachlorophenol	9.58	2.000	NG/UL	5192361	6606065	0.393
Silvex (2,4,5-TP)	9.70	2.000	NG/UL	5043281	6606065	0.382
2,4,5-T	9.82	2.000	NG/UL	6091899	6606065	0.461
Dinoseb	10.15	2.000	NG/UL	4051476	6606065	0.307
2,4-DB	10.12	2.000	NG/UL	10200139	6606065	0.772
Picloram	10.52	2.000	NG/UL	5059242	6606065	0.383
Clopyralid	8.17	2.000	NG/UL	3469638	6606065	0.263

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3970
SAMPLE : 1.0 NG/UL 8151 ICAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

ANALYSIS DATE : 08/22/02 14:15



PAGE 1

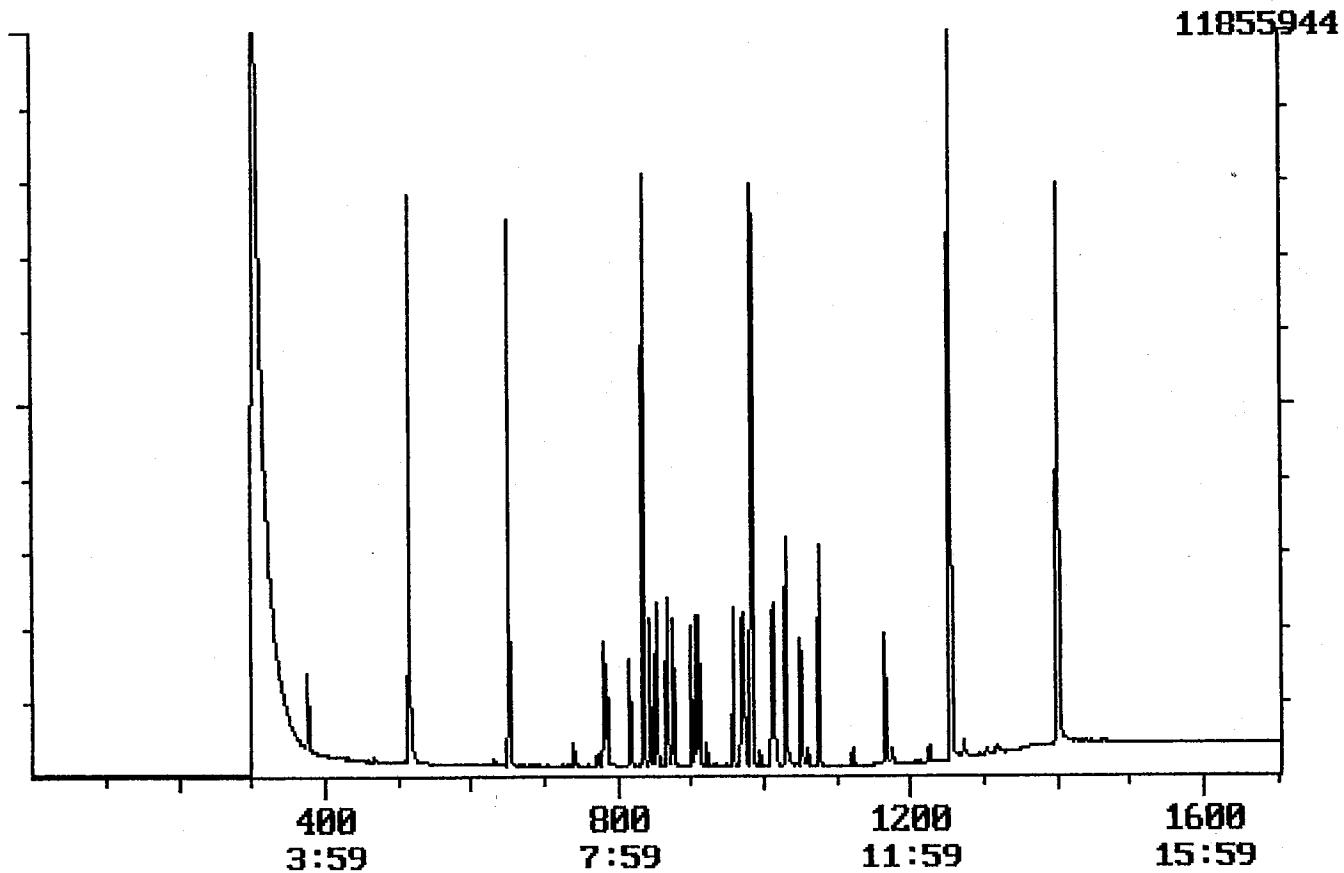
CALIBRATION STANDARD REPORT

DATAFILE : L3970 ANALYSIS DATE : 08/22/02 14:15
SAMPLE : 1.0 NG/UL 8151 ICAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.36	1.000	NG/UL	3916279	3916279	1.000
Phenanthrene D10 (IS)	9.85	1.000	NG/UL	6499037	6499037	1.000
2,4-Dichlorophenylacet	8.45	1.000	NG/UL	2562203	3916279	0.654
2,4,6-Tribromophenol	9.07	1.000	NG/UL	2675599	6499037	0.412
Dalapon	3.79	1.000	NG/UL	3449913	3916279	0.881
4-Nitrophenol	7.85	1.000	NG/UL	2508769	3916279	0.641
Dicamba	8.54	1.000	NG/UL	3034476	3916279	0.775
MCPP	8.68	1.000	NG/UL	2474923	6499037	0.381
MCPA	8.77	1.000	NG/UL	1943297	6499037	0.299
Dichloroprop	9.01	1.000	NG/UL	2306493	6499037	0.355
2,4-D	9.12	1.000	NG/UL	2737717	6499037	0.421
Pentachlorophenol	9.59	1.000	NG/UL	2772646	6499037	0.427
Silvex (2,4,5-TP)	9.70	1.000	NG/UL	2575264	6499037	0.396
2,4,5-T	9.83	1.000	NG/UL	3220473	6499037	0.496
Dinoseb	10.16	1.000	NG/UL	2109291	6499037	0.325
2,4-DB	10.12	1.000	NG/UL	5398488	6499037	0.831
Picloram	10.52	1.000	NG/UL	2892804	6499037	0.445
Clopyralid	8.17	1.000	NG/UL	1814996	6499037	0.279

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3971 ANALYSIS DATE : 08/22/02 14:39
SAMPLE : 0.5 NG/UL 8151 ICAL STD NO 979-13-2C
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis



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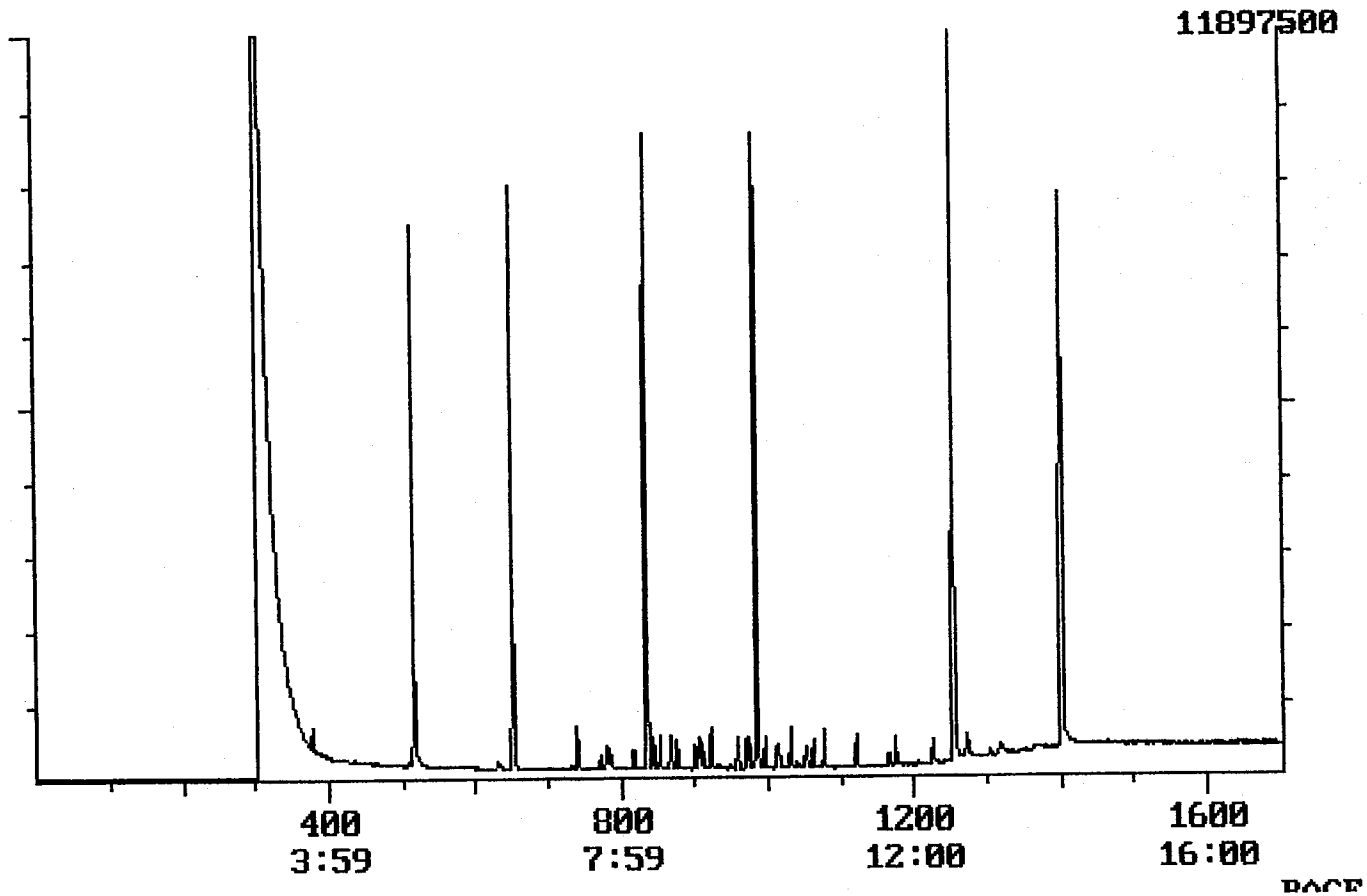
CALIBRATION STANDARD REPORT

DATAFILE : L3971 ANALYSIS DATE : 08/22/02 14:39
SAMPLE : 0.5 NG/UL 8151 ICAL STD NO 979-13-2C
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.35	1.000	NG/UL	3651621	3651621	1.000
Phenanthrene D10 (IS)	9.84	1.000	NG/UL	5869591	5869591	1.000
2,4-Dichlorophenylacet	8.44	0.500	NG/UL	1128542	3651621	0.618
2,4,6-Tribromophenol	9.06	0.500	NG/UL	1250377	5869591	0.426
Dalapon	3.76	0.500	NG/UL	1787906	3651621	0.979
4-Nitrophenol	7.85	0.500	NG/UL	1126903	3651621	0.617
Dicamba	8.53	0.500	NG/UL	1474778	3651621	0.808
MCPP	8.67	0.500	NG/UL	1142145	5869591	0.389
MCPA	8.76	0.500	NG/UL	914482	5869591	0.312
Dichloroprop	9.00	0.500	NG/UL	1058893	5869591	0.361
2,4-D	9.11	0.500	NG/UL	1356755	5869591	0.462
Pentachlorophenol	9.58	0.500	NG/UL	1296036	5869591	0.442
Silvex (2,4,5-TP)	9.69	0.500	NG/UL	1252602	5869591	0.427
2,4,5-T	9.82	0.500	NG/UL	1712031	5869591	0.583
Dinoseb	10.15	0.500	NG/UL	981800	5869591	0.335
2,4-DB	10.11	0.500	NG/UL	2722425	5869591	0.928
Picloram	10.51	0.500	NG/UL	1457813	5869591	0.497
Clopyralid	8.16	0.500	NG/UL	853192	5869591	0.291

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3972
ANALYSIS DATE : 08/22/02 15:02
SAMPLE : 0.1 NG/UL 8151 ICAL STD NO 979-13-2D
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis



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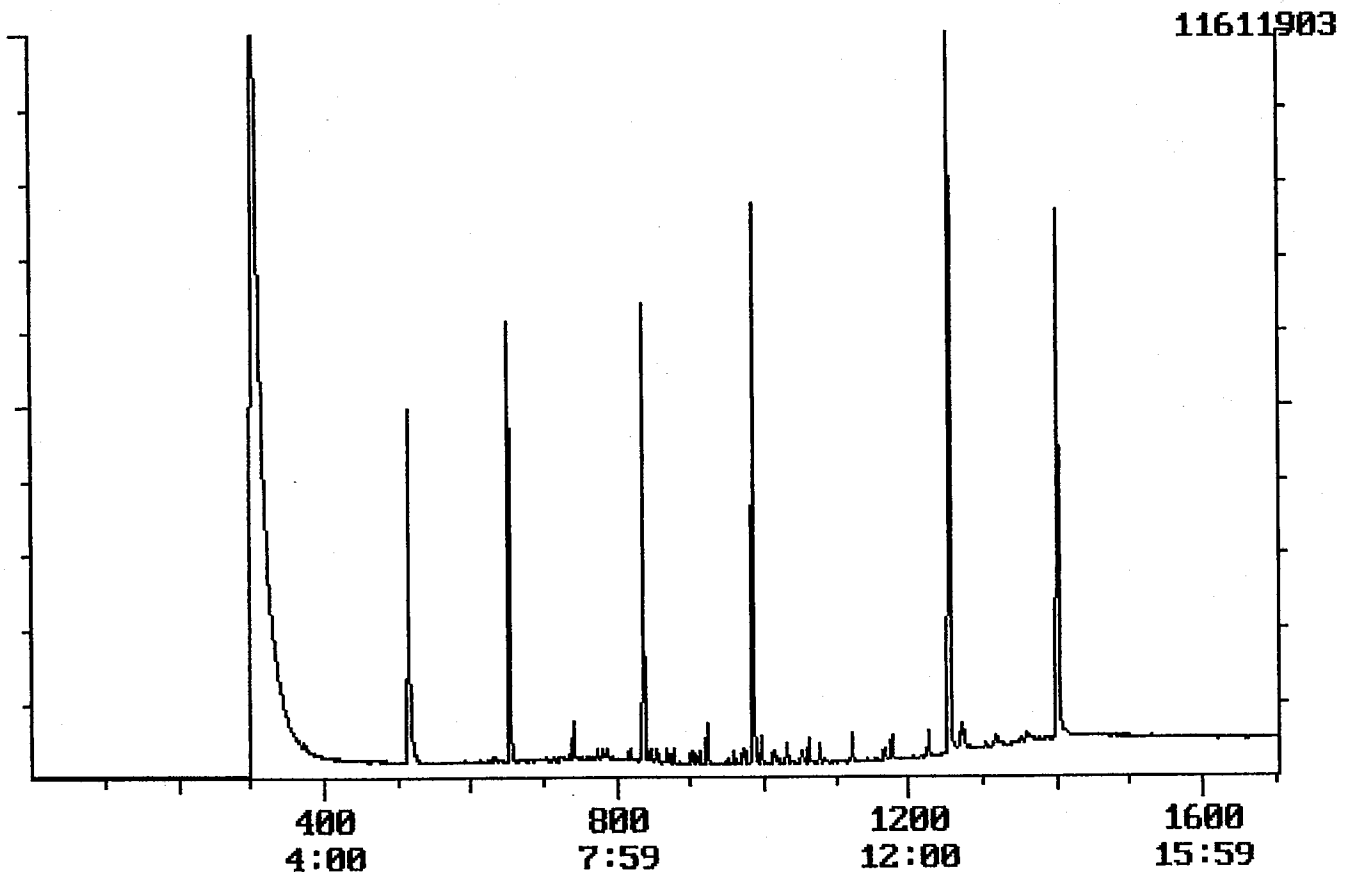
CALIBRATION STANDARD REPORT

DATAFILE : L3972 ANALYSIS DATE : 08/22/02 15:02
SAMPLE : 0.1 NG/UL 8151 ICAL STD NO 979-13-2D
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.35	1.000	NG/UL	3960798	3960798	1.000
Phenanthrene D10 (IS)	9.84	1.000	NG/UL	6303132	6303132	1.000
2,4-Dichlorophenylacet	8.44	0.100	NG/UL	259319	3960798	0.655
2,4,6-Tribromophenol	9.06	0.100	NG/UL	290999	6303132	0.462
Dalapon	3.78	0.100	NG/UL	388397	3960798	0.981
4-Nitrophenol	7.85	0.100	NG/UL	220827	3960798	0.558
Dicamba	8.53	0.100	NG/UL	322580	3960798	0.814
MCPP	8.67	0.100	NG/UL	251711	6303132	0.399
MCPA	8.76	0.100	NG/UL	172611	6303132	0.274
Dichloroprop	9.00	0.100	NG/UL	204432	6303132	0.324
2,4-D	9.11	0.100	NG/UL	262005	6303132	0.416
Pentachlorophenol	9.58	0.100	NG/UL	260595	6303132	0.413
Silvex (2,4,5-TP)	9.69	0.100	NG/UL	250979	6303132	0.398
2,4,5-T	9.82	0.100	NG/UL	343304	6303132	0.545
Dinoseb	10.14	0.100	NG/UL	148472	6303132	0.236
2,4-DB	10.11	0.100	NG/UL	526848	6303132	0.836
Picloram	10.52	0.100	NG/UL	266416	6303132	0.423
Clopyralid	8.17	0.100	NG/UL	166506	6303132	0.264

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3973 ANALYSIS DATE : 08/22/02 17:43
SAMPLE : 0.05 NG/UL 8151 ICAL STD NO 979-13-2E
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis



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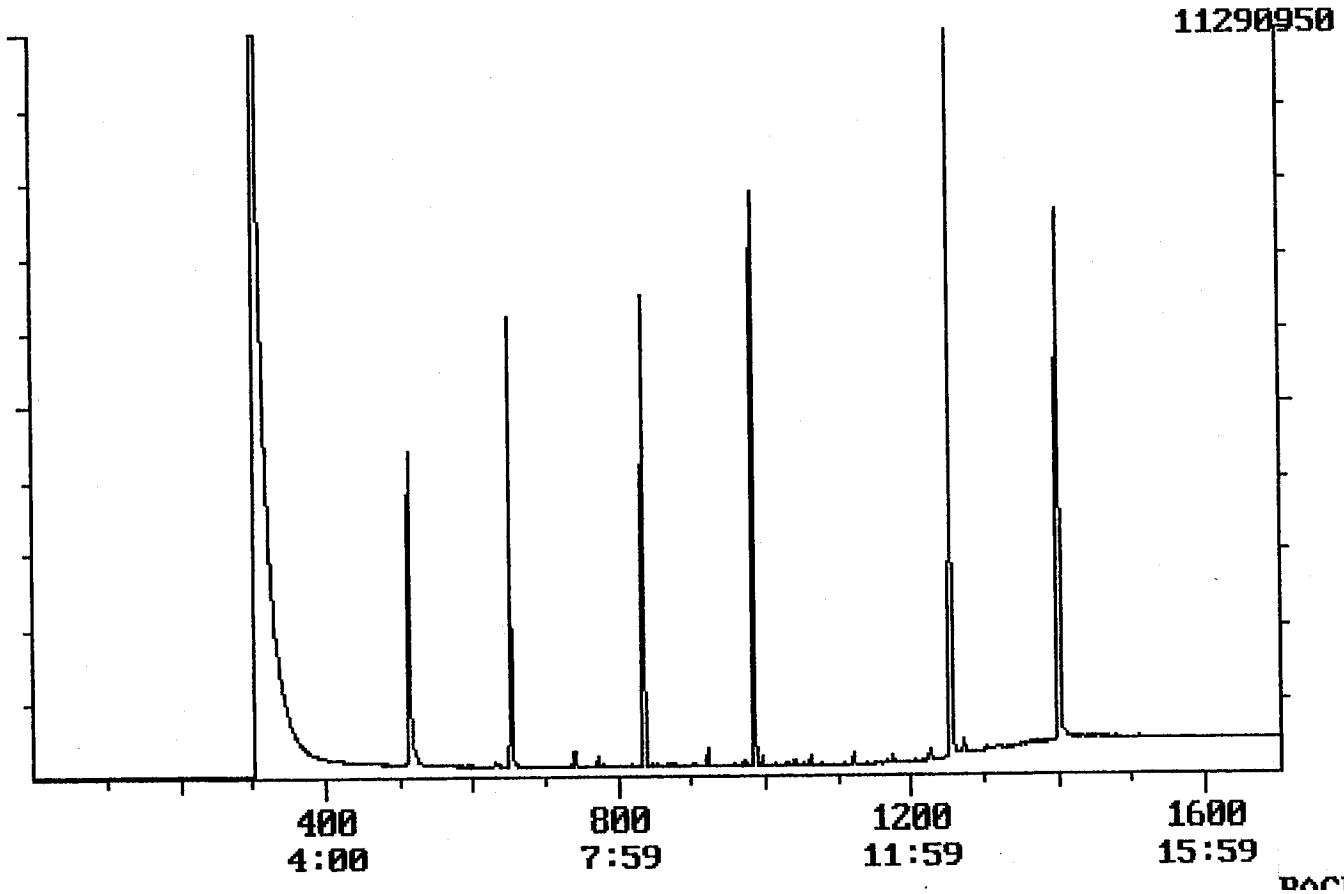
CALIBRATION STANDARD REPORT

DATAFILE : L3973 ANALYSIS DATE : 08/22/02 17:43
SAMPLE : 0.05 NG/UL 8151 ICAL STD NO 979-13-2E
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.37	1.000	NG/UL	3007623	3007623	1.000
Phenanthrene D10 (IS)	9.86	1.000	NG/UL	5306106	5306106	1.000
2,4-Dichlorophenylacet	8.46	0.050	NG/UL	102095	3007623	0.679
2,4,6-Tribromophenol	9.08	0.050	NG/UL	107655	5306106	0.406
Dalapon	3.75	0.050	NG/UL	144935	3007623	0.964
4-Nitrophenol	7.87	0.050	NG/UL	84831	3007623	0.564
Dicamba	8.55	0.050	NG/UL	133299	3007623	0.886
MCPP	8.69	0.050	NG/UL	96157	5306106	0.362
MCPA	8.77	0.050	NG/UL	82462	5306106	0.311
Dichloroprop	9.02	0.050	NG/UL	94148	5306106	0.355
2,4-D	9.12	0.050	NG/UL	120140	5306106	0.453
Pentachlorophenol	9.59	0.050	NG/UL	116546	5306106	0.439
Silvex (2,4,5-TP)	9.71	0.050	NG/UL	111845	5306106	0.422
2,4,5-T	9.84	0.050	NG/UL	151030	5306106	0.569
Dinoseb	10.16	0.050	NG/UL	81146	5306106	0.306
2,4-DB	10.13	0.050	NG/UL	245823	5306106	0.927
Picloram	10.53	0.050	NG/UL	126850	5306106	0.478
Clopyralid	8.18	0.050	NG/UL	71192	5306106	0.268

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3974
ANALYSIS DATE : 08/22/02 18:11
SAMPLE : 0.01 NG/UL 8151 ICAL STD NO 979-13-2F
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis



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CALIBRATION STANDARD REPORT

DATAFILE : L3974 ANALYSIS DATE : 08/22/02 18:11
SAMPLE : 0.01 NG/UL 8151 ICAL STD NO 979-13-2F
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount		Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.35	1.000	NG/UL	3101329	3101329	1.000
Phenanthrene D10 (IS)	9.85	1.000	NG/UL	5474825	5474825	1.000
2,4-Dichlorophenylacet	8.45	0.010	NG/UL	20000	3101329	0.645
2,4,6-Tribromophenol	9.06	0.010	NG/UL	25312	5474825	0.462
Dalapon	3.74	0.010	NG/UL	22812	3101329	0.736
4-Nitrophenol	7.87	0.010	NG/UL	15039	3101329	0.485
Dicamba	8.54	0.010	NG/UL	28095	3101329	0.906
MCPP	8.68	0.010	NG/UL	17702	5474825	0.323
MCPA	8.76	0.010	NG/UL	14515	5474825	0.265
Dichloroprop	9.01	0.010	NG/UL	20216	5474825	0.369
2,4-D	9.11	0.010	NG/UL	23927	5474825	0.437
Pentachlorophenol	9.58	0.010	NG/UL	25257	5474825	0.461
Silvex (2,4,5-TP)	9.70	0.010	NG/UL	21235	5474825	0.388
2,4,5-T	9.83	0.010	NG/UL	25773	5474825	0.471
Dinoseb	10.15	0.010	NG/UL	13574	5474825	0.248
2,4-DB	10.12	0.010	NG/UL	48807	5474825	0.891
Picloram	10.52	0.010	NG/UL	27252	5474825	0.498
Clopyralid	8.17	0.010	NG/UL	12091	5474825	0.221

Calibration Check Report

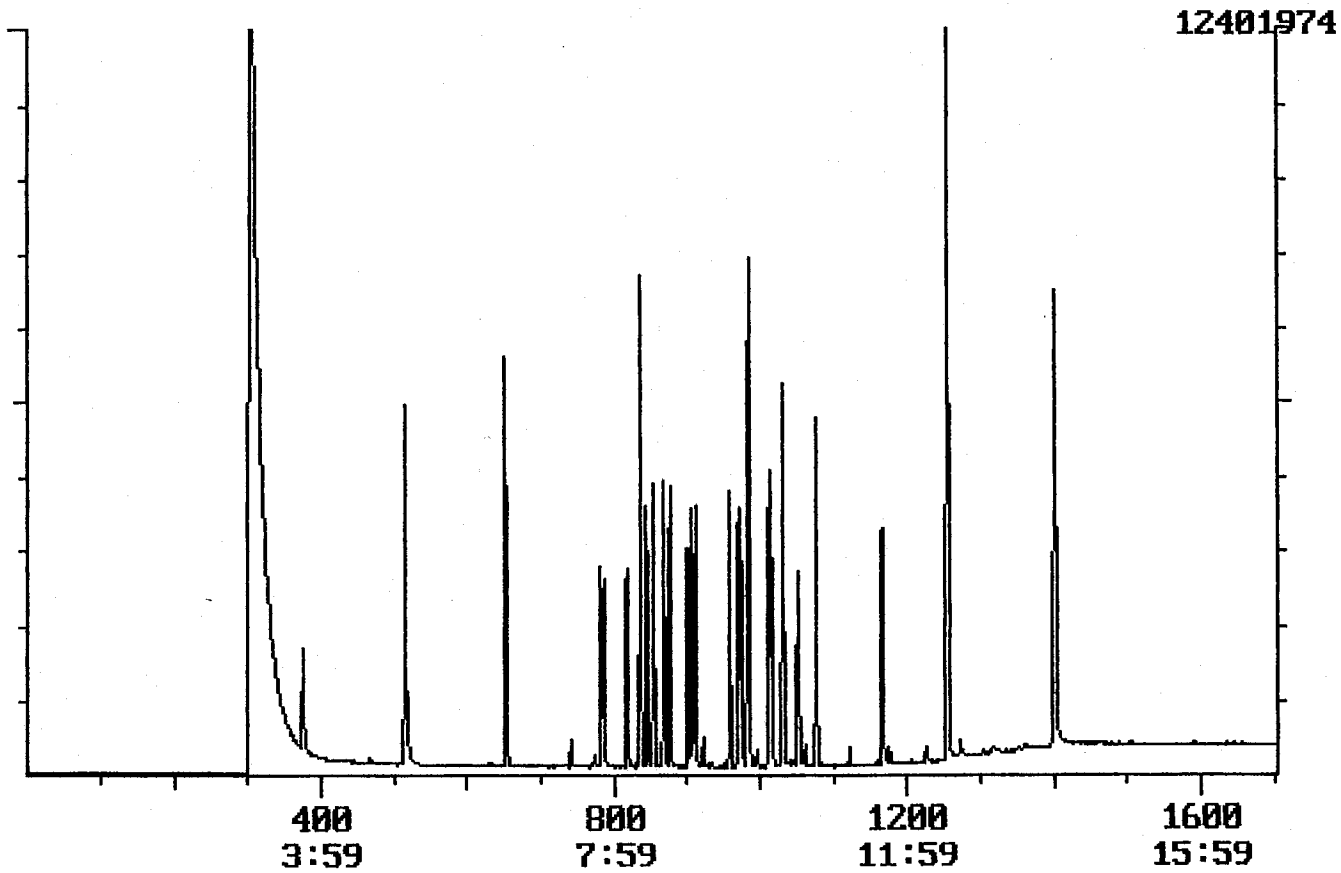
DATAFILE : L3975 ANALYSIS DATE : 08/22/02 18:34
SAMPLE : 1.00 NG/UL 8151 CCAL STD NO 979-13-60CS
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
2,4-Dichlorophenylacet	0.641	0.642	0.185	%
2,4,6-Tribromophenol	0.425	0.366	13.874	%
Dalapon	0.891	0.859	3.575	%
4-Nitrophenol	0.574	0.611	6.514	%
Dicamba	0.820	0.770	6.136	%
MCPP	0.368	0.349	5.289	%
MCPA	0.291	0.288	0.921	%
Dichloroprop	0.351	0.345	1.930	%
2,4-D	0.428	0.399	6.757	%
Pentachlorophenol	0.429	0.386	10.056	%
Silvex (2,4,5-TP)	0.402	0.372	7.518	%
2,4,5-T	0.521	0.472	9.380	%
Dinoseb	0.293	0.315	7.657	%
2,4-DB	0.864	0.798	7.694	%
Picloram	0.454	0.406	10.649	%
Clopyralid	0.264	0.258	2.501	%

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L3975 ANALYSIS DATE : 08/22/02 18:34
SAMPLE : 1.00 NG/UL 8151 CCAL STD NO 979-13-60CS
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis



CALIBRATION STANDARD REPORT

DATAFILE : L3975 ANALYSIS DATE : 08/22/02 18:34
SAMPLE : 1.00 NG/UL 8151 CCAL STD NO 979-13-60CS
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount	Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.36	1.000 NG/UL	3351180	3351180	1.000
Phenanthrene D10 (IS)	9.85	1.000 NG/UL	5885709	5885709	1.000
2,4-Dichlorophenylacet	8.45	1.000 NG/UL	2152417	3351180	0.642
2,4,6-Tribromophenol	9.07	1.000 NG/UL	2156778	5885709	0.366
Dalapon	3.75	1.000 NG/UL	2879858	3351180	0.859
4-Nitrophenol	7.86	1.000 NG/UL	2048034	3351180	0.611
Dicamba	8.54	1.000 NG/UL	2580498	3351180	0.770
MCPP	8.68	1.000 NG/UL	2051681	5885709	0.349
MCPA	8.77	1.000 NG/UL	1697549	5885709	0.288
Dichloroprop	9.01	1.000 NG/UL	2028366	5885709	0.345
2,4-D	9.12	1.000 NG/UL	2350703	5885709	0.399
Pentachlorophenol	9.59	1.000 NG/UL	2272205	5885709	0.386
Silvex (2,4,5-TP)	9.71	1.000 NG/UL	2188546	5885709	0.372
2,4,5-T	9.83	1.000 NG/UL	2777615	5885709	0.472
Dinoseb	10.16	1.000 NG/UL	1853477	5885709	0.315
2,4-DB	10.12	1.000 NG/UL	4694178	5885709	0.798
Picloram	10.52	1.000 NG/UL	2386990	5885709	0.406
Clopyralid	8.18	1.000 NG/UL	1516834	5885709	0.258

CONTINUING CALIBRATION

Sample Queue Report

INSTRUMENT : ITS40
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner

L4062DF	2.5 NG/UL DFTPP 08/27/2002						
L4063	1.0 NG/UL 8151 CCAL STD NO 979-13-2B						
L4064	HW0171	MB	#125	&1	WATER	8151	HW0171
L4065	HW0171	BS	#125	&1	WATER	8151	HW0171
L4066	HW0171	BSD	#125	&1	WATER	8151	HW0171
L4067	108166-4			&1	WATER	8151	HW0171
L4068	108177-7			&1	WATER	8151	HW0171

Calibration Check Report

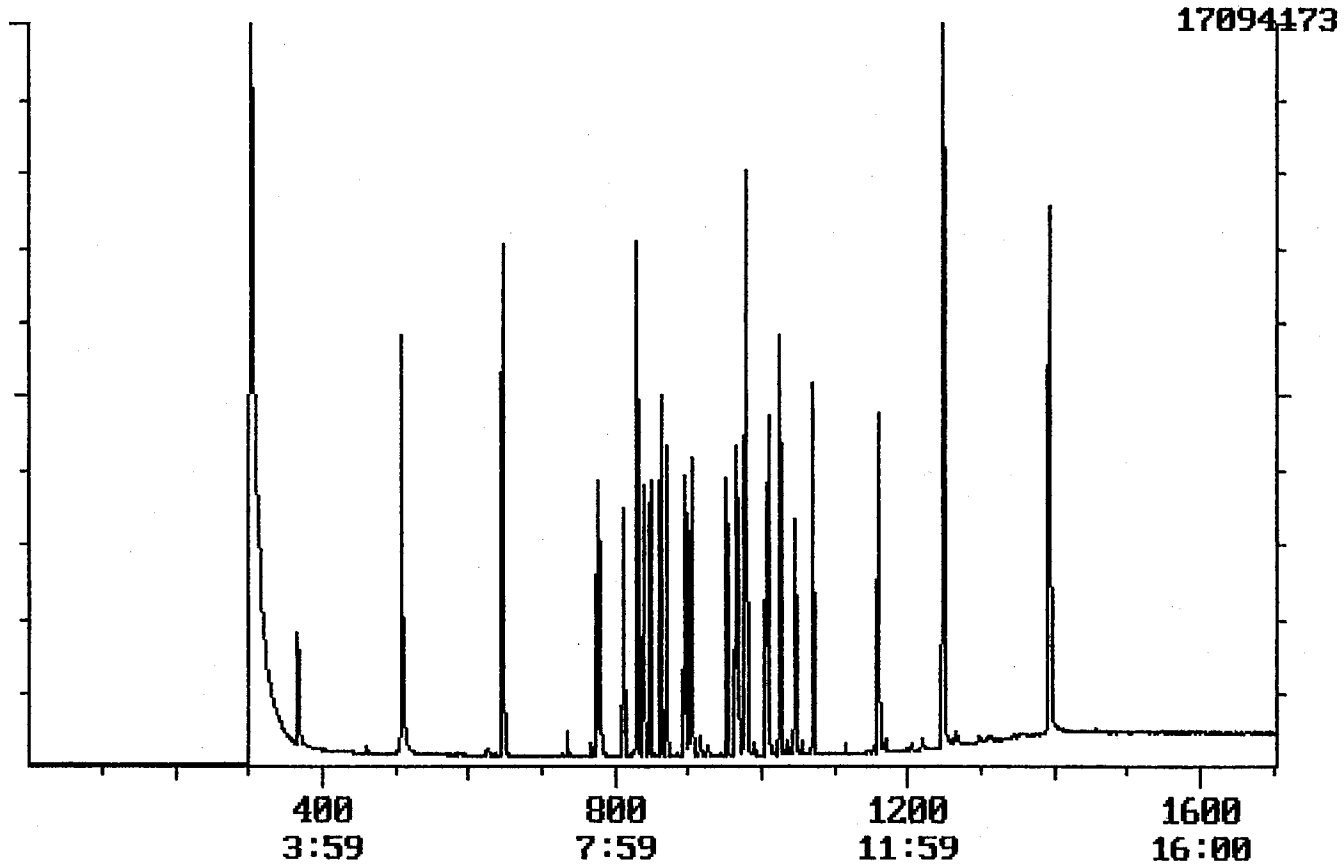
DATAFILE : L4063
SAMPLE : 1.0 NG/UL 8151 CCAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis
ANALYSIS DATE : 08/28/02 17:56

HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
2,4-Dichlorophenylacet	0.641	0.559	12.789	%
Dalapon	0.891	0.866	2.800	%
4-Nitrophenol	0.574	0.544	5.133	%
Dicamba	0.820	0.702	14.392	%
MCPP	0.368	0.392	6.600	%
MCPA	0.291	0.301	3.408	%
Dichloroprop	0.351	0.346	1.681	%
2,4-D	0.428	0.453	5.657	%
Pentachlorophenol	0.429	0.439	2.219	%
Silvex (2,4,5-TP)	0.402	0.426	5.893	%
2,4,5-T	0.521	0.535	2.674	%
Dinoseb	0.293	0.331	13.316	%
2,4-DB	0.864	0.928	7.377	%

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L4063 ANALYSIS DATE : 08/28/02 17:56
SAMPLE : 1.0 NG/UL 8151 CCAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis



CALIBRATION STANDARD REPORT

DATAFILE : L4063 ANALYSIS DATE : 08/28/02 17:56
SAMPLE : 1.0 NG/UL 8151 CCAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

Compound name	Ret. Time	Amount	Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.30	1.000 NG/UL	5187643	5187643	1.000
Phenanthrene D10 (IS)	9.80	1.000 NG/UL	7304235	7304235	1.000
2,4-Dichlorophenylacet	8.40	1.000 NG/UL	2900454	5187643	0.559
Dalapon	3.67	1.000 NG/UL	4493854	5187643	0.866
4-Nitrophenol	7.80	1.000 NG/UL	2823709	5187643	0.544
Dicamba	8.49	1.000 NG/UL	3643294	5187643	0.702
MCPP	8.63	1.000 NG/UL	2865791	7304235	0.392
MCPA	8.71	1.000 NG/UL	2198729	7304235	0.301
Dichloroprop	8.96	1.000 NG/UL	2523630	7304235	0.346
2,4-D	9.06	1.000 NG/UL	3305655	7304235	0.453
Pentachlorophenol	9.53	1.000 NG/UL	3204642	7304235	0.439
Silvex (2,4,5-TP)	9.65	1.000 NG/UL	3109867	7304235	0.426
2,4,5-T	9.77	1.000 NG/UL	3905588	7304235	0.535
Dinoseb	10.10	1.000 NG/UL	2421099	7304235	0.331
2,4-DB	10.07	1.000 NG/UL	6776697	7304235	0.928

Sample Queue Report

INSTRUMENT : ITS40
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner

L4084DF	2.5 NG/UL DFTPP 08/29/02							
L4084CC	1.0 NG/UL 8151 CCAL STD NO 979-13-2B							
L4085	HS0176	MB	#20.0000	&1	SOIL	8151	HS0176	
L4086	HS0176	BS	#20.0000	&1	SOIL	8151	HS0176	
L4087	108164-3	MS	&1	SOIL	8151	HS0176		
L4088	108164-3	MSD	&1	SOIL	8151	HS0176		
L4089	108160-1			&1	SOIL	8151	HS0176	
L4090	108160-2			&1	SOIL	8151	HS0176	
L4091	108160-3			&1	SOIL	8151	HS0176	
L4092	108160-4			&1	SOIL	8151	HS0176	
L4093	108164-1			&1	SOIL	8151	HS0176	
L4094	108164-2			&1	SOIL	8151	HS0176	
L4095	108164-3			&1	SOIL	8151	HS0176	
L4096	108166-1			&1	SOIL	8151	HS0176	
L4097	108166-2			&1	SOIL	8151	HS0176	
L4098	108166-3			&1	SOIL	8151	HS0176	
L4099	108177-1			&1	SOIL	8151	HS0176	
L4100	108177-2			&1	SOIL	8151	HS0176	
L4101	108177-3			&1	SOIL	8151	HS0176	
L4102	108177-4			&1	SOIL	8151	HS0176	
L4103	108177-5			&1	SOIL	8151	HS0176	
L4104	108177-6			&1	SOIL	8151	HS0176	
L4105	108177-8			&1	SOIL	8151	HS0176	
L4106	108177-9			&1	SOIL	8151	HS0176	
L4107	108177-10			&1	SOIL	8151	HS0176	
L4108	108177-11			&1	SOIL	8151	HS0176	

Calibration Check Report

DATAFILE : L4084CC ANALYSIS DATE : 08/29/02 21:28
SAMPLE : 1.0 NG/UL 8151 CCAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GC-MS Analysis

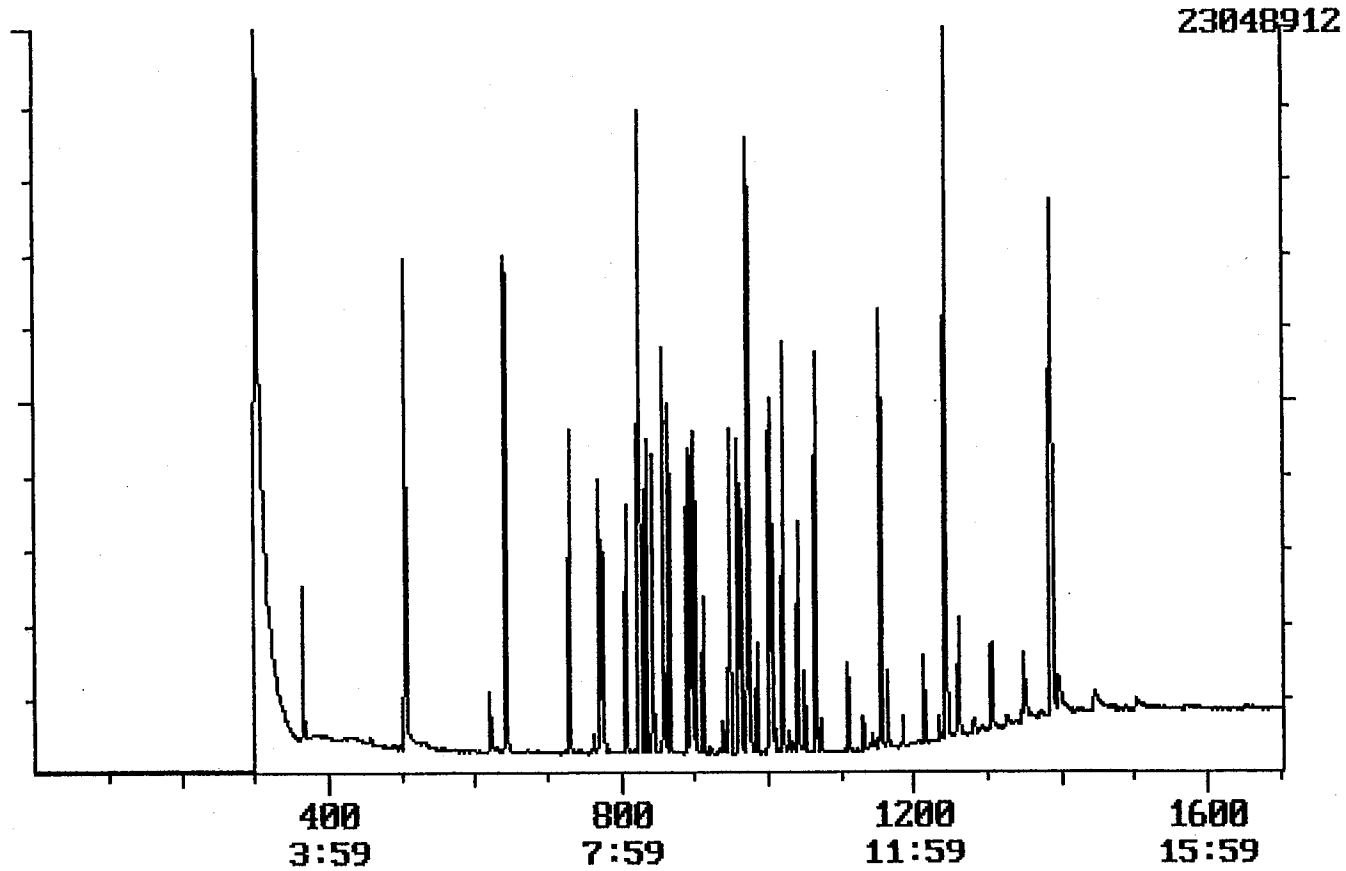
HIT ANY KEY TO CONTINUE

	AVE RF	CONT. RF	RPD	
2,4-Dichlorophenylacet	0.641	0.571	10.901	%
Dalapon	0.891	0.792	11.111	%
4-Nitrophenol	0.574	0.560	2.379	%
Dicamba	0.820	0.725	11.681	%
MCPP	0.368	0.365	0.945	%
MCPA	0.291	0.282	3.183	%
Dichloroprop	0.351	0.343	2.446	%
2,4-D	0.428	0.420	1.934	%
Pentachlorophenol	0.429	0.402	6.424	%
Silvex (2,4,5-TP)	0.402	0.383	4.859	%
2,4,5-T	0.521	0.491	5.774	%
Dinoseb	0.293	0.310	6.087	%
2,4-DB	0.864	0.768	11.111	%

CALIBRATION STANDARD CHROMATOGRAM

DATAFILE : L4084CC
SAMPLE : 1.0 NG/UL 8151 CCAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

ANALYSIS DATE : 08/29/02 21:28



PAGE 1

CALIBRATION STANDARD REPORT

DATAFILE : L4084CC ANALYSIS DATE : 08/29/02 21:28
SAMPLE : 1.0 NG/UL 8151 CCAL STD NO 979-13-2B
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : GCMS Analysis

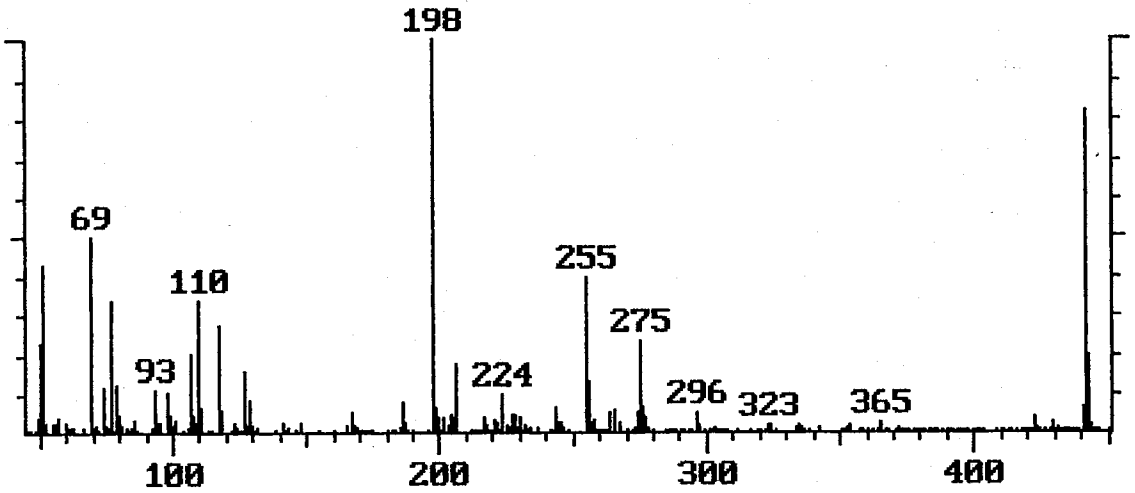
Compound name	Ret. Time	Amount	Area	I.S. Area	RF
Acenaphthene D10 (IS)	8.26	1.000 NG/UL	7512438	7512438	1.000
Phenanthrene D10 (IS)	9.74	1.000 NG/UL	11413836	11413836	1.000
2,4-Dichlorophenylacet	8.35	1.000 NG/UL	4291201	7512438	0.571
Dalapon	3.66	1.000 NG/UL	5951302	7512438	0.792
4-Nitrophenol	7.75	1.000 NG/UL	4207839	7512438	0.560
Dicamba	8.43	1.000 NG/UL	5443062	7512438	0.725
MCPP	8.58	1.000 NG/UL	4161207	11413836	0.365
MCPA	8.66	1.000 NG/UL	3216807	11413836	0.282
Dichloroprop	8.91	1.000 NG/UL	3912795	11413836	0.343
2,4-D	9.01	1.000 NG/UL	4794400	11413836	0.420
Pentachlorophenol	9.48	1.000 NG/UL	4584294	11413836	0.402
Silvex (2,4,5-TP)	9.60	1.000 NG/UL	4366144	11413836	0.383
2,4,5-T	9.72	1.000 NG/UL	5600831	11413836	0.491
Dinoseb	10.05	1.000 NG/UL	3541944	11413836	0.310
2,4-DB	10.01	1.000 NG/UL	8766220	11413836	0.768

DFTPP TUNING

Method 8270 DFTPP Report

Data File: L3968A
Cali File: DFTPP

Acqu Date: 08/22/02
Acqu Time: 13:11

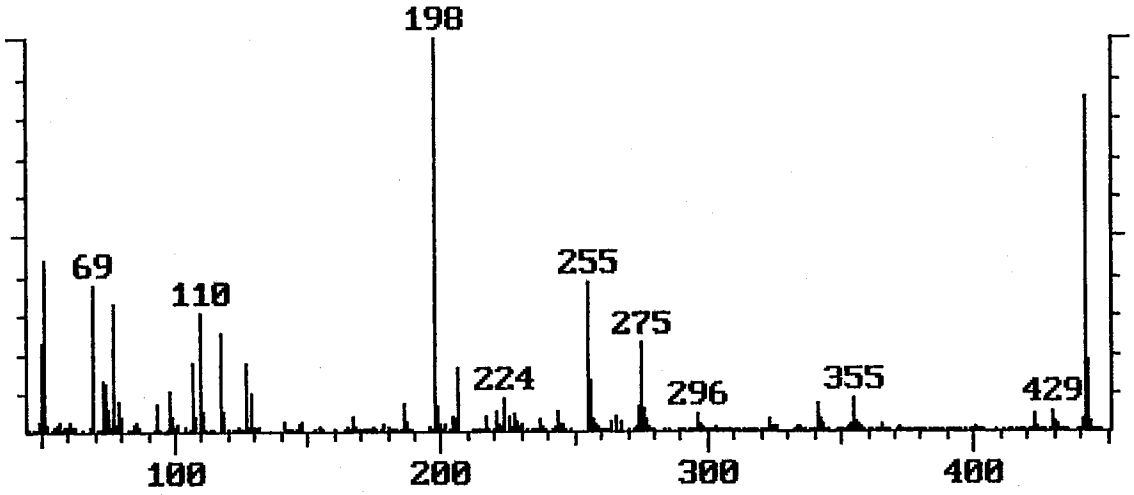


Mass	Acceptance Criterion	Value	Mass Int.	Pass/Fail
51	10-80% of base peak	43.14	32420	Pass
68	<= 2% of Mass 69	0.00	0	Pass
69	Exists Only	50.22	37744	Pass
70	<= 2% of Mass 69	1.45	547	Pass
127	10-80% of base peak	15.15	11390	Pass
197	<= 1% of Mass 198	0.00	0	Pass
198	Base peak or >50% of 442	100.00	75158	Pass
199	5 - 9% of Mass 198	6.36	4779	Pass
275	10-60% of base peak	23.13	17381	Pass
365	>= 1% of Mass 198	2.02	1515	Pass
441	Exists/<= Mass 443	7.49	4598	Pass
442	base peak or >50% of 198	81.73	61428	Pass
443	15-24% of Mass 442	23.87	14663	Pass

Method 8270 DFTPP Report

Data File: L4062DF
Cali File: DFTPP

Acqu Date: 08/28/02
Acqu Time: 17:26

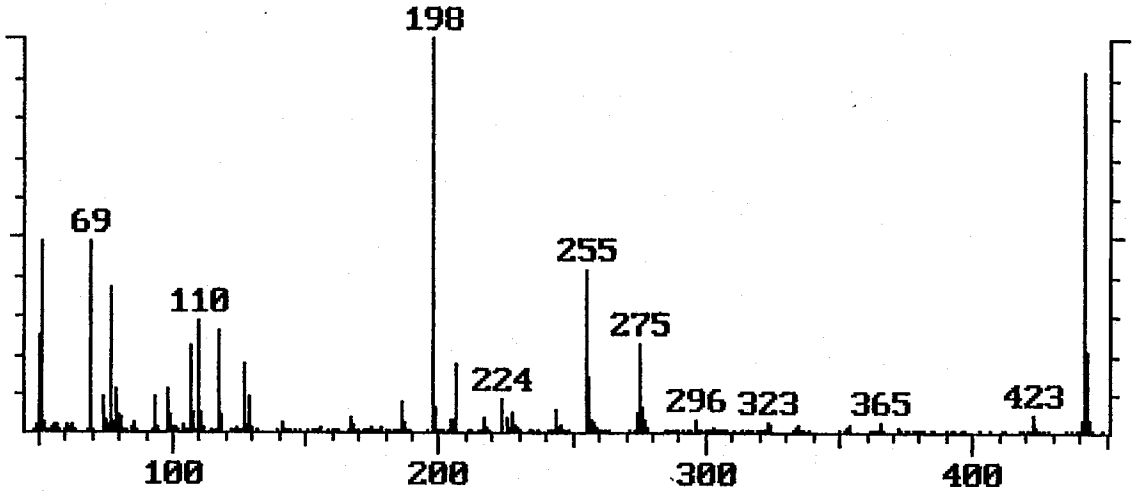


Mass	Acceptance Criterion	Value	Mass Int.	Pass/Fail
51	10-80% of base peak	44.03	80676	Pass
68	<= 2% of Mass 69	1.78	1235	Pass
69	Exists Only	37.83	69308	Pass
70	<= 2% of Mass 69	0.00	0	Pass
127	10-80% of base peak	17.03	31200	Pass
197	<= 1% of Mass 198	0.13	245	Pass
198	Base peak or >50% of 442	100.00	183226	Pass
199	5 - 9% of Mass 198	5.93	10857	Pass
275	10-60% of base peak	22.59	41394	Pass
365	>= 1% of Mass 198	1.95	3576	Pass
441	Exists/<= Mass 443	3.42	5364	Pass
442	base peak or >50% of 198	85.61	156867	Pass
443	15-24% of Mass 442	21.17	33213	Pass

Method 8270 DFTPP Report

Data File: L4084DF
Cali File: DFTPP

Acqu Date: 08/29/02
Acqu Time: 21:04

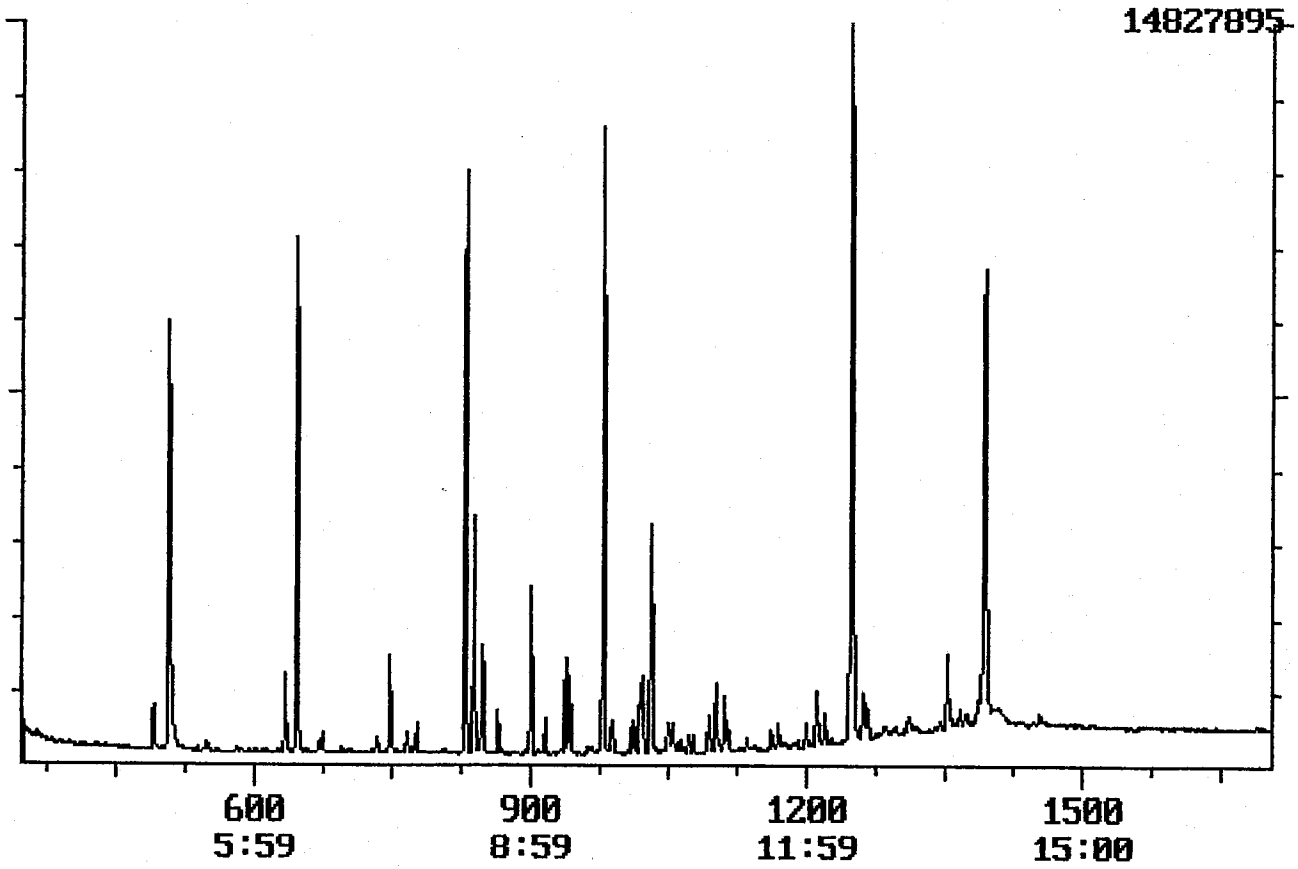


Mass	Acceptance Criterion	Value	Mass Int.	Pass/Fail
51	10-80% of base peak	48.60	320004	Pass
68	<= 2% of Mass 69	0.41	1303	Pass
69	Exists Only	48.66	320385	Pass
70	<= 2% of Mass 69	0.63	2024	Pass
127	10-80% of base peak	17.36	114303	Pass
197	<= 1% of Mass 198	0.00	0	Pass
198	Base peak or >50% of 442	100.00	658378	Pass
199	5 - 9% of Mass 198	6.07	39956	Pass
275	10-60% of base peak	22.63	149007	Pass
365	>= 1% of Mass 198	1.97	12957	Pass
441	Exists/<= Mass 443	2.92	17574	Pass
442	base peak or >50% of 198	91.56	602815	Pass
443	15-24% of Mass 442	22.39	134983	Pass

METHOD BLANK

SAMPLE CHROMATOGRAM

DATAFILE : L4064 ANALYSIS DATE : 08/28/02 18:47
SAMPLE : HW0171 MB #125 &1 WATER 8151 HW0171
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4064 ANALYSIS DATE : 08/28/02 18:47
SAMPLE : HW0171 MB #125 &1 WATER 8151 HW0171
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	RT	Concentration			Area
Acenaphthene D10 (IS)	8.30	1.000	NG/UL		4560377
Phenanthrene D10 (IS)	9.79	1.000	NG/UL		6202645
2,4-Dichlorophenylacetic a	8.39	0.685	NG/UL		2001427
Dalapon				ND	
4-Nitrophenol				ND	
Dicamba				ND	
MCPP				ND	
MCPA				ND	
Dichloroprop				ND	
2,4-D				ND	
Pentachlorophenol				ND	
Silvex (2,4,5-TP)				ND	
2,4,5-T				ND	
Dinoseb				ND	
2,4-DB				ND	

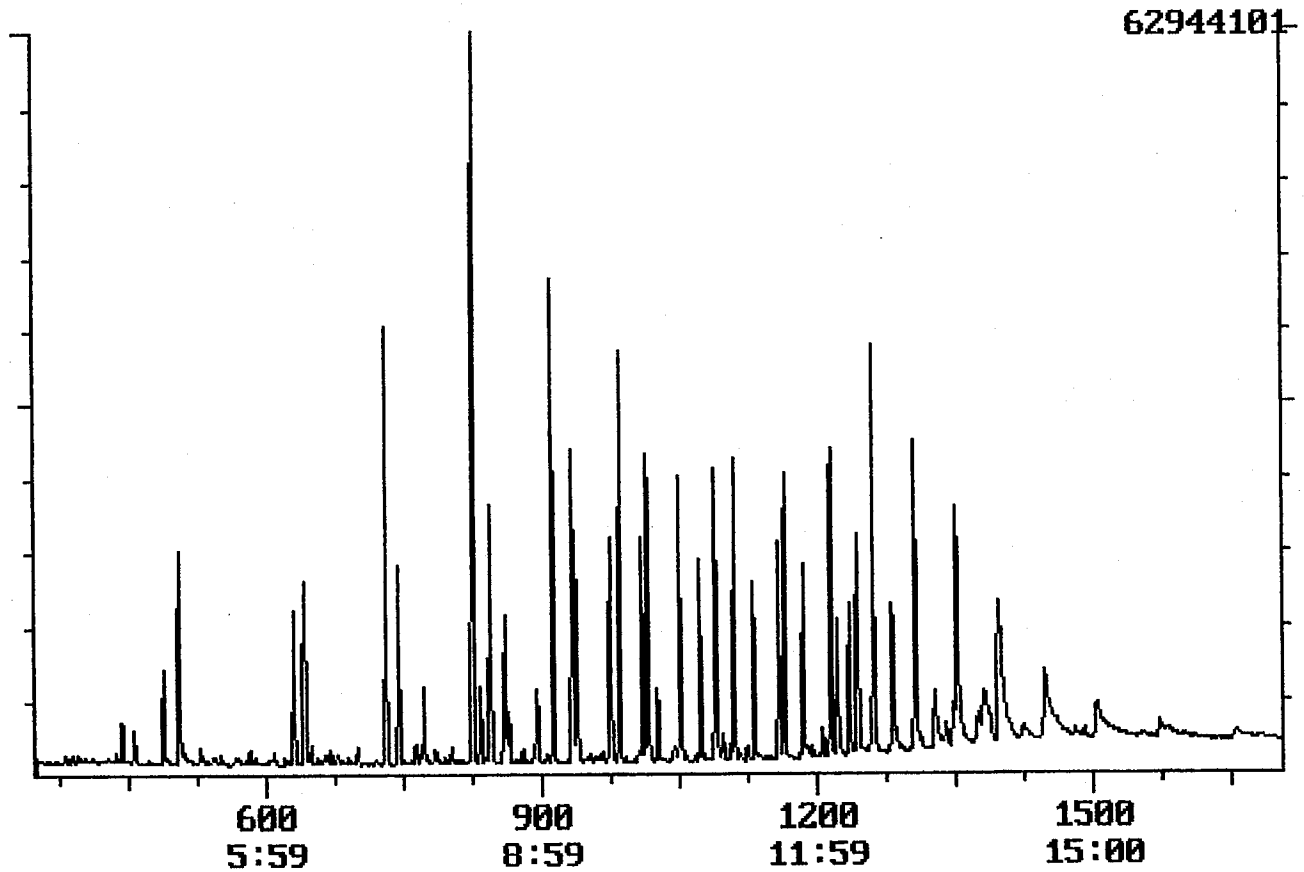
INTERNAL STANDARD QC REPORT

DATAFILE : L4064 ANALYSIS DATE : 08/28/02 18:47
SAMPLE : HW0171 MB #125 &1 WATER 8151 HW0171
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.30	8.30	0.00	5187643	4560377	12
Phenanthrene D10 (IS)	9.80	9.79	0.01	7304235	6202645	15

SAMPLE CHROMATOGRAM

DATAFILE : L4085 ANALYSIS DATE : 08/29/02 21:51
SAMPLE : HS0176 MB #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4085 ANALYSIS DATE : 08/29/02 21:51
SAMPLE : HS0176 MB #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.26	1.000	NG/UL	8008726
Phenanthrene D10 (IS)	9.74	1.000	NG/UL	11721960
2,4-Dichlorophenylacetic a	8.35	0.604	NG/UL	3095195
Dalapon			ND	
4-Nitrophenol			ND	
Dicamba			ND	
MCPP			ND	
MCPA			ND	
Dichloroprop			ND	
2,4-D			ND	
Pentachlorophenol			ND	
Silvex (2,4,5-TP)			ND	
2,4,5-T			ND	
Dinoseb			ND	
2,4-DB			ND	

INTERNAL STANDARD QC REPORT

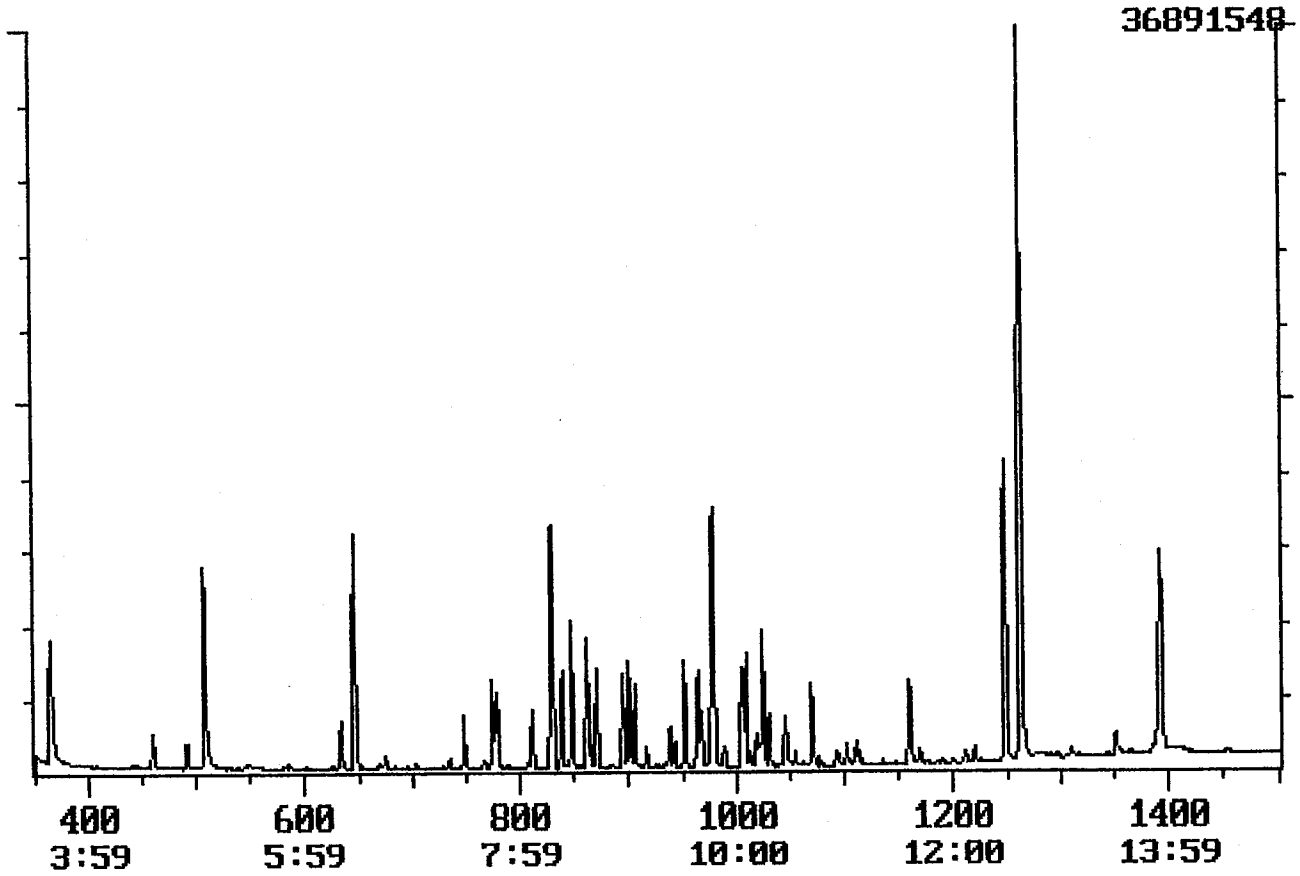
DATAFILE : L4085 ANALYSIS DATE : 08/29/02 21:51
SAMPLE : HS0176 MB #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : BRENT HEPNER
INSTRUMENT : ITS40
ANALYSIS : Herbicides by GC-MS

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.26	0.00	7512438	8008726	7
Phenanthrene D10 (IS)	9.74	9.74	0.00	11413836	11721960	3

BLANK SPIKE

SAMPLE CHROMATOGRAM

DATAFILE : L4065 ANALYSIS DATE : 08/28/02 19:10
SAMPLE : HW0171 BS #125 &1 WATER 8151 HW0171
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4065 ANALYSIS DATE : 08/28/02 19:10
SAMPLE : HW0171 BS #125 &1 WATER 8151 HW0171
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.29	1.000	NG/UL	5192101
Phenanthrene D10 (IS)	9.79	1.000	NG/UL	6973120
2,4-Dichlorophenylacetic a	8.39	0.679	NG/UL	2260001
Dalapon	3.67	0.494	NG/UL	2284127
4-Nitrophenol	7.79	0.679	NG/UL	2020567
Dicamba	8.47	0.569	NG/UL	2422875
MCPP	8.62	0.844	NG/UL	2164031
MCPA	8.70	0.739	NG/UL	1498865
Dichloroprop	8.95	0.816	NG/UL	1998080
2,4-D	9.05	0.629	NG/UL	1878380
Pentachlorophenol	9.52	0.898	NG/UL	2687518
Silvex (2,4,5-TP)	9.64	0.817	NG/UL	2290577
2,4,5-T	9.76	0.664	NG/UL	2409301
Dinoseb	10.09	0.883	NG/UL	1799229
2,4-DB	10.05	0.859	NG/UL	5172867

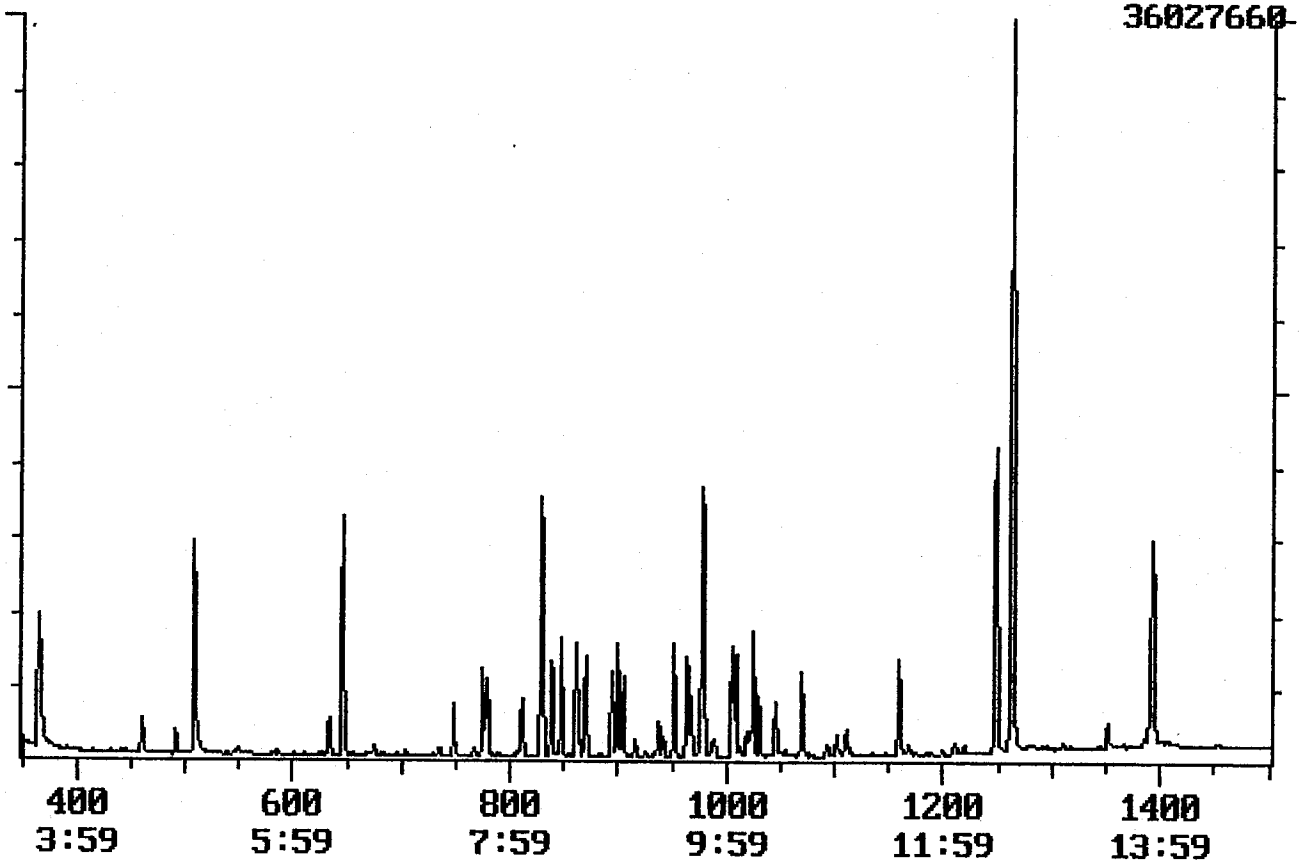
INTERNAL STANDARD QC REPORT

DATAFILE : L4065 ANALYSIS DATE : 08/28/02 19:10
SAMPLE : HW0171 BS #125 &1 WATER 8151 HW0171
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.30	8.29	0.01	5187643	5192101	0
Phenanthrene D10 (IS)	9.80	9.79	0.01	7304235	6973120	5

SAMPLE CHROMATOGRAM

DATAFILE : L4066 ANALYSIS DATE : 08/28/02 19:33
SAMPLE : HW0171 BSD #125 &1 WATER 8151 HW0171
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4066 ANALYSIS DATE : 08/28/02 19:33
SAMPLE : HW0171 BSD #125 &1 WATER 8151 HW0171
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.29	1.000	NG/UL	4977623
Phenanthrene D10 (IS)	9.78	1.000	NG/UL	7313552
2,4-Dichlorophenylacetic a	8.38	0.701	NG/UL	2235449
Dalapon	3.67	0.476	NG/UL	2108089
4-Nitrophenol	7.79	0.745	NG/UL	2127162
Dicamba	8.47	0.598	NG/UL	2441426
MCPP	8.61	0.834	NG/UL	2243175
MCPA	8.70	0.709	NG/UL	1507827
Dichloroprop	8.95	0.770	NG/UL	1978017
2,4-D	9.05	0.611	NG/UL	1913487
Pentachlorophenol	9.52	0.873	NG/UL	2737795
Silvex (2,4,5-TP)	9.63	0.768	NG/UL	2256424
2,4,5-T	9.76	0.598	NG/UL	2274645
Dinoseb	10.08	0.836	NG/UL	1787546
2,4-DB	10.05	0.802	NG/UL	5065035

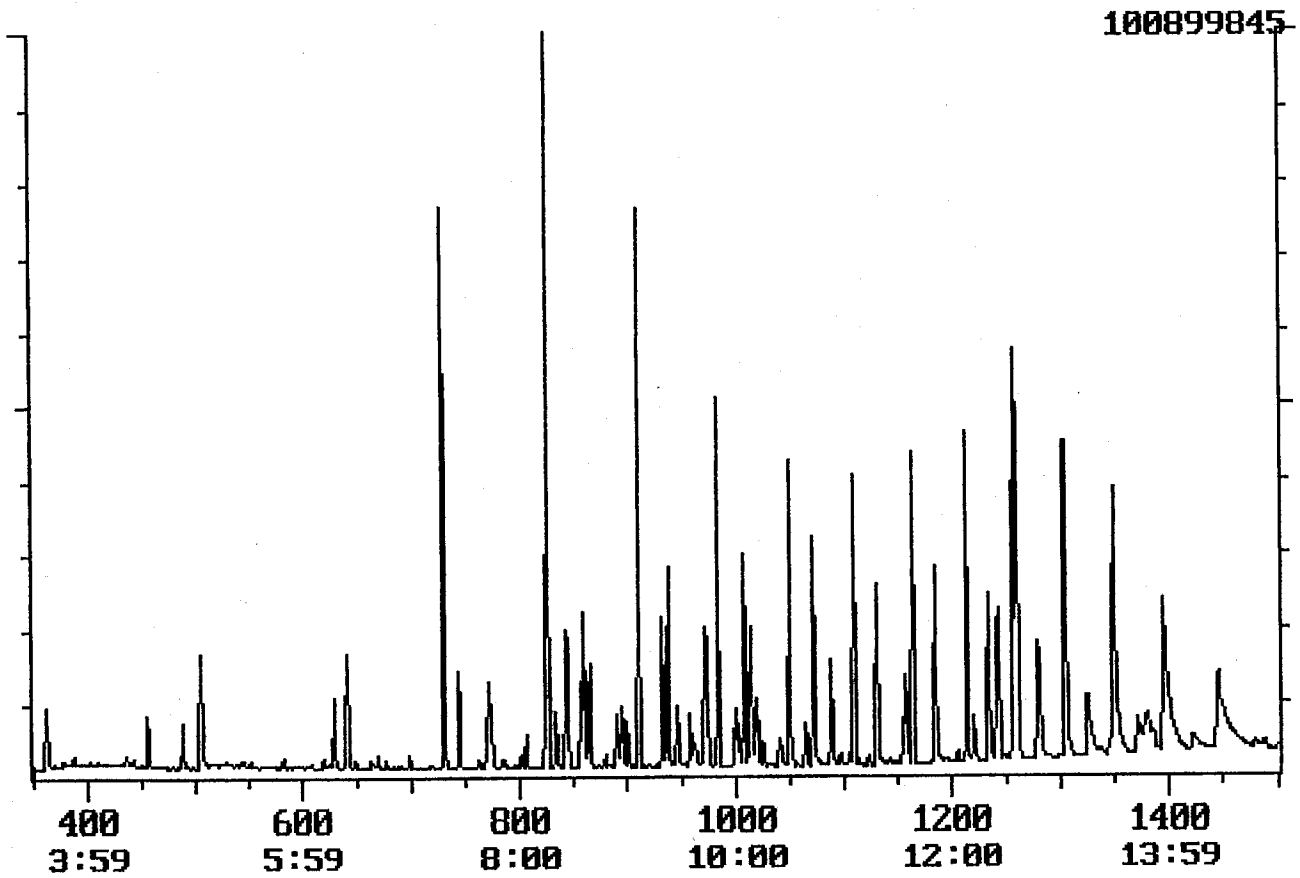
INTERNAL STANDARD QC REPORT

DATAFILE : L4066 ANALYSIS DATE : 08/28/02 19:33
SAMPLE : HW0171 BSD #125 &1 WATER 8151 HW0171
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.30	8.29	0.01	5187643	4977623	4
Phenanthrene D10 (IS)	9.80	9.78	0.02	7304235	7313552	0

SAMPLE CHROMATOGRAM

DATAFILE : L4086
ANALYSIS DATE : 08/29/02 22:15
SAMPLE : HS0176 BS #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4086 ANALYSIS DATE : 08/29/02 22:15
SAMPLE : HS0176 BS #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.25	1.000	NG/UL	7692500
Phenanthrene D10 (IS)	9.73	1.000	NG/UL	10483281
2,4-Dichlorophenylacetic a	8.34	0.673	NG/UL	3303547
Dalapon	3.65	0.411	NG/UL	2834119
4-Nitrophenol	7.74	0.701	NG/UL	3104563
Dicamba	8.43	0.579	NG/UL	3647707
MCPP	8.57	0.865	NG/UL	3335104
MCPA	8.65	0.718	NG/UL	2190519
Dichloroprop	8.90	0.754	NG/UL	2772612
2,4-D	9.00	0.646	NG/UL	2887221
Pentachlorophenol	9.47	0.887	NG/UL	3924416
Silvex (2,4,5-TP)	9.59	0.766	NG/UL	3212057
2,4,5-T	9.71	0.638	NG/UL	3465069
Dinoseb	10.04	0.650	NG/UL	1989618
2,4-DB	10.00	0.815	NG/UL	7251616

INTERNAL STANDARD QC REPORT

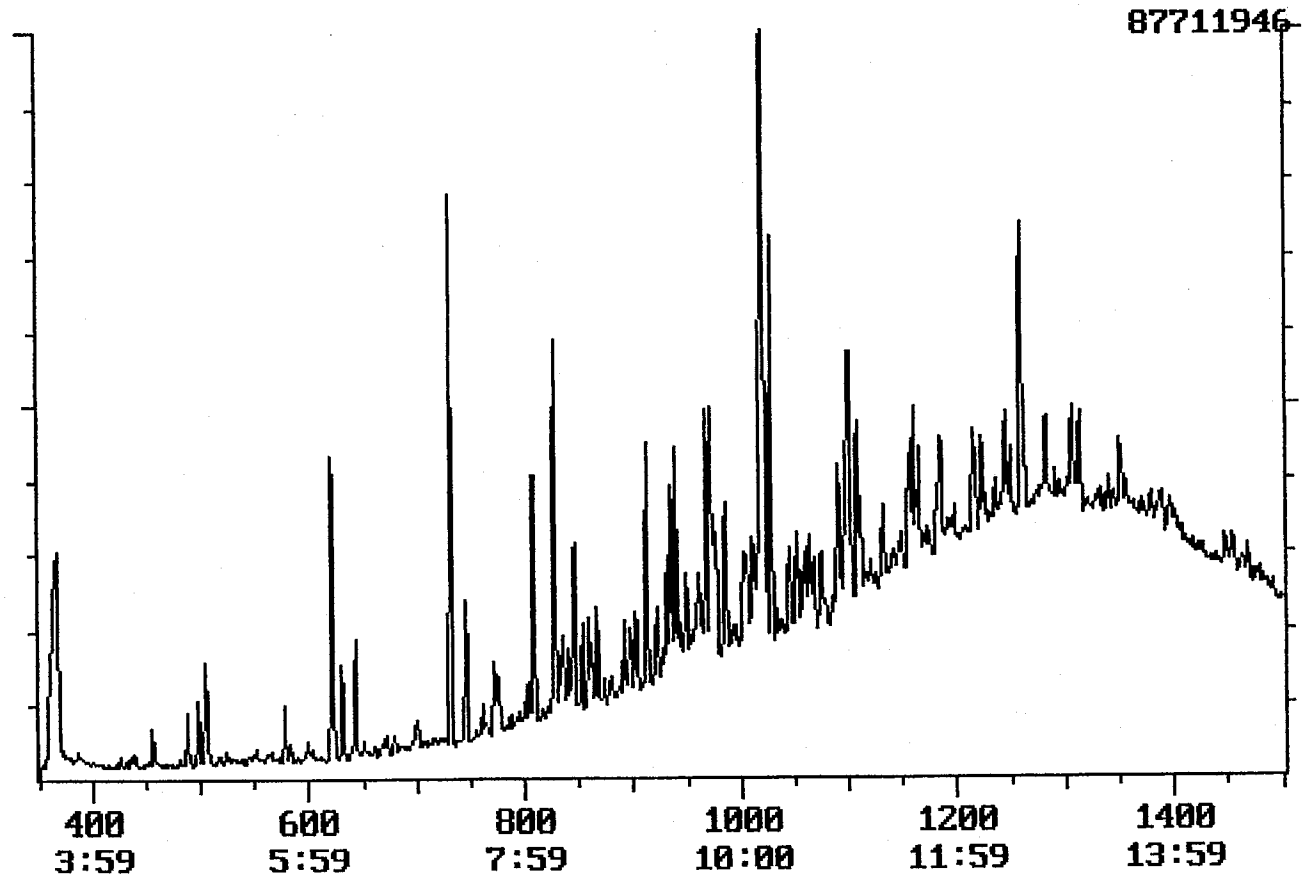
DATAFILE : L4086 ANALYSIS DATE : 08/29/02 22:15
SAMPLE : HS0176 BS #20.0000 &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.25	0.01	7512438	7692500	2
Phenanthrene D10 (IS)	9.74	9.73	0.01	11413836	10483281	8

MATIX SPIKE / MATRIX SPIKE DUPLICATE

SAMPLE CHROMATOGRAM

DATAFILE : L4087
ANALYSIS DATE : 08/29/02 22:38
SAMPLE : 108164-3 MS &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150



PAGE 1

SAMPLE QUANTITATION REPORT

DATAFILE : L4087 ANALYSIS DATE : 08/29/02 22:38
SAMPLE : 108164-3 MS &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.27	1.000	NG/UL	6295836
Phenanthrene D10 (IS)	9.76	1.000	NG/UL	9376959
2,4-Dichlorophenylacetic a	8.36	0.927	NG/UL	3683542
Dalapon	3.70	0.141	NG/UL	804591
4-Nitrophenol	7.76	0.868	NG/UL	3177160
Dicamba	8.44	0.838	NG/UL	4213287
MCPP	8.59	0.973	NG/UL	3353211
MCPA	8.67	0.988	NG/UL	2706775
Dichloroprop	8.92	0.921	NG/UL	3027260
2,4-D	9.02	0.959	NG/UL	3754187
Pentachlorophenol	9.49	0.869	NG/UL	3441085
Silvex (2,4,5-TP)	9.61	0.826	NG/UL	3091346
2,4,5-T	9.73	0.863	NG/UL	4127269
Dinoseb	10.06	0.833	NG/UL	2320279
2,4-DB	10.02	1.167	NG/UL	9060370

INTERNAL STANDARD QC REPORT

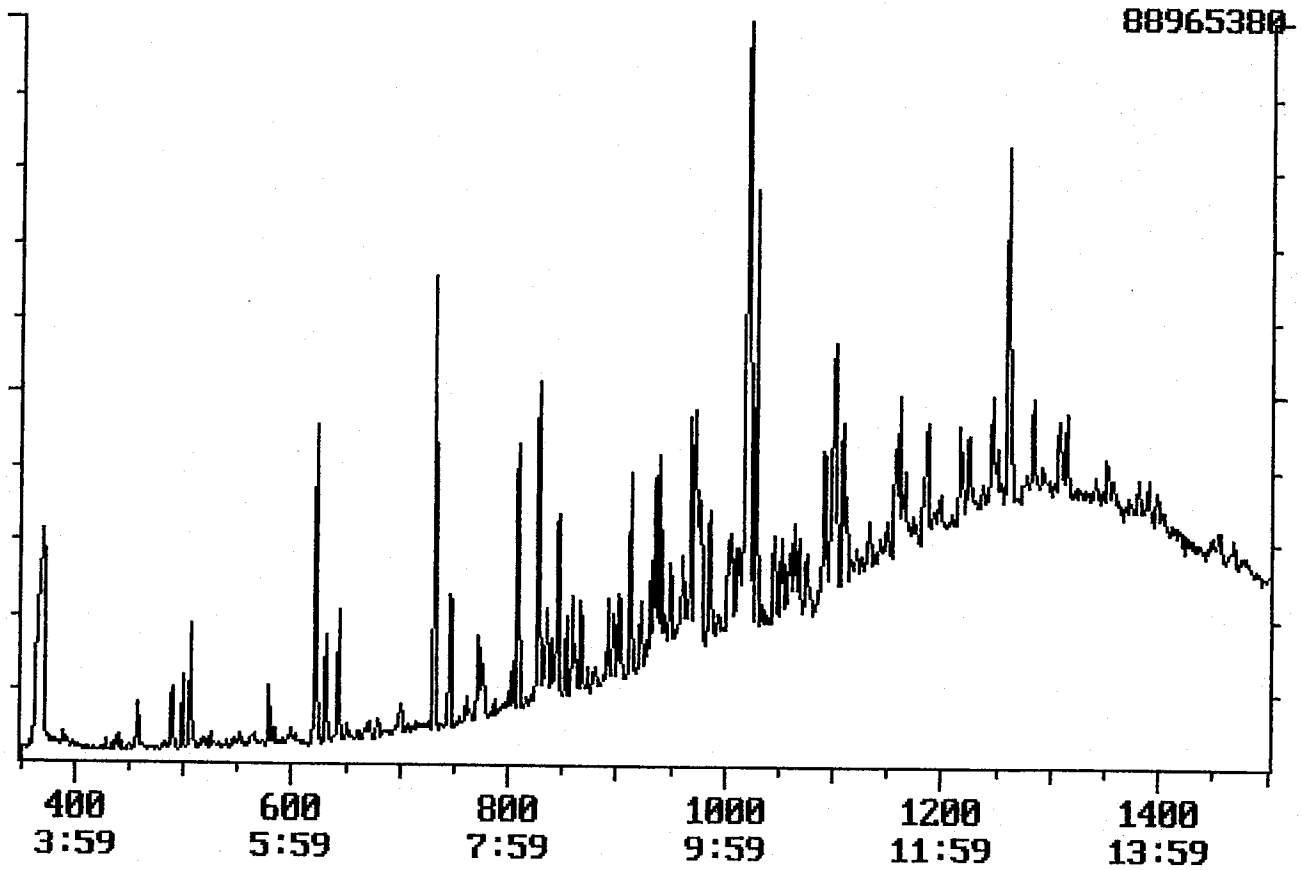
DATAFILE : L4087 ANALYSIS DATE : 08/29/02 22:38
SAMPLE : 108164-3 MS &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.27	0.01	7512438	6295836	16
Phenanthrene D10 (IS)	9.74	9.76	0.02	11413836	9376959	18

SAMPLE CHROMATOGRAM

DATAFILE : L4088
SAMPLE : 108164-3 MSD &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

ANALYSIS DATE : 08/29/02 23:01



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SAMPLE QUANTITATION REPORT

DATAFILE : L4088 ANALYSIS DATE : 08/29/02 23:01
SAMPLE : 108164-3 MSD &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	RT	Concentration		Area
Acenaphthene D10 (IS)	8.27	1.000	NG/UL	7012609
Phenanthrene D10 (IS)	9.76	1.000	NG/UL	10728859
2,4-Dichlorophenylacetic a	8.36	0.931	NG/UL	4122329
Dalapon	3.72	0.156	NG/UL	990079
4-Nitrophenol	7.76	0.917	NG/UL	3749097
Dicamba	8.45	0.849	NG/UL	4752349
MCPP	8.59	0.958	NG/UL	3780270
MCPA	8.67	0.978	NG/UL	3063468
Dichloroprop	8.92	0.928	NG/UL	3489106
2,4-D	9.02	1.002	NG/UL	4473634
Pentachlorophenol	9.49	0.829	NG/UL	3765272
Silvex (2,4,5-TP)	9.61	0.772	NG/UL	3313147
2,4,5-T	9.73	0.855	NG/UL	4684157
Dinoseb	10.06	0.880	NG/UL	2817322
2,4-DB	10.03	1.088	NG/UL	9718009

INTERNAL STANDARD QC REPORT

DATAFILE : L4088 ANALYSIS DATE : 08/29/02 23:01
SAMPLE : 108164-3 MSD &1 SOIL 8151 HS0176
LABORATORY : Sound Analytical Services
OPERATOR : Brent Hepner
INSTRUMENT : ITS40
ANALYSIS : Method 8150

Compound name	Ref RT	Act RT	Diff	Ref Area	Act Area	% D
Acenaphthene D10 (IS)	8.26	8.27	0.01	7512438	7012609	7
Phenanthrene D10 (IS)	9.74	9.76	0.02	11413836	10728859	6

LABORATORY WORKSHEETS

Herbicides Worksheet - total

QC Level:Tier IV	
Matrix:solid	
CH2M Hill	

Due: 09/04/02 | **Work Order - 108166**

Proj. Manager:Katie Downie

L-3

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

See attached for requested RLs

Sample number 108166-1		
Sample Weight/Volume	Client Sample ID	PP011801
	Date Received	8/23/02
	Date Sampled	**8/20/02 4:00:00 PM**

Herbicides - EPA 8151

Sample number 108166-2		
Sample Weight/Volume	Client Sample ID	PP011809
	Date Received	8/23/02
	Date Sampled	**8/21/02 3:00:00 PM**

Herbicides - EPA 8151

Sample number 108166-3		
Sample Weight/Volume	Client Sample ID	PP011810
	Date Received	8/23/02
	Date Sampled	**8/21/02 4:00:00 PM**

Herbicides - EPA 8151

H50176

Analyst _____ Date 09/03/02

Reviewed by _____ Date 9/04/02

Organics worksheet v4.0
If you have suggestions for changes please bring them to me - Dennis

Herbicides Worksheet - total

QC Level:Tier IV	**Due: 09/04/02**
Matrix:liquid	**Work Order - 108166**
CH2M Hill	Proj. Manager:Katie Downie

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

Sample Number 108166-1	**Client Sample ID**	PP0118EB01
Sample Weight/Volume 125mL	Date Received	8/23/02
	Date Sampled	**8/21/02 1:15:00 PM**

Herbicides - EPA 8151

Analyst B Kramer Date 09/03/02

Reviewed by SN Date 9/4/02

Organics worksheet v4.1
If you have suggestions for changes please bring them to me - Dennis

Printed - 8/27/02

Chlorinated Herbicides by USEPA Method 8151

QCBatch ID	HW0171	pH2	pH7	pH12	
Sample Matrix	Liquid	X		X	
Surrogate Standard No.	979-13-4				
Expiration Date	10/11/02	Volume Measured By/Date			
8151 MS Spike No.	979-13-5	Extracted By/Date			
Expiration Date	10/11/02	Derivatized By/Date			
Internal Standard No.	979-13-7				
Expiration Date	10/11/02				
MeCl2 Lot Number	X10466				
Methanol Lot Number					
		Spike Witness Signature/Date			
Extraction Method.	3510 Separatory Funnel				

QC Sample Type	QC Identifier	Sample Volume (ml)	Final Volume (ml)	Surr Spike (ul)	MS/BS spike amt (ul)
Method Blank	HW0171	125	1	10	N/A
Duplicate					N/A
Duplicate-2					N/A
Blank Spike	bHW0171	125	1	10	10
Blank Spike Duplicate	bdHW0171	125	1	10	10
Matrix Spike					
Matrix Spike Duplicate					
Matrix Spike-2					
Matrix Spike Duplicate-2					

Sample	Client Sample ID	Sample Volume (ml)	Final Volume (ml)	Surr Spike (ul)	Comments
108166-4	PP0118EB01	125	1	10	
108177-7	PP01M1EB02	125	1	10	

Printed - 8/28/02

Chlorinated Herbicides by USEPA Method 8151

QCBatchID	HS0176		
Sample Matrix	Solid		
Surrogate Standard No.	979-13-4		
Expiration Date	10/11/02	Weighed By/Date	8/28/02
8151 MS Spike No.	979-13-5	Extracted By/Date	8/28/02
Expiration Date	10/11/02	Derivatized By/Date	8/28/02
Internal Standard No.	979-13-7	CH2M Hill - Tier IV - low level limits - 8151	
Expiration Date	10/11/02		
MeCl2 Lot Number	X10466		
Methanol Lot Number			
		Spike Witness Signature/Date	8/28/02
Extraction Method	3550 Sonication		

QC Sample Type	QC Identifier	Sample Weight (g)	Final Volume (ml)	Sur Spike (ul)	MS/BS spike amt (ul)
Method Blank	HS0176	20.0000	1	10	N/A
Duplicate					N/A
Duplicate 2					N/A
Blank Spike	aHS0176	20.0000	1	10	100
Blank Spike Duplicate	aHS0176				
Matrix Spike	108164-3	21.1011	1	10	100
Matrix Spike Duplicate	108164-3	20.7466	1	10	100
Matrix Spike 2					
Matrix Spike Duplicate 2					

Sample	Client Sample ID	Sample Weight (g)	Final Volume (ml)	Sur Spike (ul)	Comments
108160-1	PP011802	20.2011	1	10	
108160-2	PP011803	21.3218	1	10	
108160-3	PP011804D	22.1748	1	10	
108160-4	PP011805	21.0236	1	10	
108164-1	PP011806	20.6698	1	10	
108164-2	PP011807	20.4575	1	10	
108164-3	PP011808	21.0256	1	10	
108166-1	PP011801	20.7463	1	10	
108166-2	PP011809	21.1957	1	10	
108166-3	PP011810	20.4574	1	10	
108177-1	PP01M105	21.4855	1	10	
108177-2	PP01M106	20.2658	1	10	
108177-3	PP01M107	22.0470	1	10	
108177-4	PP01M108	21.0223	1	10	
108177-5	PP01M109	20.4942	1	10	
108177-6	PP01M110	21.3369	1	10	
108177-8	PP01M101	20.5539	1	10	
108177-9	PP01M102D	20.9986	1	10	
108177-10	PP01M103	20.5536	1	10	
108177-11	PP01M104	20.8527	1	10	

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108166**
Sample Number	**1**
Batch QC ID	**HS0176**
Client Sample ID	**PP011801**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blank: HS0176

Sample weight (g)	**20.7463**	=	0.02075 /kg	Calc. Fact.	67.207705
Extract volume (ml)	**1**	=	1 ml	Dry Weight	14.87924636 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**71.72**	=	0.7172	Spike Factor	67.207705
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	**Quan Value**	**User Flags**	**% Rec.**	**Warning**	**Water Low**	**Water High**
x	2,4-Dichlorophenylacetic acid	0.701		70.1	**OK**	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	**Target Analytes**	**Quan Value**	**User Flag**	**Blank**	**Calculated Amount**	**Total Flags**	**PQL**
x	Pentachlorophenol	0.058			3.9		0.672

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108166**
Sample Number	**2**
Batch QC ID	**HS0176**
Client Sample ID	**PP011809**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blank: HS0176

Sample weight (g)	**21.1957**	=	0.0212 /kg	Calc. Fact.	60.18545825
Extract volume (ml)	**1**	=	1 ml	Dry Weight	16.61530923 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**78.39**	=	0.7839	Spike Factor	60.18545825
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	**Quan Value**	**User Flags**	**% Rec.**	**Warning**	**Water Low**	**Water High**
x	2,4-Dichlorophenylacetic acid	0.663		66.3	**OK**	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	**Target Analytes**	**Quan Value**	**User Flag**	**Blank**	**Calculated Amount**	**Total Flags**	**PQL**
x	Pentachlorophenol	0.043			2.59		0.602

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6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108166**
Sample Number	**3**
Batch QC ID	**HS0176**
Client Sample ID	**PP011810**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blank: HS0176

Sample weight (g)	**20.4574**	=	0.02046 /kg	Calc. Fact.	93.55419545
Extract volume (ml)	**1**	=	1 ml	Dry Weight	10.6889915 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**52.25**	=	0.5225	Spike Factor	93.55419545
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.688		68.8	**OK**	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**3**
Batch QC ID	**HS0176**
Client Sample ID	**PP011808**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-29-02**
Sample matrix type	**solid**
QC sample type	**ms**

Related Blank: HS0176

Sample weight (g)	**21.1011**	=	0.0211 /kg	Calc. Fact.	60.93724356
Extract volume (ml)	**1**	=	1 ml	Dry Weight	16.41032547 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**77.77**	=	0.7777	Spike Factor	60.93724356
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.927		92.7	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Dalapon	0.141			8.59		0.609
x	4-Nitrophenol	0.868			52.9		0.609
x	Dicamba	0.838			51.1		0.609
x	MCPP	0.973			59.3		0.609
x	MCPA	0.988			60.2		0.609
x	Dichloroprop	0.921			56.1		0.609
x	2,4-D	0.959			58.4		0.609
x	Pentachlorophenol	0.869			53		0.609
x	Silvex (2,4,5-TP)	0.826			50.3		0.914
x	2,4,5-T	0.863			52.6		0.914
x	Dinoseb	0.833			50.8		0.609
x	2,4-DB	1.167			71.1		0.609

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6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108164**
Sample Number	**3**
Batch QC ID	**HS0176**
Client Sample ID	**PP011808**
Date Received	**08-23-02**
Date Prepared	**08-28-02**
Date Analyzed	**08-29-02**
Sample matrix type	**solid**
QC sample type	**msd**

Related Blank: HS0176

Sample weight (g)	**20.7466**	=	0.02075 /kg	Calc. Fact.	61.9784866
Extract volume (ml)	**1**	=	1 ml	Dry Weight	16.13463082 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids	**77.77**	=	0.7777	Spike Factor	61.9784866
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.931		93.1	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Dalapon	0.156			9.67		0.62
x	4-Nitrophenol	0.917			56.8		0.62
x	Dicamba	0.849			52.6		0.62
x	MCPP	0.958			59.4		0.62
x	MCPA	0.978			60.6		0.62
x	Dichloroprop	0.928			57.5		0.62
x	2,4-D	1.002			62.1		0.62
x	Pentachlorophenol	0.829			51.4		0.62
x	Silvex (2,4,5-TP)	0.772			47.8		0.93
x	2,4,5-T	0.855			53		0.93
x	Dinoseb	0.88			54.5		0.62
x	2,4-DB	1.088			67.4		0.62

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6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	
Batch QC ID	**HS0176**
Client Sample ID	
Date Received	
Date Prepared	**08-28-02**
Date Analyzed	**08-29-02**
Sample matrix type	**solid**
QC sample type	**blank**

Related Blank: noblank

Sample weight (g)	**20**	=	0.02 /kg	Calc. Fact.	50
Extract volume (ml)	**1**	=	1 ml	Dry Weight	20 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	50
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	**Quan Value**	**User Flags**	**% Rec.**	**Warning**	**Water Low**	**Water High**
x	2,4-Dichlorophenylacetic acid	0.604		60.4	**OK**	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	**Target Analytes**	**Quan Value**	**User Flag**	**Blank**	**Calculated Amount**	**Total Flags**	**PQL**

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	
Batch QC ID	**HS0176**
Client Sample ID	
Date Received	
Date Prepared	**08-28-02**
Date Analyzed	**08-29-02**
Sample matrix type	**solid**
QC sample type	**bs**

Related Blank: HS0176

Sample weight (g)	**20**	=	0.02 /kg	Calc. Fact.	50
Extract volume (ml)	**1**	=	1 ml	Dry Weight	20 g
Dilution Factor		=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	50
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.673		67.3	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Dalapon	0.411			20.6		0.5
x	4-Nitrophenol	0.701			35.1		0.5
x	Dicamba	0.579			29		0.5
x	MCPP	0.865			43.3		0.5
x	MCPA	0.718			35.9		0.5
x	Dichloroprop	0.754			37.7		0.5
x	2,4-D	0.646			32.3		0.5
x	Pentachlorophenol	0.887			44.4		0.5
x	Silvex (2,4,5-TP)	0.766			38.3		0.75
x	2,4,5-T	0.638			31.9		0.75
x	Dinoseb	0.65			32.5		0.5
x	2,4-DB	0.815			40.8		0.5

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108166**
Sample Number	**4**
Batch QC ID	**HW0171**
Client Sample ID	**PP0118EB01**
Date Received	**08-23-02**
Date Prepared	**08-27-02**
Date Analyzed	**08-28-02**
Sample matrix type	**liquid**
QC sample type	**sample**

Related Blank: HW0171

Sample volume (ml)	**125**	=	0.125 /L	Calc. Fact.	8
Extract volume (ml)	**1**	=	1 ml	Dry Weight	-
Dilution Factor		=	1	Sample Units	ug/L
% Solids		=	1	Spike Factor	8
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.588		58.8	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	
Batch QC ID	**HW0171**
Client Sample ID	
Date Received	
Date Prepared	**08-27-02**
Date Analyzed	**08-28-02**
Sample matrix type	**liquid**
QC sample type	**blank**

Related Blank: noblank

Sample volume (ml)	**125**	=	0.125 /L	Calc. Fact.	8
Extract volume (ml)	**1**	=	1 ml	Dry Weight	-
Dilution Factor		=	1	Sample Units	ug/L
% Solids		=	1	Spike Factor	8
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.685		68.5	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blank: HW0171
Batch QC ID	**HW0171**
Client Sample ID	
Date Received	
Date Prepared	**08-27-02**
Date Analyzed	**08-28-02**
Sample matrix type	**liquid**
QC sample type	**bs**

Sample volume (ml)	**125**	=	0.125 /L	Calc. Fact.	8
Extract volume (ml)	**1**	=	1 ml	Dry Weight	-
Dilution Factor		=	1	Sample Units	ug/L
% Solids		=	1	Spike Factor	8
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	**Quan Value**	**User Flags**	**% Rec.**	**Warning**	**Water Low**	**Water High**
x	2,4-Dichlorophenylacetic acid	0.679		67.9	**OK**	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	**Target Analytes**	**Quan Value**	**User Flag**	**Blank**	**Calculated Amount**	**Total Flags**	**PQL**
x	Dalapon	0.494			3.95		0.16
x	4-Nitrophenol	0.679			5.43		0.12
x	Dicamba	0.569			4.55		0.12
x	Dichloroprop	0.816			6.53		0.08
x	2,4-D	0.629			5.03		0.12
x	Pentachlorophenol	0.898			7.18		0.08
x	Silvex (2,4,5-TP)	0.817			6.54		0.08
x	2,4,5-T	0.664			5.31		0.16
x	Dinoseb	0.883			7.06		0.16
x	2,4-DB	0.859			6.87		0.12
x	MCPP	0.844			6.75		0.08
x	MCPA	0.739			5.91		0.08

$$\frac{1\,ml}{125\,ml} \times 0.629\,ng/ul \times \frac{1\,ug}{10^3\,ng} \times \frac{10^6\,ul}{1\,L} = 5.032\,ug/L$$

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blank: HW0171
Batch QC ID	**HW0171**
Client Sample ID	
Date Received	
Date Prepared	**08-27-02**
Date Analyzed	**08-28-02**
Sample matrix type	**liquid**
QC sample type	**bsd**

Sample volume (ml)	**125**	=	0.125 /L	Calc. Fact.	8
Extract volume (ml)	**1**	=	1 ml	Dry Weight	-
Dilution Factor		=	1	Sample Units	ug/L
% Solids		=	1	Spike Factor	8
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	2,4-Dichlorophenylacetic acid	0.701		70.1	OK	50	127
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Dalapon	0.476			3.81		0.16
x	4-Nitrophenol	0.745			5.96		0.12
x	Dicamba	0.598			4.78		0.12
x	Dichloroprop	0.77			6.16		0.08
x	2,4-D	0.611			4.89		0.12
x	Pentachlorophenol	0.873			6.98		0.08
x	Silvex (2,4,5-TP)	0.768			6.14		0.08
x	2,4,5-T	0.598			4.78		0.16
x	Dinoseb	0.836			6.69		0.16
x	2,4-DB	0.802			6.42		0.12
x	MCPP	0.834			6.67		0.08
x	MCPA	0.709			5.67		0.08

ORGANOCHLORINE PESTICIDES DATA PACKAGE

SAMPLE DATA

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\034F3401.D\ADC1B.CH Vial: 34
Signal #2 : F:\HPCHEM\1\DATA\PE091102\034F3401.D\ADC1A.CH
Acq On : 12-Sep-2002, 09:18:40 Operator: JDW
Sample : 108166-1 1.2 JW 9/12/02 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 11:12:12 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.85	3.82	6692191	14162888	10.244	10.394	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	51.22%#	51.97%#	
22)	SR	Decachlorobiphen	13.51	14.42	5458626	9404295	13.098	12.217	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	65.49%	61.09%	
		Target Compounds							
2)		alpha-BHC	4.68f	0.00	957015	0	0.812	N.D.	#
3)	M	gamma-BHC (Linda	5.20	0.00	147048	0	0.144	N.D.	#
4)	M	Heptachlor	5.93	0.00	166922	0	0.171	N.D.	#
5)	M	Aldrin	6.40	6.54	418600	2160424	0.423 J	1.260	#
6)		beta-BHC	5.34	0.00	128612	0	0.340	N.D.	#
7)		delta-BHC	5.64	0.00	560026	0	0.566	N.D.	#
8)		Heptachlor Epoxi	7.33f	7.45	301588	1864940	0.362 PCB	1.279	#
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
10)		gamma-Chlordane	7.54	7.76	1115819	3585515	1.287	2.381	#
11)		alpha-Chlordane	7.76	8.02	700216	994726	0.888	0.715	
12)		4,4'-DDE	7.89	8.34	3530742	6157821	4.855	4.314	
13)	M	Dieldrin	8.44	8.64	766921	972243	0.969 PCB	0.657	
14)	M	Endrin	0.00	0.00	0	0	N.D.	N.D.	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	8.99	9.45	1595490	2457331	2.654	2.336	
17)	M	4,4'-DDT	9.51f	10.06	464566	1250181	0.754 PCB	1.328	#
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D.	N.D.	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	10.50	0.00	147128	0	0.600	N.D.	#
21)		Endrin Ketone	0.00	0.00	0	0	N.D.	N.D.	

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108166-1

Data File Path F:\HPCHEM\1\DATA\PE091102\034F3401.D
Date Acquired 12-Sep-2002, 09:18:40

CCV File Path F:\HPCHEM\1\DATA\PE091102\016F1601.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.85	3.82	0.2849	0.2651	0.2855	0.2658	OK	OK
alpha-BHC	4.68	0.00	0.3463	0.0000	0.3487	0.3330	OK	--
gamma-BHC (Lindane)	5.20	0.00	0.3852	0.0000	0.3852	0.3724	OK	--
Heptachlor	5.93	0.00	0.4391	0.0000	0.4400	0.4194	OK	--
Aldrin	6.40	6.54	0.4739	0.4536	0.4745	0.4543	OK	OK
beta-BHC	5.34	0.00	0.3949	0.0000	0.3953	0.3822	OK	--
delta-BHC	5.64	0.00	0.4173	0.0000	0.4160	0.4143	OK	--
Heptachlor Epoxide	7.33	7.45	0.5423	0.5169	0.5435	0.5172	OK	OK
Endosulfan I	0.00	0.00	0.0000	0.0000	0.5926	0.5641	--	--
gamma-Chlordane	7.54	7.76	0.5580	0.5377	0.5584	0.5385	OK	OK
alpha-Chlordane	7.76	8.02	0.5743	0.5560	0.5747	0.5566	OK	OK
4,4'-DDE	7.89	8.34	0.5839	0.5785	0.5844	0.5791	OK	OK
Dieldrin	8.44	8.64	0.6244	0.5992	0.6251	0.5996	OK	OK
Endrin	0.00	0.00	0.0000	0.0000	0.6568	0.6400	--	--
Endosulfan II	0.00	0.00	0.0000	0.0000	0.6881	0.6688	--	--
4,4'-DDD	8.99	9.45	0.6657	0.6555	0.6660	0.6560	OK	OK
4,4'-DDT	9.51	10.06	0.7038	0.6975	0.7050	0.6979	OK	OK
Endrin Aldehyde	0.00	0.00	0.0000	0.0000	0.7473	0.7154	--	--
Endosulfan Sulfate	0.00	0.00	0.0000	0.0000	0.8102	0.7535	--	--
Methoxychlor	10.50	0.00	0.7774	0.0000	0.7751	0.7951	OK	--
Endrin Ketone	0.00	0.00	0.0000	0.0000	0.8509	0.8277	--	--
Decachlorobiphenyl (S)	13.51	14.42	1.0000	1.0000	1.0000	1.0000	OK	OK

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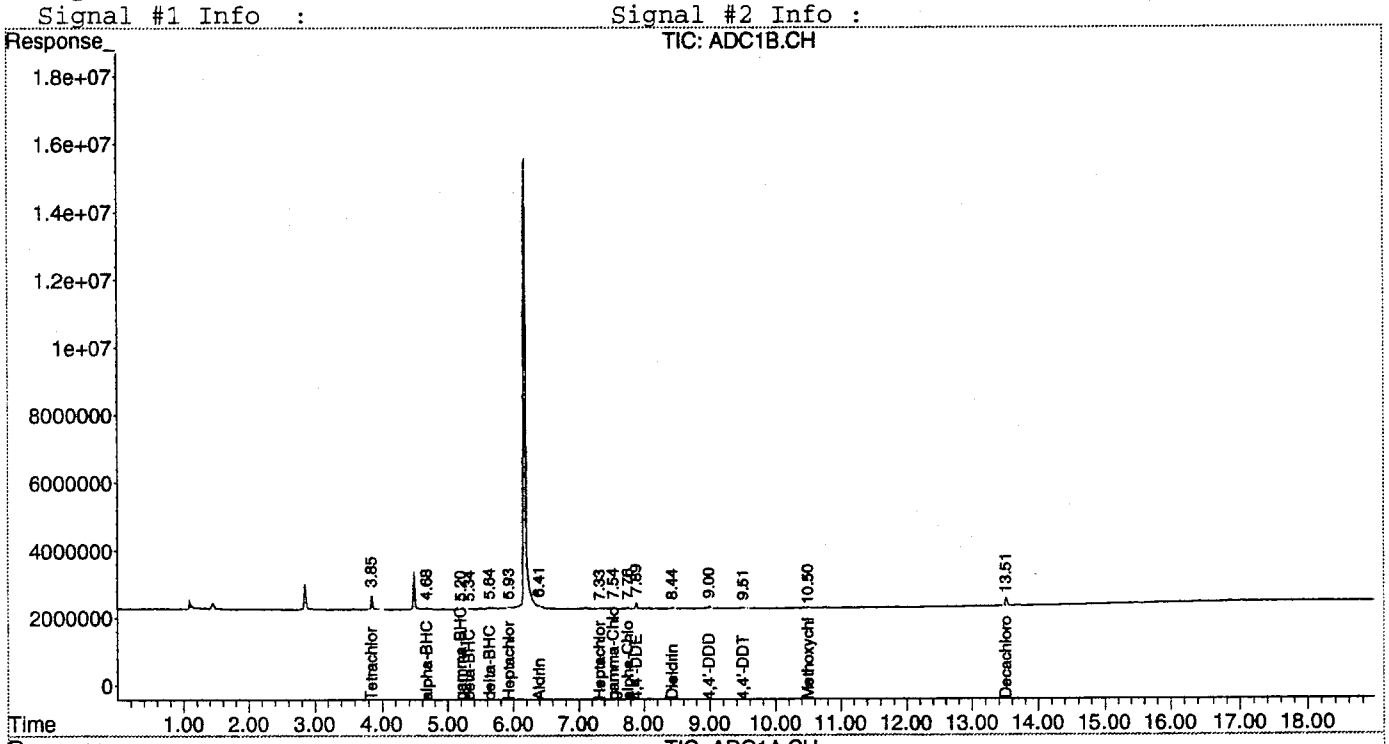
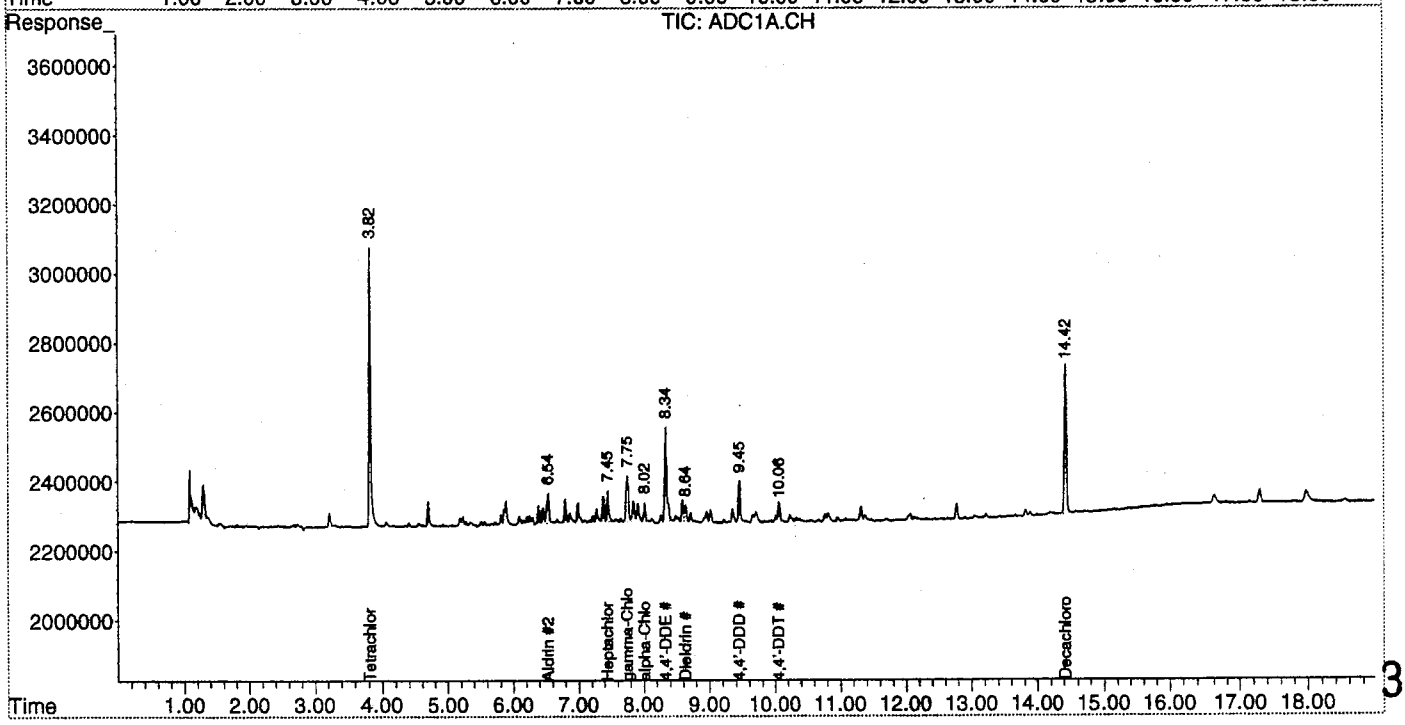
Signal #1 : F:\HPCHEM\1\DATA\PE091102\034F3401.D\ADC1B.CH Vial: 34
Signal #2 : F:\HPCHEM\1\DATA\PE091102\034F3401.D\ADC1A.CH
Acq On : 12-Sep-2002, 09:18:40 Operator: JDW
Sample : 108166-1 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 11:12 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\034F3401.D\ADC1B.CH Vial: 34
Signal #2 : F:\HPCHEM\1\DATA\PE091102\034F3401.D\ADC1A.CH
Acq On : 12-Sep-2002, 09:18:40 Operator: JDW
Sample : 108166-1 1:2 DO 9/12/02 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 11:15:55 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

MD

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) SR Tetrachloro-m-xy	3.85	3.82	7592652	14147807	11.422	10.860
Spiked Amount 20.000 Range 60 - 150 Recovery =					57.11%#	54.30%#
11) SR Decachlorobiphen	13.51f	14.42f	5461627	9404295	12.093	12.377
Spiked Amount 20.000 Range 60 - 150 Recovery =					60.47%	61.88%
Target Compounds						
2) Hexachloroethane	1.56f	0.00	854894	0	0.555	N.D. #
3) Hexachlorobenzen	4.48	0.00	21904546	0	21.155	N.D. #
4) Hexachlorobutadi	1.83	0.00	129422	0	0.061	N.D. #
5) Oxychlordane	7.24f	7.28f	243346	819324	0.352 BOL	0.673 #
6) cis-Nonachlor	8.93f	0.00	584347	0	0.722	N.D. #
7) trans-Nonachlor	7.76	7.92	700216	1242489	0.922 BOL	0.905
8) 2,4'-DDE	7.33	7.76f	301588	3585515	0.624 BOL	4.207 #
9) 2,4'-DDD	8.20f	0.00	718373	0	1.787 NC	N.D. #
10) 2,4'-DDT	0.00	9.35f	0	888881	N.D.	1.298 #

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108166-1

Data File Path F:\HPCHEM\1\DATA\PE091102\034F3401.D
Date Acquired 12-Sep-2002, 09:18:40

CCV File Path F:\HPCHEM\1\DATA\PE091102\017F1701.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.85	3.82	0.2849	0.2651	0.2854	0.2658	OK	OK
Hexachloroethane	1.56	0.00	0.1153	0.0000	0.1130	0.1016	OK	--
Hexachlorobenzene	4.48	0.00	0.3318	0.0000	0.3293	0.3167	OK	--
Hexachlorobutadiene	1.83	0.00	0.1357	0.0000	0.1344	0.1192	OK	--
Oxychlordane	7.24	7.28	0.5358	0.5048	0.5316	0.5064	--	OK
cis-Nonachlor	8.93	0.00	0.6611	0.0000	0.6612	0.6506	OK	--
trans-Nonachlor	7.76	7.92	0.5743	0.5488	0.5724	0.5494	OK	OK
2,4'-DDE	7.33	7.76	0.5423	0.5377	0.5420	0.5396	OK	OK
2,4'-DDD	8.20	0.00	0.6071	0.0000	0.6073	0.6056	OK	--
2,4'-DDT	0.00	9.35	0.0000	0.6483	0.6420	0.6456	--	OK
Decachlorobiphenyl (S)	13.51	14.42	1.0000	1.0000	1.0000	1.0000	OK	OK

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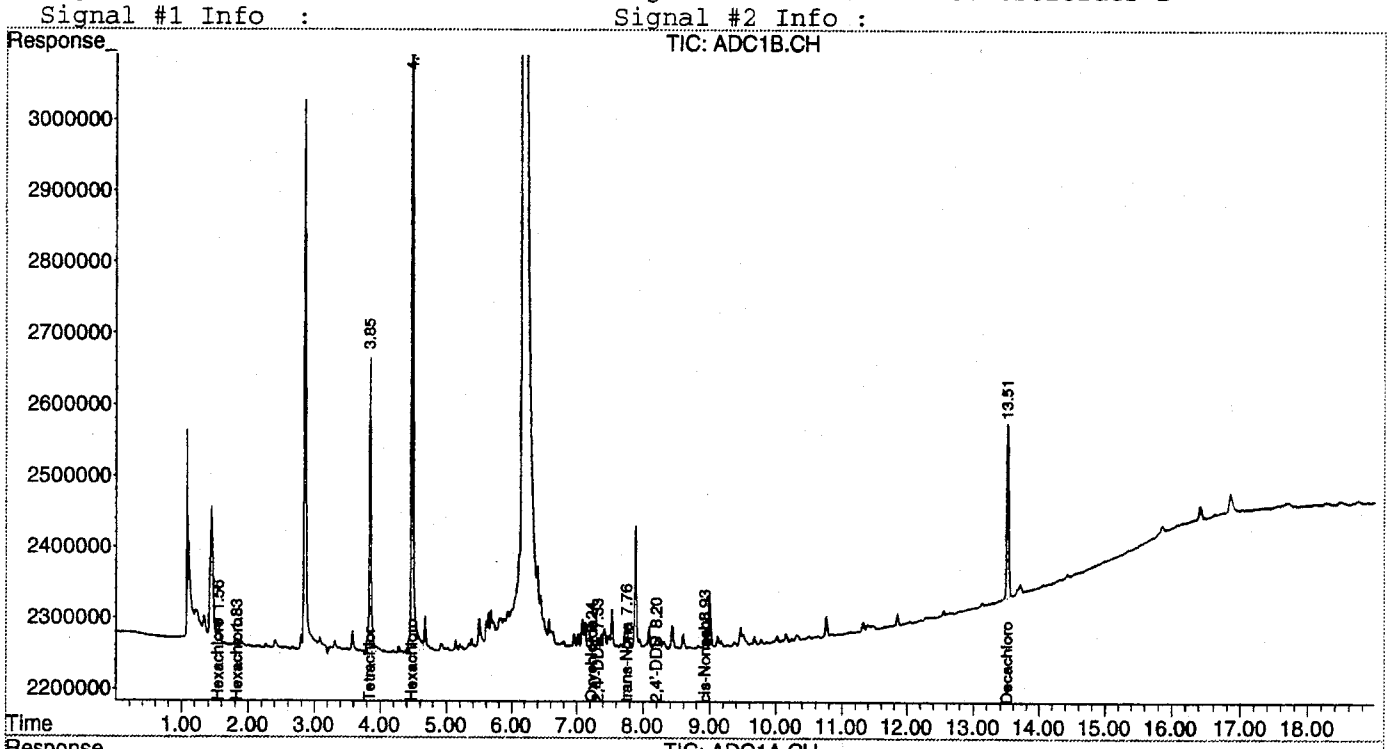
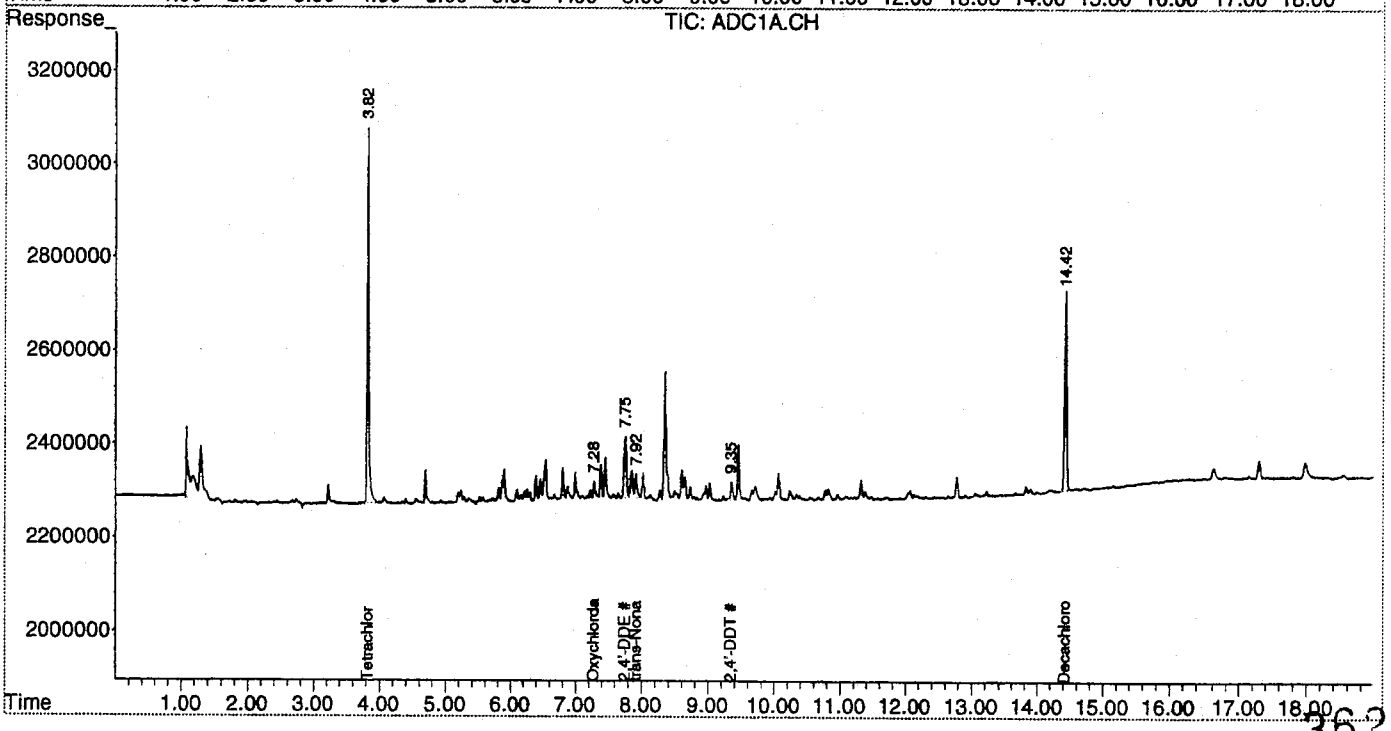
Signal #1 : F:\HPCHEM\1\DATA\PE091102\034F3401.D\ADC1B.CH Vial: 34
Signal #2 : F:\HPCHEM\1\DATA\PE091102\034F3401.D\ADC1A.CH
Acq On : 12-Sep-2002, 09:18:40 Operator: JDW
Sample : 108166-1 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 11:16 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\035F3501.D\ADC1B.CH Vial: 35
Signal #2 : F:\HPCHEM\1\DATA\PE091102\035F3501.D\ADC1A.CH
Acq On : 12-Sep-2002, 09:40:39 Operator: JDW
Sample : 108166-2 1:2 9/16/02 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 11:12:41 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

ok

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.85	3.82	6786984	14175033	10.389	10.403	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					51.94%#	52.02%#	
22)	SR	Decachlorobiphen	13.50f	14.41	6732001	11401920	16.153	14.812	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					80.77%	74.06%	
		Target Compounds							
2)		alpha-BHC	4.71	0.00	1022649	0	0.868	N.D.	#
3)	M	gamma-BHC (Linda	5.20	5.36	1182342	1161667	1.156 PCB	0.642	#
4)	M	Heptachlor	5.93	6.09f	4125225	4571270	4.218	~~5.208~~	
5)	M	Aldrin	6.40	6.54	5869773	17739647	5.934	10.345	#
6)		beta-BHC	5.33	5.51	483024	2177905	1.276	3.342	#
7)		delta-BHC	5.64	0.00	4609542	0	4.658	N.D.	#
8)		Heptachlor Epoxi	7.38f	7.45	2222070	8757575	2.670 PCB	6.006	#
9)		Endosulfan I	8.04f	8.12	1538173	1774033	1.709	1.264	
10)		gamma-Chlordane	7.54	7.74f	5169280	176.3E6	5.964	117.109	#
11)		alpha-Chlordane	7.76	8.02	5169983	4964224	6.560	3.569	#
12)		4,4'-DDE	7.89	8.34	25085455	53450236	34.496	37.442	
13)	M	Dieldrin	8.44	8.64	5729828	8043383	7.242 PCB	5.434	
14)	M	Endrin	0.00	9.22	0	538395	N.D.	0.503	#
15)		Endosulfan II	0.00	9.65	0	1957988	N.D.	1.689	#
16)		4,4'-DDD	8.99	9.45	11951256	20494377	19.877	19.482	
17)	M	4,4'-DDT	9.51f	10.05	1360592	4429776	2.208 PCB	4.705	#
18)		Endrin Aldehyde	10.09	10.33	106877	372703	0.230 BOL	0.425	#
19)		Endosulfan Sulfa	10.93f	10.84f	933306	3069421	1.694	2.896	#
20)		Methoxychlor	10.50	0.00	376268	0	1.533 MC	N.D.	#
21)		Endrin Ketone	0.00	0.00	0	0	N.D.	N.D.	

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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108166-2

Data File Path F:\HPCHEM\1\DATA\PE091102\035F3501.D
Date Acquired 12-Sep-2002, 09:40:39

CCV File Path F:\HPCHEM\1\DATA\PE091102\016F1601.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.85	3.82	0.2851	0.2653	0.2855	0.2658	OK	OK
alpha-BHC	4.71	0.00	0.3490	0.0000	0.3487	0.3330	OK	--
gamma-BHC (Lindane)	5.20	5.36	0.3854	0.3720	0.3852	0.3724	OK	OK
Heptachlor	5.93	6.09	0.4393	0.4228	0.4400	0.4194	OK	--
Aldrin	6.40	6.54	0.4742	0.4540	0.4745	0.4543	OK	OK
beta-BHC	5.33	5.51	0.3949	0.3826	0.3953	0.3822	OK	OK
delta-BHC	5.64	0.00	0.4174	0.0000	0.4160	0.4143	OK	--
Heptachlor Epoxide	7.38	7.45	0.5462	0.5171	0.5435	0.5172	OK	OK
Endosulfan I	8.04	8.12	0.5955	0.5636	0.5926	0.5641	OK	OK
gamma-Chlordane	7.54	7.74	0.5582	0.5368	0.5584	0.5385	OK	OK
alpha-Chlordane	7.76	8.02	0.5745	0.5562	0.5747	0.5566	OK	OK
4,4'-DDE	7.89	8.34	0.5842	0.5786	0.5844	0.5791	OK	OK
Dieldrin	8.44	8.64	0.6247	0.5993	0.6251	0.5996	OK	OK
Endrin	0.00	9.22	0.0000	0.6398	0.6568	0.6400	--	OK
Endosulfan II	0.00	9.65	0.0000	0.6696	0.6881	0.6688	--	OK
4,4'-DDD	8.99	9.45	0.6657	0.6554	0.6660	0.6560	OK	OK
4,4'-DDT	9.51	10.05	0.7039	0.6975	0.7050	0.6979	OK	OK
Endrin Aldehyde	10.09	10.33	0.7471	0.7165	0.7473	0.7154	OK	OK
Endosulfan Sulfate	10.93	10.84	0.8090	0.7519	0.8102	0.7535	OK	OK
Methoxychlor	10.50	0.00	0.7775	0.0000	0.7751	0.7951	OK	--
Endrin Ketone	0.00	0.00	0.0000	0.0000	0.8509	0.8277	--	--
Decachlorobiphenyl (S)	13.50	14.41	1.0000	1.0000	1.0000	1.0000	OK	OK

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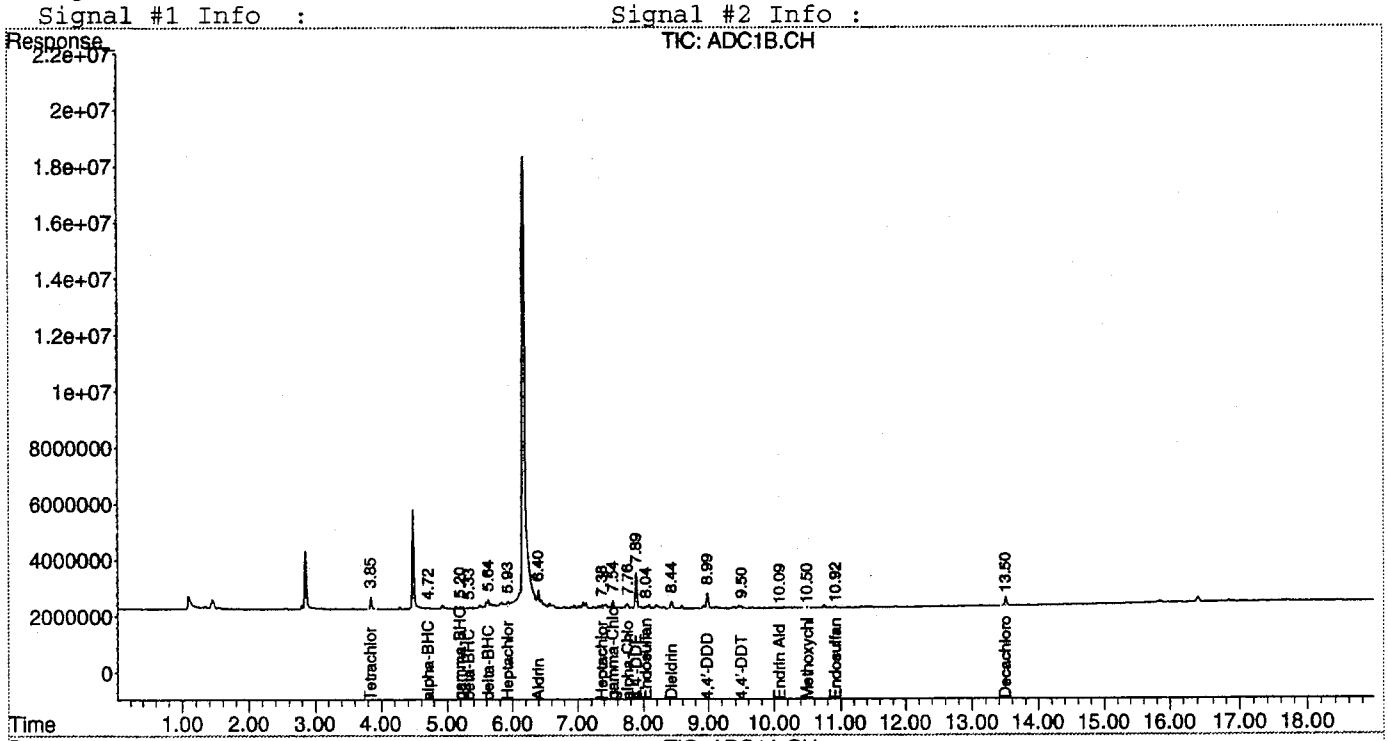
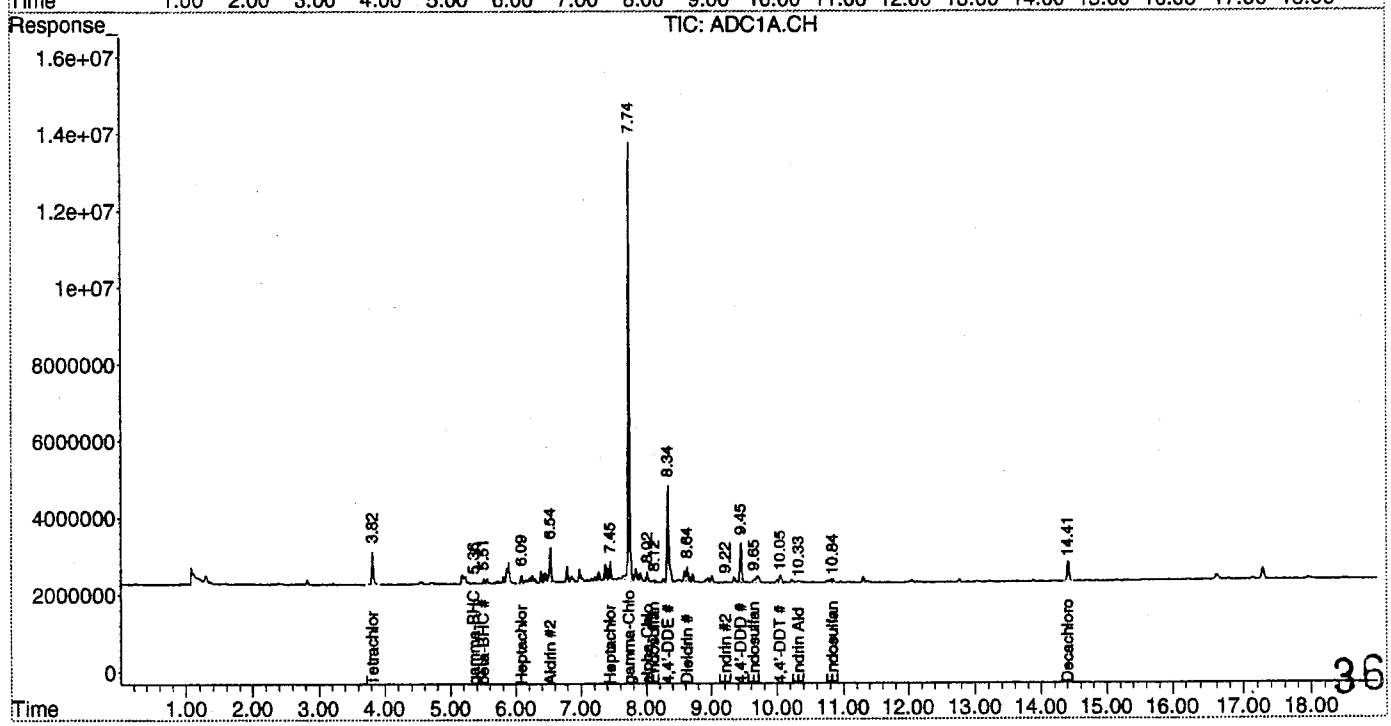
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\035F3501.D\ADC1B.CH Vial: 35
Signal #2 : F:\HPCHEM\1\DATA\PE091102\035F3501.D\ADC1A.CH
Acq On : 12-Sep-2002, 09:40:39 Operator: JDW
Sample : 108166-2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 11:12 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\035F3501.D\ADC1B.CH Vial: 35
Signal #2 : F:\HPCHEM\1\DATA\PE091102\035F3501.D\ADC1A.CH
Acq On : 12-Sep-2002, 09:40:39 Operator: JDW
Sample : 108166-2 1:2 2 9/10/02 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 11:16:38 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) SR Tetrachloro-m-xy	3.85	3.82	7609638	14129721	11.447	10.847
Spiked Amount 20.000 Range 60 - 150 Recovery =					57.23%#	54.23%#
11) SR Decachlorobiphen	13.50f	14.41f	6726359	11401920	14.894	15.006
Spiked Amount 20.000 Range 60 - 150 Recovery =					74.47%	75.03%
Target Compounds						
2) Hexachloroethane	1.55	0.00	1318165	0	0.856	N.D. #
3) Hexachlorobenzen	4.48f	4.57	72202336	1267973	69.730	0.896 #BOL
4) Hexachlorobutadi	1.83	0.00	156814	0	0.074	N.D. #
5) Oxychlordane	7.24f	7.28f	1444717	4350385	~~2.092~~	3.573 #
6) cis-Nonachlor	8.93f	0.00	2148250	0	2.654	N.D. #
7) trans-Nonachlor	7.76	7.91f	5169983	5183544	6.808	3.770 # C2
8) 2,4'-DDE	7.32	0.00	2033757	0	4.209	N.D. #
9) 2,4'-DDD	8.20f	8.72f	5040142	3953361	12.537	5.394 # C2
10) 2,4'-DDT	0.00	9.34	0	3258332	N.D.	4.756 #

366

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
035F3501.D +CPDS_910.M Thu Sep 12 11:32:10 2002

Custom Report - Relative Retention Times

Sample Name 108166-2

Data File Path F:\HPCHEM\1\DATA\PE091102\035F3501.D
Date Acquired 12-Sep-2002, 09:40:39

CCV File Path F:\HPCHEM\1\DATA\PE091102\017F1701.D

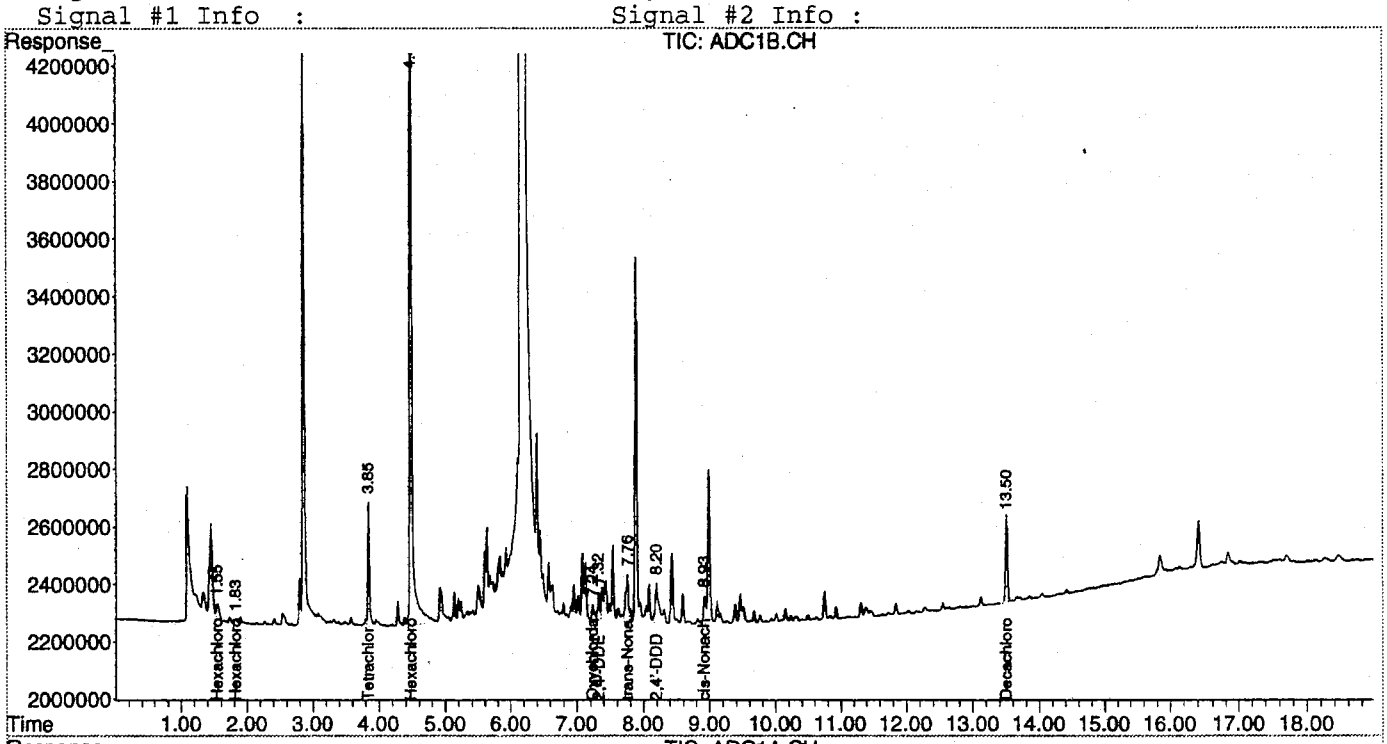
Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.85	3.82	0.2851	0.2653	0.2854	0.2658	OK	OK
Hexachloroethane	1.55	0.00	0.1148	0.0000	0.1130	0.1016	OK	--
Hexachlorobenzene	4.48	4.57	0.3321	0.3173	0.3293	0.3167	OK	OK
Hexachlorobutadiene	1.83	0.00	0.1356	0.0000	0.1344	0.1192	OK	--
Oxychlordane	7.24	7.28	0.5359	0.5050	0.5316	0.5064	--	OK
cis-Nonachlor	8.93	0.00	0.6611	0.0000	0.6612	0.6506	OK	--
trans-Nonachlor	7.76	7.91	0.5745	0.5490	0.5724	0.5494	OK	OK
2,4'-DDE	7.32	0.00	0.5424	0.0000	0.5420	0.5396	OK	--
2,4'-DDD	8.20	8.72	0.6071	0.6050	0.6073	0.6056	OK	OK
2,4'-DDT	0.00	9.34	0.0000	0.6482	0.6420	0.6456	--	OK
Decachlorobiphenyl (S)	13.50	14.41	1.0000	1.0000	1.0000	1.0000	OK	OK

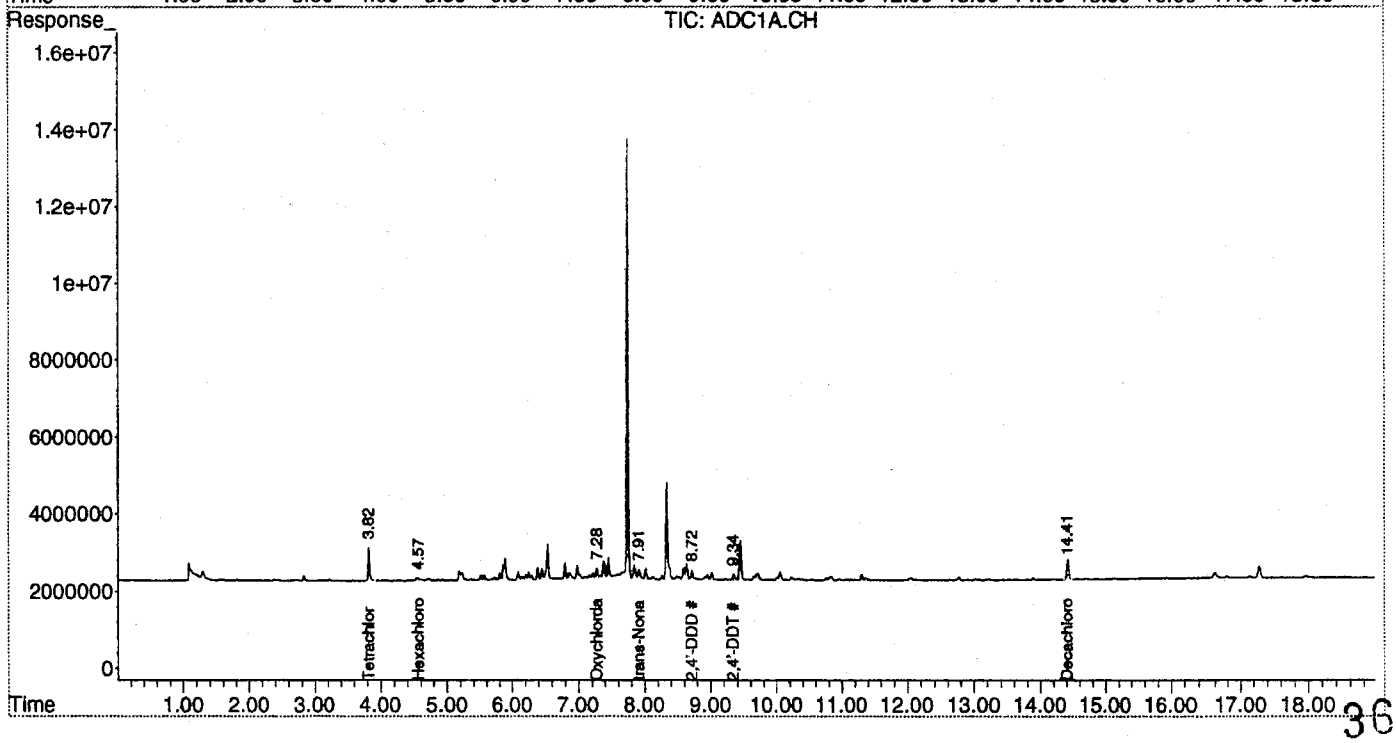
367

Signal #1 : F:\HPCHEM\1\DATA\PE091102\035F3501.D\ADC1B.CH Vial: 35
Signal #2 : F:\HPCHEM\1\DATA\PE091102\035F3501.D\ADC1A.CH
Acq On : 12-Sep-2002, 09:40:39 Operator: JDW
Sample : 108166-2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 11:16 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\036F3601.D\ADC1B.CH Vial: 36
Signal #2 : F:\HPCHEM\1\DATA\PE091102\036F3601.D\ADC1A.CH
Acq On : 12-Sep-2002, 10:02:35 Operator: JDW
Sample : 108166-3 1:2 DO 9/12/02 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 11:13:19 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.83	6027079	13363425	9.226	9.807	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					46.13%#	49.04%#	
22)	SR	Decachlorobiphen	13.52	14.43	5659605	9428739	13.580	12.249	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					67.90%	61.25%	
		Target Compounds							
2)		alpha-BHC	4.72	0.00	139969	0	0.119	N.D.	#
3)	M	gamma-BHC (Linda	5.22	0.00	290089	0	0.284	N.D.	#
4)	M	Heptachlor	5.94	0.00	556440	0	0.569	N.D.	#
5)	M	Aldrin	6.42	6.56	1717918	5038406	1.737	2.938	#
6)		beta-BHC	5.35	5.53	153266	557963	0.405	0.856	#
7)		delta-BHC	5.61	0.00	912800	0	0.922	N.D.	#
8)		Heptachlor Epoxi	7.34	7.47	636469	2313891	0.765 PCB	1.587	#
9)		Endosulfan I	8.06f	0.00	400945	0	0.445	N.D.	#
10)		gamma-Chlordane	7.55	7.75f	1030215	35506632	1.189	23.580	#
11)		alpha-Chlordane	7.77	8.03	1028917	950519	1.306	0.683	#
12)		4,4'-DDE	7.90	8.35	12692911	23612302	17.455	16.540	
13)	M	Dieldrin	8.45	8.65	1096118	1389225	1.385 PCB	0.939	
14)	M	Endrin	0.00	0.00	0	0	N.D.	N.D.	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	9.01	9.46	2277251	3502321	3.788	3.329	
17)	M	4,4'-DDT	9.53	10.07	617318	1416975	1.002 PCB	1.505	#
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D.	N.D.	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	0.00	0.00	0	0	N.D.	N.D.	
21)		Endrin Ketone	0.00	0.00	0	0	N.D.	N.D.	

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108166-3

Data File Path F:\HPCHEM\1\DATA\PE091102\036F3601.D
Date Acquired 12-Sep-2002, 10:02:35

CCV File Path F:\HPCHEM\1\DATA\PE091102\016F1601.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.86	3.83	0.2853	0.2656	0.2855	0.2658	OK	OK
alpha-BHC	4.72	0.00	0.3494	0.0000	0.3487	0.3330	OK	--
gamma-BHC (Lindane)	5.22	0.00	0.3857	0.0000	0.3852	0.3724	OK	--
Heptachlor	5.94	0.00	0.4397	0.0000	0.4400	0.4194	OK	--
Aldrin	6.42	6.56	0.4745	0.4543	0.4745	0.4543	OK	OK
beta-BHC	5.35	5.53	0.3960	0.3830	0.3953	0.3822	OK	OK
delta-BHC	5.61	0.00	0.4153	0.0000	0.4160	0.4143	OK	--
Heptachlor Epoxide	7.34	7.47	0.5427	0.5175	0.5435	0.5172	OK	OK
Endosulfan I	8.06	0.00	0.5960	0.0000	0.5926	0.5641	--	--
gamma-Chlordane	7.55	7.75	0.5585	0.5370	0.5584	0.5385	OK	OK
alpha-Chlordane	7.77	8.03	0.5747	0.5565	0.5747	0.5566	OK	OK
4,4'-DDE	7.90	8.35	0.5845	0.5788	0.5844	0.5791	OK	OK
Dieldrin	8.45	8.65	0.6249	0.5997	0.6251	0.5996	OK	OK
Endrin	0.00	0.00	0.0000	0.0000	0.6568	0.6400	--	--
Endosulfan II	0.00	0.00	0.0000	0.0000	0.6881	0.6688	--	--
4,4'-DDD	9.01	9.46	0.6660	0.6558	0.6660	0.6560	OK	OK
4,4'-DDT	9.53	10.07	0.7045	0.6979	0.7050	0.6979	OK	OK
Endrin Aldehyde	0.00	0.00	0.0000	0.0000	0.7473	0.7154	--	--
Endosulfan Sulfate	0.00	0.00	0.0000	0.0000	0.8102	0.7535	--	--
Methoxychlor	0.00	0.00	0.0000	0.0000	0.7751	0.7951	--	--
Endrin Ketone	0.00	0.00	0.0000	0.0000	0.8509	0.8277	--	--
Decachlorobiphenyl (S)	13.52	14.43	1.0000	1.0000	1.0000	1.0000	OK	OK

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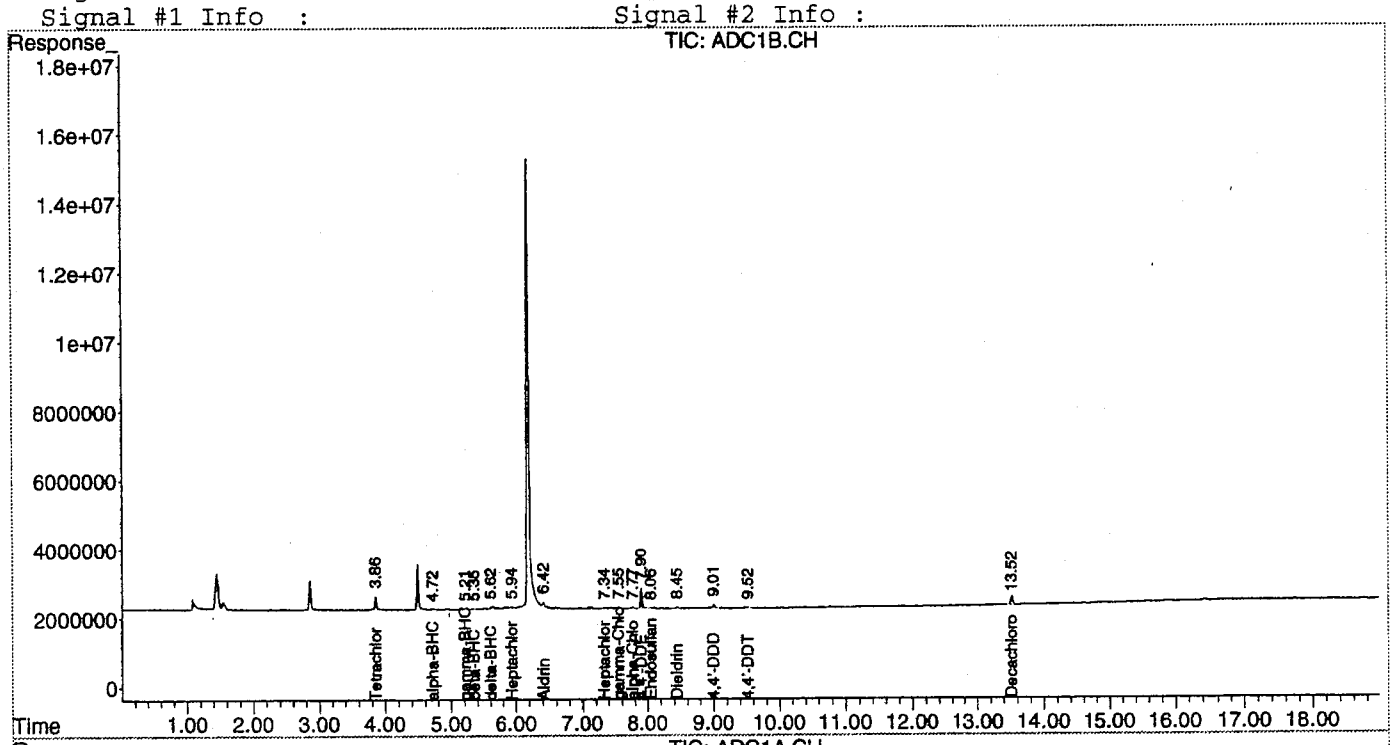
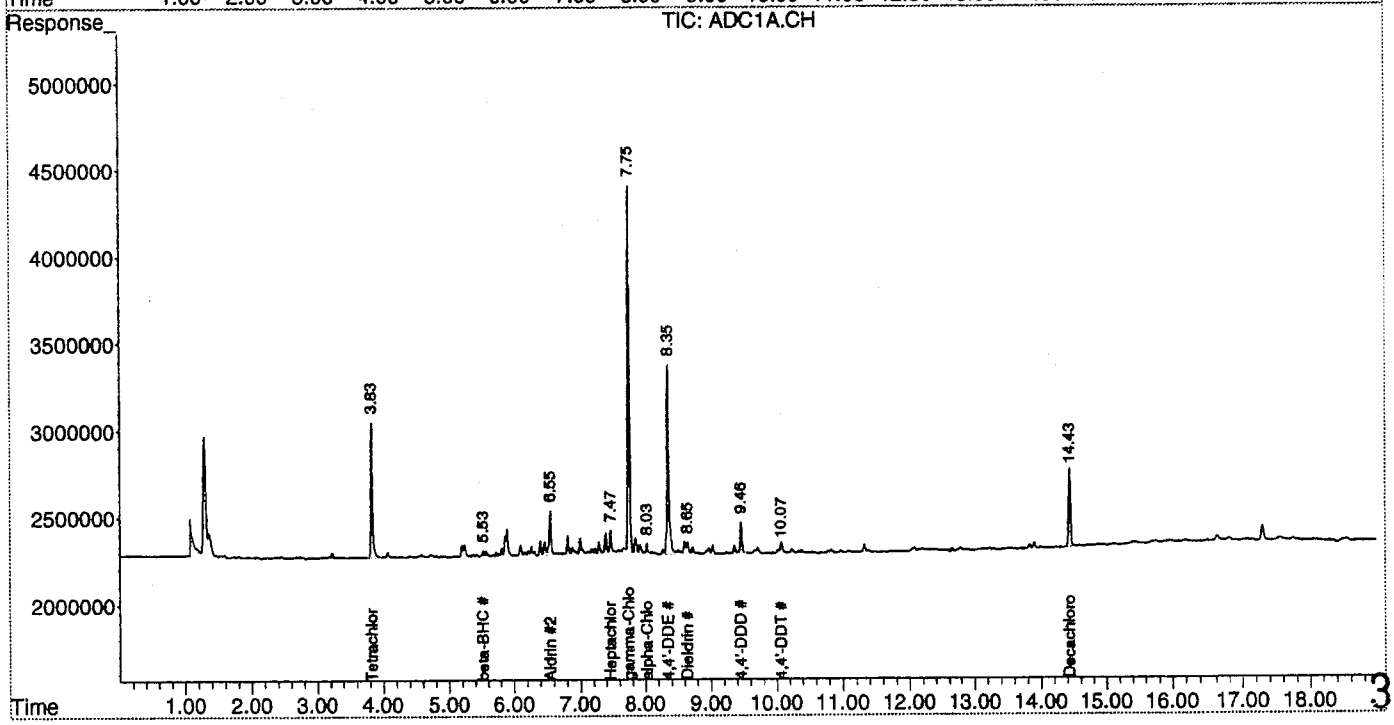
Signal #1 : F:\HPCHEM\1\DATA\PE091102\036F3601.D\ADC1B.CH Vial: 36
Signal #2 : F:\HPCHEM\1\DATA\PE091102\036F3601.D\ADC1A.CH
Acq On : 12-Sep-2002, 10:02:35 Operator: JDW
Sample : 108166-3 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 11:13 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\036F3601.D\ADC1B.CH Vial: 36
Signal #2 : F:\HPCHEM\1\DATA\PE091102\036F3601.D\ADC1A.CH
Acq On : 12-Sep-2002, 10:02:35 Operator: JDW
Sample : 108166-3 1:2 9/12/02 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 11:17:23 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

(MD)

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
	System Monitoring Compounds							
1)	SR Tetrachloro-m-xy	3.86	3.83	6858733	13382649	10.318	10.273	
	Spiked Amount 20.000 Range 60 - 150 Recovery =					51.59%#	51.36%#	
11)	SR Decachlorobiphen	13.52	14.43	5661142	9428739	12.535	12.409	
	Spiked Amount 20.000 Range 60 - 150 Recovery =					62.68%	62.05%	
	Target Compounds							
2)	Hexachloroethane	1.56f	0.00	6652222	0	4.318	N.D.	#
3)	Hexachlorobenzen	4.49f	0.00	25780362	0	24.898	N.D.	#
4)	Hexachlorobutadi	1.81	0.00	31703	0	0.015	N.D.	#
5)	Oxychlordane	0.00	7.29f	0	977898	N.D.	0.803	# BOL
6)	cis-Nonachlor	8.94	9.36f	630095	939251	0.778	0.615	
7)	trans-Nonachlor	7.77	7.93	1028917	1047353	1.355	0.763	#
8)	2,4'-DDE	7.34	0.00	636469	0	1.317	N.D.	#
9)	2,4'-DDD	8.21	8.73	594825	628275	1.480	0.857	#
10)	2,4'-DDT	0.00	9.36f	0	939251	N.D.	1.371	#

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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108166-3

Data File Path F:\HPCHEM\1\DATA\PE091102\036F3601.D
Date Acquired 12-Sep-2002, 10:02:35

CCV File Path F:\HPCHEM\1\DATA\PE091102\017F1701.D

Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.86	3.83	0.2853	0.2656	0.2854	0.2658	OK	OK
Hexachloroethane	1.56	0.00	0.1150	0.0000	0.1130	0.1016	OK	--
Hexachlorobenzene	4.49	0.00	0.3323	0.0000	0.3293	0.3167	--	--
Hexachlorobutadiene	1.81	0.00	0.1342	0.0000	0.1344	0.1192	OK	--
Oxychlordane	0.00	7.29	0.0000	0.5053	0.5316	0.5064	--	OK
cis-Nonachlor	8.94	9.36	0.6614	0.6486	0.6612	0.6506	OK	OK
trans-Nonachlor	7.77	7.93	0.5747	0.5494	0.5724	0.5494	OK	OK
2,4'-DDE	7.34	0.00	0.5427	0.0000	0.5420	0.5396	OK	--
2,4'-DDD	8.21	8.73	0.6074	0.6053	0.6073	0.6056	OK	OK
2,4'-DDT	0.00	9.36	0.0000	0.6486	0.6420	0.6456	--	OK
Decachlorobiphenyl (S)	13.52	14.43	1.0000	1.0000	1.0000	1.0000	OK	OK

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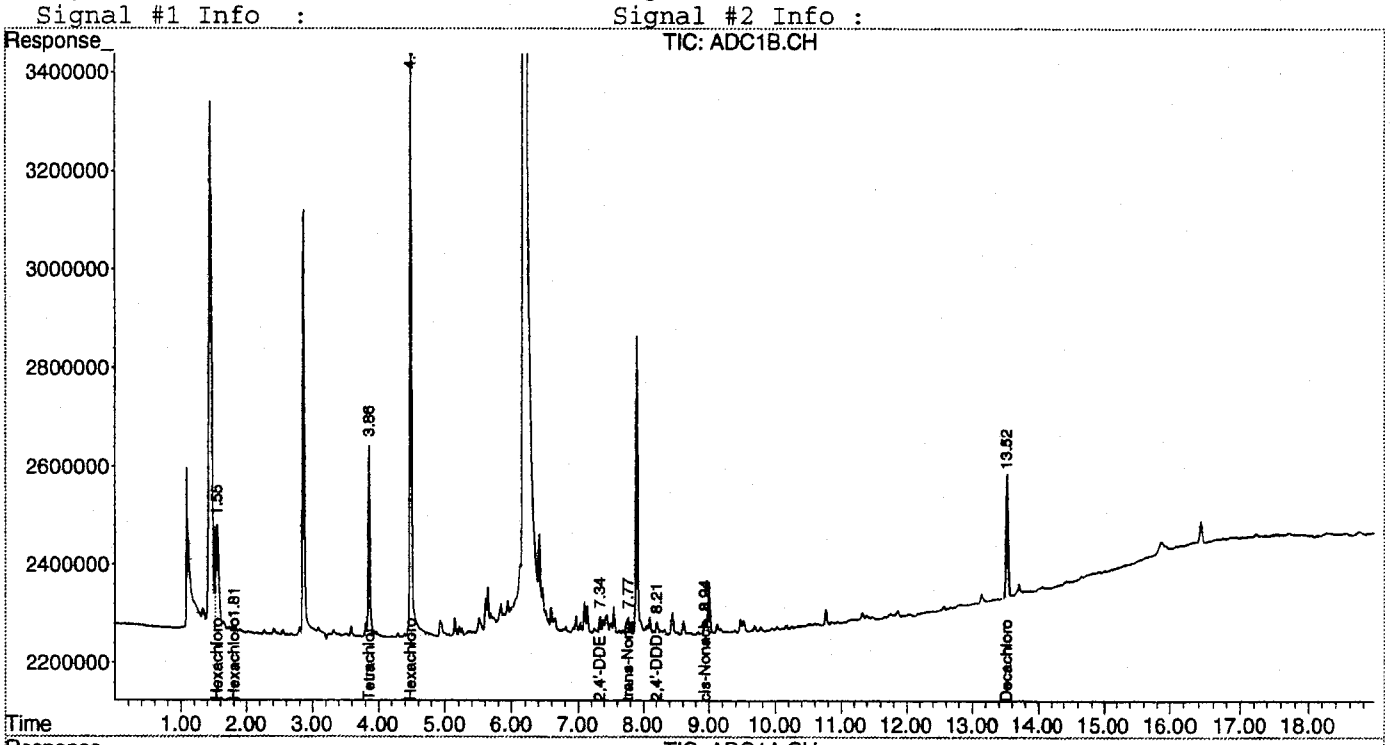
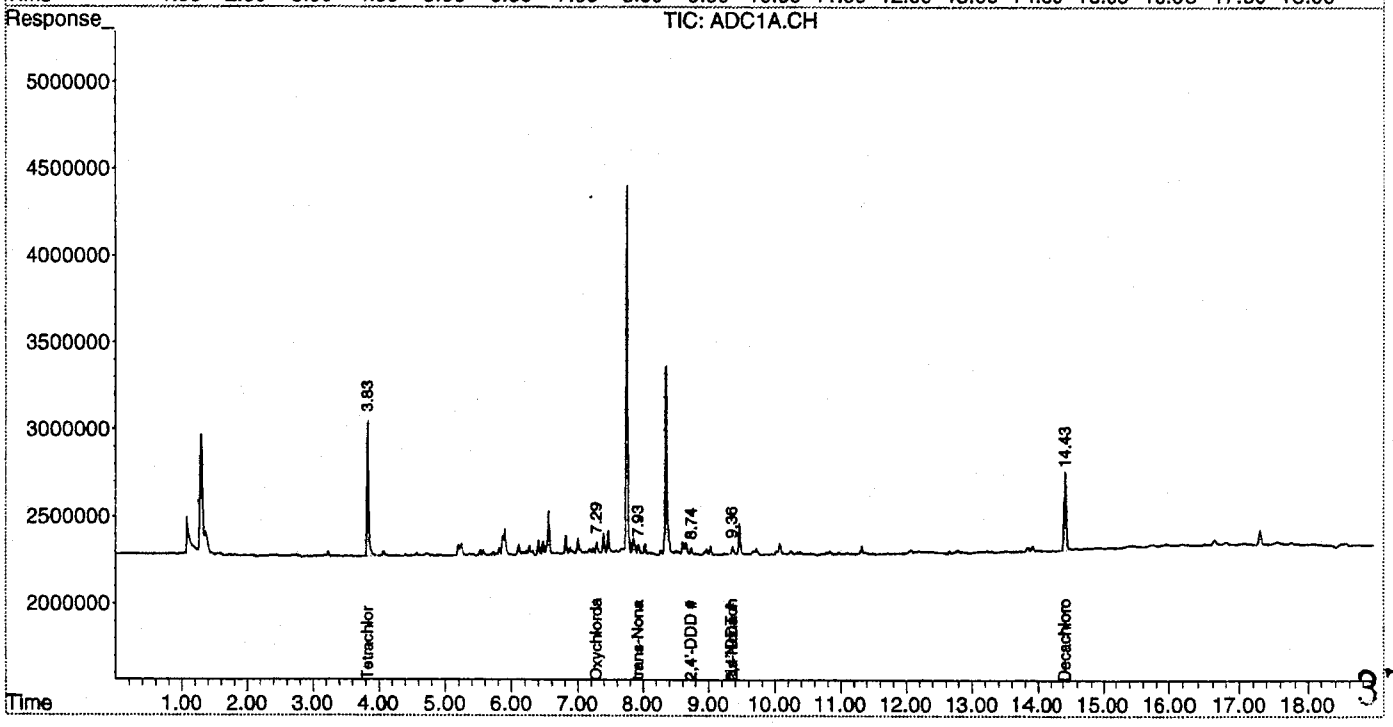
Signal #1 : F:\HPCHEM\1\DATA\PE091102\036F3601.D\ADC1B.CH Vial: 36
Signal #2 : F:\HPCHEM\1\DATA\PE091102\036F3601.D\ADC1A.CH
Acq On : 12-Sep-2002, 10:02:35 Operator: JDW
Sample : 108166-3 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 11:17 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





374

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\007F0701.D\ADC1B.CH Vial: 7
Signal #2 : F:\HPCHEM\1\DATA\PE082902\007F0701.D\ADC1A.CH
Acq On : 29-Aug-2002, 18:32:08 Operator: JDW
Sample : 108166-4 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:32:48 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

ND

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	4.11	4.06	8177096	19898030	15.955	14.717	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					79.77%	73.58%	
2)	SR	Decachlorobiphen	13.92	14.79	4745071	10558243	16.310	15.223	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					81.55%	76.11%	
		Target Compounds							
2)		alpha-BHC	0.00	0.00	0	0	N.D.	N.D.	
3)	M	gamma-BHC (Linda	0.00	0.00	0	0	N.D.	N.D.	
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.	
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.	
6)		beta-BHC	5.59f	0.00	224505	0	0.834	N.D.	#
7)		delta-BHC	5.88f	0.00	379779	0	0.538	N.D.	#
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.	
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
10)		gamma-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
12)		4,4'-DDE	8.22f	0.00	622138	0	1.104	N.D.	#
13)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.	
14)	M	Endrin	0.00	0.00	0	0	N.D.	N.D.	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	0.00	0.00	0	0	N.D.	N.D.	
17)	M	4,4'-DDT	0.00	0.00	0	0	N.D.	N.D.	
18)		Endrin Aldehyde	0.00	10.72f	0	2153961	N.D.	2.582	#
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	0.00	0.00	0	0	N.D.	N.D.	
21)		Endrin Ketone	0.00	0.00	0	0	N.D.	N.D.	

375

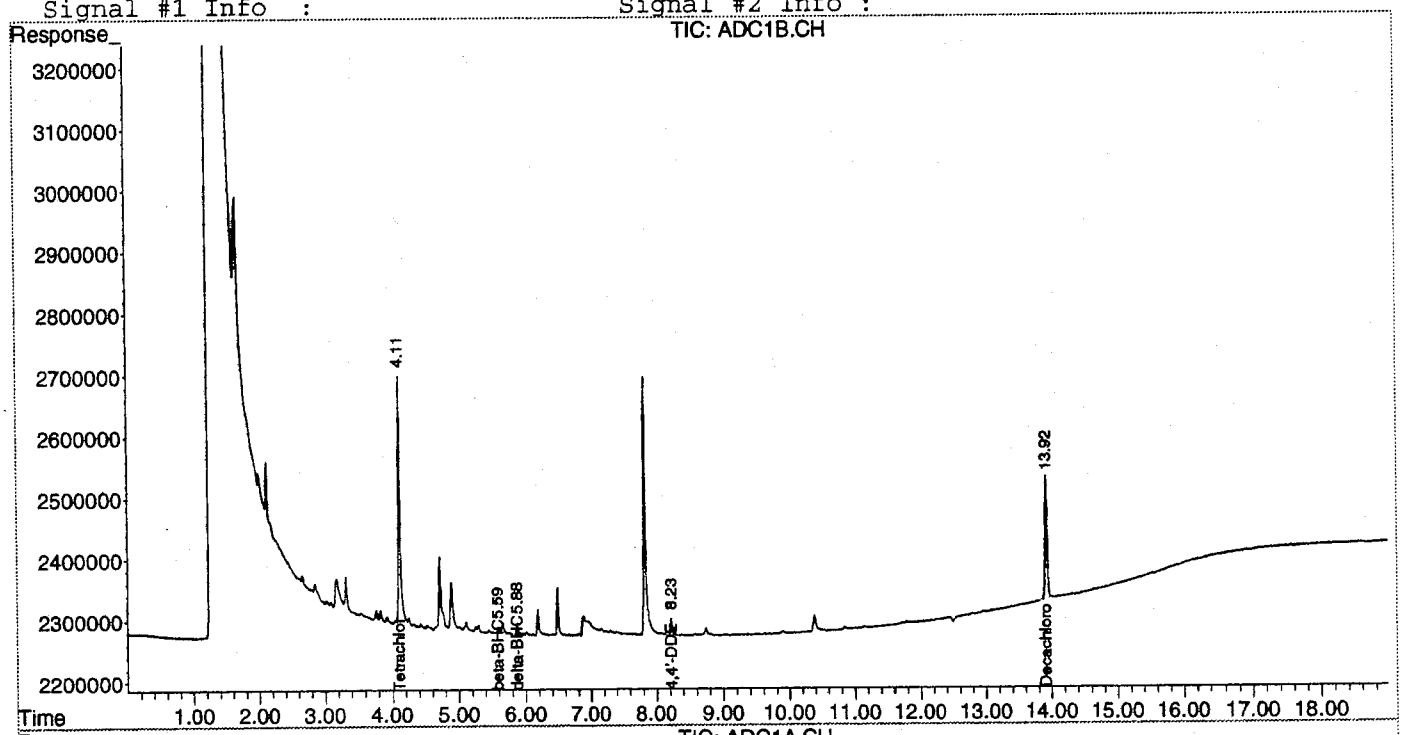
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

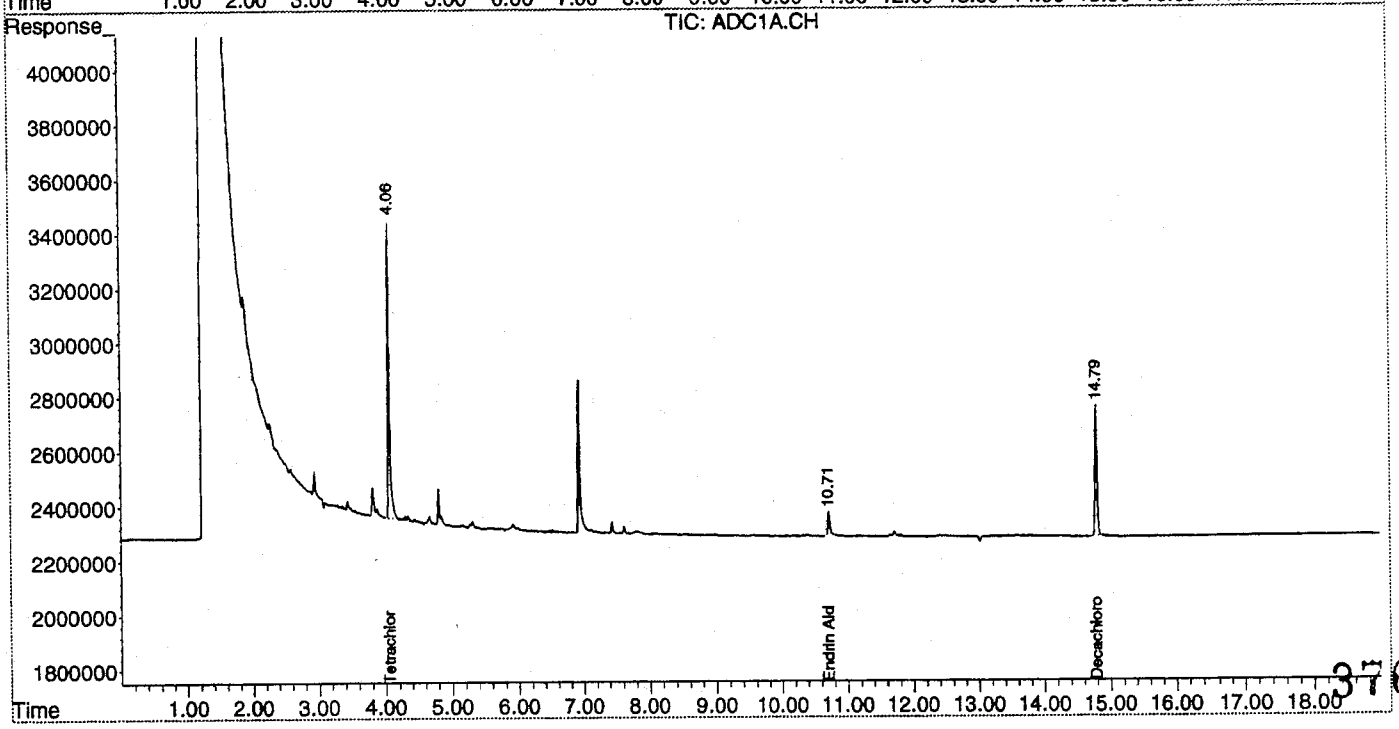
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\007F0701.D\ADC1B.CH Vial: 7
Signal #2 : F:\HPCHEM\1\DATA\PE082902\007F0701.D\ADC1A.CH
Acq On : 29-Aug-2002, 18:32:08 Operator: JDW
Sample : 108166-4 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:31 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





INITIAL CALIBRATION

Response Factor Report HP35900C

Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 09:59:46 2002

Calibration Files
1 =016F1601.D 2 =015F1501.D 3 =014F1401.D
4 =013F1301.D 5 =012F1201.D 6 =011F1101.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)	SR	Tetrachloro-m-xy	6.388	5.543	5.223	4.811	4.427	4.359	5.125	E5	14.99
2)		alpha-BHC	1.026	0.908	0.881	0.831	0.772	0.766	0.864	E6	11.30
3)	M	gamma-BHC (Linda	8.765	7.834	7.595	7.072	6.627	6.537	7.405	E5	11.36
4)	M	Heptachlor	8.503	7.664	7.426	7.018	6.526	6.558	7.283	E5	10.32
5)	M	Aldrin	8.679	7.826	7.526	7.007	6.480	6.374	7.315	E5	11.99
6)		beta-BHC	2.777	2.740	2.757	2.589	2.728	2.553	2.691	E5	3.53
7)		delta-BHC	8.516	6.871	7.227	6.836	6.495	6.449	7.066	E5	10.83
8)		Heptachlor Epoxi	7.740	6.520	6.280	5.919	5.458	5.352	6.212	E5	14.09
9)		Endosulfan I	7.770	6.670	6.352	6.318	5.795	5.695	6.433	E5	11.66
10)		gamma-Chlordane	8.200	6.773	6.439	6.165	5.712	5.616	6.484	E5	14.60
11)		alpha-Chlordane	6.884	6.120	5.875	5.607	5.165	5.062	5.786	E5	11.64
12)		4,4'-DDE	7.244	5.932	5.667	5.332	4.897	4.750	5.637	E5	16.06
13)	M	Dieldrin	7.046	6.039	5.913	5.503	5.060	4.974	5.756	E5	13.30
14)	M	Endrin	5.254	4.330	4.246	3.995	3.537	3.466	4.138	E5	15.76
15)		Endosulfan II	5.285	4.492	4.470	4.251	3.797	3.716	4.335	E5	13.15
16)		4,4'-DDD	5.107	4.638	4.649	4.320	3.953	3.847	4.419	E5	10.75
17)	M	4,4'-DDT	5.255	4.628	4.566	4.346	3.986	3.870	4.442	E5	11.28
18)		Endrin Aldehyde	4.170	3.664	3.523	3.132	2.774	2.673	3.322	E5	17.20
19)		Endosulfan Sulfa	4.709	3.972	3.971	3.839	3.391	3.313	3.866	E5	13.01
20)		Methoxychlor	2.333	1.920	1.793	1.657	1.455	1.375	1.756	E5	19.83
21)		Endrin Ketone	5.776	4.863	4.694	4.414	4.006	3.860	4.602	E5	15.04
22)	SR	Decachlorobiphen	2.741	2.956	3.589	3.095	2.627	2.447	2.909	E5	13.93

Signal #2 Calibration Files
1 =016F1601.D 2 =015F1501.D 3 =014F1401.D
4 =013F1301.D 5 =012F1201.D 6 =011F1101.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)	SR	Tetrachloro-m-xy	1.584	1.332	1.283	1.287	1.286	1.340	1.352	E6	8.60
2)		alpha-BHC	2.207	1.974	1.957	1.961	2.001	2.088	2.031	E6	4.86
3)	M	gamma-BHC (Linda	1.997	1.729	1.687	1.666	1.685	1.752	1.753	E6	7.08
4)	M	Heptachlor	0.999	1.016	1.024	1.065	1.068	1.142	1.053	E6	4.91
5)	M	Aldrin	1.845	1.602	1.572	1.607	1.672	1.728	1.671	E6	6.11
6)		beta-BHC	6.642	6.690	6.661	6.388	6.037	6.124	6.424	E5	4.49
7)		delta-BHC	1.783	1.537	1.497	1.520	1.522	1.580	1.573	E6	6.76
8)		Heptachlor Epoxi	1.625	1.430	1.425	1.393	1.375	1.435	1.447	E6	6.23
9)		Endosulfan I	1.462	1.381	1.372	1.358	1.331	1.395	1.383	E6	3.20
10)		gamma-Chlordane	1.657	1.473	1.448	1.428	1.422	1.500	1.488	E6	5.91
11)		alpha-Chlordane	1.564	1.386	1.346	1.301	1.283	1.339	1.370	E6	7.43
12)		4,4'-DDE	1.550	1.355	1.357	1.398	1.412	1.437	1.418	E6	5.09
13)	M	Dieldrin	1.548	1.377	1.354	1.394	1.415	1.457	1.424	E6	4.93
14)	M	Endrin	1.143	0.972	0.960	0.984	0.942	0.984	0.997	E6	7.34
15)		Endosulfan II	1.125	1.031	1.017	1.086	1.076	1.126	1.077	E6	4.24
16)		4,4'-DDD	1.116	0.999	0.974	1.005	1.004	1.027	1.021	E6	4.86
17)	M	4,4'-DDT	7.031	6.580	6.675	6.787	7.061	7.578	6.952	E5	5.20
18)		Endrin Aldehyde	1.006	0.863	0.823	0.783	0.739	0.789	0.834	E6	11.26
19)		Endosulfan Sulfa	1.271	0.995	0.969	0.961	0.935	0.961	1.015	E6	12.47
20)		Methoxychlor	2.362	2.109	2.261	2.493	2.644	2.717	2.431	E5	9.53
21)		Endrin Ketone	1.369	1.154	1.139	1.123	1.116	1.127	1.171	E6	8.34
22)	SR	Decachlorobiphen	6.123	8.100	7.587	7.008	6.454	6.342	6.936	E5	11.23

#) = Out of Range

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082302\011F1101.D\ADC1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\PE082302\011F1101.D\ADC1A.CH
Acq On : 23-Aug-2002, 19:54:14 Operator: JDW
Sample : 75/150 ng/ml 8081A ICV Pest886B Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 26 09:55:48 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Mon Aug 26 09:55:45 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

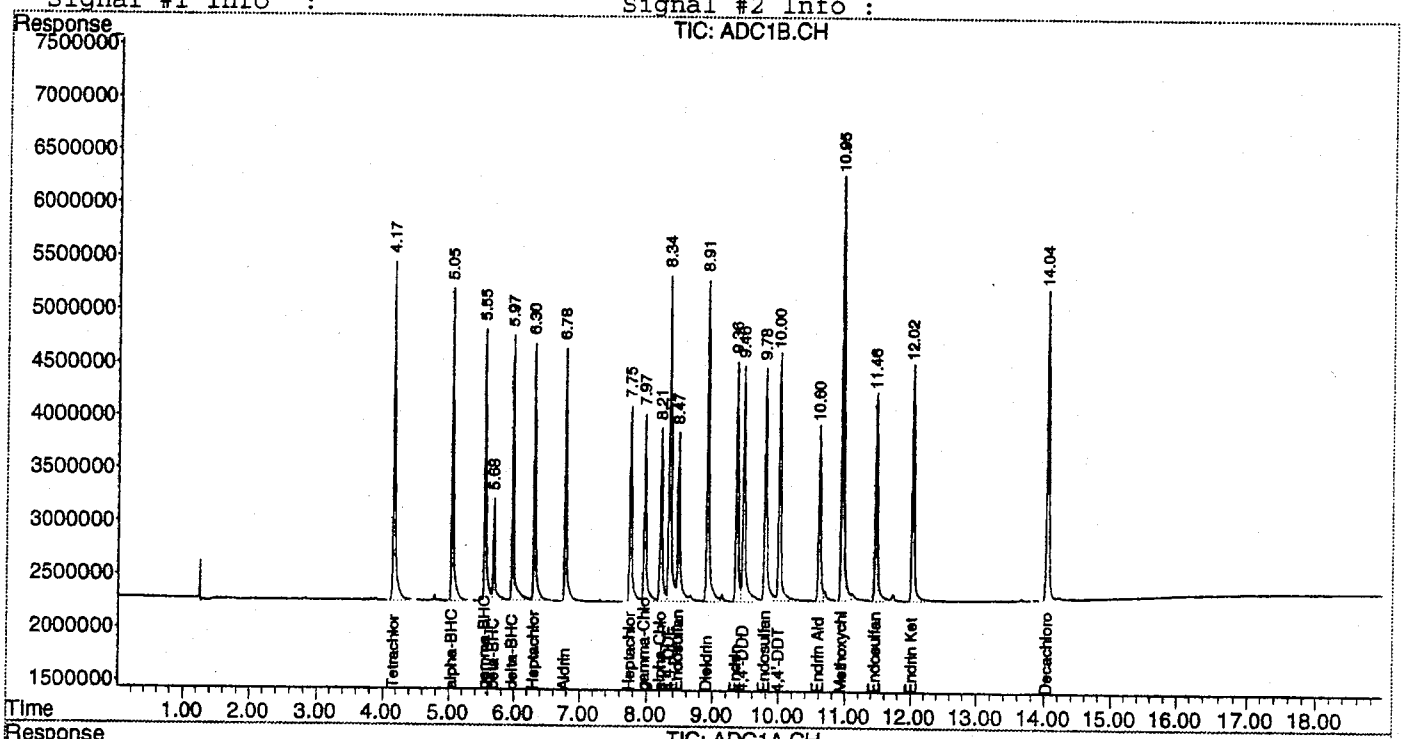
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	4.17	4.11	65379246	201.0E6	130.030	134.709
		Spiked Amount 20.000 Range 60 - 150 Recovery =					650.15%#	673.55%#
22)	SR	Decachlorobiphen	14.04	14.90	73395541	190.3E6	213.116	210.988
		Spiked Amount 20.000 Range 60 - 150 Recovery =					1065.58%#	1054.94%#
		Target Compounds						
2)		alpha-BHC	5.05	5.10	57427007	156.6E6	68.918	69.397
3)	M	gamma-BHC (Linda	5.55	5.68	49030202	131.4E6	67.691	67.468
4)	M	Heptachlor	6.30	6.37	49182068	85629579	71.635	81.496
5)	M	Aldrin	6.78	6.88	47803541	129.6E6	67.527	69.779
6)		beta-BHC	5.69	5.81	19145852	45928564	70.945	63.938
7)		delta-BHC	5.97	6.28	48369246	118.5E6	70.832	65.583
8)		Heptachlor Epoxi	7.75	7.83	40138426	107.6E6	66.639	67.402
9)		Endosulfan I	8.47	8.55	42714867	104.7E6	71.174	68.731
10)		gamma-Chlordane	7.97	8.16	42121965	112.5E6	67.851	68.130
11)		alpha-Chlordane	8.21	8.44	37965862	100.4E6	65.919	65.199
12)		4,4'-DDE	8.34	8.75	71244672	215.6E6	128.360	137.384
13)	M	Dieldrin	8.91	9.07	74611512	218.6E6	133.047	142.106
14)	M	Endrin	9.36	9.66	51990829	147.6E6	121.615	128.396
15)		Endosulfan II	9.78	10.08	55740840	168.9E6	124.390	131.335
16)		4,4'-DDD	9.46	9.88	57699966	154.0E6	137.966	135.534
17)	M	4,4'-DDT	10.00	10.49	58049407	113.7E6	138.195	137.712
18)		Endrin Aldehyde	10.60	10.76	40097762	118.4E6	117.476	116.700
19)		Endosulfan Sulfa	11.46	11.32	49695826	144.2E6	125.634	123.649
20)		Methoxychlor	10.95	11.90	103.2E6	203.8E6	584.634	690.359
21)		Endrin Ketone	12.02	12.41	57902691	169.0E6	121.359	123.866

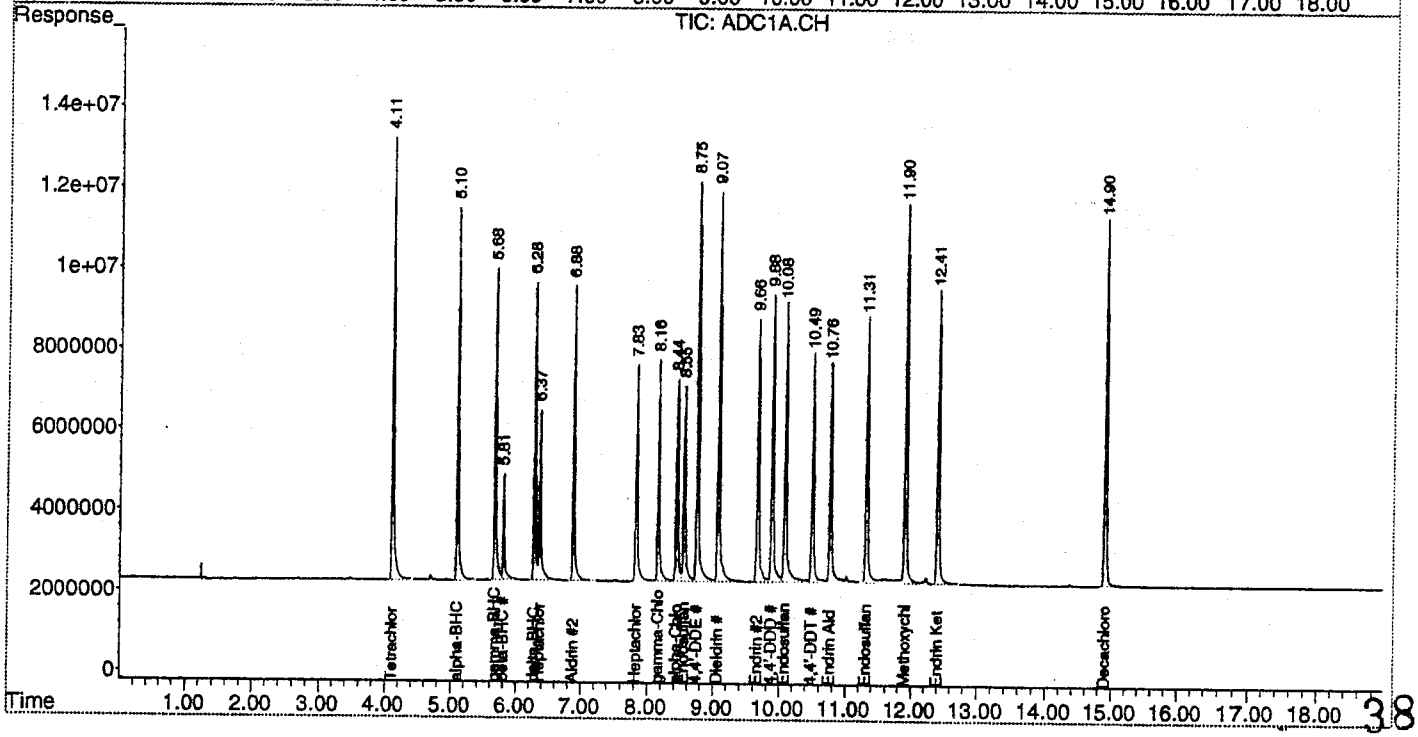
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
011F1101.D 8081_823.M Thu Aug 29 10:12:33 2002 Page 1

Signal #1 : F:\HPCHEM\1\DATA\PE082302\011F1101.D\ADC1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\PE082302\011F1101.D\ADC1A.CH
Acq On : 23-Aug-2002, 19:54:14 Operator: JDW
Sample : 75/150 ng/ml 8081A ICV Pest886B Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 26 9:54 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Mon Aug 26 09:55:45 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082302\012F1201.D\ADC1B.CH Vial: 12
Signal #2 : F:\HPCHEM\1\DATA\PE082302\012F1201.D\ADC1A.CH
Acq On : 23-Aug-2002, 20:16:09 Operator: JDW
Sample : 50/100 ng/ml 8081A ICV Pest886C Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 26 09:55:57 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Mon Aug 26 09:55:45 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

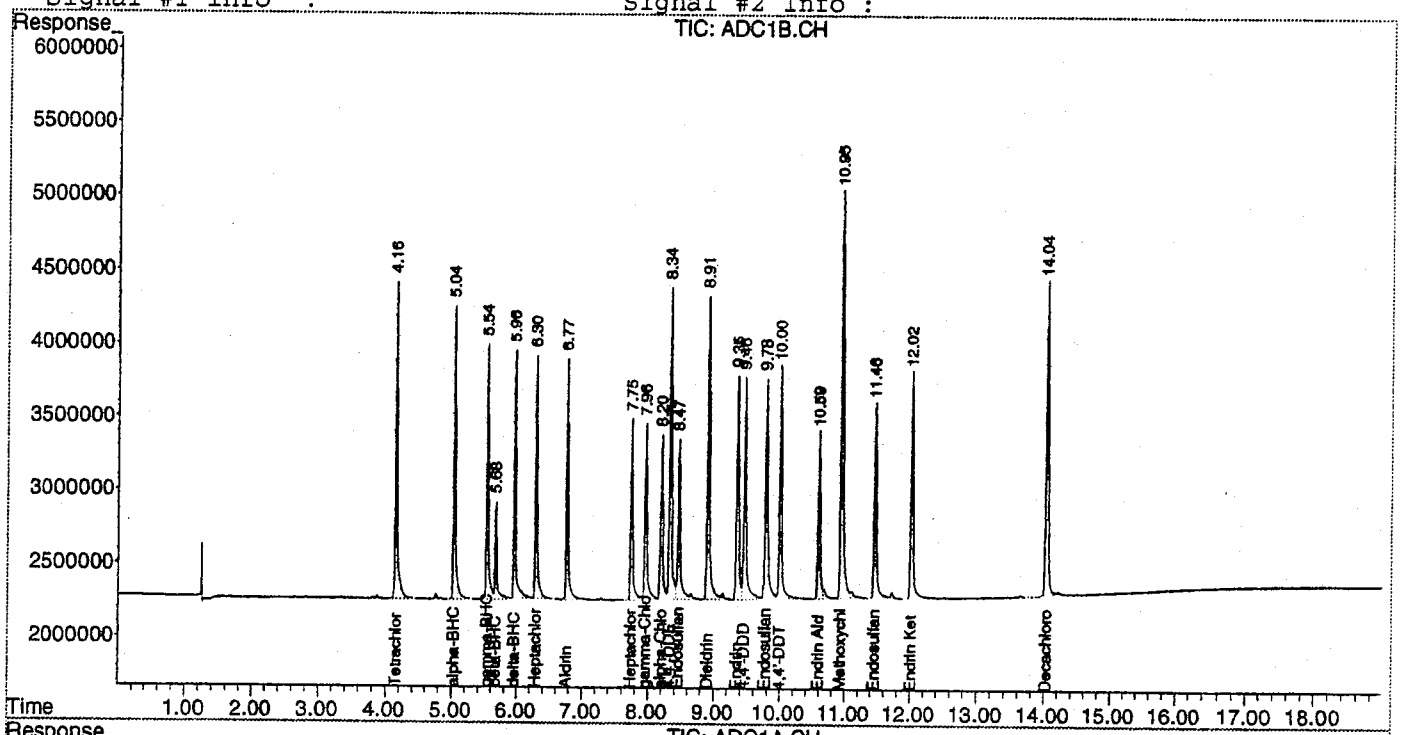
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	4.16	4.11	44267486	128.6E6	88.041	86.183
Spiked Amount		20.000	Range	60 - 150	Recovery	=	440.20%#	430.92%#
22)	SR	Decachlorobiphen	14.04	14.90	52547938	129.1E6	152.581	143.131
Spiked Amount		20.000	Range	60 - 150	Recovery	=	762.90%#	715.65%#
		Target Compounds						
2)		alpha-BHC	5.04	5.09	38587883	100.1E6	46.309	44.350
3)	M	gamma-BHC (Linda	5.54	5.67	33134238	84256651	45.745	43.270
4)	M	Heptachlor	6.30	6.36	32631235	53407302	47.528	50.829
5)	M	Aldrin	6.77	6.88	32399458	83607750	45.767	45.005
6)		beta-BHC	5.68	5.80	13639303	30185221	50.540	42.022
7)		delta-BHC	5.97	6.28	32476155	76117887	47.558	42.124
8)		Heptachlor Epoxi	7.75	7.82	27292080	68751919	45.311	43.065
9)		Endosulfan I	8.47	8.54	28976003	66555200	48.282	43.706
10)		gamma-Chlordane	7.96	8.15	28560301	71109396	46.005	43.074
11)		alpha-Chlordane	8.20	8.43	25823500	64163068	44.837	41.657
12)		4,4'-DDE	8.34	8.75	48968467	141.2E6	88.225	89.959
13)	M	Dieldrin	8.91	9.07	50600535	141.5E6	90.231	91.973
14)	M	Endrin	9.35	9.66	35373345	94173762	82.744	81.932
15)		Endosulfan II	9.78	10.08	37974218	107.6E6	84.742	83.678
16)		4,4'-DDD	9.46	9.87	39534154	100.4E6	94.530	88.333
17)	M	4,4'-DDT	10.00	10.49	39860432	70608799	94.894	85.543
18)		Endrin Aldehyde	10.59	10.76	27738238	73944193	81.266	72.875
19)		Endosulfan Sulfa	11.46	11.31	33907787	93450300	85.721	80.142
20)		Methoxychlor	10.95	11.90	72769341	132.2E6	412.433	447.876
21)		Endrin Ketone	12.02	12.40	40063694	111.6E6	83.970	81.749

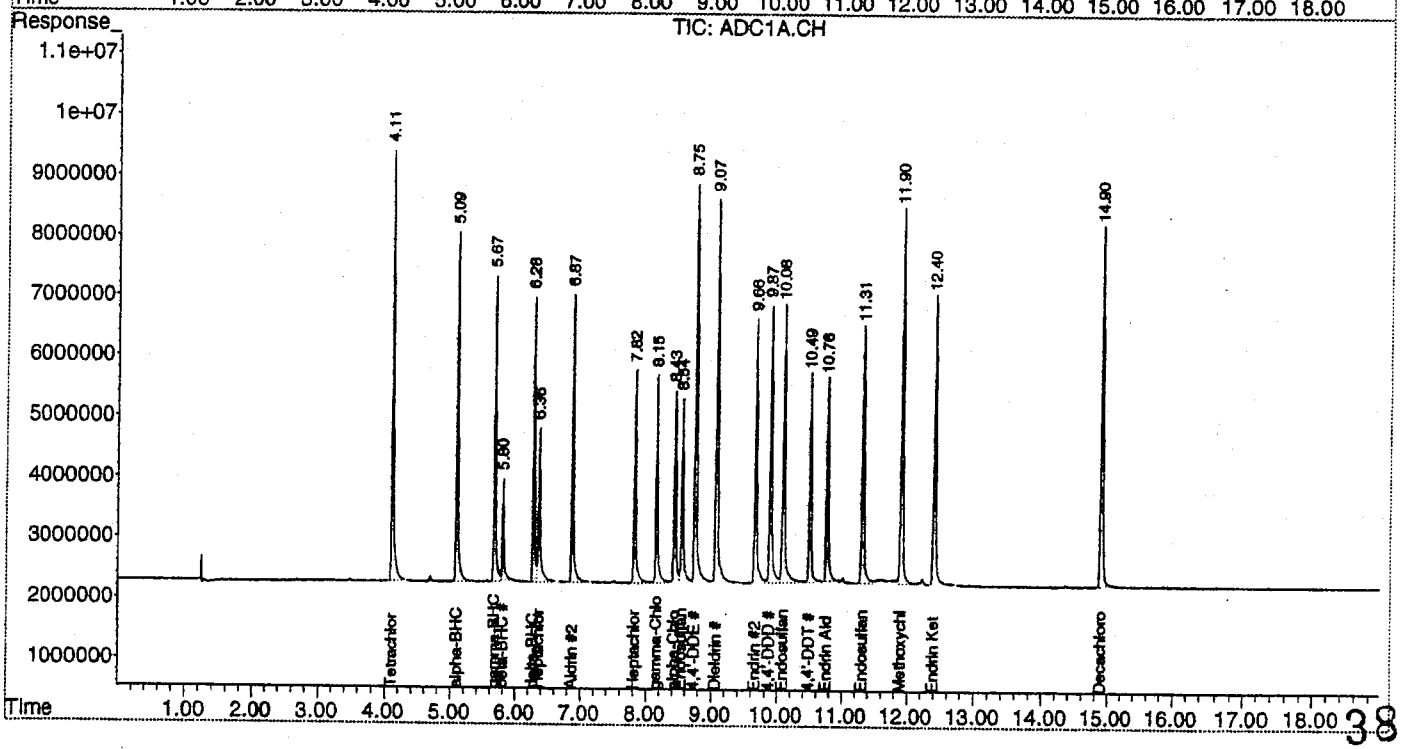
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
012F1201.D 8081_823.M Thu Aug 29 10:12:38 2002

Signal #1 : F:\HPCHEM\1\DATA\PE082302\012F1201.D\ADC1B.CH Vial: 12
Signal #2 : F:\HPCHEM\1\DATA\PE082302\012F1201.D\ADC1A.CH
Acq On : 23-Aug-2002, 20:16:09 Operator: JDW
Sample : 50/100 ng/ml 8081A ICV Pest886C Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 26 9:54 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Mon Aug 26 09:55:45 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082302\013F1301.D\ADC1B.CH Vial: 13
Signal #2 : F:\HPCHEM\1\DATA\PE082302\013F1301.D\ADC1A.CH
Acq On : 23-Aug-2002, 20:38:06 Operator: JDW
Sample : 25/50 ng/ml 8081A ICV Pest886D Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 26 09:56:04 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Mon Aug 26 09:55:45 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

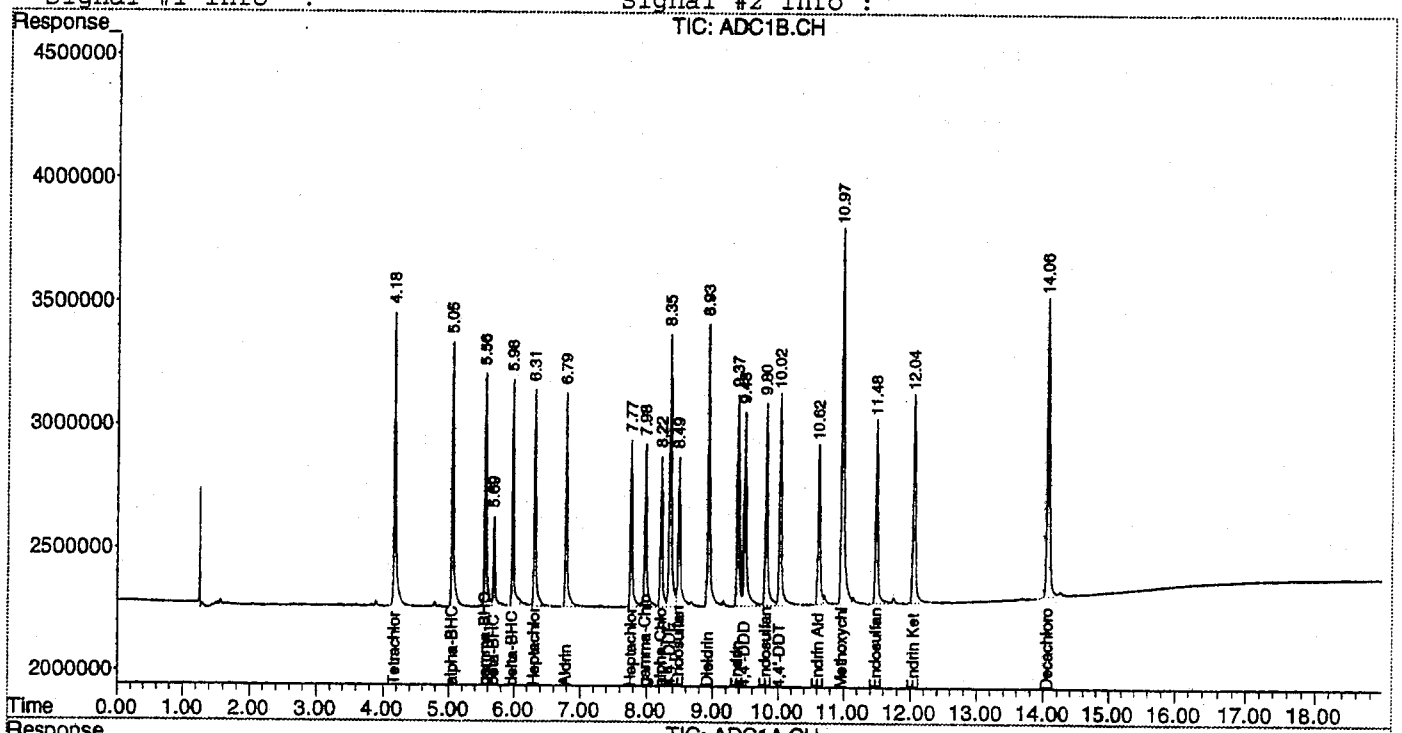
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	4.18	4.12	24057122	64344895	47.846	43.119
		Spiked Amount 20.000 Range 60 - 150 Recovery =					239.23%#	215.59%#
22)	SR	Decachlorobiphen	14.06	14.93f	30954418	70077152	89.881	77.707
		Spiked Amount 20.000 Range 60 - 150 Recovery =					449.40%#	388.53%#
		Target Compounds						
2)		alpha-BHC	5.05	5.11	20776022	49018582	24.933	21.725
3)	M	gamma-BHC (Linda	5.56	5.69	17678812	41638911	24.407	21.384
4)	M	Heptachlor	6.31	6.38	17545059	26636364	25.555	25.351
5)	M	Aldrin	6.79	6.89	17518500	40187335	24.747	21.632
6)		beta-BHC	5.69	5.82	6473535	15970936	23.988	22.233
7)		delta-BHC	5.98	6.29	17090420	37997539	25.027	21.028
8)		Heptachlor Epoxi	7.77	7.84	14798055	34819117	24.568	21.810
9)		Endosulfan I	8.49	8.56	15794071	33946012	26.317	22.292
10)		gamma-Chlordane	7.98	8.17	15412417	35688668	24.827	21.618
11)		alpha-Chlordane	8.22	8.45	14016506	32517449	24.337	21.111
12)		4,4'-DDE	8.35	8.77	26661542	69899082	48.035	44.548
13)	M	Dieldrin	8.93	9.09	27516279	69681932	49.067	45.299
14)	M	Endrin	9.37	9.68	19975344	49212202	46.726	42.815
15)		Endosulfan II	9.81	10.10	21254278	54314932	47.431	42.240
16)		4,4'-DDD	9.48	9.90	21599425	50273611	51.646	44.242
17)	M	4,4'-DDT	10.02	10.51	21728739	33935331	51.729	41.113
18)		Endrin Aldehyde	10.62	10.78	15657994	39166006	45.874	38.600
19)		Endosulfan Sulfa	11.48f	11.34	19193936	48036207	48.523	41.196
20)		Methoxychlor	10.97f	11.92	41432956	62316358	234.829	211.093
21)		Endrin Ketone	12.04	12.43	22070725	56144652	46.258	41.140

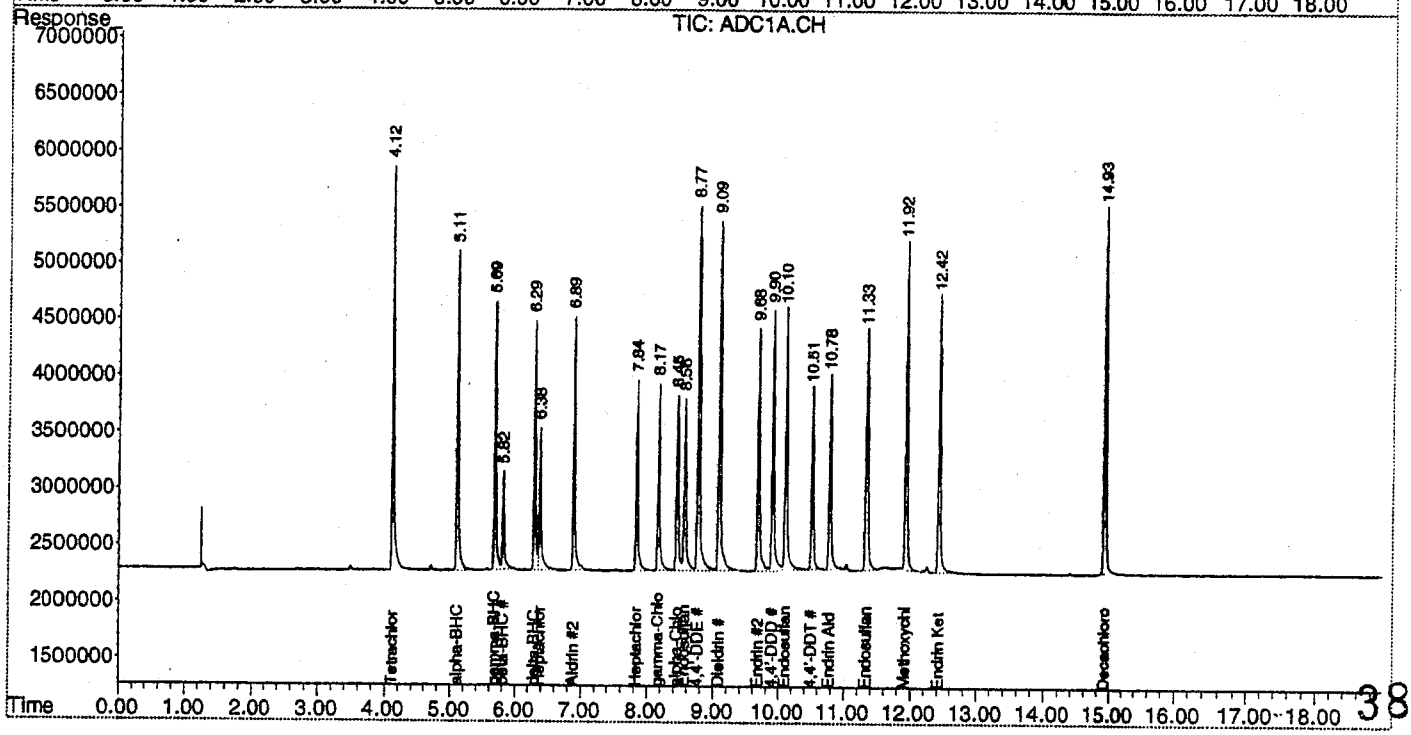
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
013F1301.D 8081_823.M Thu Aug 29 10:12:42 2002

Signal #1 : F:\HPCHEM\1\DATA\PE082302\013F1301.D\ADC1B.CH Vial: 13
Signal #2 : F:\HPCHEM\1\DATA\PE082302\013F1301.D\ADC1A.CH
Acq On : 23-Aug-2002, 20:38:06 Operator: JDW
Sample : 25/50 ng/ml 8081A ICV Pest886D Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 26 9:54 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Mon Aug 26 09:55:45 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082302\014F1401.D\ADC1B.CH Vial: 14
Signal #2 : F:\HPCHEM\1\DATA\PE082302\014F1401.D\ADC1A.CH
Acq On : 23-Aug-2002, 21:00:03 Operator: JDW
Sample : 10/20 ng/ml 8081A ICV Pest886E Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 26 09:56:10 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Mon Aug 26 09:55:45 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	4.18	4.12	10446616	25667803	20.777	17.201
Spiked Amount			20.000	Range	60 - 150	Recovery	= 103.89%	86.00%
22)	SR	Decachlorobiphen	14.06f	14.93f	14355842	30349117	41.685	33.653
Spiked Amount			20.000	Range	60 - 150	Recovery	= 208.42%#	168.26%#
		Target Compounds						
2)		alpha-BHC	5.06	5.11	8808927	19569923	10.572	8.673
3)	M	gamma-BHC (Linda	5.56	5.69	7594921	16873999	10.485	8.666
4)	M	Heptachlor	6.32	6.38	7426149	10241264	10.816	9.747
5)	M	Aldrin	6.79	6.90	7526092	15715271	10.631	8.459
6)		beta-BHC	5.70	5.82	2757029	6660670	10.216	9.272
7)		delta-BHC	5.98	6.30	7226637	14973005	10.583	8.286
8)		Heptachlor Epoxi	7.77	7.84	6279671	14254678	10.426	8.929
9)		Endosulfan I	8.49	8.57	6351542	13723770	10.583	9.012
10)		gamma-Chlordane	7.99	8.18	6439429	14476752	10.373	8.769
11)		alpha-Chlordane	8.23	8.45	5875297	13463869	10.201	8.741
12)		4,4'-DDE	8.36	8.77	11333320	27131007	20.419	17.291
13)	M	Dieldrin	8.93	9.09	11825539	27077455	21.087	17.602
14)	M	Endrin	9.38	9.68	8491312	19192248	19.863	16.697
15)		Endosulfan II	9.81f	10.10	8939726	20347640	19.950	15.824
16)		4,4'-DDD	9.48	9.90	9298679	19470580	22.234	17.135
17)	M	4,4'-DDT	10.02	10.51	9132439	13350299	21.741	16.174
18)		Endrin Aldehyde	10.62f	10.78	7045247	16464609	20.641	16.227
19)		Endosulfan Sulfa	11.49f	11.34	7941822	19376831	20.077	16.617
20)		Methoxychlor	10.97f	11.93f	17929921	22610295	101.621	76.591
21)		Endrin Ketone	12.05f	12.43f	9388988	22778677	19.678	16.691

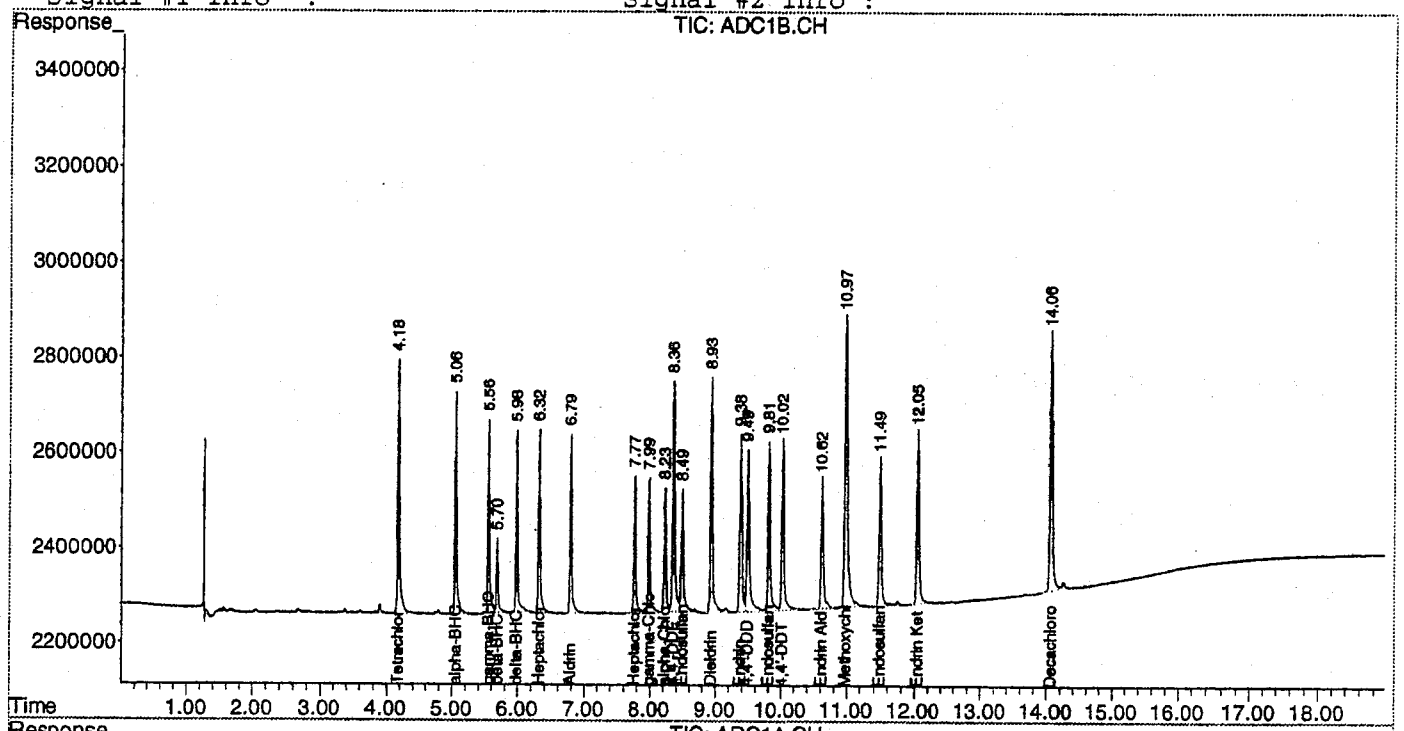
385

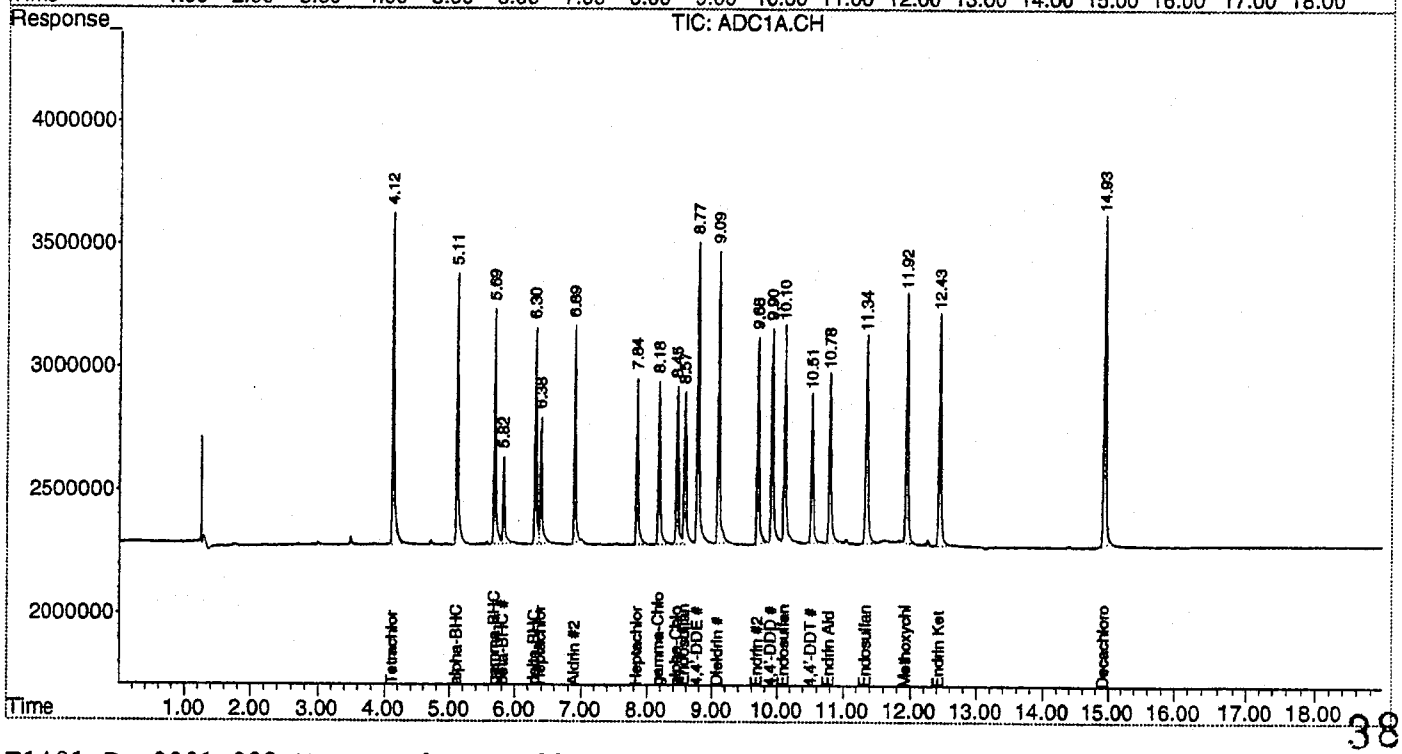
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Signal #1 : F:\HPCHEM\1\DATA\PE082302\014F1401.D\ADC1B.CH Vial: 14
Signal #2 : F:\HPCHEM\1\DATA\PE082302\014F1401.D\ADC1A.CH
Acq On : 23-Aug-2002, 21:00:03 Operator: JDW
Sample : 10/20 ng/ml 8081A ICV Pest886E Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 26 9:55 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Mon Aug 26 09:55:45 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082302\015F1501.D\ADC1B.CH Vial: 15
Signal #2 : F:\HPCHEM\1\DATA\PE082302\015F1501.D\ADC1A.CH
Acq On : 23-Aug-2002, 21:22:05 Operator: JDW
Sample : 5/10 ng/ml 8081A ICV Pest886F Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 26 09:56:17 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Mon Aug 26 09:55:45 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

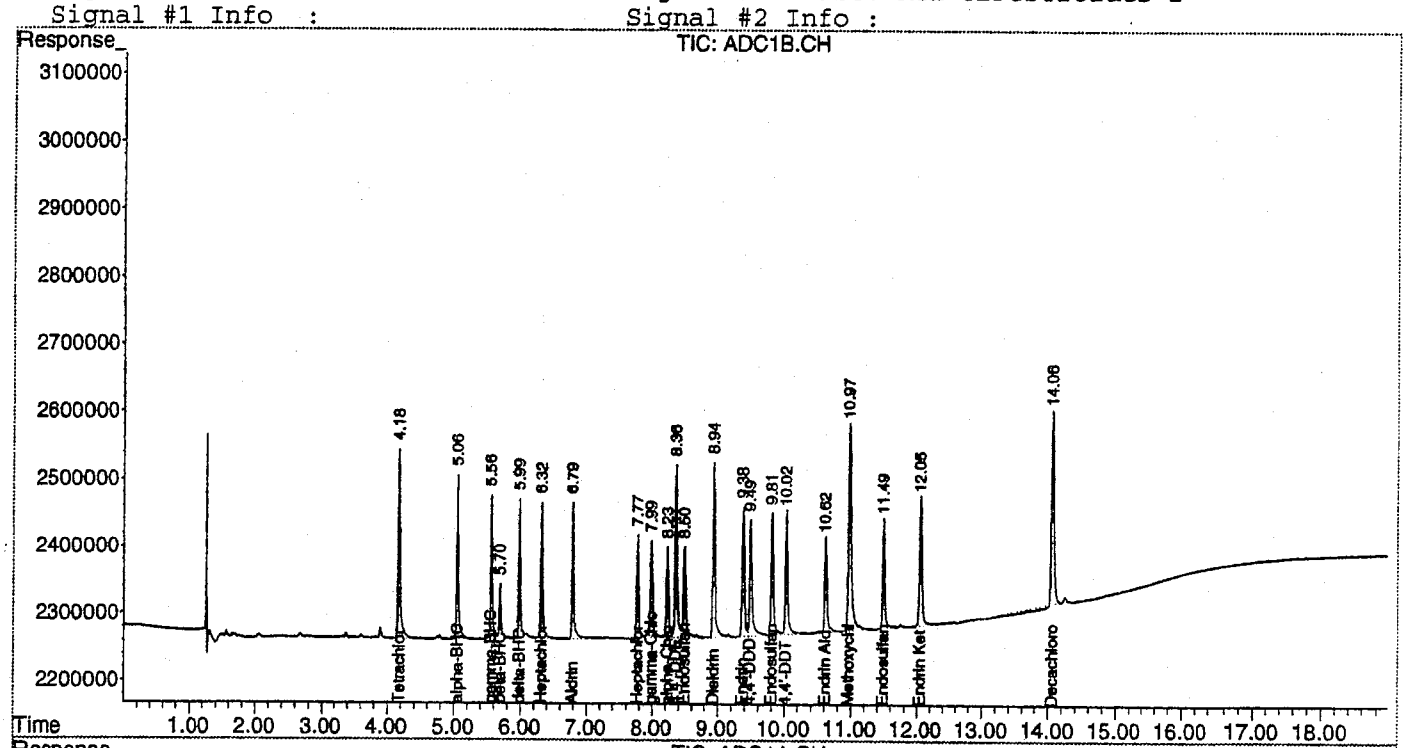
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	4.18	4.13	5542890	13317893	11.024	8.925
Spiked Amount		20.000 Range	60 - 150		Recovery	=	55.12%#	44.63%#
22)	SR	Decachlorobiphen	14.06f	14.93f	5911672	16200295	17.165	17.964
Spiked Amount		20.000 Range	60 - 150		Recovery	=	85.82%	89.82%
		Target Compounds						
2)		alpha-BHC	5.06	5.11	4540203	9871187	5.449	4.375
3)	M	gamma-BHC (Linda	5.56	5.69	3917053	8642889	5.408	4.439
4)	M	Heptachlor	6.32	6.38	3832242	5082404	5.582	4.837
5)	M	Aldrin	6.79	6.90	3913118	8012020	5.528	4.313
6)		beta-BHC	5.70	5.83	1370120	3344926	5.077	4.657
7)		delta-BHC	5.99	6.30	3435286	7684995	5.031	4.253
8)		Heptachlor Epoxi	7.77	7.84	3259894	7149653	5.412	4.478
9)		Endosulfan I	8.49	8.57	3335174	6904658	5.557	4.534
10)		gamma-Chlordane	7.99	8.18	3386591	7363535	5.455	4.460
11)		alpha-Chlordane	8.23	8.46	3059991	6929905	5.313	4.499
12)		4,4'-DDE	8.36	8.77	5931655	13547030	10.687	8.634
13)	M	Dieldrin	8.94	9.09	6038690	13768403	10.768	8.951
14)	M	Endrin	9.38	9.68f	4329934	9717722	10.128	8.455
15)		Endosulfan II	9.81f	10.10f	4491504	10309696	10.023	8.018
16)		4,4'-DDD	9.49	9.90f	4637885	9991348	11.090	8.793
17)	M	4,4'-DDT	10.02f	10.52f	4628238	6579604	11.018	7.971
18)		Endrin Aldehyde	10.62f	10.78f	3664031	8628792	10.735	8.504
19)		Endsulfan Sulfa	11.49f	11.34	3971816	9947907	10.041	8.531
20)		Methoxychlor	10.97f	11.92f	9599184	10546176	54.405	35.725
21)		Endrin Ketone	12.05f	12.43f	4863168	11544639	10.193	8.459

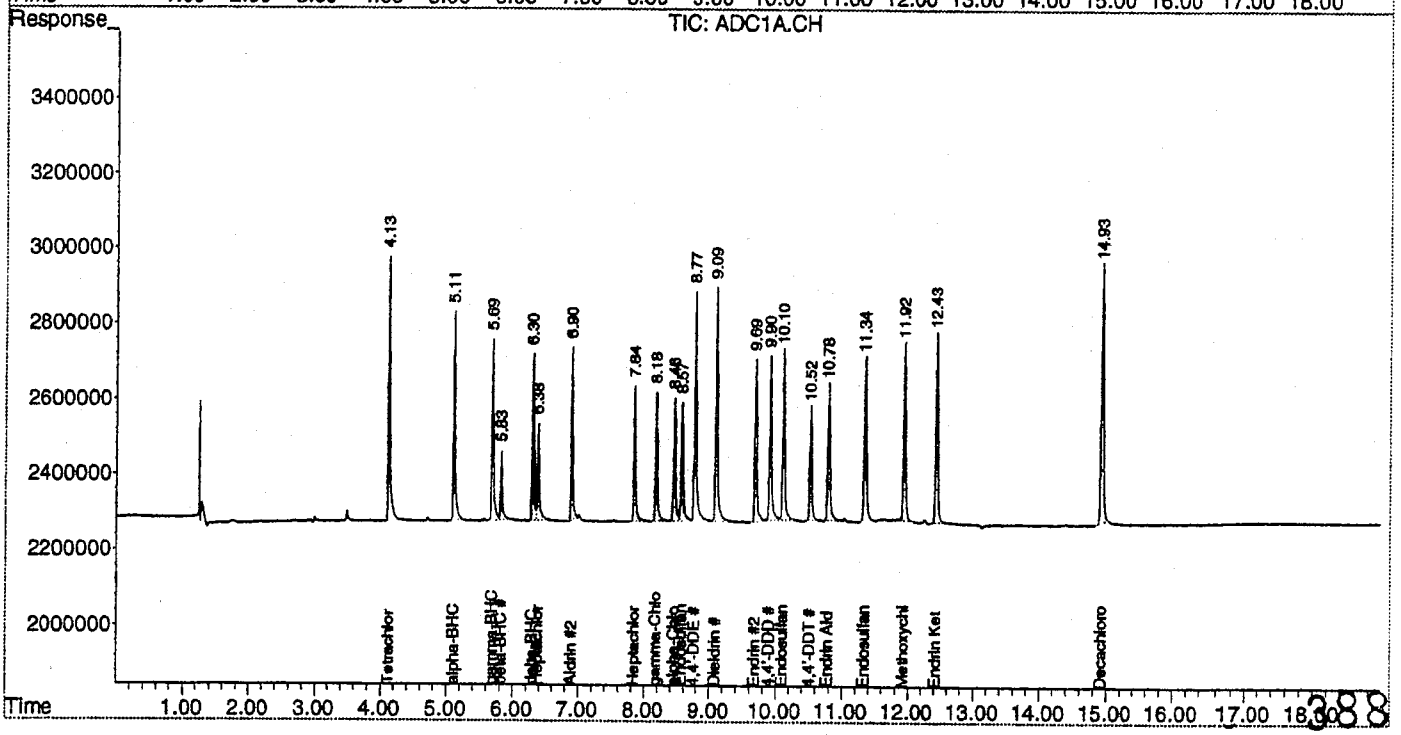
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Signal #1 : F:\HPCHEM\1\DATA\PE082302\015F1501.D\ADC1B.CH Vial: 15
Signal #2 : F:\HPCHEM\1\DATA\PE082302\015F1501.D\ADC1A.CH
Acq On : 23-Aug-2002, 21:22:05 Operator: JDW
Sample : 5/10 ng/ml 8081A ICV Pest886F Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 26 9:55 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Mon Aug 26 09:55:45 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082302\016F1601.D\ADC1B.CH Vial: 16
Signal #2 : F:\HPCHEM\1\DATA\PE082302\016F1601.D\ADC1A.CH
Acq On : 23-Aug-2002, 21:44:05 Operator: JDW
Sample : 1/2 ng/ml 8081A ICV Pest886G Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 26 09:56:46 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Mon Aug 26 09:55:45 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

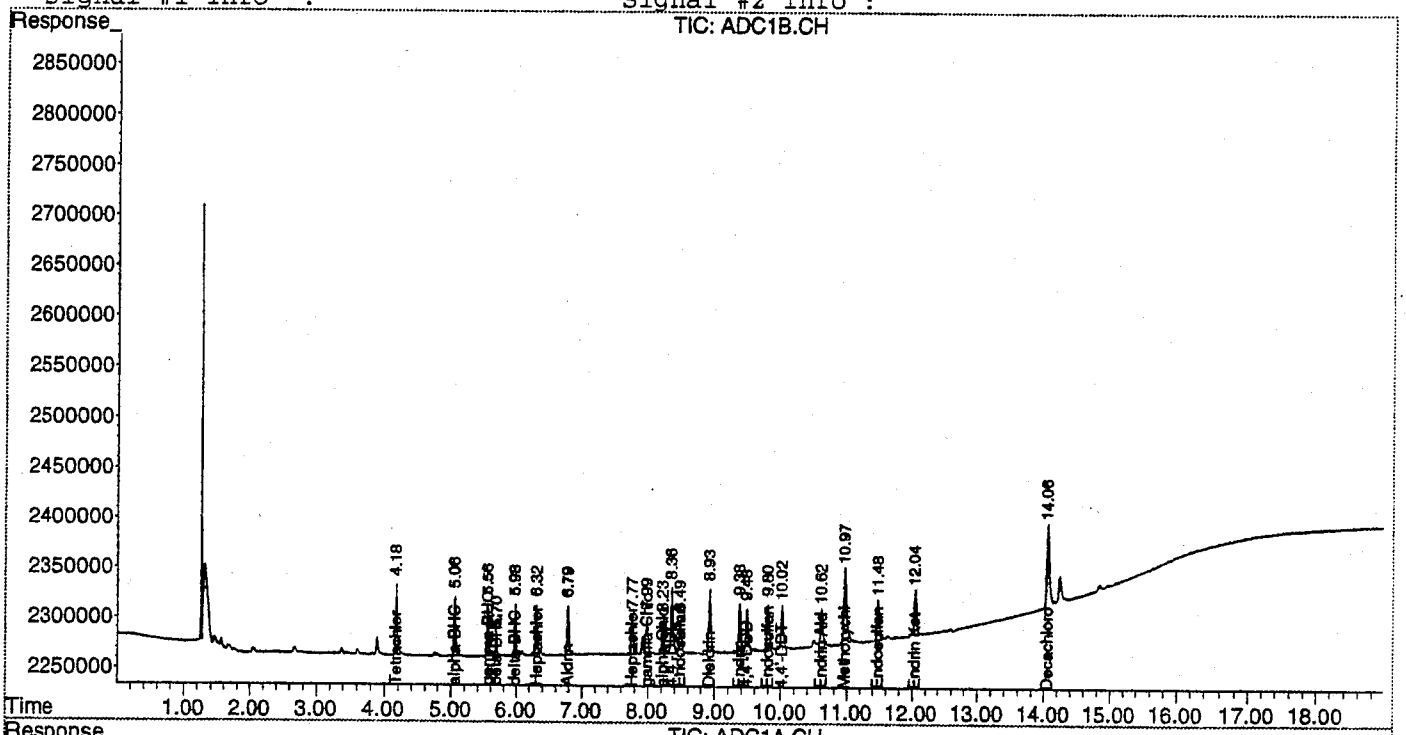
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	4.18	4.13	1277582	3168011	2.541	2.123
		Spiked Amount 20.000 Range 60 - 150 Recovery =					12.71%#	10.62%#
22)	SR	Decachlorobiphen	14.06	14.92	2192972	4898178	6.368	5.431
		Spiked Amount 20.000 Range 60 - 150 Recovery =					31.84%#	27.16%#
		Target Compounds						
2)		alpha-BHC	5.06	5.11	1025852	2207026	1.231	0.978
3)	M	gamma-BHC (Linda	5.56	5.69	876450	1997394	1.210	1.026
4)	M	Heptachlor	6.32	6.38	850259	999081	1.238	0.951
5)	M	Aldrin	6.79	6.89	867893	1844737	1.226	0.993
6)		beta-BHC	5.70	5.83	277748	664218	1.029	0.925
7)		delta-BHC	5.98	6.30	851590	1783127	1.247	0.987
8)		Heptachlor Epoxi	7.77	7.84	774045	1624657	1.285	1.018
9)		Endosulfan I	8.49	8.57	777022	1461612	1.295	0.960
10)		gamma-Chlordane	7.99	8.17	820015	1657420	1.321	1.004
11)		alpha-Chlordane	8.23	8.45	688438	1564034	1.195	1.015
12)		4,4'-DDE	8.36	8.77	1448872	3100223	2.610	1.976
13)	M	Dieldrin	8.93	9.09	1409184	3095993	2.513	2.013
14)	M	Endrin	9.37	9.68	1050873	2286480	2.458	1.989
15)		Endosulfan II	9.80	10.10	1056956	2249264	2.359	1.749
16)		4,4'-DDD	9.48	9.90	1021324	2231491	2.442	1.964
17)	M	4,4'-DDT	10.02	10.51	1051010	1406209	2.502	1.704
18)		Endrin Aldehyde	10.62	10.78	833918	2012454	2.443	1.983
19)		Endosulfan Sulfa	11.48	11.33	941777	2541101	2.381	2.179
20)		Methoxychlor	10.97	11.92	2332714	2361927	13.221	8.001
21)		Endrin Ketone	12.04	12.42	1155216	2737667	2.421	2.006

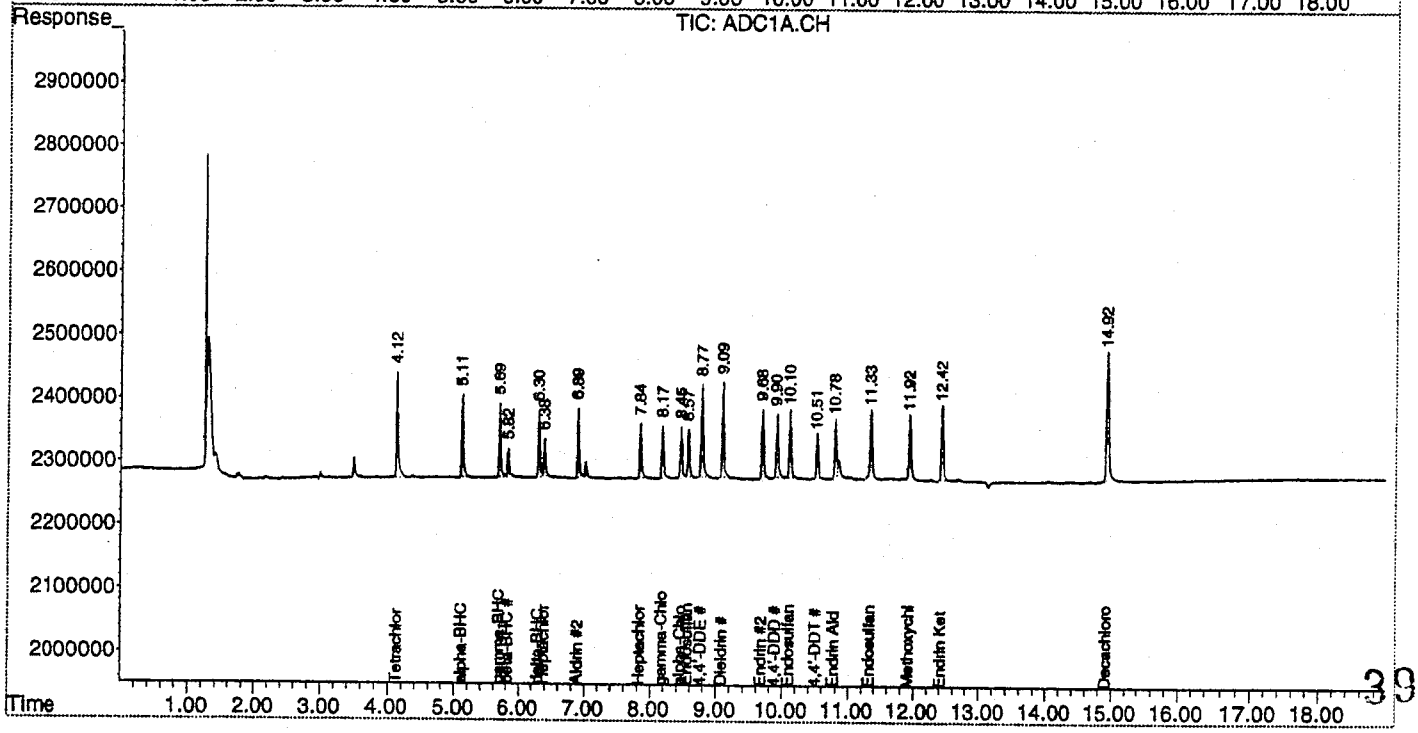
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
016F1601.D 8081_823.M Thu Aug 29 10:12:55 2002

Signal #1 : F:\HPCHEM\1\DATA\PE082302\016F1601.D\ADC1B.CH Vial: 16
Signal #2 : F:\HPCHEM\1\DATA\PE082302\016F1601.D\ADC1A.CH
Acq On : 23-Aug-2002, 21:44:05 Operator: JDW
Sample : 1/2 ng/ml 8081A ICV Pest886G Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 26 9:55 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Mon Aug 26 09:55:45 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Response Factor Report HP35900C

Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002

Calibration Files
1 =014F1401.D 2 =013F1301.D 3 =012F1201.D
4 =011F1101.D 5 =010F1001.D 6 =009F0901.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)	SR	Tetrachloro-m-xy	8.393	7.005	6.681	6.026	5.659	5.433	6.533	E5	16.68
2)		alpha-BHC	1.511	1.231	1.189	1.097	1.038	1.002	1.178	E6	15.70
3)	M	gamma-BHC (Linda	1.323	1.066	1.021	0.951	0.900	0.875	1.023	E6	15.98
4)	M	Heptachlor	1.250	1.019	0.994	0.909	0.859	0.837	0.978	E6	15.50
5)	M	Aldrin	1.268	1.036	1.005	0.918	0.863	0.846	0.989	E6	15.79
6)		beta-BHC	4.503	3.854	3.739	3.704	3.504	3.411	3.786	E5	10.22
7)		delta-BHC	1.197	0.996	1.048	0.943	0.887	0.868	0.990	E6	12.31
8)		Heptachlor Epoxi	1.066	0.869	0.843	0.776	0.727	0.712	0.832	E6	15.65
9)		Endosulfan I	1.163	0.946	0.896	0.844	0.789	0.763	0.900	E6	16.16
10)		gamma-Chlordane	1.090	0.920	0.881	0.809	0.760	0.741	0.867	E6	14.91
11)		alpha-Chlordane	1.004	0.817	0.797	0.742	0.693	0.675	0.788	E6	15.16
12)		4,4'-DDE	9.648	7.541	7.322	6.759	6.322	6.039	7.272	E5	17.83
13)	M	Dieldrin	1.024	0.830	0.807	0.738	0.689	0.659	0.791	E6	16.60
14)	M	Endrin	7.355	6.060	5.872	5.421	5.058	4.935	5.784	E5	15.33
15)		Endosulfan II	7.598	6.641	6.401	5.807	5.480	5.322	6.208	E5	13.73
16)		4,4'-DDD	6.959	6.479	6.294	5.713	5.383	5.247	6.013	E5	11.19
17)	M	4,4'-DDT	7.399	6.493	6.384	5.728	5.543	5.422	6.161	E5	12.16
18)		Endrin Aldehyde	5.587	5.230	4.993	4.262	3.944	3.806	4.637	E5	15.82
19)		Endosulfan Sulfa	6.830	5.640	5.633	5.270	4.891	4.791	5.509	E5	13.42
20)		Methoxychlor	3.194	2.601	2.579	2.367	2.070	1.913	2.454	E5	18.52
21)		Endrin Ketone	8.177	6.937	6.615	6.137	5.698	5.506	6.512	E5	15.02
22)	SR	Decachlorobiphen	3.602	5.021	4.825	4.287	3.781	3.489	4.168	E5	15.56

Signal #2 Calibration Files
1 =014F1401.D 2 =013F1301.D 3 =012F1201.D
4 =011F1101.D 5 =010F1001.D 6 =009F0901.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)	SR	Tetrachloro-m-xy	1.558	1.306	1.289	1.305	1.342	1.377	1.363	E6	7.40
2)		alpha-BHC	2.252	1.948	1.969	2.011	2.112	2.203	2.083	E6	6.09
3)	M	gamma-BHC (Linda	2.014	1.716	1.729	1.717	1.799	1.880	1.809	E6	6.57
4)	M	Heptachlor	0.767	0.785	0.834	0.857	0.956	1.066	0.878	E6	12.95
5)	M	Aldrin	1.893	1.620	1.622	1.653	1.727	1.774	1.715	E6	6.22
6)		beta-BHC	6.622	6.433	6.773	6.406	6.185	6.679	6.516	E5	3.31
7)		delta-BHC	1.786	1.524	1.550	1.550	1.602	1.677	1.615	E6	6.18
8)		Heptachlor Epoxi	1.624	1.392	1.423	1.397	1.428	1.485	1.458	E6	6.01
9)		Endosulfan I	1.512	1.361	1.379	1.367	1.374	1.430	1.404	E6	4.16
10)		gamma-Chlordane	1.684	1.443	1.464	1.441	1.468	1.536	1.506	E6	6.23
11)		alpha-Chlordane	1.611	1.354	1.356	1.313	1.327	1.386	1.391	E6	7.95
12)		4,4'-DDE	1.523	1.324	1.366	1.409	1.457	1.486	1.428	E6	5.27
13)	M	Dieldrin	1.545	1.400	1.409	1.460	1.517	1.550	1.480	E6	4.52
14)	M	Endrin	1.178	1.039	1.045	1.007	1.085	1.073	1.071	E6	5.54
15)		Endosulfan II	1.200	1.115	1.111	1.116	1.193	1.221	1.159	E6	4.37
16)		4,4'-DDD	1.090	1.021	1.022	1.010	1.069	1.099	1.052	E6	3.70
17)	M	4,4'-DDT	0.977	0.865	0.892	0.922	0.975	1.019	0.942	E6	6.22
18)		Endrin Aldehyde	9.702	8.742	8.412	8.499	8.500	8.728	8.764	E5	5.46
19)		Endosulfan Sulfa	1.225	1.041	1.024	1.002	1.009	1.057	1.060	E6	7.88
20)		Methoxychlor	4.113	3.693	3.836	4.091	4.075	4.044	3.975	E5	4.30
21)		Endrin Ketone	1.474	1.241	1.241	1.232	1.272	1.291	1.292	E6	7.11
22)	SR	Decachlorobiphen	6.277	8.486	8.224	7.862	7.600	7.738	7.698	E5	9.99

(#) = Out of Range

Signal #1 : F:\HPCHEM\1\DATA\PE091002\014F1401.D\ADC1B.CH Vial: 14
Signal #2 : F:\HPCHEM\1\DATA\PE091002\014F1401.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:48:04 Operator: JDW
Sample : 1.0/2.0 ng/ml 8081A ICAL Pest886G Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:35:40 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:34:57 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.85	1678600	3115677	2.570	2.287
		Spiked Amount 20.000 Range 60 - 150 Recovery =					12.85%#	11.43%#
22)	SR	Decachlorobiphen	13.55	14.45	2881852	5021535	6.915	6.523
		Spiked Amount 20.000 Range 60 - 150 Recovery =					34.58%#	32.62%#
		Target Compounds						
2)		alpha-BHC	4.73	4.82	1511387	2251969	1.283	1.081
3)	M	gamma-BHC (Linda	5.23	5.39	1322597	2014155	1.293	1.113
4)	M	Heptachlor	5.97	6.07	1250363	767472	1.279	0.874
5)	M	Aldrin	6.44	6.57	1268388	1892894	1.282	1.104
6)		beta-BHC	5.36	5.53	450334	662194	1.190	1.016
7)		delta-BHC	5.64	6.00	1197067	1785595	1.210	1.106
8)		Heptachlor Epoxi	7.37	7.48	1065999	1623734	1.281	1.114
9)		Endosulfan I	8.04	8.16	1163262	1511741	1.292	1.077
10)		gamma-Chlordane	7.57	7.79	1090114	1683978	1.258	1.118
11)		alpha-Chlordane	7.79	8.05	1003922	1610594	1.274	1.158
12)		4,4'-DDE	7.92	8.38	1929643	3046632	2.654	2.134
13)	M	Dieldrin	8.48	8.67	2047393	3089145	2.588	2.087
14)	M	Endrin	8.91	9.26	1471041	2356297	2.543	2.200
15)		Endosulfan II	9.33	9.67	1519692	2399429	2.448	2.070
16)		4,4'-DDD	9.03	9.49	1391836	2180577	2.315	2.073
17)	M	4,4'-DDT	9.56	10.09	1479738	1953092	2.402	2.074
18)		Endrin Aldehyde	10.13	10.35	1117324	1940496	2.268	2.208
19)		Endosulfan Sulfa	10.98	10.90	1366081	2450422	2.480	2.312
20)		Methoxychlor	10.50	11.50	3194422	4113223	13.017	10.346
21)		Endrin Ketone	11.53	11.97	1635488	2947200	2.502	2.281

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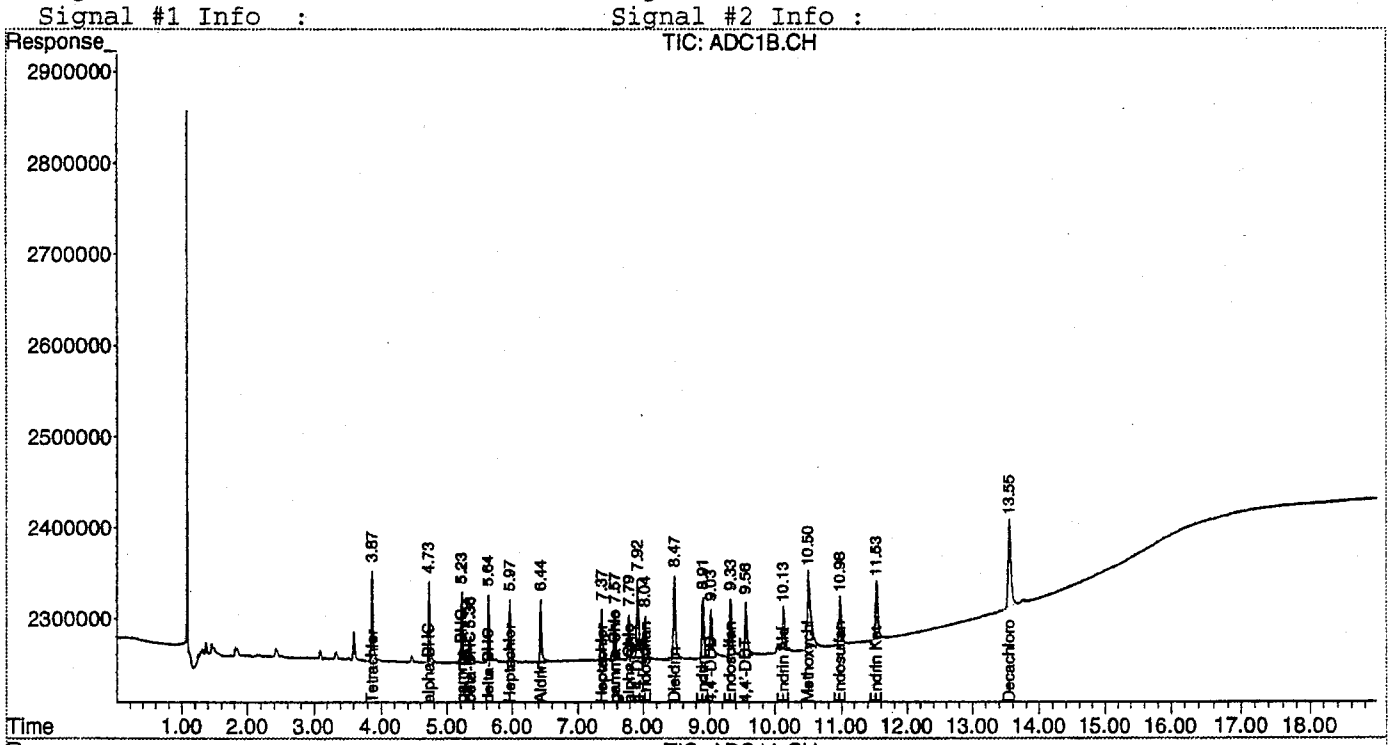
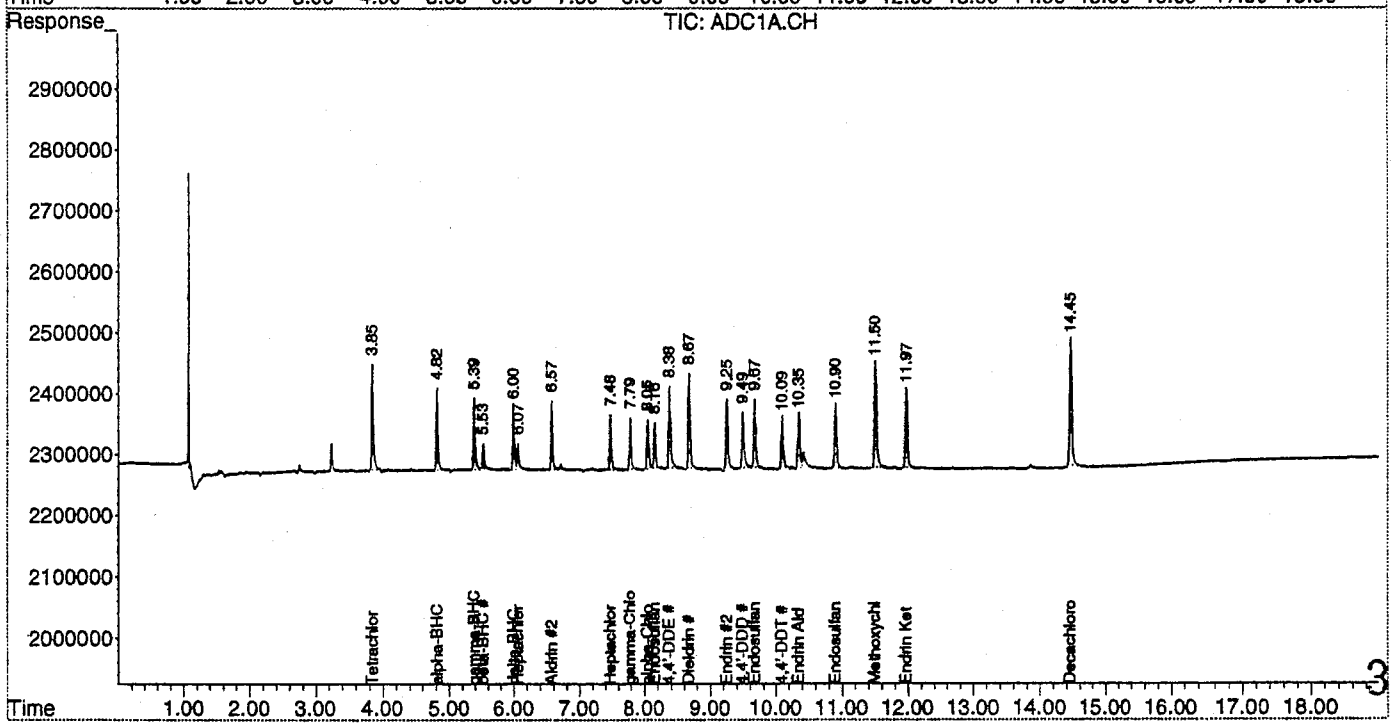
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Signal #1 : F:\HPCHEM\1\DATA\PE091002\014F1401.D\ADC1B.CH Vial: 14
Signal #2 : F:\HPCHEM\1\DATA\PE091002\014F1401.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:48:04 Operator: JDW
Sample : 1.0/2.0 ng/ml 8081A ICAL Pest886G Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:35 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:34:57 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Signal #1 : F:\HPCHEM\1\DATA\PE091002\013F1301.D\ADC1B.CH Vial: 13
Signal #2 : F:\HPCHEM\1\DATA\PE091002\013F1301.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:26:02 Operator: JDW
Sample : 5/10 ng/ml 8081A ICAL Pest886F Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:34:05 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

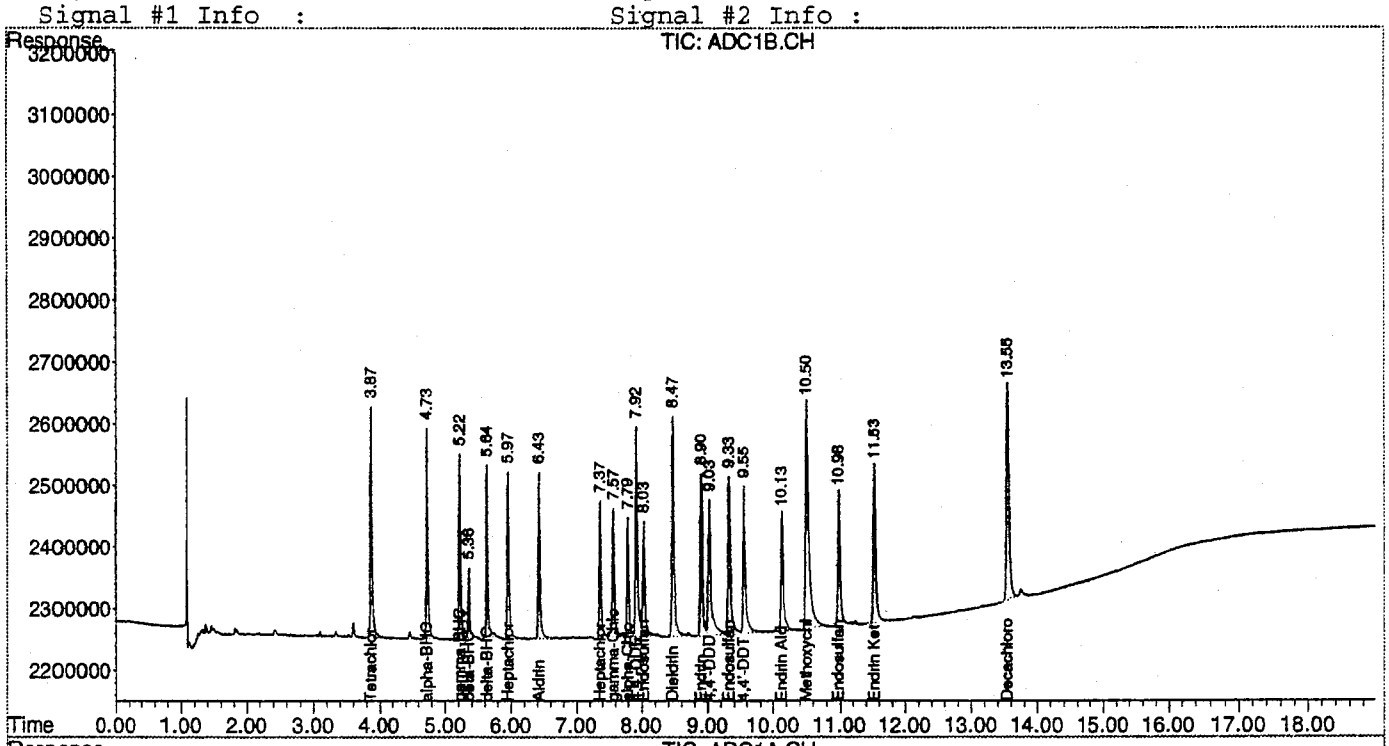
Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

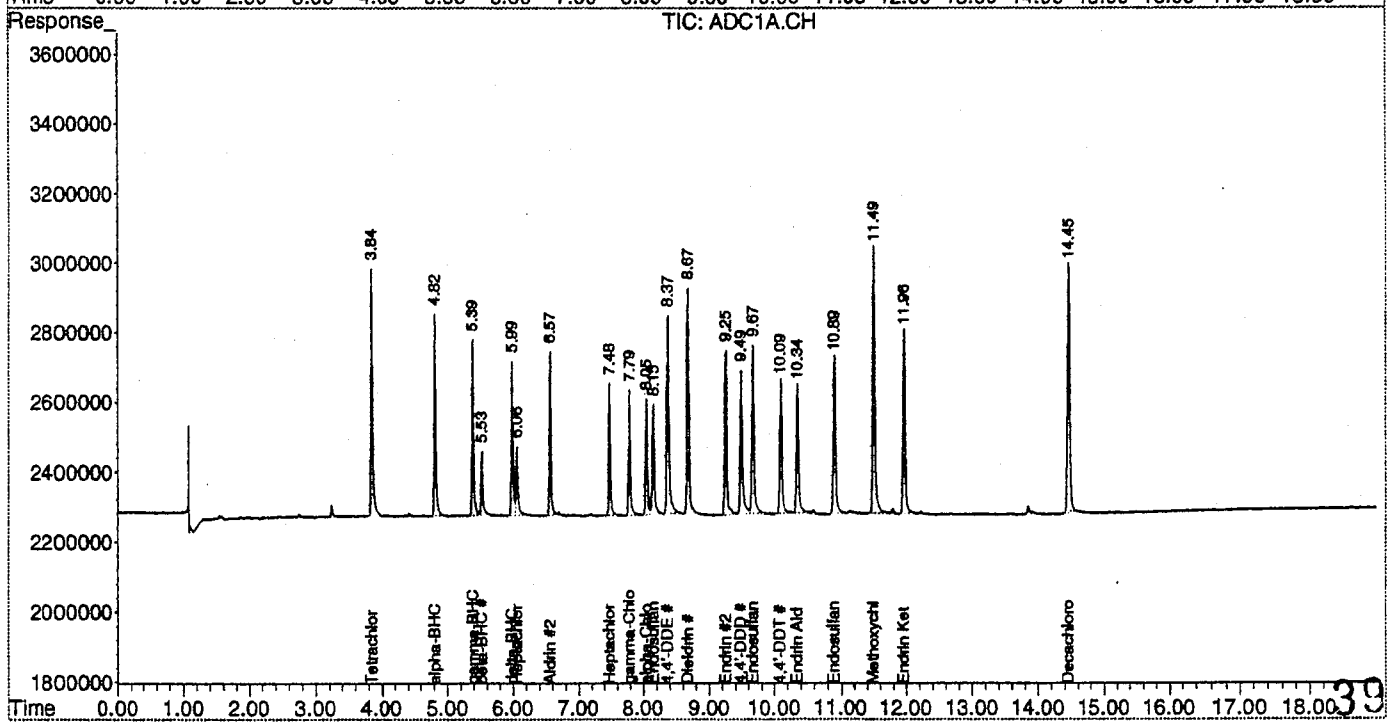
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.84	7004674	13057142	12.831	9.689
		Spiked Amount 20.000 Range 60 - 150 Recovery =					64.16%	48.45%#
22)	SR	Decachlorobiphen	13.55	14.45	10041469	16972080	32.514	24.380
		Spiked Amount 20.000 Range 60 - 150 Recovery =					162.57%#	121.90%
		Target Compounds						
2)		alpha-BHC	4.73	4.82	6153353	9737722	6.513	4.776
3)	M	gamma-BHC (Linda	5.22	5.39	5328448	8579187	6.539	4.887
4)	M	Heptachlor	5.97	6.07	5093262	3924858	6.407	3.871
5)	M	Aldrin	6.43	6.57	5177547	8098193	6.486	4.823
6)		beta-BHC	5.36	5.53	1927011	3216622	6.470	5.010
7)		delta-BHC	5.64	5.99	4982180	7619170	6.520	4.842
8)		Heptachlor Epoxi	7.37	7.48	4342655	6961614	6.483	4.811
9)		Endosulfan I	8.03	8.16	4728489	6805234	6.681	4.890
10)		gamma-Chlordane	7.57	7.79	4598949	7215219	6.649	4.835
11)		alpha-Chlordane	7.79	8.05	4086715	6767675	6.475	4.912
12)		4,4'-DDE	7.92	8.37	7541139	13240484	12.490	9.367
13)	M	Dieldrin	8.47	8.67	8295508	14000056	13.193	9.835
14)	M	Endrin	8.90	9.25	6059826	10386043	13.502	10.353
15)		Endosulfan II	9.33	9.67	6640799	11147463	14.067	10.233
16)		4,4'-DDD	9.03	9.49	6479306	10210574	13.705	10.045
17)	M	4,4'-DDT	9.56	10.09	6492845	8646068	13.529	11.672
18)		Endrin Aldehyde	10.13	10.34	5230288	8741878	13.594	10.756
19)		Endosulfan Sulfa	10.98	10.89	5639802	10406961	13.367	10.329
20)		Methoxychlor	10.50	11.49	13003144	18467329	68.466	67.821
21)		Endrin Ketone	11.53	11.96	6937419	12411291	14.108	10.441

Signal #1 : F:\HPCHEM\1\DATA\PE091002\013F1301.D\ADC1B.CH Vial: 13
Signal #2 : F:\HPCHEM\1\DATA\PE091002\013F1301.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:26:02 Operator: JDW
Sample : 5/10 ng/ml 8081A ICAL Pest886F Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:34 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Signal #1 : F:\HPCHEM\1\DATA\PE091002\012F1201.D\ADC1B.CH Vial: 12
Signal #2 : F:\HPCHEM\1\DATA\PE091002\012F1201.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:04:05 Operator: JDW
Sample : 10/20 ng/ml 8081A ICAL Pest886E Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33:56 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

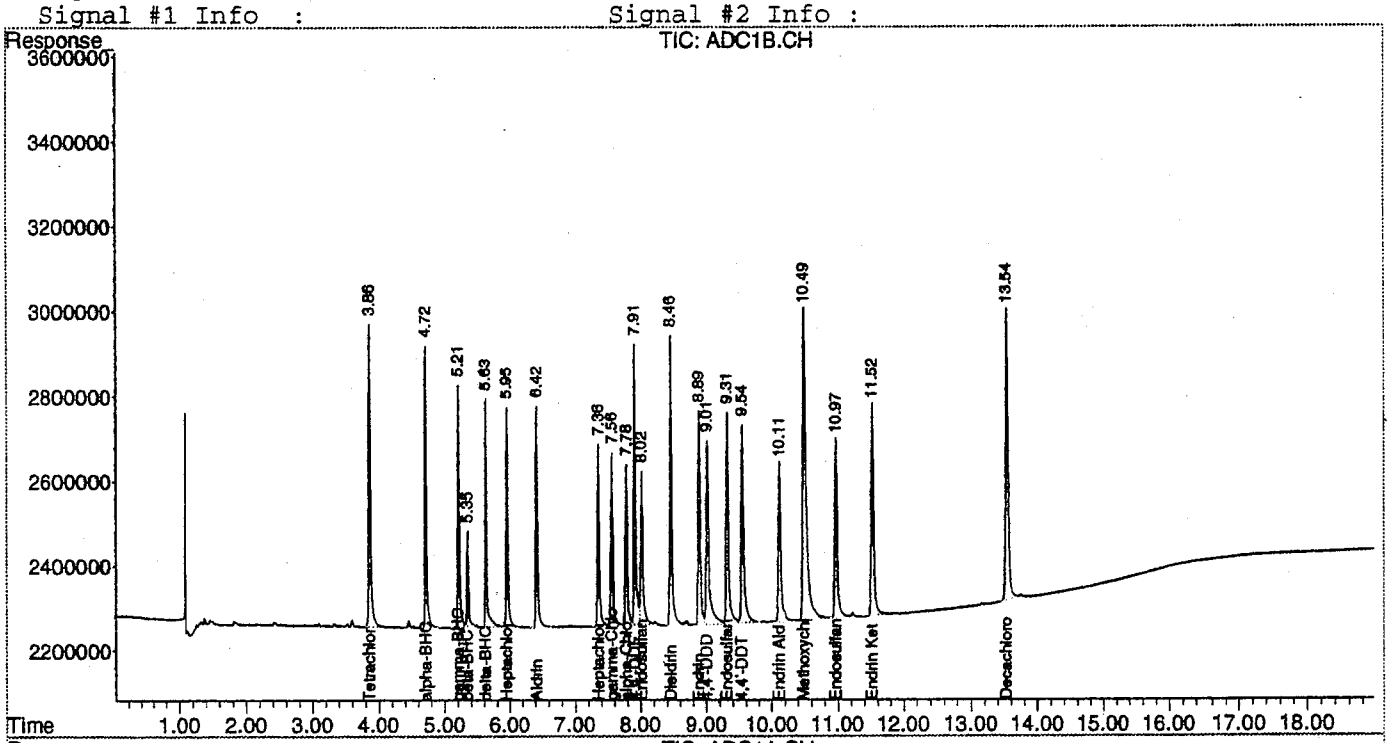
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.86	3.84	13362254	25771447	24.476	19.123
		Spiked Amount 20.000 Range 60 - 150 Recovery =					122.38%	95.62%
22)	SR	Decachlorobiphen	13.54	14.44	19298669	32897645	62.489	47.257
		Spiked Amount 20.000 Range 60 - 150 Recovery =					312.44%#	236.29%#
		Target Compounds						
2)		alpha-BHC	4.72	4.81	11892662	19692267	12.587	9.659
3)	M	gamma-BHC (Linda	5.21	5.38	10211973	17294647	12.532	9.852
4)	M	Heptachlor	5.95	6.05	9939053	8342763	12.503	8.228
5)	M	Aldrin	6.42	6.56	10050666	16222132	12.590	9.661
6)		beta-BHC	5.35	5.52	3739008	6772581	12.554	10.549
7)		delta-BHC	5.63	5.98	10476350	15495794	13.710	9.847
8)		Heptachlor Epoxi	7.36	7.47	8433960	14229275	12.591	9.834
9)		Endosulfan I	8.02	8.14	8956618	13785318	12.656	9.906
10)		gamma-Chlordane	7.56	7.77	8807773	14637180	12.734	9.809
11)		alpha-Chlordane	7.78	8.04	7972559	13562542	12.632	9.845
12)		4,4'-DDE	7.91	8.36	14644195	27319436	24.255	19.327
13)	M	Dieldrin	8.46	8.66	16138276	28172726	25.667	19.791
14)	M	Endrin	8.89	9.24	11744946	20892099	26.168	20.825
15)		Endosulfan II	9.31	9.66	12801375	22227681	27.118	20.404
16)		4,4'-DDD	9.01	9.47	12587211	20446678	26.624	20.115
17)	M	4,4'-DDT	9.54	10.08	12767396	17849806	26.603	24.096
18)		Endrin Aldehyde	10.11	10.33	9985348	16823444	25.953	20.699
19)		Endosulfan Sulfa	10.97	10.88	11265343	20475119	26.700	20.322
20)		Methoxychlor	10.49	11.48	25793092	38359440	135.809	140.874
21)		Endrin Ketone	11.52	11.95	13230747	24820234	26.906	20.879

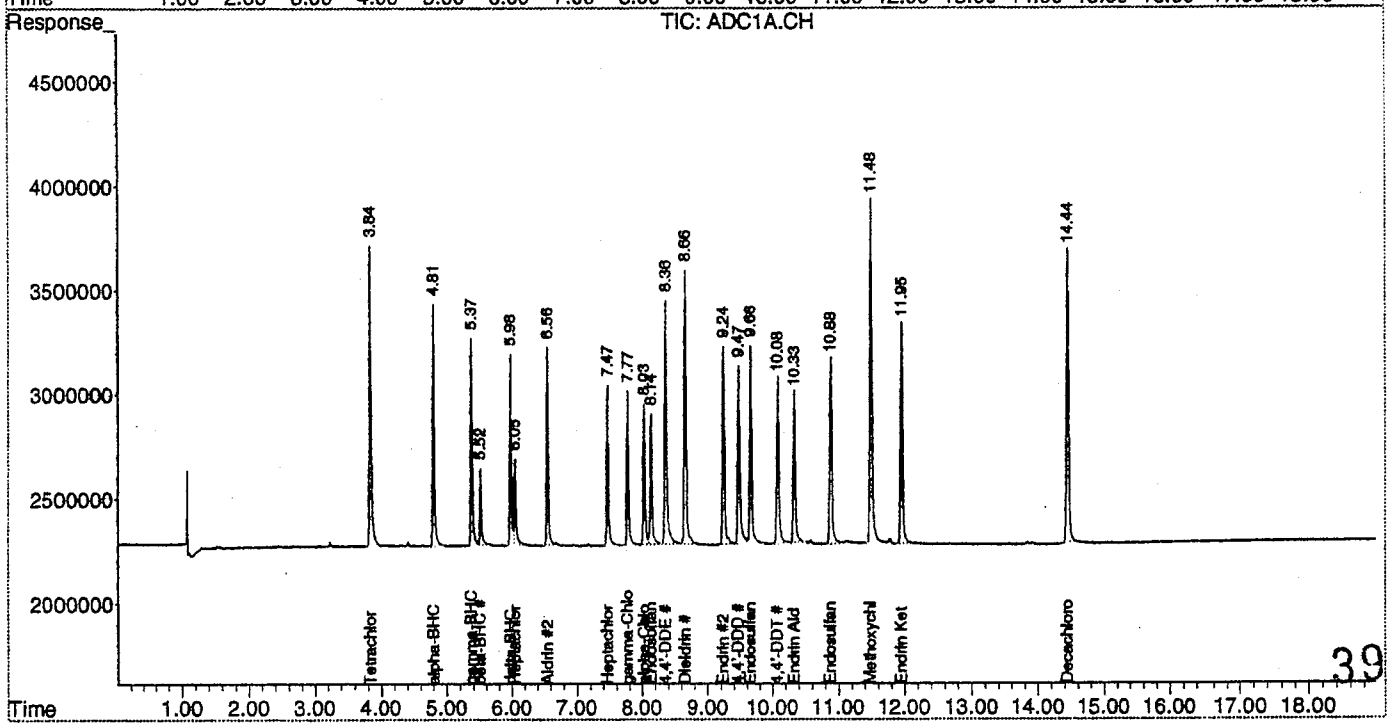
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
012F1201.D 8081_910.M Wed Sep 11 10:58:43 2002

Signal #1 : F:\HPCHEM\1\DATA\PE091002\012F1201.D\ADC1B.CH Vial: 12
Signal #2 : F:\HPCHEM\1\DATA\PE091002\012F1201.D\ADC1A.CH
Acq On : 11-Sep-2002, 01:04:05 Operator: JDW
Sample : 10/20 ng/ml 8081A ICAL Pest886E Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Signal #1 : F:\HPCHEM\1\DATA\PE091002\011F1101.D\ADC1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\PE091002\011F1101.D\ADC1A.CH
Acq On : 11-Sep-2002, 00:42:08 Operator: JDW
Sample : 25/50 ng/ml 8081A ICAL Pest886D Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33:48 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

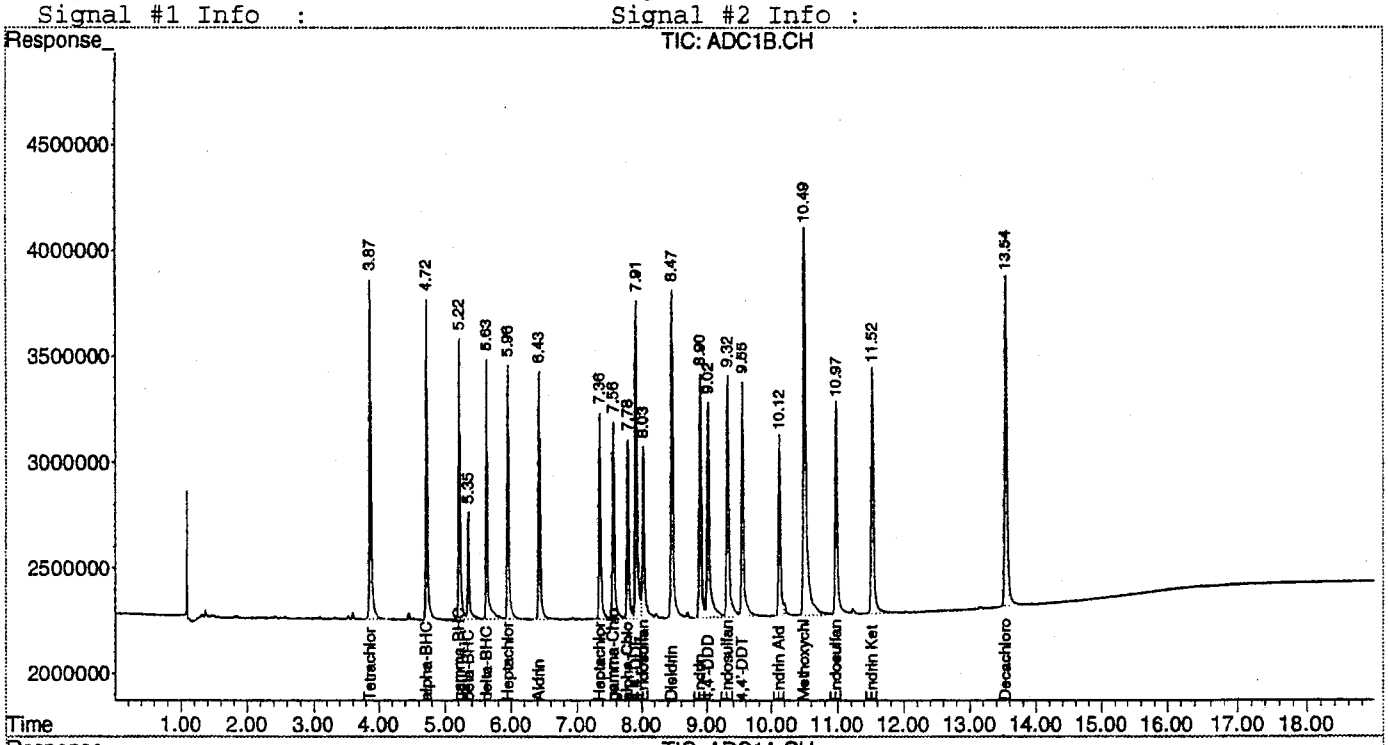
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.84	30128264	65228995	55.187	48.401
Spiked Amount		20.000 Range	60 - 150		Recovery	=	275.94%#	242.01%#
22)	SR	Decachlorobiphen	13.54	14.45	42867605	78618579	138.804	112.935
Spiked Amount		20.000 Range	60 - 150		Recovery	=	694.02%#	564.67%#
		Target Compounds						
2)		alpha-BHC	4.72	4.81	27415349	50276558	29.017	24.659
3)	M	gamma-BHC (Linda	5.22	5.38	23777035	42919296	29.180	24.450
4)	M	Heptachlor	5.96	6.06	22717106	21435365	28.577	21.141
5)	M	Aldrin	6.43	6.56	22946949	41320033	28.745	24.608
6)		beta-BHC	5.36	5.52	9258928	16015871	31.086	24.946
7)		delta-BHC	5.64	5.98	23564773	38760917	30.838	24.630
8)		Heptachlor Epoxi	7.36	7.47	19391451	34923056	28.950	24.136
9)		Endosulfan I	8.03	8.15	21109630	34185183	29.828	24.566
10)		gamma-Chlordane	7.56	7.78	20233286	36020697	29.253	24.138
11)		alpha-Chlordane	7.78	8.04	18537729	32816216	29.372	23.820
12)		4,4'-DDE	7.92	8.37	33793374	70444071	55.972	49.836
13)	M	Dieldrin	8.47	8.66	36923830	73020327	58.724	51.296
14)	M	Endrin	8.90	9.25	27107285	50326046	60.397	50.164
15)		Endosulfan II	9.32	9.66	29036211	55783432	61.508	51.207
16)		4,4'-DDD	9.02	9.48	28567359	50498931	60.425	49.680
17)	M	4,4'-DDT	9.55	10.08	28641562	46077654	59.680	62.202
18)		Endrin Aldehyde	10.12	10.34	21311823	42492866	55.393	52.282
19)		Endosulfan Sulfa	10.97	10.89	26350182	50116849	62.452	49.741
20)		Methoxychlor	10.50	11.49	59177497	102.3E6	311.588	375.591
21)		Endrin Ketone	11.52	11.96	30684690	61590584	62.401	51.812

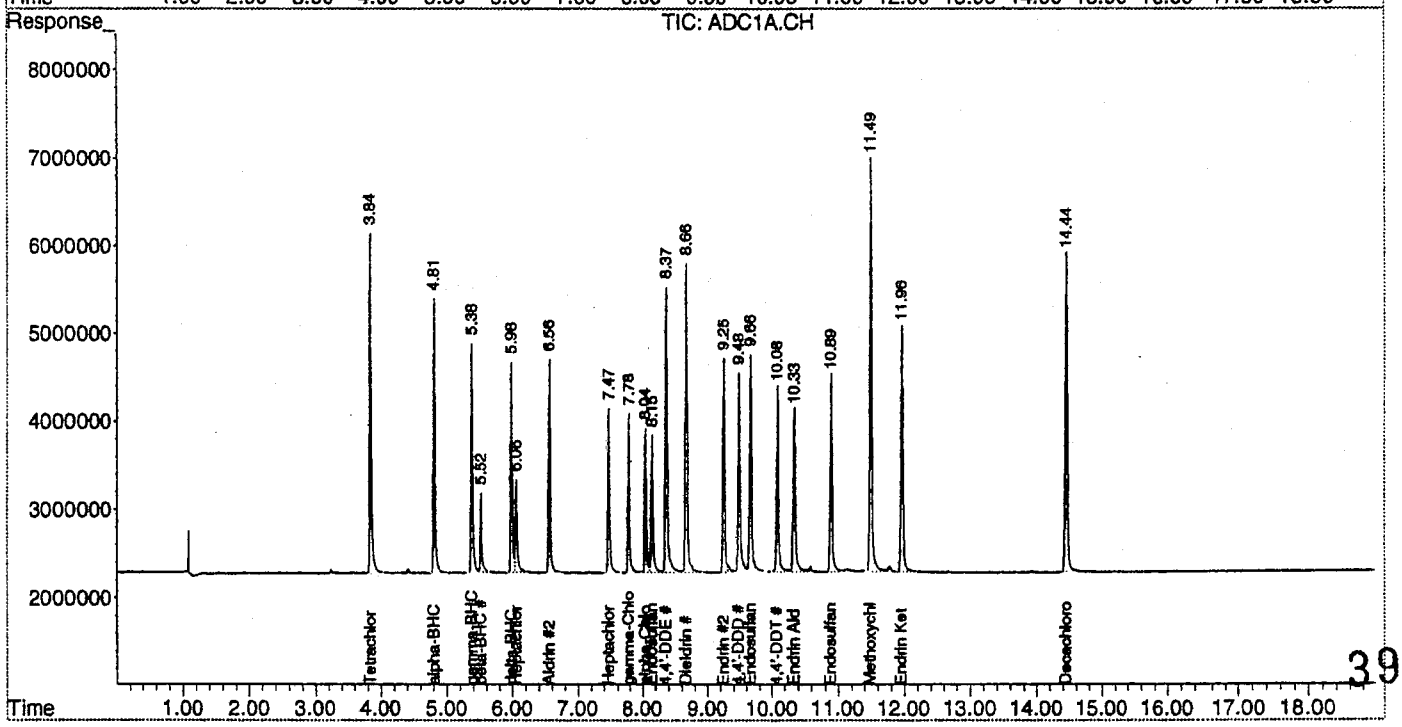
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
011F1101.D 8081_910.M Wed Sep 11 10:58:40 2002

Signal #1 : F:\HPCHEM\1\DATA\PE091002\011F1101.D\ADC1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\PE091002\011F1101.D\ADC1A.CH
Acq On : 11-Sep-2002, 00:42:08 Operator: JDW
Sample : 25/50 ng/ml 8081A ICAL Pest886D Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Signal #1 : F:\HPCHEM\1\DATA\PE091002\010F1001.D\ADC1B.CH Vial: 10
Signal #2 : F:\HPCHEM\1\DATA\PE091002\010F1001.D\ADC1A.CH
Acq On : 11-Sep-2002, 00:20:12 Operator: JDW
Sample : 50/100 ng/ml 8081A ICAL Pest886C Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33:35 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.85	56588164	134.2E6	103.654	99.570
		Spiked Amount 20.000 Range 60 - 150 Recovery =					518.27%#	497.85%#
22)	SR	Decachlorobiphen	13.55	14.45	75626748	152.0E6	244.877	218.333
		Spiked Amount 20.000 Range 60 - 150 Recovery =					1224.39%#	1091.67%#
		Target Compounds						
2)		alpha-BHC	4.73	4.82	51918844	105.6E6	54.952	51.797
3)	M	gamma-BHC (Linda	5.22	5.39	45010682	89956048	55.238	51.245
4)	M	Heptachlor	5.97	6.07	42945230	47812415	54.024	47.157
5)	M	Aldrin	6.43	6.57	43128772	86357660	54.027	51.430
6)		beta-BHC	5.36	5.53	17519200	30923135	58.820	48.165
7)		delta-BHC	5.64	5.99	44327758	80081017	58.010	50.887
8)		Heptachlor Epoxi	7.37	7.48	36364342	71382952	54.290	49.334
9)		Endosulfan I	8.03	8.16	39436071	68681680	55.723	49.355
10)		gamma-Chlordane	7.57	7.79	37991641	73378157	54.927	49.172
11)		alpha-Chlordane	7.79	8.05	34651164	66341358	54.903	48.155
12)		4,4'-DDE	7.92	8.37	63224921	145.7E6	104.719	103.075
13)	M	Dieldrin	8.47	8.67	68933618	151.7E6	109.634	106.595
14)	M	Endrin	8.90	9.25	50575897	108.5E6	112.686	108.162
15)		Endosulfan II	9.33	9.67	54797081	119.3E6	116.078	109.524
16)		4,4'-DDD	9.03	9.48	53825626	106.9E6	113.851	105.170
17)	M	4,4'-DDT	9.56	10.09	55425526	97472697	115.490	131.583
18)		Endrin Aldehyde	10.13	10.34	39439109	85001520	102.508	104.584
19)		Endosulfan Sulfa	10.98	10.89	48911520	100.9E6	115.924	100.183
20)		Methoxychlor	10.50	11.49	103.5E6	203.8E6	545.051	748.346
21)		Endrin Ketone	11.53	11.96	56984355	127.2E6	115.885	106.987

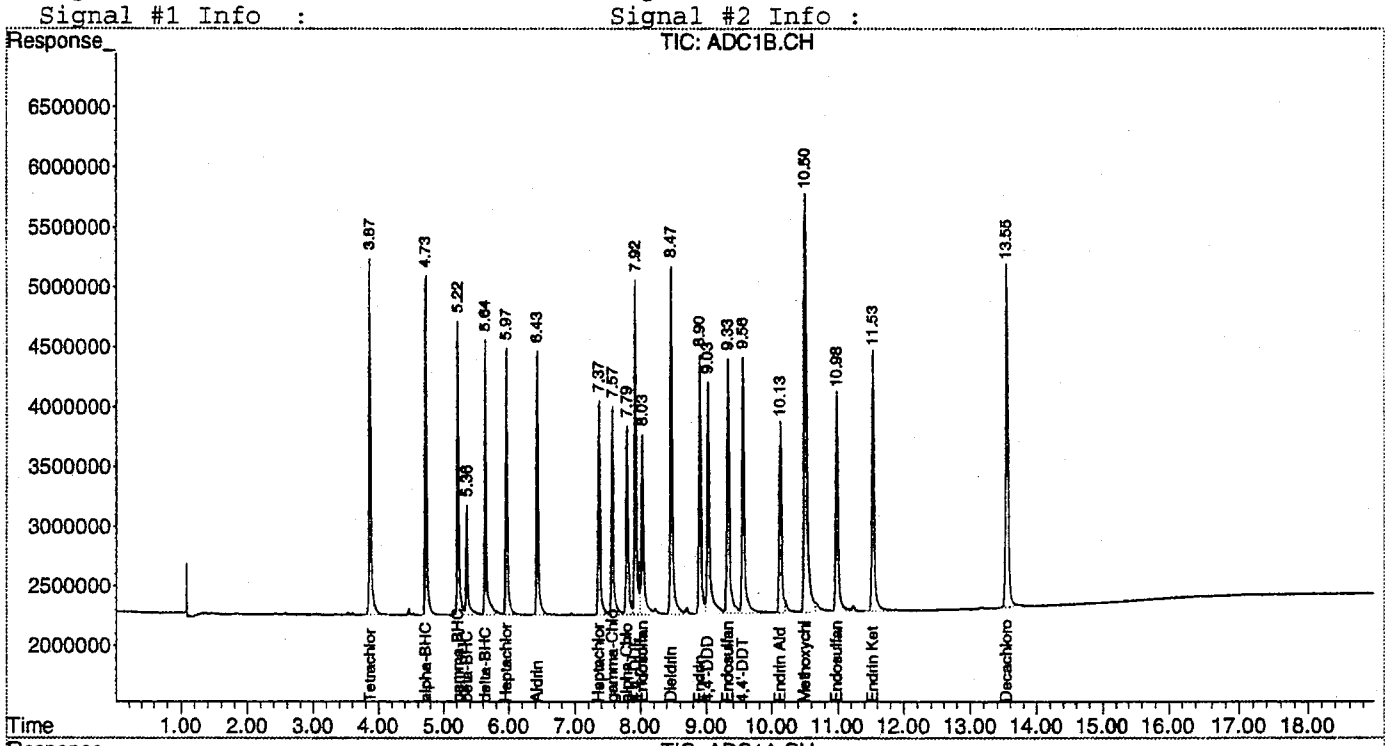
400

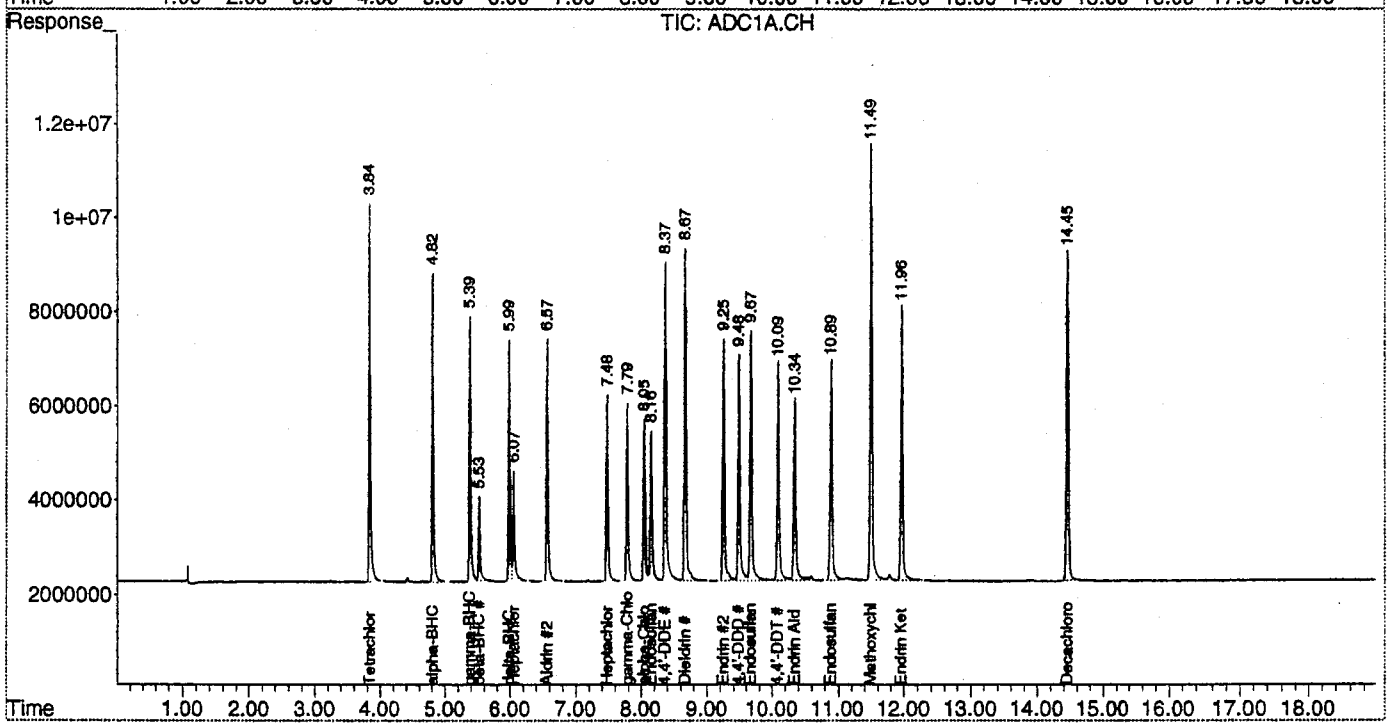
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Signal #1 : F:\HPCHEM\1\DATA\PE091002\010F1001.D\ADC1B.CH Vial: 10
Signal #2 : F:\HPCHEM\1\DATA\PE091002\010F1001.D\ADC1A.CH
Acq On : 11-Sep-2002, 00:20:12 Operator: JDW
Sample : 50/100 ng/ml 8081A ICAL Pest886C Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





401

Signal #1 : F:\HPCHEM\1\DATA\PE091002\009F0901.D\ADC1B.CH Vial: 9
Signal #2 : F:\HPCHEM\1\DATA\PE091002\009F0901.D\ADC1A.CH
Acq On : 10-Sep-2002, 23:58:09 Operator: JDW
Sample : 75/150 ng/ml 8081A ICAL Pest886B Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33:27 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

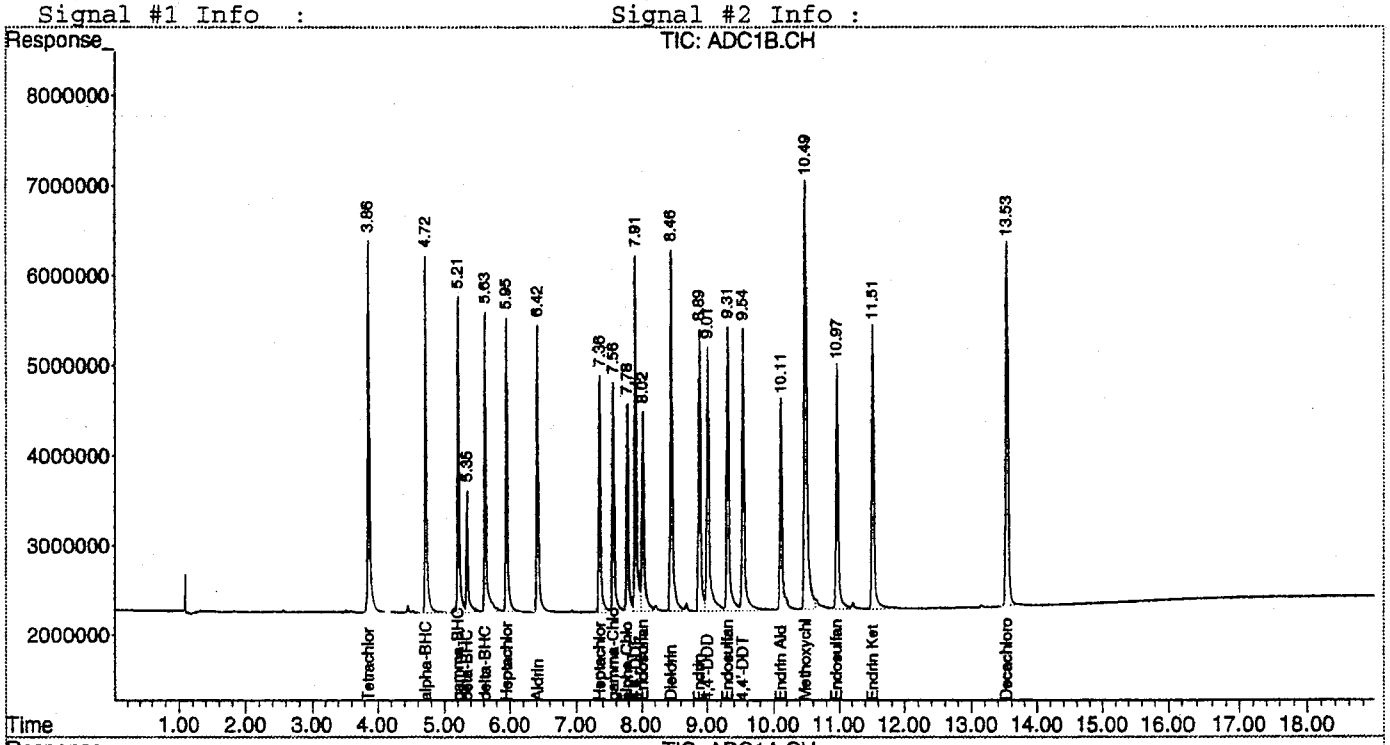
		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.84	81493468	206.5E6	149.274	153.246	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					746.37%#	766.23%#	
22)	SR	Decachlorobiphen	13.53	14.44	104.7E6	232.1E6	338.966	333.472	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					1694.83%#	1667.36%#	
		Target Compounds							
2)		alpha-BHC	4.72	4.81	75154761	165.2E6	79.546	81.051	
3)	M	gamma-BHC (Linda	5.21	5.38	65657952	141.0E6	80.577	80.303	
4)	M	Heptachlor	5.95	6.05	62805311	79933455	79.007	78.838	
5)	M	Aldrin	6.42	6.56	63427539	133.1E6	79.454	79.241	
6)		beta-BHC	5.35	5.51	25583455	50092251	85.895	78.022	
7)		delta-BHC	5.63	5.98	65073779	125.8E6	85.159	79.909	
8)		Heptachlor Epoxi	7.36	7.47	53395002	111.4E6	79.716	76.997	
9)		Endosulfan I	8.02	8.14	57187727	107.2E6	80.807	77.068	
10)		gamma-Chlordane	7.56	7.77	55551485	115.2E6	80.315	77.188	
11)		alpha-Chlordane	7.78	8.03	50661612	104.0E6	80.271	75.471	
12)		4,4'-DDE	7.91	8.36	90581893	222.9E6	150.031	157.697	
13)	M	Dieldrin	8.46	8.66	98916141	232.5E6	157.318	163.359	
14)	M	Endrin	8.89	9.24	74027787	160.9E6	164.938	160.388	
15)		Endosulfan II	9.31	9.65	79831580	183.2E6	169.110	168.187	
16)		4,4'-DDD	9.01	9.47f	78706249	164.9E6	166.478	162.195	
17)	M	4,4'-DDT	9.54	10.07	81336418	152.9E6	169.481	206.433	
18)		Endrin Aldehyde	10.11	10.33	57091923	130.9E6	148.390	161.073	
19)		Endosulfan Sulfa	10.97	10.88	71865775	158.6E6	170.327	157.392	
20)		Methoxychlor	10.49	11.48	143.5E6	303.3E6	755.311	1113.866	#
21)		Endrin Ketone	11.52	11.95	82585099	193.7E6	167.947	162.948	

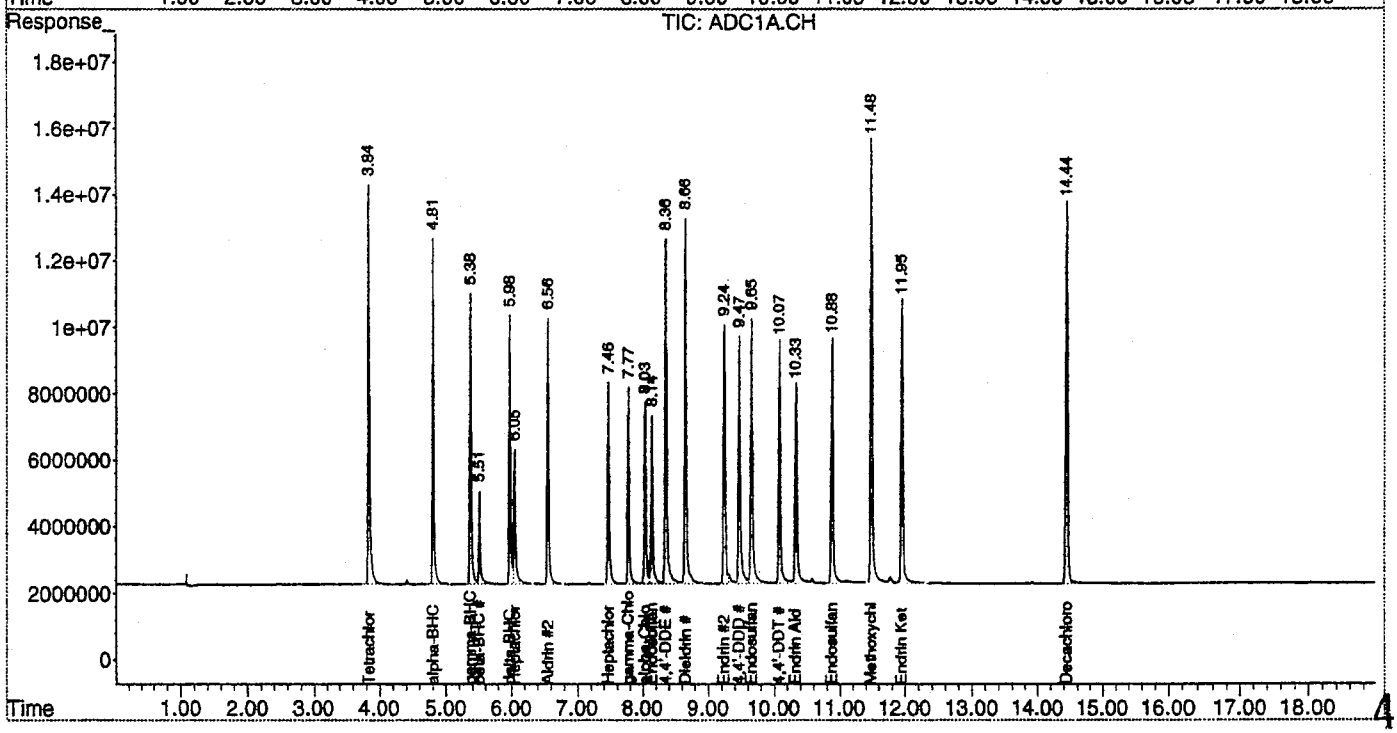
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Signal #1 : F:\HPCHEM\1\DATA\PE091002\009F0901.D\ADC1B.CH Vial: 9
Signal #2 : F:\HPCHEM\1\DATA\PE091002\009F0901.D\ADC1A.CH
Acq On : 10-Sep-2002, 23:58:09 Operator: JDW
Sample : 75/150 ng/ml 8081A ICAL Pest886B Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 11 10:33 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:33:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Response Factor Report HP35900C

Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002

Calibration Files
1 =013F1301.D 2 =012F1201.D 3 =011F1101.D
4 =010F1001.D 5 =009F0901.D 6 =008F0801.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)	SR	Tetrachloro-m-xy	6.615	6.581	6.406	6.679	6.807	6.798	6.648	E5	2.26
2)		Hexachloroethane	1.630	1.679	1.626	1.503	1.439	1.366	1.540	E6	8.03
3)		Hexachlorobenzen	1.267	1.195	1.045	0.957	0.892	0.856	1.035	E6	16.05
4)		Hexachlorobutadi	2.453	2.457	2.186	2.011	1.885	1.730	2.120	E6	14.12
5)		Oxychlordane	8.133	7.469	7.061	6.561	6.200	6.020	6.907	E5	11.67
6)		cis-Nonachlor	8.887	8.916	8.203	7.917	7.473	7.178	8.096	E5	8.86
7)		trans-Nonachlor	8.576	8.276	7.465	7.411	7.000	6.839	7.594	E5	9.13
8)		2,4'-DDE	5.287	4.898	5.039	4.664	4.615	4.490	4.832	E5	6.18
9)		2,4'-DDD	3.878	4.084	4.373	4.108	3.911	3.767	4.020	E5	5.36
10)		2,4'-DDT	4.799	5.006	4.857	4.577	4.371	4.206	4.636	E5	6.62
11)	SR	Decachlorobiphen	4.478	4.563	4.380	4.569	4.553	4.554	4.516	E5	1.65

Signal #2 Calibration Files
1 =013F1301.D 2 =012F1201.D 3 =011F1101.D
4 =010F1001.D 5 =009F0901.D 6 =008F0801.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)	SR	Tetrachloro-m-xy	1.300	1.300	1.260	1.309	1.324	1.323	1.303	E6	1.81
2)		Hexachloroethane	2.458	2.598	2.726	2.768	2.937	3.015	2.751	E6	7.53
3)		Hexachlorobenzen	1.295	1.502	1.413	1.391	1.423	1.469	1.416	E6	5.06
4)		Hexachlorobutadi	4.370	3.749	3.818	4.036	4.191	4.275	4.073	E6	6.15
5)		Oxychlordane	1.230	1.207	1.212	1.189	1.210	1.257	1.218	E6	1.92
6)		cis-Nonachlor	1.466	1.498	1.505	1.502	1.565	1.631	1.528	E6	3.92
7)		trans-Nonachlor	1.326	1.332	1.354	1.366	1.395	1.463	1.373	E6	3.71
8)		2,4'-DDE	8.376	8.352	8.757	8.511	8.476	8.664	8.523	E5	1.88
9)		2,4'-DDD	7.082	6.812	7.521	7.531	7.488	7.544	7.330	E5	4.22
10)		2,4'-DDT	6.622	6.965	6.898	6.843	6.831	6.944	6.850	E5	1.81
11)	SR	Decachlorobiphen	7.697	7.562	7.398	7.599	7.664	7.670	7.598	E5	1.45

(#) = Out of Range

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\013F1301.D\ADC1B.CH Vial: 13
Signal #2 : F:\HPCHEM\1\DATA\PE091102\013F1301.D\ADC1A.CH
Acq On : 12-Sep-2002, 01:36:38 Operator: JDW
Sample : 1.0 ng/ml 8081A Plus Pest902F Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:02:54 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:00:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	SR Tetrachloro-m-xy	3.86	3.84	13229614	26002163	19.890	19.960
	Spiked Amount 20.000 Range 60 - 150 Recovery =					99.45%	99.80%
1)	SR Decachlorobiphen	13.54	14.44	8956605	15394531	19.856	20.261
	Spiked Amount 20.000 Range 60 - 150 Recovery =					99.28%	101.31%
	Target Compounds						
2)	Hexachloroethane	1.53	1.47	1629844	2458011	0.977	0.892
3)	Hexachlorobenzen	4.46	4.57	1267338	1294734	1.155	0.915
4)	Hexachlorobutadi	1.82	1.72	2453338	4369564	1.102	1.065
5)	Oxychlordane	7.19	7.31	813295	1229527	1.166	1.010
6)	cis-Nonachlor	8.95	9.39	888672	1466336	1.098	0.960
7)	trans-Nonachlor	7.75	7.93	857554	1325568	1.129	0.966
8)	2,4'-DDE	7.34	7.79	528685	837567	1.072	0.983
9)	2,4'-DDD	8.22	8.74	387780	708240	0.965	0.966
10)	2,4'-DDT	8.69	9.32	479904	662156	1.035	0.967

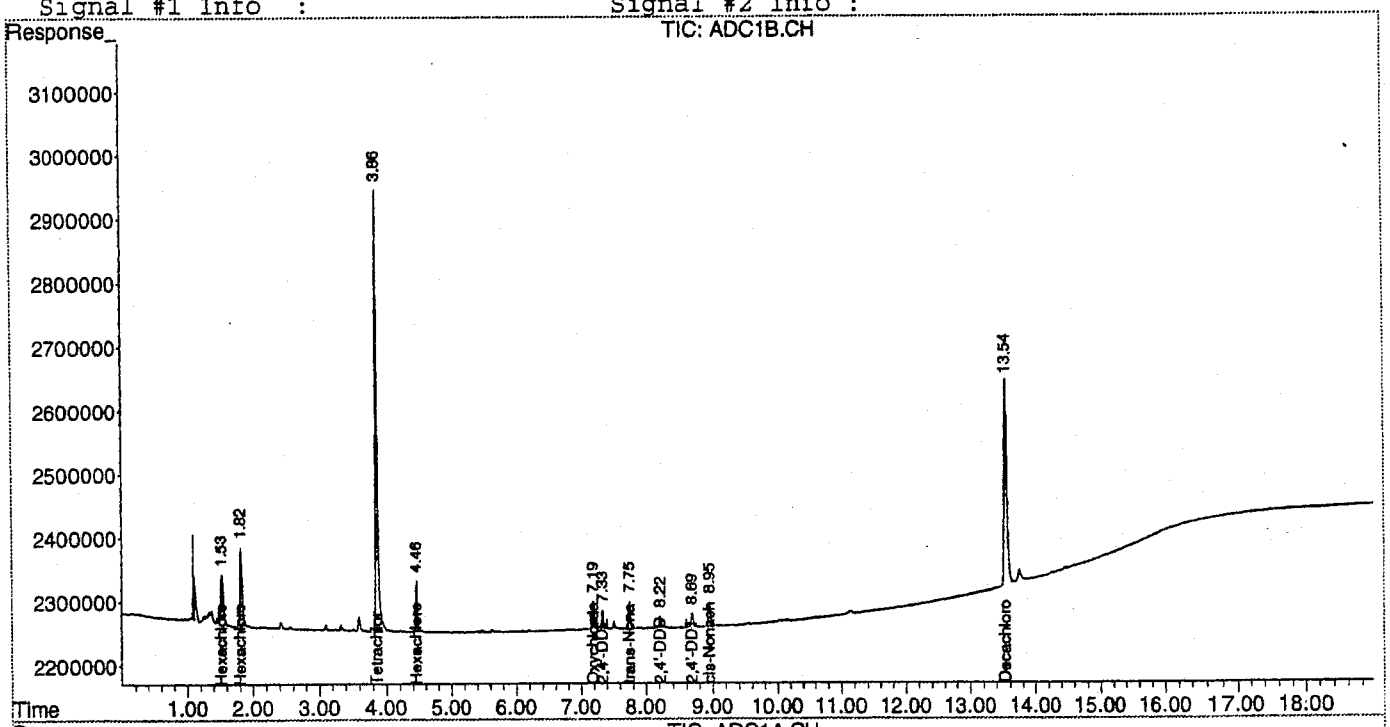
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

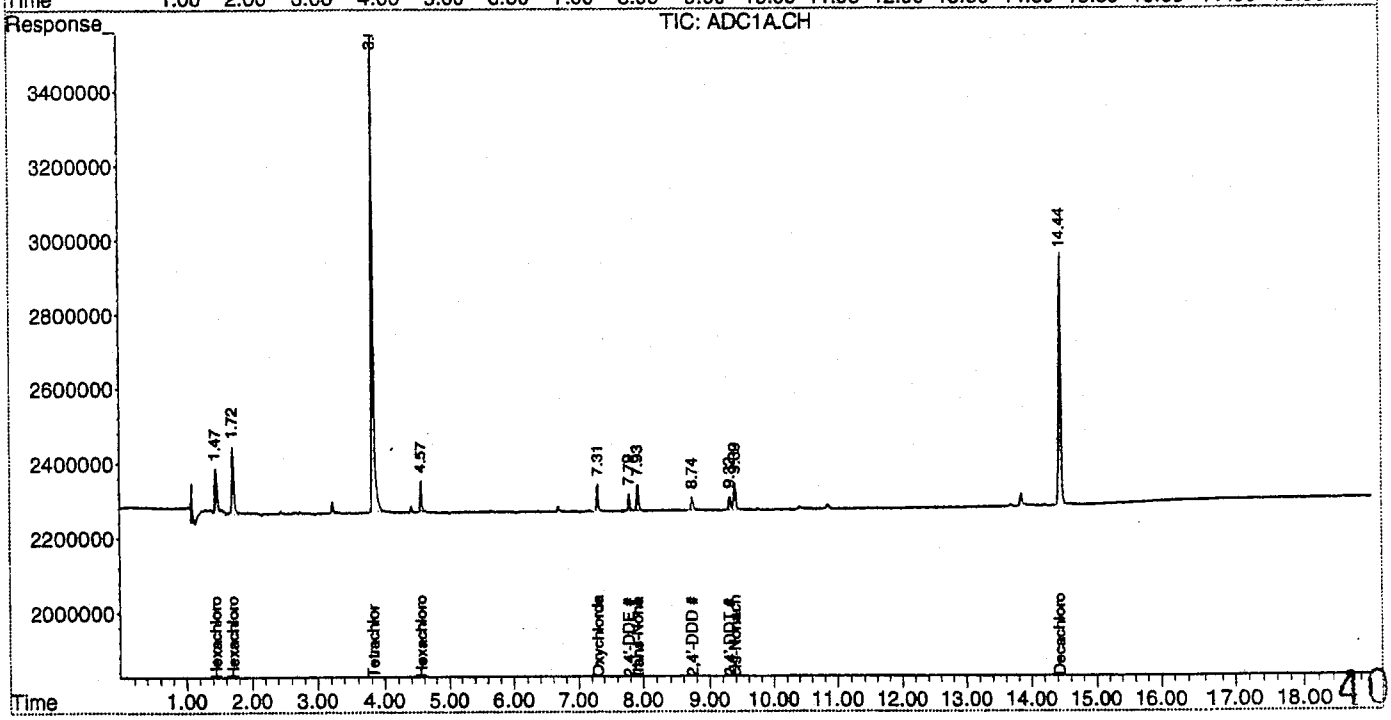
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\013F1301.D\ADC1B.CH Vial: 13
Signal #2 : F:\HPCHEM\1\DATA\PE091102\013F1301.D\ADC1A.CH
Acq On : 12-Sep-2002, 01:36:38 Operator: JDW
Sample : 1.0 ng/ml 8081A Plus Pest902F Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:02 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:00:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\012F1201.D\ADC1B.CH Vial: 12
Signal #2 : F:\HPCHEM\1\DATA\PE091102\012F1201.D\ADC1A.CH
Acq On : 12-Sep-2002, 01:14:31 Operator: JDW
Sample : 2.0 ng/ml 8081A Plus Pest902E Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:02:20 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:00:04 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) SR Tetrachloro-m-xy	3.86	3.84	13162791	25992458	19.789	19.953
Spiked Amount 20.000 Range 60 - 150 Recovery =					98.95%	99.76%
11) SR Decachlorobiphen	13.53	14.44	9126070	15123340	20.231	19.904
Spiked Amount 20.000 Range 60 - 150 Recovery =					101.16%	99.52%
Target Compounds						
2) Hexachloroethane	1.53	1.47	3357281	5196294	2.013	1.886
3) Hexachlorobenzen	4.46	4.57	2389147	3003977	2.177	2.122
4) Hexachlorobutadi	1.82	1.72	4913644	7497624	2.207	1.828
5) Oxychlordane	7.19	7.31	1493705	2414447	2.141	1.983
6) cis-Nonachlor	8.95	9.39	1783196	2996820	2.203	1.961
7) trans-Nonachlor	7.75	7.93	1655137	2663317	2.179	1.940
8) 2,4'-DDE	7.33	7.79	979533	1670452	1.987	1.960
9) 2,4'-DDD	8.22	8.74	816897	1362381	2.032	1.859
10) 2,4'-DDT	8.69	9.32	1001255	1392967	2.160	2.033

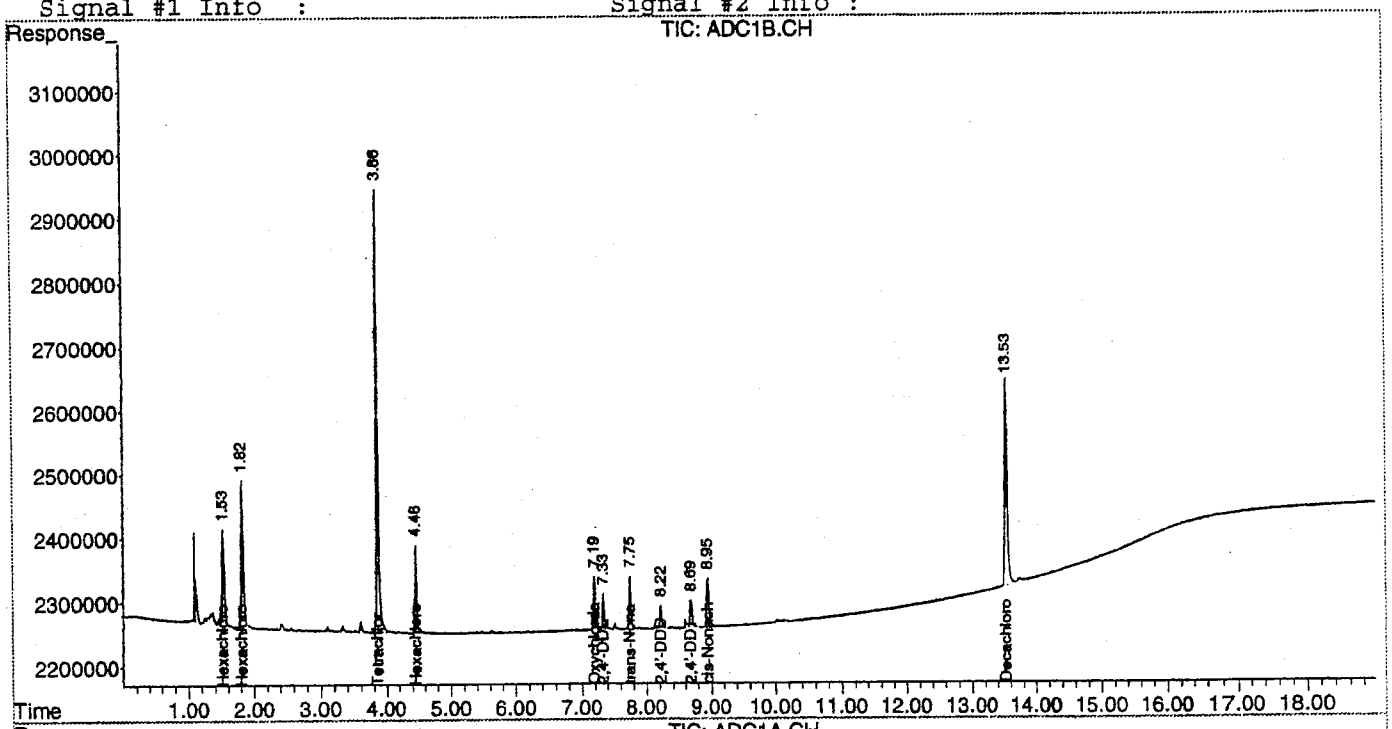
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
012F1201.D +CPDS_910.M Thu Sep 12 10:23:46 2002

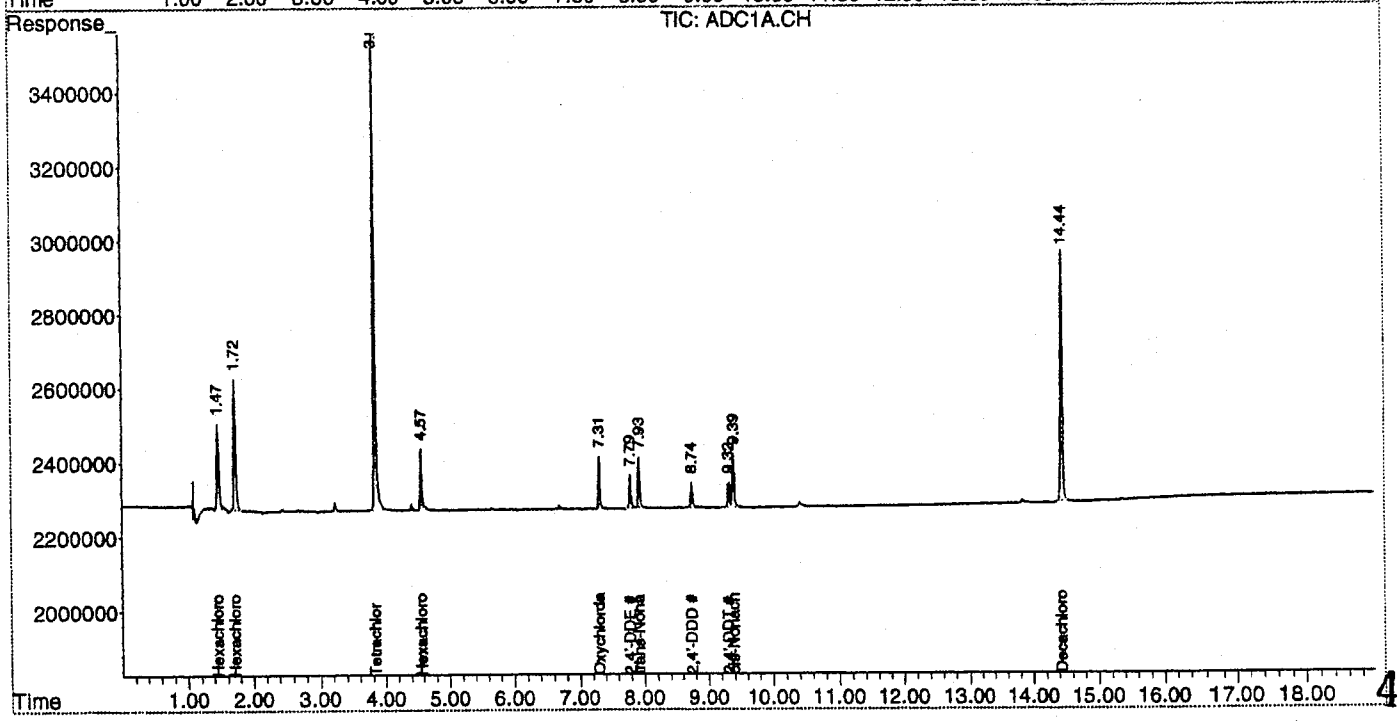
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\012F1201.D\ADC1B.CH Vial: 12
Signal #2 : F:\HPCHEM\1\DATA\PE091102\012F1201.D\ADC1A.CH
Acq On : 12-Sep-2002, 01:14:31 Operator: JDW
Sample : 2.0 ng/ml 8081A Plus Pest902E Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:02 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:00:04 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\011F1101.D\ADC1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\PE091102\011F1101.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:52:23 Operator: JDW
Sample : 10 ng/ml 8081A Plus Pest902D Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 09:49:14 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	SR Tetrachloro-m-xy	3.87	3.84	12812709	25195401	25.000	18.635
	Spiked Amount 20.000 Range 60 - 150 Recovery =					125.00%	93.18%
1)	SR Decachlorobiphen	13.54	14.45	8760414	14795004	30.113	21.332
	Spiked Amount 20.000 Range 60 - 150 Recovery =					150.57%#	106.66%
	Target Compounds						
2)	Hexachloroethane	1.53	1.47	16262121	27263017	18.825	13.421
3) M	Hexachlorobenzen	4.46	4.58	10454687	14125772	14.119	8.060 #
4) M	Hexachlorobutadi	1.82	1.72	21856286	38183259	30.012	36.279
5) M	Oxychlordane	7.20	7.32	7061408	12123673	9.653	7.255
6)	cis-Nonachlor	8.96	9.40	8202571	15047065	30.484	23.424
7)	trans-Nonachlor	7.75	7.94	7464691	13543577	10.565	8.608
8)	2,4'-DDE	7.34	7.80	5038576	8756980	8.939	6.176
9)	2,4'-DDD	8.23	8.75	4372852	7520767	9.896	7.368
10) M	2,4'-DDT	8.70	9.33	4857362	6897805	10.935	9.922

408

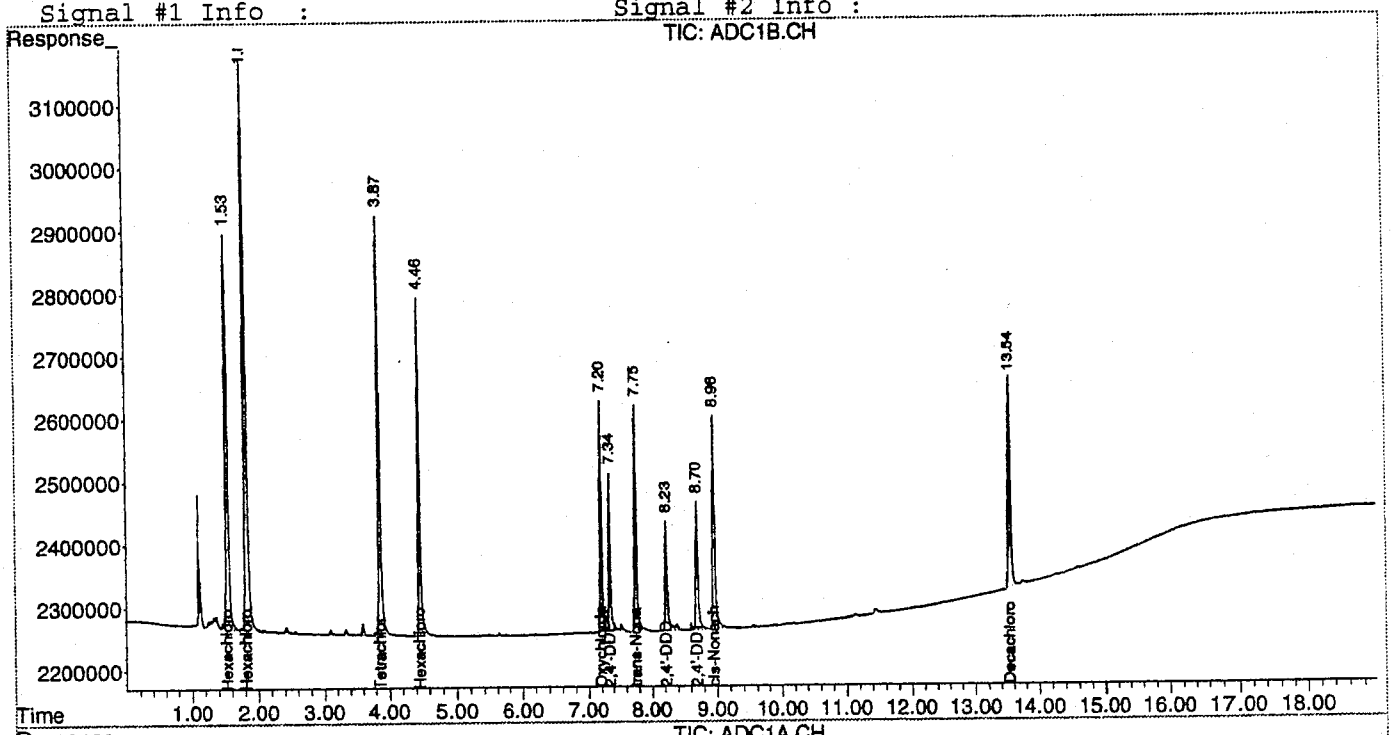
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

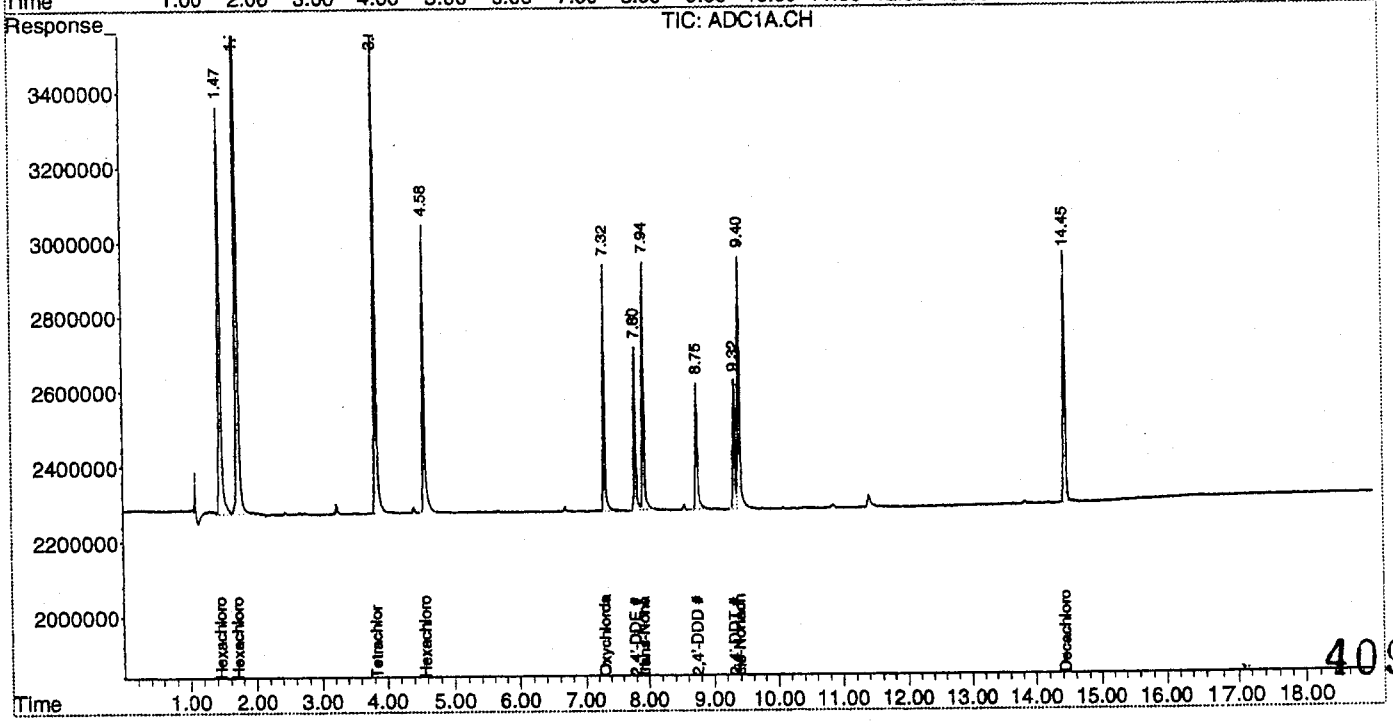
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\011F1101.D\ADC1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\PE091102\011F1101.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:52:23 Operator: JDW
Sample : 10 ng/ml 8081A Plus Pest902D Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 9:49 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





409

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\010F1001.D\ADC1B.CH Vial: 10
Signal #2 : F:\HPCHEM\1\DATA\PE091102\010F1001.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:30:29 Operator: JDW
Sample : 25 ng/ml 8081A Plus Pest902C Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 09:49:05 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.87	3.84	13357338	26183722	26.062	19.366
Spiked Amount		20.000 Range	60 - 150		Recovery	=	130.31%	96.83%
1)	SR	Decachlorobiphen	13.55	14.45	9137174	15198026	31.408	21.913
Spiked Amount		20.000 Range	60 - 150		Recovery	=	157.04%#	109.57%
		Target Compounds						
2)		Hexachloroethane	1.53	1.47	37575422	69204682	43.496	34.068
3)	M	Hexachlorobenzen	4.47	4.58	23935294	34777819	32.324	19.843
4)	M	Hexachlorobutadi	1.82	1.73	50267287	100.9E6	69.025	95.877
5)	M	Oxychlordane	7.21	7.32	16402191	29728152	22.421	17.789
6)		cis-Nonachlor	8.96	9.40	19792906	37552667	73.558	58.460
7)		trans-Nonachlor	7.76	7.94	18528181	34161954	26.223	21.714
8)		2,4'-DDE	7.35	7.80	11659791	21277495	20.685	15.005
9)		2,4'-DDD	8.23	8.75	10269003	18828633	23.238	18.446
10)	M	2,4'-DDT	8.70	9.33	11443155	17106451	25.762	24.607

410

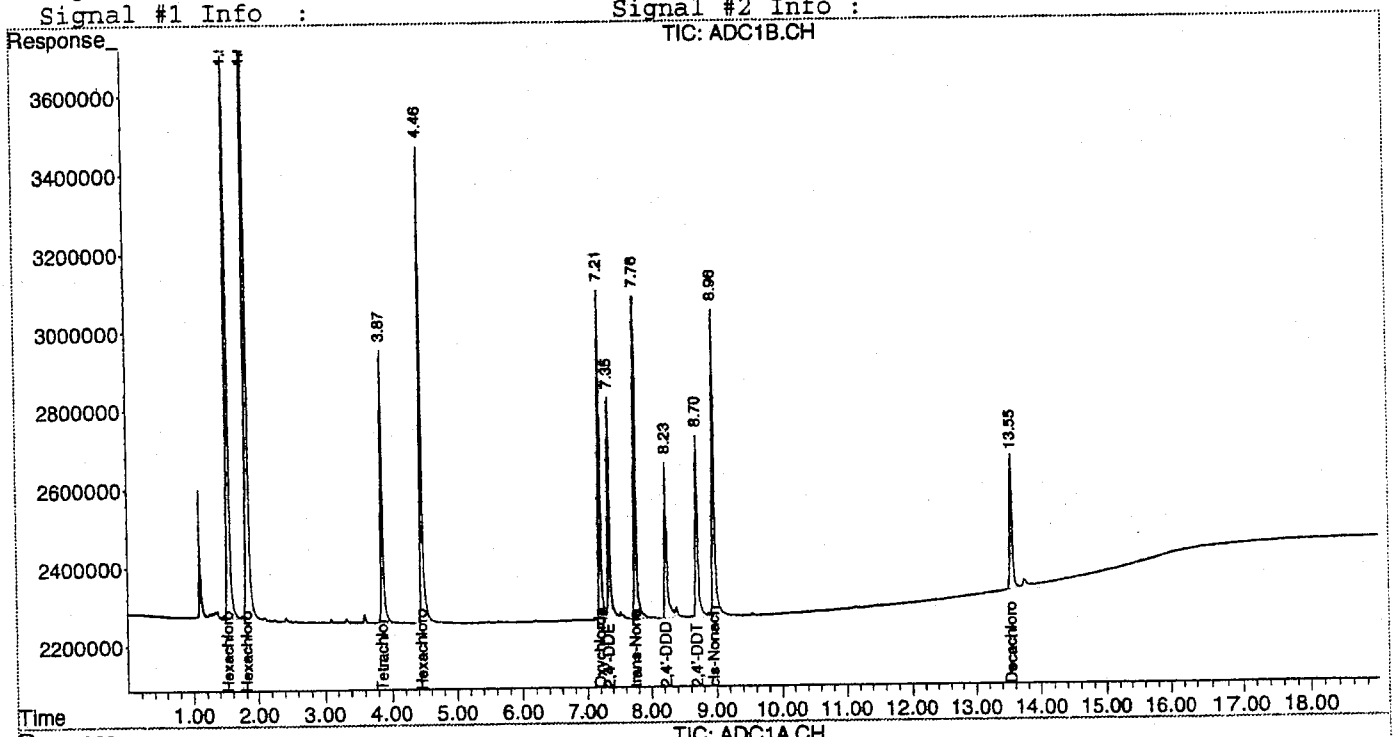
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

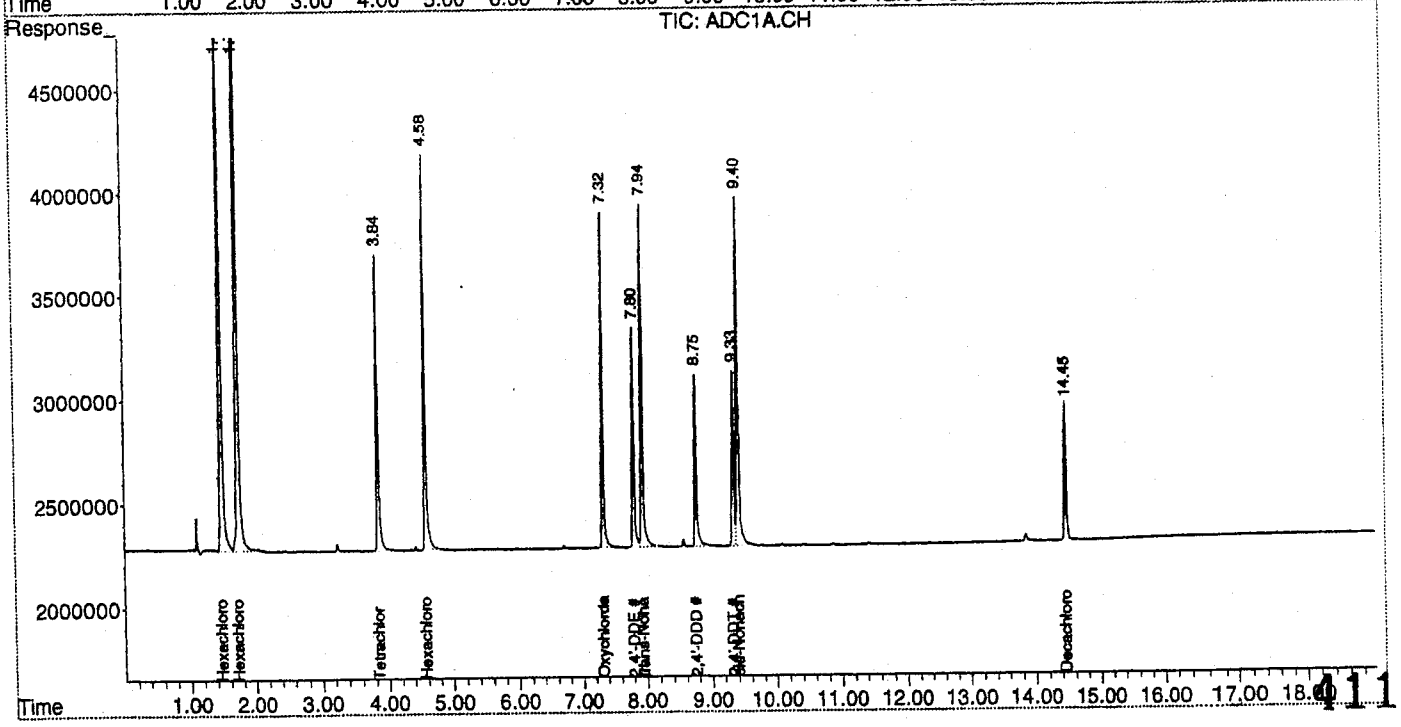
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\010F1001.D\ADC1B.CH Vial: 10
Signal #2 : F:\HPCHEM\1\DATA\PE091102\010F1001.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:30:29 Operator: JDW
Sample : 25 ng/ml 8081A Plus Pest902C Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 9:49 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\009F0901.D\ADC1B.CH Vial: 9
Signal #2 : F:\HPCHEM\1\DATA\PE091102\009F0901.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:08:33 Operator: JDW
Sample : 50 ng/ml 8081A Plus Pest902B Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 09:48:46 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.87	3.84	13613432	26488474	26.562	19.591	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	132.81%	97.95%	
11)	SR	Decachlorobiphen	13.55	14.45	9106601	15327549	31.302	22.100	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	156.51%#	110.50%	
		Target Compounds							
2)		Hexachloroethane	1.53	1.47	71933279	146.9E6	83.268	72.298	
3)	M	Hexachlorobenzen	4.46	4.58	44614383	71163876	60.250	40.604	
4)	M	Hexachlorobutadi	1.82	1.73	94265872	209.5E6	129.441	199.089	#
5)	M	Oxychlordane	7.20	7.32	31001808	60494354	42.379	36.200	
6)		cis-Nonachlor	8.96	9.40	37364322	78253207	138.860	121.820	
7)		trans-Nonachlor	7.76	7.94	34998528	69749250	49.534	44.333	
8)		2,4'-DDE	7.34	7.80	23076334	42381949	40.938	29.889	
9)		2,4'-DDD	8.23	8.75	19556628	37439665	44.256	36.679	
10)	M	2,4'-DDT	8.70	9.33	21857154	34156025	49.207	49.132	

412

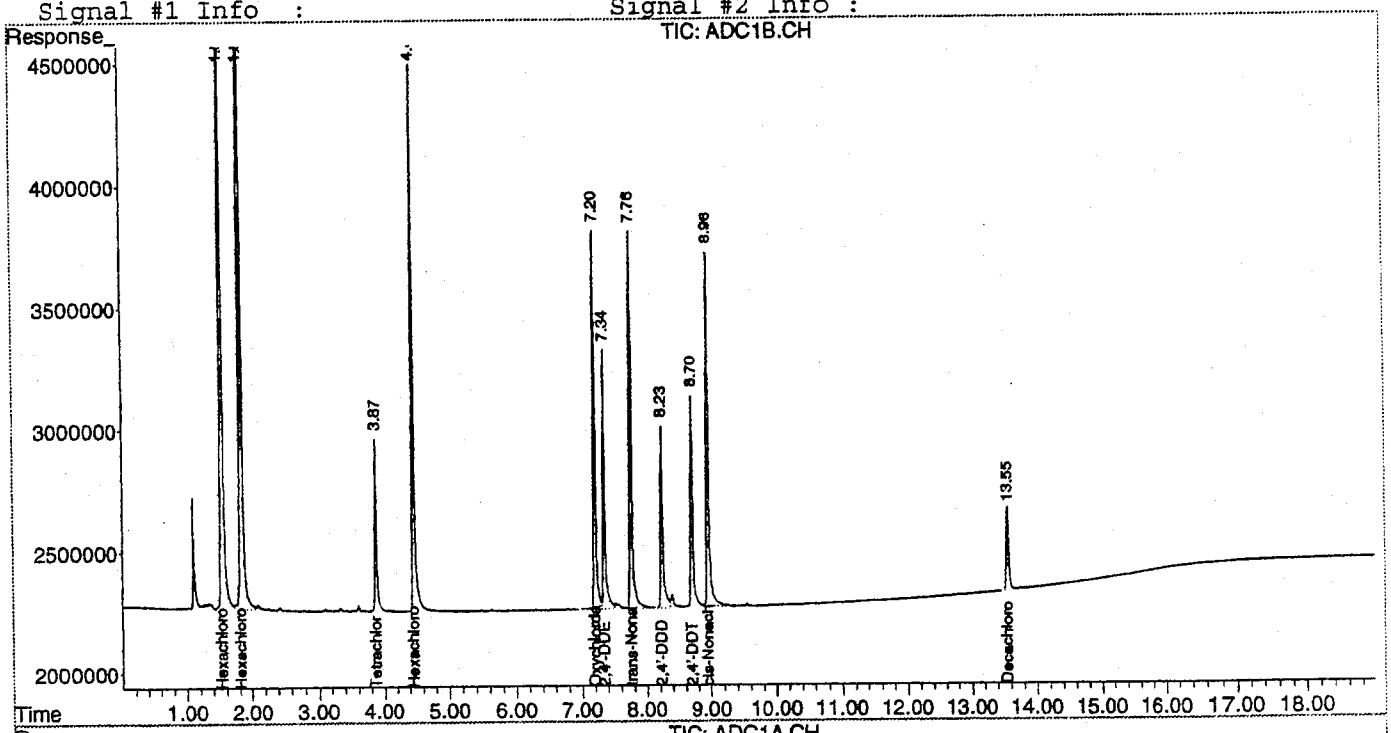
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

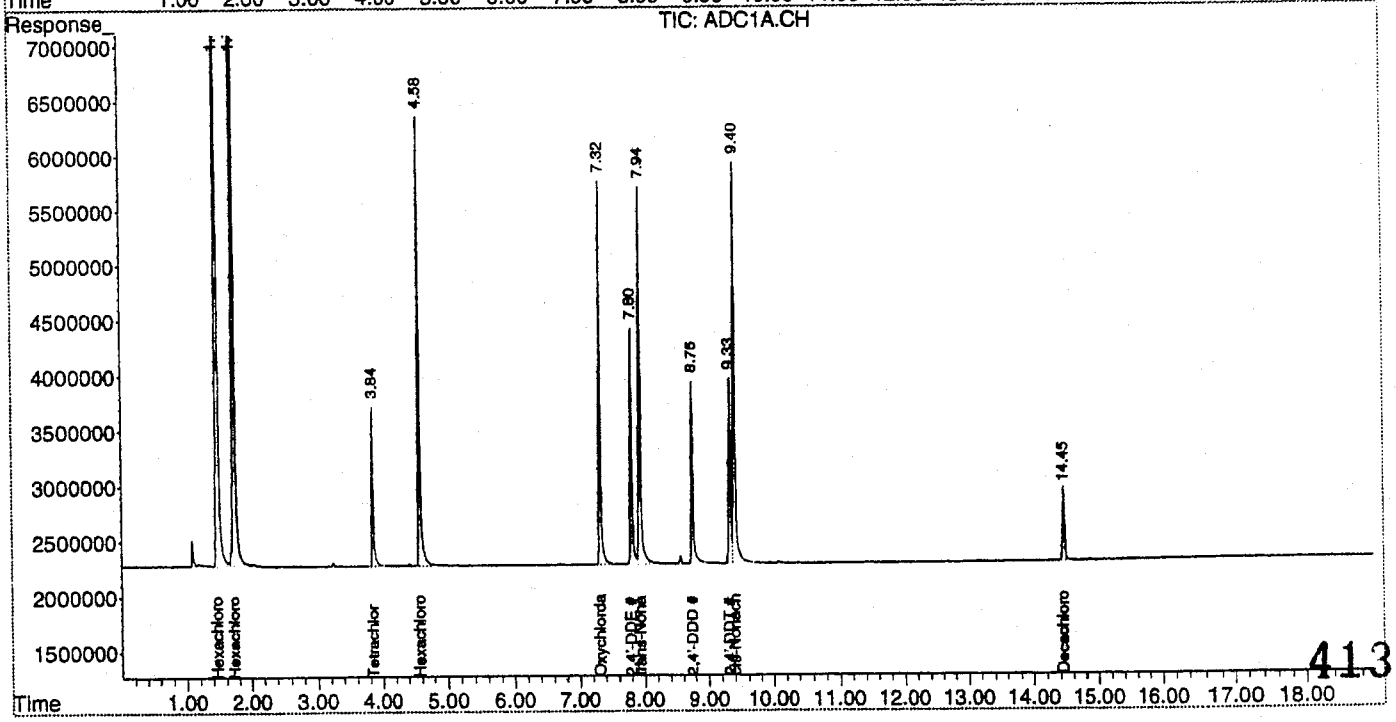
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\009F0901.D\ADC1B.CH Vial: 9
Signal #2 : F:\HPCHEM\1\DATA\PE091102\009F0901.D\ADC1A.CH
Acq On : 12-Sep-2002, 00:08:33 Operator: JDW
Sample : 50 ng/ml 8081A Plus Pest902B Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 9:48 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





413

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\008F0801.D\ADC1B.CH Vial: 8
Signal #2 : F:\HPCHEM\1\DATA\PE091102\008F0801.D\ADC1A.CH
Acq On : 11-Sep-2002, 23:46:30 Operator: JDW
Sample : 75 ng/ml 8081A Plus Pest902A Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 09:48:36 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1) SR	Tetrachloro-m-xy	3.87	3.84	13595189	26461211	26.526	19.571
Spiked Amount	20.000 Range	60 - 150	Recovery	=		132.63%	97.86%
1) SR	Decachlorobiphen	13.54	14.44	9107525	15339014	31.306	22.116
Spiked Amount	20.000 Range	60 - 150	Recovery	=		156.53%#	110.58%
	Target Compounds						
2)	Hexachloroethane	1.53	1.47	102.5E6	226.2E6	118.622	111.334
3) M	Hexachlorobenzen	4.46	4.57	64173186	110.2E6	86.663	62.880
4) M	Hexachlorobutadi	1.82	1.73	129.7E6	320.6E6	178.137	304.612 #
5) M	Oxychlordane	7.20	7.32	45152340	94308339	61.722	56.434
6)	cis-Nonachlor	8.96	9.40	53836919	122.3E6	200.078	190.454
7)	trans-Nonachlor	7.75	7.94	51292966	109.7E6	72.595	69.754
8)	2,4'-DDE	7.34	7.80	33677299	64980969	59.744	45.826
9)	2,4'-DDD	8.23	8.75	28256105	56577502	63.943	55.428
0) M	2,4'-DDT	8.70	9.32	31544930	52077481	71.017	74.911

414

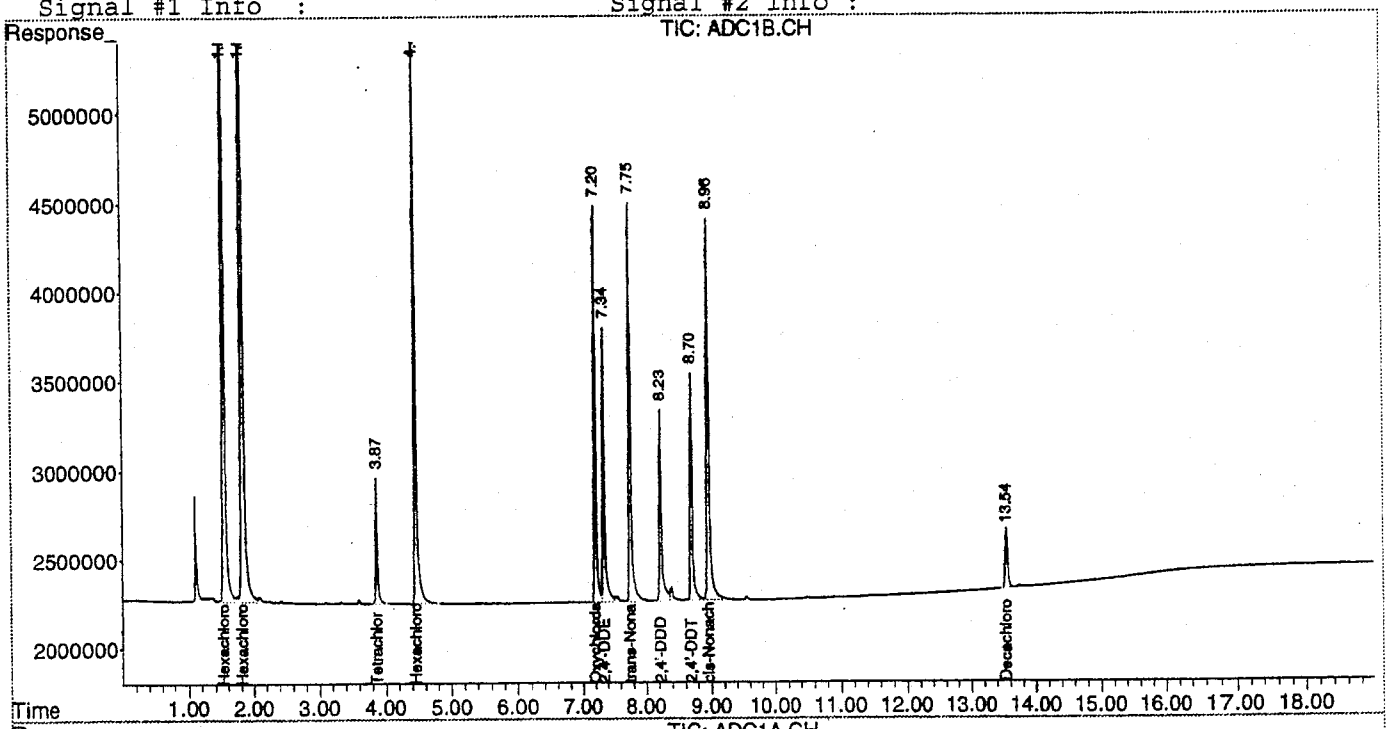
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

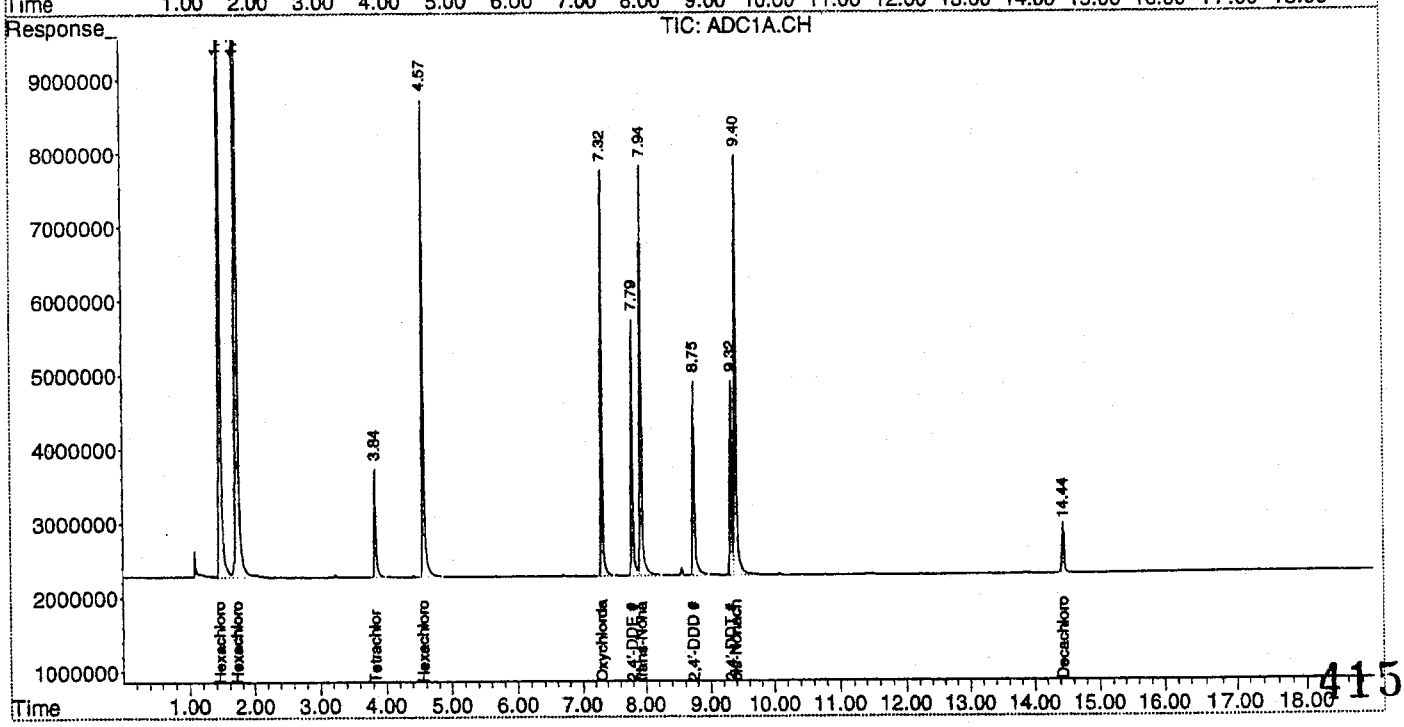
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\008F0801.D\ADC1B.CH Vial: 8
Signal #2 : F:\HPCHEM\1\DATA\PE091102\008F0801.D\ADC1A.CH
Acq On : 11-Sep-2002, 23:46:30 Operator: JDW
Sample : 75 ng/ml 8081A Plus Pest902A Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 9:48 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 09:48:31 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





CONTINUING CALIBRATION

Sequence Log

Directory : f:\HPCHEM\1\DATA\PE082902

#	Filename	Sample Name		Date/Time
1	001f0101.d	Eval Pest889		08/29/02 16:20
2	002f0201.d	10/20 ng/ml 8081A CCV Pest888		08/29/02 16:42
3	003f0301.d	Hexane blank		08/29/02 17:04
4	004f0401.d	mb pw0112		08/29/02 17:26
5	005f0501.d	bs pw0112		08/29/02 17:48
6	006f0601.d	bsd pw0112		08/29/02 18:10
7	007f0701.d	108166-4		08/29/02 18:32
8	008f0801.d	108177-7		08/29/02 18:54
9	014f1401.d	Eval Pest889	QuantFile: P	08/29/02 21:05
10	015f1501.d	10/20 ng/ml 8081A CCV Pest888		08/29/02 21:27
11	016f1601.d	Hexane blank		08/29/02 21:49

Custom Report - DDT/Endrin Breakdown Evaluation

Sample Name: Eval Pest889

Data File Name: F:\HPCHEM\1\DATA\PE082902\001F0101.D
Date Acquired: 29-Aug-2002, 16:20:28

Compound Name	RT #1	RT #2	Resp. #1	Resp. #2	Amt. #1	Amt. #2	% Breakdown Column #1	% Breakdown Column #2
Endrin	9.25	9.56	17870487	41856311	43.19	41.96	**12.58%**	**10.62%**
Endrin Aldehyde	10.49	10.66	1132742	2276818	3.41	2.73		
Endrin Ketone	11.90	12.30	1439014	2697104	3.13	2.30		
4,4'-DDT	9.89	10.39	34437475	64372259	77.53	92.60	**2.46%**	**0.20%**
4,4'-DDD	9.35	9.78	664435	131512	1.50	0.13		
4,4'-DDE	8.24	0.00	202981	0	0.36	0.00		

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\001F0101.D\ADC1B.CH Vial: 1
Signal #2 : F:\HPCHEM\1\DATA\PE082902\001F0101.D\ADC1A.CH
Acq On : 29-Aug-2002, 16:20:28 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:13:42 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	4.11	4.06	9490958	22704321	18.518	16.793	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					92.59%	83.97%	
2)	SR	Decachlorobiphen	13.91	14.79	5482084	11676674	18.844	16.836	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					94.22%	84.18%	
		Target Compounds							
2)		alpha-BHC	4.98	5.04	8257941	17752643	9.559	8.739	
3)	M	gamma-BHC (Linda	5.48	5.61	7009403	15269048	9.466	8.712	
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.	
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.	
6)		beta-BHC	5.61	5.75	2496494	5877049	9.278	9.149	
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.	
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.	
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
.0)		gamma-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
.1)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
.2)		4,4'-DDE	8.24	0.00	202981	0	0.360	N.D.	#
.3)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.	
.4)	M	Endrin	9.25	9.56	17870487	41856311	43.186	41.965	
.5)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	9.35f	9.78	664435	131512	1.504	0.129	#
17)	M	4,4'-DDT	9.89	10.39	34437475	64372259	77.529	92.596	
18)		Endrin Aldehyde	10.49	10.66	1132742	2276818	3.409	2.730	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	10.84	11.80	33851244	49669889	192.818	204.312	
21)		Endrin Ketone	11.90	12.30	1439014	2697104	3.127	2.303	

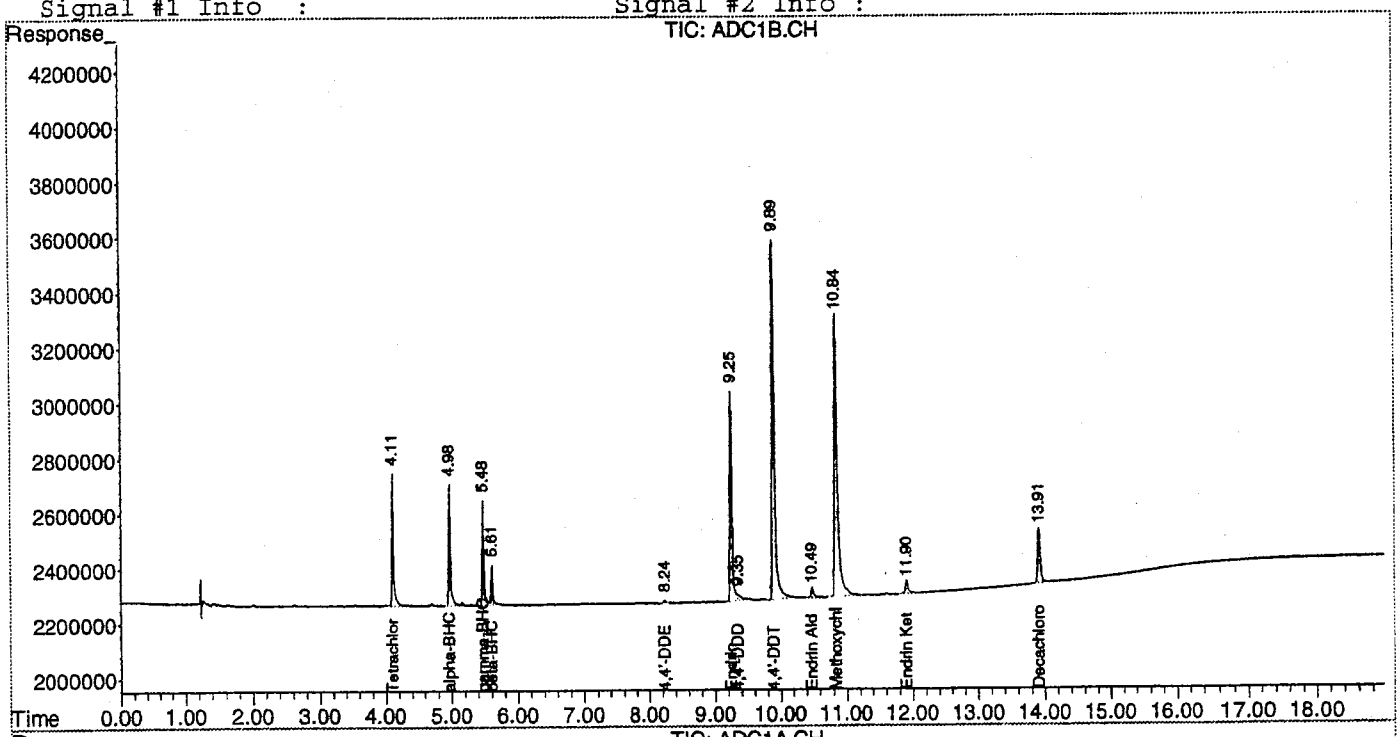
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
001F0101.D 8081_823.M Fri Aug 30 16:12:41 2002

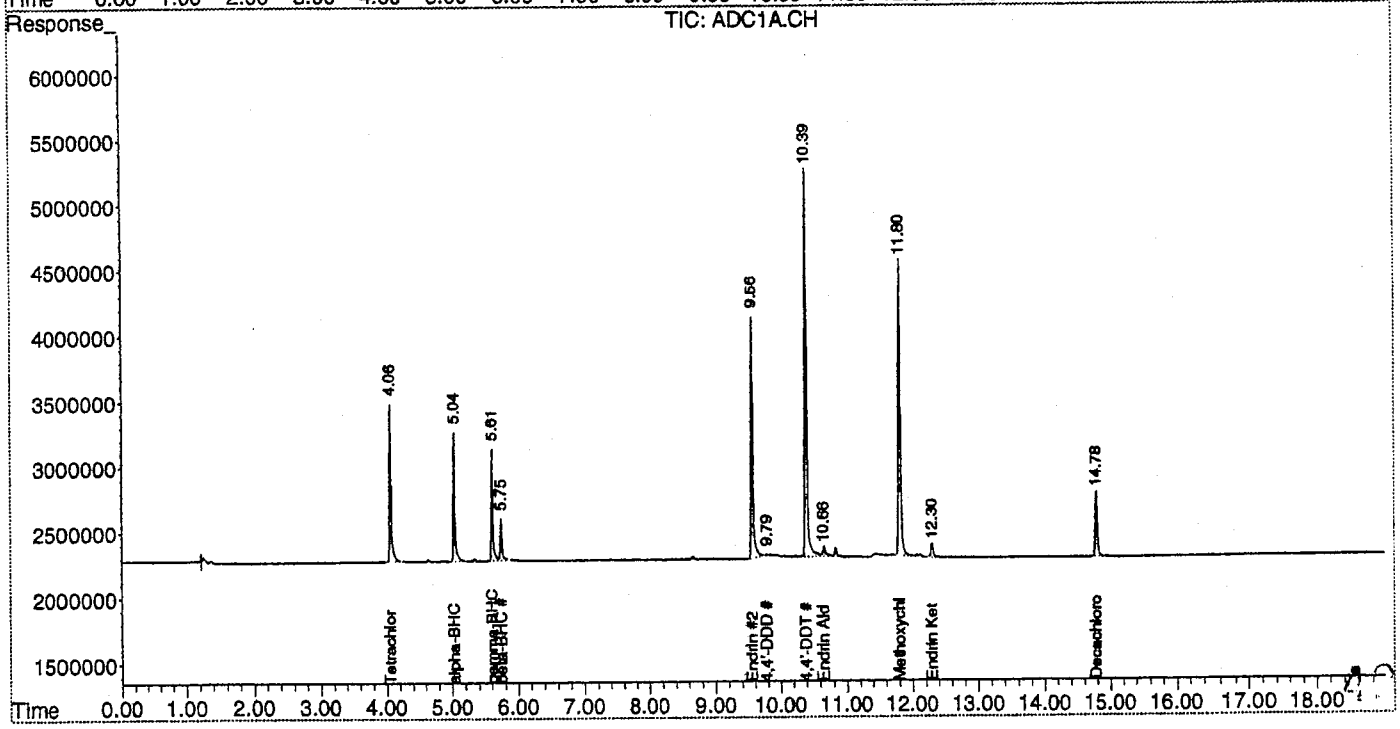
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\001F0101.D\ADC1B.CH Vial: 1
Signal #2 : F:\HPCHEM\1\DATA\PE082902\001F0101.D\ADC1A.CH
Acq On : 29-Aug-2002, 16:20:28 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:12 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\002F0201.D\ADC1B.CH Vial: 2
Signal #2 : F:\HPCHEM\1\DATA\PE082902\002F0201.D\ADC1A.CH
Acq On : 29-Aug-2002, 16:42:28 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:26:18 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	4.10	4.05	9508277	23195633	18.552	17.156
		Spiked Amount 20.000 Range 60 - 150 Recovery =					92.76%	85.78%
22)	SR	Decachlorobiphen	13.91	14.78	10745594	23699359	36.936	34.170
		Spiked Amount 20.000 Range 60 - 150 Recovery =					184.68%#	170.85%#
		Target Compounds						
2)		alpha-BHC	4.97	5.03	8101732	17830668	9.378	8.778
3)	M	gamma-BHC (Linda	5.47	5.61	6945020	15358306	9.379	8.763
4)	M	Heptachlor	6.22	6.29	6796429	10833775	9.333	10.293
5)	M	Aldrin	6.69	6.80	6739667	14805681	9.213	8.860
6)		beta-BHC	5.61	5.74	2455499	5908632	9.126	9.198
7)		delta-BHC	5.89	6.21	6711593	13463343	9.499	8.557
8)		Heptachlor Epoxi	7.65f	7.74f	5801184	12930633	9.339	8.936
9)		Endosulfan I	8.36f	8.45f	6102399	12296956	9.486	8.890
10)		gamma-Chlordane	7.86f	8.06f	5936678	13444506	9.155	9.036
11)		alpha-Chlordane	8.10f	8.34f	5149413	11680467	8.901	8.527
12)		4,4'-DDE	8.23f	8.65f	9953695	24312304	17.658	17.146
13)	M	Dieldrin	8.80f	8.97f	10711236	24566309	18.609	17.251
14)	M	Endrin	9.24f	9.56	7103574	16186920	17.166	16.229
15)		Endosulfan II	9.67	9.98	8352269	19880170	19.267	18.461
16)		4,4'-DDD	9.35	9.78	8256805	17937603	18.685	17.573
17)	M	4,4'-DDT	9.89	10.39	7959788	12611164	17.920	18.140
18)		Endrin Aldehyde	10.48	10.65	6198892	14957857	18.657	17.933
19)		Endosulfan Sulfa	11.34	11.21	7008249	17330191	18.129	17.072
20)		Methoxychlor	10.84	11.80	15978045	21320375	91.012	87.699
21)		Endrin Ketone	11.90	12.29	8645461	21364400	18.785	18.240

421

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE082902\
Data File Name 002F0201.D
Date Acquired 29-Aug-2002, 16:42:28

Column #1

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation
Tetrachloro-m-xylene (S)	20	18.55	7.2
alpha-BHC	10	9.38	6.2
gamma-BHC (Lindane)	10	9.38	6.2
Heptachlor	10	9.33	6.7
Aldrin	10	9.21	7.9
beta-BHC	10	9.13	8.7
delta-BHC	10	9.50	5.0
Heptachlor Epoxide	10	9.34	6.6
Endosulfan I	10	9.49	5.1
gamma-Chlordane	10	9.16	8.4
alpha-Chlordane	10	8.90	11.0
4,4'-DDE	20	17.66	11.7
Dieldrin	20	18.61	7.0
Endrin	20	17.17	14.2
Endosulfan II	20	19.27	3.7
4,4'-DDD	20	18.68	6.6
4,4'-DDT	20	17.92	10.4
Endrin Aldehyde	20	18.66	6.7
Endosulfan Sulfate	20	18.13	9.4
Methoxychlor	100	91.01	9.0
Endrin Ketone	20	18.78	6.1
Decachlorobiphenyl (S)	40	36.94	7.7

Average Percent Difference of All Compounds 7.79

(#) = Out of Range

422

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE082902\
Data File Name 002F0201.D
Date Acquired 29-Aug-2002, 16:42:28

Column #2

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation	
Tetrachloro-m-xylene (S)	20	17.16	14.2	
alpha-BHC	10	8.78	12.2	
gamma-BHC (Lindane)	10	8.76	12.4	
Heptachlor	10	10.29	2.9	
Aldrin	10	8.86	11.4	
beta-BHC	10	9.20	8.0	
delta-BHC	10	8.56	14.4	
Heptachlor Epoxide	10	8.94	10.6	
Endosulfan I	10	8.89	11.1	
gamma-Chlordane	10	9.04	9.6	
alpha-Chlordane	10	8.53	14.7	
4,4'-DDE	20	17.15	14.3	
Dieldrin	20	17.25	13.7	
Endrin	20	16.23	18.9	#
Endosulfan II	20	18.46	7.7	
4,4'-DDD	20	17.57	12.1	
4,4'-DDT	20	18.14	9.3	
Endrin Aldehyde	20	17.93	10.3	
Endosulfan Sulfate	20	17.07	14.6	
Methoxychlor	100	87.70	12.3	
Endrin Ketone	20	18.24	8.8	
Decachlorobiphenyl (S)	40	34.17	14.6	

Average Percent Difference of All Compounds 11.74

(#) = Out of Range

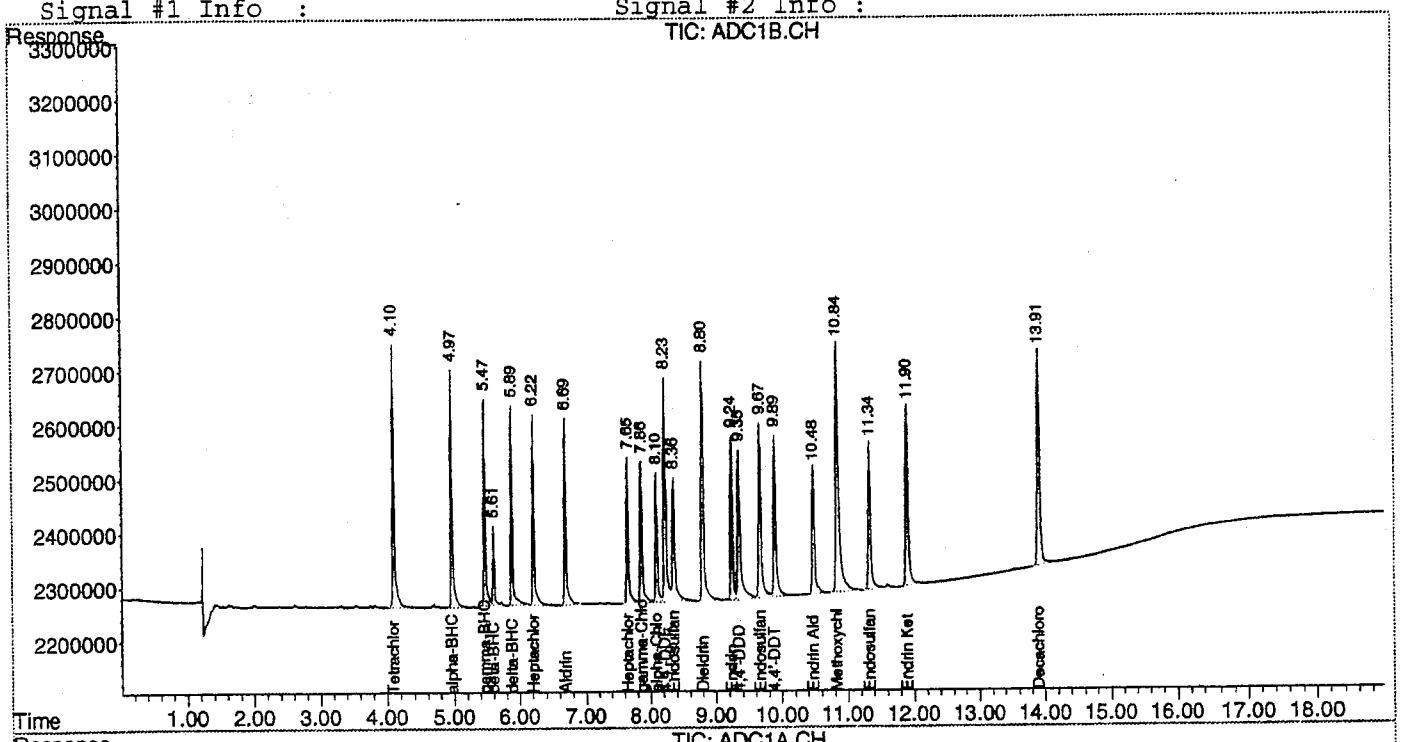
423

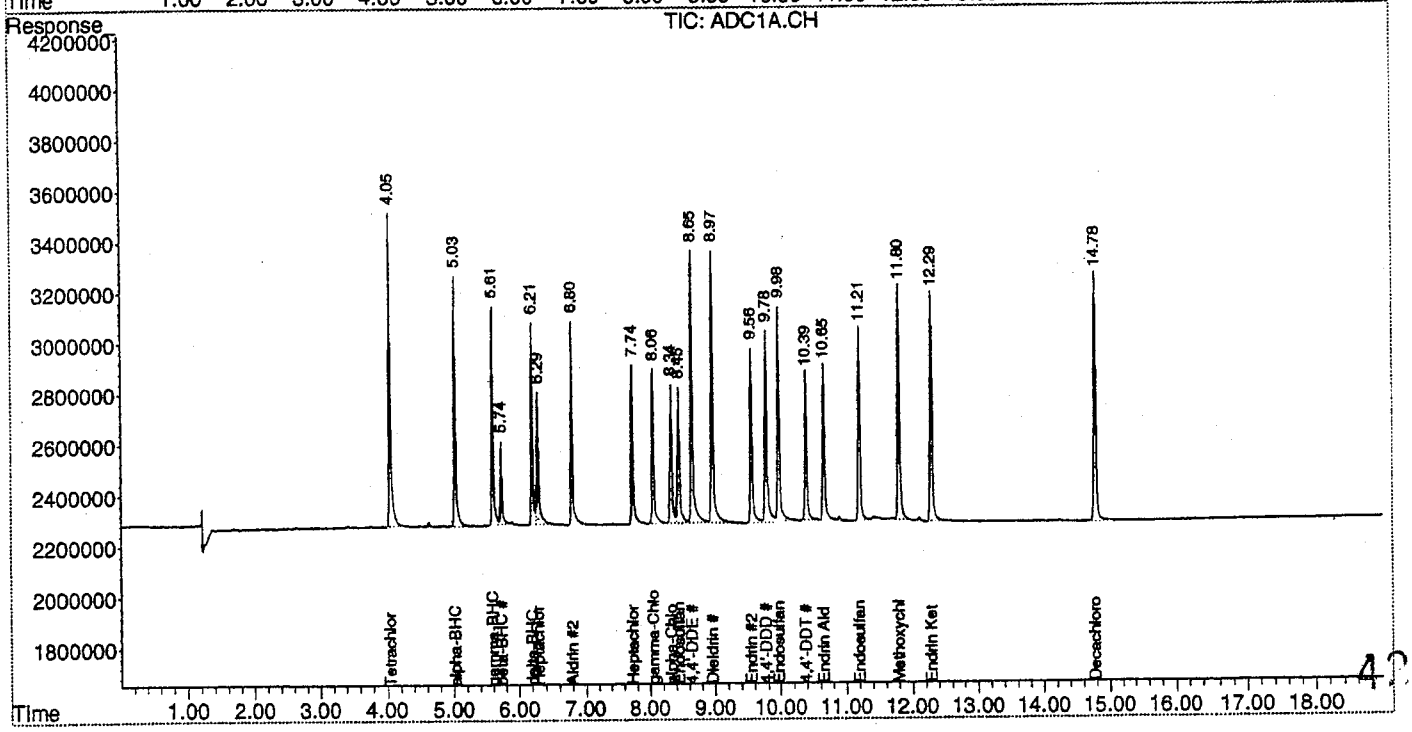
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\002F0201.D\ADC1B.CH Vial: 2
Signal #2 : F:\HPCHEM\1\DATA\PE082902\002F0201.D\ADC1A.CH
Acq On : 29-Aug-2002, 16:42:28 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:25 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Custom Report - DDT/Endrin Breakdown Evaluation

Sample Name: Eval Pest889

Data File Name: F:\HPCHEM\1\DATA\PE082902\014F1401.D
Date Acquired: 29-Aug-2002, 21:05:48

Compound Name	RT #1	RT #2	Resp. #1	Resp. #2	Amt. #1	Amt. #2	% Breakdown Column #1	% Breakdown Column #2
Endrin	9.27	9.58	18607080	43613384	44.97	43.73	**14.61%**	**14.29%**
Endrin Aldehyde	10.51	10.68	1381914	2925006	4.16	3.51		
Endrin Ketone	11.92	12.32	1802470	4346211	3.92	3.71		
4,4'-DDT	9.91	10.41	38306670	69168842	86.24	99.50	**0.46%**	**0.00%**
4,4'-DDD	0.00	0.00	0	0	0.00	0.00		
4,4'-DDE	8.26	0.00	175988	0	0.31	0.00		

425

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\014F1401.D\ADC1B.CH Vial: 14
Signal #2 : F:\HPCHEM\1\DATA\PE082902\014F1401.D\ADC1A.CH
Acq On : 29-Aug-2002, 21:05:48 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:18:27 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	4.12	4.07	9930430	24665235	19.376	18.243	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					96.88%	91.21%	
22)	SR	Decachlorobiphen	13.93	14.81	5810426	12930753	19.972	18.644	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					99.86%	93.22%	
		Target Compounds							
2)		alpha-BHC	4.99	5.05	8743671	19448489	10.121	9.574	
3)	M	gamma-BHC (Linda	5.49	5.63	7386623	16758710	9.975	9.562	
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.	
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.	
6)		beta-BHC	5.62	5.76	2626288	6378407	9.760	9.930	
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.	
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.	
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
10)		gamma-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
12)		4,4'-DDE	8.26	0.00	175988	0	0.312	N.D.	#
13)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.	
14)	M	Endrin	9.27	9.58	18607080	43613384	44.966	43.727	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	0.00	0.00	0	0	N.D.	N.D.	
17)	M	4,4'-DDT	9.91	10.41	38306670	69168842	86.240	99.496	
18)		Endrin Aldehyde	10.51	10.68	1381914	2925006	4.159	3.507	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	10.86	11.82	35952758	52464560	204.789	215.807	
21)		Endrin Ketone	11.92	12.32	1802470	4346211	3.916	3.711	

426

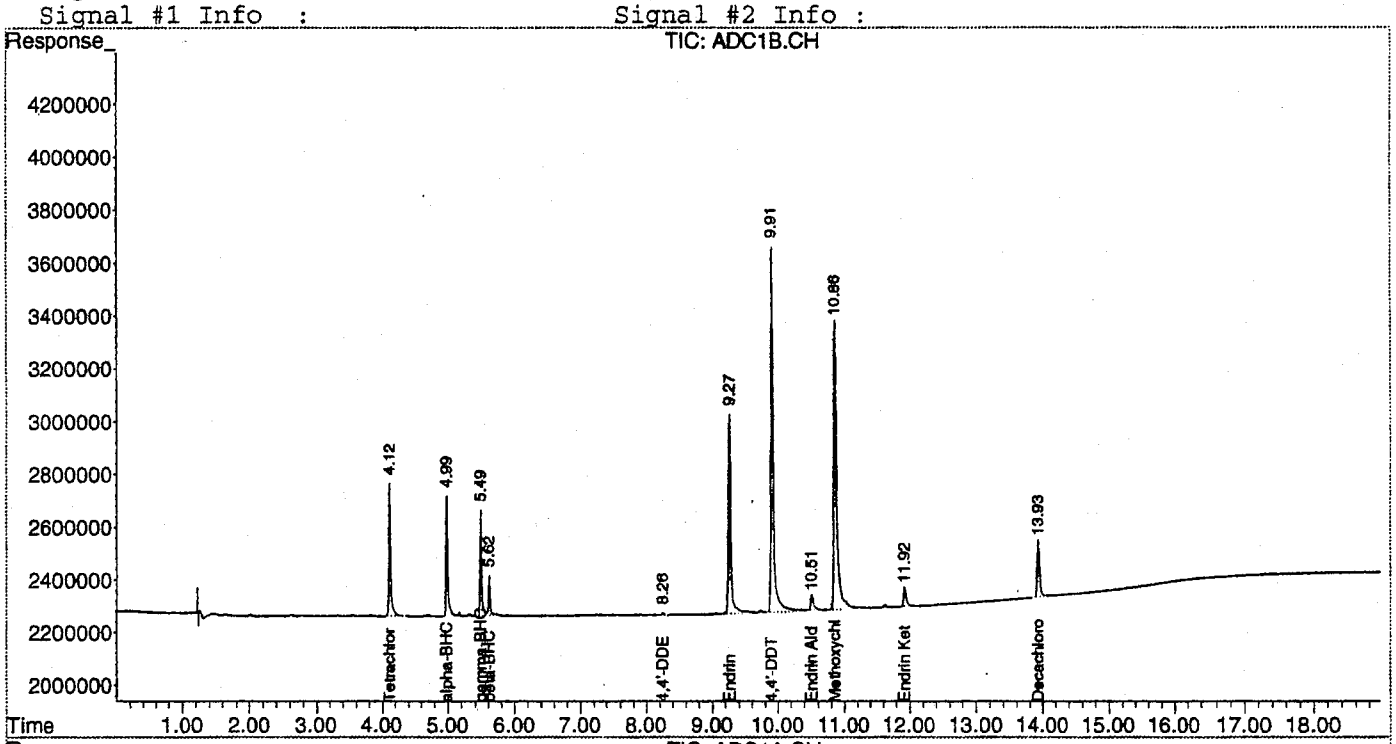
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

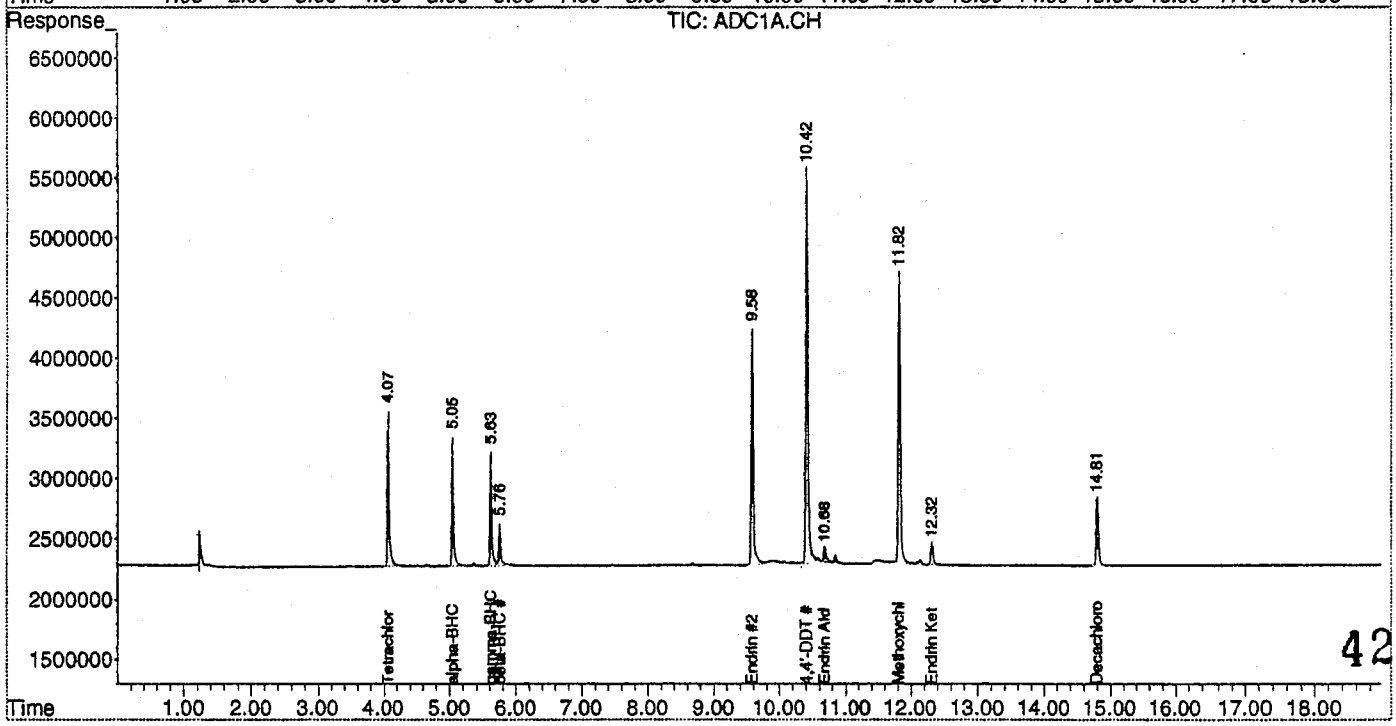
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\014F1401.D\ADC1B.CH Vial: 14
Signal #2 : F:\HPCHEM\1\DATA\PE082902\014F1401.D\ADC1A.CH
Acq On : 29-Aug-2002, 21:05:48 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:17 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





427

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\015F1501.D\ADC1B.CH Vial: 15
Signal #2 : F:\HPCHEM\1\DATA\PE082902\015F1501.D\ADC1A.CH
Acq On : 29-Aug-2002, 21:27:48 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:29:00 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	4.12	4.07	9987363	24830866	19.487	18.365
Spiked Amount		20.000 Range	60 - 150	Recovery	=		97.43%	91.82%
22)	SR	Decachlorobiphen	13.93	14.80	10881414	24559536	37.403	35.410
Spiked Amount		20.000 Range	60 - 150	Recovery	=		187.01%#	177.05%#
		Target Compounds						
2)		alpha-BHC	4.99	5.05	8512317	18969744	9.854	9.338
3)	M	gamma-BHC (Linda	5.49	5.62	7467988	16468976	10.085	9.397
4)	M	Heptachlor	6.24	6.31	7224310	11578017	9.920	11.000
5)	M	Aldrin	6.71	6.82	7146352	15868332	9.769	9.496
6)		beta-BHC	5.62	5.76	2816582	6297875	10.467	9.804
7)		delta-BHC	5.91	6.23	7048400	14293182	9.976	9.085
8)		Heptachlor Epoxi	7.67	7.76	6033875	13812051	9.714	9.545
9)		Endosulfan I	8.38	8.47	6740784	13094611	10.478	9.467
10)		gamma-Chlordane	7.89	8.08	6341622	14191379	9.780	9.538
11)		alpha-Chlordane	8.12	8.36	5449393	12362605	9.419	9.025
12)		4,4'-DDE	8.25	8.68	10459700	25704442	18.556	18.127
13)	M	Dieldrin	8.82	8.99	11022873	25903123	19.151	18.189
14)	M	Endrin	9.26	9.58	6536069	15130234	15.795	15.169
15)		Endosulfan II	9.69	10.00	8596161	20178268	19.829	18.738
16)		4,4'-DDD	9.38	9.80	8562131	18546730	19.376	18.170
17)	M	4,4'-DDT	9.91	10.41	8520212	12986437	19.182	18.680
18)		Endrin Aldehyde	10.50	10.68	6621837	15663248	19.930	18.779
19)		Endosulfan Sulfa	11.36	11.23	7131224	18511197	18.447	18.236
20)		Methoxychlor	10.86	11.82	16361796	21510951	93.198	88.483
21)		Endrin Ketone	11.92	12.31	9212761	23081673	20.017	19.706

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
015F1501.D 8081_823.M Fri Aug 30 16:13:10 2002

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE082902\
Data File Name 015F1501.D
Date Acquired 29-Aug-2002, 21:27:48

Column #1

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation	
Tetrachloro-m-xylene (S)	20	19.49	2.6	
alpha-BHC	10	9.85	1.5	
gamma-BHC (Lindane)	10	10.09	0.9	
Heptachlor	10	9.92	0.8	
Aldrin	10	9.77	2.3	
beta-BHC	10	10.47	4.7	
delta-BHC	10	9.98	0.2	
Heptachlor Epoxide	10	9.71	2.9	
Endosulfan I	10	10.48	4.8	
gamma-Chlordane	10	9.78	2.2	
alpha-Chlordane	10	9.42	5.8	
4,4'-DDE	20	18.56	7.2	
Dieldrin	20	19.15	4.2	
Endrin	20	15.79	21.0	#
Endosulfan II	20	19.83	0.9	
4,4'-DDD	20	19.38	3.1	
4,4'-DDT	20	19.18	4.1	
Endrin Aldehyde	20	19.93	0.3	
Endosulfan Sulfate	20	18.45	7.8	
Methoxychlor	100	93.20	6.8	
Endrin Ketone	20	20.02	0.1	
Decachlorobiphenyl (S)	40	37.40	6.5	

Average Percent Difference of All Compounds 4.12

(#) = Out of Range

429

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE082902\
Data File Name 015F1501.D
Date Acquired 29-Aug-2002, 21:27:48

Column #2

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation	
Tetrachloro-m-xylene (S)	20	18.37	8.2	
alpha-BHC	10	9.34	6.6	
gamma-BHC (Lindane)	10	9.40	6.0	
Heptachlor	10	11.00	10.0	
Aldrin	10	9.50	5.0	
beta-BHC	10	9.80	2.0	
delta-BHC	10	9.08	9.2	
Heptachlor Epoxide	10	9.54	4.6	
Endosulfan I	10	9.47	5.3	
gamma-Chlordane	10	9.54	4.6	
alpha-Chlordane	10	9.02	9.8	
4,4'-DDE	20	18.13	9.4	
Dieldrin	20	18.19	9.1	
Endrin	20	15.17	24.2	#
Endosulfan II	20	18.74	6.3	
4,4'-DDD	20	18.17	9.1	
4,4'-DDT	20	18.68	6.6	
Endrin Aldehyde	20	18.78	6.1	
Endosulfan Sulfate	20	18.24	8.8	
Methoxychlor	100	88.48	11.5	
Endrin Ketone	20	19.71	1.5	
Decachlorobiphenyl (S)	40	35.41	11.5	

Average Percent Difference of All Compounds 7.97

(#) = Out of Range

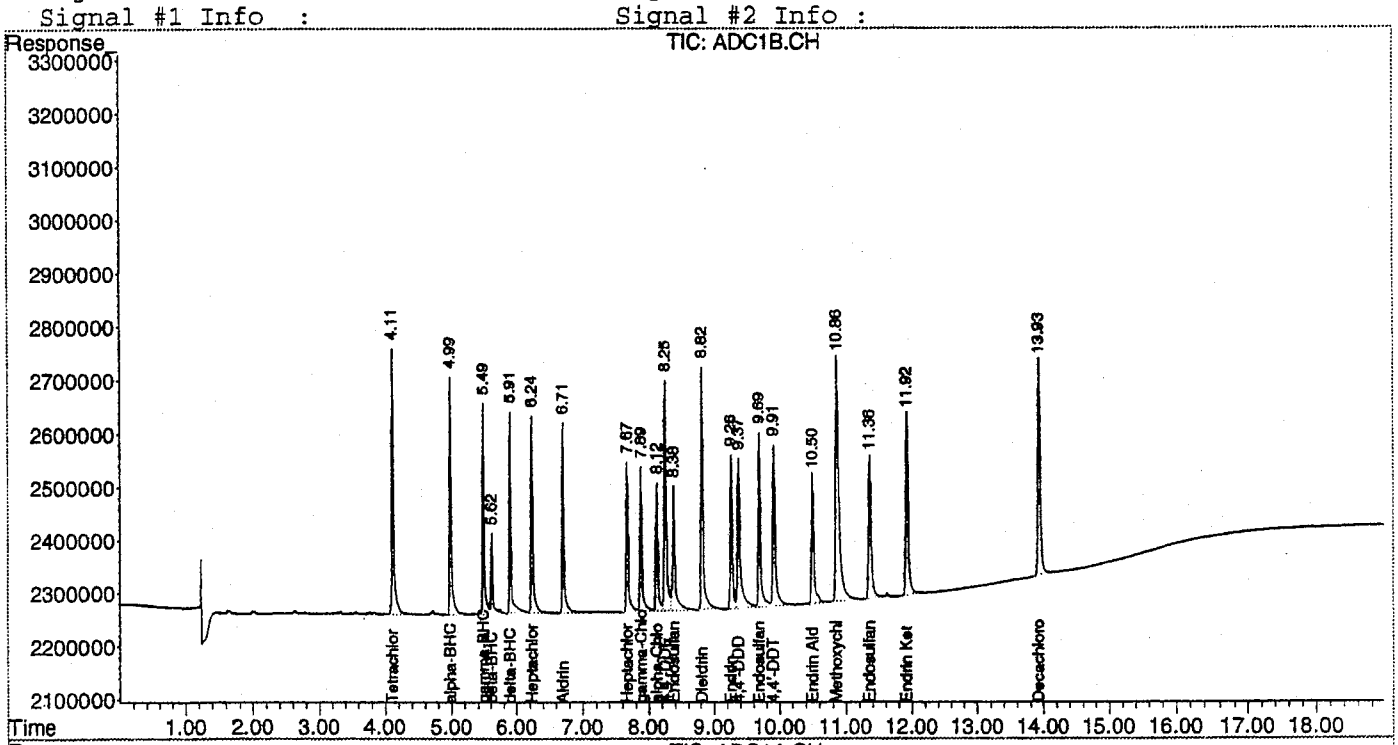
430

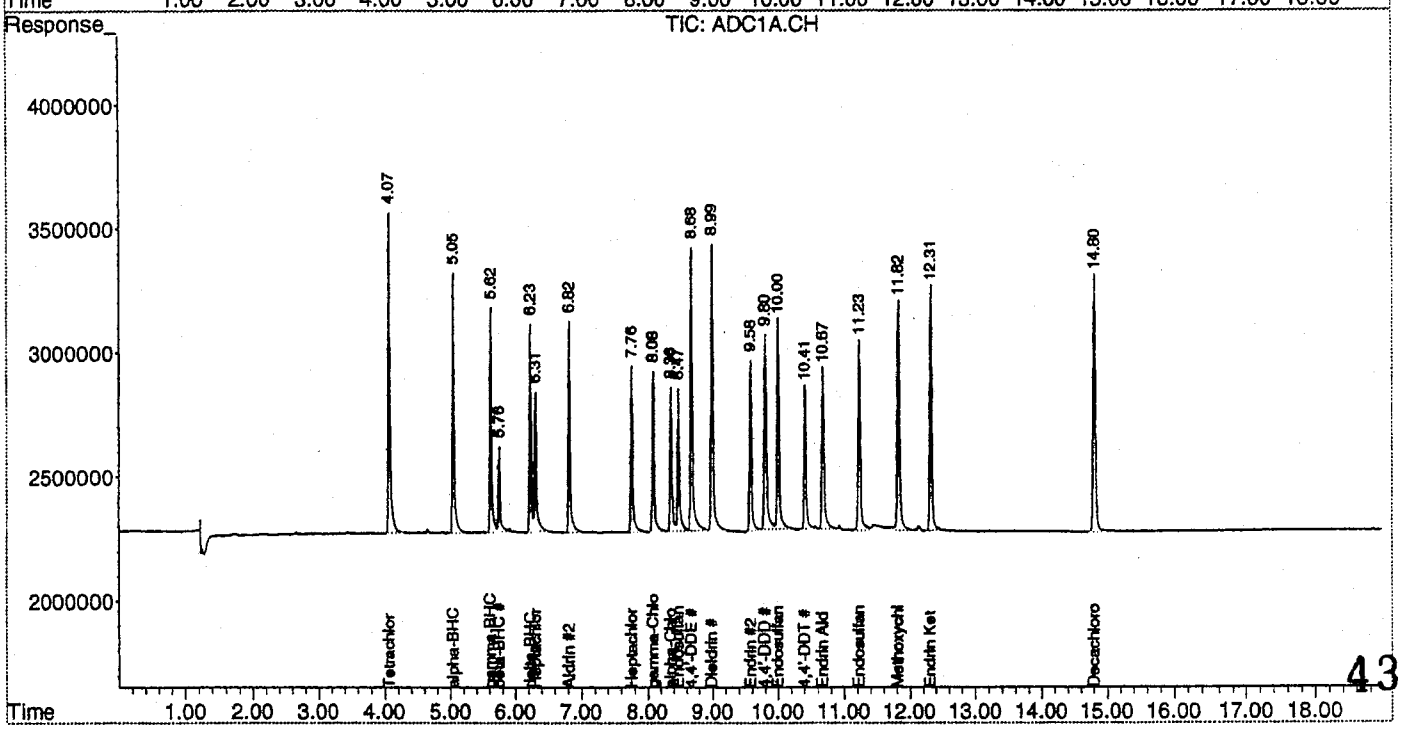
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\015F1501.D\ADC1B.CH Vial: 15
Signal #2 : F:\HPCHEM\1\DATA\PE082902\015F1501.D\ADC1A.CH
Acq On : 29-Aug-2002, 21:27:48 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:28 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Sequence Log

Directory : f:\HPCHEM\1\DATA\PE091102

	Filename	Sample Name		Date/Time
1	008f0801.d	75 ng/ml 8081A Plus Pest902A		09/11/02 23:46
2	009f0901.d	50 ng/ml 8081A Plus Pest902B	QuantFile: P	09/12/02 00:08
3	010f1001.d	25 ng/ml 8081A Plus Pest902C	QuantFile: P	09/12/02 00:30
4	011f1101.d	10 ng/ml 8081A Plus Pest902D	QuantFile: P	09/12/02 00:52
5	012f1201.d	2.0 ng/ml 8081A Plus Pest902E	QuantFile: P	09/12/02 01:14
6	013f1301.d	1.0 ng/ml 8081A Plus Pest902F	QuantFile: P	09/12/02 01:36
7	014f1401.d	Hexane blank	QuantFile: P	09/12/02 01:58
8	015f1501.d	Eval Pest889		09/12/02 02:20
9	016f1601.d	10/20 ng/ml 80810A CCV Pest888		09/12/02 02:42
10	017f1701.d	15 ng/ml 8081A Plus CCV Pest903		09/12/02 03:04
11	018f1801.d	mb pe1511		09/12/02 03:26
12	019f1901.d	bs pe1511		09/12/02 03:48
13	020f2001.d	bsd pe1511		09/12/02 04:10
14	021f2101.d	108160-1 1:2	QuantFile: 8	09/12/02 04:32
15	022f2201.d	108160-2 1:2	QuantFile: P	09/12/02 04:54
16	023f2301.d	108160-3 1:2	QuantFile: +	09/12/02 05:16
17	024f2401.d	108160-4 1:2	QuantFile: P	09/12/02 05:38
18	025f2501.d	108164-1 1:2	QuantFile: P	09/12/02 06:00
19	026f2601.d	108164-2 1:2	QuantFile: P	09/12/02 06:22
20	027f2701.d	108164-3 1:2	QuantFile: +	09/12/02 06:44
21	028f2801.d	108164-3 ms 1:2		09/12/02 07:06
22	029f2901.d	108164-3 msd 1:2		09/12/02 07:28
23	030f3001.d	Hexane blank		09/12/02 07:50
24	031f3101.d	Eval Pest889		09/12/02 08:12
25	032f3201.d	10/20 ng/ml 8081A CCV Pest888		09/12/02 08:34
26	033f3301.d	15 ng/ml 8081A Plus CCV Pest903		09/12/02 08:56
27	034f3401.d	108166-1		09/12/02 09:18
28	035f3501.d	108166-2		09/12/02 09:40
29	036f3601.d	108166-3		09/12/02 10:02
30	037f3701.d	108177-1		09/12/02 10:24
31	038f3801.d	108177-2		09/12/02 10:46
32	039f3901.d	108177-3 1:2	QuantFile: P	09/12/02 11:08
33	040f4001.d	108177-4 1:2		09/12/02 11:30
34	041f4101.d	108177-5 1:2	QuantFile: P	09/12/02 11:52
35	042f4201.d	108177-6 1:2		09/12/02 12:14
36	043f4301.d	108177-8 1:2		09/12/02 12:36
37	044f4401.d	108177-9 1:2	QuantFile: 8	09/12/02 12:58
38	045f4501.d	108177-10 1:2		09/12/02 13:20
39	046f4601.d	108177-11 1:2	QuantFile: 8	09/12/02 13:42
40	047f4701.d	108164-3 msd 1:2	QuantFile: P	09/12/02 14:04
41	048f4801.d	Hexane blank		09/12/02 14:26
42	049f4901.d	Eval Pest889		09/12/02 14:49
43	050f5001.d	10/20 ng/ml 8081A CCV Pest888		09/12/02 15:10
44	051f5101.d	15 ng/ml 8081A Plus Pest903		09/12/02 15:32
45	052f5201.d	100 ng/ml 1242/1260 561-102-5		09/12/02 15:54

Custom Report - DDT/Endrin Breakdown Evaluation

Sample Name Eval Pest889

Data File Name F:\HPCHEM\1\DATA\PE091102\015F1501.D
Date Acquired 12-Sep-2002, 02:20:40

Compound Name	RT #1	RT #2	Resp. #1	Resp. #2	Amt. #1	Amt. #2	% Breakdown Column #1	% Breakdown Column #2
Endrin	8.89	9.24	24593363	46719088	42.52	43.62	13.97%	13.34%
Endrin Aldehyde	10.11	10.33	1643730	2635544	6.91	6.29		
Endrin Ketone	11.51	11.95	2350407	4558785	6.17	5.55		
4,4'-DDT	9.54	10.07	50366261	88456539	81.74	93.95	5.66%	4.59%
4,4'-DDD	9.02	9.47	2749678	4254444	4.57	4.04		
4,4'-DDE	7.91	0.00	272969	0	0.38	0.00		

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\015F1501.D\ADC1B.CH Vial: 15
Signal #2 : F:\HPCHEM\1\DATA\PE091102\015F1501.D\ADC1A.CH
Acq On : 12-Sep-2002, 02:20:40 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:50:22 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.83	12948690	25161596	19.821	18.466	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					99.11%	92.33%	
2)	SR	Decachlorobiphen	13.53	14.44	9596338	16300358	23.026	21.175	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					115.13%	105.88%	
		Target Compounds							
2)		alpha-BHC	4.72	4.80	11818744	19806748	10.032	9.511	
3)	M	gamma-BHC (Linda	5.21	5.37	10224665	17529774	9.998	9.690	
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.	
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.	
6)		beta-BHC	5.35	5.51	3687237	6721104	9.740	10.314	
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.	
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.	
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
10)		gamma-Chlordane	7.51f	0.00	124052	0	0.143	N.D.	#
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
12)		4,4'-DDE	7.91	0.00	272969	0	0.375	N.D.	#
13)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.	
14)	M	Endrin	8.89	9.24	24593363	46719088	42.522	43.624	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	9.02	9.47	2749678	4254444	4.573	4.044	
17)	M	4,4'-DDT	9.54	10.07	50366261	88456539	81.745	93.946	
18)		Endrin Aldehyde	10.12	10.33	1643730	2635544	3.545	3.007	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	10.49	11.48	51935865	87265318	211.631	219.508	
21)		Endrin Ketone	11.51	11.95	2350407	4558785	3.609	3.529	

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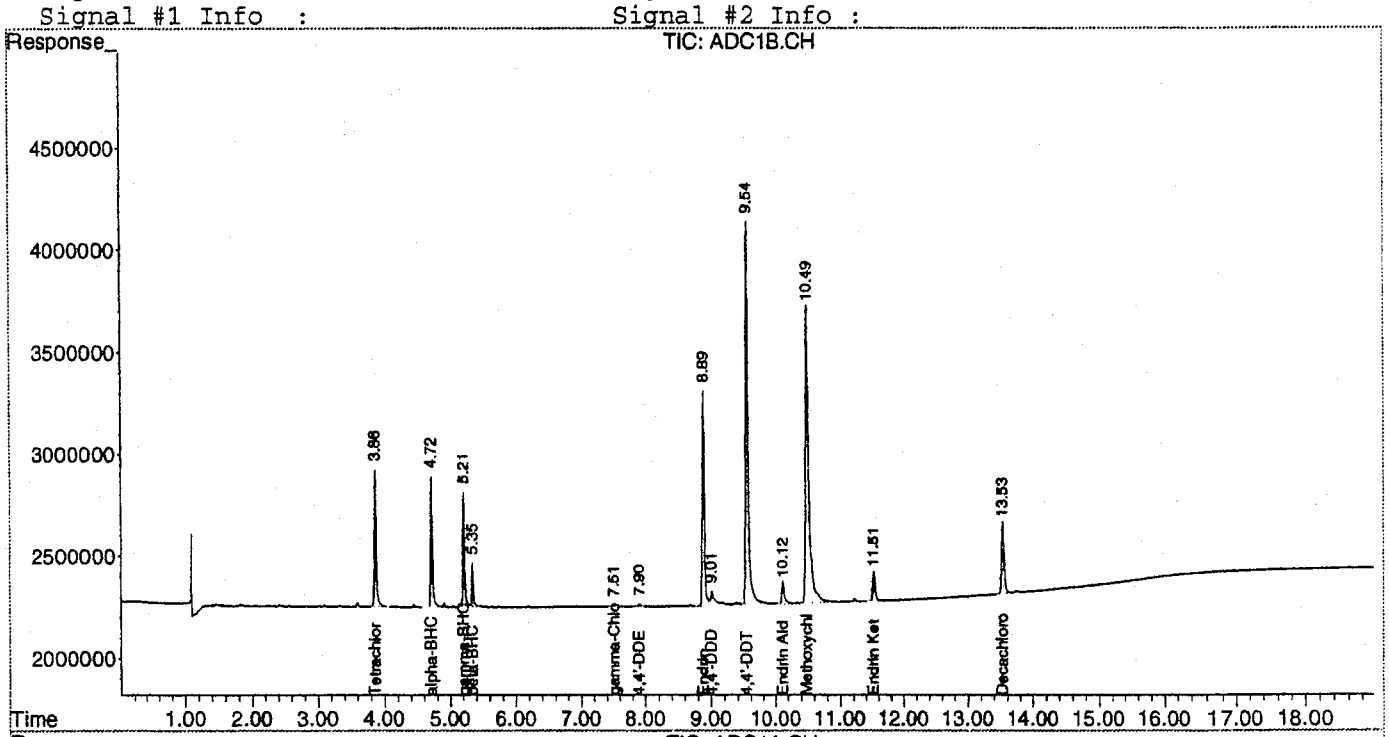
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

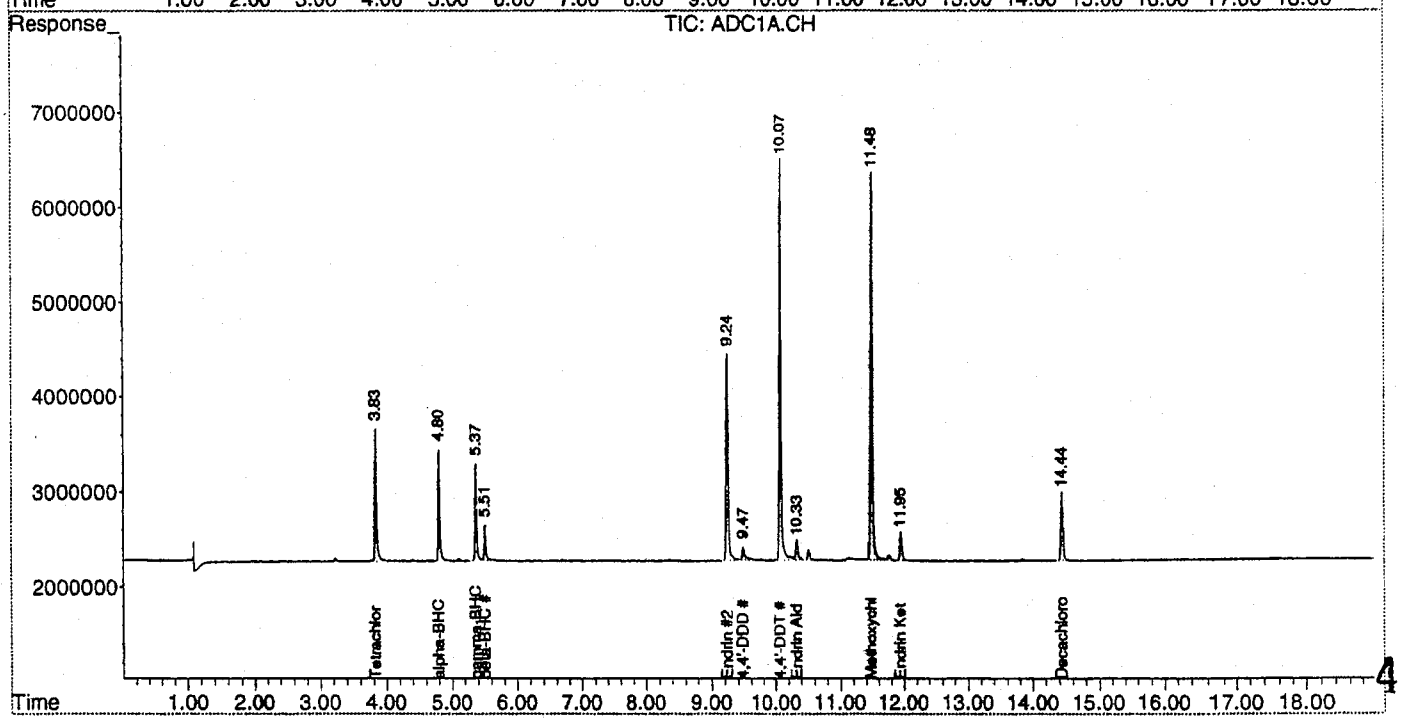
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\015F1501.D\ADC1B.CH Vial: 15
Signal #2 : F:\HPCHEM\1\DATA\PE091102\015F1501.D\ADC1A.CH
Acq On : 12-Sep-2002, 02:20:40 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:50 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\016F1601.D\ADC1B.CH Vial: 16
Signal #2 : F:\HPCHEM\1\DATA\PE091102\016F1601.D\ADC1A.CH
Acq On : 12-Sep-2002, 02:42:42 Operator: JDW
Sample : 10/20 ng/ml 80810A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:45:59 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.86	3.84	13891721	27159130	21.265	19.932
Spiked Amount		20.000 Range	60 - 150		Recovery	=	106.33%	99.66%
22)	SR	Decachlorobiphen	13.53	14.44	18885484	32515580	45.316	42.240
Spiked Amount		20.000 Range	60 - 150		Recovery	=	226.58%#	211.20%#
		Target Compounds						
2)		alpha-BHC	4.72	4.81	12571342	21162046	10.671	10.162
3)	M	gamma-BHC (Linda	5.21	5.38	11260070	18874797	11.010	10.433
4)	M	Heptachlor	5.95	6.06	10445233	7677423	10.680	8.747
5)	M	Aldrin	6.42	6.56	10673320	17750538	10.790	10.351
6)		beta-BHC	5.35	5.52	3951415	7257510	10.437	11.137
7)		delta-BHC	5.63	5.98	10703494	17077378	10.815	10.577
8)		Heptachlor Epoxi	7.36	7.47	9279572	15836620	11.152	10.861
9)		Endosulfan I	8.02	8.14	9398700	15071147	10.443	10.737
10)		gamma-Chlordane	7.56	7.78	9901757	16615357	11.424	11.034
11)		alpha-Chlordane	7.78	8.04	8557275	14831191	10.858	10.662
12)		4,4'-DDE	7.91	8.36	16125278	30572992	22.175	21.416
13)	M	Dieldrin	8.46	8.66	17177676	30915699	21.710	20.886
14)	M	Endrin	8.89	9.24	11309801	19627249	19.555	18.327
15)		Endosulfan II	9.31	9.66	14238090	24862448	22.934	21.445
16)		4,4'-DDD	9.01	9.47	13264390	23724157	22.061	22.552
17)	M	4,4'-DDT	9.54	10.08	12288530	18279262	19.944	19.414
18)		Endrin Aldehyde	10.11	10.33	10534852	19317864	22.719	22.043
19)		Endosulfan Sulfa	10.96	10.88	12455656	23461618	22.609	22.139
20)		Methoxychlor	10.49	11.48	25293593	37619159	103.068	94.628
21)		Endrin Ketone	11.51	11.95	14807519	28520416	22.739	22.078

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
016F1601.D 8081_910.M Fri Sep 13 09:21:10 2002

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 80810A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 016F1601.D
Date Acquired 12-Sep-2002, 02:42:42

Column #1

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation
Tetrachloro-m-xylene (S)	20	21.26	6.3
alpha-BHC	10	10.67	6.7
gamma-BHC (Lindane)	10	11.01	10.1
Heptachlor	10	10.68	6.8
Aldrin	10	10.79	7.9
beta-BHC	10	10.44	4.4
delta-BHC	10	10.82	8.2
Heptachlor Epoxide	10	11.15	11.5
Endosulfan I	10	10.44	4.4
gamma-Chlordane	10	11.42	14.2
alpha-Chlordane	10	10.86	8.6
4,4'-DDE	20	22.17	10.9
Dieldrin	20	21.71	8.5
Endrin	20	19.55	2.2
Endosulfan II	20	22.93	14.7
4,4'-DDD	20	22.06	10.3
4,4'-DDT	20	19.94	0.3
Endrin Aldehyde	20	22.72	13.6
Endosulfan Sulfate	20	22.61	13.0
Methoxychlor	100	103.07	3.1
Endrin Ketone	20	22.74	13.7
Decachlorobiphenyl (S)	40	45.32	13.3

Average Percent Difference of All Compounds 8.76

(#) = Out of Range

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Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 80810A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 016F1601.D
Date Acquired 12-Sep-2002, 02:42:42

Column #2

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation
Tetrachloro-m-xylene (S)	20	19.93	0.3
alpha-BHC	10	10.16	1.6
gamma-BHC (Lindane)	10	10.43	4.3
Heptachlor	10	8.75	12.5
Aldrin	10	10.35	3.5
beta-BHC	10	11.14	11.4
delta-BHC	10	10.58	5.8
Heptachlor Epoxide	10	10.86	8.6
Endosulfan I	10	10.74	7.4
gamma-Chlordane	10	11.03	10.3
alpha-Chlordane	10	10.66	6.6
4,4'-DDE	20	21.42	7.1
Dieldrin	20	20.89	4.4
Endrin	20	18.33	8.4
Endosulfan II	20	21.45	7.2
4,4'-DDD	20	22.55	12.8
4,4'-DDT	20	19.41	2.9
Endrin Aldehyde	20	22.04	10.2
Endosulfan Sulfate	20	22.14	10.7
Methoxychlor	100	94.63	5.4
Endrin Ketone	20	22.08	10.4
Decachlorobiphenyl (S)	40	42.24	5.6

Average Percent Difference of All Compounds 7.16

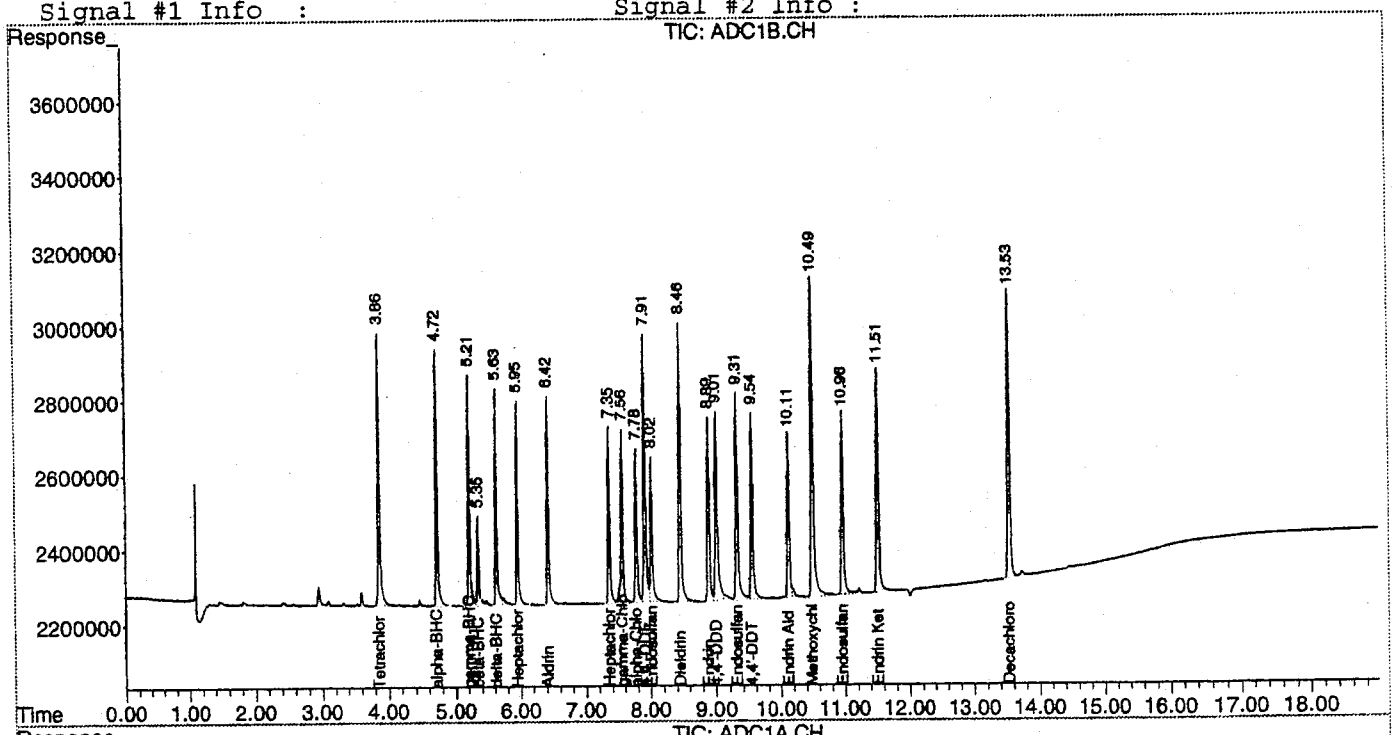
(#) = Out of Range

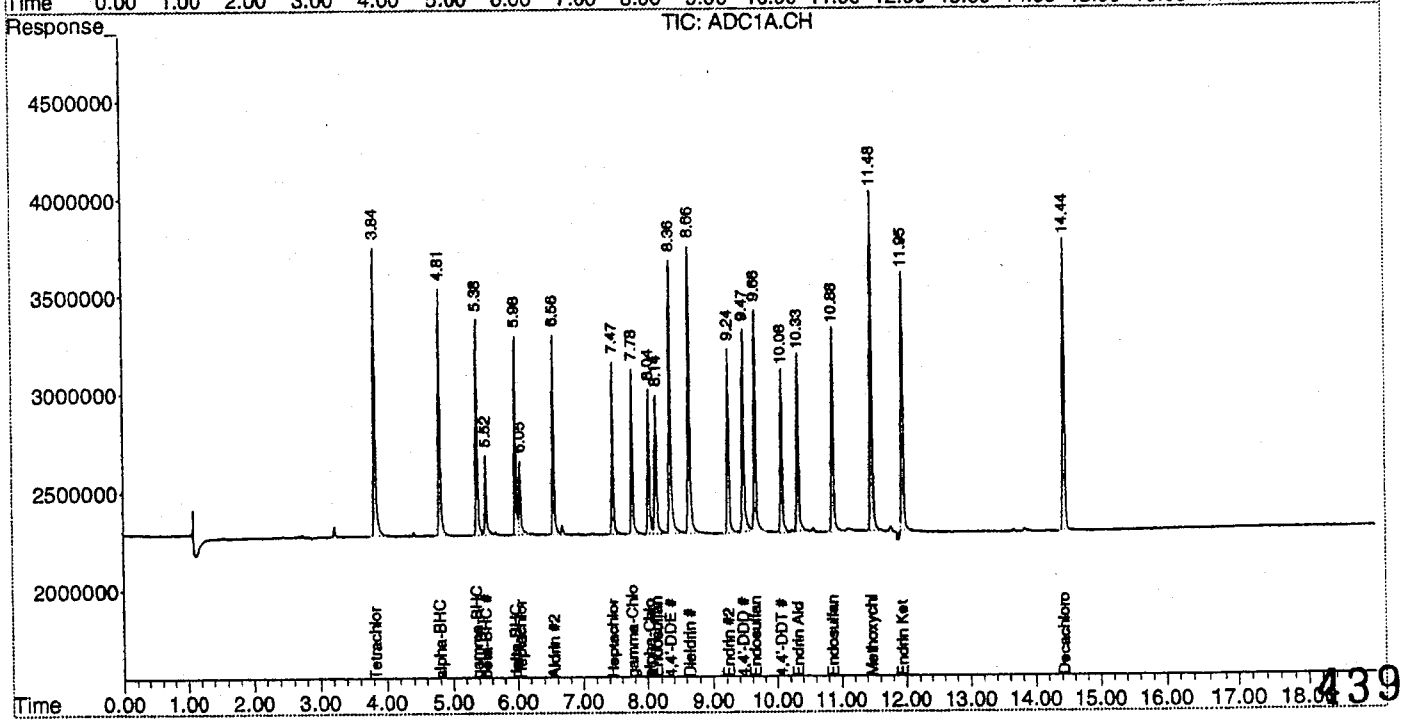
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\016F1601.D\ADC1B.CH Vial: 16
Signal #2 : F:\HPCHEM\1\DATA\PE091102\016F1601.D\ADC1A.CH
Acq On : 12-Sep-2002, 02:42:42 Operator: JDW
Sample : 10/20 ng/ml 80810A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:46 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1B.CH Vial: 17
Signal #2 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:04:39 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:03:35 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) SR Tetrachloro-m-xy	3.86	3.84	13170457	25861534	19.812	19.852
Spiked Amount 20.000 Range 60 - 150 Recovery =					99.06%	99.26%
11) SR Decachlorobiphen	13.54	14.44	8941593	15401658	19.799	20.270
Spiked Amount 20.000 Range 60 - 150 Recovery =					99.00%	101.35%
Target Compounds						
2) Hexachloroethane	1.53	1.47	22933323	39786160	14.887	14.465
3) Hexachlorobenzen	4.46	4.57	14507226	20200765	14.011	14.271
4) Hexachlorobutadi	1.82	1.72	30911024	56434333	14.579	13.855
5) Oxychlordane	7.20	7.31	9931660	17412829	14.378	14.301
6) cis-Nonachlor	8.95	9.40	11699705	21761944	14.452	14.242
7) trans-Nonachlor	7.75	7.93	10601024	19544276	13.959	14.238
8) 2,4'-DDE	7.34	7.79	7087536	12539886	14.668	14.713
9) 2,4'-DDD	8.22	8.75	6080104	10742326	15.124	14.656
10) 2,4'-DDT	8.69	9.32	6934342	9888594	14.957	14.435

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
017F1701.D +CPDS_910.M Thu Sep 12 10:23:52 2002

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1B.CH Vial: 17
Signal #2 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:04:39 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E

Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	SR	Tetrachloro-m-xylene (S)	20.000	19.812	0.9	0	0.00
2		Hexachloroethane	15.000	14.887	0.8	0	0.00
3		Hexachlorobenzene	15.000	14.011	6.6	0	0.00
4		Hexachlorobutadiene	15.000	14.579	2.8	0	0.00
5		Oxychlordane	15.000	14.378	4.1	0	0.00
6		cis-Nonachlor	15.000	14.452	3.7	0	0.00
7		trans-Nonachlor	15.000	13.959	6.9	0	0.00
8		2,4'-DDE	15.000	14.668	2.2	0	0.00
9		2,4'-DDD	15.000	15.124	-0.8	0	0.00
10		2,4'-DDT	15.000	14.957	0.3	0	0.00
11	SR	Decachlorobiphenyl (S)	20.000	19.799	1.0	0	0.00

Signal #2

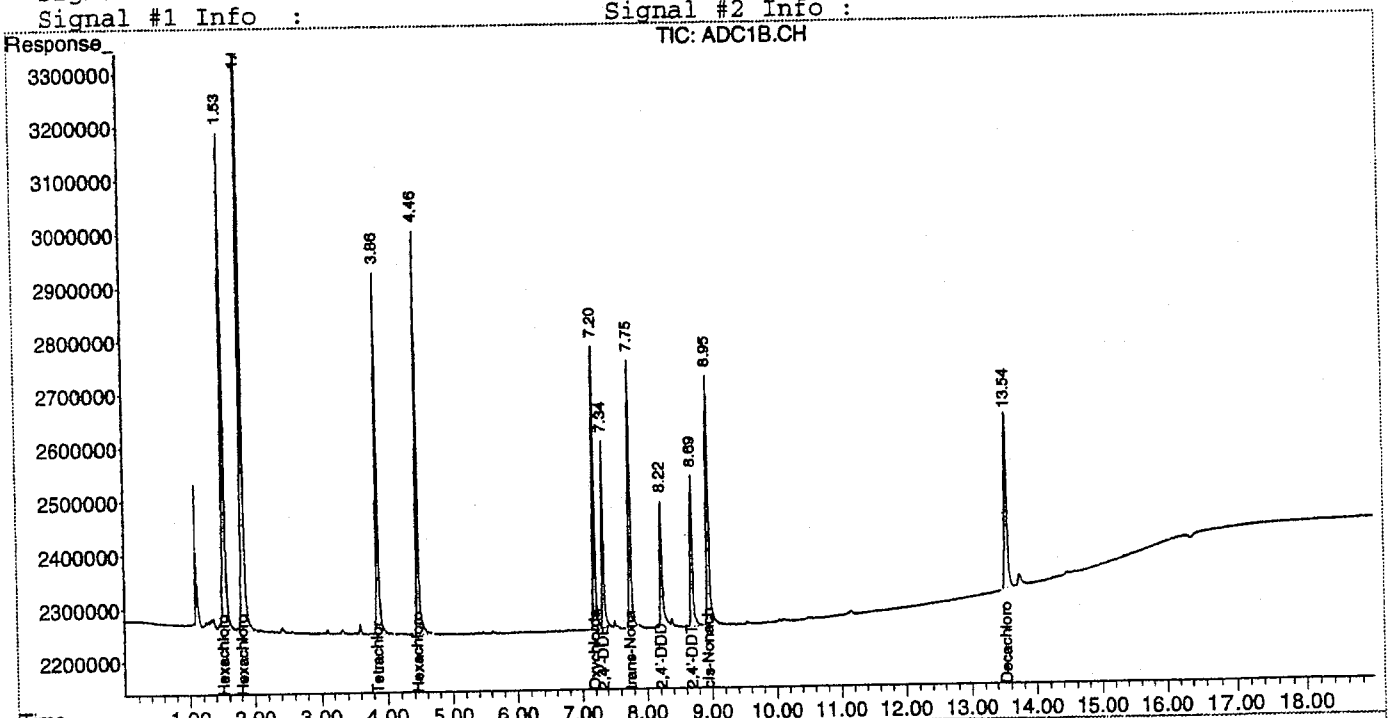
1	SR	Tetrachloro-m-xylene (S)	20.000	19.852	0.7	0	0.00
2		Hexachloroethane	15.000	14.465	3.6	0	0.00
3		Hexachlorobenzene	15.000	14.271	4.9	0	0.00
4		Hexachlorobutadiene	15.000	13.855	7.6	0	0.00
5		Oxychlordane	15.000	14.301	4.7	0	0.00
6		cis-Nonachlor	15.000	14.242	5.1	0	0.00
7		trans-Nonachlor	15.000	14.238	5.1	0	0.00
8		2,4'-DDE	15.000	14.713	1.9	0	0.00
9		2,4'-DDD	15.000	14.656	2.3	0	0.00
10		2,4'-DDT	15.000	14.435	3.8	0	0.00
11	SR	Decachlorobiphenyl (S)	20.000	20.270	-1.3	0	0.00

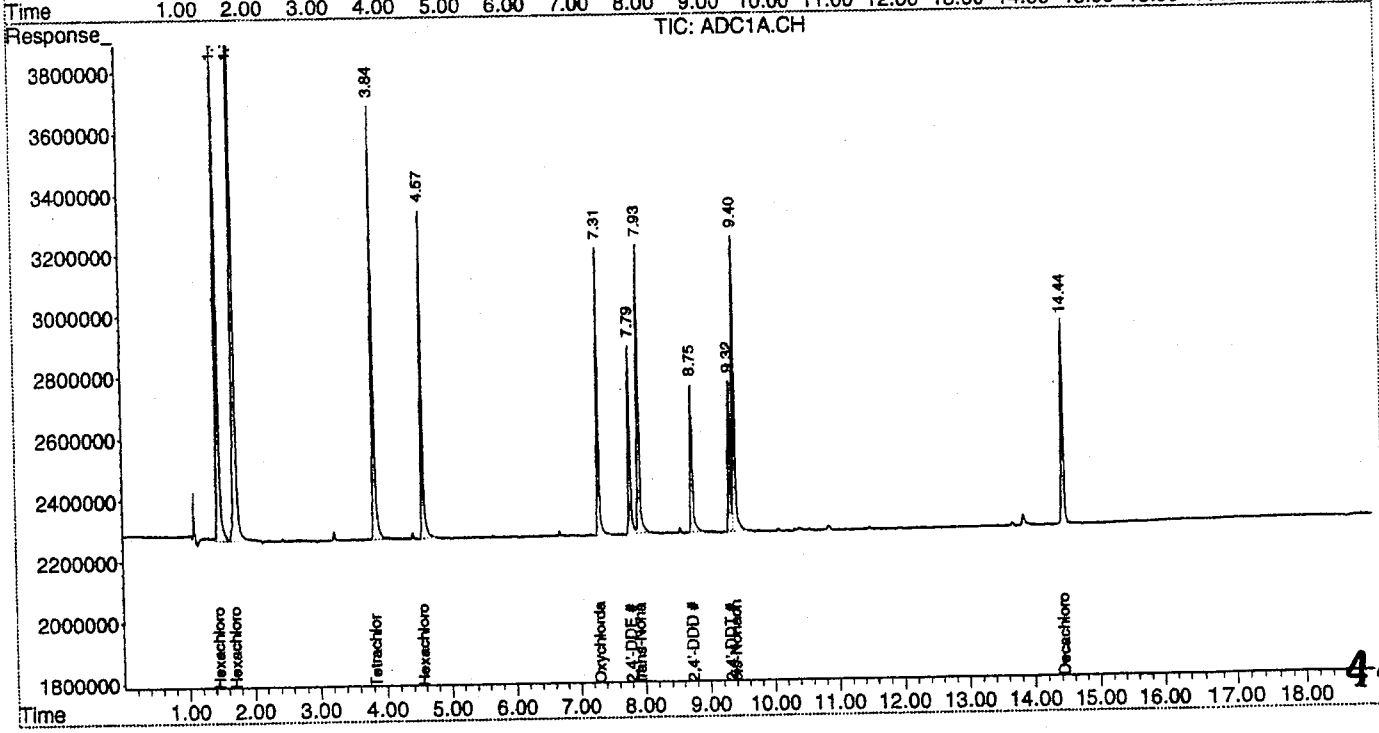
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1B.CH Vial: 17
Signal #2 : F:\HPCHEM\1\DATA\PE091102\017F1701.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:04:39 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:03 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Custom Report - DDT/Endrin Breakdown Evaluation

Sample Name Eval Pest889

Data File Name F:\HPCHEM\1\DATA\PE091102\031F3101.D
Date Acquired 12-Sep-2002, 08:12:39

Compound Name	RT #1	RT #2	Resp. #1	Resp. #2	Amt. #1	Amt. #2	% Breakdown Column #1	% Breakdown Column #2
Endrin	8.88	9.23	24654933	48314513	42.63	45.11	**10.76%**	**9.13%**
Endrin Aldehyde	10.10	10.32	1171508	2049160	5.89	4.96		
Endrin Ketone	11.50	11.94	1800134	2807264	5.61	4.97		
4,4'-DDT	9.53	10.07	46307894	91058093	75.16	96.71	**7.19%**	**5.11%**
4,4'-DDD	9.01	9.46	3268158	4903095	5.44	4.66		
4,4'-DDE	7.90	0.00	317553	0	0.44	0.00		

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\031F3101.D\ADC1B.CH Vial: 31
Signal #2 : F:\HPCHEM\1\DATA\PE091102\031F3101.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:12:39 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 09:27:18 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.83	12626377	24771123	19.328	18.180	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	96.64%	90.90%	
22)	SR	Decachlorobiphen	13.52	14.43	9474509	15565258	22.734	20.220	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	113.67%	101.10%	
		Target Compounds							
2)		alpha-BHC	4.71	4.80	11701025	19612886	9.932	9.418	
3)	M	gamma-BHC (Linda	5.21	5.37	10161112	17465937	9.936	9.654	
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.	
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.	
6)		beta-BHC	5.34	5.51	3784855	6764730	9.997	10.381	
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.	
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.	
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
10)		gamma-Chlordane	7.51f	0.00	164914	0	0.190	N.D.	#
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
12)		4,4'-DDE	7.90	0.00	317553	0	0.437	N.D.	#
13)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.	
14)	M	Endrin	8.88	9.23	24654933	48314513	42.629	45.114	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	9.01	9.46	3268158	4903095	5.436	4.661	
17)	M	4,4'-DDT	9.53	10.07	46307894	91058093	75.158	96.709	
18)		Endrin Aldehyde	10.10	10.32	1171508	2049160	2.526	2.338	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	10.48	11.47	46537722	94667551	189.634	238.127	
21)		Endrin Ketone	11.50	11.94	1800134	2807264	2.764	2.173	

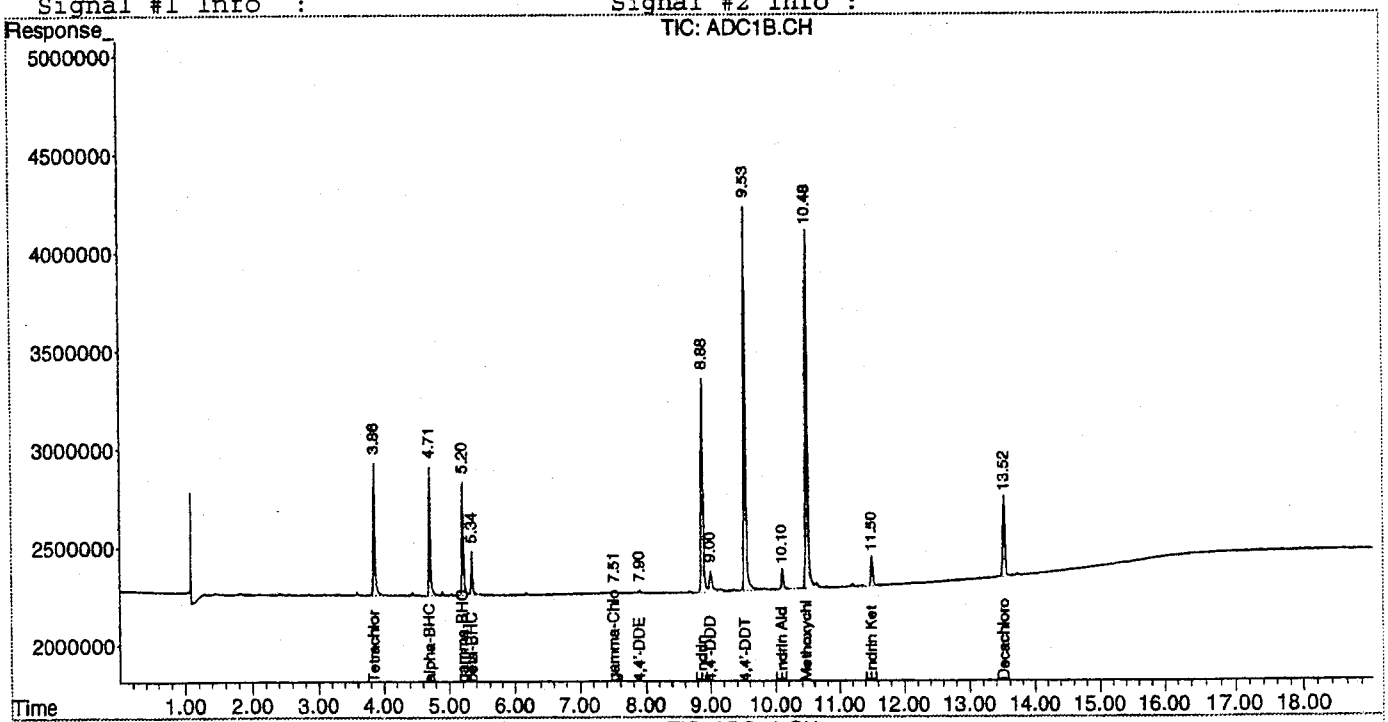
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
031F3101.D 8081_910.M Fri Sep 13 09:27:20 2002

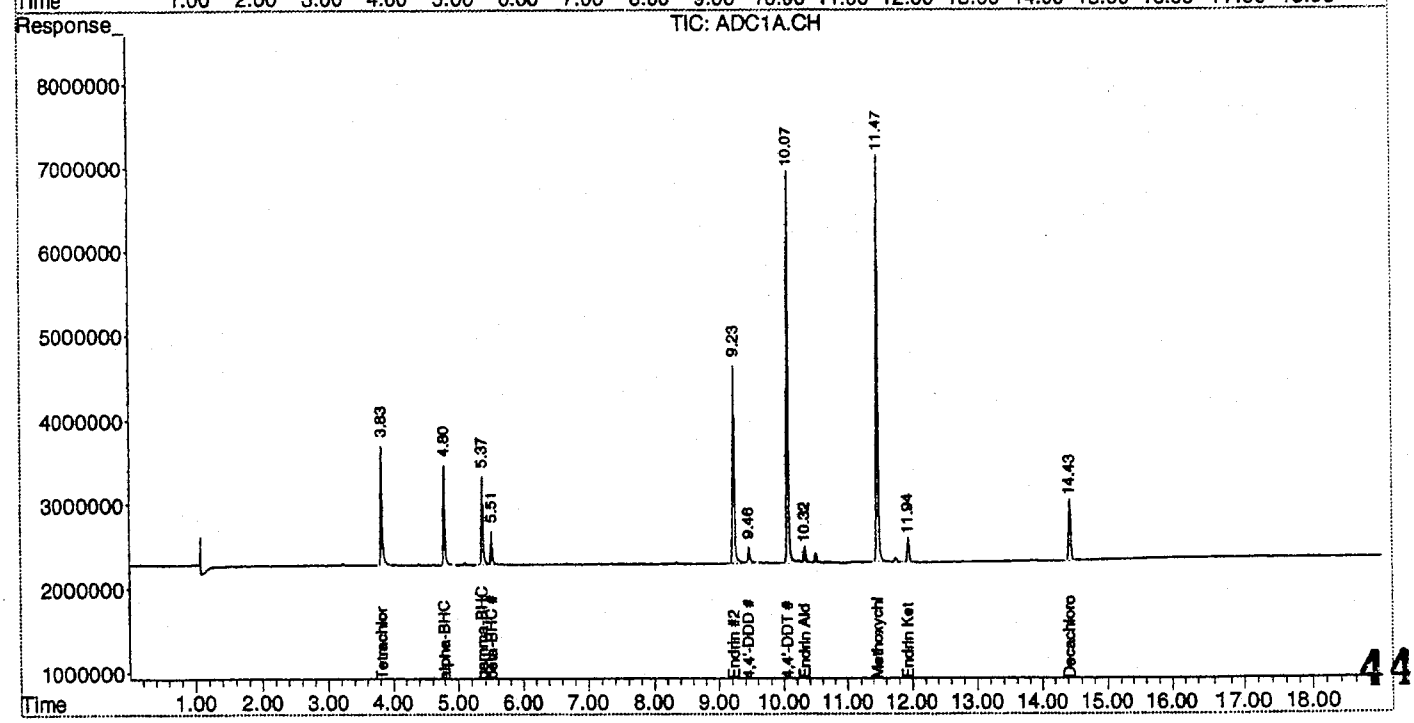
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\031F3101.D\ADC1B.CH Vial: 31
Signal #2 : F:\HPCHEM\1\DATA\PE091102\031F3101.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:12:39 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 9:27 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





445

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\032F3201.D\ADC1B.CH Vial: 32
Signal #2 : F:\HPCHEM\1\DATA\PE091102\032F3201.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:34:39 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:48:23 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.85	3.83	13652822	27113778	20.899	19.899
		Spiked Amount 20.000 Range 60 - 150 Recovery =					104.50%	99.50%
22)	SR	Decachlorobiphen	13.52	14.42	19129981	32259401	45.902	41.907
		Spiked Amount 20.000 Range 60 - 150 Recovery =					229.51%#	209.53%#
		Target Compounds						
2)		alpha-BHC	4.71	4.80	12499400	21318448	10.610	10.237
3)	M	gamma-BHC (Linda	5.20	5.37	11216674	19094341	10.968	10.554
4)	M	Heptachlor	5.94	6.05	10265307	14205956	10.496	16.186 #
5)	M	Aldrin	6.41	6.55	10594854	17864704	10.711	10.418
6)		beta-BHC	5.34	5.51	4143892	7395909	10.946	11.350
7)		delta-BHC	5.62	5.97	10803565	17689262	10.916	10.956
8)		Heptachlor Epoxi	7.34	7.46	9217520	15887883	11.077	10.896
9)		Endosulfan I	8.01	8.13	9072154	14983811	10.080	10.674
10)		gamma-Chlordane	7.54	7.76	9903951	16598889	11.426	11.023
11)		alpha-Chlordane	7.77	8.02	8534508	14915039	10.829	10.722
12)		4,4'-DDE	7.90	8.35	16128536	30565757	22.179	21.411
13)	M	Dieldrin	8.44	8.65	16940424	30941471	21.410	20.903
14)	M	Endrin	8.87	9.23	11116653	20078791	19.221	18.749
15)		Endosulfan II	9.30	9.64	14011087	25598446	22.569	22.080
16)		4,4'-DDD	9.00	9.46	13471850	23803473	22.406	22.628
17)	M	4,4'-DDT	9.53	10.06	11260465	19098447	18.276	20.284
18)		Endrin Aldehyde	10.10	10.32	10604426	19935961	22.869	22.748
19)		Endosulfan Sulfa	10.95	10.87	12126772	23498848	22.012	22.174
20)		Methoxychlor	10.47	11.47	22689515	40343830	92.456	101.481
21)		Endrin Ketone	11.50	11.94	14474748	28825517	22.228	22.314

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
032F3201.D 8081_910.M Fri Sep 13 09:21:14 2002

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 032F3201.D
Date Acquired 12-Sep-2002, 08:34:39

Column #1

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation
Tetrachloro-m-xylene (S)	20	20.90	4.5
alpha-BHC	10	10.61	6.1
gamma-BHC (Lindane)	10	10.97	9.7
Heptachlor	10	10.50	5.0
Aldrin	10	10.71	7.1
beta-BHC	10	10.95	9.5
delta-BHC	10	10.92	9.2
Heptachlor Epoxide	10	11.08	10.8
Endosulfan I	10	10.08	0.8
gamma-Chlordane	10	11.43	14.3
alpha-Chlordane	10	10.83	8.3
4,4'-DDE	20	22.18	10.9
Dieldrin	20	21.41	7.1
Endrin	20	19.22	3.9
Endosulfan II	20	22.57	12.8
4,4'-DDD	20	22.41	12.0
4,4'-DDT	20	18.28	8.6
Endrin Aldehyde	20	22.87	14.3
Endosulfan Sulfate	20	22.01	10.1
Methoxychlor	100	92.46	7.5
Endrin Ketone	20	22.23	11.1
Decachlorobiphenyl (S)	40	45.90	14.8

Average Percent Difference of All Compounds 9.01

(#) = Out of Range

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 032F3201.D
Date Acquired 12-Sep-2002, 08:34:39

Column #2

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation	
Tetrachloro-m-xylene (S)	20	19.90	0.5	
alpha-BHC	10	10.24	2.4	
gamma-BHC (Lindane)	10	10.55	5.5	
Heptachlor	10	16.19	61.9	#
Aldrin	10	10.42	4.2	
beta-BHC	10	11.35	13.5	
delta-BHC	10	10.96	9.6	
Heptachlor Epoxide	10	10.90	9.0	
Endosulfan I	10	10.67	6.7	
gamma-Chlordane	10	11.02	10.2	
alpha-Chlordane	10	10.72	7.2	
4,4'-DDE	20	21.41	7.1	
Dieldrin	20	20.90	4.5	
Endrin	20	18.75	6.3	
Endosulfan II	20	22.08	10.4	
4,4'-DDD	20	22.63	13.1	
4,4'-DDT	20	20.28	1.4	
Endrin Aldehyde	20	22.75	13.7	
Endosulfan Sulfate	20	22.17	10.9	
Methoxychlor	100	101.48	1.5	
Endrin Ketone	20	22.31	11.6	
Decachlorobiphenyl (S)	40	41.91	4.8	
Average Percent Difference of All Compounds			9.81	

(#) = Out of Range

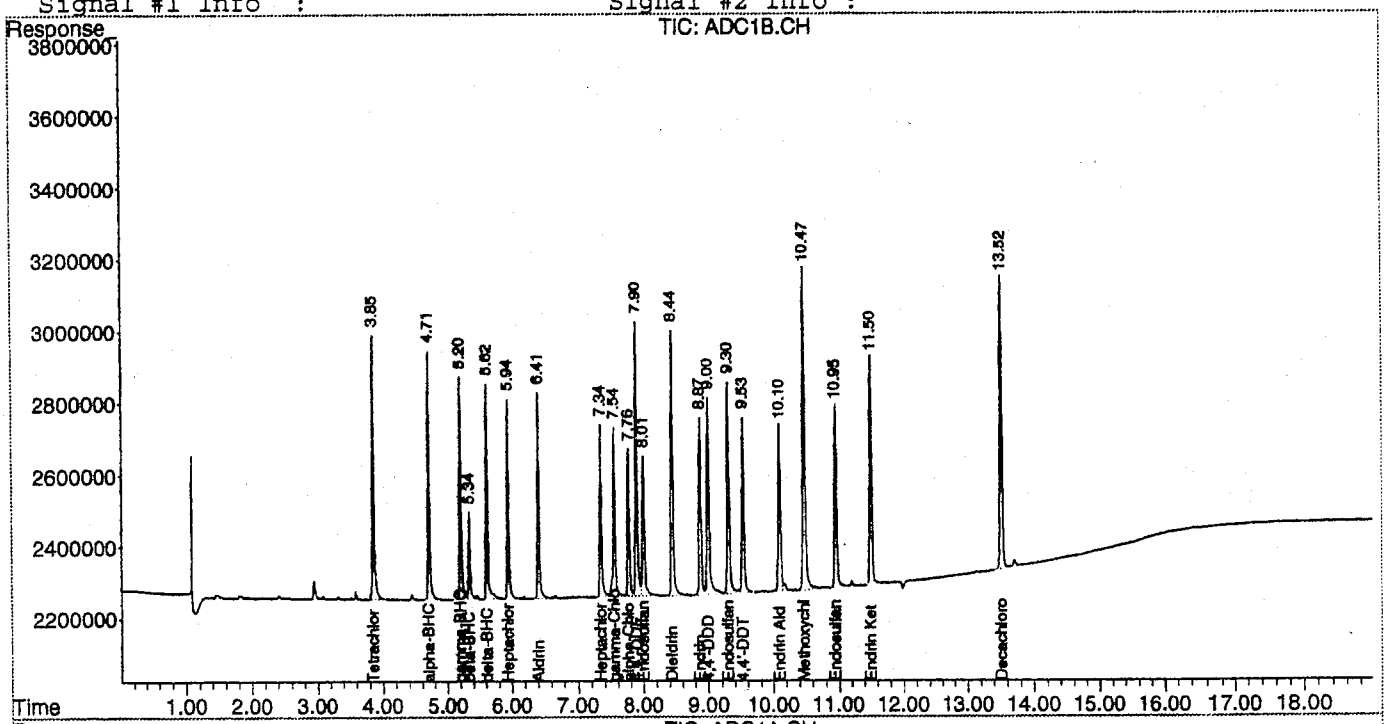
448

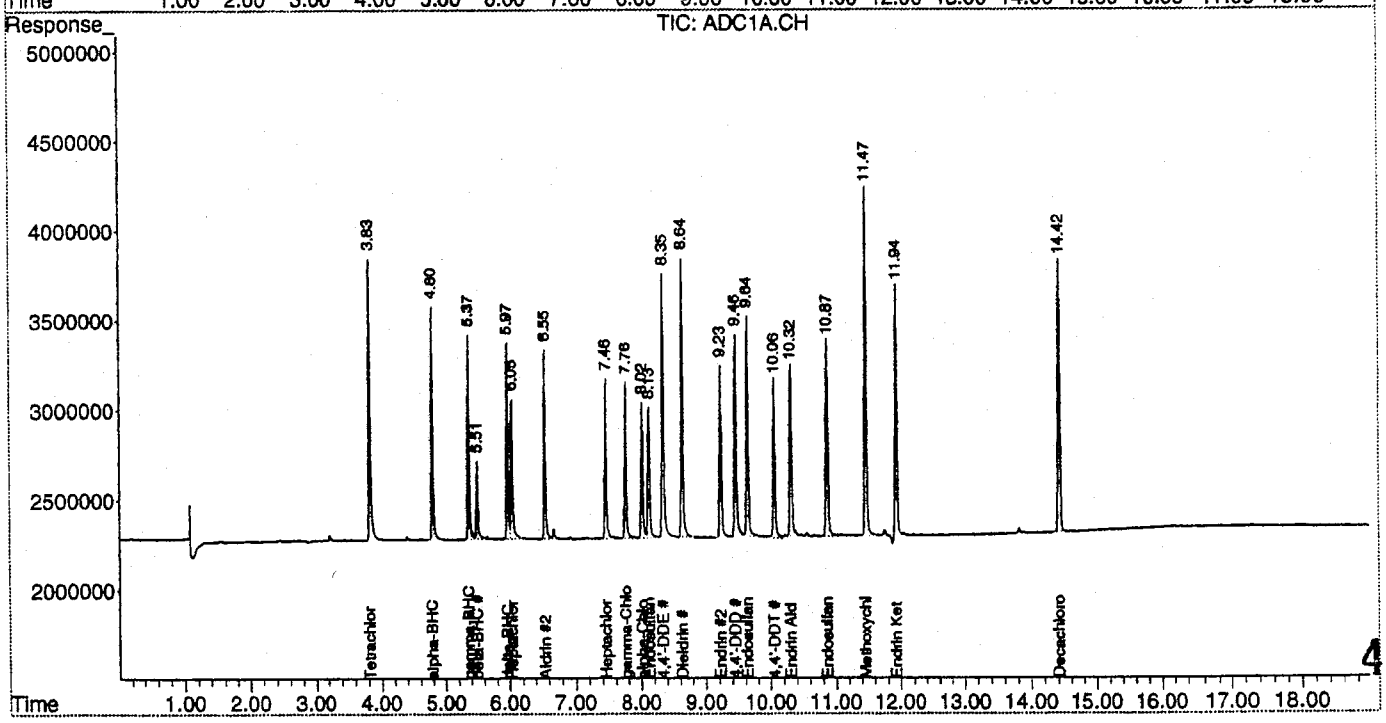
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\032F3201.D\ADC1B.CH Vial: 32
Signal #2 : F:\HPCHEM\1\DATA\PE091102\032F3201.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:34:39 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:48 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1B.CH Vial: 33
Signal #2 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:56:42 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:05:43 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) SR Tetrachloro-m-xy	3.85	3.83	13230663	25872140	19.903	19.860
Spiked Amount 20.000 Range 60 - 150 Recovery =					99.52%	99.30%
1) SR Decachlorobiphen	13.51f	14.42f	8938812	14952908	19.793	19.680
Spiked Amount 20.000 Range 60 - 150 Recovery =					98.96%	98.40%
Target Compounds						
2) Hexachloroethane	1.53	1.46	23147585	39468723	15.026	14.349
3) Hexachlorobenzen	4.45	4.56	14396139	20120834	13.903	14.214
4) Hexachlorobutadi	1.81	1.72	30892685	55931338	14.570	13.732
5) Oxychlordane	7.18	7.30	9838748	17210654	14.244	14.135
6) cis-Nonachlor	8.93f	9.38	11454236	21291492	14.149	13.934
7) trans-Nonachlor	7.73	7.92	10424342	19458208	13.726	14.175
8) 2,4'-DDE	7.33	7.78	7107683	12604904	14.709	14.790
9) 2,4'-DDD	8.20	8.73	6193449	11080118	15.406	15.117
10) 2,4'-DDT	8.67f	9.30	6460276	10316748	13.934	15.060

450

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1B.CH Vial: 33
Signal #2 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:56:42 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E

Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	SR	Tetrachloro-m-xylene (S)	20.000	19.903	0.5	0	-0.01
2		Hexachloroethane	15.000	15.026	-0.2	0	0.00
3		Hexachlorobenzene	15.000	13.903	7.3	0	-0.01
4		Hexachlorobutadiene	15.000	14.570	2.9	0	0.00
5		Oxychlordane	15.000	14.244	5.0	0	-0.02
6		cis-Nonachlor	15.000	14.149	5.7	0	-0.02
7		trans-Nonachlor	15.000	13.726	8.5	0	-0.02
8		2,4'-DDE	15.000	14.709	1.9	0	-0.02
9		2,4'-DDD	15.000	15.406	-2.7	0	-0.02
10		2,4'-DDT	15.000	13.934	7.1	0	-0.02
11	SR	Decachlorobiphenyl (S)	20.000	19.793	1.0	0	-0.03

Signal #2

1	SR	Tetrachloro-m-xylene (S)	20.000	19.860	0.7	0	-0.01
2		Hexachloroethane	15.000	14.349	4.3	0	0.00
3		Hexachlorobenzene	15.000	14.214	5.2	0	-0.01
4		Hexachlorobutadiene	15.000	13.732	8.5	0	0.00
5		Oxychlordane	15.000	14.135	5.8	0	-0.01
6		cis-Nonachlor	15.000	13.934	7.1	0	-0.02
7		trans-Nonachlor	15.000	14.175	5.5	0	-0.02
8		2,4'-DDE	15.000	14.790	1.4	0	-0.02
9		2,4'-DDD	15.000	15.117	-0.8	0	-0.02
10		2,4'-DDT	15.000	15.060	-0.4	0	-0.02
11	SR	Decachlorobiphenyl (S)	20.000	19.680	1.6	0	-0.02

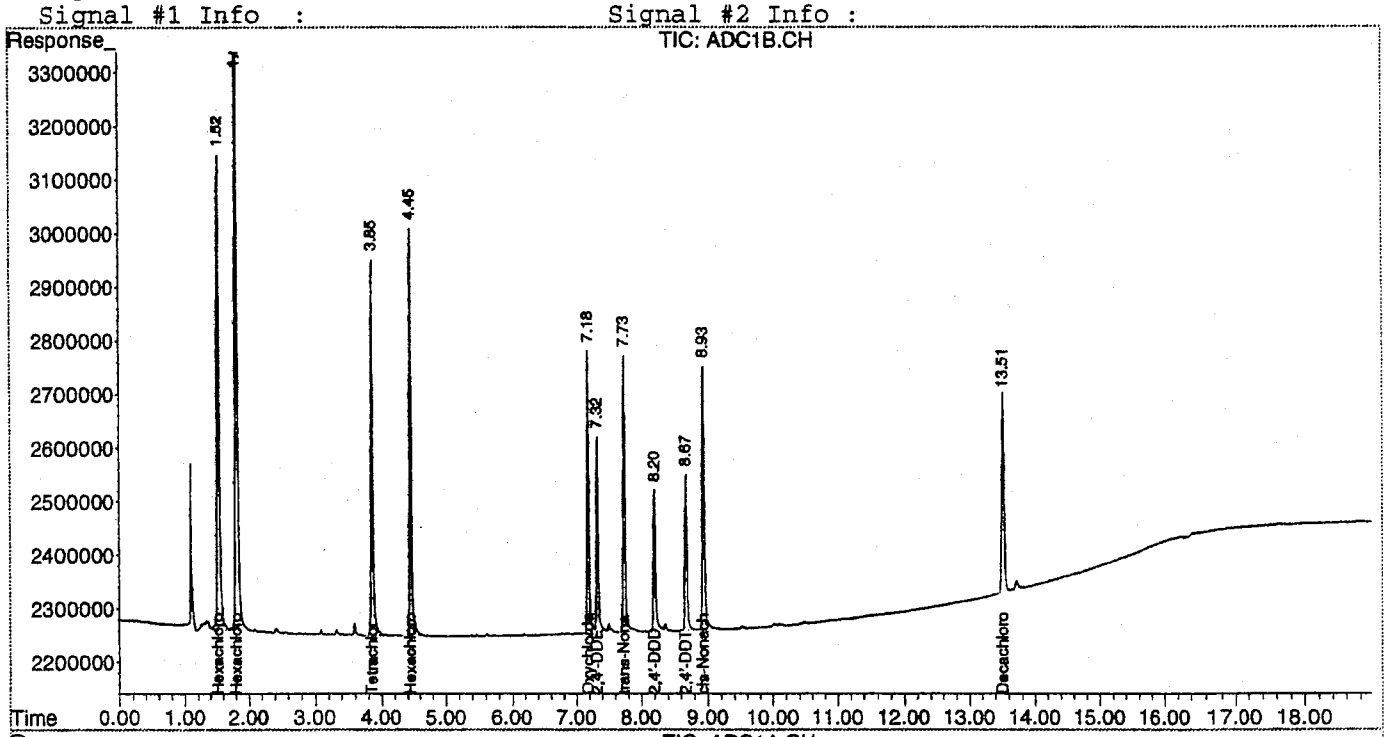
(#) = Out of Range SPCC's out = 0 CCC's out = 0
033F3301.D +CPDS_910.M Thu Sep 12 10:05:56 2002

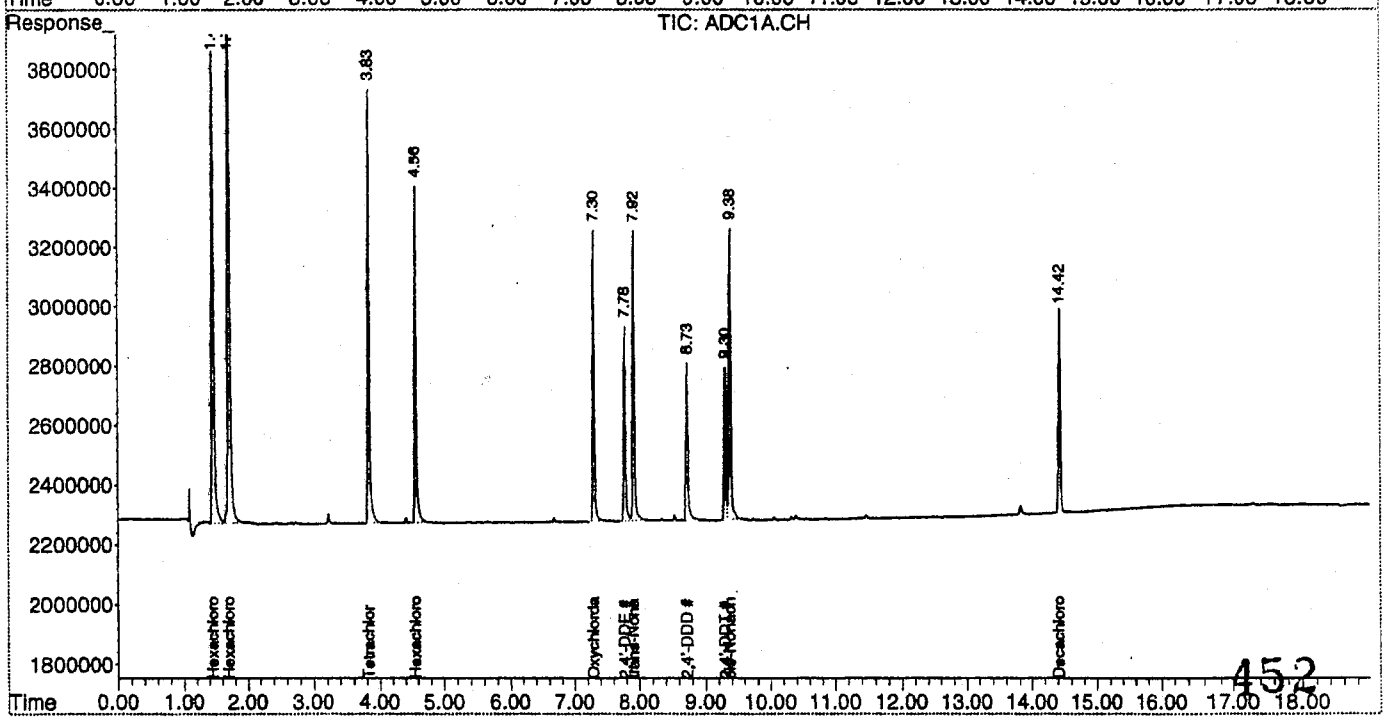
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1B.CH Vial: 33
Signal #2 : F:\HPCHEM\1\DATA\PE091102\033F3301.D\ADC1A.CH
Acq On : 12-Sep-2002, 08:56:42 Operator: JDW
Sample : 15 ng/ml 8081A Plus CCV Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:05 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Custom Report - DDT/Endrin Breakdown Evaluation

Sample Name: Eval Pest889

Data File Name: F:\HPCHEM\1\DATA\PE091102\049F4901.D
Date Acquired: 12-Sep-2002, 14:49:00

Compound Name	RT #1	RT #2	Resp. #1	Resp. #2	Amt. #1	Amt. #2	% Breakdown Column #1	% Breakdown Column #2
Endrin	8.88	9.23	24201480	48040196	41.84	44.86	21.42%	18.74%
Endrin Aldehyde	10.10	10.32	2806773	4467514	6.05	5.10		
Endrin Ketone	11.50	11.94	3789509	6613633	5.82	5.12		
4,4'-DDT	9.53	10.07	42968002	85946765	69.74	91.28	10.71%	8.14%
4,4'-DDD	9.01	9.46	4844567	7617712	8.06	7.24		
4,4'-DDE	7.90	0.00	308655	0	0.42	0.00		

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\049F4901.D\ADC1B.CH Vial: 49
Signal #2 : F:\HPCHEM\1\DATA\PE091102\049F4901.D\ADC1A.CH
Acq On : 12-Sep-2002, 14:49:00 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 08:21:41 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.85	3.83	12995136	25561800	19.892	18.760	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	99.46%	93.80%	
2)	SR	Decachlorobiphen	13.52	14.43	9114806	14944900	21.871	19.414	
Spiked Amount		20.000 Range	60 - 150		Recovery	=	109.36%	97.07%	
		Target Compounds							
2)		alpha-BHC	4.71	4.80	11765112	19908102	9.987	9.560	
3)	M	gamma-BHC (Linda	5.20	5.37	10178575	17587871	9.953	9.722	
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.	
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.	
6)		beta-BHC	5.34	5.51	3854441	6909619	10.181	10.604	
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.	
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.	
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
10)		gamma-Chlordane	7.50f	0.00	130171	0	0.150	N.D.	#
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
12)		4,4'-DDE	7.90	0.00	308655	0	0.424	N.D.	#
13)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.	
14)	M	Endrin	8.88	9.23	24201480	48040196	41.845	44.858	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	9.01	9.46	4844567	7617712	8.057	7.241	
17)	M	4,4'-DDT	9.53	10.07	42968002	85946765	69.737	91.281	
18)		Endrin Aldehyde	10.10	10.32	2806773	4467514	6.053	5.098	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	10.48	11.47	43160025	88317609	175.871	222.155	
21)		Endrin Ketone	11.50	11.94	3789509	6613633	5.819	5.120	

454

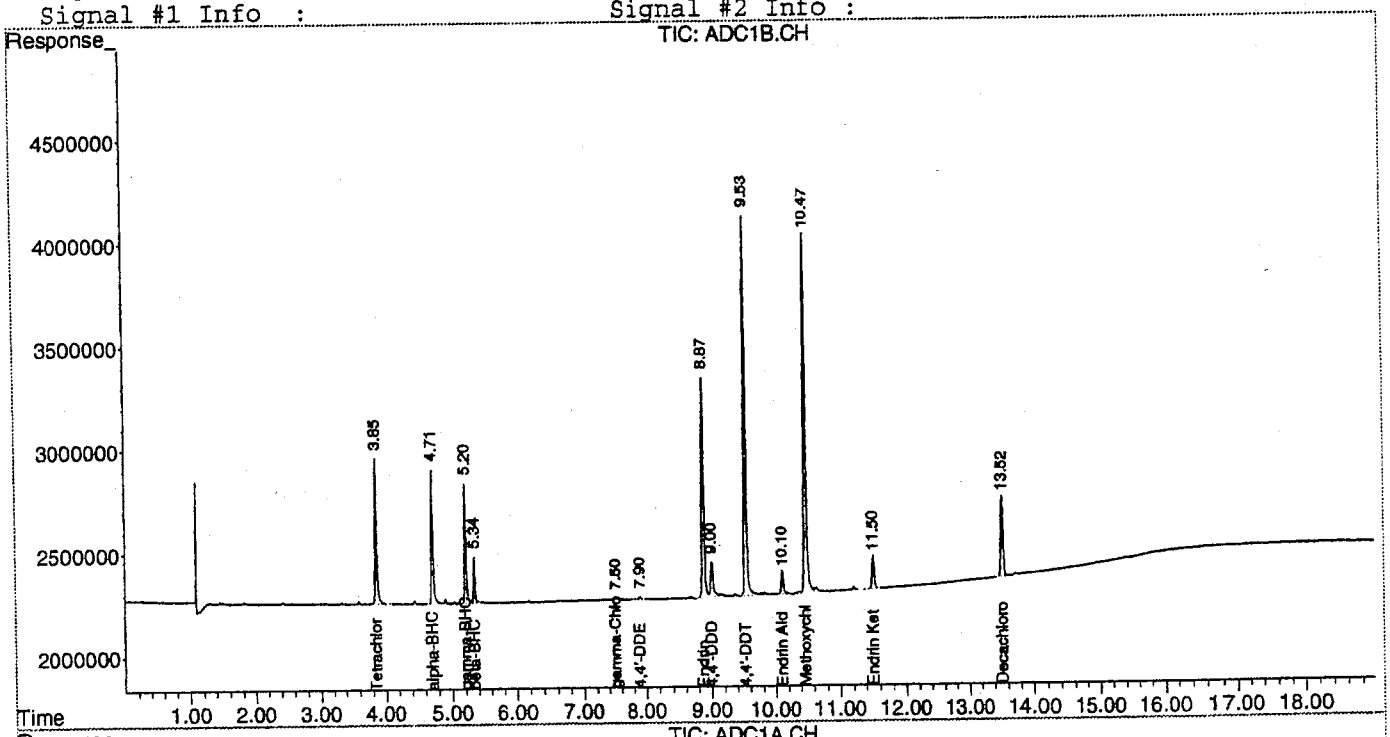
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

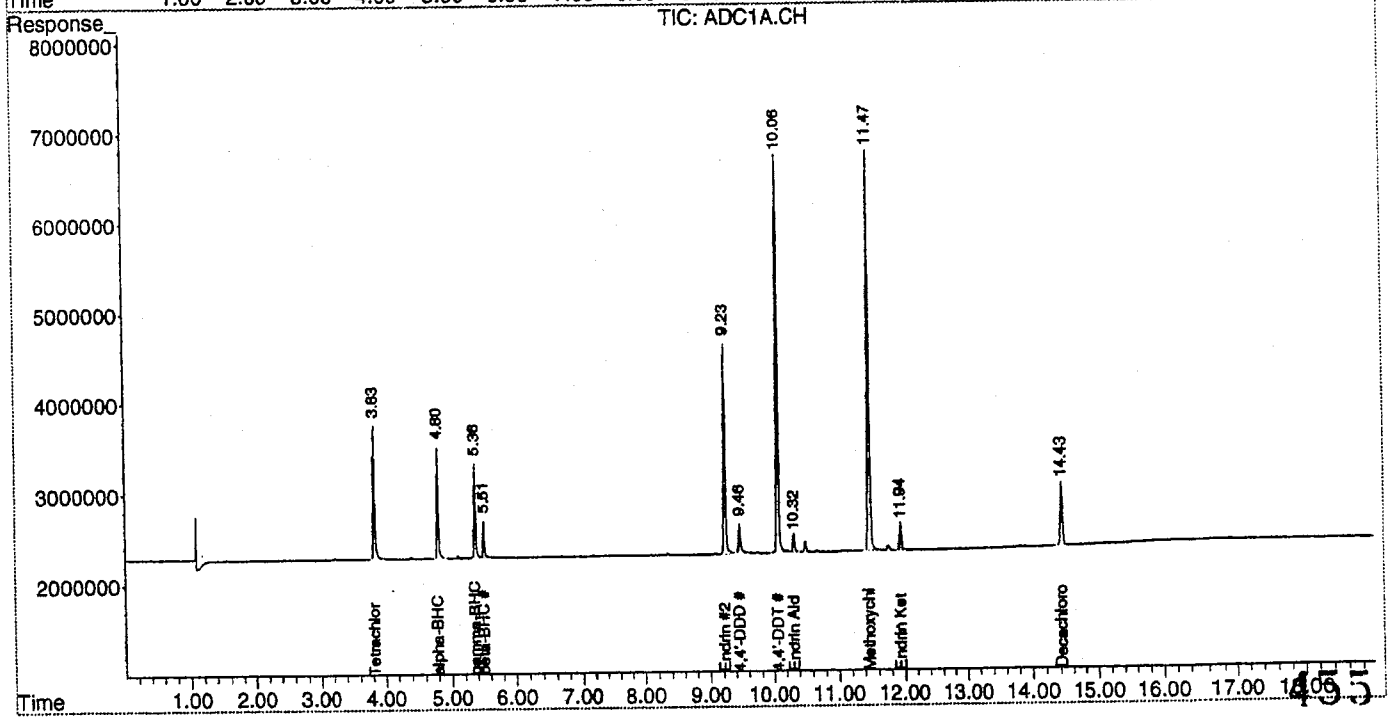
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\049F4901.D\ADC1B.CH Vial: 49
Signal #2 : F:\HPCHEM\1\DATA\PE091102\049F4901.D\ADC1A.CH
Acq On : 12-Sep-2002, 14:49:00 Operator: JDW
Sample : Eval Pest889 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 8:21 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\050F5001.D\ADC1B.CH Vial: 50
Signal #2 : F:\HPCHEM\1\DATA\PE091102\050F5001.D\ADC1A.CH
Acq On : 12-Sep-2002, 15:10:57 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 08:23:55 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.86	3.83	13869422	27787344	21.231	20.393	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					106.16%	101.96%	
22)	SR	Decachlorobiphen	13.52	14.43	19069615	32229787	45.757	41.869	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					228.78%#	209.34%#	
		Target Compounds							
2)		alpha-BHC	4.71	4.80	12528256	21598802	10.635	10.371	
3)	M	gamma-BHC (Linda	5.21	5.37	11189000	19249873	10.941	10.640	
4)	M	Heptachlor	5.95	6.05	9922631	13512862	10.146	15.396	#
5)	M	Aldrin	6.42	6.55	10463621	18139653	10.578	10.578	
6)		beta-BHC	5.34	5.51	4081558	6995994	10.781	10.736	
7)		delta-BHC	5.62	5.98	10846229	18167654	10.960	11.252	
8)		Heptachlor Epoxi	7.35	7.46	9136008	15960591	10.979	10.946	
9)		Endosulfan I	8.01	8.14	8918888	15021259	9.909	10.701	
10)		gamma-Chlordane	7.55	7.77	9821219	16723534	11.331	11.106	
11)		alpha-Chlordane	7.77	8.03	8499610	15154172	10.785	10.894	
12)		4,4'-DDE	7.90	8.35	16149399	30966408	22.208	21.692	
13)	M	Dieldrin	8.45	8.65	16836619	31057897	21.279	20.982	
14)	M	Endrin	8.88	9.23	10958419	19891582	18.947	18.574	
15)		Endosulfan II	9.30	9.65	13790654	25466936	22.214	21.967	
16)		4,4'-DDD	9.00	9.46	13932590	25799234	23.173	24.525	
17)	M	4,4'-DDT	9.53	10.07	10588895	18224017	17.186	19.355	
18)		Endrin Aldehyde	10.10	10.32	10635001	20222755	22.935	23.076	
19)		Endosulfan Sulfa	10.95	10.87	11580771	23449079	21.021	22.127	
20)		Methoxychlor	10.48	11.47	21126321	38276950	86.087	96.282	
21)		Endrin Ketone	11.50	11.94	14850412	28915739	22.805	22.384	

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 050F5001.D
Date Acquired 12-Sep-2002, 15:10:57

Column #1

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation	
Tetrachloro-m-xylene (S)	20	21.23	6.2	
alpha-BHC	10	10.63	6.3	
gamma-BHC (Lindane)	10	10.94	9.4	
Heptachlor	10	10.15	1.5	
Aldrin	10	10.58	5.8	
beta-BHC	10	10.78	7.8	
delta-BHC	10	10.96	9.6	
Heptachlor Epoxide	10	10.98	9.8	
Endosulfan I	10	9.91	0.9	
gamma-Chlordane	10	11.33	13.3	
alpha-Chlordane	10	10.79	7.9	
4,4'-DDE	20	22.21	11.0	
Dieldrin	20	21.28	6.4	
Endrin	20	18.95	5.3	
Endosulfan II	20	22.21	11.1	
4,4'-DDD	20	23.17	15.9	#
4,4'-DDT	20	17.19	14.1	
Endrin Aldehyde	20	22.94	14.7	
Endosulfan Sulfate	20	21.02	5.1	
Methoxychlor	100	86.09	13.9	
Endrin Ketone	20	22.81	14.0	
Decachlorobiphenyl (S)	40	45.76	14.4	
Average Percent Difference of All Compounds			9.28	

(#) = Out of Range

457

Custom Report - 10 & 20 ng/ml CCV Evaluation Report

Sample Name 10/20 ng/ml 8081A CCV Pest888

Data File Path F:\HPCHEM\1\DATA\PE091102\
Data File Name 050F5001.D
Date Acquired 12-Sep-2002, 15:10:57

Column #2

Compound Name	Amount (ng/ml)	Calc. Amount (ng/ml)	% Deviation	
Tetrachloro-m-xylene (S)	20	20.39	2.0	
alpha-BHC	10	10.37	3.7	
gamma-BHC (Lindane)	10	10.64	6.4	
Heptachlor	10	15.40	54.0	#
Aldrin	10	10.58	5.8	
beta-BHC	10	10.74	7.4	
delta-BHC	10	11.25	12.5	
Heptachlor Epoxide	10	10.95	9.5	
Endosulfan I	10	10.70	7.0	
gamma-Chlordane	10	11.11	11.1	
alpha-Chlordane	10	10.89	8.9	
4,4'-DDE	20	21.69	8.5	
Dieldrin	20	20.98	4.9	
Endrin	20	18.57	7.1	
Endosulfan II	20	21.97	9.8	
4,4'-DDD	20	24.52	22.6	#
4,4'-DDT	20	19.36	3.2	
Endrin Aldehyde	20	23.08	15.4	#
Endosulfan Sulfate	20	22.13	10.6	
Methoxychlor	100	96.28	3.7	
Endrin Ketone	20	22.38	11.9	
Decachlorobiphenyl (S)	40	41.87	4.7	
Average Percent Difference of All Compounds			10.49	

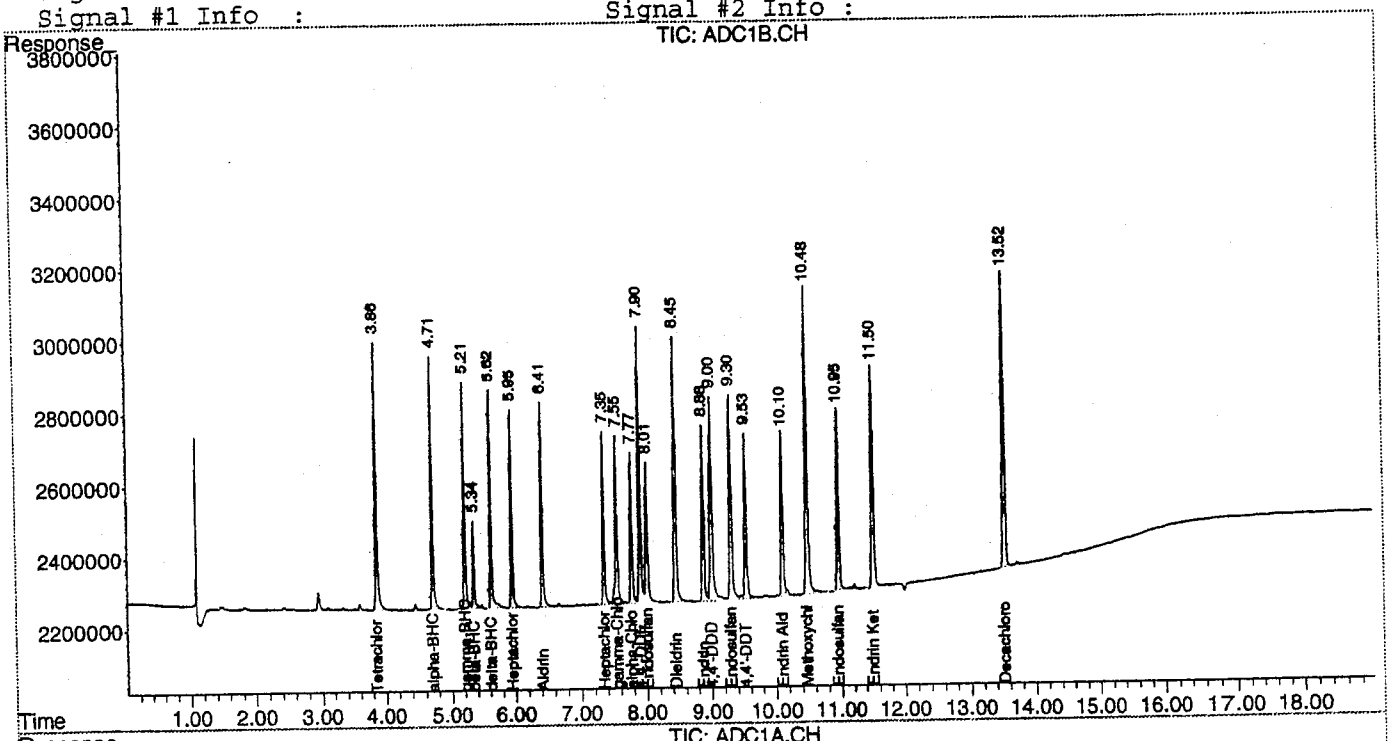
(#) = Out of Range

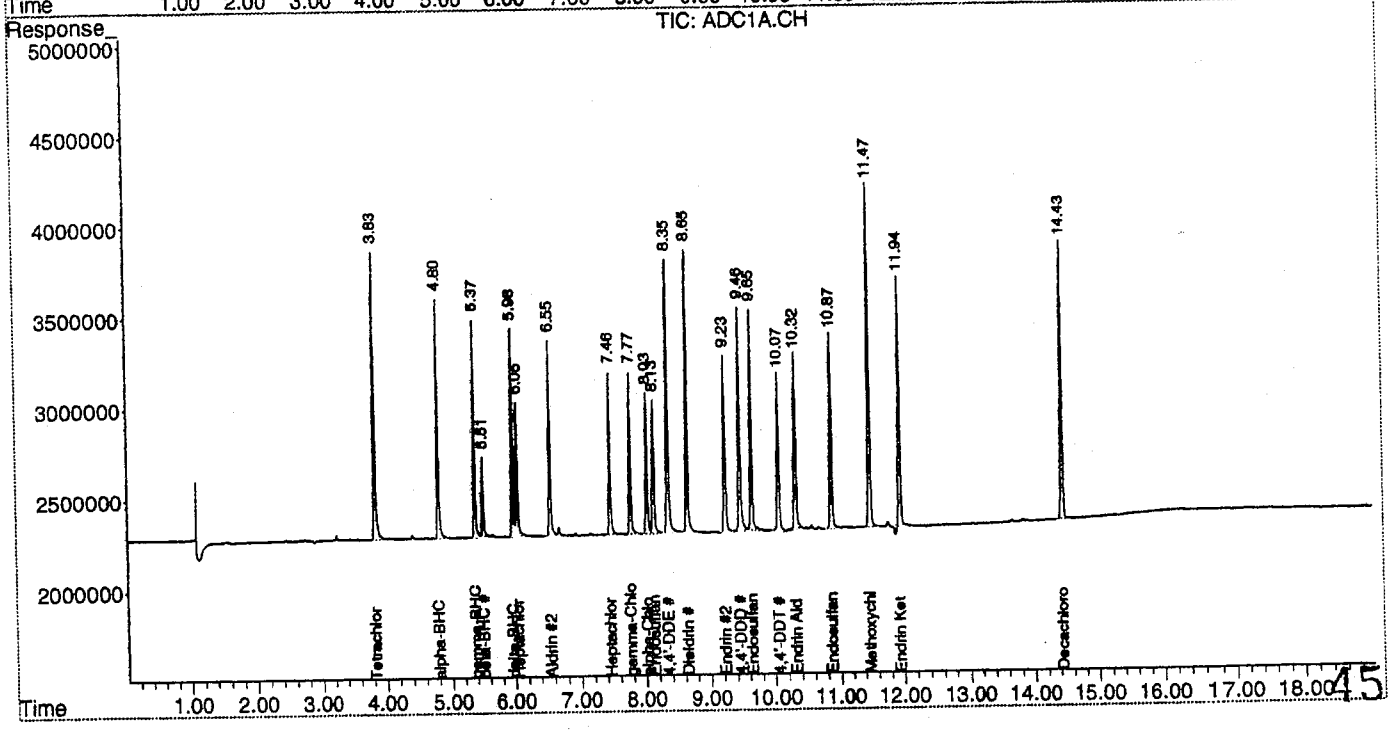
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\050F5001.D\ADC1B.CH Vial: 50
Signal #2 : F:\HPCHEM\1\DATA\PE091102\050F5001.D\ADC1A.CH
Acq On : 12-Sep-2002, 15:10:57 Operator: JDW
Sample : 10/20 ng/ml 8081A CCV Pest888 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 8:24 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1B.CH Vial: 51
Signal #2 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1A.CH
Acq On : 12-Sep-2002, 15:32:53 Operator: JDW
Sample : 15 ng/ml 8081A Plus Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 08:29:57 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	SR Tetrachloro-m-xy	3.86	3.84	13412257	26733691	20.176	20.522
	Spiked Amount 20.000 Range 60 - 150 Recovery =					100.88%	102.61%
1)	SR Decachlorobiphen	13.53	14.44	8934823	14550144	19.784	19.150
	Spiked Amount 20.000 Range 60 - 150 Recovery =					98.92%	95.75%
	Target Compounds						
2)	Hexachloroethane	1.53	1.46	23519038	40311511	15.268	14.656
3)	Hexachlorobenzen	4.46	4.57	14580497	20719122	14.081	14.637
4)	Hexachlorobutadi	1.82	1.72	31030935	56850637	14.635	13.958
5)	Oxychlordane	7.19	7.31	9972031	17673098	14.437	14.515
6)	cis-Nonachlor	8.95	9.39	11638831	21716170	14.377	14.212
7)	trans-Nonachlor	7.75	7.93	10682930	19872625	14.067	14.477
8)	2,4'-DDE	7.34	7.79	7247972	12970850	15.000	15.219
9)	2,4'-DDD	8.22	8.74	6396830	11512243	15.911	15.706
.0)	2,4'-DDT	8.69	9.32	6216168	10199534	13.408	14.889

460

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1B.CH Vial: 51
Signal #2 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1A.CH
Acq On : 12-Sep-2002, 15:32:53 Operator: JDW
Sample : 15 ng/ml 8081A Plus Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E

Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	SR	Tetrachloro-m-xylene (S)	20.000	20.176	-0.9	0	0.00
2		Hexachloroethane	15.000	15.268	-1.8	0	0.00
3		Hexachlorobenzene	15.000	14.081	6.1	0	0.00
4		Hexachlorobutadiene	15.000	14.635	2.4	0	0.00
5		Oxychlordane	15.000	14.437	3.8	0	0.00
6		cis-Nonachlor	15.000	14.377	4.2	0	0.00
7		trans-Nonachlor	15.000	14.067	6.2	0	0.00
8		2,4'-DDE	15.000	15.000	0.0	0	0.00
9		2,4'-DDD	15.000	15.911	-6.1	0	0.00
10		2,4'-DDT	15.000	13.408	10.6	0	0.00
11	SR	Decachlorobiphenyl (S)	20.000	19.784	1.1	0	0.00

Signal #2

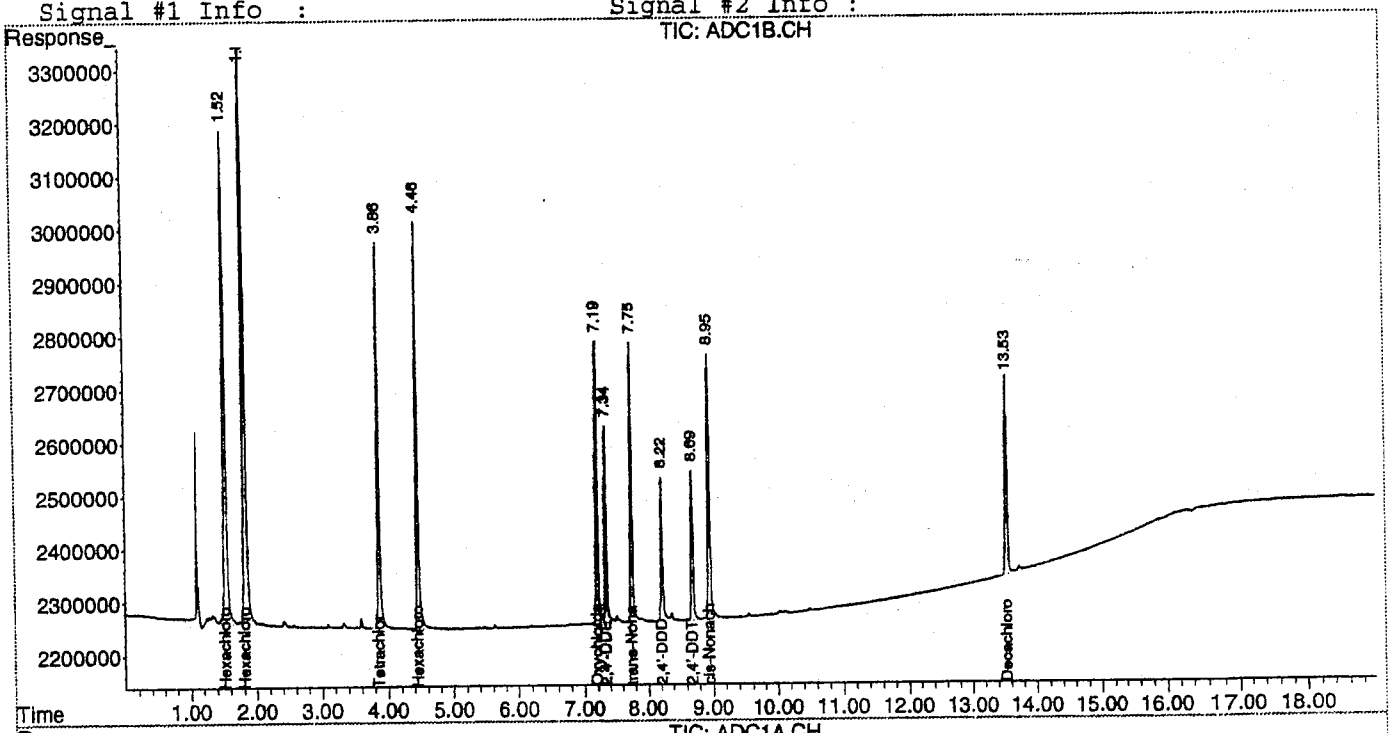
1	SR	Tetrachloro-m-xylene (S)	20.000	20.522	-2.6	0	0.00
2		Hexachloroethane	15.000	14.656	2.3	0	0.00
3		Hexachlorobenzene	15.000	14.637	2.4	0	0.00
4		Hexachlorobutadiene	15.000	13.958	6.9	0	0.00
5		Oxychlordane	15.000	14.515	3.2	0	0.00
6		cis-Nonachlor	15.000	14.212	5.3	0	0.00
7		trans-Nonachlor	15.000	14.477	3.5	0	0.00
8		2,4'-DDE	15.000	15.219	-1.5	0	0.00
9		2,4'-DDD	15.000	15.706	-4.7	0	0.00
10		2,4'-DDT	15.000	14.889	0.7	0	0.00
11	SR	Decachlorobiphenyl (S)	20.000	19.150	4.3	0	0.00

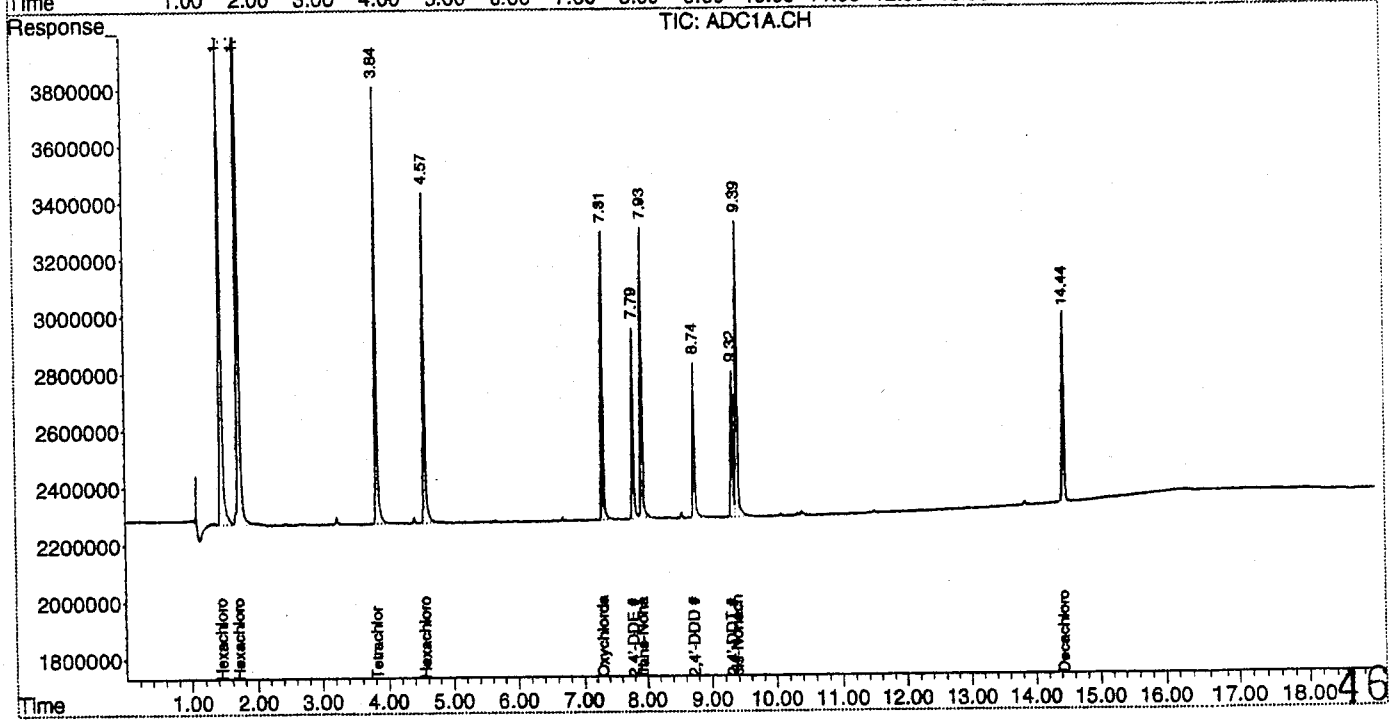
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1B.CH Vial: 51
Signal #2 : F:\HPCHEM\1\DATA\PE091102\051F5101.D\ADC1A.CH
Acq On : 12-Sep-2002, 15:32:53 Operator: JDW
Sample : 15 ng/ml 8081A Plus Pest903 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 13 8:30 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





METHOD BLANK

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\004F0401.D\ADC1B.CH Vial: 4
Signal #2 : F:\HPCHEM\1\DATA\PE082902\004F0401.D\ADC1A.CH
Acq On : 29-Aug-2002, 17:26:14 Operator: JDW
Sample : mb pw0112 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:30:47 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

NJ

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	4.11	4.06	5827258	14904763	11.370	11.024
		Spiked Amount 20.000 Range 60 - 150 Recovery =					56.85%#	55.12%#
2)	SR	Decachlorobiphen	13.92	14.79	4029778	8910924	13.852	12.848
		Spiked Amount 20.000 Range 60 - 150 Recovery =					69.26%	64.24%
		Target Compounds						
2)		alpha-BHC	0.00	0.00	0	0	N.D.	N.D.
3)	M	gamma-BHC (Linda	0.00	0.00	0	0	N.D.	N.D.
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.
6)		beta-BHC	0.00	0.00	0	0	N.D.	N.D.
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.
10)		gamma-Chlordane	0.00	0.00	0	0	N.D.	N.D.
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.
12)		4,4'-DDE	0.00	0.00	0	0	N.D.	N.D.
13)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.
14)	M	Endrin	0.00	0.00	0	0	N.D.	N.D.
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.
16)		4,4'-DDD	0.00	0.00	0	0	N.D.	N.D.
17)	M	4,4'-DDT	0.00	0.00	0	0	N.D.	N.D.
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D.	N.D.
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.
20)		Methoxychlor	0.00	0.00	0	0	N.D.	N.D.
21)		Endrin Ketone	0.00	0.00	0	0	N.D.	N.D.

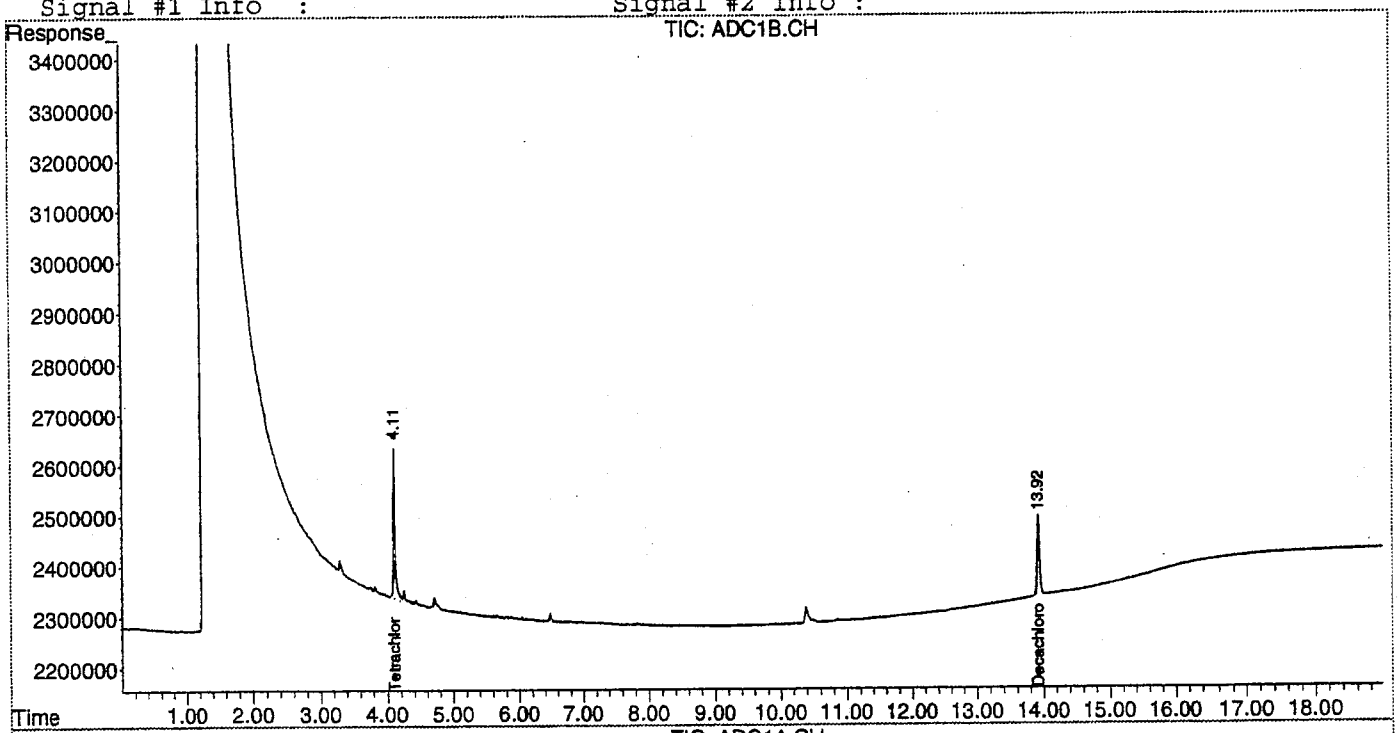
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

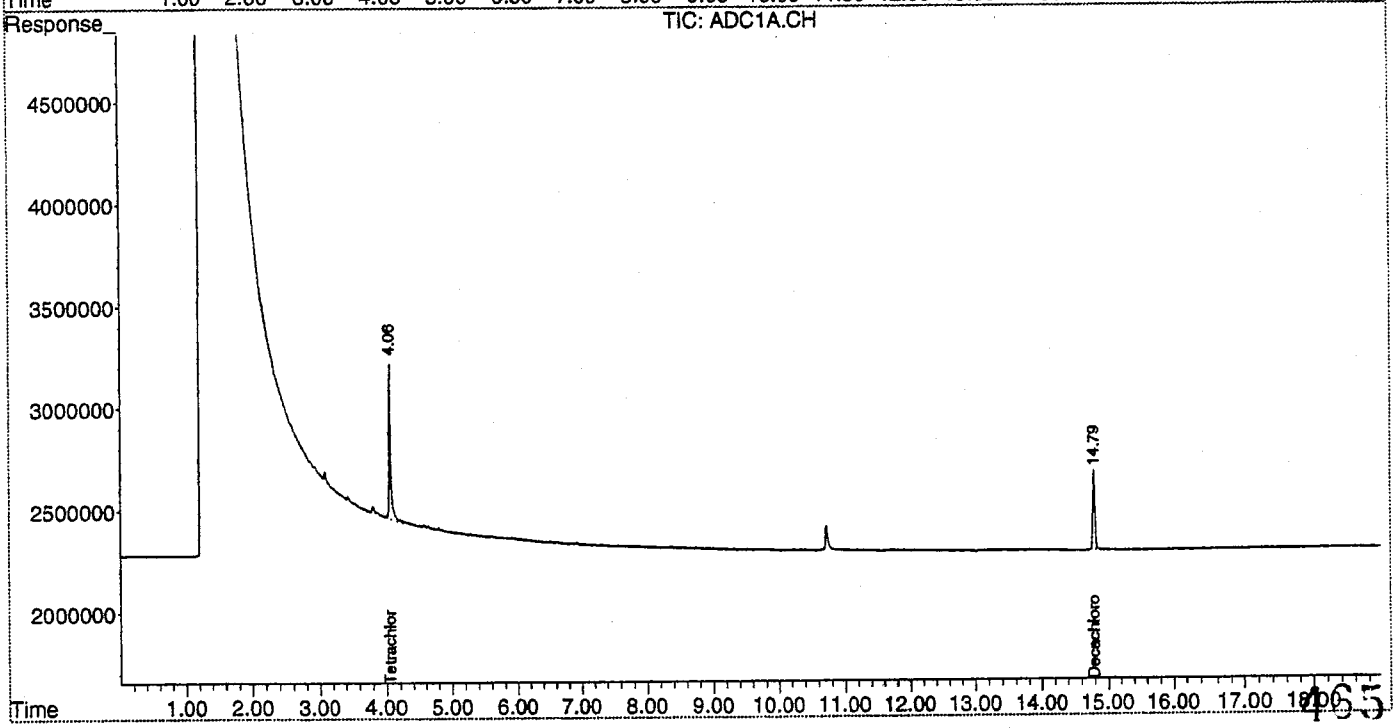
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\004F0401.D\ADC1B.CH Vial: 4
Signal #2 : F:\HPCHEM\1\DATA\PE082902\004F0401.D\ADC1A.CH
Acq On : 29-Aug-2002, 17:26:14 Operator: JDW
Sample : mb pw0112 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:29 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1B.CH Vial: 18
Signal #2 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:26:46 Operator: JDW
Sample : mb pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:50:44 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

ND

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.87	3.84	14504615	28288968	22.203	20.761	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					111.02%	103.80%	
2)	SR	Decachlorobiphen	13.54	14.44	10706901	18165006	25.691	23.598	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					128.45%	117.99%	
		Target Compounds							
2)		alpha-BHC	0.00	0.00	0	0	N.D.	N.D.	
3)	M	gamma-BHC (Linda	0.00	0.00	0	0	N.D.	N.D.	
4)	M	Heptachlor	0.00	0.00	0	0	N.D.	N.D.	
5)	M	Aldrin	0.00	0.00	0	0	N.D.	N.D.	
6)		beta-BHC	0.00	0.00	0	0	N.D.	N.D.	
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.	
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D.	N.D.	
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.	
10)		gamma-Chlordane	7.52f	0.00	265634	0	0.306	N.D.	#
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.	
12)		4,4'-DDE	0.00	0.00	0	0	N.D.	N.D.	
13)	M	Dieldrin	0.00	0.00	0	0	N.D.	N.D.	
14)	M	Endrin	0.00	0.00	0	0	N.D.	N.D.	
15)		Endosulfan II	0.00	0.00	0	0	N.D.	N.D.	
16)		4,4'-DDD	0.00	0.00	0	0	N.D.	N.D.	
17)	M	4,4'-DDT	0.00	0.00	0	0	N.D.	N.D.	
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D.	N.D.	
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
20)		Methoxychlor	0.00	0.00	0	0	N.D.	N.D.	
21)		Endrin Ketone	0.00	0.00	0	0	N.D.	N.D.	

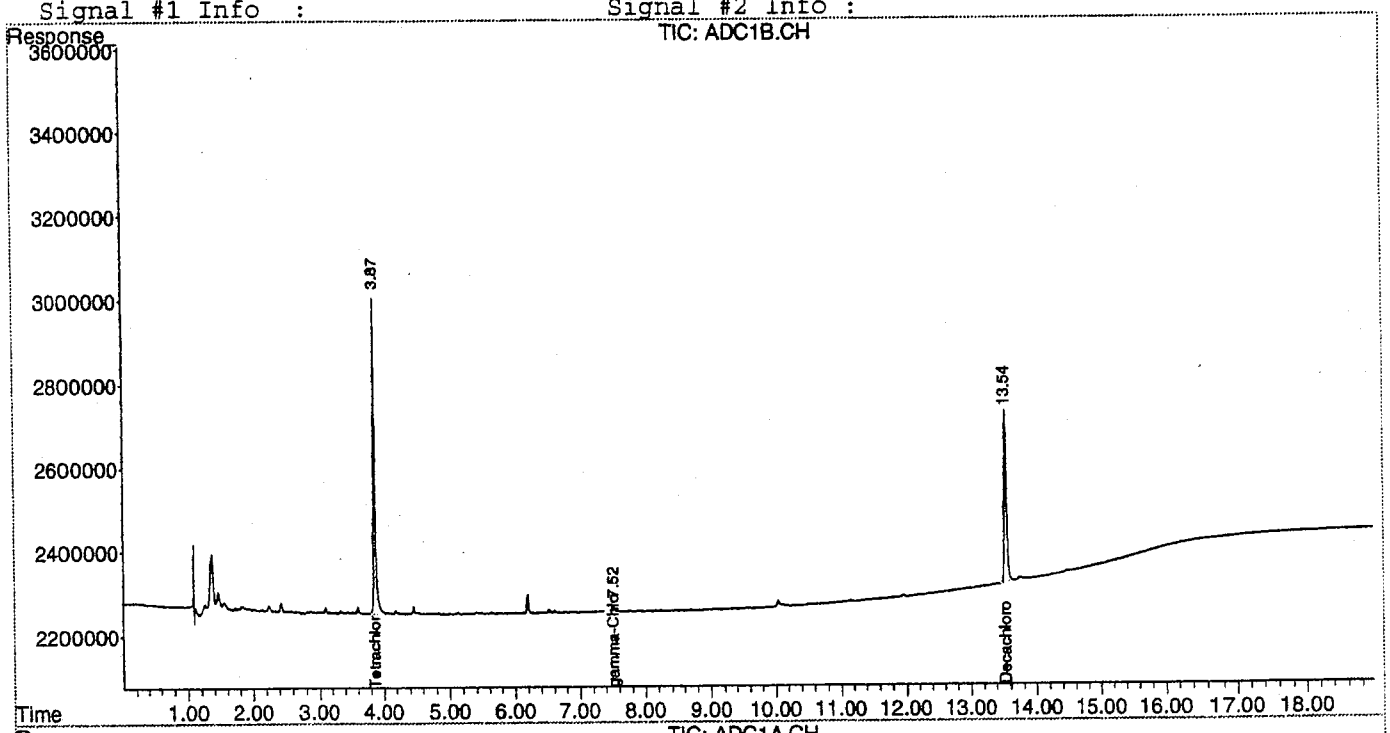
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

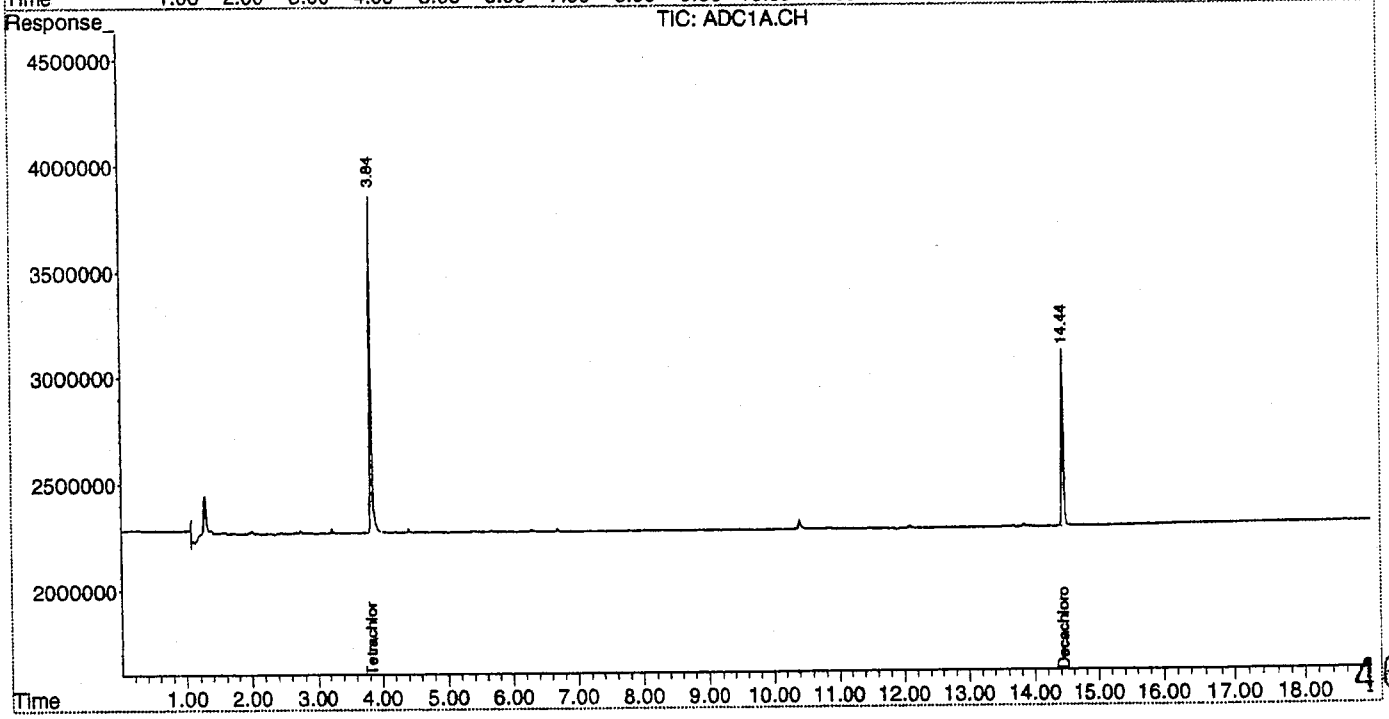
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1B.CH Vial: 18
Signal #2 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:26:46 Operator: JDW
Sample : mb pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:50 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





467

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1B.CH Vial: 18
Signal #2 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:26:46 Operator: JDW
Sample : mb pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:06:05 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

ND

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
System Monitoring Compounds							
1) SR Tetrachloro-m-xy	3.87	3.84	14487177	28288968	21.793	21.716	
Spiked Amount 20.000 Range 60 - 150 Recovery =					108.97%	108.58%	
11) SR Decachlorobiphen	13.54	14.44	10585758	18165006	23.440	23.907	
Spiked Amount 20.000 Range 60 - 150 Recovery =					117.20%	119.54%	
Target Compounds							
2) Hexachloroethane	1.56f	0.00	994262	0	0.645	N.D.	#
3) Hexachlorobenzen	4.46	0.00	294453	0	0.284	N.D.	#
4) Hexachlorobutadi	1.82	0.00	150117	0	0.071	N.D.	#
5) Oxychlordane	0.00	0.00	0	0	N.D.	N.D.	
6) cis-Nonachlor	0.00	0.00	0	0	N.D.	N.D.	
7) trans-Nonachlor	0.00	0.00	0	0	N.D.	N.D.	
8) 2,4'-DDE	0.00	0.00	0	0	N.D.	N.D.	
9) 2,4'-DDD	0.00	0.00	0	0	N.D.	N.D.	
10) 2,4'-DDT	0.00	0.00	0	0	N.D.	N.D.	

468

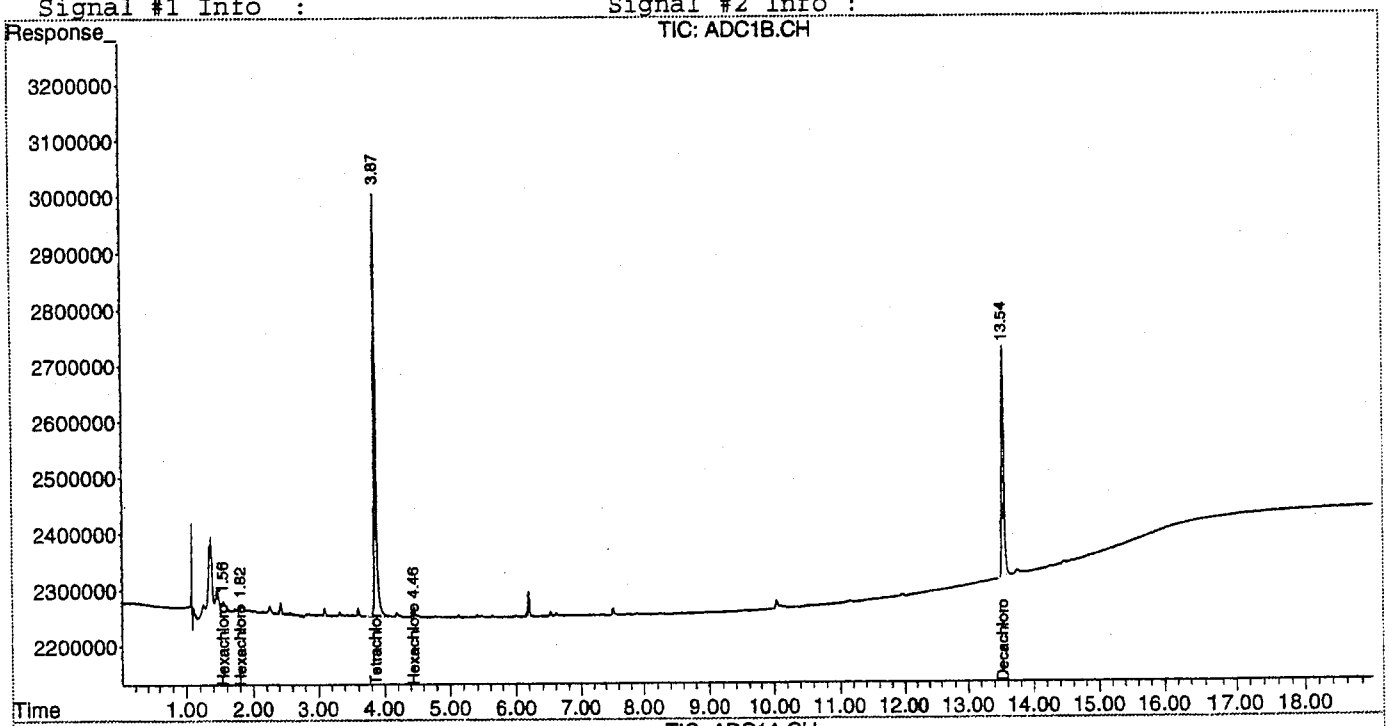
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

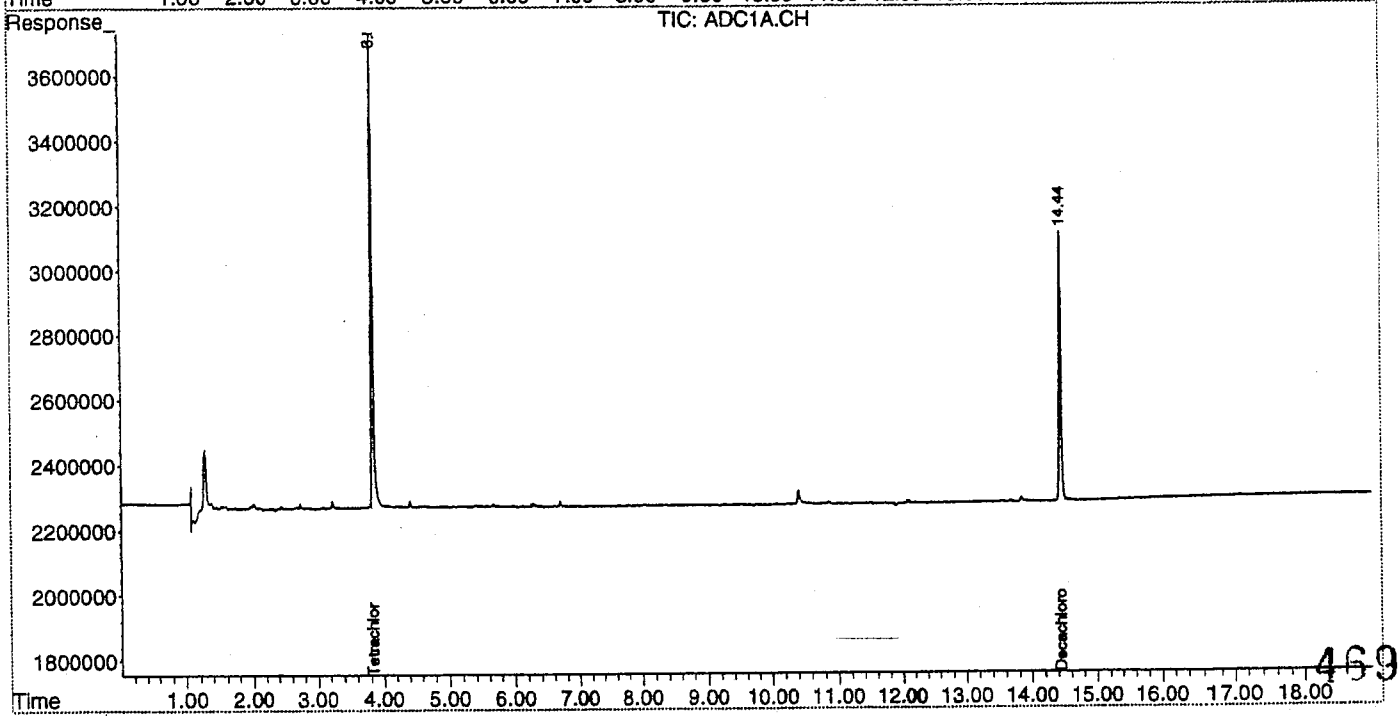
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1B.CH Vial: 18
Signal #2 : F:\HPCHEM\1\DATA\PE091102\018F1801.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:26:46 Operator: JDW
Sample : mb pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:06 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





BLANK SPIKE

Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\005F0501.D\ADC1B.CH Vial: 5
Signal #2 : F:\HPCHEM\1\DATA\PE082902\005F0501.D\ADC1A.CH
Acq On : 29-Aug-2002, 17:48:15 Operator: JDW
Sample : bs pw0112 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:31:42 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

ok

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	4.11	4.06	7274326	19136625	14.193	14.154
		Spiked Amount 20.000 Range 60 - 150 Recovery =					70.97%	70.77%
22)	SR	Decachlorobiphen	13.91	14.79	5111895	11234647	17.571	16.198
		Spiked Amount 20.000 Range 60 - 150 Recovery =					87.86%	80.99%
		Target Compounds						
2)		alpha-BHC	0.00	0.00	0	0	N.D.	N.D.
3)	M	gamma-BHC (Linda	5.48	5.61	14450590	34344233	19.515	19.596
4)	M	Heptachlor	6.23	6.30	14452888	21105600	19.846	20.053
5)	M	Aldrin	6.70	6.81	13260831	30769525	18.127	18.413
6)		beta-BHC	0.00	0.00	0	0	N.D.	N.D.
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D. d	N.D. d
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.
10)		gamma-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.
12)		4,4'-DDE	0.00	0.00	0	0	N.D. d	N.D. d
13)	M	Dieldrin	8.81	8.97	26333312	63377923	45.751	44.505
14)	M	Endrin	9.25	9.56	21192559	42953880	51.214	43.065
15)		Endosulfan II	0.00	0.00	0	0	N.D. d	N.D. d
16)		4,4'-DDD	0.00	0.00	0	0	N.D. d	N.D. d
17)	M	4,4'-DDT	9.89	10.39	18258503	37966420	41.105	54.613
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D. d	N.D. d
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.
20)		Methoxychlor	0.00	0.00	0	0	N.D.	N.D.
21)		Endrin Ketone	0.00	0.00	0	0	N.D. d	N.D. d

471

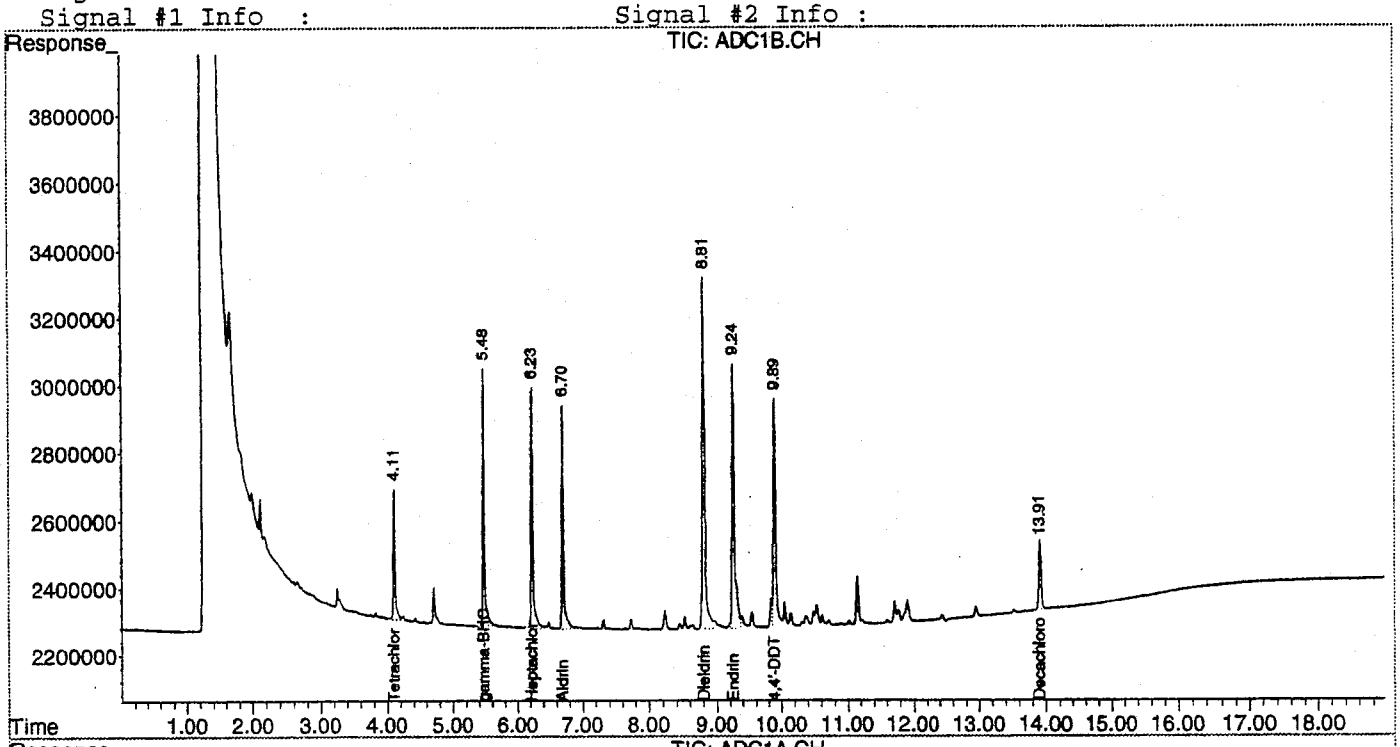
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

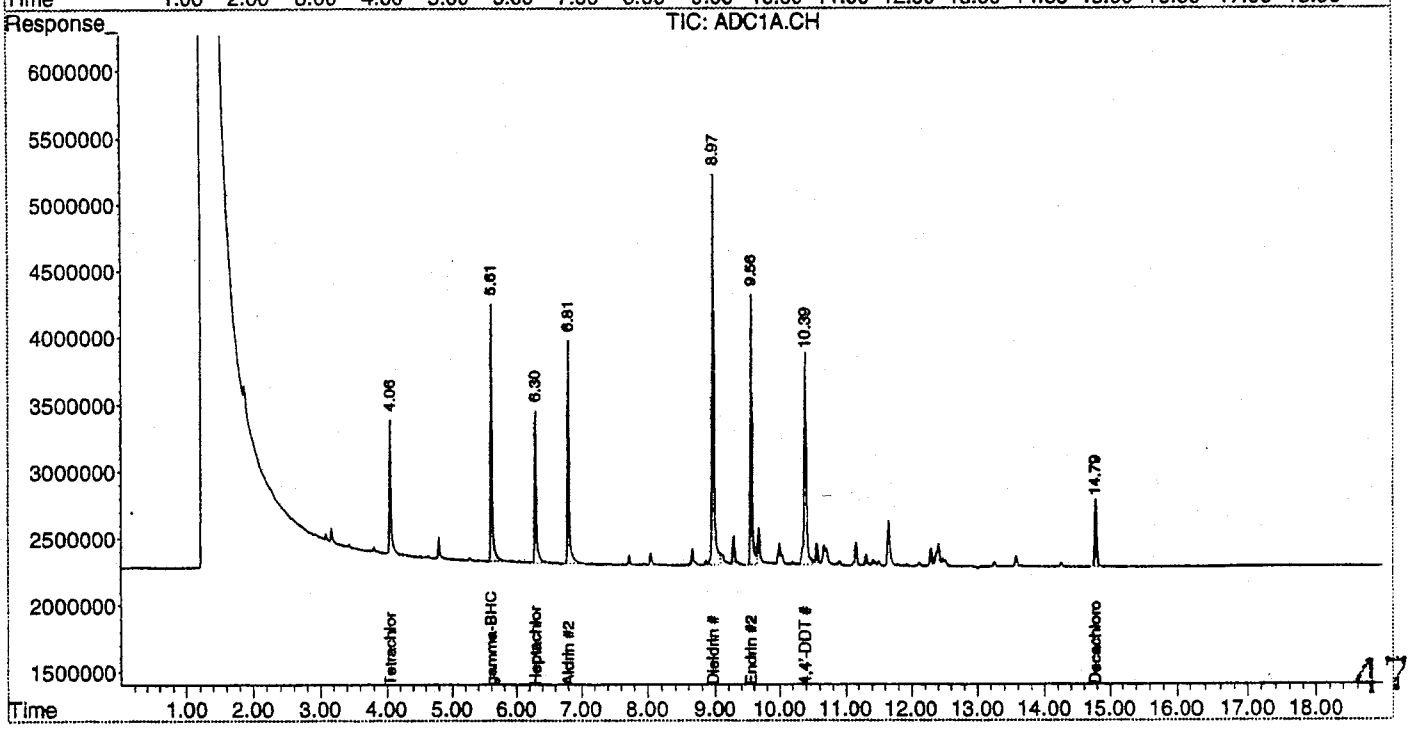
Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\005F0501.D\ADC1B.CH Vial: 5
Signal #2 : F:\HPCHEM\1\DATA\PE082902\005F0501.D\ADC1A.CH
Acq On : 29-Aug-2002, 17:48:15 Operator: JDW
Sample : bs pw0112 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:31 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





472

Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\006F0601.D\ADC1B.CH Vial: 6
Signal #2 : F:\HPCHEM\1\DATA\PE082902\006F0601.D\ADC1A.CH
Acq On : 29-Aug-2002, 18:10:14 Operator: JDW
Sample : bsd pw0112 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:32:26 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

OK

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	4.11	4.06	7521511	19986910	14.676	14.783
Spiked Amount			20.000	Range	60 - 150	Recovery	= 73.38%	73.91%
2)	SR	Decachlorobiphen	13.91	14.79	5020809	11035587	17.258	15.911
Spiked Amount			20.000	Range	60 - 150	Recovery	= 86.29%	79.55%
		Target Compounds						
2)		alpha-BHC	0.00	0.00	0	0	N.D.	N.D.
3)	M	gamma-BHC (Linda	5.48	5.62	13552091	32903254	18.302	18.774
4)	M	Heptachlor	6.23	6.30	14382491	21154948	19.749	20.100
5)	M	Aldrin	6.70	6.81	13311895	31206905	18.197	18.674
6)		beta-BHC	0.00	0.00	0	0	N.D.	N.D.
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D. d	N.D. d
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.
10)		gamma-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.
12)		4,4'-DDE	0.00	0.00	0	0	N.D. d	N.D. d
13)	M	Dieldrin	8.81	8.98	25528398	61775068	44.352	43.379
14)	M	Endrin	9.25	9.57	20714958	42358990	50.059	42.469
15)		Endosulfan II	0.00	0.00	0	0	N.D. d	N.D. d
16)		4,4'-DDD	0.00	0.00	0	0	N.D. d	N.D. d
17)	M	4,4'-DDT	9.89	10.40	17757289	37020663	39.977	53.252
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D. d	N.D. d
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.
20)		Methoxychlor	0.00	0.00	0	0	N.D.	N.D.
21)		Endrin Ketone	0.00	0.00	0	0	N.D. d	N.D. d

473

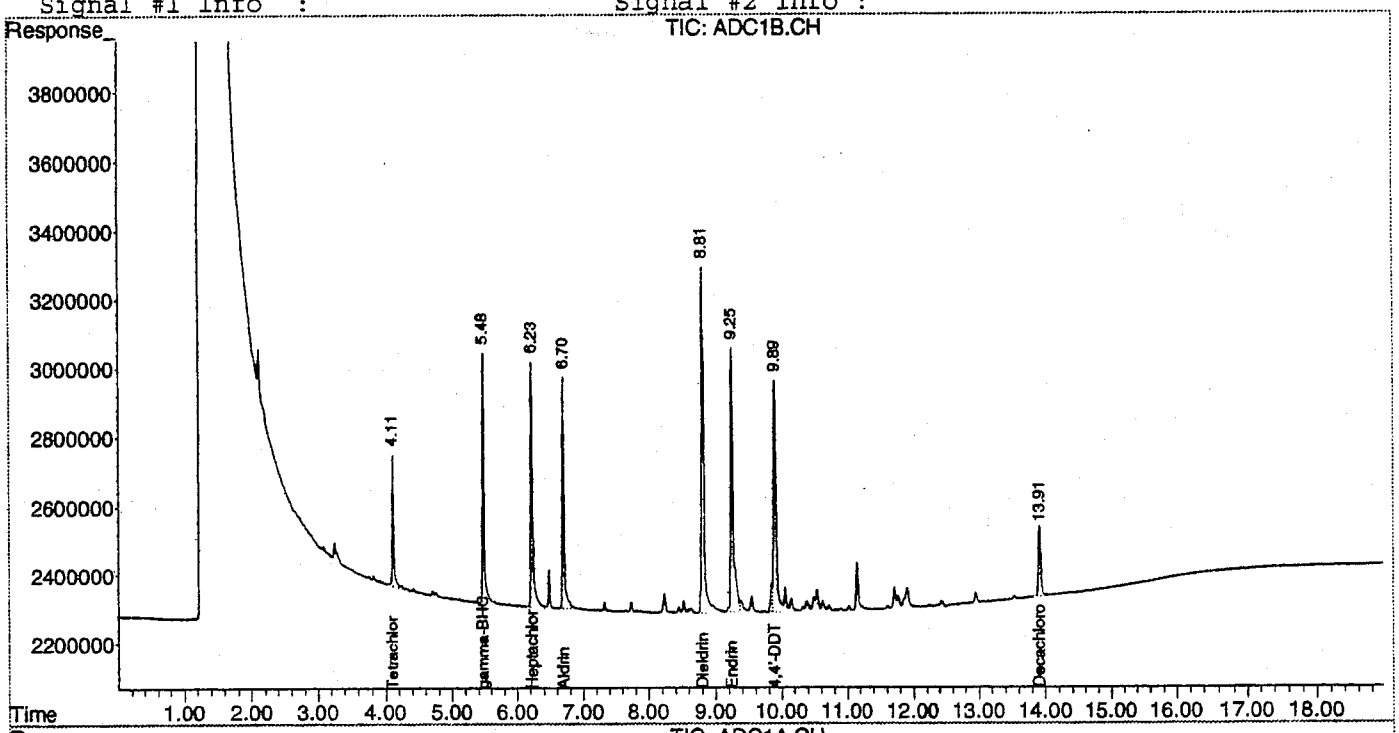
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

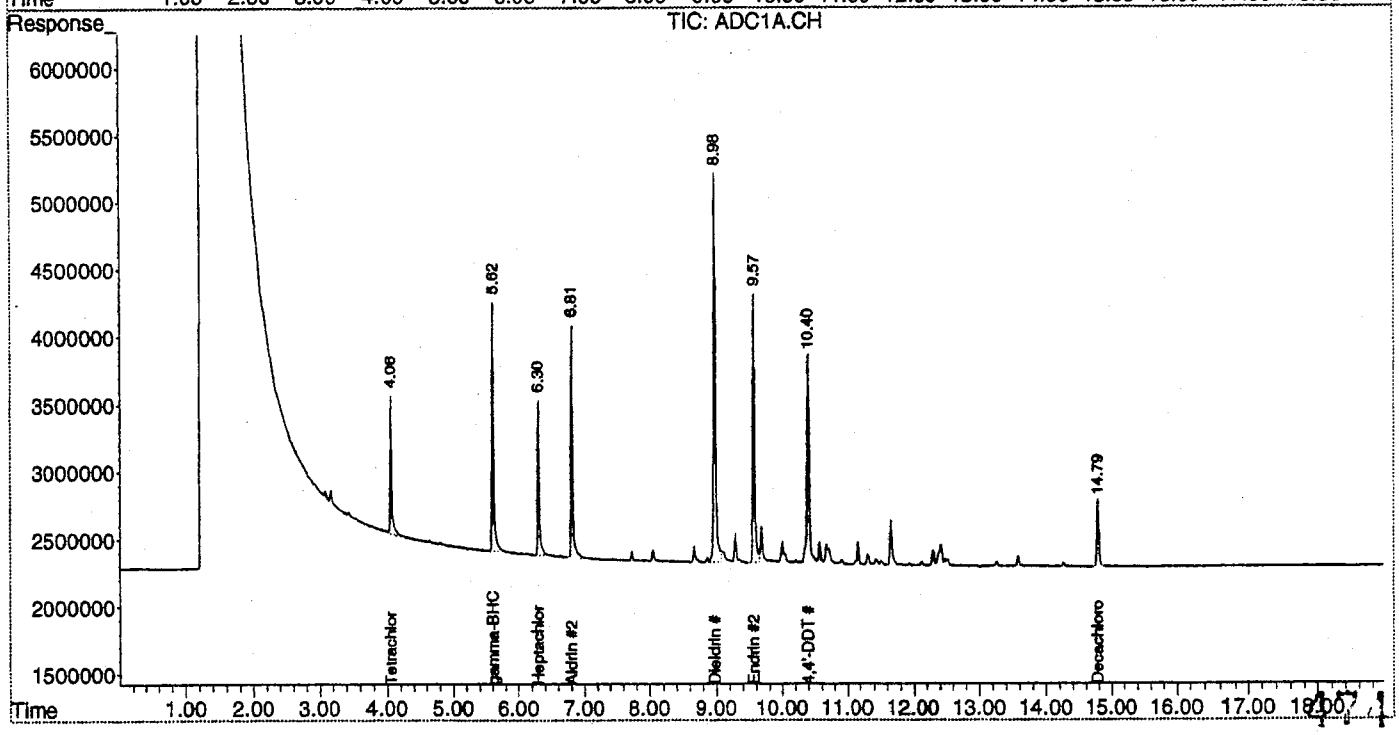
Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE082902\006F0601.D\ADC1B.CH Vial: 6
Signal #2 : F:\HPCHEM\1\DATA\PE082902\006F0601.D\ADC1A.CH
Acq On : 29-Aug-2002, 18:10:14 Operator: JDW
Sample : bsd pw0112 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Aug 30 15:31 2002 Quant Results File: 8081_823.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_823.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Aug 29 11:50:23 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\019F1901.D\ADC1B.CH Vial: 19
Signal #2 : F:\HPCHEM\1\DATA\PE091102\019F1901.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:48:44 Operator: JDW
Sample : bs pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:50:53 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

OK

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	SR Tetrachloro-m-xy	3.87	3.84	14913287	28802273	22.829	21.138
	Spiked Amount 20.000 Range 60 - 150 Recovery =					114.15%	105.69%
22)	SR Decachlorobiphen	13.54	14.45	10813526	18334980	25.947	23.818
	Spiked Amount 20.000 Range 60 - 150 Recovery =					129.74%	119.09%
	Target Compounds						
2)	alpha-BHC	0.00	0.00	0	0	N.D.	N.D.
3) M	gamma-BHC (Linda	5.22	5.39	21699575	39520020	21.218	21.845
4) M	Heptachlor	5.96	6.06	21864029	13436325	22.356	15.309
5) M	Aldrin	6.43	6.57	21022375	36598102	21.252	21.342
6)	beta-BHC	0.00	0.00	0	0	N.D.	N.D.
7)	delta-BHC	0.00	0.00	0	0	N.D.	N.D.
8)	Heptachlor Epoxi	0.00	0.00	0	0	N.D. d	N.D. d
9)	Endosulfan I	0.00	0.00	0	0	N.D.	N.D.
10)	gamma-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
11)	alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.
12)	4,4'-DDE	0.00	0.00	0	0	N.D. d	N.D. d
13) M	Dieldrin	8.47	8.67	38158739	74011297	48.227	50.000
14) M	Endrin	8.90	9.25	26132199	50914687	45.183	47.542
15)	Endosulfan II	0.00	0.00	0	0	N.D. d	N.D. d
16)	4,4'-DDD	0.00	0.00	0	0	N.D. d	N.D. d
17) M	4,4'-DDT	9.55	10.09	26168375	47732260	42.471	50.695
18)	Endrin Aldehyde	0.00	0.00	0	0	N.D. d	N.D. d
19)	Endosulfan Sulfa	0.00	0.00	0	0	N.D. d	N.D. d
20)	Methoxychlor	0.00	0.00	0	0	N.D.	N.D.
21)	Endrin Ketone	0.00	0.00	0	0	N.D. d	N.D. d

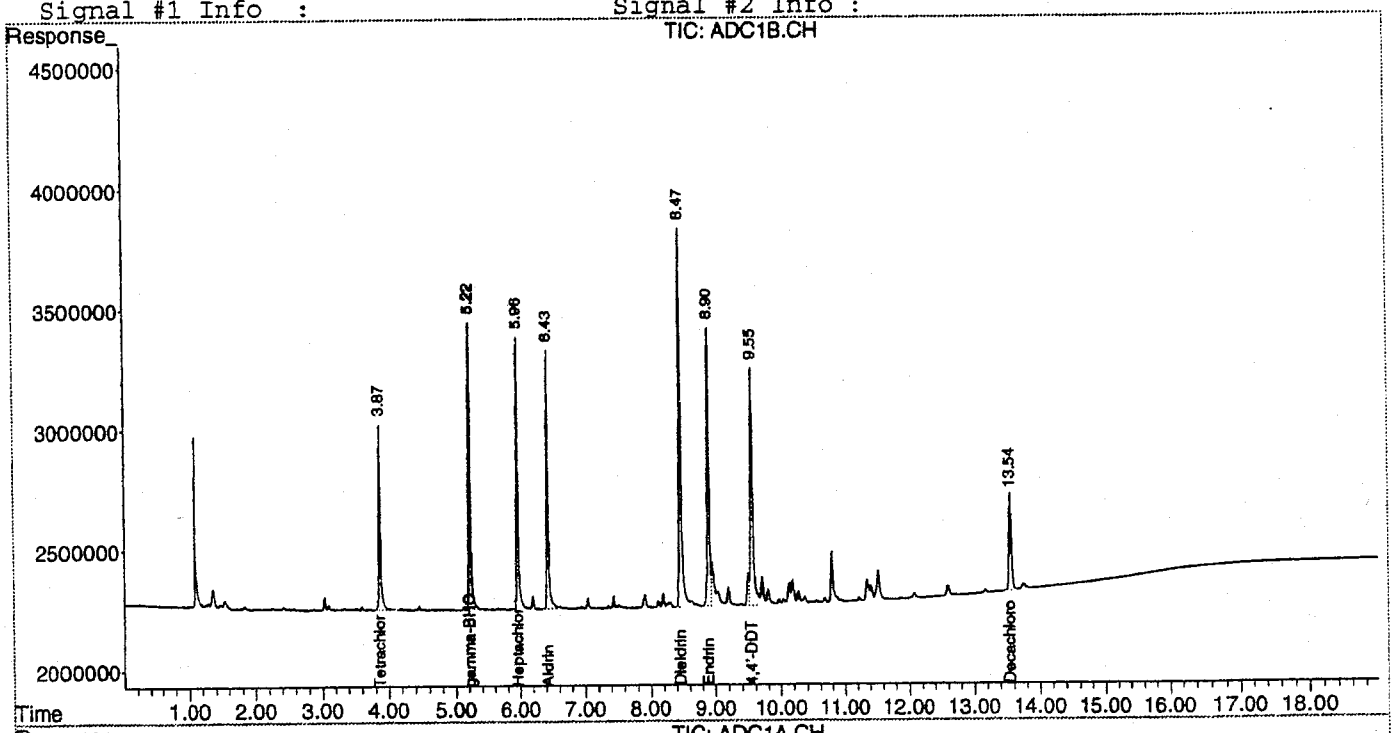
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

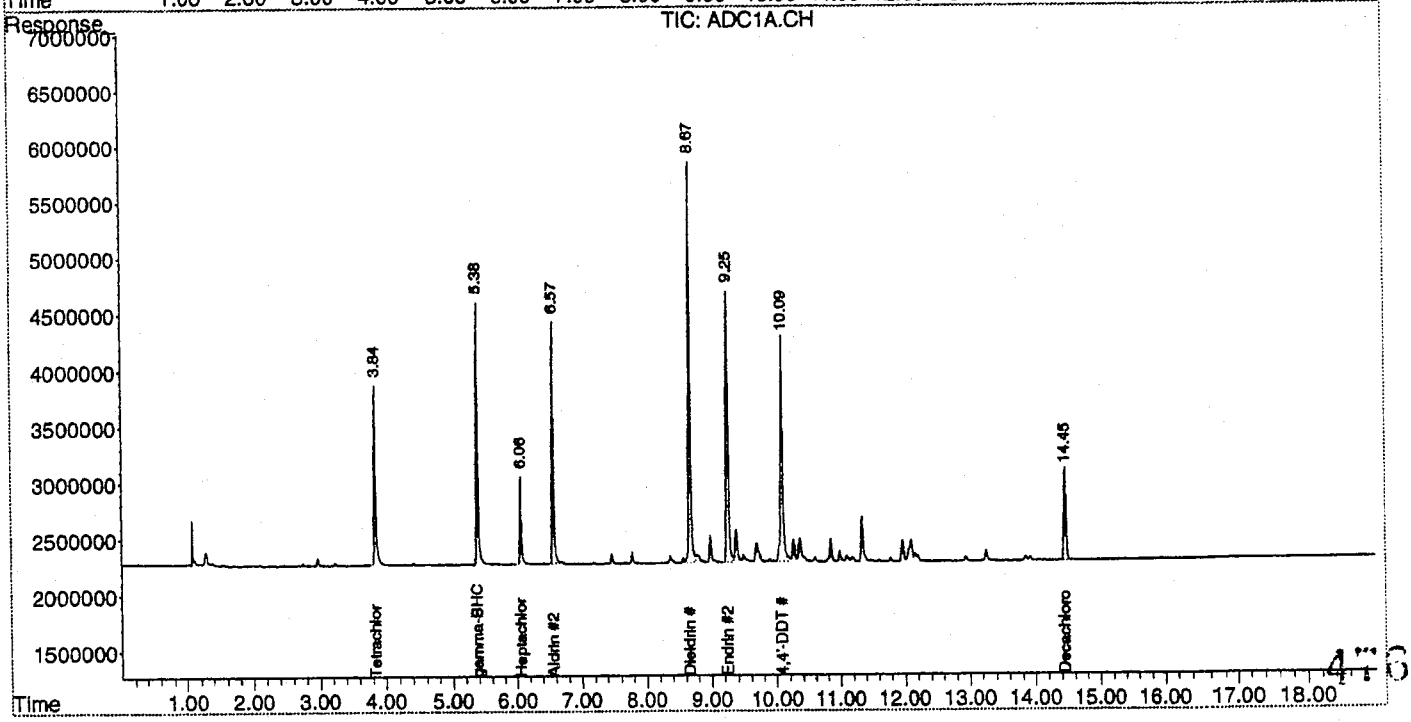
Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\019F1901.D\ADC1B.CH Vial: 19
Signal #2 : F:\HPCHEM\1\DATA\PE091102\019F1901.D\ADC1A.CH
Acq On : 12-Sep-2002, 03:48:44 Operator: JDW
Sample : bs pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:51 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\020F2001.D\ADC1B.CH Vial: 20
Signal #2 : F:\HPCHEM\1\DATA\PE091102\020F2001.D\ADC1A.CH
Acq On : 12-Sep-2002, 04:10:35 Operator: JDW
Sample : bsd pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:51:23 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

OK

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.86	3.83	14713974	28936584	22.524	21.237
Spiked Amount		20.000 Range	60 - 150	Recovery	=		112.62%	106.19%
22)	SR	Decachlorobiphen	13.53	14.43	10898963	18490269	26.152	24.020
Spiked Amount		20.000 Range	60 - 150	Recovery	=		130.76%	120.10%
		Target Compounds						
2)		alpha-BHC	0.00	0.00	0	0	N.D.	N.D.
3)	M	gamma-BHC (Linda	5.21	5.37	22361987	40411742	21.866	22.337
4)	M	Heptachlor	5.95	6.05	22289961	13529526	22.792	15.415
5)	M	Aldrin	6.42	6.55	21294280	37322333	21.527	21.765
6)		beta-BHC	0.00	0.00	0	0	N.D.	N.D.
7)		delta-BHC	0.00	0.00	0	0	N.D.	N.D.
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D. d	N.D. d
9)		Endosulfan I	0.00	0.00	0	0	N.D.	N.D.
10)		gamma-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
11)		alpha-Chlordane	0.00	0.00	0	0	N.D.	N.D.
12)		4,4'-DDE	0.00	0.00	0	0	N.D. d	N.D. d
13)	M	Dieldrin	8.45	8.65	38819332	75660901	49.062	51.115
14)	M	Endrin	8.88	9.23	26639259	52098890	46.060	48.647
15)		Endosulfan II	0.00	0.00	0	0	N.D. d	N.D. d
16)		4,4'-DDD	0.00	0.00	0	0	N.D. d	N.D. d
17)	M	4,4'-DDT	9.54	10.07	26601811	48870486	43.175	51.903
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D. d	N.D. d
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D. d	N.D. d
20)		Methoxychlor	0.00	0.00	0	0	N.D. d	N.D. d
21)		Endrin Ketone	0.00	0.00	0	0	N.D. d	N.D. d

477

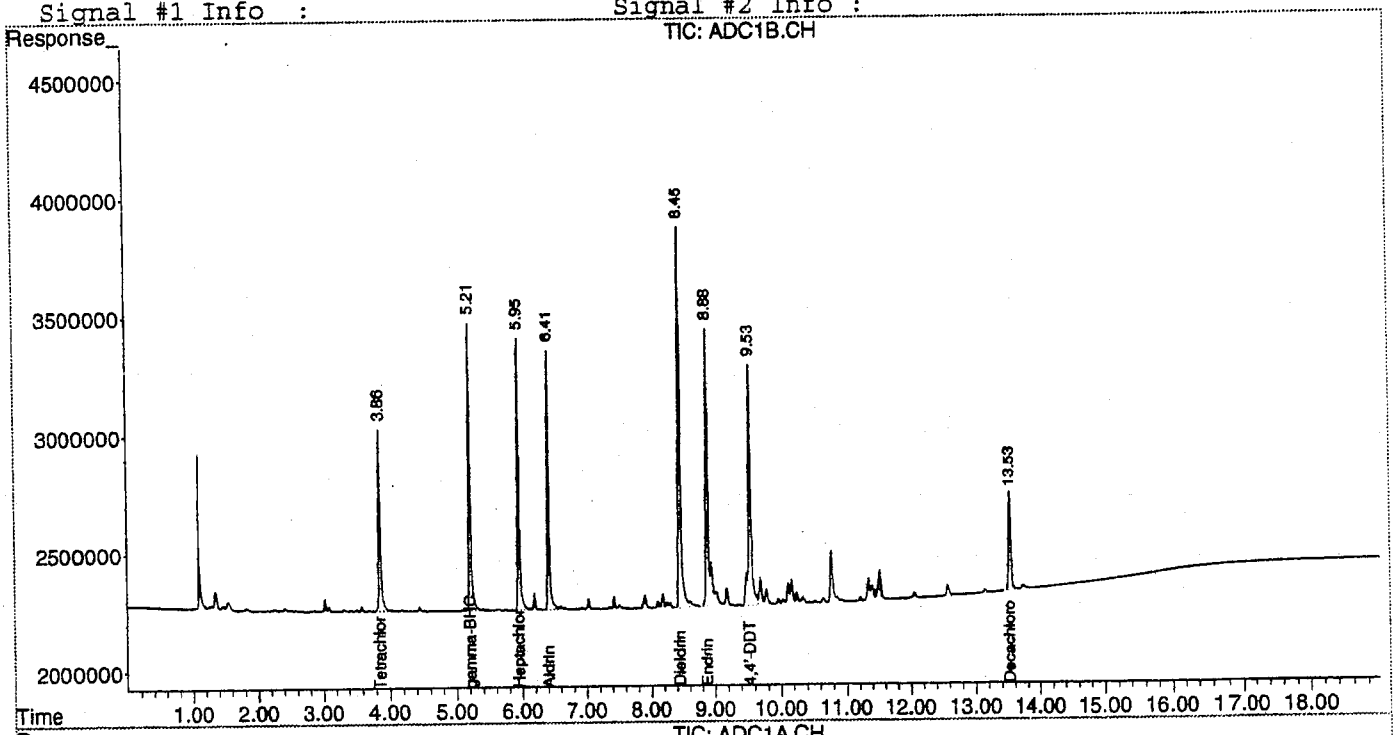
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
020F2001.D 8081_910.M Thu Sep 12 11:59:04 2002

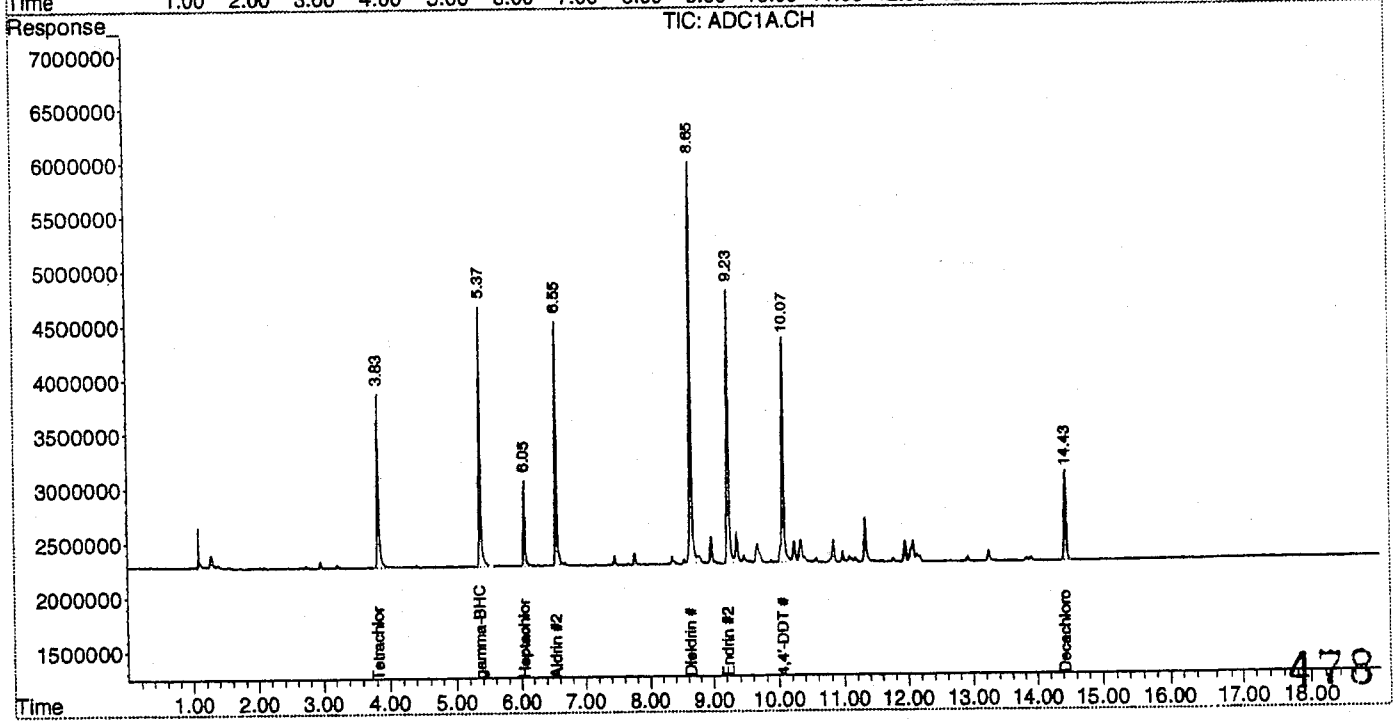
Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\020F2001.D\ADC1B.CH Vial: 20
Signal #2 : F:\HPCHEM\1\DATA\PE091102\020F2001.D\ADC1A.CH
Acq On : 12-Sep-2002, 04:10:35 Operator: JDW
Sample : bsd pe1511 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:51 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





MATIX SPIKE / MATRIX SPIKE DUPLICATE

Quantification Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1B.CH Vial: 27
Signal #2 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:44:37 Operator: JDW
Sample : 108164-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:58:14 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

OK

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB	
		System Monitoring Compounds							
1)	SR	Tetrachloro-m-xy	3.85	3.82	6721280	14286916	10.289	10.485	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					51.44%#	52.42%#	
2)	SR	Decachlorobiphen	13.50f	14.41	4790714	7510873	11.495	9.757	
		Spiked Amount 20.000 Range 60 - 150 Recovery =					57.48%#	48.79%#	
		Target Compounds							
2)		alpha-BHC	4.67f	0.00	103638	0	0.088	N.D.	#
3)	M	gamma-BHC (Linda	5.20	0.00	369049	0	0.361	N.D.	#
4)	M	Heptachlor	5.93f	6.09f	852774	2065720	0.872	~~2.354~~	#
5)	M	Aldrin	6.40	6.54	2113457	6019785	2.137	3.510	#
6)		beta-BHC	5.33	5.51	232171	707156	0.613 J	1.085	#
7)		delta-BHC	5.63	0.00	2395789	0	2.421	N.D.	#
8)		Heptachlor Epoxi	7.37	7.45	1202877	4746818	1.446 PCB	3.255	#
9)		Endosulfan I	8.04f	8.12	526429	1332635	0.585 J	0.949	#
0)		gamma-Chlordane	7.53	7.75	2661540	6018461	3.071	3.997	
1)		alpha-Chlordane	7.80	8.01	557369	2902832	0.707	2.087	#
2)		4,4'-DDE	7.88f	8.33f	8622143	15556943	11.857	10.898	
3)	M	Dieldrin	8.42f	8.64	1100793	1042389	1.391 PCB	0.704	#
4)	M	Endrin	8.92f	0.00	1334857	0	2.308	N.D.	#
5)		Endosulfan II	0.00	9.65	0	1026001	N.D.	0.885	#
6)		4,4'-DDD	8.98f	9.44	2697425	4027152	4.486 PCB	3.828	
7)	M	4,4'-DDT	9.50f	10.05	829838	2547338	1.547 PCB	2.705	#
8)		Endrin Aldehyde	10.14f	0.00	479980	0	1.035 MC	N.D.	#
9)		Endosulfan Sulfa	0.00	0.00	0	0	N.D.	N.D.	
0)		Methoxychlor	10.50	0.00	305272	0	1.244 MC	N.D.	#
1)		Endrin Ketone	0.00	0.00	0	0	N.D.	N.D.	

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108164-3 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\027F2701.D
Date Acquired 12-Sep-2002, 06:44:37

CCV File Path F:\HPCHEM\1\DATA\PE091102\016F1601.D

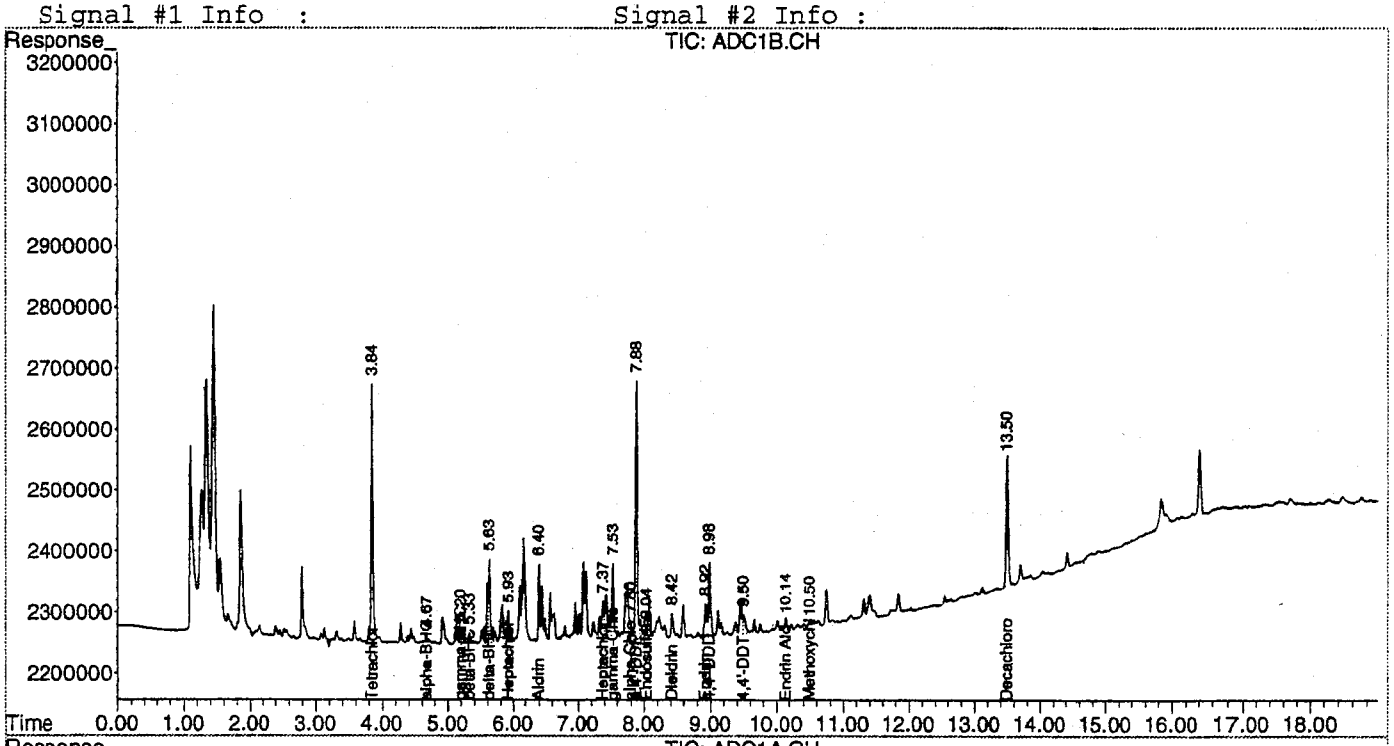
Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.85	3.82	0.2848	0.2650	0.2855	0.2658	OK	OK
alpha-BHC	4.67	0.00	0.3463	0.0000	0.3487	0.3330	OK	--
gamma-BHC (Lindane)	5.20	0.00	0.3851	0.0000	0.3852	0.3724	OK	--
Heptachlor	5.93	6.09	0.4390	0.4225	0.4400	0.4194	OK	--
Aldrin	6.40	6.54	0.4739	0.4536	0.4745	0.4543	OK	OK
beta-BHC	5.33	5.51	0.3946	0.3822	0.3953	0.3822	OK	OK
delta-BHC	5.63	0.00	0.4171	0.0000	0.4160	0.4143	OK	--
Heptachlor Epoxide	7.37	7.45	0.5459	0.5167	0.5435	0.5172	OK	OK
Endosulfan I	8.04	8.12	0.5953	0.5634	0.5926	0.5641	OK	OK
gamma-Chlordane	7.53	7.75	0.5579	0.5378	0.5584	0.5385	OK	OK
alpha-Chlordane	7.80	8.01	0.5774	0.5558	0.5747	0.5566	OK	OK
4,4'-DDE	7.88	8.33	0.5838	0.5782	0.5844	0.5791	OK	OK
Dieldrin	8.42	8.64	0.6238	0.5995	0.6251	0.5996	OK	OK
Endrin	8.92	0.00	0.6609	0.0000	0.6568	0.6400	--	--
Endosulfan II	0.00	9.65	0.0000	0.6696	0.6881	0.6688	--	OK
4,4'-DDD	8.98	9.44	0.6655	0.6552	0.6660	0.6560	OK	OK
4,4'-DDT	9.50	10.05	0.7038	0.6972	0.7050	0.6979	OK	OK
Endrin Aldehyde	10.14	0.00	0.7514	0.0000	0.7473	0.7154	--	--
Endosulfan Sulfate	0.00	0.00	0.0000	0.0000	0.8102	0.7535	--	--
Methoxychlor	10.50	0.00	0.7774	0.0000	0.7751	0.7951	OK	--
Endrin Ketone	0.00	0.00	0.0000	0.0000	0.8509	0.8277	--	--
Decachlorobiphenyl (S)	13.50	14.41	1.0000	1.0000	1.0000	1.0000	OK	OK

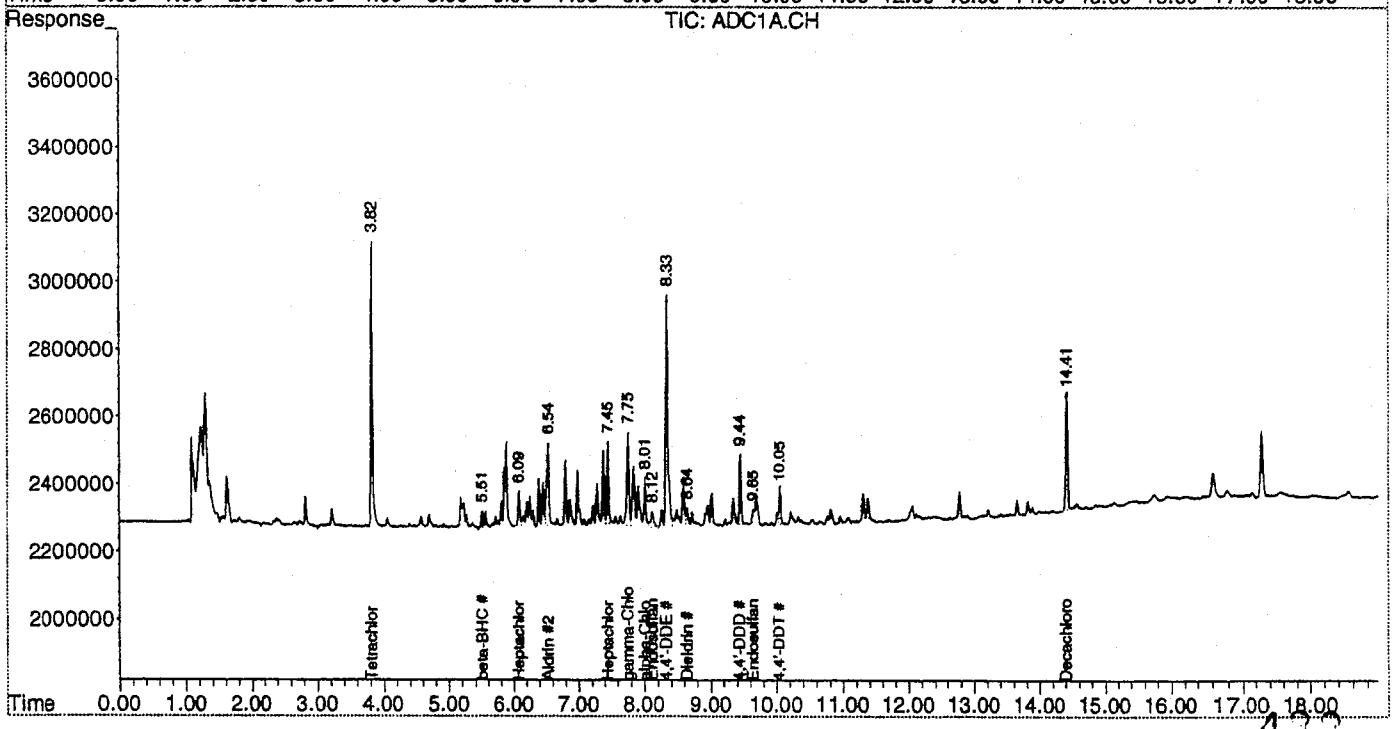
481

Signal #1 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1B.CH Vial: 27
Signal #2 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:44:37 Operator: JDW
Sample : 108164-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:58 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1B.CH Vial: 27
Signal #2 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:44:37 Operator: JDW
Sample : 108164-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:22:07 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) SR Tetrachloro-m-xy	3.85	3.82	7224796	14275283	10.868	10.958
Spiked Amount 20.000 Range 60 - 150 Recovery =					54.34%#	54.79%#
1) SR Decachlorobiphen	13.50f	14.41f	4787186	7510873	10.600	9.885
Spiked Amount 20.000 Range 60 - 150 Recovery =					53.00%#	49.42%#
Target Compounds						
2) Hexachloroethane	1.55	0.00	2798455	0	1.817	N.D. #
3) Hexachlorobenzen	4.48	4.57	239023	711663	0.231 BDL	0.503 #
4) Hexachlorobutadi	1.81	0.00	185230	0	0.087	N.D. #
5) Oxychlordane	7.23f	7.27f	881555	2445262	1.276	2.008 #
6) cis-Nonachlor	8.98f	9.44f	2620832	4027152	3.237	2.636
7) trans-Nonachlor	7.75	7.91f	2965514	3061766	3.905	2.230 #
8) 2,4'-DDE	7.32	7.83f	840482	4395456	1.739	5.157 #
9) 2,4'-DDD	8.23	8.72f	1793635	594369	4.461	0.811 BDL
0) 2,4'-DDT	0.00	9.34	0	1960748	N.D.	2.862 #

483

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Custom Report - Relative Retention Times

Sample Name 108164-3 1:2

Data File Path F:\HPCHEM\1\DATA\PE091102\027F2701.D
Date Acquired 12-Sep-2002, 06:44:37

CCV File Path F:\HPCHEM\1\DATA\PE091102\017F1701.D

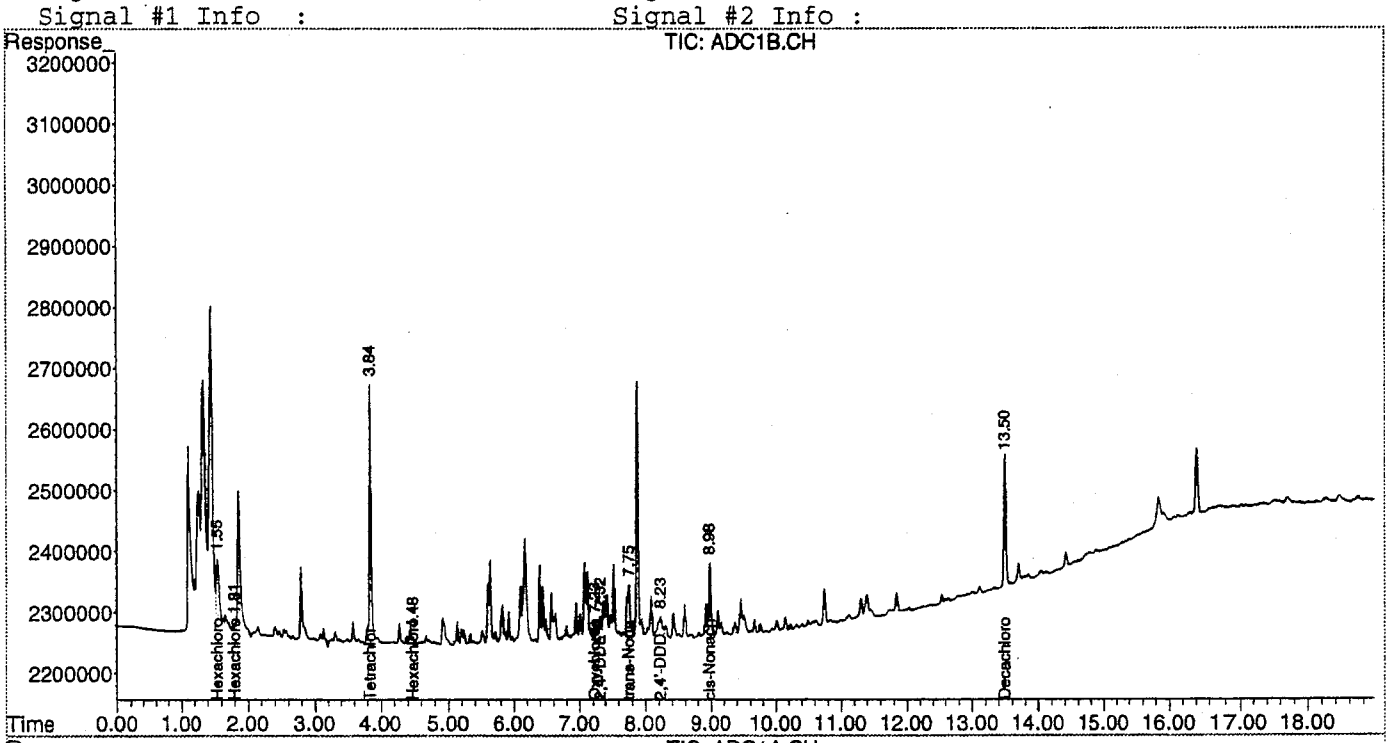
Compound Name	RT #1	RT #2	RRT #1	RRT #2	CCV RRT #1	CCV RRT #2	+/- 0.003 Chk. #1	+/- 0.003 Chk. #2
Tetrachloro-m-xylene (S)	3.85	3.82	0.2848	0.2850	0.2854	0.2858	OK	OK
Hexachloroethane	1.55	0.00	0.1144	0.0000	0.1130	0.1016	OK	--
Hexachlorobenzene	4.48	4.57	0.3316	0.3170	0.3293	0.3167	OK	OK
Hexachlorobutadiene	1.81	0.00	0.1340	0.0000	0.1344	0.1192	OK	--
Oxychlordane	7.23	7.27	0.5357	0.5047	0.5316	0.5064	--	OK
cis-Nonachlor	8.98	9.44	0.6655	0.6552	0.6612	0.6506	--	--
trans-Nonachlor	7.75	7.91	0.5741	0.5487	0.5724	0.5494	OK	OK
2,4'-DDE	7.32	7.83	0.5423	0.5436	0.5420	0.5396	OK	--
2,4'-DDD	8.23	8.72	0.6094	0.6047	0.6073	0.6056	OK	OK
2,4'-DDT	0.00	9.34	0.0000	0.6481	0.6420	0.6456	--	OK
Decachlorobiphenyl (S)	13.50	14.41	1.0000	1.0000	1.0000	1.0000	OK	OK

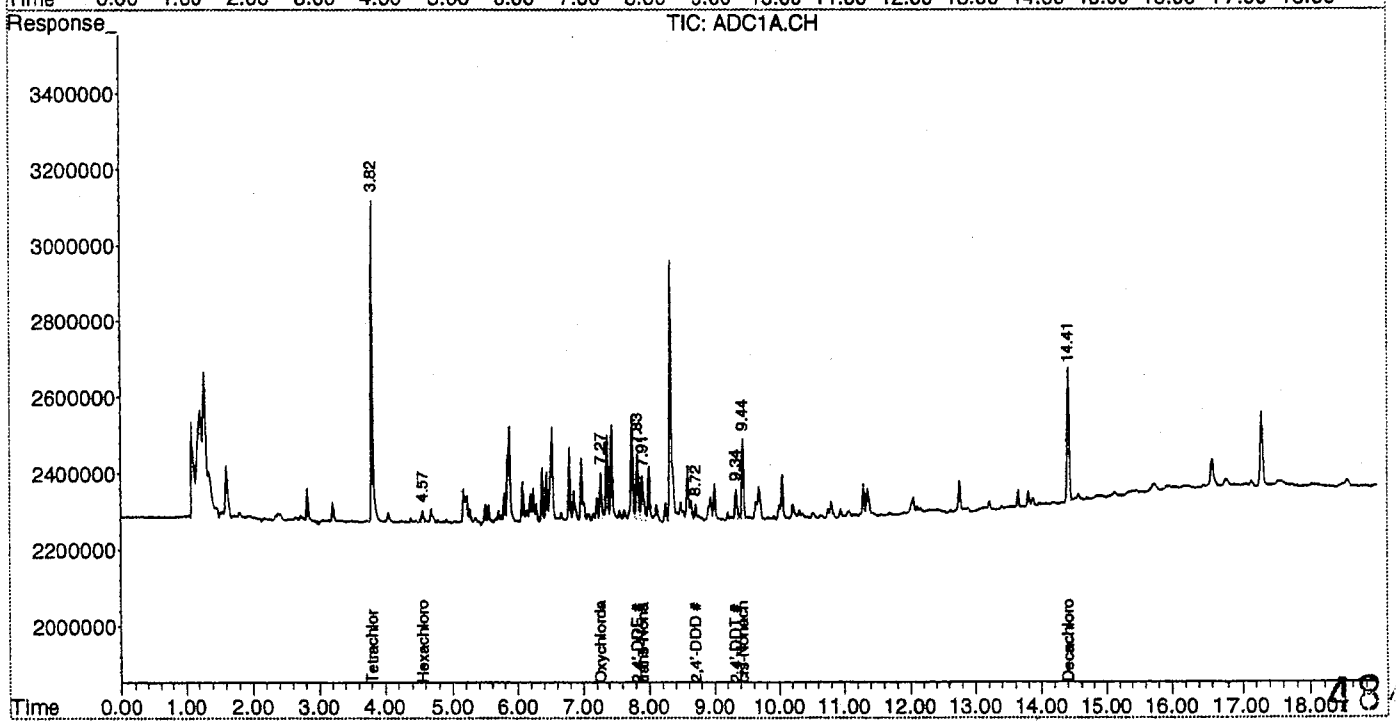
Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1B.CH Vial: 27
Signal #2 : F:\HPCHEM\1\DATA\PE091102\027F2701.D\ADC1A.CH
Acq On : 12-Sep-2002, 06:44:37 Operator: JDW
Sample : 108164-3 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:22 2002 Quant Results File: +CPDS_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\+CPDS_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 10:03:14 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\028F2801.D\ADC1B.CH Vial: 28
Signal #2 : F:\HPCHEM\1\DATA\PE091102\028F2801.D\ADC1A.CH
Acq On : 12-Sep-2002, 07:06:39 Operator: JDW
Sample : 108164-3 ms 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:58:45 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

OK

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.85	3.82	6384842	14215377	9.774	10.433
		Spiked Amount 20.000 Range 60 - 150 Recovery =					48.87%#	52.16%#
2)	SR	Decachlorobiphen	13.51	14.41	5836774	11667859	14.005	15.157
		Spiked Amount 20.000 Range 60 - 150 Recovery =					70.03%	75.78%
		Target Compounds						
2)		alpha-BHC	0.00	0.00	0	0	N.D. d	N.D. d
3)	M	gamma-BHC (Linda	5.20	5.36	8201707	14721868	8.020	8.137
4)	M	Heptachlor	5.94	6.04	10827379	14643534	11.071	16.684 #
5)	M	Aldrin	6.40	6.54	9219414	22367612	9.320	13.044
6)		beta-BHC	0.00	0.00	0	0	N.D. d	N.D. d
7)		delta-BHC	0.00	0.00	0	0	N.D. d	N.D. d
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D. d	N.D. d
9)		Endosulfan I	0.00	0.00	0	0	N.D. d	N.D. d
10)		gamma-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
11)		alpha-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
12)		4,4'-DDE	0.00	0.00	0	0	N.D. d	N.D. d
13)	M	Dieldrin	8.44	8.64	18153911	28708196	22.944	19.395
14)	M	Endrin	8.87	9.22	13059077	21826790	22.579	20.381
15)		Endosulfan II	0.00	0.00	0	0	N.D. d	N.D. d
16)		4,4'-DDD	0.00	0.00	0	0	N.D. d	N.D. d
17)	M	4,4'-DDT	9.52	10.06	12837897	24329744	20.836	25.840
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D. d	N.D. d
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D. d	N.D. d
20)		Methoxychlor	0.00	0.00	0	0	N.D. d	N.D. d
21)		Endrin Ketone	0.00	0.00	0	0	N.D. d	N.D. d

485

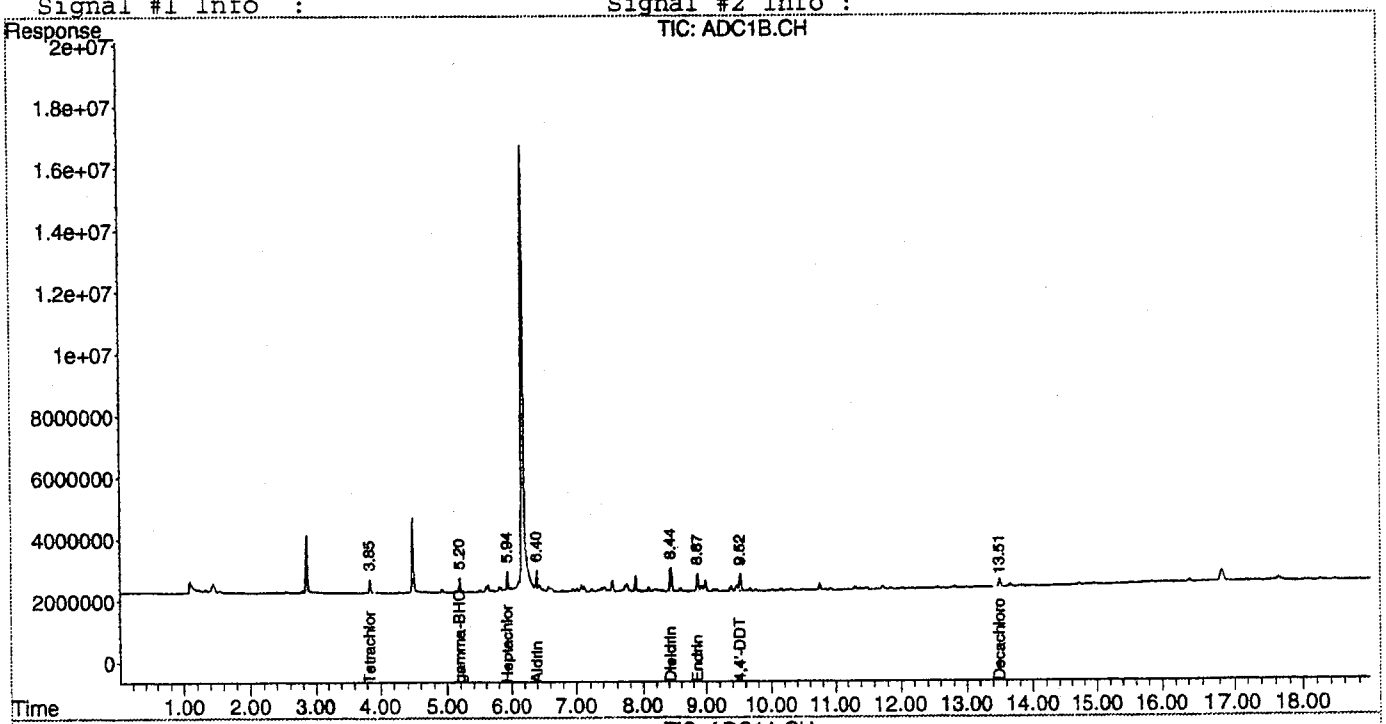
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

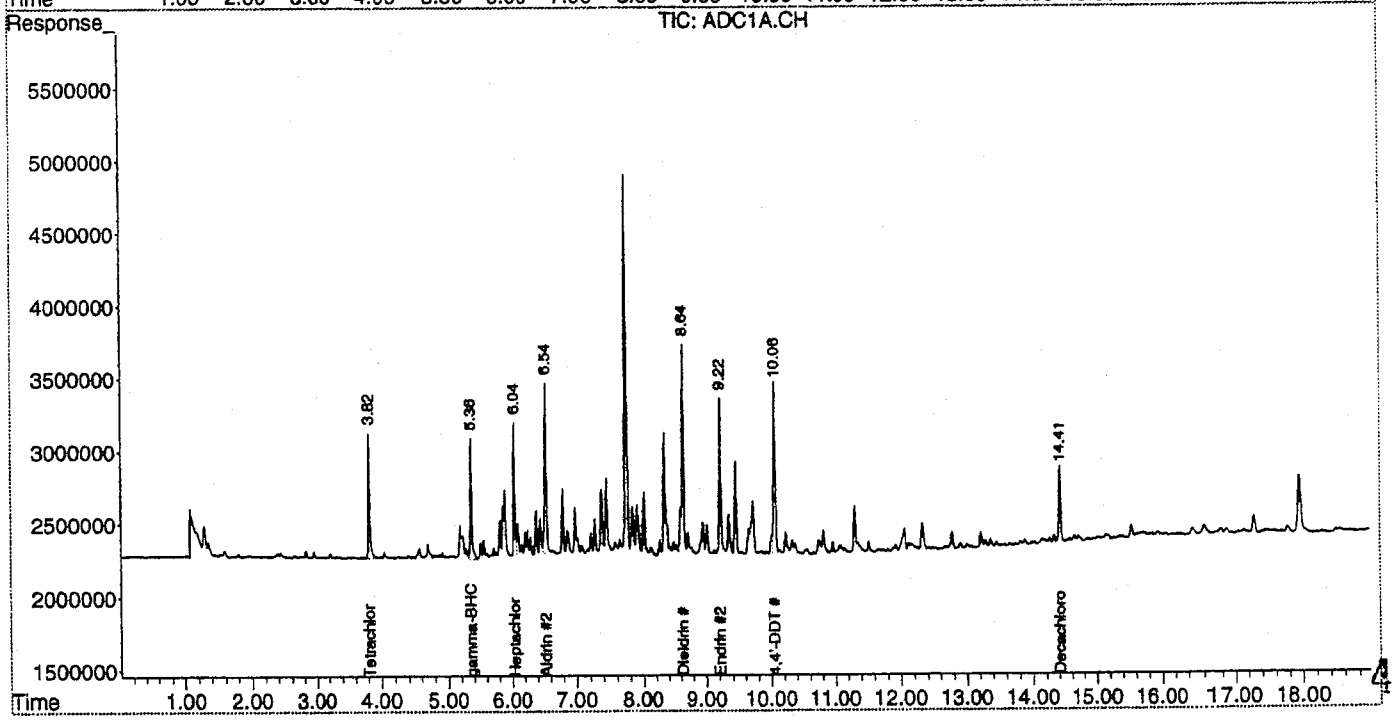
Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\028F2801.D\ADC1B.CH Vial: 28
Signal #2 : F:\HPCHEM\1\DATA\PE091102\028F2801.D\ADC1A.CH
Acq On : 12-Sep-2002, 07:06:39 Operator: JDW
Sample : 108164-3 ms 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 10:59 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Wed Sep 11 10:48:53 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\047F4701.D\ADC1B.CH Vial: 47
Signal #2 : F:\HPCHEM\1\DATA\PE091102\047F4701.D\ADC1A.CH
Acq On : 12-Sep-2002, 14:04:40 Operator: JDW
Sample : 108164-3 msd 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 15:20:14 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Initial Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
		System Monitoring Compounds						
1)	SR	Tetrachloro-m-xy	3.85	3.83	6450532	14520996	9.874	10.657
		Spiked Amount 20.000 Range 60 - 150 Recovery =					49.37%#	53.29%#
22)	SR	Decachlorobiphen	13.52	14.43	5626613	11664204	13.501	15.153
		Spiked Amount 20.000 Range 60 - 150 Recovery =					67.50%	75.77%
		Target Compounds						
2)		alpha-BHC	0.00	0.00	0	0	N.D. d	N.D. d
3)	M	gamma-BHC (Linda	5.20	5.37	8275053	15263575	8.091	8.437
4)	M	Heptachlor	5.94	6.04	10899388	13496261	11.145	15.377
5)	M	Aldrin	6.41	6.55	9992496	23135311	10.102	13.492
6)		beta-BHC	0.00	0.00	0	0	N.D. d	N.D. d
7)		delta-BHC	0.00	0.00	0	0	N.D. d	N.D. d
8)		Heptachlor Epoxi	0.00	0.00	0	0	N.D. d	N.D. d
9)		Endosulfan I	0.00	0.00	0	0	N.D. d	N.D. d
10)		gamma-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
11)		alpha-Chlordane	0.00	0.00	0	0	N.D. d	N.D. d
12)		4,4'-DDE	0.00	0.00	0	0	N.D. d	N.D. d
13)	M	Dieldrin	8.45	8.65	18308715	29938240	23.139	20.226
14)	M	Endrin	8.88	9.23	12849903	22116457	22.218	20.651
15)		Endosulfan II	0.00	0.00	0	0	N.D. d	N.D. d
16)		4,4'-DDD	0.00	0.00	0	0	N.D. d	N.D. d
17)	M	4,4'-DDT	9.53	10.07	11791177	23507002	19.137	24.966
18)		Endrin Aldehyde	0.00	0.00	0	0	N.D. d	N.D. d
19)		Endosulfan Sulfa	0.00	0.00	0	0	N.D. d	N.D. d
20)		Methoxychlor	0.00	0.00	0	0	N.D. d	N.D. d
21)		Endrin Ketone	0.00	0.00	0	0	N.D. d	N.D. d

487

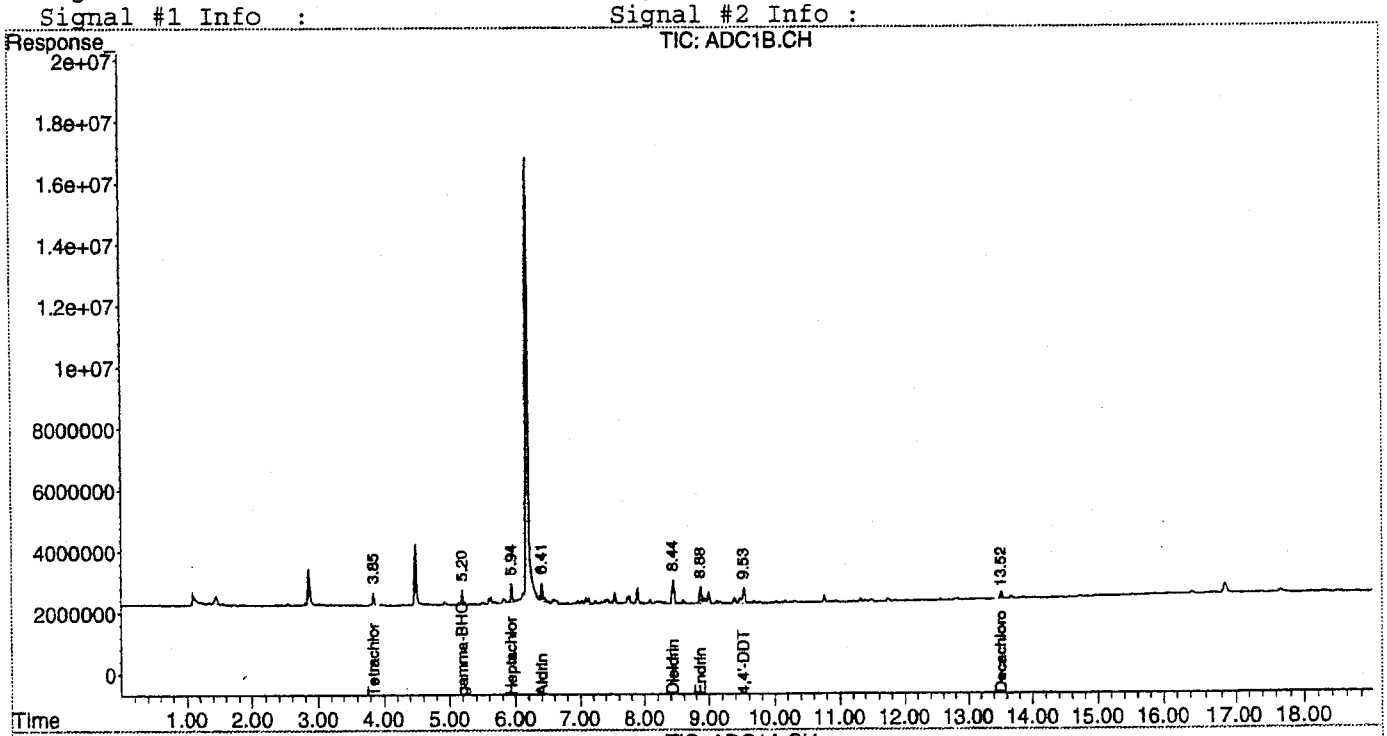
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

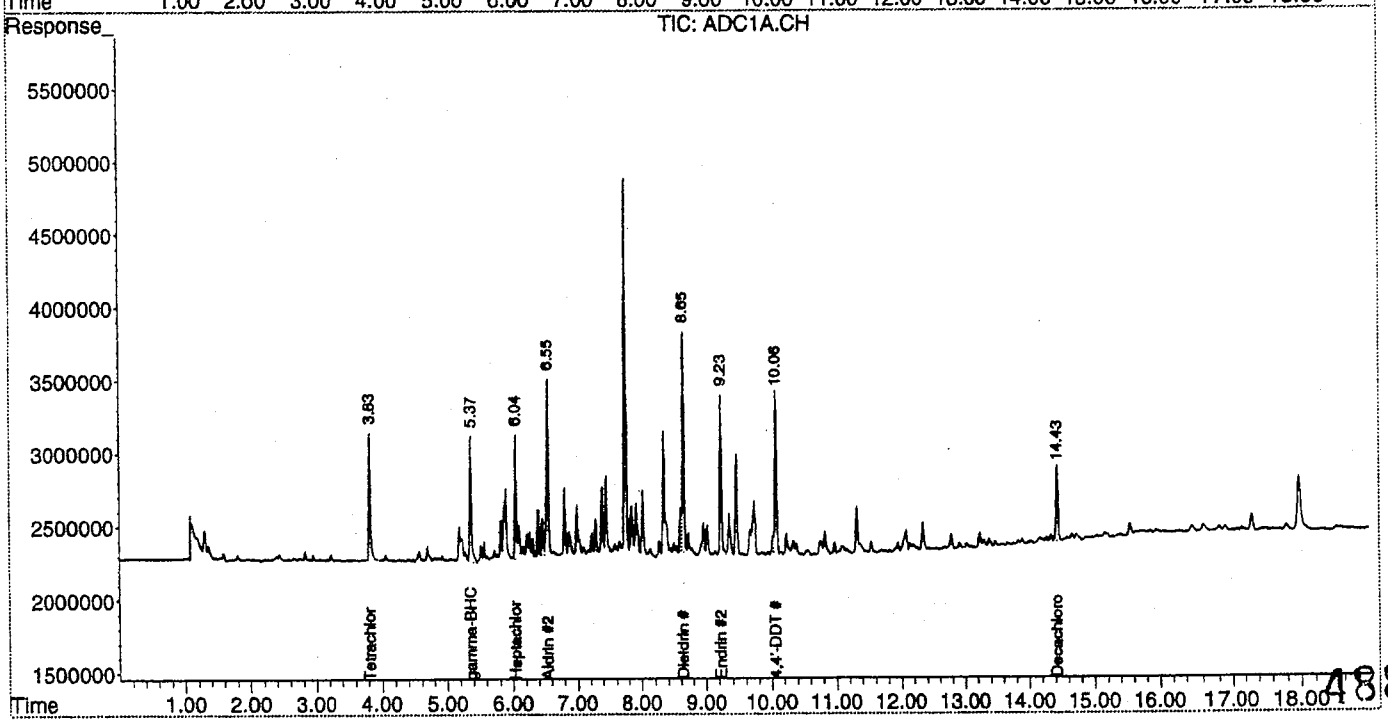
Quantitation Report (QT Reviewed)

Signal #1 : F:\HPCHEM\1\DATA\PE091102\047F4701.D\ADC1B.CH Vial: 47
Signal #2 : F:\HPCHEM\1\DATA\PE091102\047F4701.D\ADC1A.CH
Acq On : 12-Sep-2002, 14:04:40 Operator: JDW
Sample : 108164-3 msd 1:2 Inst : HP35900C
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: Sep 12 15:20 2002 Quant Results File: 8081_910.RES

Quant Method : C:\MSDCHEM\1\METHODS\8081_910.M (Chemstation Integrator)
Title : 8081A Pesticides - Dual Column
Last Update : Thu Sep 12 12:33:47 2002
Response via : Multiple Level Calibration
DataAcq Meth : PEST_RUN.M

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPesticides Signal #2 Phase: RTX-CLPesticides 2
Signal #1 Info : Signal #2 Info :





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LABORATORY WORKSHEETS

Chlorinated Pesticides Worksheet - total

QC Level:Tier IV	**Due: 09/04/02**
Matrix:solid	**Work Order - 108166**
CH2M Hill	Proj. Manager:Katie Downie

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

See attached for analyte list & req RLs

Sample number: 108166-1	Client Sample ID	PP011801
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/20/02 4:00:00 PM**

Chlor. Pest. - EPA 8081

Sample number: 108166-2	Client Sample ID	PP011809
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/21/02 3:00:00 PM**

Chlor. Pest. - EPA 8081

Sample number: 108166-3	Client Sample ID	PP011810
Sample Weight/Volume	Date Received	8/23/02
	Date Sampled	**8/21/02 4:00:00 PM**

Chlor. Pest. - EPA 8081

Analyst SW Date 9/12/2002

Reviewed by JC Date 9/12/2002

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Organics worksheet v4.0
If you have suggestions for changes please bring them to me - Dennis

Chlorinated Pesticides Worksheet - total

QC Level:Tier IV	**Due: 09/04/02**
Matrix:liquid	**Work Order - 108166**
CH2M Hill	Proj. Manager:Katie Downie

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

Sample number [illegible]		Client Sample ID	PP0118EB01
Sample Weight/Volume	125 mL	Date Received	8/23/02
		Date Sampled	**8/21/02 1:15:00 PM**

Chlor. Pest. - EPA 8081

Analyst JW Date 8/31/02

Reviewed by [illegible] Date 9/16/02

Organics worksheet v4.1
If you have suggestions for changes please bring them to me - Dennis

Printed - 8/27/02

Organochlorine Pesticide Analysis by USEPA Method 8081A

QCBatch ID	PW0112	pH2	pH7	pH12	
Sample Matrix	Liquid		X		
Surrogate Standard No.	561-92-3				
8081 MS Spike No.	PEST849	Volume Measured By/Date			
Chlordane MS Spike No.		Extracted By/Date			8 27 02
Toxaphene MS Spike No.					
BnCD Lot Number	X10466				
Hexane Lot Number	3841				
Na2SO4 Lot Number	010291	Spike Witness Signature/Date			
Extraction Method	3510 Separatory Funnel				

QC Sample Type	QC Identifier	Sample Volume (ml)	Final Volume (ml)	Surr Spike (ul)	MS/BS spike amt (ul)
Method Blank	PW0112	125	1	10	N/A
Duplicate	none				
Duplicate-2	none				
Blank Spike	SPW0112	125	1	10	10
Blank Spike Duplicate	dPW0112	125	1	10	10
Matrix Spike	none				
Matrix Spike Duplicate	none				
Matrix Spike-2	none				
Matrix Spike Duplicate-2	none				

Sample	Client Sample ID	Sample Volume (ml)	Final Volume (ml)	Surr Spike (ul)	Comments
108177-7	PP01M1EB02	125	1	10	
108166-4	PP0118EB01	125	1	10	

Sample Prep Log Sheet 9/3/02

Organochlorine Pesticide Analysis by USEPA Method 8081A

	pe1511				
	561-80-4				
	Pest889	Weighed By/Date			
		Extracted By/Date	SW 9/3/02		
	012691	Florisil & sulfur cleanup performed.			
	3550				
	9/3/2002				
		Spike Witness Signature/Date			

		10.0000	10.0	100	
		10.0000	10.0	100	100
		10.0000	10.0	100	100
		10.2092	10.0	100	100
		11.9823	10.0	100	100

108160-1	PP011802	10.2202	10.0	100	☐ No ☑ Yes
108160-2	PP011803	10.1058	10.0	100	☐ No ☑ Yes
108160-3	PP011804D	11.0424	10.0	100	☐ No ☑ Yes
108160-4	PP011805	10.6777	10.0	100	☐ No ☑ Yes
108164-1	PP011806	11.3644	10.0	100	☐ No ☑ Yes
108164-2	PP011807	11.2222	10.0	100	☐ No ☑ Yes
108164-3	PP011808	10.9277	10.0	100	☐ No ☑ Yes
108166-1	PP011801	10.3754	10.0	100	☐ No ☑ Yes
108166-2	PP011809	11.1500	10.0	100	☐ No ☑ Yes
108166-3	PP011810	10.2683	10.0	100	☐ No ☑ Yes
108177-1	PP01M105	10.2935	10.0	100	☐ No ☑ Yes
108177-2	PP01M106	11.1652	10.0	100	☐ No ☑ Yes
108177-3	PP01M107	10.4641	10.0	100	☐ No ☑ Yes
108177-4	PP01M108	10.3117	10.0	100	☐ No ☑ Yes
108177-5	PP01M109	10.7173	10.0	100	☐ No ☑ Yes
108177-6	PP01M110	10.6280	10.0	100	☐ No ☑ Yes
108177-8	PP01M101	10.9303	10.0	100	☐ No ☑ Yes
108177-9	PP01M102D	10.5377	10.0	100	☐ No ☑ Yes
108177-10	PP01M103	10.2493	10.0	100	☐ No ☑ Yes
108177-11	PP01M104	10.3729	10.0	100	☐ No ☑ Yes

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108166
Sample Number	1
Data Filename	pe1511
Client Sample ID	PP011801
Date Received	08-23-02
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	sample

Related Blank: pe1511

Sample weight (g)	10.3754	=	0.01038 /kg	Calc. Fact.	2.687725216
Extract volume (ml)	10	=	10 ml	Dry Weight	7.44123688 g
Dilution Factor	2	=	2	Sample Units	ug/kg
% Solids	71.72	=	0.7172	Spike Factor	134.3862608
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	10.2442		102	OK	70	122
x	Decachlorobiphenyl	13.0979		131	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	0.423	C2		ND		2.69
x	4,4'-DDD	2.6536	C1		7.13	C1	5.38
x	4,4'-DDE	4.8553	C1		13	C1	5.38
x	alpha-Chlordane	0.8885	C1		2.39	J C1	2.69
x	gamma-Chlordane	1.287	C2		3.46	C2	2.69

$$\frac{0.423\ \mu g/L \times 0.01L \times 2}{0.0103754\ Kg \times 0.7172} = 1.14\ \mu g/Kg$$ <MDL

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108166
Sample Number	2
Data Filename	pe1511
Client Sample ID	PP011809
Date Received	08-23-02
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	sample

Related Blank: pe1511

Sample weight (g)	11.15	=	0.01115 /kg	Calc. Fact.	2.288202543
Extract volume (ml)	10	=	10 ml	Dry Weight	8.740485 g
Dilution Factor	2	=	2	Sample Units	ug/kg
% Solids	78.39	=	0.7839	Spike Factor	114.4101271
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	10.3893		104	OK	70	122
x	Decachlorobiphenyl	16.1534	X9	162	HIGH	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	5.9339	C2		13.6	C2	2.29
x	beta-BHC	1.276	C2		2.92	C2	2.29
x	4,4'-DDD	19.8772	C1		45.5	C1	4.58
x	4,4'-DDE	34.4964	C1		78.9	C1	4.58
x	Endosulfan I	1.709	C1		3.91	C1	2.29
x	Endosulfan sulfate	1.694	C2		3.88	J C2	4.58
x	alpha-Chlordane	6.5601	C2		15	C2	2.29
x	gamma-Chlordane	5.9639	C2		13.6	C2	2.29
x	trans-Nonachlor	3.776	C2		8.64	C2	4.58
x	2,4'-DDD	5.394	C2		12.3	C2	4.58

~~Dieldrin?~~ No 7.242

1.808
6.338

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108166
Sample Number	3
Data Filename	pe1511
Client Sample ID	PP011810
Date Received	08-23-02
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	sample

Related Blank: pe1511

Sample weight (g)	10.2683	=	0.01027 /kg	Calc. Fact.	3.727736038
Extract volume (ml)	10	=	10 ml	Dry Weight	5.36518675 g
Dilution Factor	2	=	2	Sample Units	ug/kg
% Solids	52.25	=	0.5225	Spike Factor	186.3868019
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	9.226		92.3	OK	70	122
x	Decachlorobiphenyl	13.5802		136	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	1.737	C2		6.48	C2	3.73
x	beta-BHC	0.405	C2		ND		3.73
x	4,4'-DDD	3.7875	C1		14.1	C1	7.46
x	4,4'-DDE	17.4547	C1		65.1	C1	7.46
x	alpha-Chlordane	1.3056	C2		4.87	C2	3.73
x	gamma-Chlordane	1.189	C2		4.43	C2	3.73

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blank: noblank
Data Filename	**pe1511**
Client Sample ID	
Date Received	
Date Prepared	**09-03-02**
Date Analyzed	**09-12-02**
Sample matrix type	**solid**
QC sample type	**blank**

Sample weight (g)	**10**	=	0.01 /kg	Calc. Fact.	1
Extract volume (ml)	**10**	=	10 ml	Dry Weight	10 g
Dilution Factor	**1**	=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	100
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	22.2031		111	**OK**	70	122
x	Decachlorobiphenyl	25.6911		128	**OK**	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	
Data Filename	pe1511
Client Sample ID	
Date Received	
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	bs

Related Blank: pe1511

Sample weight (g)	10	=	0.01 /kg	Calc. Fact.	1
Extract volume (ml)	10	=	10 ml	Dry Weight	10 g
Dilution Factor	1	=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	100
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	22.8287		114	OK	70	122
x	Decachlorobiphenyl	25.947		130	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	21.2522	C1		21.3	C1	1
x	gamma-BHC (Lindane)	21.2179	C1		21.2	C1	1
x	4,4'-DDT	42.4713	C1		42.5	C1	2
x	Dieldrin	48.2268	C1		48.2	C1	2
x	Endrin	45.1831	C1		45.2	C1	2
x	Heptachlor	22.3562	C1		22.4	C1	1

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blank: pe1511
Data Filename	pe1511
Client Sample ID	
Date Received	
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	bsd

Sample weight (g)	10	=	0.01 /kg	Calc. Fact.	1
Extract volume (ml)	10	=	10 ml	Dry Weight	10 g
Dilution Factor	1	=	1	Sample Units	ug/kg
% Solids		=	1	Spike Factor	100
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	22.5236		113	OK	70	122
x	Decachlorobiphenyl	26.152		131	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	21.5271	C1		21.5	C1	1
x	gamma-BHC (Lindane)	21.8656	C1		21.9	C1	1
x	4,4'-DDT	43.1748	C1		43.2	C1	2
x	Dieldrin	49.0616	C1		49.1	C1	2
x	Endrin	46.0598	C1		46.1	C1	2
x	Heptachlor	22.7917	C1		22.8	C1	1

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108164
Sample Number	3
Data Filename	pe1511
Client Sample ID	PP011808
Date Received	08-23-02
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	ms

Related Blank: pe1511

Sample weight (g)	10.2092	=	0.01021 /kg	Calc. Fact.	2.518988501
Extract volume (ml)	10	=	10 ml	Dry Weight	7.93969484 g
Dilution Factor	2	=	2	Sample Units	ug/kg
% Solids	77.77	=	0.7777	Spike Factor	125.949425
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	9.7737		97.7	OK	70	122
x	Decachlorobiphenyl	14.0053		140	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	9.3202	C1		23.5	C1	2.52
x	gamma-BHC (Lindane)	8.0196	C1		20.2	C1	2.52
x	4,4'-DDT	20.8359	C1		52.5	C1	5.04
x	Dieldrin	22.9437	C1		57.8	C1	5.04
x	Endrin	22.5794	C1		56.9	C1	5.04
x	Heptachlor	11.071	C2		27.9	C2	2.52

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108164
Sample Number	3
Data Filename	pe1511
Client Sample ID	PP011808
Date Received	08-23-02
Date Prepared	09-03-02
Date Analyzed	09-12-02
Sample matrix type	solid
QC sample type	msd

Related Blank: pe1511

Sample weight (g)	11.9823	=	0.01198 /kg	Calc. Fact.	2.14623715
Extract volume (ml)	10	=	10 ml	Dry Weight	9.31863471 g
Dilution Factor	2	=	2	Sample Units	ug/kg
% Solids	77.77	=	0.7777	Spike Factor	107.3118575
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	2
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	9.8742		98.7	OK	70	122
x	Decachlorobiphenyl	13.501		135	OK	64	130
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	10.1017	C1		21.7	C1	2.15
x	gamma-BHC (Lindane)	8.0914	C1		17.4	C1	2.15
x	4,4'-DDT	19.1371	C1		41.1	C1	4.29
x	Dieldrin	23.1394	C1		49.7	C1	4.29
x	Endrin	22.2177	C1		47.7	C1	4.29
x	Heptachlor	11.1447	C1		23.9	C1	2.15

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill
Work Order Number	108166
Sample Number	4
Data Filename	pw0112
Client Sample ID	PP0118EB01
Date Received	08-23-02
Date Prepared	08-27-02
Date Analyzed	08-29-02
Sample matrix type	liquid
QC sample type	sample

Related Blank: pw0112

Sample volume (ml)	125	=	0.125 /L	Calc. Fact.	0.008
Extract volume (ml)	1	=	1 ml	Dry Weight	-
Dilution Factor	1	=	1	Sample Units	ug/L
% Solids		=	1	Spike Factor	8
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	15.9548		79.8	OK	53	127
x	Decachlorobiphenyl	16.3104		81.6	OK	57	121
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL

STL Seattle

6a Sample Information

Client Name					
Work Order Number					
Sample Number				Related Blank: noblank	
Data Filename	pw0112				
Client Sample ID					
Date Received					
Date Prepared	08-27-02				
Date Analyzed	08-29-02				
Sample matrix type	liquid				
QC sample type	blank				
Sample volume (ml)	125	=	0.125 /L	Calc. Fact.	0.008
Extract volume (ml)	1	=	1 ml	Dry Weight	-
Dilution Factor	1	=	1	Sample Units	ug/L
% Solids		=	1	Spike Factor	8
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	11.3699		56.8	OK	53	127
x	Decachlorobiphenyl	13.8517		69.3	OK	57	121
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blank: pw0112
Data Filename	pw0112
Client Sample ID	
Date Received	
Date Prepared	08-27-02
Date Analyzed	08-29-02
Sample matrix type	liquid
QC sample type	bs

Sample volume (ml)	125	=	0.125 /L	Calc. Fact.	0.008
Extract volume (ml)	1	=	1 ml	Dry Weight	-
Dilution Factor	1	=	1	Sample Units	ug/L
% Solids		=	1	Spike Factor	8
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	14.1934		71	OK	53	127
x	Decachlorobiphenyl	17.5713		87.9	OK	57	121
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	18.1273	C1		0.145	C1	0.008
x	gamma-BHC (Lindane)	19.515	C1		0.156	C1	0.008
x	4,4'-DDT	41.1054	C1		0.329	C1	0.016
x	Dieldrin	45.7509	C1		0.366	C1	0.016
x	Endrin	51.2136	C1		0.41	C1	0.016
x	Heptachlor	19.846	C1		0.159	C1	0.008

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blank: pw0112
Data Filename	pw0112
Client Sample ID	
Date Received	
Date Prepared	08-27-02
Date Analyzed	08-29-02
Sample matrix type	liquid
QC sample type	bsd

Sample volume (ml)	125	=	0.125 /L	Calc. Fact.	0.008
Extract volume (ml)	1	=	1 ml	Dry Weight	-
Dilution Factor	1	=	1	Sample Units	ug/L
% Solids		=	1	Spike Factor	8
GPC (Enter 2 if GPC'd)		=	1	Rept. Dil. Fact.	1
Report in PPM		=	1		
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Tetrachloro-m-xylene	14.6757		73.4	OK	53	127
x	Decachlorobiphenyl	17.2582		86.3	OK	57	121
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aldrin	18.1971	C1		0.146	C1	0.008
x	gamma-BHC (Lindane)	18.3016	C1		0.146	C1	0.008
x	4,4'-DDT	39.977	C1		0.32	C1	0.016
x	Dieldrin	44.3525	C1		0.355	C1	0.016
x	Endrin	50.0595	C1		0.4	C1	0.016
x	Heptachlor	19.7493	C1		0.158	C1	0.008

TOTAL METALS DATA PACKAGE

Mean Data

ID: Calib Blank 1 Seq. No.: 1 A/S Pos: 1

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 10:57:04

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	261,646.5	[0.00]	2,740.52	%				1.05 %
Sc 361.383	654,711.1	[0.00]	7,923.84	%				1.21 %
Al 308.215	2,672.0	[0.00]	74.19	mg/L				2.78 %

Mean Data

ID: High Standard Seq. No.: 2 A/S Pos: 2

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 11:12:44

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	265,598.0	101.5	5,514.92	%				2.08 %
Sc 361.383	678,072.3	103.6	5,466.76	%				0.81 %
Al 308.215	43,369.7	[2.00]	613.62	mg/L				1.41 %

Mean Data

ID: ICV Seq. No.: 3 A/S Pos: 3

2002/09/03 07:43:11 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 11:17:18

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	267,383.4	102.2	1.81	%				1.77 %
Sc 361.383	670,983.6	102.5	1.87	%				1.83 %
Al 308.215	39,278.9	1.811	0.0083	mg/L	1.811			0.46 %

2002/09/03 07:43:11 QC value within limits for Al 308.215 Recovery = 90.57%

Mean Data

ID: ICB Seq. No.: 4 A/S Pos: 1

2002/09/03 07:43:14 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 11:23:05

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	269,904.0	103.2	0.91	%				0.88 %
Sc 361.383	674,113.6	103.0	0.89	%				0.86 %
Al 308.215	-181.7	-0.0084	0.00298	mg/L	-0.0084			35.61 %

2002/09/03 07:43:14 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: ICSA Seq. No.: 5 A/S Pos: 7

2002/09/03 07:43:19 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 11:43:57

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	256,246.2	97.94	0.510	%				0.52 %

Sc 361.383	616,162.1	94.11	0.749	%				0.80 %
Al 308.215	2,730,993.3	125.9	0.99	mg/L	125.9			0.78 %

2002/09/03 07:43:19 QC value within limits for Al 308.215 Recovery = 104.95%

Mean Data

ID: ICSAB **Seq. No.:** 6 **A/S Pos:** 8

2002/09/03 07:43:19 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 11:48:31

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	256,963.6	98.21	0.546	%				0.56 %
Sc 361.383	616,792.8	94.21	0.544	%				0.58 %
Al 308.215	2,826,940.6	130.4	1.19	mg/L	130.4			0.92 %

2002/09/03 07:43:19 QC value within limits for Al 308.215 Recovery = 108.64%

Mean Data

ID: CCV **Seq. No.:** 7 **A/S Pos:** 5

2002/09/03 07:44:46 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 20:17:34

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	188,891.6	102.1	7.37	%				7.21 %
Sc 361.383	500,904.7	106.9	7.84	%				7.33 %
Al 308.215	10,731.1	0.4608	0.04646	mg/L	0.4608			10.08 %

2002/09/03 07:44:46 QC value within limits for Al 308.215 Recovery = 92.16%

Mean Data

ID: CCB **Seq. No.:** 8 **A/S Pos:** 6

2002/09/03 07:44:46 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 20:18:58

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	181,898.4	98.35	6.125	%				6.23 %
Sc 361.383	459,275.0	97.98	6.308	%				6.44 %
Al 308.215	122.4	0.0053	0.00358	mg/L	0.0053			68.05 %

2002/09/03 07:44:46 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: mb sp883 **Seq. No.:** 9 **A/S Pos:** 93

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 20:20:21

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	180,208.9	97.44	6.296	%			%	6.46 %
Sc 361.383	459,118.0	97.95	6.381	%			%	6.51 %
Al 308.215	-52.8	-0.0023	0.00818	mg/L	-0.0023	0.00818	mg/L	361.06 %

Mean Data

ID: 108164-3-1/5 Seq. No.: 10 A/S Pos: 94

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:21:41

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	178,976.0	96.77	2.598	%			%	2.68 %
Sc 361.383	475,601.0	101.5	2.85	%			%	2.81 %
Al 308.215	142,228.7	6.108	0.1871	mg/L	6.108	0.1871	mg/L	3.06 %

Mean Data

ID: 108164-3 Seq. No.: 11 A/S Pos: 95

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:23:53

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	177,847.4	96.16	4.508	%			%	4.69 %
Sc 361.383	489,683.5	104.5	2.98	%			%	2.86 %
Al 308.215	674,432.1	28.96	1.244	mg/L	28.96	1.244	mg/L	4.29 %

Mean Data

ID: 108164-3d Seq. No.: 12 A/S Pos: 96

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:26:04

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	181,112.5	97.93	1.291	%			%	1.32 %
Sc 361.383	500,471.2	106.8	1.51	%			%	1.41 %
Al 308.215	561,214.2	24.10	0.364	mg/L	24.10	0.364	mg/L	1.51 %

Mean Data

ID: 108164-3dd Seq. No.: 13 A/S Pos: 97

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:28:14

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	173,670.6	93.90	2.670	%			%	2.84 %
Sc 361.383	486,277.1	103.7	3.00	%			%	2.90 %
Al 308.215	673,315.5	28.91	0.660	mg/L	28.91	0.660	mg/L	2.28 %

Mean Data

ID: 108164-3s Seq. No.: 14 A/S Pos: 98

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:30:25

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	177,035.3	95.72	0.677	%			%	0.71 %

Sc 361.383	481,808.0	102.8	0.73	%			%	0.71 %
Al 308.215	664,639.1	28.54	0.417	mg/L	28.54	0.417	mg/L	1.46 %

Mean Data

ID: 108164-3sd Seq. No.: 15 A/S Pos: 99

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:32:36

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	174,680.3	94.45	1.991	%			%	2.11 %
Sc 361.383	472,495.9	100.8	2.06	%			%	2.04 %
Al 308.215	608,269.4	26.12	0.822	mg/L	26.12	0.822	mg/L	3.15 %

Mean Data

ID: 108164-3ps Seq. No.: 16 A/S Pos: 100

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:34:48

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	164,879.0	89.15	2.211	%			%	2.48 %
Sc 361.383	461,169.7	98.39	2.379	%			%	2.42 %
Al 308.215	796,116.9	34.19	1.220	mg/L	34.19	1.220	mg/L	3.57 %

Mean Data

ID: lcs-soil Seq. No.: 17 A/S Pos: 101

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:37:00

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	174,578.0	94.40	2.205	%			%	2.34 %
Sc 361.383	467,141.6	99.66	2.315	%			%	2.32 %
Al 308.215	501,128.5	21.52	0.539	mg/L	21.52	0.539	mg/L	2.50 %

Mean Data

ID: CCV Seq. No.: 18 A/S Pos: 5

2002/09/03 07:44:49 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:39:14

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	175,294.7	94.78	3.776	%				3.98 %
Sc 361.383	470,979.8	100.5	6.27	%				6.24 %
Al 308.215	11,652.1	0.5004	0.04124	mg/L	0.5004			8.24 %

2002/09/03 07:44:49 QC value within limits for Al 308.215 Recovery = 100.07%

Mean Data

ID: CCB Seq. No.: 19 A/S Pos: 6

2002/09/03 07:44:49 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:40:39

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	181,119.0	97.93	5.319	%				5.43 %
Sc 361.383	458,188.4	97.75	5.428	%				5.55 %
Al 308.215	199.1	0.0086	0.00822	mg/L	0.0086			96.12 %

2002/09/03 07:44:49 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: mb sp883 Seq. No.: 20 A/S Pos: 102

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:42:00

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	189,987.9	102.7	3.46	%			%	3.37 %
Sc 361.383	480,791.3	102.6	3.18	%			%	3.10 %
Al 308.215	193.9	0.0083	0.00287	mg/L	0.0083	0.00287	mg/L	34.51 %

Mean Data

ID: 180164-1 Seq. No.: 21 A/S Pos: 103

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:43:16

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	175,425.6	94.85	0.933	%			%	0.98 %
Sc 361.383	496,779.8	106.0	1.41	%			%	1.33 %
Al 308.215	690,489.7	29.65	0.298	mg/L	29.65	0.298	mg/L	1.01 %

Mean Data

ID: 108164-2 Seq. No.: 22 A/S Pos: 104

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:45:23

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	167,399.1	90.51	3.705	%			%	4.09 %
Sc 361.383	457,757.0	97.66	3.956	%			%	4.05 %
Al 308.215	576,539.2	24.76	1.027	mg/L	24.76	1.027	mg/L	4.15 %

Mean Data

ID: 108160-1 Seq. No.: 23 A/S Pos: 105

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:47:29

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	168,386.0	91.05	2.954	%			%	3.24 %

Sc 361.383	468,350.5	99.92	3.124	%			%	3.13 %
Al 308.215	664,538.6	28.54	1.099	mg/L	28.54	1.099	mg/L	3.85 %

Mean Data

ID: 108160-2 Seq. No.: 24 A/S Pos: 106

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:49:36

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	173,155.8	93.63	3.132	%			%	3.35 %
Sc 361.383	473,391.8	101.0	3.34	%			%	3.31 %
Al 308.215	577,440.1	24.80	0.766	mg/L	24.80	0.766	mg/L	3.09 %

Mean Data

ID: 108160-3 Seq. No.: 25 A/S Pos: 107

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:51:46

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	180,005.0	97.33	2.650	%			%	2.72 %
Sc 361.383	512,429.9	109.3	1.47	%			%	1.34 %
Al 308.215	883,236.7	37.93	0.767	mg/L	37.93	0.767	mg/L	2.02 %

Mean Data

ID: 108160-4 Seq. No.: 26 A/S Pos: 108

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:53:55

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	170,794.4	92.35	2.223	%			%	2.41 %
Sc 361.383	465,325.7	99.27	2.436	%			%	2.45 %
Al 308.215	554,089.1	23.79	0.531	mg/L	23.79	0.531	mg/L	2.23 %

Mean Data

ID: 108166-1 Seq. No.: 27 A/S Pos: 109

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:56:03

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	162,007.7	87.60	4.202	%			%	4.80 %
Sc 361.383	455,094.2	97.09	4.388	%			%	4.52 %
Al 308.215	716,277.4	30.76	1.182	mg/L	30.76	1.182	mg/L	3.84 %

Mean Data

ID: bs sp883 Seq. No.: 28 A/S Pos: 110

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 20:58:11

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	182,646.4	98.76	0.986	%			%	1.00 %
Sc 361.383	461,422.5	98.44	0.794	%			%	0.81 %
Al 308.215	80,671.1	3.464	0.0306	mg/L	3.464	0.0306	mg/L	0.88 %

Mean Data

ID: bsd sp883 Seq. No.: 29 A/S Pos: 111

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:00:19

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	166,520.2	90.04	4.194	%			%	4.66 %
Sc 361.383	426,339.3	90.96	4.429	%			%	4.87 %
Al 308.215	88,977.9	3.821	0.1819	mg/L	3.821	0.1819	mg/L	4.76 %

Mean Data

ID: CCV Seq. No.: 30 A/S Pos: 5

2002/09/03 07:44:52 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:02:32

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	171,220.0	92.58	7.294	%				7.88 %
Sc 361.383	469,454.5	100.2	8.71	%				8.70 %
Al 308.215	11,497.5	0.4937	0.05301	mg/L	0.4937			10.74 %

2002/09/03 07:44:52 QC value within limits for Al 308.215 Recovery = 98.75%

Mean Data

ID: CCB Seq. No.: 31 A/S Pos: 6

2002/09/03 07:44:53 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:03:55

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	190,911.7	103.2	4.80	%				4.65 %
Sc 361.383	482,277.1	102.9	4.67	%				4.54 %
Al 308.215	30.0	0.0013	0.00563	mg/L	0.0013			436.58 %

2002/09/03 07:44:53 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: mb sp883 Seq. No.: 32 A/S Pos: 112

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:05:19

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	164,798.3	89.11	4.643	%			%	5.21 %

Sc 361.383	424,073.0	90.47	5.218	%			%	5.77 %
Al 308.215	576.7	0.0248	0.01032	mg/L	0.0248	0.01032	mg/L	41.69 %

Mean Data

ID: 108166-2 **Seq. No.:** 33 **A/S Pos:** 113

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:06:41

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	180,074.4	97.37	1.386	%			%	1.42 %
Sc 361.383	503,782.9	107.5	1.74	%			%	1.61 %
Al 308.215	592,283.7	25.43	0.509	mg/L	25.43	0.509	mg/L	2.00 %

Mean Data

ID: 108166-3 **Seq. No.:** 34 **A/S Pos:** 114

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:08:51

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	163,832.8	88.59	3.009	%			%	3.40 %
Sc 361.383	482,397.0	102.9	3.28	%			%	3.19 %
Al 308.215	951,346.8	40.85	1.352	mg/L	40.85	1.352	mg/L	3.31 %

Mean Data

ID: 108177-1 **Seq. No.:** 35 **A/S Pos:** 115

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:11:05

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	182,510.2	98.68	7.236	%			%	7.33 %
Sc 361.383	459,286.1	97.99	5.414	%			%	5.53 %
Al 308.215	291,840.5	12.53	0.689	mg/L	12.53	0.689	mg/L	5.50 %

Mean Data

ID: 108177-2 **Seq. No.:** 36 **A/S Pos:** 116

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:13:18

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	169,397.4	91.59	4.530	%			%	4.95 %
Sc 361.383	455,607.7	97.20	4.999	%			%	5.14 %
Al 308.215	477,497.7	20.51	1.161	mg/L	20.51	1.161	mg/L	5.66 %

Mean Data

ID: 108177-3 Seq. No.: 37 A/S Pos: 117

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:15:27

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	178,697.1	96.62	2.540	%			%	2.63 %
Sc 361.383	481,286.5	102.7	2.61	%			%	2.54 %
Al 308.215	484,312.0	20.80	0.539	mg/L	20.80	0.539	mg/L	2.59 %

Mean Data

ID: 108177-4 Seq. No.: 38 A/S Pos: 118

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:17:34

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	182,425.3	98.64	1.946	%			%	1.97 %
Sc 361.383	539,975.7	115.2	1.31	%			%	1.13 %
Al 308.215	709,171.8	30.45	0.472	mg/L	30.45	0.472	mg/L	1.55 %

Mean Data

ID: 108177-5 Seq. No.: 39 A/S Pos: 119

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:19:41

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	161,736.8	87.45	2.723	%			%	3.11 %
Sc 361.383	450,743.9	96.16	2.876	%			%	2.99 %
Al 308.215	695,999.1	29.89	1.126	mg/L	29.89	1.126	mg/L	3.77 %

Mean Data

ID: lcs-soil Seq. No.: 40 A/S Pos: 120

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:21:48

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	192,382.5	104.0	2.55	%			%	2.45 %
Sc 361.383	509,318.5	108.7	2.81	%			%	2.59 %
Al 308.215	451,115.5	19.37	0.691	mg/L	19.37	0.691	mg/L	3.57 %

Mean Data

ID: CCV Seq. No.: 41 A/S Pos: 5

2002/09/03 07:44:55 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:23:59

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	170,640.8	92.27	7.220	%				7.83 %

Sc 361.383	466,134.4	99.45	10.702	%					10.76 %
Al 308.215	11,798.0	0.5066	0.06245	mg/L	0.5066				12.33 %

2002/09/03 07:44:55 QC value within limits for Al 308.215 Recovery = 101.33%

Mean Data

ID: CCB **Seq. No.:** 42 **A/S Pos:** 6

2002/09/03 07:44:56 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:25:24

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	176,540.2	95.46	5.678	%				5.95 %
Sc 361.383	446,724.8	95.31	5.638	%				5.92 %
Al 308.215	292.5	0.0126	0.00697	mg/L	0.0126			55.52 %

2002/09/03 07:44:56 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: mb sp883 **Seq. No.:** 43 **A/S Pos:** 121

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:26:46

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	187,412.5	101.3	7.09	%			%	7.00 %
Sc 361.383	477,730.4	101.9	6.93	%			%	6.80 %
Al 308.215	-110.1	-0.0047	0.00343	mg/L	-0.0047	0.00343	mg/L	72.46 %

Mean Data

ID: 108177-6 **Seq. No.:** 44 **A/S Pos:** 122

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:28:04

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	170,370.7	92.12	2.662	%			%	2.89 %
Sc 361.383	472,779.5	100.9	2.99	%			%	2.96 %
Al 308.215	541,426.2	23.25	1.085	mg/L	23.25	1.085	mg/L	4.67 %

Mean Data

ID: 108177-8 **Seq. No.:** 45 **A/S Pos:** 123

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:30:11

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	177,938.0	96.21	4.300	%			%	4.47 %
Sc 361.383	489,366.5	104.4	4.69	%			%	4.50 %
Al 308.215	585,861.9	25.16	1.055	mg/L	25.16	1.055	mg/L	4.19 %

Mean Data

ID: 108177-9 Seq. No.: 46 A/S Pos: 124

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:32:19

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	167,802.1	90.73	2.770	%			%	3.05 %
Sc 361.383	460,840.9	98.32	3.008	%			%	3.06 %
Al 308.215	541,320.8	23.25	0.876	mg/L	23.25	0.876	mg/L	3.77 %

Mean Data

ID: 108177-10 Seq. No.: 47 A/S Pos: 125

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:34:30

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	168,420.2	91.07	3.606	%			%	3.96 %
Sc 361.383	472,595.4	100.8	1.64	%			%	1.63 %
Al 308.215	935,035.2	40.15	0.726	mg/L	40.15	0.726	mg/L	1.81 %

Mean Data

ID: 108177-11 Seq. No.: 48 A/S Pos: 126

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:36:40

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	179,536.0	97.08	2.985	%			%	3.07 %
Sc 361.383	483,322.0	103.1	3.22	%			%	3.12 %
Al 308.215	470,036.5	20.18	0.618	mg/L	20.18	0.618	mg/L	3.06 %

Mean Data

ID: bs sp883 Seq. No.: 49 A/S Pos: 127

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:38:49

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	190,589.4	103.1	0.87	%			%	0.84 %
Sc 361.383	511,215.6	109.1	1.12	%			%	1.02 %
Al 308.215	459,475.8	19.73	0.335	mg/L	19.73	0.335	mg/L	1.70 %

Mean Data

ID: bsd sp883 Seq. No.: 50 A/S Pos: 128

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:40:59

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	176,902.1	95.65	4.742	%			%	4.96 %

Sc 361.383	451,208.5	96.26	5.038	%			%	5.23 %
Al 308.215	81,882.8	3.516	0.1546	mg/L	3.516	0.1546	mg/L	4.40 %

Mean Data

ID: mb sp883 Seq. No.: 51 A/S Pos: 129

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:43:08

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	176,471.9	95.42	1.139	%			%	1.19 %
Sc 361.383	453,955.0	96.85	1.432	%			%	1.48 %
Al 308.215	82,052.7	3.524	0.0640	mg/L	3.524	0.0640	mg/L	1.82 %

Mean Data

ID: CCV Seq. No.: 52 A/S Pos: 5

2002/09/03 07:44:59 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:45:22

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	177,911.0	96.20	5.538	%				5.76 %
Sc 361.383	483,746.3	103.2	5.95	%				5.76 %
Al 308.215	11,113.4	0.4772	0.03229	mg/L	0.4772			6.77 %

2002/09/03 07:44:59 QC value within limits for Al 308.215 Recovery = 95.45%

Mean Data

ID: CCB Seq. No.: 53 A/S Pos: 6

2002/09/03 07:44:59 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:46:47

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	180,210.8	97.44	5.304	%				5.44 %
Sc 361.383	456,745.5	97.44	5.400	%				5.54 %
Al 308.215	253.6	0.0109	0.00329	mg/L	0.0109			30.17 %

2002/09/03 07:44:59 QC value within limits for Al 308.215 Recovery = Not calculated

Mean Data

ID: ICSA Seq. No.: 54 A/S Pos: 7

2002/09/03 07:44:59 All analytes passed QC.

Sample Qty g Prep. Vol.: Dilution: : Date: 2002/08/30 21:48:16

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	161,133.9	87.13	5.618	%				6.45 %
Sc 361.383	387,499.2	82.67	4.920	%				5.95 %
Al 308.215	3,036,263.0	130.4	7.60	mg/L	130.4			5.83 %

2002/09/03 07:44:59 QC value within limits for Al 308.215 Recovery = 108.65%

Mean Data

ID: ICSAB **Seq. No.:** 55 **A/S Pos:** 8

2002/09/03 07:44:59 All analytes passed QC.

Sample Qty g **Prep. Vol.:** **Dilution:** : **Date:** 2002/08/30 21:50:36

Analyte	Corr. Intensity	Conc (Calib)	Std. Dev.	Calib Units	Conc (Sample)	Std. Dev.	Sample Units	RSD
Lu 261.542	167,911.0	90.79	7.261	%				8.00 %
Sc 361.383	389,696.4	83.14	7.528	%				9.06 %
Al 308.215	3,103,632.3	133.3	12.66	mg/L	133.3			9.50 %

2002/09/03 07:44:59 QC value within limits for Al 308.215 Recovery = 111.07%

STL Seattle Perkin-Elmer Elan 6100 ICP-MS
Quantitative Analysis Calibration Report

File Name:
File Path:
Calibration Type: External Calibration

(Dual Detector Mode)

Analyte	Mass	Curve Type	Slope	Intercept	Corr. Coeff.
Al	26.982	Linear Thru Zero	0.01	0.00	0.999968
Cr	51.941	Linear Thru Zero	0.01	0.00	0.999957
Ni	59.933	Linear Thru Zero	0.00	0.00	0.999979
Cu	64.928	Linear Thru Zero	0.00	0.00	0.999966
Zn	67.925	Linear Thru Zero	0.00	0.00	0.999961
As	74.922	Linear Thru Zero	0.00	0.00	0.999991
Se	81.917	Linear Thru Zero	0.00	0.00	0.999984
Ge	73.922	Linear Thru Zero	0.00	0.00	0.000000
Ag	106.905	Linear Thru Zero	0.01	0.00	0.999992
Cd	113.904	Linear Thru Zero	0.00	0.00	0.999992
Sb	122.904	Linear Thru Zero	0.01	0.00	0.999995
Rh	102.905	Linear Thru Zero	0.00	0.00	0.000000
Pb	207.977	Linear Thru Zero	0.03	0.00	0.999861
Ho	164.930	Linear Thru Zero	0.00	0.00	0.000000

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Blank

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 08:37:21
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\Blank.003

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Al	27		ug/L			8730.4	2.1
|	Cr	52		ug/L			20358.9	1.1
|	Ni	60		ug/L			358.9	8.3
|	Cu	65		ug/L			314.4	7.1
|	Zn	68		ug/L			1689.3	4.3
|	As	75		ug/L			213.1	7.7
|	Se	82		ug/L			18.2	107.5
⌊>	Ge	74		ug/L			1248137.4	0.5
⌈	Ag	107		ug/L			27.8	25.0
|	Cd	114		ug/L			7.6	216.6
|	Sb	123		ug/L			61.5	16.9
⌊>	Rh	103		ug/L			1235153.6	1.1
⌈	Pb	208		ug/L			1487.8	6.3
⌊>	Ho	165		ug/L			1034260.1	0.7

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 1

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 08:39:39
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\Standard 1.004

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Al	27	**5.000**	ug/L	2.4	8730.445	53413.1	2.9
│	Cr	52	**5.000**	ug/L	2.6	20358.933	73970.6	1.3
│	Ni	60	**5.000**	ug/L	1.0	358.893	13532.0	1.1
│	Cu	65	**5.000**	ug/L	1.5	314.448	15155.8	1.8
│	Zn	68	**5.000**	ug/L	3.8	1689.336	8996.9	1.5
│	As	75	**5.000**	ug/L	2.3	213.068	11262.2	3.3
│	Se	82	**5.000**	ug/L	3.8	18.164	1399.2	3.1
└>	Ge	74		ug/L		1248137.398	1219003.3	1.6
┌	Ag	107	**5.000**	ug/L	1.6	27.778	53936.1	1.9
│	Cd	114	**5.000**	ug/L	2.8	7.646	31599.9	2.1
│	Sb	123	**5.000**	ug/L	1.3	61.516	35048.3	1.3
└>	Rh	103		ug/L		1235153.625	1234566.7	1.9
┌	Pb	208	**5.000**	ug/L	1.4	1487.808	196567.5	0.4
└>	Ho	165		ug/L		1034260.101	1045051.7	1.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 2

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 08:42:29
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\Standard 2.005

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Al	27	**9.684**	ug/L	2.5	8730.445	86049.5	1.0
|	Cr	52	**9.942**	ug/L	0.9	20358.933	125499.0	0.7
|	Ni	60	**9.960**	ug/L	3.4	358.893	26300.9	2.5
|	Cu	65	**9.976**	ug/L	3.6	314.448	29778.8	3.6
|	Zn	68	**10.009**	ug/L	3.2	1689.336	16480.4	3.2
|	As	75	**10.038**	ug/L	3.5	213.068	22838.4	4.1
|	Se	82	**9.954**	ug/L	5.7	18.164	2731.6	7.0
L>	Ge	74		ug/L		1248137.398	1223956.5	1.4
Γ	Ag	107	**9.997**	ug/L	0.8	27.778	110267.3	1.4
|	Cd	114	**9.894**	ug/L	0.5	7.646	61411.2	0.4
|	Sb	123	**9.951**	ug/L	2.4	61.516	69986.0	1.6
L>	Rh	103		ug/L		1235153.625	1263905.1	0.9
Γ	Pb	208	**9.983**	ug/L	1.7	1487.808	385286.6	2.0
L>	Ho	165		ug/L		1034260.101	1036706.7	0.5

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 3

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 08:45:50
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\Standard 3.006

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Al	27	**25.061**	ug/L	1.5	8730.445	209437.0	2.6
│	Cr	52	**25.053**	ug/L	2.9	20358.933	285733.1	1.4
│	Ni	60	**24.998**	ug/L	3.2	358.893	64788.9	3.6
│	Cu	65	**24.968**	ug/L	2.3	314.448	72835.3	2.6
│	Zn	68	**25.063**	ug/L	0.4	1689.336	38849.3	2.1
│	As	75	**25.094**	ug/L	1.9	213.068	57254.9	2.0
│	Se	82	**25.055**	ug/L	1.3	18.164	6849.7	2.1
└>	Ge	74		ug/L		1248137.398	1211337.5	1.8
┌	Ag	107	**25.055**	ug/L	2.3	27.778	267607.6	2.5
│	Cd	114	**25.097**	ug/L	1.9	7.646	152132.9	2.0
│	Sb	123	**25.094**	ug/L	1.3	61.516	172223.2	1.4
└>	Rh	103		ug/L		1235153.625	1210575.5	0.4
┌	Pb	208	**24.905**	ug/L	2.6	1487.808	945959.6	1.3
└>	Ho	165		ug/L		1034260.101	1042274.6	1.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 4

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 08:49:42
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\Standard 4.007

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Al	27	**50.033**	ug/L	1.6	8730.445	405653.1	2.4
|	Cr	52	**50.156**	ug/L	0.8	20358.933	551545.8	3.7
|	Ni	60	**50.334**	ug/L	1.5	358.893	131474.7	2.5
|	Cu	65	**50.188**	ug/L	1.4	314.448	146202.4	2.6
|	Zn	68	**50.161**	ug/L	2.1	1689.336	75984.5	1.2
|	As	75	**49.945**	ug/L	3.0	213.068	111985.2	2.6
|	Se	82	**49.728**	ug/L	3.0	18.164	13173.0	1.4
⌊>	Ge	74		ug/L		1248137.398	1197170.1	3.0
⌈	Ag	107	**49.796**	ug/L	1.4	27.778	527328.4	1.9
|	Cd	114	**49.851**	ug/L	3.2	7.646	300661.5	2.3
|	Sb	123	**49.936**	ug/L	3.3	61.516	342768.5	0.4
⌊>	Rh	103		ug/L		1235153.625	1216985.6	2.9
⌈	Pb	208	**49.721**	ug/L	1.8	1487.808	1875565.1	1.5
⌊>	Ho	165		ug/L		1034260.101	1054974.4	0.6

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 5

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 08:55:35
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\Standard 5.008

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Al	27	**99.711**	ug/L	2.0	8730.445	808370.9	0.9
│	Cr	52	**99.503**	ug/L	0.5	20358.933	1079479.1	2.9
│	Ni	60	**99.864**	ug/L	3.1	358.893	264455.2	3.6
│	Cu	65	**99.579**	ug/L	0.4	314.448	291691.1	3.3
│	Zn	68	**99.531**	ug/L	1.2	1689.336	149965.6	2.4
│	As	75	**99.800**	ug/L	1.3	213.068	226578.4	3.1
│	Se	82	**99.861**	ug/L	1.3	18.164	26841.0	1.6
└>	Ge	74		ug/L		1248137.398	1220378.4	2.9
┌	Ag	107	**99.971**	ug/L	1.9	27.778	1054135.2	2.0
│	Cd	114	**100.004**	ug/L	2.1	7.646	601359.3	2.7
│	Sb	123	**100.119**	ug/L	1.3	61.516	687635.8	1.0
└>	Rh	103		ug/L		1235153.625	1212636.4	1.1
┌	Pb	208	**99.105**	ug/L	1.1	1487.808	3710531.0	1.4
└>	Ho	165		ug/L		1034260.101	1076359.2	1.3

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MSICV

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 09:05:45
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\MSICV.010

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Al	27	**9.719**	ug/L	1.2	8730.445	86599.5	1.0
|	Cr	52	**10.221**	ug/L	2.2	20358.933	128853.9	1.8
|	Ni	60	**10.127**	ug/L	1.3	358.893	27160.2	1.9
|	Cu	65	**9.913**	ug/L	2.0	314.448	29336.8	2.3
|	Zn	68	**9.804**	ug/L	1.8	1689.336	16274.8	1.0
|	As	75	**10.154**	ug/L	2.7	213.068	23256.0	2.0
|	Se	82	**9.901**	ug/L	6.5	18.164	2679.3	5.8
⌊>	Ge	74		ug/L		1248137.398	1221392.1	0.8
⌈	Ag	107	**10.162**	ug/L	1.4	27.778	108211.6	0.3
|	Cd	114	**9.940**	ug/L	3.6	7.646	60345.3	2.8
|	Sb	123	**10.088**	ug/L	1.1	61.516	70014.8	0.6
⌊>	Rh	103		ug/L		1235153.625	1224416.4	1.2
⌈	Pb	208	**10.689**	ug/L	0.5	1487.808	385492.2	1.4
⌊>	Ho	165		ug/L		1034260.101	1033218.9	1.2

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: ICB

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 09:13:33
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\ICB.011

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Al	27	**0.047**	ug/L	5.5	8730.445	9150.7	2.8
│	Cr	52	**0.189**	ug/L	22.6	20358.933	22502.9	1.5
│	Ni	60	**-0.002**	ug/L	1188.6	358.893	354.4	13.8
│	Cu	65	**0.008**	ug/L	25.3	314.448	341.1	4.6
│	Zn	68	**-0.064**	ug/L	39.6	1689.336	1597.2	1.6
│	As	75	**0.011**	ug/L	281.8	213.068	239.0	28.0
│	Se	82	**-0.015**	ug/L	524.4	18.164	13.6	159.7
└>	Ge	74		ug/L		1248137.398	1253185.9	2.8
┌	Ag	107	**0.005**	ug/L	20.9	27.778	78.9	13.6
│	Cd	114	**-0.002**	ug/L	130.5	7.646	-2.5	528.3
│	Sb	123	**0.006**	ug/L	35.0	61.516	104.0	14.0
└>	Rh	103		ug/L		1235153.625	1242897.3	0.2
┌	Pb	208	**0.002**	ug/L	122.6	1487.808	1600.0	6.7
└>	Ho	165		ug/L		1034260.101	1062372.0	1.3

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 0.5 PPB (MDL VERIFICATION STANDARD)

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 09:18:09
Number of Replicates: 3
Batch ID: 08-29-02
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\0.5 PPB (MDL VERIFICATION STANDARD).013

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Al	27	**-0.032**	ug/L	192.7	8730.445	8243.5	2.5
|	Cr	52	**0.768**	ug/L	10.6	20358.933	27995.5	0.7
|	Ni	60	**0.428**	ug/L	17.7	358.893	1474.5	10.4
|	Cu	65	**0.448**	ug/L	11.2	314.448	1613.4	7.3
|	Zn	68	**0.216**	ug/L	26.6	1689.336	1967.8	3.4
|	As	75	**0.513**	ug/L	4.9	213.068	1367.0	3.7
|	Se	82	**0.484**	ug/L	20.7	18.164	146.9	15.1
⌊>	Ge	74		ug/L		1248137.398	1217200.4	3.5
⌈	Ag	107	**0.504**	ug/L	4.8	27.778	5432.1	3.6
|	Cd	114	**0.490**	ug/L	3.7	7.646	3000.7	2.5
|	Sb	123	**0.500**	ug/L	6.5	61.516	3547.5	5.2
⌊>	Rh	103		ug/L		1235153.625	1232768.2	1.5
⌈	Pb	208	**0.501**	ug/L	2.8	1487.808	19703.2	0.9
⌊>	Ho	165		ug/L		1034260.101	1044790.9	1.7

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 1.0 PPB (MDL VERIFICATION STANDARD)

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 09:20:27
Number of Replicates: 3
Batch ID: 08-29-02
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\1.0 PPB (MDL VERIFICATION STANDARD).014

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Al	27	**0.584**	ug/L	5.0	8730.445	12923.6	0.8
│	Cr	52	**1.356**	ug/L	6.0	20358.933	33574.5	1.8
│	Ni	60	**0.940**	ug/L	3.2	358.893	2773.6	2.7
│	Cu	65	**0.940**	ug/L	0.5	314.448	2989.2	1.4
│	Zn	68	**0.726**	ug/L	10.8	1689.336	2673.1	4.9
│	As	75	**1.043**	ug/L	9.8	213.068	2518.3	9.8
│	Se	82	**0.886**	ug/L	28.1	18.164	250.3	26.7
└>	Ge	74		ug/L		1248137.398	1193128.8	1.0
┌	Ag	107	**0.989**	ug/L	1.8	27.778	10506.1	2.5
│	Cd	114	**1.040**	ug/L	5.2	7.646	6287.9	4.1
│	Sb	123	**0.973**	ug/L	3.3	61.516	6772.4	2.8
└>	Rh	103		ug/L		1235153.625	1217811.2	1.1
┌	Pb	208	**1.029**	ug/L	2.0	1487.808	38215.5	0.8
└>	Ho	165		ug/L		1034260.101	1026794.7	1.2

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 5.0 PPB (MDL VERIFICATION STANDARD)

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 09:22:45
Number of Replicates: 3
Batch ID: 08-29-02
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\5.0 PPB (MDL VERIFICATION STANDARD).015

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Al	27	**7.100**	ug/L	4.7	8730.445	65333.6	2.6
|	Cr	52	**5.291**	ug/L	2.4	20358.933	76062.3	1.5
|	Ni	60	**5.070**	ug/L	3.5	358.893	13724.4	1.9
|	Cu	65	**4.869**	ug/L	2.1	314.448	14516.3	0.6
|	Zn	68	**4.831**	ug/L	1.6	1689.336	8831.2	1.5
|	As	75	**4.890**	ug/L	1.5	213.068	11274.4	1.7
|	Se	82	**4.946**	ug/L	5.1	18.164	1342.7	3.7
L>	Ge	74		ug/L		1248137.398	1217595.7	1.7
Γ	Ag	107	**5.002**	ug/L	0.9	27.778	53129.7	0.9
|	Cd	114	**4.992**	ug/L	4.4	7.646	30219.2	3.4
|	Sb	123	**4.954**	ug/L	2.8	61.516	34304.2	1.6
L>	Rh	103		ug/L		1235153.625	1220855.6	1.4
Γ	Pb	208	**5.278**	ug/L	1.0	1487.808	188901.8	0.1
L>	Ho	165		ug/L		1034260.101	1021476.5	1.0

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MSICSA

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 09:25:05
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\MSICSA.016

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Al	27	S	ug/L	S	8730.445	S	S
|	Cr	52	2.481	ug/L	4.2	20358.933	44363.1	0.6
|	Ni	60	3.286	ug/L	5.0	358.893	8667.1	6.6
|	Cu	65	3.960	ug/L	4.4	314.448	11399.0	6.2
|	Zn	68	3.540	ug/L	1.7	1689.336	6636.4	2.9
|	As	75	0.309	ug/L	32.6	213.068	871.8	25.7
|	Se	82	-0.585	ug/L	22.6	18.164	-133.6	26.1
L>	Ge	74		ug/L		1248137.398	1169033.1	2.0
Γ	Ag	107	0.165	ug/L	9.7	27.778	1690.1	9.1
|	Cd	114	0.163	ug/L	44.3	7.646	943.0	44.0
|	Sb	123	1.850	ug/L	5.3	61.516	12198.9	5.0
L>	Rh	103		ug/L		1235153.625	1158891.4	0.9
Γ	Pb	208	0.506	ug/L	1.0	1487.808	18737.1	2.0
L>	Ho	165		ug/L		1034260.101	983702.5	1.1

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MSICSAB

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 09:27:25
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\MSICSAB.017

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Al	27	**S**	ug/L	S	8730.445	S	S
|	Cr	52	**21.905**	ug/L	1.5	20358.933	239013.2	1.4
|	Ni	60	**39.674**	ug/L	1.2	358.893	99406.9	1.2
|	Cu	65	**21.208**	ug/L	3.2	314.448	58874.5	3.2
|	Zn	68	**19.901**	ug/L	0.6	1689.336	29560.5	0.6
|	As	75	**20.072**	ug/L	2.0	213.068	43182.5	2.0
|	Se	82	**18.009**	ug/L	1.7	18.164	4584.8	1.6
⌊>	Ge	74		ug/L		1248137.398	1152168.6	0.1
⌈	Ag	107	**18.820**	ug/L	1.7	27.778	187160.3	0.9
|	Cd	114	**9.693**	ug/L	0.9	7.646	54979.0	2.4
|	Sb	123	**1.778**	ug/L	2.2	61.516	11570.1	0.7
⌊>	Rh	103		ug/L		1235153.625	1143665.4	1.5
⌈	Pb	208	**0.475**	ug/L	2.7	1487.808	17528.6	2.9
⌊>	Ho	165		ug/L		1034260.101	975765.0	0.3

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 3

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 11:16:39
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\QC Std 3.044

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Al	27	**46.309**	ug/L	1.7	8730.445	406907.7	3.9
│	Cr	52	**48.052**	ug/L	0.7	20358.933	568912.4	2.8
│	Ni	60	**48.872**	ug/L	0.5	358.893	138699.1	1.8
│	Cu	65	**49.526**	ug/L	0.5	314.448	155410.1	2.7
│	Zn	68	**49.950**	ug/L	1.3	1689.336	81440.3	3.2
│	As	75	**51.395**	ug/L	2.0	213.068	124963.7	2.5
│	Se	82	**51.843**	ug/L	2.1	18.164	14922.4	2.3
└>	Ge	74		ug/L		1248137.398	1305947.4	2.3
┌	Ag	107	**46.288**	ug/L	1.5	27.778	541118.6	2.1
│	Cd	114	**49.403**	ug/L	1.1	7.646	329327.0	1.7
│	Sb	123	**49.268**	ug/L	1.7	61.516	375193.2	2.3
└>	Rh	103		ug/L		1235153.625	1344566.8	2.7
┌	Pb	208	**50.103**	ug/L	3.0	1487.808	1949603.4	1.6
└>	Ho	165		ug/L		1034260.101	1118458.6	1.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 4

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 11:22:34
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\QC Std 4.045

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Al	27	**0.011**	ug/L	131.4	8730.445	9199.7	2.3
|	Cr	52	**0.702**	ug/L	9.5	20358.933	29202.2	3.1
|	Ni	60	**0.005**	ug/L	267.7	358.893	387.8	8.8
|	Cu	65	**0.039**	ug/L	63.3	314.448	451.1	18.2
|	Zn	68	**0.107**	ug/L	49.4	1689.336	1931.5	5.1
|	As	75	**0.059**	ug/L	117.6	213.068	362.9	44.9
|	Se	82	**-0.051**	ug/L	66.4	18.164	4.4	223.7
⌊>	Ge	74		ug/L		1248137.398	1301624.2	0.9
⌈	Ag	107	**0.004**	ug/L	59.9	27.778	77.8	34.6
|	Cd	114	**-0.002**	ug/L	178.9	7.646	-3.7	603.2
|	Sb	123	**0.017**	ug/L	9.9	61.516	190.7	6.4
⌊>	Rh	103		ug/L		1235153.625	1326604.8	3.4
⌈	Pb	208	**-0.004**	ug/L	15.7	1487.808	1403.4	2.6
⌊>	Ho	165		ug/L		1034260.101	1089189.5	0.8

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MB

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 11:24:58
Number of Replicates: 3
Batch ID: TP880
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\MB.046

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Al	27	**6.983**	ug/L	2.9	8730.445	69759.4	2.0
│	Cr	52	**0.850**	ug/L	5.3	20358.933	31284.4	1.2
│	Ni	60	**-0.044**	ug/L	18.5	358.893	254.4	8.4
│	Cu	65	**0.039**	ug/L	19.8	314.448	454.5	5.0
│	Zn	68	**1.496**	ug/L	8.0	1689.336	4193.5	4.4
│	As	75	**0.026**	ug/L	117.3	213.068	289.8	26.0
│	Se	82	**0.045**	ug/L	116.8	18.164	32.4	47.5
└>	Ge	74		ug/L		1248137.398	1318521.9	0.7
┌	Ag	107	**0.017**	ug/L	11.4	27.778	228.9	10.5
│	Cd	114	**-0.002**	ug/L	95.4	7.646	-2.9	371.1
│	Sb	123	**0.030**	ug/L	7.3	61.516	289.6	5.0
└>	Rh	103		ug/L		1235153.625	1333680.7	0.6
┌	Pb	208	**0.018**	ug/L	7.3	1487.808	2392.3	4.0
└>	Ho	165		ug/L		1034260.101	1167221.8	2.0

MB

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108166-4 (5X)

Sample Description: 5X
Sample Date/Time: Thursday, August 29, 2002 11:27:22
Number of Replicates: 3
Batch ID: TP880
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\108166-4 (5X).047

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Al	27	**4.682**	ug/L	3.2	8730.445	50825.5	3.2
|	Cr	52	**2.622**	ug/L	6.0	20358.933	52702.8	2.8
|	Ni	60	**1.383**	ug/L	5.3	358.893	4419.6	5.0
|	Cu	65	**0.708**	ug/L	2.2	314.448	2622.5	1.9
|	Zn	68	**2.536**	ug/L	3.1	1689.336	5986.4	2.1
|	As	75	**-0.161**	ug/L	222.8	213.068	-169.2	531.9
|	Se	82	**-0.006**	ug/L	833.8	18.164	17.8	89.4
⌊>	Ge	74		ug/L		1248137.398	1345102.0	1.3
⌈	Ag	107	**1.274**	ug/L	4.1	27.778	15158.1	5.7
|	Cd	114	**-0.002**	ug/L	9.3	7.646	-5.5	20.7
|	Sb	123	**0.213**	ug/L	3.0	61.516	1713.6	1.9
⌊>	Rh	103		ug/L		1235153.625	1365399.6	3.4
⌈	Pb	208	**0.120**	ug/L	1.5	1487.808	6385.0	3.2
⌊>	Ho	165		ug/L		1034260.101	1140677.6	2.2

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108166-4

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 11:29:46
Number of Replicates: 3
Batch ID: TP880
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\108166-4.048

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Al	27	**18.059**	ug/L	2.2	8730.445	157681.3	3.8
│	Cr	52	**8.786**	ug/L	3.3	20358.933	116531.9	1.5
│	Ni	60	**7.531**	ug/L	2.6	358.893	20823.0	2.9
│	Cu	65	**2.387**	ug/L	1.9	314.448	7488.6	0.8
│	Zn	68	**6.765**	ug/L	4.5	1689.336	12049.4	2.2
│	As	75	**-1.205**	ug/L	85.8	213.068	-2573.3	92.8
│	Se	82	**-0.149**	ug/L	117.4	18.164	-23.4	208.1
└>	Ge	74		ug/L		1248137.398	1253701.8	1.8
┌	Ag	107	**7.559**	ug/L	17.1	27.778	82669.3	16.2
│	Cd	114	**0.002**	ug/L	357.6	7.646	19.7	220.2
│	Sb	123	**0.950**	ug/L	14.7	61.516	6826.6	13.7
└>	Rh	103		ug/L		1235153.625	1258626.2	0.9
┌	Pb	208	**0.368**	ug/L	1.6	1487.808	15487.8	2.1
└>	Ho	165		ug/L		1034260.101	1088775.3	0.8

SBmglz

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108166-4D

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 11:32:07
Number of Replicates: 3
Batch ID: TP880
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\108166-4D.049

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Al	27	**17.819**	ug/L	0.3	8730.445	154981.3	2.8
|	Cr	52	**8.381**	ug/L	5.0	20358.933	111572.8	2.6
|	Ni	60	**7.246**	ug/L	1.2	358.893	19958.4	1.9
|	Cu	65	**2.375**	ug/L	3.0	314.448	7417.5	0.3
|	Zn	68	**8.749**	ug/L	3.7	1689.336	15018.5	2.0
|	As	75	**-0.950**	ug/L	58.1	213.068	-2006.7	65.0
|	Se	82	**-0.353**	ug/L	57.9	18.164	-79.4	71.7
⌊>	Ge	74		ug/L		1248137.398	1248138.2	2.5
⌈	Ag	107	**2.314**	ug/L	12.3	27.778	25421.7	12.7
|	Cd	114	**0.006**	ug/L	92.3	7.646	44.1	76.2
|	Sb	123	**0.523**	ug/L	11.7	61.516	3802.3	11.9
⌊>	Rh	103		ug/L		1235153.625	1261803.5	0.5
⌈	Pb	208	**0.380**	ug/L	3.1	1487.808	15985.7	2.0
⌊>	Ho	165		ug/L		1034260.101	1090798.1	1.3

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108166-4S

Sample Description: 20X
Sample Date/Time: Thursday, August 29, 2002 11:34:24
Number of Replicates: 3
Batch ID: TP880
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\108166-4S.050

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Al	27	**214.794**	ug/L	0.1	8730.445	1741337.4	0.6
|	Cr	52	**21.685**	ug/L	0.9	20358.933	252157.1	1.2
|	Ni	60	**51.309**	ug/L	1.7	358.893	136795.4	2.3
|	Cu	65	**25.884**	ug/L	2.7	314.448	76452.0	3.3
|	Zn	68	**55.324**	ug/L	2.3	1689.336	84556.7	2.9
|	As	75	**206.342**	ug/L	0.4	213.068	470725.5	0.3
|	Se	82	**204.355**	ug/L	1.5	18.164	55215.9	2.0
⌊>	Ge	74		ug/L		1248137.398	1226832.5	0.6
⌈	Ag	107	**30.956**	ug/L	1.1	27.778	337724.4	2.2
|	Cd	114	**4.990**	ug/L	2.9	7.646	31046.2	2.6
|	Sb	123	**145.540**	ug/L	0.3	61.516	1034101.9	1.2
⌊>	Rh	103		ug/L		1235153.625	1254444.9	1.2
⌈	Pb	208	**50.774**	ug/L	2.2	1487.808	1950567.4	1.6
⌊>	Ho	165		ug/L		1034260.101	1104070.2	1.0

Spike

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108166-4SD

Sample Description: 20X
Sample Date/Time: Thursday, August 29, 2002 11:36:42
Number of Replicates: 3
Batch ID: TP880
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\108166-4SD.051

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Al	27	**204.972**	ug/L	2.4	8730.445	1719365.3	4.6
|	Cr	52	**21.178**	ug/L	2.5	20358.933	255041.0	0.2
|	Ni	60	**49.552**	ug/L	1.7	358.893	136646.6	3.7
|	Cu	65	**24.876**	ug/L	1.5	314.448	75999.6	3.6
|	Zn	68	**53.428**	ug/L	1.7	1689.336	84474.0	0.8
|	As	75	**199.117**	ug/L	1.2	213.068	469815.3	3.3
|	Se	82	**199.377**	ug/L	2.3	18.164	55706.7	3.3
L>	Ge	74		ug/L		1248137.398	1268657.9	2.2
Γ	Ag	107	**30.403**	ug/L	0.4	27.778	334247.8	2.5
|	Cd	114	**4.896**	ug/L	0.7	7.646	30702.3	2.8
|	Sb	123	**144.923**	ug/L	0.8	61.516	1037817.2	3.0
L>	Rh	103		ug/L		1235153.625	1264170.9	2.2
Γ	Pb	208	**49.686**	ug/L	1.0	1487.808	1956105.8	1.7
L>	Ho	165		ug/L		1034260.101	1131442.7	2.3

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108166-4PS

Sample Description: 20X
Sample Date/Time: Thursday, August 29, 2002 11:39:01
Number of Replicates: 3
Batch ID: TP880
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\108166-4PS.052

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Al	27	**208.591**	ug/L	1.0	8730.445	1684860.9	1.6
|	Cr	52	**21.997**	ug/L	1.4	20358.933	254503.5	1.1
|	Ni	60	**51.122**	ug/L	2.0	358.893	135755.4	1.6
|	Cu	65	**25.265**	ug/L	1.5	314.448	74339.6	1.9
|	Zn	68	**58.062**	ug/L	2.2	1689.336	88308.6	2.1
|	As	75	**206.598**	ug/L	0.6	213.068	469519.9	1.3
|	Se	82	**205.854**	ug/L	1.3	18.164	55403.3	1.2
⌊>	Ge	74		ug/L		1248137.398	1222131.3	0.8
⌈	Ag	107	**30.748**	ug/L	0.6	27.778	335501.1	1.4
|	Cd	114	**4.991**	ug/L	1.7	7.646	31055.4	0.8
|	Sb	123	**144.585**	ug/L	1.1	61.516	1027528.1	1.4
⌊>	Rh	103		ug/L		1235153.625	1254773.0	1.6
⌈	Pb	208	**50.455**	ug/L	0.3	1487.808	1945864.7	1.7
⌊>	Ho	165		ug/L		1034260.101	1108251.2	1.7

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: BS-TP880

Sample Description: 20X
Sample Date/Time: Thursday, August 29, 2002 11:41:19
Number of Replicates: 3
Batch ID: TP880
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\BS-TP880.053

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Al	27	**204.443**	ug/L	2.0	8730.445	1609234.7	1.5
|	Cr	52	**21.732**	ug/L	0.4	20358.933	245262.6	1.0
|	Ni	60	**50.082**	ug/L	1.0	358.893	129612.0	0.3
|	Cu	65	**25.375**	ug/L	2.4	314.448	72762.7	3.0
|	Zn	68	**56.065**	ug/L	1.9	1689.336	83148.1	1.4
|	As	75	**207.564**	ug/L	1.7	213.068	459665.5	1.8
|	Se	82	**211.402**	ug/L	1.8	18.164	55443.5	1.6
⌊>	Ge	74		ug/L		1248137.398	1190952.4	0.8
⌈	Ag	107	**30.080**	ug/L	1.5	27.778	315459.9	1.4
|	Cd	114	**5.017**	ug/L	3.4	7.646	30013.9	4.1
|	Sb	123	**147.527**	ug/L	0.6	61.516	1007771.1	1.3
⌊>	Rh	103		ug/L		1235153.625	1206010.3	0.7
⌈	Pb	208	**52.143**	ug/L	0.4	1487.808	1869441.1	1.2
⌊>	Ho	165		ug/L		1034260.101	1030313.8	1.5

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: BSD-TP880

Sample Description: 20X
Sample Date/Time: Thursday, August 29, 2002 11:43:39
Number of Replicates: 3
Batch ID: TP880
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\BSD-TP880.054

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Al	27	**205.722**	ug/L	1.8	8730.445	1608590.4	0.7
|	Cr	52	**21.737**	ug/L	3.0	20358.933	243651.7	1.1
|	Ni	60	**50.387**	ug/L	1.6	358.893	129557.2	2.1
|	Cu	65	**25.672**	ug/L	1.2	314.448	73121.1	1.2
|	Zn	68	**57.720**	ug/L	0.6	1689.336	85011.9	2.3
|	As	75	**204.434**	ug/L	0.8	213.068	449775.3	1.1
|	Se	82	**209.753**	ug/L	0.7	18.164	54660.4	2.2
⌊>	Ge	74		ug/L		1248137.398	1183270.4	1.9
⌈	Ag	107	**30.380**	ug/L	1.8	27.778	314552.8	1.9
|	Cd	114	**5.027**	ug/L	2.8	7.646	29684.5	2.7
|	Sb	123	**148.664**	ug/L	0.9	61.516	1002577.4	1.2
⌊>	Rh	103		ug/L		1235153.625	1190631.8	0.4
⌈	Pb	208	**50.235**	ug/L	2.3	1487.808	1837996.9	2.2
⌊>	Ho	165		ug/L		1034260.101	1051408.0	0.3

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: WATER LCS

Sample Description: 20X
Sample Date/Time: Thursday, August 29, 2002 11:45:59
Number of Replicates: 3
Batch ID: TP880
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\WATER LCS.055

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Al	27	**197.805**	ug/L	2.7	8730.445	1556070.0	2.8
|	Cr	52	**21.467**	ug/L	2.1	20358.933	242299.0	1.9
|	Ni	60	**49.466**	ug/L	2.7	358.893	127923.9	2.9
|	Cu	65	**25.426**	ug/L	0.9	314.448	72839.7	1.1
|	Zn	68	**57.164**	ug/L	1.9	1689.336	84680.0	1.9
|	As	75	**202.756**	ug/L	0.8	213.068	448646.6	1.0
|	Se	82	**208.371**	ug/L	1.5	18.164	54605.7	1.7
⌊>	Ge	74		ug/L		1248137.398	1189933.6	0.3
⌈	Ag	107	**30.013**	ug/L	3.0	27.778	311074.7	2.1
|	Cd	114	**5.068**	ug/L	3.5	7.646	29955.3	1.7
|	Sb	123	**148.821**	ug/L	2.4	61.516	1004703.7	1.3
⌊>	Rh	103		ug/L		1235153.625	1192195.8	1.8
⌈	Pb	208	**51.254**	ug/L	1.9	1487.808	1836157.2	1.2
⌊>	Ho	165		ug/L		1034260.101	1029755.0	2.5

LCS

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 3

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 11:50:51
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\QC Std 3.056

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Al	27	**48.523**	ug/L	4.9	8730.445	394253.5	6.3
|	Cr	52	**49.954**	ug/L	1.6	20358.933	546600.8	2.9
|	Ni	60	**50.144**	ug/L	1.5	358.893	131718.1	2.8
|	Cu	65	**49.954**	ug/L	1.8	314.448	145040.4	1.4
|	Zn	68	**50.444**	ug/L	1.2	1689.336	76081.9	0.6
|	As	75	**52.458**	ug/L	1.0	213.068	118062.8	2.6
|	Se	82	**52.960**	ug/L	1.2	18.164	14108.3	1.1
⌊>	Ge	74		ug/L		1248137.398	1208631.4	1.6
⌈	Ag	107	**49.138**	ug/L	0.6	27.778	535715.6	2.0
|	Cd	114	**48.561**	ug/L	0.1	7.646	301890.6	1.8
|	Sb	123	**49.513**	ug/L	0.7	61.516	351662.5	2.4
⌊>	Rh	103		ug/L		1235153.625	1253704.5	1.8
⌈	Pb	208	**50.536**	ug/L	2.2	1487.808	1890414.7	1.6
⌊>	Ho	165		ug/L		1034260.101	1075117.6	1.5

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 4

Sample Description:
Sample Date/Time: Thursday, August 29, 2002 11:56:45
Number of Replicates: 3
Batch ID:
Method File: C:\elandata\Method\8-STL-ICPMS.mth
Dataset File: c:\elandata\dataset\082902am\QC Std 4.057

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Al	27	**-0.022**	ug/L	140.7	8730.445	8624.1	2.6
|	Cr	52	**0.562**	ug/L	17.7	20358.933	26696.5	2.5
|	Ni	60	**-0.006**	ug/L	200.2	358.893	345.6	7.8
|	Cu	65	**0.020**	ug/L	161.8	314.448	375.6	23.7
|	Zn	68	**0.352**	ug/L	20.0	1689.336	2244.9	3.6
|	As	75	**0.021**	ug/L	366.7	213.068	265.9	68.6
|	Se	82	**0.086**	ug/L	145.8	18.164	42.6	82.8
L>	Ge	74		ug/L		1248137.398	1259085.7	1.9
Γ	Ag	107	**0.018**	ug/L	21.3	27.778	232.2	19.9
|	Cd	114	**-0.000**	ug/L	639.1	7.646	6.0	240.4
|	Sb	123	**0.039**	ug/L	12.9	61.516	349.4	12.3
L>	Rh	103		ug/L		1235153.625	1292939.9	2.4
Γ	Pb	208	**0.000**	ug/L	1586.9	1487.808	1545.6	5.2
L>	Ho	165		ug/L		1034260.101	1070689.5	1.0

STL Seattle Perkin-Elmer Elan 6100 ICP-MS
Quantitative Analysis Calibration Report

File Name:
File Path:
Calibration Type: External Calibration

(Dual Detector Mode)

Analyte	Mass	Curve Type	Slope	Intercept	Corr. Coeff.
Cr	51.941	Linear Thru Zero	0.01	0.00	1.000000
Ni	59.933	Linear Thru Zero	0.00	0.00	0.999961
Cu	64.928	Linear Thru Zero	0.00	0.00	0.999989
Zn	67.925	Linear Thru Zero	0.00	0.00	0.999931
As	74.922	Linear Thru Zero	0.00	0.00	0.999989
Se	81.917	Linear Thru Zero	0.00	0.00	0.999931
Ge	73.922	Linear Thru Zero	0.00	0.00	0.000000
Ag	106.905	Linear Thru Zero	0.01	0.00	0.999987
Cd	113.904	Linear Thru Zero	0.01	0.00	0.999949
Sb	122.904	Linear Thru Zero	0.01	0.00	0.999987
Rh	102.905	Linear Thru Zero	0.00	0.00	0.000000
Pb	207.977	Linear Thru Zero	0.04	0.00	0.999828
Ho	164.930	Linear Thru Zero	0.00	0.00	0.000000

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Blank

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:35:09
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Blank.003

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52		ug/L			7828.4	3.6
│	Ni	60		ug/L			111.1	4.6
│	Cu	65		ug/L			137.8	12.4
│	Zn	68		ug/L			941.9	9.2
│	As	75		ug/L			185.4	20.6
│	Se	82		ug/L			-10.9	355.5
└>	Ge	74		ug/L			1206756.4	0.9
┌	Ag	107		ug/L			606.7	3.6
│	Cd	114		ug/L			9.8	206.9
│	Sb	123		ug/L			320.1	3.5
└>	Rh	103		ug/L			1149578.7	1.2
┌	Pb	208		ug/L			746.7	7.8
└>	Ho	165		ug/L			1062362.2	2.0

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 1

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:37:28
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Standard 1.004

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**5.000**	ug/L	1.8	7828.421	58358.4	1.6
│	Ni	60	**5.000**	ug/L	1.2	111.112	12476.6	1.0
│	Cu	65	**5.000**	ug/L	2.0	137.778	13906.8	1.8
│	Zn	68	**5.000**	ug/L	1.1	941.907	8623.0	1.0
│	As	75	**5.000**	ug/L	1.8	185.412	11028.4	1.7
│	Se	82	**5.000**	ug/L	3.0	-10.889	1379.2	3.0
└>	Ge	74		ug/L		1206756.445	1206813.3	0.4
┌	Ag	107	**5.000**	ug/L	2.8	606.680	51021.0	2.7
│	Cd	114	**5.000**	ug/L	2.9	9.798	29550.0	1.9
│	Sb	123	**5.000**	ug/L	2.4	320.125	35419.1	1.0
└>	Rh	103		ug/L		1149578.700	1146041.7	1.4
┌	Pb	208	**5.000**	ug/L	2.4	746.675	200783.1	2.2
└>	Ho	165		ug/L		1062362.244	1054504.1	0.7

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 2

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:40:18
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Standard 2.005

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**9.990**	ug/L	1.7	7828.421	107204.4	2.0
│	Ni	60	**10.069**	ug/L	1.1	111.112	25436.0	1.1
│	Cu	65	**10.058**	ug/L	1.8	137.778	28186.7	0.9
│	Zn	68	**10.024**	ug/L	3.0	941.907	16317.1	4.9
│	As	75	**9.999**	ug/L	0.4	185.412	21626.9	2.6
│	Se	82	**9.884**	ug/L	2.3	-10.889	2586.1	2.1
└>	Ge	74		ug/L		1206756.445	1193843.4	2.2
┌	Ag	107	**10.013**	ug/L	1.6	606.680	102534.5	1.5
│	Cd	114	**10.011**	ug/L	2.3	9.798	59673.3	2.4
│	Sb	123	**9.973**	ug/L	1.5	320.125	69886.9	1.6
└>	Rh	103		ug/L		1149578.700	1150728.5	0.1
┌	Pb	208	**10.027**	ug/L	0.6	746.675	403693.2	1.2
└>	Ho	165		ug/L		1062362.244	1047893.2	1.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 3

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:43:38
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Standard 3.006

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**24.964**	ug/L	1.6	7828.421	257084.5	1.2
│	Ni	60	**24.789**	ug/L	2.2	111.112	60544.7	2.3
│	Cu	65	**24.857**	ug/L	2.9	137.778	68210.3	2.3
│	Zn	68	**24.629**	ug/L	1.6	941.907	36467.8	1.2
│	As	75	**24.952**	ug/L	1.7	185.412	53721.1	2.2
│	Se	82	**24.794**	ug/L	1.3	-10.889	6310.5	2.0
└>	Ge	74		ug/L		1206756.445	1205776.2	0.6
┌	Ag	107	**24.989**	ug/L	1.9	606.680	260274.4	1.6
│	Cd	114	**24.935**	ug/L	1.5	9.798	150076.8	1.4
│	Sb	123	**24.886**	ug/L	2.0	320.125	173937.2	1.8
└>	Rh	103		ug/L		1149578.700	1177198.1	0.3
┌	Pb	208	**24.944**	ug/L	2.5	746.675	999377.2	2.1
└>	Ho	165		ug/L		1062362.244	1055705.1	0.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 4

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:47:29
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Standard 4.007

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**50.014**	ug/L	2.5	7828.421	506925.2	2.1
|	Ni	60	**50.082**	ug/L	2.2	111.112	122697.0	1.9
|	Cu	65	**50.044**	ug/L	4.7	137.778	137409.7	4.6
|	Zn	68	**49.682**	ug/L	2.5	941.907	71013.7	2.0
|	As	75	**49.831**	ug/L	1.8	185.412	105743.2	1.2
|	Se	82	**49.561**	ug/L	1.6	-10.889	12246.6	0.9
⌊>	Ge	74		ug/L		1206756.445	1204110.7	1.1
⌈	Ag	107	**49.860**	ug/L	1.9	606.680	504086.1	1.4
|	Cd	114	**50.156**	ug/L	3.0	9.798	299189.4	2.4
|	Sb	123	**49.997**	ug/L	2.3	320.125	342390.2	2.3
⌊>	Rh	103		ug/L		1149578.700	1155082.3	3.0
⌈	Pb	208	**49.483**	ug/L	0.6	746.675	1943503.0	0.8
⌊>	Ho	165		ug/L		1062362.244	1070849.7	0.7

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: Standard 5

Sample Description:
Sample Date/Time: Friday, August 30, 2002 10:53:21
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\Standard 5.008

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**100.020**	ug/L	2.8	7828.421	991565.7	0.8
│	Ni	60	**100.420**	ug/L	0.4	111.112	245518.3	2.6
│	Cu	65	**99.819**	ug/L	0.7	137.778	268454.0	2.1
│	Zn	68	**99.650**	ug/L	0.5	941.907	137964.9	2.2
│	As	75	**100.187**	ug/L	0.7	185.412	210523.4	1.6
│	Se	82	**100.406**	ug/L	2.1	-10.889	24766.1	1.9
└>	Ge	74		ug/L		1206756.445	1186522.2	2.2
┌	Ag	107	**99.748**	ug/L	1.2	606.680	1002001.2	1.8
│	Cd	114	**99.452**	ug/L	3.1	9.798	584408.6	2.2
│	Sb	123	**99.746**	ug/L	1.1	320.125	678703.6	1.8
└>	Rh	103		ug/L		1149578.700	1156941.3	2.0
┌	Pb	208	**99.098**	ug/L	2.2	746.675	3767149.1	1.0
└>	Ho	165		ug/L		1062362.244	1065925.7	3.3

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MSICV

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:03:29
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\MSICV.010

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**9.933**	ug/L	1.8	7828.421	108323.5	1.9
|	Ni	60	**10.085**	ug/L	2.4	111.112	25424.8	1.6
|	Cu	65	**9.881**	ug/L	2.5	137.778	27421.9	1.1
|	Zn	68	**10.699**	ug/L	1.1	941.907	16069.8	2.8
|	As	75	**9.907**	ug/L	2.4	185.412	21552.8	1.3
|	Se	82	**9.785**	ug/L	1.8	-10.889	2470.3	2.8
⌊>	Ge	74		ug/L		1206756.445	1219377.1	3.6
⌈	Ag	107	**10.255**	ug/L	0.8	606.680	105578.7	1.0
|	Cd	114	**10.083**	ug/L	1.0	9.798	60428.6	1.4
|	Sb	123	**10.218**	ug/L	2.6	320.125	71176.9	2.5
⌊>	Rh	103		ug/L		1149578.700	1179410.1	0.4
⌈	Pb	208	**10.559**	ug/L	0.7	746.675	405378.0	0.4
⌊>	Ho	165		ug/L		1062362.244	1074260.9	0.7

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: ICB

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:11:18
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\ICB.011

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**-0.007**	ug/L	319.8	7828.421	7889.3	2.5
│	Ni	60	**-0.012**	ug/L	51.3	111.112	82.2	18.3
│	Cu	65	**-0.010**	ug/L	98.5	137.778	113.3	22.2
│	Zn	68	**-0.014**	ug/L	230.3	941.907	937.4	4.0
│	As	75	**0.060**	ug/L	22.6	185.412	319.1	10.0
│	Se	82	**0.102**	ug/L	122.0	-10.889	14.8	214.1
└>	Ge	74		ug/L		1206756.445	1227567.0	1.0
┌	Ag	107	**-0.041**	ug/L	7.6	606.680	206.7	14.8
│	Cd	114	**0.001**	ug/L	53.8	9.798	18.2	23.9
│	Sb	123	**-0.023**	ug/L	11.2	320.125	169.0	12.4
└>	Rh	103		ug/L		1149578.700	1197506.2	1.7
┌	Pb	208	**0.000**	ug/L	970.8	746.675	761.1	2.7
└>	Ho	165		ug/L		1062362.244	1079171.7	2.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 0.5 PPB (MDL VERIFICATION STANDARD)

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:15:53
Number of Replicates: 3
Batch ID: 08-30-02
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\0.5 PPB (MDL VERIFICATION STANDARD).013

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**0.502**	ug/L	7.8	7828.421	13073.6	1.3
|	Ni	60	**0.464**	ug/L	9.4	111.112	1286.7	7.4
|	Cu	65	**0.480**	ug/L	5.3	137.778	1475.6	3.1
|	Zn	68	**0.481**	ug/L	4.7	941.907	1642.6	0.8
|	As	75	**0.445**	ug/L	16.7	185.412	1155.7	14.5
|	Se	82	**0.396**	ug/L	32.6	-10.889	90.3	37.9
⌊>	Ge	74		ug/L		1206756.445	1227838.7	1.9
⌈	Ag	107	**0.459**	ug/L	1.5	606.680	5305.4	1.7
|	Cd	114	**0.503**	ug/L	5.4	9.798	3013.0	4.5
|	Sb	123	**0.471**	ug/L	2.0	320.125	3582.1	2.8
⌊>	Rh	103		ug/L		1149578.700	1175934.1	1.2
⌈	Pb	208	**0.522**	ug/L	1.3	746.675	20503.6	1.9
⌊>	Ho	165		ug/L		1062362.244	1060991.2	2.3

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MSICSA

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:22:49
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\MSICSA.016

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**1.855**	ug/L	4.0	7828.421	26221.1	3.4
│	Ni	60	**3.607**	ug/L	1.2	111.112	9016.2	0.6
│	Cu	65	**4.410**	ug/L	3.2	137.778	12112.9	2.6
│	Zn	68	**4.684**	ug/L	4.3	941.907	7444.3	4.1
│	As	75	**0.476**	ug/L	18.0	185.412	1194.7	15.9
│	Se	82	**-0.528**	ug/L	24.2	-10.889	-142.2	21.8
└>	Ge	74		ug/L		1206756.445	1198803.8	0.6
┌	Ag	107	**0.129**	ug/L	2.3	606.680	1874.6	2.6
│	Cd	114	**0.334**	ug/L	24.4	9.798	1938.8	24.5
│	Sb	123	**1.826**	ug/L	2.4	320.125	12522.9	1.8
└>	Rh	103		ug/L		1149578.700	1137009.2	1.4
┌	Pb	208	**0.649**	ug/L	2.2	746.675	24718.4	1.3
└>	Ho	165		ug/L		1062362.244	1036835.1	2.1

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MSICSAB

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:25:09
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\MSICSAB.017

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**21.714**	ug/L	1.1	7828.421	220116.5	2.2
|	Ni	60	**40.026**	ug/L	1.1	111.112	97358.5	1.9
|	Cu	65	**21.264**	ug/L	2.0	137.778	56971.2	2.9
|	Zn	68	**21.557**	ug/L	0.1	941.907	30394.9	1.1
|	As	75	**20.335**	ug/L	2.9	185.412	42621.2	1.8
|	Se	82	**18.539**	ug/L	3.2	-10.889	4537.4	2.0
⌊>	Ge	74		ug/L		1206756.445	1179656.0	1.2
⌈	Ag	107	**19.326**	ug/L	1.6	606.680	184278.1	2.5
|	Cd	114	**10.218**	ug/L	2.9	9.798	56854.9	1.8
|	Sb	123	**1.777**	ug/L	4.8	320.125	11747.7	4.6
⌊>	Rh	103		ug/L		1149578.700	1095256.4	1.1
⌈	Pb	208	**0.668**	ug/L	2.6	746.675	24839.6	2.1
⌊>	Ho	165		ug/L		1062362.244	1012160.0	1.5

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 3

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:32:56
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 3.018

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**51.221**	ug/L	0.8	7828.421	536768.8	2.3
│	Ni	60	**49.970**	ug/L	1.6	111.112	128205.3	3.0
│	Cu	65	**49.847**	ug/L	0.6	137.778	140688.5	2.1
│	Zn	68	**50.493**	ug/L	1.1	941.907	73805.0	2.4
│	As	75	**49.628**	ug/L	0.7	185.412	109482.7	1.9
│	Se	82	**50.229**	ug/L	1.2	-10.889	12989.7	0.5
└>	Ge	74		ug/L		1206756.445	1244435.8	1.5
┌	Ag	107	**50.637**	ug/L	2.6	606.680	527166.6	2.5
│	Cd	114	**50.394**	ug/L	0.8	9.798	306799.7	0.7
│	Sb	123	**50.094**	ug/L	0.7	320.125	353217.3	0.5
└>	Rh	103		ug/L		1149578.700	1198315.1	1.2
┌	Pb	208	**50.592**	ug/L	0.9	746.675	1969365.9	1.7
└>	Ho	165		ug/L		1062362.244	1090717.9	0.9

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 4

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:38:50
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 4.019

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**-0.006**	ug/L	409.5	7828.421	8156.4	3.2
│	Ni	60	**0.087**	ug/L	18.8	111.112	342.2	12.1
│	Cu	65	**0.115**	ug/L	5.8	137.778	474.5	3.9
│	Zn	68	**0.088**	ug/L	57.1	941.907	1117.4	6.6
│	As	75	**-0.027**	ug/L	191.3	185.412	135.1	84.1
│	Se	82	**-0.040**	ug/L	66.0	-10.889	-22.0	31.7
└>	Ge	74		ug/L		1206756.445	1266357.9	0.3
┌	Ag	107	**-0.046**	ug/L	3.0	606.680	161.1	9.3
│	Cd	114	**-0.001**	ug/L	266.3	9.798	1.8	1258.7
│	Sb	123	**-0.023**	ug/L	24.4	320.125	177.8	22.7
└>	Rh	103		ug/L		1149578.700	1215831.5	1.8
┌	Pb	208	**0.006**	ug/L	15.5	746.675	1000.0	5.8
└>	Ho	165		ug/L		1062362.244	1076791.1	2.9

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: MB

Sample Description:
Sample Date/Time: Friday, August 30, 2002 11:41:14
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\MB.020

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**-0.012**	ug/L	248.1	7828.421	8288.1	3.4
|	Ni	60	**0.036**	ug/L	4.1	111.112	215.6	2.4
|	Cu	65	**0.055**	ug/L	11.1	137.778	311.1	5.3
|	Zn	68	**1.823**	ug/L	4.3	941.907	3755.1	2.9
|	As	75	**0.056**	ug/L	117.7	185.412	329.2	46.4
|	Se	82	**0.069**	ug/L	134.2	-10.889	6.9	362.2
⌊>	Ge	74		ug/L		1206756.445	1298089.8	0.6
⌈	Ag	107	**-0.052**	ug/L	0.8	606.680	100.0	3.3
|	Cd	114	**0.001**	ug/L	182.2	9.798	14.1	44.5
|	Sb	123	**-0.023**	ug/L	16.4	320.125	176.2	15.1
⌊>	Rh	103		ug/L		1149578.700	1252811.0	1.4
⌈	Pb	208	**0.032**	ug/L	8.6	746.675	2110.1	5.5
⌊>	Ho	165		ug/L		1062362.244	1151963.7	0.3

MB

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3 (25X)

Sample Description: 25X
Sample Date/Time: Friday, August 30, 2002 11:43:37
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3 (25X).021

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**5.348**	ug/L	1.7	7828.421	67661.7	0.8
|	Ni	60	**2.986**	ug/L	3.3	111.112	8305.7	3.2
|	Cu	65	**12.760**	ug/L	0.9	137.778	38624.4	0.9
|	Zn	68	**48.175**	ug/L	0.9	941.907	75354.1	2.1
|	As	75	**0.995**	ug/L	9.7	185.412	2549.3	10.2
|	Se	82	**0.073**	ug/L	51.0	-10.889	8.0	126.4
⌊>	Ge	74		ug/L		1206756.445	1330936.7	1.8
⌈	Ag	107	**-0.009**	ug/L	14.1	606.680	575.6	0.9
|	Cd	114	**0.139**	ug/L	1.5	9.798	913.9	2.9
|	Sb	123	**0.167**	ug/L	1.5	320.125	1612.7	2.5
⌊>	Rh	103		ug/L		1149578.700	1277787.7	1.6
⌈	Pb	208	**25.926**	ug/L	0.9	746.675	1107238.7	2.3
⌊>	Ho	165		ug/L		1062362.244	1196191.8	1.5

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 11:46:00
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3.022

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**27.391**	ug/L	2.0	7828.421	303540.6	0.5
|	Ni	60	**15.527**	ug/L	1.3	111.112	41666.2	0.8
|	Cu	65	**63.634**	ug/L	2.9	137.778	187421.7	1.9
|	Zn	68	**216.062**	ug/L	2.5	941.907	326331.2	1.7
|	As	75	**4.669**	ug/L	1.0	185.412	10934.1	1.4
|	Se	82	**0.307**	ug/L	18.0	-10.889	71.2	19.5
⌊>	Ge	74		ug/L		1206756.445	1299361.8	1.8
⌈	Ag	107	**0.146**	ug/L	6.3	606.680	2204.6	5.0
|	Cd	114	**0.599**	ug/L	7.7	9.798	3744.2	6.0
|	Sb	123	**0.923**	ug/L	4.9	320.125	6999.6	3.0
⌊>	Rh	103		ug/L		1149578.700	1227724.0	1.8
⌈	Pb	208	**124.231**	ug/L	1.7	746.675	5147803.1	0.5
⌊>	Ho	165		ug/L		1062362.244	1161555.1	1.2

Sample

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3D

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 11:48:23
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3D.023

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**27.876**	ug/L	0.8	7828.421	307024.5	1.0
|	Ni	60	**15.565**	ug/L	2.9	111.112	41523.6	2.5
|	Cu	65	**64.973**	ug/L	1.0	137.778	190300.5	1.7
|	Zn	68	**220.313**	ug/L	1.9	941.907	330857.4	2.3
|	As	75	**4.718**	ug/L	3.0	185.412	10982.8	3.1
|	Se	82	**0.184**	ug/L	41.2	-10.889	37.7	53.6
L>	Ge	74		ug/L		1206756.445	1291711.4	0.8
Γ	Ag	107	**0.139**	ug/L	7.2	606.680	2093.5	3.8
|	Cd	114	**0.555**	ug/L	5.1	9.798	3419.4	6.0
|	Sb	123	**0.976**	ug/L	4.8	320.125	7268.1	3.4
L>	Rh	103		ug/L		1149578.700	1208455.1	1.2
Γ	Pb	208	**125.009**	ug/L	1.7	746.675	5268258.7	1.8
L>	Ho	165		ug/L		1062362.244	1181614.8	3.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3DD

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 11:50:48
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3DD.024

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**26.876**	ug/L	2.3	7828.421	294819.8	1.3
│	Ni	60	**16.298**	ug/L	2.2	111.112	43258.7	1.0
│	Cu	65	**110.892**	ug/L	2.1	137.778	323030.3	0.4
│	Zn	68	**238.935**	ug/L	1.4	941.907	356943.4	0.7
│	As	75	**5.306**	ug/L	4.7	185.412	12260.1	2.9
│	Se	82	**0.226**	ug/L	83.4	-10.889	48.7	104.0
└>	Ge	74		ug/L		1206756.445	1285504.6	1.9
┌	Ag	107	**0.166**	ug/L	4.2	606.680	2406.9	1.8
│	Cd	114	**0.654**	ug/L	2.4	9.798	4084.5	2.4
│	Sb	123	**2.433**	ug/L	2.8	320.125	17867.8	1.1
└>	Rh	103		ug/L		1149578.700	1225776.4	1.8
┌	Pb	208	**155.828**	ug/L	0.4	746.675	6519843.9	2.1
└>	Ho	165		ug/L		1062362.244	1172764.2	2.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3S

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 11:53:11
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3S.025

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**27.281**	ug/L	2.0	7828.421	310464.3	1.7
|	Ni	60	**57.448**	ug/L	2.3	111.112	157954.3	2.5
|	Cu	65	**41.466**	ug/L	2.6	137.778	125472.2	2.8
|	Zn	68	**111.966**	ug/L	1.7	941.907	174148.0	1.8
|	As	75	**198.735**	ug/L	1.7	185.412	469330.1	1.9
|	Se	82	**184.684**	ug/L	3.1	-10.889	51233.4	3.1
⌊>	Ge	74		ug/L		1206756.445	1333923.9	0.3
⌈	Ag	107	**31.638**	ug/L	2.3	606.680	353248.1	1.6
|	Cd	114	**5.266**	ug/L	2.2	9.798	34397.0	5.2
|	Sb	123	**138.104**	ug/L	3.7	320.125	1042608.4	0.4
⌊>	Rh	103		ug/L		1149578.700	1284937.0	3.9
⌈	Pb	208	**75.806**	ug/L	0.3	746.675	3251014.7	0.8
⌊>	Ho	165		ug/L		1062362.244	1201893.5	1.0

Spike

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3SD

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 11:55:32
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3SD.026

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**26.625**	ug/L	1.5	7828.421	292137.5	1.8
|	Ni	60	**53.560**	ug/L	1.0	111.112	141881.1	0.9
|	Cu	65	**40.605**	ug/L	2.6	137.778	118395.7	3.6
|	Zn	68	**102.507**	ug/L	0.2	941.907	153707.1	1.9
|	As	75	**191.079**	ug/L	1.4	185.412	434859.1	3.1
|	Se	82	**180.399**	ug/L	2.9	-10.889	48228.5	4.1
⌊>	Ge	74		ug/L		1206756.445	1285261.6	1.7
⌈	Ag	107	**30.199**	ug/L	1.1	606.680	319331.9	2.3
|	Cd	114	**5.170**	ug/L	1.2	9.798	31960.2	3.2
|	Sb	123	**139.004**	ug/L	0.4	320.125	994057.8	1.6
⌊>	Rh	103		ug/L		1149578.700	1216066.2	2.0
⌈	Pb	208	**75.449**	ug/L	1.4	746.675	3060860.1	2.4
⌊>	Ho	165		ug/L		1062362.244	1136877.9	1.5

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108164-3PS

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 11:57:49
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108164-3PS.027

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**27.168**	ug/L	1.2	7828.421	270153.9	1.0
|	Ni	60	**55.634**	ug/L	1.1	111.112	133663.7	2.4
|	Cu	65	**41.862**	ug/L	1.4	137.778	110662.6	1.1
|	Zn	68	**115.234**	ug/L	2.9	941.907	156620.3	4.4
|	As	75	**197.589**	ug/L	2.0	185.412	407629.6	0.6
|	Se	82	**186.960**	ug/L	2.9	-10.889	45304.5	1.5
⌊>	Ge	74		ug/L		1206756.445	1165512.7	1.5
⌈	Ag	107	**31.408**	ug/L	0.8	606.680	303026.8	2.2
|	Cd	114	**5.237**	ug/L	1.7	9.798	29533.7	2.5
|	Sb	123	**145.068**	ug/L	1.8	320.125	946519.6	1.8
⌊>	Rh	103		ug/L		1149578.700	1109569.0	1.6
⌈	Pb	208	**76.182**	ug/L	1.3	746.675	2840045.7	2.4
⌊>	Ho	165		ug/L		1062362.244	1045012.3	3.4

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: BS-SP883

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 12:00:07
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\BS-SP883.028

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**20.895**	ug/L	3.9	7828.421	216176.2	2.0
│	Ni	60	**50.222**	ug/L	3.3	111.112	124490.2	1.9
│	Cu	65	**25.351**	ug/L	0.8	137.778	69225.1	1.6
│	Zn	68	**56.626**	ug/L	3.0	941.907	79860.9	1.5
│	As	75	**198.308**	ug/L	0.5	185.412	422380.1	2.8
│	Se	82	**202.911**	ug/L	2.1	-10.889	50765.1	3.1
└>	Ge	74		ug/L		1206756.445	1202994.8	2.3
┌	Ag	107	**30.227**	ug/L	1.1	606.680	300759.4	2.0
│	Cd	114	**5.037**	ug/L	2.3	9.798	29299.0	3.7
│	Sb	123	**150.488**	ug/L	1.0	320.125	1012597.1	1.1
└>	Rh	103		ug/L		1149578.700	1144262.7	1.5
┌	Pb	208	**51.627**	ug/L	1.8	746.675	1933536.7	1.8
└>	Ho	165		ug/L		1062362.244	1049468.2	0.1

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: BSD-SP883

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 12:02:26
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\BSD-SP883.029

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**21.371**	ug/L	3.4	7828.421	217471.1	1.6
│	Ni	60	**50.009**	ug/L	2.9	111.112	122023.5	1.5
│	Cu	65	**25.366**	ug/L	2.1	137.778	68164.5	0.6
│	Zn	68	**56.844**	ug/L	0.8	941.907	78925.5	1.2
│	As	75	**200.065**	ug/L	1.5	185.412	419296.9	0.3
│	Se	82	**202.503**	ug/L	1.8	-10.889	49854.1	0.3
└>	Ge	74		ug/L		1206756.445	1184002.0	1.6
┌	Ag	107	**30.308**	ug/L	1.7	606.680	297907.3	2.2
│	Cd	114	**5.031**	ug/L	4.2	9.798	28887.8	1.5
│	Sb	123	**149.168**	ug/L	1.6	320.125	991517.2	1.1
└>	Rh	103		ug/L		1149578.700	1130605.4	2.7
┌	Pb	208	**52.087**	ug/L	4.2	746.675	1919356.0	1.6
└>	Ho	165		ug/L		1062362.244	1034224.4	5.7

BSD

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 3

Sample Description:
Sample Date/Time: Friday, August 30, 2002 12:07:18
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 3.030

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**51.249**	ug/L	2.0	7828.421	525689.7	1.8
│	Ni	60	**49.981**	ug/L	3.1	111.112	125531.9	3.7
│	Cu	65	**50.807**	ug/L	1.9	137.778	140375.5	2.5
│	Zn	68	**52.231**	ug/L	1.9	941.907	74706.0	2.6
│	As	75	**50.061**	ug/L	0.9	185.412	108113.7	1.7
│	Se	82	**51.042**	ug/L	0.6	-10.889	12924.0	1.4
└>	Ge	74		ug/L		1206756.445	1218236.3	0.8
┌	Ag	107	**50.250**	ug/L	0.7	606.680	511857.3	1.9
│	Cd	114	**49.910**	ug/L	0.8	9.798	297307.4	2.4
│	Sb	123	**50.626**	ug/L	1.1	320.125	349275.6	2.4
└>	Rh	103		ug/L		1149578.700	1172345.8	1.6
┌	Pb	208	**52.063**	ug/L	1.9	746.675	1951846.3	0.7
└>	Ho	165		ug/L		1062362.244	1050873.7	2.6

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 4

Sample Description:
Sample Date/Time: Friday, August 30, 2002 12:13:12
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 4.031

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**0.011**	ug/L	352.9	7828.421	8357.1	2.6
│	Ni	60	**0.126**	ug/L	8.5	111.112	445.6	4.6
│	Cu	65	**0.122**	ug/L	0.6	137.778	496.7	1.8
│	Zn	68	**0.265**	ug/L	27.6	941.907	1384.0	8.3
│	As	75	**-0.031**	ug/L	116.3	185.412	126.1	66.1
│	Se	82	**0.108**	ug/L	14.4	-10.889	17.1	23.1
└>	Ge	74		ug/L		1206756.445	1271907.8	2.0
┌	Ag	107	**-0.045**	ug/L	1.1	606.680	171.1	1.1
│	Cd	114	**-0.001**	ug/L	168.8	9.798	3.4	340.5
│	Sb	123	**0.121**	ug/L	12.5	320.125	1200.3	10.6
└>	Rh	103		ug/L		1149578.700	1209920.0	2.7
┌	Pb	208	**0.008**	ug/L	8.4	746.675	1052.2	3.0
└>	Ho	165		ug/L		1062362.244	1072312.8	2.1

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108166-1

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 12:29:36
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108166-1.038

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**17.221**	ug/L	2.9	7828.421	192545.2	0.6
│	Ni	60	**12.769**	ug/L	3.6	111.112	34037.2	3.1
│	Cu	65	**32.145**	ug/L	3.6	137.778	94062.1	2.3
│	Zn	68	**155.691**	ug/L	2.8	941.907	233719.9	1.5
│	As	75	**4.433**	ug/L	5.0	185.412	10318.1	5.6
│	Se	82	**0.230**	ug/L	53.3	-10.889	49.9	65.8
└>	Ge	74		ug/L		1206756.445	1290066.5	2.2
┌	Ag	107	**0.067**	ug/L	13.3	606.680	1363.4	5.3
│	Cd	114	**0.050**	ug/L	50.1	9.798	326.2	49.8
│	Sb	123	**0.909**	ug/L	2.3	320.125	6907.1	1.4
└>	Rh	103		ug/L		1149578.700	1228291.0	2.0
┌	Pb	208	**47.552**	ug/L	1.7	746.675	1997722.9	2.0
└>	Ho	165		ug/L		1062362.244	1177248.5	1.6

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108166-2

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 12:31:57
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108166-2.039

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
Γ	Cr	52	**29.624**	ug/L	2.5	7828.421	315286.8	1.7
|	Ni	60	**15.374**	ug/L	0.8	111.112	39708.5	1.7
|	Cu	65	**69.017**	ug/L	1.9	137.778	195634.9	0.8
|	Zn	68	**247.917**	ug/L	1.0	941.907	360267.2	1.2
|	As	75	**5.165**	ug/L	3.4	185.412	11621.1	3.9
|	Se	82	**0.256**	ug/L	78.5	-10.889	55.4	94.3
L>	Ge	74		ug/L		1206756.445	1250453.6	1.5
Γ	Ag	107	**0.308**	ug/L	1.9	606.680	3810.5	1.2
|	Cd	114	**0.693**	ug/L	3.8	9.798	4202.8	4.7
|	Sb	123	**1.984**	ug/L	0.7	320.125	14223.7	0.3
L>	Rh	103		ug/L		1149578.700	1191174.1	0.9
Γ	Pb	208	**152.864**	ug/L	2.1	746.675	6233228.7	0.4
L>	Ho	165		ug/L		1062362.244	1143166.3	1.7

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: 108166-3

Sample Description: 5X
Sample Date/Time: Friday, August 30, 2002 12:34:19
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\108166-3.040

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**20.974**	ug/L	1.1	7828.421	230009.3	1.7
│	Ni	60	**13.966**	ug/L	0.9	111.112	36785.1	2.2
│	Cu	65	**28.151**	ug/L	1.2	137.778	81451.6	2.5
│	Zn	68	**69.610**	ug/L	1.2	941.907	103828.2	0.4
│	As	75	**2.548**	ug/L	3.4	185.412	5944.5	4.6
│	Se	82	**0.258**	ug/L	67.1	-10.889	56.6	80.3
└>	Ge	74		ug/L		1206756.445	1274707.5	1.3
┌	Ag	107	**0.226**	ug/L	3.8	606.680	3003.6	3.2
│	Cd	114	**0.045**	ug/L	89.5	9.798	284.9	86.2
│	Sb	123	**0.585**	ug/L	6.5	320.125	4477.9	5.9
└>	Rh	103		ug/L		1149578.700	1204721.3	0.3
┌	Pb	208	**39.345**	ug/L	2.0	746.675	1677611.4	0.4
└>	Ho	165		ug/L		1062362.244	1194902.4	1.6

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: SOIL LCS

Sample Description: 20X
Sample Date/Time: Friday, August 30, 2002 12:39:13
Number of Replicates: 3
Batch ID: SP883
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\SOIL LCS.041

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**21.932**	ug/L	2.1	7828.421	238360.1	0.4
|	Ni	60	**22.405**	ug/L	1.7	111.112	58504.0	0.5
|	Cu	65	**32.639**	ug/L	1.7	137.778	93724.3	1.9
|	Zn	68	**71.884**	ug/L	0.4	941.907	106434.8	2.0
|	As	75	**47.170**	ug/L	0.5	185.412	105837.4	1.9
|	Se	82	**27.921**	ug/L	2.9	-10.889	7336.6	0.8
⌊>	Ge	74		ug/L		1206756.445	1265643.5	2.1
⌈	Ag	107	**42.024**	ug/L	0.6	606.680	444087.9	1.6
|	Cd	114	**17.259**	ug/L	1.7	9.798	106617.9	0.6
|	Sb	123	**38.557**	ug/L	4.0	320.125	275831.9	1.9
⌊>	Rh	103		ug/L		1149578.700	1216071.2	2.2
⌈	Pb	208	**25.070**	ug/L	2.6	746.675	1021292.1	2.3
⌊>	Ho	165		ug/L		1062362.244	1141418.9	2.8

LCS

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 3

Sample Description:
Sample Date/Time: Friday, August 30, 2002 12:42:37
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 3.042

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**51.669**	ug/L	0.9	7828.421	517721.4	1.0
│	Ni	60	**51.437**	ug/L	0.0	111.112	126199.5	1.8
│	Cu	65	**50.531**	ug/L	3.0	137.778	136429.2	4.4
│	Zn	68	**51.915**	ug/L	1.6	941.907	72553.4	2.9
│	As	75	**49.768**	ug/L	0.9	185.412	105013.0	2.4
│	Se	82	**50.799**	ug/L	0.8	-10.889	12566.1	1.8
└>	Ge	74		ug/L		1206756.445	1190235.9	1.8
┌	Ag	107	**50.756**	ug/L	1.5	606.680	504449.5	1.9
│	Cd	114	**50.441**	ug/L	1.0	9.798	293156.5	1.3
│	Sb	123	**51.478**	ug/L	2.0	320.125	346504.9	2.2
└>	Rh	103		ug/L		1149578.700	1143873.2	0.4
┌	Pb	208	**51.459**	ug/L	2.0	746.675	1930634.3	1.1
└>	Ho	165		ug/L		1062362.244	1051463.3	1.1

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 4

Sample Description:
Sample Date/Time: Friday, August 30, 2002 12:48:32
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 4.043

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**-0.027**	ug/L	49.6	7828.421	7761.7	0.3
|	Ni	60	**0.108**	ug/L	26.6	111.112	388.9	18.5
|	Cu	65	**0.107**	ug/L	24.9	137.778	441.1	18.1
|	Zn	68	**0.367**	ug/L	16.4	941.907	1492.8	4.2
|	As	75	**0.015**	ug/L	195.8	185.412	222.6	27.3
|	Se	82	**0.073**	ug/L	120.6	-10.889	7.9	285.7
⌊>	Ge	74		ug/L		1206756.445	1239001.0	2.0
⌈	Ag	107	**-0.050**	ug/L	1.6	606.680	113.3	7.8
|	Cd	114	**-0.004**	ug/L	21.1	9.798	-14.9	35.8
|	Sb	123	**0.171**	ug/L	8.4	320.125	1542.9	6.4
⌊>	Rh	103		ug/L		1149578.700	1199698.4	0.3
⌈	Pb	208	**0.008**	ug/L	10.6	746.675	1040.0	2.3
⌊>	Ho	165		ug/L		1062362.244	1068517.8	2.0

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 3

Sample Description:
Sample Date/Time: Friday, August 30, 2002 13:16:38
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 3.054

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
┌	Cr	52	**50.944**	ug/L	2.8	7828.421	544368.5	2.0
│	Ni	60	**49.580**	ug/L	1.9	111.112	129698.4	1.6
│	Cu	65	**49.116**	ug/L	0.7	137.778	141374.0	1.9
│	Zn	68	**50.431**	ug/L	0.4	941.907	75175.2	1.8
│	As	75	**50.240**	ug/L	2.3	185.412	113033.9	3.0
│	Se	82	**49.653**	ug/L	3.2	-10.889	13097.5	3.7
└>	Ge	74		ug/L		1206756.445	1269146.6	1.6
┌	Ag	107	**50.820**	ug/L	1.4	606.680	530276.0	0.6
│	Cd	114	**50.408**	ug/L	0.7	9.798	307633.4	2.0
│	Sb	123	**49.396**	ug/L	1.3	320.125	349102.6	1.0
└>	Rh	103		ug/L		1149578.700	1201119.3	1.5
┌	Pb	208	**50.279**	ug/L	1.5	746.675	1926443.8	2.1
└>	Ho	165		ug/L		1062362.244	1073565.7	0.6

STL Seattle Perkin-Elmer Elan 6100 ICP-MS

Sample ID: QC Std 4

Sample Description:
Sample Date/Time: Friday, August 30, 2002 13:22:31
Number of Replicates: 3
Batch ID:
Method File: c:\elandata\Method\0-MDL VERIFICATION.mth
Dataset File: c:\elandata\dataset\083002am\QC Std 4.055

Results (ug / l)

Dual Detector Mode

	Analyte	Mass	Conc. Mean	Units	Conc. RSD	Blank Intensity	Meas. Intens. Mean	Meas. Intens. RSD
⌈	Cr	52	**-0.026**	ug/L	107.0	7828.421	8267.7	2.1
|	Ni	60	**0.108**	ug/L	31.0	111.112	414.5	20.4
|	Cu	65	**0.111**	ug/L	5.9	137.778	482.2	3.9
|	Zn	68	**0.423**	ug/L	8.6	941.907	1675.0	2.8
|	As	75	**-0.014**	ug/L	573.4	185.412	172.2	109.8
|	Se	82	**-0.024**	ug/L	426.9	-10.889	-18.7	149.2
⌊>	Ge	74		ug/L		1206756.445	1318121.7	1.7
⌈	Ag	107	**-0.050**	ug/L	3.8	606.680	115.6	18.3
|	Cd	114	**-0.007**	ug/L	57.9	9.798	-33.2	77.3
|	Sb	123	**0.023**	ug/L	21.4	320.125	519.4	5.9
⌊>	Rh	103		ug/L		1149578.700	1257458.1	1.3
⌈	Pb	208	**0.006**	ug/L	17.6	746.675	1006.7	2.8
⌊>	Ho	165		ug/L		1062362.244	1095329.6	1.3

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108166**
Sample Number	**1**
Data Filename	**sp883**
Client Sample ID	**PP011801**
Date Received	**08-23-02**
Date Prepared	**08-30-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blan sp883

Sample weight (g)	**0.5466**	=	0.00055 /kg	Calc. Fact.	1275.44019
Digest volume		=	100 ml	Dry Weight	.39202152 g
Dilution Factor	**5**	=	5	Sample Unit	mg/kg
% Solids	**71.72**	=	0.7172	Spike Factor	2.55088037
		=	1	Rept. Dil. Fa	5
Report in PPM	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Arsenic	0.004433			5.65		1.28
x	Antimony	0.000909			1.16	J	3.83
x	Cadmium	0.00005			0.0638	J	0.638
x	Chromium	0.017221			22		1.28
x	Copper	0.032145		5.5E-05	41	B2	1.28
x	Lead	0.047552		3.2E-05	60.6	B2	0.638
x	Nickel	0.012769		3.6E-05	16.3	B2	1.28
x	Silver	0.000067			0.0855	J	0.638
x	Zinc	0.155691		0.00182	199	B2	3.83

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108166**
Sample Number	**2**
Data Filename	**sp883**
Client Sample ID	**PP011809**
Date Received	**08-23-02**
Date Prepared	**08-30-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blan sp883

Sample weight (g)	**0.5821**	=	0.00058 /kg	Calc. Fact.	1095.75066
Digest volume		=	100 ml	Dry Weight	.45630819 g
Dilution Factor	**5**	=	5	Sample Unit	mg/kg
% Solids	**78.39**	=	0.7839	Spike Factor	2.19150132
		=	1	Rept. Dil. Fa	5
Report in PPM	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Arsenic	0.005165			5.66		1.1
x	Antimony	0.001984			2.17	J	3.29
x	Cadmium	0.000693			0.759		0.548
x	Chromium	0.029624			32.5		1.1
x	Copper	0.069017		5.5E-05	75.6	B2	1.1
x	Lead	0.152864		3.2E-05	168	B2	0.548
x	Nickel	0.015374		3.6E-05	16.8	B2	1.1
x	Silver	0.000308			0.337	J	0.548
x	Zinc	0.247917		0.00182	272	B2	3.29

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108166**
Sample Number	**3**
Data Filename	**sp883**
Client Sample ID	**PP011810**
Date Received	**08-23-02**
Date Prepared	**08-30-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blan sp883

Sample weight (g)	**0.5593**	=	0.00056 /kg	Calc. Fact.	1710.95619
Digest volume		=	100 ml	Dry Weight	.29223425 g
Dilution Factor	**5**	=	5	Sample Unit	mg/kg
% Solids	**52.25**	=	0.5225	Spike Factor	3.42191239
		=	1	Rept. Dil. Fa	5
Report in PPM	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Arsenic	0.002548			4.36		1.71
x	Antimony	0.000585			1	J	5.13
x	Cadmium	0.000045			0.077	J	0.855
x	Chromium	0.020974			35.9		1.71
x	Copper	0.028151		5.5E-05	48.2	B2	1.71
x	Lead	0.039345		3.2E-05	67.3	B2	0.855
x	Nickel	0.013966		3.6E-05	23.9	B2	1.71
x	Silver	0.000226			0.387	J	0.855
x	Zinc	0.06961		0.00182	119	B2	5.13

.045 mg/L x 1L x 5 / mg

.0005573 Kg x .5225 Kg

.077 mg/Kg

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blan noblank
Data Filename	**sp883**
Client Sample ID	
Date Received	
Date Prepared	**08-30-02**
Date Analyzed	**08-30-02**
Sample matrix type	**solid**
QC sample type	**blank**

Sample weight (g)		=	0.0005 /kg	Calc. Fact.	200
Digest volume		=	100 ml	Dry Weight	0 g
Dilution Factor		=	1	Sample Unit	mg/kg
% Solids		=	1	Spike Factor	2
		=	1	Rept. Dil. Fa	1
Report in PPM	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Copper	0.000055			0.011	J	0.2
x	Lead	0.000032			0.0064	J	0.1
x	Nickel	0.000036			0.0072	J	0.2
x	Zinc	0.001823			0.365	J	0.6

metals Worksheet - total

QC Level:Tier IV	
Matrix:solid	
CH2M Hill	

Due: 09/04/02 | **Work Order - 108166**

Proj. Manager:Katie Downie

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

See attached for requested DL

Sample number 108166-1	%Solids	Client Sample ID	PP011801
Sample Weight/Volume	QA/QC Batch SP883	Date Received	8/23/02
		Date Sampled	**8/20/02 4:00:00 PM**

Analyte Name	ICP	ICPMS	Result	PQL	Units
Aluminum	X				
Antimony					
Arsenic					
Cadmium					
Chromium					
Copper					
Lead					
Nickel					
Selenium					
Silver					
Zinc					

Sample number 108166-2	%Solids	Client Sample ID	PP011809
Sample Weight/Volume	QA/QC Batch	Date Received	8/23/02
		Date Sampled	**8/21/02 3:00:00 PM**

Analyte Name	ICP	ICPMS	Result	PQL	Units
Aluminum	X				
Antimony					
Arsenic					
Cadmium					
Chromium					
Copper					
Lead					
Nickel					
Selenium					
Silver					
Zinc					

Analyst _____ Date 8/30/02

Reviewed by _____ Date 9-3-02

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Organics worksheet v4.0
If you have suggestions for changes please bring them to me - Dennis

metals Worksheet - total

QC Level:Tier IV	Due: 09/04/02	Work Order - 108166
Matrix:solid		
CH2M Hill	Proj. Manager:Katie Downie	

Special Instructions: Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders.

Sample number 108166-3	%Solids	Client Sample ID	PP011810
Sample Weight/Volume	QA/QC Batch	Date Received	8/23/02
		Date Sampled	**8/21/02 4:00:00 PM**

Analyte Name	ICP	ICPMS	Result	PQL	Units
Aluminum					
Antimony					
Arsenic					
Cadmium					
Chromium					
Copper					
Lead					
Nickel					
Selenium					
Silver					
Zinc					

Analyst _____ Date 8/30/02

Reviewed by _____ Date 9-3-02

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Organics worksheet v4.0
If you have suggestions for changes please bring them to me - Dennis

metals Worksheet - total

QC Level:Tier IV	Due: 09/04/02
Matrix:liquid	Work Order - 108166
CH2M Hill	Proj. Manager:Katie Downie

Special Instructions

Original invoice is sent to: CH2M Hill, A/P Dept, PO Box 428, Corvallis, OR 97339-0428 with copy of COC, and a copy of the invoice and COC is sent to the requestor. Sample receiving please copy to all work orders. Mushed 6020, per COC

Sample number 108166-[illegible]	%Solids	Client Sample ID	PP0118EB01
Sample Weight/Volume	QA/QC Batch	Date Received	8/23/02
		Date Sampled	**8/21/02 1:15:00 PM**

Analyte Name	ICP	ICPMS	Result	PQL	Units
Aluminum					
Antimony					
Arsenic					
Cadmium					
Chromium					
Copper					
Lead					
Nickel					
Selenium					
Silver					
Zinc					

Analyst _____ Date 8/29/02

Reviewed by _____ Date 8/30/02

Organics worksheet v4.0
If you have suggestions for changes please bring them to me - Dennis

METALS DIGESTION LOG

Date: 8-29-02
Analyst: TJ
Nitric Acid Lot No.: 5002
QC Batch ID: TP880
HCl Lot No.: 5003
H2O2 Lot No.: N/A
Spike SAS Std. No.: 1001-04-21, 1001-03-24, 1001-04-02
Method:

Water Total/ Dissolved (205.8):	Low Level Water (219.1):	Soil Microwave (206.15)	Soil Waterbath (204.2)	Wipe/Filter (209.7)	Paint Chip (214.7)	Oil (208.5)	Leachate (221.4)	Other:
X								

Sample No.	Sample Size g / ml	Matrix	Spike Amt.	Final Vol., mls	Comments
108166 -4		liquid		50 ml	
-4d					
-4s			1 ml		
-4sd			1 ml		
108087 -1					
-2					
-3					
108263 -4					
108227 -1					
-2					
108210 -1					
-2					
108154 -1					
-2					
108143 -1					
-2					
-3					
108137 -1					
-2					
-3					
-4					
-5					
-6					
BLK					
BS			1 ml		
BSD					
LCS					

SPIKE WITNESSING: (CHECK OFF, SIGN & DATE)

Method ✓
Special Spiking Instructions
Matrix ✓
Spike Soln. ✓
Amount Spiked ✓

Signature: [signature]
Date: 8/29/02

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Sample Prep Log Sheet - 8/30/02

Metals Digestion Log

Extraction Date					
QCBatch ID	SP883				
Sample Matrix	solid				
	Soil Microwave (206.13)				
MS Spike No.	GPS#1 : 1001-04-21	Weighed By/Date			
	GPS#2 : 1001-03-24	FJ 8/30/02			
HCL Lot No.	S003				
Nitric Acid Lot No.	S005				
H2O2 Lot No.	N/A	Spike Witness Signature/Date			

QC Sample Type	QC Identifier	Sample Weight	Final Volume		MS/BS spike
Method Blank	SP883	0.5000	100		NA
Duplicate	108164r3	0.5336	100		NA
Duplicate-2	108164r4	0.5714			NA
Blank Spike	SSP883	0.5000	100		2 ml
Blank Spike Duplicate	dSP883	0.5000	100		2 ml
Matrix Spike	108164s3	0.5704	100		2 ml
Matrix Spike Duplicate	108164d3	0.5562	100		2 ml
Matrix Spike-2					
Matrix Spike Duplicate-2					
LCS					
ERA		0.5216	100		

Sample	Client Sample ID	Sample Weight (g)	Final Volume (ml)		
108164-1	PP011806	0.5317	100		
108164-2	PP011807	0.5509	100		
108164-3	PP011808	0.5405	100		
108160-1	PP011802	0.5176	100		
108160-2	PP011803	0.5951	100		
108160-3	PP011804D	0.5993	100		
108160-4	PP011805	0.5578	100		
108166-1	PP011801	0.5466	100		
108166-2	PP011809	0.5821	100		
108166-3	PP011810	0.5593	100		
108177-1	PP01M105	0.5377	100		
108177-2	PP01M106	0.5286	100		
108177-3	PP01M107	0.5130	100		
108177-4	PP01M108	0.5592	100		
108177-5	PP01M109	0.5257	100		
108177-6	PP01M110	0.5984	100		
108177-8	PP01M101	0.5735	100		
108177-9	PP01M102D	0.5230	100		
108177-10	PP01M103	0.5656	100		
108177-11	PP01M104	0.5588	100		

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill	
Work Order Number	108166	
Sample Number	1	Related Blan SP883
Data Filename	SP883	
Client Sample ID	PP011801	
Date Received	08-23-02	
Date Prepared	08-30-02	
Date Analyzed	08-30-02	
Sample matrix type	solid	
QC sample type	sample	

Sample weight (g)	0.5466	=	0.00055 /kg	Calc. Fact.	255.088037
Digest volume		=	100 ml	Dry Weight	0.39202152 g
Dilution Factor		=	1	Sample Units	mg/kg
% Solids	71.72	=	0.7172	Spike Factor	2.55088037
		=	1	Rept. Dil. Fac	1
blank= PPB, 1=PPM, 2=%	1	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aluminum	30.75898			7850		25.5

$$\frac{30.76 \text{ mg/L} \times .1 \text{ L}}{.0005466 \text{ Kg} \cdot .7172} = 7850 \text{ mg/Kg}$$

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill	
Work Order Number	108166	
Sample Number	2	Related Blan SP883
Data Filename	SP883	
Client Sample ID	PP011809	
Date Received	08-23-02	
Date Prepared	08-30-02	
Date Analyzed	08-30-02	
Sample matrix type	solid	
QC sample type	sample	

Sample weight (g)	0.5821	=	0.00058 /kg	Calc. Fact.	219.150132
Digest volume		=	100 ml	Dry Weight	0.45630819 g
Dilution Factor		=	1	Sample Units	mg/kg
% Solids	78.39	=	0.7839	Spike Factor	2.19150132
		=	1	Rept. Dil. Fac	1
blank= PPB, 1=PPM, 2=%	1	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aluminum	25.43434			5570		21.9

STL Seattle

6a **Sample Information**

Client Name	CH2M Hill				
Work Order Number	108166				
Sample Number	3			Related Blan	SP883
Data Filename	SP883				
Client Sample ID	PP011810				
Date Received	08-23-02				
Date Prepared	08-30-02				
Date Analyzed	08-30-02				
Sample matrix type	solid				
QC sample type	sample				

Sample weight (g)	0.5593	=	0.00056 /kg	Calc. Fact.	342.191239
Digest volume		=	100 ml	Dry Weight	0.29223425 g
Dilution Factor		=	1	Sample Units	mg/kg
% Solids	52.25	=	0.5225	Spike Factor	3.42191239
		=	1	Rept. Dil. Fac	1
blank= PPB, 1=PPM, 2=%	1	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aluminum	40.85352			14000		34.2

STL Seattle

6a **Sample Information**

Client Name					
Work Order Number					
Sample Number				Related Blan	noblank
Data Filename	SP883				
Client Sample ID					
Date Received					
Date Prepared	08-30-02				
Date Analyzed	08-30-02				
Sample matrix type	solid				
QC sample type	blank				
Sample weight (g)		=	0.0005 /kg	Calc. Fact.	200
Digest volume		=	100 ml	Dry Weight	0 g
Dilution Factor		=	1	Sample Units	mg/kg
% Solids		=	1	Spike Factor	2
		=	1	Rept. Dil. Fac	1
blank= PPB, 1=PPM, 2=%	1	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL

STL Seattle

6a **Sample Information**

Client Name	**CH2M Hill**
Work Order Number	**108166**
Sample Number	**4**
Data Filename	**tp880**
Client Sample ID	**PP0118EB01**
Date Received	**08-23-02**
Date Prepared	**08-29-02**
Date Analyzed	**08-29-02**
Sample matrix type	**liquid**
QC sample type	**sample**

Related Blan tp880

Sample volume (ml)		=	0.1 /L	Calc. Fact.	1
Digest volume		=	100 ml	Dry Weight	-
Dilution Factor		=	1	Sample Unit	mg/L
% Solids		=	1	Spike Factor	0.01
		=	1	Rept. Dil. Fa	1
Report in PPM	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aluminum	0.018059		0.00698	0.0181	B1	0.01
x	Antimony	0.00095		0.00003	0.00095	J B2	0.003
x	Chromium	0.008786		0.00085	0.00879	B2	0.001
x	Copper	0.002387		3.9E-05	0.00239	B2	0.001
x	Lead	0.000368		1.8E-05	0.000368	J B2	0.0005
x	Nickel	0.007531			0.00753		0.001
x	Zinc	0.006765		0.0015	0.00677	B1	0.003

$\frac{18.059 \text{ ug/L} \times .1 \text{ L}}{.1 \text{ L} \times 1} \times \frac{1 \text{ mg}}{1 \text{ ug}} = .0181 \text{ mg/L}$

STL Seattle

6a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blan noblank
Data Filename	**tp880**
Client Sample ID	
Date Received	
Date Prepared	**08-29-02**
Date Analyzed	**08-29-02**
Sample matrix type	**liquid**
QC sample type	**blank**

Sample volume (ml)		=	0.1 /L	Calc. Fact.	1
Digest volume		=	100 ml	Dry Weight	-
Dilution Factor		=	1	Sample Unit	mg/L
% Solids		=	1	Spike Factor	0.01
		=	1	Rept. Dil. Fa	1
Report in PPM	**1**	=	0.001		
mg/kg Carbon		=	1		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Aluminum	0.006983			0.00698	J	0.01
x	Antimony	0.00003			0.00003	J	0.003
x	Chromium	0.00085			0.00085	J	0.001
x	Copper	0.000039			0.000039	J	0.001
x	Lead	0.000018			0.000018	J	0.0005
x	Zinc	0.001496			0.0015	J	0.003

METHOD DETECTION STUDY SUMMARIES

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Soil Metals
Method 6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	4.93E+00	4.92E+00	4.89E+00	4.71E+00	4.78E+00	4.82E+00	4.87E+00	0.0812	0.2437
As	193.696	4.95E+00	4.95E+00	4.88E+00	4.71E+00	4.78E+00	4.77E+00	4.82E+00	0.0907	0.2722
Ba	233.527	4.94E-01	4.92E-01	4.93E-01	4.84E-01	4.86E-01	4.95E-01	4.94E-01	0.0042	0.0127
Cd	226.502	4.93E-01	4.92E-01	4.92E-01	4.85E-01	4.89E-01	4.92E-01	4.89E-01	0.0029	0.0086
Cr	283.563	4.89E-01	4.89E-01	4.88E-01	4.83E-01	4.84E-01	4.92E-01	4.91E-01	0.0034	0.0103
Pb	220.353	5.00E+00	4.99E+00	4.96E+00	4.85E+00	4.89E+00	4.88E+00	4.90E+00	0.0593	0.1778
Se	196.026	5.06E+00	5.06E+00	5.00E+00	4.81E+00	4.87E+00	4.84E+00	4.93E+00	0.1042	0.3127
Ag	338.289	4.87E-01	4.86E-01	4.87E-01	4.80E-01	4.80E-01	4.86E-01	4.91E-01	0.0039	0.0117
Cu	324.752	4.80E-01	4.80E-01	4.80E-01	4.70E-01	4.68E-01	4.73E-01	4.81E-01	0.0055	0.0164
Cu	327.393	4.88E-01	4.88E-01	4.88E-01	4.74E-01	4.71E-01	4.73E-01	4.82E-01	0.0079	0.0236
Ni	232.003	4.96E-01	4.96E-01	4.93E-01	4.82E-01	4.86E-01	4.87E-01	4.90E-01	0.0054	0.0161
Zn	213.857	4.93E-01	4.93E-01	4.89E-01	4.84E-01	4.89E-01	4.96E-01	4.91E-01	0.0039	0.0118
Be	313.107	4.89E-01	4.89E-01	4.89E-01	4.76E-01	4.81E-01	4.91E-01	4.91E-01	0.0057	0.0172
Sb	206.836	4.87E+00	4.85E+00	4.82E+00	4.68E+00	4.70E+00	4.80E+00	4.88E+00	0.0818	0.2453
Tl	190.801	5.10E+00	5.12E+00	5.06E+00	4.90E+00	4.94E+00	4.96E+00	4.99E+00	0.0838	0.2515
Co	228.616	5.02E-01	5.01E-01	4.97E-01	4.85E-01	4.90E-01	4.89E-01	4.92E-01	0.0064	0.0191
Mn	257.61	5.21E+00	5.22E+00	5.22E+00	5.11E+00	5.16E+00	5.18E+00	5.19E+00	0.0401	0.1203
Mn	294.92	4.98E+00	4.98E+00	4.97E+00	4.91E+00	4.92E+00	5.01E+00	5.01E+00	0.0409	0.1226
V	292.402	4.83E-01	4.83E-01	4.83E-01	4.76E-01	4.77E-01	4.86E-01	4.88E-01	0.0043	0.0128
K	766.49	9.49E+00	9.55E+00	9.18E+00	9.35E+00	8.92E+00	9.21E+00	9.49E+00	0.2271	0.6812
Na	330.237	1.41E+01	1.40E+01	1.41E+01	1.33E+01	1.35E+01	1.32E+01	1.36E+01	0.3788	1.1364
Al	308.215	4.80E-01	4.84E-01	4.80E-01	4.66E-01	4.69E-01	4.72E-01	4.70E-01	0.0070	0.0209
Al	237.313	4.87E-01	4.92E-01	4.78E-01	4.63E-01	4.66E-01	4.67E-01	4.81E-01	0.0112	0.0335
Fe	273.955	4.95E-01	4.97E-01	4.93E-01	4.82E-01	4.85E-01	4.87E-01	4.90E-01	0.0057	0.0170
Ca	315.887	4.73E+00	4.67E+00	4.74E+00	4.79E+00	4.67E+00	4.87E+00	4.91E+00	0.0931	0.2794
Mg	279.077	4.80E+00	4.74E+00	4.79E+00	4.86E+00	4.76E+00	4.88E+00	4.91E+00	0.0648	0.1945
Mo	202.031	0.4915	0.4917	0.4886	0.4736	0.4766	0.4732	0.4778	0.0084	0.0252
Si	251.611	4.9360	4.9370	4.9370	4.8340	4.8370	4.8610	4.8880	0.0471	0.1414
Sr	232.235	4.9560	4.9720	4.9580	4.8410	4.8840	4.9440	4.9180	0.0473	0.1418
B	249.677	4.7930	4.8760	4.9070	4.6610	4.7350	4.7450	4.8500	0.0877	0.2632
Ti	336.121	4.9570	4.9830	4.9690	4.8090	4.8420	4.9040	4.9460	0.0670	0.2011
Sn	189.927	4.9730	4.9870	4.9450	4.8460	4.9000	4.9140	4.9450	0.0479	0.1437

MDL 0.5 Soil

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Soil Metals
Method 6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	5.05E-01	4.97E-01	5.02E-01	4.84E-01	4.88E-01	4.77E-01	4.80E-01	0.0109	0.0326
As	193.696	5.03E-01	4.97E-01	4.96E-01	4.82E-01	4.87E-01	4.74E-01	4.77E-01	0.0111	0.0333
Ba	233.527	5.05E-02	4.98E-02	5.02E-02	4.98E-02	5.01E-02	5.01E-02	5.06E-02	0.0003	0.0009
Cd	226.502	4.96E-02	4.88E-02	4.91E-02	4.88E-02	4.93E-02	4.87E-02	4.90E-02	0.0003	0.0010
Cr	283.563	4.96E-02	4.89E-02	4.92E-02	4.94E-02	4.99E-02	5.01E-02	4.98E-02	0.0004	0.0013
Pb	220.353	5.16E-01	5.07E-01	5.11E-01	5.02E-01	5.07E-01	4.97E-01	4.99E-01	0.0069	0.0206
Se	196.026	5.21E-01	5.14E-01	5.16E-01	4.95E-01	5.02E-01	4.83E-01	4.85E-01	0.0150	0.0449
Ag	338.289	4.98E-02	4.95E-02	4.97E-02	4.85E-02	4.94E-02	4.86E-02	4.91E-02	0.0005	0.0015
Cu	324.752	4.91E-02	4.94E-02	4.96E-02	4.80E-02	4.85E-02	4.73E-02	4.77E-02	0.0009	0.0027
Cu	327.393	5.00E-02	5.11E-02	5.16E-02	4.67E-02	4.80E-02	4.72E-02	4.74E-02	0.0020	0.0060
Ni	232.003	5.11E-02	5.03E-02	5.06E-02	4.99E-02	5.04E-02	4.91E-02	4.96E-02	0.0007	0.0020
Zn	213.857	5.07E-02	4.98E-02	5.02E-02	4.97E-02	5.04E-02	4.91E-02	4.94E-02	0.0006	0.0017
Be	313.107	5.00E-02	4.97E-02	5.00E-02	4.88E-02	4.93E-02	4.92E-02	4.95E-02	0.0004	0.0013
Sb	206.836	4.89E-01	4.83E-01	4.88E-01	4.60E-01	4.81E-01	4.71E-01	4.76E-01	0.0102	0.0305
Tl	190.801	5.28E-01	5.24E-01	5.25E-01	5.08E-01	5.14E-01	4.86E-01	4.89E-01	0.0174	0.0523
Co	228.616	5.18E-02	5.11E-02	5.14E-02	5.07E-02	5.10E-02	5.01E-02	5.00E-02	0.0007	0.0020
Mn	257.61	5.49E-01	5.46E-01	5.50E-01	5.42E-01	5.48E-01	5.41E-01	5.44E-01	0.0036	0.0109
Mn	294.92	5.18E-01	5.14E-01	5.18E-01	5.12E-01	5.17E-01	5.17E-01	5.19E-01	0.0025	0.0074
V	292.402	4.89E-02	4.88E-02	4.90E-02	4.85E-02	4.92E-02	4.89E-02	4.87E-02	0.0002	0.0007
K	766.49	8.63E-01	8.55E-01	8.50E-01	9.45E-01	9.49E-01	9.03E-01	9.12E-01	0.0415	0.1244
Na	330.237	1.37E+00	1.31E+00	1.34E+00	1.26E+00	1.34E+00	1.22E+00	1.25E+00	0.0566	0.1698
Al	308.215	4.48E-02	4.23E-02	4.31E-02	5.22E-02	5.20E-02	4.74E-02	4.91E-02	0.0040	0.0121
Al	237.313	4.99E-02	4.99E-02	4.96E-02	4.70E-02	4.74E-02	4.64E-02	4.63E-02	0.0017	0.0050
Fe	273.955	5.08E-02	5.04E-02	5.06E-02	4.92E-02	4.99E-02	4.89E-02	4.30E-02	0.0027	0.0082
Ca	315.887	4.73E-01	4.67E-01	4.75E-01	4.85E-01	4.92E-01	4.92E-01	4.94E-01	0.0109	0.0328
Mg	279.077	4.88E-01	4.84E-01	4.98E-01	4.96E-01	5.03E-01	4.96E-01	4.94E-01	0.0064	0.0191
Mo	202.031	0.0499	0.0495	0.0503	0.0477	0.0494	0.0483	0.0485	0.0009	0.0028
Si	251.611	0.4900	0.4886	0.4901	0.4783	0.4830	0.4738	0.4778	0.0066	0.0199
Sr	232.235	0.5050	0.4959	0.5008	0.4961	0.4978	0.4985	0.5016	0.0033	0.0098
B	249.677	0.4725	0.4802	0.4872	0.4748	0.4926	0.4887	0.4944	0.0086	0.0258
Ti	336.121	0.5070	0.5059	0.5096	0.4914	0.4956	0.4961	0.4988	0.0069	0.0206
Sn	189.927	0.4950	0.4925	0.4965	0.4848	0.4961	0.4763	0.4854	0.0076	0.0227

MDL 0,05 Soil

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Soil Metals
Method 6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	5.16E-02	5.10E-02	5.00E-02	5.02E-02	4.98E-02	4.59E-02	4.48E-02	0.0026	0.0078
As	193.696	5.03E-02	4.97E-02	4.97E-02	5.18E-02	4.91E-02	4.55E-02	4.72E-02	0.0021	0.0062
Ba	233.527	5.10E-03	5.10E-03	5.10E-03	5.00E-03	5.00E-03	4.70E-03	4.80E-03	0.0002	0.0005
Cd	226.502	5.00E-03	4.90E-03	4.90E-03	5.10E-03	4.90E-03	4.70E-03	4.60E-03	0.0002	0.0005
Cr	283.563	4.90E-03	5.00E-03	4.70E-03	5.30E-03	5.30E-03	4.70E-03	4.70E-03	0.0003	0.0008
Pb	220.353	5.35E-02	5.31E-02	5.28E-02	5.27E-02	5.09E-02	4.92E-02	4.77E-02	0.0022	0.0067
Se	196.026	5.16E-02	5.13E-02	5.04E-02	5.35E-02	5.22E-02	4.40E-02	4.69E-02	0.0033	0.0100
Ag	338.289	4.70E-03	5.00E-03	4.90E-03	5.20E-03	4.70E-03	4.70E-03	4.70E-03	0.0002	0.0006
Cu	324.752	4.60E-03	4.50E-03	4.50E-03	3.50E-03	4.70E-03	2.60E-03	3.80E-03	0.0008	0.0023
Cu	327.393	5.40E-03	5.20E-03	5.20E-03	2.50E-03	3.90E-03	1.70E-03	2.90E-03	0.0015	0.0045
Ni	232.003	4.90E-03	5.10E-03	5.00E-03	5.10E-03	5.20E-03	4.90E-03	4.70E-03	0.0002	0.0005
Zn	213.857	5.00E-03	5.00E-03	5.00E-03	5.10E-03	4.80E-03	4.90E-03	4.60E-03	0.0002	0.0005
Be	313.107	5.00E-03	5.00E-03	5.00E-03	5.00E-03	4.90E-03	4.80E-03	4.70E-03	0.0001	0.0004
Sb	206.836	4.72E-02	4.67E-02	4.59E-02	4.88E-02	4.91E-02	4.40E-02	4.34E-02	0.0022	0.0066
Tl	190.801	5.12E-02	5.16E-02	5.21E-02	5.19E-02	5.09E-02	2.82E-02	2.41E-02	0.0125	0.0374
Co	228.616	5.30E-03	5.30E-03	5.50E-03	5.10E-03	5.20E-03	4.60E-03	4.70E-03	0.0003	0.0010
Mn	257.61	5.59E-02	5.54E-02	5.56E-02	5.48E-02	5.49E-02	5.14E-02	5.16E-02	0.0019	0.0057
Mn	294.92	5.24E-02	5.19E-02	5.19E-02	5.14E-02	5.13E-02	4.88E-02	4.87E-02	0.0015	0.0046
V	292.402	4.90E-03	5.00E-03	4.90E-03	5.00E-03	5.00E-03	4.70E-03	4.40E-03	0.0002	0.0007
K	766.49	1.91E-02	-9.30E-03	-1.55E-02	1.75E-01	1.09E-01	1.07E-01	5.48E-02	0.0707	0.2120
Na	330.237	1.80E-01	1.36E-01	2.29E-01	2.39E-01	1.35E-01	-1.31E-02	1.21E-01	0.0844	0.2533
Al	308.215	1.00E-03	2.70E-03	2.50E-03	1.38E-02	9.40E-03	1.38E-02	9.30E-03	0.0054	0.0163
Al	237.313	3.80E-03	3.70E-03	3.10E-03	2.30E-03	3.80E-03	-1.80E-03	5.10E-03	0.0022	0.0067
Fe	273.955	5.10E-03	4.80E-03	4.90E-03	5.20E-03	4.80E-03	4.60E-03	4.50E-03	0.0003	0.0008
Ca	315.887	4.69E-02	4.57E-02	4.66E-02	5.49E-02	5.00E-02	5.80E-02	5.06E-02	0.0046	0.0138
Mg	279.077	5.15E-02	5.48E-02	5.47E-02	5.23E-02	5.03E-02	3.59E-02	4.39E-02	0.0069	0.0206
Mo	202.031	0.0046	0.0046	0.0047	0.0048	0.0049	0.0049	0.0047	0.0001	0.0004
Si	251.611	0.0414	0.0406	0.0401	0.0419	0.0379	0.0363	0.0340	0.0029	0.0088
Sr	232.235	0.0510	0.0488	0.0511	0.0506	0.0465	0.0539	0.0522	0.0024	0.0071
B	249.677	0.0472	0.0359	0.0320	0.0604	0.0559	0.0622	0.0573	0.0121	0.0362
Ti	336.121	0.0515	0.0508	0.0508	0.0502	0.0503	0.0486	0.0474	0.0014	0.0043
Sn	189.927	0.0494	0.0495	0.0488	0.0511	0.0503	0.0461	0.0462	0.0019	0.0058

MDL 0.005 Soil

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Water Metals
Method 200.7/6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	4.95E+00	5.01E+00	4.96E+00	4.85E+00	4.82E+00	4.85E+00	4.85E+00	0.0744	0.2231
As	193.696	4.97E+00	4.98E+00	4.95E+00	4.85E+00	4.80E+00	4.75E+00	4.83E+00	0.0903	0.2709
Ba	233.527	4.95E-01	4.98E-01	4.92E-01	4.87E-01	4.89E-01	4.96E-01	4.92E-01	0.0038	0.0115
Cd	226.502	4.95E-01	4.99E-01	4.92E-01	4.87E-01	4.91E-01	4.93E-01	4.90E-01	0.0040	0.0120
Cr	283.563	4.92E-01	4.93E-01	4.91E-01	4.85E-01	4.86E-01	4.95E-01	4.92E-01	0.0035	0.0105
Pb	220.353	5.02E+00	5.05E+00	4.99E+00	4.91E+00	4.92E+00	4.88E+00	4.89E+00	0.0696	0.2087
Se	196.026	5.07E+00	5.09E+00	5.05E+00	4.94E+00	4.93E+00	4.87E+00	4.93E+00	0.0848	0.2545
Ag	338.289	4.89E-01	4.90E-01	4.91E-01	4.84E-01	4.84E-01	4.90E-01	4.88E-01	0.0030	0.0091
Cu	324.752	4.79E-01	4.80E-01	4.83E-01	4.76E-01	4.71E-01	4.82E-01	4.78E-01	0.0040	0.0119
Cu	327.393	4.83E-01	4.86E-01	4.90E-01	4.79E-01	4.73E-01	4.81E-01	4.78E-01	0.0054	0.0162
Ni	232.003	5.00E-01	5.04E-01	4.98E-01	4.88E-01	4.91E-01	4.87E-01	4.87E-01	0.0069	0.0207
Zn	213.857	5.00E-01	5.04E-01	4.94E-01	4.89E-01	4.93E-01	4.92E-01	4.92E-01	0.0053	0.0159
Be	313.107	4.92E-01	4.96E-01	4.94E-01	4.85E-01	4.89E-01	4.93E-01	4.92E-01	0.0036	0.0108
Sb	206.836	4.90E+00	4.94E+00	4.91E+00	4.80E+00	4.79E+00	4.79E+00	4.84E+00	0.0635	0.1905
Tl	190.801	5.15E+00	5.17E+00	5.14E+00	4.99E+00	5.00E+00	4.92E+00	4.96E+00	0.1035	0.3105
Co	228.616	5.04E-01	5.07E-01	5.01E-01	4.93E-01	4.94E-01	4.90E-01	4.88E-01	0.0072	0.0217
Mn	257.61	5.23E+00	5.28E+00	5.26E+00	5.19E+00	5.24E+00	5.20E+00	5.18E+00	0.0368	0.1104
Mn	294.92	5.01E+00	5.03E+00	5.01E+00	4.94E+00	4.96E+00	5.03E+00	4.99E+00	0.0354	0.1063
V	292.402	4.85E-01	4.86E-01	4.86E-01	4.80E-01	4.80E-01	4.90E-01	4.87E-01	0.0036	0.0109
K	766.49	9.37E+00	9.61E+00	9.79E+00	9.38E+00	9.31E+00	9.48E+00	9.33E+00	0.1739	0.5218
Na	330.237	1.39E+01	1.40E+01	1.41E+01	1.36E+01	1.36E+01	1.35E+01	1.36E+01	0.2346	0.7039
Al	308.215	4.78E-01	4.83E-01	4.79E-01	4.65E-01	4.70E-01	4.71E-01	4.72E-01	0.0061	0.0182
Al	237.313	4.88E-01	4.89E-01	4.86E-01	4.74E-01	4.68E-01	4.68E-01	4.75E-01	0.0092	0.0277
Fe	273.955	4.99E-01	5.04E-01	4.99E-01	4.86E-01	4.90E-01	4.84E-01	4.88E-01	0.0076	0.0228
Ca	315.887	4.70E+00	4.78E+00	4.76E+00	4.80E+00	4.83E+00	4.76E+00	4.79E+00	0.0422	0.1266
Mg	279.077	4.76E+00	4.84E+00	4.91E-01	4.85E+00	4.89E+00	4.76E+00	4.80E+00	1.6354	4.9061
Mo	202.031	0.4921	0.4943	0.4911	0.4788	0.4824	0.4751	0.4784	0.0077	0.0232
Si	251.611	4.9370	4.9630	4.9570	4.8870	4.8720	4.9170	4.8750	0.0383	0.1148
Sr	232.235	4.9930	5.0560	4.9660	4.8880	4.9010	4.9160	4.8980	0.0623	0.1869
B	249.677	4.7850	4.8750	4.9100	4.7450	4.7800	4.8180	4.8550	0.0587	0.1762
Ti	336.121	4.9560	5.0120	5.0210	4.9010	4.9290	4.9370	4.9220	0.0458	0.1375
Sn	189.927	5.0200	5.0730	4.9920	4.9230	4.9440	4.8810	4.9300	0.0657	0.1971

MDL 0.5 Water

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Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Water Metals
Method 200.7/6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	5.11E-01	5.00E-01	5.03E-01	4.88E-01	4.85E-01	4.78E-01	4.87E-01	0.0118	0.0353
As	193.696	5.10E-01	4.98E-01	5.02E-01	4.89E-01	4.87E-01	4.78E-01	4.82E-01	0.0113	0.0340
Ba	233.527	5.12E-02	5.02E-02	5.04E-02	5.05E-02	5.00E-02	5.02E-02	5.10E-02	0.0004	0.0013
Cd	226.502	5.06E-02	4.98E-02	4.97E-02	4.95E-02	4.87E-02	4.86E-02	4.94E-02	0.0007	0.0020
Cr	283.563	5.07E-02	4.99E-02	4.97E-02	5.00E-02	4.94E-02	4.98E-02	5.07E-02	0.0005	0.0015
Pb	220.353	5.26E-01	5.17E-01	5.15E-01	5.00E-01	5.00E-01	4.95E-01	5.03E-01	0.0113	0.0339
Se	196.026	5.22E-01	5.12E-01	5.15E-01	5.05E-01	5.02E-01	4.86E-01	4.93E-01	0.0127	0.0381
Ag	338.289	5.07E-02	5.00E-02	5.05E-02	4.94E-02	4.89E-02	4.89E-02	4.98E-02	0.0007	0.0022
Cu	324.752	4.90E-02	4.74E-02	4.86E-02	5.06E-02	5.04E-02	4.91E-02	4.96E-02	0.0011	0.0033
Cu	327.393	4.88E-02	4.72E-02	4.90E-02	5.20E-02	5.09E-02	4.97E-02	4.96E-02	0.0015	0.0046
Ni	232.003	5.20E-02	5.10E-02	5.10E-02	5.02E-02	4.99E-02	4.95E-02	5.01E-02	0.0009	0.0026
Zn	213.857	5.23E-02	5.15E-02	5.11E-02	4.94E-02	4.92E-02	4.87E-02	4.95E-02	0.0014	0.0041
Be	313.107	5.11E-02	5.04E-02	5.04E-02	4.95E-02	4.90E-02	4.94E-02	5.01E-02	0.0007	0.0022
Sb	206.836	4.84E-01	4.78E-01	4.89E-01	4.79E-01	4.82E-01	4.71E-01	4.81E-01	0.0055	0.0166
Tl	190.801	5.35E-01	5.24E-01	5.26E-01	5.14E-01	5.13E-01	4.88E-01	4.97E-01	0.0167	0.0501
Co	228.616	5.24E-02	5.15E-02	5.17E-02	5.09E-02	5.08E-02	4.99E-02	5.07E-02	0.0008	0.0024
Mn	257.61	5.58E-01	5.50E-01	5.51E-01	5.51E-01	5.46E-01	5.45E-01	5.51E-01	0.0044	0.0131
Mn	294.92	5.27E-01	5.20E-01	5.21E-01	5.21E-01	5.16E-01	5.20E-01	5.27E-01	0.0040	0.0120
V	292.402	4.98E-02	4.91E-02	4.91E-02	4.94E-02	4.87E-02	4.90E-02	4.99E-02	0.0004	0.0013
K	766.49	9.65E-01	9.03E-01	9.12E-01	9.82E-01	9.58E-01	9.62E-01	9.30E-01	0.0295	0.0886
Na	330.237	1.34E+00	1.29E+00	1.40E+00	1.26E+00	1.26E+00	1.27E+00	1.27E+00	0.0532	0.1597
Al	308.215	5.11E-02	5.39E-02	4.89E-02	4.10E-02	4.18E-02	4.26E-02	4.49E-02	0.0050	0.0151
Al	237.313	4.91E-02	4.85E-02	4.87E-02	4.85E-02	4.89E-02	4.57E-02	4.58E-02	0.0015	0.0044
Fe	273.955	5.21E-02	5.12E-02	5.13E-02	4.96E-02	4.89E-02	4.89E-02	4.96E-02	0.0013	0.0039
Ca	315.887	4.85E-01	4.76E-01	4.72E-01	4.93E-01	4.91E-01	4.92E-01	4.98E-01	0.0096	0.0288
Mg	279.077	4.95E-01	4.86E-01	4.82E-01	5.10E-01	5.09E-01	4.96E-01	5.04E-01	0.0107	0.0322
Mo	202.031	0.0500	0.0494	0.0501	0.0488	0.0492	0.0477	0.0493	0.0008	0.0024
Si	251.611	0.5027	0.4946	0.4970	0.4955	0.4886	0.4830	0.4864	0.0068	0.0205
Sr	232.235	0.5171	0.5070	0.5061	0.4933	0.4917	0.4933	0.5031	0.0094	0.0281
B	249.677	0.4729	0.4732	0.4828	0.5052	0.5059	0.4928	0.5005	0.0143	0.0429
Ti	336.121	0.5132	0.5047	0.5079	0.5037	0.4982	0.5019	0.5072	0.0048	0.0144
Sn	189.927	0.4995	0.4974	0.5011	0.4883	0.4907	0.4742	0.4882	0.0092	0.0277

MDL 0.05 Water

Method Detection Limits
Perkin Elmer Optima 3200DV
ICP Water Metals
Method 200.7/6010

Date 2/25/02-3/1/02

ELEMENT	Wavelength	Result	Result	Result	Result	Result	Result	Result	SD	3xSD
As	188.979	5.06E-02	5.06E-02	5.20E-02	4.66E-02	4.94E-02	4.77E-02	4.52E-02	0.0025	0.0074
As	193.696	5.20E-02	4.87E-02	5.04E-02	4.86E-02	5.05E-02	4.64E-02	4.62E-02	0.0022	0.0065
Ba	233.527	5.00E-03	5.10E-03	5.10E-03	4.90E-03	5.00E-03	4.80E-03	4.80E-03	0.0001	0.0004
Cd	226.502	5.00E-03	5.00E-03	5.00E-03	4.80E-03	4.90E-03	4.60E-03	4.50E-03	0.0002	0.0006
Cr	283.563	5.00E-03	4.90E-03	5.00E-03	4.90E-03	5.00E-03	4.80E-03	4.70E-03	0.0001	0.0003
Pb	220.353	5.34E-02	5.39E-02	5.32E-02	4.99E-02	4.96E-02	4.75E-02	4.71E-02	0.0029	0.0086
Se	196.026	5.05E-02	5.26E-02	5.15E-02	5.00E-02	5.08E-02	4.64E-02	4.49E-02	0.0028	0.0084
Ag	338.289	5.00E-03	5.00E-03	4.70E-03	4.30E-03	4.20E-03	4.40E-03	4.50E-03	0.0003	0.0010
Cu	324.752	4.20E-03	4.20E-03	4.00E-03	6.00E-03	5.70E-03	4.50E-03	4.60E-03	0.0008	0.0024
Cu	327.393	4.00E-03	4.10E-03	3.70E-03	5.70E-03	6.10E-03	4.00E-03	4.40E-03	0.0009	0.0028
Ni	232.003	5.10E-03	5.00E-03	5.20E-03	5.00E-03	5.00E-03	4.80E-03	4.80E-03	0.0001	0.0004
Zn	213.857	5.10E-03	5.20E-03	5.20E-03	4.70E-03	4.80E-03	4.60E-03	4.40E-03	0.0003	0.0009
Be	313.107	5.10E-03	5.10E-03	5.10E-03	4.80E-03	4.90E-03	4.70E-03	4.70E-03	0.0002	0.0006
Sb	206.836	4.67E-02	4.73E-02	4.72E-02	4.65E-02	4.85E-02	4.14E-02	4.11E-02	0.0030	0.0090
Tl	190.801	5.20E-02	5.22E-02	5.18E-02	4.84E-02	4.86E-02	2.81E-02	2.69E-02	0.0114	0.0342
Co	228.616	5.20E-03	5.20E-03	5.30E-03	5.10E-03	5.10E-03	4.50E-03	4.80E-03	0.0003	0.0008
Mn	257.61	5.55E-02	5.58E-02	5.57E-02	5.45E-02	5.51E-02	5.21E-02	5.20E-02	0.0017	0.0050
Mn	294.92	5.23E-02	5.19E-02	5.25E-02	5.16E-02	5.23E-02	4.97E-02	4.88E-02	0.0015	0.0044
V	292.402	5.10E-03	4.90E-03	5.00E-03	4.90E-03	4.80E-03	4.50E-03	4.60E-03	0.0002	0.0006
K	766.49	4.11E-02	7.07E-02	5.91E-02	1.30E-01	1.09E-01	9.97E-02	1.11E-01	0.0320	0.0961
Na	330.237	1.50E-01	1.49E-01	1.18E-01	1.15E-01	1.47E-01	7.43E-02	6.47E-02	0.0356	0.1068
Al	308.215	6.10E-03	7.60E-03	8.10E-03	1.90E-03	3.00E-04	5.00E-03	4.10E-03	0.0029	0.0086
Al	237.313	2.90E-03	3.60E-03	3.00E-03	4.20E-03	3.70E-03	2.30E-03	1.70E-03	0.0009	0.0026
Fe	273.955	5.10E-03	5.50E-03	5.20E-03	4.50E-03	4.40E-03	4.40E-03	4.30E-03	0.0005	0.0014
Ca	315.887	4.87E-02	5.04E-02	4.94E-02	4.49E-02	4.48E-02	4.54E-02	4.48E-02	0.0025	0.0074
Mg	279.077	4.95E-02	5.12E-02	5.25E-02	5.20E-02	5.31E-02	5.04E-02	4.54E-02	0.0026	0.0078
Mo	202.031	0.0046	0.0046	0.0047	0.0046	0.0048	0.0047	0.0048	0.0001	0.0003
Si	251.611	0.0474	0.0460	0.0469	0.0444	0.0446	0.0388	0.0385	0.0037	0.0111
Sr	232.235	0.0531	0.0535	0.0534	0.0468	0.0449	0.0434	0.0435	0.0048	0.0143
B	249.677	0.0550	0.0443	0.0379	0.0680	0.0637	0.0626	0.0551	0.0109	0.0326
Ti	336.121	0.0513	0.0511	0.0508	0.0503	0.0506	0.0488	0.0486	0.0011	0.0033
Sn	189.927	0.0490	0.0488	0.0490	0.0474	0.0491	0.0440	0.0454	0.0021	0.0062

MDL 0.005 Water

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STL Seattle Perkin - Elmer Elan 6100 ICP-MS
2/15/2002
FCW

AVERAGE SOIL MDL (mg / kg) ANNUALLY

ELEMENT	MASS	RUN #1	RUN #2	RUN #3	NEW MDL	CURRENT MDL
Lithium	7	0.01095	0.01158	0.00898	**0.0105**	********
Beryllium	9	0.01171	0.0106	0.01068	**0.0110**	0.044
Magnesium	24	0.03216	0.04357	0.07977	**0.0518**	********
Aluminum	27	0.14472	0.06699	1.78178	**0.6645**	5
Titanium	47	0.07776	0.09294	0.10461	**0.0918**	0.1248
Vanadium	51	0.1016	0.09801	0.06504	**0.0882**	0.1454
Chromium	52	0.05538	0.03263	0.02943	**0.0391**	0.0477
Manganese	55	0.03088	0.0364	0.02732	**0.0315**	0.0225
Cobalt	59	0.00364	0.00334	0.00424	**0.0037**	0.0377
Nickel	60	0.00791	0.00567	0.00424	**0.0059**	0.0735
Copper	65	0.0068	0.01141	0.01119	**0.0098**	0.0812
Zinc	68	0.05438	0.06108	0.06446	**0.0600**	0.1818
Arsenic	75	0.09764	0.10609	0.11282	**0.1055**	0.1537
Selenium	82	0.36309	0.20149	0.42598	**0.3302**	0.3864
Strontium	88	0.04385	0.00285	0.00285	**0.0165**	0.0177
Molybdenum	95	0.01301	0.02365	0.0268	**0.0212**	0.0488
Silver	107	0.00334	0.00574	0.00454	**0.0045**	0.0485
Cadmium	114	0.0069	0.0068	0.0069	**0.0069**	0.0833
Indium	115	0.00236	0.00227	0.00113	**0.0019**	********
Tin	118	0.02784	0.03907	0.03249	**0.0331**	0.0642
Antimony	123	0.01629	0.01856	0.02386	**0.0196**	0.0201
Barium	137	0.00611	0.00849	0.00898	**0.0079**	0.0933
Thallium	205	0.01406	0.00532	0.00763	**0.0090**	0.0473
Lead	208	0.00113	0.0034	0.00207	**0.0022**	0.0232
Bismuth	209	0.0218	0.01301	0.04173	**0.0255**	********
Uranium	238	0.00207	0.00236	0.0001	**0.0015**	********

STL Seattle Perkin - Elmer Elan 6100 ICP-MS
2/11/2002
FCW

SOIL / OIL / WIPE / FILTER / PAINT CHIP'S MDL #1

ELEMENT	MASS	spike (ug/l)	Result	Result	Result	Result	Result	Result	Result	Std Dev	(mg / kg) MDL	CURRENT MDL
Lithium	7	0.01	-0.074	-0.083	-0.079	-0.078	-0.085	-0.082	-0.079	0.0037	**0.01095**	********
Beryllium	9	0.01	0.01	0.003	0.013	0.013	0.008	0.006	0.005	0.0039	**0.01171**	0.044
Magnesium	24	0.5	0.386	0.396	0.403	0.4	0.412	0.4	0.419	0.0107	**0.03216**	********
Aluminum	27	0.5	0.328	0.367	0.341	0.372	0.474	0.389	0.405	0.0482	**0.14472**	5
Titanium	47	0.5	0.198	0.202	0.241	0.203	0.218	0.172	0.165	0.0259	**0.07776**	0.1248
Vanadium	51	0.5	0.477	0.425	0.375	0.463	0.452	0.425	0.419	0.0339	**0.1016**	0.1454
Chromium	52	0.05	-0.031	0.007	0.019	0.003	-0.016	-0.012	-0.027	0.0185	**0.05538**	0.0477
Manganese	55	0.5	0.51	0.508	0.523	0.514	0.534	0.532	0.523	0.0103	**0.03088**	0.0225
Cobalt	59	0.01	0.009	0.01	0.011	0.009	0.009	0.007	0.009	0.0012	**0.00364**	0.0377
Nickel	60	0.01	0.007	0.011	0.011	0.008	0.004	0.008	0.011	0.0026	**0.00791**	0.0735
Copper	65	0.01	-0.009	-0.006	-0.012	-0.007	-0.008	-0.008	-0.005	0.0023	**0.0068**	0.0812
Zinc	68	0.5	0.374	0.356	0.347	0.379	0.38	0.344	0.336	0.0181	**0.05438**	0.1818
Arsenic	75	0.5	0.541	0.636	0.558	0.606	0.579	0.576	0.557	0.0325	**0.09764**	0.1537
Selenium	82	0.5	0.794	0.886	0.697	0.75	0.594	0.685	0.525	0.1210	**0.36309**	0.3864
Strontium	88	0.01	0.011	0.01	-0.027	0.014	0.012	0.01	0.012	0.0146	**0.04385**	0.0177
Molybdenum	95	0.05	0.066	0.057	0.059	0.055	0.055	0.055	0.053	0.0043	**0.01301**	0.0488
Silver	107	0.01	0.012	0.014	0.013	0.011	0.013	0.011	0.012	0.0011	**0.00334**	0.0485
Cadmium	114	0.01	0.003	0.007	0.009	0.003	0.007	0.004	0.005	0.0023	**0.0069**	0.0833
Indium	115	0.01	0.01	0.011	0.01	0.012	0.01	0.011	0.01	0.0008	**0.00236**	********
Tin	118	0.05	0.091	0.084	0.079	0.073	0.072	0.071	0.063	0.0093	**0.02784**	0.0642
Antimony	123	0.05	0.077	0.077	0.067	0.073	0.067	0.066	0.064	0.0054	**0.01629**	0.0201
Barium	137	0.01	0.008	0.009	0.009	0.011	0.009	0.014	0.009	0.0020	**0.00611**	0.0933
Thallium	205	0.05	0.093	0.093	0.083	0.086	0.082	0.085	0.083	0.0047	**0.01406**	0.0473
Lead	208	0.01	0.013	0.013	0.013	0.014	0.013	0.013	0.013	0.0004	**0.00113**	0.0232
Bismuth	209	0.05	0.075	0.083	0.071	0.069	0.064	0.063	0.064	0.0073	**0.0218**	********
Uranium	238	0.01	0.01	0.01	0.011	0.01	0.01	0.011	0.009	0.0007	**0.00207**	********

STL Seattle Perkin - Elmer Elan 6100 ICP-MS
2/13/2002
FCW

SOIL / OIL / WIPE / FILTER / PAINT CHIP'S MDL #2

(mg / kg)

ELEMENT	MASS	spike (ug/l)	Result	Result	Result	Result	Result	Result	Result	Std Dev	MDL	CURRENT MDL
Lithium	7	0.01	-0.008	-0.009	-0.017	-0.015	-0.016	-0.015	-0.009	0.0039	**0.01158**	********
Beryllium	9	0.01	0.012	0.009	0.016	0.008	0.008	0.015	0.015	0.0035	**0.0106**	0.044
Magnesium	24	0.5	0.444	0.433	0.427	0.413	0.408	0.404	0.415	0.0145	**0.04357**	********
Aluminum	27	0.5	-0.492	-0.493	-0.55	-0.52	-0.531	-0.539	-0.51	0.0223	**0.06699**	5
Titanium	47	0.5	0.407	0.355	0.404	0.364	0.392	0.443	0.422	0.0310	**0.09294**	0.1248
Vanadium	51	0.5	0.399	0.489	0.485	0.468	0.466	0.471	0.498	0.0327	**0.09801**	0.1454
Chromium	52	0.05	-0.016	0.01	-0.003	0.011	-0.013	0.006	-0.006	0.0109	**0.03263**	0.0477
Manganese	55	0.5	0.507	0.509	0.51	0.499	0.514	0.488	0.527	0.0121	**0.0364**	0.0225
Cobalt	59	0.01	0.01	0.009	0.012	0.011	0.009	0.011	0.01	0.0011	**0.00334**	0.0377
Nickel	60	0.01	-0.005	-0.005	-0.009	-0.005	-0.004	-0.006	-0.003	0.0019	**0.00567**	0.0735
Copper	65	0.01	0.006	0.003	0.011	0.007	0.012	0.014	0.009	0.0038	**0.01141**	0.0812
Zinc	68	0.5	0.347	0.383	0.39	0.362	0.379	0.388	0.41	0.0204	**0.06108**	0.1818
Arsenic	75	0.5	0.613	0.656	0.564	0.629	0.555	0.611	0.612	0.0354	**0.10609**	0.1537
Selenium	82	0.5	0.34	0.307	0.292	0.346	0.395	0.414	0.214	0.0672	**0.20149**	0.3864
Strontium	88	0.01	0.006	0.007	0.007	0.005	0.007	0.007	0.008	0.0010	**0.00285**	0.0177
Molybdenum	95	0.05	0.071	0.069	0.062	0.061	0.054	0.051	0.053	0.0079	**0.02365**	0.0488
Silver	107	0.01	0.013	0.015	0.016	0.012	0.011	0.013	0.011	0.0019	**0.00574**	0.0485
Cadmium	114	0.01	0.01	0.009	0.007	0.006	0.008	0.003	0.007	0.0023	**0.0068**	0.0833
Indium	115	0.01	0.009	0.011	0.01	0.009	0.01	0.01	0.009	0.0008	**0.00227**	********
Tin	118	0.05	0.095	0.079	0.07	0.071	0.062	0.061	0.057	0.0130	**0.03907**	0.0642
Antimony	123	0.05	0.084	0.084	0.078	0.075	0.072	0.075	0.067	0.0062	**0.01856**	0.0201
Barium	137	0.01	0.003	0.005	0.008	0.004	0.011	0.004	0.007	0.0028	**0.00849**	0.0933
Thallium	205	0.05	0.057	0.053	0.055	0.055	0.058	0.054	0.054	0.0018	**0.00532**	0.0473
Lead	208	0.01	0.008	0.007	0.007	0.01	0.009	0.009	0.009	0.0011	**0.0034**	0.0232
Bismuth	209	0.05	0.061	0.055	0.058	0.059	0.057	0.053	0.048	0.0043	**0.01301**	********
Uranium	238	0.01	0.011	0.012	0.011	0.01	0.01	0.01	0.01	0.0008	**0.00236**	********

STL Seattle Perkin - Elmer Elan 6100 ICP-MS
2/15/2002
FCW

SOIL / OIL / WIPE / FILTER / PAINT CHIP'S MDL #3

ELEMENT	MASS	spike (ug/l)	Result	Result	Result	Result	Result	Result	Result	Std Dev	(mg / kg) MDL	CURRENT MDL
Lithium	7	0.01	0.019	0.023	0.02	0.017	0.024	0.018	0.016	0.0030	**0.00898**	********
Beryllium	9	0.01	0.016	0.009	0.013	0.008	0.015	0.008	0.008	0.0036	**0.01068**	0.044
Magnesium	24	0.5	0.659	0.705	0.675	0.74	0.693	0.69	0.672	0.0266	**0.07977**	********
Aluminum	27	0.5	0.427	1.295	1.75	1.016	1.873	1.815	0.598	0.5939	**1.78178**	5
Titanium	47	0.5	0.382	0.442	0.475	0.435	0.466	0.391	0.431	0.0349	**0.10461**	0.1248
Vanadium	51	0.5	0.374	0.351	0.386	0.403	0.361	0.338	0.37	0.0217	**0.06504**	0.1454
Chromium	52	0.05	-0.034	-0.043	-0.038	-0.021	-0.015	-0.035	-0.033	0.0098	**0.02943**	0.0477
Manganese	55	0.5	0.524	0.523	0.518	0.541	0.525	0.511	0.522	0.0091	**0.02732**	0.0225
Cobalt	59	0.01	0.012	0.011	0.009	0.01	0.009	0.011	0.008	0.0014	**0.00424**	0.0377
Nickel	60	0.01	0.004	0.005	0.001	0.002	0.004	0.002	0.003	0.0014	**0.00424**	0.0735
Copper	65	0.01	0.018	0.016	0.009	0.008	0.015	0.012	0.011	0.0037	**0.01119**	0.0812
Zinc	68	0.5	0.854	0.892	0.887	0.865	0.837	0.867	0.895	0.0215	**0.06446**	0.1818
Arsenic	75	0.5	0.551	0.564	0.506	0.579	0.559	0.609	0.505	0.0376	**0.11282**	0.1537
Selenium	82	0.5	0.396	0.477	0.474	0.333	0.413	0.665	0.204	0.1420	**0.42598**	0.3864
Strontium	88	0.01	0.011	0.011	0.011	0.011	0.012	0.009	0.01	0.0010	**0.00285**	0.0177
Molybdenum	95	0.05	0.076	0.065	0.079	0.068	0.06	0.054	0.061	0.0089	**0.0268**	0.0488
Silver	107	0.01	0.013	0.012	0.014	0.01	0.011	0.011	0.01	0.0015	**0.00454**	0.0485
Cadmium	114	0.01	0.011	0.01	0.008	0.006	0.012	0.008	0.012	0.0023	**0.0069**	0.0833
Indium	115	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.009	0.0004	**0.00113**	********
Tin	118	0.05	0.108	0.098	0.088	0.084	0.079	0.078	0.085	0.0108	**0.03249**	0.0642
Antimony	123	0.05	0.1	0.08	0.085	0.079	0.084	0.083	0.075	0.0080	**0.02386**	0.0201
Barium	137	0.01	0.012	0.01	0.012	0.011	0.011	0.019	0.012	0.0030	**0.00898**	0.0933
Thallium	205	0.05	0.048	0.043	0.047	0.041	0.044	0.046	0.047	0.0025	**0.00763**	0.0473
Lead	208	0.01	0.015	0.015	0.016	0.015	0.014	0.015	0.014	0.0007	**0.00207**	0.0232
Bismuth	209	0.05	0.117	0.11	0.101	0.095	0.085	0.085	0.08	0.0139	**0.04173**	********
Uranium	238	0.01	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.0000	**7E-10**	********

STL Seattle Perkin - Elmer Elan 6100 ICP-MS
2/13/2002
FCW

WATER MDL

ELEMENT	MASS	spike (ug/l)	Result	Result	Result	Result	Result	Result	Result	Std Dev	(ug / l) MDL	CURRENT MDL
Lithium	7	0.05	0.026	0.03	0.034	0.03	0.028	0.021	0.026	0.0041	**0.0123**	********
Beryllium	9	0.05	0.062	0.05	0.057	0.054	0.057	0.045	0.054	0.0055	**0.01638**	0.044
Magnesium	24	0.05	-0.062	-0.064	-0.072	-0.066	-0.075	-0.063	-0.068	0.0048	**0.01454**	********
Aluminum	27	0.5	-0.618	-0.61	-0.588	-0.595	-0.517	-0.561	-0.615	0.0363	**0.10894**	5
Titanium	47	0.05	-0.024	-0.012	-0.015	-0.004	-0.033	0.006	-0.03	0.0141	**0.04232**	0.1248
Vanadium	51	0.5	0.505	0.459	0.45	0.55	0.486	0.447	0.473	0.0366	**0.10972**	0.1454
Chromium	52	0.05	-0.016	-0.044	-0.016	-0.007	-0.013	-0.014	-0.003	0.0132	**0.03963**	0.0477
Manganese	55	0.05	0.07	0.069	0.073	0.067	0.066	0.075	0.074	0.0035	**0.01052**	0.0225
Cobalt	59	0.01	0.012	0.01	0.011	0.009	0.011	0.011	0.007	0.0017	**0.00503**	0.0377
Nickel	60	0.05	0.031	0.038	0.038	0.027	0.032	0.034	0.032	0.0039	**0.0118**	0.0735
Copper	65	0.05	0.052	0.045	0.045	0.052	0.047	0.04	0.047	0.0042	**0.01266**	0.0812
Zinc	68	0.05	-0.041	-0.055	-0.064	-0.065	-0.053	-0.06	-0.051	0.0084	**0.02509**	0.1818
Arsenic	75	0.5	0.632	0.696	0.665	0.598	0.56	0.585	0.632	0.0471	**0.14117**	0.1537
Selenium	82	0.5	0.518	0.447	0.569	0.312	0.263	0.179	0.418	0.1409	**0.42269**	0.3864
Strontium	88	0.01	0.008	0.006	0.007	0.005	0.008	0.006	0.006	0.0011	**0.0034**	0.0177
Molybdenum	95	0.05	0.08	0.067	0.061	0.057	0.06	0.051	0.049	0.0105	**0.0314**	0.0488
Silver	107	0.01	0.019	0.016	0.014	0.014	0.012	0.014	0.013	0.0023	**0.0069**	0.0485
Cadmium	114	0.01	0.009	0.007	0.004	0.006	0.003	0.007	0.006	0.0020	**0.006**	0.0833
Indium	115	0.01	0.009	0.01	0.01	0.008	0.009	0.01	0.009	0.0008	**0.00227**	********
Tin	118	0.05	0.092	0.089	0.082	0.071	0.071	0.066	0.057	0.0127	**0.03814**	0.0642
Antimony	123	0.05	0.095	0.094	0.091	0.081	0.078	0.081	0.078	0.0076	**0.02277**	0.0201
Barium	137	0.01	0.006	0.005	0.009	0.005	0.005	0.003	0.003	0.0020	**0.00611**	0.0933
Thallium	205	0.5	0.47	0.473	0.506	0.511	0.5	0.504	0.507	0.0170	**0.05095**	0.0473
Lead	208	0.01	0.014	0.01	0.012	0.01	0.008	0.008	0.009	0.0022	**0.00658**	0.0232
Bismuth	209	0.05	0.077	0.07	0.068	0.065	0.062	0.06	0.054	0.0074	**0.02234**	********
Uranium	238	0.01	0.012	0.011	0.01	0.011	0.01	0.009	0.011	0.0010	**0.00293**	********

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SOUND ANALYTICAL SERVICES

Instrument:	3400-II
Method:	8081A
Matrix:	liquid
Analyst:	JDW
Date Prepared:	4/29/2002
Date Analyzed:	5/3/2002
Units:	ug/L

Sample Amount:	125 ml
Final Volume:	1.0 ml
Cleanup Used:	Restek CLP1 Column

Data Filenames: ->	025F2501	026F2601	027F2701	028F2801	029F2901	030F3001	031F3101	**Spiked**	**Ave.**			
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	Pass/Fail
Aldrin	0.008459	0.007771	0.008585	0.009053	0.008817	0.008777	0.00898	0.008	108	**0.00126**	0.008	This MDL passes
alpha-BHC	0.008727	0.007246	0.008714	0.009075	0.008573	0.008714	0.008718	0.008	107	**0.00172**	0.008	This MDL passes
beta-BHC	0.012942	0.008159	0.010009	0.012978	0.010705	0.010793	0.011174	0.008	137	**0.00488**	0.008	amount OR PQL is
delta-BHC	0.00981	0.007276	0.009685	0.010879	0.010503	0.010597	0.010764	0.008	121	**0.00366**	0.008	amount OR PQL is
gamma-BHC (Lindane)	0.009967	0.00866	0.009994	0.010873	0.01035	0.010534	0.010255	0.008	123	**0.00205**	0.008	This MDL passes
Chlordane (technical)	0.094256	0.083472	0.091448	0.092624	0.09556	0.09728	0.09864	0.08	117	**0.01459**	0.08	This MDL passes
4,4'-DDD	0.017773	0.018962	0.019078	0.024366	0.018498	0.019209	0.019809	0.016	123	**0.00630**	0.016	amount OR PQL is
4,4'-DDE	0.019765	0.01863	0.01744	0.020326	0.020094	0.019655	0.01995	0.016	121	**0.00298**	0.016	This MDL passes
4,4'-DDT	0.019098	0.017768	0.018862	0.025954	0.020425	0.019902	0.019726	0.016	127	**0.00773**	0.016	amount OR PQL is
Dieldrin	0.021022	0.018319	0.019487	0.021295	0.020859	0.020848	0.020637	0.016	127	**0.00310**	0.016	This MDL passes
Endosulfan I	0.009485	0.009639	0.009602	0.009491	0.010159	0.008907	0.010005	0.008	120	**0.00118**	0.008	This MDL passes
Endosulfan II	0.018096	0.01779	0.01813	0.020942	0.01856	0.01937	0.019416	0.016	118	**0.00320**	0.016	This MDL passes
Endosulfan sulfate	0.018622	0.016966	0.017831	0.018878	0.019268	0.018921	0.01898	0.016	116	**0.00236**	0.016	This MDL passes
Endrin	0.023056	0.022177	0.022081	0.026383	0.022985	0.024836	0.024798	0.016	148	**0.00468**	0.016	This MDL passes
Endrin aldehyde	0.018316	0.016406	0.017201	0.018484	0.016866	0.01692	0.016341	0.016	108	**0.00251**	0.016	This MDL passes
Heptachlor	0.0086	0.007026	0.008996	0.011828	0.008673	0.009594	0.010038	0.008	116	**0.00431**	0.008	amount OR PQL is
Heptachlor epoxide	0.009517	0.00893	0.009486	0.009728	0.009754	0.009993	0.00993	0.008	120	**0.00104**	0.008	This MDL passes
Methoxychlor	0.141483	0.168251	0.158623	0.169802	0.257762	0.494244	0.346882	0.08	310	**0.37999**	0.08	amount OR PQL is
Endrin ketone	0.01939	0.0183	0.01855	0.019737	0.018557	0.023458	0.019586	0.016	123	**0.00515**	0.016	This MDL passes
Toxaphene	0.614768	0.753064	0.706544	0.612616	0.577904	0.575392	0.572672	0.8	79	**0.20753**	0.8	This MDL passes
alpha-Chlordane	0.010324	0.010101	0.010718	0.010657	0.01073	0.010042	0.010572	0.008	131	**0.00085**	0.008	This MDL passes
gamma-Chlordane	0.00934	0.008622	0.010161	0.009502	0.009159	0.009078	0.009281	0.008	116	**0.00136**	0.016	This MDL passes

SOUND ANALYTICAL SERVICES

Instrument:	3400-II
Method:	8081A
Matrix:	liquid
Analyst:	JDW
Date Prepared:	4/29/2002
Date Analyzed:	5/3/2002
Units:	ug/L

Sample Amount:	125 ml
Final Volume:	1.0 ml
Cleanup Used:	Restek CLP2 Column

Data Filenames: ->	025F2501	026F2601	027F2701	028F2801	029F2901	030F3001	031F3101	**Spiked**	**Ave.**			
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	Pass/Fail
Aldrin	0.008839	0.00804	0.008758	0.009967	0.008845	0.00874	0.009485	0.008	112	**0.00178**	0.008	This MDL passes
alpha-BHC	0.00779	0.007894	0.007926	0.008557	0.007663	0.008075	0.007698	0.008	99	**0.00089**	0.008	This MDL passes
beta-BHC	0.009919	0.008444	0.009651	0.010886	0.009758	0.010316	0.009846	0.008	123	**0.00216**	0.008	This MDL passes
delta-BHC	0.00906	0.007506	0.008115	0.00945	0.008993	0.008974	0.008653	0.008	107	**0.00192**	0.008	This MDL passes
gamma-BHC (Lindane)	0.008949	0.00801	0.008864	0.009633	0.00901	0.008992	0.009009	0.008	110	**0.00139**	0.008	This MDL passes
Chlordane (technical)	0.0846	0.094344	0.098744	0.092536	0.083368	0.09092	0.092792	0.08	114	**0.01576**	0.08	This MDL passes
4,4'-DDD	0.015626	0.01679	0.015652	0.016393	0.015582	0.016414	0.016232	0.016	101	**0.00139**	0.016	amount OR PQL is
4,4'-DDE	0.017803	0.017435	0.017646	0.01861	0.017842	0.018396	0.018769	0.016	113	**0.00150**	0.016	amount OR PQL is
4,4'-DDT	0.019066	0.017779	0.018624	0.019529	0.018768	0.019326	0.018702	0.016	118	**0.00166**	0.016	This MDL passes
Dieldrin	0.018067	0.017411	0.017766	0.018521	0.017963	0.018264	0.017983	0.016	112	**0.00103**	0.016	amount OR PQL is
Endosulfan I	0.008729	0.008799	0.008656	0.009079	0.008684	0.008902	0.008751	0.008	110	**0.00043**	0.008	amount OR PQL is
Endosulfan II	0.017724	0.016658	0.017208	0.01829	0.017778	0.018024	0.017962	0.016	110	**0.00161**	0.016	This MDL passes
Endosulfan sulfate	0.018864	0.016735	0.017898	0.018845	0.019363	0.019401	0.018984	0.016	116	**0.00278**	0.016	This MDL passes
Endrin	0.020956	0.020058	0.021194	0.021548	0.020917	0.021459	0.021029	0.016	131	**0.00143**	0.016	amount OR PQL is
Endrin aldehyde	0.017294	0.016879	0.017007	0.017786	0.016989	0.017095	0.017286	0.016	107	**0.00089**	0.016	amount OR PQL is
Heptachlor	0.009337	0.008904	0.008992	0.008672	0.010232	0.009592	0.01004	0.008	117	**0.00172**	0.008	This MDL passes
Heptachlor epoxide	0.009702	0.00897	0.009558	0.009922	0.00914	0.009626	0.009253	0.008	118	**0.00099**	0.008	This MDL passes
Methoxychlor	0.141483	0.08148	0.082162	0.087646	0.086502	0.087635	0.086519	0.08	117	**0.00220**	0.08	amount OR PQL is
Endrin ketone	0.017344	0.016786	0.016995	0.017933	0.017277	0.018352	0.018303	0.016	110	**0.00183**	0.016	This MDL passes
Toxaphene	0.583968	0.574464	0.535904	0.593216	0.569888	0.501312	0.470032	0.8	68	**0.13500**	0.8	This MDL passes
alpha-Chlordane	0.009526	0.009168	0.009474	0.009899	0.009569	0.010038	0.009786	0.008	120	**0.00085**	0.008	This MDL passes
gamma-Chlordane	0.008266	0.007485	0.008844	0.008492	0.008226	0.008764	0.008302	0.008	104	**0.00131**	0.016	This MDL passes

SOUND ANALYTICAL SERVICES

Instrument:	3400-II
Method:	8081A
Matrix:	solid
Analyst:	JDW
Date Prepared:	4/17/2002
Date Analyzed:	4/18/2002
Units:	ug/kg

Sample Amount:	10 g
Final Volume:	10 g
Cleanup Used:	Restek CLP2 Column

Data Filenames: ->	025F2501	026F2601	027F2701	028F2801	029F2901	030F3001	031F3101	Spiked	Ave.			
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	Pass/Fail
Aldrin	0.804	0.7155	0.7488	0.6983	0.7152	0.7273	0.7304	0.75	98	**0.1004**	1	This MDL passes
alpha-BHC	0.7345	0.7293	0.7368	0.7373	0.6987	0.7522	0.7453	0.75	98	**0.6496**	1	amount OR PQL is
beta-BHC	0.9522	0.6633	0.5821	0.9598	0.7736	0.6971	0.7403	0.75	102	**0.4150**	1	amount OR PQL is
delta-BHC	0.8459	0.8513	0.8877	1.0285	1.0245	1.0262	1.0149	0.75	124	**0.2550**	1	This MDL passes
gamma-BHC (Lindane)	0.8095	0.824	0.8377	0.9487	0.8021	0.7881	0.8225	0.75	110	**0.1554**	1	This MDL passes
Chlordane (technical)	5.218	5.955	5.488	5.351	5.042	5.88	5.663	7.5	74	**0.9856**	10	This MDL passes
4,4'-DDD	1.6382	1.5212	1.5414	1.6387	1.4994	1.4205	1.4857	1.5	102	**0.2329**	2	This MDL passes
4,4'-DDE	1.5898	1.4919	1.6176	1.5728	1.481	1.4717	1.4903	1.5	102	**0.1758**	2	This MDL passes
4,4'-DDT	1.8447	1.5487	1.6574	1.8711	1.5881	1.5341	1.5345	1.5	110	**0.4243**	2	This MDL passes
Dieldrin	1.6498	1.8768	1.6675	1.7414	1.4826	1.4383	1.473	1.5	108	**0.4712**	2	This MDL passes
Endosulfan I	0.8179	0.7605	0.835	0.8223	0.7587	0.7634	0.8194	0.75	106	**0.0990**	1	This MDL passes
Endosulfan II	1.6533	1.525	1.5815	1.4453	1.5658	1.5691	1.5598	1.5	104	**0.1825**	2	This MDL passes
Endosulfan sulfate	1.7852	1.6551	1.7141	1.7043	1.703	1.5416	1.6196	1.5	112	**0.2272**	2	This MDL passes
Endrin	1.6347	1.5837	1.5591	1.6005	1.5637	1.4971	1.5076	1.5	104	**0.1425**	2	amount OR PQL is
Endrin aldehyde	1.7033	1.2798	1.6139	1.513	1.5407	1.5014	1.3995	1.5	100	**0.4017**	2	This MDL passes
Heptachlor	0.8564	0.8237	0.9226	1.1021	0.8482	0.916	0.8413	0.75	120	**0.2797**	1	This MDL passes
Heptachlor epoxide	0.8116	0.8977	0.8148	0.8446	0.8285	0.8766	0.8333	0.75	113	**0.0936**	1	This MDL passes
Methoxychlor	7.4469	6.6056	6.8177	7.0078	6.8246	6.5638	6.5753	7.5	91	**0.9189**	10	This MDL passes
Endrin ketone	1.7205	1.4524	1.6409	1.5329	1.514	1.4307	1.4392	1.5	102	**0.3208**	2	This MDL passes
Toxaphene	86.401	85.665	86.359	86.849	88.055	101.4	87.96	75	119	**15.1665**	100	This MDL passes
alpha-Chlordane	0.8862	0.7397	0.8472	0.8422	0.7942	0.8027	0.8302	0.75	109	**0.1361**	1	This MDL passes
gamma-Chlordane	0.8609	0.7845	0.8921	0.8967	0.7743	0.8095	0.8197	0.75	111	**0.1448**	2	This MDL passes

SOUND ANALYTICAL SERVICES

Instrument:	3400-II
Method:	8081A
Matrix:	solid
Analyst:	JDW
Date Prepared:	4/17/2002
Date Analyzed:	4/18/2002
Units:	ug/kg

Sample Amount:	10 g
Final Volume:	10 g
Cleanup Used:	Restek CLP1 Column

Data Filenames: ->	025F2501	026F2601	027F2701	028F2801	029F2901	030F3001	031F3101	Spiked	Ave.			
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	Pass/Fail
Aldrin	0.8566	0.8669	0.9	0.8458	0.8352	0.8384	0.8492	0.75	114	**0.0645**	1	amount OR PQL is
alpha-BHC	0.7762	0.787	0.8002	0.7806	0.766	0.7608	0.7795	0.75	104	**0.0380**	1	amount OR PQL is
beta-BHC	0.9522	0.7583	0.7272	0.9598	0.798	0.7277	0.7348	0.75	108	**0.3023**	1	This MDL passes
delta-BHC	1.0038	0.902	0.9861	1.2687	0.9122	1.0921	0.8966	0.75	130	**0.3910**	1	amount OR PQL is
gamma-BHC (Lindane)	0.8619	0.8618	0.8531	0.8961	0.8628	0.8473	0.8758	0.75	113	**0.0469**	1	amount OR PQL is
Chlordane (technical)	6.723	6.374	6.18	6.409	6.443	8.671	7.194	7.5	91	**2.5160**	10	This MDL passes
4,4'-DDD	1.5385	1.6346	1.489	1.5234	1.4574	1.3657	1.4397	1.5	100	**0.2474**	2	This MDL passes
4,4'-DDE	1.669	1.4958	1.6402	1.6988	1.6097	1.4681	1.4684	1.5	105	**0.2876**	2	This MDL passes
4,4'-DDT	1.8614	1.6375	1.8243	1.9681	1.7224	1.5744	1.656	1.5	117	**0.4091**	2	This MDL passes
Dieldrin	1.7451	1.6199	1.6701	1.6403	1.6339	1.627	1.5849	1.5	110	**0.1472**	2	amount OR PQL is
Endosulfan I	0.7302	0.7324	0.7424	0.7593	0.7538	0.7539	0.7507	0.75	99	**0.0330**	1	amount OR PQL is
Endosulfan II	1.5441	1.4968	1.5121	1.5927	1.5295	1.4295	1.4709	1.5	101	**0.1529**	2	This MDL passes
Endosulfan sulfate	1.8649	2.3917	1.7623	1.9622	2.0454	2.2083	1.9184	1.5	135	**0.6268**	2	This MDL passes
Endrin	1.6878	1.6912	1.5138	1.7058	1.633	1.5512	1.5536	1.5	108	**0.2304**	2	This MDL passes
Endrin aldehyde	1.7033	1.3814	1.652	1.5261	1.5987	1.5262	1.6413	1.5	105	**0.3134**	2	This MDL passes
Heptachlor	0.9305	0.9668	0.9501	1.0279	0.9863	0.997	0.9928	0.75	131	**0.0943**	1	This MDL passes
Heptachlor epoxide	0.8568	0.8232	0.8111	0.7817	0.7884	0.7818	0.7949	0.75	107	**0.0798**	1	This MDL passes
Methoxychlor	9.5247	8.054	8.407	8.8792	8.5595	8.193	8.3413	7.5	114	**1.4522**	10	This MDL passes
Endrin ketone	1.7887	1.5974	1.6461	1.6913	1.6257	1.4599	1.5575	1.5	108	**0.3010**	2	This MDL passes
Toxaphene	86.398	90.652	83.573	75.451	89.386	85.271	84.762	75	113	**14.3761**	100	This MDL passes
alpha-Chlordane	1.0196	0.9021	1.0437	1.0462	0.9345	0.9023	0.9039	0.75	129	**0.1999**	1	This MDL passes
gamma-Chlordane	0.7528	0.718	0.7374	0.7342	0.7059	0.6868	0.7363	0.75	97	**0.0652**	2	amount OR PQL is

SOUND ANALYTICAL SERVICES

Instrument:	ITS-40 3	its_40__
Method:	8151A	8151a
Matrix:	SOIL	soil
Analyst:	BRENT HEPNER	brent_he
Date Prepared:	4/4/02	1
Date Analyzed:	4/4/02	its_40__.xls
Units:	UG/KG	e:\mdl\soil\8151a

Sample Amount: 15.0000 GRAMS
Final Volume: 2.0 ML
Cleanup Used:

Data Filenames: ->	L1917	L1918	L1919	L1920	L1921	L1922	L1923	Spiked	Ave.			factor	133.3333
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	base PQL	base mdl
Dalapon	1.2	1.47	1.33	1.47	1.47	1.33	1.33	1.3	105	**0.30**	0.32	0.01	0.002248
4-Nitrophenol	1.6	1.73	1.73	1.73	1.47	1.73	1.73	1.3	129	**0.30**	0.42	0.01	0.002232
Dicamba	1.6	1.6	1.6	1.47	1.47	1.33	1.6	1.3	117	**0.31**	0.37	0.01	0.002299
MCPP	1.2	1.2	1.33	1.33	1.2	1.07	1.2	1.3	94	**0.26**	0.28	0.01	0.001958
MCPA	1.47	1.33	1.73	1.6	1.2	1.33	1.2	1.3	108	**0.59**	0.64	0.01	0.004393
Dichloroprop	1.33	1.2	1.47	1.73	1.33	1.33	1.47	1.3	108	**0.49**	0.54	0.01	0.003705
2,4-D	1.6	1.73	1.73	1.2	1.6	1.6	1.6	1.3	122	**0.52**	0.66	0.01	0.003894
Pentachlorophenol	1.6	1.33	1.47	1.47	1.33	1.2	1.33	1.3	107	**0.38**	0.41	0.01	0.00287
Silvex (2,4,5-TP)	1.47	1.73	1.6	1.47	1.47	1.33	1.2	1.3	113	**0.50**	0.57	0.015	0.003748
2,4,5-T	1.6	1.33	1.47	1.2	1.33	0.933	1.33	1.3	101	**0.61**	0.62	0.015	0.004587
Dinoseb	1.33	1.2	1.33	1.47	1.2	1.07	1.07	1.3	95	**0.43**	0.45	0.01	0.003213
2,4-DB	1.33	0.933	1.07	1.07	1.2	1.07	1.2	1.3	87	**0.37**	0.43	0.01	0.002806
Picloram	1.6	1.6	1.6	1.33	1.47	1.47	1.33	1.3	113	**0.38**	0.44	0.01	0.002867
Clopyralid	1.73	1.47	1.73	1.6	1.33	1.33	1.47	1.3	115	**0.52**	0.61	0.015	0.003866

SOUND ANALYTICAL SERVICES

Instrument:	ITS40-3
Method:	8270
Matrix:	liquid
Analyst:	B. HEPNER
Date Prepared:	5/4/01
Date Analyzed:	5/5/01
Units:	ug/l

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8270
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its40_3.xls
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Sample Amount: 1000
Final Volume: 1
Cleanup Used:

Data Filenames: ->	E7124	E7125	E7126	E7127	E7128	E7129	E7130	Spiked	Ave.			factor	1
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**	**PQL**	base PQL	base mdl
Phenol	0.024	0.027	0.026	0.024	0.027	0.024	0.026	0.05	57	**0.026**	0.05	0.045302	0.025822
bis(2-Chloroethyl)ether	0.009	0.011	0.009	0.041	0.01	0.009	0.01	0.05	37	**0.049**	0.13	0.132401	0.04932
2-Chlorophenol	0.038	0.048	0.046	0.043	0.049	0.042	0.048	0.05	91	**0.012**	0.01	0.013377	0.012173
1,3-Dichlorobenzene	0.046	0.056	0.049	0.049	0.049	0.048	0.054	0.05	100	**0.010**	0.01	0.00964	0.009615
1,4-Dichlorobenzene	0.046	0.063	0.057	0.046	0.058	0.048	0.059	0.05	107	**0.019**	0.02	0.020909	0.019498
Benzyl Alcohol	0.026	0.027	0.024	0.028	0.025	0.025	0.029	0.05	59	**0.025**	0.04	0.04296	0.025132
1,2-Dichlorobenzene	0.049	0.052	0.053	0.048	0.054	0.047	0.054	0.05	102	**0.008**	0.01	0.008224	0.00808
2-Methylphenol	0.039	0.042	0.043	0.04	0.044	0.038	0.045	0.05	85	**0.011**	0.01	0.013285	0.011325
bis(2-Chloroisopropyl)ether	0.043	0.046	0.047	0.042	0.05	0.042	0.048	0.05	92	**0.010**	0.01	0.010667	0.009814
3- & 4-Methylphenol	0.032	0.04	0.035	0.034	0.038	0.034	0.039	0.05	76	**0.017**	0.02	0.022102	0.016687
N-nitroso-di-n-propylamine	0.034	0.04	0.037	0.033	0.039	0.032	0.043	0.05	77	**0.018**	0.02	0.022818	0.01757
Hexachloroethane	0.05	0.059	0.054	0.049	0.054	0.05	0.057	0.05	106	**0.011**	0.01	0.011604	0.010937
Nitrobenzene	0.047	0.05	0.048	0.051	0.05	0.051	0.045	0.05	98	**0.006**	0.01	0.006414	0.006286
Isophorone	0.033	0.037	0.033	0.035	0.039	0.037	0.037	0.05	75	**0.016**	0.02	0.021188	0.015944
2-Nitrophenol	0.035	0.035	0.033	0.034	0.034	0.035	0.034	0.05	73	**0.016**	0.02	0.022708	0.016463
2,4-Dimethylphenol	0.045	0.043	0.043	0.042	0.042	0.044	0.043	0.05	88	**0.008**	0.01	0.008749	0.007699
Benzoic Acid	0.017	0.022	0.025	0.027	0.021	0.026	0.021	0.05	52	**0.030**	0.06	0.057259	0.029918
bis(2-Chloroethoxy)methane	0.04	0.042	0.042	0.039	0.038	0.038	0.038	0.05	82	**0.012**	0.01	0.014569	0.01191
2,4-Dichlorophenol	0.034	0.042	0.032	0.035	0.039	0.034	0.041	0.05	77	**0.017**	0.02	0.022703	0.017424
1,2,4-Trichlorobenzene	0.045	0.047	0.047	0.044	0.045	0.047	0.046	0.05	93	**0.005**	0.01	0.005854	0.00543
Naphthalene	0.045	0.047	0.051	0.047	0.044	0.047	0.045	0.05	94	**0.007**	0.01	0.007661	0.007202
4-Chloroaniline	0.023	0.032	0.026	0.027	0.025	0.025	0.025	0.05	58	**0.026**	0.04	0.044612	0.025986
Hexachlorobutadiene	0.049	0.046	0.044	0.045	0.047	0.044	0.045	0.05	93	**0.007**	0.01	0.007158	0.006621
4-Chloro-3-methylphenol	0.038	0.039	0.038	0.039	0.039	0.043	0.039	0.05	81	**0.012**	0.01	0.014849	0.012065
2-Methylnaphthalene	0.049	0.049	0.049	0.047	0.046	0.047	0.047	0.05	96	**0.004**	0.00	0.004331	0.004158
Hexachlorocyclopentadiene	0.034	0.036	0.037	0.039	0.037	0.036	0.034	0.05	76	**0.015**	0.02	0.020054	0.015191
2,4,6-Trichlorophenol	0.037	0.037	0.037	0.037	0.038	0.037	0.039	0.05	78	**0.013**	0.02	0.016977	0.013242
2,4,5-Trichlorophenol	0.044	0.045	0.039	0.042	0.04	0.042	0.041	0.05	86	**0.010**	0.01	0.011939	0.010237
2-Chloronaphthalene	0.048	0.046	0.048	0.048	0.047	0.047	0.046	0.05	95	**0.004**	0.00	0.004052	0.003849
2-Nitroaniline	0.038	0.037	0.038	0.036	0.037	0.035	0.037	0.05	77	**0.014**	0.02	0.01814	0.013968
Dimethylphthalate	0.048	0.05	0.049	0.047	0.047	0.047	0.048	0.05	97	**0.004**	0.00	0.003905	0.003768
Acenaphthylene	0.046	0.047	0.044	0.044	0.044	0.044	0.045	0.05	91	**0.006**	0.01	0.006908	0.006286
2,6-Dinitrotoluene	0.041	0.042	0.039	0.039	0.038	0.04	0.04	0.05	82	**0.011**	0.01	0.013569	0.011161
3-Nitroaniline	0.03	0.035	0.032	0.033	0.036	0.034	0.03	0.05	70	**0.019**	0.03	0.027033	0.018923
Acenaphthene	0.048	0.05	0.049	0.048	0.048	0.048	0.048	0.05	97	**0.003**	0.00	0.00277	0.002693
2,4-Dinitrophenol	0.011	0.011	0.009	0.009	0.008	0.007	0.005	0.05	28	**0.043**	0.16	0.153031	0.043458
4-Nitrophenol	0.017	0.017	0.018	0.019	0.019	0.015	0.017	0.05	43	**0.034**	0.08	0.079231	0.034069
Dibenzofuran	0.045	0.049	0.048	0.048	0.048	0.047	0.045	0.05	95	**0.005**	0.01	0.005486	0.005212
2,4-Dinitrotoluene	0.036	0.035	0.034	0.033	0.034	0.033	0.034	0.05	72	**0.017**	0.02	0.023166	0.016738
Diethylphthalate	0.048	0.044	0.046	0.047	0.044	0.045	0.045	0.05	92	**0.006**	0.01	0.006693	0.006175
4-Chlorophenylphenylether	0.043	0.044	0.044	0.044	0.044	0.044	0.043	0.05	89	**0.007**	0.01	0.007491	0.006667
Fluorene	0.049	0.048	0.049	0.047	0.048	0.047	0.047	0.05	96	**0.003**	0.00	0.003439	0.00331
4-Nitroaniline	0.035	0.035	0.03	0.032	0.032	0.029	0.029	0.05	68	**0.020**	0.03	0.029776	0.020247
4,6-Dinitro-2-methylphenol	0.008	0.009	0.008	0.007	0.009	0.008	0.007	0.05	27	**0.044**	0.16	0.164956	0.043713
N-Nitrosodiphenylamine	0.045	0.048	0.045	0.041	0.049	0.046	0.047	0.05	93	**0.008**	0.01	0.008956	0.008306
4-Bromophenylphenylether	0.048	0.05	0.048	0.036	0.05	0.049	0.048	0.05	95	**0.014**	0.01	0.014548	0.013784
Hexachlorobenzene	0.046	0.048	0.044	0.042	0.045	0.045	0.043	0.05	91	**0.008**	0.01	0.008472	0.007689
Pentachlorophenol	0.027	0.027	0.027	0.025	0.028	0.027	0.024	0.05	59	**0.025**	0.04	0.042204	0.024795
Phenanthrene	0.048	0.05	0.05	0.043	0.051	0.049	0.048	0.05	97	**0.007**	0.01	0.007569	0.007361
Anthracene	0.05	0.051	0.048	0.043	0.05	0.045	0.051	0.05	97	**0.009**	0.01	0.00902	0.00875
Di-n-butylphthalate	0.059	0.061	0.062	0.055	0.062	0.057	0.058	0.05	116	**0.012**	0.01	0.014248	0.011968
Fluoranthene	0.047	0.05	0.048	0.043	0.049	0.046	0.046	0.05	95	**0.007**	0.01	0.007406	0.007017
Pyrene	0.047	0.049	0.048	0.045	0.048	0.047	0.049	0.05	96	**0.005**	0.00	0.004767	0.004565
Butylbenzylphthalate	0.044	0.039	0.046	0.042	0.042	0.042	0.041	0.05	87	**0.010**	0.01	0.011597	0.010032
3,3'-Dichlorobenzidine	0.029	0.028	0.028	0.024	0.024	0.023	0.023	0.05	57	**0.026**	0.05	0.046091	0.026387

SOUND ANALYTICAL SERVICES

Benzo(a)anthracene	0.029	0.026	0.039	0.035	0.03	0.043	0.041	0.05	73	0.024	0.03	0.032603	0.023882
Chrysene	0.043	0.039	0.05	0.044	0.042	0.045	0.044	0.05	89	0.011	0.01	0.012443	0.011105
bis(2-Ethylhexyl)phthalate	0.062	0.053	0.052	0.054	0.048	0.051	0.05	0.05	105	0.013	0.01	0.013234	0.012572
Di-n-octylphthalate	0.055	0.042	0.05	0.047	0.05	0.043	0.043	0.05	95	0.013	0.01	0.014134	0.013427
Benzo(b)fluoranthene	0.061	0.042	0.039	0.035	0.05	0.039	0.041	0.05	89	0.025	0.03	0.027893	0.024894
Benzo(k)fluoranthene	0.057	0.05	0.052	0.048	0.06	0.046	0.048	0.05	103	0.014	0.01	0.014538	0.014138
Benzo(a)pyrene	0.048	0.039	0.04	0.036	0.045	0.038	0.038	0.05	84	0.015	0.02	0.01832	0.015297
Indeno(1,2,3-cd)pyrene	0.05	0.04	0.042	0.04	0.049	0.037	0.04	0.05	87	0.016	0.02	0.017882	0.015557
Dibenz(a,h)anthracene	0.049	0.038	0.041	0.029	0.044	0.034	0.037	0.05	81	0.021	0.03	0.026463	0.021302
Benzo(g,h,i)perylene	0.049	0.04	0.041	0.038	0.045	0.035	0.037	0.05	84	0.016	0.02	0.01954	0.016365
Carbazole	0.05	0.052	0.049	0.047	0.051	0.051	0.051	0.05	100	0.005	0.00	0.004576	0.004565
N-nitrosodimethylamine	0.005	0.013	0.007	0.011	0.011	0.01	0.013	0.05	30	0.042	0.14	0.141241	0.042372
Pyridine	ND	ND	ND	ND	ND	ND	ND	0.05	100	0.000	0.00	0	0
Benzidine	0.009	0.012	0.007	0.009	0.01	0.006	0.011	0.05	29	0.043	0.15	0.150378	0.042858
1,2-Diphenylhydrazine	0.04	0.043	0.043	0.039	0.042	0.043	0.044	0.05	86	0.010	0.01	0.011264	0.009687
2,3,4,6-Tetrachlorophenol	0.036	0.037	0.034	0.034	0.038	0.035	0.037	0.05	75	0.015	0.02	0.020348	0.015312

SOUND ANALYTICAL SERVICES

Instrument:	ITS40-III
Method:	8270
Matrix:	solid
Analyst:	BRENT HEPNER
Date Prepared:	5/5/01
Date Analyzed:	5/30/01
Units:	ug/kg

Sample Amount:	15
Final Volume:	2
Cleanup Used:	

Data Filenames: ->	LV7765	LV7766	LV7767	LV7768	LV7769	LV7770	LV7771	Spiked	Ave.	
Target Analytes	**Rep. 1**	**Rep. 2**	**Rep. 3**	**Rep. 4**	**Rep. 5**	**Rep. 6**	**Rep. 7**	**Amt.**	**Rec.**	**MDL**
Phenol	5.3	6	5.5	5.6	6	4.5	5.1	5	108	**1.51**
bis(2-Chloroethyl)ether	5.1	5.2	4.5	5.1	5.1	4.5	5.1	5	99	**0.83**
2-Chlorophenol	5.6	6.1	5.9	6.1	5.9	5.6	6.4	5	119	**0.84**
1,3-Dichlorobenzene	6.3	7.1	6.4	6.9	6.7	6.1	7.3	5	134	**1.28**
1,4-Dichlorobenzene	7.2	7.6	6	7.7	8	6.1	7.7	5	144	**2.36**
Benzyl Alcohol	5.1	4.9	4.5	4.7	5.1	4.4	4.9	5	96	**0.81**
1,2-Dichlorobenzene	6.5	7.1	6.7	6.8	7.5	6.1	6.9	5	136	**1.29**
2-Methylphenol	5.2	5.2	4.7	4.7	4.9	3.9	4.7	5	95	**1.28**
bis(2-Chloroisopropyl)ether	5.6	6	5.6	5.6	5.6	4.9	5.6	5	111	**0.95**
3- & 4-Methylphenol	5.6	5.3	5.6	4.9	5.2	4.9	5.5	5	106	**0.88**
N-nitroso-di-n-propylamine	4.4	4.3	4.3	4.3	4.1	4.1	4.7	5	86	**0.59**
Hexachloroethane	11	11	12	13	13	11	9	5	229	**4.07**
Nitrobenzene	6.3	6.4	5.5	5.6	5.7	6.1	5.9	5	119	**1.02**
Isophorone	6	5.2	4.9	5.6	5.6	5.9	5.3	5	110	**1.14**
2-Nitrophenol	5.3	5.5	5.1	4.7	5.1	5.6	5.3	5	105	**0.87**
2,4-Dimethylphenol	6	6	5.3	5.5	5.5	5.9	5.6	5	114	**0.81**
Benzoic Acid	1.5	1.2	3.9	1.1	2.1	1.6	1.6	5	37	**2.79**
bis(2-Chloroethoxy)methane	5.5	5.3	4.8	4.9	4.9	5.2	5.2	5	102	**0.74**
2,4-Dichlorophenol	4.9	5.6	4.5	4	4.8	5.2	4.8	5	97	**1.47**
1,2,4-Trichlorobenzene	6	6.7	5.9	6	5.7	6.3	6.7	5	124	**1.14**
Naphthalene	8.4	8.7	8.4	7.5	7.9	8.7	8.3	5	165	**1.27**
4-Chloroaniline	5.6	5.5	4.7	4.7	5.1	5.2	4.8	5	102	**1.08**
Hexachlorobutadiene	5.9	5.9	5.9	5.1	5.9	5.9	6.1	5	116	**0.94**
4-Chloro-3-methylphenol	6.3	6.1	5.5	5.3	5.6	5.9	5.5	5	115	**1.06**
2-Methylnaphthalene	6.8	7.1	6.9	6.3	7.6	7.2	6.7	5	139	**1.20**
Hexachlorocyclopentadiene	2.8	3.5	2.7	3.3	2.7	3.1	2.9	5	60	**0.90**
2,4,6-Trichlorophenol	4.9	4.4	4	4	4.3	4.5	4.4	5	87	**0.90**
2,4,5-Trichlorophenol	4.8	4.4	4.3	3.9	4.5	4.8	4.5	5	89	**0.90**
2-Chloronaphthalene	6	5.5	5.1	4.8	5.3	6.1	5.9	5	111	**1.43**
2-Nitroaniline	4.8	4.7	4.7	4	4.5	5.1	4.4	5	92	**1.01**
Dimethylphthalate	7.3	7.2	7.1	6.8	7.3	8.1	7.3	5	146	**1.15**
Acenaphthylene	5.5	5.5	5.1	4.5	5.3	5.6	5.5	5	106	**1.12**
2,6-Dinitrotoluene	5.9	5.1	4.8	4.7	5.2	5.2	4.9	5	102	**1.16**
3-Nitroaniline	5.9	4.8	4.8	4.3	5.3	5.1	4.9	5	100	**1.45**
Acenaphthene	5.1	5.3	4.9	5.1	5.7	5.3	5.6	5	106	**0.83**
2,4-Dinitrophenol	1.5	1.5	1.2	1.3	1.9	1.3	1.7	5	30	**0.72**
4-Nitrophenol	3.9	3.5	4.1	3.5	3.1	4.5	2.7	5	72	**1.77**
Dibenzofuran	6.8	6.4	6.1	5.5	6.7	6.5	6.4	5	127	**1.27**
2,4-Dinitrotoluene	6.4	6.4	5.6	5.6	6.1	6.1	6.1	5	121	**0.96**
Diethylphthalate	6.1	6.3	5.5	5.1	6.7	6.7	6.1	5	121	**1.73**

4-Chlorophenylphenylether	5.6	4.7	4.5	4.4	5.1	5.3	5.3	5	100	**1.33**
Fluorene	6.1	6.1	5.2	5.5	5.9	5.9	5.9	5	116	**0.97**
4-Nitroaniline	5.6	5.3	4.7	4.4	4.9	5.2	4.7	5	99	**1.21**
4,6-Dinitro-2-methylphenol	3.2	3.1	2.9	2.7	2.7	2.5	3.1	5	58	**0.76**
N-Nitrosodiphenylamine	5.7	4.8	5.2	5.5	5.2	5.5	5.3	5	106	**0.85**
4-Bromophenylphenylether	5.2	4.9	4.9	4.7	4.7	5.2	4.7	5	98	**0.65**
Hexachlorobenzene	5.2	5.2	5.2	5.1	4.8	5.2	4.9	5	102	**0.49**
Pentachlorophenol	3.5	3.1	2.9	2.9	2.5	3.1	2.8	5	59	**0.90**
Phenanthrene	7.9	7.1	7.5	7.1	7.1	8.1	7.2	5	149	**1.22**
Anthracene	7.3	6.8	6.9	6.9	6	6.9	6.8	5	136	**1.14**
Di-n-butylphthalate	13	12	13	14	13	12	12	5	254	**2.20**
Fluoranthene	6.4	6.3	6.1	6.3	5.6	6.1	5.9	5	122	**0.81**
Pyrene	7.1	5.7	6.8	6.3	5.9	6.1	7.1	5	129	**1.67**
Butylbenzylphthalate	6.4	5.9	6.1	6.4	6.3	5.9	5.1	5	120	**1.33**
3,3'-Dichlorobenzidine	5.3	4.9	5.1	5.2	4.7	4.9	4.7	5	99	**0.69**
Benzo(a)anthracene	6.9	6.4	7.2	8	6.9	7.2	6.3	5	140	**1.66**
Chrysene	7.3	8.3	6.8	7.7	7.5	8.3	7.5	5	153	**1.56**
bis(2-Ethylhexyl)phthalate	6.9	6.4	6.1	7.3	6.8	6.7	6	5	132	**1.34**
Di-n-octylphthalate	8.5	9.3	8.3	8.7	8.1	8	8.7	5	170	**1.28**
Benzo(b)fluoranthene	7.2	6.8	6.4	6.1	6.8	7.1	7.2	5	136	**1.22**
Benzo(k)fluoranthene	7.5	6.5	6.9	7.1	6.4	6.4	6.8	5	136	**1.19**
Benzo(a)pyrene	5.7	6	6.9	6.1	6	6.1	6.1	5	123	**1.07**
Indeno(1,2,3-cd)pyrene	5.9	6	5.9	5.6	5.6	5.6	5.7	5	115	**0.50**
Dibenz(a,h)anthracene	6	6.1	6.1	5.9	6.1	5.5	6.4	5	120	**0.80**
Benzo(g,h,i)perylene	5.9	5.9	5.9	5.6	5.7	5.6	5.9	5	116	**0.43**
Carbazole	6.9	6.7	6.9	6.5	6	7.1	6.5	5	133	**1.06**
N-nitrosodimethylamine	11	16	15	17	15	10	11	5	271	**8.21**
Pyridine	13	12	15	11	17	15	17	5	286	**6.87**
Benzidine	8.8	14	10	10	9.6	8.4	6.1	5	191	**6.93**
1,2-Diphenylhydrazine	5.1	5.2	5.2	5.3	4.7	4.9	5.1	5	101	**0.60**
2,3,4,6-Tetrachlorophenol	4.4	4.1	3.9	3.6	4.3	4.1	4.1	5	81	**0.76**

SEVERN
TRENT
SERVICES

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

TRANSMITTAL MEMORANDUM

DATE: September 17, 2002

TO: Kathy McKinley
CH2M Hill
2300 NW Walnut Blvd
Corvallis, OR 97330-3538

PROJECT: Portland Harbor 163160.AS.OS

REPORT NUMBER: 108166 Addendum

TOTAL NUMBER OF PAGES: 30

Enclosed are the additional test results for three samples received at STL Seattle on August 23, 2002, and submitted to STL Burlington for analysis of grain size. Please add the enclosed data package to the previously submitted report.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Katie Downie
Project Manager

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender immediately at 253-922-2310 and destroy this report immediately.

STL Seattle

Sample Identification:

Lab. No.	Client ID	Date/Time Sampled	Matrix
108166-1	PP011801	08-20-02 16:00	solid
108166-2	PP011809	08-21-02 15:00	solid
108166-3	PP011810	08-21-02 16:00	solid
108166-4	PP0118EB01	08-21-02 13:15	liquid

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PHYSICAL ANALYSIS DATA PACKAGE

SEVERN
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Severn Trent Laboratories, Inc.

NARRATIVE

SEVERN TRENT SERVICES

STL Burlington
208 South Park Drive
Suite 1
Colchester, VT 05446

Tel: 802 655 1203
Fax: 802 655 1248
www.stl-inc.com

September 16, 2002

Ms. Katie Downie
STL Seattle
5755 8th Street East
Tacoma, WA 98424

Re: Laboratory Project No. 22029
Case: 22029; SDG: 89517

Dear Ms. Downie:

Enclosed are the analytical results of samples received intact by Severn Trent Laboratories on August 27, 2002. Laboratory numbers have been assigned and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 08/27/02 ETR No: 89517		
499886	108160-1	08/20/02	Soil
499887	108160-2	08/20/02	Soil
499888	108160-3	08/20/02	Soil
499889	108160-4	08/21/02	Soil
499890	108164-1	08/21/02	Soil
499891	108164-2	08/21/02	Soil
499892	108164-3	08/21/02	Soil
499893	108166-1	08/20/02	Soil
499894	108166-2	08/21/02	Soil
499895	108166-3	08/21/02	Soil

There were no exceptions noted during the analysis of samples in this delivery group. If there are any questions regarding this submittal, please contact Jeannine McCrumb at (802) 655-1203.

This report shall not be reproduced, except in full, without the written approval of the laboratory. This report is sequentially numbered starting with page 0001 and ending with page 0026.

I certify that this package is in compliance with the NELAC requirements, both technically and for completeness, for other than the conditions detailed above. The release of the data contained in this hardcopy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Sincerely,

Michael F. Wheeler, Ph.D.
Laboratory Director

mfw/jta/jmm
Enclosure

STL Burlington is a part of Severn Trent Laboratories, Inc.

0001-A LAST ALPHA

Chain of Custody Record

STL-8274 (0102)

STL Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.stl-inc.com

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc.

Client: STL - SEATTLE	Project Manager: KATIE DOWNIE	Date: 8/26/02	Chain of Custody Number: 005412
Address: 5755 8TH STREET EAST	Telephone Number (Area Code)/Fax Number: 253-922-2310 / 253-922-5047	Lab Number	Page 1 of 2
City: TACOMA; State: WA; Zip Code: 98424	Site Contact	Lab Contact	
Project Name and Location (State): CH2M HILL	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): GRAIN SIZE	Special Instructions/ Conditions of Receipt
108160-1	8/20/02	4:35PM				X							X	
108160-2	8/20/02	5:10PM				X							X	
108160-3	8/20/02	12:01AM				X							X	
108160-4	8/21/02	9:45AM				X							X	
108164-1	8/21/02	10:10AM				X							X	
108164-2	8/21/02	11:45AM				X							X	
108164-3	8/21/02	2:15PM				X							X	
108166-1	8/20/02	4:10PM				X							X	
108166-2	8/21/02	7:00PM				X							X	
108166-3	8/21/02	4:00PM				X							X	

Cooler: ☐ Yes ☐ No Cooler Temp: _____

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Disposal By Lab ☐ Return To Client ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days): ☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☐ 15 Days ☐ Other STD

QC Requirements (Specify): TIER IV DELIVERABLE

1. Relinquished By: [signature]	Date: 8/26/02	Time: 4:15pm	1. Received By	Date	Time
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By [signature]	Date: 8-27-02	Time: 0930

Comments: 8

DISTRIBUTION: WHITE - Stays with the Samples; CANARY - Returned to Client with Report; PINK - Field Copy

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Severn Trent Laboratories, Inc.

PARTICLE SIZE ANALYSIS

Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

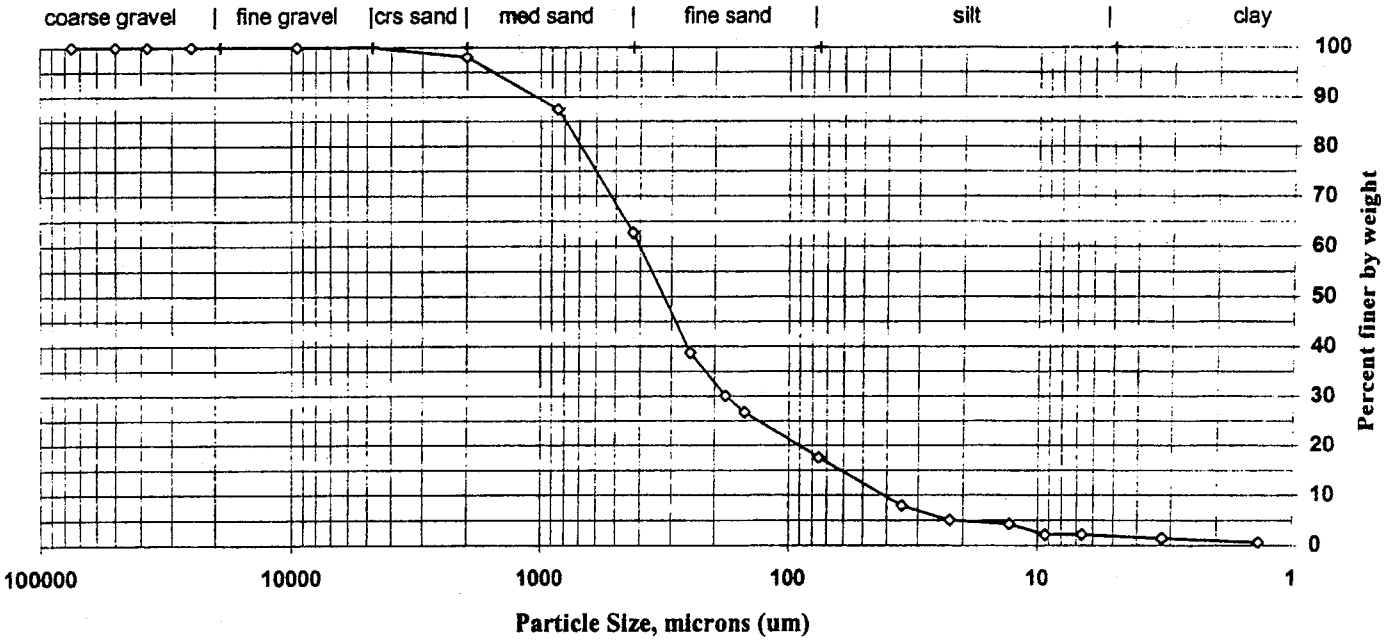
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499886 **Sample ID:** 108160-1

Percent Solids: 71.0% **Maximum Particle Size:** Crs sand

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	98.1	1.9
#20	850	87.5	10.6
#40	425	62.8	24.7
#60	250	38.8	24.0
#80	180	30.0	8.7
#100	150	26.7	3.3
#200	75	17.6	9.1
Hydrometer	34.7	7.9	9.7
|	22.3	5.0	2.9
|	13.0	4.3	0.7
|	9.3	2.1	2.1
|	6.6	2.1	0.0
|	3.2	1.4	0.7
V	1.4	0.7	0.7

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

8

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: D2217

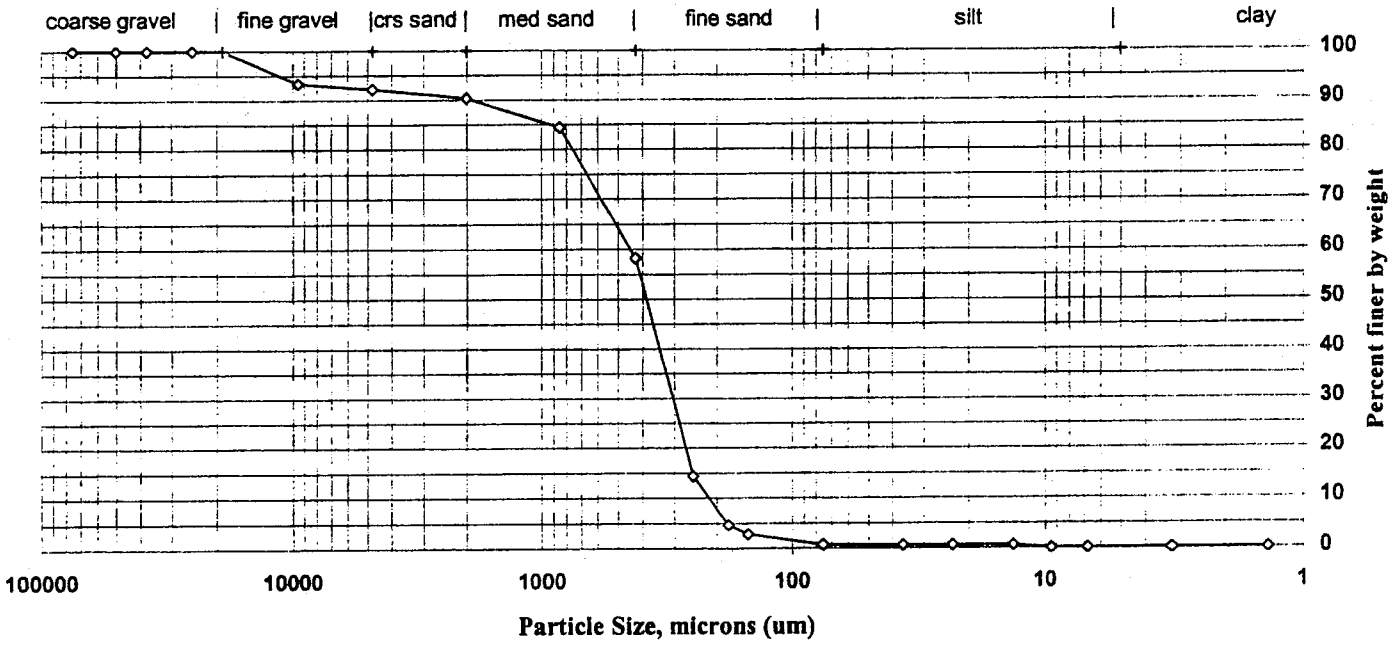
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499887 **Sample ID:** 108160-2

Percent Solids: 70.7% **Maximum Particle Size:** 19 mm

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	93.4	6.6
#4	4750	92.2	1.2
#10	2000	90.3	1.9
#20	850	84.5	5.9
#40	425	58.2	26.3
#60	250	14.4	43.8
#80	180	4.6	9.8
#100	150	2.8	1.8
#200	75	0.7	2.1
Hydrometer	36.3	0.6	0.1
|	22.9	0.6	0.0
|	13.2	0.6	0.0
|	9.4	0.0	0.6
|	6.8	0.0	0.0
|	3.2	0.0	0.0
V	1.4	0.0	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

9

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

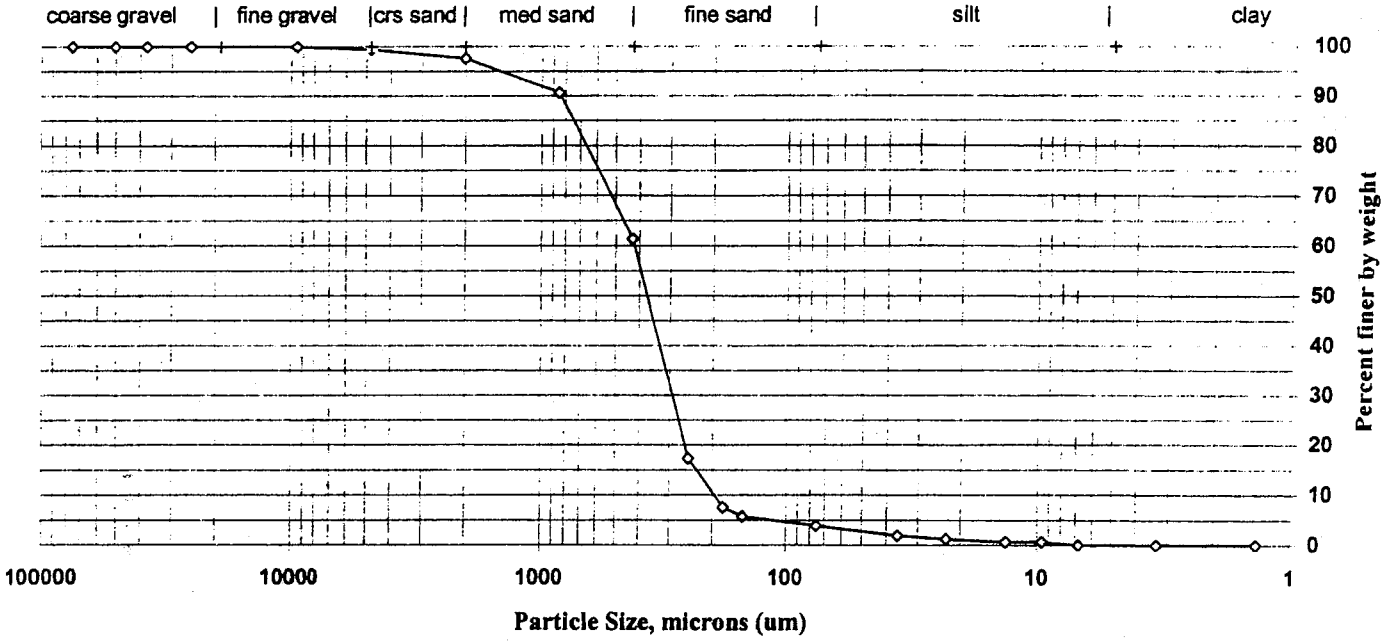
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499888 **Sample ID:** 108160-3

Percent Solids: 69.0% **Maximum Particle Size:** 9.5 mm

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	99.4	0.6
#10	2000	97.6	1.9
#20	850	90.6	7.0
#40	425	61.4	29.2
#60	250	17.3	44.1
#80	180	7.6	9.7
#100	150	5.8	1.8
#200	75	3.9	1.9
Hydrometer	36.0	1.8	2.0
|	22.8	1.2	0.6
|	13.2	0.6	0.6
|	9.5	0.6	0.0
|	6.8	0.0	0.6
|	3.3	0.0	0.0
V	1.4	0.0	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

10

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: D2217

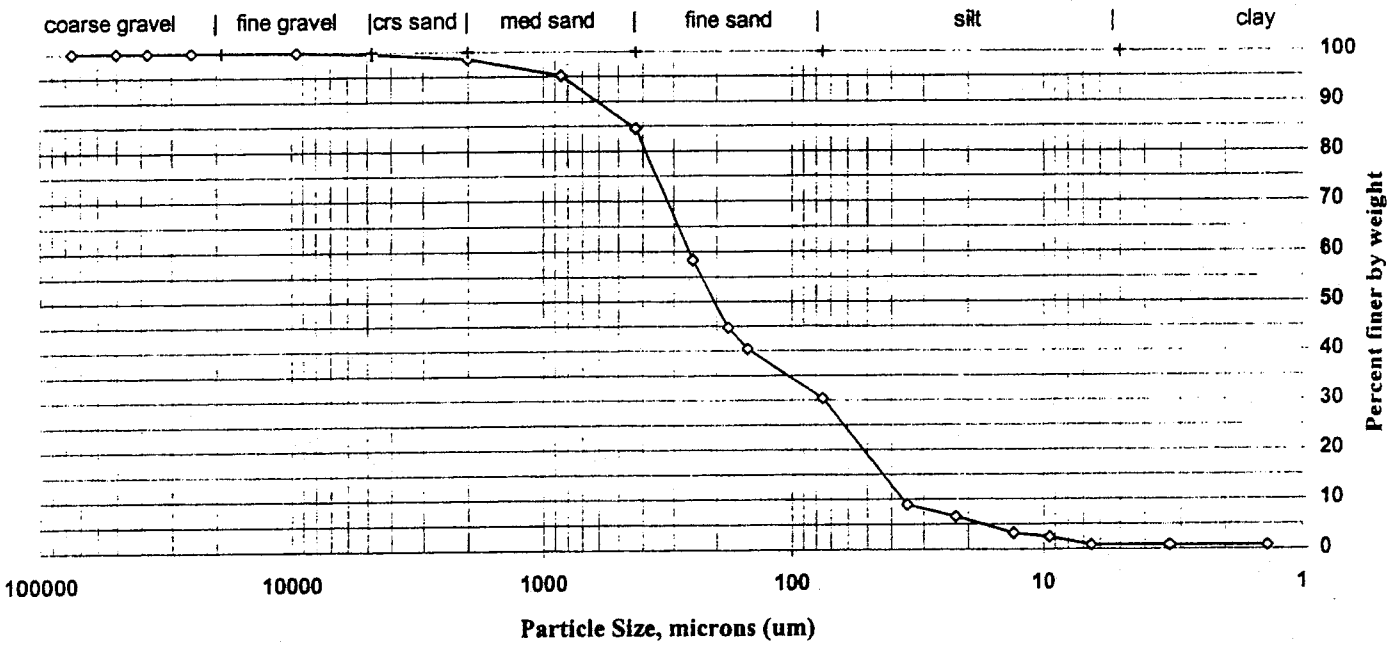
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499889 **Sample ID:** 108160-4

Percent Solids: 58.2% **Maximum Particle Size:** 9.5 mm

Specific Gravity: 2.65 **Shape (> #10):** subrounded

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	99.7	0.3
#10	2000	98.7	1.0
#20	850	95.3	3.4
#40	425	84.5	10.7
#60	250	58.3	26.2
#80	180	44.8	13.5
#100	150	40.4	4.4
#200	75	30.3	10.0
Hydrometer	34.7	8.9	21.4
|	22.2	6.5	2.4
|	13.1	3.2	3.2
|	9.4	2.4	0.8
|	6.5	0.8	1.6
|	3.2	0.8	0.0
V	1.4	0.7	0.1

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: Jeff 22 **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: **D2217**

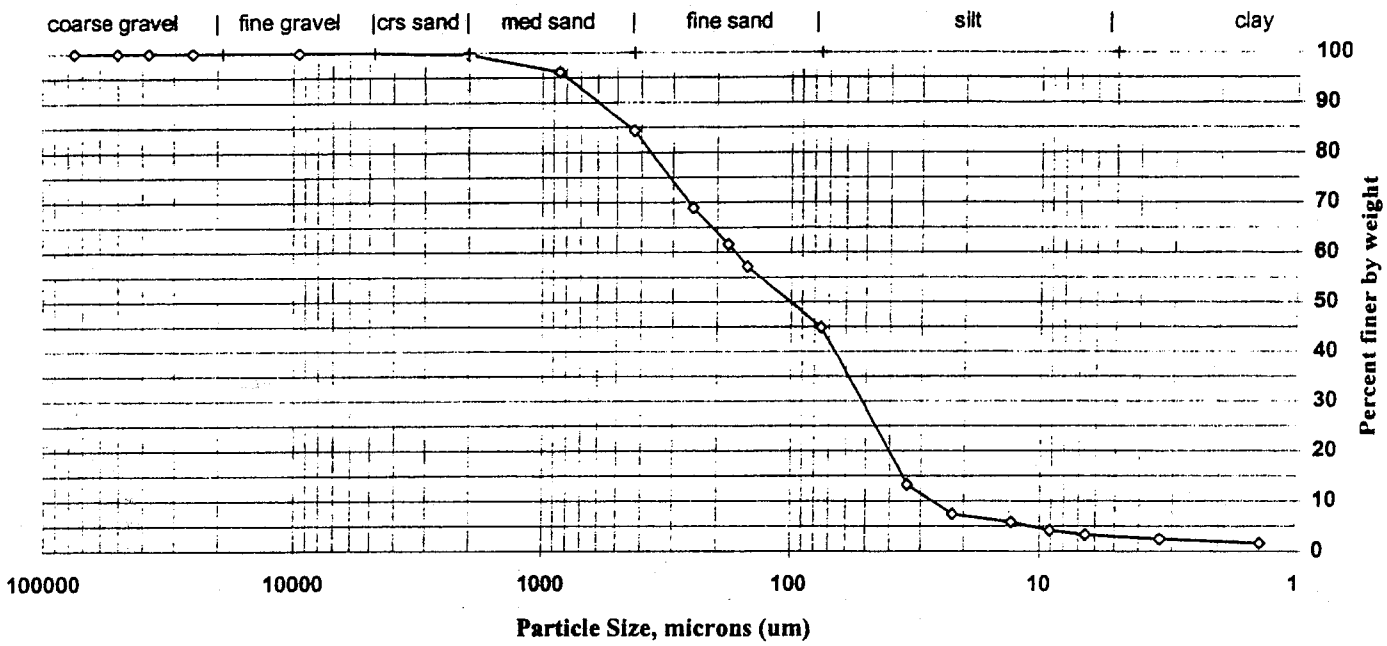
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499890 **Sample ID:** 108164-1

Percent Solids: 59.4% **Maximum Particle Size:** Crs sand

Specific Gravity: 2.65 **Shape (> #10):** subrounded

Hardness (> #10): brittle



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.7	0.3
#20	850	96.1	3.5
#40	425	84.4	11.8
#60	250	69.0	15.4
#80	180	61.6	7.3
#100	150	57.2	4.5
#200	75	44.9	12.3
Hydrometer	33.8	13.2	31.7
|	22.1	7.5	5.8
|	12.9	5.8	1.7
|	9.1	4.1	1.7
|	6.5	3.3	0.8
|	3.3	2.5	0.8
V	1.4	1.6	0.9

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

12

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: D2217

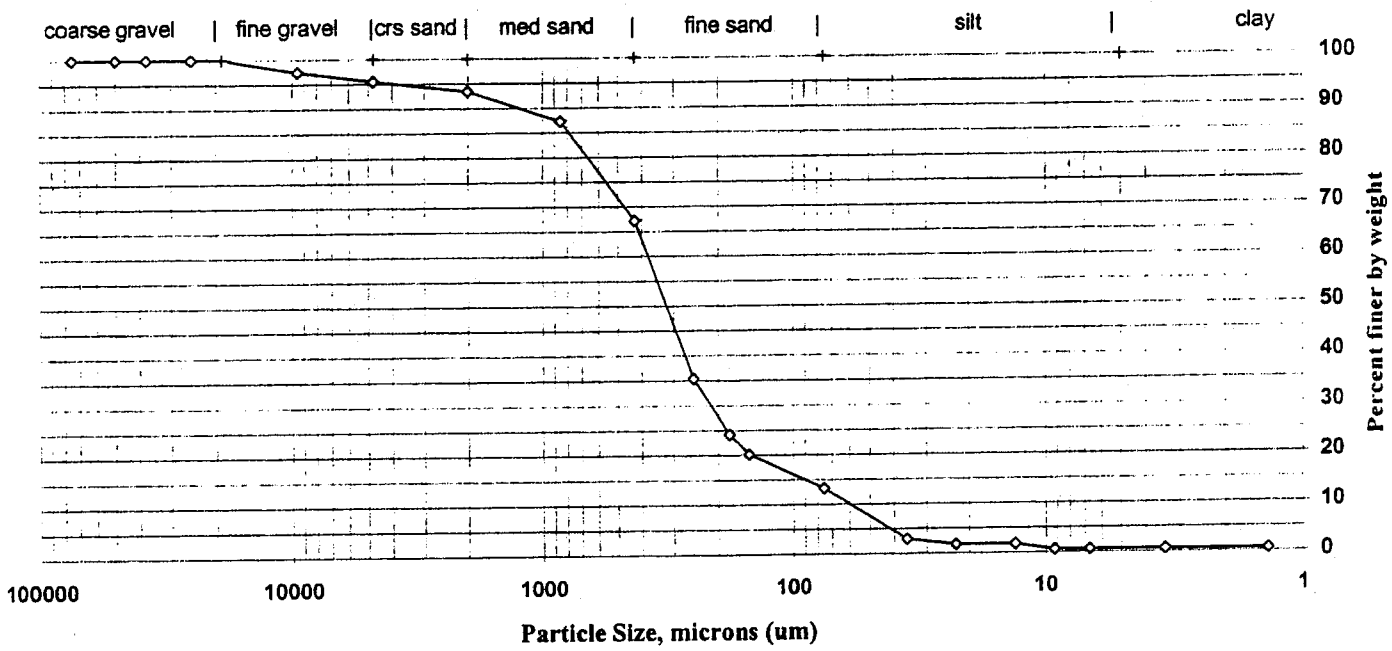
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499891 **Sample ID:** 108164-2

Percent Solids: 71.9% **Maximum Particle Size:** 19 mm

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	97.4	2.6
#4	4750	95.5	1.9
#10	2000	93.5	2.0
#20	850	87.4	6.1
#40	425	67.2	20.2
#60	250	35.4	31.7
#80	180	24.2	11.2
#100	150	20.2	4.0
#200	75	13.3	6.9
Hydrometer	35.6	2.9	10.4
|	22.7	1.7	1.2
|	13.1	1.7	0.0
|	9.2	0.6	1.2
|	6.7	0.6	0.0
|	3.4	0.6	0.0
V	1.4	0.5	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** 8951 7PS.xls::Report

Particle Size of Soils by ASTM D422

Sample preparation by: D2217

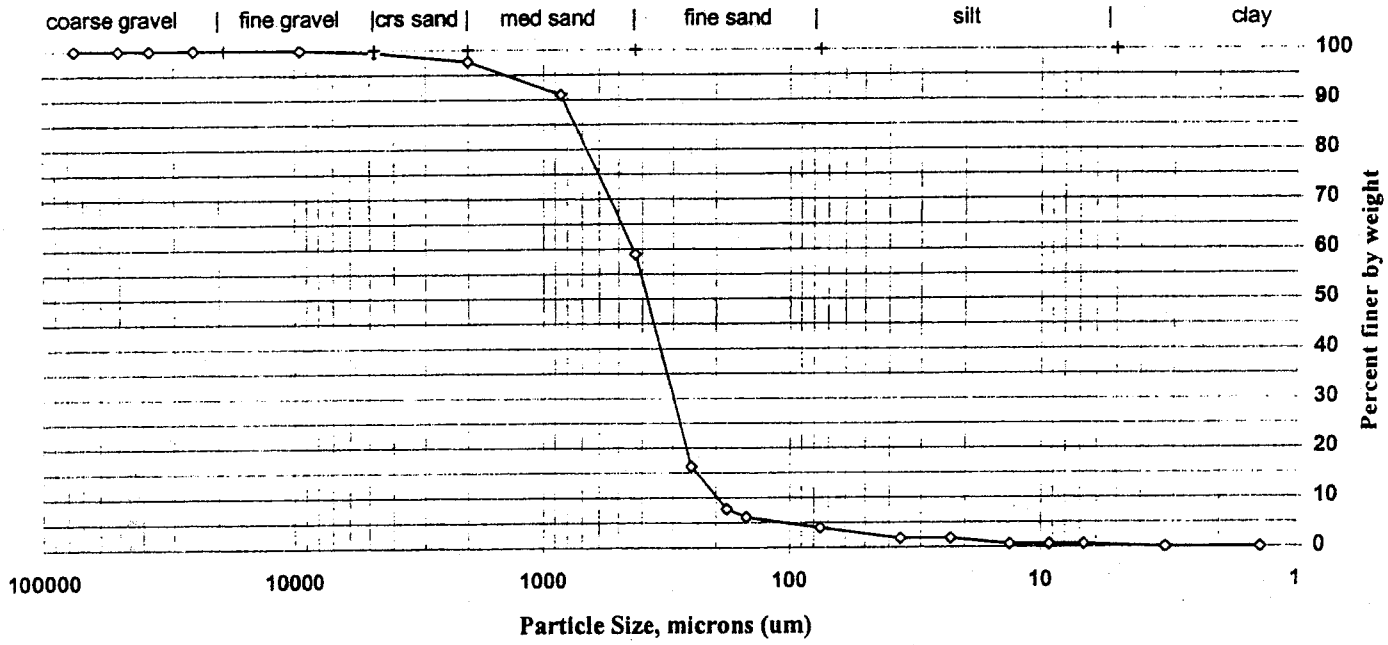
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499892 **Sample ID:** 108164-3

Percent Solids: 68.7% **Maximum Particle Size:** 9.5 mm

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	99.5	0.5
#10	2000	97.8	1.7
#20	850	91.0	6.7
#40	425	59.0	32.1
#60	250	16.3	42.7
#80	180	7.7	8.6
#100	150	6.1	1.6
#200	75	3.9	2.1
Hydrometer	36.0	1.7	2.2
|	22.7	1.7	0.0
|	13.2	0.6	1.2
|	9.2	0.6	0.0
|	6.7	0.6	0.0
|	3.2	0.0	0.6
V	1.4	0.0	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

14

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

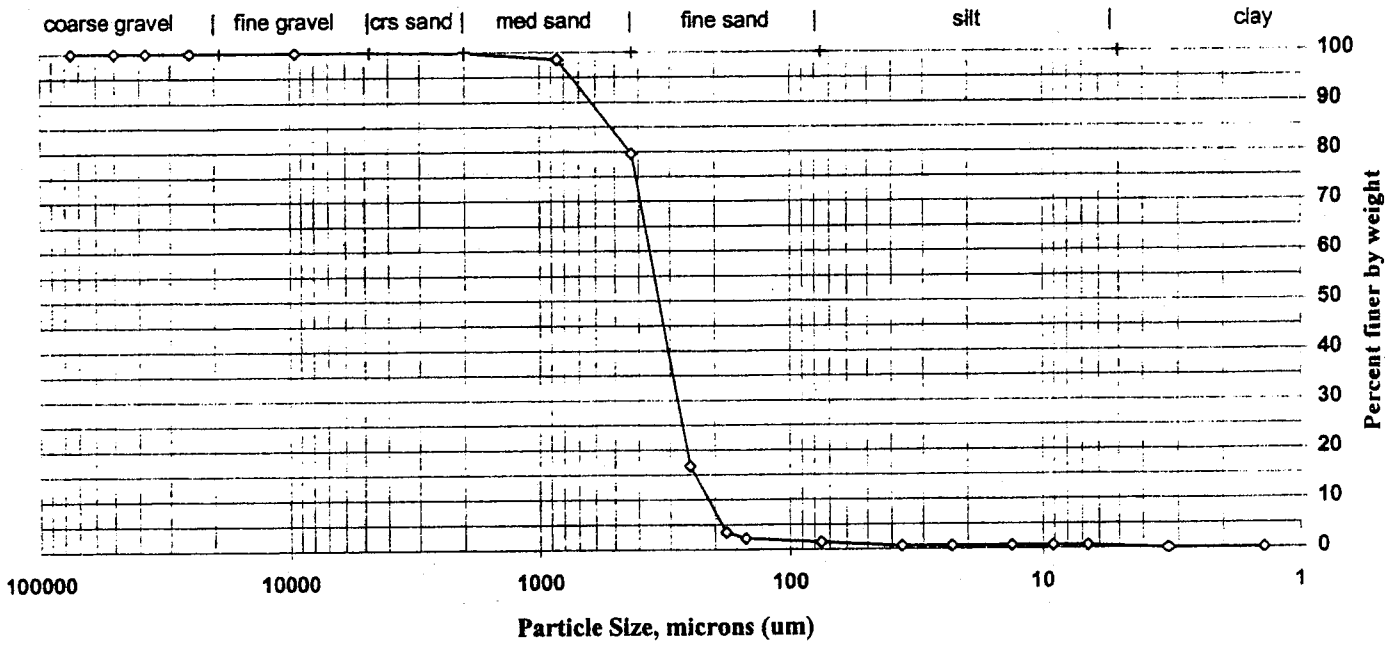
Sample preparation by: D2217

Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499893 **Sample ID:** 108166-1

Percent Solids: 70.7%
Specific Gravity: 2.65

Maximum Particle Size: Crs sand
Shape (> #10): subangular
Hardness (> #10): brittle



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.8	0.2
#20	850	98.6	1.2
#40	425	79.6	19.0
#60	250	16.8	62.8
#80	180	3.4	13.4
#100	150	2.2	1.2
#200	75	1.4	0.8
Hydrometer	36.3	0.5	0.9
I	22.9	0.5	0.0
I	13.2	0.5	0.0
I	9.1	0.5	0.0
I	6.6	0.5	0.0
I	3.2	0.0	0.5
V	1.4	0.0	1.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: Jeff 22 **Date:** 09/13/02 **STL - Burlington** **89517PS.xls::Report**

Particle Size of Soils by ASTM D422

Sample preparation by: D2217

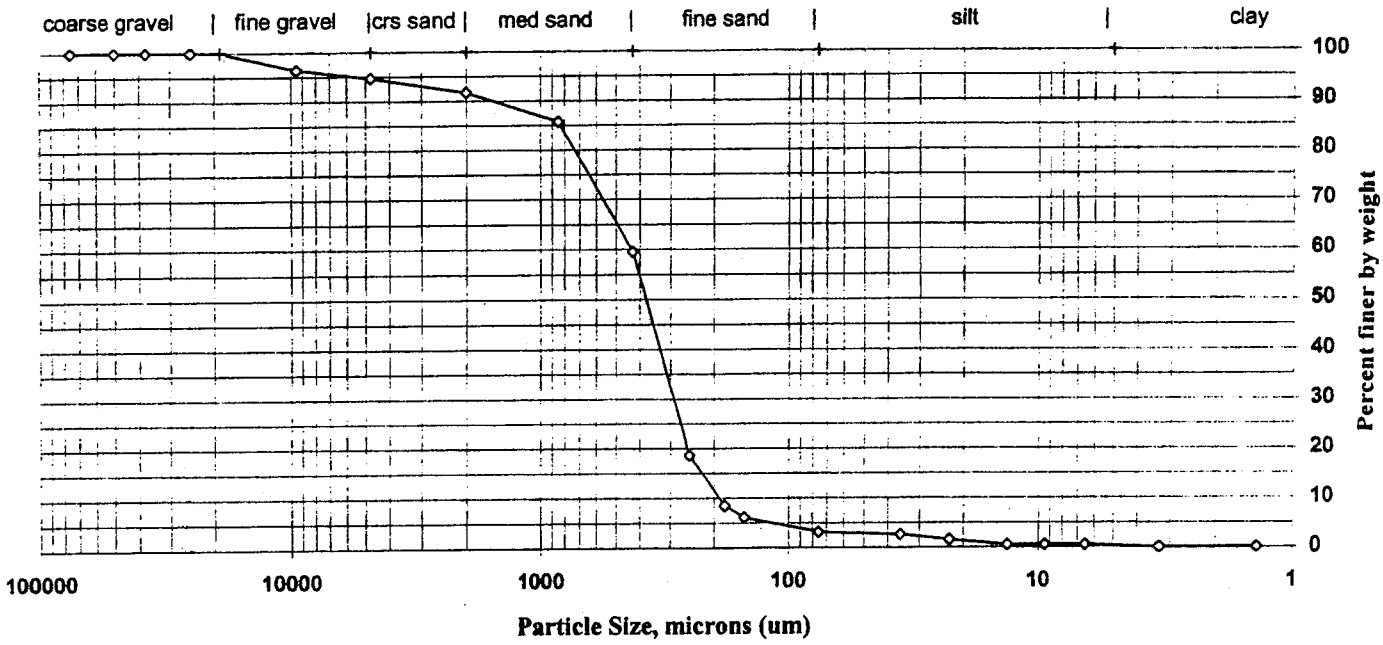
Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499894 **Sample ID:** 108166-2

Percent Solids: 71.4% **Maximum Particle Size:** 19 mm

Specific Gravity: 2.65 **Shape (> #10):** subangular

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	96.5	3.5
#4	4750	94.7	1.7
#10	2000	91.7	3.0
#20	850	85.8	5.9
#40	425	59.5	26.3
#60	250	18.6	40.9
#80	180	8.5	10.2
#100	150	6.1	2.4
#200	75	3.1	3.0
Hydrometer	35.6	2.6	0.5
|	22.7	1.6	1.0
|	13.2	0.5	1.0
|	9.4	0.5	0.0
|	6.5	0.5	0.0
|	3.2	0.0	0.5
V	1.4	0.0	0.0

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** 89517PS.xls::Report

Particle Size of Soils by ASTM D422

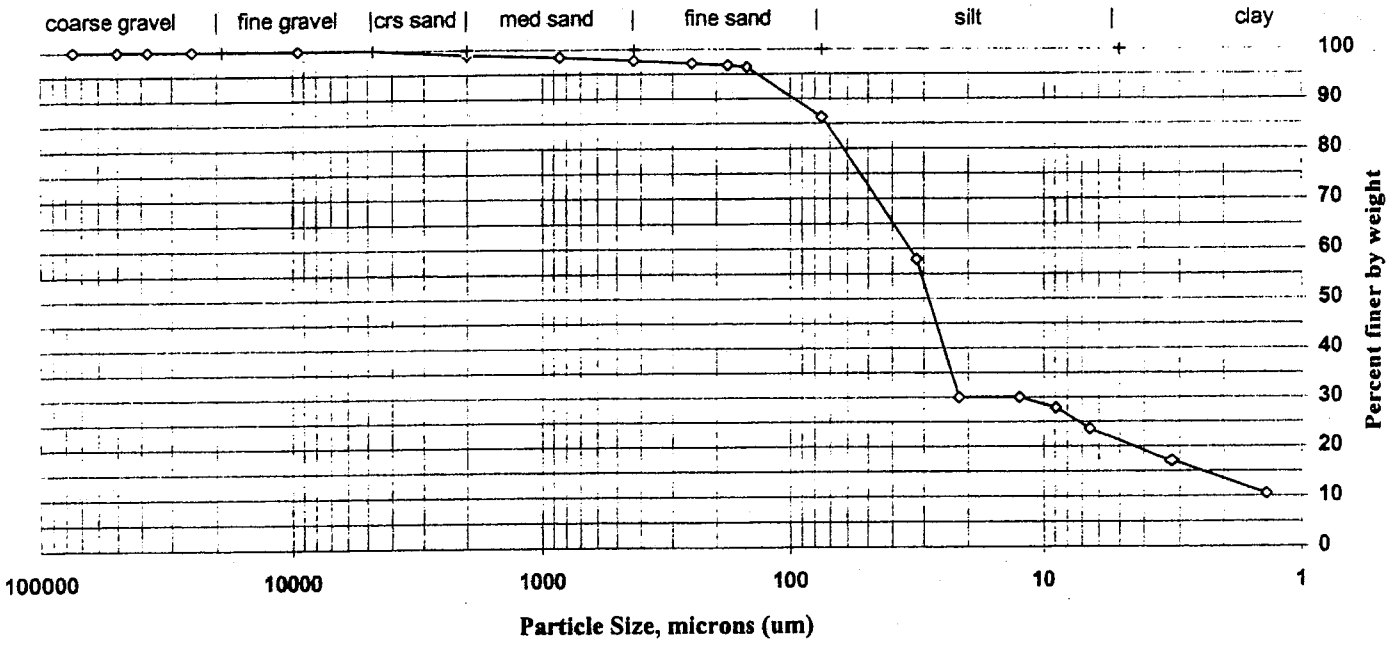
Sample preparation by: **D2217**

Client:	STLWAS	**Project No.:**	22029	**ETR(s) #:**	89517
Client Code:	STLWAS	**Job No.:**	N/A	**SDG(s):**	89517
Date Received:	27-Aug-02	**Start Date:**	06-Sep-02	**End Date:**	13-Sep-02

Lab ID: 499895 **Sample ID:** 108166-3

Percent Solids: 46.7%
Specific Gravity: 2.65

Maximum Particle Size: Crs sand
Shape (> #10): subangular
Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.0	1.0
#20	850	98.5	0.5
#40	425	97.8	0.7
#60	250	97.2	0.6
#80	180	96.8	0.4
#100	150	96.4	0.4
#200	75	86.3	10.1
Hydrometer	31.9	57.9	28.5
|	21.6	30.0	27.9
|	12.5	30.0	0.0
|	8.9	27.9	2.1
|	6.5	23.6	4.3
|	3.2	17.1	6.4
V	1.4	10.5	6.6

Dispersion of soil for hydrometer test by mechanical mixer with metal paddle, operated for at least one minute within a dispersion cup with 125 mls sodium hexametaphosphate

Submitted By: _____ **Date:** 09/13/02 **STL - Burlington** 89517PS.xls::Report

SEVERN
TRENT
SERVICES

Severn Trent Laboratories, Inc.

SAMPLE PREPARATION

Particle Size Analysis
Sieve Data

Client: STLWAS | ETR(s): 89517 | Project: 22029 | Date Rec: 27-Aug-02 | Start Date: 06-Sep-02
Client Code: STLWAS | SDG(s): 89517 | Case: 22029 | End Date: 13-Sep-02

SET: 89517

Dry prep = D421
Wet prep = D2217

Standard Values

Sieve	Opening, um
3 inch	75000
2 inch	50000
1.5 inch	37500
1 inch	25000
3/4 inch	19000
3/8 inch	9500
#4	4750
#10	2000
#20	850
#40	425
#60	250
#80	180
#100	150
#200	75

Sieve (tares)

Size	Mass, g	
3 inch		
2 inch		
1.5 inch		
1 inch		
3/4 inch		
3/8 inch	447.98	
#4	443.02	
#10	437.39	
#20	387.02	c
#40	345.91	c
#60	328.19	c
#80	306.55	c
#100	306.25	c
#200	303.17	c

Test	1	2	3	4	5	6	7	8	9	10	11	12
Laboratory No	499886	499887	499888	499889	499890	499891	499892	499893	499894	499895		
Sample ID	108160-1	108160-2	108160-3	108160-4	108164-1	108164-2	108164-3	108166-1	108166-2	108166-3		
Sample Prep Method	D2217	D2217	D2217	D2217	D2217	D2217	D2217	D2217	D2217	D2217		
Pan, g												
Pan/sample, g	158.22	193.91	189.56	171.33	165.67	191.88	202.33	206.81	215.30	80.19		
Pan/dry sampl, g												
Non-soil material												
Description	wood	wood/glass	n/a	wood	wood	wood	wood/glass	n/a	n/a	n/a		
Pan, g	3.68	3.68		3.68	3.68	3.68	3.68					
Pan/dry sampl, g	3.85	3.83		4.43	5.07	3.83	3.78					
Non-soil, g	0.17	0.15		0.75	1.39	0.15	0.10					
Hydroscopic Moisture correction factor (HMCF) for dry prep / Percent Solids for dry and wet prep												
Pan, g	1.27	1.27	1.26	1.28	1.27	1.28	1.28	1.27	1.28	1.28		
Pan/sample, g	40.38	34.15	41.33	39.87	35.24	39.46	35.37	37.49	45.20	34.49		
Pan/dry sampl, g	29.04	24.52	28.91	23.73	21.44	28.75	24.70	26.88	32.64	16.80		
HMCF	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		
Sample % Solids	71.0%	70.7%	69.0%	58.2%	59.4%	71.9%	68.7%	70.7%	71.4%	46.7%		
Sample used, g	112.17	136.97	130.80	98.92	96.98	137.91	138.90	146.23	153.73	37.48		
Sieve + Sample Weights												
Size	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g	Mass, g
3 inch												
2 inch												
1.5 inch												
1 inch												
3/4 inch												
3/8 inch		457.08				451.57			453.41			
#4		444.60	443.75	443.35		445.62	443.72		445.70			
#10	439.54	439.93	439.83	438.39	437.71	440.19	439.79	437.66	442.02	437.76		
#20	398.92	395.09	396.12	390.39	390.44	395.46	396.37	388.80	396.11	387.21		
#40	373.64	381.90	384.12	356.52	357.34	373.77	390.46	373.67	386.33	346.17		
#60	355.11	388.13	385.87	354.12	343.13	371.95	387.52	420.02	391.05	328.41		
#80	316.32	319.95	319.27	319.93	313.66	322.06	318.45	326.15	322.16	306.70		
#100	309.99	308.78	308.62	310.63	310.58	311.79	308.51	308.04	309.87	306.40		
#200	313.43	306.02	305.64	313.09	315.05	312.67	306.12	304.31	307.80	306.96		
Maximum Particle size												
	Crs sand	19 mm	9.5 mm	9.5 mm	Crs sand	19 mm	9.5 mm	Crs sand	19 mm	Crs sand		
Description of >#10 particles												
Shape	subangular	subangular	subangular	subrounded	subrounded	subangular	subangular	subangular	subangular	subangular	N/A	N/A
Hardness	hard	hard	hard	hard	brittle	hard	hard	brittle	hard	hard	N/A	N/A
Sample Mass Parameters												
Pan/sample, g	158.22	193.91	189.56	171.33	165.67	191.88	202.33	206.81	215.30	80.19		
Mass removed, g	2.32	13.37	3.17	2.08	1.71	9.14	3.20	0.27	12.74	0.37	0.00	0.00
Sample mass, g	110.02	123.75	127.64	97.59	96.66	128.92	135.80	145.96	140.99	37.11		

STL-Burlington

89517PS.xls::Sieves

Particle Size Analysis
Hydrometer Data

Set Number	Client:	Project No.:	ETR(s) #:
89517	STLWAS	22029	89517
	Client Code: STLWAS	Job No.: N/A	SDG(s): 89517
	Date Received: 27-Aug-02	Start Date: 06-Sep-02	End Date: 13-Sep-02

Date and Analyst

Percent Solids	Weighed/Mixed	Hydrometer	Large sieves	Non-soil	Small sieves
JTE 9/10/02	JTE 9/10/02	ERB 9/10/02	MRD 9/10/02	MRD 9/10/02	ERB 9/12/02
DJP 9/11/02	MRD 9/10/02	ERB 9/11/02	JTE 9/11/02	JTE 9/11/02	MRD 9/13/02

Test number	1	2	3	4	5	6	7	8	9	10	11	12
Lab number	499886	499887	499888	499889	499890	499891	499892	499893	499894	499895		
Time, min. (2)	2	2	2	2	2	2	2	2	2	2	2	2
Reading	1.0090	1.0040	1.0050	1.0090	1.0115	1.0060	1.0050	1.0040	1.0060	1.0170		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (5)	5	5	5	5	5	5	5	5	5	5	5	5
Reading	1.0070	1.0040	1.0045	1.0075	1.0080	1.0050	1.0050	1.0040	1.0050	1.0105		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (15)	15	15	15	15	15	15	15	15	15	15	15	15
Reading	1.0065	1.0040	1.0040	1.0055	1.0070	1.0050	1.0040	1.0040	1.0040	1.0105		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (30)	30	30	29	29	31	31	31	32	30	30	30	31
Reading	1.0050	1.0035	1.0040	1.0050	1.0060	1.0040	1.0040	1.0040	1.0040	1.0100		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (60)	59	58	58	63	60	59	59	60	63	57	63	57
Reading	1.0050	1.0035	1.0035	1.0040	1.0055	1.0040	1.0040	1.0040	1.0040	1.0090		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (250)	256	256	250	250	240	234	265	259	253	247	241	235
Reading	1.0045	1.0035	1.0035	1.0040	1.0050	1.0040	1.0035	1.0035	1.0035	1.0075		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (1440)	1440	1440	1434	1434	1424	1418	1412	1406	1400	1394	1388	1382
Reading	1.0040	1.0035	1.0035	1.0040	1.0045	1.0040	1.0035	1.0035	1.0035	1.0060		
Temperature, C	22.5	23.0	23.0	22.5	22.5	22.5	23.0	23.0	23.0	22.5		

Hydrometer used: 548343 **Model #:** ASTM 151H **Manufacturer:** CHASE **Hydrometer start time:** 20:10

Calibrations:

L temp, C	L read	H Temp, C	H read
17.0	1.0040	23.0	1.0035

Cal. Date: 18-Feb-02 **Hydrometer data entered:** MRD 9/13/02

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Particle Size Analysis
Hydrometer Data

Set Number	Client:	Project No.:	ETR(s) #:
89517	STLWAS	22029	89517
	Client Code: STLWAS	Job No.: N/A	SDG(s): 89517
	Date Received: 27-Aug-02	Start Date: 6-Sep-02	End Date: 0-Jan-00

Date and Analyst

Percent Solids	Weighed/Mixed	Hydrometer	Large sieves	Non-soil	Small sieves
PLC 9/10/02	PLC 9/10/02	EKB 9/10/02	MRD 9/10/02	MRD 9/10/02	EKB 9/12/02
DSP 9/11/02	MRD 9/10/02	EKB 9/11/02	PLC 9/11/02	PLC 9/11/02	MRD 9/13/02

Test number	1	2	3	4	5	6	7	8	9	10	11	12
Lab number	499886	499887	499888	499889	499890	499891	499892	499893	499894	499895		
Time, min. (2)	2	2	2	2	2	2	2	2	2	2	2	2
Reading	1.0070	1.0040	1.0050	1.0070	1.0115	1.0060	1.0050	1.0040	1.0060	1.0170		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (5)	5	5	5	5	5	5	5	5	5	5	5	5
Reading	1.0070	1.0040	1.0045	1.0075	1.0080	1.0050	1.0050	1.0040	1.0050	1.0105 ~~1.0050~~		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (15)	15	15	15	15	15	15	15	15	15	15	15	15
Reading	1.0065	1.0040	1.0040	1.0055	1.0070	1.0050	1.0040	1.0040	1.0040	1.0105		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (30)	30	30	29	29	31	31	31	32	30	30	30	31
Reading	1.0050	1.0030	1.0040	1.0050	1.0060	1.0040	1.0040	1.0040	1.0040	1.0100		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (60)	59	58	58	63	60	59	59	60	63	57	63	57
Reading	1.0050	1.0035	1.0035	1.0040	1.0055	1.0040	1.0040	1.0040	1.0040	1.0090		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (250)	256	256	250	250	240	234	265	259	253	247	241	235
Reading	1.0045	1.0035	1.0035	1.0040	1.0050	1.0040	1.0035	1.0035	1.0035	1.0075		
Temperature, C	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0		
Time, min. (1440)	1440	1440	1434	1434	1424	1418	1412	1406	1400	1394	1388	1382
Reading	1.0040	1.0035	1.0035	1.0040	1.0045	1.0040	1.0035	1.0035	1.0035	1.0060		
Temperature, C	22.5 ~~21.3~~	~~21.0~~ 23.0	~~21.0~~ 23.0	~~21.0~~ 22.5	~~21.0~~ 22.5 DSP 9/11/02	~~21.0~~ 22.5	~~21.0~~ 23.0	~~21.0~~ 23.0	~~21.0~~ 23.0	~~21.0~~ 22.5	22.5	

Hydrometer used: 548343 **Model #:** ASTM 151H **Manufacturer:** **Hydrometer start time:**

Calibrations:

L temp, C	L read	H Temp, C	H read
17.0		23.0	

Cal. Date: 18-Feb-02 **Hydrometer data entered:** 20:10 MRD 9/13/02

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STL Burlington

Balance Calibration Log

Type:	Mettler PB3002-S
Serial #:	1120173088
Asset #:	n/a
Location:	Soils Lab
Calibrate to:	2000g

Date	Time	Calibration Weight	Initials
01-Sep-02	[illegible]	2000.00	SLH
02-Sep-02	[illegible]	[illegible]	[illegible]
03-Sep-02	08:39	2000.00	DJT
04-Sep-02	07:00	2000.00	DJT
05-Sep-02	07:50	2000.00	DJT
06-Sep-02	07:50	2000.00	DJT
07-Sep-02	[illegible]	[illegible]	[illegible]
08-Sep-02	[illegible]	[illegible]	[illegible]
09-Sep-02	09:00	2000.00	DJT
10-Sep-02	08:00	2000.00	DJT
11-Sep-02	08:03	2000.00	DJT
12-Sep-02	07:50	2000.00	DJT
13-Sep-02	07:50	2000.00	DJT
14-Sep-02	[illegible]	[illegible]	[illegible]
15-Sep-02	[illegible]	[illegible]	[illegible]
16-Sep-02			

Date	Time	Calibration Weight	Initials
17-Sep-02			
18-Sep-02			
19-Sep-02			
20-Sep-02			
21-Sep-02	[illegible]	[illegible]	[illegible]
22-Sep-02	[illegible]	[illegible]	[illegible]
23-Sep-02			
24-Sep-02			
25-Sep-02			
26-Sep-02			
27-Sep-02			
28-Sep-02			
29-Sep-02	[illegible]	[illegible]	[illegible]
30-Sep-02	[illegible]	[illegible]	[illegible]
01-Oct-02			

Balance Calibration Log

Type:	Mettler Toledo PB3002
Serial #:	1116283195
Asset #:	N/A
Location:	Soils Lab
Calibrate to:	2000g

Date	Time	Calibration Weight	Initials
01-Sep-02	[illegible]	2000.00	[illegible]
02-Sep-02	[illegible]	[illegible]	[illegible]
03-Sep-02	08:40	2000.00	DJP
04-Sep-02	07:01	2000.00	DJP
05-Sep-02	07:51	2000.00	DJP
06-Sep-02	07:51	2000.00	DJP
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
09-Sep-02	08:01	2000.00	DJP
10-Sep-02	08:02	2000.00	DJP
11-Sep-02	08:04	2000.00	DJP
12-Sep-02	07:55	2000.00	DJP
13-Sep-02	07:51	2000.00	DJP
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
16-Sep-02			

Date	Time	Calibration Weight	Initials
17-Sep-02			
18-Sep-02			
19-Sep-02			
20-Sep-02			
21-Sep-02	[illegible]	[illegible]	[illegible]
22-Sep-02	[illegible]	[illegible]	[illegible]
23-Sep-02			
24-Sep-02			
25-Sep-02			
26-Sep-02			
27-Sep-02			
28-Sep-02	[illegible]	[illegible]	[illegible]
29-Sep-02	[illegible]	[illegible]	[illegible]
30-Sep-02			
01-Oct-02			

Oven #1 Quality Control Log

Type:	Baxter/Scientific Products (H6620-13A)
Serial #:	1090-0313
Asset #:	N/A
Location:	Soils Lab
Calibration Range:	110°C ±5

Date	Temperature	Oven Setting	Initials
[redacted]			
[redacted]			
03-Sep-02	114°	5.4	DJP
04-Sep-02	115°	5.1	DJP
05-Sep-02	110°	5.1	DJP
06-Sep-02	105°	5.1	DJP
[redacted]			
[redacted]			
09-Sep-02	110°	5.1	DJP
10-Sep-02	109°	5.1	DJP
11-Sep-02	108	5.1	DJP
12-Sep-02	107°	5.1	DJP
13-Sep-02	115°	5.1	DJP
[redacted]			
[redacted]			
16-Sep-02			

Date	Temperature	Oven Setting	Initials
17-Sep-02			
18-Sep-02			
19-Sep-02			
20-Sep-02			
[redacted]			
[redacted]			
23-Sep-02			
24-Sep-02			
25-Sep-02			
26-Sep-02			
27-Sep-02			
[redacted]			
[redacted]			
30-Sep-02			
01-Oct-02			

Oven #2 Quality Control Log

Type:	Baxter/Scientific Products (H6620-13A)
Serial #:	0292-0485
Asset #:	3333
Location:	Soils Lab
Calibration Range:	110°C ±5

Date	Temperature	Oven Setting	Initials
[redacted]			
[redacted]			
03-Sep-02	115°	4.5	DJP
04-Sep-02	105°	4.5	DJP
05-Sep-02	115°	4.5	DJP
06-Sep-02	105°	4.5	DJP
[redacted]			
[redacted]			
09-Sep-02	112°	4.8	DJP
10-Sep-02	105°	4.8	DJP
11-Sep-02	115°	4.8	DJP
12-Sep-02	105°	4.8	DJP
13-Sep-02	106°	4.8	DJP
[redacted]			
[redacted]			
16-Sep-02			

Date	Temperature	Oven Setting	Initials
17-Sep-02			
18-Sep-02			
19-Sep-02			
20-Sep-02			
[redacted]			
[redacted]			
23-Sep-02			
24-Sep-02			
25-Sep-02			
26-Sep-02			
27-Sep-02			
[redacted]			
[redacted]			
30-Sep-02			
01-Oct-02			

Sodium Hexametaphosphate
Quality Control Log

Date	Amount	Concentration	Mfg./Supplier	Lot #	Exp. Date*	Initials
6/18/02	3L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	MRO
6/20/02	3L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	MRO
6/24/02	3L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	DJP
7/1/02	3L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	DJP
7/9/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	DJP
7/19/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	DJP
7/24/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	DJP
7/29/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	DJP
7/30/02	3L	120g / 3L H20	Em Science	41285146	4/17/03	DJP
8/7/02	3L	120g / 3L H20	Em Science	41285146	4/17/03	DJP
8/9/02	3L	120g / 3L H20	Em Science	41285146	4/17/03	ERB
8/14/02	3L	120g / 3L H20	Em Science	41285146	4/17/03	DJP
8/16/02	3L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	DJP
8/19/02	6L	120g / 3L H20	EM SCIENCE	41285146	4/17/03	MRO
8/19/02	6L	120g / 3L H20	Em Science	41285146	4/17/03	JCH
8/20/02	3L	120g / 3L H20	EM Science	41285146	4/17/03	JKZ
8/22/02	6L	120g / 3L H20	EM Science	41285146	7/18/02	JKZ
8/28/02	3L	120g / 3L H20	EM Science	42193230	8/28/03	SAC
9/12/02	9L	120g / 3L H20	EM SCIENCE	42193230	9/29/03	MRO
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				
		120g / 3L H20				

Note: * No expiration date noted on container. Date is one year from opening.

SEVERN
TRENT
SERVICES

Severn Trent Laboratories, Inc.

SAMPLE HANDLING

From: KIM A PRESLEY (253)922-2310
STL-Seattle
5755 6TH STREET EAST

Tacoma, WA, 98424

REVENUE BARCODE

FedEx.

To: Sample Receiving (802)655-1203
STL-Burlington
208 South Park Drive
Suite 1
Colchester, VT, 05446

SHIP DATE: 26AUG02
WEIGHT: 78 LBS

Ref:

ORIGINAL ON FILE
SDG # ~~108177~~ ETR # 89513
8-27-02 89513

DELIVERY ADDRESS BARCODE(FEDEX-EDR)

TRK # 7900 3537 3495 FORM 0201

FedEx STANDARD OVERNIGHT

TUE
AA

05446-VT-US

BTV
XB BTVA

Deliver by:
27AUG02

8-27-02 0930

Please fold this document in half and place it in the waybill pouch affixed to your shipment so that the barcode portion of the label can be read and scanned.
***WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

[redacted]

1. Use the "Print" feature from your browser to send this page to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping label pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Use of this system constitutes your agreement to the service conditions in the current FedEx service Guide, available upon request.
FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

SEVERN TRENT LABORATORIES LOG-IN SHEET - Form DC-1

Lab Name: STL Burlington

Received By (Print or Type Name): Frank N. Bessette

Log-in Date: 08/28/02

Received By (Signature):

Case Number:	22029
Sample Delivery Group No.:	89517
ETR Number:	89517
REMARKS:	
1. Custody Seal	Present and Intact
2. Custody Seal Nos:	339198,339758
3. Chain-of-Custody Records	Present
4. Sample Information Sheets	Absent*
5. Airbill Present	As Airbill
6. Airbill Number(s):	7900-3537-3495
7. Sample Tags	Absent*
8. Tag Nos. Listed on COC	N/A
9. Sample Condition:	Intact
10. VOA Vial Bubbles	N/A
11. Does info on the custody records, sample info sheets, sample tags and labels agree?	Yes
12. Date Received at Lab:	08/27/02
13. Time Received at Lab:	0930
14. Cooler Temperature(s):	5 C
SAMPLE TRANSFER:	
Fraction(s):	ALL
Area Number:	Level 4 Storage
Transferred By:	FNB
Transferred On:	08/27/02

CORRESPONDING			
CLIENT SAMPLE #	SAMPLE TAG #	ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT ETC.
108160-1	NA	499886	
108160-2	NA	499887	
108160-3	NA	499888	
108160-4	NA	499889	
108164-1	NA	499890	
108164-2	NA	499891	
108164-3	NA	499892	
108166-1	NA	499893	
108166-2	NA	499894	
108166-3	NA	499895	

8-28-02

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0025

* *Contact Project Director*

Reviewed By:_____ Date:_____

** COOLER RECEIPT CHECKLIST **

List ETR 89517

WERE CUSTODY SEALS PRESENT ON THE COOLERS?

YES NO

WERE THE CUSTODY SEALS SIGNED?

YES NO

COPY - ORIGINAL ON FILE
SDG # 108477 ETR # 89513
89513
8-27-02

WERE THERE CUSTODY SEAL NUMBERS?

YES NO

LIST THE CUSTODY SEAL NUMBERS. 339198 339758

WHAT TYPE OF COOLING WAS UTILIZED?

ICE MELTED ICE PACKS NONE

COOLER TEMPERATURE (degrees c): 5 (2-6 °C Acceptable)

DATE AND TIME COOLER RECEIVED: 08-27-02 0930

DO SAMPLES APPEAR TO BE INTACT: YES NO

DO ANY SAMPLES HAVE SHORT HOLDING TIMES?
(less than seven days)

WET CHEM YES NO

EXTRACTABLES YES NO

UNPRES VOA YES NO

RADIATION SCREEN RESULTS <0.05 MR/HR YES NO

0026

SM02 Cooler Rpt Chklist
STL Burlington

APPENDIX D

Chain-of-Custody Forms

CH2MHILL Applied Sciences Lab
CHAIN OF CUSTODY RECORD
AND AGREEMENT TO PERFORM SERVICES

CVO 2300 NW Walnut Boulevard
Corvallis, OR 97330-3538
(541) 752-4271 FAX (541) 752-0276

Batch: 8006 ~~108166~~ 108166
COC #3
PP-003

COC # _____

Project # 164067.A1.02	Purchase Order #
Project Name: City of Portland Outfalls - Pilot Project	
Company Name: City of Portland	
Report to: Dawn Sanders	Phone No: 503 235-5000
Requested Completion Date: Standard	Sample Disposal: Dispose ☑ Return ☐

Sampling Date	Sampling Time	Type COMP	Type GRAB	Matrix WATER	Matrix SOIL	Matrix AIR	Matrix Other	CLIENT SAMPLE ID (8 CHARACTERS)	LAB QC	TOTAL # OF CONTAINERS	Grain Size	Metals	Pesticides	Herbicides	Mercury	SVOC/Low Level PAH	TPH-Dx	PCB	TOC
8/7/02	1600	X					X	PP011301		4	/	/	/	/	/	/	/	/	/
8/7/02	1500	X					X	PP011509		4	/	/	/	/	/	/	/	/	/
8/7/02	1600	X					X	PP011810		4	/	/	/	/	/	/	/	/	/
8/7/02	1805	X		X				PP011EB01		10		/	/	/	/	/	/	/	/

Requested Analytical Method #

Preservative

THIS AREA FOR LAB USE ONLY: Lab # ____ Page ____ of ____

EPA Tier QC Level: 1 (Screening) 2 3 4

Alternate Description	Lab ID

Relinquished By: David Lacy	Date/Time: 8/7/02 1500	Received By:	Date/Time:
Sampled By and Title: David Lacy (Please sign and print name)	Date/Time: 8/7/02 1900	Relinquished By: (Please sign and print name)	Date/Time:
Received By: (Please sign and print name)	Date/Time:	Relinquished By: (Please sign and print name)	Date/Time:
Received By: (Please sign and print name)	Date/Time:	Shipped Via: UPS Fed-Ex Other HAND	Shipping #:

Special Instructions:
* Run SW 8270C and SW 8270C-SIM

Instructions and Agreement Provisions on Reverse Side

DISTRIBUTION: Original - LAB, Yellow - LAB, Pink - Client
Rev 2/01 Lab form 340

PDX/030860010.PDF

CHAIN OF CUSTODY INSTRUCTIONS

Project #:	Project number to be referenced for work.
Purchase Order #:	Purchase order to be referenced on invoices.
Project Name:	Name of the project served by the samples.
Company Name:	Name of the company requesting the work. Correspondence will be sent to this address.
Project Manager or Contact & Phone #:	Name and phone number of person to receive the **original** laboratory report and who can be contacted concerning this project.
Report To:	Name and address of the person to receive the laboratory report.
Date of Completion	Date when the report is scheduled to be mailed. Normal turnaround time (TAT) = 21 days (30 days for Level II/III or CLP reports). Faster TAT must be **prearranged** through Client Services.
Sample Disposal:	Indicate whether the samples are to be returned to the project at the project's cost or disposed of by the laboratory at $25 per sample and invoiced for this service.
Sampling Time:	The date and time at which the sample was collected.
Type:	Indicate the type of sample collection (Composite or Grab).
Matrix:	Indicate the sample matrix (Water, Soil, Air, or other)
Client Sample ID:	Project assigned identifier (up to 9 characters) .
QC ID:	Up to 3 characters (Examples: MS, MSD, DUP, FB, ER, TB, etc.)
Number of Containers:	The number of containers for this line item or sample.
Analyses Requested:	Use one column for each parameter or group of parameters. Specific method numbers, parameter list, and TIC requirements must be indicated.
For Lab Use Only:	Do not make any entry in this space.
Sample Remarks:	Record any comments about each sample on the same line as the sample description, e.g., "In the past, the sample has shown presence of...", "The sample may have a high concentration of ...", or "Smell of hydrocarbons in the sampling area" etc.
Sampled By:	The person who took the sample signs this box and prints his/her name, title, date, and time when sampling was completed.
Relinquished By:	The sampler must sign this box and print his/her name, date, and time when the samples are given to someone else.
Received By:	The person who receives the sample must sign here and print his/her name, date, and time when the samples were accepted under his/her custody.
Shipped Via:	How the samples are being shipped to the laboratory; e.g., "Federal Express."
Shipping Number:	The waybill number on the shipping papers by which the package can be traced.
Batch Remarks:	Record any comments regarding the samples as a whole. Additional comments or special requirements must be included.

PROVISIONS OF THE AGREEMENT

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   The standard of care applied to our environmental laboratory services will be the degree of skill and diligence normally employed by laboratory testing industry personnel performing the same or similar service.
4. **Warranty and Limitation of Liability**
   CH2M HILL Inc. makes no warranty, express or implied, and under no circumstances will be liable for any claims or damages except those resulting solely from its own or its employees' negligence. To the maximum extent permitted by law, our liability for damages will not exceed the compensation received by CH2M HILL Inc. for the batch of samples under the project Agreement.
5. **Severability and Survival**
   If any of the provisions contained in this Agreement are held illegal, invalid, or unenforceable, the enforceability of the remaining provisions shall not be impaired thereby. Limitations of liability and indemnities shall survive termination of this Agreement for any cause.
6. **Asbestos or Hazardous Substances**
   To the maximum extent permitted by law, the **CLIENT** will indemnify, hold harmless, and defend CH2M HILL Inc. and its officers, employees, parent firm, sub-consultants, and agents from all claims, damages, losses, and expenses, including, but not limited to, direct, indirect, or consequential damages and attorney's fees in excess of the Limitation of Liability in Article 4 arising out of or relating to the presence, discharge, release, or escape of hazardous substances, contaminants, or asbestos on or from the Project.
7. **Interpretation**
   The limitation of liability and indemnities will apply whether CH2M HILL Inc.'s liability arises under breach of contract or warranty; tort, including negligence (but not sole negligence); strict liability; statutory liability; or any other causes of action; and shall apply to CH2M HILL Inc.'s officers, employees, parent firm, and subcontractors. The professional services agreement will take precedence in the event there is a conflict with the agreement and chain of custody document.
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9. **Sample Preservation**
   Samples are expected to be field preserved in accordance to applicable methods being requested.

Batch 8000
108164
COC # 2
DP-002

CH2MHILL Applied Sciences Lab
CHAIN OF CUSTODY RECORD
AND AGREEMENT TO PERFORM SERVICES

CVO 2300 NW Walnut Boulevard
Corvallis, OR 97330-3538
(541) 752-4271 FAX (541) 752-0276

COC # _____

Project #	164067.A1.02
Purchase Order #	
Project Name	Portland City Outfalls Pilot Project
Company Name	City of Portland
Report to:	Dawn Sanders
Phone No:	503 235 5000
Requested Completion Date:	Standard
Sample Disposal:	Dispose ☒ Return ☐

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Lab #	Page	of

EPA Tier QC Level: 1 (Screening) 2 3 4

Sampling Date	Sampling Time	Type COMP	Type GRAB	Matrix WATER	Matrix SOIL	Matrix AIR	Matrix Other	CLIENT SAMPLE ID (8 CHARACTERS)	LAB QC	TOTAL # OF CONTAINERS	Grain Size	Metals	Pesticides	Herbicides	TPH-Dx	Mercury	*SVOC/[illegible] PAH	PCB	TOC	Alternate Description	Lab ID
											Preservative										
											4°	4°	4°	4°	4°	4°	4°	4°	4°		
8/21/02	1030	X					X	FP011806		4	/	/	/	/	/	/	/	/	/		
8/21/02	1195	X					X	FP011807		4	/	/	/	/	/	/	/	/	/		
8/21/02	1415	/					/	FP011808		4	/	/	/	/	/	/	/	/	/		
8/21/02	1415	/					/	FP011808	MSD	3		/	/	/	/	/	/	/	/		

Relinquished By: David Lacey [signature]	Date/Time: 8/21/02 1900	Received By:	Date/Time:
Sampled By and Title (Please sign and print name): David Lacey [signature]	Date/Time: 8/21/02 1900	Relinquished By (Please sign and print name):	Date/Time:
Received By (Please sign and print name):	Date/Time:	Relinquished By (Please sign and print name):	Date/Time:
Received By (Please sign and print name):	Date/Time:	Shipped Via: UPS Fed-Ex Other HAND	Shipping #:

Special Instructions:
X Run SW8270C and SW8270C-SIM

Instructions and Agreement Provisions on Reverse Side

DISTRIBUTION: Original - LAB, Yellow - LAB, Pink - Client
Rev 2/01 Lab form 340

PDX/030860010.PDF

CHAIN OF CUSTODY INSTRUCTIONS

Project #:	Project number to be referenced for work.
Purchase Order #:	Purchase order to be referenced on invoices.
Project Name:	Name of the project served by the samples.
Company Name:	Name of the company requesting the work. Correspondence will be sent to this address.
Project Manager or Contact & Phone #:	Name and phone number of person to receive the **original** laboratory report and who can be contacted concerning this project.
Report To:	Name and address of the person to receive the laboratory report.
Date of Completion	Date when the report is scheduled to be mailed. Normal turnaround time (TAT) = 21 days (30 days for Level II/III or CLP reports). Faster TAT must be **prearranged** through Client Services.
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Batch: 8000
108160

PP-001
COC #1

CH2MHILL Applied Sciences Lab
CHAIN OF CUSTODY RECORD
AND AGREEMENT TO PERFORM SERVICES

CVO 2300 NW Walnut Boulevard
Corvallis, OR 97330-3538
(541) 752-4271 FAX (541) 752-0276

COC #

Project #: 164067.A1.02
Purchase Order #:
Project Name: City of Portland Outfalls Pilot Project
Company Name: City of Portland
Report to: Dave Sanders
Phone No: (503) 235-5010
Requested Completion Date: Standard
Sample Disposal: Dispose ☒ Return ☐

Sampling Date	Sampling Time	Type COMP	Type GRAB	Matrix WATER	Matrix SOIL	Matrix AIR	Matrix Other	CLIENT SAMPLE ID (8 CHARACTERS)	LAB QC	TOTAL # OF CONTAINERS	Grain Size	Metals	Pesticides	Herbicides	TPH-Dx	Mercury	SVOC/Carbonyl PAH	PCBs	TOC
											Preservative								
											4°	4°	4°	4°	4°	4°	4°	4°	4°
8/2/02	1635	X					X	PP011502		4	/	/	/	/	/	/	/	/	/
8/2/02	1710	X					X	PP011503	Dup of 03	4	/	/	/	/	/	/	/	/	/
8/2/02	2400	X					X	PP011804		4	/	/	/	/	/	/	/	/	/
8/2/02	945	X					X	PP011505		4	/	/	/	/	/	/	/	/	/

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Lab #	Page	of

EPA Tier QC Level: 1 (Screening) 2 3 4

Alternate Description	Lab ID

Relinquished By	Date/Time	Received By	Date/Time
David Lucey	8/2/02 1700		
Sampled By and Title (Please sign and print name)	**Date/Time**	**Relinquished By** (Please sign and print name)	**Date/Time**
David Lucey	8/2/02		
Received By (Please sign and print name)	**Date/Time**	**Relinquished By** (Please sign and print name)	**Date/Time**
Received By (Please sign and print name)	**Date/Time**	**Shipped Via** UPS Fed-Ex Other Hand	**Shipping #**

Special Instructions:
Run SW 8270C and SW 8270C-SIM

Instructions and Agreement Provisions on Reverse Side

DISTRIBUTION: Original - LAB, Yellow - LAB, Pink - Client
Rev 2/01 Lab form 340

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CHAIN OF CUSTODY INSTRUCTIONS

Project #:	Project number to be referenced for work.
Purchase Order #:	Purchase order to be referenced on invoices.
Project Name:	Name of the project served by the samples.
Company Name:	Name of the company requesting the work. Correspondence will be sent to this address.
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Report To:	Name and address of the person to receive the laboratory report.
Date of Completion	Date when the report is scheduled to be mailed. Normal turnaround time (TAT) = 21 days (30 days for Level II/III or CLP reports). Faster TAT must be **prearranged** through Client Services.
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~~Batch 8006~~
~~COC #3~~

CH2MHILL Applied Sciences Lab
CHAIN OF CUSTODY RECORD
AND AGREEMENT TO PERFORM SERVICES

CVO 2300 NW Walnut Boulevard
Corvallis, OR 97330-3538
(541) 752-4271 FAX (541) 752-0276

COC # _____

Project # A1.02 164067.~~A0.05~~ DC	Purchase Order #
Project Name: PDX outfall Pilot Project	
Company Name: CH2M Hill	
Report to: Dawn Sanders	Phone No: 503 ~~503~~ 235-5000
Requested Completion Date: Standard	Sample Disposal: Dispose ☒ Return ☐

Requested Analytical Method #: Arrive

Preservative

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Lab #	Page	of

EPA Tier QC Level: 1 (Screening) 2 3 4

Sampling Date	Sampling Time	Type COMP	Type GRAB	Matrix WATER	Matrix SOIL	Matrix AIR	Matrix Other	CLIENT SAMPLE ID (8 CHARACTERS)	LAB QC	TOTAL # OF CONTAINERS	Alternate Description	Lab ID
8-20-02	1600	X					X	PP011801		4		
8-20-02	1635	X					X	PP011802		4		
8-20-02	1710	X					X	PP011803		4		
8-20-02	2400	X					X	PP011804		4		
8-21-02	9:45	X					X	PP011805		4		
8-21-02	10:30	X					X	PP011806		4		
8-21-02	11:45	X					X	PP011807		4		
8-21-02	1415	X					X	PP011808		4		
~~8-21-02~~	~~1415~~	~~X~~					~~X~~	~~PP011808~~	~~MSD~~	~~3~~		
8-21-02	1500	X					X	PP011809		4		
8-21-02	1600	X					X	PP011810		1		

Relinquished By	Date/Time	Received By	Date/Time
[signature]	8/23/02 1000		
Sampled By and Title (Please sign and print name): BRAD PAULSON / FIELD TEAM LEAD	8/23/02 1000	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name): [signature]	Date/Time	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Shipped Via: UPS Fed-Ex Other HAND	Shipping #

Special Instructions: Hold for one year (8/23/03)

Instructions and Agreement Provisions on Reverse Side

DISTRIBUTION: Original - LAB, Yellow - LAB, Pink - Client
Rev 2/01 Lab form 340

PDX/030860010.PDF

CHAIN OF CUSTODY INSTRUCTIONS

Project #:	Project number to be referenced for work.
Purchase Order #:	Purchase order to be referenced on invoices.
Project Name:	Name of the project served by the samples.
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APPENDIX E

Quality Assurance/Quality Control Report

Review of Quality Assurance/Quality Control (QA/QC) Data for the Portland Harbor Pilot Project Sediment Sampling, August 2002

TO: Dave Livesay/CH2M HILL/CVO
Erin Toelke/CH2M HILL/PDX
Scott Echols/CH2M HILL/CVO

COPIES: Project File

FROM: Wendi Gale/CH2M HILL/CVO

DATE: October 15, 2002

Summary

The majority of the data have met the QA/QC acceptance criteria outlined for the Portland Harbor Pilot Project Sampling study. Nonconformances with QA/QC criteria are discussed, identified, and qualified in this report. The following is a brief summary of the overall quality of the sample results.

All herbicide, polychlorinated biphenyls (PCBs), and total organic carbon (TOC) results for all samples met all QA/QC criteria for the selected QC parameters. A completeness objective of 95 percent was achieved for all samples analyzed for all parameters based on precision and accuracy.

The majority of semivolatile organic compound (SVOC) results for all samples met all QA/QC criteria for the selected QC parameters. A completeness objective of 95 percent was achieved for all samples analyzed for all parameters based on precision and accuracy. Nonconformances with the QA/QC criteria were observed as follows:

- Benzoic acid, 4-chloroaniline, benzyl alcohol, 4-nitroaniline, and 3,3-dichlorobenzidine results for two water samples were qualified as estimates and flagged with a "J" for positive results or with a "UJ" for nondetected results as a result of exceeding continuing calibration criteria.
- Aniline, bis(2-chloroethyl)ether, nitrobenzene, and 4-chloroaniline results for ten sediment samples were qualified as estimates and flagged with a "J" for positive results or with a "UJ" for nondetected results as a result of exceeding continuing calibration criteria.
- SVOC results for five sediment samples were qualified as estimates and flagged with a "J" for positive results or with a "UJ" for nondetected results as a result of surrogate recoveries not reported due to sample dilution.
- Phenol results for two water samples were rejected and flagged with a "UR" as a result of laboratory control sample recoveries reported below the lower QC acceptance criteria.

The majority of NWTPH-Dx results for all samples met all QA/QC criteria for the selected QC parameters. A completeness objective of 95 percent was achieved for all samples analyzed for all parameters based on precision and accuracy. Nonconformances with the QA/QC criteria were observed as follows:

- The NWTPH-Lube Oil result for one sediment sample was qualified as a nondetect and flagged with a "U" as a result of method blank contamination.
- NWTPH-Diesel and NWTPH-Lube Oil results for two sediment samples were qualified as estimates and flagged with a "J" for positive results as a result of surrogate recoveries not reported due to sample dilution.
- NWTPH-Diesel and NWTPH-Lube Oil results for one sediment sample were qualified as estimates and flagged with a "J" for positive results as a result of surrogate recoveries reported below the lower QC acceptance criteria.

The majority of mercury results for all samples met all QA/QC criteria for the selected QC parameters. A completeness objective of 95 percent was achieved for all samples analyzed for all parameters based on precision and accuracy. Nonconformances with the QA/QC criteria were observed as follows:

- Mercury results for three sediment samples were qualified as estimates and flagged with a "J" for positive results as a result of matrix spike recoveries reported below the lower QC acceptance criteria.
- Mercury results for seven sediment samples were qualified as nondetects and flagged with a "U" as a result of equipment blank contamination.

The majority of metals results for all samples met all QA/QC criteria for the selected QC parameters. A completeness objective of 95 percent was achieved for all samples analyzed for all parameters based on precision and accuracy. Nonconformances with the QA/QC criteria were observed as follows:

- Aluminum and zinc results for one water sample were qualified as estimates and flagged with a "J" for positive results as a result of exceeding laboratory duplicate relative percent difference (RPD) QC acceptance criteria.

The majority of pesticide results for all samples met all QA/QC criteria for the selected QC parameters. A completeness objective of 95 percent was achieved for all samples analyzed for all parameters based on precision and accuracy. Nonconformances with the QA/QC criteria were observed as follows:

- Heptachlor results for thirteen sediment samples were qualified as estimates and flagged with a "J" for positive results or with a "UJ" for nondetected results as a result of exceeding continuing calibration criteria.

Introduction

Eighteen sediment samples, two field duplicate, and two equipment blank samples were collected between August 20 and 22, 2002. Samples submitted for NWTPH-Dx, PCBs, mercury, and TOC analyses were performed by CH2M HILL Applied Sciences Group laboratory, located in Corvallis, Oregon. Samples submitted for SVOC, herbicides, pesticides, and metals analyses were performed by Severn Trent Services laboratory (STL), located in Tacoma, Washington.

Data Review Criteria

EPA Contract Laboratory Program (CLP) *National Functional Guidelines (NFG) for Organic Data Review* (February 1994) and *National Functional Guidelines (NFG) for Inorganic Data Review* (February 1994) provided guidelines for data qualification, where applicable.

This QA review focuses on criteria for the following QA/QC parameters and their overall effect on the data:

- Sample custody, handling, and preservation
- Holding time compliance
- Summary initial and continuing calibration data
- Method blanks
- Surrogate spike recovery
- Precision and Accuracy (laboratory control samples, spike/spike duplicates, and laboratory duplicates)
- Field QA/QC (equipment blanks and field duplicates)

Only summary QA/QC information were reviewed for each analytical parameter. Analytical results and QA/QC summary information were provided for all sample analyses.

Analytical Methods

All samples were analyzed by and QA/QC criteria were taken from one of the following sources:

- U.S. EPA. Test Methods for Evaluating Solid Waste (SW 846), December 1996.
- U.S. EPA. Methods for Chemical Analysis of Water and Wastes. 600/4-79-200, March, 1983.
- U.S. EPA. Methods for the Determination of Organic Compounds in Drinking Water. 600/4-88-039, December, 1988. Revised July, 1991.
- Standard Methods for the Examination of Water and Wastewater. 18th Edition. 1992.
- Oregon D.E.Q. Method NWTPH-Dx is based on Oregon's Department of Environmental Quality TPH-D and Washington's Department of Ecology WTPH-D methods.

Table 1 lists the analytical method used for each parameter and the number and type of samples analyzed.

Table 1
Summary of Analyses

Parameter	Method	No. of Field Samples	No. of Field Duplicates	No. of Equipment Blanks
SVOC	EPA 8270C	18 sediment	2 sediment	2 water
Herbicides	EPA 8151A GC/MS Mod	18 sediment	2 sediment	2 water
Pesticides	SW 8081A	18 sediment	2 sediment	2 water
PCBs	SW 8082	18 sediment	2 sediment	2 water
NWTPH-Diesel, NWTPH-Lube Oil	NWTPH-Dx	18 sediment	2 sediment	2 water
Metals	EPA 6010/6020	18 sediment	2 sediment	2 water
Mercury	SW 7471A	18 sediment	2 sediment	2 water
TOC	ASTM E-777	18 sediment	2 sediment	none

Qualifiers

The following definitions provide brief explanations of the data qualifiers that were assigned to results in the data review process.

U - The analyte was analyzed for, but the analyte was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

UR - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The laboratory may have assigned additional data qualifiers. Laboratory data qualifiers are defined in each laboratory report.

Sample Custody, Handling, and Preservation

Chain-of-custody (COC) forms and the laboratory sample receiving checklists were reviewed to determine if any sample handling procedures might affect the integrity or the quality of the sample results.

All coolers were received by the laboratory at a temperature of 4 °C ± 2 °C, as recommended by EPA. All sample containers were received intact and no bubbles were noted in liquid samples submitted for analysis. All sediment and equipment blank samples were extracted and/or analyzed within their respective holding time requirements.

No preserved TOC vials were provided for the equipment blank sample PP0118EB01, therefore TOC was not analyzed for this sample.

Matrix spike duplicate analysis was requested on the chain of custody form for sample PP011808. Matrix spike analysis was added for all analyses as per Scott Echols/CVO.

STL was unable to locate standards for two requested pesticide compounds (alpha-chlordene and gamma chlordene), therefore the laboratory was unable to collect data for these compounds.

The sample time listed on the sample bottle did not match the chain of custody form for sample PP011805. The sample time on the chain of custody form was used for this sample.

GC/MS Tune Criteria

Instrument tuning must be performed at the beginning of each twelve-hour instrument sequence, prior to standard and sample analyses. Analysis frequency criteria and ion abundance criteria for each instrument sequence were met.

Initial Calibration

Initial calibration criteria monitor analytical performance and proper compound identification at the start of analysis.

Initial calibration data were provided for each instrument used for SVOC, herbicide, pesticide, PCBs, NWTPH-Dx, metals, and TOC analysis. Except for the instances noted below, all initial calibrations met QC acceptance criteria.

- The SVOC initial calibration performed on August 19, 2002 (SDGs 108166 and 108177) reported the percent relative standard deviation for nitrobenzene (32.8%) greater than 30. Nitrobenzene results for all associated samples were reported as nondetects, therefore qualification was not required.
- The SVOC initial calibration performed on August 29, 2002 (SDGs 108160, 108164, and 108166) reported the percent relative standard deviation for benzoic acid (37.3%), 2,4-dinitrophenol (32.6%), and aniline (31.1%) greater than 30. Benzoic acid, 2,4-dinitrophenol, and aniline results for all associated samples were reported as nondetects, therefore qualification was not required.

Continuing Calibration

Continuing calibration criteria monitor analytical performance and proper compound identification on a daily or more frequent basis.

Continuing calibration data were provided for each instrument used for SVOC, herbicide, pesticide, PCBs, NWTPH-Dx, metals, and TOC analysis. A continuing calibration

verification was performed every 12 hour tuning period using a mid-calibration range standard. %D results should be within the QC control limits of ±25% to meet continuing calibration QC acceptance criteria. Except for the instances noted below, all target compounds met continuing calibration QC acceptance criteria.

- The SVOC CCV performed on August 28, 2002 at 3:28pm (SDGs 108166 and 108177) reported the %D results for benzoic acid (63.5%), 4-chloroaniline (48.6%), benzyl alcohol (30.5%), 4-nitroaniline (52.9%), and 3,3-dichlorobenzidine (37%) above the QC acceptance criteria. Benzoic acid, 4-chloroaniline, benzyl alcohol, 4-nitroaniline, and 3,3-dichlorobenzidine results for equipment blank samples PP0118EB01 and PP01M1EB02 were qualified as estimates and flagged with a "J" for positive results or with a "UJ" for nondetected results.
- The SVOC CCV performed on September 5, 2002 at 4:47pm (SDGs 108160, 108164, 108166, and 108177) reported the %D results for aniline (33.1%), bis(2-chloroethyl)ether (38.2%), nitrobenzene (118.2%), and 4-chloroaniline (41.1%) above the QC acceptance criteria. Aniline, bis(2-chloroethyl)ether, nitrobenzene, and 4-chloroaniline results for sediment samples PP011801, PP011802, PP011803, PP011804D, PP011805, PP011806, PP011807, PP011808, PP011809, and PP011810 were qualified as estimates and flagged with a "J" for positive results or with a "UJ" for nondetected results.
- The pesticide CCV performed on September 12, 2002 at 8:34am (SDGs 108166 and 108177) reported the %D result for heptachlor (61.9%) above the QC acceptance criteria. Heptachlor results for sediment samples PP011801, PP011809, PP011810, PP01M101, PP01M102D, PP01M103, PP01M104, PP01M105, PP01M106, PP01M107, PP01M108, PP01M109, and PP01M110 were qualified as estimates and flagged with a "J" for positive results or with a "UJ" for nondetected results.

Method Blanks

Method blanks monitor contamination that may be introduced during analysis.

A method blank was analyzed with each analytical batch, therefore meeting frequency QC acceptance criteria. Except for the instances noted below, all method blanks were contamination-free, therefore meeting QC acceptance criteria.

- The NPWPH-Dx method blank analyzed on August 23, 2002 (SDGs 8005, 8006, and 8008) was reported with detectable concentrations of NWTPH-Lube Oil (9.96 J mg/kg). The NWTPH-Lube Oil result for sediment sample PP011802 (35.8 U) was qualified as a nondetect and flagged with a "U" as a result of method blank contamination.
- The NWTPH-Dx method blank analyzed on August 27, 2002 (SDGs 8006 and 8016) was reported with detectable concentrations of NWTPH-Diesel (0.04 J mg/L) and NWTPH-Lube Oil (0.19 J mg/L). Equipment blank results are not qualified based on method blank contamination, therefore no sample results required qualification as a result of the method blank contamination.
- The NWTPH-Dx method blank analyzed on August 28, 2002 (SDG 8016) was reported with detectable concentrations of NWTPH-Lube Oil (15.6 J mg/kg). NWTPH-Lube Oil results for the associated sediment samples were reported with concentrations greater than five times the concentration detected in the method blank, therefore, no sample results required qualification as a result of the method blank contamination.

- The SVOC method blank analyzed on August 28, 2002 (SDGs 108166 and 108177) was reported with detectable concentrations of 2-methylnaphthalene (0.0228 J µg/L). Equipment blank results are not qualified based on method blank contamination, therefore no sample results required qualification as a result of the method blank contamination.
- The metals method blank analyzed on August 29, 2002 (SDG 108166) was reported with detectable concentrations of aluminum (0.00698 J mg/L), antimony (0.00003 J mg/L), chromium (0.00085 J mg/L), copper (0.000039 J mg/L), lead (0.000018 J mg/L), and zinc (0.0015 J mg/L). Equipment blank results are not qualified based on method blank contamination, therefore no sample results required qualification as a result of the method blank contamination.
- The metals method blank analyzed on August 30, 2002 (SDGs 108160, 108164, 108166, and 108177) was reported with detectable concentrations of copper (0.011 J mg/kg), lead (0.0064 J mg/kg), nickel (0.0072 J mg/kg), and zinc (0.365 J mg/kg). Copper, lead, nickel, and zinc results for the associated sediment samples were reported with concentrations greater than five times the concentration detected in the method blank, therefore, no sample results required qualification as a result of the method blank contamination.
- The metals method blank analyzed on August 30, 2002 (SDG 108177) was reported with detectable concentrations of aluminum (0.0087 J mg/L), chromium (0.000059 J mg/L), copper (0.000055 J mg/L), lead (0.000033 J mg/L), nickel (0.000046 J mg/L), and zinc (0.00226 J mg/L). Equipment blank results are not qualified based on method blank contamination, therefore no sample results required qualification as a result of the method blank contamination.
- The mercury method blank analyzed on September 4, 2002 (SDG 8005) was reported with detectable concentrations of mercury (0.0074 J mg/kg). Mercury results for the associated sediment samples were reported with concentrations greater than five times the concentration detected in the method blank, therefore, no sample results required qualification as a result of the method blank contamination.
- The mercury method blank analyzed on September 10, 2002 (SDGs 8006 and 8016) was reported with detectable concentrations of mercury (0.016 J µg/L). Equipment blank results are not qualified based on method blank contamination, therefore no sample results required qualification as a result of the method blank contamination.

Surrogate Spike Recovery

Surrogate compounds are organic compounds which are similar to the analytes of interest in chemical composition, extraction, and chromatography, but are not likely to be found in environmental samples. Every sample and blank analyzed for organic parameters is spiked prior to extraction or analysis with surrogate compounds that are representative of the analysis.

All surrogate spike recoveries should be within the laboratory-established control limits to meet QC acceptance criteria.

EPA Method 8270C (SVOCs)

Surrogate recoveries should be within the QC control limits of 42 to 154 percent for nitrobenzene-d5, 51 to 142 percent for 2-fluorobiphenyl, 44 to 144 percent for terphenyl-d14, 43 to 157 percent for phenol-d5, 37 to 160 percent for 2-fluorophenol, and 36 to 159 percent for 2,4,6-tribromophenol for sediment samples. SVOC sample results are not qualified unless two or more SVOC surrogates within the same fraction (base/neutral or acid fraction) are outside QC criteria. Except for the instances noted below, all surrogate recoveries were within the specified QC control limits.

- The surrogate recovery for terphenyl-d14 was reported above the upper QC control limit for sample PP011806 (182%). No sample results required qualification.
- The surrogate recovery for 2-fluorobiphenyl was reported below the lower QC control limit for samples PP011801 (31.3%), PP011807 (50.7%), PP01M108 (37.3%), PP01M109 (50.4%), and PP01M110 (40.3%). No sample results required qualification.
- The surrogate recoveries for nitrobenzene-d5 and 2-fluorobiphenyl were reported below the lower QC control limit for samples PP01M104 (36.8% and 38.2%, respectively) and PP0118EB01 (39.3% and 47.1%, respectively). No sample results required qualification.
- The surrogate recoveries for nitrobenzene-d5, 2-fluorobiphenyl, terphenyl-d14, phenol-d5, 2-fluorophenol, and 2,4,6-tribromophenol were not reported as a result of dilution in sediment samples PP01M101, PP01M102D, PP01M103, PP01M105, and PP01M106. SVOC results for these samples were qualified as estimates and flagged with a "J" for positive results or with a "UJ" for nondetected results.

EPA Method 8151A GC/MS Modified (Herbicides)

Surrogate recoveries should be within the QC control limits of 48 to 128 percent for 2,4-dichlorophenylacetic acid in sediment samples. All surrogate recoveries were within the specified QC control limits.

SW Method 8082 (PCBs)

Surrogate recoveries should be within the QC control limits of 25 to 143 percent for decachlorobiphenyl in sediment samples. All surrogate recoveries were within the specified QC control limits.

NWTPH-Dx Method (NWTPH-Diesel and NWTPH-Lube Oil)

Surrogate recoveries should be within the QC control limits of 50 to 150 percent for o-terphenyl and octacosane in sediment samples. Except for the instances noted below, all surrogate recoveries were within the specified QC control limits.

- The surrogate recoveries for o-terphenyl and octacosane were not reported as a result of dilution in sediment samples PP011806DL and PP011807DL. NWTPH-Diesel and NWTPH-Lube Oil results for samples PP011806DL and PP011807DL were qualified as estimates and flagged with a "J" for positive results.
- The surrogate recoveries for o-terphenyl and octacosane were reported below the lower QC control limit for sample PP011805DL (33.9% and 25%, respectively). NWTPH-Diesel and NWTPH-Lube Oil results for sample PP011805DL were qualified as estimates and flagged with a "J" for positive results.

Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicates, and Laboratory Duplicates

Precision and accuracy of laboratory performance are evaluated by the analysis of laboratory control samples (LCS), matrix spike (MS), matrix spike duplicates (MSDs), and laboratory duplicates. LCSs, MS/MSDs, and laboratory duplicates should be performed at a frequency of five percent or once per analytical batch, whichever is more frequent. LCS, MS/MSD, and laboratory duplicate recoveries and relative percent difference (%RPD) results should be within laboratory established control limits to meet precision and accuracy QC acceptance criteria.

Frequency criteria were met for all analytical methods. Except for the instances noted below, all LCS, MS/MSD, and laboratory duplicate recoveries and %RPD results were within the laboratory established QC control limits for all samples analyzed. Therefore, the majority of the samples met precision and accuracy QC acceptance criteria.

- The aluminum MS recovery for sample PP011808 (70%) was reported below the QC control limits of 75 to 125 percent. Spike recovery limits do not apply when sample concentration exceeds the spike concentration by a factor of four or greater, therefore sample results were not qualified based on aluminum MS recoveries.
- The mercury MS recovery for sample PP011802 (178%) was reported above the QC control limits of 75 to 125 percent. Spike recovery limits do not apply when sample concentration exceeds the spike concentration by a factor of four or greater, therefore sample results were not qualified based on aluminum MS recoveries.
- The mercury MSD recovery for sample PP011808 (52.5%) was reported below the QC control limits of 75 to 125 percent. The positive mercury results for samples PP011806, PP011807, and PP011808 were qualified as estimates and flagged with a "J" as a result of MSD recovery.
- The SVOC LCS analyzed on August 28, 2002 reported recoveries below the QC control limits for phenol (23%). The phenol results for samples PP0118EB01 and PP01M1EB02 were rejected and flagged with a "UR" as a result of LCS recovery.
- The metals laboratory duplicate reported the RPD results for arsenic (200%) and aluminum (26%) above the QC acceptance criteria. The arsenic result for sample PP01M1EB02 was reported as a nondetect, and no further qualification was required. The positive aluminum result for sample PP01M1EB02 was qualified as an estimate and flagged with a "J" as a result of laboratory duplicate RPD.
- The metals laboratory duplicate reported the RPD results for antimony (59%) and zinc (25%) above the QC acceptance criteria. The positive antimony result for sample PP0118EB01 was flagged by the laboratory with a "J" qualifier, and no further qualification was required. The positive zinc result for sample PP0118EB01 was qualified as an estimate and flagged with a "J" as a result of laboratory duplicate RPD.
- Several MS/MSD recoveries and RPD results were reported outside the laboratory-established QC control limits for SVOC, herbicide, pesticide, and NWTPH-Dx analysis. Organic sample results cannot be qualified using MS/MSD data alone, but can be used in conjunction with other QC criteria to determine the precision and accuracy of individual samples. Sample results did not require qualification based on precision or

accuracy criteria, therefore SVOC, herbicide, pesticide, and NWTPH-Dx results were not qualified based on MS/MSD results.

Field QA/QC

Equipment Blanks

Equipment blanks are used primarily to indicate if contamination has occurred as a result of sample collection or handling procedures.

Two equipment blank samples (PP0118EB01 and PP01M1EB02) were analyzed for SVOC, herbicides, pesticides, PCBs, NWTPH-Dx, metals, and mercury.

Equipment blank sample PP018EB01 was reported with detectable concentrations of NWTPH-Diesel (0.16 J mg/L), NWTPH-Lube Oil (0.17 J mg/L), mercury (0.025 J µg/L), aluminum (0.0181 mg/L), antimony (0.00095 J mg/L), chromium (0.00879 mg/L), copper (0.00239 mg/L), lead (0.000368 J mg/L), nickel (0.00753 mg/L), zinc (0.00677 mg/L), di-n-octylphthalate (0.222 µg/L), benzoic acid (0.166 J µg/L), naphthalene (0.0709 µg/L), 4-chloro-3-methylphenol (0.204 µg/L), and bis(2-ethylhexyl)phthalate (0.634 µg/L). NWTPH-Diesel, NWTPH-Lube Oil, aluminum, antimony, chromium, copper, lead, nickel, zinc, di-n-octylphthalate, benzoic acid, naphthalene, 4-chloro-3-methylphenol, and bis(2-ethylhexyl)phthalate were not detected in any associated samples or were greater than 5 times the detected concentration, therefore sample results were considered unaffected and were not qualified based on equipment blank contamination. The mercury result for sample PP011801 (0.115 U) was qualified as a nondetect and flagged with a "U" as a result of equipment blank contamination.

Equipment blank sample PP01M1EB02 was reported with detectable concentrations of NWTPH-Diesel (0.17 J mg/L), NWTPH-Lube Oil (0.19 J mg/L), mercury (0.02 J µg/L), aluminum (0.013 mg/L), chromium (0.0032 mg/L), copper (0.0026 mg/L), lead (0.000315 J mg/L), nickel (0.00164 mg/L), zinc (0.00817 mg/L), naphthalene (0.0958 µg/L), 4-chloro-3-methylphenol (0.256 µg/L), and di-n-octylphthalate (0.144 J µg/L). NWTPH-Diesel, NWTPH-Lube Oil, aluminum, chromium, copper, lead, nickel, zinc, naphthalene, 4-chloro-3-methylphenol, and di-n-octylphthalate were not detected in any associated samples or were greater than 5 times the detected concentration, therefore sample results were considered unaffected and were not qualified based on equipment blank contamination. The mercury result for samples PP01M104 (0.0725 U), PP01M106 (0.0725 U), PP01M107 (0.0714 U), PP01M108 (0.082 U), PP01M109 (0.0877 U), and PP01M110 (0.0758 U) were qualified as nondetects and flagged with a "U" as a result of equipment blank contamination.

Field Duplicates

Field duplicates are another measure of reproducibility by duplicate analysis.

Field duplicate results are used to determine the precision of field sampling and laboratory techniques. There are no criteria or control limits for the %RPD of field duplicates; therefore laboratory duplicate criteria are applied. This allows control limits of ±35 RPD for sediment samples with the provisional control limit of plus or minus the MRL when sample concentrations are less than five times the MRL. These control limits may be too stringent, however, since precision in this case involves both sampling and laboratory precision.

There are no specific review criteria used to compare field sample result comparability. Qualifiers are not assigned when field duplicate results do not meet QC acceptance criteria.

Samples PP011803 and PP01M101 were collected in duplicate and analyzed for SVOC, herbicides, pesticides, PCBs, NWTPH-Dx, metals, mercury, and TOC.

APPENDIX F

Basin Assessment

APPENDIX F

Basin Assessment

This appendix consists of the following subappendixes:

- **Preliminary Evaluation Update**

  Outfall 18 text and tables 1, 3, 4A, 4B, 8, 9, 10, 13, and 15 from the document entitled *Preliminary Evaluation of City Outfalls—Portland Harbor Study Area:* Notebook 2, Westshore Stormwater and CSO Outfalls (CH2M HILL, December 2000). Table 4B is a new addition. Table 9 includes Environmental Cleanup Site Inventory (ESCI) site summary data reports for ESCI sites located within the Outfall 18 drainage basin. Table 10 includes leaking underground storage tank (LUST) site summary data reports for LUST sites located within the Outfall 18 drainage basin.

- **City Data Compilation**

  – Table F-1: Illicit Discharge Elimination Program Data
  – September 2002 IDEP Sampling and Laboratory Results
  – Table F-2: Pollution Complaints Data

- **National Pollutant Discharge Elimination System (NPDES) Data Compilation**

  Table F-3: Summary of Information Obtained from the Water Quality File Review of Outfall 18 Facilities with NPDES Permits

- **Department of Environmental Quality ECSI File Reviews**

Preliminary Evaluation Update

City of Portland Stormwater Outfall 18 Summary of Existing Information

Physical Description

City of Portland Stormwater Outfall 18 is a 72-inch-diameter pipe and was constructed about 1955. This outfall receives flows from Forest Park streams. Outfall 18 is located behind the Equilon dock and along the shoreline adjacent to Gunderson, Inc., property. In the Preliminary Evaluation of City Outfalls; Westshore Stormwater and CSO Outfalls (CH2M HILL, December 2000), the physical description for Outfall 18 stated, "At one time, this outfall had CSO diversion overflow." This statement was based on the presence of diversion structures located at NW Yeon. Additional research indicates that there was construction of diversion structures and tide gates just downstream of the diversion structures, with the intent to drain stormwater into the sanitary system in the case of high river water elevations. There was no ability for sanitary flows to be diverted to the river. The two diversions to the interceptor sewer at NW Yeon were plugged in 1990. Therefore, this outfall has never been a combined sewer overflow (CSO) outfall.

The storm drainage basin for this outfall is approximately 475 acres. Land use in the basin is predominantly designated as vacant (55 percent of the basin) and industrial (29 percent). Single-family residences, forest, and rural designations make up approximately 2 percent of the basin. Rights-of-way are estimated at 14 percent of the basin.

There are seven non-City outfalls within approximately 1,100 feet northwest (downstream) and 13 non-City outfalls within 1,600 feet southeast (upstream) of Outfall 18. The outfall designations are as follows:

- WP-131 to WP-150: Gunderson

These non-City outfalls are assigned to Gunderson, although various tenants may contribute to Gunderson's total discharge.

Sediment Concerns

As part of the Site Discovery portion of the Portland Harbor Sediment Management Plan, DEQ had identified preliminary "baseline" sediment screening levels for sediment. Screening was conducted using updated baseline values obtained from DEQ. The DEQ baseline values are not based on environmental or human risk or a regulatory need for action, and it is believed that the baseline values will tend to overestimate analytes of concern. Therefore, analytes that may be of interest to the City outfall were identified as values that exceeded three times the DEQ baseline values. Sediment Quality Guidelines will be developed by DEQ and/or EPA that will more accurately predict analytes of concern based on risk to human health and the environment.

Historical sediment data in the vicinity of Outfall 18 are available from one source:

- Portland Harbor Sediment Investigation, EPA/DEQ (Stations SD140, SD142, SD143, SD144 and SD146)

Five sediment sample locations have been sampled in the vicinity of Outfall 18. All of the stations had samples collected at the surface (0 to 10 centimeters). In addition, Station SD143 had a depth-composite sample collected (0 to 90 centimeters).

Two stations are located upstream of Outfall 18: Station SD144 is approximately 200 feet upstream and SD146 is approximately 400 feet upstream. Station SD143 is between the shoreline and Outfall 18. Two stations are located downstream of Outfall 19: SD142 is approximately 250 feet downstream and Station SD140 is approximately 600 feet downstream.

Table 1 shows the available historical sediment data with station ID, sample ID, field replicate and subsample numbers, sample depth, and sample date. Table 1 also identifies detected sediment concentrations greater than three times the baseline level and the analytes that might be of interest to the evaluation of the City outfall. The sediment data collected in 1997 as part of the Portland Harbor Sediment Investigation showed elevated concentrations for several analytes in exceedance of the DEQ baseline at the surface and may be of interest to the City. These analytes are:

- **Chromium:** detected in concentrations greater than three times the baseline in the depth-composite sample at sediment station SD143
- **Lead**: detected in concentrations greater than three times the baseline in the depth-composite sample at sediment station SD143
- **Mercury:** detected in concentrations greater than three times the baseline in the depth-composite sample at sediment station SD143
- **Zinc:** detected in concentrations greater than three times the baseline in the depth-composite sample at sediment station SD143
- **Bis(2-ethylhexyl) phthalate:** detected in concentrations greater than three times the baseline in the depth-composite sample at sediment station SD143
- **2-Methylnapthalene:** detected in concentrations greater than three times the baseline in the depth-composite sample at sediment station SD143

The only historical sediment sample that had concentrations greater than three times the DEQ baseline was a depth composite and the surface sample concentrations were significantly lower, suggesting a historical release.

The primary purpose for identifying analytes of interest is to help determine potential sources contributing to the City's conveyance system. Table 2 provides information on industrial uses of the analytes of interest that can aid in evaluating specific facilities and their potential to contribute contaminants.

Additional sediment data were collected by the City of Portland in 2002. See Section 2 of this Phase 1 Data Evaluation Report for an evaluation of this sediment data set.

Drainage Basin Information

Baseline drainage basin information has been compiled from existing BES, DEQ, and EPA files and databases. The information included in the following tables has been selected for the purposes of assisting in the evaluation of the outfall. A list of the tables, along with a brief description, is summarized below. Several of these tables were updated in 2003 (as indicated below) as part of the Basin Assessment for this Outfall.

Table 1 lists the sediment results for DEQ baseline analytes sampled at stations in the vicinity of the City outfall, with concentrations in bold to show results that are three times the DEQ baseline values. (Updated in 2003)

Table 2 lists the industrial chemical uses for analytes of interest at Outfall 22C.

Table 3 summarizes the available information on facilities currently located in the Outfall 18 drainage basin, including where site runoff drains, discharge permits, business type and whether there is exposure of site activities to stormwater. (Updated in 2003)

Table 4 shows available stormwater data for industrial facilities required to have an NPDES permit to discharge to the City's stormwater system. (Renamed Table 4A and updated in 2003)

Table 4B shows BES stormwater quality monitoring data collected at subbasins within Outfall 18 as part of its MS4 NPDES permit. (Added in 2003)

Table 5 summarizes the Polk Directory information for selected addresses within the drainage basin for each decade since 1940.

Table 6 EPA's Toxic Release Inventory, which records releases of chemicals to the environment, and the Hazardous Waste Generators, which shows sites that treat, store, or dispose of hazardous materials.

Table 7 EPA's Corrective Action (CORRACTS) list contains information about handlers with corrective action activity. This list is maintained by the Environmental Protection Agency as part of RCRA Title C.

Table 8 lists EPA's Treatment Storage Disposal (TSD) of sites that treat, store, or dispose of hazardous materials. (This table was inadvertently left out of the notebooks submitted in 2000 and was updated in 2003.)

Table 9 lists the sites for which the DEQ has established environmental cleanup site investigation files. This list contains both active and inactive sites, including low to high priority sites. Behind this table, the ECSI site summary reports are provided for sites listed in Table 8. (Updated in 2003)

Table 10 is DEQ's list of leaking underground storage tanks (LUST). The list includes both sites with active leaks and those that have been cleaned up to the satisfaction of the DEQ in the past. Behind this table, the LUST incident reports are provided for facilities listed in Table 10. (Updated in 2003)

Table 11 is DEQ's list of permitted tanks that contains information on sites that are registered to receive commercial fuel deliveries.

Table 12 is the Portland Fire Bureau's list of underground storage tanks (USTs) registered with the City.

Table 13 is the State Fire Marshal's list of hazardous spills to which the fire department has responded. (Updated in 2003)

Table 14 is the State Fire Marshal's list of hazardous substances that are used or stored at sites within the drainage basin. This list may not be comprehensive because companies are not required to provide this information to the State Fire Marshal.

Table 15 is the CRL (Confirmed Release List) inventory of sites that are currently being remediated under one of three separate programs, the Voluntary Cleanup Program, the Site Response Program, and the Site Assessment Program. (Updated in 2003)

Table 16 lists the SIC numbers and descriptions for the sites identified in the Table 3 facility list.

Table 17 shows the land use assigned to each tax lot, the tax lot area, the area of the tax lot within the basin boundary, and a summary of total acreage in the basin for each land use type.

The following database was searched but no information was available for sites within the drainage basin:

- EPA Emergency Response Notification System

Outfall 18 Evaluation

Based on historical data, the analytes of interest identified as of potential interest to the City outfall included:

- Chromium
- Lead
- Mercury
- Zinc
- Bis(2-ethylhexyl) phthalate
- 2-Methylnapthalene

The only sediment sample that had concentrations greater than three times the DEQ baseline was a depth composite and the surface sample concentrations were significantly lower, suggesting a historical release.

Upon review of the environmental databases, there are a number of sites that have the potential to have released metals either to the City or adjacent private outfalls. Stormwater data maintained by the City show higher metals concentrations at ABF Freight, Bay News, and Gunderson. The ECSI database also indicated that there is a potential for metals release from Columbia American Plating, but BES does not maintain the stormwater data for this site. DEQ files should be reviewed for NPDES stormwater data from this site. In addition, the ECSI database indicated the potential for metals release from several other sites , including Gunderson, Magnus Company, and National Lead Company.

Based on the ECSI database, PAHs and oils have been found onsite or released to the river from several sites (Burlington Northern, Christenson Oil, and McWhorter Inc.) in the vicinity of the Outfall 18 drainage basin. These may have contributed to the elevated 2-methylnapthalene concentrations in sediment.

There is no demonstrated source of phthalates within the basin. Bis(2-ethylhexyl) phthalate is commonly used at a plasticizer, such as polyvinyl chloride resins and vinyl copolymer resins, and could be used in a variety of industrial and commercial uses that may not show up in the environmental databases that were searched. According to the ECSI database, McClosky Varnish Company (located at the McWhorter site from 1943 to 1989) and McWhorter Inc. manufactured resins, but there is no information on phthalates for this site.

See [reference Phase 1 report] for additional information on evaluation of analytes of interest and potential sources.

Table 1
Historical Sediment Results in the Vicinity of Outfall 18 updated: Mar-03

StationID		SD146	SD144	SD143	SD143	SD142	SD140
Sample ID #		WR-WSI98SD1460	WR-WSI98SD1440	WR-WSI98SD1430	WR-WSI98SD1430000A	WR-WSI98SD1420	WR-WSI98SD1400
Field Replicate #		#	#	#	#	#	#
SubSample #		#	#	#	#	#	#
Sample Depth		0-10 CM	0-10 CM	0-10 CM	0-90 CM	0-10 CM	0-10 CM
Sample Date		9/24/97	9/24/97	9/24/97	10/16/97	9/24/97	9/24/97
Analyte	**Unit**						
Aluminum	mg/kg	41000 AA	42100 AA	28900 AA	31900 AA	40300 AA	41000 AA
Antimony	mg/kg	5 UJ AA	6 J AA	5 UJ AA	5 UJ AA	6 UJ AA	5 UJ AA
Arsenic	mg/kg	5 U AA	6 U AA	5 U AA	9 AA	6 U AA	5 U AA
Barium	mg/kg	189 AA	183 AA	148 AA	274 AA	177 AA	186 AA
Beryllium	mg/kg	0.7 AA	0.6 AA	0.48 AA	0.44 AA	0.7 AA	0.6 AA
Cadmium	mg/kg	0.4 AA	0.5 AA	0.5 AA	5.3 AA	0.5 J AA	0.6 AA
Chromium	mg/kg	37.8 AA	39.3 AA	32.1 AA	157 AA	37.9 AA	37.6 AA
Cobalt	mg/kg	19.2 AA	18.5 AA	14.8 AA	17.6 AA	18.1 AA	19 AA
Copper	mg/kg	43.9 AA	48.3 AA	34.1 AA	124 AA	47.9 J AA	44 AA
Iron	mg/kg	42900 AA	44700 AA	34500 AA	36500 AA	43000 AA	43400 AA
Lead	mg/kg	14 AA	20 AA	28 AA	1080 AA	17 J AA	15 AA
Manganese	mg/kg	691 AA	635 AA	512 AA	483 AA	632 AA	694 AA
Mercury	mg/kg	0.05 AA	0.06 AA	0.04 AA	0.37 AA	0.06 AA	0.08 AA
Nickel	mg/kg	30 AA	30 AA	23.2 AA	30.7 AA	29 AA	30 AA
Selenium	mg/kg	14 AA	11 AA	10 AA	8 AA	14 AA	10 AA
Silver	mg/kg	0.7 AA	0.8 AA	0.6 AA	3.4 AA	0.8 AA	0.7 AA
Thallium	mg/kg	8 AA	12 AA	5 U AA	5 U AA	10 AA	11 AA
Titanium	mg/kg	1900 AA	2160 AA	1840 AA	1870 AA	2010 AA	
Vanadium	mg/kg	105 AA	110 AA	86.3 AA	91.9 AA	108 AA	106 AA
Zinc	mg/kg	100 AA	120 AA	109 AA	583 AA	113 J AA	102 AA
Total organic carbon	%	1.4 AA	1.7 AA	1 AA	5.6 AA	1.8 AA	1.6 AA
4-Methylphenol	ug/kg	750 AA	1200 AA	290 AA	910 U AA	950 AA	730 AA
Benzoic acid	ug/kg	190 U AA	190 U AA	190 U AA	9100 U AA	190 U AA	200 U AA
Benzyl alcohol	ug/kg	19 U AA	19 U AA	19 U AA	910 U AA	19 U AA	20 U AA
Bis(2-ethylhexyl) phthalate	ug/kg	170 AA	440 AA	640 AA	5000 AA	300 AA	190 AA
Butylbenzyl phthalate	ug/kg	19 U AA	20 AA	30 AA	910 U AA	19 U AA	20 U AA
Dibutyl phthalate	ug/kg	19 U AA	19 U AA	19 U AA	910 U AA	19 U AA	20 U AA
Di-n-octyl phthalate	ug/kg	19 U AA	19 U AA	19 U AA	910 U AA	19 U AA	20 U AA
Dibenzofuran	ug/kg	19 U AA	19 U AA	19 U AA	910 U AA	21 AA	20 U AA
Dimethyl phthalate	ug/kg	19 U AA	19 U AA	19 U AA	910 U AA	19 U AA	20 U AA
Pentachlorophenol	ug/kg	95 U AA	96 U AA	96 U AA	4500 U AA	95 U AA	99 U AA
Phenol	ug/kg	19 U AA	19 U AA	19 U AA	910 U AA	19 U AA	20 U AA
2-Methylnaphthalene	ug/kg	19 U AA	19 U AA	36 AA	2000 AA	19 U AA	20 U AA
Acenaphthene	ug/kg	19 U AA	19 U AA	20 AA	910 U AA	35 AA	20 U AA
Acenaphthylene	ug/kg	19 U AA	19 U AA	19 U AA	910 U AA	19 U AA	20 U AA
Anthracene	ug/kg	19 U AA	19 U AA	19 U AA	910 U AA	20 AA	20 U AA
Benz(a)anthracene	ug/kg	22 AA	38 AA	38 AA	910 U AA	58 AA	40 AA
Benzo(a)pyrene	ug/kg	23 AA	41 AA	55 AA	910 U AA	48 AA	36 AA
Benzo(b)fluoranthene	ug/kg	24 AA	59 AA	64 AA	910 U AA	55 AA	40 AA
Benzo(g,h,i)perylene	ug/kg	19 U AA	28 AA	28 AA	910 U AA	27 AA	22 AA
Benzo(k)fluoranthene	ug/kg	20 AA	38 AA	37 AA	910 U AA	56 AA	32 AA
Chrysene	ug/kg	38 AA	68 AA	68 AA	910 U AA	86 AA	91 AA
Dibenz(a,h)anthracene	ug/kg	19 U AA	19 U AA	19 U AA	910 U AA	19 U AA	20 U AA
Fluoranthene	ug/kg	55 AA	110 AA	110 AA	910 U AA	200 AA	130 AA
Fluorene	ug/kg	19 U AA	19 U AA	27 AA	910 U AA	33 AA	20 U AA
Indeno(1,2,3-cd)pyrene	ug/kg	19 U AA	31 AA	32 AA	910 U AA	33 AA	23 AA
Naphthalene	ug/kg	19 U AA	19 U AA	19 U AA	910 U AA	19 U AA	20 U AA
Phenanthrene	ug/kg	32 AA	58 AA	110 AA	1100 AA	140 AA	62 AA
Pyrene	ug/kg	50 AA	88 AA	110 AA	910 U AA	140 AA	110 AA
Carbazole	ug/kg	19 U AA	19 U AA	19 U AA	910 UJ AA	19 U AA	20 U AA

Notes:

QA Level:

AA = QA1Cat1

Qualifier List:

Qualifier	Definition
J	Estimate, usually applied because the value is less than the method reporting limit but greater than the method detection limit, or for QA/QC concerns.
U	Undetected at the detection limit shown.
UJ	Undetected at the detection limit shown; PSAMP estimate - quality control not met. Estimate, usually applied because the value is less than the method reporting limit but greater than the method detection limit, or for QA/QC concerns.

Table 3
Outfall 18 Facility List

Aquarius Search: Mar-2003
Basin Reconn: Jul-2002

RNO	Business Name	Address	Drainage	SIC Number	Permit Type	Permit No.	Business Type	Exposure	Comments
R941300320	ABCO Sanitation	3333 NW St. Helens Rd	MS4 - No connections yet	5521, 7699*			Waste processor (once facility built)		This facility is not built yet. They have building plans submitted but the property is pretty much undeveloped at this time.
R941290710	ABF Freight Systems	3333 NW 35th Ave.	MS4	4213*	NPDES	1200Z	Transportation	Yes	Previously occupied by Bay News/FTL
R941200160	Ackroyd Photography Inc	3840 NW Yeon Ave.	MS4	7221			Photo processor	No	
R94291400	Active Equipment Co.	3103 NW St. Helens Rd.	MS4	5082			Distribution	No	No longer at site.
R941190361	American Steel Inc.	4033 NW Yeon Ave.	MS4	5051*			Metal fabrication	Yes	
R941291370	Ashland Chemical Inc.	3322 NW 35th Ave.	MS4	4213*, 5162*, 5169*, 2865*			Chemical distributor	No	
			Sanitary	4213*, 5162*, 5169*, 2865*	Pretreatment	400.026			
R941291620	B&I Furnishings Inc.	3621 NW Yeon Ave.	MS4	5021			Distribution	No	Unable to verify drainage, either Outfall 17 and/or 18
R941190130	Bay News Inc. (doing business as FTL Inc.)	4285 NW Yeon Ave.	MS4	4212*, 4213*, 5192*	NPDES	1200Z	Transportation	Yes	Previously occupied by ABF Freight
R697400250	Becker Trucking	3641 NW St. Helens Rd.	MS4	4212*, 4213*			Transportation	Yes	No longer at the site. McKinney's Son is the new tenant.
R697400490	Boise Workspaces (Formerly known as Baxter & Flaming Industries)	3717 NW St. Helens Rd.	MS4	3442*, 3449*			Manufacturing	No	
R941200040 R941201230 R941190010	Burlington Northern Santa Fe Railroad	3930 NW Yeon Ave.	MS4	4011*	NPDES	1200Z	Transportation	Yes	
R941290570	Calpac Container Northwest	3599 NW Yeon	MS4	5113			Distribution	No	Same address as Tricor Packaging (Drainage to Outfall 17 and 18)
R941290110	Carson Oil Co. Inc.	3125 NW 35th Ave.	MS4	5983, 5171*,	NPDES	1200Z	Oil distributor	Yes	
			Sanitary	5171*, 7538*	Pretreatment	400.033			
R941190190	Chapel Steel	4200 NW Yeon Ave.	MS4	5051			Distribution	Yes	Previously occupied by High Reach and Service Steel
R697400830	Christenson Oil	3821 NW St. Helens Rd.	MS4	2992*, 5170*,	NPDES	1200Z	Oil distributor	Yes	
R084303610	Columbia American Plating	3003 NW 35th Ave.	MS4	3471*	NPDES	1200Z	Metal plater	Yes	No longer at site.
			Sanitary	3471*	Pretreatment	413.005			
R084303350	Container Management Services (Formerly known as Myers Container Corp.)	3000 NW St. Helens Rd.	MS4	3412*, 5085*, 7699*			Container recycler	Yes	

Table 3
Outfall 18 Facility List

Aquarius Search: Mar-2003
Basin Reconn: Jul-2002

RNO	Business Name	Address	Drainage	SIC Number	Permit Type	Permit No.	Business Type	Exposure	Comments
			Sanitary	3412*, 5085*, 7699*	Pretreatment	414.028			
R941200160	Container Recovery Inc.	3900 NW Yeon Ave.	MS4	4200, 5093*	NPDES	1200Z	Container recycler	Yes	
R347601510	Daily Journal of Commerce	2840 NW 35th Ave.	MS4	2752			Printing & Distribution	No	No pluming records available, unable to verify discharge to Outfall 17 or 18
R941190700	Eastman Chemical (Formerly known as McWhorter Technologies)	4155 NW Yeon Ave.	MS4	2821*, 2851*	NPDES	100J/ 1200Z/ 1500A	Manufacturing	Yes	No longer at site
			Sanitary	2821*, 2851*	Pretreatment	414.002			
R347600580	Electrical Pacific Agencies	2720 NW 35th Ave.	MS4	5063			Distribution	No	No longer at site. No pluming records available, unable to verify discharge to Outfall 17 or 18
R941190330	Equilon Enterprises, LLC	3800 NW St. Helens Rd.	MS4	2911*, 5171*, 5172*	NPDES	1200T/ 1300J/ 1500A	Petroleum terminal	Yes	Formerly Texaco Portland Terminal
			Sanitary	2911*, 5171*,	Pretreatment				
R941300400	FD Thomas Inc.	3333 NW St. Helens Rd.	MS4	1721			Painting Contractor	Yes	
R941190290	Food Sak	4325 NW Yeon Ave.	MS4	5411			Convenience store	No	Unable to verify drainage, either Outfall 18 and/or 19
R941290710	FTL Freightlines	3333 NW 35th Ave.	MS4	4214, 5192			Transportation	Yes	
R941190130	FTL Inc (aka Bay News Inc.)	4285 NW Yeon Ave.	MS4	4214			Transportation	Yes	
R941300530	G-S Industrial Services Inc.	3530 NW St. Helens Rd.	MS4	5085*			Office/warehouse	No	
R941200500	Gunderson Inc.	4350 NW Front Ave.	MS4	3321*, 3743*	NPDES	1200Z	Manufacturing	Yes	
R941200500	Gunderson Inc.	4350 NW Front Ave.	WP-131 to WP 150	3321*, 3743*	NPDES	1200Z	Manufacturing	Yes	
R649704660	Hawthorn Inn & Suite	4319 NW Yeon Ave.	MS4	5812, 7011			Hotel	No	
R941300400	Hemphill Oil Co.	3333 NW St. Helens Rd.	MS4	1710*, 1711*, 1730*, 5170*, 5172*, 5983*			Oil distributor	Yes	No longer at site; new tenant unknown
R941190190	High Reach Inc.	4200 NW Yeon Ave.	MS4	7359*			Equipment rental	Yes	No longer at site
R941291170	I Harris (aka Harris Transportation Co.)	3077 NW St. Helens Rd.	MS4	4213			Trans/offices	Yes	
R941290710	IJB Portland Terminal Inc.	3333 NW 35th Ave.	MS4	4011, 4013			Transportation	Yes	No longer at site; new tenant unknown
R941290340	Industrial Craters & Packers	3074 NW St. Helens Rd.	MS4	4783			Manufacturing	No	
R941300380	Industrial Export Co.	3340 NW St. Helens Rd.	MS4	5051			Distribution	Yes	
R697400010	Industrial Valve of Oregon	3615 NW St. Helens Rd.	MS4	5085			Sales/repair	No	
R941290710	JLE Enterprises	3333 NW 35th Ave.	MS4	7542			Truck washing	No	No longer at site; new tenant unknown

Table 3
Outfall 18 Facility List

Aquarius Search: Mar-2003
Basin Reconn: Jul-2002

RNO	Business Name	Address	Drainage	SIC Number	Permit Type	Permit No.	Business Type	Exposure	Comments
R941190200	McDowell Welding & Pipe Fitting	4000 NW St. Helens Rd.	MS4	3441*, 3559*	NPDES	1200L	Metal fabrication	Yes	No longer at site; new tenant unknown
R941190190	Michelin Tire Corp.	4240 NW Yeon Ave.	MS4, Drywell	5014			Distribution	No	Verified connection to Outfall 19, unable to verify connection to Outfall 18 through plumbing records
R941290710	MRP Environmental	3333 NW 35th Ave.	MS4	4953			Env Clnup Com	Yes	
R941300440	Northwestern Industrial Maintenance	3509 NW St. Helens Rd.	MS4	1799			Equipment repair	Yes	
R941291400	O&S Supply Co.	3103 NW St. Helens Rd.	MS4	5085*			Distribution	No	
R084303300	Oregon Handling Equipment Co.	2949 NW St. Helens Rd.	MS4	3537*, 5046*, 5084*			Offices	No	
R941200150	Owens Corning	3750 NW Yeon Ave.	MS4	2952*, 2992*	NPDES	100J/ 1200Z/ 1300J/ 1500A/ 500J	Manufacturing	Yes	
			Sanitary	2952*, 2992*	Pretreatment	400.092			
R941290800	Owens Corning/Trumbull Division	3605 NW 35th Ave.	MS4	2952			Distribution	Yes	
R347601330	Pacific Machinery & Tool Steel	3445 NW Luzan St.		5051					
R941291170	Pacific Pride	3031 NW St. Helens Rd.	MS4	5171			Gas station	Yes	
R941201230	Pacific Rail Services	3930 NW Yeon Ave.	MS4	4789			Transportation	Yes	
R941190190	Pacific Welding Inc.	4166 NW Yeon Ave.	MS4	7692			Metal fabrication	Yes	
R649704640	Performance Mobility Inc.	4347 NW Yeon Ave.	MS4	7352, 5047, 5013			Office/dist	No	
R6977400250	Pro Lube	3641 NW St. Helens Rd.	MS4	7699*			Vehicle repair	Yes	
R941290570	Professional Records Center	3587 NW Yeon Ave.	MS4	4226*			Offices	No	
R941290710	Pronto Distribution	3333 NW 35th Ave.	MS4	4789			Trans/distribution	Yes	No longer at site; new tenant unknown
R84303420	Sarico Inc.	2727 NW 35th Ave.							No longer at site
R941291670	Schnitzer Investment Corp.	3720 NW Yeon Ave	MS4					No	No longer at site. DWA Trade Show & Exposition Services is the new tenant.
R347600580	Segot	2710 NW 35th Ave.	MS4	5198			?	No	No pluming records available, unable to verify discharge to Outfalls 17 or 18
R941190190	Service Steel Inc.	4200 NW Yeon Ave.	MS4	3499*, 5051*			Metal fabrication	Yes	No longer at site; now Chapel Steel
R941300350	Special Asphalt Products	3537 NW St. Helens Rd.	MS4	2952*, 5170*			Distribution	Yes	
R084303320	Sprint Equipment Building	2955 NW St. Helens Rd.	MS4	4813			Phone center	No	

Table 3
Outfall 18 Facility List

Aquarius Search: Mar-2003
Basin Reconn: Jul-2002

RNO	Business Name	Address	Drainage	SIC Number	Permit Type	Permit No.	Business Type	Exposure	Comments
R697400250	T W Express Inc.	3641 NW St. Helens Rd.	MS4	4731			Transportation	Yes	No longer at site; new tenant unknown
R941300390	Terrys Diesel Repair	3345 NW St. Helens Rd.	MS4	7538			Vehicle repair	No	
R941300460	Trad Trucking Co. Inc.	3133 NW St. Helens Rd.	MS4	4212*, 4214*			Transportation	Yes	
R941290570	Tricor Packaging	3599 NW Yeon Ave.	MS4	5113			Distribution	No	
R941290710	Trimac/Rentway Truck Leasing	3333 NW 35th Ave.	MS4	4212, 4213, 7359, 7533			Transportation	Yes	No longer at site; new tenant unknown
R084303330	US Sprint Communications	2955-57 NW St. Helens Rd.	MS4	4813			Phone center	No	
R941190200	USNR Portland	4000 NW St. Helens Rd.	MS4	5085*			Distribution	No	
R941200170	Univar (Formerly known as Van Waters & Rogers)	3950 NW Yeon Ave.	MS4	5169*	NPDES	Individual	Chemical manufacturing	Yes	They have changed their name several times. NPDES
			Sanitary	5161*, 5169*	Pretreatment	400.025			
R941190980	Western Pacific Building Materials Inc.	3865 NW St. Helens Rd.	MS4	5031			Distribution	No	
R697400830	Western Stations	3821 NW St. Helens Rd.	MS4	9999			?	No	No longer at site; Christenson Oil occupies site
R941190910	Western Wire Works	4025 NW Express Ave.	MS4	3496*	NPDES	1200Z	Metal fabrication	Yes	
R941290800	Westport Supply Co.	3536 NW 35th Ave	MS4	5085, 5087			Distribution	No	
R347602940	Weyerhauser Recycling	3136 NW 35th Ave.	MS4	5051, 5093			Waste recycler	Yes	BES records indicate that the yard drains to Outfall 17 and the roof drains to Outfall 18.
R941290690	Wilhelm Trucking Co.	3250 NW St. Helens Rd.	MS4	4212*, 4213*, 7353*	NPDES	1200Z	Transportation	Yes	
			Sanitary	4212*, 4213*, 7353*	Pretreatment	400.047			

*indicates SIC # has been verified via site inspection

CEG = Conditionally Exempt Generator
SQG = Small Quantity Generator

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location Code	Tester	Arsenic	Cadmium	Carbon (Dissolved Organic)	TOC	Chromium	COD	Copper	Lead	Mercury	Molyb-denum	Nickel	O/G Total	pH	Phosphorus (Total)	Selenium	Solids (Total)	TSS	Temp.	Titanium	Zinc
2001 1200Z Benchmarks									**0.1**	**0.4**				**10**	**5.5-9.0**				**130**			**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**deg C**	**mg/L**	
ABF FREIGHT SYSTEM INC - 4285 NW Yeon Ave. (1200Z)																						
1/19/1996	01	city	<0.003	0.0014		21	0.003	38	0.0099	0.01	<0.0005		0.0035	12		0.2			164			0.637
3/4/1996	01	self	<0.005	0.002		13	0.018	27	0.061	0.064	<0.0002		0.017	4.3	7	0.7			415			0.36
3/4/1996	02	self	<0.005	<0.002		5	0.02	<10	0.05	0.11	<0.0002		0.009	4.2	6.4	0.25			182			0.29
5/16/1996	01	self	<0.005	<0.005		10	0.017	10	0.064	0.07	<0.0002		0.014	8	6.5	1.4			510			0.39
5/16/1996	02	self	<0.005	<0.002		140	0.008	140	0.025	0.038	<0.0002		<0.005	1.6	6.2	0.24			100			0.14
3/3/1997	01	city		<0.001		<1	<0.003	27	<0.067	<0.02	0.0005	<0.003	<0.004	7.1			<0.02	28				<0.209
3/3/1997	02	city		<0.001		2.21	0.004	200	0.027	0.061	0.0007	<0.003	0.013	17			<0.02	230				0.25
4/8/1997	01	self	<0.005	<0.002	4.3		0.006	41	0.021	0.022	<0.0002		<0.005	0.9	6.5	0.025			83			0.11
4/8/1997	02	self	<0.005	<0.002		27	0.013	100	0.047	0.041	<0.0002		0.011	3.7	6.6	0.099			160			0.54
1/22/1998	01	city						73	0.027	<0.1				21	6.6				193	9		0.968
1/22/1998	02	city						260	0.093	<0.1				30	6.7				576	9.4		0.518
5/8/1998	01	self	<0.005	0.023		73	0.009	290	0.29	0.11	<0.0002		0.03	5.9	6.6	0.8			150			2.2
5/8/1998	02	self	<0.005	<0.005		35	0.021	230	0.079	0.078	<0.0002		0.015	<5	6.5	1			400			0.45
11/20/1998	01	city						52	<0.03	<0.1				15	6.8				81	14.1		0.516
11/20/1998	02	city						67	0.042	<0.1				13	6.7				109	14.3		0.18
2/22/1999	01	city						57	<0.03	<0.1				11	7				109			0.53
2/22/1999	02	city						120	0.05	<0.1				21.5	7.1				330			0.26
3/3/1999	01	self							0.014	0.017				<5	7.1				36			0.088
3/3/1999	02	self							0.015	0.01				<5	6.4				59			0.26
11/24/1999	01	city						51	<0.03	<0.1				8	5.9				19			0.16
11/24/1999	02	city						130	<0.03	<0.1				7.7	6.1				21			0.21
12/8/1999	01	city						4	<0.03	<0.1				6.9	8				32	10.3		0.85
12/8/1999	02	city						36	0.045	<0.1				11.5	7.6				132	10.3		0.13
1/24/2000	01	self							0.0422	0.0479				5	6.2				230			0.259
1/24/2000	02	self							0.0241	0.0204				5	6				120			0.632
4/6/2000	01	self							0.0973	0.115				5.5	6.8				470			0.695
4/6/2000	02	self							0.225	0.14				6	6.7				1500			1.85
ABF FREIGHT SYSTEM INC - 3333 NW 35th Ave. (1200Z)																						
3/15/2001	02	self							0.0135	0.0387				6.2	6.84				145			0.228
3/15/2001	07	self							0.0243	0.0457				<5	6.85				160			0.214
6/12/2001	02	self							0.0464	0.0213				<5	5.7				210			0.594
6/12/2001	07	self							0.0433	0.0488				<5	5.8				222			0.403
6/12/2001	13	self							0.0522	0.0533				5.2	5.7				284			0.544
3/6/2002	13	self							0.0078	0.0122				<5	5.7				40			0.104
3/6/2002	02	self							0.0107	0.0112				<5	5.9				76			0.105
3/6/2002	07	self							0.01	0.0163				<5	5.8				77			0.345
6/17/2002	02	self							0.0382	0.017				5.5	6.6				126		0.357	0.221
6/17/2002	07	self							0.0404	0.0187				<5	6.1				78		0.245	0.218
6/17/2002	13	self							0.0392	0.0218				<5	6.3				88		0.205	0.237
9/30/2002	02	city						140	0.0359	0.0322				6.4	6.8				341	10		0.382
9/30/2002	07	city						97	0.039	0.0668				<5	6.7				178	10.9		0.34

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Shaded entries indicate an exceedence of benchmark. For the permits represented in this table, there are only benchmarks for copper, lead, zinc, oil & grease, pH, and TSS.
< = nondetect
mg/L = milligrams per liter
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std unts = standard units
deg C = degrees centigrade

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location Code	Test	Arsenic	Barium	Cadmium	TOC	Chromium	COD	Copper	Lead	Mercury	Nickel	O/G Total	pH	Phosphorus (Total)	Selenium	Silver	TSS	Zinc
2002 1200Z Benchmarks									**0.1**	**0.4**			**10**	**5.5-9.0**				**130**	**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
BAY NEWS INC/FTL - 3333 NW 35th Ave. (1200Z)																			
1/15/1996	03	self	<0.005	0.029	<0.002	7.6	<0.005	30		0.017	<0.0002		1.9	5.8	0.23	<0.005	<0.005	24	
1/15/1996	07	self	<0.005	0.55	<0.002	1.1	<0.005	40		<0.005	<0.0002		9	0.3	<0.1	<0.005	<0.005	195	
1/15/1996	13	self	<0.005	0.029	<0.002	1.2	0.005	24		0.021	<0.002			6.2	<0.1	<0.005	<0.005	30	
1/15/1996	17	self	<0.005	0.077	0.008	1.2	0.013	47		0.06	<0.0002		7.6	6.2	<0.1	<0.005	<0.005	84	
4/11/1996	03	self	<0.005		<0.002	270	0.008	631		0.034	<0.0002			6.5	<0.1			36	
4/11/1996	07	self	<0.005	0.042	<0.002	7	0.008	14.4		0.027	<0.0002			6.6	0.25	<0.005	<0.005	42	
4/11/1996	17	self	0.031	0.086	<0.002	7	0.045	61.1		0.06	<0.0002			6.2	0.24	0.014	0.037	104	
7/1/1997	03	self	0.011		0.013	17	0.12	120	0.28	0.4	<0.0002	0.099	6	6.2	2.2			180	3.2
7/1/1997	07	self	<0.005		<0.002	9.5	<0.005	44	0.016	0.009	<0.0002	<0.005	1.4	6.3	0.14			30	0.19
7/1/1997	13	self	<0.005		<0.002	14	<0.005	120	0.02	0.011	<0.0002	0.005	3.1	6.4	0.32			45	0.26
7/1/1997	17	self	0.029		0.12	44	0.46	1100	1.4	2.4	<0.0002	0.29	5.5	6.3	9.4			1500	9.6
10/10/1997	03	self	<0.4		<0.08	52	0.068		0.019	0.3	<0.0002	<0.04	10	6.69	0.61			483	1.4
10/10/1997	13	self	<0.4		<0.08	39	0.036		0.13	0.18	<0.0002	<0.04	30	6.58	0.34			1680	1
10/10/1997	17	self	<0.4		<0.08	72	0.021		0.013	<0.15	<0.0002	<0.04	21	6.47	0.082			116	0.56
11/6/1998	03	self							<0.25	<0.05			<5	6.8				110	0.088
11/6/1998	07	self							<0.25	<0.05			<5	7.2				49	0.21
11/6/1998	13	self							<0.25	<0.05			<5	6.8				60	0.18
11/6/1998	17	self							<0.25	<0.05			7.4	7.1				38	0.27
2/5/1999	03	self								0.36			11	5.8				8000	
2/5/1999	07	self								2.5			47	5.9				17000	
2/5/1999	13	self								0.33			13	5.7				7400	
2/5/1999	17	self								1.4			58	6.1				11000	
10/27/1999	03	self							0.046	<0.02			5.9	6.77				338	0.28
10/27/1999	07	self							0.08	0.05			5.4	8.16				557	0.68
10/27/1999	13	self							0.05	<0.02			14.9	8.23				222	0.22
10/27/1999	17	self							0.06	0.04			19.3	7.4				210	0.24
10/27/1999	13	city						57	<0.03	<0.1			10	6.7				54.3	0.13
10/27/1999	07	city						160	<0.03	<0.1			15	7.1				348	0.56
10/27/1999	03	city						71	<0.03	<0.1			12	6.8				54.7	0.11
10/27/1999	17	city						240	0.13	0.1			140	6.4				202	1
4/28/2000	03	self							<0.04	<0.02			<5	6.39				129	0.18
4/28/2000	07	self							0.07	0.04			18.1	6.54				158	1.52
4/28/2000	13	self							<0.04	<0.02			8.04	6.42				121	0.24
4/28/2000	17	self							0.05	0.04			6.21	6.46				77	0.27
FTL INC. - 4285 NW Yeon Ave. (1200Z)																			
3/27/2001	01	city						46	<0.05	<0.2			<5	6.7				135	0.146
3/27/2001	02	city						83	<0.05	<0.2			8	6.8				276	0.222
6/11/2001	01	self							0.08	0.07			14.8	6.5				248	0.51
6/11/2001	02	self							0.05	0.02			11.1	6.46				205	0.41
11/30/2001	01	city						20	<0.05	<0.2			<5	6.9				42	0.069
11/30/2001	02	city						26	<0.05	<0.2			<5	6.2				66	0.096
12/18/2001	02	self					0.0059		0.0231				20	6.64				393	0.156
12/18/2001	01	self					0.0103		<0.01				<5	6.6				16	0.068

Date	Location Code	Test	Arsenic	Barium	Cadmium	TOC	Chromium	COD	Copper	Lead	Mercury	Nickel	O/G Total	pH	Phosphorus (Total)	Selenium	Silver	TSS	Zinc
2002 1200Z Benchmarks									**0.1**	**0.4**			**10**	**5.5-9.0**				**130**	**0.6**
5/28/2002	02	self							0.0597	<0.02			<5	5.95				388	0.45
5/28/2002	01	self							0.306	0.239			<5	6.58				3140	2.28

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Shaded entries indicate an exceedence of benchmark. For the permits represented in this table, there are only benchmarks for copper, lead, zinc, oil & grease, pH, and TSS.

< = nondetect

mg/L = milligrams per liter

ug/L = micrograms per liter

std unts = standard units

deg C = degrees centigrade

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Lead	Mercury	Nickel	O/G (Nonpolar)	O/G (Polar)	O/G (Total)	TPH	pH	Phosphorus (Total)	PO4 (Total)	TSS	Temp.	Zinc
2002 1200Z Benchmarks								**0.1**	**0.4**					**10**		**5.5-9.0**			**130**		**0.6**
									mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**deg C**	
Burlington Northern RR - 3930 NW Yeon Ave. (1200Z)																					
10/28/1997	X01	self			13		780						51	72		6.55	1.1		1200		
6/24/1998	X01	self	<0.005	0.003	10	0.002	120	0.04	0.023	<0.002	<0.01			7		7.58		1.1	130		0.33
11/5/1998	X01	self	0.0008	0.0005	3	0.008	170	0.03	0.023	<0.001	<0.01		<3	7	5	7.07	0.4		340		0.27
11/30/1998	X01	self																	34		
4/27/1999	X01	self	<0.001	0.0004	19	0.003	77	0.02	0.0068	<0.001	<0.01			<3		7.22	0.11		24		0.16
11/16/1999	X01	self						0.13	0.06	<0.0003				<3		7.13			120		2.5
11/24/1999	X01	city					15	<0.03	<0.1					<5		5.3			8.7		0.23
5/30/2000	X01	self						<0.05	<0.2				4	4	<3	6.98			85		0.25
3/15/2001	X01	self						0.09	0.046					<3		7.31			360		0.49
3/27/2001	X01	city					31	<0.05	<0.2					<5		6.1			56.8	10	0.146
6/1/2001	X01	self						<0.05	<0.005					<3		6.96			40		0.28
3/19/2002	01	self										20	8	27		6.71					
6/21/2002	01	self						<0.03	<0.005					6		8.06			4		<0.05
CARSON OIL TRUCK SHOP - 3125 NW 35th Ave. (1200Z)																					
11/20/1998	01	city					190	0.039	<0.1					25		6.9			223	14.6	0.21
12/7/1998	01	self						<0.02	0.029					9		5.83			119		0.22
2/18/1999	01	city					56	0.037	<0.1					<5		7.1			146		0.16
10/27/1999	01	city					140	0.07	<0.1					17		5.7			186		0.4
11/16/1999	01	self						0.04	0.03					13		6.03			233		0.27
2/22/2000	01	self						0.01	0.1					2		6.33			680		0.41
5/8/2000	01	self						0.03	0.01					4		5.82			68		0.2
10/10/2000	01	self						0.03	0.02					5		5.88			42		0.22
11/29/2000	01	city					110	<0.05	<0.2					5.3		5.4			81	5.1	0.29
4/2/2001	01	self						0.135	<0.02					23.2		3.69			133		2.21
6/29/2001	01	self						0.216	4.57					62.9		6.01			605		2.06
10/10/2001	01	city					150	0.051	<0.2					17.4		5.3			89.5	11.1	0.313
11/19/2001	01	self						0.0409	0.384					<5		6.37			167		0.532
4/16/2002	01	self						0.023	<0.02					<5		6.26			96		0.261
CHRISTENSON OIL - 3821 NW St. Helens Rd. (1200Z)																					
10/30/1997	X01	self	0.003	0.0017	32.1	0.0083	105	0.028	0.0357	0.00042	0.0053			1.03		7.39			108		0.368
11/20/1998	X01	city					28	<0.03	<0.1					7.3		6.4			152	13.8	0.144
1/19/1999	X01	self						<0.018	<0.045					<3		6.28			120		0.09
3/1/1999	X01	city					110	0.056	<0.1					14.7		6.7			246		0.29
5/17/1999	X01	self						<0.02	<0.05					<3		6.15			19		0.02
10/27/1999	X01	city					87	<0.03	<0.1					23		6.6			98.8		0.34
11/10/1999	X01	self						0.1	<0.05				5	16	11	6.37			73		0.28
6/27/2000	X01	self						<0.052	0.09				4	7	3	6.72			760		0.9
11/29/2000	X01	self						<0.05	0.016					<3		6.52			97		0.15
11/29/2000	X01	city					13	<0.05	<0.2					<5		6			55	4.7	0.17
2/16/2001	X01	self						<0.03	0.011					<3		7.78			33		0.2
11/19/2001	X01	self						0.0339	0.0419					36		6.38			402		0.392
11/20/2001	X01	city					74	0.162	<0.2					10		6.5			110	10.6	0.67
2/21/2002	X01	self						<0.03	0.003					<3		7.32			21		0.15
5/13/2002	X01	self						0.0356	<0.02					<5		6.59			20		0.312
COLUMBIA AMERICAN PLATING - 3003 NW 35th Ave. (1200Z)																					
4/11/2002	02	city				0.00325	35	0.0719	0.00201		0.314			14.2		6.2			12		0.353
11/12/2002	02	city				0.00295	6	0.0303	0.00074		0.43			<5		8.2			3.7	11.6	0.466

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Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester		COD	Copper	Lead	O/G (Total)	TPH	pH	TSS	Temp.	Zinc
2002 1200Z Benchmarks					**0.1**	**0.4**	**10**		**5.5-9.0**	**130**		**0.6**
				mg/L		**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**deg C**	**mg/L**
CONTAINER MANAGEMENT SERVICES (Myers Container) - 3000 NW St. Helens Rd. (1200Z)												
1/24/2001	01	self			0.16	0.28	<3		7.04	380		0.86
1/24/2001	08	self			0.03	0.035	<3		7.1	10		0.22
1/24/2001	04	self			0.05	0.053	30		7.15	160		0.52
5/15/2001	01	self			<0.1	0.19	12		6.21	1100		0.83
5/15/2001	04	self			<0.01	0.013	8		6.48	50		0.16
5/15/2001	08	self			<0.01	0.014	5		6.85	53		0.16
11/13/2001	01	self			0.1	0.15	5		6.53	550		0.62
11/13/2001	08	self			0.04	0.046	<3		7.01	20		0.19
11/13/2001	X03	self			0.26	0.034	5		6.84	49		0.37
2/5/2002	04	city		230	0.538	0.526	49.3		6.2	736	5.1	1.2
2/5/2002	01	city		27	0.663	1.62	258		6.2	7700	4.1	3.01
2/5/2002	08	city		44	0.0191	0.0558	<5		6.4	21	4.2	0.182
3/19/2002	01	self			0.09	0.019	38		8.74	80		0.25
3/19/2002	08	self			0.04	0.09	120			290		0.22
3/19/2002	X03	self			0.03	0.08	8		7.11	58		0.18
CONTAINER RECOVERY INC. - 3900 NW Yeon Ave. (1200Z)												
3/15/2001	01	self			<0.03	0.027	10		5.76	120		0.59
3/15/2001	02	self			<0.03	0.045	3		6.26	170		0.27
3/15/2001	03	self			<0.03	0.014	8		6.09	44		0.37
3/15/2001	04	self			<0.03	0.019	4		6.43	52		0.13
6/29/2001	01	self			<0.05	0.018	5		6.25	83		0.33
6/29/2001	02	self			0.05	0.056	8		6.22	310		0.6
10/22/2001	03	city		98	<0.05	<0.2	<5		6.78	74	12.2	0.273
10/22/2001	02	city		69	<0.05	<0.2	<5		6.42	71	12.7	0.208
1/25/2002	01	self			0.12	0.032	68		7.48	180		0.59
1/25/2002	02	self			0.07	0.099	19		6.87	520		0.4
1/25/2002	03	self			<0.03	0.007	12		6.59	49		0.2
1/25/2002	04	self			<0.03	0.007	<3		6.43	12		<0.05
5/28/2002	01	self			0.03	0.022	10		6.02	82		0.24
5/28/2002	03	self			0.06	0.04	22		6.23	120		0.49
5/28/2002	04	self			0.05	0.031	11		4.74	76		0.34
6/7/2002	02	self			0.05	0.012	12		6.42	60		0.38
12/30/2002	01	self			0.04	0.017	19		6.9	220		0.5
12/30/2002	02	self			0.04	0.039	14		6.86	250		0.31
12/30/2002	03	self			<0.03	0.01	<5		8.92	16		0.18
12/30/2002	04	self			<0.03	0.012	<5		6.79	38		0.11

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Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	BOD-5	Cadmium	TOC	Chromium	COD	Copper	Ethyl Benzene	Lead	Mercury	Nickel	O/G (Nonpolar)	O/G (Polar)	O/G (Total)	pH	Chlorine (Residual)	TSS	Toluene	Zinc
2002 1200Z Benchmarks									**0.1**		**0.4**					**10**	**5.5-9.0**		**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**ug/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**ug/L**	**mg/L**
EASTMAN CHEMICAL COMPANY (McWhorter Technologies) - 4155 NW Yeon Ave. (1200Z)																					
4/10/1995	01	self			0.00051	6.4		14	0.012		0.0036						6.9				0.49
4/10/1995	02	self			0.00014			7	0.006								6.5				0.22
4/10/1995	03	self			0.00041	23		63	0.012		0.0057					0.86	6				0.3
11/9/1995	01	self	<0.002		<0.005	8.1	<0.005	17	<0.01		0.082	<0.0002	0.015			0.55	6.8		20		0.2
11/9/1995	02	self	<0.002		<0.005	4.5	<0.005	11	<0.01		0.0071	<0.0002	<0.015			<0.5	7.3		<10		0.16
11/9/1995	03	self	<0.002		<0.005	43	<0.005	120	<0.01		0.015	<0.0002	<0.015			<0.5	6.1		<10		0.18
4/15/1996	01	self	<0.002		<0.005	8.2	<0.005	13	0.02		0.0002	<0.0002	<0.015			<0.5	6.9		<10		0.31
4/15/1996	02	self	<0.002		<0.005	5.7	<0.005	13	0.012		0.0054	<0.0002	<0.015			<0.5	6.9		11		0.23
4/15/1996	03	self	<0.002		<0.005	54	<0.005	120	0.013		0.015	<0.0002	<0.015			<0.5	6.1		<10		0.18
11/15/1996	01	self	<0.001		<0.001	18.6	0.004	30.6	0.0156		0.0076	<0.0002	0.0063			<5	6.88	<0.1	<10		0.556
11/15/1996	02	self	<0.001		<0.001	11.6	0.0026	35.5	0.0167		0.0063	<0.0002	0.0032			<5	7.08		14		0.252
11/15/1996	03	self	<0.001		<0.001	19.6	0.0021	26.1	0.0128	13.3	0.0074	<0.0002	0.002			<5	7		<10	8.17	0.489
4/22/1997	01	self	<0.001		<0.001	6.16	<0.001	16.4	0.0103		0.0023	<0.0002	<0.002	<5	<5	<5	6.72		<10		0.501
4/22/1997	02	self	<0.001		<0.001	3.35	<0.001	<5	0.00633		0.00123	<0.0002	<0.002	<5	<5	<5	6.88		<10		0.153
4/22/1997	03	self	<0.001		<0.001	23.2	0.00135	59.4	0.0132	84.1	0.00998	<0.0002	0.00292	<5	<5	<5	6.7		16		0.418
5/27/1997	03	self	0.00354	143	0.00102	168	0.00264	542	0.0477	215	0.0187	<0.0002	0.00474	<5	<5	<5	8.27		<10	184	0.408
11/25/1997	01	self	<0.001		<0.001	<3	<0.001	<5	0.006		0.004	<0.0002	<0.002			<5	7.07		<10		0.235
11/25/1997	02	self	<0.001		<0.001	<3	0.001	<5	0.007		0.004	<0.0002	<0.002			<5	7.09		<10		0.369
11/25/1997	03	self	<0.001		<0.001	11.1	0.001	19.3	0.009		0.01	<0.0002	0.002			<5	6.75		<10		0.157
6/4/1998	01	self				<3		<5								<5	7.18		19		
6/4/1998	02	self				4.2		<5								<5	6.99		<10		
6/4/1998	03	self				18.9		46.2								<5	6.62		<10		
11/10/1999	01	self							0.004		0.002					<5	6.91		<10		0.174
11/10/1999	02	self							0.005		0.001					<5	6.76		<10		0.16
11/10/1999	03	self							0.01		0.01					<5	6.73		33		0.32
11/24/1999	03	city						44	<0.03		<0.1					6.4	6.2		26		0.075
11/24/1999	01	city						46	0.036		<0.1					<5	6		16		0.25
11/24/1999	02	city						41	0.044		<0.1					16	6.5		51.5		0.2
10/4/2000	01	self							0.01		<0.001					3.1	7.2		12		0.18
10/4/2000	02	self							0.01		<0.001					4.4	6.4		16		0.18
10/4/2000	03	self							0.008		0.004					2.5	6.5		17		0.63
5/1/2001	01	self							0.01		0.004					2.1	6.7		4		0.21
5/1/2001	03	self							0.02		0.01					3.4	7.4		4		0.16
5/1/2001	02	self							0.02		0.008					<2	7		<1		0.22

Notes:
The monitoring data contained in this table, while representing best available information, may contain inadvertent errors or omissions.
In addition, there may be other data available solely in the hard file.
Shaded entries indicate an exceedence of benchmark. For the permits represented in this table, there are only benchmarks for copper, lead, zinc, oil & grease, pH, and TSS.
< = nondetect
mg/L = milligrams per liter
ug/L = micrograms per liter
std unts = standard units
deg C = degrees centigrade

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Ethanol	Flow	Flow (Batch)	Flow (Daily)	Lead	Mercury	Molyb-denum	Nickel	O/G (Polar)	O/G (Total)	TPH	pH	Phosphorus (Total)	Selenium	TSS	Temp.	Zinc
2002 1300J Limits																		**10[a]**		**6.0-9.0**					
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**gallons**	**gallons**	**gallons**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**deg C**	**mg/L**
EQUILON ENTERPRISES, LLC - 3800 NW St. Helens Rd. (1300J)																									
1/2/1995	01	self																2							
1/9/1995	01	self																2.3							
1/16/1995	01	self																1							
1/23/1995	01	self																1.6							
1/30/1995	01	self																4.2							
2/7/1995	01	self																0.9							
2/13/1995	01	self																2.3							
2/20/1995	01	self																2.4							
2/28/1995	01	self																3.1							
3/6/1995	01	self																2.5							
3/13/1995	01	self																2.9							
3/20/1995	01	self																1.8							
3/27/1995	01	self																5							
4/3/1995	01	self																1.9							
4/10/1995	01	self																0.9							
4/16/1995	01	self																1.3							
4/23/1995	01	self																1.7							
4/30/1995	01	self																2.5							
5/7/1995	01	self																0.9							
5/14/1995	01	self																2.8							
5/21/1995	01	self																2.4							
5/28/1995	01	self																3.3							
6/4/1995	01	self																1							
6/11/1995	01	self																1.6							
6/18/1995	01	self																1.4							
6/25/1995	01	self																4.3							
7/2/1995	01	self																2.3							
7/9/1995	01	self										43						2.8							
7/15/1995	01	self										331						1.7							
7/23/1995	01	self																1.7							
7/30/1995	01	self																2.1							
8/6/1995	01	self																0.9							
8/13/1995	01	self																1.4							
8/20/1995	01	self																4.1							
8/27/1995	01	self																4.9							
9/3/1995	01	self																2.8							
9/10/1995	01	self																4.2							
9/17/1995	01	self							<10									<4.8							
9/24/1995	01	self																3.7							
10/1/1995	01	self																4.8							
10/8/1995	01	self																7.2							
10/10/1995	01	self	<0.005	<0.002	74	<0.005	342	0.015					0.012	<0.0002		<0.005		5.2		5.62	0.11		52		0.22
10/15/1995	01	self																2.2							
10/22/1995	01	self																1.9							
10/29/1995	01	self																2.3							
11/6/1995	01	self																1.1							
11/13/1995	01	self																<0.5							
11/15/1995	01	city	<0.005	<0.002	7.6	<0.005	21	<0.005					<0.005	<0.0002	0.005	<0.005		<0.5			0.05	<0.02			0.074
11/21/1995	01	self																6.4							
11/28/1995	01	self																0.9							
12/3/1995	01	self																<0.5							
12/9/1995	01	self																1.4							
12/17/1995	01	self																0.8							
12/19/1995	01	self	<0.005	<0.002	28	<0.005	182	<0.005					0.023	<0.0002		<0.005		1.4		6.7	0.11				0.1
12/24/1995	01	self							31.9									1							
12/31/1995	01	self																11							
7/6/1996	01	self								0								<0.5							
7/14/1996	01	self								0								9.7							
7/21/1996	01	self								0								5.8							
7/28/1996	01	self								1685								6.2							
8/4/1996	01	self								5054								5.6							

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Ethanol	Flow	Flow (Batch)	Flow (Daily)	Lead	Mercury	Molyb-denum	Nickel	O/G (Polar)	O/G (Total)	TPH	pH	Phosphorus (Total)	Selenium	TSS	Temp.	Zinc
2002 1300J Limits																		**10^a**		**6.0-9.0**					
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**gallons**	**gallons**	**gallons**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**deg C**	**mg/L**
EQUILON ENTERPRISES, LLC - 3800 NW St. Helens Rd. (1300J)																									
8/11/1996	01	self								0								<0.5							
9/15/1996	01	self								75758								<0.5							
9/22/1996	01	self								5054								<0.5							
9/29/1996	01	self								0								<0.5							
10/6/1996	01	self								0								<0.5							
10/13/1996	01	self								1509								16							
10/14/1996	01	self	<0.002	<0.005	68	<0.005	270	0.016					0.014	<0.0002		<0.015		14		6.2	1.8		10		0.44
10/20/1996	01	self								0								<0.5							
10/27/1996	01	self								0								<0.5							
11/3/1996	01	self								25243								29.8							
11/10/1996	01	self								0								<0.5							
11/17/1996	01	self								2033								<0.5							
11/25/1996	01	self								0								<0.5							
12/2/1996	01	self								97569								<0.5							
12/8/1996	01	self								77439								<0.5							
12/15/1996	01	self								0								<0.5							
12/22/1996	01	self								35352								<0.5							
12/23/1996	01	self	<0.001	<0.001	7.27	0.00124	41.4	0.00571					0.00481	<0.0002		<0.002		<5		6.81	0.611		<10		0.128
1/2/1997	01	self								0								<0.5							
1/12/1997	01	self								0								<0.5							
1/20/1997	01	self								10605.6								<0.5							
1/23/1997	01	self							20.6																
1/27/1997	01	self							22.7	74073.6								6.57							
2/2/1997	01	self								835.2								<0.5							
2/10/1997	01	self								0								<0.5							
2/16/1997	01	self							<10	1684.8								<0.5							
2/24/1997	01	self								0								<0.5							
3/2/1997	01	self								52185.6								<0.5							
3/9/1997	01	self							<10	89222.4								<0.5							
3/18/1997	01	self								116165								<0.5							
3/23/1997	01	self								0								<0.5							
3/30/1997	01	self								37036.8								<0.5							
4/6/1997	01	self								0								5.44							
4/13/1997	01	self								18518.4								6.63							
4/20/1997	01	self								1684.8								<0.5							
4/27/1997	01	self								13464								<0.5							
5/4/1997	01	self							<10	1684.8								<0.5							
5/11/1997	01	self								0								<0.5							
5/18/1997	01	self								0								<0.5							
5/25/1997	01	self								0								5.71							
6/1/1997	01	self								5054.4								8.3							
6/8/1997	01	self								0								<0.5							
6/15/1997	01	self								0								5.19							
6/22/1997	01	self								65649.6								5.58							
6/29/1997	01	self								0								6.89							
7/6/1997	01	self								835.2								<0.5							
7/13/1997	01	self							<10	0								<0.5							
7/20/1997	01	self								0								<0.5							
7/27/1997	01	self								0								5.57							
8/3/1997	01	self							<10	0								<0.5							
8/10/1997	01	self								0								<0.5							
8/17/1997	01	self								0								<0.5							
8/24/1997	01	self								112795								14.1							
9/2/1997	01	self								0								21.1							
9/7/1997	01	self							16.6	0								14.9							
9/14/1997	01	self							<10	8424								5.57							
9/21/1997	01	self								0								<0.5							
9/28/1997	01	self								0								<0.5							
10/5/1997	01	self								8424								<0.5							
10/12/1997	01	self								3369.6								<0.5							
10/20/1997	01	self							<10	0								<0.5							

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Ethanol	Flow	Flow (Batch)	Flow (Daily)	Lead	Mercury	Molyb-denum	Nickel	O/G (Polar)	O/G (Total)	TPH	pH	Phosphorus (Total)	Selenium	TSS	Temp.	Zinc
2002 1300J Limits																		**10^a**		**6.0-9.0**					
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**gallons**	**gallons**	**gallons**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**deg C**	**mg/L**
EQUILON ENTERPRISES, LLC - 3800 NW St. Helens Rd. (1300J)																									
10/27/1997	01	self								0								<0.5							
10/31/1997	01	self	<0.001	<0.001	5.05	<0.001	19.6	0.004					0.008	<0.0002		<0.002		1.27		6.75	0.066		<10		0.137
11/3/1997	01	self							<10	16833.6								<0.5							
11/10/1997	01	self								0								<0.5							
11/17/1997	01	self								37036.8								<0.5							
11/19/1997	01	self								178445								<0.5							
11/24/1997	01	self								60609.6								<0.5							
12/1/1997	01	self							20.3	0								<0.5							
12/8/1997	01	self								5054.4								<0.5							
12/15/1997	01	self								70704								<0.5							
12/22/1997	01	self								16833.6								<0.5							
12/29/1997	01	self								0								<0.5							
1/20/1998	01	self	<0.001	<0.001	10.1	0.001	37.9	<0.002					0.003	<0.0002		0.004		6.14		6.85	0.04		<10		0.346
12/17/1998	01	self	<0.001	<0.001	4.08	<0.001	14	0.004					0.002	0.00034		<0.002		0.601		6.63	0.05		<10		0.338
1/3/1999	01	self																<5							
1/10/1999	01	self																<5							
1/18/1999	01	self																<5							
1/24/1999	01	self																<5							
1/31/1999	01	self																<5							
2/7/1999	01	self																<5							
2/14/1999	01	self																<5							
2/17/1999	01	city					29	<0.03					<0.1					5.6		6			11		0.14
2/21/1999	01	self																<5							
2/26/1999	01	self	<0.001	<0.001	3.1	0.001	<5	0.0035					0.003	<0.0002		<0.002		<0.5		6.32	<0.035		<10		0.137
2/28/1999	01	self																<5							
3/7/1999	01	self																<5							
3/14/1999	01	self																<5							
3/21/1999	01	self																<5							
3/28/1999	01	self																<5							
4/4/1999	01	self																<5							
4/11/1999	01	self																<5							
4/18/1999	01	self																<5							
4/25/1999	01	self																<5							
5/2/1999	01	self																<5							
5/9/1999	01	self																<5							
5/17/1999	01	self																<5							
5/23/1999	01	self																<5							
5/30/1999	01	self																5.61							
6/6/1999	01	self																<5							
6/13/1999	01	self																8.87							
6/21/1999	01	self																7.03							
6/27/1999	01	self																9.71							
7/4/1999	01	self																22.3							
7/11/1999	01	self																7.13							
7/18/1999	01	self																<5							
7/25/1999	01	self																<5							
8/7/1999	01	self																<5							
8/15/1999	01	self															<5								
8/22/1999	01	self																<5							
8/29/1999	01	self																<5							
9/5/1999	01	self																<5							
9/12/1999	01	self																<5							
9/19/1999	01	self																<5							
9/26/1999	01	self																<5							
10/3/1999	01	self																<5							
10/10/1999	01	self																<5							
10/17/1999	01	self																<5							
10/24/1999	01	self																<5							
10/31/1999	01	self																<5							
11/7/1999	01	self																<5							
11/14/1999	01	self																<5							

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Ethanol	Flow	Flow (Batch)	Flow (Daily)	Lead	Mercury	Molyb-denum	Nickel	O/G (Polar)	O/G (Total)	TPH	pH	Phosphorus (Total)	Selenium	TSS	Temp.	Zinc
2002 1300J Limits																		**10^a**		**6.0-9.0**					
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**gallons**	**gallons**	**gallons**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**deg C**	**mg/L**
EQUILON ENTERPRISES, LLC - 3800 NW St. Helens Rd. (1300J)																									
11/21/1999	01	self																<5							
11/28/1999	01	self																<5							
12/4/1999	01	self																<5							
12/9/1999	01	city					22	<0.03					<0.1					6.9		5.8			3.5	7.4	0.14
12/12/1999	01	self																<5							
12/19/1999	01	self																<5							
12/26/1999	01	self																<5							
1/2/2000	01	self																<5							
1/9/2000	01	self																<5							
1/16/2000	01	self																<5							
1/23/2000	01	self																<5							
1/30/2000	01	self																<5							
2/6/2000	01	self																<5							
2/13/2000	01	self																<5							
2/19/2000	01	self																<5							
2/27/2000	01	self																<5							
3/5/2000	01	self																<5							
3/12/2000	01	self																<5							
3/19/2000	01	self																<5							
3/26/2000	01	self																<5							
4/2/2000	01	self																<5							
4/9/2000	01	self																<5							
4/16/2000	01	self																<5							
4/23/2000	01	self																<5							
4/30/2000	01	self																<5							
5/6/2000	01	self																<5							
5/14/2000	01	self																<5							
5/21/2000	01	self																<5							
5/28/2000	01	self																<5							
6/4/2000	01	self																<5							
6/11/2000	01	self																<5							
6/18/2000	01	self																<5							
6/25/2000	01	self																<5							
7/2/2000	01	self																<5							
7/9/2000	01	self																<5							
7/16/2000	01	self																<5							
7/23/2000	01	self																<5							
7/30/2000	01	self																<5							
8/5/2000	01	self																<5							
8/13/2000	01	self																<5							
8/19/2000	01	self																5							
8/26/2000	01	self																<5							
9/3/2000	01	self																<5							
9/10/2000	01	self																<5							
9/17/2000	01	self																<5							
9/24/2000	01	self																<5							
10/1/2000	01	self																<5							
10/8/2000	01	self																<5							
10/15/2000	01	self																<							
10/22/2000	01	self																<5							
11/5/2000	01	self																<5							
11/12/2000	01	self																<5							
11/19/2000	01	self																<							
11/26/2000	01	self																<5							
11/29/2000	01	city					10	<0.05					<0.2					<5		6.7			6	6.7	0.31
12/3/2000	01	self																<5							
12/10/2000	01	self																<5							
12/17/2000	01	self																<5							
12/24/2000	01	self																<5							
10/22/2001	01	city					23	<0.05					<0.2					<5					8.5	12.2	0.205
5/6/2002	01	self								11784								<5							

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Ethanol	Flow	Flow (Batch)	Flow (Daily)	Lead	Mercury	Molyb-denum	Nickel	O/G (Polar)	O/G (Total)	TPH	pH	Phosphorus (Total)	Selenium	TSS	Temp.	Zinc
2002 1300J Limits																		**10[a]**		**6.0-9.0**					
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**gallons**	**gallons**	**gallons**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**deg C**	**mg/L**
EQUILON ENTERPRISES, LLC - 3800 NW St. Helens Rd. (1300J)																									
6/2/2002	01	self								0								<5							
7/7/2002	01	self										11787					<5		<5						
7/8/2002	01	self																<5							
7/29/2002	01	self										28618.6													
9/2/2002	01	self										89222.8													
10/10/2002	01	self										89222.8													
11/4/2002	01	city										48820													
12/2/2002	01	city										47136.6													
1/5/2003	01	self									0							<5							

Notes:
[a] The limit for O&G associated with this permit is 10mg/L for a monthly average and 15mg/L for a daily maximum.
The monitoring data contained in this table, while representing best available information, may contain inadvertent errors or omissions.
In addition, there may be other data available solely in the hard file.
Shaded entries indicate a exceedence of the permit limit. There are permit limits for oil & grease and pH.
Equilon filed a monitoring waiver around June 2000 (which accounts for data from January 2001 through April 2002).
< = nondetect
mg/L = milligrams per liter
ug/L = micrograms per liter
std unts = standard units
deg C = degrees centigrade

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Iron	Lead	Mercury	Nickel	O/G (Total)	pH	TSS	Temp.	Zinc
2002 1200Z Benchmarks								**0.1**		**0.4**			**10**	**5.5-9.0**	**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**deg C**	**mg/L**
GUNDERSON INC. - 4350 NW Front Ave. (1200Z)																	
1/9/1995	01	self		0.000076	6.9		73	0.061		0.048			5.2	6.9	77		0.29
1/9/1995	X02	self	0.0045	0.0043	6.5		45	0.068		0.032			1.9	6.3	42		0.29
1/9/1995	X03	self		0.003	6.4		30							6.1			2.2
1/9/1995	X04	self					15							6.8			0.19
1/9/1995	X05	self		0.000064	25		110	0.049		0.0077			10	7.2	19		0.58
1/9/1995	X06	self	0.0096	0.0039	6.4	0.071	67	0.39		0.57	0.0014	0.066	1.2	7	400		1.4
6/14/1995	01	self			5.8		25	0.026		0.01			0.88	7.3			0.092
6/14/1995	X02	self	0.0029		6.1	0.006	46	0.063		0.025			0.72	7			0.32
6/14/1995	X04	self			4.1			0.036						6.9			0.37
6/14/1995	X05	self	0.034		7.3	0.016	45	0.16		0.03			2.3	7.4			0.88
6/15/1995	X02	self													24		
6/15/1995	X05	self													44		
4/22/1996	X12	city	<0.002	0.002	3.4	<0.003	10	0.004		<0.02	0.0011	<0.004	7.6	6.9	2	12.8	2.12
1/5/1998	01	self						0.061		0.039			4.83	6.16	50	7.2	0.358
1/5/1998	07	self						0.057		0.023			1.98	6.42	20	6.8	0.306
1/5/1998	10	self						0.07		0.035			2.92	7.1	67	7.4	0.356
1/5/1998	13	self						0.014		0.001			<0.5		<10		1.35
1/5/1998	17	self						0.486		0.074			3.82	7.1	184	7.1	1.2
1/5/1998	22	self						0.293		0.245				7.14		7.5	0.779
1/5/1998	X06	self						0.013		0.001			<0.5	6.35	<10	8	0.93
1/5/1998	X08	self						0.022		0.009			0.931	6.43	<10	7.7	0.163
1/5/1998	X09	self						0.059		0.034			2.86	7.11	32	7.4	0.416
1/5/1998	X11	self						0.011					<0.5	6.61	<10	7.3	0.217
1/5/1998	X14	self						0.005		<0.001			<0.5	7.05	<0.1	8.8	0.446
1/5/1998	X16	self						0.159		0.02			1.76	7.05	25	6.9	0.478
1/5/1998	X19	self						0.317		0.047			5.44	7.5	78	6.8	0.851
1/5/1998	X20	self						0.051		0.008			0.5	6.75	<10	7.1	0.341
1/5/1998	X21	self						0.09		1.89			<0.5	6.66	1100	6.7	5.35
1/5/1998	X23	self						0.053		0.055			<0.5	7.48	<10	6.5	0.321
1/5/1998	X24	self						0.196		0.038			2.58	6.66	50	6.4	0.62
5/20/1998	17	self						0.149		0.01			<0.5	6.99	<10	14.6	0.428
5/20/1998	22	self						0.116		0.127			1.4	6.76	75	14	0.528
5/20/1998	X02	self						0.02		0.002			<0.5	7.63	<10	13.5	0.109
5/20/1998	X03	self						0.021		0.006			0.658	6.94	<10	13.5	0.147
5/20/1998	X19	self						0.134		0.011			<1.2	7.1	<10	14	0.469
10/02/1998 [1]	21	self											1.37		80		
10/02/1998 [1]	20	self											<0.5		<10		
10/02/1998 [1]	18	self											<0.5		<10		
10/02/1998 [1]	13	self											<0.5		<10		

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Iron	Lead	Mercury	Nickel	O/G (Total)	pH	TSS	Temp.	Zinc
2002 1200Z Benchmarks								**0.1**		**0.4**			**10**	**5.5-9.0**	**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**deg C**	**mg/L**
GUNDERSON INC. - 4350 NW Front Ave. (1200Z)																	
10/02/1998 [1]	12	self											1.04		<10		
10/02/1998 [1]	1	self											1.04		<10		
10/02/1998 [1]	7	self											1.16		<10		
10/02/1998 [1]	8	self											0.75		<10		
10/02/1998 [1]	9	self						0.0352		0.0033			1.96		<10		0.395
10/02/1998 [1]	11	self						0.0519		<.001			<0.5		<10		0.514
10/02/1998 [1]	10	self						0.0873		0.0046			1.29		10		1.41
10/9/1998	12E	self						0.025		0.005			0.76		<10		0.327
10/9/1998	12S	self						0.026		0.009			1.27		<10		0.618
10/9/1998	17	self						0.381		0.043			2.04		64		0.759
10/9/1998	22	self						0.088		0.049			0.78		18		0.341
10/9/1998	X03	self						0.014		0.005			<0.5		<10		0.81
10/9/1998	X05	self						0.027		0.007			2.04		<10		0.177
10/9/1998	X14	self						0.011		<0.001			<0.5		<10		0.156
10/9/1998	X16	self						0.026		<0.001			0.588		<10		0.148
10/9/1998	X19	self						0.263		0.041			1.3		75		0.494
10/9/1998	X20	self						0.128		0.013			0.91		14		0.355
10/9/1998	X24	self						0.03		0.001			<0.5		<10		0.342
1/28/1999	01	self						0.086		0.065			7.46		79		0.393
1/28/1999	07	self						0.113		0.06			7.25		131		0.4
1/28/1999	10	self						0.162		0.068			2.33		334		0.708
1/28/1999	13	self						0.038		0.003			<0.5		<10		0.28
1/28/1999	X03	self						0.012		0.008			<0.5		<10		0.26
1/28/1999	X05	self						0.039		0.02			2.26		18		0.21
1/28/1999	X06	self						0.014		0.0014			<0.5		<10		0.419
1/28/1999	X09	self						0.09		0.047			3.3		114		0.44
1/28/1999	X11	self						0.028		0.004			<0.5		<10		0.399
1/28/1999	01	city					92	0.09		<0.1			11.9	7.3	165		0.39
1/28/1999	X08	city					26	0.06		<0.1			5.8	6.1	58		0.22
1/28/1999	13	city					4	0.04		<0.1			<5	5.9	5		0.3
2/24/1999	12E	city					5	<0.03		<0.1			7.5	6.7	12		0.61
2/24/1999	12S	city					9	<0.03		<0.1			6.2	9.4	1		0.42
2/28/1999	X08	self						0.054		0.025			2.47		60		0.201
12/2/1999	01	self						0.078		0.058			24		170		0.39
12/2/1999	07	self						0.027		0.006			23		15		0.11
12/2/1999	10	self						0.043		0.34			6.5		62		0.013
12/2/1999	12E	self						0.026		<0.001			<0.5		11		0.92
12/2/1999	13	self						0.014		0.005			<0.5		7		0.07
12/2/1999	17	self						0.0076		<0.001			18		<10		0.165

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Iron	Lead	Mercury	Nickel	O/G (Total)	pH	TSS	Temp.	Zinc
2002 1200Z Benchmarks								**0.1**		**0.4**			**10**	**5.5-9.0**	**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**deg C**	**mg/L**
GUNDERSON INC. - 4350 NW Front Ave. (1200Z)																	
12/2/1999	22	self						0.316		0.408			<0.5		76		0.998
12/2/1999	X02	self						0.0085		0.0051			<0.5		<10		0.26
12/2/1999	X05	self						0.033		0.018			<5		26		0.29
12/2/1999	X08	self						0.057		0.028			<0.5		56		0.31
12/2/1999	X09	self						0.064		0.036			12		74		0.45
12/2/1999	X11	self						0.015		<0.001			8.8		<10		0.35
12/2/1999	X14	self						0.029		<0.001			<0.5		<10		0.22
12/2/1999	X16	self						0.0056		0.001			5.5		<10		0.13
12/2/1999	X18	self						0.012		<0.001			<0.5		<10		0.385
12/2/1999	X19	self						0.047		<0.001			<0.5		<10		0.798
12/2/1999	X20	self						0.046		<0.001			<0.5		<10		0.613
12/2/1999	X23	self						0.043		0.051			<0.5		24		0.28
12/2/1999	X24	self						0.0537		<0.001			<0.5		<10		0.321
5/9/2000	01	self						0.084		0.067			<5	9.33	172		0.406
5/9/2000	07	self						0.068		0.018			5	8.78	52		0.266
5/9/2000	X12	self						0.035		0.015			<5	8.29	22		0.465
5/9/2000	17	self						0.008		<0.005			<5	8.08	<5		0.137
5/9/2000	22	self						0.061		0.042			<5	7.17	30		0.33
5/10/2000	01	city					13	<0.03		<0.1			<5	6.3	13	9	1.9
12/19/2000	01	self						0.078		0.07			<5	5.5	106		0.402
12/19/2000	07	self						0.044		0.022			<5	5.5	27		0.315
12/19/2000	10	self						0.014		<0.005			<5	5.5	7		0.367
12/19/2000	17	self						0.038		<0.005			<5	5.5	<5		1.25
12/19/2000	22	self						0.258		0.314			5	5.5	86		0.808
12/19/2000	X12	self						<0.022		<0.005			<5	5.5	<5		0.326
3/28/2001	01	self						0.019		0.01			<5	8.63	8		0.127
3/28/2001	07	self						0.018		0.007			<5	8.28	5		0.122
3/28/2001	10	self						0.187		<0.005			<5	7.67	10		1.36
3/28/2001	17	self						<0.005		<0.005			<5	7.53	<5		0.16
3/28/2001	22	self						0.112		0.138			<5	7.62	20		0.444
3/28/2001	X12	self						0.125		<0.005			<5	7.65	<5		0.164
10/10/2001	01	self						0.03		0.0249			<5		50		0.185
10/10/2001	07	self						0.0204		0.0094			<5		15		0.197
10/10/2001	10	self						0.0185		<0.005			<5		8		0.193
10/10/2001	13	self						0.162		0.0111			<5		40		1.01
10/10/2001	17	self						0.0177		<0.005			<5		<5		0.464
10/10/2001	12E	self						0.0195		<0.005			<5		<5		0.402
10/10/2001	12S	self						0.0285		0.0082							1.19
10/22/2001	22	self						0.22		0.236			<5		242		0.981

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Iron	Lead	Mercury	Nickel	O/G (Total)	pH	TSS	Temp.	Zinc
2002 1200Z Benchmarks								**0.1**		**0.4**			**10**	**5.5-9.0**	**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**deg C**	**mg/L**
GUNDERSON INC. - 4350 NW Front Ave. (1200Z)																	
3/6/2002	01	self						0.0449		0.0343			<5	6.5	111		0.226
3/6/2002	07	self						0.0148		<0.005			<5	6	13		0.104
3/6/2002	10	self						0.0421		0.0088			<5	6.2	41		0.357
3/6/2002	13	self						0.0979		0.005			<5	6.2	12		0.839
3/6/2002	17	self						0.0153		<0.005			<5	7.6	<5		0.268
3/6/2002	12E	self						0.0102		<0.005			<5	8.9	<5		0.0902
3/11/2002	22	self						0.0477		0.0379			<5		42		0.142
3/11/2002	12S	self						0.0281		0.0185			<5	5.8	46		0.695

Notes:
The monitoring data contained in this table, while representing best available information, may contain inadvertent errors or omissions.
In addition, there may be other data available solely in the hard file.
Shaded entries indicate an exceedence of benchmark. For the permits represented in this table, there are only benchmarks for copper, lead, zinc, oil & grease, pH, and TSS.
Additional data was found in the form of summary tables in DEQ files (1992 to 1995). No analytical laboratory reports were included with the summary tables and therefore it has not been included in this table. Based on the data shown in the DEQ summary table, there were exceedences for TSS and lead.
< = nondetect
mg/L = milligrams per liter
ug/L = micrograms per liter
std unts = standard units
deg C = degrees centigrade

Table 4A
NPDES Stoı NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	BOD-5	Cadmium	TOC	Chromium	COD	Conductivity (Specific)	Copper	Flow	Flow (Daily)	Lead	Mercury	Nickel	Nitrogen (Ammonia)	O/G (Polar)	O/G (Total)	TPH	pH	Chlorine (Residual)	TSS	Temp.	Zinc
2002 1200Z Benchmarks and 1300J Limits										**0.1**			**0.4**					**10[a]**		**5.5-9.0 (benchmark) 6.0-9.0 (Limit)**		**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**umhos/cm**		**gallons**	**gallons**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**deg C**	**mg/L**
OWENS CORNING (CORP) - 3750 NW Yeon Ave. (1200 Z and 1300J)																								
6/5/1995	X01	self	0.008			53	0.005	150		0.07			0.004		0.04									0.55
06/05/1995 [1]	X03	self	0.009		<0.001	31	0.008	83		0.04			0.017	<0.005	0.02		<3	5	<3	8.37		40		0.19
06/05/1995 [1]	X04	self			<0.001	20	0.005	58		0.02			0.015	<0.005	0.02		<3	<3	<3	6.95		95		0.11
6/13/1995	X01	self																		6.46		5		
1/9/1996	X01	self	<0.005		0.004	<1	<0.00	8		<0.02			0.002	<0.005	<0.01			<3		6.94		<1		0.04
4/1/1996	X01	self		3		2.4		28.9	79.5							<0.12		5		7.68	<0.18	77		
5/28/1997	X01	self	0.0015		0.0009	12	0.002	46		0.02			0.008	<0.0005	<0.01		<3	<3	<3	7.15		11		0.11
12/15/1997	X01	self	<0.0005		<0.0002	0.8	<0.002	6		<0.02			0.0046	<0.0005	<0.01			<3		7.12		2		0.05
9/1/1998	01	self																6.3		7.8				
10/1/1998	01	self																2.2		7.9				
11/1/1998	01	self																2.7		7.4				
12/1/1998	01	self																11		7.8				
12/28/1998	X01	self								<0.02			<0.02					<3		8		54		0.09
12/28/1998 [1]	X02	self								0.02			<0.05					<3		7.48		46		0.28
12/28/1998 [1]	X03	self								0.05			<0.05				4	7	<3	7.19		480		0.33
1/1/1999	01	self																2.6		7.6				
2/1/1999	01	self																11		7.8				
3/1/1999	01	self																8.3		6.8				
4/1/1999	01	self																7.5		7.2				
5/1/1999	01	self																5.5		7.6				
6/1/1999	01	self																7.6		7.9				
6/24/1999	X01	self								<0.02			<0.05					<3		6.78		18		0.03
7/1/1999	01	self																5		8.2				
8/1/1999	01	self																34		7.9				
9/1/1999	01	self																4.1		7.9				
10/1/1999	01	self																3.2		7.9				
11/1/1999	01	self																2.8		7.2				
12/1/1999	01	self																9.6		7.6				
1/1/2000	01	self																4.3		7.4				
2/1/2000	01	self																4.4		7.8				
3/1/2000	01	self																6.5		8.1				
4/1/2000	01	self																2.9		7.9				
4/13/2000	X01	city						4		<0.03			<0.1					<5		6.9		19	14	0.074
4/13/2000	02	city						45		<0.03			<0.1					5.3		8.3		24.4	18.1	0.47
4/13/2000	X01	self								<0.02			<0.021					<3		8.29		13		0.18
5/1/2000	01	self																15		8.4				
6/1/2000	01	self																4.7		7.2				
7/1/2000	01	self																4		7.8				
8/1/2000	01	self																5.9		7.4				
9/1/2000	01	self																6.7		7.6				
10/1/2000	01	self																4.2		7.2				
11/1/2000	01	self																3.6		7.4				
12/1/2000	01	self																2						
12/14/2000	X01	self								<0.05			<0.005					<3		9.13		71		<0.05
1/1/2001	01	self																3.3		9.5				
1/2/2001	01	self																4.3		6.8				
1/3/2001	01	self																2.9		7.5				
1/7/2001	01	self										*21700						*2.4		8.4				
1/12/2001	01	self																0.6						
2/1/2001	01	self																7.2		6.8				
3/1/2001	01	self																4.8		7.5				
3/15/2001	X01	self								<0.03			<0.005					<3		7.38		77		0.013
4/1/2001	01	self																17		7.3				
5/1/2001	01	self																4.6		7.6				
6/1/2001	01	self																7.9		8.5				
7/1/2001	01	self																13.7		8.4				
8/1/2001	01	self										*25700						*3.7		8.1				
9/1/2001	01	self										*28200						*1		8.6				
10/1/2001	01	self															4.8			8.4				
11/2/2001	01	self									*43000							9.7						
11/8/2001	01	self									*43000							<2						
11/12/2001	01	self									*43000							<2						
11/19/2001	01	self									*43000							<2						
11/19/2001	03	self								<0.03			<0.005					<3		7.09		<1		<0.05
11/27/2001	01	self									*43000							5.7						
11/30/2001	03	city						14		<0.05			<0.2					<5		6.5		4.3	6.5	<0.05
11/30/2001	02	city						15		<0.05			<0.2					<5		6.9		10	9.2	0.274
12/3/2001	01	self										*67600						3.8						
12/10/2001	01	self										*67600						4.2						
12/17/2001	01	self										*67600						4.1						
12/24/2001	01	self										*67600						<2						
1/2/2002	01	self										*118300						6.4						

Table 4A
NPDES Sto NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	BOD-5	Cadmium	TOC	Chromium	COD	Conductivity (Specific)	Copper	Flow	Flow (Daily)	Lead	Mercury	Nickel	Nitrogen (Ammonia)	O/G (Polar)	O/G (Total)	TPH	pH	Chlorine (Residual)	TSS	Temp.	Zinc
2002 1200Z Benchmarks and 1300J Limits										**0.1**			**0.4**					**10[a]**		**5.5-9.0 (benchmark) 6.0-9.0 (Limit)**		**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**umhos/cm**		**gallons**	**gallons**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**deg C**	**mg/L**
OWENS CORNING (CORP) - 3750 NW Yeon Ave. (1200 Z and 1300J)																								
1/7/2002	01	self										*118300						6.1						
1/14/2002	01	self										*118300						5.3						
1/21/2002	01	self										*118300						12.9						
1/28/2002	01	self										*118300						<2						
2/4/2002	01	self										*55728						3.5						
2/11/2002	01	self										*55728						<2						
2/18/2002	01	self										*55728						<2						
2/25/2002	01	self										*55728						<2						
3/4/2002	01	self										*41184						19						
3/12/2002	01	self										*41184						<2			<0.1	5		
3/18/2002	01	self										*41184						<2						
3/19/2002	03	self								<0.03			<0.005					<3		7.16		15		<0.05
3/25/2002	01	self										*41184						<2						
4/1/2002	01	self										*26240						2.1			<0.1	3		
4/8/2002	01	self										*26240						4.1						
4/15/2002	01	self										*26240						<2						
4/22/2002	01	self										*26240						2.5						
4/29/2002	01	self										*26240						3.3						
5/6/2002	01	self										*25700						2.3						
5/13/2002	01	self										*25700						<2						
5/20/2002	01	self										*25700						3.2						
5/28/2002	01	self										*25700						<2						
6/3/2002	01	self										*15200						<2						
6/10/2002	01	self										*15200						3.8						
6/17/2002	01	self										*15200						<2						
6/24/2002	01	self										*15200						<2						
8/5/2002	01	self										*15200						<2						
8/12/2002	01	self										*15200						<2						
8/19/2002	01	self										*15200						3						
8/26/2002	01	self										*15200						<2						
9/3/2002	01	self										*						<2						
9/9/2002	01	self										*						<2						
9/16/2002	01	self										*						4						
9/23/2002	01	self										*						3						
9/30/2002	01	self										*						4						
10/7/2002	01	self																<2						
10/14/2002	01	self																<2						
10/21/2002	01	self																<2						
10/28/2002	01	self																<2						
11/4/2002	01	self																5						
11/11/2002	01	self																4						
11/18/2002	01	self																3						
11/25/2002	01	self																<2						
12/2/2002	01	self																3						
12/9/2002	01	self																3						
12/16/2002	01	self																<2						
12/26/2002	01	self																2						
12/31/2002	01	self																2						
1/6/2003	01	self										*						4						
1/13/2003	01	self										*						<2						
1/20/2003	01	self										*						<2						
1/27/2003	01	self										*						8						

Notes:
[a] The benchmark for O&G is 10mg/L and the limit is 10mg/L for a monthly average and 15mg/L for a daily maximum.
The monitoring data contained in this table, while representing best available information, may contain inadvertent errors or omissions.
In addition, there may be other data available solely in the hard file.
Shaded entries indicate an exceedence of benchmark or permit limit. For this permit there is a benchmark for TSS, copper, lead, and zinc and a permit limit for O&G and pH.
< = nondetect
mg/L = milligrams per liter
ug/L = micrograms per liter
std unts = standard units
deg C = degrees centigrade
* = There was flow, however no flow was reported.
*[number] = the number is an average

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	BOD-5	Cadmium	TOC	Chromium	COD	Copper	Lead	O/G (Nonpolar)	O/G (Total)	TPH	pH	TSS	Temp.	Zinc
2002 1200Z Benchmarks								**0.1**	**0.4**		**10**		**5.5-9.0**	**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**deg C**	**mg/L**
UNIVAR USA INC (Van Waters & Rogers) - 3950 NW Yeon Ave. (individual permit for groundwater cleanup; incorporates 1200Z benchmarks for stormwater issues)																
1/11/2000	01	self						<0.01	0.004		<5		6.88	25		0.101
1/1/2001	03	self						0.012	0.004		<5		7.21	7		0.105
1/9/2001	01	self						0.023	0.015		<5		7.17	100		0.166
1/9/2001	02	self						0.016	0.007		<5		7	22		0.128
3/27/2001	01	self						0.01	0.008		<5		7.24	74		0.089
3/27/2001	02	self						0.01	0.0092		<5		6.61	52		0.067
3/27/2001	03	self						0.013	0.0034		5		9.24	8		0.073
11/30/2001	01	city					16	<0.05	<0.2		<5		8.1	22	6	0.1
11/30/2001	02	city					61	<0.05	<0.2		<5		6.3	268	6.2	0.075
12/12/2001	01	self						<0.01	0.005		<5		7.09	109		0.093
12/12/2001	02	self						0.022	0.019		<5		7.09	83		0.214
12/12/2001	03	self						0.023	0.009		<5		7.19	19		0.208
6/18/2002	01	self						0.0128	0.0082		12			5		0.165
6/18/2002	02	self						0.0242	0.0071		11			33		0.178
6/18/2002	03	self						0.0134	0.0082		11			50		0.243
WESTERN WIRE WORKS - 4025 NW Express Ave. (1200Z)																
11/20/1998	01	self						0.016	0.014		1.3		7.02	12		0.065
11/20/1998	X04	self						<0.001	<0.001		<1		7.02	3		0.018
5/4/1999	X04	self						0.012	0.007		<5		6.89	<5		0.12
5/7/1999	01	self						0.012	<0.005		<5		6.88	6.5		0.009
10/27/1999	01	city					26	<0.03	<0.1		11		6.4	25		0.08
10/27/1999	X04	city					2	<0.03	<0.1		8		5.5	2		0.05
6/9/2000	01	self						0.015	0.0066		5		7.05	3.5		0.028
6/9/2000	X04	self						0.015	0.0062		4		7.08	7.8		0.03
12/21/2000	X03	self						0.02	0.007		<2		6.9	<1		0.048
12/21/2000	07	self						0.032	0.104		4.5		7.1	105		0.056
4/10/2001	07	self						0.013	0.004		<2		6.95	79		0.053
4/10/2001	X03	self						0.026	0.003		12		6.95	130		0.17
11/13/2001	01	self						<0.03	<0.005		<6		6.08	12		<0.05
11/13/2001	07	self						0.08	0.083		<9		6.71	450		0.39
11/30/2001	07	city					150	0.068	0.218		<5		6.6	334	5.8	0.443
11/30/2001	01	city					9	<0.05	<0.2		10		6	38		<0.05
4/5/2002	01	self						<0.03	0.006		<10		6.84	8		0.12
4/5/2002	07	self						0.07	0.071		35		6.31	180		0.31
WEYERHAEUSER RECYCLING - 3136 NW 35th Ave. (1200Z)																
6/14/1995	01	self	5		15		47				5		6.17			
11/15/1995	01	self	<3		3.9		15			<3	<3		7	4		
2/6/1996	01	city	<10		14		12				6.7		7	63.5	14	
4/1/1996	01	self	<3		2		16			<3	<3		6.93	4		

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	BOD-5	Cadmium	TOC	Chromium	COD	Copper	Lead	O/G (Nonpolar)	O/G (Total)	TPH	pH	TSS	Temp.	Zinc
2002 1200Z Benchmarks								**0.1**	**0.4**		**10**		**5.5-9.0**	**130**		**0.6**
WILHELM TRUCKING CO - 3520 NW St. Helens Rd. (1200Z)																
10/8/1997	X01	self		<0.01		<0.02		0.018	0.088	<2	<2	3.7	6.3	430		0.06
10/9/1997	X01	city					6	<0.02	<0.3		19		6.3	46	10.8	0.572
2/6/1998	X01	self						0.085	0.29	3.7	9.7		5.8	430		0.33
11/4/1998	X01	self						0.02	<0.06		7		6.2	48		0.15
11/10/1998	X01	city					20	<0.03	<0.1		8.1		6.1	59		0.991
12/28/1998	X01	city					25	<0.03	<0.1		9.6		6.4	42		0.063
2/17/1999	X01	self						0.024	<0.095		5.8		6	40		0.088
3/1/1999	X01	city					29	<0.03	<0.1		5.4		6.4	84.3		0.064
10/27/1999	X01	city					200	0.12	0.12		12		6.8	426		0.48
11/24/1999	X01	self						0.075	0.1		49		6.1	520		0.32
2/24/2000	X01	self						0.042	0.08		13		6	140		0.19
11/29/2000	X01	city					41	<0.05	<0.2		16.6		7	141	4.6	0.21
12/20/2000	X01	self						0.022	0.034	3.3	4.1		6.2	180		0.16
3/12/2001	X01	self						0.07	0.08		48		6.2	120		0.71
11/28/2001	01	self						0.01	0.016		16.1		6.85	184		0.16
4/10/2002	01	self						0.025	0.009		3.4		6.87	2		0.068

Notes:
The monitoring data contained in this table, while representing best available information, may contain inadvertent errors or omissions.
In addition, there may be other data available solely in the hard file.
Shaded entries indicate an exceedence of benchmark. For the permits represented in this table, there are only benchmarks for copper, lead, zinc, oil & grease, pH, and TSS.
< = nondetect
mg/L = milligrams per liter
ug/L = micrograms per liter
std unts = standard units
deg C = degrees centigrade

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location Code	Tester	Arsenic	Cadmium	Carbon (Dissolved Organic)	TOC	Chromium	COD	Copper	Lead	Mercury	Molyb-denum	Nickel	O/G Total	pH	Phosphorus (Total)	Selenium	Solids (Total)	TSS	Temp.	Titanium	Zinc
2001 1200Z Benchmarks									**0.1**	**0.4**				**10**	**5.5-9.0**				**130**			**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**deg C**	**mg/L**	
ABF FREIGHT SYSTEM INC - 4285 NW Yeon Ave. (1200Z)																						
1/19/1996	01	city	<0.003	0.0014		21	0.003	38	0.0099	0.01	<0.0005		0.0035	12		0.2			164			0.637
3/4/1996	01	self	<0.005	0.002		13	0.018	27	0.061	0.064	<0.0002		0.017	4.3	7	0.7			415			0.36
3/4/1996	02	self	<0.005	<0.002		5	0.02	<10	0.05	0.11	<0.0002		0.009	4.2	6.4	0.25			182			0.29
5/16/1996	01	self	<0.005	<0.005		10	0.017	10	0.064	0.07	<0.0002		0.014	8	6.5	1.4			510			0.39
5/16/1996	02	self	<0.005	<0.002		140	0.008	140	0.025	0.038	<0.0002		<0.005	1.6	6.2	0.24			100			0.14
3/3/1997	01	city		<0.001		<1	<0.003	27	<0.067	<0.02	0.0005	<0.003	<0.004	7.1			<0.02	28				<0.209
3/3/1997	02	city		<0.001		2.21	0.004	200	0.027	0.061	0.0007	<0.003	0.013	17			<0.02	230				0.25
4/8/1997	01	self	<0.005	<0.002	4.3		0.006	41	0.021	0.022	<0.0002		<0.005	0.9	6.5	0.025			83			0.11
4/8/1997	02	self	<0.005	<0.002		27	0.013	100	0.047	0.041	<0.0002		0.011	3.7	6.6	0.099			160			0.54
1/22/1998	01	city						73	0.027	<0.1				21	6.6				193	9		0.968
1/22/1998	02	city						260	0.093	<0.1				30	6.7				576	9.4		0.518
5/8/1998	01	self	<0.005	0.023		73	0.009	290	0.29	0.11	<0.0002		0.03	5.9	6.6	0.8			150			2.2
5/8/1998	02	self	<0.005	<0.005		35	0.021	230	0.079	0.078	<0.0002		0.015	<5	6.5	1			400			0.45
11/20/1998	01	city						52	<0.03	<0.1				15	6.8				81	14.1		0.516
11/20/1998	02	city						67	0.042	<0.1				13	6.7				109	14.3		0.18
2/22/1999	01	city						57	<0.03	<0.1				11	7				109			0.53
2/22/1999	02	city						120	0.05	<0.1				21.5	7.1				330			0.26
3/3/1999	01	self							0.014	0.017				<5	7.1				36			0.088
3/3/1999	02	self							0.015	0.01				<5	6.4				59			0.26
11/24/1999	01	city						51	<0.03	<0.1				8	5.9				19			0.16
11/24/1999	02	city						130	<0.03	<0.1				7.7	6.1				21			0.21
12/8/1999	01	city						4	<0.03	<0.1				6.9	8				32	10.3		0.85
12/8/1999	02	city						36	0.045	<0.1				11.5	7.6				132	10.3		0.13
1/24/2000	01	self							0.0422	0.0479				5	6.2				230			0.259
1/24/2000	02	self							0.0241	0.0204				5	6				120			0.632
4/6/2000	01	self							0.0973	0.115				5.5	6.8				470			0.695
4/6/2000	02	self							0.225	0.14				6	6.7				1500			1.85
ABF FREIGHT SYSTEM INC - 3333 NW 35th Ave. (1200Z)																						
3/15/2001	02	self							0.0135	0.0387				6.2	6.84				145			0.228
3/15/2001	07	self							0.0243	0.0457				<5	6.85				160			0.214
6/12/2001	02	self							0.0464	0.0213				<5	5.7				210			0.594
6/12/2001	07	self							0.0433	0.0488				<5	5.8				222			0.403
6/12/2001	13	self							0.0522	0.0533				5.2	5.7				284			0.544
3/6/2002	13	self							0.0078	0.0122				<5	5.7				40			0.104
3/6/2002	02	self							0.0107	0.0112				<5	5.9				76			0.105
3/6/2002	07	self							0.01	0.0163				<5	5.8				77			0.345
6/17/2002	02	self							0.0382	0.017				5.5	6.6				126		0.357	0.221
6/17/2002	07	self							0.0404	0.0187				<5	6.1				78		0.245	0.218
6/17/2002	13	self							0.0392	0.0218				<5	6.3				88		0.205	0.237
9/30/2002	02	city						140	0.0359	0.0322				6.4	6.8				341	10		0.382
9/30/2002	07	city						97	0.039	0.0668				<5	6.7				178	10.9		0.34

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Shaded entries indicate an exceedence of benchmark. For the permits represented in this table, there are only benchmarks for copper, lead, zinc, oil & grease, pH, and TSS.
< = nondetect
mg/L = milligrams per liter
ug/L = micrograms per liter
std unts = standard units
deg C = degrees centigrade

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location Code	Test	Arsenic	Barium	Cadmium	TOC	Chromium	COD	Copper	Lead	Mercury	Nickel	O/G Total	pH	Phosphorus (Total)	Selenium	Silver	TSS	Zinc
2002 1200Z Benchmarks									**0.1**	**0.4**			**10**	**5.5-9.0**				**130**	**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
BAY NEWS INC/FTL - 3333 NW 35th Ave. (1200Z)																			
1/15/1996	03	self	<0.005	0.029	<0.002	7.6	<0.005	30		0.017	<0.0002		1.9	5.8	0.23	<0.005	<0.005	24	
1/15/1996	07	self	<0.005	0.55	<0.002	1.1	<0.005	40		<0.005	<0.0002		9	0.3	<0.1	<0.005	<0.005	195	
1/15/1996	13	self	<0.005	0.029	<0.002	1.2	0.005	24		0.021	<0.002			6.2	<0.1	<0.005	<0.005	30	
1/15/1996	17	self	<0.005	0.077	0.008	1.2	0.013	47		0.06	<0.0002		7.6	6.2	<0.1	<0.005	<0.005	84	
4/11/1996	03	self	<0.005		<0.002	270	0.008	631		0.034	<0.0002			6.5	<0.1			36	
4/11/1996	07	self	<0.005	0.042	<0.002	7	0.008	14.4		0.027	<0.0002			6.6	0.25	<0.005	<0.005	42	
4/11/1996	17	self	0.031	0.086	<0.002	7	0.045	61.1		0.06	<0.0002			6.2	0.24	0.014	0.037	104	
7/1/1997	03	self	0.011		0.013	17	0.12	120	0.28	0.4	<0.0002	0.099	6	6.2	2.2			180	3.2
7/1/1997	07	self	<0.005		<0.002	9.5	<0.005	44	0.016	0.009	<0.0002	<0.005	1.4	6.3	0.14			30	0.19
7/1/1997	13	self	<0.005		<0.002	14	<0.005	120	0.02	0.011	<0.0002	0.005	3.1	6.4	0.32			45	0.26
7/1/1997	17	self	0.029		0.12	44	0.46	1100	1.4	2.4	<0.0002	0.29	5.5	6.3	9.4			1500	9.6
10/10/1997	03	self	<0.4		<0.08	52	0.068		0.019	0.3	<0.0002	<0.04	10	6.69	0.61			483	1.4
10/10/1997	13	self	<0.4		<0.08	39	0.036		0.13	0.18	<0.0002	<0.04	30	6.58	0.34			1680	1
10/10/1997	17	self	<0.4		<0.08	72	0.021		0.013	<0.15	<0.0002	<0.04	21	6.47	0.082			116	0.56
11/6/1998	03	self							<0.25	<0.05			<5	6.8				110	0.088
11/6/1998	07	self							<0.25	<0.05			<5	7.2				49	0.21
11/6/1998	13	self							<0.25	<0.05			<5	6.8				60	0.18
11/6/1998	17	self							<0.25	<0.05			7.4	7.1				38	0.27
2/5/1999	03	self								0.36			11	5.8				8000	
2/5/1999	07	self								2.5			47	5.9				17000	
2/5/1999	13	self								0.33			13	5.7				7400	
2/5/1999	17	self								1.4			58	6.1				11000	
10/27/1999	03	self							0.046	<0.02			5.9	6.77				338	0.28
10/27/1999	07	self							0.08	0.05			5.4	8.16				557	0.68
10/27/1999	13	self							0.05	<0.02			14.9	8.23				222	0.22
10/27/1999	17	self							0.06	0.04			19.3	7.4				210	0.24
10/27/1999	13	city						57	<0.03	<0.1			10	6.7				54.3	0.13
10/27/1999	07	city						160	<0.03	<0.1			15	7.1				348	0.56
10/27/1999	03	city						71	<0.03	<0.1			12	6.8				54.7	0.11
10/27/1999	17	city						240	0.13	0.1			140	6.4				202	1
4/28/2000	03	self							<0.04	<0.02			<5	6.39				129	0.18
4/28/2000	07	self							0.07	0.04			18.1	6.54				158	1.52
4/28/2000	13	self							<0.04	<0.02			8.04	6.42				121	0.24
4/28/2000	17	self							0.05	0.04			6.21	6.46				77	0.27
FTL INC. - 4285 NW Yeon Ave. (1200Z)																			
3/27/2001	01	city						46	<0.05	<0.2			<5	6.7				135	0.146
3/27/2001	02	city						83	<0.05	<0.2			8	6.8				276	0.222
6/11/2001	01	self							0.08	0.07			14.8	6.5				248	0.51
6/11/2001	02	self							0.05	0.02			11.1	6.46				205	0.41
11/30/2001	01	city						20	<0.05	<0.2			<5	6.9				42	0.069
11/30/2001	02	city						26	<0.05	<0.2			<5	6.2				66	0.096
12/18/2001	02	self					0.0059		0.0231				20	6.64				393	0.156
12/18/2001	01	self					0.0103		<0.01				<5	6.6				16	0.068

Date	Location Code	Test	Arsenic	Barium	Cadmium	TOC	Chromium	COD	Copper	Lead	Mercury	Nickel	O/G Total	pH	Phosphorus (Total)	Selenium	Silver	TSS	Zinc
2002 1200Z Benchmarks									**0.1**	**0.4**			**10**	**5.5-9.0**				**130**	**0.6**
5/28/2002	02	self							0.0597	<0.02			<5	5.95				388	0.45
5/28/2002	01	self							0.306	0.239			<5	6.58				3140	2.28

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Shaded entries indicate an exceedence of benchmark. For the permits represented in this table, there are only benchmarks for copper, lead, zinc, oil & grease, pH, and TSS.

< = nondetect

mg/L = milligrams per liter

ug/L = micrograms per liter

std unts = standard units

deg C = degrees centigrade

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Lead	Mercury	Nickel	O/G (Nonpolar)	O/G (Polar)	O/G (Total)	TPH	pH	Phosphorus (Total)	PO4 (Total)	TSS	Temp.	Zinc
2002 1200Z Benchmarks								**0.1**	**0.4**					**10**		**5.5-9.0**			**130**		**0.6**
									mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**deg C**	
Burlington Northern RR - 3930 NW Yeon Ave. (1200Z)																					
10/28/1997	X01	self			13		780						51	72		6.55	1.1		1200		
6/24/1998	X01	self	<0.005	0.003	10	0.002	120	0.04	0.023	<0.002	<0.01			7		7.58		1.1	130		0.33
11/5/1998	X01	self	0.0008	0.0005	3	0.008	170	0.03	0.023	<0.001	<0.01		<3	7	5	7.07	0.4		340		0.27
11/30/1998	X01	self																	34		
4/27/1999	X01	self	<0.001	0.0004	19	0.003	77	0.02	0.0068	<0.001	<0.01			<3		7.22	0.11		24		0.16
11/16/1999	X01	self						0.13	0.06	<0.0003				<3		7.13			120		2.5
11/24/1999	X01	city					15	<0.03	<0.1					<5		5.3			8.7		0.23
5/30/2000	X01	self						<0.05	<0.2				4	4	<3	6.98			85		0.25
3/15/2001	X01	self						0.09	0.046					<3		7.31			360		0.49
3/27/2001	X01	city					31	<0.05	<0.2					<5		6.1			56.8	10	0.146
6/1/2001	X01	self						<0.05	<0.005					<3		6.96			40		0.28
3/19/2002	01	self										20	8	27		6.71					
6/21/2002	01	self						<0.03	<0.005					6		8.06			4		<0.05
CARSON OIL TRUCK SHOP - 3125 NW 35th Ave. (1200Z)																					
11/20/1998	01	city					190	0.039	<0.1					25		6.9			223	14.6	0.21
12/7/1998	01	self						<0.02	0.029					9		5.83			119		0.22
2/18/1999	01	city					56	0.037	<0.1					<5		7.1			146		0.16
10/27/1999	01	city					140	0.07	<0.1					17		5.7			186		0.4
11/16/1999	01	self						0.04	0.03					13		6.03			233		0.27
2/22/2000	01	self						0.01	0.1					2		6.33			680		0.41
5/8/2000	01	self						0.03	0.01					4		5.82			68		0.2
10/10/2000	01	self						0.03	0.02					5		5.88			42		0.22
11/29/2000	01	city					110	<0.05	<0.2					5.3		5.4			81	5.1	0.29
4/2/2001	01	self						0.135	<0.02					23.2		3.69			133		2.21
6/29/2001	01	self						0.216	4.57					62.9		6.01			605		2.06
10/10/2001	01	city					150	0.051	<0.2					17.4		5.3			89.5	11.1	0.313
11/19/2001	01	self						0.0409	0.384					<5		6.37			167		0.532
4/16/2002	01	self						0.023	<0.02					<5		6.26			96		0.261
CHRISTENSON OIL - 3821 NW St. Helens Rd. (1200Z)																					
10/30/1997	X01	self	0.003	0.0017	32.1	0.0083	105	0.028	0.0357	0.00042	0.0053			1.03		7.39			108		0.368
11/20/1998	X01	city					28	<0.03	<0.1					7.3		6.4			152	13.8	0.144
1/19/1999	X01	self						<0.018	<0.045					<3		6.28			120		0.09
3/1/1999	X01	city					110	0.056	<0.1					14.7		6.7			246		0.29
5/17/1999	X01	self						<0.02	<0.05					<3		6.15			19		0.02
10/27/1999	X01	city					87	<0.03	<0.1					23		6.6			98.8		0.34
11/10/1999	X01	self						0.1	<0.05				5	16	11	6.37			73		0.28
6/27/2000	X01	self						<0.052	0.09				4	7	3	6.72			760		0.9
11/29/2000	X01	self						<0.05	0.016					<3		6.52			97		0.15
11/29/2000	X01	city					13	<0.05	<0.2					<5		6			55	4.7	0.17
2/16/2001	X01	self						<0.03	0.011					<3		7.78			33		0.2
11/19/2001	X01	self						0.0339	0.0419					36		6.38			402		0.392
11/20/2001	X01	city					74	0.162	<0.2					10		6.5			110	10.6	0.67
2/21/2002	X01	self						<0.03	0.003					<3		7.32			21		0.15
5/13/2002	X01	self						0.0356	<0.02					<5		6.59			20		0.312
COLUMBIA AMERICAN PLATING - 3003 NW 35th Ave. (1200Z)																					
4/11/2002	02	city				0.00325	35	0.0719	0.00201		0.314			14.2		6.2			12		0.353
11/12/2002	02	city				0.00295	6	0.0303	0.00074		0.43			<5		8.2			3.7	11.6	0.466

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mg/L = milligrams per liter
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Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester		COD	Copper	Lead	O/G (Total)	TPH	pH	TSS	Temp.	Zinc
2002 1200Z Benchmarks					**0.1**	**0.4**	**10**		**5.5-9.0**	**130**		**0.6**
				mg/L		**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**deg C**	**mg/L**
CONTAINER MANAGEMENT SERVICES (Myers Container) - 3000 NW St. Helens Rd. (1200Z)												
1/24/2001	01	self			0.16	0.28	<3		7.04	380		0.86
1/24/2001	08	self			0.03	0.035	<3		7.1	10		0.22
1/24/2001	04	self			0.05	0.053	30		7.15	160		0.52
5/15/2001	01	self			<0.1	0.19	12		6.21	1100		0.83
5/15/2001	04	self			<0.01	0.013	8		6.48	50		0.16
5/15/2001	08	self			<0.01	0.014	5		6.85	53		0.16
11/13/2001	01	self			0.1	0.15	5		6.53	550		0.62
11/13/2001	08	self			0.04	0.046	<3		7.01	20		0.19
11/13/2001	X03	self			0.26	0.034	5		6.84	49		0.37
2/5/2002	04	city		230	0.538	0.526	49.3		6.2	736	5.1	1.2
2/5/2002	01	city		27	0.663	1.62	258		6.2	7700	4.1	3.01
2/5/2002	08	city		44	0.0191	0.0558	<5		6.4	21	4.2	0.182
3/19/2002	01	self			0.09	0.019	38		8.74	80		0.25
3/19/2002	08	self			0.04	0.09	120			290		0.22
3/19/2002	X03	self			0.03	0.08	8		7.11	58		0.18
CONTAINER RECOVERY INC. - 3900 NW Yeon Ave. (1200Z)												
3/15/2001	01	self			<0.03	0.027	10		5.76	120		0.59
3/15/2001	02	self			<0.03	0.045	3		6.26	170		0.27
3/15/2001	03	self			<0.03	0.014	8		6.09	44		0.37
3/15/2001	04	self			<0.03	0.019	4		6.43	52		0.13
6/29/2001	01	self			<0.05	0.018	5		6.25	83		0.33
6/29/2001	02	self			0.05	0.056	8		6.22	310		0.6
10/22/2001	03	city		98	<0.05	<0.2	<5		6.78	74	12.2	0.273
10/22/2001	02	city		69	<0.05	<0.2	<5		6.42	71	12.7	0.208
1/25/2002	01	self			0.12	0.032	68		7.48	180		0.59
1/25/2002	02	self			0.07	0.099	19		6.87	520		0.4
1/25/2002	03	self			<0.03	0.007	12		6.59	49		0.2
1/25/2002	04	self			<0.03	0.007	<3		6.43	12		<0.05
5/28/2002	01	self			0.03	0.022	10		6.02	82		0.24
5/28/2002	03	self			0.06	0.04	22		6.23	120		0.49
5/28/2002	04	self			0.05	0.031	11		4.74	76		0.34
6/7/2002	02	self			0.05	0.012	12		6.42	60		0.38
12/30/2002	01	self			0.04	0.017	19		6.9	220		0.5
12/30/2002	02	self			0.04	0.039	14		6.86	250		0.31
12/30/2002	03	self			<0.03	0.01	<5		8.92	16		0.18
12/30/2002	04	self			<0.03	0.012	<5		6.79	38		0.11

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Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	BOD-5	Cadmium	TOC	Chromium	COD	Copper	Ethyl Benzene	Lead	Mercury	Nickel	O/G (Nonpolar)	O/G (Polar)	O/G (Total)	pH	Chlorine (Residual)	TSS	Toluene	Zinc
2002 1200Z Benchmarks									**0.1**		**0.4**					**10**	**5.5-9.0**		**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**ug/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**ug/L**	**mg/L**
EASTMAN CHEMICAL COMPANY (McWhorter Technologies) - 4155 NW Yeon Ave. (1200Z)																					
4/10/1995	01	self			0.00051	6.4		14	0.012		0.0036						6.9				0.49
4/10/1995	02	self			0.00014			7	0.006								6.5				0.22
4/10/1995	03	self			0.00041	23		63	0.012		0.0057					0.86	6				0.3
11/9/1995	01	self	<0.002		<0.005	8.1	<0.005	17	<0.01		0.082	<0.0002	0.015			0.55	6.8		20		0.2
11/9/1995	02	self	<0.002		<0.005	4.5	<0.005	11	<0.01		0.0071	<0.0002	<0.015			<0.5	7.3		<10		0.16
11/9/1995	03	self	<0.002		<0.005	43	<0.005	120	<0.01		0.015	<0.0002	<0.015			<0.5	6.1		<10		0.18
4/15/1996	01	self	<0.002		<0.005	8.2	<0.005	13	0.02		0.0002	<0.0002	<0.015			<0.5	6.9		<10		0.31
4/15/1996	02	self	<0.002		<0.005	5.7	<0.005	13	0.012		0.0054	<0.0002	<0.015			<0.5	6.9		11		0.23
4/15/1996	03	self	<0.002		<0.005	54	<0.005	120	0.013		0.015	<0.0002	<0.015			<0.5	6.1		<10		0.18
11/15/1996	01	self	<0.001		<0.001	18.6	0.004	30.6	0.0156		0.0076	<0.0002	0.0063			<5	6.88	<0.1	<10		0.556
11/15/1996	02	self	<0.001		<0.001	11.6	0.0026	35.5	0.0167		0.0063	<0.0002	0.0032			<5	7.08		14		0.252
11/15/1996	03	self	<0.001		<0.001	19.6	0.0021	26.1	0.0128	13.3	0.0074	<0.0002	0.002			<5	7		<10	8.17	0.489
4/22/1997	01	self	<0.001		<0.001	6.16	<0.001	16.4	0.0103		0.0023	<0.0002	<0.002	<5	<5	<5	6.72		<10		0.501
4/22/1997	02	self	<0.001		<0.001	3.35	<0.001	<5	0.00633		0.00123	<0.0002	<0.002	<5	<5	<5	6.88		<10		0.153
4/22/1997	03	self	<0.001		<0.001	23.2	0.00135	59.4	0.0132	84.1	0.00998	<0.0002	0.00292	<5	<5	<5	6.7		16		0.418
5/27/1997	03	self	0.00354	143	0.00102	168	0.00264	542	0.0477	215	0.0187	<0.0002	0.00474	<5	<5	<5	8.27		<10	184	0.408
11/25/1997	01	self	<0.001		<0.001	<3	<0.001	<5	0.006		0.004	<0.0002	<0.002			<5	7.07		<10		0.235
11/25/1997	02	self	<0.001		<0.001	<3	0.001	<5	0.007		0.004	<0.0002	<0.002			<5	7.09		<10		0.369
11/25/1997	03	self	<0.001		<0.001	11.1	0.001	19.3	0.009		0.01	<0.0002	0.002			<5	6.75		<10		0.157
6/4/1998	01	self				<3		<5								<5	7.18		19		
6/4/1998	02	self				4.2		<5								<5	6.99		<10		
6/4/1998	03	self				18.9		46.2								<5	6.62		<10		
11/10/1999	01	self							0.004		0.002					<5	6.91		<10		0.174
11/10/1999	02	self							0.005		0.001					<5	6.76		<10		0.16
11/10/1999	03	self							0.01		0.01					<5	6.73		33		0.32
11/24/1999	03	city						44	<0.03		<0.1					6.4	6.2		26		0.075
11/24/1999	01	city						46	0.036		<0.1					<5	6		16		0.25
11/24/1999	02	city						41	0.044		<0.1					16	6.5		51.5		0.2
10/4/2000	01	self							0.01		<0.001					3.1	7.2		12		0.18
10/4/2000	02	self							0.01		<0.001					4.4	6.4		16		0.18
10/4/2000	03	self							0.008		0.004					2.5	6.5		17		0.63
5/1/2001	01	self							0.01		0.004					2.1	6.7		4		0.21
5/1/2001	03	self							0.02		0.01					3.4	7.4		4		0.16
5/1/2001	02	self							0.02		0.008					<2	7		<1		0.22

Notes:
The monitoring data contained in this table, while representing best available information, may contain inadvertent errors or omissions.
In addition, there may be other data available solely in the hard file.
Shaded entries indicate an exceedence of benchmark. For the permits represented in this table, there are only benchmarks for copper, lead, zinc, oil & grease, pH, and TSS.
< = nondetect
mg/L = milligrams per liter
ug/L = micrograms per liter
std unts = standard units
deg C = degrees centigrade

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Ethanol	Flow	Flow (Batch)	Flow (Daily)	Lead	Mercury	Molyb-denum	Nickel	O/G (Polar)	O/G (Total)	TPH	pH	Phosphorus (Total)	Selenium	TSS	Temp.	Zinc
2002 1300J Limits																		**10[a]**		**6.0-9.0**					
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**gallons**	**gallons**	**gallons**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**deg C**	**mg/L**
EQUILON ENTERPRISES, LLC - 3800 NW St. Helens Rd. (1300J)																									
1/2/1995	01	self																2							
1/9/1995	01	self																2.3							
1/16/1995	01	self																1							
1/23/1995	01	self																1.6							
1/30/1995	01	self																4.2							
2/7/1995	01	self																0.9							
2/13/1995	01	self																2.3							
2/20/1995	01	self																2.4							
2/28/1995	01	self																3.1							
3/6/1995	01	self																2.5							
3/13/1995	01	self																2.9							
3/20/1995	01	self																1.8							
3/27/1995	01	self																5							
4/3/1995	01	self																1.9							
4/10/1995	01	self																0.9							
4/16/1995	01	self																1.3							
4/23/1995	01	self																1.7							
4/30/1995	01	self																2.5							
5/7/1995	01	self																0.9							
5/14/1995	01	self																2.8							
5/21/1995	01	self																2.4							
5/28/1995	01	self																3.3							
6/4/1995	01	self																1							
6/11/1995	01	self																1.6							
6/18/1995	01	self																1.4							
6/25/1995	01	self																4.3							
7/2/1995	01	self																2.3							
7/9/1995	01	self										43						2.8							
7/15/1995	01	self										331						1.7							
7/23/1995	01	self																1.7							
7/30/1995	01	self																2.1							
8/6/1995	01	self																0.9							
8/13/1995	01	self																1.4							
8/20/1995	01	self																4.1							
8/27/1995	01	self																4.9							
9/3/1995	01	self																2.8							
9/10/1995	01	self																4.2							
9/17/1995	01	self							<10									<4.8							
9/24/1995	01	self																3.7							
10/1/1995	01	self																4.8							
10/8/1995	01	self																7.2							
10/10/1995	01	self	<0.005	<0.002	74	<0.005	342	0.015					0.012	<0.0002		<0.005		5.2		5.62	0.11		52		0.22
10/15/1995	01	self																2.2							
10/22/1995	01	self																1.9							
10/29/1995	01	self																2.3							
11/6/1995	01	self																1.1							
11/13/1995	01	self																<0.5							
11/15/1995	01	city	<0.005	<0.002	7.6	<0.005	21	<0.005					<0.005	<0.0002	0.005	<0.005		<0.5			0.05	<0.02			0.074
11/21/1995	01	self																6.4							
11/28/1995	01	self																0.9							
12/3/1995	01	self																<0.5							
12/9/1995	01	self																1.4							
12/17/1995	01	self																0.8							
12/19/1995	01	self	<0.005	<0.002	28	<0.005	182	<0.005					0.023	<0.0002		<0.005		1.4		6.7	0.11				0.1
12/24/1995	01	self							31.9									1							
12/31/1995	01	self																11							
7/6/1996	01	self								0								<0.5							
7/14/1996	01	self								0								9.7							
7/21/1996	01	self								0								5.8							
7/28/1996	01	self								1685								6.2							
8/4/1996	01	self								5054								5.6							

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Ethanol	Flow	Flow (Batch)	Flow (Daily)	Lead	Mercury	Molyb-denum	Nickel	O/G (Polar)	O/G (Total)	TPH	pH	Phosphorus (Total)	Selenium	TSS	Temp.	Zinc
2002 1300J Limits																		**10^a**		**6.0-9.0**					
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**gallons**	**gallons**	**gallons**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**deg C**	**mg/L**
EQUILON ENTERPRISES, LLC - 3800 NW St. Helens Rd. (1300J)																									
8/11/1996	01	self								0								<0.5							
9/15/1996	01	self								75758								<0.5							
9/22/1996	01	self								5054								<0.5							
9/29/1996	01	self								0								<0.5							
10/6/1996	01	self								0								<0.5							
10/13/1996	01	self								1509								16							
10/14/1996	01	self	<0.002	<0.005	68	<0.005	270	0.016					0.014	<0.0002		<0.015		14		6.2	1.8		10		0.44
10/20/1996	01	self								0								<0.5							
10/27/1996	01	self								0								<0.5							
11/3/1996	01	self								25243								29.8							
11/10/1996	01	self								0								<0.5							
11/17/1996	01	self								2033								<0.5							
11/25/1996	01	self								0								<0.5							
12/2/1996	01	self								97569								<0.5							
12/8/1996	01	self								77439								<0.5							
12/15/1996	01	self								0								<0.5							
12/22/1996	01	self								35352								<0.5							
12/23/1996	01	self	<0.001	<0.001	7.27	0.00124	41.4	0.00571					0.00481	<0.0002		<0.002		<5		6.81	0.611		<10		0.128
1/2/1997	01	self								0								<0.5							
1/12/1997	01	self								0								<0.5							
1/20/1997	01	self								10605.6								<0.5							
1/23/1997	01	self							20.6																
1/27/1997	01	self							22.7	74073.6								6.57							
2/2/1997	01	self								835.2								<0.5							
2/10/1997	01	self								0								<0.5							
2/16/1997	01	self							<10	1684.8								<0.5							
2/24/1997	01	self								0								<0.5							
3/2/1997	01	self								52185.6								<0.5							
3/9/1997	01	self							<10	89222.4								<0.5							
3/18/1997	01	self								116165								<0.5							
3/23/1997	01	self								0								<0.5							
3/30/1997	01	self								37036.8								<0.5							
4/6/1997	01	self								0								5.44							
4/13/1997	01	self								18518.4								6.63							
4/20/1997	01	self								1684.8								<0.5							
4/27/1997	01	self								13464								<0.5							
5/4/1997	01	self							<10	1684.8								<0.5							
5/11/1997	01	self								0								<0.5							
5/18/1997	01	self								0								<0.5							
5/25/1997	01	self								0								5.71							
6/1/1997	01	self								5054.4								8.3							
6/8/1997	01	self								0								<0.5							
6/15/1997	01	self								0								5.19							
6/22/1997	01	self								65649.6								5.58							
6/29/1997	01	self								0								6.89							
7/6/1997	01	self								835.2								<0.5							
7/13/1997	01	self							<10	0								<0.5							
7/20/1997	01	self								0								<0.5							
7/27/1997	01	self								0								5.57							
8/3/1997	01	self							<10	0								<0.5							
8/10/1997	01	self								0								<0.5							
8/17/1997	01	self								0								<0.5							
8/24/1997	01	self								112795								14.1							
9/2/1997	01	self								0								21.1							
9/7/1997	01	self							16.6	0								14.9							
9/14/1997	01	self							<10	8424								5.57							
9/21/1997	01	self								0								<0.5							
9/28/1997	01	self								0								<0.5							
10/5/1997	01	self								8424								<0.5							
10/12/1997	01	self								3369.6								<0.5							
10/20/1997	01	self							<10	0								<0.5							

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Ethanol	Flow	Flow (Batch)	Flow (Daily)	Lead	Mercury	Molyb-denum	Nickel	O/G (Polar)	O/G (Total)	TPH	pH	Phosphorus (Total)	Selenium	TSS	Temp.	Zinc
2002 1300J Limits																		**10^a**		**6.0-9.0**					
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**gallons**	**gallons**	**gallons**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**deg C**	**mg/L**
EQUILON ENTERPRISES, LLC - 3800 NW St. Helens Rd. (1300J)																									
10/27/1997	01	self								0								<0.5							
10/31/1997	01	self	<0.001	<0.001	5.05	<0.001	19.6	0.004					0.008	<0.0002		<0.002		1.27		6.75	0.066		<10		0.137
11/3/1997	01	self							<10	16833.6								<0.5							
11/10/1997	01	self								0								<0.5							
11/17/1997	01	self								37036.8								<0.5							
11/19/1997	01	self								178445								<0.5							
11/24/1997	01	self								60609.6								<0.5							
12/1/1997	01	self							20.3	0								<0.5							
12/8/1997	01	self								5054.4								<0.5							
12/15/1997	01	self								70704								<0.5							
12/22/1997	01	self								16833.6								<0.5							
12/29/1997	01	self								0								<0.5							
1/20/1998	01	self	<0.001	<0.001	10.1	0.001	37.9	<0.002					0.003	<0.0002		0.004		6.14		6.85	0.04		<10		0.346
12/17/1998	01	self	<0.001	<0.001	4.08	<0.001	14	0.004					0.002	0.00034		<0.002		0.601		6.63	0.05		<10		0.338
1/3/1999	01	self																<5							
1/10/1999	01	self																<5							
1/18/1999	01	self																<5							
1/24/1999	01	self																<5							
1/31/1999	01	self																<5							
2/7/1999	01	self																<5							
2/14/1999	01	self																<5							
2/17/1999	01	city					29	<0.03					<0.1					5.6		6			11		0.14
2/21/1999	01	self																<5							
2/26/1999	01	self	<0.001	<0.001	3.1	0.001	<5	0.0035					0.003	<0.0002		<0.002		<0.5		6.32	<0.035		<10		0.137
2/28/1999	01	self																<5							
3/7/1999	01	self																<5							
3/14/1999	01	self																<5							
3/21/1999	01	self																<5							
3/28/1999	01	self																<5							
4/4/1999	01	self																<5							
4/11/1999	01	self																<5							
4/18/1999	01	self																<5							
4/25/1999	01	self																<5							
5/2/1999	01	self																<5							
5/9/1999	01	self																<5							
5/17/1999	01	self																<5							
5/23/1999	01	self																<5							
5/30/1999	01	self																5.61							
6/6/1999	01	self																<5							
6/13/1999	01	self																8.87							
6/21/1999	01	self																7.03							
6/27/1999	01	self																9.71							
7/4/1999	01	self																22.3							
7/11/1999	01	self																7.13							
7/18/1999	01	self																<5							
7/25/1999	01	self																<5							
8/7/1999	01	self																<5							
8/15/1999	01	self															<5								
8/22/1999	01	self																<5							
8/29/1999	01	self																<5							
9/5/1999	01	self																<5							
9/12/1999	01	self																<5							
9/19/1999	01	self																<5							
9/26/1999	01	self																<5							
10/3/1999	01	self																<5							
10/10/1999	01	self																<5							
10/17/1999	01	self																<5							
10/24/1999	01	self																<5							
10/31/1999	01	self																<5							
11/7/1999	01	self																<5							
11/14/1999	01	self																<5							

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Ethanol	Flow	Flow (Batch)	Flow (Daily)	Lead	Mercury	Molyb-denum	Nickel	O/G (Polar)	O/G (Total)	TPH	pH	Phosphorus (Total)	Selenium	TSS	Temp.	Zinc
2002 1300J Limits																		**10^a**		**6.0-9.0**					
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**gallons**	**gallons**	**gallons**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**deg C**	**mg/L**
EQUILON ENTERPRISES, LLC - 3800 NW St. Helens Rd. (1300J)																									
11/21/1999	01	self																<5							
11/28/1999	01	self																<5							
12/4/1999	01	self																<5							
12/9/1999	01	city					22	<0.03					<0.1					6.9		5.8			3.5	7.4	0.14
12/12/1999	01	self																<5							
12/19/1999	01	self																<5							
12/26/1999	01	self																<5							
1/2/2000	01	self																<5							
1/9/2000	01	self																<5							
1/16/2000	01	self																<5							
1/23/2000	01	self																<5							
1/30/2000	01	self																<5							
2/6/2000	01	self																<5							
2/13/2000	01	self																<5							
2/19/2000	01	self																<5							
2/27/2000	01	self																<5							
3/5/2000	01	self																<5							
3/12/2000	01	self																<5							
3/19/2000	01	self																<5							
3/26/2000	01	self																<5							
4/2/2000	01	self																<5							
4/9/2000	01	self																<5							
4/16/2000	01	self																<5							
4/23/2000	01	self																<5							
4/30/2000	01	self																<5							
5/6/2000	01	self																<5							
5/14/2000	01	self																<5							
5/21/2000	01	self																<5							
5/28/2000	01	self																<5							
6/4/2000	01	self																<5							
6/11/2000	01	self																<5							
6/18/2000	01	self																<5							
6/25/2000	01	self																<5							
7/2/2000	01	self																<5							
7/9/2000	01	self																<5							
7/16/2000	01	self																<5							
7/23/2000	01	self																<5							
7/30/2000	01	self																<5							
8/5/2000	01	self																<5							
8/13/2000	01	self																<5							
8/19/2000	01	self																5							
8/26/2000	01	self																<5							
9/3/2000	01	self																<5							
9/10/2000	01	self																<5							
9/17/2000	01	self																<5							
9/24/2000	01	self																<5							
10/1/2000	01	self																<5							
10/8/2000	01	self																<5							
10/15/2000	01	self																<							
10/22/2000	01	self																<5							
11/5/2000	01	self																<5							
11/12/2000	01	self																<5							
11/19/2000	01	self																<							
11/26/2000	01	self																<5							
11/29/2000	01	city					10	<0.05					<0.2					<5		6.7			6	6.7	0.31
12/3/2000	01	self																<5							
12/10/2000	01	self																<5							
12/17/2000	01	self																<5							
12/24/2000	01	self																<5							
10/22/2001	01	city					23	<0.05					<0.2					<5					8.5	12.2	0.205
5/6/2002	01	self								11784								<5							

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Ethanol	Flow	Flow (Batch)	Flow (Daily)	Lead	Mercury	Molyb-denum	Nickel	O/G (Polar)	O/G (Total)	TPH	pH	Phosphorus (Total)	Selenium	TSS	Temp.	Zinc
2002 1300J Limits																		**10[a]**		**6.0-9.0**					
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**gallons**	**gallons**	**gallons**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**mg/L**	**deg C**	**mg/L**
EQUILON ENTERPRISES, LLC - 3800 NW St. Helens Rd. (1300J)																									
6/2/2002	01	self								0								<5							
7/7/2002	01	self										11787					<5		<5						
7/8/2002	01	self																<5							
7/29/2002	01	self										28618.6													
9/2/2002	01	self										89222.8													
10/10/2002	01	self										89222.8													
11/4/2002	01	city										48820													
12/2/2002	01	city										47136.6													
1/5/2003	01	self									0							<5							

Notes:
[a] The limit for O&G associated with this permit is 10mg/L for a monthly average and 15mg/L for a daily maximum.
The monitoring data contained in this table, while representing best available information, may contain inadvertent errors or omissions.
In addition, there may be other data available solely in the hard file.
Shaded entries indicate a exceedence of the permit limit. There are permit limits for oil & grease and pH.
Equilon filed a monitoring waiver around June 2000 (which accounts for data from January 2001 through April 2002).
< = nondetect
mg/L = milligrams per liter
ug/L = micrograms per liter
std unts = standard units
deg C = degrees centigrade

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Iron	Lead	Mercury	Nickel	O/G (Total)	pH	TSS	Temp.	Zinc
2002 1200Z Benchmarks								**0.1**		**0.4**			**10**	**5.5-9.0**	**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**deg C**	**mg/L**
GUNDERSON INC. - 4350 NW Front Ave. (1200Z)																	
1/9/1995	01	self		0.000076	6.9		73	0.061		0.048			5.2	6.9	77		0.29
1/9/1995	X02	self	0.0045	0.0043	6.5		45	0.068		0.032			1.9	6.3	42		0.29
1/9/1995	X03	self		0.003	6.4		30							6.1			2.2
1/9/1995	X04	self					15							6.8			0.19
1/9/1995	X05	self		0.000064	25		110	0.049		0.0077			10	7.2	19		0.58
1/9/1995	X06	self	0.0096	0.0039	6.4	0.071	67	0.39		0.57	0.0014	0.066	1.2	7	400		1.4
6/14/1995	01	self			5.8		25	0.026		0.01			0.88	7.3			0.092
6/14/1995	X02	self	0.0029		6.1	0.006	46	0.063		0.025			0.72	7			0.32
6/14/1995	X04	self			4.1			0.036						6.9			0.37
6/14/1995	X05	self	0.034		7.3	0.016	45	0.16		0.03			2.3	7.4			0.88
6/15/1995	X02	self													24		
6/15/1995	X05	self													44		
4/22/1996	X12	city	<0.002	0.002	3.4	<0.003	10	0.004		<0.02	0.0011	<0.004	7.6	6.9	2	12.8	2.12
1/5/1998	01	self						0.061		0.039			4.83	6.16	50	7.2	0.358
1/5/1998	07	self						0.057		0.023			1.98	6.42	20	6.8	0.306
1/5/1998	10	self						0.07		0.035			2.92	7.1	67	7.4	0.356
1/5/1998	13	self						0.014		0.001			<0.5		<10		1.35
1/5/1998	17	self						0.486		0.074			3.82	7.1	184	7.1	1.2
1/5/1998	22	self						0.293		0.245				7.14		7.5	0.779
1/5/1998	X06	self						0.013		0.001			<0.5	6.35	<10	8	0.93
1/5/1998	X08	self						0.022		0.009			0.931	6.43	<10	7.7	0.163
1/5/1998	X09	self						0.059		0.034			2.86	7.11	32	7.4	0.416
1/5/1998	X11	self						0.011					<0.5	6.61	<10	7.3	0.217
1/5/1998	X14	self						0.005		<0.001			<0.5	7.05	<0.1	8.8	0.446
1/5/1998	X16	self						0.159		0.02			1.76	7.05	25	6.9	0.478
1/5/1998	X19	self						0.317		0.047			5.44	7.5	78	6.8	0.851
1/5/1998	X20	self						0.051		0.008			0.5	6.75	<10	7.1	0.341
1/5/1998	X21	self						0.09		1.89			<0.5	6.66	1100	6.7	5.35
1/5/1998	X23	self						0.053		0.055			<0.5	7.48	<10	6.5	0.321
1/5/1998	X24	self						0.196		0.038			2.58	6.66	50	6.4	0.62
5/20/1998	17	self						0.149		0.01			<0.5	6.99	<10	14.6	0.428
5/20/1998	22	self						0.116		0.127			1.4	6.76	75	14	0.528
5/20/1998	X02	self						0.02		0.002			<0.5	7.63	<10	13.5	0.109
5/20/1998	X03	self						0.021		0.006			0.658	6.94	<10	13.5	0.147
5/20/1998	X19	self						0.134		0.011			<1.2	7.1	<10	14	0.469
10/02/1998 [1]	21	self											1.37		80		
10/02/1998 [1]	20	self											<0.5		<10		
10/02/1998 [1]	18	self											<0.5		<10		
10/02/1998 [1]	13	self											<0.5		<10		

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Iron	Lead	Mercury	Nickel	O/G (Total)	pH	TSS	Temp.	Zinc
2002 1200Z Benchmarks								**0.1**		**0.4**			**10**	**5.5-9.0**	**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**deg C**	**mg/L**
GUNDERSON INC. - 4350 NW Front Ave. (1200Z)																	
10/02/1998 [1]	12	self											1.04		<10		
10/02/1998 [1]	1	self											1.04		<10		
10/02/1998 [1]	7	self											1.16		<10		
10/02/1998 [1]	8	self											0.75		<10		
10/02/1998 [1]	9	self						0.0352		0.0033			1.96		<10		0.395
10/02/1998 [1]	11	self						0.0519		<.001			<0.5		<10		0.514
10/02/1998 [1]	10	self						0.0873		0.0046			1.29		10		1.41
10/9/1998	12E	self						0.025		0.005			0.76		<10		0.327
10/9/1998	12S	self						0.026		0.009			1.27		<10		0.618
10/9/1998	17	self						0.381		0.043			2.04		64		0.759
10/9/1998	22	self						0.088		0.049			0.78		18		0.341
10/9/1998	X03	self						0.014		0.005			<0.5		<10		0.81
10/9/1998	X05	self						0.027		0.007			2.04		<10		0.177
10/9/1998	X14	self						0.011		<0.001			<0.5		<10		0.156
10/9/1998	X16	self						0.026		<0.001			0.588		<10		0.148
10/9/1998	X19	self						0.263		0.041			1.3		75		0.494
10/9/1998	X20	self						0.128		0.013			0.91		14		0.355
10/9/1998	X24	self						0.03		0.001			<0.5		<10		0.342
1/28/1999	01	self						0.086		0.065			7.46		79		0.393
1/28/1999	07	self						0.113		0.06			7.25		131		0.4
1/28/1999	10	self						0.162		0.068			2.33		334		0.708
1/28/1999	13	self						0.038		0.003			<0.5		<10		0.28
1/28/1999	X03	self						0.012		0.008			<0.5		<10		0.26
1/28/1999	X05	self						0.039		0.02			2.26		18		0.21
1/28/1999	X06	self						0.014		0.0014			<0.5		<10		0.419
1/28/1999	X09	self						0.09		0.047			3.3		114		0.44
1/28/1999	X11	self						0.028		0.004			<0.5		<10		0.399
1/28/1999	01	city					92	0.09		<0.1			11.9	7.3	165		0.39
1/28/1999	X08	city					26	0.06		<0.1			5.8	6.1	58		0.22
1/28/1999	13	city					4	0.04		<0.1			<5	5.9	5		0.3
2/24/1999	12E	city					5	<0.03		<0.1			7.5	6.7	12		0.61
2/24/1999	12S	city					9	<0.03		<0.1			6.2	9.4	1		0.42
2/28/1999	X08	self						0.054		0.025			2.47		60		0.201
12/2/1999	01	self						0.078		0.058			24		170		0.39
12/2/1999	07	self						0.027		0.006			23		15		0.11
12/2/1999	10	self						0.043		0.34			6.5		62		0.013
12/2/1999	12E	self						0.026		<0.001			<0.5		11		0.92
12/2/1999	13	self						0.014		0.005			<0.5		7		0.07
12/2/1999	17	self						0.0076		<0.001			18		<10		0.165

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Iron	Lead	Mercury	Nickel	O/G (Total)	pH	TSS	Temp.	Zinc
2002 1200Z Benchmarks								**0.1**		**0.4**			**10**	**5.5-9.0**	**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**deg C**	**mg/L**
GUNDERSON INC. - 4350 NW Front Ave. (1200Z)																	
12/2/1999	22	self						0.316		0.408			<0.5		76		0.998
12/2/1999	X02	self						0.0085		0.0051			<0.5		<10		0.26
12/2/1999	X05	self						0.033		0.018			<5		26		0.29
12/2/1999	X08	self						0.057		0.028			<0.5		56		0.31
12/2/1999	X09	self						0.064		0.036			12		74		0.45
12/2/1999	X11	self						0.015		<0.001			8.8		<10		0.35
12/2/1999	X14	self						0.029		<0.001			<0.5		<10		0.22
12/2/1999	X16	self						0.0056		0.001			5.5		<10		0.13
12/2/1999	X18	self						0.012		<0.001			<0.5		<10		0.385
12/2/1999	X19	self						0.047		<0.001			<0.5		<10		0.798
12/2/1999	X20	self						0.046		<0.001			<0.5		<10		0.613
12/2/1999	X23	self						0.043		0.051			<0.5		24		0.28
12/2/1999	X24	self						0.0537		<0.001			<0.5		<10		0.321
5/9/2000	01	self						0.084		0.067			<5	9.33	172		0.406
5/9/2000	07	self						0.068		0.018			5	8.78	52		0.266
5/9/2000	X12	self						0.035		0.015			<5	8.29	22		0.465
5/9/2000	17	self						0.008		<0.005			<5	8.08	<5		0.137
5/9/2000	22	self						0.061		0.042			<5	7.17	30		0.33
5/10/2000	01	city					13	<0.03		<0.1			<5	6.3	13	9	1.9
12/19/2000	01	self						0.078		0.07			<5	5.5	106		0.402
12/19/2000	07	self						0.044		0.022			<5	5.5	27		0.315
12/19/2000	10	self						0.014		<0.005			<5	5.5	7		0.367
12/19/2000	17	self						0.038		<0.005			<5	5.5	<5		1.25
12/19/2000	22	self						0.258		0.314			5	5.5	86		0.808
12/19/2000	X12	self						<0.022		<0.005			<5	5.5	<5		0.326
3/28/2001	01	self						0.019		0.01			<5	8.63	8		0.127
3/28/2001	07	self						0.018		0.007			<5	8.28	5		0.122
3/28/2001	10	self						0.187		<0.005			<5	7.67	10		1.36
3/28/2001	17	self						<0.005		<0.005			<5	7.53	<5		0.16
3/28/2001	22	self						0.112		0.138			<5	7.62	20		0.444
3/28/2001	X12	self						0.125		<0.005			<5	7.65	<5		0.164
10/10/2001	01	self						0.03		0.0249			<5		50		0.185
10/10/2001	07	self						0.0204		0.0094			<5		15		0.197
10/10/2001	10	self						0.0185		<0.005			<5		8		0.193
10/10/2001	13	self						0.162		0.0111			<5		40		1.01
10/10/2001	17	self						0.0177		<0.005			<5		<5		0.464
10/10/2001	12E	self						0.0195		<0.005			<5		<5		0.402
10/10/2001	12S	self						0.0285		0.0082							1.19
10/22/2001	22	self						0.22		0.236			<5		242		0.981

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	Cadmium	TOC	Chromium	COD	Copper	Iron	Lead	Mercury	Nickel	O/G (Total)	pH	TSS	Temp.	Zinc
2002 1200Z Benchmarks								**0.1**		**0.4**			**10**	**5.5-9.0**	**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**deg C**	**mg/L**
GUNDERSON INC. - 4350 NW Front Ave. (1200Z)																	
3/6/2002	01	self						0.0449		0.0343			<5	6.5	111		0.226
3/6/2002	07	self						0.0148		<0.005			<5	6	13		0.104
3/6/2002	10	self						0.0421		0.0088			<5	6.2	41		0.357
3/6/2002	13	self						0.0979		0.005			<5	6.2	12		0.839
3/6/2002	17	self						0.0153		<0.005			<5	7.6	<5		0.268
3/6/2002	12E	self						0.0102		<0.005			<5	8.9	<5		0.0902
3/11/2002	22	self						0.0477		0.0379			<5		42		0.142
3/11/2002	12S	self						0.0281		0.0185			<5	5.8	46		0.695

Notes:
The monitoring data contained in this table, while representing best available information, may contain inadvertent errors or omissions.
In addition, there may be other data available solely in the hard file.
Shaded entries indicate an exceedence of benchmark. For the permits represented in this table, there are only benchmarks for copper, lead, zinc, oil & grease, pH, and TSS.
Additional data was found in the form of summary tables in DEQ files (1992 to 1995). No analytical laboratory reports were included with the summary tables and therefore it has not been included in this table. Based on the data shown in the DEQ summary table, there were exceedences for TSS and lead.
< = nondetect
mg/L = milligrams per liter
ug/L = micrograms per liter
std unts = standard units
deg C = degrees centigrade

Table 4A
NPDES Stoı NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	BOD-5	Cadmium	TOC	Chromium	COD	Conductivity (Specific)	Copper	Flow	Flow (Daily)	Lead	Mercury	Nickel	Nitrogen (Ammonia)	O/G (Polar)	O/G (Total)	TPH	pH	Chlorine (Residual)	TSS	Temp.	Zinc
2002 1200Z Benchmarks and 1300J Limits										**0.1**			**0.4**					**10[a]**		**5.5-9.0 (benchmark) 6.0-9.0 (Limit)**		**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**umhos/cm**		**gallons**	**gallons**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**deg C**	**mg/L**
OWENS CORNING (CORP) - 3750 NW Yeon Ave. (1200 Z and 1300J)																								
6/5/1995	X01	self	0.008			53	0.005	150		0.07			0.004		0.04									0.55
06/05/1995 [1]	X03	self	0.009		<0.001	31	0.008	83		0.04			0.017	<0.005	0.02		<3	5	<3	8.37		40		0.19
06/05/1995 [1]	X04	self			<0.001	20	0.005	58		0.02			0.015	<0.005	0.02		<3	<3	<3	6.95		95		0.11
6/13/1995	X01	self																		6.46		5		
1/9/1996	X01	self	<0.005		0.004	<1	<0.00	8		<0.02			0.002	<0.005	<0.01			<3		6.94		<1		0.04
4/1/1996	X01	self		3		2.4		28.9	79.5							<0.12		5		7.68	<0.18	77		
5/28/1997	X01	self	0.0015		0.0009	12	0.002	46		0.02			0.008	<0.0005	<0.01		<3	<3	<3	7.15		11		0.11
12/15/1997	X01	self	<0.0005		<0.0002	0.8	<0.002	6		<0.02			0.0046	<0.0005	<0.01			<3		7.12		2		0.05
9/1/1998	01	self																6.3		7.8				
10/1/1998	01	self																2.2		7.9				
11/1/1998	01	self																2.7		7.4				
12/1/1998	01	self																11		7.8				
12/28/1998	X01	self								<0.02			<0.02					<3		8		54		0.09
12/28/1998 [1]	X02	self								0.02			<0.05					<3		7.48		46		0.28
12/28/1998 [1]	X03	self								0.05			<0.05				4	7	<3	7.19		480		0.33
1/1/1999	01	self																2.6		7.6				
2/1/1999	01	self																11		7.8				
3/1/1999	01	self																8.3		6.8				
4/1/1999	01	self																7.5		7.2				
5/1/1999	01	self																5.5		7.6				
6/1/1999	01	self																7.6		7.9				
6/24/1999	X01	self								<0.02			<0.05					<3		6.78		18		0.03
7/1/1999	01	self																5		8.2				
8/1/1999	01	self																34		7.9				
9/1/1999	01	self																4.1		7.9				
10/1/1999	01	self																3.2		7.9				
11/1/1999	01	self																2.8		7.2				
12/1/1999	01	self																9.6		7.6				
1/1/2000	01	self																4.3		7.4				
2/1/2000	01	self																4.4		7.8				
3/1/2000	01	self																6.5		8.1				
4/1/2000	01	self																2.9		7.9				
4/13/2000	X01	city						4		<0.03			<0.1					<5		6.9		19	14	0.074
4/13/2000	02	city						45		<0.03			<0.1					5.3		8.3		24.4	18.1	0.47
4/13/2000	X01	self								<0.02			<0.021					<3		8.29		13		0.18
5/1/2000	01	self																15		8.4				
6/1/2000	01	self																4.7		7.2				
7/1/2000	01	self																4		7.8				
8/1/2000	01	self																5.9		7.4				
9/1/2000	01	self																6.7		7.6				
10/1/2000	01	self																4.2		7.2				
11/1/2000	01	self																3.6		7.4				
12/1/2000	01	self																2						
12/14/2000	X01	self								<0.05			<0.005					<3		9.13		71		<0.05
1/1/2001	01	self																3.3		9.5				
1/2/2001	01	self																4.3		6.8				
1/3/2001	01	self																2.9		7.5				
1/7/2001	01	self										*21700						*2.4		8.4				
1/12/2001	01	self																0.6						
2/1/2001	01	self																7.2		6.8				
3/1/2001	01	self																4.8		7.5				
3/15/2001	X01	self								<0.03			<0.005					<3		7.38		77		0.013
4/1/2001	01	self																17		7.3				
5/1/2001	01	self																4.6		7.6				
6/1/2001	01	self																7.9		8.5				
7/1/2001	01	self																13.7		8.4				
8/1/2001	01	self										*25700						*3.7		8.1				
9/1/2001	01	self										*28200						*1		8.6				
10/1/2001	01	self															4.8			8.4				
11/2/2001	01	self									*43000							9.7						
11/8/2001	01	self									*43000							<2						
11/12/2001	01	self									*43000							<2						
11/19/2001	01	self									*43000							<2						
11/19/2001	03	self								<0.03			<0.005					<3		7.09		<1		<0.05
11/27/2001	01	self									*43000							5.7						
11/30/2001	03	city						14		<0.05			<0.2					<5		6.5		4.3	6.5	<0.05
11/30/2001	02	city						15		<0.05			<0.2					<5		6.9		10	9.2	0.274
12/3/2001	01	self										*67600						3.8						
12/10/2001	01	self										*67600						4.2						
12/17/2001	01	self										*67600						4.1						
12/24/2001	01	self										*67600						<2						
1/2/2002	01	self										*118300						6.4						

Table 4A
NPDES Sto NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	Arsenic	BOD-5	Cadmium	TOC	Chromium	COD	Conductivity (Specific)	Copper	Flow	Flow (Daily)	Lead	Mercury	Nickel	Nitrogen (Ammonia)	O/G (Polar)	O/G (Total)	TPH	pH	Chlorine (Residual)	TSS	Temp.	Zinc
2002 1200Z Benchmarks and 1300J Limits										**0.1**			**0.4**					**10[a]**		**5.5-9.0 (benchmark) 6.0-9.0 (Limit)**		**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**umhos/cm**		**gallons**	**gallons**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**mg/L**	**deg C**	**mg/L**
OWENS CORNING (CORP) - 3750 NW Yeon Ave. (1200 Z and 1300J)																								
1/7/2002	01	self										*118300						6.1						
1/14/2002	01	self										*118300						5.3						
1/21/2002	01	self										*118300						12.9						
1/28/2002	01	self										*118300						<2						
2/4/2002	01	self										*55728						3.5						
2/11/2002	01	self										*55728						<2						
2/18/2002	01	self										*55728						<2						
2/25/2002	01	self										*55728						<2						
3/4/2002	01	self										*41184						19						
3/12/2002	01	self										*41184						<2			<0.1	5		
3/18/2002	01	self										*41184						<2						
3/19/2002	03	self								<0.03			<0.005					<3		7.16		15		<0.05
3/25/2002	01	self										*41184						<2						
4/1/2002	01	self										*26240						2.1			<0.1	3		
4/8/2002	01	self										*26240						4.1						
4/15/2002	01	self										*26240						<2						
4/22/2002	01	self										*26240						2.5						
4/29/2002	01	self										*26240						3.3						
5/6/2002	01	self										*25700						2.3						
5/13/2002	01	self										*25700						<2						
5/20/2002	01	self										*25700						3.2						
5/28/2002	01	self										*25700						<2						
6/3/2002	01	self										*15200						<2						
6/10/2002	01	self										*15200						3.8						
6/17/2002	01	self										*15200						<2						
6/24/2002	01	self										*15200						<2						
8/5/2002	01	self										*15200						<2						
8/12/2002	01	self										*15200						<2						
8/19/2002	01	self										*15200						3						
8/26/2002	01	self										*15200						<2						
9/3/2002	01	self										*						<2						
9/9/2002	01	self										*						<2						
9/16/2002	01	self										*						4						
9/23/2002	01	self										*						3						
9/30/2002	01	self										*						4						
10/7/2002	01	self																<2						
10/14/2002	01	self																<2						
10/21/2002	01	self																<2						
10/28/2002	01	self																<2						
11/4/2002	01	self																5						
11/11/2002	01	self																4						
11/18/2002	01	self																3						
11/25/2002	01	self																<2						
12/2/2002	01	self																3						
12/9/2002	01	self																3						
12/16/2002	01	self																<2						
12/26/2002	01	self																2						
12/31/2002	01	self																2						
1/6/2003	01	self										*						4						
1/13/2003	01	self										*						<2						
1/20/2003	01	self										*						<2						
1/27/2003	01	self										*						8						

Notes:
[a] The benchmark for O&G is 10mg/L and the limit is 10mg/L for a monthly average and 15mg/L for a daily maximum.
The monitoring data contained in this table, while representing best available information, may contain inadvertent errors or omissions.
In addition, there may be other data available solely in the hard file.
Shaded entries indicate an exceedence of benchmark or permit limit. For this permit there is a benchmark for TSS, copper, lead, and zinc and a permit limit for O&G and pH.
< = nondetect
mg/L = milligrams per liter
ug/L = micrograms per liter
std unts = standard units
deg C = degrees centigrade
* = There was flow, however no flow was reported.
*[number] = the number is an average

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	BOD-5	Cadmium	TOC	Chromium	COD	Copper	Lead	O/G (Nonpolar)	O/G (Total)	TPH	pH	TSS	Temp.	Zinc
2002 1200Z Benchmarks								**0.1**	**0.4**		**10**		**5.5-9.0**	**130**		**0.6**
			mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**std units**	**mg/L**	**deg C**	**mg/L**
UNIVAR USA INC (Van Waters & Rogers) - 3950 NW Yeon Ave. (individual permit for groundwater cleanup; incorporates 1200Z benchmarks for stormwater issues)																
1/11/2000	01	self						<0.01	0.004		<5		6.88	25		0.101
1/1/2001	03	self						0.012	0.004		<5		7.21	7		0.105
1/9/2001	01	self						0.023	0.015		<5		7.17	100		0.166
1/9/2001	02	self						0.016	0.007		<5		7	22		0.128
3/27/2001	01	self						0.01	0.008		<5		7.24	74		0.089
3/27/2001	02	self						0.01	0.0092		<5		6.61	52		0.067
3/27/2001	03	self						0.013	0.0034		5		9.24	8		0.073
11/30/2001	01	city					16	<0.05	<0.2		<5		8.1	22	6	0.1
11/30/2001	02	city					61	<0.05	<0.2		<5		6.3	268	6.2	0.075
12/12/2001	01	self						<0.01	0.005		<5		7.09	109		0.093
12/12/2001	02	self						0.022	0.019		<5		7.09	83		0.214
12/12/2001	03	self						0.023	0.009		<5		7.19	19		0.208
6/18/2002	01	self						0.0128	0.0082		12			5		0.165
6/18/2002	02	self						0.0242	0.0071		11			33		0.178
6/18/2002	03	self						0.0134	0.0082		11			50		0.243
WESTERN WIRE WORKS - 4025 NW Express Ave. (1200Z)																
11/20/1998	01	self						0.016	0.014		1.3		7.02	12		0.065
11/20/1998	X04	self						<0.001	<0.001		<1		7.02	3		0.018
5/4/1999	X04	self						0.012	0.007		<5		6.89	<5		0.12
5/7/1999	01	self						0.012	<0.005		<5		6.88	6.5		0.009
10/27/1999	01	city					26	<0.03	<0.1		11		6.4	25		0.08
10/27/1999	X04	city					2	<0.03	<0.1		8		5.5	2		0.05
6/9/2000	01	self						0.015	0.0066		5		7.05	3.5		0.028
6/9/2000	X04	self						0.015	0.0062		4		7.08	7.8		0.03
12/21/2000	X03	self						0.02	0.007		<2		6.9	<1		0.048
12/21/2000	07	self						0.032	0.104		4.5		7.1	105		0.056
4/10/2001	07	self						0.013	0.004		<2		6.95	79		0.053
4/10/2001	X03	self						0.026	0.003		12		6.95	130		0.17
11/13/2001	01	self						<0.03	<0.005		<6		6.08	12		<0.05
11/13/2001	07	self						0.08	0.083		<9		6.71	450		0.39
11/30/2001	07	city					150	0.068	0.218		<5		6.6	334	5.8	0.443
11/30/2001	01	city					9	<0.05	<0.2		10		6	38		<0.05
4/5/2002	01	self						<0.03	0.006		<10		6.84	8		0.12
4/5/2002	07	self						0.07	0.071		35		6.31	180		0.31
WEYERHAEUSER RECYCLING - 3136 NW 35th Ave. (1200Z)																
6/14/1995	01	self	5		15		47				5		6.17			
11/15/1995	01	self	<3		3.9		15			<3	<3		7	4		
2/6/1996	01	city	<10		14		12				6.7		7	63.5	14	
4/1/1996	01	self	<3		2		16			<3	<3		6.93	4		

Table 4A
NPDES Stormwater Results (1200Z and 1300J) for Industries Discharging to Outfall 18
Database Search: March 2003

Date	Location	Tester	BOD-5	Cadmium	TOC	Chromium	COD	Copper	Lead	O/G (Nonpolar)	O/G (Total)	TPH	pH	TSS	Temp.	Zinc
2002 1200Z Benchmarks								**0.1**	**0.4**		**10**		**5.5-9.0**	**130**		**0.6**
WILHELM TRUCKING CO - 3520 NW St. Helens Rd. (1200Z)																
10/8/1997	X01	self		<0.01		<0.02		0.018	0.088	<2	<2	3.7	6.3	430		0.06
10/9/1997	X01	city					6	<0.02	<0.3		19		6.3	46	10.8	0.572
2/6/1998	X01	self						0.085	0.29	3.7	9.7		5.8	430		0.33
11/4/1998	X01	self						0.02	<0.06		7		6.2	48		0.15
11/10/1998	X01	city					20	<0.03	<0.1		8.1		6.1	59		0.991
12/28/1998	X01	city					25	<0.03	<0.1		9.6		6.4	42		0.063
2/17/1999	X01	self						0.024	<0.095		5.8		6	40		0.088
3/1/1999	X01	city					29	<0.03	<0.1		5.4		6.4	84.3		0.064
10/27/1999	X01	city					200	0.12	0.12		12		6.8	426		0.48
11/24/1999	X01	self						0.075	0.1		49		6.1	520		0.32
2/24/2000	X01	self						0.042	0.08		13		6	140		0.19
11/29/2000	X01	city					41	<0.05	<0.2		16.6		7	141	4.6	0.21
12/20/2000	X01	self						0.022	0.034	3.3	4.1		6.2	180		0.16
3/12/2001	X01	self						0.07	0.08		48		6.2	120		0.71
11/28/2001	01	self						0.01	0.016		16.1		6.85	184		0.16
4/10/2002	01	self						0.025	0.009		3.4		6.87	2		0.068

Notes:
The monitoring data contained in this table, while representing best available information, may contain inadvertent errors or omissions.
In addition, there may be other data available solely in the hard file.
Shaded entries indicate an exceedence of benchmark. For the permits represented in this table, there are only benchmarks for copper, lead, zinc, oil & grease, pH, and TSS.
< = nondetect
mg/L = milligrams per liter
ug/L = micrograms per liter
std unts = standard units
deg C = degrees centigrade

org_name	locatetter	collection_	arsenic	barium	bod - 5	cadmium	carbon - dissolved organic	carbon - total organic	chloroform(as)chromium	cod	conductivi	copper	ethanol	ethyl benzene	flow	flow - batch	flow - daily	iron	lead	mercury	molybdenum	nickel	nitrogen - nitr	nitrogen - nitr	oil grease - polar	oil grease petroleum	pH	phosphorus	pot - total re	residual chlorin	silver	solids - total	solids - totmeprat	titanium	toluene	zinc
													mg/L	ug/L	gallons	gallons	gallons	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	deg C	mg/L	ug/L	
ABF FREIGHT SYSTEMS INC	01	city	1/19/1996	<0.003			0.0014		21		0.003	39	0.0099							0.01	<0.0005		0.0035				12		0.2				164			0.637
ABF FREIGHT SYSTEMS INC	01	self	3/8/1996	<0.005			0.002		15		0.016	27	0.061							0.064	<0.0002		0.017				4.3	7	0.7				631			0.36
ABF FREIGHT SYSTEMS INC	02	self	3/8/1996	<0.005			<0.002		5		0.02	<10	0.05							0.11	<0.0002		0.008				4.2	6.6	0.25				69			0.29
ABF FREIGHT SYSTEMS INC	02	city	1/19/1996	<0.003			<0.002		10		0.003	10	0.0099							0.0101	<0.0002		0.0035				1.6	6.2	0.09				160			0.14
ABF FREIGHT SYSTEMS INC	02	city	1/19/1996	<0.005			<0.002		140		0.004	140	0.005							0.018	<0.0002		<0.005				1.6	6.2	0.24				160			0.14
ABF FREIGHT SYSTEMS INC	01	city	3/3/1997				<0.001	<1		<0.003	27	<0.067	0.05						<0.02		0.0005	<0.003	<0.004				7.1				<0.02	28			<0.209
ABF FREIGHT SYSTEMS INC	02	city	3/3/1997				<0.001		2.21		0.004	200	0.027							0.061	0.0007	<0.003	0.013				17				<0.02	230			0.25
ABF FREIGHT SYSTEMS INC	02	self	4/8/1997	<0.005			<0.002	4.3			0.004	41	0.021							0.022	<0.0002		<0.005				0.9	6.6	0.025				69			0.11
ABF FREIGHT SYSTEMS INC	02	city	4/8/1997	<0.005			<0.002		27		0.013	20	0.0099							0.041	<0.0002		0.011				1	6.6	0.099				160			0.099
ABF FREIGHT SYSTEMS INC	01	city	1/23/1998									73	0.027						<0.1								20	6.6					156	9		0.068
ABF FREIGHT SYSTEMS INC	02	city	1/23/1998									260	0.092						<0.1								30	6.7					576	9.4		0.518
ABF FREIGHT SYSTEMS INC	01	self	5/8/1998	<0.005			0.023		73		0.009	260	0.29							0.11	<0.0002		0.03				5.9	6.6	0.8				150			2.2
ABF FREIGHT SYSTEMS INC	02	self	5/8/1998	<0.005			<0.005		35		0.021	230	0.079							0.078	<0.0002		0.015					6.5	1				430			0.45
ABF FREIGHT SYSTEMS INC	01	city	11/20/1998									67							<0.1							<5	15						156	14.8mg/L		0.19
ABF FREIGHT SYSTEMS INC	02	city	11/20/1998									67	0.062						<0.1								13						156	14.3		0.19
ABF FREIGHT SYSTEMS INC	01	city	2/23/1999									57	<0.03						<0.1								11						139			0.13
ABF FREIGHT SYSTEMS INC	02	city	2/23/1999									120							<0.1								21.5						330			0.25
ABF FREIGHT SYSTEMS INC	01	self	3/3/1999										0.05							0.017							<5	7.1					36			0.088
ABF FREIGHT SYSTEMS INC	02	self	3/3/1999										0.014							0.01							<5	6.4					59			0.16
ABF FREIGHT SYSTEMS INC	01	city	11/23/1999									51	0.153						<0.1								8	5.9					28			0.15
ABF FREIGHT SYSTEMS INC	02	city	11/23/1999									130	<0.03						<0.1								7.7	6.9					70			0.35
ABF FREIGHT SYSTEMS INC	01	city	12/8/1999									4	<0.03						<0.1								6.9	8					32	10.3		0.65
ABF FREIGHT SYSTEMS INC	02	city	12/8/1999									36	0.045						<0.1								11.5	7.6					132	10.3		0.13
ABF FREIGHT SYSTEMS INC	01	self	10/8/2000										0.0622							0.0679							5	6.2					230			0.359
ABF FREIGHT SYSTEMS INC	02	self	10/8/2000										0.0841							0.0916							5	6					120			0.632
ABF FREIGHT SYSTEMS INC	01	self	4/9/2000										0.0255							0.14							6.5	6.8					1020			1.45
ABF FREIGHT SYSTEMS INC	02	self	4/9/2000										0.105							0.14							6	6.7					1020			1.45
ABF FREIGHT SYSTEMS INC	01	self	3/15/2001										0.0135							0.0387							6.2	6.84					145			0.228
ABF FREIGHT SYSTEMS INC	02	self	3/15/2001										0.0343							0.0857							<5	6.85					160			0.214
ABF FREIGHT SYSTEMS INC	01	self	6/12/2001										0.0464							0.0213							<5	5.7					210			0.584
ABF FREIGHT SYSTEMS INC	02	self	6/12/2001										0.0464							0.0213							<5	5.7					210			0.584
ABF FREIGHT SYSTEMS INC	01	self	9/12/2001										0.0922							0.0533							5.2	5.7					240			0.544
ABF FREIGHT SYSTEMS INC	02	self	9/12/2001										0.0079							0.0122							<5	5.7					40			0.104
ABF FREIGHT SYSTEMS INC	01	self	3/6/2002										0.0107							0.0113							<5	5.9					76			0.165
ABF FREIGHT SYSTEMS INC	02	self	3/6/2002										0.01							0.0163							<5	5.9					77			0.345
ABF FREIGHT SYSTEMS INC	01	self	6/17/2002										0.0182							0.0267							5.5	6.1					76		0.357	0.153
ABF FREIGHT SYSTEMS INC	02	self	6/17/2002										0.0182							0.0267							<5	6.1					76		0.265	0.153
ABF FREIGHT SYSTEMS INC	13	self	9/17/2002										0.0392							0.0218							<5	6.3					88			0.237
ABF FREIGHT SYSTEMS INC	02	city	9/30/2002									140	0.0359							0.0224							6.4	6.8					241	10		0.362
ABF FREIGHT SYSTEMS INC	07	city	9/30/2002									97	0.039							0.0668							<5	6.7					178	10.9		0.34
BAY NEWS INCFTL	03	self	1/15/1996	<0.005	0.039		<0.002		7.6	<0.005	30								<0.005	0.017	<0.0002						1.9	6.3	0.23		<0.005	<0.005	24			
BAY NEWS INCFTL	07	self	1/15/1996	<0.005	0.05		<0.002		1.1	<0.005	40									0.021	<0.0002						9	6.2	<0.1		<0.005	<0.005	195			
BAY NEWS INCFTL	13	self	1/15/1996	<0.005	0.06		<0.002		1.2		0.013	47								0.021	<0.0002							6.2	<0.1		<0.005	<0.005	84			
BAY NEWS INCFTL	17	self	1/15/1996	<0.005	0.077		0.008		1.2		0.013	47								0.06	<0.0002						7.6	6.2	<0.1		<0.005	<0.005	84			
BAY NEWS INCFTL	03	self	4/11/1996	<0.005			<0.002		270		0.008	681								0.034	<0							6.5	<0.1					36			
BAY NEWS INCFTL	07	self	4/11/1996	<0.005	0.042		<0.002		7		0.008	14.4								0.027	<0.0002							6.6	0.35		<0.005	<0.005	42			
BAY NEWS INCFTL	17	self	4/11/1996	0.031	0.086		<0.002		7		0.045	61.1								0.06	<0.0002							6.2	0.23		0.014	0.037	156			
BAY NEWS INCFTL	03	self	7/15/1997	0.011			0.013		9.1		0.12	44	0.29							0.0204	<0.0002		0.099				6	6.3	0.14				30			3.2
BAY NEWS INCFTL	07	self	7/15/1997	<0.005			<0.002		9.5	<0.005	44	0.156								0.0204	<0.0002		<0.005				1.4	6.3	0.14				30			0.19
BAY NEWS INCFTL	13	self	7/15/1997	<0.005			<0.002		14	<0.005	120	0.02								0.011	<0.0002		0.005				3.1	6.4	0.12				45			0.26
BAY NEWS INCFTL	17	self	7/15/1997	0.029			0.12		44		0.46	1100	1.4							2.4	<0.0002		0.29				5.5	6.3	9.4				1030			9.6
BAY NEWS INCFTL	03	self	10/31/1997	<0.4			<0.06		52		0.068		0.019							0.3	<0.0002		<0.04				10	6.69	0.61				493			1.4
BAY NEWS INCFTL	07	self	10/31/1997	<0.4			<0.06		28		0.036		0.13							0.18	<0.0002		<0.04				30	6.67	0.59				156			
BAY NEWS INCFTL	13	self	10/31/1997	<0.4			<0.06		72		0.021		0.013						<0.15		<0.0002		<0.04				21	6.67	0.382				156			0.55
BAY NEWS INCFTL	03	self	11/6/1998										<0.25						<0.05								<5	6.8					110			0.088
BAY NEWS INCFTL	07	self	11/6/1998										<0.25						<0.05								<5	7.2					49			0.21
BAY NEWS INCFTL	13	self	11/6/1998										<0.25						<0.05								<5	6.9					50			0.19
BAY NEWS INCFTL	17	self	11/6/1998										<0.25						<0.05								7.4	7.1					36			0.27
BAY NEWS INCFTL	03	self	2/5/1999																	0.26							11	5.8					3000			
BAY NEWS INCFTL	07	self	2/5/1999																	2.6							12	5.7					7400			
BAY NEWS INCFTL	13	self	2/5/1999																	0.33							12	5.7					7400			
BAY NEWS INCFTL	17	self	2/5/1999																	1.4							58	6.1					11000			
BAY NEWS INCFTL	03	self	10/27/1999										0.046						<0.02								5.9	6.77					338			0.29
BAY NEWS INCFTL	07	self	10/27/1999										0.08							0.05							5.4	8.16					537			0.69
BAY NEWS INCFTL	13	self	10/27/1999										0.05						<0.02								10.1	7.4					230			0.23
BAY NEWS INCFTL	17	self	10/27/1999										0.06							0.04							34.3	7.4					230			0.23
BAY NEWS INCFTL	13	city	10/27/1999									57	<0.03						<0.1								10	6.7					54.3			0.13
BAY NEWS INCFTL	07	city	10/27/1999									160	<0.03						<0.1								15	7.1					348			0.56
BAY NEWS INCFTL	03	city	10/27/1999									71	<0.03						<0.1								12	6.8					54.7			0.11
BAY NEWS INCFTL	17	city	10/27/1999									240	0.13							0.1							7.1	6.9					1030			
BAY NEWS INCFTL	10	self	4/28/2000										<0.04						<0.02							<5	18.1	6.14					136			0.16
BAY NEWS INCFTL	07	self	4/28/2000										0.07						<0.02	0.04							18.1	6.54					198			1.52
BAY NEWS INCFTL	13	self	4/28/2000										<0.04							0.02							21	6.62					121			0.24
BAY NEWS INCFTL	17	self	4/28/2000										0.05							0.04							6.21	6.46					77			0.27
BURLINGTON NORTHERN RAILROAD	10	self	6/23/1998						13			760														51	72	6.55	1.1	1.1			1250			
BURLINGTON NORTHERN RAILROAD	10	self	6/23/1998	<0.005			0.003		10	0.002		120	0.04							0.023	<0.0002		<0.01					7	7.59					130			0.33
BURLINGTON NORTHERN RAILROAD	07	city	1/22/1997	0.0008			0.0005		3	0.008		170	0.02							0.024	<0.001		<0.01		<3		7	7	7.07	5	0.03 units		170			0.27
BURLINGTON NORTHERN RAILROAD	07	self	11/20/1998																														26			
BURLINGTON NORTHERN RAILROAD	07	self	6/27/1998	<0.001			0.0004		19		0.003	77	0.02							0.0068	<0.001		<0.01				<3	7.22	0.11				24			0.16
BURLINGTON NORTHERN RAILROAD	07	self	11/16/1999										0.13							0.01	<0.0003						<3	7.13					120			2.5
BURLINGTON NORTHERN RAILROAD	city	11/29/1999										15	<0.03						<0.1							<5	6.3					67			0.23
BURLINGTON NORTHERN RAILROAD	self	2/10/2001											<0.06						<0.2							4-<3	7.26					280			0.49
BURLINGTON NORTHERN RAILROAD	self	2/10/2001											0.09						<0.2	0.046						<3	7.31					280			0.49
BURLINGTON NORTHERN RAILROAD	city	3/27/2001										31	<0.05						<0.2							<5	6.1					56.6	10		0.146
BURLINGTON NORTHERN RAILROAD	self	6/1/2001											<0.05						<0.05					20		8	6.96					40			0.28
BURLINGTON NORTHERN RAILROAD	self	3/19/2002																	<0.05								27	6.71					4			<0.05
CARSON OIL TRUCK SHOP	01	city	11/20/1998										<0.03						<0.1								25	6.9					203	14.6		0.21
CARSON OIL TRUCK SHOP	01	city	11/20/1998									190	0.09						<0.1	0.029							9	5.83					139			0.22
CARSON OIL TRUCK SHOP	01	city	12/7/1998									56	0.037						<0.1							<5	7	5.7					186			0.55
CARSON OIL TRUCK SHOP	01	city	10/27/1999									140	0.07						<0.1								17	6.7					186			0.4
CARSON OIL TRUCK SHOP	01	self	11/16/1999										0.04							0.03							13	6.03					231			0.27
CARSON OIL TRUCK SHOP	01	self	2/23/2000										0.01							0.1							2	6.33					680			0.41
CARSON OIL TRUCK SHOP	01	self	6/27/2000										0.03							0.02							3	5.68					49			0.22
CARSON OIL TRUCK SHOP	01	self	10/10/2000										0.03							0.02							5	5.88					49			0.22
CARSON OIL TRUCK SHOP	01	city	11/28/2000									110	<0.05						<0.2							5.2	5.4					81	5.1		0.29
CARSON OIL TRUCK SHOP	01	self	4/2/2001										0.135						<0.02							23.2	3.69					131			2.21
CARSON OIL TRUCK SHOP	01	self	6/29/2001										0.216							4.57						62.9	6.01					655			3.56
CARSON OIL TRUCK SHOP	01	self	11/19/2001									150	0.0409						<0.2							17.4	6.7					337	11.1		0.622
CARSON OIL TRUCK SHOP	01	self	11/19/2001										0.0409							0.384							<5	6.37					337			0.622
CARSON OIL TRUCK SHOP	01	self	4/16/2002										0.023						<0.02								<5	6.26					96			0.261
CHRISTENSON OIL	01	self	10/20/1997	0.003			0.0017		32.1		0.0063	165	0.039							0.0357	0.00042		0.0053				1.03	7.39					108			0.369
CHRISTENSON OIL	01	city	11/20/1998									28	<0.03						<0.1								7.3	6.4					152	13.8mg/L		0.144
CHRISTENSON OIL	01	city	3/3/1999										<0.03						<0.1								<3	7.04					240			0.19
CHRISTENSON OIL	01	city	3/19/1999									110	0.056						<0.1								14.7	6.7					240			0.19
CHRISTENSON OIL	01	self	5/17/1999										<0.02						<0.05								<3	6.15					39			0.02
CHRISTENSON OIL	01	city	10/27/1999									87	<0.03						<0.1								23	6.6					84.6			0.16
CHRISTENSON OIL	01	self	11/21/1999										0.1						<0.05							5	16	11	6.37				73			0.29
CHRISTENSON OIL	01	self	6/27/2001										<0.052							0.09							4	7	3	6.72				760			3.9
CHRISTENSON OIL	01	self	11/29/2000										<0.05							0.016							<3			6.52				97			0.15
CHRISTENSON OIL	01	self	2/16/2001									13	<0.05						<0.2								<3			7	4.7			35			0.2
CHRISTENSON OIL	01	self	2/16/2001										<0.03							0.011							<3	7.76					35			0.2
CHRISTENSON OIL	01	self	11/19/2001										0.0339							0.0619							36	6.38					402			0.392
CHRISTENSON OIL	01	city	11/20/2001									74	0.302						<0.2								10	6.5					120	10.6		0.67
CHRISTENSON OIL	01	self	2/21/2002										<0.03							0.003							<3	7.32					21			0.15
CHRISTENSON OIL	01	self	4/16/2002										0.0954						<0.02								<5	6.26					96			0.261
COLUMBIA AMERICAN PLATING	02	city	8/11/2000							0.00325		35	0.0719							0.00001			0.316				14.2	6.2					12			0.353
COLUMBIA AMERICAN PLATING	02	city	11/12/2002							0.00295		6	0.0303							0.00074			0.43					6.2					3.7	11.6		0.486
CONTAINER MANAGEMENT SERVIC	self	1/24/2001											0.16							0.28							<3	7.04					380			0.66
CONTAINER MANAGEMENT SERVIC	self	1/24/2001											0.02							0.025							<3	7.11					10			0.22
CONTAINER MANAGEMENT SERVIC	self	1/24/2001											0.05							0.025							10	7.11					10			0.22
CONTAINER MANAGEMENT SERVIC	self	5/10/2001										<3.1								0.19							12	6.21					1180			0.62
CONTAINER MANAGEMENT SERVIC	self	5/15/2001										<0.05								0.013							9	6.46					60			0.16
CONTAINER MANAGEMENT SERVIC	self	5/10/2001										<0.01								0.014							5	6.65					53			0.16
CONTAINER MANAGEMENT SERVIC	self	11/13/2001											0.1							0.15							5	6.53					550			0.62
CONTAINER MANAGEMENT SERVIC	self	11/13/2001											0.04							0.046							<3	7.01					30			0.19
CONTAINER MANAGEMENT SERVIC	self	11/13/2001											0.36							0.034							5	6.84					49			0.17
CONTAINER MANAGEMENT SERVIC	city	2/5/2002										230	0.0403							0.0258							46.3	6.2					7790	5.1		3.01
CONTAINER MANAGEMENT SERVIC	city	2/5/2002										27	0.0403							1.12							258	6.2					7790	4.1		3.01
CONTAINER MANAGEMENT SERVIC	city	2/5/2002										44	0.0291							0.0558							<5	6.4					21	4.2		0.182
CONTAINER MANAGEMENT SERVIC	self	3/18/2002											0.09							0.019							39	6.74					80			0.25
CONTAINER MANAGEMENT SERVIC	self	3/18/2002											0.04							0.08							120						280			0.22
CONTAINER MANAGEMENT SERVIC	self	3/18/2002											0.03							0.08							10	7.11					280			0.22
CONTAINER RECOVERY INC	01	self	2/15/2001									<0.03								0.027							10	5.76					130			0.59
CONTAINER RECOVERY INC	02	self	2/15/2001									<0.03								0.045							3	6.26					170			0.27
CONTAINER RECOVERY INC	03	self	2/15/2001									<0.03								0.014							8	6.09					48			0.27
CONTAINER RECOVERY INC	04	self	2/15/2001									<0.03								0.019							4	6.43					52			0.13
CONTAINER RECOVERY INC	01	self	6/26/2001									<0.05								0.014							5	6.22					160			0.16
CONTAINER RECOVERY INC	03	self	6/26/2001									<0.05	0.05							0.054							8	6.22					160			0.16
CONTAINER RECOVERY INC	01	city	10/22/2001							98		<0.05							<0.2								<5	6.76					74	12.2		0.273
CONTAINER RECOVERY INC	03	city	10/22/2001							69		<0.05							<0.2								<5	6.62					71	12.7		0.358
CONTAINER RECOVERY INC	01	self	10/25/2002										0.12							0.032							48	7.48					180			0.59
CONTAINER RECOVERY INC	02	self	10/25/2002										0.07							0.066							12	6.87					520			3.4
CONTAINER RECOVERY INC	03	self	10/25/2002									<0.03								0.007							12	6.59					49			0.2
CONTAINER RECOVERY INC	04	self	10/25/2002									<0.03								0.007							<3	6.62					49			<0.05
CONTAINER RECOVERY INC	01	self	5/28/2002										0.03							0.022							10	6.22					32			0.24
CONTAINER RECOVERY INC	03	self	5/28/2002										0.06							0.04							22	6.23					120			0.49
CONTAINER RECOVERY INC	04	self	5/28/2002										0.06							0.012							11	4.74					76			0.34
CONTAINER RECOVERY INC	02	self	6/7/2002										0.05							0.012							12	6.42					60			0.38
CONTAINER RECOVERY INC	01	self	12/16/2002										0.04							0.028							14	6.86					290			0.21
CONTAINER RECOVERY INC	02	self	12/16/2002										0.04							0.028							14	6.86					290			0.21
CONTAINER RECOVERY INC	03	self	12/16/2002									<0.03								0.01							<5	8.92					56			0.18
CONTAINER RECOVERY INC	04	self	12/16/2002									<0.03								0.012							<5	6.79					36			0.11
EASTMAN CHEMICAL COMPANY01	self	4/11/1996				0.0001		6.4				14	0.012							0.0036								6.9								0.49
EASTMAN CHEMICAL COMPANY01	self	4/11/1996				0.0014						14	0.006													

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OWENS-CORNING (CORP.)	01	self	5/1/2000																						15		8.4				
OWENS-CORNING (CORP.)	01	self	6/1/2000																						4.7		7.2				
OWENS-CORNING (CORP.)	01	self	7/1/2000																						4		7.6				
OWENS-CORNING (CORP.)	01	self	8/1/2000																						6.9		7.4				
OWENS-CORNING (CORP.)	01	self	9/1/2000																						6.7		7.4				
OWENS-CORNING (CORP.)	01	self	10/1/2000																						6.2		7.2				
OWENS-CORNING (CORP.)	01	self	11/1/2000																						4.2		7.4				
OWENS-CORNING (CORP.)	01	self	12/1/2000																						2						
OWENS-CORNING (CORP.)	X01	self	12/14/2000					<0.05										<0.005						<3		9.13			71		<0.05
OWENS-CORNING (CORP.)	01	self	1/1/2001																						3.3		9.5				
OWENS-CORNING (CORP.)	01	self	2/2/2001																						4.3		9.8				
OWENS-CORNING (CORP.)	01	self	3/2/2001																						2.9		8.6				
OWENS-CORNING (CORP.)	01	self	4/2/2001														*21700							*2.4		8.4				
OWENS-CORNING (CORP.)	01	self	10/1/2001																						0.6						
OWENS-CORNING (CORP.)	01	self	2/1/2001																						7.2		6.8				
OWENS-CORNING (CORP.)	01	self	3/1/2001																						4.8		7.5				
OWENS-CORNING (CORP.)	01	self	4/1/2001					<0.03										<0.005						<3		7.13			77		0.013
OWENS-CORNING (CORP.)	01	self	5/1/2001																						17		7.8				
OWENS-CORNING (CORP.)	01	self	6/1/2001																						4.6		7.6				
OWENS-CORNING (CORP.)	01	self	7/1/2001																						7.9		8.5				
OWENS-CORNING (CORP.)	01	self	8/1/2001														*25700							*17		8.4				
OWENS-CORNING (CORP.)	01	self	9/1/2001														*28000							*		8.1				
OWENS-CORNING (CORP.)	01	self	11/1/2001																					4.8		8.6				
OWENS-CORNING (CORP.)	01	self	11/2/2001											*30000mg/L											9.7						
OWENS-CORNING (CORP.)	01	self	11/8/2001											*30000mg/L										<2							
OWENS-CORNING (CORP.)	01	self	11/12/2001											*35000mg/L										<2							
OWENS-CORNING (CORP.)	01	self	11/19/2001											*35000mg/L										<2							
OWENS-CORNING (CORP.)	01	self	11/26/2001					<0.03										<0.005						<3		7.09			<1		<0.05
OWENS-CORNING (CORP.)	01	self	11/27/2001											*30000mg/L											6.7						
OWENS-CORNING (CORP.)	03	city	11/20/2001			14		<0.05										<0.2						<5		6.5		4.3	6.5		<0.05
OWENS-CORNING (CORP.)	02	city	11/20/2001			15		<0.05										<0.2						<5		6.9		10	9.2		0.274
OWENS-CORNING (CORP.)	01	self	12/3/2001														*27600							3.8							
OWENS-CORNING (CORP.)	01	self	12/10/2001														*27600							4.2							
OWENS-CORNING (CORP.)	01	self	12/17/2001														*27600							4.1							
OWENS-CORNING (CORP.)	01	self	12/24/2001														*27600							<2							
OWENS-CORNING (CORP.)	01	self	1/2/2002														*18300							4.4							
OWENS-CORNING (CORP.)	01	self	1/7/2002														*18300							6.1							
OWENS-CORNING (CORP.)	01	self	1/14/2002														*18300							5.3							
OWENS-CORNING (CORP.)	01	self	1/21/2002														*18300							12.5							
OWENS-CORNING (CORP.)	01	self	1/28/2002														*18300							<2							
OWENS-CORNING (CORP.)	01	self	2/4/2002														*52728							3.5							
OWENS-CORNING (CORP.)	01	self	2/11/2002														*52728							<2							
OWENS-CORNING (CORP.)	01	self	2/18/2002														*52728							<2							
OWENS-CORNING (CORP.)	01	self	2/25/2002														*52728							<2							
OWENS-CORNING (CORP.)	01	self	3/4/2002														*41184								19						
OWENS-CORNING (CORP.)	01	self	3/12/2002														*41184							<2				<0.1	1		
OWENS-CORNING (CORP.)	01	self	3/18/2002														*41184							<2							
OWENS-CORNING (CORP.)	03	self	3/18/2002					<0.03										<0.005						<3		7.16			15		<0.05
OWENS-CORNING (CORP.)	01	self	3/25/2002														*41184							<2							
OWENS-CORNING (CORP.)	01	self	4/1/2002														*26240							2.1				<0.1	3		
OWENS-CORNING (CORP.)	01	self	4/8/2002														*26240							4.1							
OWENS-CORNING (CORP.)	01	self	4/15/2002														*26240							<2							
OWENS-CORNING (CORP.)	01	self	4/22/2002														*26240							2.5							
OWENS-CORNING (CORP.)	01	self	4/29/2002														*26240							3.3							
OWENS-CORNING (CORP.)	01	self	5/6/2002														*26240							2.3							
OWENS-CORNING (CORP.)	01	self	5/13/2002														*25700							<2							
OWENS-CORNING (CORP.)	01	self	5/20/2002														*25700							3.2							
OWENS-CORNING (CORP.)	01	self	5/28/2002														*25700							<2							
OWENS-CORNING (CORP.)	01	self	6/3/2002														*15200							<2							
OWENS-CORNING (CORP.)	01	self	6/10/2002														*15200							3.8							
OWENS-CORNING (CORP.)	01	self	6/17/2002														*15200							<2							
OWENS-CORNING (CORP.)	01	self	6/24/2002														*15200							<2							
OWENS-CORNING (CORP.)	01	self	8/5/2002														*15200							<2							
OWENS-CORNING (CORP.)	01	self	8/12/2002														*15200							<2							
OWENS-CORNING (CORP.)	01	self	8/19/2002														*15200							3							
OWENS-CORNING (CORP.)	01	self	8/26/2002														*15200							<2							
OWENS-CORNING (CORP.)	01	self	9/2/2002														*							<2							
OWENS-CORNING (CORP.)	01	self	9/9/2002														*								4						
OWENS-CORNING (CORP.)	01	self	9/16/2002														*								3						
OWENS-CORNING (CORP.)	01	self	9/23/2002														*								4						
OWENS-CORNING (CORP.)	01	self	9/30/2002														*														
OWENS-CORNING (CORP.)	01	self	10/7/2002																					<2							
OWENS-CORNING (CORP.)	01	self	10/14/2002																					<2							
OWENS-CORNING (CORP.)	01	self	10/21/2002																					<2							
OWENS-CORNING (CORP.)	01	self	10/28/2002																					<2							
OWENS-CORNING (CORP.)	01	self	11/4/2002																						6						
OWENS-CORNING (CORP.)	01	self	11/11/2002																						4						
OWENS-CORNING (CORP.)	01	self	11/18/2002																						3						
OWENS-CORNING (CORP.)	01	self	11/25/2002																					<2							
OWENS-CORNING (CORP.)	01	self	12/2/2002																						3						
OWENS-CORNING (CORP.)	01	self	12/9/2002																						3						
OWENS-CORNING (CORP.)	01	self	12/16/2002																					<2							
OWENS-CORNING (CORP.)	01	self	12/26/2002																						2						
OWENS-CORNING (CORP.)	01	self	1/6/2003														*								2						
OWENS-CORNING (CORP.)	01	self	1/13/2003														*								4						
OWENS-CORNING (CORP.)	01	self	1/20/2003														*							<2							
OWENS-CORNING (CORP.)	01	self	1/27/2003														*							<2							
UNIVAR USA INC	01	self	10/30/1998					<0.01										0.004						<5		6.88			35		0.101
UNIVAR USA INC	03	self	1/12/2001						0.052									0.004						<5		7.21			7		0.155
UNIVAR USA INC	01	self	1/9/2001						0.023									0.015						<5		7.17			100		0.166
UNIVAR USA INC	02	self	1/9/2001						0.016									0.007						<5		7			22		0.119
UNIVAR USA INC	01	self	2/27/2001						0.01									0.008						<5		7.24			74		0.089
UNIVAR USA INC	02	self	2/27/2001						0.01									0.0092						<5		6.61			52		0.067
UNIVAR USA INC	03	self	2/27/2001						0.013									0.0034							5	8.24			3		0.073
UNIVAR USA INC	01	self	11/20/2001			16		<0.05										<0.2						<5		6.3		6	298	6	0.075
UNIVAR USA INC	02	city	11/20/2001			61		<0.05										<0.2						<5		6.3			298	6.2	0.075
UNIVAR USA INC	01	self	12/12/2001					<0.01										0.005						<5		7.09			139		0.093
UNIVAR USA INC	02	self	12/12/2001						0.022									0.019						<5		7.09			33		0.214
UNIVAR USA INC	03	self	12/12/2001						0.023									0.009						<5		7.19			19		0.268
UNIVAR USA INC	01	self	6/18/2002						0.0042									0.0071							12				35		0.178
UNIVAR USA INC	02	self	6/18/2002						0.0042									0.0071							11				35		0.178
UNIVAR USA INC	03	self	6/18/2002						0.0134									0.0092							11				50		0.243
WESTERN WIRE WORKS	01	self	11/20/1998						0.016									0.014						<1		1.3	7.02		12		0.065
WESTERN WIRE WORKS	X04	self	11/20/1998					<0.001										<0.001						<1			7.02		3		0.018
WESTERN WIRE WORKS	01	self	5/7/1999						0.012									0.007						<5			6.86			<5	0.059
WESTERN WIRE WORKS	01	self	5/7/1999						0.012									<0.005						<5			6.86		6.5		0.059
WESTERN WIRE WORKS	01	city	10/27/1999			26		<0.03										<0.1							11		6.4		35		0.08
WESTERN WIRE WORKS	X04	city	10/27/1999			2		<0.03										<0.1							8		5.5		2		0.05
WESTERN WIRE WORKS	01	self	6/8/2000						0.015									0.0066							5		7.05		3.5		0.028
WESTERN WIRE WORKS	X04	self	6/8/2000						0.015									0.0062							4		7.08		7.8		0.03
WESTERN WIRE WORKS	X03	self	12/21/2000						0.02									0.007						<2			6.9			<1	0.048
WESTERN WIRE WORKS	01	self	4/10/2001						0.013									0.014						<2	4.5		6.95		105		0.053
WESTERN WIRE WORKS	07	self	4/10/2001						0.013									0.014						<2			6.95		79		0.053
WESTERN WIRE WORKS	X03	self	4/10/2001						0.026									0.003							12		6.95		130		0.17
WESTERN WIRE WORKS	01	self	11/13/2001					<0.03										<0.005						<6			6.08		12		<0.05
WESTERN WIRE WORKS	07	self	11/13/2001						0.08									0.083						<9			6.71		490		0.39
WESTERN WIRE WORKS	01	city	11/20/2001			160		<0.05	0.068									0.218						<5			6.4	5.8	26		0.313
WESTERN WIRE WORKS	01	city	11/20/2001			9		<0.05										<0.2							10		6		26		<0.05
WESTERN WIRE WORKS	01	self	4/5/2002					<0.03										0.006						<10			6.84		6		0.12
WESTERN WIRE WORKS	07	self	4/5/2002						0.07									0.071							35		6.21		180		0.31
WEYERHAEUSER RECYCLING	01	self	6/14/1996			47																			5		6.17				
WEYERHAEUSER RECYCLING	01	city	1/29/1996		<5mg/L	15														<3				<3			6		6		
WEYERHAEUSER RECYCLING	01	city	2/8/1996		<5mg/L	14																			6.7		7		63.5	14	
WEYERHAEUSER RECYCLING	01	self	4/1/1996		<5mg/L	2														<3				<3			6.93		6		
WILHELM TRUCKING CO	X01	self	10/8/1997	<0.01			<0.02		0.018									0.088		<2				<2		3.7	6.3		430		0.06
WILHELM TRUCKING CO	X01	city	10/8/1997			6		<0.02										<0.3							19		6.3		46	10.8	0.572
WILHELM TRUCKING CO	X01	self	2/9/1998						0.065									0.29				3.7			9.7		5.8		430		0.13
WILHELM TRUCKING CO	X01	self	11/4/1998						0.02									<0.06							7		6.2		48		0.15
WILHELM TRUCKING CO	X01	city	12/28/1998			20		<0.03										<0.1							11		6.4		42		0.063
WILHELM TRUCKING CO	X01	city	12/28/1998			25		<0.03										<0.1							9.6		6.4		42		0.063
WILHELM TRUCKING CO	X01	self	2/17/1999						0.024									<0.086							5.8		6		80		0.088
WILHELM TRUCKING CO	X01	city	3/1/1999			29		<0.03										<0.1							5.4		6.4		84.3		0.064
WILHELM TRUCKING CO	X01	city	10/27/1999			200			0.12									0.12							12		6.8		426		0.48
WILHELM TRUCKING CO	X01	self	2/14/2000						0.012									0.008							12		6		140		0.19
WILHELM TRUCKING CO	X01	self	2/24/2000						0.042									0.08							13		6		140		0.19
WILHELM TRUCKING CO	X01	city	11/29/2000			41		<0.05										<0.2							16.6		7		141	4.6	0.21
WILHELM TRUCKING CO	X01	self	12/20/2000						0.022									0.034				3.3			4.1		6.2		180		0.16
WILHELM TRUCKING CO	X01	self	3/12/2001						0.07									0.08							49		6.2		130		0.71
WILHELM TRUCKING CO	01	self	11/28/2001						0.01									0.014							34.1		6.85		194		0.16
WILHELM TRUCKING CO	01	self	4/10/2002						0.025									0.009							3.4		6.87		2		0.068

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Total Dissolved Solids				Method EPA 160.1		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	28	46	1
# 2	**8/9/1991**	0.31	18	113	338	1
# 2a	**10/15/1991**	0.08	12			1
# 3	**10/22/1991**	0.51	11		141	1
# 4	**12/5/1991**	1.60	33	7	12	1
# 5	**12/18/1991**	0.63	23	43	80	1
# 6	**1/10/1992**	0.48	40	154		1
# 7	**9/23/1992**	0.69	15	73	60	1
# 8	**10/29/1992**	1.29	36	43	27	1
# 9	**11/18/1992**	0.54	9	134	54	1
# 10	**1/19/1993**	0.94	19	109	55	1
#11	**4/7/1995**	0.59	16	76	68	2
#12	**10/25/1995**	0.69	17		96	2
#13	**3/3/1996**	0.80	20	92	44	2
Median				61	61	
COV				1.11	0.98	
Mean				92	86	

Total Suspended Solids				Method EPA 160.2		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	78	74	1
# 2	**8/9/1991**	0.31	18	1080	234	1
# 2a	**10/15/1991**	0.08	12			1
# 3	**10/22/1991**	0.51	11		112	1
# 4	**12/5/1991**	1.60	33	78	90	1
# 5	**12/18/1991**	0.63	23	87	99	1
# 6	**1/10/1992**	0.48	40	113		1
# 7	**9/23/1992**	0.69	15	265	142	1
# 8	**10/29/1992**	1.29	36	520	148	1
# 9	**11/18/1992**	0.54	9	92	58	1
# 10	**1/19/1993**	0.94	19	119	105	1
#11	**4/7/1995**	0.59	16	330	250	1
#12	**10/25/1995**	0.69	17		60	1
#13	**3/3/1996**	0.80	20	220	70	2
Median				182	107	
COV				1.07	0.51	
Mean				266	121	

BOD5				Method EPA 405.1		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	*96*	*6*	1
# 2	**8/9/1991**	0.31	18	68	89	1
# 2a	**10/15/1991**	0.08	12			1
# 3	**10/22/1991**	0.51	11		37	1
# 4	**12/5/1991**	1.60	33	68	2	1
# 5	**12/18/1991**	0.63	23	21	10	1
# 6	**1/10/1992**	0.48	40	160		1
# 7	**9/23/1992**	0.69	15	69	8	3
# 8	**10/29/1992**	1.29	36	24	5	3
# 9	**11/18/1992**	0.54	9	55	nd	5
# 10	**1/19/1993**	0.94	19	104	8	3
#11	**4/7/1995**	0.59	16	41	12	1
#12	**10/25/1995**	0.69	17		4	3
#13	**3/3/1996**	0.80	20	17	nd	3
Median				53	7	
COV				0.81	1.72	
Mean				69	15	

COD				Method EPA 410.4		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	226		1
# 2	**8/9/1991**	0.31	18	284	440	1
# 2a	**10/15/1991**	0.08	12			1
# 3	**10/22/1991**	0.51	11		252	1
# 4	**12/5/1991**	1.60	33	120	35	1
# 5	**12/18/1991**	0.63	23	124	37	1
# 6	**1/10/1992**	0.48	40	250		1
# 7	**9/23/1992**	0.69	15	105	65	1
# 8	**10/29/1992**	1.29	36	102	74	1
# 9	**11/18/1992**	0.54	9	34	40	1
# 10	**1/19/1993**	0.94	19	240	59	1
#11	**4/7/1995**	0.59	16	58	15	1
#12	**10/25/1995**	0.69	17		47	1
#13	**3/3/1996**	0.80	20	88	26	1
Median				124	59	
COV				0.74	1.25	
Mean				155	95	

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TKN				Method SM 420		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	1.40		0.07
# 2	**8/9/1991**	0.31	18	5.9		0.2
# 2a	**10/15/1991**	0.08	12			0.1
# 3	**10/22/1991**	0.51	11		4.0	0.2
# 4	**12/5/1991**	1.60	33	1.7	0.6	0.2
# 5	**12/18/1991**	0.63	23	1.4	1.4	0.2
# 6	**1/10/1992**	0.48	40	2.5		0.1
# 7	**9/23/1992**	0.69	15	3.2	1.4	0.1
# 8	**10/29/1992**	1.29	36	3.1	0.9	0.2
# 9	**11/18/1992**	0.54	9	0.9	1.8	0.2
# 10	**1/19/1993**	0.94	19	2.5	1.2	0.2
#11	**4/7/1995**	0.59	16	2.8	1.5	0.2
#12	**10/25/1995**	0.69	17		0.8	0.2
#13	**3/3/1996**	0.80	20	2.8	0.5	0.2
Median				2.3	1.2	
COV	**6/17/1993**			0.55	0.65	
Mean				2.6	1.4	

Ammonia Nitrogen (NH3-N)				Method SM 417 A, D		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	nd		0.14
# 2	**8/9/1991**	0.31	18	1.5		0.2
# 2a	**10/15/1991**	0.08	12			0.1
# 3	**10/22/1991**	0.51	11		1.4	0.2
# 4	**12/5/1991**	1.60	33	0.4	nd	0.2
# 5	**12/18/1991**	0.63	23	nd	0.6	0.2
# 6	**1/10/1992**	0.48	40	nd		0.1
# 7	**9/23/1992**	0.69	15	0.7	0.5	0.1
# 8	**10/29/1992**	1.29	36	0.4	0.2	0.1
# 9	**11/18/1992**	0.54	9	0.3	0.9	0.2
# 10	**1/19/1993**	0.94	19	0.5	0.6	0.2
#11	**4/7/1995**	0.59	16	nd	nd	0.2
#12	**10/25/1995**	0.69	17			
#13	**3/3/1996**	0.80	20	0.5	0.3	0.2
Median				0.3	0.4	
COV				1.48	1.18	
Mean				0.5	0.6	

Total Phosphorus				Method SM 424 C,E		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	0.47		0.05
# 2	**8/9/1991**	0.31	18	0.90		0.05
# 2a	**10/15/1991**	0.08	12			0.05
# 3	**10/22/1991**	0.51	11		0.41	0.05
# 4	**12/5/1991**	1.60	33	0.36	0.15	0.05
# 5	**12/18/1991**	0.63	23	0.39	0.22	0.05
# 6	**1/10/1992**	0.48	40	0.65		0.05
# 7	**9/23/1992**	0.69	15	0.68	0.22	0.05
# 8	**10/29/1992**	1.29	36	0.92	0.27	0.01
# 9	**11/18/1992**	0.54	9	0.68	0.61	0.05
# 10	**1/19/1993**	0.94	19	0.66	0.20	0.05
#11	**4/7/1995**	0.59	16	0.85	0.72	0.05
#12	**10/25/1995**	0.69	17		0.24	0.05
#13	**3/3/1996**	0.80	20	0.45	0.11	0.05
Median				0.61	0.27	
COV				0.34	0.65	
Mean				0.64	0.32	

Orthophosphate				Method SM 242 E		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	nd	nd	0.05
# 2	**8/9/1991**	0.31	18	0.23		0.05
# 2a	**10/15/1991**	0.08	12			0.05
# 3	**10/22/1991**	0.51	11		0.09	0.05
# 4	**12/5/1991**	1.60	33	0.12	0.11	0.05
# 5	**12/18/1991**	0.63	23	*0.13*	*0.11*	0.05
# 6	**1/10/1992**	0.48	40	0.16		0.05
# 7	**9/23/1992**	0.69	15	0.14	0.08	0.05
# 8	**10/29/1992**	1.29	36	0.06	0.02	0.01
# 9	**11/18/1992**	0.54	9	0.13	0.8	0.01
# 10	**1/19/1993**	0.94	19	0.24	0.03	0.01
#11	**4/7/1995**	0.59	16	0.02	0.01	0.01
#12	**10/25/1995**	0.69	17		0.08	0.01
#13	**3/3/1996**	0.80	20	0.02	0.04	0.01
Median				0.08	0.06	
COV				1.21	1.70	
Mean				0.13	0.12	

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Nitrate (NO3-N)				Method EPA 300		*Detection Limit*
Storm Event	***Date***	**Volume (in)**	**Duration (hrs)**	***I-1***	***T-1***	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	nd	0.17	0.05
# 2	**8/9/1991**	0.31	18	*nd*		0.10
# 2a	**10/15/1991**	0.08	12			0.10
# 3	**10/22/1991**	0.51	11		1.0	0.1
# 4	**12/5/1991**	1.60	33	nd	nd	0.3
# 5	**12/18/1991**	0.63	23	nd	0.2	0.1
# 6	**1/10/1992**	0.48	40	*nd*		0.1
# 7	**9/23/1992**	0.69	15	0.3	0.3	0.1
# 8	**10/29/1992**	1.29	36	0.3	0.1	0.1
# 9	**11/18/1992**	0.54	9	0.5	0.3	0.1
# 10	**1/19/1993**	0.94	19	0.2	1.0	0.1
#11	**4/7/1995**	0.59	16	0.14	0.1	0.01
#12	**10/25/1995**	0.69	17		0.13	0.01
#13	**3/3/1996**	0.80	20	0.29	0.14	0.01
Median				0.13	0.23	
COV				1.26	0.98	
Mean				0.21	0.32	

Total Calcium				Method EPA 200.7		*Detection Limit*
Storm Event	***Date***	**Volume (in)**	**Duration (hrs)**	***I-1***	***T-1***	mg/L (ppm)
# 1	**5/7/1991**	0.83	19			
# 2	**8/9/1991**	0.31	18	6.80	29.00	0.05
# 2a	**10/15/1991**	0.08	12	27.0		0.1
# 3	**10/22/1991**	0.51	11		18.0	0.1
# 4	**12/5/1991**	1.60	33	1.9	2.5	0.1
# 5	**12/18/1991**	0.63	23	3.7	7.3	0.1
# 6	**1/10/1992**	0.48	40	4.1		0.1
# 7	**9/23/1992**	0.69	15	5.5	5.9	0.2
# 8	**10/29/1992**	1.29	36	5	4	1
# 9	**11/18/1992**	0.54	9	6.1	7.5	0.2
# 10	**1/19/1993**	0.94	19	4.4	4.4	0.1
#11	**4/7/1995**	0.59	16	6.3	8.6	1
#12	**10/25/1995**	0.69	17	4.1	5.4	0.0125
#13	**3/3/1996**	0.80	20			
Median				5.3	7.1	
COV				0.71	0.82	
Mean				6.6	9.2	

Italicized values are considered estimates due to QA/QC review but are included in the calculations. COV is the Coefficient of Variation.
Results expressed as mg/L (ppm) unless otherwise noted.
* Value is considered an outlier and is not used in calculations.
"nd" means none detected at or above the detection limit listed. If no value is shown, the lab analysis was not performed.

Table 4B
City of Portland NPDES MS4 Permit
Outfall 18 Stormwater Quality Monitoring Data: Bacterial

Revision Date: Sept. 2002

Fecal Streptococcus		Method SM 923OC		*Detection Limit*
Storm	**Date**	***I-1***	***T-1***	colonies/100ml
# 1	**5/7/1991**	31200	43900	1
# 2	**8/9/1991**	nd	21400	1
# 3	**10/22/1991**	24000	26000	1
# 4	**12/5/1991**	28000	7500	1
# 5	**12/18/1991**	36000	1300	1
# 6	**1/10/1992**	51000	980	1
# 7	**9/23/1992**	460	560	1
# 8	**10/29/1992**	470	3000	1
# 9	**11/18/1992**	460	560	1
# 10	**1/19/1993**	1430	790	1
Median		2207	3341	
COV		587	4.1	
Mean		1295581	14019	

Enterococcus Bacteria		Method SM 923OC		*Detection Limit*
Storm	**Date**	***I-1***	***T-1***	colonies/100ml
# 1	**5/7/1991**	23	140	1
# 2	**8/9/1991**	10400	19000	1
# 3	**10/22/1991**	3000	37000	1
# 4	**12/5/1991**	9200	6100	1
# 5	**12/18/1991**	3600	3900	1
# 6	**1/10/1992**	380	920	1
# 7	**9/23/1992**	5000	1060	1
# 8	**10/29/1992**	2000	4000	1
# 9	**11/18/1992**	5000	1060	1
# 10	**1/19/1993**	900	290	1
Median		1823	2212	
COV		5.3	4.6	
Mean		9919	10400	

Fecal Coliform Bacteria		Method SM 92222D		*Detection Limit*
Storm	**Date**	***I-1***	***T-1***	colonies/100ml
# 1	**5/7/1991**	800	6000	1
# 2	**8/9/1991**	600	1300	1
# 3	**10/22/1991**	3000	41000	1
# 4	**12/5/1991**	3100	510	1
# 5	**12/18/1991**	20	60	1
# 6	**1/10/1992**	470	130	1
# 7	**9/23/1992**	80	240	1
# 8	**10/29/1992**	1300	1430	1
# 9	**11/18/1992**	80	240	1
# 10	**1/19/1993**	200	330	1
# 11	**4/7/1995**	11900	2200	1
# 12	**10/25/1995**		730	1
# 13	**3/3/1996**	10	160	10
Median		377	695	
COV		9.7	4.6	
Mean		3666	3303	

E. Coli		Method SM 9213D		*Detection Limit*
Storm	**Date**	***I-1***	***T-1***	colonies/100ml
# 11	**4/7/1995**	1800	2300	1
# 12	**10/25/1995**		770	1
# 13	**3/3/1996**	ND	10	10
Median		95	261	
COV		5776.51	62.58	
Mean		548008	16314	

"nd" means none detected at or above the detection limit listed. If no value is shown, the lab analysis was not performed
Italicized values are considered estimates due to QA/QC review but are included in the calculations. COV is the Coefficient of Variation.

Table 4B
City of Portland NPDES MS4 Permit
Outfall 18 Stormwater Quality Monitoring Data: Oil & Grease

Revision Date: Sept. 2002

Total Oil & Grease				Method SM 5520c		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	16.0	15.0	0.6
# 2	**8/9/1991**	0.31	18	7.0	13.0	0.5
# 3	**10/22/1991**	0.51	11	4.8	9.1	0.6
# 4	**12/5/1991**	1.60	33	4.5	4.2	0.5
# 5	**12/18/1991**	0.63	23	4.0	3.9	0.5
# 6	**1/10/1992**	0.48	40	12.0	4.6	0.6
# 7	**9/23/1992**	0.69	15	4.0	10.4	0.6
# 8	**10/29/1992**	1.29	36	3.0	4.5	0.6
# 9	**11/18/1992**	0.54	9	4.0	10.4	0.6
# 10	**1/19/1993**	0.94	19	11.0	12.0	0.6
#11	**4/7/1995**	0.59	16	2.0	3.0	1.0
#12	**10/25/1995**	0.69	17		6.0	2.0
#13	**3/3/1996**	0.80	20	nd	nd	0.5
Median				4.2	5.4	
COV				1.5	1.5	
Mean				7.5	9.6	

Total Petroleum Hydrocarbons				Method SM 5520f		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	12.0	11.0	0.6
# 2	**8/9/1991**	0.31	18	3.2	6.9	0.5
# 3	**10/22/1991**	0.51	11	3.0	5.9	0.6
# 4	**12/5/1991**	1.60	33	3.0	3.5	0.5
# 5	**12/18/1991**	0.63	23	2.7	2.8	0.5
# 6	**1/10/1992**	0.48	40	10.0	3.5	0.6
# 7	**9/23/1992**	0.69	15	3.0	8.6	0.6
# 8	**10/29/1992**	1.29	36	2.0	3.4	0.6
# 9	**11/18/1992**	0.54	9	3.0	8.6	0.6
# 10	**1/19/1993**	0.94	19	8.9	9.6	0.6
#11	**4/7/1995**	0.59	16	nd	nd	1.0
#12	**10/25/1995**	0.69	17		3.7	1.0
#13	**3/3/1996**	0.80	20	nd	nd	0.5
Median				2.7	3.6	
COV				1.6	1.6	
Mean				5.2	6.9	

Polar Oil & Grease				Method SM 5520 c,f		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	4.0	4.0	0.6
# 2	**8/9/1991**	0.31	18	3.8	6.1	0.5
# 3	**10/22/1991**	0.51	11	1.8	3.2	0.6
# 4	**12/5/1991**	1.60	33	1.5	0.7	0.5
# 5	**12/18/1991**	0.63	23	1.3	1.1	0.5
# 6	**1/10/1992**	0.48	40	2.0	1.1	0.6
# 7	**9/23/1992**	0.69	15	1.0	1.8	0.6
# 8	**10/29/1992**	1.29	36	1.0	1.1	0.6
# 9	**11/18/1992**	0.54	9	1.0	1.8	0.6
# 10	**1/19/1993**	0.94	19	2.1	2.4	0.6
#11	**4/7/1995**	0.59	16	1.0	nd	1.0
#12	**10/25/1995**	0.69	17		1.8	1.0
#13	**3/3/1996**	0.80	20	nd	nd	0.5
Median				1.4	1.5	
COV				0.84	1.07	
Mean				1.8	2.1	

Italicized values are considered estimates due to QA/QC review but are included in the calculations. COV is the Coefficient of Variation.
'Results expressed as mg/L (ppm) unless otherwise noted.

Table 4B
City of Portland NPDES MS4 Permit
Outfall 18 Stormwater Quality Monitoring Data: Total Metals

Revision Date: Sept. 2002

Total Antimony				Method EPA 204.2		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	nd	nd	0.003
# 2	**8/9/1991**	0.31	18	0.003	0.003	0.003
# 2a	**10/15/1991**	0.08	12	0.003		0.001
# 3	**10/22/1991**	0.51	11		0.003	0.001
# 4	**12/5/1991**	1.60	33	*nd*	*nd*	0.001
# 5	**12/18/1991**	0.63	23	nd	nd	0.001
# 6	**1/10/1992**	0.48	40	nd		0.001
# 7	**9/23/1992**	0.69	15	nd	nd	0.005
# 8	**10/29/1992**	1.29	36	nd	nd	0.005
# 9	**11/18/1992**	0.54	9			
# 10	**1/19/1993**	0.94	19	nd	nd	0.001
Median				-	-	
COV				-	-	
Mean				-	-	

Total Cadmium				Method EPA 213.2		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	0.0040	0.0008	0.0002
# 2	**8/9/1991**	0.31	18	0.0100	0.0046	0.0002
# 2a	**10/15/1991**	0.08	12	*0.0110*		0.0002
# 3	**10/22/1991**	0.51	11		0.0020	0.0002
# 4	**12/5/1991**	1.60	33	*0.0016*	*0.0005*	0.0002
# 5	**12/18/1991**	0.63	23	0.0026	0.0011	0.0002
# 6	**1/10/1992**	0.48	40	*0.0027*		0.0002
# 7	**9/23/1992**	0.69	15	0.004	nd	0.001
# 8	**10/29/1992**	1.29	36	0.0160	0.0014	0.0005
# 9	**11/18/1992**	0.54	9	nd	0.0007	0.0002
# 10	**1/19/1993**	0.94	19	0.0031	0.0012	0.0002
#11	**4/7/1995**	0.59	16	0.0040	0.0016	0.0002
#12	**10/25/1995**	0.69	17		0.0006	0.0003
#13	**3/3/1996**	0.80	20	*0.0012*	*nd*	0.0005
Median				0.0030	0.0010	
COV				2.15	0.90	
Mean				0.0071	0.0013	

Total Arsenic				Method EPA 206.2		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	nd	0.001	0.001
# 2	**8/9/1991**	0.31	18	0.006	0.005	0.001
# 2a	**10/15/1991**	0.08	12	0.005		0.001
# 3	**10/22/1991**	0.51	11		0.008	0.001
# 4	**12/5/1991**	1.60	33	nd	nd	0.005
# 5	**12/18/1991**	0.63	23	nd	nd	0.005
# 6	**1/10/1992**	0.48	40	nd		0.005
# 7	**9/23/1992**	0.69	15	nd	nd	0.005
# 8	**10/29/1992**	1.29	36	0.007	nd	0.005
# 9	**11/18/1992**	0.54	9			
# 10	**1/19/1993**	0.94	19	nd	nd	0.005
Median				-	-	
COV				-	-	
Mean				-	-	

Total Chromium				Method EPA 218.2		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	0.023	0.008	0.001
# 2	**8/9/1991**	0.31	18	0.042	0.019	0.001
# 2a	**10/15/1991**	0.08	12	0.041		0.001
# 3	**10/22/1991**	0.51	11		0.014	0.001
# 4	**12/5/1991**	1.60	33	0.009	0.009	0.001
# 5	**12/18/1991**	0.63	23	0.012	0.009	0.001
# 6	**1/10/1992**	0.48	40	*0.015*		0.001
# 7	**9/23/1992**	0.69	15	0.022	0.005	0.001
# 8	**10/29/1992**	1.29	36	*0.068*	0.012	0.001
# 9	**11/18/1992**	0.54	9			
# 10	**1/19/1993**	0.94	19	0.013	0.008	0.001
Median				0.022	0.010	
COV				0.76	0.42	
Mean				0.028	0.011	

Table 4B
City of Portland NPDES MS4 Permit
Outfall 18 Stormwater Quality Monitoring Data: Total Metals

Revision Date: Sept. 2002

Total Beryllium				Method EPA 200.7		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	nd	nd	0.0002
# 2	**8/9/1991**	0.31	18	nd	0.0004	0.0002
# 2a	**10/15/1991**	0.08	12	0.0002		0.0002
# 3	**10/22/1991**	0.51	11		0.0002	0.0002
# 4	**12/5/1991**	1.60	33	nd	nd	0.0002
# 5	**12/18/1991**	0.63	23	nd	nd	0.0002
# 6	**1/10/1992**	0.48	40	nd		0.0002
# 7	**9/23/1992**	0.69	15	nd	nd	0.0002
# 8	**10/29/1992**	1.29	36	0.0002	nd	0.0002
# 9	**11/18/1992**	0.54	9			
# 10	**1/19/1993**	0.94	19	nd	nd	0.0002
Median				-	-	
COV				-	-	
Mean				-	-	

Total Copper				Method EPA 200.7		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	0.031	0.024	0.001
# 2	**8/9/1991**	0.31	18	0.100	0.130	0.002
# 2a	**10/15/1991**	0.08	12	0.110		0.001
# 3	**10/22/1991**	0.51	11		0.053	0.001
# 4	**12/5/1991**	1.60	33	0.021	0.019	0.001
# 5	**12/18/1991**	0.63	23	0.032	0.022	0.001
# 6	**1/10/1992**	0.48	40	0.028		0.001
# 7	**9/23/1992**	0.69	15	0.082	0.037	0.001
# 8	**10/29/1992**	1.29	36	0.120	0.029	0.004
# 9	**11/18/1992**	0.54	9	0.031	0.009	0.001
# 10	**1/19/1993**	0.94	19	0.039	0.026	0.003
#11	**4/7/1995**	0.59	16	0.057	0.052	0.001
#12	**10/25/1995**	0.69	17		0.019	0.001
#13	**3/3/1996**	0.80	20	0.032	0.008	0.001
Median				0.048	0.027	
COV				0.67	0.89	
Mean				0.058	0.036	

Total Lead				Method EPA 239.2		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	0.016	0.025	0.001
# 2	**8/9/1991**	0.31	18	0.120	0.080	0.001
# 2a	**10/15/1991**	0.08	12	*0.057*		0.001
# 3	**10/22/1991**	0.51	11		0.018	0.001
# 4	**12/5/1991**	1.60	33	*0.033*	*0.043*	0.001
# 5	**12/18/1991**	0.63	23	0.048	0.028	0.001
# 6	**1/10/1992**	0.48	40	*0.030*		0.001
# 7	**9/23/1992**	0.69	15	0.075	0.033	0.001
# 8	**10/29/1992**	1.29	36	0.170	0.068	0.001
# 9	**11/18/1992**	0.54	9	0.027	0.013	0.001
# 10	**1/19/1993**	0.94	19	0.036	0.032	0.001
#11	**4/7/1995**	0.59	16	0.080	0.080	0.001
#12	**10/25/1995**	0.69	17		*0.019*	0.005
#13	**3/3/1996**	0.80	20	*0.044*	*0.013*	0.001
Median				0.050	0.031	
COV				0.75	0.72	
Mean				0.062	0.038	

Total Silver				Method EPA 272.2		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	0.0010	0.0003	0.0002
# 2	**8/9/1991**	0.31	18	0.0023	0.0002	0.0002
# 2a	**10/15/1991**	0.08	12	*0.0008*		0.0002
# 3	**10/22/1991**	0.51	11		nd	0.0002
# 4	**12/5/1991**	1.60	33	0.0003	nd	0.0002
# 5	**12/18/1991**	0.63	23	0.0004	nd	0.0002
# 6	**1/10/1992**	0.48	40	nd		0.0002
# 7	**9/23/1992**	0.69	15	0.001	nd	0.001
# 8	**10/29/1992**	1.29	36	0.0003	nd	0.0002
# 9	**11/18/1992**	0.54	9	nd	nd	0.0002
# 10	**1/19/1993**	0.94	19	0.0004	nd	0.0002
#11	**4/7/1995**	0.59	16	0.0008	nd	0.0002
#12	**10/25/1995**	0.69	17		0.0004	0.0003
#13	**3/3/1996**	0.80	20	*nd*	*nd*	0.0005
Median				0.0004	-	
COV				1.20	-	
Mean				0.0007	-	

Table 4B
City of Portland NPDES MS4 Permit
Outfall 18 Stormwater Quality Monitoring Data: Total Metals

Revision Date: Sept. 2002

Total Mercury				Method EPA 245.1		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	nd	nd	0.005
# 2	**8/9/1991**	0.31	18	nd	nd	0.005
# 2a	**10/15/1991**	0.08	12	nd		0.0005
# 3	**10/22/1991**	0.51	11		nd	0.0005
# 4	**12/5/1991**	1.60	33	nd	nd	0.0005
# 5	**12/18/1991**	0.63	23	nd	nd	0.0005
# 6	**1/10/1992**	0.48	40	nd		0.0005
# 7	**9/23/1992**	0.69	15	nd	nd	0.0005
# 8	**10/29/1992**	1.29	36	nd	nd	0.0005
# 9	**11/18/1992**	0.54	9			
# 10	**1/19/1993**	0.94	19	nd	nd	0.0005
Median				-	-	
COV				-	-	
Mean				-	-	

Total Selenium				Method EPA 270.3		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	nd	nd	0.0005
# 2	**8/9/1991**	0.31	18	nd	nd	0.001
# 2a	**10/15/1991**	0.08	12	0.002		0.001
# 3	**10/22/1991**	0.51	11		0.002	0.001
# 4	**12/5/1991**	1.60	33	nd	nd	0.001
# 5	**12/18/1991**	0.63	23	nd	nd	0.001
# 6	**1/10/1992**	0.48	40	*nd*		0.001
# 7	**9/23/1992**	0.69	15	nd	nd	0.005
# 8	**10/29/1992**	1.29	36	nd	nd	0.005
# 9	**11/18/1992**	0.54	9			
# 10	**1/19/1993**	0.94	19	nd	nd	0.0005
Median				-	-	
COV				-	-	
Mean				-	-	

Total Nickel				Method EPA 200.7		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	0.044	0.005	0.001
# 2	**8/9/1991**	0.31	18	0.110	0.030	0.002
# 2a	**10/15/1991**	0.08	12	0.029		0.002
# 3	**10/22/1991**	0.51	11		0.014	0.002
# 4	**12/5/1991**	1.60	33	0.010	0.004	0.002
# 5	**12/18/1991**	0.63	23	0.016	0.005	0.002
# 6	**1/10/1992**	0.48	40	*0.014*		0.002
# 7	**9/23/1992**	0.69	15	0.058	0.006	0.002
# 8	**10/29/1992**	1.29	36	0.072	0.012	0.002
# 9	**11/18/1992**	0.54	9			
# 10	**1/19/1993**	0.94	19	0.016	0.008	0.002
Median				0.030	0.008	
COV				1.01	0.76	
Mean				0.043	0.011	

Total Thallium				Method EPA 279.2		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	nd	nd	0.001
# 2	**8/9/1991**	0.31	18	nd	0.001	0.001
# 2a	**10/15/1991**	0.08	12	nd		0.001
# 3	**10/22/1991**	0.51	11		nd	0.001
# 4	**12/5/1991**	1.60	33	nd	nd	0.001
# 5	**12/18/1991**	0.63	23	nd	nd	0.001
# 6	**1/10/1992**	0.48	40	*nd*		0.001
# 7	**9/23/1992**	0.69	15	nd	nd	0.005
# 8	**10/29/1992**	1.29	36	nd	nd	0.005
# 9	**11/18/1992**	0.54	9			
# 10	**1/19/1993**	0.94	19	nd	nd	0.001
Median				-	-	
COV				-	-	
Mean				-	-	

Table 4B
City of Portland NPDES MS4 Permit
Outfall 18 Stormwater Quality Monitoring Data: Total Metals

Revision Date: Sept. 2002

Total Zinc				**Method EPA 200.7**		***Detection Limit***
Storm Event	***Date***	**Volume (in)**	**Duration (hrs)**	***I-1***	***T-1***	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	0.28	0.125	0.001
# 2	**8/9/1991**	0.31	18	0.72	0.730	0.005
# 2a	**10/15/1991**	0.08	12	8.10		0.001
# 3	**10/22/1991**	0.51	11		0.480	0.001
# 4	**12/5/1991**	1.60	33	0.19	0.123	0.001
# 5	**12/18/1991**	0.63	23	0.35	0.180	0.001
# 6	**1/10/1992**	0.48	40	*0.33*		0.001
# 7	**9/23/1992**	0.69	15	0.54	0.160	0.01
# 8	**10/29/1992**	1.29	36	0.69	0.250	0.003
# 9	**11/18/1992**	0.54	9	0.62	0.120	0.01
# 10	**1/19/1993**	0.94	19	0.40	0.140	0.01
#11	**4/7/1995**	0.59	16	0.40	0.340	0.001
#12	**10/25/1995**	0.69	17		0.190	0.001
#13	**3/3/1996**	0.80	20	0.67	0.050	0.001
Median				0.558	0.189	
COV				1.18	0.81	
Mean				0.864	0.244	

Italicized values are considered estimates due to QA/QC review but are included in the calculations. COV is the Coefficient of Variation.
Results expressed as mg/L (ppm) unless otherwise noted.
"nd" means none detected at or above the detection limit listed. If no value is shown, the lab analysis was not performed.

Table 4B
City of Portland NPDES MS4 Permit
Outfall 18 Stormwater Quality Monitoring Data: Dissolved Metals

Revision Date: Sept. 2002

Dissolved Antimony				Method EPA 204.2		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	nd	nd	0.003
# 2	**8/9/1991**	0.31	18	nd	nd	0.003
# 2a	**10/15/1991**	0.08	12	0.004		0.001
# 3	**10/22/1991**	0.51	11		nd	0.001
# 4	**12/5/1991**	1.60	33	*nd*	*nd*	0.001
# 5	**12/18/1991**	0.63	23	nd	nd	0.001
# 6	**1/10/1992**	0.48	40	nd		0.001
# 7	**9/23/1992**	0.69	15	nd	nd	0.005
# 8	**10/29/1992**	1.29	36	nd	nd	0.002
# 9	**11/18/1992**	0.54	9			
# 10	**1/19/1993**	0.94	19	nd	nd	0.001
Median				-	-	
COV				-	-	
Mean				-	-	

Dissolved Arsenic				Method EPA 206.2		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	nd	nd	0.001
# 2	**8/9/1991**	0.31	18	*0.001*	0.002	0.001
# 2a	**10/15/1991**	0.08	12	0.002		0.001
# 3	**10/22/1991**	0.51	11		0.002	0.001
# 4	**12/5/1991**	1.60	33	nd	nd	0.005
# 5	**12/18/1991**	0.63	23	nd	nd	0.005
# 6	**1/10/1992**	0.48	40	nd		0.005
# 7	**9/23/1992**	0.69	15	nd	nd	0.005
# 8	**10/29/1992**	1.29	36	nd	nd	0.005
# 9	**11/18/1992**	0.54	9			
# 10	**1/19/1993**	0.94	19	nd	nd	0.005
Median				-	-	
COV				-	-	
Mean				-	-	

Dissolved Beryllium				Method EPA 200.7		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19			
# 2	**8/9/1991**	0.31	18	nd	nd	0.0002
# 2a	**10/15/1991**	0.08	12	nd	nd	0.0002
# 3	**10/22/1991**	0.51	11	nd		0.0002
# 4	**12/5/1991**	1.60	33		nd	0.0002
# 5	**12/18/1991**	0.63	23	nd	nd	0.0002
# 6	**1/10/1992**	0.48	40	nd	nd	0.0002
# 7	**9/23/1992**	0.69	15	nd		0.0002
# 8	**10/29/1992**	1.29	36	nd	nd	0.0002
# 9	**11/18/1992**	0.54	9	nd	nd	0.0002
# 10	**1/19/1993**	0.94	19	nd	nd	0.0002
Median				-	-	
COV				-	-	
Mean				-	-	

Dissolved Chromium				Method EPA 218.2		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	0.007	0.002	0.001
# 2	**8/9/1991**	0.31	18	0.009	0.005	0.001
# 2a	**10/15/1991**	0.08	12	0.013		0.001
# 3	**10/22/1991**	0.51	11		0.006	0.001
# 4	**12/5/1991**	1.60	33	0.004	0.003	0.001
# 5	**12/18/1991**	0.63	23	0.004	0.003	0.001
# 6	**1/10/1992**	0.48	40	0.004		0.001
# 7	**9/23/1992**	0.69	15	nd	0.001	0.001
# 8	**10/29/1992**	1.29	36	nd	nd	0.001
# 9	**11/18/1992**	0.54	9			
# 10	**1/19/1993**	0.94	19	0.003	0.001	0.001
Median				0.003	0.002	
COV				1.67	1.06	
Mean				0.006	0.003	

Table 4B
City of Portland NPDES MS4 Permit
Outfall 18 Stormwater Quality Monitoring Data: Dissolved Metals

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Dissolved Cadmium				Method EPA 213.2		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	0.0030	0.0006	0.0002
# 2	**8/9/1991**	0.31	18	nd	nd	0.004
# 2a	**10/15/1991**	0.08	12	*0.0057*		0.0002
# 3	**10/22/1991**	0.51	11		0.0007	0.0002
# 4	**12/5/1991**	1.60	33	0.0017	0.0003	0.0002
# 5	**12/18/1991**	0.63	23	0.0026	0.0008	0.0002
# 6	**1/10/1992**	0.48	40	0.0025		0.0002
# 7	**9/23/1992**	0.69	15	nd	nd	0.001
# 8	**10/29/1992**	1.29	36	0.0005	nd	0.0005
# 9	**11/18/1992**	0.54	9	0.003	nd	0.0002
# 10	**1/19/1993**	0.94	19	0.0019	0.0009	0.0002
#11	**4/7/1995**	0.59	16	0.0005	nd	0.0002
#12	**10/25/1995**	0.69	17		nd	0.0003
#13	**3/3/1996**	0.80	20	0.0005	nd	0.0005
Median				0.0015	-	
COV				1.06	-	
Mean				0.0022	-	

Dissolved Copper				Method EPA 200.7		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	0.016	0.009	0.001
# 2	**8/9/1991**	0.31	18	0.006	0.037	0.002
# 2a	**10/15/1991**	0.08	12	0.031		0.001
# 3	**10/22/1991**	0.51	11		0.031	0.001
# 4	**12/5/1991**	1.60	33	0.007	*0.003*	0.001
# 5	**12/18/1991**	0.63	23	0.008	0.007	0.001
# 6	**1/10/1992**	0.48	40	0.008		0.001
# 7	**9/23/1992**	0.69	15	0.012	0.014	0.005
# 8	**10/29/1992**	1.29	36	0.004	0.006	0.001
# 9	**11/18/1992**	0.54	9	0.002	nd	0.001
# 10	**1/19/1993**	0.94	19	0.011	0.007	0.003
#11	**4/7/1995**	0.59	16	0.005	0.004	0.001
#12	**10/25/1995**	0.69	17		0.004	0.001
#13	**3/3/1996**	0.80	20	0.003	0.003	0.001
Median				0.007	0.006	
COV				0.87	1.64	
Mean				0.010	0.012	

Dissolved Iron				Method EPA 200.7		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19			
# 2	**8/9/1991**	0.31	18	1.80	0.62	0.02
# 2a	**10/15/1991**	0.08	12	6.70		0.05
# 3	**10/22/1991**	0.51	11		0.30	0.05
# 4	**12/5/1991**	1.60	33	0.15	0.10	0.05
# 5	**12/18/1991**	0.63	23	0.28	0.33	0.05
# 6	**1/10/1992**	0.48	40	0.70		0.05
# 7	**9/23/1992**	0.69	15	0.50	0.10	0.05
# 8	**10/29/1992**	1.29	36	0.2	0.2	0.1
# 9	**11/18/1992**	0.54	9	0.91	0.15	0.05
# 10	**1/19/1993**	0.94	19	0.65	0.10	0.05
Median				0.65	0.19	
COV				1.71	0.76	
Mean				1.29	0.24	

Dissolved Mercury				Method EPA 245.1		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	nd	nd	0.005
# 2	**8/9/1991**	0.31	18	nd	nd	0.005
# 2a	**10/15/1991**	0.08	12	nd		0.005
# 3	**10/22/1991**	0.51	11		nd	0.005
# 4	**12/5/1991**	1.60	33	nd	nd	0.005
# 5	**12/18/1991**	0.63	23	nd	nd	0.005
# 6	**1/10/1992**	0.48	40	nd		0.005
# 7	**9/23/1992**	0.69	15	nd	nd	0.005
# 8	**10/29/1992**	1.29	36	nd	nd	0.005
# 9	**11/18/1992**	0.54	9			
# 10	**1/19/1993**	0.94	19	nd	nd	0.005
Median				-	-	
COV				-	-	
Mean				-	-	

Table 4B
City of Portland NPDES MS4 Permit
Outfall 18 Stormwater Quality Monitoring Data: Dissolved Metals

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Dissolved Lead				Method EPA 239.2		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	nd	0.001	0.0010
# 2	**8/9/1991**	0.31	18	0.001	0.002	0.0010
# 2a	**10/15/1991**	0.08	12	*0.008*		0.0010
# 3	**10/22/1991**	0.51	11		0.004	0.0010
# 4	**12/5/1991**	1.60	33	*0.009*	*0.008*	0.0010
# 5	**12/18/1991**	0.63	23	*0.005*	*0.006*	0.0010
# 6	**1/10/1992**	0.48	40	*0.001*		0.0010
# 7	**9/23/1992**	0.69	15	nd	0.001	0.0010
# 8	**10/29/1992**	1.29	36	0.001	0.001	0.0010
# 9	**11/18/1992**	0.54	9	nd	nd	0.0010
# 10	**1/19/1993**	0.94	19	0.002	0.001	0.0010
#11	**4/7/1995**	0.59	16	nd	nd	0.0010
#12	**10/25/1995**	0.69	17		0.001	0.0003
#13	**3/3/1996**	0.80	20	0.002	0.003	0.0010
Median				0.001	0.002	
COV				1.50	1.15	
Mean				0.003	0.002	

Dissolved Nickel				Method EPA 200.7		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	0.040	0.003	0.001
# 2	**8/9/1991**	0.31	18	0.080	0.019	0.002
# 2a	**10/15/1991**	0.08	12	0.024		0.002
# 3	**10/22/1991**	0.51	11		0.010	0.002
# 4	**12/5/1991**	1.60	33	0.008	0.002	0.002
# 5	**12/18/1991**	0.63	23	0.011	0.004	0.002
# 6	**1/10/1992**	0.48	40	0.011		0.002
# 7	**9/23/1992**	0.69	15	0.045	0.004	0.002
# 8	**10/29/1992**	1.29	36	0.018	0.002	0.002
# 9	**11/18/1992**	0.54	9			
# 10	**1/19/1993**	0.94	19	0.011	0.002	0.002
Median				0.021	0.004	
COV				0.93	0.99	
Mean				0.028	0.006	

Dissolved Magnesium				Method EPA 200.7		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19			
# 2	**8/9/1991**	0.31	18	0.720	2.600	0.005
# 2a	**10/15/1991**	0.08	12	2.20		0.05
# 3	**10/22/1991**	0.51	11		1.70	0.05
# 4	**12/5/1991**	1.60	33	0.19	0.17	0.05
# 5	**12/18/1991**	0.63	23	0.43	0.61	0.05
# 6	**1/10/1992**	0.48	40	0.49		0.05
# 7	**9/23/1992**	0.69	15	0.76	0.53	0.05
# 8	**10/29/1992**	1.29	36	0.5	0.3	0.1
# 9	**11/18/1992**	0.54	9	0.66	0.68	0.05
# 10	**1/19/1993**	0.94	19	0.55	0.39	0.05
Median				0.591	0.611	
COV				0.71	1.10	
Mean				0.726	0.906	

Dissolved Selenium				Method EPA 270.3		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	nd	nd	0.0005
# 2	**8/9/1991**	0.31	18	nd	nd	0.001
# 2a	**10/15/1991**	0.08	12	0.001		0.001
# 3	**10/22/1991**	0.51	11		0.001	0.001
# 4	**12/5/1991**	1.60	33	nd	nd	0.001
# 5	**12/18/1991**	0.63	23	nd	nd	0.001
# 6	**1/10/1992**	0.48	40	*nd*		0.001
# 7	**9/23/1992**	0.69	15	nd	nd	0.005
# 8	**10/29/1992**	1.29	36	nd	nd	0.001
# 9	**11/18/1992**	0.54	9			
# 10	**1/19/1993**	0.94	19	nd	nd	0.005
Median				-	-	
COV				-	-	
Mean				-	-	

Table 4B
City of Portland NPDES MS4 Permit
Outfall 18 Stormwater Quality Monitoring Data: Dissolved Metals

Revision Date: Sept. 2002

Dissolved Silver				Method EPA 272.2		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	0.0002	nd	0.0002
# 2	**8/9/1991**	0.31	18	0.0005	0.0006	0.0002
# 2a	**10/15/1991**	0.08	12	nd		0.0002
# 3	**10/22/1991**	0.51	11		nd	0.0002
# 4	**12/5/1991**	1.60	33	*nd*	*nd*	0.0002
# 5	**12/18/1991**	0.63	23	nd	nd	0.0002
# 6	**1/10/1992**	0.48	40	*nd*		0.0002
# 7	**9/23/1992**	0.69	15	nd	nd	0.001
# 8	**10/29/1992**	1.29	36	nd	nd	0.0002
# 9	**11/18/1992**	0.54	9	nd	nd	0.0002
# 10	**1/19/1993**	0.94	19	0.0003	nd	0.0002
#11	**4/7/1995**	0.59	16	nd	nd	0.0002
#12	**10/25/1995**	0.69	17		nd	0.0003
#13	**3/3/1996**	0.80	20	nd	nd	0.0005
Median				-	-	
COV				-	-	
Mean				-	-	

Dissolved Zinc				Method EPA 200.7		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	0.24	0.056	0.001
# 2	**8/9/1991**	0.31	18	0.35	0.478	0.005
# 2a	**10/15/1991**	0.08	12	7.30		0.001
# 3	**10/22/1991**	0.51	11		0.200	0.001
# 4	**12/5/1991**	1.60	33	0.12	0.046	0.001
# 5	**12/18/1991**	0.63	23	0.25	0.083	0.001
# 6	**1/10/1992**	0.48	40	0.29		0.001
# 7	**9/23/1992**	0.69	15	0.41	0.10	0.01
# 8	**10/29/1992**	1.29	36	0.16	0.058	0.002
# 9	**11/18/1992**	0.54	9	0.38	0.07	0.01
# 10	**1/19/1993**	0.94	19	0.39	0.11	0.01
#11	**4/7/1995**	0.59	16	0.13	0.06	0.001
#12	**10/25/1995**	0.69	17		0.028	0.001
#13	**3/3/1996**	0.80	20	0.37	0.029	0.001
Median				0.339	0.077	
COV				1.44	0.94	
Mean				0.596	0.106	

Dissolved Thallium				Method EPA 279.2		*Detection Limit*
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*	mg/L (ppm)
# 1	**5/7/1991**	0.83	19	nd	nd	0.001
# 2	**8/9/1991**	0.31	18	nd	nd	0.001
# 2a	**10/15/1991**	0.08	12	*nd*		0.001
# 3	**10/22/1991**	0.51	11		nd	0.001
# 4	**12/5/1991**	1.60	33	nd	nd	0.001
# 5	**12/18/1991**	0.63	23	nd	nd	0.001
# 6	**1/10/1992**	0.48	40	nd		0.001
# 7	**9/23/1992**	0.69	15	nd	nd	0.005
# 8	**10/29/1992**	1.29	36	nd	nd	0.002
# 9	**11/18/1992**	0.54	9			
# 10	**1/19/1993**	0.94	19	nd	nd	0.001
Median				-	-	
COV				-	-	
Mean				-	-	

Dissolved Hardness				Method SM 314a	
Storm Event	*Date*	Volume (in)	Duration (hrs)	*I-1*	*T-1*
# 1	**5/7/1991**	0.83	19	12	19
# 2	**8/9/1991**	0.31	18	20	610
# 2a	**10/15/1991**	0.08	12	76	
# 3	**10/22/1991**	0.51	11		52
# 4	**12/5/1991**	1.60	33	5.5	6.9
# 5	**12/18/1991**	0.63	23	11	21
# 6	**1/10/1992**	0.48	40	12	
# 7	**9/23/1992**	0.69	15	17	17
# 8	**10/29/1992**	1.29	36	14	11
# 9	**11/18/1992**	0.54	9	18	22
# 10	**1/19/1993**	0.94	19	13	13
#11	**4/7/1995**	0.59	16	8	12
#12	**10/25/1995**	0.69	17		12
#13	**3/3/1996**	0.80	20	21	70
Median				15	25
COV				0.71	1.80
Mean				18	51

Italicized values are considered estimates due to QA/QC review but are included in the calculations. COV is the Coefficient of Variation.
Results expressed as mg/L (ppm) unless otherwise noted.
"nd" means none detected at or above the detection limit listed. If no value is shown, the lab analysis was not performed.

Table 8
Outfall 18 EPA RCRA Treatment Storage Disposal updated: March 2003[1]

RNO	Address	EPA ID	TRI Facility ID	Name
R084303350	3000 NW St Helens Rd. 97210	ORD027750654		Container Management Services, LLC.
R084303610	3003 NW 35th Ave. 97210	ORD068788926	97210CLMBM3003N	Columbia American Plating
R941291370	3322 NW 35th Ave. 97210	ORD115485989	97210SHLND3322N	Ashland Distribution Company
R347600840	3333 NW Industrial St. 97210 [2]	ORD027747518		Pfizer Distributing Center
R941190330	3800 NW St Helens Rd. 97210	ORD000641639	97210QLNPR3800N	Equilon Portland Terminal
R941200170	3950 NW Yeon Ave. 97210	ORD009227398	97210VNWTR3920N	Vopak USA Inc.
R941190700	4155 NW Yeon Ave 97210	ORD002277085	97210THMCC4155N	McWhorter Techs. Inc.
R941200500	4350 NW Front Ave. 97210	ORD009027368 ORD131974057	97210GNDRS4350N	Gunderson Inc.
	4466 NW Yeon Ave. 97210 [3]	ORD083647347	97210DRNDS4466N	Dura Industries Incorporated

1. This update did not include performing a new search of the EPA RCRA TSD database. That search was last performed in August 2002.
2. Indicates that this site is actually located in Basin 17, but is close to the Outfall 18 border.
3. Indicates that this site is actually located in Basin 19, but is close to the Outfall 18 border.

Table 9
Outfall 18 DEQ Environmental Cleanup Site Information List

updated: March 2003[1]

RNO	Address	Company	ECSI ID	CERCLIS	Action	DEQ Project Manager	Status
R941290710	3333 NW 35th Ave.	ANRFS Holdings Inc.	1820		Remedial Investigation recommended (RI)	Tom Roick	LIS
R941190860	4315 NW St. Helens Rd.[2]	Brazil & Co.	1026		State Basic Preliminary Assessment recommended (PA)	No project manager assigned	SUS
R941200040 R941201230	NW Yeon Ave.	Burlington Northern - HUB Center	100		State Basic Preliminary Assessment recommended (PA)	Alicia Voss	SUS
R697400830	3821 NW St. Helens Rd.	Christenson Oil - Plant No. 1	2426		State Expanded Preliminary Assessment recommended (XPA)	Tom Gainer	SUS
R084303610	3003 NW 35th Ave.	Columbia American Plating Co.	29	68788926	Remedial Investigation recommended (RI)	No project manager assigned	LIS
	4466 NW Yeon Ave.[3]	Dura Industries	111		Site Screening recommended (EV)	No project manager assigned	SUS
R941200500	4350 NW Front Ave.	Gunderson Inc.	1155		Remedial Investigation	Matt McClincy	LIS
R941291370	3322 NW 35th Ave.	Hill Investment Co.	1076		State Expanded Preliminary Assessment recommended (XPA)	No project manager assigned	LIS
R941290340	3074 NW St. Helens Rd.	Magnus Co.	69	980639439	Site Screening recommended (EV)	No project manager assigned	SUS
R941190700	4155 NW Yeon Ave.	McWhorter Inc.	135		No further State action required	No project manager assigned	NFA
	4488 NW Yeon Ave.[3]	Mt. Hood Chemical Property	1328		No further State action required	No project manager assigned	NFA
R941190480	4444 NW Yeon Ave.[3]	Mt. Hood Chemical Corp.	81		No further State action required	No project manager assigned	NFA
R941190770	NW St. Helens Rd[4]	PGE - Forest Park Property	2406		Letter Agreement	No project manager assigned	SUS

Table 9
Outfall 18 DEQ Environmental Cleanup Site Information List

updated: March 2003[1]

RNO	Address	Company	ECSI ID	CERCLIS	Action	DEQ Project Manager	Status
R941291670	3720 NW Yeon Ave.	Schnitzer Investment - near NW 35th and Yeon	2424		State Expanded Preliminary Assessment recommended (XPA)	No project manager assigned	SUS
R941190330	3800 NW St. Helens Rd.	Texaco Portland Terminal	169	000641639	Negotiations	Matt McClincy	LIS
R941200090	4500 NW Front Ave.	Texaco Product Pipeline	2117		Negotiations	Matt McClincy	LIS
R941290800	3605 NW 35th Ave.	Trumbull Asphalt Plant	1160		Remedial Investigation/Feasibility Study recommended	Tom Gainer	LIS
R941200170	3950 NW Yeon Ave.	Van Waters & Rogers	330	009227398	Other remedial or investigative action recommended	No project manager assigned	LIS

LIS = Listed
NFA = No Further Action
SUS = Suspected

1. This update did not include performing a new search of the DEQ ECSI database. That search was last performed in September 2002.
2.Indicates that the site was included in the Basin 19 assessment in the *Preliminary Evaluation of City Outfalls—Portland Harbor Study Area* (Notebook 2, Westshore Stormwater and CSO Outfalls) (CH2M HILL, December 2000). It has been included in this table because it is directly adjacent to the Basin 18 drainage boundary. There are no plumbing records for the site. The site is in Basin 19 however there is some uncertainty whether part of the runoff from the site drains to Basin 18.
3.Indicates that the site was included in the Basin 19 assessment in the *Preliminary Evaluation of City Outfalls—Portland Harbor Study Area* (Notebook 2, Westshore Stormwater and CSO Outfalls) (CH2M HILL, December 2000). It has been included in this table because it is directly adjacent to the Basin 18 drainage boundary. Plumbing records indicate that the site has connection to 19 and possibly 18 (not verified). The site is in Basin 19 however there is some uncertainty whether part of the runoff from the site drains to Basin 18.
4. Indicates that the site was included in the Basin 18 assessment in the Preliminary Evaluation of City Outfalls—Portland Harbor Study Area (Notebook 2, Westshore Stormwater and CSO Outfalls) (CH2M HILL, December 2000). It has been included in this table because it is directly adjacent to the Basin 18 drainage boundary. There are no plumbing records for the site. The site is in Basin 19 however there is some uncertainty whether part of the runoff from the site drains to Basin 18.

Table 10
Outfall 18 DEQ Leaking Underground Storage Tanks List

updated: March 2003[1]

RNO	Address	Log Number	Company	Zip	Cleanup Start	Cleanup End	Site Work Complete
R649712600	2700 NW St Helens Road	26-92-0163	Quality Millwork Inc.	97210	18-Jun-92	15-May-97	
R084303190	2727 NW St Helens Road	26-97-0806	Don Thomas Petroleum	97210	27-Oct-97	13-Apr-99	
R084303350	3000 NW St Helens Road	26-93-0113	Myers Container Corp.	97210	10-Jul-93	25-Sep-96	
	3033 NW St Helens Road	26-97-0272	Heating Oil Tank	97210	4/25/1997	26-Jan-99	
R941290960	3055 NW Yeon	26-93-6041	Heating Oil Tank	97210	16-Jun-93	20-Jul-94	
	3074 NW St Helens Road	26-97-0599	Heating Oil Tank	97210			
R941290110	3125 NW 35th Ave	26-91-0235	Carson Oil Company	97210	24-Jun-91	17-Jun-92	17-Jun-92
R941290110	3125 NW 35th Ave	26-97-0451	Carson Oil Company	97210	18-Jun-97	5-Jun-00	23-Mar-00
R941290690	3250 NW St Helens Road	26-89-0230	Wilhelm Trucking Co.	97210	16-Oct-89	16-Apr-91	19-Feb-90
R941291370	3322 NW 35th	26-89-0280	Hill Investment/Nabisco Warehouse	97210	17-Nov-92	18-Sep-00	
R941290710	3333 NW 35th	26-91-0063	A N R Freight System	97210	7-Feb-91	3-Sep-92	3-Sep-92
R941300400	3333 NW St Helens Road	26-89-0165	Hemphill Oil Company	97210	4-Aug-89		
R941300380	3340 NW St Helens Road	26-92-0247	Industrial Export Company (Index)	97210	29-Aug-92	30-Oct-96	9-Jul-96
R941300380	3340 NW St Helens Road	26-96-0486	Industrial Export Company (Index)	97210	19-Aug-96	13-Jan-00	
R347602940	3441 NW Guam Street[2]	26-90-0219	Northwest Steel	97210	20-Jun-90	9-Jul-90	9-Jul-90
R941201230	3500 NW Yeon	26-91-0441	Portland Railroad Company	97210			
R941300350	3537 NW St Helens Road	26-90-0207	Special Asphalt Products, Inc.	97210	22-Mar-90	15-Oct-90	15-Oct-90
R941290570	3570 NW Yeon	26-88-0054	Trumball Asphalt Fume Line	97210	17-Jul-92	17-Jul-92	17-Jul-92
R941290570	3599 N W Yeon	26-90-0126	Coca Cola of Oregon	97210	10-Apr-90	6-Sep-91	6-Sep-91
R941291620	3601 NW Yeon Ave[2]	26-89-0013	Terminal Transfer, Inc.	97210	1-Jan-91		
R697400250	3641 NW St Helens Road	26-90-0379	Courtesy Trucking (Truck Term.)	97210	11-Oct-90	13-Dec-90	13-Dec-90
R941190330	3800 NW St Helens Road	26-89-0323	Texaco Portland, OR Sales Terminal	97210	21-Dec-89	9-Nov-90	4-Jan-90
R697400830	3821 NW St Helens Road	26-90-0415	Christenson Oil	97210	26-Oct-90	14-Nov-00	
R941190980	3865 NW St Helens Road	26-87-0041	Lagrande Chain Corp.	97210	16-Nov-92	16-Nov-92	16-Nov-92
R941200160	3900 NW Yeon	26-87-0030	Convoy Corporation	97210	4-Jan-88	30-Dec-88	6-Jan-88
R941200160	3900 NW Yeon	26-89-0203	Container Recovery Inc	97210		17-May-94	
R941190141	3939 NW St Helens Road	26-90-0001	Bingham Construction, Inc.	97210	29-Dec-89	11-Apr-95	23-Jan-95
R941190200	4000 NW St Helens Road	26-94-0001	Lagrande Steel Corp.	97210	30-Dec-93	1-Dec-95	
R941190700	4155 NW Yeon	26-90-0288	McWhorter Technologies Inc (Eastman Chemical Co.)	97210	8-Aug-90		
R941190700	4155 NW Yeon	26-90-0389	McWhorter, Inc.	97210	15-Oct-90	15-Jan-91	15-Jan-91
R941190190	4200 NW Yeon	26-93-0149	EGW Machinery Inc.	97210	9-Sep-93	30-Sep-96	
R941190130	4285 NW Yeon	26-89-0176	Silver Eagle Trucking	97210	22-Aug-89	6-Aug-90	6-Oct-89
	4300 NW St Helens Road[2]	26-90-0336	Mcculloch Property	97210	18-Sep-90	2-Oct-90	
R941190130	4300 NW Yeon	26-90-0486	Schnitzer Investment Property	97210	13-Dec-90	21-May-92	21-May-92
R941200500	4350 NW Front	26-91-0064	Gunderson Incorporated	97210	6-Feb-91	6-Aug-96	6-Aug-96

1. This update did not include performing a new search of the DEQ LUST database. That search was last performed in September 2002.
2. Indicates that this site is located just outside the Outfall 18 drainage basin. It is unclear what basin the stormwater drains to.

Environmental Cleanup Site Inventory (ECSI)
Site Summary Data Reports

Oregon DEQ

Home > Programs> Cleanup & Spills > ECSI Query > ECSI Site Details

Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 1820

This report shows data entered as of January 31, 2003 at 10:07:15 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 1820	Site Name: ANRFS Holdings Inc.		CERCLIS No:	
	Address: 3333 NW 35th AVE Portland 97210			
	County: Multnomah		Region: Northwest	
	Investigation Status: Listed on CRL or Inventory	NPL Site: No	Orphan Site: No	Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 29		Tax Lots: 17	
	Latitude: 45 deg. 32 ' 48"	Longitude: -122 deg. 43 ' 12"	Site Size: 9.3 ac.	
Other Site Names:				
	ANR Freight Terminal			
	Coastal Corp.			
	FTL Inc.			
Operations:				

Contamination Information

Hazardous Substances/Waste Types:	Chlorinated solvents, petroleum-based solvents, hydrocarbons.
Manner and Time of Release:	The manner and time of release(s) are not known.
Contamination Information:	Coastal Corp. (Houston, TX), the property owner, met with DEQ 1/23/96 to find out whether DEQ could make the determination that Coastal was not responsible for groundwater contamination that it has discovered on the site. Coastal believed that the contamination, consisting of chlorinated and

petroleum-based VOCs, originated from undetermined off-site sources. The site has had two other unrelated contamination issues: releases from USTs that were removed in 1992 (for which DEQ's UST Program issued an NFA letter 9/92), and oil in groundwater along the northern property boundary, for which Owens-Corning (Trumbull Asphalt) has assumed responsibility. There are a number of shallow monitoring wells on-site, and the highest level of chlorinated VOCs occur along the western side of the property. Sources for this groundwater contamination had not been determined as of July 1997.

Pathways: Groundwater is relatively shallow at the site, located at an average depth of 6 to 10 feet. There is no evidence of groundwater usage for other than industrial supply in the site vicinity (there are two recorded industrial wells within 0.5 mile of the site.) The nearest surface water is the Willamette River, located about 0.5 mile northeast of the site. The site is fenced and paved, and because all documented contamination is in the subsurface, direct contact does not appear to be a significant risk. As a result of these factors, exposure pathways from on-site contamination are likely to be limited.

Environmental/Health Threats:

Status of Investigative or Remedial Action: (GMW 7/30/97) In September 1996, Coastal/ANFRS Holdings entered the Voluntary Cleanup Program, seeking concurrence from DEQ that groundwater contamination along the western boundary of the site originated from off-site sources. From its review of available on- and off-site data, the VCP concluded that while there was no documentation of on-site releases of VOCs, there were a number of possible sources for such on-site releases in the past. In June 1997, ANFRS Holdings decided to terminate its agreement with VCP. DEQ's further-action recommendations for the site are as follows: 1) evaluate potential on-site sources of contamination; 2) conduct a full characterization of groundwater on-site and where possible, at neighboring facilities; 3) based on this data, determine source(s) of groundwater contamination; and 4) conduct a risk assessment and beneficial-use determination for groundwater. Further state action at this site is a medium priority. (GMW 8/26/98) Coastal Corp. has submitted a report prepared by Fluor Daniel documenting the removal of and sampling beneath an on-site trench drain and sump. They concluded that this former feature was not a significant source of groundwater contamination at the site. Report forwarded to NWR.

Data Sources: Letter report dated 1/22/96 from DRT Environmental Consultants (Fort Collins, CO); other site investigative work is summarized in DEQ's 1/23/97 File Review Memo, prepared while the site was in the Voluntary Cleanup Program. 8/18/98 report from Fluor Daniel on removal of the trench drain and sump at the site. See also LUST File 26-91-0063 (ANR Freight System)

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission
BENZENE	Groundwater	21.6 ppb	11/20/1995	Yes	No	No
DICHLOROETHANE,1,1-	Groundwater	383 ppb	11/20/1995	Yes	No	No
DICHLOROETHYLENE,1,1-	Groundwater	47.7 ppb	11/20/1995	Yes	No	No
DICHLOROETHYLENE,1,2-CIS-	Groundwater	1,375 ppb	11/20/1995	Yes	No	No
ETHYLBENZENE	Groundwater	551 ppb	11/20/1995	Yes	No	No
METHYLENE CHLORIDE	Groundwater	98.6 ppb	11/20/1995	Yes	No	No

METHYLENE CHLORIDE	Groundwater	98.6 ppb	11/20/1995	Yes	No	No
TETRACHLOROETHYLENE	Groundwater	4.1 ppb	11/20/1995	Yes	No	No
TOLUENE	Groundwater	1,070 ppb	11/20/1995	Yes	No	No
TRICHLOROETHANE,1,1,1-	Groundwater	43.1 ppb	11/20/1995	Yes	No	No
TRICHLOROETHYLENE	Groundwater	39.3 ppb	11/20/1995	Yes	No	No
TRIMETHYLBENZENE,1,2,4-	Groundwater	25.7 ppb	11/20/1995	Yes	No	No
VINYL CHLORIDE	Groundwater	979 ppb	11/20/1995	Yes	No	No
XYLENEs	Groundwater	1,599 ppb	11/20/1995	Yes	No	No

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency	Code	Region	Lead Pgm
SITE EVALUATION	1/20/1996	7/30/1997	Gil Wistar	DEQ		NWR	SAS
Site added to database	1/24/1996		Janelle Waggy	DEQ		NWR	VCS
VCS Waiting List	4/3/1996	7/29/1996		DEQ		NWR	VCS
NEGOTIATIONS	7/30/1996	7/30/1997	Thomas Roick	DEQ		NWR	VCS
PRELIMINARY ASSESSMENT EQUIVALENT	7/30/1996	1/23/1997	Thomas Roick	DEQ		NWR	VCS
Proposal for Confirmed Release List recommended	7/30/1997	7/30/1997	Thomas Roick	DEQ		NWR	VCS
Proposal for Inventory recommended	7/30/1997	7/30/1997	Thomas Roick	DEQ		NWR	VCS
Remedial Investigation recommended (RI)	7/30/1997	7/30/1997	Gil Wistar	DEQ		NWR	SAS
Facility proposed for Confirmed Release List	8/14/1997	8/14/1997	Kim Van Patten	DEQ		NWR	VCS
Facility proposed for Inventory	8/14/1997	8/14/1997	Kim Van Patten	DEQ		NWR	VCS
Facility placed on Confirmed Release List	9/30/1997	9/30/1997	Kim Van Patten	DEQ		NWR	VCS
Facility placed on Inventory	9/30/1997	9/30/1997	Kim Van Patten	DEQ		NWR	VCS

Key to certain acronyms and terms in this report:

CERCLIS No.: The U.S. EPA's Hazardous Waste Site identification number, shown only if EPA has been involved at the site.
Region: DEQ divides the state into three regions (E, NW, and W); the regional office shown is responsible for site investigation/cleanup.
NPL Site: Is the site on EPA's Superfund List? (Y/N).
Orphan Site: Has DEQ's Orphan Program been active at this site? (Y/N). The Orphan Program cleans up high-priority sites where owners and operators responsible for the contamination are absent, or are unwilling or unable to use their own resources for cleanup.
Study Area: Is this site a Study Area? (Y/N). ECSI assigns unique Site ID numbers to both individual sites and to Study Areas, which are groupings of individual ECSI sites that may be contributing to a larger, area-wide problem.
SIC Code: The Standard Industrial Classification code assigned to the operation described in this part of the report.
Pathways: A description of human or environmental resources that site contamination could affect.
Lead Pgm: This column refers to the Cleanup Program affiliation of the DEQ employee responsible for the action shown.
SAS = Site Assessment; VCS = Voluntary Cleanup; SRS = Site Response (enforcement cleanup).

For more information about this page please contact Gil Wistar at (503) 229-5512 or via email at wistar.gil@deq.state.or.us.

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Oregon DEQ

Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 1026

This report shows data entered as of March 26, 2003 at 8:55:23 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 1026	Site Name: Brazil & Co.		CERCLIS No:
	Address: 4315 NW St. Helens RD Portland 97210		
	County: Multnomah		Region: Northwest
	Investigation Status: Suspect site requiring further investigation	NPL Site: No	Orphan Site: No / Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 19		Tax Lots: 1500 and 1600
	Latitude: 45 deg. 33 ' 14"	Longitude: -122 deg. 43 ' 57"	Site Size: 1.45 acres
Other Site Names:			

Operations:

Contamination Information

Hazardous Substances/Waste Types:	PCBs
Manner and Time of Release:	
Contamination Information:	Owner may have dismantled transformers on-site and routinely dumped their contents onto the ground.
Pathways:	
Environmental/Health Threats:	
Status of Investigative or Remedial Action:	
Data Sources:	Database report filed 7/6/89; Phone memo

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission

No information is available

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
Site added to database	03/22/1990		Sara Laumann	DEQ	HQ	SAS
SITE EVALUATION	12/28/1990	12/28/1990	Matt McClincy	DEQ	HQ	SAS
Listing Review completed	12/28/1990	12/28/1990	Matt McClincy	DEQ	HQ	SAS
Insufficient information to list	12/28/1990		Matt McClincy	DEQ	HQ	SAS
State Basic Preliminary Assessment recommended (PA)	12/28/1990	12/28/1990	Matt McClincy	DEQ	HQ	SAS

Key to certain acronyms and terms in this report:
CERCLIS No.: The U.S. EPA's Hazardous Waste Site identification number, shown only if EPA has been involved at the site.
Region: DEQ divides the state into three regions (E, NW, and W); the regional office shown is responsible for site investigation/cleanup.
NPL Site: Is the site on EPA's Superfund List? (Y/N).
Orphan Site: Has DEQ's Orphan Program been active at this site? (Y/N). The Orphan Program cleans up high-priority sites where owners and operators responsible for the contamination are absent, or are unwilling or unable to use their own resources for cleanup.
Study Area: Is this site a Study Area? (Y/N). ECSI assigns unique Site ID numbers to both individual sites and to Study Areas, which are groupings of individual ECSI sites that may be contributing to a larger, area-wide problem.
SIC Code: The Standard Industrial Classification code assigned to the operation described in this part of the report.
Pathways: A description of human or environmental resources that site contamination could affect.
Lead Pgm: This column refers to the Cleanup Program affiliation of the DEQ employee responsible for the action shown. SAS = Site Assessment; VCS = Voluntary Cleanup; SRS = Site Response (enforcement cleanup).

For more information about this page please contact Gil Wistar at (503) 229-5512 or via email at wistar.gil@deq.state.or.us.

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Oregon DEQ

Home > Programs> Cleanup & Spills > ECSI Query > ECSI Site Details

Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 100

This report shows data entered as of January 31, 2003 at 10:07:53 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 100	Site Name: Burlington Northern Railroad Lake Yard		CERCLIS No:	
	Address: 3500/3930 NW Yeon Portland 97210			
	County: Multnomah		Region: Northwest	
	Investigation Status: Listed on CRL or Inventory	NPL Site: No	Orphan Site: No	Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 20		Tax Lots: 17 separate Tax Lots	
	Latitude: 45 deg. 33 ' 7"	Longitude: -122 deg. 43 ' 6"	Site Size: 142.03 acres	

Other Site Names:

Burlington Northern Santa Fe Railroad Lake Yard
Guilds Lake Railyard
Kleen Blast Abrasives
Lake Yard
Portland Terminal Railroad Guilds Lake Yard

Operations:

Name: Kleen Blast Abrasives
Comments: Distribution of sand blast grit; recovery / storage of used blast grit.
Years of Operation: 1972-present
SIC Code: 5085 — Operating Status: Inactive
Name: Burlington Northern - Hub Center

Comments: Railroad switching yard; bulk product storage, loading, unloading

Years of Operation: 1879 to present

SIC Code: 4013 Operating Status: Active

Contamination Information

Hazardous Substances/Waste Types:	Petroleum constituents (diesel fuel, oil, oil & grease, benzene, toluene, PAHs), phenol, trichlorophenol, 2-nitrophenol, TCE, PCE, methylene chloride, PCBs, phthalates, metals (antimony, arsenic, cadmium, chromium, copper, mercury, selenium, zinc), acetone, MEK, and possible sodium cyanide, ethylene glycol, and creosote constituents.
Manner and Time of Release:	Historic spills, current and past operating practices, past tank and pipeline releases, some off-site contributions, Time of release: historic and ongoing, most specific dates unclear.
Contamination Information:	The site was added to ECSI because of a 1985 removal of oily sediments from a former unnamed creek that crossed the site. The sediments contained relatively low levels of oil & grease, methylene chloride, phenol, trichlorophenol, l-nitrophenol, and leachable barium and lead. The creek was later directed to an underground culvert, but there is no indication of the extent to which sediments were contaminated, where dredged sediments were stored, or how they were disposed of. Approximately 23 crushed drums of solidified paint were also excavated from another location on the railyard at about the same time. Liquid in the drums qualified the material as a hazardous waste based on leachable chromium and lead content, ignitability, and phenol content. There is no data to indicate the location of drum removal, or if soils contained residual contamination. An underground mineral spirits pipeline leaked at a parcel that McCloskey Varnish leased from the railroad in November 1985. About 3 cubic yards of visually contaminated soil were removed, but follow-up sampling in September 1986 indicated that subsurface soils still contained benzene and methylene chloride above EPA Region 9 Industrial Soil PRGs, along with lower levels of other BTEX and petroleum constituents, PCE, acetone, MEK, and phthalates. Shallow soils in an area that Kleen Blast leases from the railroad contain concentrations of antimony, arsenic, cadmium, chromium, copper, lead, nickel, selenium, zinc, and organotins that appear to be higher than regional background levels, although only arsenic exceeds EPA Region 9 Industrial Soil PRGs. Stormwater from BNSF, PTRR, and the parcel leased to Eastman Chemical (former McCloskey leased parcel) has had concentrations of oil & grease, copper, lead, mercury, and zinc exceeding Water Quality Permit levels, along with elevated levels of COD and TOC. Contaminants in stormwater are similar to those in site soils, and to contaminants in Willamette River sediments at City Stormwater Outfalls #18 and #17. The parcel that McCloskey leased from the railroad was also used for storing hazardous waste prior to 1986. Prior to 1986, parcel runoff was directed to on-site drywells and an on-site French drain system. Samples of ponded stormwater at the parcel, and water within a catch basin on the parcel, contained low levels of benzene, toluene, TCE, phenol, and petroleum in 1986. There is no indication that the drywells and French drain system have ever been investigated. About 5,000 cubic yards of petroleum contaminated soil were excavated from a former locomotive-fueling area in 1994-95 (LUST #26-91-0441) and bioremediated at the site. Soils in the excavation pit contained up to 16,000 ppm diesel fuel. Apparent antifreeze was observed seeping into the excavation pit at the time; it was not analyzed, and no source was determined. The bioremediated soils were landfilled on-site, after remediation was confirmed by diesel fuel analyses. Later analyses indicated that oil was also present in the excavation pit. PCB 1260 was also detected in the subsurface at a low concentration. Several pockets of subsurface soil with up to 16,000 ppm diesel fuel and 4400 ppm oil remain at the excavation site. Excavated soils may not have been adequately remediated or tested. Wastes were historically burned along a drainage ditch on the

northwestern end of the railyard. The burning activities likely produced PAHs that could have entered the river via the drainage ditch. Site garbage was also accumulated at two other railyard locations that have not been examined. Cleanout of railcars containing potential hazardous substances could have occurred, or possibly led to railcar waste burial, in these areas. Additional investigation should probably be conducted at several historic on-site operating areas, as well as spill locations such as a July 1992 hydraulic oil release to storm-sewer catch basins, a December 1994 toluene release location, and an October 1987 sodium cyanide cleanup area.

Pathways:	Potential health threat for on-site workers and utility trench workers: surface contact; inhalation; incidental ingestion. Possible discharge of contaminated surface runoff to city storm sewers (and then to the river). Potential groundwater contamination that could discharge directly to the river or to underground storm sewer lines. Site contaminants reaching the river could have contributed to Portland Harbor sediment contamination, or could exacerbate existing Harbor sediment contamination. Contaminated groundwater could also reach two nearby Hercules Powder Company industrial wells.
Environmental/Health Threats:	Contaminated stormwater currently discharges to the river via city storm sewers. Surface contaminants could run off to city storm sewers that discharge to Portland Harbor. Subsurface soil contaminants could contaminate groundwater, which could discharge directly to Portland Harbor, or to subsurface storm sewers that discharge to the Harbor. Historic releases to the river could have contributed to Portland Harbor sediment contamination. Ongoing releases could exacerbate existing Harbor sediment contamination. Site surface contaminants could pose risks to on-site workers through direct contact, inhalation, or incidental ingestion. Subsurface contaminants could pose a threat to on-site utility trench workers through direct contact, inhalation, or incidental ingestion.
Status of Investigative or Remedial Action:	Contractors excavated contaminated on-site creek sediments, relocated the sediments on-site, and may have disposed of the sediments off-site, although full extent of the creek sediment contamination may not have been adequately defined. Using visual cues, subsurface mineral-spirits contamination at the McCloskey-leased parcel was excavated, but residual contamination remains, and the full extent of contamination has evidently not been defined. A soil sample was collected beneath a leaking toluene tankcar in December 1994, although the full extent of potential soil contamination may not have been adequately determined. Buried drums of solidified paint waste were excavated and disposed of in 1985, although residual soil contamination may not have been adequately defined. In October 1987, sodium-cyanide cleanup wastes were disposed of, although any residual soil contamination has not been described or defined. Approximately 5,000 cubic yards of petroleum-contaminated soil were excavated from a former locomotive-refueling area and bioremediated at the site in 1995-96, although the bioremediation may not have been adequate, and additional petroleum-contaminated subsurface soils were left in place.
Data Sources:	Correspondence from owner and/or operator; lab results. PTRR response to a December 2000 Site Assessment Site Information Request; LUST File #26-91-0441 (Portland Railroad Company); Water Quality Permit files for BNSF, PTRR, and Eastman Chemical/McWhorter Technologies/McCloskey Varnish, and Texaco Bulk Terminal; Hazardous Waste files for BNSF Hub Center, and McWhorter Technologies; DEQ ECSI Files for Texaco Portland Bulk Terminal (ECSI #169), Texaco Product Pipeline (ECSI #2117), and McWhorter, Inc (ECSI #135); DEQ Spill Files (EMD #92-0957 and #94-2069).

Substance Contamination Information

Media	Date	Lab	Agency	Owner

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Operator Admission
ACETONE	Sediment	In sediments from unnamed creek	9/8/1986	Yes	No	No
ACETONE	Soil	Subsurface soils at mineral spirits pipeline release - McCloskey lease area	9/8/1986	Yes	No	No
ANTHRACENE	Groundwater	In ponded groundwater from LUST excavation pit	8/9/1994	Yes	No	No
ANTIMONY	Soil	Shallow soils at Kleen Blast operating area	8/1/2000	Yes	No	No
ARSENIC	Other	In stormwater from PTRR Lake Yard	12/1/1997	Yes	No	No
ARSENIC	Soil	Shallow soils at Kleen Blast operating area	8/1/2000	Yes	No	No
BARIUM	Sediment	EPTOX barium in sediments dredged from unnamed creek.	11/21/1985	Yes	No	No
BARIUM	Soil	As TCLP barium in subsurface soils at LUST cleanup site	8/1/1991	Yes	No	No
BENZENE	Other	Stormwater ponded next to catch basin, McCloskey lease area	6/2/1986	Yes	No	No
BENZENE	Soil	Subsurface soils at mineral spirits pipeline release - McCloskey lease area	9/8/1986	Yes	No	No
BIS(2-ETHYLHEXYL) PHTHALATE	Other	In stormwater from McWhorter lease area	5/1/1994	Yes	No	No
BIS(2-ETHYLHEXYL) PHTHALATE	Soil	Subsurface soils at mineral spirits pipeline release - McCloskey lease area	9/8/1986	Yes	No	No
CADMIUM	Other	In stormwater, BNSF Hub Center	10/1/1997	Yes	No	No
CADMIUM	Soil	Shallow soils at Kleen Blast operating area	8/1/2000	Yes	No	No
CHLOROFORM	Other	In stormwater from McWhorter lease area	5/1/1997	Yes	No	No
CHLOROFORM	Soil	Surface soils at McCloskey lease area	6/2/1986	Yes	No	No
CHROMIUM	Other	In stormwater from PTRR Lake Yard	12/1/1997	Yes	No	No

CHROMIUM	Soil	Shallow soils at Kleen Blast operating area	8/1/2000	Yes	No	No
COPPER	Other	In stormwater from PTRR Lake Yard	12/1/1997	Yes	No	No
COPPER	Soil	Shallow soils at Kleen Blast operating area	8/1/2000	Yes	No	No
DIESEL - FUEL OIL	Soil	Subsurface soils at LUST cleanup site	7/1/1994	Yes	No	No
DIMETHYLPHENOL,2,4-	Other	In stormwater from McWhorter lease area	4/1/1995	Yes	No	No
DI-n-BUTYL PHTHALATE	Soil	Subsurface soils at mineral spirits pipeline release - McCloskey lease area	9/8/1986	Yes	No	No
ETHYLBENZENE	Other	In stormwater from McWhorter lease area	5/1/1997	Yes	No	No
ETHYLBENZENE	Soil	In subsurface soils at mineral spirits pipeline release - McCloskey lease area	9/10/1986	Yes	No	No
HEXACHLOROBUTADIENE	Soil	Subsurface soils at LUST cleanup site	5/21/2001	Yes	No	No
ISOPHORONE	Other	In stormwater from McCloskey lease area	11/1/1994	Yes	No	No
LEAD	Other	In stormwater from PTRR Lake Yard	12/1/1997	Yes	No	No
LEAD	Sediment	EPTOX lead in sediments dredged from unnamed creek	11/21/1985	Yes	No	No
LEAD	Soil	Shallow soils at Kleen Blast operating area	8/1/2000	Yes	No	No
MERCURY	Other	In stormwater from PTRR Lake Yard	6/1/1997	Yes	No	No
MERCURY	Soil	Shallow soils in railyard background sampling location `	8/1/2000	Yes	No	No
METHYL ETHYL KETONE	Sediment	In sediments from unnamed creek	9/8/1986	Yes	No	No
METHYL ETHYL KETONE	Soil	Subsurface soils at mineral spirits pipeline release - McCloskey lease area	9/8/1986	Yes	No	No
METHYLENE CHLORIDE	Sediment	In sediments from unnamed creek; also at 0.74 ppm in sediments dredged from creek.	11/21/1985	Yes	No	No

METHYLENE CHLORIDE	Soil	Subsurface soils at mineral spirits pipeline release, also in surface soils at 3.4 ppm - McCloskey lease area	6/2/1986	Yes	No	No
NAPHTHALENE	Other	Stormwater from McWhorter lease area	5/1/1994	Yes	No	No
NAPHTHALENE	Soil	Subsurface soils at mineral spirits pipeline release - McCloskey lease area	9/8/1986	Yes	No	No
NICKEL	Other	In stormwater from PTRR Lake Yard	12/1/1997	Yes	No	No
NITROPHENOL,2-	Sediment	In sediments dredged from unnamed creek.	11/21/1985	Yes	No	No
OIL - LUBRICATING	Sediment	In sediments dredged from unnamed creek (range 11.23 - 11.50 ppm; dupl analy)	11/21/1985	Yes	No	No
OIL - LUBRICATING	Soil	Soils remaining at LUST cleanup site	5/21/2001	Yes	No	No
OIL OR FUEL RELATED COMPOUNDS	Other	Oil & Grease in Stormwater - Hub Center	10/1/1997	Yes	No	No
PCB 1260	Soil	In subsurface soils at LUST cleanup area	8/1/1991	Yes	No	No
PHENOL	Other	In stormwater from McWhorter lease area	5/1/1994	Yes	No	No
PHENOL	Sediment	In sediments dredged from unnamed creek.	11/21/1985	Yes	No	No
PHENOL	Surface Water	Water within catch basin - McCloskey lease area	6/2/1986	Yes	No	No
SELENIUM	Soil	Shallow soils at Kleen Blast operating area	8/1/2000	Yes	No	No
TETRACHLOROETHYLENE	Soil	Subsurface soils at mineral spirits pipeline release - McCloskey lease area	9/8/1986	Yes	No	No
TOLUENE	Other	Stormwater from McWhorter lease area	5/1/1994	Yes	No	No
TOLUENE	Sediment	In sediments from unnamed creek	9/8/1986	Yes	No	No
TOLUENE	Soil	In subsurface soils at mineral spirits pipeline release - McCloskey lease area	9/10/1986	Yes	No	No
TOLUENE	Surface Water	Water within catch basin, McCloskey lease area	6/2/1985	Yes	No	No
TOTAL PETROLEUM		In ponded groundwater from				

TOTAL PETROLEUM HYDROCARBONS (TPH)	Groundwater	In ponded groundwater from LUST cleanup pit	8/9/1994	Yes	No	No
TRIBUTYLTIN	Soil	Shallow soils at Kleen Blast operating area Total Organotins: 0.268 ppm	8/1/2000	Yes	No	No
TRICHLOROETHYLENE	Other	Ponded stormwater next to catch basin, McCloskey lease area	6/2/1986	Yes	No	No
TRICHLOROETHYLENE	Surface Water	Water within catch basin, McCloskey lease area	6/2/1986	Yes	No	No
TRICHLOROPHENOL,2,4,6-	Sediment	In sediments dredged from unnamed creek	11/21/1985	Yes	No	No
TRIMETHYLBENZENEs	Soil	Subsurface soils at mineral spirits pipeline release - McCloskey lease area	9/8/1986	Yes	No	No
XYLENEs	Soil	In subsurface soils at mineral spirits pipeline release - McCloskey lease area	9/10/1986	Yes	No	No
ZINC	Other	In stormwater from BNSF Hub Center	10/1/1997	Yes	No	No
ZINC	Soil	Shallow soils at Kleen Blast operating area	8/1/2000	Yes	No	No

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
Site added to database	5/9/1988		Michael Zollitsch	DEQ		SAS
Responsible party notified re 11/88 Inventory listing	11/30/1988			DEQ		SAS
SITE EVALUATION	1/3/1991	1/3/1991	Matt McClincy	DEQ		SAS
Insufficient information to list	1/4/1991		Matt McClincy	DEQ		SAS
Listing Review completed	1/4/1991	1/4/1991	Matt McClincy	DEQ		SAS
State Basic Preliminary Assessment recommended (PA)	3/24/2000	3/24/2000	Gil Wistar	DEQ	HQ	SAS
SITE PRIORITY EVALUATION FOR FURTHER ACTION	12/4/2000		Stephen Fortuna	DEQ	NWR	SAS
PRELIMINARY ASSESSMENT EQUIVALENT	10/2/2001	12/7/2001	Stephen Fortuna	DEQ	NWR	SAS
Proposal for Confirmed Release List recommended	12/7/2001		Stephen Fortuna	DEQ	NWR	SAS
Proposal for Inventory recommended	12/7/2001		Stephen Fortuna	DEQ	NWR	SAS

Remedial Investigation recommended (RI)	12/7/2001	12/7/2001	Stephen Fortuna	DEQ	NWR	SAS
Facility proposed for Confirmed Release List	4/30/2002	4/30/2002	Kim Van Patten	DEQ	NWR	SAS
Facility proposed for Inventory	4/30/2002	4/30/2002	Kim Van Patten	DEQ	NWR	SAS
Extension requested by owner/operator	6/3/2002	6/3/2002	Kim Van Patten	DEQ	NWR	SAS
Petition or request granted	6/20/2002	6/20/2002	Kim Van Patten	DEQ	NWR	SAS
Facility placed on Confirmed Release List	10/17/2002	10/17/2002	Kim Van Patten	DEQ	NWR	SAS
Facility placed on Inventory	10/17/2002	10/17/2002	Kim Van Patten	DEQ	NWR	SAS

Key to certain acronyms and terms in this report:
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Region: DEQ divides the state into three regions (E, NW, and W); the regional office shown is responsible for site investigation/cleanup.
NPL Site: Is the site on EPA's Superfund List? (Y/N).
Orphan Site: Has DEQ's Orphan Program been active at this site? (Y/N). The Orphan Program cleans up high-priority sites where owners and operators responsible for the contamination are absent, or are unwilling or unable to use their own resources for cleanup.
Study Area: Is this site a Study Area? (Y/N). ECSI assigns unique Site ID numbers to both individual sites and to Study Areas, which are groupings of individual ECSI sites that may be contributing to a larger, area-wide problem.
SIC Code: The Standard Industrial Classification code assigned to the operation described in this part of the report.
Pathways: A description of human or environmental resources that site contamination could affect.
Lead Pgm: This column refers to the Cleanup Program affiliation of the DEQ employee responsible for the action shown. SAS = Site Assessment; VCS = Voluntary Cleanup; SRS = Site Response (enforcement cleanup).

For more information about this page please contact Gil Wistar at (503) 229-5512 or via email at wistar.gil@deq.state.or.us.

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Oregon DEQ

Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 2426

This report shows data entered as of January 31, 2003 at 10:08:14 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 2426	Site Name: Christenson Oil - Plant Number 1		CERCLIS No:
	Address: 3821 NW St. Helens Rd Portland 97210		
	County: Multnomah		Region: Northwest
	Investigation Status: Suspect site requiring further investigation	NPL Site: No	Orphan Site: No / Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 19		Tax Lots: 1,2,& 3 (1200, 1300, 1400)
	Latitude: 45 deg. 32 ' 58.2"	Longitude: -122 deg. 43 ' 36.8"	Site Size: 2.08 acres
Other Site Names:			
	HAJ, Incorporated		
Operations:			
	Name: Christenson Oil		
	Comments: HAJ, Inc. dba Christenson Oil		
	Years of Operation: 1940's - Current		
	SIC Code: 2992		Operating Status: Active

Contamination Information

Hazardous Substances/Waste Types:	Petroleum products and metals.
Manner and Time of Release:	Presumably from historic spills and possible tank leaks.

Contamination Information:	September 1998: a release of lube oil occurred during filling of a 20,000-gal. AST; approximately 715 gallons of product were recovered. No soil removal or sampling was conducted. In November 1995, approximately 60 gal. of hydraulic oil were released to soils at a bulk loading area at the northwest end of the property when a product transfer hose to a tank truck broke. About 60 gallons of oil and 52 gallons of rainwater were vacuumed up; there is no record of a soil sampling or removal. During the night of October 16-17, 1975, less than 1000 gallons of oil (bright stock) were released to the floor of the main building when a transfer valve was left open and unattended overnight, and a mixing tank overflowed. The oil entered the building's floor drains, which discharge to a small creek at the site's western property line. The release was not discovered until the following morning. The oil was reportedly contained within the creek, and cleanup was completed within two days. There is no record of soil or sediment samplings or removals. The creek discharges to the Willamette River at City of Portland Stormwater Outfall #18, near the Gunderson facility. Site stormwater discharges to an unnamed creek on the northwestern property line; some discharges to a City stormwater catch basin in St.Helens Road. Stormwater samples from the site have contained oil & grease, lead, and mercury at concentrations above the limits set in the site's stormwater permit. Levels of copper and zinc have exceeded acute freshwater aquatic toxicity criteria. Cadmium concentrations have exceeded chronic freshwater aquatic toxicity criteria. Stoddard solvent, diesel fuel, and heavier oil were detected in subsurface soils during an October 1990 decommissioning of two USTs at the site. The contamination did not appear to originate from the USTs, although the actual source was not clearly ascertained. The full vertical and horizontal extent of subsurface contamination was not defined. Approximately 200 cu. yds. (variously reported as 50 to 355 yds.) of contaminated soil were aerated on-site between February 1991 and August 1993. The soils were treated on the southeastern portion of the site and were to be spread across the site at completion.
Pathways:	Possible direct contact, inhalation, or incidental ingestion by on-site workers. Possible direct contact, inhalation, or incidental ingestion by utility trench workers. Possible ecological impacts to aquatic life in the Willamette River.
Environmental/Health Threats:	Potential health threat to on-site workers, utility trench workers, or ecological impacts to river.
Status of Investigative or Remedial Action:	Free petroleum product was recovered from site surfaces following three site releases (October 1975, November 1995, and November 1998), although there are no records to indicate that site soils or creek sediments were ever sampled or cleaned up. 200 cubic yards (variously reported as 50 to 355 cubic yards) of soil contaminated with Stoddard solvent, diesel fuel, and heavy oil, which were excavated from a UST decommissioning location in October 1990, were aerated on-site in two stockpiles from February 1991 to August 1993. The soils were treated on the southwestern portion of the site and were to be spread across the site, although (as of September 1993) final disposition is unclear. (4/30/01 ELB/VCP) UST decommissioning NFA issued in November 2000. Preliminary Assessment prepared by owner submitted October 2000. Currently under review. (11/19/01 TBG/VCP) After reviewing the Preliminary Assessment, DEQ recommended sampling and analysis of catch-basin sediment and soil in the tank farm. Results from tank-farm soil samples (9/13/01) showed near-surface heavy petroleum contamination, likely resulting from ongoing piping drips and not the 9/98 release of 715 gallons of flush oil. Additional sampling is pending. (10/30/02 TBG/VCP) On-going storm water and catch basin sediment evaluations and implementation of additional best management practices to reduce contaminants in site storm water.
Data Sources:	Spill/Release Report (OERS) 98-2288, 9/25/98; Spill/Release Form (DEQ Office Reference) 95-263

(OERS Number 95-2221), 11/6/95; Christenson Oil/HAJ, Inc, response to DEQ Site Assessment Information Request, 11/20/99; DEQ Water Quality File, Stormwater Permit, Christenson Oil; LUST file 26-90-0415. Additional local background information: Texaco Portland Terminal File, ECSI #169; McWhorter, Inc. (McClosky Varnish) File, ECSI #135; Portland Harbor Sediment Investigation Report, by Roy F. Weston, Inc., May 1998.

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission
CADMIUM	Other	Stormwater	10/30/1997	Yes	No	No
COPPER	Other	Stormwater	11/10/1999	Yes	No	No
DIESEL - FUEL OIL	Soil	1020 ppm in excavated soils; 90 ppm left in subsurface soils	10/26/1990	Yes	No	No
LEAD	Other	Stormwater	10/30/1997	Yes	No	No
MERCURY	Other	Stormwater	10/30/1997	Yes	No	No
NAPHTHA	Soil	Excavated soils	10/26/1990	Yes	No	No
OIL - LUBRICATING	Soil	900 ppm in excavated soils; 160 ppm left in subsurface	10/26/1990	Yes	No	No
TOTAL PETROLEUM HYDROCARBONS (TPH)	Other	As I & grease in stormwater		Yes	No	No
TOTAL PETROLEUM HYDROCARBONS (TPH)	Soil	In excavated subsurface soils, ten months after soil aeration initiated.	11/25/1991	Yes	No	No
ZINC	Other	Stormwater	11/10/1999	Yes	No	No

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
Site added to database	10/25/1999	10/25/1999	Janelle Waggy	DEQ	NWR	VCS
Site Screening recommended (EV)	10/26/1999	10/26/1999	Mark Pugh	DEQ	NWR	SAS
SITE EVALUATION	5/22/2000	6/29/2000	Stephen Fortuna	DEQ	NWR	SAS
Insufficient information to list	6/29/2000	6/29/2000	Stephen Fortuna	DEQ	NWR	SAS
State Expanded Preliminary Assessment recommended (XPA)	6/29/2000	6/29/2000	Stephen Fortuna	DEQ	NWR	SAS
EXPANDED PRELIMINARY ASSESSMENT	4/30/2001		Thomas Gainer	DEQ	NWR	VCS

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SIC Code: The Standard Industrial Classification code assigned to the operation described in this part of the report.
Pathways: A description of human or environmental resources that site contamination could affect.
Lead Pgm: This column refers to the Cleanup Program affiliation of the DEQ employee responsible for the action shown. SAS = Site Assessment; VCS = Voluntary Cleanup; SRS = Site Response (enforcement cleanup).

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Oregon DEQ

Home > Programs> Cleanup & Spills > ECSI Query > ECSI Site Details

Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 29

This report shows data entered as of January 31, 2003 at 10:08:38 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 29	Site Name: Columbia American Plating Co.		CERCLIS No: 068788926	
	Address: 3003 NW 35th AVE Portland 97210			
	County: Multnomah		Region: Northwest	
	Investigation Status: Listed on CRL or Inventory	NPL Site: No	Orphan Site: No	Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 29		Tax Lots: 11	
	Latitude: 45 deg. 32 ' 40"	Longitude: -122 deg. 43 ' 9"	Site Size: .8 acres	
Other Site Names:				

Operations:

Name: Columbia American Plating Co.

Comments: Metal finishing, electronic plating shop

Years of Operation: 1975 to present

SIC Code: 3471 Operating Status: Active

Contamination Information

Hazardous Substances/Waste Types:	high pH, cadmium, chrome, lead, cyanide, zinc, trichloroethylene, hydrochloric acid
Manner and Time of Release:	Tank failure due to metal fatigue in pickling process tank on 4/28/84; other releases may have resulted from past operating practices at the facility, including wastewater collection, treatment, and discharge, and hazardous waste handling and storage

discharge, and hazardous waste handling and storage.

Contamination Information:	Past waste-management practices at the site resulted in RCRA compliance and enforcement actions starting in the 1980s. Violations have consisted of storage of hazardous wastes for over 90 days, often in deteriorated and leaking containers; inadequate protection from spills; and unauthorized recycling/treatment of hazardous waste. Until mid-1991, the facility was cited for numerous violations of its wastewater discharge permit, involving cyanides and heavy metals. A 2,300-gal. spill from an acid pickling tank entered the south parking area in 1984. Groundwater grab samples collected in 1992 from just beyond CAP's northern property line showed dissolved cyanides at 30 ppb, and TCE at 240 ppb. TCLP metals were not found above detection limits in these samples. Cyanide may have migrated from the CAP facility, because of the water treatment system on the the northern end of the site. It is also possible that the TCE and other chlorinated compounds originated from CAP, because of historical usage of TCE and TCA for degreasing; however, these materials are common industrial solvents with many other potential sources. An EPA Site Inspection in 1994 documented the presence of total metals, PAHs, and several chlorinated solvents in subsurface soils at the site.
Pathways:	Potential soil and groundwater contamination beneath storage and treatment areas.
Environmental/Health Threats:	potential groundwater contamination
Status of Investigative or Remedial Action:	After repeated RCRA violations, DEQ fined the facility in 1990 and 1991. The latter penalty was accompanied by a Consent Agreement requiring Columbia American Plating to remove all accumulated hazardous wastes from the site by 5/1/93. Although this date passed without full compliance, the facility did significantly reduce its storage of hazardous wastes. DEQ initiated a PA 7/92, but due to the large quantities of hazardous wastes on-site, DEQ determined that waste removal and RCRA enforcement were needed before a PA could be conducted safely. The PA was finally completed 12/93, and it recommended a federal Site Investigation with subsurface soil and groundwater sampling. An SI that incorporated only soil sampling was completed 10/94. Although EPA's contractor found a variety of inorganic and organic contaminants in these samples, and concluded that site operations had probably affected groundwater as well, EPA determined 11/94 that no further federal action would be taken at the site, due to the lack of human and environmental receptors in the site vicinity. This lack of receptors makes the site a low priority for further state action.
Data Sources:	CERCLIS file, including 9/94 Site Inspection Report; Source file - RCRA/hazardous waste; Inspection reports; "Phase II Site Investigation, Carson Oil Main Office," by Cascade Earth Sciences, Ltd. 4/10/92; DEQ PA, 12/93.

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission
BENZO(a)ANTHRACENE	Soil	1,220 ppb	7/7/1995	Yes	No	No
BENZO(a)PYRENE	Soil	1,700 ppb	7/6/1994	Yes	No	No
BENZO(b)FLUORANTHENE	Soil	1,730 ppb	7/6/1994	Yes	No	No
BENZO(ghi)PERYLENE	Soil	1,610 ppb	7/6/1994	Yes	No	No
BENZO(k)FLUORANTHENE	Soil	654 ppb	7/6/1994	Yes	No	No
CADMIUM	Soil	300 ppm	7/6/1994	Yes	No	No
CHROMIUM	Soil	306 ppm	7/6/1994	Yes	No	No

CHRYSENE	Soil	1,520 ppb	7/6/1994	Yes	No		No
CYANIDE (AS ION)	Soil	36.3 ppm	7/6/1994	Yes	No		No
HYDROCHLORIC ACID	Soil	Unknown		No	No		No
INDENO(1,2,3-cd)PYRENE	Soil	1,350 ppb	7/6/1994	Yes	No		No
TETRACHLOROETHYLENE	Soil	20.1 ppb	7/5/1994	Yes	No		No
TRICHLOROETHYLENE	Soil	47.4 ppb	7/5/1994	Yes	No		No
ZINC	Soil	2,340 ppm	7/6/1994	Yes	No		No

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
Site added to CERCLIS	6/1/1981			EPA		
EPA PA1/SI1	2/20/1985	7/31/1985		EPA		
No Further Remedial Action Planned under Federal program	7/31/1985	7/31/1985		EPA		
Site added to database	4/22/1988		Marilyn Daniel	DEQ		SAS
SITE EVALUATION	12/20/1990	12/20/1990	Matt McClincy	DEQ	NWR	SAS
Listing Review completed	12/20/1990	12/21/1990	Matt McClincy	DEQ	NWR	SAS
Excluded from confirmed release definition	12/21/1990	12/21/1990	Matt McClincy	DEQ	NWR	SAS
BASIC PRELIMINARY ASSESSEMENT	7/2/1992	12/9/1993	Gil Wistar	DEQ	NWR	SAS
Site Confirmatory Sampling recommended	12/9/1993	12/9/1993	Gil Wistar	DEQ	NWR	SAS
EPA Screening Site Inspection 2	4/15/1994	10/24/1994		EPA		
No Further Remedial Action Planned under Federal program	11/15/1994	11/15/1994		EPA		
SITE PRIORITY EVALUATION FOR FURTHER ACTION	3/20/1995	3/23/1995	Gil Wistar	DEQ	NWR	SAS
Listing Review completed	3/23/1995	3/23/1995	Gil Wistar	DEQ	NWR	SAS
Proposal for Confirmed Release List recommended	3/23/1995	3/23/1995	Gil Wistar	DEQ	NWR	SAS
Proposal for Inventory recommended	3/23/1995	3/23/1995	Gil Wistar	DEQ	NWR	SAS
Remedial Investigation recommended (RI)	3/23/1995	3/23/1995	Gil Wistar	DEQ	NWR	SAS
Facility proposed for Confirmed Release List	4/3/1995	4/3/1995		DEQ	NWR	SAS
Facility proposed for Inventory	4/3/1995	4/3/1995		DEQ	NWR	SAS
Review for final listing	6/9/1995	6/15/1995		DEQ	NWR	SAS
Listing on Confirmed Release List recommended	6/15/1995	6/15/1995		DEQ	NWR	SAS
Listing on Inventory recommended	6/15/1995	6/15/1995		DEQ	NWR	SAS
Facility placed on Confirmed Release List	6/16/1995	6/16/1995		DEQ	NWR	SAS

Facility placed on Inventory	6/16/1995	6/16/1995	DEQ	NWR	SAS

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Study Area: Is this site a Study Area? (Y/N). ECSI assigns unique Site ID numbers to both individual sites and to Study Areas, which are groupings of individual ECSI sites that may be contributing to a larger, area-wide problem.
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Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 111

This report shows data entered as of March 26, 2003 at 8:56:22 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 111	Site Name: Dura Industries		CERCLIS No:
	Address: 4466 NW Yeon AVE Portland 97210		
	County: Multnomah		Region: Northwest
	Investigation Status: Suspect site requiring further investigation	NPL Site: No	Orphan Site: No / Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 19		Tax Lots: 106,103 (now 300,500)
	Latitude: 45 deg. 33 ' 8"	Longitude: -122 deg. 43 ' 34"	Site Size: 3.6 acres
Other Site Names:			

Operations:

Name: Dura Industries	
Comments: Paint shop/plating	
Years of Operation:	
SIC Code: 3479	Operating Status: Active

Contamination Information

Hazardous Substances/Waste Types:	cadmium, chromium, lead

Manner and Time of Release:	Manner and time of release unknown; discovered March 1985.
Contamination Information:	The facility has received NOVs for improper hazardous-waste management practices. From the source file, it is hard to confirm a release. Sampling by the source indicates a release occurred. Later samples (split w/DEQ) showed lower levels of contaminants (what appears to be the only soil sample is negative). (12/18/90 MJM) The soil sample run by the facility was for total metals. Cd and Cr appear to be above what is considered background in the area. The DEQ sample analysis was an EP-Tox, which showed the two metals were not leachable.
Pathways:	Possible soil contamination.
Environmental/Health Threats:	
Status of Investigative or Remedial Action:	There was more sampling later and the values were lower. There appears to be one soil sample. The results from Federal Testing were inconsistent with the later results. This issue was never resolved.
Data Sources:	Source File Program DEQ HW, NW Region; Inspection reports; correspondence from owner and/or operator; Notice of Violation Letter; Complaint form; Lab results.

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission
CADMIUM	Soil	206 ppm		No	No	No
CHROMIUM	Soil	236 ppm		No	No	No
LEAD	Soil	335 ppm		No	No	No

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
Site added to database	07/28/1988		Michael Zollitsch	DEQ	HQ	SAS
Responsible party notified re 11/88 Inventory listing	11/30/1988			DEQ	HQ	SAS
Insufficient information to list	12/18/1990		Matt McClincy	DEQ	HQ	SAS
SITE EVALUATION	12/18/1990	12/19/1990	Matt McClincy	DEQ	HQ	SAS
Listing Review completed	12/18/1990	12/18/1990	Matt McClincy	DEQ	HQ	SAS
Site Screening recommended (EV)	03/24/2000	03/24/2000	Gil Wistar	DEQ	HQ	SAS

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Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 1155

This report shows data entered as of January 31, 2003 at 10:09:00 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 1155	Site Name: Gunderson Inc.		CERCLIS No:	
	Address: 4350 NW Front AVE Portland 97210			
	County: Multnomah		Region: Northwest	
	Investigation Status: Listed on CRL or Inventory	NPL Site: No	Orphan Site: No	Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 20		Tax Lots:	
	Latitude: 45 deg. 33 ' 19"	Longitude: -122 deg. 43 ' 27"	Site Size: 67 acres	
Other Site Names:				
	Portland Harbor Sediment Study			
Operations:				

Contamination Information

Hazardous Substances/Waste Types:	1,1,1-trichloroethane (TCA), PAHs, TPH, BTEX, waste solvents, PCBs, chromium, copper, nickel, mercury, zinc.
Manner and Time of Release:	Suspected leaks and spills from degreasing operations, leaking underground storage tanks, sandblasting, painting and salvage-yard operations. Time of release: unknown.
Contamination Information:	(4/19/00 MJM/VCP) The property consists of 67 acres along the west bank of the Willamette River. Gunderson leased the property in 1985 and purchased it 6/93. An above-ground TCA dip tank used for degreasing is located on the northwest end of the facility. A spill occurred at this dip tank in 1980. TCA has been detected in shallow groundwater at concentrations as high as 7.2 mg/L. A deeper monitoring well completed in the underlying basalts contained TCA at concentrations of 2.0 mg/L. Historically, the southeast end of the property was used by Schnitzer Steel Products & American Ship

	Dismantlers as a ship and automobile salvage yard. A total of 11 hydrocarbon storage tanks were identified throughout the property; nine were used for petroleum storage and one was used for toluene solvent storage (Tank #6). An inactive tank (Tank #11) containing solvents and waste oil was discovered underneath a paint storage room. Soil and perched groundwater near Tank 11 were found to contain significant levels of TPH and various PAHs. No contaminants were identified in the underlying water table aquifer. Xylenes and ethylbenzene have been found in the soil at former Tank #6. Investigation of the former Schnitzer yard has been very limited. Initial surface sampling identified lead levels as high as 4800 mg/kg, PCBs at 17 ppm and 19 ppm, and elevated levels of chromium, copper, mercury, zinc, and nickel. Loose asbestos was also found. Follow-up investigation has shown groundwater contamination above MCLs by lead, chromium, and cadmium.
Pathways:	The site is located in the floodplain of the Willamette River. This site was built up in the early 1900s with dredged fill from the river. The surrounding area is heavy industrial with no nearby residents. Local industrial water supply wells draw from depths typically between 200 and 600 feet below ground.
Environmental/Health Threats:	Groundwater has been impacted; potential for direct contact with soil contamination; potential impacts to river.
Status of Investigative or Remedial Action:	(5/3/95 MHK/VCP) Considerable soil and groundwater investigation was completed by Gunderson's consultant Squier Associates prior to joining VCP. Reports documenting the work were submitted in January and November 1992. An initial review was completed 2/11/93. Reviews of UST decommissioning work were completed by VCP and NWR UST staff on 12/6/93 and 3/8/94. It was determined that 9 of 11 tanks (#'s 1,2,3,4,5,7,8,9,10) were decommissioned in accordance with DEQ regulations. Agreement to perform a RI/FS completed 4/15/94. The Agreement addresses the northwest third of the facility (TCA contaminated groundwater and nearby petroleum contamination) and the remaining UST issues (#'s 6 and 11). Gunderson elected to defer follow-up on the remainder of the site, particularly the Former Schnitzer Yard, pending completion of the RI/FS. A scoping proposal for the RI/FS was submitted on May 19, 1994. Quarterly groundwater monitoring was started in June 1994. A work plan for the first phase of additional investigation was approved 3/1/95 and field work started 3/22/95. (7/13/95 MHK) Reports documenting the work were submitted 7/6/95. (10/30/95) Geoprobe sampling in area of TCA dip tank further characterized soil and groundwater contamination; TCA concentrations in groundwater are as high as 170 mg/L and extend to the top of the basalts approx 40 ft bgs. (5/27/98 MJM/VCP) Efforts to characterize the nature & extent of the TCA in groundwater are ongoing. A NFA decision for UST #6 was made 2/17/98. A pocket of petroleum-impacted soil associated with UST #6 remains beneath a structure. Should site conditions change, allowing access to the soil, additional evaluation will be required to determine if further cleanup is needed. Vapor extraction system installed May 1998 to remediate soil in UST #11 (aromatic tank) area. (11/21/01 MJM/VCP) DEQ received a proposal to expand the scope of the Remedial Investigation to Area 3, and after DEQ comments it is being revised. Sampling is scheduled for November 2001 to determine if remedial action objectives in the UST #11 area have been met. Gunderson presented options in May and August 2001 to implement source control measures to limit the discharge of TCA in groundwater to the Willamette River. Groundwater pump-and-treat at the property boundary and air sparging/soil vapor extraction in the source area were selected. Gunderson is preparing plans for field pilot studies.
Data Sources:	Risk Assessment Guidance, Gunderson Inc., Squire Associates, 10/20/92; Environmental Site Assessment, Gunderson, Inc, Squire Associates, 1/17/91; Additional Soil and Groundwater Investigation, Gunderson, Inc, Squire Associates, 12/20/91; NWR Voluntary Cleanup Program - Gunderson File.

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission
CADMIUM	Groundwater	0.02 mg/l	7/1/1991	Yes	No	No
CADMIUM	Soil	27 ppm	6/5/1989	Yes	No	No
CHROMIUM	Groundwater	0.43 mg/l	7/1/1991	Yes	No	No
CHROMIUM	Soil	240 ppm	6/5/1989	Yes	No	No
COPPER	Soil	3800 ppm	6/5/1989	Yes	No	No
DICHLOROETHYLENE,1,1-	Groundwater	1.5 mg/l	7/1/1991	Yes	No	No
LEAD	Groundwater	0.59 mg/l	7/1/1991	Yes	No	No
LEAD	Soil	4,800 ppm	6/5/1989	Yes	No	No
MERCURY	Soil	7.5 ppm	6/5/1989	Yes	No	No
NICKEL	Soil	240 ppm	6/5/1989	Yes	No	No
PCBs	Soil	19 ppm	6/5/1989	Yes	No	No
TETRACHLOROETHYLENE	Groundwater	0.22 mg/l	7/1/1991	Yes	No	No
TOTAL PETROLEUM HYDROCARBONS (TPH)	Soil	2,800 ppm	7/1/1991	Yes	No	No
TRICHLOROETHANE,1,1,1-	Groundwater	170 mg/L	10/1/1996	Yes	No	No
TRICHLOROETHANE,1,1,1-	Soil	56 mg/kg	10/1/1996	Yes	No	No
ZINC	Soil	12,000 ppm	6/5/1989	Yes	No	No

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
NEGOTIATIONS	7/15/1991	4/15/1994	Michael Kortenhof	DEQ	NWR	VCS
Site added to database	11/5/1991		Michael Rosen	DEQ		VCS
SITE EVALUATION	2/11/1993	2/11/1993	Michael Kortenhof	DEQ	HQ	VCS
PRELIMINARY ASSESSMENT EQUIVALENT	2/11/1993	2/11/1993	Michael Kortenhof	DEQ	HQ	VCS
Letter Agreement	4/15/1994	4/15/1994	Michael Kortenhof	DEQ	NWR	VCS
REMEDIAL INVESTIGATION	4/21/1994		Matt McClincy	DEQ	NWR	VCS
Listing Review completed	5/15/1995	5/18/1995	Michael Kortenhof	DEQ		VCS
Proposal for Confirmed Release List recommended	5/18/1995	5/18/1995	Michael Kortenhof	DEQ		VCS
Proposal for Inventory recommended	5/18/1995	5/18/1995	Michael Kortenhof	DEQ		VCS

Facility proposed for Confirmed Release List	10/20/1995	10/20/1995	Michael Kortenhof	DEQ		VCS
Facility proposed for Inventory	10/20/1995	10/20/1995	Michael Kortenhof	DEQ		VCS
REMEDIAL DESIGN	10/30/1995		Matt McClincy	DEQ	NWR	VCS
Facility placed on Confirmed Release List	2/12/1996	2/12/1996	Matt McClincy	DEQ	NWR	VCS
Facility placed on Inventory	2/12/1996	2/12/1996	Matt McClincy	DEQ	NWR	VCS
Letter Agreement	7/1/1997	7/1/1997	Matt McClincy	DEQ	NWR	VCS

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Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 1076

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See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 1076	Site Name: Hill Investment Co.		CERCLIS No:	
	Address: 3322 NW 35th AVE Portland 97210			
	County: Multnomah		Region: Northwest	
	Investigation Status: Listed on CRL or Inventory	NPL Site: No	Orphan Site: No	Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 29		Tax Lots: 137 (R94129 1370) 1N1E29BA 500	
	Latitude: 45 deg. 32 ' 47"	Longitude: -122 deg. 43 ' 5"	Site Size: 3.18 acres	
Other Site Names:				
	Ashland Chemical Co.			
	Nabisco Warehouse			
Operations:				
	Name: Ashland Chemical co.			
	Comments: warehouse facility			
	Years of Operation:			
	SIC Code: 4225		Operating Status: Active	

Contamination Information

Hazardous Substances/Waste Types:	Cis-1,2-dichloroethene, perchloroethylene (at saturation concentration in groundwater), trichloroethylene, vinyl chloride, trans-1,2-dichloroethene.

Manner and Time of Release:	
Contamination Information:	During a 1990 site assessment, chorinated solvents were detected at very high levels (e.g., PCE at 35.5 ppm; essentially at saturation) in groundwater at the site. Nabisco formerly occupied the site, and Ashland Chemical Co. is the current operator. At the time, the highest concentration of solvents was found in a monitoring well considered by the contractor to be upgradient, suggesting an off-site source. Since the discovery of chlorinated solvents, DEQ's oversight has been limited to underground storage tank issues and petroleum contamination (see UST file #26-89-0280). No groundwater sampling for chlorinated solvents has occurred since 1990. Solvent issues also explored in LUST File #26-89-0013 (Terminal Transfer), Jan-July 1990; with preliminary site screening by Geotechnical Resources, Inc., March 1989).
Pathways:	Site is in the Guilds Lake industrial area. Topography is flat; soil is fill (boring log shows material to be silty sands). Depth to groundwater is about 9.5 feet and its uses are unknown.
Environmental/Health Threats:	Chlorinated solvents present in the groundwater, with PCE at saturation concentration.
Status of Investigative or Remedial Action:	Hill Investment Co. indicated to DEQ in April 1991 that it would conduct its own preliminary assessment. However, as of July 1995, no PA has been performed at the site, and Hill Investment disagrees that it ever consented to conduct its own PA. In view of the very high levels of chlorinated solvents found in groundwater, Site Assessment recommends that the RP initiate further groundwater investigation as soon as possible. Otherwise, DEQ should perform an XPA, under medium priority. Despite the RP's claim that solvents migrated from off-site, Site Assessment believes more data is needed to determine their origin.
Data Sources:	NWR LUST file #26-89-0280 containing the following: Nabisco Site Soil & GW Sampling Round II 11/11/90; Nabisco Site Soil & GW Sampling & Asbestos Survey 10/11/90. LUST file #26-89-0013, Terminal Transfer (Jan-July 1990 for site photos). Preliminary Site Screening Report, March 1989, by Geotechnical Resources, Inc).

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission
DICHLOROETHYLENE,1,2-CIS-	Groundwater	3,580 ppb	10/25/1990	Yes	No	No
TETRACHLOROETHANE,1,1,1,2-	Groundwater	35,500 ppb	9/7/1990	Yes	No	No
TRICHLOROETHYLENE	Groundwater	5,040 ppb	9/7/1990	Yes	No	No
VINYL CHLORIDE	Groundwater	308 ppb	10/25/1990	Yes	No	No

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
Site added to database	1/24/1991			DEQ		SAS
SITE EVALUATION	1/24/1991	1/24/1991		DEQ		SAS
Listing Review completed	1/24/1991	1/24/1991		DEQ		SAS
Proposal for Confirmed Release List recommended	1/24/1991	1/24/1991		DEQ		SAS
BASIC PRELIMINARY ASSESSEMENT	4/3/1991			DEQ		SAS
Facility proposed for Confirmed Release List	6/26/1991	6/26/1991		DEQ		SAS

Facility proposed for Confirmed Release List	6/26/1991	6/26/1991		DEQ		SAS
Review for final listing	9/18/1992	9/18/1992	Loretta Pickerell	DEQ		SAS
Listing on Confirmed Release List recommended	9/18/1992	9/18/1992	Loretta Pickerell	DEQ		SAS
Facility placed on Confirmed Release List	10/23/1992	10/23/1992	Loretta Pickerell	DEQ		SAS
SITE PRIORITY EVALUATION FOR FURTHER ACTION	6/12/1995	7/20/1995	Gil Wistar	DEQ	NWR	SAS
Other remedial or investigative action recommended	7/20/1995	7/20/1995	Gil Wistar	DEQ	NWR	SAS
State Expanded Preliminary Assessment recommended (XPA)	7/20/1995	7/20/1995	Gil Wistar	DEQ	NWR	SAS

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Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 69

This report shows data entered as of January 31, 2003 at 10:09:54 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 69	Site Name: Magnus Co.		CERCLIS No: 980639439
	Address: 3074 NW St. Helens RD (now 3250 NW St. Helens RD) Portland 97210		
	County: Multnomah		Region: Northwest
	Investigation Status: Suspect site requiring further investigation	NPL Site: No	Orphan Site: No / Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 29		Tax Lots: 34 (now T.L. 800)
	Latitude: 45 deg. 32 ' 36"	Longitude: -122 deg. 43 ' 17"	Site Size: 1 acres
Other Site Names:			

Operations:

Name: Magnus Co.	
Comments: Bearing rehabilitation plant	
Years of Operation: 1930-1967	
SIC Code: 3562	Operating Status: Inactive

Contamination Information

Hazardous Substances/Waste Types:	lead
Manner and Time of Release:	Lead melting operations; time of release: 1930-1967.
Contamination	Magnus Co. (from 1930-1936) and National Lead Company (from 1936-1967) operated a bearing

Contamination Information:	Magnus Co. (from 1930-1936) and National Lead Company (from 1936-1967) operated a bearing rehabilitation plant at the site. Furnaces were used to melt lead from the bearings. Cracks in the building's concrete floor were filled with lead. Also, lead dust settled on structural beams within the building. Some lead dust may have settled outside the building on unpaved areas.
Pathways:	Workers at the business that currently uses the site (Industrial Craters, Inc.) may be exposed to lead-containing dust that has settled inside the building.
Environmental/Health Threats:	
Status of Investigative or Remedial Action:	Further DEQ information or investigation needed. (3/25/93 DRobinson/EPA) Based on a review by EPA's contractor, PRC Environmental Management, no further investigation is anticipated under the Federal Superfund program. PRC recommended the mitigaton of soil contamination on-site, to reduce the threat through the soil and air pathways.
Data Sources:	

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission
LEAD	Other	280 ppm		No	No	No
LEAD	Soil	39 ppm		No	No	No

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
Site added to CERCLIS	6/1/1981			EPA		
EPA PA1/SI1	11/2/1984	9/16/1986		EPA		
Site added to database	4/29/1988			DEQ		SAS
Responsible party notified re 11/88 Inventory listing	11/30/1988			DEQ		SAS
EPA Site Inspection Prioritization	10/28/1992	2/23/1993		EPA		
No Further Remedial Action Planned under Federal program	2/23/1993	2/23/1993		EPA		
Site Screening recommended (EV)	2/12/1994	2/12/1994	Daniel Crouse	DEQ		SAS

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Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 135

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For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 135	Site Name: McWhorter Inc.		CERCLIS No:
	Address: 4155 NW Yeon AVE Portland 97210		
	County: Multnomah		Region: Northwest
	Investigation Status: No further action required	NPL Site: No	Orphan Site: No / Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 19		Tax Lots: 70 (now 900)
	Latitude: 45 deg. 33 ' 1"	Longitude: -122 deg. 43 ' 17"	Site Size: 1.39 acres
Other Site Names:			
	McClosky Varnish		
Operations:			
	Name: McWhorter Inc.		
	Comments: Manufactures paint products and resins		
	Years of Operation: July 1989 to present		
	SIC Code: 2821		Operating Status: Active
	Name: McCloskey Varnish Co.		
	Comments: Manufactured varnish products and oil/water based resins		
	Years of Operation: 1943 to July 1989		
	SIC Code: 2821		Operating Status: Inactive

Contamination Information

Hazardous Substances/Waste Types:	resins, mineral spirits, petroleum, BTEX, styrene
Manner and Time of Release:	Numerous small spills and releases documented between 1985 and 1990. Most were cleaned up. Also suspected migration of petroleum onto site from off-site source.
Contamination Information:	(6/28/91 MJZ/SAS) McCloskey Varnish Company began manufacturing paint products at the site in the 1940s. In September 1986, DEQ issued a Notice of Violation (NOV) for two minor releases of methyl methacrylate and polyvinyl acetate. The action apparently spurred McCloskey to retain Century Environmental Services to complete a Closure Plan (under RCRA?). In part, the Closure Plan outlined the steps that had been taken to address nine releases that had occurred in 1985 and 1986. Several of these releases had impacted a creek that ran through the property. As part of the remediation, the creek was routed through a pipe and covered over, although it is not clear from the file that contaminated sediments in the creek bed were ever removed. DEQ approved the Closure Plan in November 1987. In July 1989, the property was purchased by McWhorter, a wholly-owned subsidiary of Valspar Corporation.
Pathways:	The site is located in an industrial area in northwest Portland. The Willamette River is 0.5 mile north and east (downgradient) of the site. Forest Park is 0.25 mile southwest of the site. Soils consist of 2-10 feet of a silt/sand/gravel fill, over 23-40 feet of sand, over a layer of silt and clay. Groundwater fluctuates between 10-17 feet bgs. The site itself consists of two fenced parcels (separated by Yeon Ave.), with an underground encased product transfer pipeline between them. There are 25 underground and 36 above-ground storage tanks at the site that hold potentially hazardous materials. The above-ground tanks are on concrete slabs and are bermed. Most of the site is built or paved over.
Environmental/Health Threats:	
Status of Investigative or Remedial Action:	(6/28/91 MJZ/SAS) In August 1990, an unknown volume of mineral spirits leaked from a pipe fitting near two underground storage tanks (USTs). Soil sampling found up to 5,460 ppm TPH (6,170 ppm using HCID). Cleanup of the spill is ongoing in the LUST program. In October 1990, while investigating a suspected release of cyclohexanone, McWhorter discovered diesel fuel in on-site soils (2-12 feet bgs) at levels up to 8,650 ppm. The diesel is thought to have migrated onto the site from the adjacent Texaco Portland Terminal site (ECSI #169). DEQ recommends that McWhorter work with Texaco to address the petroleum contamination. Following approval of the Closure Plan, no further action is necessary for the pre-1990 identified releases.
Data Sources:	1) July 1986 Century Environmental Services "Closure Plan". 2) July 1991 Parametrix "Preliminary Assessment". 3) LUST file #26-90-0288. 4) LUST file #26-90-0389.

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission
ETHYLBENZENE	Sediment	285.20 ppm		No	No	No
STYRENE	Soil	116.5 ppm		No	No	No
TOLUENE	Sediment	75.50 ppm		No	No	No
TOTAL PETROLEUM HYDROCARBONS (TPH)	Soil	up to 8,650 ppm	11/9/1990	Yes	No	No

HYDROCARBONS (TPH)					
XYLENEs	Sediment	4354 ppm	No	No	No

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
Site added to database	3/29/1988		Michael Zollitsch	DEQ	HQ	SAS
Responsible party notified re 11/88 Inventory listing	11/30/1988			DEQ	HQ	SAS
State Basic Preliminary Assessment recommended (PA)	1/24/1991	1/24/1991	Michael Zollitsch	DEQ	HQ	SAS
SITE EVALUATION	1/24/1991	1/24/1991	Michael Zollitsch	DEQ	HQ	SAS
BASIC PRELIMINARY ASSESSEMENT	1/25/1991	6/28/1991	Michael Zollitsch	DEQ	HQ	SAS
Listing Review completed	6/28/1991	6/28/1991	Michael Zollitsch	DEQ	HQ	SAS
NO FURTHER STATE ACTION REQUIRED	6/28/1991	6/28/1991	Michael Zollitsch	DEQ	HQ	SAS

Key to certain acronyms and terms in this report:
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Region: DEQ divides the state into three regions (E, NW, and W); the regional office shown is responsible for site investigation/cleanup.
NPL Site: Is the site on EPA's Superfund List? (Y/N).
Orphan Site: Has DEQ's Orphan Program been active at this site? (Y/N). The Orphan Program cleans up high-priority sites where owners and operators responsible for the contamination are absent, or are unwilling or unable to use their own resources for cleanup.
Study Area: Is this site a Study Area? (Y/N). ECSI assigns unique Site ID numbers to both individual sites and to Study Areas, which are groupings of individual ECSI sites that may be contributing to a larger, area-wide problem.
SIC Code: The Standard Industrial Classification code assigned to the operation described in this part of the report.
Pathways: A description of human or environmental resources that site contamination could affect.
Lead Pgm: This column refers to the Cleanup Program affiliation of the DEQ employee responsible for the action shown. SAS = Site Assessment; VCS = Voluntary Cleanup; SRS = Site Response (enforcement cleanup).

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Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 1328

This report shows data entered as of March 26, 2003 at 8:57:07 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 1328	Site Name: Mt. Hood Chemical Property		CERCLIS No:
	Address: 4488 NW Yeon AVE Portland 97210		
	County: Multnomah		Region: Northwest
	Investigation Status: No further action required	NPL Site: No	Orphan Site: No Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 19		Tax Lots: 104 (now 2100)
	Latitude: 45 deg. 33 ' 8"	Longitude: -122 deg. 43 ' 34"	Site Size: 2.38 acres
Other Site Names:			
	McKesson Chemical Co.		
	Van Waters & Rogers		
Operations:			

Contamination Information

Hazardous Substances/Waste Types:	
Manner and Time of Release:	
Contamination Information:	This facility has historically been used for bulk chemical storage and distribution, as well as for transport and storage of some hazardous wastes (mostly chlorinated solvent wastes). Most of the site is paved, and chemical storage and handling took place on concrete pads or within concrete containment basins. Chemical storage and handling ceased at the site in late 1986, and in 1990, Van Waters & Rogers began to implement its RCRA Facility Closure plan. No known spills have occurred at the site since McKesson Chemical Co. began operations in 1961. A 1991 RCRA Facility Assessment prepared by DEQ supported RCRA "clean

closure." A 1991 DEQ soil sample from the most downgradient portion of the site contained 460 ppb TCA, compared to the Oregon Soil Cleanup Standard of 9,000 ppb. Van Waters & Roger's sample from the same area was non-detect for VOCs, including TCA.

Pathways:

Environmental/Health Threats:

Status of Investigative or Remedial Action: (10/3/95 GMW/SAS) In 1/92, DEQ's Hazardous Waste Section determined that Van Waters & Rogers had accomplished "clean closure" of the site under RCRA. This was based on a full decontamination of the facility, including the concrete hazardous waste storage pad and sump. Concrete in the sump, although found to be stained, had no cracks that penetrated the matrix, and concrete core samples contained no significant contamination. Because there is no evidence of significant contamination anywhere else at this facility, Site Assessment recommends no further action.

Data Sources: RCRA source files, DEQ Northwest Region.

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission

No information is available

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
Site added to database	01/24/1993		Daniel Crouse	DEQ	HQ	SAS
Site Screening recommended (EV)	02/12/1994	02/12/1994	Daniel Crouse	DEQ		SAS
SITE EVALUATION	08/22/1995	09/29/1995	Gil Wistar	DEQ	NWR	SAS
Listing Review completed	09/29/1995	10/03/1995	Gil Wistar	DEQ	NWR	SAS
NO FURTHER STATE ACTION REQUIRED	10/03/1995	10/03/1995	Gil Wistar	DEQ	NWR	SAS

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NPL Site: Is the site on EPA's Superfund List? (Y/N).
Orphan Site: Has DEQ's Orphan Program been active at this site? (Y/N). The Orphan Program cleans up high-priority sites where owners and operators responsible for the contamination are absent, or are unwilling or unable to use their own resources for cleanup.
Study Area: Is this site a Study Area? (Y/N). ECSI assigns unique Site ID numbers to both individual sites and to Study Areas, which are groupings of individual ECSI sites that may be contributing to a larger, area-wide problem.
SIC Code: The Standard Industrial Classification code assigned to the operation described in this part of the report.
Pathways: A description of human or environmental resources that site contamination could affect.
Lead Pgm: This column refers to the Cleanup Program affiliation of the DEQ employee responsible for the action shown. SAS = Site Assessment; VCS = Voluntary Cleanup; SRS = Site Response (enforcement cleanup).

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Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 81

This report shows data entered as of March 26, 2003 at 8:59:55 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 81	Site Name: Mt. Hood Chemical Corp.		CERCLIS No: 009020108
	Address: 4444 NW Yeon AVE Portland 97210		
	County: Multnomah		Region: Northwest
	Investigation Status: No further action required	NPL Site: No	Orphan Site: No Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 19		Tax Lots: 48 (now 200)
	Latitude: 45 deg. 33 ' 7"	Longitude: -122 deg. 43 ' 32"	Site Size: 2.34 acres
Other Site Names:			

Operations:

Name: Mt. Hood Chemical Corp.

Comments: Manufacturer of a broad range of cleaning compounds.

Years of Operation: 1973 to present

SIC Code: 2841 Operating Status: Active

Contamination Information

Hazardous Substances/Waste Types:	corrosive liquids, methylene chloride
Manner and Time of Release:	Possible leak or spill from drum. Time of release: unknown
Contamination	Manufacturer doesn't produce hazardous waste as a byproduct: feedstocks are blended or diluted to make

Information: product. Feedstocks include corrosive acids & bases & flammable liquid chemicals. There have been two events since 1973 when there has been a discharge to a sanitary sewer of liquids with pH >12.5. In the past the company has admitted to washing out empty surfactant feedstock drums onto a gravel surface which may flow to a storm drain connection. However, no hazardous substances were detected in this area after sampling. A parking lot storm drain catchment basin was sampled & found to contain 4400 mg/L of methylene chloride. Rain could carry chemical to storm drain & ultimately to Willamette River. May have resulted from feedstock drum leaking to drain.

Pathways:

Environmental/Health Threats:

Status of Investigative or Remedial Action: (6/8/92 KPD/SAS) In May 1985, DEQ's Northwest Region required Mt. Hood Chemical to clean out its storm drain catchment basin and alter its rinsing and storage practices. The company pumped and shoveled out the storm drain catchment basin in June 1985. Sand and gravel from the catchment was dried and stored in pails inside the building. Confirmation sampling in July 1985 found methylene chloride at less than 2.5 ppb. Empty drums were sent off-site for reconditioning, or washed out inside the building. Residues were funneled into a city-approved neutralization pit. The drum storage site was moved to where the residues could be contained. Site Assessment believes no further action is required at this site at this time under the state Superfund program.

Data Sources:

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission
METHYLENE CHLORIDE	Other	4400 mg/L	7/30/1984	Yes	No	No

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency	Code	Region	Lead Pgm
Site added to CERCLIS	01/01/1983			EPA			
EPA PA1/SI1	10/29/1984	12/10/1984		EPA			
No Further Remedial Action Planned under Federal program	12/10/1984	12/10/1984		EPA			
Site added to database	04/04/1988		Michael Rosen	DEQ		HQ	SRS
Refer to RCRA Program	04/04/1988			DEQ		NWR	RCR
SITE EVALUATION	06/07/1992	06/07/1992	Kevin Dana	DEQ		HQ	SAS
Listing Review completed	06/08/1992	06/08/1992	Kevin Dana	DEQ		HQ	SAS
Excluded from confirmed release definition	06/09/1992		Kevin Dana	DEQ		HQ	SAS
NO FURTHER STATE ACTION REQUIRED	06/10/1992	06/10/1992	Kevin Dana	DEQ		HQ	SAS
EPA Site Inspection Prioritization	08/17/1992	08/17/1992		EPA			
No Further Remedial Action Planned under Federal program	03/30/1993	03/30/1993		EPA			

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NPL Site: Is the site on EPA's Superfund List? (Y/N).
Orphan Site: Has DEQ's Orphan Program been active at this site? (Y/N). The Orphan Program cleans up high-priority sites where owners and operators responsible for the contamination are absent, or are unwilling or unable to use their own resources for cleanup.
Study Area: Is this site a Study Area? (Y/N). ECSI assigns unique Site ID numbers to both individual sites and to Study Areas, which are groupings of individual ECSI sites that may be contributing to a larger, area-wide problem.
SIC Code: The Standard Industrial Classification code assigned to the operation described in this part of the report.
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Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 2406

This report shows data entered as of March 26, 2003 at 9:00:21 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 2406	Site Name: PGE - Forest Park Property		CERCLIS No:
	Address: NW St. Helens Rd Portland 97210		
	County: Multnomah		Region: Northwest
	Investigation Status: No further action required	NPL Site: No	Orphan Site: No Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 19		Tax Lots: 100
	Latitude: 45 deg. 33 ' 13"	Longitude: -122 deg. 43 ' 57"	Site Size:
Other Site Names:			
	PGE - Yeon Site		
Operations:			
	Name: PGE Yeon Site		
	Comments:		
	Years of Operation: unknown		
	SIC Code: 4911		Operating Status: Active

Contamination Information

Hazardous Substances/Waste Types:	PCBs
Manner and Time of Release:	
Contamination	(9/7/99 SAM/VCP) Suspected leakage (PCBs) from electrical equipment.

Information:

Pathways:

Environmental/Health Threats:

Status of Investigative or Remedial Action: (9/7/99 SAM/VCP) Signed agreement to participate in DEQ's Independent Cleanup Pathway Program. Requested ICP and site-specific technical consultation. Final report to be submitted to DEQ approx. 11/1/99. (12/1/00 ACV/VCP) Final report submitted 12/00. Review comments expected in January. (6/25/01 ACV/VCP) DEQ reviewed ICP report submitted in January 2001. ICP report indicates PGE removed over 1,000 tons of soil via excavation and off-site disposal (Arlington). Residual PCBs do not exceed PCB generic remedy cleanup level of 1.2 ppm. Public notice in April 2001. DEQ issued NFA decision on May 15, 2001.

Data Sources:

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission
PCBs	Soil	70 ppm	1/1/1999	Yes	No	No

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
Independent Cleanup Program	07/30/1999	05/16/2001	Alicia Voss	DEQ	NWR	VCS
Letter Agreement	08/23/1999	08/23/1999	Alicia Voss	DEQ	NWR	VCS
Site added to database	09/07/1999	09/07/1999	Janelle Waggy	DEQ	NWR	VCS
NO FURTHER STATE ACTION REQUIRED	05/16/2001	05/16/2001	Alicia Voss	DEQ	NWR	ICP

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NPL Site: Is the site on EPA's Superfund List? (Y/N).

Orphan Site: Has DEQ's Orphan Program been active at this site? (Y/N). The Orphan Program cleans up high-priority sites where owners and operators responsible for the contamination are absent, or are unwilling or unable to use their own resources for cleanup.

Study Area: Is this site a Study Area? (Y/N). ECSI assigns unique Site ID numbers to both individual sites and to Study Areas, which are groupings of individual ECSI sites that may be contributing to a larger, area-wide problem.

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Pathways: A description of human or environmental resources that site contamination could affect.

Lead Pgm: This column refers to the Cleanup Program affiliation of the DEQ employee responsible for the action shown. SAS = Site Assessment; VCS = Voluntary Cleanup; SRS = Site Response (enforcement cleanup).

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Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 2424

This report shows data entered as of March 26, 2003 at 9:00:41 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 2424	Site Name: Schnitzer Investment - near NW 35th and Yeon		CERCLIS No:
	Address: 3720 NW Yeon Ave. (162 ft SE of SE corner of NW 35th and Yeon) Portland 97210		
	County: Multnomah		Region: Northwest
	Investigation Status: Suspect site requiring further investigation	NPL Site: No	Orphan Site: No Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 20		Tax Lots: 200 (29-1N1E)(R94129-1670)
	Latitude: 45 deg. 32 ' 54.1"	Longitude: -122 deg. 43 ' 1.4"	Site Size: 2.84 acres
Other Site Names:			
	Chase Bag Company (Former)		
	Great Western Chemical Co. (Former)		
	Willard Storage Battery Co. of Calif. (Former)		
Operations:			
	Name: Chase Packaging Corporation		
	Comments: Multiwall bag manufacture.		
	Years of Operation: 1984-1989 (?)		
	SIC Code: 2674		Operating Status: Inactive
	Name: Ace Hardware		

Comments: Hardware wholesale facility
Years of Operation: 1972 - 1975
SIC Code: 5072 Operating Status: Inactive
Name: Schnitzer Investment Corporation
Comments: Property owner / property management
Years of Operation: 1971 (?) to 1999
SIC Code: 6512 Operating Status: Active
Name: Great Western Chemical Company
Comments: Chemical Manufacturing
Years of Operation: 1959 - 1970
SIC Code: 2899 Operating Status: Inactive
Name: Willard Storage Battery Company of Calif
Comments: Storage Battery Manufacture
Years of Operation: 1948 - 1958
SIC Code: 3691 Operating Status: Inactive

Contamination Information

Hazardous Substances/Waste Types:	Possible PCE DNAPL at site. Various PCE decomposition products in nearby groundwater: TCE, cis- and trans-1,2-DCE, 1,1-DCE, vinyl chloride, chloromethane. RCRA records indicate Schnitzer Investments removed 297 tons of lead-contaminated (hazardous waste) soils from site in December 1997. Accumulation of leaking drums photographed on site in February 1991.
Manner and Time of Release:	No verified on-site release of hazardous substances, but 297 tons of lead-contaminated soil removed from site in December 1997, large accumulation of apparently leaking drums (contents unknown) photographed at site in February 1991, and an inactive 1000 gallon UST decommissioned at site in 1985 (use unknown) by filling in place. 1963 air photo indicates that materials (including apparent drums) were stored along the southern end of the site when Great Western Chemical Company operated at the site.
Contamination Information:	Subsurface soil and groundwater data (1990-1991) from adjoining Hill Investment Company site (to south) (ECSI #1076; LUST #26-89-0280) suggests that releases of perchloroethylene (PCE; PERC) may have occurred on the Schnitzer Investment (former Chase Bag Company) site. Groundwater data from Hill Investment site suggests the presence of free-product (DNAPL) PCE. 2/91 photos by George D. Ward & Assoc (environmental contractor for Terminal Transfer site to east; LUST #26-89-0013) depict leaking drums stored at former Chase Bag site. Parcel was also historically the site of chemical manufacturing operations by Great Western Chemical Company. DEQ Hazardous Waste files indicate that Schnitzer Investment conducted a Hazardous Waste removal action at the site in December 1997: 297 tons of lead-contaminated soil were removed and sent to CWM in Arlington for treatment and disposal. DEQ has no other documentation of the 1997 soil removal activities.
Pathways:	Primary pathways of concern would be: 1) potential dermal contact, inhalation, or incidental ingestion of

	subsurface contaminants by utility trench workers; 2) potential vapor inhalation by on-site workers; and 3) potential discharge of contaminated groundwater to leaking storm sewer lines and discharge to Willamette River at City Outfalls 17 and 18.
Environmental/Health Threats:	Potential threats to utility trench workers (inhalation, dermal contact, incidental ingestion), on-site workers (vapors), or aquatic life within Willamette River (potential contaminant discharge to leaking storm sewer lines)
Status of Investigative or Remedial Action:	XPA recommended with subsurface soil and groundwater sampling for potential lead and volatile chlorinated hydrocarbons.
Data Sources:	DEQ LUST file #26-89-0013, Terminal Transfer site. DEQ LUST file #26-89-0280, Hill Investment Company site. DEQ HWIMSy database file for Schnitzer Investment Corp. at 3720 NW Yeon.

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission
No information is available						

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
Site added to database	10/25/1999	10/25/1999	Janelle Waggy	DEQ	NWR	VCS
SITE EVALUATION	10/25/1999	11/02/1999	Stephen Fortuna	DEQ	NWR	SAS
Insufficient information to list	11/02/1999	11/02/1999	Stephen Fortuna	DEQ	NWR	SAS
State Expanded Preliminary Assessment recommended (XPA)	11/02/1999	11/02/1999	Stephen Fortuna	DEQ	NWR	SAS
SRS Waiting List	11/08/1999		Stephen Fortuna	DEQ	NWR	SAS

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NPL Site: Is the site on EPA's Superfund List? (Y/N).
Orphan Site: Has DEQ's Orphan Program been active at this site? (Y/N). The Orphan Program cleans up high-priority sites where owners and operators responsible for the contamination are absent, or are unwilling or unable to use their own resources for cleanup.
Study Area: Is this site a Study Area? (Y/N). ECSI assigns unique Site ID numbers to both individual sites and to Study Areas, which are groupings of individual ECSI sites that may be contributing to a larger, area-wide problem.
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Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 169

This report shows data entered as of January 31, 2003 at 10:11:46 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 169	Site Name: Texaco Portland Terminal		CERCLIS No: 000641639
	Address: 3800 NW St. Helens RD Portland 97210		
	County: Multnomah		Region: Northwest
	Investigation Status: Listed on CRL or Inventory	NPL Site: No	Orphan Site: No / Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 19		Tax Lots: 33 (now T.L. 1000)
	Latitude: 45 deg. 33 ' 0"	Longitude: -122 deg. 43 ' 36"	Site Size: 18.8 acres
Other Site Names:			
	SEE ECSI #2117		
Operations:			
	Name: Petroleum bulk plant		
	Comments:		
	Years of Operation: Since 1926		
	SIC Code: 5171		Operating Status: Active

Contamination Information

Hazardous Substances/Waste Types:	Petroleum products (gasoline, diesel, petroleum sludge) and ethanol. Previous operations included storage and distribution of bunker fuel, jet fuel, and lubrication oil. Lead in adjacent Willamette River sediments.
Manner and Time of Release:	Specific sources undetermined. General releases from product handling, storage and distribution. Time of release before 1984; additional contemporary releases are possible.
Contamination	(5/1/95 TERA/CC) The first site subsurface investigation was performed in 1982 by Texaco Terminal

Contamination Information:	(5/1/95 TER/VCS) The first site subsurface investigation was performed in 1983 by Texaco Terminal personnel. The investigation was prompted by discovery of a hydrocarbon-like sheen on water in the drainage ditch near the oil/water separator. The drainage ditch (now relined with culvert) flowed across the site from beneath NW St. Helens Road in a timber flume which discharged into the Willamette River. Groundwater monitoring confirmed the release and product recovery actions were initiated in 1983. Between 1983 and 1986, 31,231 gal. of floating product were recovered from an on-site recovery well. A total of 38 monitoring wells have been installed at the site. Aquifer testing and sparge and vapor extraction tests have been conducted. No off-site work has been conducted by Texaco. However, file information for the downgradient McWhorter facility indicates that contamination likely extends off-site. Texaco entered into a Letter Agreement with the Voluntary Cleanup Program on August 12, 1993. At that time Texaco was completing field work for a focused remedial investigation and feasibility study (RI/FS) for the site. (1/12/00 TBG/SAP) A RI prepared for the site by Texaco's consultant in 1994 concluded that "the results of the RA indicate that risks associated with the chemicals of concern at the site are within DEQ and EPA's target risk limits for cancer and for non-cancer effects for human health. In addition, impacts to environmental receptors appear unlikely." The FS concluded that the no-action alternative was protective. Approximately 36 tons of lead contaminated surface soil were excavated from the site in 1996 and disposed of at an off-site facility. The source was historic sandblasting of the ASTs. (11/21/01 MJM/VCP) 1997/1998 investigation of gasoline vapors and soil and groundwater impacts at the Gunderson facility along Front Avenue concluded that gasoline had leaked from an abandoned product transmission line. Removal efforts via air sparging and soil vapor extraction have been ongoing.
Pathways:	Recent data indicates surface soil contamination from lead paint/sandblast grit. Potential point sources include former gasoline/diesel loading rack; former bunker-fuel loading rack; underground piping to barge dock; oil/water separator and feeder lines; USTs and ancillary underground piping; former underground piping to loading racks; current gasoline/diesel loading rack; diesel dispensing station; boiler/pump house. Potential area sources include former bunker fuel ASTs; diesel/fuel oil ASTs; former lube-oil ASTs. Nearest surface water is the Willamette River.
Environmental/Health Threats:	Potential for direct contact through surface soils. Shallow groundwater contamination.
Status of Investigative or Remedial Action:	Scoring package mailed 10/5/92. Proposed overall score: 21, based in part on the 1969 dumping of separator sludge. (1/93 TER/VCS) RI in progress, should be completed by 1/94. VCS will proceed with a file review after submittal of the RI report. VCS Letter Agreement 8/27/93. Focused RI report completed 2/24/94. VCS file review completed 5/24/94. Additional work to proceed with VCS oversight. (5/2/95 TER/VCS) Meeting to discuss a formal Agreement held 11/7/94. RI/FS Addendum and Groundwater Monitoring Proposal received 9/94 and comments provided 1/4/95. Lead impacts on surface soils from the 1969 separator sludge dumping evaluated. Determined that no further work regarding sludge dumping was necessary. Draft Agreement prepared 3/95. Quarterly Monitoring Report and additional information received from Texaco 3/95. (7/5/95 TER/VCS) Off-site sampling plan submitted 4/30. Quarterly Monitoring Report received 6/16. (8/31/95 TER/VCS) Bid for Lead Dust Cleanup Services received 7/95. Quarterly Groundwater Monitoring Report received 8/95. Comments on the Draft Agreement received 8/95. VCP participation terminated 8/31/95. (1/20/00 TBG/SAP) Based on initial sampling results from a river sediment quality study, the Texaco Terminal and pipeline (ECSI #2117) have been identified as a potential source of contamination to the Portland Harbor. A strategy recommendation was completed on September 2, 1999. A Remedial Investigation (RI) is required to evaluate the potential ecological threat of the sediment contamination (high priority). (1/18/01 MJM/VCP) DEQ and Equilon entered into a Voluntary RI Agreement on August 16, 2000.

(1/19/01 MJM/VCP) DEQ and Equilon entered into a Voluntary RI Agreement on August 16, 2000. Equilon submitted a Draft Pre-Remedial Investigation Assessment Workplan in October 2000. (11/21/01 MJM/VCP) A revised Pre-Remedial Investigation Assessment work plan was approved on September 26, 2001.

Data Sources: Monitoring Report 3800 NW St. Helens Road, prepared by Groundwater Technology, Inc. 12/91; Soil & Groundwater Investigation, Texaco Environmental Services 11/14/91; Monitoring Report, Texaco Refining & Marketing, Inc. 12/18/91; Monitoring Report, Texaco Refining & Marketing, Inc. 9/91; Focused Remedial Investigation Report 2/24/94; Portland Harbor Sediment Investigation Report, prepared by Roy F. Weston, Inc., for USEPA, May 1998; MetroScan Property Records, Multnomah County, Oregon; Equilon Enterprises LLC response to DEQ Site Assessment Information Request, April 14, 1999.

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission
ACENAPHTHENE	Soil	11 mg/kg	6/30/1993	Yes	No	No
ACENAPHTHYLENE	Groundwater	0.17 mg/l	6/30/1993	Yes	No	No
ANTHRACENE	Groundwater	.0031 mg/l	6/30/1993	Yes	No	No
ANTHRACENE	Soil	6.6 mg/kg	6/30/1993	Yes	No	No
ARSENIC	Groundwater	.027 mg/l	6/30/1993	Yes	No	No
ARSENIC	Soil	9.4 mg/kg	6/30/1993	Yes	No	No
BENZENE	Groundwater	2.6 mg/l	3/30/1993	Yes	No	No
BENZENE	Soil	4.1 mg/kg	3/30/1993	Yes	No	No
BENZO(a)ANTHRACENE	Groundwater	.0006 mg/l	6/30/1993	Yes	No	No
BENZO(a)ANTHRACENE	Soil	4.5 mg/kg	6/30/1993	Yes	No	No
BENZO(a)PYRENE	Soil	2.4 mg/kg	6/30/1993	Yes	No	No
BENZO(b)FLUORANTHENE	Groundwater	.0005 mg/l	6/30/1993	Yes	No	No
BENZO(b)FLUORANTHENE	Soil	1.7 mg/kg	6/30/1993	Yes	No	No
BENZO(ghi)PERYLENE	Groundwater	.0004 mg/l	6/30/1993	Yes	No	No
BENZO(ghi)PERYLENE	Soil	6.6 mg/kg	6/30/1993	Yes	No	No
BENZO(k)FLUORANTHENE	Groundwater	.0001 mg/l	6/30/1993	Yes	No	No
BENZO(k)FLUORANTHENE	Soil	0.87 mg/kg	6/30/1993	Yes	No	No
CHRYSENE	Groundwater	.0005 mg/kg	6/30/1993	Yes	No	No
CHRYSENE	Soil	2.1 mg.kg	6/30/1993	Yes	No	No
DIBENZO(a,h)ANTHRACENE	Groundwater	.011 mg/l	6/30/1993	Yes	No	No
DIBENZO(a,h)ANTHRACENE	Soil	4.8 mg/kg	6/30/1993	Yes	No	No
ETHYLBENZENE	Groundwater	1.6 mg/l	6/30/1993	Yes	No	No
ETHYLBENZENE	Soil	20 mg/kg	6/30/1993	Yes	No	No
FLUORANTHENE	Groundwater	.069 mg/l	6/30/1993	Yes	No	No
FLUORANTHENE	Soil	38 mg/kg	6/30/1993	Yes	No	No
FLUORENE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

FLUORENE	Groundwater	.018 mg/l	6/30/1993	Yes	No	No
FLUORENE	Soil	20 mg/kg	6/30/1993	Yes	No	No
INDENO(1,2,3-cd)PYRENE	Groundwater	.0012 mg/l	6/30/1993	Yes	No	No
INDENO(1,2,3-cd)PYRENE	Soil	1.5 mg/kg	6/30/1993	Yes	No	No
LEAD	Groundwater	.011 mg/l	6/30/1993	Yes	No	No
LEAD	Soil	395 mg/kg	6/30/1993	Yes	No	No
NAPHTHALENE	Groundwater	0.43 mg/l	6/30/1993	Yes	No	No
NAPHTHALENE	Soil	18 mg/lg	6/30/1993	Yes	No	No
PHENANTHRENE	Groundwater	.031 mg/l	6/30/1993	Yes	No	No
PHENANTHRENE	Soil	38 mg/kg	6/30/1993	Yes	No	No
PYRENE	Groundwater	.0013 mg/l	6/30/1993	Yes	No	No
PYRENE	Soil	6.9 mg/kg	6/30/1993	Yes	No	No
TOLUENE	Groundwater	0.82 mg/l	6/30/1993	Yes	No	No
TOLUENE	Soil	38 mg/kg	6/30/1993	Yes	No	No
TOTAL PETROLEUM HYDROCARBONS (TPH)	Groundwater	(gasoline) 24 mg/l, (diesel/oil) 65 mg/l	6/30/1993	Yes	No	No
TOTAL PETROLEUM HYDROCARBONS (TPH)	Soil	(gasoline) 8,900 mg/kg, (diesel/oil) 16,000 mg/kg	6/30/1993	Yes	No	No
XYLENEs	Groundwater	1.5 mg/l	6/30/1993	Yes	No	No
XYLENEs	Soil	94 mg/kg	6/30/1993	Yes	No	No

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
Site added to CERCLIS	1/1/1983			EPA		
EPA PA1/SI1	6/1/1984	8/23/1984		EPA		
No Further Remedial Action Planned under Federal program	8/23/1984	8/23/1984		EPA		
Site added to database	3/21/1988		Michael Zollitsch	DEQ		SAS
Responsible party notified re 11/88 Inventory listing	11/30/1988			DEQ		SAS
SITE EVALUATION	3/1/1992	3/1/1992		DEQ		SAS
Listing Review completed	3/2/1992	3/2/1992		DEQ		SAS
Insufficient information to list	3/3/1992	9/30/1992		DEQ		SAS
SITE SCORING	3/4/1992	7/30/1992		DEQ		SAS
PRELIMINARY ASSESSMENT EQUIVALENT	5/4/1992	9/28/1992		DEQ		SAS
Proposal for Confirmed Release List recommended	9/30/1992	9/30/1992		DEQ		SAS
Proposal for Inventory recommended	9/30/1992	9/30/1992		DEQ		SAS
Facility proposed for Confirmed Release List	10/5/1992	10/5/1992		DEQ		SAS
Facility proposed for Inventory	10/5/1992	10/5/1992		DEQ		SAS
Extension requested by owner/operator	11/13/1992	11/13/1992		DEQ		SAS

Extension requested by owner/operator	11/13/1992	11/13/1992		DEQ		SAS
Petition or request granted	11/14/1992	11/14/1992		DEQ		SAS
VCS Waiting List	2/24/1993	6/22/1993	Michael Rosen	DEQ		VCS
NEGOTIATIONS	6/23/1993	9/11/1994	Michael Kortenhof	DEQ		VCS
REMEDIAL INVESTIGATION	9/12/1994	8/31/1995	Thomas Roick	DEQ	NWR	VCS
Review for final listing	6/1/1995	9/5/1995	Thomas Roick	DEQ	NWR	VCS
Listing on Confirmed Release List recommended	9/5/1995	9/5/1995	Thomas Roick	DEQ	NWR	VCS
Listing on Inventory recommended	9/5/1995	9/5/1995	Thomas Roick	DEQ	NWR	VCS
Facility placed on Confirmed Release List	9/15/1995	9/15/1995	Thomas Roick	DEQ	NWR	VCS
Facility placed on Inventory	9/15/1995	9/15/1995	Thomas Roick	DEQ	NWR	VCS
BASIC PRELIMINARY ASSESSEMENT	9/7/1999	9/7/1999	Thomas Gainer	DEQ	NWR	SAS
Remedial Investigation recommended (RI)	9/7/1999	9/7/1999	Thomas Gainer	DEQ	NWR	SAS
SITE SCORING	9/7/1999	9/7/1999	Thomas Gainer	DEQ	NWR	SAS
NEGOTIATIONS	2/29/2000		Matt McClincy	DEQ	NWR	VCS
Letter Agreement	2/29/2000	8/16/2000	Matt McClincy	DEQ	NWR	VCS
REMEDIAL INVESTIGATION	8/16/2000		Matt McClincy	DEQ	NWR	VCS

Key to certain acronyms and terms in this report:

CERCLIS No.: The U.S. EPA's Hazardous Waste Site identification number, shown only if EPA has been involved at the site.
Region: DEQ divides the state into three regions (E, NW, and W); the regional office shown is responsible for site investigation/cleanup.
NPL Site: Is the site on EPA's Superfund List? (Y/N).
Orphan Site: Has DEQ's Orphan Program been active at this site? (Y/N). The Orphan Program cleans up high-priority sites where owners and operators responsible for the contamination are absent, or are unwilling or unable to use their own resources for cleanup.
Study Area: Is this site a Study Area? (Y/N). ECSI assigns unique Site ID numbers to both individual sites and to Study Areas, which are groupings of individual ECSI sites that may be contributing to a larger, area-wide problem.
SIC Code: The Standard Industrial Classification code assigned to the operation described in this part of the report.
Pathways: A description of human or environmental resources that site contamination could affect.
Lead Pgm: This column refers to the Cleanup Program affiliation of the DEQ employee responsible for the action shown. SAS = Site Assessment; VCS = Voluntary Cleanup; SRS = Site Response (enforcement cleanup).

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Oregon DEQ

Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 2117

This report shows data entered as of January 31, 2003 at 10:12:13 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 2117	Site Name: Texaco Product Pipeline		CERCLIS No:
	Address: 4500 Block NW Front AVE Portland 97210		
	County: Multnomah		Region: Northwest
	Investigation Status: Listed on CRL or Inventory	NPL Site: No	Orphan Site: No Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 19		Tax Lots: R94120 0500 (Gunderson propty)
	Latitude: 45 deg. 33 ' 10.2"	Longitude: -122 deg. 43 ' 20"	Site Size: estim. 0.35 acres
Other Site Names:			
	Equilon Portland Sales Terminal Pipeline		
	Portland Harbor Sediment Study		
Operations:			
	Name: Texaco Product Pipeline		
	Comments: Product unloading/transfer pipeline.		
	Years of Operation: 1926 to present		
	SIC Code: 4613		Operating Status: Active

Contamination Information

Hazardous Substances/Waste Types:	Petroleum products, including BTEX constituents (benzene, toluene, ethylbenzene, and xylenes); MTBE, PAHs, and lead may also be present. The accidental rupture of one of Texaco's inactive pipelines during the late winter of 1998/99 released up to 300 gallons of Bunker oil, so PAHs may also be a significant concern at the site.

also be a significant concern at the site.

Manner and Time of Release:	Soil contamination data suggests that the release originated from an underground pipeline leak. It is unclear if the pipline is the only source of petroleum releases. One of Texaco's nearby inactive Bunker fuel pipelines was also ruptured during fiber-optic cable trenching activities in the late winter of 1998/99, releasing approximately 300 gallons of Bunker fuel.
Contamination Information:	Gasoline with some diesel fuel. Primarily BTEX contamination, with possible MTBE. Possible lead if historic releases were also involved. Possible PAHs, depending on overall diesel fuel concentrations. One of Texaco's inactive underground pipelines was also ruptured during the late winter of 1998/99 when a trenching contractor who was installing a fiber-optic cable struck the pipeline, releasing approximately 300 gal. of bunker fuel. (1/20/00 TBG/SAP) Soil and groundwater investigation was conducted in 1997 to evaluate petroleum hydrocarbons around Texaco's pipelines located under the Gunderson facility. Gasoline-range contamination was found in soil and groundwater, and petroleum vapors turned up in nearby sewers and inside the Gunderson building. Because the downgradient extent of contamination is not known, it is unclear whether contaminants released from the pipeline have migrated to the Willamette River.
Pathways:	Most significant concerns are: vapor releases (benzene) to nearby buildings on the Gunderson property; vapor and free-product releases to the sanitary sewer line that could create explosive conditions within the sewer lines; potential hazard to utility trench workers; potential damage to other nearby underground utilities (natural gas, water, telephone); potential discharges to storm sewers that discharge to the Willamette River; potential discharge of contaminated groundwater to the Willamette River; and potential exacerbation of existing subsurface contamination at the Gunderson site.
Environmental/Health Threats:	Benzene inhalation threat through vapor intrusion into Gunderson buildings; BTEX vapor inhalation and BTEX & PAH contact threat to potential utility trench workers and sanitary-sewer workers; potential explosion hazard in sanitary sewer line.
Status of Investigative or Remedial Action:	(1/20/00 TGB/SAP) Based on sampling results from a river sediment study, the Texaco pipeline has been identified as a potential source of contamination to Porltand Harbor. DEQ completed an initial investigation in September 1999. A remedial investigation (RI) is required to evaluate potential ecological threats posed by sediment contamination (high priority). (1/19/01 MJM/VCP) DEQ and Equilon entered into a Voluntary RI Agreement 8/16/00. Equilon submitted a draft pre-remedial investigation work plan for both the bulk-fuel facility and the pipeline 10/00, and is currently revising it based on DEQ review comments. Equilon constructed a soil vapor extraction and air-sparge system 12/99 on the Gunderson site to remediate vadose-zone soils and groundwater from the suspected pipeline release. Groundwater monitoring indicates the system has effectively reduced contaminant levels. DEQ requested additional investigation to establish the nature and extent of the original release.
Data Sources:	DEQ Spill Files, spill numbers 97-0497 and 97-0506; Soil and Groundwater Investigation on Front Ave., by SECOR, 10/97; Quarterly groundwater monitoring reports (1998); Remedial System Installation and Groundwater and Soil Vapor Monitoring Report (5/98). SEE ALSO ECSI #169.

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission
BARIUM	Sediment	Texaco Dock - 274 ppm	9/1/1997	Yes	No	No

BENZENE	Groundwater		6/11/1997	Yes	No	No
BENZENE	Other	In sanitary sewer line (Manhole #1)	2/18/1997	Yes	No	No
BENZENE	Soil		6/10/1997	Yes	No	No
BIS(2-ETHYLHEXYL) PHTHALATE	Sediment	Texaco Dock - 440-5000 ppb	9/1/1997	Yes	No	No
BUTYL BENZYL PHTHALATE	Sediment	30 ppb	9/1/1997	Yes	No	No
CADMIUM	Sediment	Texaco Dock - 5.3 ppm	9/1/1999	Yes	No	No
CHROMIUM	Sediment	Texaco Dock - 157 ppm	9/1/1997	Yes	No	No
COPPER	Sediment	Texaco Dock - 124 ppm	9/1/1997	Yes	No	No
CRESOL,4-	Sediment	Texaco Dock - 730-1200 ppb	9/1/1997	Yes	No	No
DIESEL - FUEL OIL	Soil	Detected (greater than 50 mg/kg; not quantified) GP-9	6/10/1997	Yes	No	No
ETHYLBENZENE	Groundwater	MW-1	6/11/1997	Yes	No	No
ETHYLBENZENE	Other	In sanitary sewer line (Manhole #2)	2/18/1997	Yes	No	No
ETHYLBENZENE	Soil	GP-3	9/11/1997	Yes	No	No
GASOLINE	Groundwater	MW-1	6/11/1997	Yes	No	No
GASOLINE	Other	In Sanitary Sewer Line (Manhole #2)	2/18/1997	Yes	No	No
GASOLINE	Soil	GP-3	6/10/1997	Yes	No	No
LEAD	Sediment	Texaco Dock - 1080 ppm	9/1/1997	Yes	No	No
MERCURY	Sediment	Texaco Dock - 0.37 ppm	9/1/1997	Yes	No	No
METHYLNAPHTHALENE,2-	Sediment	Texaco Dock - 2000 ppb	9/1/1997	Yes	No	No
POLYAROMATIC HYDROCARBONS (PAH)	Sediment	Texaco Dock - LPAHs 1100 ppb	9/1/1997	Yes	No	No
SILVER	Sediment	Texaco Dock - 3.4 ppm	9/1/1997	Yes	No	No
THALLIUM	Sediment	Texaco Dock - 15 ppm	9/1/1997	Yes	No	No
TITANIUM	Sediment	Texaco Dock - 2160 ppm	9/1/1997	Yes	No	No
TOLUENE	Groundwater	MW-1	6/11/1997	Yes	No	No
TOLUENE	Other	In Sanitary Sewer Line (Manhole #1)	2/18/1997	Yes	No	No
TOLUENE	Soil		6/10/1997	Yes	No	No
XYLENEs	Groundwater	MW-1	6/11/1997	Yes	No	No
XYLENEs	Other	In Sanitary Sewer Line (Manhole #1)	2/18/1997	Yes	No	No
XYLENEs	Soil	GP-3	6/10/1997	Yes	No	No
ZINC	Sediment	Texaco Dock - 120-583	9/1/1997	Yes	No	No

ZINC	Sediment	ppm	9/1/1997	Yes	No	No

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
Site added to database	10/23/1997	10/23/1997	Alicia Voss	DEQ	NWR	SAS
PRELIMINARY ASSESSMENT EQUIVALENT	10/23/1997	4/22/1999	Stephen Fortuna	DEQ	NWR	SAS
Remedial Investigation/Feasibility Study recommended	12/11/1998	4/23/1999	Stephen Fortuna	DEQ	NWR	SAS
Proposal for Confirmed Release List recommended	4/23/1999	4/23/1999	Stephen Fortuna	DEQ	NWR	SAS
Proposal for Inventory recommended	4/23/1999	4/23/1999	Stephen Fortuna	DEQ	NWR	SAS
Facility proposed for Confirmed Release List	4/30/1999	4/30/1999	Kim Van Patten	DEQ	NWR	SAS
Facility proposed for Inventory	4/30/1999	4/30/1999	Kim Van Patten	DEQ	NWR	SAS
Remedial Investigation recommended (RI)	9/2/1999	9/2/1999	Thomas Gainer	DEQ	NWR	SAS
SITE EVALUATION	9/2/1999	9/2/1999	Thomas Gainer	DEQ	NWR	SAS
SITE SCORING	9/2/1999	9/2/1999	Thomas Gainer	DEQ	NWR	SAS
Facility placed on Confirmed Release List	9/14/1999	9/14/1999	Kim Van Patten	DEQ	NWR	SAS
Facility placed on Inventory	9/14/1999	9/14/1999	Kim Van Patten	DEQ	NWR	SAS
Letter Agreement	2/29/2000		Matt McClincy	DEQ	NWR	VCS
NEGOTIATIONS	2/29/2000		Matt McClincy	DEQ	NWR	VCS

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Study Area: Is this site a Study Area? (Y/N). ECSI assigns unique Site ID numbers to both individual sites and to Study Areas, which are groupings of individual ECSI sites that may be contributing to a larger, area-wide problem.
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SAS = Site Assessment; VCS = Voluntary Cleanup; SRS = Site Response (enforcement cleanup).

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Oregon DEQ

Home > Programs> Cleanup & Spills > ECSI Query > ECSI Site Details

Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 1160

This report shows data entered as of January 31, 2003 at 10:12:36 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 1160	Site Name: Trumbull Asphalt Plant		CERCLIS No:	
	Address: 3605 NW 35th AVE (3750 NW Yeon Ave) Portland 97210			
	County: Multnomah		Region: Northwest	
	Investigation Status: Listed on CRL or Inventory	NPL Site: No	Orphan Site: No	Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 20		Tax Lots: 15 (now T.L. 1600)	
	Latitude: 45 deg. 32 ' 55"	Longitude: -122 deg. 43 ' 12"	Site Size: 8.06 acrea	
Other Site Names:				

Operations:

Name: Trumbull Asphalt Plant		
Comments: Asphalt manufacturing plant		
Years of Operation: 1930s to present		
SIC Code: 2911		Operating Status: Active

Contamination Information

Hazardous Substances/Waste Types:	
Manner and Time of Release:	Leak from old underground asphalt fume line prior to 6/88.
Contamination	(11/06/01 RP/NWR) In 7/88, during decommissioning of an underground fume line, soil and

Contamination Information:	(11/26/91 RP/NWR) In 7/88, during decommissioning of an underground fume line, soil and groundwater contamination by petroleum hydrocarbons were discovered at the site. Initial investigation by Crosby and Overton found two distinct areas of petroleum hydrocarbon contamination. One area was similar to diesel fuel, the other appeared to be blowing distillate (BD) releated to asphalt processing and the old fume line.
Pathways:	
Environmental/Health Threats:	Possible free product migration and contaminated groundwater migration off site.
Status of Investigative or Remedial Action:	(11/25/91 RP/NWR) At present, groundwater contamination remains, including free product in at least one area. It may or may not have migrated off-site. The PRP intends to continue and perhaps expand groundwater monitoring efforts. Since most of the contaminated areas are covered with asphalt, no soil removal or remediation has been planned or attempted. Further assessment and continued monitoring of the site is recommended. Owens/Corning Fiberglass conducted a PA at the Trumbull Asphalt Plant. Inventory ranking package needs to be completed. (4/13/93 EB/VCS) Significant levels of TPH contamination remain in the soil. Analysis of contaminants is required (BTEX, PAHs). Effort to remove as much contaminated soil as reasonably possible is required. TPH is still present in groundwater (BTEX, BDL). PAH and TPH analyses should be continued.
Data Sources:	

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission
TOTAL PETROLEUM HYDROCARBONS (TPH)	Groundwater	160 ppm (0.04 inches of free product)	7/26/1992	Yes	No	No
TOTAL PETROLEUM HYDROCARBONS (TPH)	Soil	9350 mg/kg (as high as 162,000 in 1988 data)		Yes	No	No

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
SITE EVALUATION	11/24/1991	11/24/1991		DEQ		SAS
Listing Review completed	11/25/1991	11/25/1991		DEQ		SAS
Proposal for Confirmed Release List recommended	11/25/1991	11/25/1991		DEQ		SAS
Preliminary Assessment Equivalent recommended (PAE)	11/26/1991	11/26/1991		DEQ		SAS
Site added to database	12/31/1991			DEQ		SAS
Remedial Investigation/Feasibility Study recommended	2/25/1992	6/30/1992		DEQ	HQ	SAS
PRELIMINARY ASSESSMENT EQUIVALENT	2/25/1992	6/30/1992		DEQ	HQ	SAS
Proposal for Inventory recommended	6/30/1992	6/30/1992		DEQ		SAS
Facility proposed for Confirmed Release List	12/7/1992	12/7/1992		DEQ		SAS
Facility proposed for Inventory	12/7/1992	12/7/1992		DEQ		SAS
Listing on Confirmed Release List recommended	3/24/1993	3/24/1993		DEQ		SAS
Listing on Inventory recommended	3/24/1993	3/24/1993		DEQ		SAS

Review for final listing	3/24/1993	3/24/1993	DEQ		SAS
Facility placed on Confirmed Release List	4/15/1993	4/15/1993	DEQ	HQ	SAS
Facility placed on Inventory	4/15/1993	4/15/1993	DEQ	HQ	SAS

Key to certain acronyms and terms in this report:
CERCLIS No.: The U.S. EPA's Hazardous Waste Site identification number, shown only if EPA has been involved at the site.
Region: DEQ divides the state into three regions (E, NW, and W); the regional office shown is responsible for site investigation/cleanup.
NPL Site: Is the site on EPA's Superfund List? (Y/N).
Orphan Site: Has DEQ's Orphan Program been active at this site? (Y/N). The Orphan Program cleans up high-priority sites where owners and operators responsible for the contamination are absent, or are unwilling or unable to use their own resources for cleanup.
Study Area: Is this site a Study Area? (Y/N). ECSI assigns unique Site ID numbers to both individual sites and to Study Areas, which are groupings of individual ECSI sites that may be contributing to a larger, area-wide problem.
SIC Code: The Standard Industrial Classification code assigned to the operation described in this part of the report.
Pathways: A description of human or environmental resources that site contamination could affect.
Lead Pgm: This column refers to the Cleanup Program affiliation of the DEQ employee responsible for the action shown. SAS = Site Assessment; VCS = Voluntary Cleanup; SRS = Site Response (enforcement cleanup).

For more information about this page please contact Gil Wistar at (503) 229-5512 or via email at wistar.gil@deq.state.or.us.

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Oregon DEQ

Environmental Cleanup Site Information Database
Site Summary Report - Details for Site ID 330

This report shows data entered as of January 31, 2003 at 10:12:58 AM

See the bottom of this page for a key to certain acronyms and terms used in the report below

For more information on what is occuring at this site see DEQ's Facility Profiler.

Site Information

Site ID: 330	Site Name: Van Waters & Rogers - Portland		CERCLIS No: 009227398
	Address: 3950 NW Yeon AVE Portland 97210		
	County: Multnomah		Region: Northwest
	Investigation Status: Listed on CRL or Inventory	NPL Site: No	Orphan Site: No; Study Area: No
Property:	Twnshp/Range/Sect: 1N , 1E , 20		Tax Lots: 17 (now Tax Lot 1800)
	Latitude: 45 deg. 32 ' 57"	Longitude: -122 deg. 43 ' 6"	Site Size: 9.38 acres
Other Site Names:			
	McKesson Chemical Co.		
	Univar Corp.		
Operations:			
	Name: Van Waters & Rogers		
	Comments: Packages and stores chemicals (also recycles solvents)		
	Years of Operation: 1946 to present		
	SIC Code: 4226		Operating Status: Active

Contamination Information

Hazardous Substances/Waste Types:	halogenated and aromatic VOCs, pesticides

Manner and Time of Release:	Past practices; spills. Time of release: sometime after 1974.
Contamination Information:	(11/30/93 KPD/SAS) Van Waters & Rogers, a subsidiary of Univar Corp., started as a chemical supply company in 1946. About 1974, the company expanded into recycling and distilling spent solvents. In August 1980, methylene chloride spilled from a ruptured tank hose. The spill was confined to the pavement and mopped up. In September 1983, about 515 gallons of trichloroethylene (TCE) spilled from a ruptured tank gauge across a paved road and into the storm sewers. An emergency valve in the sewer line blocked the spill, and the TCE was pumped out. The City of Portland recorded a series of low pH discharges (0.8 to 3.2) in 1984 and 1985. VWR decided not to renew its hazardous waste storage permit in December 1985. Soil and groundwater sampling was required as part of RCRA Closure activities. The sampling, performed in the summer of 1987, found high levels of solvents in the soil (down to 11 feet) and in the groundwater. In January 1989, toluene spilled from a leaking valve into the storm sewers. The toluene was contained and pumped out. In June 1990, DEQ was informed of a release of 3,900 gallons of nitric acid, phosphoric acid, and water. No information on the cleanup is in the files. As of May 1992, 16 substances were present in the groundwater at the site at levels above the federal Maximum Contaminant Levels (MCLs) for drinking water.
Pathways:	
Environmental/Health Threats:	At least a dozen chemicals (mostly solvents) are present in the groundwater at levels above the federal MCLs for drinking water.
Status of Investigative or Remedial Action:	(11/30/93 KPD/SAS) Surface contamination apparently was cleaned up by January 1992. Groundwater contamination at the site is presently being remediated, via corrective action, under the federal RCRA program. Site Assessment recommends that the site be placed on both the Confirmed Release List and Inventory. Once the site has been closed under RCRA, the site can be reevaluated to determine if any further action is necessary under the state Superfund program.
Data Sources:	1) Inspection reports. 2) EPA CERCLA Preliminary Assessment. 3) Correspondence FROM owner and/or operator. 4) Laboratory results. 5) Spill reports. 6) Sampling and Analysis Plan. 7) Phase I Field Investigation and Analytical Program report. 8) Progress Report XXV.

Substance Contamination Information

Substance	Media Contaminated	Concentration Level	Date Recorded	Lab Data	Agency Observation	Owner Operator Admission
BENZENE	Groundwater	up to 530 ppb		Yes	No	No
CHLOROFORM	Groundwater	up to 1,000 ppb		Yes	No	No
DICHLOROETHANE,1,2-	Groundwater	up to 130 ppb		Yes	No	No
DICHLOROETHYLENE,1,1-	Groundwater	up to 4,600 ppb		Yes	No	No
DICHLOROETHYLENE,1,2-CIS-	Groundwater	up to 65,000 ppb		Yes	No	No
DICHLOROETHYLENE,1,2-TRANS-	Groundwater	up to 230 ppb		Yes	No	No
ETHYLBENZENE	Groundwater	up to 3,600 ppb		Yes	No	No
METHYLENE CHLORIDE	Groundwater	up to 290,000 ppb		Yes	No	No

STYRENE	Groundwater	up to 520 ppb	Yes	No	No
TETRACHLOROETHYLENE	Groundwater	up to 98,000 ppb	Yes	No	No
TOLUENE	Groundwater	up to 130,000 ppb	Yes	No	No
TRICHLOROETHANE,1,1,1-	Groundwater	up to 51,000 ppb	Yes	No	No
TRICHLOROETHANE,1,1,2-	Groundwater	up to 110 ppb	Yes	No	No
TRICHLOROETHYLENE	Groundwater	up to 90,000 ppb	Yes	No	No
VINYL CHLORIDE	Groundwater	up to 850 ppb	Yes	No	No
XYLENEs	Groundwater	up to 15,000 ppb	Yes	No	No

Investigative, Remedial and Administrative Actions

Action	Start Date	Compl. Date	Resp. Staff	Agency Code	Region	Lead Pgm
Site added to CERCLIS	2/1/1980			EPA		
EPA Basic Preliminary Assessment	6/26/1984	9/17/1984		EPA		
Site added to database	8/16/1988		Michael Zollitsch	DEQ	HQ	SAS
Responsible party notified re 11/88 Inventory listing	11/30/1988			DEQ	HQ	SAS
EPA Preliminary Assessment 2	8/14/1991	12/5/1991		EPA		
SITE EVALUATION	6/28/1992	6/28/1992	Kevin Dana	DEQ	HQ	SAS
Listing Review completed	6/29/1992	6/29/1992	Kevin Dana	DEQ	HQ	SAS
Proposal for Confirmed Release List recommended	6/30/1992	6/30/1992	Kevin Dana	DEQ	HQ	SAS
PRELIMINARY ASSESSMENT EQUIVALENT	11/29/1993	11/29/1993	Kevin Dana	DEQ	HQ	SAS
Proposal for Inventory recommended	11/30/1993	11/30/1993	Kevin Dana	DEQ	HQ	SAS
Other remedial or investigative action recommended	12/1/1993	12/1/1993	Kevin Dana	DEQ	HQ	SAS
Facility proposed for Confirmed Release List	5/25/1994	5/25/1994	Kevin Dana	DEQ	HQ	SRS
Facility proposed for Inventory	5/25/1994	5/25/1994	Kevin Dana	DEQ	HQ	SRS
Review for final listing	10/18/1994	10/18/1994	Kevin Dana	DEQ	HQ	SRS
Listing on Confirmed Release List recommended	10/19/1994	10/19/1994	Kevin Dana	DEQ	HQ	SRS
Listing on Inventory recommended	10/19/1994	10/19/1994	Kevin Dana	DEQ	HQ	SRS
Facility placed on Confirmed Release List	10/24/1994	10/24/1994		DEQ	HQ	SAS
Facility placed on Inventory	10/24/1994	10/24/1994		DEQ	HQ	SAS

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SIC Code: The Standard Industrial Classification code assigned to the operation described in this part of the report.
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Leaking Underground Storage Tank (LUST) Site Summary Data Reports

Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-92-0163**
Site Name: QUALITY MILLWORK INC
Address: 2700 NW ST HELENS RD
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**
Status: **CLOSED**
Received Date: 6/18/1992
UST Facility Id: 11022
County: MULTNOMAH

Assessment Information

26-92-0163

Discovery Date: 6/18/1992
Discovery Method: DECOMMISSIONING
Cause Of Release: OVERFILL

Management Information

26-92-0163

Release Stopped Date: 6/18/1992
Cleanup Start Date: 6/18/1992
Cleanup End Date: 5/15/1997

Contaminant Impact Information

26-92-0163

Media / Contaminant		
Soil	LUBRICANT	

No Status Information Entered For This Incident 26-92-0163

Work Performed Information

26-92-0163

Work	Company	Begin Date	End Date
Initial Response			

No Reports Received Information Entered For This Incident 26-92-0163

This information may not reflect current status of site.
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Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-97-0806**
Site Name: DON THOMAS PETROLEUM
Address: 2727 NW ST HELENS RD
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**
Status: **CLOSED**
Received Date: 10/28/1997
UST Facility Id: 6362
County: MULTNOMAH

Assessment Information

26-97-0806

Discovery Date: 10/28/1997
Discovery Method: DECOMMISSIONING
Cause Of Release: PIPE LEAK

Management Information

26-97-0806

Release Stopped Date: 10/27/1997
Cleanup Start Date: 10/27/1997
Cleanup End Date: 4/13/1999

Contaminant Impact Information

26-97-0806

Media / Contaminant		
	Soil	MISC. GASOLINE
		SOLVENT

No Status Information Entered For This Incident 26-97-0806

No Work Performed Information Entered For This Incident 26-97-0806

No Reports Received Information Entered For This Incident 26-97-0806

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-93-0113**
Status: **CLOSED**
Site Name: MYERS CONTAINER CORPORATION
Received Date: 7/9/1993
Address: 3000 NW ST HELENS ROAD
UST Facility Id: 4095
City: PORTLAND
Zip Code: 97210
County: MULTNOMAH
Heating Oil Tank (HOT): N
Regulated Tank: **Y**

Assessment Information

26-93-0113

Discovery Date: 7/9/1993
Discovery Method: SITE ASSESSMENT
Cause Of Release: TANK LEAK

Management Information

26-93-0113

Release Stopped Date: 7/9/1993
Cleanup Start Date: 7/10/1993
Cleanup End Date: 9/25/1996

Contaminant Impact Information

26-93-0113

Media / Contaminant		
Soil	MISC. GASOLINE	

No Status Information Entered For This Incident 26-93-0113

Work Performed Information

26-93-0113

Work	Company	Begin Date	End Date
Initial Response			

No Reports Received Information Entered For This Incident 26-93-0113

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-97-0272**
Status: **CLOSED**
Site Name: HEATING OIL TANK
Received Date: 4/8/1997
Address: 3033 NW ST HELENS ROAD
City: PORTLAND
Zip Code: 97210
County: MULTNOMAH
Heating Oil Tank (HOT): **Y**
Regulated Tank: N

Assessment Information

26-97-0272

Discovery Date: 4/2/1997
Discovery Method: SITE ASSESSMENT
Cause Of Release: PIPE LEAK

Management Information

26-97-0272

Release Stopped Date: 4/2/1997
Cleanup Start Date: 4/25/1997
Cleanup End Date: 1/26/1999

Contaminant Impact Information

26-97-0272

Media / Contaminant		
	Soil	HEATING OIL

No Status Information Entered For This Incident

26-97-0272

Work Performed Information

26-97-0272

Work	Company	Begin Date	End Date
Site Characterization	Kleinfelder, Inc.	1/11/1999	

Reports Received Information

26-97-0272

Report Type	Received Date	Comment
20 Day Report	5/1/1997	
Site Characterization	1/11/1999	

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Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Log Nbr: **26-93-6041**
Site Name: HEATING OIL TANK
Address: 3055 NW YEON
City: PORTLAND
Heating Oil Tank (HOT): **Y**

Basic Incident Information

Zip Code: 97210
Regulated Tank: N

Status: **CLOSED**
Received Date: 6/18/1993
County: MULTNOMAH

Assessment Information 26-93-6041

Discovery Date: 6/16/1993 Discovery Method: DECOMMISSIONING Cause Of Release: TANK LEAK

Management Information 26-93-6041

Release Stopped Date: 6/16/1993 Cleanup Start Date: 6/16/1993 Cleanup End Date: 7/20/1994

Contaminant Impact Information 26-93-6041

Media / Contaminant Soil HEATING OIL

No Status Information Entered For This Incident 26-93-6041

No Work Performed Information Entered For This Incident 26-93-6041

No Reports Received Information Entered For This Incident 26-93-6041

This information may not reflect current status of site.
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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-97-0599**
Status: **ACTIVE**
Site Name: HEATING OIL TANK
Received Date: 8/11/1997
Address: 3074 NW ST HELENS ROAD
City: PORTLAND
Zip Code: 97210
County: MULTNOMAH
Heating Oil Tank (HOT): **Y**
Regulated Tank: N

Assessment Information

26-97-0599

Discovery Date: 8/8/1997
Discovery Method: SITE ASSESSMENT
Cause Of Release: UNKNOWN

No Management Information For This Incident 26-97-0599

Contaminant Impact Information

26-97-0599

Media / Contaminant		
	Soil	BUNKER FUEL
		HEATING OIL

No Status Information Entered For This Incident 26-97-0599

Work Performed Information

26-97-0599

Work	Company	Begin Date	End Date
Initial Response	GeoCon, Inc.	4/14/1999	

Reports Received Information

26-97-0599

Report Type	Received Date	Comment
Other	11/3/1997	ADDITIONAL INFO.
20 Day Report	4/13/1999	

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-91-0235**
Site Name: CARSON OIL COMPANY
Address: 3125 NW 35TH AVE
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**
Status: **CLOSED**
Received Date: 6/24/1991
UST Facility Id: 3066
County: MULTNOMAH

No Assessment Information For This Incident 26-91-0235

Management Information 26-91-0235

Release Stopped Date: 6/24/1991 Cleanup Start Date: 6/24/1991 Cleanup End Date: 6/17/1992

No Contaminant Impact Information For This Incident 26-91-0235

No Status Information Entered For This Incident 26-91-0235

Work Performed Information 26-91-0235

Work	Company	Begin Date	End Date
Site Assessment	Wohlers Environmental Services,Inc.	10/1/1998	

Reports Received Information 26-91-0235

Report Type	Received Date	Comment
Corrective Action Plan	9/29/1998	Appendix maps.

This information may not reflect current status of site.
For further detail, refer to the DEQ Regional Office file.

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Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-97-0451**
Site Name: CARSON OIL COMPANY
Address: 3125 NW 35TH AVE
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**
Status: **CLOSED**
Received Date: 6/12/1997
UST Facility Id: 3066
County: MULTNOMAH

Assessment Information

26-97-0451

Discovery Date: 6/11/1997
Discovery Method: SITE ASSESSMENT
Cause Of Release: UNKNOWN

Management Information

26-97-0451

Release Stopped Date: 6/12/1997
Cleanup Start Date: 6/18/1997
Cleanup End Date: 6/5/2000

Contaminant Impact Information

26-97-0451

Media / Contaminant		
	Soil	BUNKER FUEL
		DIESEL

No Status Information Entered For This Incident 26-97-0451

Work Performed Information

26-97-0451

Work	Company	Begin Date	End Date
Site Characterization	Wohlers Environmental Services,Inc.	9/30/1998	
Quarterly Ground Water Monitoring	Wohlers Environmental Services,Inc.	8/23/1999	
Quarterly Ground Water Monitoring	Wohlers Environmental Services,Inc.	3/10/2000	
Initial Response			

Reports Received Information

26-97-0451

Report Type	Received Date	Comment
Other	6/8/1998	ADDITIONAL INFO.
Workplan	8/3/1998	
Other	9/29/1998	Appendix maps from the RBCA Stratagey Document.
Corrective Action Plan	9/30/1998	
Other	1/14/1999	Well location plan.
Other	1/15/1999	Existing & Proposed Monitoring Well Location Map
Site Characterization	5/3/1999	
Groundwater Monitoring	8/20/1999	
Groundwater Monitoring	11/1/1999	
Groundwater Monitoring	3/7/2000	

This information may not reflect current status of site.
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Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-89-0230**
Site Name: WILHELM TRUCKING CO.
Address: 3250 NW ST HELENS RD
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**
Status: **CLOSED**
Received Date: 10/17/1989
UST Facility Id: 3493
County: MULTNOMAH

Assessment Information

26-89-0230

Discovery Date: 10/16/1989
Discovery Method: DECOMMISSIONING
Cause Of Release: OVERFILL

Management Information

26-89-0230

Release Stopped Date: 10/16/1989
Cleanup Start Date: 10/16/1989
Cleanup End Date: 4/16/1991

Contaminant Impact Information

26-89-0230

Media / Contaminant: Soil DIESEL

No Status Information Entered For This Incident 26-89-0230

No Work Performed Information Entered For This Incident 26-89-0230

No Reports Received Information Entered For This Incident 26-89-0230

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Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-89-0280**
Status: **CLOSED**
Site Name: HILL INVESTMENT/NABISCO WAREHOUSE
Received Date: 11/12/1989
Address: 3322 NW 35TH
UST Facility Id: 4358
City: PORTLAND
Zip Code: 97210
County: MULTNOMAH
Heating Oil Tank (HOT): N
Regulated Tank: **Y**

Assessment Information

26-89-0280

Discovery Date: 11/17/1989
Discovery Method: DECOMMISSIONING
Cause Of Release: PIPE LEAK

Management Information

26-89-0280

Release Stopped Date:
Cleanup Start Date: 11/17/1992
Cleanup End Date: 9/18/2000

Contaminant Impact Information

26-89-0280

Media / Contaminant		
	Soil	DIESEL

No Status Information Entered For This Incident

26-89-0280

Work Performed Information

26-89-0280

Work	Company	Begin Date	End Date
Ground Water Other	Hart Crowser, Inc.	7/7/1999	

Reports Received Information

26-89-0280

Report Type	Received Date	Comment
Other	6/3/1997	MONITORING REPORT
Groundwater Monitoring	7/7/1999	

This information may not reflect current status of site.
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Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-91-0063**
Site Name: A N R FREIGHT SYSTEM
Address: 3333 NW 35TH
City: PORTLAND
Heating Oil Tank (HOT): N

Zip Code: 97210
Regulated Tank: **Y**

Status: **CLOSED**
Received Date: 2/7/1991
UST Facility Id: 5039
County: MULTNOMAH

Assessment Information

26-91-0063

Discovery Date: 2/7/1991
Discovery Method: OTHER
Cause Of Release: UNKNOWN

Management Information

26-91-0063

Release Stopped Date: 2/7/1991
Cleanup Start Date: 2/7/1991
Cleanup End Date: 9/3/1992

Contaminant Impact Information

26-91-0063

Media / Contaminant		
	Groundwater	DIESEL
	Soil	DIESEL

No Status Information Entered For This Incident 26-91-0063

No Work Performed Information Entered For This Incident 26-91-0063

No Reports Received Information Entered For This Incident 26-91-0063

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Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-89-0165**
Site Name: HEMPHILL OIL COMPANY
Address: 3333 NW ST HELENS RD
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**
Status: **ACTIVE**
Received Date: 8/4/1989
UST Facility Id: 5030
County: MULTNOMAH

Assessment Information

26-89-0165

Discovery Date: 8/3/1989
Discovery Method: DECOMMISSIONING
Cause Of Release: OVERFILL

Management Information

26-89-0165

Release Stopped Date:
Cleanup Start Date: 8/4/1989
Cleanup End Date:

Contaminant Impact Information

26-89-0165

Media / Contaminant	Groundwater	DIESEL

No Status Information Entered For This Incident

26-89-0165

Work Performed Information

26-89-0165

Work	Company	Begin Date	End Date
Soil Treatment	GeoEngineers, Inc.	12/20/2000	
Site Characterization	SECOR International Incorporated	2/15/2002	

Reports Received Information

26-89-0165

Report Type	Received Date	Comment
Soil Treatment Report	1/5/1995	
Site Characterization	2/14/2002	
Groundwater Monitoring	6/5/2002	
Groundwater Monitoring	6/20/2002	

This information may not reflect current status of site.
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Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-92-0247**
Status: **CLOSED**
Site Name: INDUSTRIAL EXPORT COMPANY (INDEX)
Received Date: 8/31/1992
Address: 3340 NW ST HELENS ROAD
UST Facility Id: 2255
City: PORTLAND
Zip Code: 97210
County: MULTNOMAH
Heating Oil Tank (HOT): N
Regulated Tank: **Y**

Assessment Information

26-92-0247

Discovery Date: 8/29/1992
Discovery Method:
Cause Of Release: TANK LEAK

Management Information

26-92-0247

Release Stopped Date: 8/29/1992
Cleanup Start Date: 8/29/1992
Cleanup End Date: 10/30/1996

Contaminant Impact Information

26-92-0247

Media / Contaminant		
	Soil	UNLEADED GASOLINE

No Status Information Entered For This Incident 26-92-0247

Work Performed Information

26-92-0247

Work	Company	Begin Date	End Date
Initial Response			

No Reports Received Information Entered For This Incident 26-92-0247

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Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-96-0486**
Status: **CLOSED**
Site Name: INDUSTRIAL EXPORT COMPANY (INDEX)
Received Date: 8/20/1996
Address: 3340 NW ST HELENS RD
UST Facility Id: 2255
City: PORTLAND
Zip Code: 97210
County: MULTNOMAH
Heating Oil Tank (HOT): N
Regulated Tank: **Y**

Assessment Information

26-96-0486

Discovery Date: 8/19/1996
Discovery Method: SITE ASSESSMENT
Cause Of Release: OVERFILL

Management Information

26-96-0486

Release Stopped Date: 8/19/1996
Cleanup Start Date: 8/19/1996
Cleanup End Date: 1/13/2000

Contaminant Impact Information

26-96-0486

Media / Contaminant	Soil	DIESEL

No Status Information Entered For This Incident

26-96-0486

Work Performed Information

26-96-0486

Work	Company	Begin Date	End Date
Tank Decommissioning	TNCC Inc	8/13/1999	

Reports Received Information

26-96-0486

Report Type	Received Date	Comment
Decommissioning Report	7/14/1999	

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Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Log Nbr: **26-90-0219**
Site Name: NORTHWEST STEEL
Address: 3441 NW GUAM STREET
City: PORTLAND
Heating Oil Tank (HOT): N

Basic Incident Information

Zip Code:
Regulated Tank: N

Status: **CLOSED**
Received Date: 6/20/1990
County: MULTNOMAH

Assessment Information 26-90-0219

Discovery Date: 6/10/1990
Discovery Method: SITE ASSESSMENT
Cause Of Release: OTHER

Management Information 26-90-0219

Release Stopped Date: 6/20/1990
Cleanup Start Date: 6/20/1990
Cleanup End Date: 7/9/1990

No Contaminant Impact Information For This Incident 26-90-0219

No Status Information Entered For This Incident 26-90-0219

No Work Performed Information Entered For This Incident 26-90-0219

No Reports Received Information Entered For This Incident 26-90-0219

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Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-91-0441**
Site Name: PORTLAND RAILROAD COMPANY
Address: 3500 NW YEON AVE
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**
Status: **CLOSED**
Received Date: 11/1/1991
UST Facility Id: 3687
County: MULTNOMAH

Assessment Information

26-91-0441

Discovery Date:
Discovery Method: SITE ASSESSMENT
Cause Of Release: UNKNOWN

Management Information

26-91-0441

Release Stopped Date: 11/1/1991
Cleanup Start Date: 11/1/1991
Cleanup End Date: 8/15/2002

Contaminant Impact Information

26-91-0441

Media / Contaminant		
	Soil	DIESEL

Status Information

26-91-0441

Site Type: Administratively Closed
Active Remediation:
Comp GW Monitoring:
Delineate GW: Y
GW Delineated:
See Also: ECSI #100

File Status: Administrative Closure
Free Product Present:
Free Product Removed:
Vapors Present:
Vapors Controlled:

CAP Requested:
CAP Submitted:
CAP Approved:
Delineate Soil: Y
Soil Delineated:

Work Performed Information

26-91-0441

Work	Company	Begin Date	End Date
Site Characterization		10/6/2000	
Other	CH2M Hill	3/2/2001	

Reports Received Information

26-91-0441

Report Type	Received Date	Comment
Site Characterization	10/6/2000	2 copies
Workplan	3/1/2001	
Site Characterization	8/6/2001	and CAP requesting NFA

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-90-0207**
Status: **CLOSED**
Site Name: SPECIAL ASPHALT PRODUCTS, INC.
Received Date: 3/22/1990
Address: 3537 NW ST HELENS RD
UST Facility Id: 1050
City: PORTLAND
Zip Code: 97210
County: MULTNOMAH
Heating Oil Tank (HOT): N
Regulated Tank: **Y**

Assessment Information

26-90-0207

Discovery Date: 11/1/1989
Discovery Method: SITE ASSESSMENT
Cause Of Release: PIPE LEAK

Management Information

26-90-0207

Release Stopped Date: 3/22/1990
Cleanup Start Date: 3/22/1990
Cleanup End Date: 10/15/1990

No Contaminant Impact Information For This Incident 26-90-0207

No Status Information Entered For This Incident 26-90-0207

No Work Performed Information Entered For This Incident 26-90-0207

No Reports Received Information Entered For This Incident 26-90-0207

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-88-0054**
Status: **CLOSED**
Site Name: TRUMBALL ASPHALT FUME LINE
Received Date: 8/26/1988
Address: 3570 NW YEON
City: PORTLAND
Zip Code: 97210
County: MULTNOMAH
Heating Oil Tank (HOT): N
Regulated Tank: N

Assessment Information

26-88-0054

Discovery Date: 8/22/1988
Discovery Method: DECOMMISSIONING
Cause Of Release: UNKNOWN

Management Information

26-88-0054

Release Stopped Date:
Cleanup Start Date: 7/17/1992
Cleanup End Date: 7/17/1992

Contaminant Impact Information

26-88-0054

Media / Contaminant	Groundwater	MISC. GASOLINE

Status Information

26-88-0054

Site Type: Administratively Closed	File Status: Transferred to Other Program	CAP Requested:
Active Remediation:	Free Product Present:	CAP Submitted:
Comp GW Monitoring:	Free Product Removed:	CAP Approved:
Delineate GW:	Vapors Present:	Delineate Soil:
GW Delineated:	Vapors Controlled:	Soil Delineated:

No Work Performed Information Entered For This Incident 26-88-0054

No Reports Received Information Entered For This Incident 26-88-0054

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-90-0126**
Site Name: COCA COLA OF OREGON
Address: 3599 N W YEON
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**
Status: **CLOSED**
Received Date: 4/10/1990
UST Facility Id: 1750
County: MULTNOMAH

Assessment Information

26-90-0126

Discovery Date: 4/10/1990
Discovery Method: DECOMMISSIONING
Cause Of Release: OVERFILL

Management Information

26-90-0126

Release Stopped Date: 4/10/1990
Cleanup Start Date: 4/10/1990
Cleanup End Date: 9/6/1991

No Contaminant Impact Information For This Incident 26-90-0126

No Status Information Entered For This Incident 26-90-0126

No Work Performed Information Entered For This Incident 26-90-0126

No Reports Received Information Entered For This Incident 26-90-0126

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-90-0379**
Site Name: COURTESY TRUCKING (TRUCK TERM., INC.)
Address: 3641 NW ST HELENS ROAD
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**
Status: **CLOSED**
Received Date: 10/11/1990
UST Facility Id: 3924
County: MULTNOMAH

Assessment Information 26-90-0379

Discovery Date: 10/11/1990
Discovery Method: DECOMMISSIONING
Cause Of Release: OVERFILL

Management Information 26-90-0379

Release Stopped Date: 10/11/1990
Cleanup Start Date: 10/11/1990
Cleanup End Date: 12/13/1990

No Contaminant Impact Information For This Incident 26-90-0379

No Status Information Entered For This Incident 26-90-0379

No Work Performed Information Entered For This Incident 26-90-0379

No Reports Received Information Entered For This Incident 26-90-0379

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-89-0323**
Status: **CLOSED**
Site Name: TEXACO PORTLAND, OR SALES TERMINAL
Received Date: 12/21/1989
Address: 3800 NW ST HELENS ROAD
UST Facility Id: 7120
City: PORTLAND
Zip Code: 97210
County: MULTNOMAH
Heating Oil Tank (HOT): N
Regulated Tank: **Y**

Assessment Information 26-89-0323

Discovery Date: 12/21/1989
Discovery Method: DECOMMISSIONING
Cause Of Release: UNKNOWN

Management Information 26-89-0323

Release Stopped Date: 12/21/1989
Cleanup Start Date: 12/21/1989
Cleanup End Date: 11/9/1990

No Contaminant Impact Information For This Incident 26-89-0323

No Status Information Entered For This Incident 26-89-0323

No Work Performed Information Entered For This Incident 26-89-0323

No Reports Received Information Entered For This Incident 26-89-0323

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-90-0415**
Site Name: CHRISTENSON OIL
Address: 3821 NW ST HELENS RD
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**
Status: **CLOSED**
Received Date: 10/31/1990
UST Facility Id: 2887
County: MULTNOMAH

Assessment Information

26-90-0415

Discovery Date: 10/26/1990
Discovery Method: DECOMMISSIONING
Cause Of Release: OVERFILL

Management Information

26-90-0415

Release Stopped Date: 10/26/1990
Cleanup Start Date: 10/26/1990
Cleanup End Date: 11/14/2000

Contaminant Impact Information

26-90-0415

Media / Contaminant: Soil SOLVENT

Status Information

26-90-0415

Site Type: Soil Matrix Cleanup
Active Remediation:
Comp GW Monitoring:
Delineate GW:
GW Delineated:
File Status: No Further Action
Free Product Present:
Free Product Removed:
Vapors Present:
Vapors Controlled:
CAP Requested:
CAP Submitted:
CAP Approved:
Delineate Soil:
Soil Delineated:

No Work Performed Information Entered For This Incident 26-90-0415

No Reports Received Information Entered For This Incident 26-90-0415

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Log Nbr: **26-87-0041**
Site Name: LAGRANDE CHAIN CORP.
Address: 3865 NW ST HELENS ROAD
City: PORTLAND
Heating Oil Tank (HOT): N

Basic Incident Information

Zip Code: 97210
Regulated Tank: **Y**

Status: **CLOSED**
Received Date: 2/27/1987
UST Facility Id: 8272
County: MULTNOMAH

No Assessment Information For This Incident 26-87-0041

Management Information 26-87-0041

Release Stopped Date:
Cleanup Start Date: 11/16/1992
Cleanup End Date: 11/16/1992

Contaminant Impact Information 26-87-0041

Media / Contaminant
Soil UNKNOWN

No Status Information Entered For This Incident 26-87-0041

No Work Performed Information Entered For This Incident 26-87-0041

No Reports Received Information Entered For This Incident 26-87-0041

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-87-0030**
Site Name: CONVOY CORPORATION
Address: 3900 NW YEON
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**
Status: **CLOSED**
Received Date: 12/28/1987
UST Facility Id: 4739
County: MULTNOMAH

Assessment Information

26-87-0030

Discovery Date: 12/28/1987
Discovery Method: DECOMMISSIONING
Cause Of Release: UNKNOWN

Management Information

26-87-0030

Release Stopped Date:
Cleanup Start Date: 1/4/1988
Cleanup End Date: 12/30/1988

No Contaminant Impact Information For This Incident 26-87-0030

No Status Information Entered For This Incident 26-87-0030

No Work Performed Information Entered For This Incident 26-87-0030

No Reports Received Information Entered For This Incident 26-87-0030

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Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Log Nbr: **26-89-0203**
Site Name: CONTAINER RECOVERY INC
Address: 3900 NW YEON
City: PORTLAND
Heating Oil Tank (HOT): N.

Basic Incident Information

Zip Code: 97210
Regulated Tank: **Y**

Status: **CLOSED**
Received Date: 9/20/1989
UST Facility Id: 4739
County: MULTNOMAH

No Assessment Information For This Incident 26-89-0203

Management Information 26-89-0203

Release Stopped Date:
Cleanup Start Date:
Cleanup End Date: 5/17/1994

No Contaminant Impact Information For This Incident 26-89-0203

No Status Information Entered For This Incident 26-89-0203

No Work Performed Information Entered For This Incident 26-89-0203

No Reports Received Information Entered For This Incident 26-89-0203

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-90-0001**
Site Name: BINGHAM CONSTRUCTION, INC.
Address: 3939 NW ST HELENS RD
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**

Status: **CLOSED**
Received Date: 1/2/1990
UST Facility Id: 7227
County: MULTNOMAH

No Assessment Information For This Incident 26-90-0001

Management Information 26-90-0001

Release Stopped Date: 12/29/1989 Cleanup Start Date: 12/29/1989 Cleanup End Date: 4/11/1995

No Contaminant Impact Information For This Incident 26-90-0001

No Status Information Entered For This Incident 26-90-0001

No Work Performed Information Entered For This Incident 26-90-0001

No Reports Received Information Entered For This Incident 26-90-0001

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-94-0001**
Site Name: LAGRANDE STEEL CORP.
Address: 4000 NW ST HELENS RD
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**
Status: **CLOSED**
Received Date: 1/3/1994
UST Facility Id: 8273
County: MULTNOMAH

Assessment Information

26-94-0001

Discovery Date: 12/30/1993
Discovery Method: DECOMMISSIONING
Cause Of Release: PIPE LEAK

Management Information

26-94-0001

Release Stopped Date: 12/30/1993
Cleanup Start Date: 12/30/1993
Cleanup End Date: 12/1/1995

Contaminant Impact Information

26-94-0001

Media / Contaminant		
	Soil	DIESEL
		UNLEADED GASOLINE

No Status Information Entered For This Incident 26-94-0001

No Work Performed Information Entered For This Incident 26-94-0001

No Reports Received Information Entered For This Incident 26-94-0001

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-90-0288**
Site Name: EASTMAN CHEMICAL COMPANY
Address: 4155 NW YEON
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**
Status: **ACTIVE**
Received Date: 8/10/1990
UST Facility Id: 7122
County: MULTNOMAH

Assessment Information

26-90-0288

Discovery Date: 8/10/1990
Discovery Method: SITE ASSESSMENT
Cause Of Release: PIPE LEAK

Management Information

26-90-0288

Release Stopped Date: 8/8/1990
Cleanup Start Date: 8/8/1990
Cleanup End Date:

Contaminant Impact Information

26-90-0288

Media / Contaminant Groundwater OTHER

No Status Information Entered For This Incident

26-90-0288

Work Performed Information

26-90-0288

Work	Company	Begin Date	End Date
Quarterly Ground Water Monitoring	Squier Associates, Inc.	6/9/1998	
Quarterly Ground Water Monitoring	Squier Associates, Inc.	12/14/1998	
Site Assessment		1/22/1999	
Site Assessment	Spencer Environmental, Inc.	6/3/1999	
Quarterly Ground Water Monitoring	Squier Associates, Inc.	9/2/1999	
Quarterly Ground Water Monitoring	Squier Associates, Inc.	1/14/2000	
Quarterly Ground Water Monitoring	Squier Associates, Inc.	4/4/2000	
Quarterly Ground Water Monitoring		10/3/2000	
Quarterly Ground Water Monitoring		1/18/2001	
Initial Response			

Reports Received Information

26-90-0288

Report Type	Received Date	Comment
Other	7/17/1998	ASSESSMENT
Groundwater Monitoring	8/11/1998	2nd Qtr
Groundwater Monitoring	12/11/1998	
Other	1/22/1999	Off-site assessment activities.
Groundwater Monitoring	4/8/1999	
Site Characterization	6/3/1999	this one's a mistake TMB
Groundwater Monitoring	8/26/1999	
Groundwater Monitoring	1/6/2000	
Groundwater Monitoring	3/31/2000	
Groundwater Monitoring	10/2/2000	2 Copies
Groundwater Monitoring	1/18/2001	
Groundwater Monitoring	12/3/2001	

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-90-0389**
Site Name: MCWHORTER, INC.
Address: 4155 NW YEON
City: PORTLAND
Heating Oil Tank (HOT): N

Zip Code: 97210
Regulated Tank: **Y**

Status: **CLOSED**
Received Date: 10/15/1990
UST Facility Id: 7122
County: MULTNOMAH

Assessment Information

26-90-0389

Discovery Date: 10/15/1990
Discovery Method: TANK TEST
Cause Of Release: OTHER

Management Information

26-90-0389

Release Stopped Date: 10/15/1990
Cleanup Start Date: 10/15/1990
Cleanup End Date: 1/15/1991

No Contaminant Impact Information For This Incident 26-90-0389

No Status Information Entered For This Incident 26-90-0389

Work Performed Information

26-90-0389

Work	Company	Begin Date	End Date
Quarterly Ground Water Monitoring	Squier Associates, Inc.	6/3/1999	

Reports Received Information

26-90-0389

Report Type	Received Date	Comment
Groundwater Monitoring	6/2/1999	

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For further detail, refer to the DEQ Regional Office file.

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-93-0149**
Site Name: EGW MACHINERY, INC.
Address: 4200 NW YEON
City: PORTLAND
Heating Oil Tank (HOT): N

Zip Code: 97210
Regulated Tank: **Y**

Status: **CLOSED**
Received Date: 9/9/1993
UST Facility Id: 3016
County: MULTNOMAH

Assessment Information

26-93-0149

Discovery Date: 9/9/1993
Discovery Method: DECOMMISSIONING
Cause Of Release: OVERFILL

Management Information

26-93-0149

Release Stopped Date: 9/9/1993
Cleanup Start Date: 9/9/1993
Cleanup End Date: 9/30/1996

Contaminant Impact Information

26-93-0149

Media / Contaminant		
	Soil	DIESEL

No Status Information Entered For This Incident 26-93-0149

Work Performed Information

26-93-0149

Work	Company	Begin Date	End Date
Initial Response			

No Reports Received Information Entered For This Incident 26-93-0149

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Leaking Underground Storage Tanks (LUST) Site Information

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Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-89-0176**
Site Name: SILVER EAGLE TRUCKING
Address: 4285 NW YEON
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**
Status: **CLOSED**
Received Date: 8/22/1989
UST Facility Id: 6292
County: MULTNOMAH

Assessment Information

26-89-0176

Discovery Date: 8/18/1989
Discovery Method: DECOMMISSIONING
Cause Of Release: UNKNOWN

Management Information

26-89-0176

Release Stopped Date: 8/16/1989
Cleanup Start Date: 8/22/1989
Cleanup End Date: 8/6/1990

No Contaminant Impact Information For This Incident 26-89-0176

No Status Information Entered For This Incident 26-89-0176

No Work Performed Information Entered For This Incident 26-89-0176

No Reports Received Information Entered For This Incident 26-89-0176

This information may not reflect current status of site.
For further detail, refer to the DEQ Regional Office file.

This page updated: October 23, 2001
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PDX/030860010.PDF

Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Log Nbr: **26-90-0336**
Site Name: MCCULLOCH PROPERTY
Address: 4300 NW ST HELENS ROAD
City: PORTLAND
Heating Oil Tank (HOT): N

Basic Incident Information

Zip Code: 97210
Regulated Tank: **Y**

Status: **CLOSED**
Received Date: 9/18/1990
County: MULTNOMAH

Assessment Information

26-90-0336

Discovery Date: 7/1/1990
Discovery Method: DECOMMISSIONING
Cause Of Release: UNKNOWN

Management Information

26-90-0336

Release Stopped Date: 9/18/1990
Cleanup Start Date: 9/18/1990
Cleanup End Date: 10/2/1990

No Contaminant Impact Information For This Incident 26-90-0336

No Status Information Entered For This Incident 26-90-0336

No Work Performed Information Entered For This Incident 26-90-0336

No Reports Received Information Entered For This Incident 26-90-0336

This information may not reflect current status of site.
For further detail, refer to the DEQ Regional Office file.

This page updated: October 23, 2001
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Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Log Nbr: **26-90-0486**

Basic Incident Information

Status: **CLOSED**

Site Name: SCHNITZER INVESTMENT PROPERTY

Received Date: 12/12/1990

Address: 4300 NW YEON

City: PORTLAND

Zip Code: 97210

County: MULTNOMAH

Heating Oil Tank (HOT): N

Regulated Tank: N

Assessment Information

26-90-0486

Discovery Date: 12/13/1990

Discovery Method: DECOMMISSIONING

Cause Of Release: TANK LEAK

Management Information

26-90-0486

Release Stopped Date: 12/13/1990

Cleanup Start Date: 12/13/1990

Cleanup End Date: 5/21/1992

Contaminant Impact Information

26-90-0486

Media / Contaminant		
	Groundwater	DIESEL
	Soil	DIESEL

No Status Information Entered For This Incident 26-90-0486

No Work Performed Information Entered For This Incident 26-90-0486

No Reports Received Information Entered For This Incident 26-90-0486

This information may not reflect current status of site.
For further detail, refer to the DEQ Regional Office file.

This page updated: October 23, 2001
DEQ Online is the official web site for the Oregon Department of Environmental Quality.

PDX/030860010.PDF

Leaking Underground Storage Tanks (LUST) Site Information

(Use "Back" button on browser to return to previous search results)

Leaking Underground Storage Tank (LUST) Site Information

Basic Incident Information

Log Nbr: **26-91-0064**
Site Name: GUNDERSON INCORPORATED
Address: 4350 NW FRONT
City: PORTLAND
Zip Code: 97210
Heating Oil Tank (HOT): N
Regulated Tank: **Y**
Status: **CLOSED**
Received Date: 2/7/1991
UST Facility Id: 7473
County: MULTNOMAH

Assessment Information

26-91-0064

Discovery Date: 2/6/1991
Discovery Method: DECOMMISSIONING
Cause Of Release: PIPE LEAK

Management Information

26-91-0064

Release Stopped Date: 2/6/1991
Cleanup Start Date: 2/6/1991
Cleanup End Date: 8/6/1996

No Contaminant Impact Information For This Incident 26-91-0064

No Status Information Entered For This Incident 26-91-0064

Work Performed Information

26-91-0064

Work	Company	Begin Date	End Date
Quarterly Ground Water Monitoring	Squier Associates, Inc.	2/15/2002	

Reports Received Information

26-91-0064

Report Type	Received Date	Comment
Groundwater Monitoring	2/14/2002	

This information may not reflect current status of site.
For further detail, refer to the DEQ Regional Office file.

This page updated: October 23, 2001
DEQ Online is the official web site for the Oregon Department of Environmental Quality.

PDX/030860010.PDF

Table 13
Outfall 18 State Fire Marshal Hazardous Spills List

updated: March 2003[1]

RNO	Address	Chemical	Date	Incident ID
R084303420	2727 NW 35th Ave.	Diesel fuel	02/04/02	83
R941290700	3000 NW St. Helens Rd.	Diesel fuel #2	03/06/97	02-291-970187
R084303610	3003 NW 35th Ave.	Hydrochloric acid	01/27/91	02-291-910024
R347601820	3250 NW Guam St.[2]	Propane	09/17/88	02-291-880125
R941300390	3335 NW St. Helens Rd.	Propane	07/15/87	02-291-870023
R941201230	3500 NW Yeon Ave.	Triethylamine	04/11/94	HM-06-940158
R941201230	3500 NW Yeon Ave.	Toluene	12/23/94	HM-06-940493
R941290570	3571 NW Yeon Ave.	Diesel fuel #2	12/21/95	02-291-950641
R697400250	3641 NW St. Helens Rd.	Pigment	04/09/91	02-291-910118
R941190330	3800 NW St. Helens Rd.	Gasoline	04/05/91	02-291-910121
R941201230	3930 NW Yeon Ave.	Transmission oil	05/11/97	02-291-970217
R941201230	3930 NW Yeon Ave.	Paint related materials	04/30/98	HM-06-980055
R941201230	3930 NW Yeon Ave.	Pine oil	05/13/89	02-291-890160
R941201230	3930 NW Yeon Ave.	Phenolic resin	07/02/90	02-291-900175
R941201230	3930 NW Yeon Ave.	Chromic acid/Chromium trioxide	07/07/97	HM-06-970105
R941201230	3930 NW Yeon Ave.	Unknown Chemical	05/07/89	890155
R941291550	3950 NW Yeon Ave.	Aqua ammonia	08/10/90	02-291-900225
R941291550	3950 NW Yeon Ave.	Evap-o-kleen	06/06/90	02-291-900146
R941190700	4155 NW Yeon Ave.	Mineral spirits	11/03/86	02-291-860105
R941190700	4155 NW Yeon Ave.	Ethyl acrylate	07/02/86	02-291-860017
R941190290	4240 NW Yeon Ave.[3]	Diesel fuel #2	05/25/95	02-291-950244
R941190130	4285 NW Yeon Ave.	Aluminum chloride	08/28/88	02/291-880077
R649704660	4319 NW Yeon Ave.	Motor oil	05/27/00	02-291-000146
R941191100	4320 NW St. Helens Rd.	Tetramethylthiuammonosulf?	11/27/90	02-291-900452
?	4315 NW Front Ave.	Chemlene-o-lene	08/09/88	02-291-880072

1. This update did not include performing a new search of the State Fire Marshall database. That search was last performed in September 2002.
2. Indicates that this address is located in Basin 17, near Basin 18
3. Indicates that this site is located in Basin 19, near Basin 18

Table 15
Outfall 18 Confirmed Release List

updated: March 2003*

RNO	Site Name	Address	Site ID	Substance	Media	Phase	Program
R084303610	Columbia American Plating Co.	3003 NW 35th Ave	29	Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(ghi)perylene, Benzo(k)fluoranthene, Cadmium, Chromium, Chrysene, Cyanide (as ion), Hydrochloric Acid, Indeno(1,2,3-cd)pyrene, Tetrachloroethylene, Trichloroethylene, Zinc	Soil	1	SAS
R941291370	Hill Investment Co.	3322 NW 35th Ave	1076	Dichloroethylene,1,2-cis-; Tetrachloroethane,1,1,1,2-; Trichloroethylene; Vinyl Chloride	Groundwater	1	SAS
R941290710	ANRFS Holdings Inc.	3333 NW 35th Ave	1820	Benzene, Dichloroethane,1,1- Dichloroethylene,1,1- Dichloroethylene,1,2-cis-, Ethylbenzene, Methylene Chloride, Tetrachloroethylene, Toluene, Trichloroethane,1,1,1-, Trichloroethylene, Trimethylbenzene,1,2,4-, Vinyl Chloride, Xylenes	Groundwater	1	SAS
R941290800	Trumball Asphalt Plant	3605 NW 35th Ave	1160	Total Petroleum Hydrocarbons (TPH)	Groundwater, Soil	1	SAS
R941190330	Texaco Portland Terminal	3800 NW St. Helens Rd	169	Acenaphthene, Acenaphthylene, Anthracene, Arsenic, Benzene, Benzo(a)anthracene, Benzo(A)Pyrene, Benzo(b)Fluoranthene, Benzo(ghi)perylene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Ethylbenzene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyren	Groundwater, Soil	2	VCS
R941200170	Van Waters & Rogers	3950 NW Yeon Ave	330	Benzene, Chloroform, Dichloroethane,1,2-, Dichloroethylene,1,1-, Dichloroethylene,1,2-cis-, Dichloroethylene,1,2-trans-, Ethylbenzene, Methylene Chloride, Styrene, Tetrachloroethylene, Toluene, Trichloroethane,1,1,1-, Trichloroethane,1,1,2-, Trichloroeth	Groundwater	1	SAS
R941200500	Gunderson Inc.	4350 NW Front Ave	1155	Cadmium, Chromium, Copper, Dichloroethylene,1,1-, Lead, Mercury, Nickel, PCBs, Solvent - Waste, Tetrachloroethylene, Total Petroleum Hydrocarbons (TPH), Trichloroethane,1,1,1-, Zinc	Soil, Groundwater	2	VCS
R941200090	Texaco Product Pipeline	4500 NW Front Ave	2117	Barium, Benzene, Bis(2-Ethylhexyl) Phthalate, Butyl Benzyl Phthalate, Cadmium, Chromium, Copper, Cresol, 4-, Diesel - Fuel Oil, Ethylbenzene, Gasoline, Lead, Mercury, Methylnaphthalene, 2-, Polyaromatic Hydrocarbons, Silver, Thallium, Titanium, Toluene, X	Sediment, Groundwater, Soil	2	VCS

* Indicates that this update did not include performing a new search of the DEQ CRL database. That search was last performed in September 2002.

Phase
1: Facilities where remedial investigation and feasibility studies have not been initiated.
2: Facilities where remedial investigation or feasibility studies are underway.

Program
SAS: Indicates that the site is still under investigation through the DEQ
VCS: Responsible parties have entered into an agreement with DEQ to voluntarily address contamination associated with their property under the oversight of DEQ's Voluntary Cleanup Section.

City Data Compilation

Table F-1
Illicit Discharge Elimination Program
Source Control Pilot Project: Outfall 18

update: March 2003

NPDES #	Date	Time	Type of Site	Dominant Land Use	Flow Observed	Odor	Color	Clarity	Floatables	Biological	Deposits/ Stains	Vegetation Condition	Structural Condition	pH	Temp. (F)	Conduct. (µmhos/cm)	Copper (mg/L)	Iron (mg/L)	Zinc (µg/L)	Arsenic (µg/L)	Cadmium (µg/L)	Chromium (mg/L)	Lead (µg/L)	Mercury (µg/L)	Nickel (µg/L)	Silver (mg/L)	Residual chlorine (mg/L)	Chlorine (total) mg/L	Sulfate (mg/L)	Phosphate (mg/L)	Fecal Coliform (1/100cfu)	Sample #	Upstream Investigation (L1)	Actions Taken/Comments	SINCE LAST RAIN
SE0318	08/10/94	17:30	outfall	industrial	yes	musty	clear	clear	none	none	none	normal	normal				0.06					ND				0.02		0.08	ND	2.42					3-6 Days
SE0318	07/20/95	8:55	outfall	industrial	yes	none		grey	cloud	oily sheen	oily	normal	normal																					outfall submerged, 1ST MH UPS not representative of flow	> 1 WK
SE0318	08/01/95	10:30	outfall	industrial		none	clear	clear	none	none	none	normal	normal																					outfall submerged, 1ST MH UPS not representative of flow	> 1 WK
SE0318	09/14/95	14:05	manhole	industrial	yes										73	250											1.24							batteries on pH meter were dead, sampled 1st MH UPS, unable to track Cl UPS b/c we don't have any UPS maps in van	> 1 WK
	7/3/96	13:00	outfall	industrial																														outfall submerged, 1ST UPS MH needs traffic control	3-6 Days
	05/20/97	11:50	outfall	industrial	no																													outfall submerged, 1ST UPS MH needs traffic control	
	09/17/98	9:45		industrial																														outfall inaccessible, 1st UPS MH needs traffic control	
	08/13/98	8:50		industrial																														outfall inaccessible, 1st UPS MH needs traffic control	
	06/01/98	9:00	outfall	industrial																														outfall inaccessible, 1st UPS MH needs traffic control	
	07/13/98	10:15		industrial																														outfall inaccessible, 1st UPS MH needs traffic control	
	09/22/99	9:25		industrial																														outfall inaccessible, 1st UPS MH needs traffic control	
	08/18/99	8:10		industrial																														outfall submerged, 1ST UPS MH needs traffic control	
	06/23/99	13:50	outfall	industrial																														outfall submerged, 1ST UPS MH needs traffic control	
	07/13/99	14:05	outfall	industrial																														outfall submerged, 1ST UPS MH needs traffic control	
	09/27/00	14:25	manhole	industrial	yes																										10	SRP 000176	42" @ 3950 NW Front	flow smelled of hydrogen sulfide - will have BOM TV to try and identify flow. Debris found in line & cleared out. Smell no longer noticed.	
	08/16/00	13:30	manhole	industrial	yes									6.9	75	635	ND	ND									0.03				140	SRP 000145	flow from east of 4033 NW Yeon Ave.	also sampled for VOCS, M+6 -- M+5 - ND, Zn = 0.34 mg/l --	
	07/10/00	12:45	manhole	industrial	yes									7.1	68	96	0.1	0.1									0.06				45	SRP 000063	sample location @ 4033 NW Yeon - M+8, VOCs		
	10/03/01	14:15	outfall	industrial	yes	musty	clear	clear	none	none	iron bacteria	none	none	7.1	70	266	0.1	5									0.02				10	SRP 010128	Also sampled for VOCs ND & M+3 ND		
	09/20/01	14:25	outfall	industrial	yes	musty	grey	cloudy	none	algae	none	none	none	7.1	68	249	0.1	5									0.07				36	SRP 010118	also sampled for Mg 7.88 mg/l, Cr, Pb, Cu, Zn - ND		
	09/12/01	12:25	outfall	industrial	yes	none	clear	clear	none	algae	none	none	none	7.1	72	279	0.1	5									0.02				10	SRP 010101			
	07/24/01	13:35		industrial																														outfall submerged, 1ST UPS MH needs traffic control	

Table F-1
Illicit Discharge Elimination Program
Source Control Pilot Project: Outfall 18

update: March 2003

NPDES #	Date	Time	Type of Site	Dominant Land Use	Flow Observed	Odor	Color	Clarity	Floatables	Biological	Deposits/ Stains	Vegetation Condition	Structural Condition	pH	Temp. (F)	Conduct. (µmhos/cm)	Copper (mg/L)	Iron (mg/L)	Zinc (µg/L)	Arsenic (µg/L)	Cadmium (µg/L)	Chromium (mg/L)	Lead (µg/L)	Mercury (µg/L)	Nickel (µg/L)	Silver (mg/L)	Residual chlorine (mg/L)	Chlorine (total) mg/L	Sulfate (mg/L)	Phosphate (mg/L)	Fecal Coliform (1/100cfu)	Sample #	Upstream Investigation (L1)	Actions Taken/Comments	SINCE LAST RAIN
	08/30/01	8:00	outfall	industrial	yes	none	grey	cloudy	none	none	iron bacteria	none	none	6.7	65	291	0.2	5									0.04				9	SRP 020087		also sampled for : TS 198mg/l TDS 190 mg/l TSS 9.6 - M+3 ND - MBAS 0.1 mg/l	
	07/11/02	11:50	outfall	industrial																														outfall submerged	
	09/05/02	13:00	outfall	industrial	yes	musty	grey	cloudy	none	none	sediment	none	normal	6.9	66	377	0.1	0.3									0.05				10	LAB 021076		also sampled for M+ & TPH HCID	
	09/09/02	10:50	outfall	industrial	yes									7.1	63	339	1.18 ug/l	5	11.8	8.03	ND	ND	0.71	ND	8.05		0				31	LAB 021082		also sampled for M+ & TPH HCID	
	10/23/02	13:05	outfall	industrial	yes									7.4	64	381	0	5									0.01				10	LAB 021280			
	07/24/02	12:15	outfall	industrial																														outfall submerged	
	08/12/02	9:00	outfall	industrial																														outfall submerged	

Notes:
Only E coli is sent to the lab. All other tests are field tests unless otherwise noted (copper and iron are strips). If an extreme pH is recorded, additional samples are sent to the lab.
µg/L = microgram per liter
µmhos/cm = micromho per centimeter
mg/L = milligram per liter

September 2002 IDEP
Sampling and Laboratory Results

___CITY OF PORTLAND_____
ENVIRONMENTAL SERVICES
1120 SW 5th Avenue, Room 1000, Portland OR 97204-1972
(503) 823-5313 FAX (503) 823-6995

M E M O R A N D U M

DATE: **May 29, 2003**
TO: **File**
FROM: **Dawn Sanders**
SUBJECT: **IDEP data collected at City Outfall 18**

In September 2002, Ali Dirks from the City's Illicit Discharge Elimination Program (IDEP) collected 2 samples from City Outfall 18 during dry-weather conditions and analyzed the samples for a broader analyte list. The IDEP was developed to prevent, search for, detect, and control illicit discharges to the City's stormwater systems. Dry-weather monitoring is used to detect non-permitted discharges.

Typically, IDEP monitoring measures pH, conductivity, temperature, residual chlorine, iron, and copper, using field kits, and bacteria (*E.coli*), analyzed by the laboratory. Because Outfall 18 is being evaluated as part of a pilot with DEQ, dry-weather samples were analyzed in the laboratory for total metals, bacteria, and TPH, in addition to the field measurements. The attached sheets provide the laboratory data for these two samples and the table below provides a summary of the data compared to Ambient Water Quality Criteria (AWQC).

Analyte	Unit	Method	MDL	OF 18 5-Sep-02 1:00 PM	OF 18 9-Sep-02 10:50 AM	Acute AWQC
Arsenic	µg/L	EPA 200.8	0.1	5.02	8.03	850[a]/360[b]
Cadmium	µg/L	EPA 200.8	0.1	<0.1	<0.1	1.8[c]
Chromium	µg/L	EPA 200.8	0.4	<0.4	<0.4	16[d]/984[e,c]
Copper	µg/L	EPA 200.8	0.2	0.85	1.18	9[c]
Lead	µg/L	EPA 200.8	0.1	0.34	0.71	34[c]
Mercury	µg/L	EPA 200.8	0.010	<0.01	<0.01	2.4
Nickel	µg/L	EPA 200.8	0.2	7.03	8.05	789[c]
Zinc	µg/L	EPA 200.8	0.5	8.99	11.8	65[c]
E. coli	MPN/100 ml	SM 9223 B	1	<10	31	406
Diesel	mg/L	NWTPH-HCID	0.63	<0.63	<0.63	NA
Gasoline	mg/L	NWTPH-HCID	0.25	<0.25	<0.25	NA
Heavy fuel oil	mg/L	NWTPH-HCID	0.63	<0.63	<0.63	NA
Lube oil	mg/L	NWTPH-HCID	0.63	<0.63	<0.63	NA

[a]Arsenic (Penta)
[b]Arsenic (Tri)
[c]Hardness dependent (50mg/L used)
[d]Chromium (Hex)
[e]Chromium (Tri)

There were no exceedances of AWQC and these data suggest no significant dry-weather concerns for the analyzed parameters.

City of Portland
Water Pollution Control Laboratory
Laboratory Analysis Report

Sample Date/Time 9/5/02 13:00 **System ID** AG07716 **Sample ID** **LAB021076**

Page: 1

Proj./Company Name: SPCR-IDEP
Address/Location: OUTFALL #18

Date Received: 9/5/02
Sample Status: COMPLETE AND VALIDATED

Proj Subcategory SPCR
Sample Point Code: 1
IMS File/Invoice #: 3050.001

Sample Type: GRAB
Sample Matrix: OTHER
Collected By: AMD

Comments:

Test Parameter	Result	Units	MRL	Method
METALS				
MERCURY	<0.010	µg/L	0.010	EPA 200.8
METALS BY ICP-MS (TOTAL) - 7				
ARSENIC	5.02	µg/L	0.1	EPA 200.8
CADMIUM	<0.10	µg/L	0.1	EPA 200.8
CHROMIUM	<0.40	µg/L	0.4	EPA 200.8
COPPER	0.85	µg/L	0.2	EPA 200.8
LEAD	0.34	µg/L	0.1	EPA 200.8
NICKEL	7.03	µg/L	0.2	EPA 200.8
ZINC	8.99	µg/L	0.5	EPA 200.8
NWTPH-HCID				
DIESEL	<0.63	mg/L	0.63	NWTPH-HCID
GASOLINE	<0.25	mg/L	0.25	NWTPH-HCID
HEAVY FUEL OIL	<0.63	mg/L	0.63	NWTPH-HCID
LUBE OIL	<0.63	mg/L	0.63	NWTPH-HCID
OTHER	<0.63	mg/L	0.63	NWTPH-HCID
Surrogate Recovery (%)	75	mg/L		NWTPH-HCID
MICRO				
E. COLI	<10	MPN/100 ml	1	SM 9223 B

End of Report for Sample ID: LAB021076

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Report Date: 6/10/03

Validated By: Signature on File

City of Portland
Water Pollution Control Laboratory
Laboratory Analysis Report

Sample Date/Time 9/9/02 10:50 **System ID** AG07815 **Sample ID** **LAB021082**

Page: 1
Proj./Company Name: SPCR-IDEP
Date Received: 9/9/02
Address/Location: OUTFALL #18
Sample Status: COMPLETE AND VALIDATED

Proj Subcategory SPCR
Sample Point Code: 1
IMS File/Invoice #: 3050.001
Sample Type: GRAB
Sample Matrix: OTHER
Collected By: AMD/JF

Comments:

Test Parameter	Result	Units	MRL	Method
METALS				
MERCURY	<0.010	µg/L	0.010	EPA 200.8
METALS BY ICP-MS (TOTAL) - 7				
ARSENIC	8.03	µg/L	0.1	EPA 200.8
CADMIUM	<0.10	µg/L	0.1	EPA 200.8
CHROMIUM	<0.40	µg/L	0.4	EPA 200.8
COPPER	1.18	µg/L	0.2	EPA 200.8
LEAD	0.71	µg/L	0.1	EPA 200.8
NICKEL	8.05	µg/L	0.2	EPA 200.8
ZINC	11.8	µg/L	0.5	EPA 200.8
NWTPH-HCID				
DIESEL	<0.63	mg/L	0.63	NWTPH-HCID
GASOLINE	<0.25	mg/L	0.25	NWTPH-HCID
HEAVY FUEL OIL	<0.63	mg/L	0.63	NWTPH-HCID
LUBE OIL	<0.63	mg/L	0.63	NWTPH-HCID
OTHER	<0.63	mg/L	0.63	NWTPH-HCID
Surrogate Recovery (%)	78	mg/L		NWTPH-HCID
MICRO				
E. COLI	31	MPN/100 ml	1	SM 9223 B

End of Report for Sample ID: LAB021082

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Report Date: 6/10/03

Validated By: Signature on File

NPDES Data Compilation

Table F-3
Summary of Information Obtained from the 2002 Water Quality File Review of Outfall 18 Facilities with NPDES Permits
Source Control Pilot Project: Outfall 18

updated: March 2003 [1]

Facility	Permit	Activities That May Contribute to the Contamination of Stormwater	Stormwater Fate	Stormwater Management	Leaks, Spills, or Other Instances of Stormwater Contamination	Permit Exceedence of Benchmark[2]	SWPCP or SPCC Plan?	Industrial Significant Activities	Potential Pollutants	References
ABF Freight	1200-Z	Fueling activities, vehicle washing	N/A	N/A	20-gallon fuel spill to a stormwater catch basin	Exceeded suspended solids benchmark on 2/5/99, 10/17/99, 3/15/01, 6/10/01, and 6/12/01. Exceeded benchmarks for oil and grease on 2/5/99 and 10/27/99.	N/A	N/A	N/A	DEQ File Letter from FTL, 3/1/00, Annual Stormwater Inspection 4/17/02
Bay News Inc.	1200-Z	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	DEQ File
Burlington Northern Railroad Co.	1200-Z	N/A	N/A	N/A	N/A	Exceeded benchmarks for oil and grease on 3/19/02. Exceeded suspended solids benchmark on 4/2/01.	N/A	N/A	N/A	Annual stormwater Monitoring Data -Reports
Burlington Northern Railroad Co.	1200-T	N/A	N/A	N/A	N/A	Exceeded benchmarks for oil and grease on 10/28/97.	N/A	N/A	N/A	Annual stormwater Monitoring Report 2002
Carson Oil Company	1200-Z	N/A	N/A	N/A	N/A	Exceeded suspended solids benchmark on 11/16/99, 2/22/00, 4/2/01, 6/27/01, and 11/19/01. Exceeded benchmark for oil and grease on 11/16/99, 4/2/01, and 6/27/01. Exceeded benchmarks for pH on 4/2/01. Exceeded benchmark for metals on 4/2/01 and 6/27/01.	N/A	N/A	N/A	DEQ file data reports
Christenson Oil	1200-Z	Spills during loading or unloading of bulk products; the rupture or overflow of a bulk storage tanks; spills during the packaging process; the rupture of a drum or tote container.	There are three channeled flows that run off the site; a stream on the north end of the property, a storm sewer drain in the front loading area, and the driveway as it meets St. Helens Road.	N/A	N/A	Exceeded suspended solids benchmark on 6/27/00 and 11/19/01. Exceeded benchmark for oil and grease on 11/10/99. Exceeded benchmark for metals on 11/410/99 and 6/27/00.	N/A	N/A	Base oils, kerosene, and solvents.	Registration application for general stormwater permit/DEQ file data reports.
Columbia American Plating Co.	1200-Z	N/A	N/A	N/A	N/A	N/A	N/A	As of March 2003, all stormwater was treated via preatreatment and then discharged to the sanitary sewer line	N/A	DEQ letter to Columbia Plating

Table F-3
Summary of Information Obtained from the 2002 Water Quality File Review of Outfall 18 Facilities with NPDES Permits
Source Control Pilot Project: Outfall 18

updated: March 2003 [1]

Facility	Permit	Activities That May Contribute to the Contamination of Stormwater	Stormwater Fate	Stormwater Management	Leaks, Spills, or Other Instances of Stormwater Contamination	Permit Exceedence of Benchmark[2]	SWPCP or SPCC Plan?	Industrial Significant Activities	Potential Pollutants	References
Container Recovery, Inc.	1200-Z	N/A	N/A	N/A	In 1999, a City compliance inspection stated there was not an adequate SWPCP. Truck wash, tote wash, and distressed product were discharging to the stormwater system.	Exceeded suspended solids benchmark on 3/15/01, 6/27/00, 6/29/01, and 11/19/01. Exceeded benchmark for oil and grease on 3/15/01, 5/5/02, and 6/7/02. Exceeded pH benchmark on 5/5/02. Exceeded copper benchmark on 5/5/02.	N/A	N/A	N/A	DEQ file letter from City of Portland on facility stormwater Inspection results/DEQ file data reports
Equilon Enterprises, Inc.	1200-T	N/A	N/A	N/A	N/A	N/A	N/A	Bulk storage and transfer of petroleum products	N/A	Permit registration application
Equilon Enterprises, Inc.	1300-J	N/A	City stormwater sewer	The Terminal has six general drainage areas that discharge to one outfall. The outfall consists of the discharge pipe from the last chamber of the oil/water separator.	N/A	Exceeded oil and grease benchmark on 11/3/96.	SWPCP (2000)	Bulk storage and transfer of petroleum products	Diesel, gasoline, fuel additives, dyes, methanol, oil and grease.	SWPCP 2000
Equilon Enterprises, Inc.	1500-A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1500-A NPDES Discharge Monitoring Report
Gunderson, Inc.	1200-Z	N/A	N/A	N/A	In 1997a City compliance inspector documented several minor stormwater management issues that needed to be addressed by Gunderson.	Exceeded suspended solids benchmark on 6/7/94, 1/5/95, 1/5/98, and 12/2/99. Exceeded pH benchmark on 12/2/99 and 5/1/00. Exceeded metals benchmark on 1/5/98, 5/29/98, 10/9/98, 1/28/99, 2/24/99, 12/9/99, 12/19/00, and 3/28/01.	N/A	Railcar and ship construction	N/A	Gunderson letter to City of Portland/DEQ file data reports
McDowell Welding & Pipe	1200-L (not active)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	DEQ File

Table F-3
Summary of Information Obtained from the 2002 Water Quality File Review of Outfall 18 Facilities with NPDES Permits
Source Control Pilot Project: Outfall 18

updated: March 2003 [1]

Facility	Permit	Activities That May Contribute to the Contamination of Stormwater	Stormwater Fate	Stormwater Management	Leaks, Spills, or Other Instances of Stormwater Contamination	Permit Exceedence of Benchmark[2]	SWPCP or SPCC Plan?	Industrial Significant Activities	Potential Pollutants	References
McWhorters Technologies	1200-Z (terminated)	Site spills	City stormwater sewer and surface runoff to adjoining property	Discharge water passes through oil/water separator before discharge	One drum of butyl acrylates spilled into the storm drain. Date unknown but prior to 1985. In 1996, 200 gallons of "Varcyl" were released to the site drains.	N/A	SPCC (1985)	Manufacturer of varnish products and oil water-based resin.	N/A	SPCC (1985)
McWhorters Technologies	0100-J (terminated)	N/A	N/A	N/A	N/A	N/A	N/A	Non-contact cooling water	N/A	DEQ File
McWhorters Technologies	1500-A (unknown status)	N/A	N/A	N/A	N/A	N/A	N/A	Non-contact cooling water	N/A	DEQ File
Myers Container Corp. (Now called Container Management Systems)	1200-Z	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Owens Corning	1200-Z	N/A	Stormwater runoff moves northeast across the paved area in sheet flow to storm drains located on 35th Ave. and Yeon Ave.	N/A	50 gallons of diesel spilled from pierced fuel tank, 1990.	Exceeded suspended solids benchmark on 12/28/98.	SWPCP (1994)	Asphalt Manufacturing and Roofing manufacturing.	Sand, talc, BD oil, Air compressor condensate line, waster oil storage area, forklift steam-cleaning area	SWPCP 1994 / DEQ file data reports
Owens Corning	100-J	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	DEQ File
Owens Corning	500-J	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	DEQ File
Owens Corning	1300-J	N/A	N/A	N/A	N/A	Exceeded benchmarks for oil and grease on 8/26/96, 4/16/01 and 3/1/02.	N/A	Asphalt manufacturing area only.	N/A	Owens Corning. 2002. File # 103803 Monthly Reports for NPDES Permit 1300-J

Table F-3
Summary of Information Obtained from the 2002 Water Quality File Review of Outfall 18 Facilities with NPDES Permits
Source Control Pilot Project: Outfall 18

updated: March 2003 [1]

Facility	Permit	Activities That May Contribute to the Contamination of Stormwater	Stormwater Fate	Stormwater Management	Leaks, Spills, or Other Instances of Stormwater Contamination	Permit Exceedence of Benchmark[2]	SWPCP or SPCC Plan?	Industrial Significant Activities	Potential Pollutants	References
Owens Corning	1500A	N/A	N/A	N/A	N/A	Exceeded benchmarks for TPH on 5/28/96.	N/A	Dewatering activities associated by trench excavation.	N/A	Owens Corning. 1996. Results of Compliance Monitoring for May, 1996.
Univar (Van Waters and Rogers)	individual	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Western Wire Works	1200-Z	N/A	N/A	N/A	N/A	Exceeded benchmarks for oil and grease on 4/5/02. Exceeded benchmarks for suspended solids on 11/13/01 and 4/5/02.	N/A	N/A	N/A	DEQ file data reports
Wilhelm Trucking Co.	1200-Z	N/A	N/A	N/A	N/A	Exceeded benchmarks for oil and grease on 11/24/99, 2/14/00, 3/12/01 and 11/18/01. Exceeded benchmarks for suspended solids on 2/6/98, 11/24/99, 2/14/00, 12/20/00, and 11/28/01. Exceeded benchmark for zinc on 3/12/01.	N/A	N/A	N/A	W&H Pacific, 2000. Stormwater Runoff Investigation and Recommendations.

Notes:
1. File review performed September 2002.
2. Permit violations based on data found in water quality file review. The water quality files did not have all National Pollutant Discharge Elimination System (NPDES) data. See Table 4A in Preliminary Evaluation Update for additional data.

Definitions of permit types:
100-J Cooling water/heat pumps
500-J Boiler blowdown
1200-Z Industrial Stormwater
1300-J Oily stormwater runoff/oil water separators
1500-A Tanks cleanup and treatment of groundwater

N/A = Not available

DEQ ECSI File Reviews

DEQ ECSI File Reviews for City Outfall 18

More than half of the City of Portland Outfall 18 drainage basin is located in forested portions of Forest Park. A number of commercial and industrial facilities are located in the other part of the basin. Of those facilities, 13 Department of Environmental Quality (DEQ) Environmental Cleanup Site Inventory (ECSI) sites were identified. DEQ ECSI files were reviewed for all 13 of these sites. The information obtained during these file reviews is summarized in the following discussion, which has been organized by address. Site names are as follows:

- Gunderson Inc.
- Texaco Product Pipeline
- Burlington Northern Hub Center and Lake Yard
- Texaco Portland Terminal
- Christenson Oil Plant No. 1
- McWhorter, Inc.
- Van Waters & Rogers
- Schnitzer Investment
- ANRFS Holdings Inc.
- Trumbull Asphalt Plant
- Hill Investment Co.
- Columbia American Plating Co.
- Magnus Co.

4350 NW Front Ave., Portland, OR 97210
ECSI ID #1155
Gunderson Inc.

Gunderson Inc. is the only ECSI site located at 4350 NW Front Ave. in Portland, Oregon. This site is located partially in the Outfall 18 drainage basin. Approximately half of the northern portion of the site is 100 feet or less from the edge of the Willamette River. The other half of the site is directly on the river's edge. Outfall 18 is located at about the midpoint of the site, approximately 100 feet from the edge of the site (see Figure 3-1 in Section 3 of this report).

Information gathered from the DEQ ECSI files for this site is summarized below.

Site Description

Gunderson Inc. is located on approximately 75 acres of property on the western bank of the Willamette River in Portland, Oregon. The current property owner, Gunderson Inc., has occupied the property since 1985. Prior to 1985, the Gunderson Brothers Engineering Company owned the site. Other tenants of the property include Schnitzer Steel Products

and American Ship Dismantlers (Squier, 1990). An easement acquired by Shell Oil (formerly Texaco) runs through the property, terminating at the Equilon dock (Squier, 2002).

This site can be divided into three main areas, as shown in Figure 1. Area 1 is located in the northwestern portion of the site, Area 2 is located in the central portion of the site, and Area 3 is located in the southeastern portion of the site.

Historically, this site has been used primarily for industrial purposes, including steel fabrication and railroad car building and refurbishing (Area 1) and ship dismantling and automobile salvage and storage (Areas 2 and 3). Several of these activities have been conducted outdoors (for example, painting of railcars) owing to space constraints, and some have been conducted in unpaved areas.

Area 1 currently contains a steam-cleaning station and truck repair shop. Most of the industrial activity is currently focused in Area 2, with the primary focus being the fabrication of railcars and marine barges. Area 3 is predominantly unpaved and is used for storage of railcars and other materials, including some hazardous material (Squier, 1999).

Materials and hazardous substances that have been used, processed, or generated onsite include solvents, paints, primers, sandblasting residues, petroleum products, polychlorinated biphenyls (PCBs), and heavy metals.

A network of more than 60 catch basins and 24 stormwater outfalls (including 17 oil/water separators) collects and discharges stormwater from both paved and unpaved portions of the site to the Willamette River. All of these outfalls except one (OF-12) are private outfalls. OF-12 is also known as the City's Outfall 18.

Biannual outfall sampling has been conducted for several of these outfalls under Gunderson's 1200-Z permit. Samples are collected at several of the private outfalls and at the two inflow pipes contributing stormwater to the City's Outfall 18. The two inflow pipes collect runoff from "Main Street" on the Gunderson property and from the Finishing and Paint Building (Squier, 1998). The earliest record of National Pollutant Discharge Elimination System (NPDES) monitoring samples that was obtained for this facility is from December 1992 (summary tables were obtained from DEQ water quality files; however, no laboratory documentation was found). The City has monitoring data beginning in 1995. Between 1995 and 2002, Gunderson exceeded benchmarks for multiple constituents on several occasions.

Background and Site History

Numerous investigations, sampling efforts, and remedial actions have been conducted at this site. Major activities identified in the DEQ ECSI files are summarized below (this summary is not inclusive):

- **November 1990:** Level I Environmental Site Assessment (ESA). Items noted were: 10 underground storage tanks (USTs), signs of overflow near the waste oil pit adjacent to the truck repair building, surface hydrocarbon staining, large quantities of paint, primer, and solvents stored onsite, and areas where slag from welding had been dumped. This report concluded that past practices may have affected the soil and groundwater associated with the site, and additional investigation was recommended (Squier, 1990).

- **January 1991:** Level II Environmental Site Assessment. A subsurface soil and groundwater investigation was performed in locations recommended in the Level I ESA. Analytical results indicated the presence of total petroleum hydrocarbon (TPH), chromium, and lead in the subsurface soils of Areas 1 and 2. Volatile organic compounds (VOCs), lead, and chromium were detected in the groundwater of Areas 1 and 2. In Area 3, TPH, lead, and polychlorinated biphenyls (PCBs) were detected in the subsurface soils, and TPH and lead were detected in the groundwater. Additional investigation was recommended (Squier, 1991).
- **March/April 1991:** Two separate soil removals were performed in Area 3 in response to petroleum spills (Squier, 2000).
- **July 1991:** Final Report on Contaminated Soils Cleanup. Several USTs were decommissioned. In Area 2, two USTs were decommissioned. VOC contamination was found at one of these USTs. After further investigation, DEQ issued a "No Further Action" letter on February 17, 1998 (Squier, 2002). In Area 3, two USTs were decommissioned. Evidence of a diesel or oil release was observed, and approximately 500 cubic yards of petroleum-contaminated soil were excavated (Squier, 2000).
- **May 1998:** Operation of a vapor extraction system (VES) at UST #11 (an aromatic solvent UST located in Area 2) was started. The performance of this system is currently being evaluated.
- **March 1999:** Remedial Action Plan—Former American Ship Dismantler's Access Gully. A combination of events resulted in the identification of a former gully that was used during the 1960s to provide access to the riverbank during the final stages of ship dismantling. This former gully is located in the southeastern portion of Area 3. Elevated levels of petroleum hydrocarbons, polynuclear aromatic hydrocarbons (PAHs), PCBs, lead, and zinc were found in the soil. Elevated levels of lead and PAHs were detected in the groundwater. To date, no action has been performed (Squier, 2000).
- **September 2000:** Preliminary Site Assessment and Remedial Investigation Proposal (Gunderson Area 3). Additional work in Area 3 was recommended in this report, including subsurface sampling and analysis of fire bricks located throughout the area (Squier, 2000).
- **June/July 2001:** Additional Soil and Groundwater Investigation. Analytical results indicate the presence of lead, chromium, arsenic, TPH, and PCBs in the soil and groundwater across the site. In addition, a solvent plume was identified in Area 1. A risk assessment was recommended (Squier, 1991).
- **June 2002:** Preliminary Site Assessment (Area 2). Additional work in Area 2 was recommended, including subsurface investigations and inspection and/or sampling of the 38 catch basins, eight oil/water separators in Area 2, and the riverbank.
- **February 2003:** Interview with DEQ project manager Gunderson is developing source controls for the northern end of the site near the 1,1,1-trichloroethane (TCA) plume. Gunderson has proposed a pump and treat system and soil vapor extraction system to control the TCA plume. The VES in Area 2 (near the paint booth area) will continue to operate because recent sampling indicates high levels of toluene remaining in the

ground. Additional information regarding past practices (dumping of toluene near an area identified as the stencil wash area) was obtained. Geoprobe work was performed to define this new source of toluene soil and groundwater contamination. It is not known whether this plume reaches the river. Gunderson is proposing to install a well and move the VES to this area when cleanup is complete in Area 2. Gunderson is currently working on the following activities: preparation of a preliminary assessment for Area 2 (may include bank sampling), getting ready to implement the first phase of the remedial investigation (RI) for Area 2, preparation of a work plan to address the former access gully area, and presentation of outfall testing data to DEQ.

Summary

Historically, this site has been used primarily for heavy industrial activities such as steel fabrication, railroad car building and refurbishing (including painting), ship dismantling, and automobile salvage and storage. Contaminants of interest (COIs) that may be associated with these types of activities include: metals, PAHs, VOCs, PCBs, phthalates, dichlorodiphenyltrichloroethanes (DDTs), and organotins.

Multiple environmental investigations have been conducted at this site. According to Gunderson's environmental consultant since 1990 (Squier), historical operations (including material handling and disposal) at the site have resulted in soil and groundwater contamination. Types of soil contaminants include: petroleum hydrocarbons, PCBs, PAHs, chromium, lead, arsenic, and zinc. Types of groundwater contaminants include: VOCs, petroleum hydrocarbons, PAHs, PCBs, chromium, lead, and arsenic. (Squier, 2000) According to DEQ, Gunderson has performed additional sampling as part of an investigation of tits outfalls. No results were available as of February 2003. Based on the available information, some of the contaminated portions of the site are located close to the river. According to a remedial action plan dated 1999, "The possibility of contamination coming into contact with the Willamette River is significant and the surface pathway is a concern." (Squier, 1999.)

In 1997, multiple sediment samples were collected approximately 150 feet offshore from this site as part of a U.S. Environmental Protection Agency (EPA) investigation. PAHs, phthalates, PCBs, and selected metals were detected in several of the samples. PAHs, PCBs, and selected metals (lead, mercury, and zinc) were detected at elevated levels in at least one sample collected offshore of this site (Squier, 2000).

In 2002, additional sediment samples were collected near Outfall 18. On the basis of results obtained from the samples, the following COIs were identified for the Outfall 18 basin: phthalates, PAHs, PCBs, DDTs and metabolites, lead, and mercury. PAHs, PCBs, and lead have all been identified as site COIs based on soil or groundwater investigations. Phthalates may be associated with site activities that have been historically conducted onsite and, therefore, are also a site COI.

Based on stormwater sampling results submitted to DEQ from 1998-2001, Gunderson has consistently exceeded benchmark levels for copper and zinc at some of its private outfalls. According to a letter written by Gunderson to the City of Portland (August 1998), the elevated zinc concentrations are thought to be attributed to aging galvanized roofing and/or siding onsite.

References

Squier. 1990. *Environmental Site Assessment*. November 1990.

Squier. 1991. *Additional Soil and Groundwater Investigation*. October 1991.

Squier. 1998. *Second Storm Water Monitoring Event (1997-1998*). June 1998.

Squier. 1999. *Remedial Action Plan—Former American Ship Dismantler's Access Gully*. March 1999.

Squier. 2000. *Preliminary Site Assessment/RI Proposal (Area 3)*. September 2000.

Squier. 2002. *Preliminary Site Assessment (Area 2)*. June 2002.

4500 NW Front Ave., Portland, OR 97210
ECSI ID #2117
Texaco Product Pipeline

The Texaco Product Pipeline leak is the only ECSI site located at 4500 NW Front Ave., in Portland, Oregon. Outfall 18 is located approximately 400 feet from the suspected pipeline leak (see Figure 3-1 in Section 3 of this report).

Information gathered from the DEQ ECSI files for this site is summarized below.

Site Description

The site is defined by a suspected leak in a pipeline that runs underground approximately 2,000 feet from the Equilon Bulk Terminal (formerly Texaco Portland Terminal ECSI Site #169) to the facility's docks located on the Willamette River at River Mile 8.7. The pipeline corridor runs underneath several properties, including McWhorter, Inc. (ECSI Site #135), Burlington Northern Santa Fe Rail Yard (ECSI Site #100), and Gunderson Inc. rail car manufacturing facility (ECSI Site #1155). The pipeline corridor runs parallel to, and is approximately 200 feet north of, the city stormwater line (Figure 2). A leak is suspected to have occurred in one of the 12 subsurface pipelines located within the pipeline corridor. Although the exact source of the leak has not been determined, gasoline-affected soil and groundwater have been identified in the subsurface beneath the Gunderson facility (DEQ, 1999).

As of 2001, five of the 12 pipelines were active, including one 12-inch-diameter diesel pipeline, one 6-inch diesel pipeline, two 8-inch gasoline pipelines, and one 6-inch slop oil/water return pipeline (SECOR, 2001a). The pipeline corridor is relatively shallow, located approximately 4 to 6 feet below ground surface (bgs). Concrete culverts and containment channels have been constructed in various locations along the pipeline corridor to protect the pipelines from surface loads (SECOR, 2001a).

The Equilon Bulk Terminal currently stores gasoline, diesel, and ethanol for distribution. Fuel is currently imported via barge delivery and from two large-diameter underground pipelines owned by Olympic Pipe Line Company. Gasoline and diesel are exported from the

site by truck or barge. Trucks are loaded at the terminal and barges are loaded via the underground pipelines at the dock (SECOR, 2001a).

There is no NPDES permit associated with this ECSI site.

Background and Site History

In February 1997, City of Portland personnel reported hydrocarbon odors in the sanitary sewer along NW Front Avenue between the 4200 block and NW Kittridge Avenue. Vapors were detected at the top of the manhole at 20 percent of the lower explosive limit (LEL) using an LEL meter. Hydrocarbon odors were also noted in two restrooms of the Gunderson facility located in the area on the east side of NW Front Avenue. A subsurface investigation found substantial gasoline-range impacts to soil and groundwater beneath the Gunderson facility. The underground pipelines were suspected as a potential source and a 1997 investigation found a leak in an abandoned ethanol line, which Texaco Product Pipeline attributed to be the source of the gasoline contamination (SECOR, 2001a). Below is a summary of investigations associated with the pipeline corridor.

- **March 1997:** Texaco collected water samples from manholes in response to reported hydrocarbon odors in the sanitary sewer along NW Front Avenue between the 4200 block and NW Kittridge Avenue. Hydrocarbon odors were also noted in two restrooms of the Gunderson facility located on the east side of NW Front Avenue in this area. Benzene, toluene, ethylbenzene, and xylene (BTEX) and gasoline-range total petroleum hydrocarbon (TPH-Gx) were detected in water samples downgradient from the suspected location of the product piping, but the source of the hydrocarbons entering the sanitary sewer could not be determined on the basis of the field investigation (SECOR, 1997a).

- **October 1997:** Investigation of gasoline vapors, soil, and groundwater impacts at the Gunderson facility along NW Front Avenue concluded that substantial gasoline-range hydrocarbons were present in subsurface soils and groundwater (SECOR, 1997b). As part of this investigation, ten monitoring wells were installed along NW Front Avenue and at the Gunderson site. Groundwater data were collected on a quarterly basis from 1997 to 2001 (SECOR, 2001a).

- **November 1997:** Texaco Product Pipeline's contractor, J. H. Kelly, and SECOR conducted a backhoe investigation along the pipeline corridor in the Gunderson parking lot. During the investigation, a half-inch-diameter hole was observed on the bottom of an abandoned ethanol pipeline. Texaco also conducted a hydrostatic pressure test and a tracer soil-gas investigation on the active pipelines. The test showed no evidence of a pipeline release from any of the active lines. SECOR determined that "Since the testing indicated that the active lines were competent, it was concluded that the source of the impacted soil and groundwater at the Gunderson facility was from the hole in the ethanol line." However, no explanation was given as to why gasoline would have been in an abandoned ethanol line, nor was information provided as to how the line was abandoned (SECOR, 2001b).

- **March 1998:** SECOR installed air sparging and soil vapor extraction systems in the area of the gasoline-range impacts (SECOR, 1998). However, operation of the system appeared to be intermittent (DEQ, 1999).
- **1999:** 100 gallons of Bunker C fuel were released to soil when an abandoned pipeline was punctured during construction. A limited amount of separate phase product and affected soil were removed and disposed of offsite. The puncture occurred on NW Front Avenue in front of the Gunderson facility. Texaco claims the pipeline was filled with Bunker C fuel to prevent corrosion. No other details were given as to how the pipeline was abandoned (DEQ, 1999).

Summary

DEQ currently lists the site as a "high" priority for further action because of possible migration to the Willamette River, though Equilon is contesting this ranking. DEQ does not believe that the downgradient extent of gasoline contamination on the Gunderson facility has been adequately delineated and the source of the contamination fully explained (DEQ, 2000). Groundwater data from quarterly monitoring indicate that the source of the contamination may be upgradient of the Gunderson facility, possibly on the Burlington Northern Rail Yard site (ECSI Site #100) (SECOR, 2001a). Equilon is currently in the early stages of a Remedial Investigation/Feasibility Study (RI/FS) investigation that may clarify many of these issues.

On the basis of incidents occurring along the pipeline, the COIs associated with this site include: PAHs and VOCs. PAHs were identified as a COI for the Outfall 18 basin based on sediment sampling performed by the City in 2002.

References

SECOR. 1997a. *Summary of Investigation of Hydrocarbon in Sanitary Sewer*. March 11, 1997.

SECOR. 1997b. *Soil and Groundwater Investigation on Front Avenue*. October 10, 1997.

SECOR. 1998. *Remediation System Installation and Groundwater and Soil Vapor Monitoring Report for Texaco Product Pipe Line at Gunderson Facility*. May 6, 1998.

DEQ. 2000. *Draft Pre-Remedial Investigation Assessment Work Plan*. November 13, 2000.

SECOR. 2001a. *2nd Draft Pre-Remedial Investigation Assessment Work Plan*. June 29 , 2001.

SECOR. 2001b. *1997 Pipeline Investigation Summary*. June 12, 2001.

3500/3930 NW Yeon Ave., Portland, OR 97210
ECSI ID #100
Burlington Northern Hub Center and Lake Yard

Burlington Northern Hub Center and Lake Yard is the only ECSI site located at 3500/3930 NW Yeon Ave., in Portland, Oregon. The majority of the site is located within the City Outfall 18 drainage basin, approximately 1,000 feet from the west bank of the Willamette

River. The northwest portion of the site is approximately 800 feet from Outfall 18 (see Figure 3-1 in Section 3 of this report).

Information gathered from the DEQ ECSI files for this site is summarized below.

Site Description

Burlington Northern Hub Center and Guilds Lake Rail Yard, more commonly referred to as Guilds Lake Yard, is owned by Portland Terminal Railroad Company (PTRR) and Burlington Northern Santa Fe Railway Company (BNSF). PTRR owns 75 percent of the property and BNSF owns 25 percent (PTRR, 2002). These two entities, or their corporate predecessors, have owned the site since 1879. Numerous entities have leased portions of the property during this time. This approximately 130-acre site is actively used as a railroad switching and transfer yard (DEQ, 2001).

According to the Stormwater Pollution Control Plan (SWPCP) prepared in 1999, site activities include locomotive fueling and maintenance, loading and unloading of paper products, truck washing, truck fueling, and truck maintenance. Products that are stored and/or used onsite include diesel fuel, hydraulic fuel, grease, and solvents (PTRR, 1999). In addition to products stored onsite, rail cars entering and exiting the facility may carry a variety of products.

Stormwater is currently collected at the facility by a complex network of catch basins and underground storm sewer lines. More than 100 catch basins are located throughout the site. These catch basins discharge to the river via City Outfalls 17 and 18 (see Figure 3). Before this drainage network was constructed (pre-1980s), onsite drainage ditches collected stormwater and discharged to an unnamed creek which, in turn, discharged to the Willamette River (DEQ, 2001).

The Guilds Lake site has two different active General Discharge Permits (1200-Z). Samples are collected at the inflow pipe contributing stormwater to City Outfall 18. The earliest record of NPDES monitoring for this facility was from October 1997. The City has monitoring data from 1997 to present. Between 1997 and 2002, BNSF exceeded benchmarks for multiple constituents (copper, zinc, pH, oil and grease, and total suspended solids [TSS]) on several different occasions.

Background and Site History

BNSF signed a Voluntary Cleanup Agreement with DEQ within the last year. There has not been a significant amount of environmental investigation or remediation at the site since its listing in the DEQ ECSI database. Summarized below are spills, site investigations, and associated actions listed in the DEQ ECSI files:

- **1985 November:** On November 15, McCloskey Varnish notified DEQ of a leak in an underground pipeline on property leased from PTRR. An estimated 50 gallons of mineral spirits leaked from the pipeline. Approximately 3 cubic yards of visibly contaminated soil were removed from a trench beneath the pipeline (DEQ, 2001).
- **July 1986:** Contaminated sediment was discovered during the installation of culvert piping in the open stormwater drainage ditch. Approximately 1,624 tons of soil were excavated during the installation. Analytical sample results showed low levels of oil and

grease and VOCs, but the material was not characteristic hazardous waste (oil and grease 11 parts per million [ppm], EPTOX Pb 0.4 milligrams per liter [mg/L], EPTOX Ba 0.17 mg/L, trichlorophenol 0.9 ppm, phenol 5 ppm, 2-nitrophenol 1.2 ppm, methylene chloride 0.74 ppm) (DEQ, 2001)

- **December 1986:** In July 1986, Riedel Environmental discovered and removed 23 crushed drums of solidified paint and associated soil. Limited analysis was performed on the contents of the drums (showing that the material was hazardous waste). There are no data that show where the drums were removed or the type of residual contamination associated with the drums (DEQ,2001).
- **September 1987:** Cleanup of 1,365 pounds of sodium cyanide spill waste (PTRR, 2002).
- **May 1989:** An unknown chemical leaked from a rail car. No record of any associated cleanup.
- **July 1990:** An unspecified quantity of "3-poxy solution" (which contains phenol-formaldehyde resins, and/or polyisocyanate solution and kerosene) spilled at the site.
- **July 1991:** Approximately 5 gallons of isoacetyl monomer were spilled at the site.
- **1991 to 2001:** A tank removal and soil remediation project involved the removal of two leaking underground storage tanks (LUSTs). Extensive subsurface petroleum contamination was observed in the vicinity of the locomotive refueling facility. Extensive cleanup and investigational work has been completed at the release site. In August 2001, PTRR submitted a request for a "no further action" determination from DEQ based on soil and groundwater samples collected at the site. As of October 2001, DEQ had not yet closed the LUST site (DEQ, 2001).
- **July 1992:** In July 1992, EMD reported a release of hydraulic oil to one of the rail yard's stormwater catch basins. The City of Portland and the U.S. Coast Guard visually determined that the contaminated stormwater did not reach the river. Riedel Environmental was hired to pump out the affected catch basin. No additional information was given regarding the volume of oil spilled, which catch basin was affected, or a potential source for the oil (DEQ, 2001).
- **December 1994:** Approximately 5 gallons of toluene and 30 pounds of triethylamine leaked from rail cars.
- **August 1996:** Sodium hydroxide, hydrochloric acid/muriatic acid, and an unknown chemical leaked from rail cars.
- **September 2000:** A shallow soil investigation was conducted in September 2000. No information was available as to why the investigation was performed. Several metals and organotins were detected above background levels (antimony [Sb] < 0.50 to 6.61 milligrams per kilogram [mg/kg], arsenic [As] 1.8 to 47.1 mg/kg, beryllium [Be] and thallium [Tl] both < 0.50 mg/kg, cadmium [Cd] < 0.50 to 2.38 mg/kg, chromium [Cr] 10.7 to 100 mg/kg, copper [Cu] 11.1 to 1,840 mg/kg, lead [Pb] < 10.0 to 336 mg/kg, mercury [Hg] < 0.10 to 0.16 mg/kg, nickel [Ni] 15.7 to 46.5 mg/kg, selenium [Se] < 0.50 to 2.72 mg/kg, silver [Ag] < 1.0 mg/kg, Zn 37.7 to 1,670 mg/kg, and total organotins < 0.00437 to 0.268 mg/kg).

- **October 2000:** In October of 2000, 1.78 tons of petroleum-stained soil was removed from an area adjacent to the BNSF shop and TTX Car Maintenance contractor's office and sent offsite for disposal. No additional information was given regarding the source of the petroleum contamination (DEQ, 2001).
- **February 2003:** Interview with DEQ project manager recently assigned to the site. BNSF is expected to submit a work plan to DEQ within the next few months. No other information was available at the time of the interview.

Summary

On the basis of onsite activities and historical information regarding spills, benchmark exceedances, and known soil contamination, BNSF could be a source of PAHs, metals, phthalates, and PCBs. All of these constituents were identified as COIs based on the sediment sampling performed by the City in 2002. The site currently practices a variety of best management practices (BMPs) that may limit current contamination. However, past practices have resulted in confirmed soil contamination. No groundwater or catch basin data were found for the site.

References

PTRR. 2002. Letter from Portland Terminal Railroad Company to DEQ. May 21, 2002.

DEQ. 2001. *DEQ Site Assessment Program—Strategy Recommendation*. October 4, 2001.

3800 NW St. Helens Rd., Portland, OR 97210
ECSI ID #169
Texaco Portland Terminal

Texaco Portland Terminal is the only ECSI site located at 3800 NW St. Helens Road, in Portland, Oregon. This site is located within the Outfall 18 drainage basin, approximately 2,000 feet from the Willamette River. The northeast portion of the site is approximately 2,100 feet from Outfall 18 (see Figure 3-1 in Section 3 of this report).

Information gathered from the DEQ ECSI files for this site is summarized below.

Site Description

The site has been a petroleum distribution terminal since its construction in 1926, and it was operated by Texaco from 1928 to 1998. Ownership and operation of the terminal and dock transferred from Texaco to Equilon Enterprises LLC effective January 1, 1998. The current owner of the site is Shell.

The terminal currently stores gasoline, diesel, and ethanol for distribution. Fuel is currently imported via barge delivery and from two large-diameter underground pipelines owned by Olympic Pipe Line Company. Gasoline and diesel are exported from the site by truck or barge. The trucks are loaded at the loading racks located west of the west tank farm at the terminal. Barges are loaded via a dedicated underground piping system that connects the terminal to docks located on the Willamette River downstream of Outfall 18 at River Mile

8.7. This pipeline is suspected of leaking and is listed separately as ID #2117, located at 4500 NW Front Avenue (SECOR, 2001).

Previous operations at the terminal included storage and distribution of Bunker C fuel oil, jet fuel, and lubrication oil. Bunker C fuel oil was delivered to the terminal docks by barge and pumped from the docks to the terminal. Jet fuel, along with gasoline and diesel, was delivered to the terminal by pipeline from Texaco's Anacortes, Washington, refinery. The facility also handled the cleaning of lube-oil drums and tank cars (SECOR, 2001).

Currently, 15 aboveground storage tanks (ASTs), ranging in size from 5,000 to 2,300,000 gallons, are the major storage containers used at the terminal (see Figure 4). In addition to the ASTs at the terminal, there are three USTs at the facility. One of the USTs is a 1,000-gallon tank, installed in 1993, that is used to store slop oil/water mixtures. The remaining USTs, a 1,000-gallon vapor knock-out tank and a 10,000-gallon oil/water spill tank, are used as process flow-through tanks and as part of the wastewater collection system, respectively (SECOR, 2001).

The terminal has six general drainage areas with 28 catch basins that discharge to one outfall. The outfall consists of the discharge pipe from the last chamber of the oil/water separator and is connected to the manhole that ties into the buried Green Creek culvert. The culvert crosses the adjacent McWhorter property and ultimately discharges to the Willamette River through the City of Portland storm sewer system at Outfall 18. The culvert is constructed of 48-inch-diameter, high-density polyethylene plastic (HDPE) and was installed in October 1993. Before 1993, the drainage consisted of an open timber-lined flume on the terminal site (SECOR, 2001).

As of 2003, the terminal facility has two active NPDES permits (a 1300-J and a 1500-A). The 1300-J permit is for oily stormwater and oil/water separator discharge at the site. The 1500-A permit is for a hydrocarbon water treatment system installed in April 1998. This aeration and carbon filtration system receives nonhazardous water such as purge water from the groundwater monitoring and wastewater generated at service stations (SECOR, 2001). This site formerly had a 1200-T permit that is no longer active. The City has monitoring data from 1995 to present.

Background and Site History

This site has a very long and complex regulatory history. Over the years there have been numerous spills, investigations, sampling efforts, and remedial actions. The following is a list of some of the major activities that were listed in the DEQ ECSI files; however, this summary is not inclusive:

- **1979:** Mixed light oils spilled from the dock and created a sheen on the Willamette River one mile long by one-half mile wide (DEQ, 1999).
- **1983:** An estimated 30,000 gallons of diesel were released at the terminal. Diesel and fuel oil range petroleum was observed seeping into a wooden flume crossing the site that carried water from a creek in Forest Park. The drainage ditch (now a relined culvert) flowed across the site from beneath NW St. Helens Road in a timber flume that discharged into the Willamette River. Groundwater monitoring confirmed the release, and product recovery actions were initiated in 1983. The source of the release was never

fully determined, although a dock-line leak is suspected. From 1983 to 1986, 31,231 gallons of floating product were recovered from an onsite recovery well (Groundwater Technology, 1994).

- **1984:** In 1969, Texaco removed 558 cubic yards of sludge from the API oil/water separator and placed it on the ground in the tank farm, notifying EPA in 1981. At DEQ's request, six soil samples were collected from this area in 1984 . All results were below the detection limits (Equilon, 1999).
- **September 1988:** 200 gallons of diesel No. 2 were spilled during barge loading at the Texaco Dock. (DEQ, 1999)
- **April 1989:** Approximately 20 gallons of diesel fuel #2 were spilled into the Willamette River during barge loading at the Texaco dock (DEQ, 1999).
- **October 1989:** Sediment sampling was conducted in the vicinity of the Texaco dock by Oregon Beamn & Associates, prior to planned dredging activities. Three core samples were collected from the upper 30 inches of sediment and were composited for laboratory analysis. Results from these samples were not included in the DEQ file (SECOR, 2001).
- **1991:** A subsurface investigation was conducted that included soil and groundwater analysis from 30 borings. Significant portions of the site showed elevated soil and groundwater concentrations of gasoline, diesel, and kerosene-range petroleum hydrocarbons (DEQ, 1999).
- **1992:** During barge loading, 25 –gallons of diesel fuel spilled into the Willamette River (DEQ, 1999).
- **August 1993:** Approximately 100 gallons of high-sulfur diesel were released at the terminal as the result of a leak in a flange gasket. The leak was within the tank farm containment area. Free product that was pooled on the surface was recovered and pumped to the oil/water separator, which then discharged the water via the storm sewer. Riedel Environmental was contracted to excavate and dispose of affected soil (DEQ, 1999).
- **August 1993:** Entered into a Letter Agreement with the Voluntary Cleanup Program (Groundwater Technology, 1994).
- **October 1993:** A 48-inch-diameter HDPE culvert was installed within the wooden flume. The timber-lined structure was left in place, and backfill material was placed around the pipe (SECOR, 2001).
- **1994:** An RI/FS prepared by Texaco's consultants concluded that "the results of the Risk Assessment indicated that risks associated with the chemicals of concern at the site are within DEQ and WPA's target risk limits for cancer and for non-cancer effects for human health. In addition, impacts to environmental receptors appear unlikely. The FS concluded that the no-action alternative was protective. Contaminant migration in groundwater from the terminal site to the Willamette River was modeled in Texaco's Risk Assessment. The model apparently showed that of the contaminants of concern, only lead arrived at the river in groundwater concentrations exceeding Ambient Water Quality Criteria (AWQC) (Groundwater Technology, 1994). The concentration of lead in

a subsurface sediment sample collected in the vicinity of the Texaco dock was 36 times the Portland Harbor baseline level (DEQ, 1999).

- **1994:** A 10,000-gallon, flush-oil UST and a 1,000-gallon, vapor recovery UST were removed. Approximately 872 tons of petroleum-affected soil were removed from the excavation and disposed of offsite (DEQ, 1999).
- **November 1995:** Approximately 36 tons of surficial sandblast grit (containing lead-based paint chips) were removed. Confirmation samples were collected and analyzed. Concentrations remaining in the soil after the cleanup were below applicable cleanup levels (SECOR, 2001).
- **December 1995:** TCM Northwest conducted assessment activities during the removal of an unregulated UST. Approximately 280 tons of hydrocarbon-affected soil were excavated and transported offsite for treatment and disposal (SECOR, 2001).
- **May 1995:** In anticipation of construction, a subsurface investigation (consisting of seven hand-auger borings) was performed. Soil samples were collected around the underground piping that is located in the area west of the southwest corner of the McWhorter NW property. Petroleum hydrocarbons were detected in the subsurface (TCM Northwest, 1995).
- **March 1996:** Approximately 36 tons of lead-contaminated surface soil were excavated from the site and disposed of at an offsite facility. The source was from historical, routine sandblasting of ASTs (Rust E&I, 1996).
- **1997:** Multiple sediment samples were collected in the vicinity of the Texaco dock facility as part of an EPA investigation. PAHs, phthalates, and selected metals (barium, cadmium, chromium, copper, lead, mercury, silver, and zinc were detected at elevated levels in at least one sample collected offshore of this site (DEQ, 1999).
- **June 2001:** Texaco's consultants submitted a 2nd Draft Pre-Remedial Investigation Assessment Work Plan to DEQ.
- **January 2002:** Texaco was completing field work for a focused RI/FS.
- **February 2003:** Interview with DEQ project manager. Texaco has a harbor agreement with DEQ. Texaco continues to operate a vapor extraction system. DEQ has requested that utility trenches be investigated as potential preferential migration pathways.

Summary

Throughout the history of this facility, there have been multiple petroleum-product spills at both the terminal and the dock. As stated above, in 1983 a large volume (more than 30,000 gallons) of free-phase diesel was discovered on the water table at the site. Although a significant volume of product has been removed from the subsurface at the terminal, there is still extensive petroleum hydrocarbon contamination in the soil and groundwater. Texaco's evaluation of contaminant migration from the terminal to the Willamette River concluded that, in the absence of preferential pathways, it is unlikely that groundwater contaminants will migrate from the terminal to the river. However, the migration of this contamination to the river via preferential pathways has not yet been assessed.

Additionally, no assessment of the potential of past releases that may have discharged to the flume and migrated to surface water or sediments has been conducted. DEQ has asked Equilon Enterprises, LLC, to address these issues in its ongoing remedial investigation. The current and historical use of the site's docks for more than 70 years to transfer large volumes of petroleum product is a possible source of petroleum hydrocarbon and PAH sediment contamination by routine or accidental activities. As stated above, numerous spills to the Willamette River have occurred at the site's dock.

Stormwater at the site is passed through an oil/water separator before being discharged to the City's stormwater system under the site's NPDES permit. The site appears generally to be in compliance with the NPDES permit, which requires monthly testing for oil and grease and quarterly testing for ethanol when it is stored onsite (Equilon, 2002).

On the basis of onsite activities and historical information regarding spills, benchmark exceedances, and known soil and groundwater contamination (based on soil and groundwater sampling), the Texaco Portland Terminal could be a source of PAHs, VOCs, and lead. PAHs and lead were identified as COIs based on the sediment sampling conducted by the City in 2002. No catch basin data were found for the site. Although sediment data have been collected near the Texaco dock, those data were not available.

References

Groundwater Technologies. 1994. Focused Remedial Investigation Report. February 24, 1994.

TCM Northwest. 1995. Soil Assessment Report. May 9, 1995.

RUST E&I. 1996. Removal of Surficial Sandblast Grit. March 7, 1996.

SECOR. 1997. Summary of Investigation of Hydrocarbon In Sanitary Sewer. March 11, 1997.

DEQ. 1999. DEQ Site Assessment Program – Strategy Recommendation. September 2, 1999.

Equilon. 1999. DEQ Site Assessment Information Request. April 14, 1999.

Equilon. 2002. Equilon Enterprises LLC Portland Terminal Stormwater Pollution Control Plan. July, 2000.

SECOR. 2001. 2nd Draft Pre-Remedial Investigation Assessment Work Plan. June 29, 2001.

3821 NW St. Helens Rd., Portland, OR 97210
ECSI ID #2426
Christenson Oil Plant No. 1

Christenson Oil Plant No. 1 is the only ECSI site located at 3821 NW St. Helens Rd., in Portland, Oregon. This site is located within the Outfall 18 drainage basin, approximately 3,600 feet south of the Willamette River and Outfall 18 (see Figure 3-1 in Section 3 of this report).

Information gathered from the DEQ ECSI files for this site is summarized below.

Site Description

Christenson Oil Plant No. 1 is located on 2.08 acres of property. This facility is currently owned by HAJ, Inc., and operated by Christenson Oil. Christenson Oil has operated this facility from approximately the mid-1940s to the present. The facility is used to mix, blend, package, store, and distribute various lubricants. Lubricants and lubricant components are stored in 32 aboveground storage tanks located in three interior tank farms and in 14 aboveground storage tanks located in two exterior tank farms (see Figure 5) (Wohlers, 2000).

The western half of the site is steeply sloped, densely vegetated, and unpaved. Stormwater collected from the western half typically is discharged to the subsurface. The eastern half of the site is paved. Stormwater in the eastern half is collected in one catch basin and is discharged to the City of Portland Outfall 18. There is also an unnamed intermittent stream that borders the northern portion of the property, adjacent to the tank farm. This stream ultimately drains into the Willamette River via Outfall 18, but there is no direct discharge of stormwater (only potential sheet flow) from this site to this stream(Wohlers, 2000).

The site has a 1200-Z NPDES permit. The City has monitoring data for the site from 1997 to present. On various occasions this site has exceeded total suspended solids, oil and grease, and/or zinc benchmarks. As a result, BMPs have been and are being implemented.

Background and Site History

- **October 1975:** Fewer than 1,000 gallons of Bright Stock (a plasticizing agent) were released to the concrete floor of the building in which the material was stored. A portion of the material discharged to the floor drain which, at the time, released into the intermittent stream. Upon entering the stream, the material hardened. Immediate spill response actions were taken. According to employees of Christenson Oil, the material (very viscous in nature) did not reach the Willamette River. No soil, sediment, or groundwater samples were taken (Wohlers, 2000).

- **April 1989:** One 10,000-gallon diesel UST was decommissioned by removal. No groundwater was encountered during the removal. Petroleum hydrocarbons were not detected in the confirmation sample that was collected from the UST cavity (Wohlers, 2000).

- **October 1990:** Two USTs were decommissioned by removal. One of the tanks was a 10,000-gallon kerosene tank and the other was a 10,000-gallon Stoddard solvent (a petroleum-based product) tank. According to UST reports, the tanks were in good condition and are currently used as ASTs at the site. No groundwater was encountered during the removal. Soil excavated as part of the removal was stockpiled. Confirmation samples were collected from the stockpiled soil and from soil located at the bottom of the former UST cavities. Based on analytical results indicating clean soil located in the former UST cavities and affected stockpiled soil, the cavities were backfilled and the approximately 116 cubic yards of stockpiled soil were treated onsite. In November 2000, DEQ recommended “no further action” for these two tanks (Wohlers, 2000).

- **November 1995:** Approximately 60 gallons of AW Hydraulic Oil 46 were spilled during the fueling of a bulk truck. The spill occurred in a paved area. Spill responses were immediately performed, and the spill was properly contained and cleaned up. Although

no soil sampling was performed, a DEQ spill report indicated that none of the oil affected surrounding air, soil, surface water, or groundwater (DEQ, 1995).

- **September 1998:** A tank was overfilled in Tank Farm A. Approximately 715 gallons of line flush oil were spilled in an unpaved area onto a soil and gravel surface surrounded by an earthen berm. According to a Christenson Oil spill report, all 715 gallons were contained and recovered (Christenson Oil, 1998). No soil sampling was done. Because of surface soil contamination that resulted from this spill, DEQ referred the site for additional site assessment (Wohlers, 2000).
- **October 2000:** Christenson Oil submitted a preliminary assessment (PA) to DEQ.
- **April 2001:** DEQ sent its response to comment regarding the PA. DEQ requested that a work plan be submitted to address the potential soil contamination in Tank Farm A (associated with the September 1998 spill). In addition, DEQ recommended that additional stormwater, catch basin sediment, and upland soil investigations be performed to further evaluate the surface water pathway.
- **August 2001:** Nine soil samples (depths ranging from 1 to 4 feet bgs) were collected from various locations throughout Tank Farm A. Soil samples were analyzed for TPH-Dx (diesel and oil), BTEX, and PAHs. Elevated concentrations of diesel, oil, and PAHs were detected in the soil.
- **November 2001:** One stormwater sample and one sediment sample were collected from the onsite catch basin. The water sample was analyzed for oil and grease, total copper, total lead, total zinc, TSS, and PAHs. The sediment sample was analyzed for PAHs only. The stormwater sample had concentrations of oil and grease and TSS that exceeded benchmark values. In addition, DEQ Level II Ecological Screening Level Values (SLVs, 2001) for copper, lead, zinc, benzo(a)anthracene, and benzo(b)pyrene were exceeded. The levels of copper, lead, and zinc were below the benchmarks set in the NPDES permit. In the sediment sample, ten different PAHs were detected at concentrations that exceeded the SLVs. On the basis of PAH concentrations detected in stormwater and catch basin sediment, DEQ stated that potential releases at the site could significantly affect the Willamette River. As a result, DEQ requested that specific BMPs be implemented (DEQ, 2002).
- **February 2003:** Interview with DEQ project manager. According to the DEQ project manager, additional catch basin sampling was performed after the November 2001 round. Analytical results reportedly showed lower levels of PAHs. The facility has implemented several BMPs in order to address the elevated levels of PAHs and other constituents.

Summary

On the basis of the types of activities that have been and continue to be conducted at this site, known spill incidents, and analytical results from stormwater, catchbasin sediment, and soil samples that show levels exceed the DEQ SLVs. PAHs, copper, lead, and zinc are considered COIs for the site. PAHs and lead are COIs identified in the City's 2002 sediment investigation conducted near Outfall 18.

References

DEQ. 1995. Spill Containment, Cleanup, and Spill Report. November 17, 1995.

Christenson Oil. 1998. Spill Report. October 13, 1998.

Wohlers. 2000. Voluntary Preliminary Assessment. October 18, 2000.

DEQ. 2002. DEQ Letter to Wohlers Environmental. January 16, 2002.

4155 NW Yeon Ave., Portland, OR 97210
ECSI ID #135
McWhorter, Inc.

McWhorter, Inc., is the only ECSI site located at 4155 NW Yeon Ave., in Portland, Oregon. This site is located within the Outfall 18 drainage basin, approximately 2,000 feet from the Willamette River. The northern portion of the site is approximately 2,000 feet southwest of Outfall 18 (see Figure 3-1 in Section 3 of this report).

Information gathered from the DEQ ECSI files for this site is summarized below.

Site Description

This site is located on two different parcels (one north of NW Yeon Ave. and the other south of NW Yeon Ave.; see Figure 6). The north parcel is only approximately 0.48 acre and is owned by a subsidiary of Burlington Northern Railroad. This parcel was mostly used for storage. The main portion of the site is located south of NW Yeon Ave. on a 1.44-acre parcel of land. McCloskey Varnish Company owned and operated the main portion of the site from 1943 to 1989. In 1990, McWhorter bought the site and operated there until 1995. In 1995 it was sold to Eastman Chemical, which operated the site until 2001. The site is currently unoccupied.

McCloskey Varnish Company manufactured varnish products and oil/water-based resins, and McWhorter manufactured paint products and resins; processes used for both were similar. Available records did not indicate the types of operations that took place during Eastman Chemical's operation at the site (Parametrix, 1991).

A variety of hazardous substances were used and/or generated at this site, including: alkyds, latexes, polyesters, acrylics, varnishes, copolymers, and solvents (methyl ethyl ketone, toluene, and cyclohexanone). Hazardous substances were stored in USTs and ASTs. Asphalt concrete slab or concrete slab covers all of the ground surface at this site (Parametrix, 1991).

Before 1986, stormwater was collected in an unnamed, open creek that connected to the Willamette River via Outfall 18. In 1986, this creek was routed through a pipe and covered. A network of catch basins, trench drains, and catch pans collected stormwater from portions of the site and discharged to the rerouted creek via three discharge points that were all equipped with oil/water separators. In addition, several drywells were located throughout the site, some of which were located adjacent to process areas and storage tanks (Parametrix, 1991).

During its period of operation, this site had three separate NPDES permits (100-J, 1200-Z, and 1500-A). The City has NPDES monitoring data from April 1995 to May 2001. Between 1995 and 2001, the benchmark for zinc was exceeded once. No other benchmarks were exceeded.

Background and Site History

This site has an extensive history of hazardous substance spills. Following are the spills that were listed in the DEQ ECSI files (Parametrix, 1991):

- **Unknown (pre-1990):** 55 gallons of butyl acetate were spilled (media unknown) and subsequently cleaned up.
- **June 1985:** 500 gallons of methyl methacrylate were spilled onto soil. The soil was removed. An unknown amount of polyvinyl acetate was also released to water.
- **August 1985:** 2 quarts of styrene and an unknown quantity of ethylbenzene were spilled into a storm drain.
- **September 1985:** An unknown quantity of ethyl acrylate was spilled into a storm drain, and unknown quantities of toluene, ethylbenzene, and xylene were spilled into a surface stream.
- **October 1985:** 10 gallons each of styrene and mineral spirits were spilled onto soil and cleaned up.
- **November 1985:** 50 gallons of mineral spirits were spilled on soil. The soil was removed.
- **December 1985:** 500 gallons of alkyd resin were spilled onto soil. The soil was removed.
- **June 1986:** An unknown amount of ethyl acrylate was released to air.
- **July 1986:** 500 gallons of polymerized resin were released to water/air. An emergency cleanup was performed.
- **September 1987:** An unknown amount of ethyl acrylate was released to air.
- **August 1990:** An unknown quantity of mineral spirits was released to soil.
- **October 1990:** An unknown amount of cyclohexanone was released to soil.

Summary

This site is currently not active in the Voluntary Cleanup Program. The most recent information included in the DEQ ECSI file is from 1991. The majority of the environmental investigations performed on the site have involved historical releases that potentially affected sediments of the unnamed creek (drainage ditch) that crossed the property (and served as stormwater conveyance). Analytical data from an investigation performed in November 1986 indicated the presence of pentachlorophenol (10.5 ppm) in the streambed sediment. Records indicate that portions of the streambed were once lined with creosote-treated timbers. In addition, the following results were obtained from soil samples that were collected and analyzed to support a Resource Conservation and Recovery Act (RCRA) closure plan in 1991: xylene (0.007 to 1730 ppm), toluene (1.5 and 73.7 ppm), benzene (4.8 to

15.2 ppm), tetrachloroethylene (0.4 to 2.1 ppm), napthalene (0.6 ppm), acetone (0.27 to 2.42 ppm), methylene chloride (0.24 to 0.036 ppm), 2-pentanone (3.5 to 3.8 ppm), ethylbenzene (0.5 to 81.7 ppm), styrene (26.8 to 116.5 ppm), and decane 2.2 ppm). On the basis of these results, pentachlorophenol and VOCs are potential COIs for the site.

In addition to the contamination that was addressed under the Closure Plan, diesel-contaminated soil (8,650 ppm) was also found in the southern portion of the site in 1990. The contamination was suspected to have migrated from the adjacent Texaco facility. On the basis of these results, PAHs may also be a COI. PAHs were identified as COIs for the Outfall 18 basin on the basis of 2002 sediment sampling.

References

Parametrix. 1991. Preliminary Assessment of McWhorter Inc. July 1991.

3950 NW Yeon Ave., Portland, OR 97210
ECSI ID #330
Van Waters & Rogers

Van Waters & Rogers (VWR) is the only ECSI site located at 3950 NW Yeon Ave., in Portland, Oregon (see Figure 7). This site is located within the Outfall 18 drainage basin approximately 2,200 feet from the Willamette River. The northernmost portion of the site is approximately 2,000 feet southwest of Outfall 18 (see Figure 3-1 in Section 3 of this report).

Information gathered from the DEQ ECSI files for this site is summarized below.

Site Description

Van Waters and Rogers (currently called Univar) is located on 9.38 acres. Other site names for this facility include McKesson Chemical Co., Vopak USA, and Univar. This facility has packaged, stored, and distributed bulk chemicals (including pesticides, herbicides, and food additives and preservatives) since 1947. In 1973, the facility began recycling chlorinated solvents and other hazardous wastes. Historically, bulk chemicals were stored in 13 underground tanks, all of which were removed in 1985 (Harding Lawson Associates 1987). According to a 2002 SWPCP, the majority of chemical handling and storage areas are located in the central and southern portions of the site. Chemicals enter and exit the facility via tanker trucks and railcars. Ninety percent of the site is impervious. Five general drainage areas have been defined for the site. Stormwater flows in sheet flow across the paved portions of the site into a series of catch basins. All of these catch basins discharge via two main connections into the City stormwater system that eventually discharges to Outfall 18. In addition, , a small portion of the site drains to a storm main located at the adjacent property (American Steel), which also discharges to Outfall 18. American Steel does not have an NPDES permit (PES Environmental, Inc., 2002).

The VWR site has an individual NPDES permit, and the City has NPDES monitoring data since 2000. The following constituents are monitored as part of this permit: lead, copper, zinc, TSS, pH, and oil and grease. Since 2000, there have been a few benchmark exceedances of oil and grease, TSS, and pH.

Background and Site History

On the basis of information in the DEQ ECSI files, an investigation and remedial action have taken place under an Administrative Order on Consent between EPA and VWR. Soil and groundwater sampling has been performed, and a vapor extraction system was installed onsite. The following is a list of the site investigations and associated actions that were listed in the DEQ ECSI files:

- **August 1980:** Methylene chloride spilled when a hose ruptured while transferring the solvent to a storage tank. The spill was soaked up with diatomaceous earth and placed in a drum for disposal. The amount of methylene chloride spilled is unclear. VWR stated that the spill was less than the reportable quantity of 10 pounds (approximately 1 gallon). In a letter to EPA in December 1985, however, DEQ stated that approximately 76 gallons of methylene chloride had spilled. Because of limited file information, neither claim can be substantiated (DEQ, 1993).

- **September 1983:** Approximately 515 gallons of trichloroethylene (TCE) spilled when a tank gauge ruptured. The spill flowed across a paved road and into VWR's two concrete storm sewer collectors. An emergency valve in the sewer line prevented the TCE from entering the City's stormwater system. Three water samples were collected from the stormwater system the day after the spill. Analytical results confirmed that TCE was not present in the City's stormwater main. VWR pumped approximately 1,300 gallons of TCE and water from the collectors; the TCE and water were placed in drums and disposed of offsite. VWR decided that no additional investigation or cleanup actions needed to be undertaken at the time (DEQ, 1993).

- **December 1985:** In 1985, DEQ requested information regarding the 1980 methylene chloride spill, the 1983 TCE spill, and a series of low-pH discharges to the City's storm sewers. Upon receipt of this information, DEQ was concerned about what it saw as conflicting information regarding the past release of hazardous spills, DEQ requested that EPA take enforcement actions to require VWR to perform soil testing and groundwater monitoring (DEQ, 1993).

- **September 1987:** VWR conducted a Phase I Site Investigation as required under a July 1986 administrative order issued by EPA. Soil and groundwater samples indicated extensive chlorinated VOC contamination across the site. Contaminants included trichloroethylene, tetrachloroethylene, 1,1,1-trichloroethane, methylene chloride, and trans 1,2-dichloroethylene and vinyl chloride (Harding Lawson Associates, 1987).

- **January 1989:** Toluene spilled as a result of a leaking valve. Some of the toluene entered the stormwater sewer, and Crosby & Overton was hired to pump out 1,000 gallons of a toluene/washwater mixture. Two weeks later, VWR reported the spill to the City of Portland, stating that the spill volume was approximately 35 gallons. Three days after the spill, however, DEQ had received an anonymous complaint alleging that "hundreds" of gallons of toluene had spilled. Because the anonymous complainant was not willing to testify as to the larger volume, DEQ took no action.

- **June 1990:** DEQ received a report of a release of 3,900 gallons of a mixture of water, nitric acid, and phosphoric acid. A report of the spill and cleanup was to be received a week later, but a copy is not in the DEQ file (DEQ, 1993).

- **August 1990:** A meeting was held between VWR and EPA. VWR proposed a "pilot remediation project" to address the observed contamination. A work plan was to be submitted by the end of the year. No further information on the remediation project or the work plan was in the file (DEQ, 1993).

There are two quarterly monitoring reports in the DEQ file (August 1992 and November 1996). from the August 1992 report covers June 1992 to July 1992 (VWR, 1992), and the November 1996 report covers August 1996 to October 1996 (VWR, 1996). These reports were written for "work performed as part of a corrective action plan being implemented pursuant to an Administrative Order On Consent dated June 15, 1998, between the U.S. Environmental Protection Agency, Region X, and VWR." It is unclear whether quarterly monitoring occurred continuously from 1992 to 1996, or how long it continued after 1996.

The August 1992 report indicates that there were plans to install a vapor extraction system and sample for dense nonaqueous phase liquids (DNAPLs) in several of the wells. As of August 1992, there were 24 groundwater monitoring wells at the site, 11 of which were sampled in June 1992. Sixteen VOCs were present in the groundwater at the site at levels above the federal maximum contaminant levels (MCLs) for drinking water (VWR, 1992).

The November 1996 report indicates that a vapor extraction system had been installed and that from August 1through October 31, 1996, the system removed 187 pounds of VOCs. Eighteen VOCs were present in the groundwater at the site. Additionally, during the evaluation of the structural integrity of the 42-inch-diameter stormwater line that runs across the site, approximately 15 to 20 yards of sediment were removed from the line and 10,000 to 15,000 gallons of water were used to flush the line. The laboratory analytical report indicated the sediment was contaminated with perchloroethylene (120 ppm), toluene (22 ppm), trichloroethylene (19 ppm), xylene (18 ppm), cis-1,2 dichloroethene (18 ppm), and ethylbenzene (8 ppm) (VWR, 1996).

Summary

Several spills of VOCs have occurred at this site. Two of these spills have resulted in known discharges to the site's stormwater system, which is connected to the City's stormwater system. The 1983 release of TCE appears to have been contained within the site's stormwater system via an emergency cutoff valve. After the 1989 toluene release, no samples were collected to assess whether or not toluene entered the City's stormwater system. The high levels of VOCs detected in sediment samples collected from the site's stormwater system indicate that there is a strong likelihood that, without the proper precautions, contamination from the site could enter the City's stormwater system. Because of limited information in the DEQ file, it is unclear whether remedial activities are still ongoing at this site and whether steps have been taken to protect the City's stormwater system from past and future spills.

On the basis of onsite activities and historical information regarding spills, benchmark exceedances, and known soil, groundwater, and sediment contamination, VWR could be a source of VOCs, PAHs, and DDT. PAHs and DDT have been identified as COIs for the Outfall 18 basin based on 2002 sampling.

References

Harding Lawson Associates. 1987. Phase I Site Investigation Van Waters and Rogers, Inc. Portland, Oregon. September 25, 1987.

VWR. 1992. Progress Report XXV. August 10, 1992.

DEQ. 1993. DEQ Site Assessment Program – Strategy Recommendation. November 30, 1993.

VWR. 1996. Progress Report 50. November 10, 1996.

PES Environmental, Inc. 2002. Stormwater Pollution Control Plan. June 2002.

3720 NW Yeon Ave. Portland , OR 97210
ECSI ID #2424
Schnitzer Investment Corporation

Schnitzer Investment Corporation (SIC) is the only ECSI site located at 3720 NW Yeon Ave., in Portland, Oregon. This site is located directly adjacent to the perimeter boundary of the Outfall 18 drainage basin, approximately 2,100 feet from the Willamette River. The northern portion of the site is approximately 3,000 feet southeast of Outfall 18 (see Figure 3-1 in Section 3 of this report).

Information gathered from the DEQ ECSI files for this site are summarized below.

Site Description

This 2.84-acre site was operated by Willard Battery, a battery manufacturer, from 1947 to 1965. From 1965 to 1970, the Great Western Chemical Company occupied the site. In 1968, SIC acquired the site from Mitchell Brothers and owned it from 1968 to 1998. During that time, the following tenants occupied the site: Great Western Chemical Company (1968 to 1970), Ace Hardware (1971 to 1976), Barker Manufacturing (1976 to 1978), Chase Bag (1978 to 1992), and Daisy Kingdom (1992 to 1997). The current owners of the site are Stephanie and Donald Wirfs (Bridgewater, 2000).

Stormwater from paved portions of the western half of the site is collected in catch basins that eventually drain to City Outfall 17. On the basis of available information, it is unclear where stormwater drains from paved portions of the eastern half of the site. There are catch basins located along NW 35th and NW Yeon Avenue that are near this side of the site, and these catch basins drain to Outfall 18. Stormwater runoff in unpaved portions of the site infiltrates into the soil (Bridgewater, 2000). According to City plumbing records, the site drains to both Outfall 17 and Outfall 18.

Background and Site History

The following is a summary of the information obtained from the DEQ ECSI files:

- 1988: A 10,000-gallon, gasoline UST was removed from the site. A confirmation soil sample was collected from the excavation. The sample was analyzed for gasoline-range

hydrocarbons and BTEX. None of these constituents were reported at a level greater than the laboratory reporting limit (Bridgewater, 2000).

- 1991: Photographs taken by an adjoining property's environmental consultant showed potential release sources (e.g., leaking drums) at the site (DEQ, 1999).
- 1996: A 12,000-gallon, heating oil tank was removed from the site. Two confirmation samples were collected from the bottom of the excavation and analyzed for gasoline, diesel, and heavy oil. None of these analytes were detected (Bridgewater, 2000).
- 1997: A soil investigation was conducted to investigate whether lead-contaminated soils were present near the eastern and western rail spurs located at the site. Sampling was performed in two phases. Results indicated that elevated concentrations of lead (a lead concentration greater than 2,000 mg/kg and a toxicity characteristic leaching procedure [TCLP] lead concentration of 17.1 mg/kg) were present in the ballast material located within the southern 350 feet of the eastern rail spur. A soil remediation program was performed. A total of 295 tons of contaminated soil was removed from the site (Bridgewater, 2000).
- 1999: DEQ prepared a site strategy recommendation advising that additional investigations be performed (DEQ, 1999).
- 2000: Bridgewater Group, Inc., prepared a Preliminary Assessment for the current site owners to address some of DEQ's concerns. The assessment focused on activities that took place during SIC's ownership of the site. Based on findings presented in the assessment, no additional investigation was recommended by the consultant. No record of DEQ's response to this recommendation was found.

Summary

No specific activities have been performed to determine the extent to which SIC may have contributed to sediment contamination, nor have any of the assessments focused on the stormwater pathway. According to information obtained in a Preliminary Assessment, there is no evidence of releases to the soil or groundwater on the site during SIC's ownership. This Preliminary Assessment failed to discuss activities that may have been conducted on the site prior to SIC's ownership. Limited onsite soil sampling has been performed, though no groundwater or catch basin sediment sampling has been reported. According to statements contained in the DEQ strategy recommendation, site historical activities may warrant additional investigation. It is not known whether additional investigations have been performed since the year 2000.

References

DEQ. 1999. Strategy Recommendation. November 5, 1999.

Bridgewater. 2000. Preliminary Assessment. February 29, 2000.

3333 NW 35th Ave., Portland, OR 97210
ECSI ID #1820
ANRFS Holdings Inc.

ANRFS Holdings Inc. is the only ECSI site located at 3333 NW 35th Ave., in Portland, Oregon. This site is located within the City Outfall 18 drainage basin, approximately 2,500 feet from the west bank of the Willamette River. The northwest portion of the site is approximately 3,000 feet south of Outfall 18 (see Figure 3-1 in Section 3 of this report).

Information gathered from the DEQ ECSI files for this site is summarized below.

Site Description

ABF Freight Systems, Inc., currently owns and operates a truck terminal located at this site. Four buildings are located on the 9.3-acre site: the main terminal, paint shop, truck maintenance building, and truck wash. All other portions of the site are paved. Currently, the site is bordered by Owens Corning, Container Recovery Inc., Van Waters & Rogers, Wilhelm Trucking, and Carson Oil Company (ITC, 2001).

Over the years, this site has had several different owners and occupants, but it has been used consistently as a truck terminal for the transfer and storage of various kinds of freight. On the basis of available information (a 1950 Polk Directory), the earliest recorded site occupant was Woodbury Steel Company(. The Woodbury Steel Company used the site for steel storage and as a transport facility until 1963 (DEQ, 1997). From 1963 to 1993, the site was owned and operated by ANR Freight Service, Inc. After 1993, the site was occupied by FTL Motor Freight Carrier until 2000, and then by ABF Freight Systems, Inc. (ITC, 2001).

According to the SWPCP plan prepared in 1995, site activities include: loading and unloading of paper products, truck washing, truck fueling, and truck maintenance. Products that are stored and/or used onsite include: diesel, used oil, antifreeze, degreasers, and solvents (Psomas and Associates, 1995).

This facility does not generate wastewater from industrial operations. Stormwater is collected from paved portions of the facility by a series of 17 catch basins and is discharged to the public storm drain at 10 outlet locations (Figure 8). The stormwater is ultimately discharged to the Willamette River through City of Portland Outfall 18 (Psomas and Associates, 1995).

ABF currently has a 1200-Z NPDES permit. The City has NPDES monitoring data for this facility from January 1996 to present. During this time, ABF Freight has exceeded benchmarks for oil and grease, TSS, and zinc on multiple occasions.

Background and Site History

On the basis of information in the DEQ ECSI files, numerous investigations have taken place over the years. As a result, some soil and groundwater sampling has been performed. In some cases, these sampling and/or investigation results have led to remedial actions. Following are the site investigations and associated actions that were listed in the DEQ ECSI files:

- **December 1990:** Preparation of a Level 1 Environmental Audit. Items noted were: four USTs, and minor spillage/leakage of hazardous materials near the fueling pad and pump area, and at property boundaries (W, NW, and N) (DEQ, 1997).
- **May 20, 1991:** A subsurface investigation indicated seven areas of potential environmental concern (USTs, diesel UST area, oil line area, trench drain area, sump area, Trumbull Asphalt area (neighboring property), and chlorinated solvent/paint area). Follow-up activities were recommended (HAI, 19991).
- **May 24, 1991:** Site Reconnaissance Activities were performed to supplement information collected during the Level 1 Environmental Audit (December 1990) and the Subsurface Investigation (May 1991). Additional areas of "environmental concern" were documented, and further investigation of 13 different areas was recommended.
- **1992:** Four USTs (diesel, gasoline, motor oil, and used oil) were removed, soils around the USTs were over-excavated, and soil samples confirmed that petroleum hydrocarbons remained in acceptable concentrations. Resulted in a DEQ recommendation of "no further action" in September 1992 (ITC, 2001)
- **August 1992:** Petroleum-affected soil in the area of the former truck maintenance area was removed. A Cleanup Assessment Report was completed in September 1992. Cleanup of the contaminated soil at the truck shop beneath the trench drain and truck cleaning pad was addressed in the report. The report concluded that, based on analytical results, these two areas were properly remediated (Coastal Remediation Company, 1992).
- **November 1993:** Soil samples were collected near the former paint shop. Analytical results indicated that VOCs were not detected (ITC, 2001).
- **March 1996:** A GeoProbe investigation was performed in the northwest corner of the property in an attempt to identify sources of the chlorinated solvents that were detected in surrounding monitoring wells. VOCs were detected in several of the samples; however, no conclusions on the probable source were reached (DEQ, 1997).
- **September 1996:** Entered into the Voluntary Cleanup Program (VCP).
- **June 1997:** Withdrawal from VCP.
- **July 1997:** Removal of a trench drain and sump and subsequent soil assessment. The *Trench Drain and Sump Removal Report* (August 1998) concluded that the trench drain and the sump were not significant sources of dissolved BTEX or chlorinated solvents (ITC, 2001).
- **1991–2001:** Groundwater monitoring was performed. Results show that chlorinated hydrocarbons, benzene, toluene, ethylbenzene, and xylenes are present in the groundwater (ITC, 2001).

Summary

On the basis of these investigations, several areas of potential concern have been identified. However, according to DEQ, the resolution of several of these concerns has not been

documented (DEQ, 1997b). One of the outstanding issues is the VOC groundwater contamination found at the site. Past and current owners claim that the contamination is from offsite sources. Owens Corning, located directly north of ANRFS, has assumed responsibility for petroleum-contaminated groundwater that has migrated onto the ANRFS site (in the northeast corner of the site). In addition, high concentrations of VOCs have been detected in monitoring well MW-11, which is located in the northwest corner of the site. In the *2000 Annual Groundwater Monitoring and Sampling Results* report, the following statement was made in regard to this contamination: "ITC concludes that there is likely an offsite source of VOCs, upgradient of MW-11, impacting the groundwater at this site." While DEQ agrees that offsite sources are possible, DEQ also feels that the distribution of contaminated groundwater suggests that the paint shop may be a contributing source (DEQ, 1997b).

While VOC groundwater contamination is known to be present at the site, there is little information in the DEQ files about how this could be related to stormwater. However, in a letter to the owner, DEQ made the following comments: "While no direct evidence of contaminant migration through the storm drain system has been collected, the storm drain crosses the site in the area where the highest onsite concentrations of groundwater VOCs have been detected. Investigation adjacent to the storm drain to date is limited, and DEQ believes it is prudent to consider the storm drain a potential migration pathway, and to include it in any additional site investigation activities." VOCs were not identified as potential COIs for the Outfall 18 basin based on the City's 2002 sediment investigation of Outfall 18. However, PAHs (commonly associated with petroleum products) have been identified. On the basis of known site activities, PAHs are a potential COI for this site.

References

HAI. 1991. *Subsurface Investigation*. May 1991.

Coastal Remediation Company. 1992. *Cleanup Assessment Report Truck Maintenance Shop*. September 1992.

Psomas and Associates. 1995. *FTL, Inc. Stormwater Pollution Control Plan*. May 1995.

DEQ. 1997. *DEQ ANFRS File Review Memorandum*. January 1997.

DEQ. 1997b. *DEQ Letter to ANRFS Holdings, Inc*. April 1997.

ITC. 2001. *2000 Annual Groundwater Monitoring and Sampling Results*. March 2001.

3605 NW 35th Ave., Portland, OR 97210
ECSI ID #1160
Trumbull Asphalt Plant

Trumbull Asphalt Plant is the only ECSI site located at 3605 NW 35th Ave., in Portland, Oregon. This site is located within the Outfall 18 drainage basin, approximately 2,100 feet from the Willamette River. The northernmost portion of the site is approximately 2,800 feet southeast of Outfall 18 (see Figure 3-1 in Section 3 of this report).

Information gathered from the DEQ ECSI files for this site is summarized below.

Site Description

The Trumbull Asphalt plant is located on an 8.06-acre parcel of land that is owned and operated by Owens Corning. Owens Corning has been the owner of this property since 1977, when it purchased the site from Fry Roofing. The two main operations that have been conducted at this site are asphalt manufacturing and roof manufacturing. According to a report submitted to DEQ in February 2002, the asphalt plant operations were scheduled to cease in May 2002. There was no record in the DEQ ECSI files to indicate whether this occurred. This summary assumes that asphalt production has ceased (SECOR, 2002).

Historically, asphalt manufacturing was conducted in the northern and eastern portion of the site, and roof manufacturing was and still is conducted in the southwestern portion of the site. According to the SWPCP prepared for this site, all of the industrial activities that generate potential pollutants are performed within roofed structures or within some other type of secondary containment (SECOR, 1994). Ninety percent of this site is paved with asphalt (SECOR, 2002).

A variety of hazardous substances are either generated or stored at this site. Materials that are stored onsite include: talc, sand, roofing granules, asphalt, paint, plastic wrappers, release tape, fiberglass mat, used oil, grease, antifreeze, and transmission fluid (SECOR, 1994).

Several storm drains are located throughout the property (see Figure 9). It is assumed that these storm drains connect solely to City of Portland Outfall 18 because there was no mention of any additional outfalls.

There is no NPDES permit associated with this site.

Background and Site History

The majority of the information found in the DEQ ECSI files for this site pertained to soil and groundwater contamination from a release of asphalt byproduct (blowing distillate oil – composition similar to No. 4 fuel oil) to the subsurface via a fume line (line used to transport vapors). There was not a significant amount of other information in the file. Following are the spills, site investigations, and associated actions that were listed in the DEQ ECSI files:

- **1987:** Subsurface contamination was found during the decommissioning of an underground fume line (DEQ ECSI database).
- **April and May 1989:** A Groundwater Contamination Remediation Investigation was conducted, and soil samples were collected. The investigation confirmed that the soil and groundwater were contaminated with petroleum hydrocarbons below the site and recommended quarterly groundwater monitoring and free product removal (SECOR,1994).
- **June 1989:** Groundwater and product monitoring began; product was found to have migrated to adjacent property (ANRFS) (SECOR, 2002).
- **August 1990:** Approximately 50 gallons of diesel leaked from a truck's pierced fuel tank onto the road and into the storm sewer (SECOR, 2002).

- **May 1996:** A groundwater extraction trench was installed. This trench has been operated since May 1996 (SECOR, 2002).
- **October 2001:** Delineation of onsite product plume.

Summary

Trumbull Asphalt entered the Independent Cleanup Program in 2002. As of September 2002, no specific activities had been performed to determine the extent to which Trumbull Asphalt may have contributed to sediment contamination. However, this site has historically been involved in the manufacturing of asphalt and roofs. There are numerous hazardous substances that are generated and/or stored onsite. In addition, there is documented soil and groundwater contamination beneath the site and adjacent property owing to historical activities. There was no mention of current activities that may be contributing contamination to the sediments in the Willamette River. Owens Corning has been working with DEQ to develop a plan for site closure. Details of this plan were not found in the file during the time On the basis of site activities and known soil and groundwater contamination, TPH, metals, and PAHs are potential COIs for the site. PAHs, lead, and mercury were identified as COIs for the Outfall 18 basin on the basis of 2002 sediment sampling performed near Outfall 18.

References

SECOR. 1994. Status Report Groundwater Monitoring. March 1994.

SECOR 2002. Draft Soil and Groundwater Remediation Plan. February 2002.

3322 NW 35th Ave., Portland, OR 97210
ECSI ID #1076
Hill Investment Co.

Hill Investment Co. is the only ECSI site located at 3322 NW 35th Ave., in Portland, Oregon. This site is located within the City Outfall 18 drainage basin, approximately 2,500 feet from the west bank of the Willamette River. The northwest portion of the site is approximately 3,300 feet southeast of Outfall 18 (see Figure 3-1 in Section 3 of this report).

Information gathered from the DEQ ECSI files for this site is summarized below.

Site Description

This site is currently owned by Hill Investment Co. The current occupant of this 3.8-acre site is Ashland Chemical Company. Previously, Nabisco occupied the site. This site is bordered by two other ECSI sites, ANRFS Holdings Inc. to the west and Trumbull Asphalt to the north.

The DEQ ECSI files did not contain information about current operations at the site.

Background and Site History

Only limited information about this site was in the DEQ ECSI files; this is summarized below:

- **1990:** Groundwater monitoring results indicated the presence of the following chlorinated solvents in the groundwater: cis-1,2-dichloroethane, perchloroethylene (PCE), trichloroethylene, vinyl chloride, and trans-1,2-dichloroethene. In particular, PCE was found at very high levels (35.5 ppm) (DEQ, 1995).
- **1995:** A DEQ site assessment was performed. DEQ recommended additional action (DEQ, 1995).

Summary

No groundwater monitoring has been conducted since 1990. The DEQ ECSI files had no record of a remedial investigation or action taking place. The current status of this site is unknown, and no DEQ project manager is listed for this site.

References

DEQ. 1995. Site Assessment. July 20, 1995.

3003 NW 35th Ave., Portland, OR 97210
ECSI ID #29
Columbia American Plating Co.

Columbia American Plating Co. is the only ECSI site located at 3003 NW 35th Ave., in Portland, Oregon. This site is located within the City Outfall 18 drainage basin, approximately 4,300 feet southwest of the west bank of the Willamette River. The site is approximately 4,515 feet southeast of Outfall 18 (see Figure 3-1 in Section 3 of this report).

Information gathered from the DEQ ECSI files for this site is summarized below.

Site Description[1]

Columbia American Plating is a 0.8-acre site owned by Lakea Corporation and operated by Columbia American Plating Co. Lakea Corporation has owned the site since 1987. On the basis of the most recent information available in the DEQ ECSI file (1994), plating and metal finishing operations have been conducted at the site since approximately 1975. Prior to 1975, the site was occupied by Soule Steel (Weston, 1994).

According to a DEQ site inspection report, several types of plating are conducted at the site, including: zinc, electrodeless nickel, cyanide copper, acid copper, bright nickel, chromium tin, silver, and rhodium. In addition, cadmium plating was conducted until 1990 (DEQ, 1992).

[1] At the time that this summary was originally written Columbia American Plating was in operation. However, the site was recently shut down by the State Fire Marshall (5/9/03) for having site conditions that posed a “severe fire and explosion hazard”.

The plating process generally involves pre-cleaning the metal with a caustic solution or solvent, then activating the metal using a acid pickling process, and, finally, plating the (DEQ, 1993).

Hazardous materials used, stored, and/or generated onsite include: acids, bases, dissolved metals solutions, solvents, oxidizers, cyanides, chromate sludge, and other plating wastes (DEQ, 1993).

The site contains two storm drains (see Figure 10). One of the storm drains is located in the south parking area, approximately 20 feet away from the hazardous material and waste storage area. The other storm drain is located near the north property boundary. Historically, these storm drains drained to City Outfall 18. According to the City, the site recently disconnected all storm drainage to the City storm sewer except for roof drains. The stormwater now drains to the pretreatment system and is then discharged to the sanitary sewer.

This site has a 1200-Z NPDES permit. The City has NPDES monitoring data for this facility beginning in April 2002. From April 2002 to the present, the facility has exceeded the benchmark for oil and grease once. No other benchmarks have been exceeded.

Background and Site History

Past waste management practices at the site resulted in RCRA compliance and enforcement actions starting in the 1980s. Violations have consisted of storage of hazardous wastes for more than 90 days, often in deteriorated and leaking containers; inadequate protection from spills; and unauthorized recycling/treatment of hazardous waste. The site has been used for plating with zinc, nickel, copper, chromium, silver, gold, tin, and cadmium. As of 1994, zinc plating was the primary process at the site. A variety of hazardous materials have been stored at the facility including acids, bases, dissolved metal solutions, solvents, oxidizers, and cyanides (EPA, 1994).

In addition to the RCRA compliance issues listed above, the site had the following two events listed in the DEQ files:

- **April 1984:** A fatigued pickling tank spilled 2,300 gallons of hydrochloric acid that flowed into the south yard. The south yard storm drain was reportedly plugged at the time. Neutralization and disposal were handled onsite (EPA, 1994).
- **September 1994:** EPA Region 10 completed a Site Investigation report (SI), which documented soil contamination at various locations through the site. Analytical results from soil samples indicated releases of metals (primarily cadmium, chromium, copper, nickel, and zinc), cyanide, and VOCs. No groundwater samples were collected. The SI concluded that, despite soil and, possibly, groundwater contamination at the site, exposure to surrounding human and ecological populations is limited and that no further investigation under the federal Superfund program was warranted. There was no indication that the stormwater pathway was considered in the SI (DEQ, 1995).

Summary

Large quantities of hazardous materials, including dissolved metal solutions and solvents, have been stored improperly at the site in the past. EPA Region 10 concluded in 1994 that no

further investigations were necessary under the federal Superfund program; however, DEQ sent Columbia American Plating Co. a letter informing the company that DEQ believed further action was necessary, under the state program, to investigate the extent of soil and groundwater contamination beneath the facility. No additional information is presented in the DEQ ECSI file regarding investigations conducted after 1994.

On the basis of site activities and known soil contamination, cadmium, chromium, copper, nickel, zinc, cyanide, and VOCs are potential COIs for the site. None of these COIs were identified as COIs on the basis of the sediment sampling that the City conducted in 2002 near Outfall 18.

References

DEQ. 1993. Preliminary Assessment. Columbia American Plating. Gil Wilstar. December 1993.

EPA 1994. Columbia American Plating #29 Site Inspection Report. September 1994.

Weston. 1994. Site Inspection Report Columbia American Plating. September 1994.

DEQ. 1995. Columbia American Plating. March 21, 1995.

3074 NW St. Helens Rd., Portland, OR 97210
ECSI ID #69
Magnus Co.

Magnus Co. is the only ECSI site located at 3074 NW St. Helens Rd., in Portland, Oregon. This site is located within the City Outfall 18 drainage basin, approximately 3,800 feet from the west bank of the Willamette River. The northwest portion of the site is approximately 4,000 feet southeast of Outfall 18 (see Figure 3-1 in Section 3 of this report).

Information gathered from the DEQ ECSI files for this site is summarized below.

Site Description

The Magnus Co. site is currently occupied by Industrial Craters Inc., a manufacturing company. This site was listed in the DEQ ECSI database because of historical activities conducted by Magnus Co. Therefore, information contained in the DEQ ECSI files focused on past site operations. There was no information in the indicating that current operations posed a threat to the environment.

Magnus Co. owned and operated the site, conducting lead smelting operations, from 1930 to 1936 From 1936 to 1968, the site was owned and operated by the National Lead Company, which operated a bearing rehabilitation plant. Operations included the smelting of lead, zinc, and brass (EPA, 1984). Throughout these years, lead was used to fill cracks in the concrete floor of the building. In addition, lead-containing dust accumulated inside and outside the building (DEQ, 1989).

There is no NPDES permit associated with this site.

Background and Site History

Limited information regarding environmental regulatory concerns was available in the DEQ ECSI files. The following is a summary of the information in the DEQ ECSI files:

- **July 1984:** Eight samples of soil and dust were collected and analyzed for lead. Results ranged from 0.2 to 280 ppm (DEQ, 1989).
- **November 1984:** EPA performed a Preliminary Assessment. Soil mitigation was recommended; however, no further action under the federal program was recommended (DEQ, 1989).
- **February 1994:** Site screening was recommended by DEQ (DEQ ECSI database).

Summary

There are no records of soil mitigation being performed. On the basis of results obtained from the samples in 1984, elevated levels of lead contamination are present onsite as a result of historical operations. Therefore, lead is a potential COI for this site. Lead was also identified as a COI for the Outfall 18 basin, based on the 2002 sediment sampling performed near Outfall 18.

There was no information in the DEQ ECSI files indicating any current operations that would pose a threat to the environment. In addition, there was no information in the files indicating that DEQ had performed site screening. There is no current DEQ project manager for this site.

References

EPA. 1984. Potential Hazardous Waste Site Preliminary Assessment. October 1984.

DEQ. 1989. DEQ Site Report. January 1989.

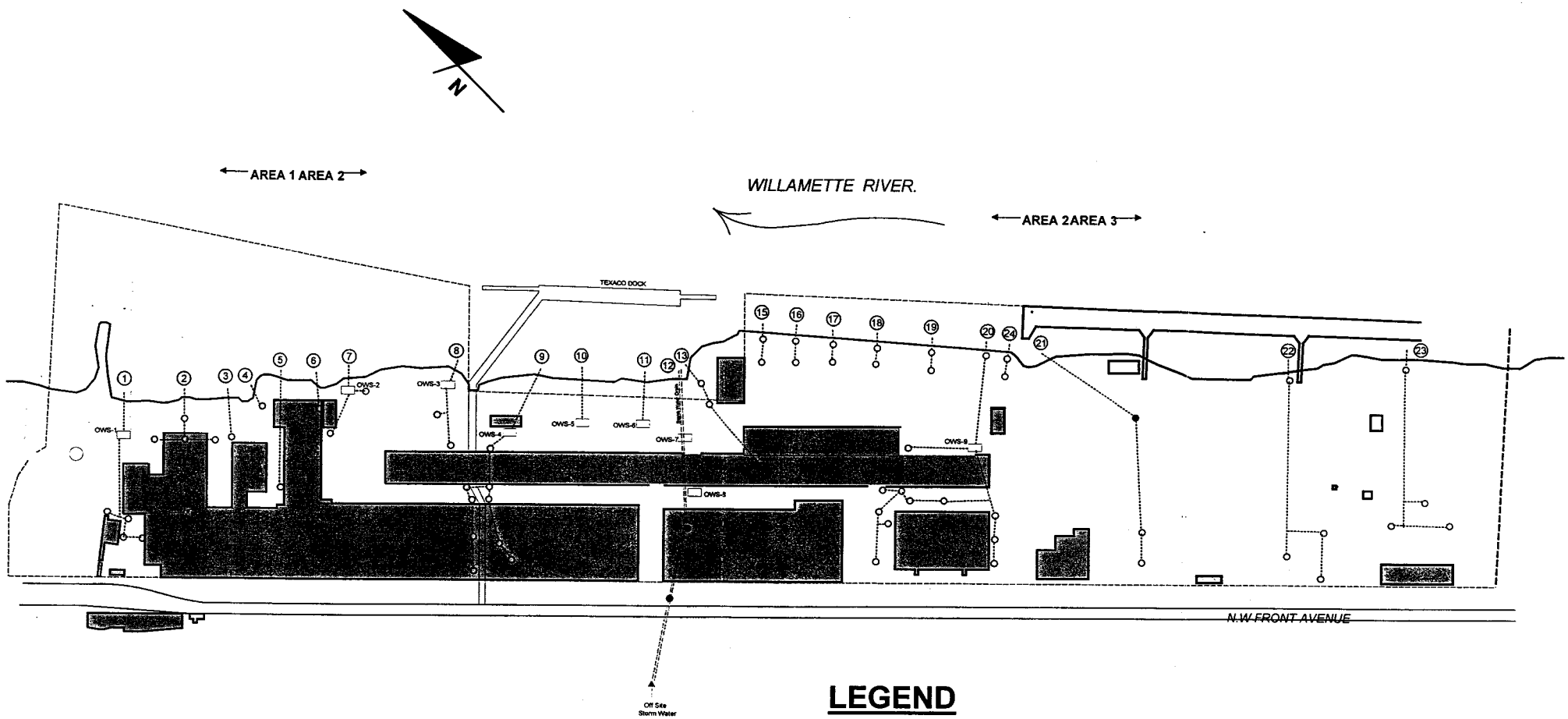

FIGURE 1

SCALE IN FEET
0 200 400

LEGEND

- Catch Basins
- Man holes
- Oil/Water Separators
- Storm water Outfalls
- Storm water Piping
- Covered Buildings

GUNDERSON, INC. PROPERTY
4350 N.W. FRONT AVENUE
PORTLAND, OREGON

STORM WATER OUTFALLS

FIGURE 1

SOCIATES

NOTE: Features shown are for illustrative purposes only and are approximate

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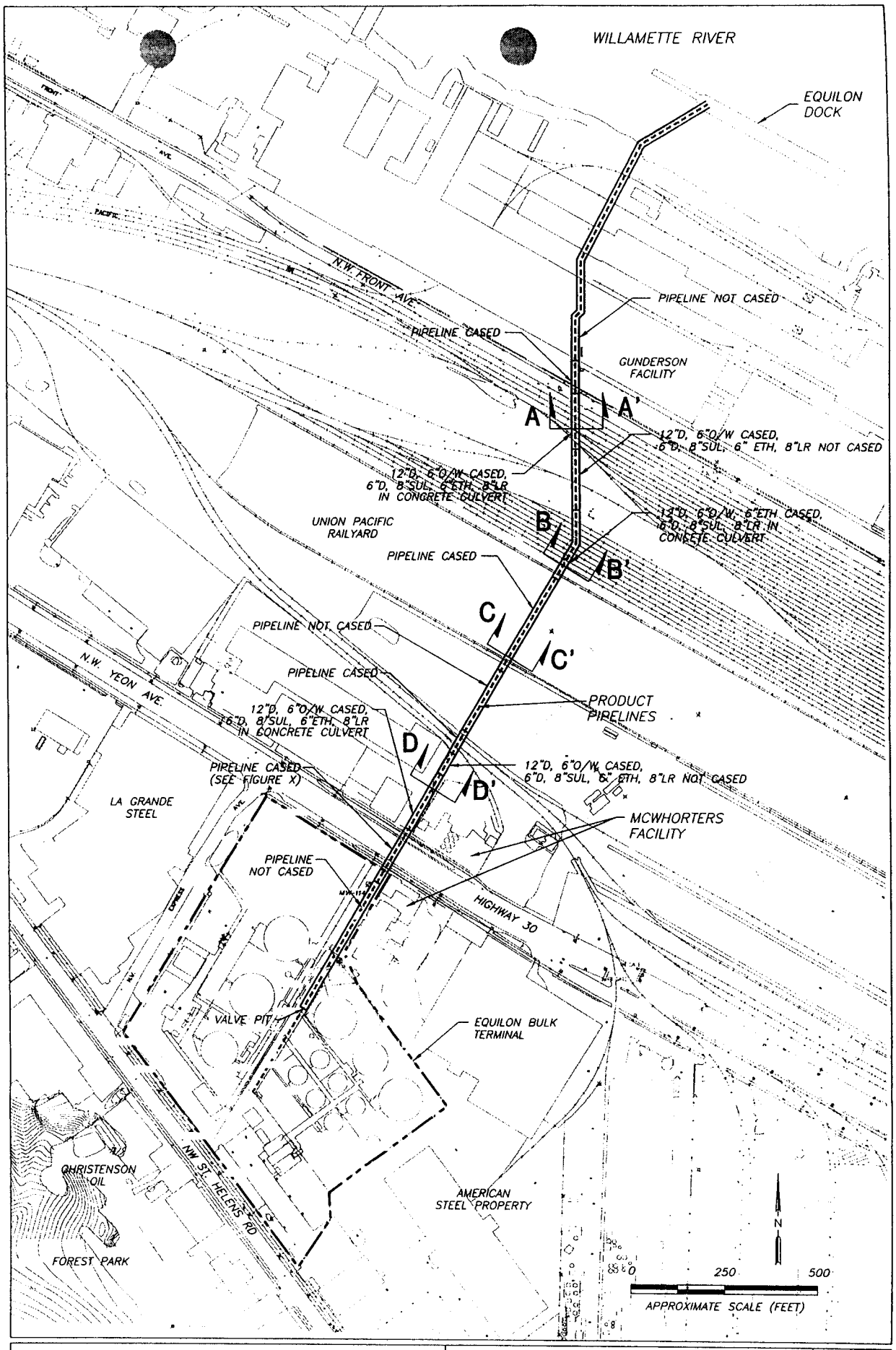

FIGURE 2

SECOR
International Incorporated
015

DOCK PIPELINE CORRIDOR MAP

EQUILON BULK TERMINAL SAP NO. 357083
3800 NW ST HELENS ROAD
PORTLAND, OREGON

FIGURE: 4

JOB#: 015.08985.003 APPR: DWN: KPM DATE: 08/19/01

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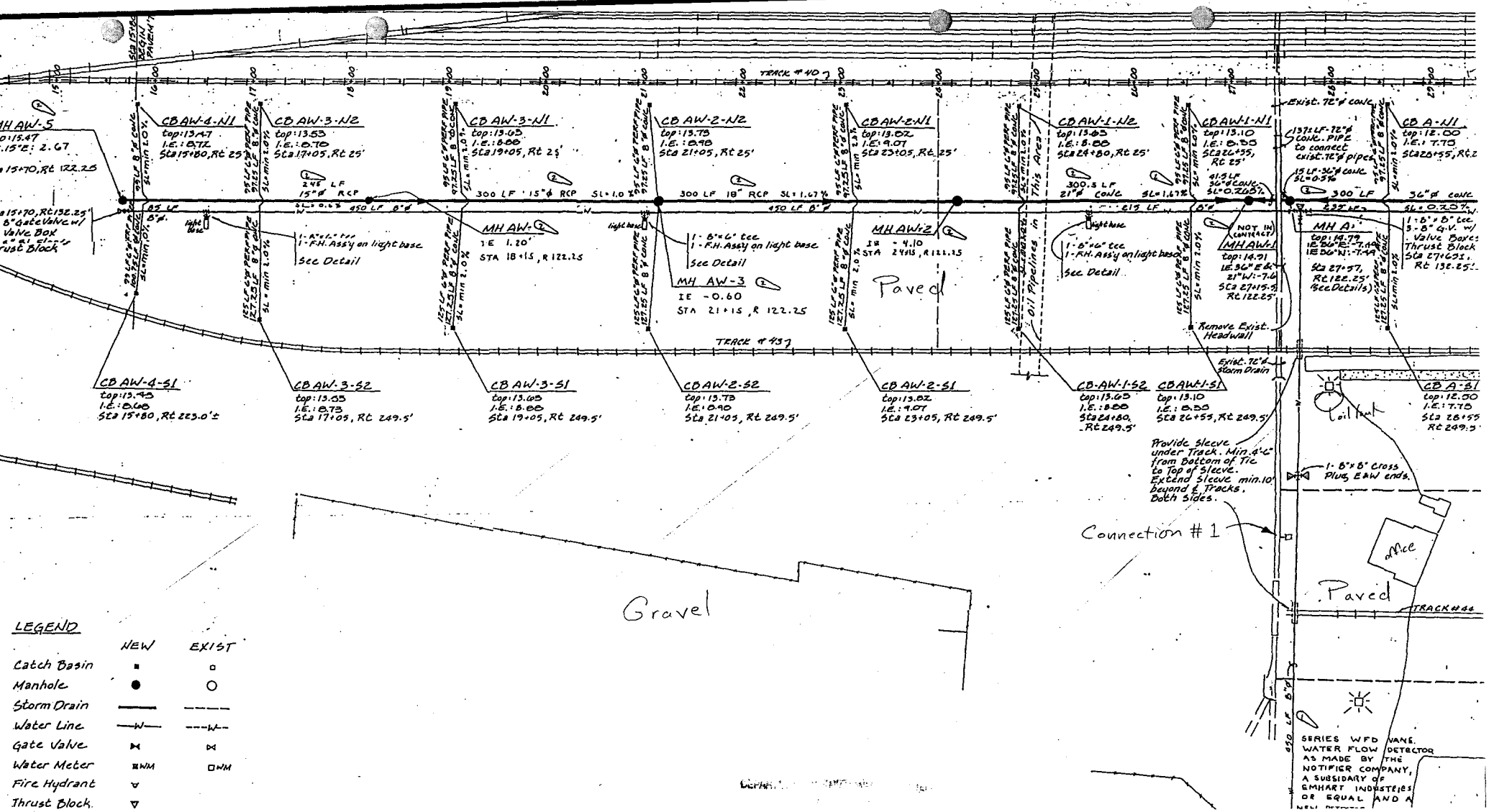

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AUG 2 4 19

NORTHWEST

FIGURE 3

AUG 2 4 1995

NORTHWEST REGION

NTAL QUALITY

EGION

YEON AVE.

STORM DRAIN DATUM NOTES

1. Elevations shown are based on the BNR Survey Datum. Reference Elev. is flowline @ end of existing 72" ø pipe at Station 27+45.5, 56' Rt. Elev = 0.56 ft

2. Elev 0.0 BNR Datum = 23.95 City of

DESIGNED AJH/WRB
DRAWN
STORM DR

BURLINGTON NORTHERN RAILROAD
PORTLAND HUB CENTER
PORTLAND, OREGON

SITE MAP SHEET 1 OF 3
WESTERN PORTION

956003.09

FIGURE 2

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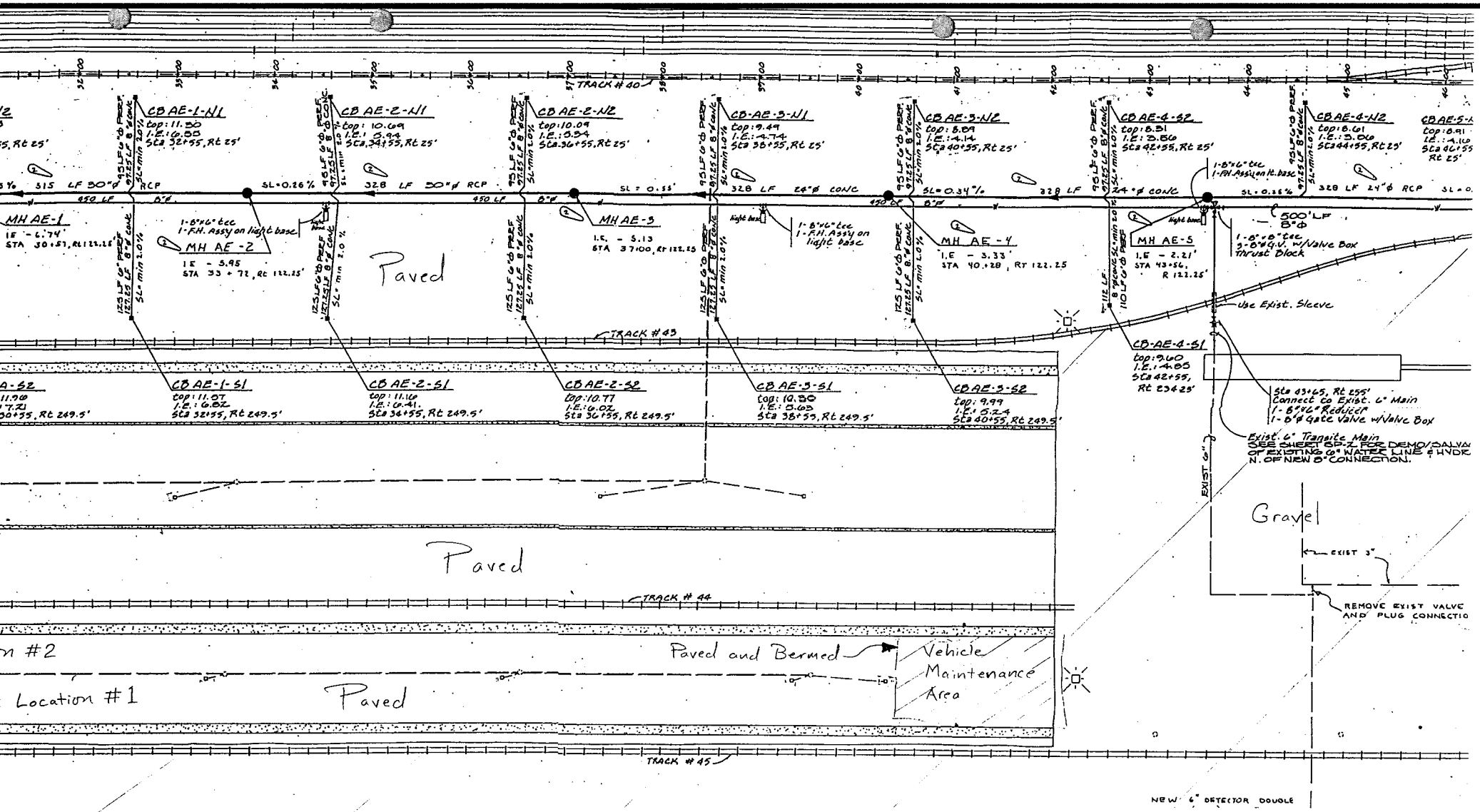

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AUG 24 1995
NORTHWEST REGION

FIGURE 3

BURLINGTON NORTHERN RAILROAD
PORTLAND HUB CENTER
PORTLAND, OREGON

SITE MAP SHEET 2 OF 3
MIDDLE PORTION

956003.09

FIGURE 3

YEC

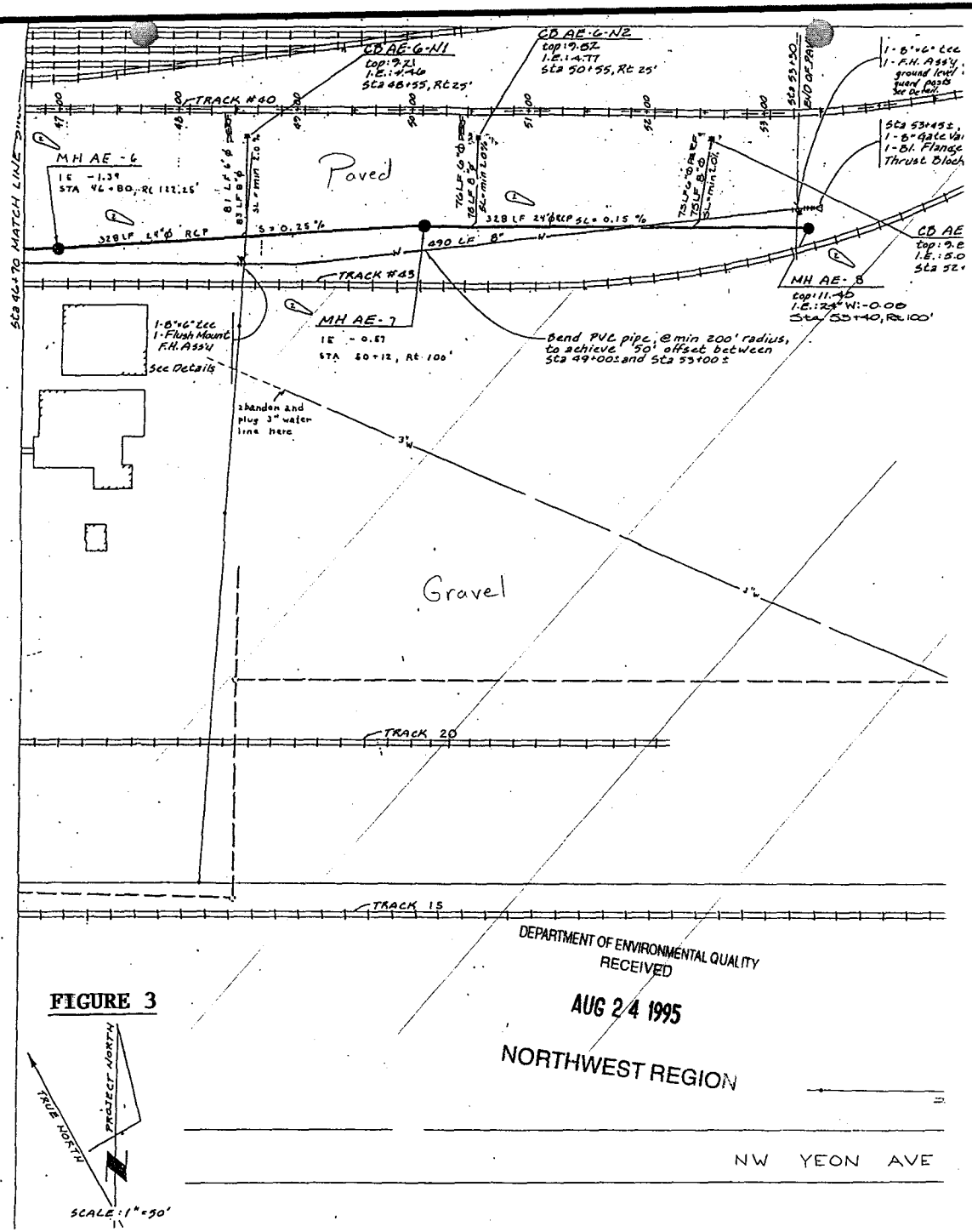


FIGURE 3

DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
AUG 24 1995
NORTHWEST REGION

BURLINGTON NORTHERN RAILROAD
PORTLAND HUB CENTER
PORTLAND, OREGON

SITE MAP **SHEET 3 OF 3**
EASTERN PORTION

956003.09

FIGURE 4

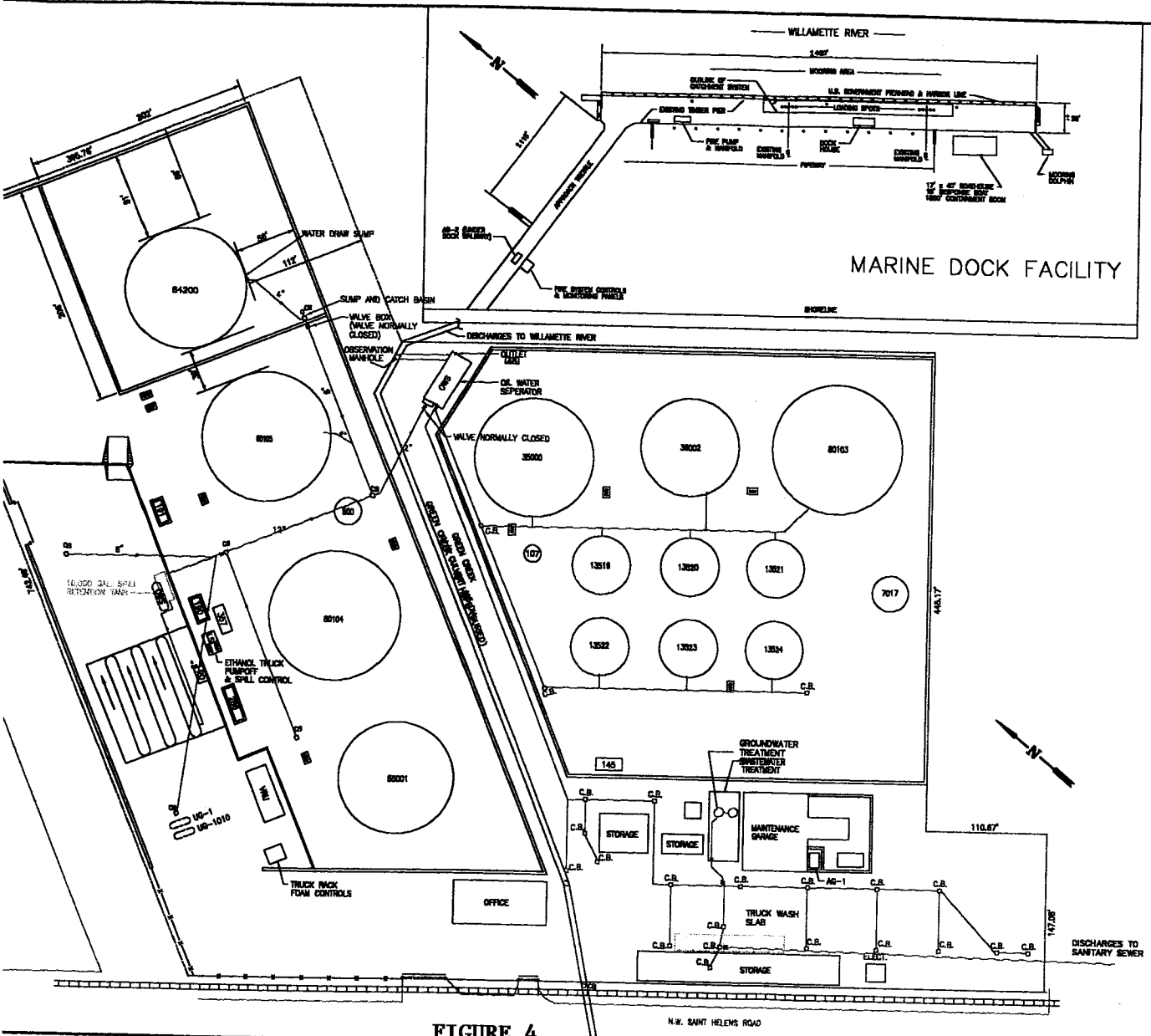


FIGURE 4

SUMMARY OF STORAGE TANKS

(NOTE: TANK CAPACITY SHALL INDICATE NORMAL SAFE FILL, WITH CAPACITY IN BBLS FOR 42,000 GALS OR GREATER.)

TANK ID NUMBER	SIZE	DIA. & HEIGHT	TYPE	COMMODITY
13519	11,117	--	CONE	DIESEL
13520	11,642	--	CONE	DIESEL
13521	11,626	--	CONE	DIESEL
13522	11,474	--	CONE	DIESEL
13523	11,855	--	CONE	DIESEL
13524	11,450	--	CONE	DIESEL
36002	34,456	--	CONE	DIESEL
55000	45,305	--	IFR	GASOLINE
55001	46,835	100' x 40'	IFR	GASOLINE
80103	78,229	--	CONE	DIESEL
80104	67,492	120' x 40'	IFR	GASOLINE
80105	68,698	120' X 40'	IFR	GASOLINE
84200	77,436	112' x 48'	IFR	GASOLINE
7017	6,368	--	EFR	WASTEWATER
48	2,000	5'-6" x 12'	HORIZONTAL	DYE (FOR DIESEL)
107	--	--	CONE	EMPTY
145	5,838	--	HORIZONTAL	PARADYNE
190	8,000	8' x 21'	HORIZONTAL	SHELL ADDITIVE
191	8,000	8' x 21'	HORIZONTAL	DIESEL ADDITIVE
286	12,000	8' x 32'	HORIZONTAL	GENERIC ADDITIVE
357	15,000	10' x 26'	HORIZONTAL	ETHANOL SLOP
500	18,396	--	CONE	TEXACO ADDITIVE
UG-1	1,000	--	DW F/GLASS	VAPOR KNOCKOUT
UG-1010	1,000	--	DW F/GLASS	HYDROCARBON SLOP
AG-1	--	--	--	--
AG-2	--	--	--	--

LEGEND:

- STORM WATER SEWER SYSTEM
- DISCHARGE LINE TO POTW
- OILY WATER SEWER SYSTEM
- OWS — OIL-WATER SEPARATOR (ABOVEGROUND)
- OWS — OIL-WATER SEPARATOR (UNDERGROUND)
- LS — LIFT STATION
- UNDERGROUND STORAGE TANK
- VRU — VAPOR RECOVERY UNIT
- CB — CATCH BASIN
- VC — VAPOR COMBUSTER UNIT
- SLIDING GATE
- OC — OWN CONSUMPTION (DIESEL) TRUCK FUELING
- TRUCK LOADING RACK
- PRIMARY PRODUCT PUMP(S)
- CHAIN LINK FENCING
- CONCRETE WALL OR CURBING
- EARTHEN OR COATED DIKE WALL
- EQPL — EQUILON PIPELINE FACILITIES: PUMP STATION, METERING, ETC.
- ELEC — ELECTRICAL SWITCHGEAR
- RW, MW, IW — RECOVERY OR MONITORING WELL, INJECTION WELL
- PO — PUMP OFF AREA
- 2 — TANK NO. 2 (ETC...)
- SWING GATE
- HW — HAZARDOUS WASTE DRUM STORAGE

REFERENCE DRAWING DESCRIPTION	REV. NO.	DATE	REVISION DESCRIPTION	BY	CHK.	ENGR.	APP.
	2	6/22/00	SWPCP Requirements Added	dMT	RPK		RPK
	1	6/12/00	REVD PER FIELD CHECK/AS-BUILT/ADD MARINE DOCK FACILITY	CEF	RPK		RPK
	0	10/26/99	FOR REVIEW	DTT	RPK		RPK

EQUILON ENTERPRISES LLC

PORTLAND TERMINAL

GENERAL PLOT PLAN
SWPCP
FIGURE 2
3800 NW St. Helens Road
Portland, OR

FOREIGN DRAWING NUMBER | LOCATION CODE | SCALE: 1" = 50'-0" | DRAWN: DTT | DATE: 10/26/99 | Sheet 1 of 1 | SWPCP FIGURE 2 | REV. 2

Z:\distribution plants shell\terminals temp\ex-texaco terminals\portland master dtt 10/26/99 8:31am rev. 0

PDX/030860024.PDF

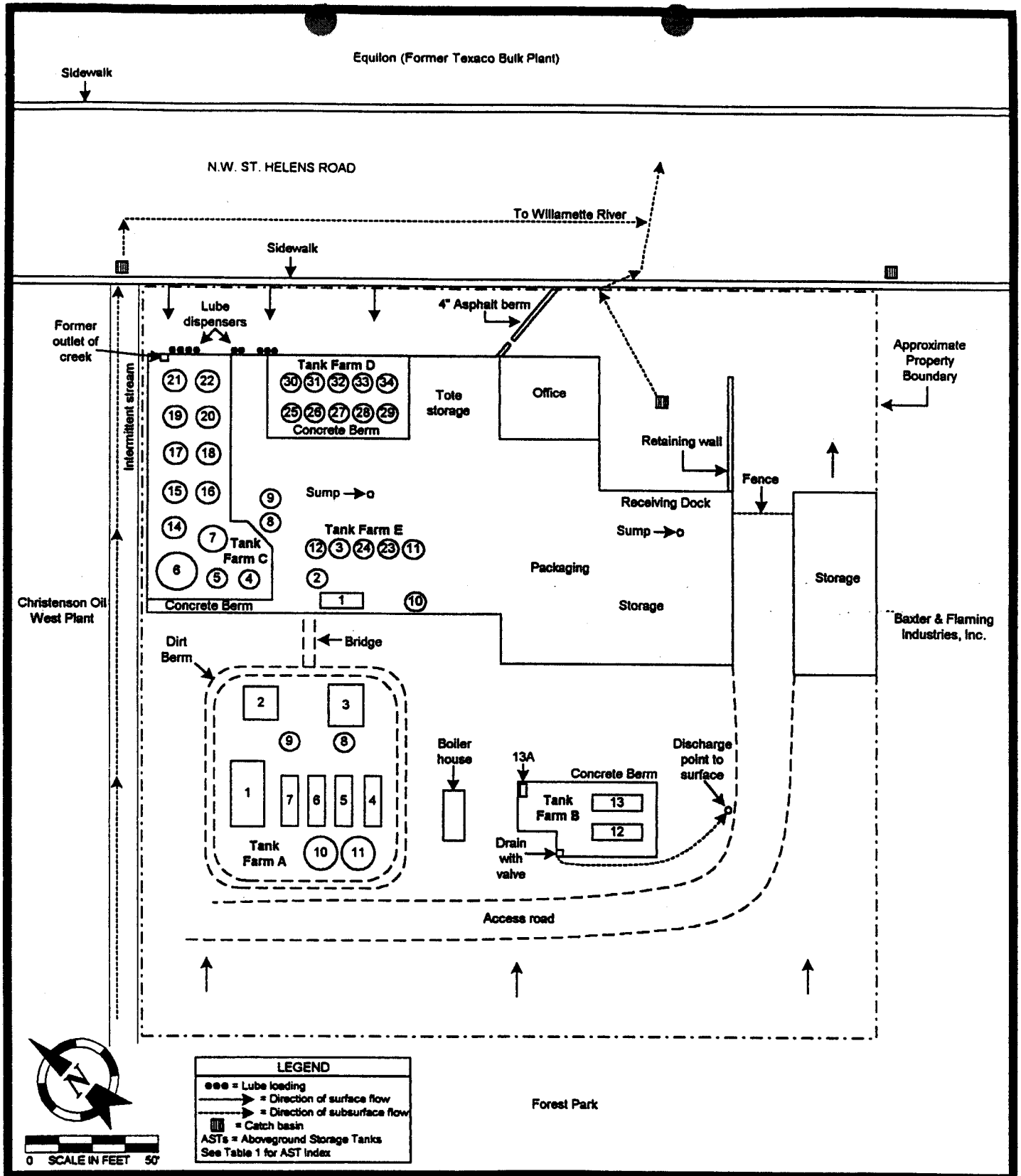


FIGURE 5

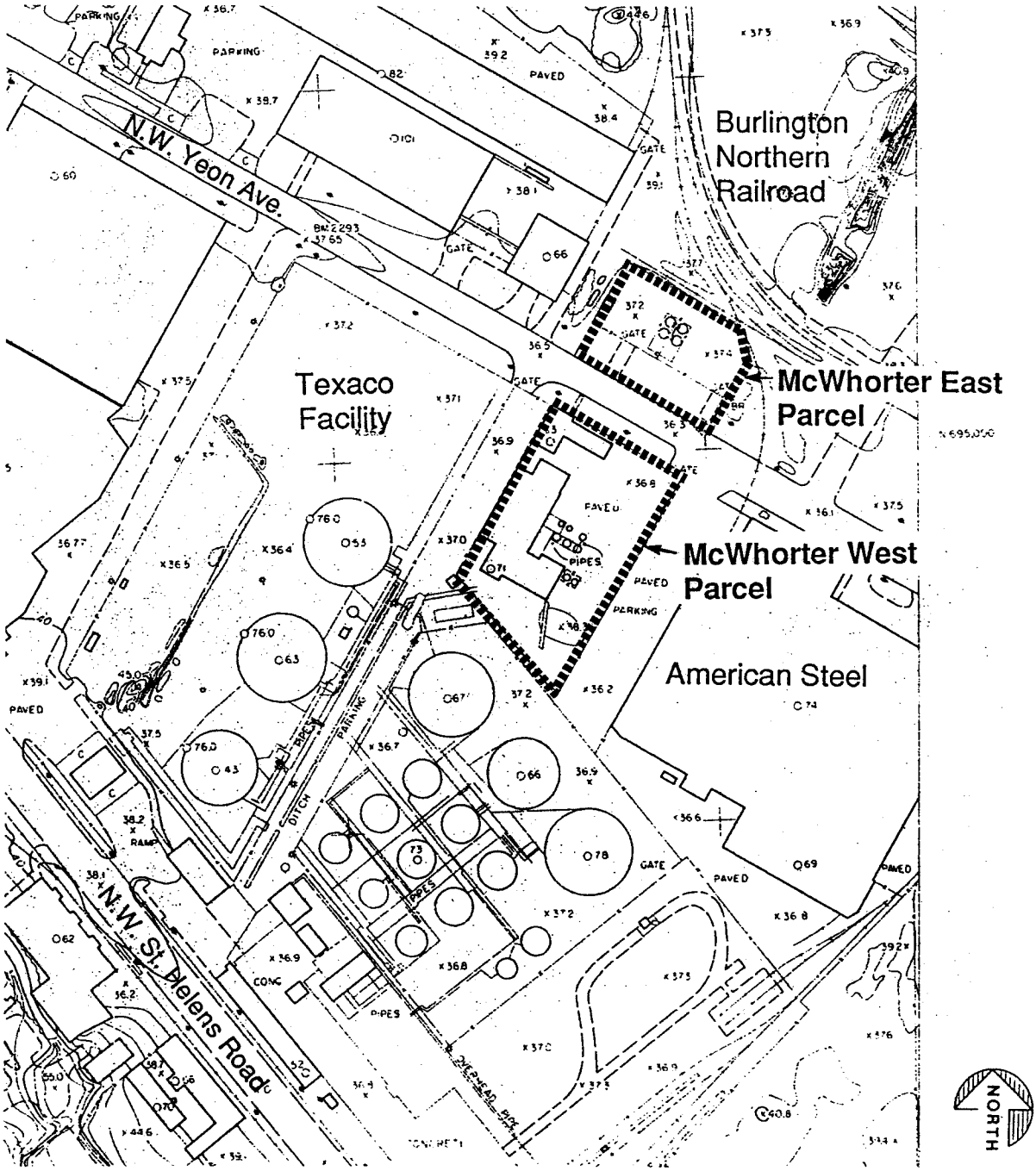
WOHLERS ENVIRONMENTAL SERVICES, INC.

FIGURE 2A

SITE MAP OF EAST PLANT

CHRISTENSON OIL COMPANY
3821 N.W. ST. HELENS ROAD
PORTLAND, OREGON

PROJECT NO.:	00-0120
DATE:	09/21/00
SCALE:	1" ≅ 50'
FILE:	FG000120
DRAWN BY:	MM



Base Map: City of Portland - Topographic Map Quarter Section 2624
(T1N / R1E - Sec 19, SE 1/4)

200' 100' 0 200'
Scale In Feet

Note: Scale is Approximate

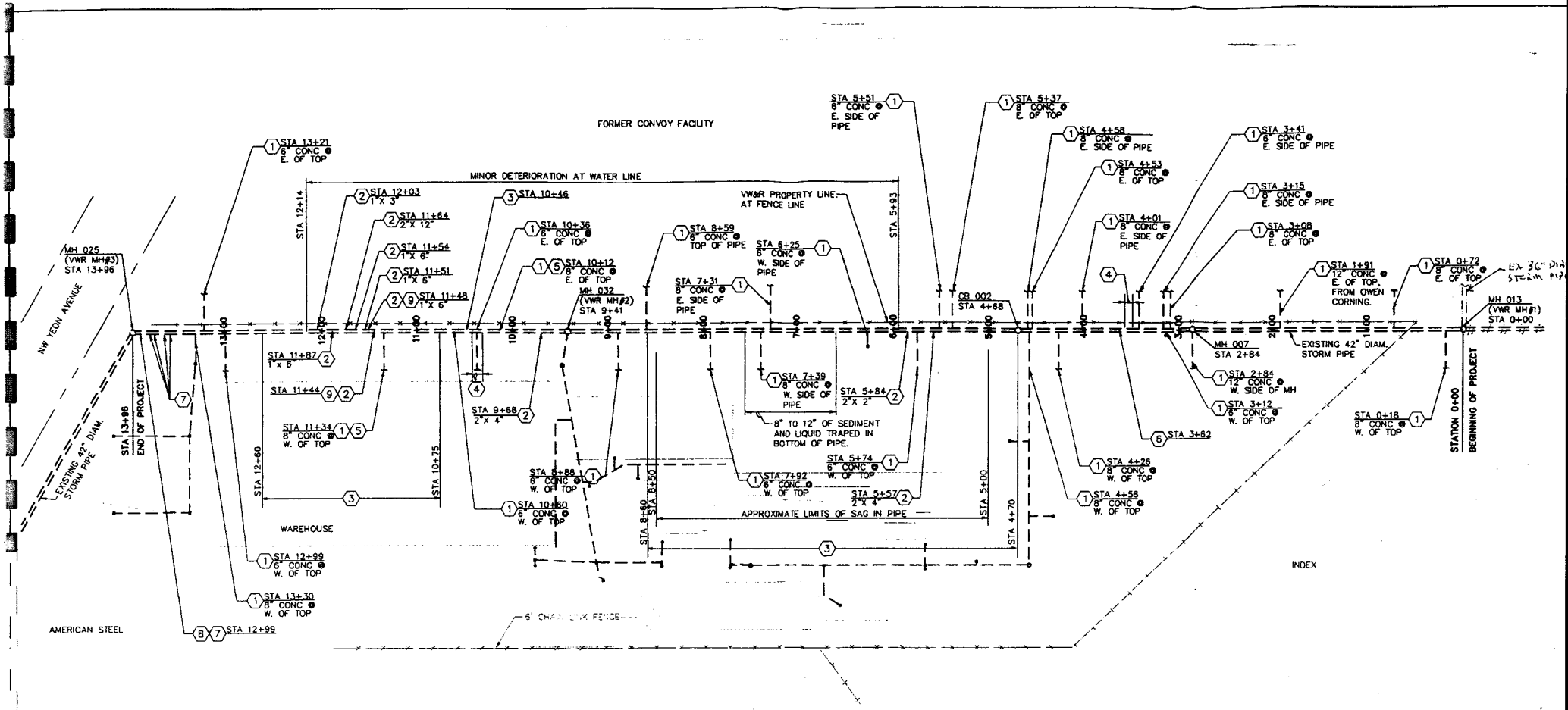
FIGURE 6

McWhorter Facility Study Area Topographic Map

PMX #55-1846-07
JUNE 1991

Figure 5

Parametrix, Inc.



STRUCTURE NOTES:

1. SERVICE LINE
2. BROKEN/CHIPPED JOINT
3. JOINT(S) PULLED 1/4 TO 1/2 OF BELL DEPTH (1" TO 2").
4. MINOR DETERIORATION ON TOP OF PIPE
5. SERVICE LINE BROKEN AT END
6. DISCOLORATION ON TOP OF PIPE, IMPLIES LEAKAGE
7. DISCOLORATION ON BOTTOM OF PIPE, IMPLIES LEAKAGE
8. CIRCUMFERENTIAL CRACK
9. SEDIMENT MAY ENTER PIPE AT THIS LOCATION

AMERICAN STEEL

NOTES:

1. ALL SERVICE LINE SIZES AND LOCATIONS ARE APPROXIMATE AND ARE NOT INTENDED FOR CONSTRUCTION PURPOSES. ONLY THE CONNECTIONS TO THE 42" STORM PIPE WAS OBTAINED FROM FIELD DATA.
2. ALL LOCATIONS OF STRUCTURAL OBSERVATIONS ARE BASED ON VIDEO TAPE SURVEY OF LINE.

VIEW: P
DATE: 09/17/96 6:55am
DRG NAME: @:\MUM\30860491\VIDEO
JOB NO. 30860

FIGURE 7

PLAN

50 0 50 100
SCALE FEET

NO	DATE	BY	APPR	REVISIONS

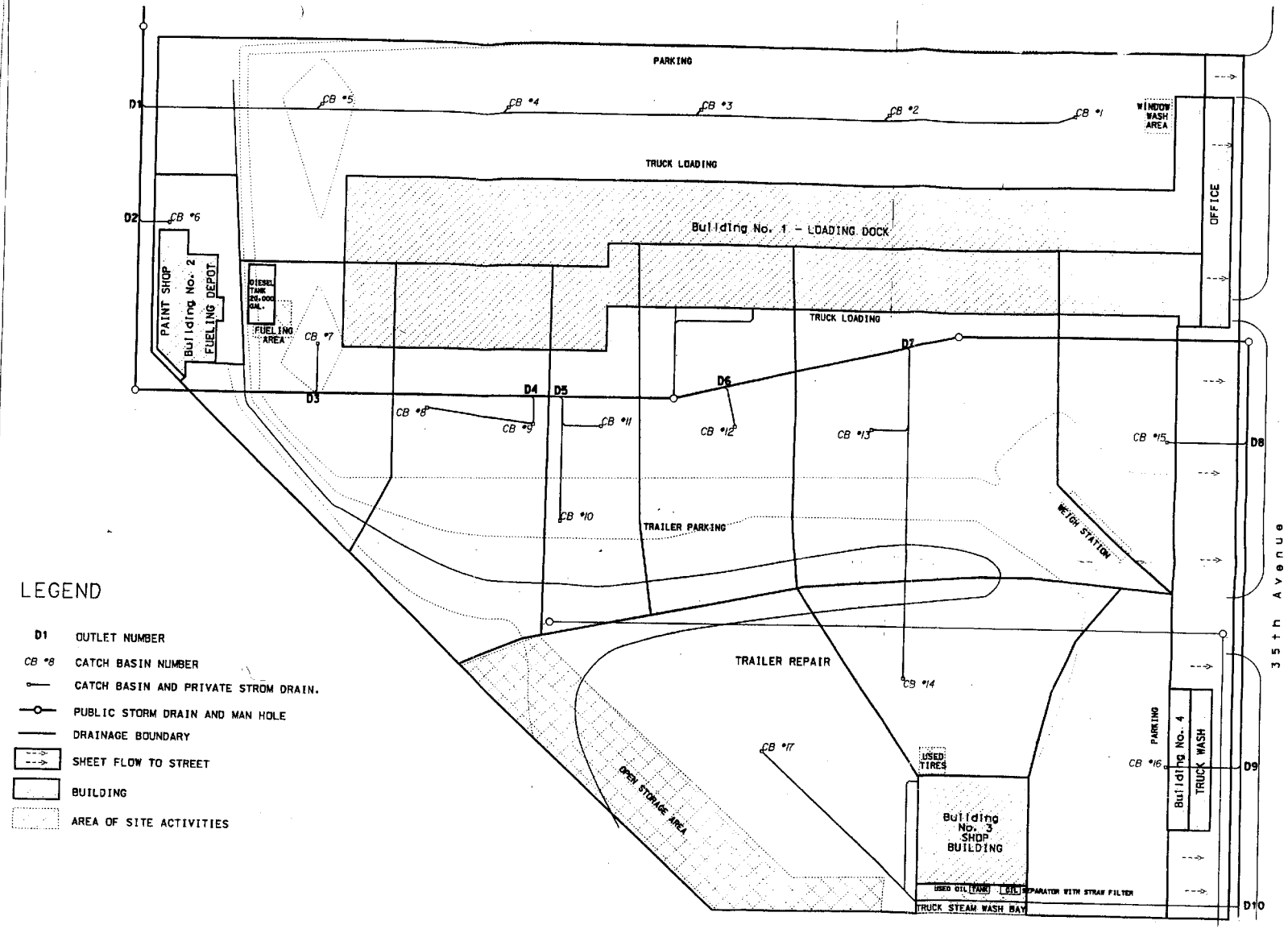
PDX/030860024.PDF

R.GASTON, P.E. 9/17/96 DESIGNED BY DATE
R.GASTON, P.E. 9/17/96 DRAWN BY DATE
CHECKED BY DATE

INSPECTION OF 42" STORM DRAIN
VAN WATERS AND ROGERS, INC.
3950 N.W. YEON AVE., PORTLAND, OREGON

Harding Lawson Associates
Infrastructure, Inc.
AE Consultants

SHT 1 OF 1



LEGEND

- D1 — OUTLET NUMBER
- CB #8 — CATCH BASIN NUMBER
- CATCH BASIN AND PRIVATE STROM DRAIN.
- PUBLIC STORM DRAIN AND MAN HOLE
- DRAINAGE BOUNDARY
- SHEET FLOW TO STREET
- BUILDING
- AREA OF SITE ACTIVITIES

FIGURE 8

(ANRFS Holdings, Inc.)

FTL, Inc.

3333 N.W. 35TH AVENUE
PORTLAND, OREGON 97210

STORMWATER POLLUTION CONTROL PLAN
FIGURE 2: SITE PLAN

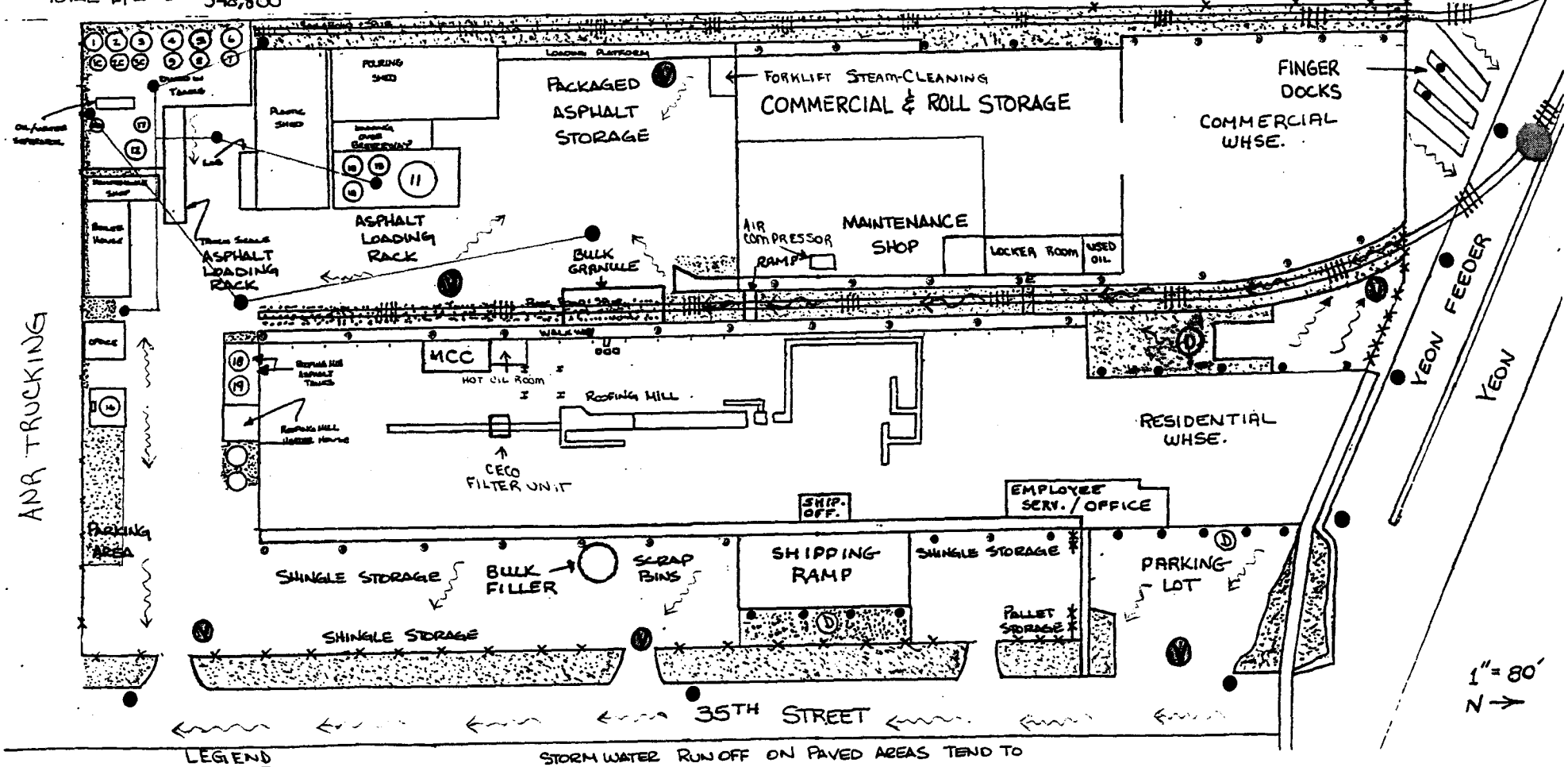
PSOMAS
Psomas & Associates—Portland
Engineers

ROOFING AREA - 194,000
PAVED AREA FT² - 116,800
GRASS AREA FT² - 38,000
TOTAL FT² - 348,800

PORTLAND PLANT

STORM WATER SURVEY

ROOF DRAIN DIRECT TO DRYWELL
ROOF DRAIN ON TO PAVEMENT/RAILSIDING
STORM DRAIN
NPDES PERMIT #1300J. ALL LINES FEED OIL/WATER SEPERATOR



LEGEND

IMPERVIOUS
SHEET FLOW
PERVIOUS
DRYWELL
VISUAL OBSERVATION LOCATION

STORM WATER RUNOFF ON PAVED AREAS TEND TO MOVE NORTH TO SOUTH, AND WEST TO EAST.

OWENS CORNING / TRUMBULL ASPHALT PLANT

FIGURE 9

PDX/030860024.PDF

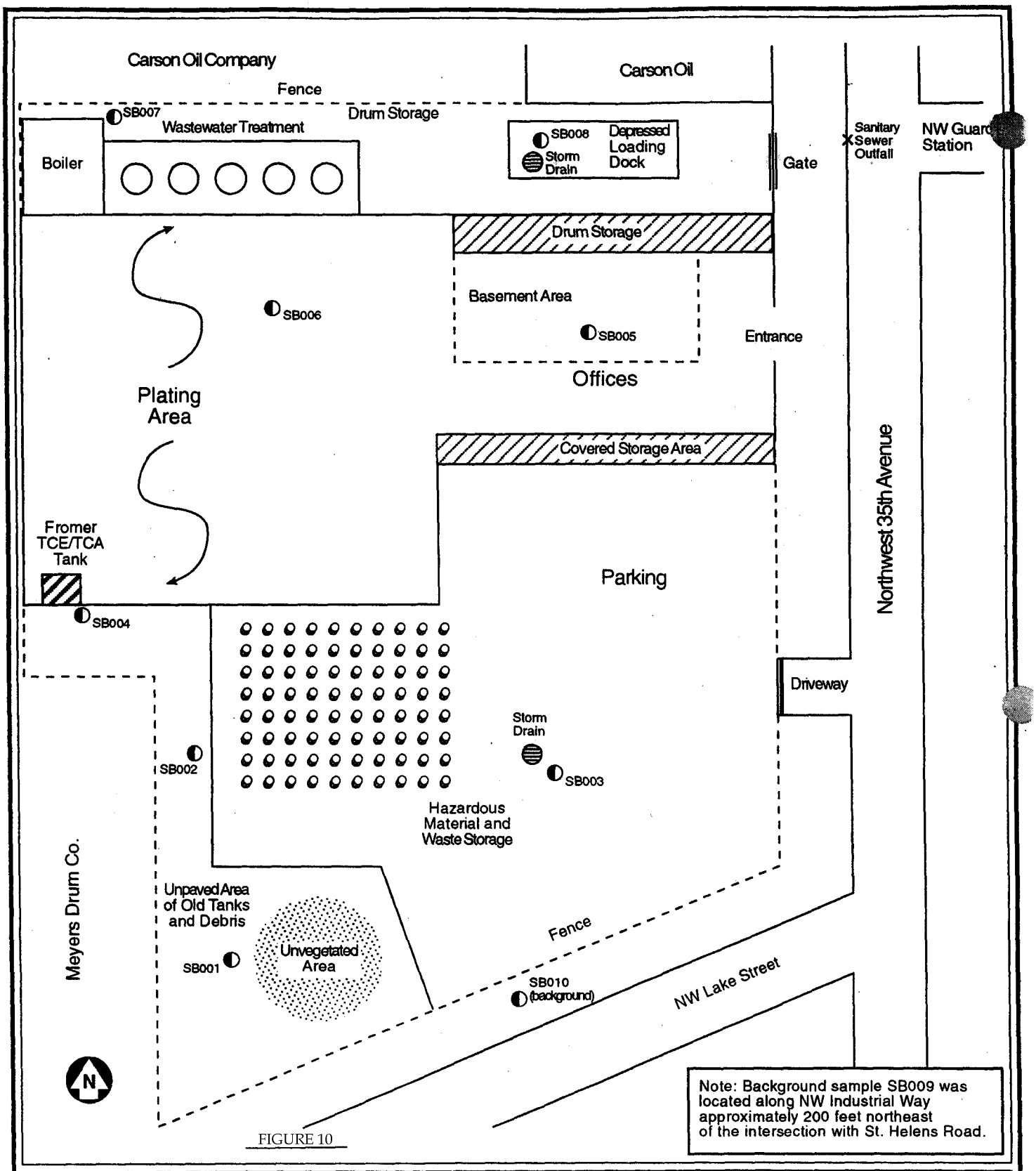


FIGURE 10

0 18 36

Approximate Scale in Feet

Explanation

Hand Auger Boring

Source: WESTON, 1994

4000-19-02-4100
September 1994

Columbia American Plating Sampling Locations

FIGURE
3-1