



cook inlet processing

03 July, 2002

DEC, Kenai District Office
Attn: Don Seagren
4335 Kalifornsky Beach Road, Suite 11
Soldotna, AK 99669

Re: Phase 2 evaluation, Uganik Bay

Don:

Pursuant to our discussion this morning, I am forwarding copies of the Phase 1 and Phase 2 evaluations performed at our Uganik Bay location. Geo Engineers performed the evaluations at the request of a prospective buyer and subsequently informed us that we needed to report this to you.

I can be reached in our Nikiski office, or Cliff Kohler in our Anchorage office is being kept apprised of the situation and can be contacted directly at 907-272-0404.

Sincerely

Mark A. Johnson, plant engineer

ADEC Spill # 2002⁹⁵ 01/6901

**Phase I Environmental Site Assessment
Uganik Bay Processing Plant
Kodiak Island, Alaska**

March 25, 2002

**For
Ocean Beauty Seafoods, Inc.**

Disclaimer: This document (email, text, table, and/or figure) and any attachments are only a copy of a master document. The master hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

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March 25, 2002

Ocean Beauty Seafoods, Inc.
1100 West Ewing Street
Seattle, Washington 98119-1321

Attention: Tony Ross

GeoEngineers is pleased to submit three copies of our "Phase I Environmental Site Assessment, Uganik Bay Processing Plant, Kodiak Island, Alaska." Our services were completed in general accordance with our proposal dated March 7, 2002 (Appendix A). Your authorized our services on March 8, 2002.

We appreciate the opportunity to assist Ocean Beauty Seafoods, Inc. on this project. Please contact us if you have questions regarding this report.

Yours very truly,

GeoEngineers, Inc.

Scott E. Widness, P.E.
Principal

SEW:skl
Document ID: 676500200esa.doc

Attachments

**PHASE I ENVIRONMENTAL SITE ASSESSMENT
UGANIK BAY PROCESSING PLANT
KODIAK ISLAND, ALASKA
FOR
OCEAN BEAUTY SEAFOODS, INC.**

1.0 INTRODUCTION

This report summarizes the results of our Phase I Environmental Site Assessment (ESA) of the Uganik Bay Processing Plant located in Uganik Bay, on Kodiak Island, Alaska. The Uganik Bay Processing Plant is an operational salmon cannery that was built in 1926 by San Juan Fisheries. The property is referred to herein as the "site." The site is shown relative to surrounding physical features on Figure 1. The site layout and surrounding land are shown on Figure 2.

Our study was completed at the request of Tony Ross of Ocean Beauty Seafoods, Inc. (Ocean Beauty). We understand that Ocean Beauty plans to purchase the site. We further understand that the results of this Phase I ESA will be used by Ocean Beauty as part of their evaluation or potential environmental liabilities associated with ownership of the site.

1.1 PURPOSE AND SCOPE OF SERVICES

The purpose of this Phase I ESA is to identify recognized environmental conditions¹ (RECs) in connection with the property. GeoEngineers' scope of services was completed in general accordance with American Society for Testing and Materials (ASTM) Standard E1527-00 for Phase I ESAs. GeoEngineers' qualifications for performing Phase I ESAs are contained in our proposal included in Appendix A. Our scope of services for the Phase I ESA is as follows:

1. Reviewed readily available geotechnical reports, environmental reports and/or other relevant documents pertaining to environmental conditions at the subject site.
2. Reviewed the results of a federal, state and local environmental database search provided by EcoSearch Environmental Resources, Inc. (EcoSearch) for listings of known or suspected environmental problems at the site or nearby properties within the search distances specified by ASTM.
3. Reviewed regulatory agency files regarding listed sites of potential environmental concern relative to the subject site.
4. Identified Ken Reinke as a key site manager with specific knowledge of past and present site use and met with him on site for an interview during the visual site reconnaissance.

¹ Recognized Environmental Conditions are defined in ASTM E-1527-00 as "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies."

5. Interviewed a representative of the local fire department, health department and Alaska Department of Environmental Conservation (ADE C) regarding the history of the subject site and surrounding properties relative to the likely presence of hazardous substances.
6. Reviewed historical aerial photographs, a chain-of-title report and a property appraisal report to identify past development history on and adjacent to the site relative to the possible use, generation, storage, release or disposal of hazardous substances. Attempted to identify uses of the site from the present to the time that records show no apparent development of the site in 1926.
7. Reviewed United States Geological Survey (USGS) topographic maps to identify the physiographic setting of the site.
8. Identified the sources of potable water for the site and the current heating and sewage disposal systems used at the site. Inquired about the age of the heating and sewage systems.
9. Provided a statement on the local geologic, soil and ground water conditions based on our general experience and sources such as geologic maps and soil surveys.
10. Conducted a visual reconnaissance of the site and adjacent properties to identify visible evidence of RECs.

1.2 SPECIAL CONSIDERATIONS

Our scope of services did not include an environmental compliance audit, an evaluation for the presence of lead-based paint, polychlorinated biphenyls (PCBs) in light ballasts, RADON, lead in drinking water, asbestos-containing materials (ACM) or urea-formaldehyde insulation in on-site structures. Soil, surface water or ground water sampling and chemical analysis were not included as part of this scope of services.

Although we did not perform a comprehensive compliance audit, we attempted to identify potential ACM locations during our site reconnaissance. Samples and photos were obtained to document these findings.

2.0 SITE DESCRIPTION

2.1 INVOLVED PARTIES

The site currently is owned by Cook Inlet Processing (CIP). Ocean Beauty is considering purchasing the property.

2.2 LOCATION, LEGAL DESCRIPTION AND SETTING

General site information, property use(s) and environmental setting of the site area are summarized in Table I below. Refer to Figure 1 for a vicinity map and Figure 2 for the layout of the site in relation to surrounding properties.

Table I. Site Information

Topographic Maps	U.S. Geological Survey, 7.5 minute Kodiak D-4, Anchorage topographic quadrangle map dated 1952, minor revisions 1986.
Quarter/Quarter, Section, Township and Range	SE quarter of NE quarter of Section 16 Township 28 South, Range 26 West, Seward Meridian
Site Address	Uganik Bay, Kodiak Island, Alaska
Site General Location	Southeast shore of Uganik Bay, due east of Sheep Island.
Site Legal Description	Included in Chain-of-Title (Appendix E)
Site Approximate Area	1.75 Acres with 73,000 sf of cannery buildings and 31,000 square feet of ancillary buildings (See Appendix B for building narrative)
Site Existing Use	Salmon processing plant and cannery
Geologic Setting	Uganik Bay
Nearest Surface Water Bodies	Uganik Bay
Approximate Surface Elevation	0 to 150 feet above mean sea level
Soil and Geologic Conditions	Bedrock is shallow and covered by varying depths of silty sand.
Depth to Ground Water	Within ten feet of the ground surface
Inferred Direction of Shallow Ground Water Flow	West

Our knowledge of the general physiographic setting, geology and ground water occurrence in the site vicinity is based on our review of the maps listed above, the Appraisal of Uganik Fish Processing Plant by Hugh A. Thompson & Associates, Inc., dated February 20, 1992, and our general experience in the area.

2.3 SITE RECONNAISSANCE

2.3.1 Summary of Observations

A representative of GeoEngineers performed a visual reconnaissance of the site on March 13, 2002. The GeoEngineers representative was accompanied by Ken Reinke, winter watchman and longtime employee at the Uganik Bay cannery, during the site reconnaissance. Our interview with Ken Reinke took place during the site reconnaissance and is summarized in Section 4.0.

The site was accessed by air from Kodiak with the approval of Wayne Kvasnikoff, plant superintendent. The site contains numerous processing, employee and management buildings connected by board walks. About half of the buildings are founded on treated timber piers, the rest are founded on bedrock. We entered and observed representative spaces within the on-site buildings. Our visual reconnaissance focused on the areas where hazardous substance use, storage and/or disposal was likely based on our experience. During our site reconnaissance, snow hindered observation of the ground surface below the fuel dispensing system piping.

Table II below summarizes conditions observed during our site reconnaissance. Section 2.3.2 contains additional details regarding conditions of potential environmental significance observed during our site reconnaissance and a summary list of known or suspect environmental conditions

identified by this portion of our study. The approximate locations of the observed features discussed in this section are shown on Figure 2. Photographs of the site were taken to document observations made during our reconnaissance. Representative site photographs are presented on Figures 4-13, additional photographs are available in our files.

Table II. Summary of Site Reconnaissance Observations

Feature	Observed	Not Observed	Comment, Location and/or Description and other development on site (e.g. pavement, etc.)
Structures (existing)	X		Cannery, bunkhouses, etc. for complete description, see Appendix B
Structures (evidence of former)	X		Bunkhouse is condemned and the northern portion was removed.
Heating/Cooling System	X		Bunkhouses and store are heated by furnaces, one per building. Fuel is drawn from day tanks outside the corresponding buildings.
Floor Drains, Sumps or Drywells	X		The processing facilities have floor drains that are attachment to a pipe system that collects the fish waste and water and dumps it all in to a dispensing pipe to Uganik Bay.
Aboveground Storage Tanks (ASTs)	X		Multiple ASTs are present at the site. There are: five 20,000 gallon fuel ASTs upgradient of the cannery; about 10 day-tanks for the boilers that heat the buildings; one 8,000 stove oil tank; and numerous temporary storage tanks for gas, diesel, stove oil and waste oil. The 800-gallon stove oil AST supplies the boiler daytanks and has a series of above-grade pipes to transport the fuel. The other fuel ASTs are connected with additional above-grade steel pipe with steel welded joints.
Underground Storage Tanks (USTs) or Evidence of USTs		X	
Drums or Other Containers	X		55-gallon drums and five gallon buckets of new oil are stored in several buildings.
Chemicals or Hazardous Materials (other than de minimis quantities of cleaning products)	X		Pressurized Acetylene, Argon and Oxygen canisters are stored in the cannery for the winter. Cleaning agents are stored in bulk and include: Quorumcopper, Mikro-kleen, bio-sol concentrate and d-sect. MSDS sheets are available upon request.
Evidence of Leaks, Spills or Releases Surrounding ASTs, USTs, and/or	X		Minor staining observed on concrete slabs beneath fill ports on day tanks and below

Feature	Observed	Not Observed	Comment, Location and/or Description and other development on site (e.g. pavement, etc.)
Chemical Storage Areas			the generators.
Stained or Corroded Floors, Walls or Drains (other than apparent water stains or minor oil stains on pavement from parked vehicles)		X	
Pipes of Unknown Origin or Use		X	
On-site Septic System	X		During winter months, the watchman's house uses a septic system that was installed within the last five to 10 years.
Sewage Disposal System	X		On-site treatment facility collects all sewage waste and treats it.
Potable Water Supply	X		Flumes catch surface water from the adjacent hillside, the water is chlorinated and stored in AST's upgradient of the plant.
Solid Waste Refuse Dumpsters	X		Most solid waste is collected in an open burn pit, cans and nonflammable materials are crushed and transported to Kodiak for disposal.
Hydraulic Hoists	X		There are two hydraulic cranes on the loading dock. Also, a portion of the machinery in the cannery is hydraulically operated.
Oil/Water Separators		X	
Discolored or Stained Soil or Vegetation Potentially from Hazardous Substances		X	Ground covered with 1-2 feet of snow.
Hazardous Waste Disposal Areas	X		Waste oil from fishing vessels is collected in an on-site AST.
Uncontained Debris, Refuse or Unidentified Waste Materials	X		An old rusted tank was observed just east of the cannery. It appeared to be empty, its use and origin are unknown.
Standing Water or Other Liquids		X	
Catch Basins and Storm Water Drainage		X	
Pits/Ponds/Lagoons		X	
Waste or Wastewater Discharges	X		Fish waste is passed through a 1/2-inch grinder and discharged into Uganik Bay. The discharge is under about 90 feet of water and is approximately 150 feet from the northwest corner of the loading dock. Waste water is discharged from the treatment facility
Unusual Odors		X	

Feature	Observed	Not Observed	Comment, Location and/or Description and other development on site (e.g. pavement, etc.)
Stressed Vegetation		X	
Fill Material		X	
Water Wells (agricultural, domestic, monitoring)		X	
Pad-Mounted Transformers		X	
Pole-Mounted Transformers		X	
Other Conditions of Environmental Concern	X		1)Some potential asbestos containing material was observed and sampled. 2)According to Ken, the land under the burn pit may have been used as a landfill for a number of years prior to 1978.

2.3.2 Findings

Visual surface reconnaissance of the fuel storage and transport system throughout the site indicated only minor quantities of spillage. However, snow hindered a complete inspection for surface staining below fuel transport lines. Catch basins were in place below most valves and fill ports and a large catch basin surrounds the five largest fuel ASTs.

The ASTs and fuel lines observed during our site visit appeared to be in good condition and well maintained. According to Ken Reinke, the fuel lines form the loading dock to the 20,000-gallon ASTs were recently replaced. Even though no surface staining was observed, it is possible that leaks and spillage have occurred. Visual evidence of surface staining may have been obscured by snow cover during our visit.

2.4 ASBESTOS

2.4.1 Summary of Observations

During our site reconnaissance, we looked for potential ACM in the building insulation, boiler rooms, surrounding pipes, floor tiles and other likely areas. This brief search does not constitute a comprehensive ACM survey. During our search, we did not encounter any known ACM. Identified potential sources include: caulking putties, adhesives, mastics and floor tiles in the winter watchman's house, the office and the store. These are the only buildings that are insulated and were observed to contain potential ACM, with the following exception. The 10-inch steam pipe from the main boiler to the canning retorts has possible ACM surrounding it (see Figure 5). The retorts contained asbestos until recently, according to Ken Reinke; the exact removal date is unknown.

The potential for asbestos was observed in the following locations:

- Insulation surrounding the 10-inch steam pipe that runs from the main boiler to the retorts.
- Winter watchman's house, office and store may contain ACM in caulking putties, adhesives, mastics and floor tiles.

2.5 ADJACENT PROPERTY AND VICINITY OBSERVATIONS

2.5.1 Summary of Observations

We viewed the area surrounding the site on March 13, 2002. The land to the north, east and south is undeveloped, and Uganik Bay is on the west side. No potential RECs were observed on the adjacent land.

2.6 PREVIOUS REPORTS

2.6.1 Summary of Previous Reports

Our research did not identify prior geotechnical or environmental reports pertaining to the subject site. However, we reviewed an "Appraisal of Uganik Fish Processing Plant," provided by Hugh A. Thompson & Associates, Inc. which did not identify any environmental conditions of concern.

3.0 ENVIRONMENTAL RECORDS REVIEW

3.1 DATABASE SEARCH

GeoEngineers reviewed the results of a search of pertinent environmental regulatory lists and databases for current or previous facilities listed at addresses located within ASTM-specified distances from the subject site. The information reviewed was provided by EcoSearch and is presented in Appendix C. The report revealed that the site was not listed and that there were no listed sites within ASTM-specified distances from the site. In addition, no unmappable sites were included in the EcoSearch report.

3.2 REVIEW OF REGULATORY FILES

The site was not listed in the ADEC database as a contaminated site and therefore did not have a file to review. The only file located with ADEC was in the Department of Environmental Health. Drinking water and waste water permits were supposed to be in that file, however they were not located. There was evidence that compliance monitoring had been occurring during the mid 1980s, but no recent activities were documented.

3.3 PERMITS

3.3.1 Permits Required

The following is a list of permits necessary for the cannery, based on an ADEC online permit questionnaire (see Appendix D) and interviews with ADEC personnel.

- **Land based cannery** - requires an annual permit to operate.
- **Fish waste discharged into Uganik Bay** - requires a site specific National Pollutant Discharge Elimination System (NPDES) permit and compliance monitoring.
- **"Class B" drinking water system** - requires an ADEC engineering plan review of the system prior to construction and a qualified person to operate the system.
- **Food for approximately 150 employees** - requires a food establishment plan review and permit.

- **Oil storage and transfer** - requires approval of an oil discharge prevention and contingency plan.
- **Coal ash from utility boilers** - requires statewide general permit.
- **Waste water** - included in NPDES.
- **Sludge from waste water treatment system** – requires individual waste water disposal permit or solid waste disposal permit depending on the moisture content.

3.3.2 Permits Reviewed

Local CIP headquarters in Anchorage, CIP facilities personnel and ADEC representatives were interviewed about permits pertaining to the Uganik Bay cannery. Through interviews and file searches, the permit to operate for 2001 was located and the NPDES permit number was identified. Incomplete compliance monitoring records were indicated by the ADEC file and by a U.S. Environmental Protection Agency (EPA) database. The remainder of the permits listed above were not located during our review.

- CIP does not anticipate operating the cannery this summer, so they did not renew their ADEC Division of Environmental Health, Permit to Operate. A copy of the Uganik Bay cannery Permit to Operate for 2001 (Permit No. 236-C) is included in Appendix D.
- The land based cannery is required to have an NPDES permit which needs to be renewed every five years. NPDES permits are based on EPA regulations but are renewed through ADEC. The NPDES permit for Alaska seafood processors, regulates discharges from seafood processing facilities. A general NPDES permit (see Appendix D) covers many parts of Alaska, including Resurrection Bay. However, Uganik Bay is included in the "listing of receiving waters excluded from coverage under general NPDES permit AK-G52-0000." CIP's original permit (AK-G52-0102) was issued in June of 1984; its most recent NPDES permit expired in August of 2000. An EPA database search indicates compliance monitoring was performed during the mid 1980s, but recent results were not available (see Appendix D). ADEC did not have record of compliance monitoring in their file either.
- The Uganik Bay cannery has its own waste water and sewage treatment and discharge facility and fish waste collection, grinding and discharge system. These systems may be regulated by the EPA through their NPDES permit.

3.3.3 Violations

Our file search and interviews did not reveal any regulatory-issued permit-related violations. The following are potential violations:

- **Incomplete permit documentation at the facility** - Ken Reinke could not locate any permits at the cannery.
- **Expired NPDES permit** - the EPA database searched indicated the NPDES permit AK-G52-0102 had expired in 2001 and had not been renewed. CIP and ADEC did not have record of a current NPDES permit either.

- **Discontinued NPDES compliance monitoring** - ADEC and EPA records indicate compliance monitoring was discontinued in the mid 1980s.

3.4 FINDINGS

It is unclear if the site remained within compliance since the records were inconclusive. This should be investigated more comprehensively to ensure compliance with the applicable permits.

- It appears that permits have been obtained for operation of the Uganik Bay cannery. However, many of these permits were not available through an ADEC file search. They may be obtained from the current owner.

4.0 SITE HISTORY

4.1 HISTORICAL RESOURCES

Our understanding of the history of the site is based on a review of the information from the historical resources listed in Table V, and from interviews with the individuals listed.

Table V. Historical Resources Reviewed

Description	Provider or Interviewee	Dates of Coverage or Dates of Site Knowledge	Date Reviewed or Contacted	Comment (See Section 4.2 for findings)
Historical Aerial Photographs ²	AeroMap of Anchorage	1970, 1980, 1990, 2001	03/15/02	See Figure 3
Chain-of-Title Document	First American Title in Kenai	1963 to present	03/11/02	See Appendix E
Interview	Ken Reinke	Winter watchman and employee since 1978	03/13/02	Summarized in Section 4.2
Interview	Wayne Kvasnikoff	Plant superintendent, employee since 1977	03/18/02	Summarized in Section 4.2
Interview	Kodiak Fire Department representative	N/A	03/20/02	The Kodiak Fire Department does not respond to CIP in Uganik, nor does it have any records of the facility.
Interview	ADEC-Kodiak, Mike Gardner	Recent years	03/20/02	ADEC in Kodiak does not have any files on CIP in Uganik and Mike Gardner was unaware of any environmental issues at the site.

² The scale of the photographs reviewed allowed for an interpretation of general site development/configuration, such as identifying most structures, roadways and clearings. However, the scale of the photographs did not allow for identification of specific site features, such as fuel pumps, wells or chemical storage areas on the site, if any.

4.2 HISTORICAL SITE OWNERSHIP AND USE SUMMARY

The available historical sources indicate that the site is currently owned and operated by Polar Equipment, Inc. d/b/a Cook Inlet Processing; it was purchased from Chugach Alaska Fisheries, Inc. in 1992. Chugach Alaska Fisheries purchased the site from PRTX Enterprises, Inc. in 1988. PRTX only occupied the site for one year after acquiring it from Uganik Bay Seafoods in 1987. Uganik Escrow Group briefly owned the site during May of 1983 according to the chain-of-title included in Appendix E. Sam Rubinstein, trustee in bankruptcy for New England Fish Company, acquired the site after it filed for bankruptcy in 1983. According to Ken Reinke, New England occupied the site as early as 1978; the chain-of-title did not reveal when New England purchased the site. According to an appraisal report, San Juan Fishing & Packing Co. constructed the facility in 1926 and purchased the land from the State of Alaska in 1963.

Throughout the site's history, fish processors have occupied the site and operated salmon processing and canning systems. Most of the buildings are uninsulated wood frame structures with corrugated metal roofing and wood or metal siding that are founded on piles driven into the tidal flats. The canning system has evolved from its original design, a system powered by a central power plant driving a shaft running the length of the building with belts to each item of equipment, to a system with tapered cans with a can de-nester and electric powered canning units. Some of the original building remains; however, large additions were constructed in 1956 and 1970 and continual upgrades have occurred throughout the years. One of the warehouses was built in 1941 and is connected to the other warehouse by a crossover near the westerly end. The remainder of the site is occupied with living quarters and facilities that accompany a fully independent community. The winter watchman's house is insulated and occupied year-round; the office and store are also insulated and maintained all year.

4.3 ADJACENT PROPERTIES

Adjacent land is undeveloped state-owned property. Due to the physical characteristics of the surrounding land, steep grade on the east and open water on the west, future development is not likely.

4.4 ENVIRONMENTAL LIENS OR PROPERTY USE RESTRICTIONS

During the course of our research, we did not find that environmental liens had been filed against the site.

4.5 FINDINGS

Known or suspect environmental conditions identified by this portion of the study are listed below:

- **A Possible Former Landfill Site** was mentioned by Ken Reinke during the site reconnaissance and key personnel interview. The potential solid waste landfill is in the south end of the facility on a natural soil shelf that is approximately 50 feet above mean sea level. The extent and content of the potential landfill are unknown; reportedly it has not been used

since the mid 1970s. Currently it is obscured by two feet of snow; however, historical photos indicate the surface of the area is covered with vegetation. Depth to groundwater is unknown, but the steep upgradient slope to the east and downgradient to the west indicate the ground water would flow due west. There are no cannery facilities in that direction, but Uganik Bay would be the receptor of any potential contamination from the landfill. The potential for soil, ground water or surface water contamination from this potential landfill is moderate.

- **Drains that empty directly to Uganik Bay** were observed in the egghouse and fishhouse during our site reconnaissance. The drains consist of 3-inch-diameter steel pipes that penetrate the concrete floor and stick up about 1/2 to 1 inch above the floor grade. The REC potential for these drains is low.
- **An insulated 10-inch-steam pipe from the main boiler to the canning retorts** was observed during our site reconnaissance. Based on our site reconnaissance and interviews with key site personnel, it is our opinion that the potential for asbestos is low.
- **Subsurface contamination from handling, storing and distributing fuel.** Even though there were no historical records indicating a fuel release, it is possible that leaks and spillage have occurred. Obvious visual evidence may have been obscured by snow cover during our visit. The potential for subsurface soil contamination is moderate.

5.0 CONCLUSIONS

GeoEngineers has performed a Phase I ESA of the Uganik Bay Processing Plant located Uganik Bay on Kodiak Island, Alaska. The Phase I ESA was conducted in general accordance with the scope and limitations of ASTM E 1527-00. Based on the results of our study, we did not identify significant known or environmental conditions in conjunction with the site.

Our research and file reviews indicate there may be some permit compliance issues. The most recent NPDES permit encountered expired in August of 2000 and compliance monitoring documentation is also outdated. Further investigation into ADEC and CIP files is recommended.

6.0 LIMITATIONS

This Phase I ESA has been prepared for use by Ocean Beauty Seafoods, Inc. GeoEngineers has performed this Phase I ESA of the Cook Inlet Processing Plant Uganik Bay in general accordance with the scope and limitations of our proposal dated March 8, 2002, and ASTM E 1527-00, Standard Practice for Phase I ESAs.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with the generally accepted environmental science practices for Phase I ESAs in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

Please refer to the Appendix F, titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.



We appreciate the opportunity to be of service to Ocean Beauty. Please call if you require more information or have questions regarding this report.

Respectfully submitted,

GeoEngineers, Inc.

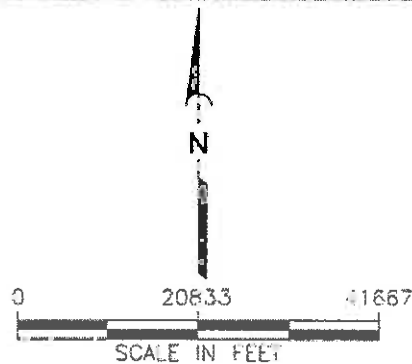
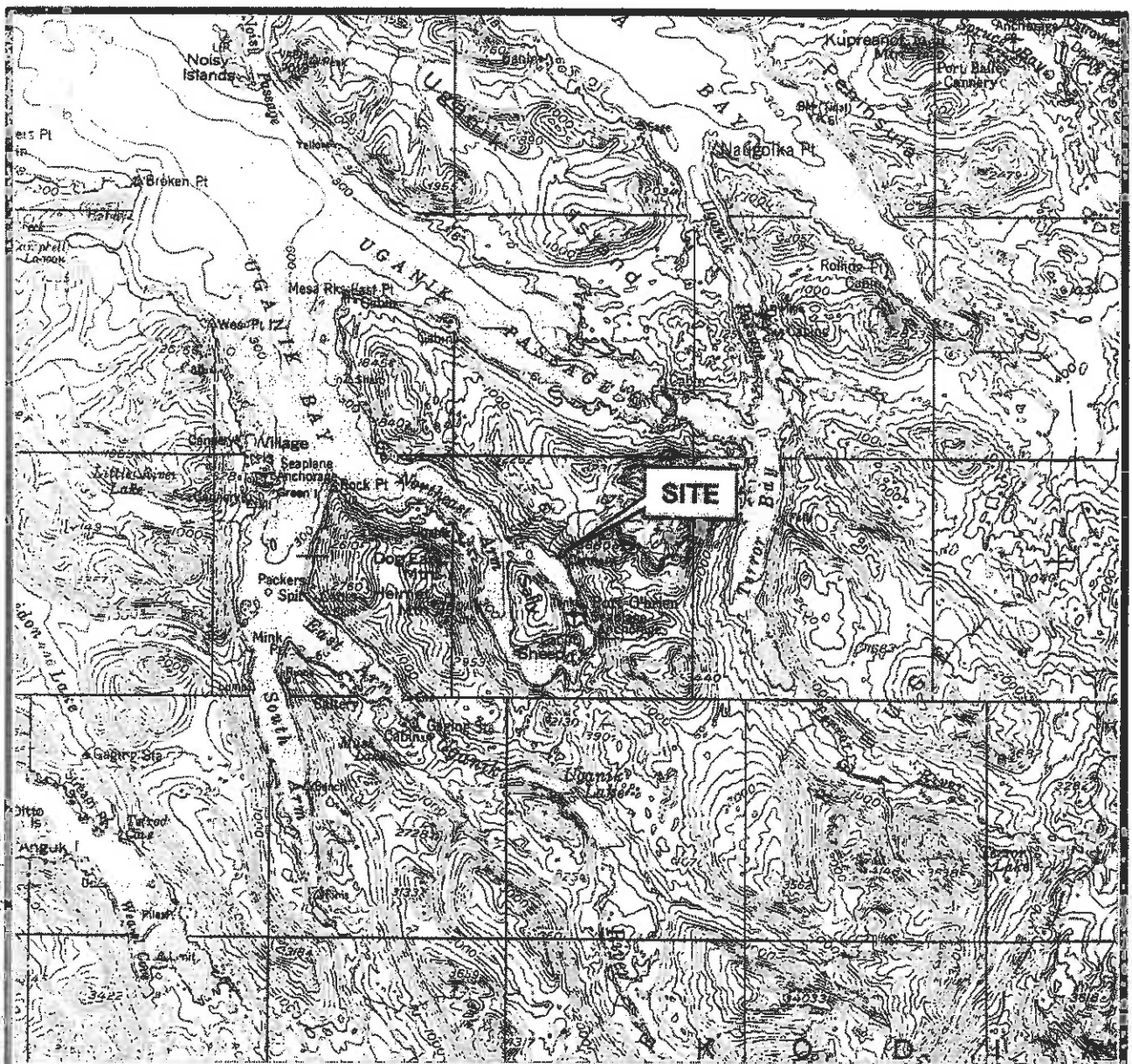
Deanne K. Raiha
Geotechnical Engineer

Scott E. Widness, P.E.
Principal

DKR:SEW:skl
Document ID: 676500200esa.doc

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References:
USGS topographic quadrangle map "Kodiak, AK." 1952, limited revision 1983.

Geo  Engineers

VICINITY MAP

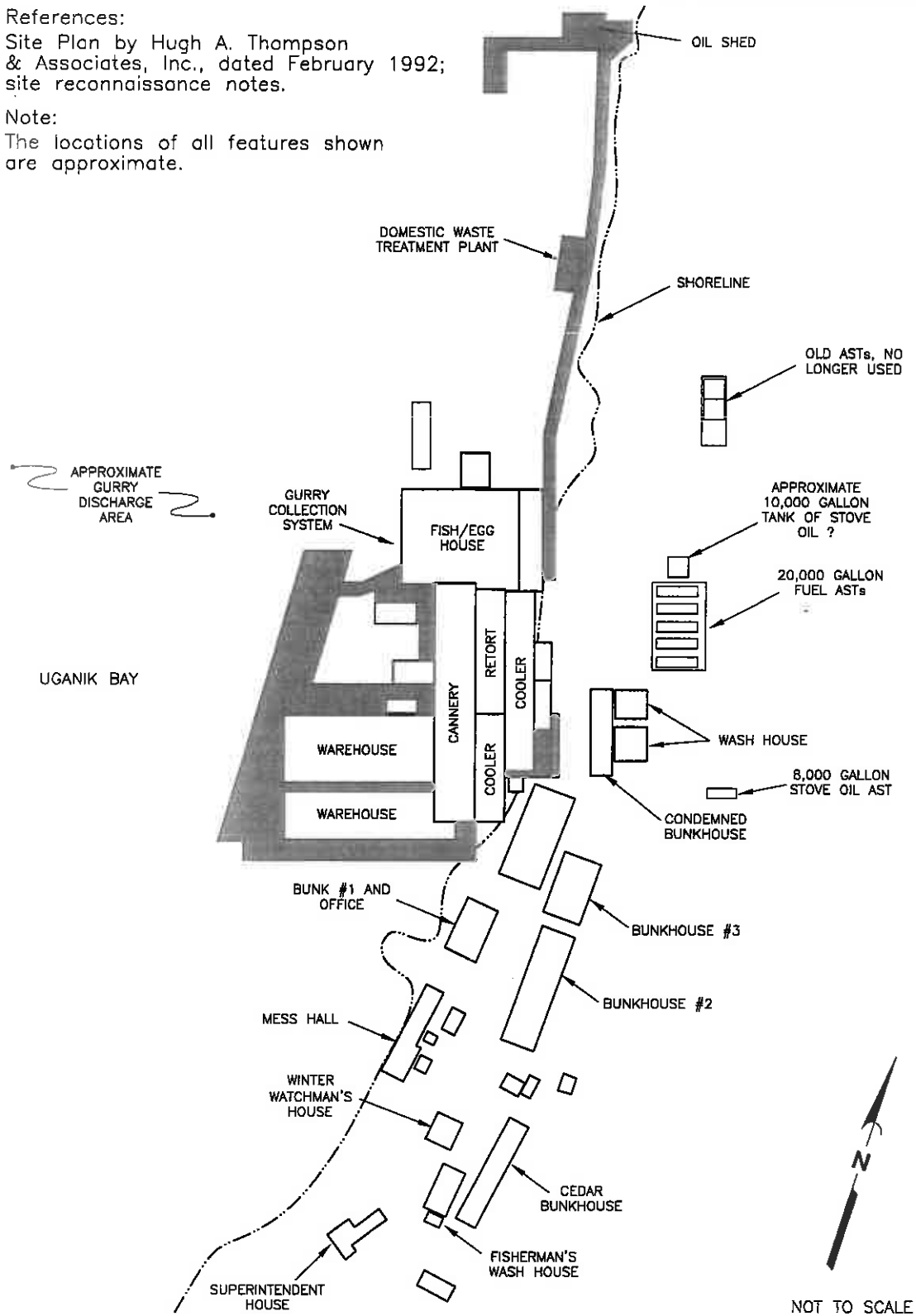
FIGURE 1

References:

Site Plan by Hugh A. Thompson
& Associates, Inc., dated February 1992;
site reconnaissance notes.

Note:

The locations of all features shown
are approximate.



**Phase II Environmental Site Assessment
Uganik Bay Processing Plant
Uganik Bay
Kodiak Island, Alaska**

June 18, 2002

**For
Williams Kastner & Gibbs PLLC**

June 18, 2002

Williams Kastner & Gibbs PLLC
Two Union Square
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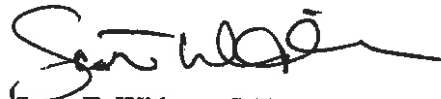
Attention: Mark Myers

GeoEngineers is pleased to submit two copies of our report "Phase II Environmental Site Assessment, Uganik Bay Processing Plant, Uganik Bay, Kodiak Island, Alaska" for Williams Kastner & Gibbs PLLC. Our report was completed in general accordance with our proposal dated April 5, 2002. Tony Ross at Ocean Beauty Seafoods, Inc. authorized our services on May 3, 2002.

We appreciate the opportunity to work with you on this project. Please contact us if you have questions regarding this report or other aspects of the project.

Yours very truly,

GeoEngineers, Inc.


Scott E. Widness, P.E.
Principal

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**PHASE II ENVIRONMENTAL SITE ASSESSMENT
UGANIK BAY PROCESSING PLANT
UGANIK BAY
KODIAK ISLAND, ALASKA
FOR
WILLIAMS KASTNER & GIBBS PLLC**

INTRODUCTION

This report summarizes the results of our Phase II Environmental Site Assessment (ESA) of the property located on the east side of the Northeast Arm of Uganik Bay, Kodiak Island, Alaska. The Uganik Bay Processing Plant is an operational salmon cannery that was built in 1926 by San Juan Fisheries. The property is referred to herein as the "site." The site is shown relative to surrounding physical features on Figure 1. The site layout and surrounding land are shown on Figure 2.

We completed a Phase I ESA of the site in March 2002. The results of our earlier study are contained within the "Phase I Environmental Site Assessment, Uganik Bay Processing Plant, Kodiak Island, Alaska," dated March 25, 2002.

We identified the presence of two potential sources of contamination during our Phase I ESA as follows:

- Due to the large quantity of fuel that is stored and transported on site, the potential for minor spills exists. The fuel transport system includes numerous steel pipes that run from the dock to aboveground storage tanks (AST) which feed day tanks and eventually supply the buildings with diesel, gasoline and stove oil. In addition, used oil is sometimes collected from fishing boats and stored on site until it is transferred to a disposal facility. The bulk AST fuel storage areas are shown on Figure 2.
- We observed a portion of the shoreline shelf, which according to Ken Reinke may have been used as a landfill prior to the mid 1970s. The potential landfill area appears to be 50 feet by 100 feet and is located on the southern end of the site. The former landfill area is currently capped with soil and low vegetation and contains the site's solid waste incinerator.

PURPOSE AND SCOPE OF SERVICES

The purpose of this Phase II ESA was to investigate the potential for contamination from the on-site sources identified in our Phase I ESA. The scope of services completed for the Phase II ESA are as follows:

1. Completed a health and safety plan for use by GeoEngineers' personnel while on the site.
2. Hand dug 12 soil excavations to depths of 0.5 to 4.0 feet below ground surface (bgs) where surface staining was encountered or subsurface contamination was suspected.
3. Field screened the soil for organic vapors and for evidence of petroleum-like sheen in the hand auger borings at appropriate intervals to the total depths explored.
4. Collected one to three soil samples from the hand auger borings based on field screening results. The soil samples were then transferred into the laboratory-provided containers.

5. Submitted 17 soil samples to North Creek Analytical Laboratories (NCA) under chain-of-custody procedures for chemical analysis of diesel-range organics (DRO) and residual-range organics (RRO) by Alaska Department of Environmental Conservation (ADEC) Method AK102/103.
6. Submitted one additional soil sample as a blind duplicate for analysis of DRO/RRO by ADEC Method AK102/103.
7. Evaluated the chemical analytical results relative to ADEC Method Two, Table B2 Soil Cleanup levels, Over 40-Inch Zone, Migration to Ground Water.
8. Provided an opinion regarding cleanup options and estimated costs based on the data.
9. Prepared a report summarizing our Phase II ESA findings.

Additional Limited Water Assessment of Assumed Landfill Area

1. Installed two implant wells in the potential landfill area to facilitate evaluation of shallow water migrating toward Uganik Bay. Implant well locations were selected by the GeoEngineers field engineer on the basis of field observations during the site visit. A slide hammer was used to drive a detachable, threaded drive point into the ground to the desired sample depth. A 1/2-inch-diameter stainless steel screen, approximately 6 inches in length, was attached to 1/4-inch-diameter polyethylene tubing and connected to the drive point by passing it down the hollow pipe and screwing it into the drive point. The pipe was extracted from the ground leaving behind the drive point, well screen and tubing. A new well screen, drive tip and tubing was used for each well.
2. Collected a water sample from each implant well by using a hand vacuum pump to withdraw water into an unused transfer bottle. The water samples were then transferred into the laboratory-provided container for submittal to NCA under chain-of-custody procedures for chemical analysis of gasoline-range organics (GRO)/benzene, ethylbenzene, toluene and xylenes (BETX) by ADEC Method AK101; halogenated volatile organic compounds (HVOC) by U.S. Environmental Protection Agency (EPA) Method 8260B; and Resource Conservation and Recovery Act 8 (RCRA) field filtered dissolved metals by EPA 6000/7000 Series Methods. We also collected one representative sample for analysis of DRO/RRO by ADEC Method AK102/103.
3. Submitted one additional water sample as a blind duplicate for analysis of GRO/BETX by ADEC Method AK101.
4. Evaluated the chemical analytical results relative to ADEC Table C ground water cleanup levels.
5. Provided an opinion regarding cleanup options and estimated costs based on the data.
6. Prepared a report summarizing our Phase II ESA findings.

SITE CONDITIONS

The Uganik Bay processing plant is located on the east side of the Northeast Arm of Uganik Bay. The processing plant is presently occupied by Cook Inlet Processing (CIP); however, CIP

did not renew its permit to operate for 2002. During the upcoming season, the store, fuel pumping station and the fishermen's wash house will be open for use by the public. The 19.87-acre site contains about 104,000 square feet of processing, warehouse and ancillary buildings including a 3-line cannery consisting of two 1/2-pound lines and one 1-pound line. About half the processing plant is founded on timber piles overhanging the bay, the remainder is founded on shallow bedrock. The land-based portion of the processing plant is on a steep slope that has a former shoreline bench that is approximately 20 to 50 feet wide and spans the length of the site. On the south end of the shoreline bench is the area referred to previously as the potential landfill area. There are several streams that flow through the facility; some are diverted through culverts for lengths of up to 50 feet, others flow naturally. Numerous ground water seeps were observed along the hillside throughout the site, some of which had slight to moderate seepage. The layout of the site is presented on Figure 2 and site feature photographs are presented on Figures 5 through 11.

SUBSURFACE CONDITIONS

GENERAL Soil

Soil encountered in the explorations completed for this study consisted of brown silt with sand, tan fine to medium sand, and dark brown to black silt. These soil types were encountered at varying depths throughout the site (see Figures A-3 through A-14 for details). The tan sand encountered exhibited the highest field screening results which is likely a result of the sand being more permeable than the silt, thus allowing the contaminants to flow more easily in this medium.

Underlying the surficial soil at depths ranging from 0.5 feet bgs to 8.0 feet bgs, is shallow silt-stone bedrock that parallels the surface topography. Shallower bedrock was encountered near the winter watchman's house and throughout the center of the site. Deeper bedrock was observed in the landfill area with the deepest measured bedrock at about 8 feet bgs. Bedrock was encountered at approximately 3 to 4 feet bgs below the two rectangular ASTs in the northeast corner of the site.

Ground Water

Ground water throughout most of the site is very shallow and flows along the surface soil/bedrock interface. During excavation of HA-5, HA-6 and HA-8 through HA-10, ground water was encountered at depths ranging from 1.25 feet bgs to 2.0 feet bgs. Ground water in the landfill area was encountered at approximately 6 feet bgs on the north side in GP-1 and at 5 feet bgs on the south side in GP-2. In general, the ground water flows to the west toward Uganik Bay.

HAND AUGER BORINGS

GeoEngineers collected soil samples using a manually advanced hand auger from 12 locations throughout the site. Soil samples were collected to evaluate the presence of diesel- and residual-range organics. Soil sample locations are shown on Figure 2. The hand auger was advanced to the desired sampling depths ranging from 0.5 to 4.00 feet bgs. A soil sample was retrieved from the 4-inch barrel of the auger and transferred to a laboratory-supplied 8-ounce

glass jar. The jar was filled as much as practical to reduce headspace and the potential loss of volatile compounds. Once filled, the jar was sealed, labeled, and placed on ice in a cooler for transport to the analytical laboratory. Chain-of-custody forms were completed in the field and accompanied the samples to the laboratory.

Details concerning the subsurface exploration program are contained in Appendix A. The soil classification system is included as Figure A-1 and the key to boring log symbols is Figure A-2. Logs of the hand auger borings, including field-screening results, are contained on Figures A-3 through A-14.

GEOPROBE® IMPLANT WELLS

GeoEngineers collected water samples using manually advanced Geoprobe® implant wells. Ground water samples were collected to evaluate the presence of dissolved metals and petroleum-related contamination. Implant well locations are shown on Figure 2. The implant wells were advanced to refusal on bedrock where ground water was encountered. Representative samples were collected using a vacuum pump and a transfer bottle. The samples were then transferred into the laboratory-supplied containers and were sealed, labeled and placed in a cooler on ice for transport to the analytical laboratory. Chain-of-custody forms were completed in the field and accompanied the samples to the laboratory.

FIELD SCREENING RESULTS

Field screening was performed on soil samples obtained from the hand auger borings. A description of the field screening methods is included in Appendix A. Field screening results are summarized in the hand auger boring logs, which are included as Figures A-3 through A-14. Field screening tests indicated a high potential for petroleum-related contamination in the soil encountered by the hand auger borings.

ANALYTICAL RESULTS

HAND AUGER BORINGS

General

Seventeen soil samples from the hand auger borings were transported to NCA in Bothell, Washington, for chemical analysis. The soil samples were submitted for chemical analysis of DRO and RRO by ADEC Methods AK102/I03. The samples were collected from HA-2 through HA-11 located throughout the site, as shown on Figure 2. Chemical analytical results are summarized in Table 1 and on Figure 3. Laboratory reports are contained in Appendix B.

DRO was detected in all the soil samples at concentrations ranging from 4.85 milligrams per kilogram (mg/kg) in HA-11(1.5) to 106,000 mg/kg in HA-6(1.5). All concentrations detected, except for those in HA-4 and HA-11, were greater than the ADEC Method Two Petroleum Hydrocarbon Soil Cleanup Level of 230 mg/kg for the Over 40-Inch Zone, Migration to Ground Water pathway.

RRO was detected in HA-2, HA-3, HA-4 and HA-7 at concentrations less than the ADEC Method Two Petroleum Hydrocarbon Soil Cleanup Level of 9,700 mg/kg for the Over 40-Inch

Zone, Migration to Ground Water pathway. RRO was not detected greater than laboratory method reporting limits in the rest of the soil samples; however, the reporting limits for some of the samples were elevated due to sample dilution in order to quantify the high DRO concentrations detected.

A field duplicate soil sample was collected from hand auger boring HA-8 at 1 foot bgs. The sample was identified as "Duplicate" on the laboratory chain-of-custody. DRO was detected in the duplicate sample at a concentration found to be within the established control limits when compared to HA-8(1.0) sample results. RRO was not detected in either sample so a comparison could not be made.

10,000-Gallon Rectangular Multi-Use AST Area

Two rectangular ASTs on a wooden platform are located in the northeast corner of the site. A third tank that used to be beside the others was recently moved about 100 feet to the south and now resides in the 20,000-gallon-tank containment structure. The two remaining tanks are no longer used, while the moved tank contains stove oil. Hand auger borings HA-2 and HA-3 were located downgradient of the tank that was moved. HA-2 was directly below the outflow valve and HA-3 was approximately 15 feet west of HA-2. DRO and RRO were detected in the samples analyzed from this area. DRO concentrations ranged from 2,000 mg/kg to 19,600 mg/kg and RRO ranged from 385 mg/kg to 4,100 mg/kg. See Figure 5 for 10,000-gallon AST area photographs.

20,000-Gallon Gasoline and Diesel AST Area

A wooden containment structure was built around five 20,000-gallon ASTs and one 10,000-gallon AST on the east side of the site, approximately 100 feet east of the main cannery building. The northern-most AST is the rectangular tank mentioned above; just to its south is the 20,000-gallon gasoline AST, followed by four 20,000-gallon diesel ASTs.

HA-4 was located inside the containment structure. DRO and RRO were detected in this soil sample at concentrations less than the corresponding ADEC soil cleanup levels.

HA-5 and HA-6 were located about 30 feet and 60 feet downgradient of diesel tank number three, respectively. RRO was not detected in the soil samples collected from HA-5 or HA-6. DRO was detected at concentrations greater than the ADEC soil cleanup level in all samples analyzed from HA-5 and HA-6. Concentrations detected ranged from 4,080 mg/kg in HA-5 at 0.5 feet bgs to 106,000 mg/kg in HA-6 at 1.5 feet bgs. See Figures 6 through 8 for 20,000-gallon AST area photographs.

HA-7 was located downgradient from the day tank that supplies the generator building with stove oil; it is also downgradient of 20,000-gallon tank number two. Two samples were collected and analyzed from HA-7, one at 0.5 feet bgs and one at 3.0 feet bgs. Both samples had DRO detections greater than the ADEC soil cleanup level. RRO was only detected in the upper sample and the concentration detected was less than the ADEC soil cleanup level.

8,000-Gallon Stove Oil AST Area

The 8,000-gallon stove oil tank that supplies the day tanks throughout the site is located about 100 feet up the hill between the wash house and bunkhouse number three. HA-8 was excavated directly below the outflow valve and HA-9 was approximately 30 feet downgradient of HA-8. DRO was detected at concentrations greater than the ADEC cleanup level in all samples analyzed from HA-8 and HA-9. The DRO concentrations ranged from 2,980 mg/kg in HA-8 at 2.0 feet bgs to 37,400 mg/kg at 1.0 feet bgs in HA-8. RRO was not detected in either hand auger boring to the depths explored. See Figure 5 for 8,000-gallon AST area photographs.

1,000-Gallon Stove Oil Transfer AST Area

The 8,000-gallon stove oil tank feeds a smaller transfer tank that is located about 25 feet from the northeast corner of the guest house. HA-10 was excavated 60 feet downgradient of the transfer tank. DRO was detected at a concentration of 5,490 mg/kg which is greater than the ADEC soil cleanup level. RRO was not detected in the soil sample analyzed.

HA-11 was located approximately 175 feet west-southwest of the transfer tank. DRO was detected at a concentration of 4.85 mg/kg, which is less than the ADEC soil cleanup level. RRO was not detected. See Figure 10 for 1,000-gallon AST area photographs.

GEOPROBE® IMPLANT WELLS

Ground water samples were collected from Geoprobe® implant wells GP-1 and GP-2 and were transported to NCA for chemical analysis. Ground water samples collected from both wells were submitted for analysis of GRO/BETX by ADEC Method AK101 and HVOC by EPA Method 8260B. Additional samples were collected from GP-2 and submitted for analysis of dissolved metals by EPA 6000/7000 Series Methods and DRO/RRO by ADEC Methods AK102/103. The representative sample analyzed for dissolved metals was field filtered and transferred to the laboratory-supplied, preserved container. Chemical analytical results are summarized in Tables 2 through 4 and on Figure 4. Laboratory results are contained in Appendix B.

GRO/BETX were not detected in the ground water samples collected from GP-1 or GP-2. DRO was detected in GP-2 at a concentration of 0.238 milligrams per liter (mg/l), which is less than the corresponding ADEC ground water cleanup level. RRO was not detected in the sample submitted from GP-2. Silver, arsenic, barium and lead were detected at concentrations less than ADEC ground water cleanup levels in GP-2. HVOCs were not detected in either sample submitted. See Figure 11 for landfill area photographs.

A field duplicate ground water sample was collected from implant well GP-2. The sample was identified as "Duplicate" on the laboratory chain-of-custody. BETX and GRO were not detected in the duplicate sample or in GP-2, so a comparison could not be made.

CONCLUSIONS

SOIL

Seventeen soil samples were collected from 12 hand auger borings and submitted for chemical analysis of DRO and RRO. The borings were located downgradient of the 10,000-gallon, 20,000-gallon, 8,000-gallon and 1,000-gallon AST areas. DRO and/or RRO contamination was encountered to varying degrees in all the soil samples analyzed from the boring locations throughout the site.

DRO and RRO were detected in the samples analyzed from the 10,000-gallon AST area. DRO concentrations ranged from 2,000 mg/kg to 19,600 mg/kg and RRO ranged from 385 mg/kg to 4,100 mg/kg. The DRO concentrations detected are greater than the ADEC soil cleanup level; RRO concentrations are less than the corresponding cleanup level.

Soil samples tested within the containment structure for the 20,000-gallon ASTs revealed concentrations of DRO and RRO that were less than cleanup levels. The area downgradient of the containment structure had the highest concentrations of DRO detected. DRO detections ranged from 4,080 mg/kg to 106,000 mg/kg, all greater than the appropriate cleanup level. RRO was only detected in this area in HA-7(0.5) at a concentration less than the cleanup level.

DRO was detected at concentrations greater than the ADEC cleanup level in all samples analyzed from the 8,000-gallon AST area. The DRO concentrations ranged from 2,980 mg/kg in HA-8 at 2.0 feet bgs to 37,400 mg/kg at 1.0 feet bgs in HA-8. RRO was not detected in the hand auger borings in this area to the depths explored.

DRO was detected downgradient of the 1,000-gallon transfer AST at a concentration of 5,490 mg/kg which is greater than the ADEC soil cleanup level. RRO was not detected in the soil sample analyzed.

In general, it appears that the subsurface soil downgradient of the AST areas mentioned previously is contaminated with petroleum-related contaminants at concentrations that exceed ADEC cleanup levels. Additional investigation is necessary to characterize the extent of contamination to the north and to the south of the areas examined during this Phase II ESA.

GROUND WATER

Two implant wells were installed in the potential landfill area that was reportedly used up until the mid 1970s. Ground water samples were collected and submitted for chemical analysis of GRO/BETX, DRO, RRO, HVOC and/or dissolved metals. GRO/BETX were not detected in the ground water samples collected from GP-1 or GP-2. DRO was detected in GP-2 at a concentration of 0.238 mg/l, which is less than the corresponding ADEC ground water cleanup level. RRO was not detected in the sample submitted from GP-2. The laboratory noted the DRO chromatogram did not resemble a standard fuel chromatogram, indicating the detection may be from an alternate source. Potential sources identified by the laboratory for this detection are weathered fuel oil #6 or biogenics. Silver, arsenic, barium and lead were detected at concentrations less than ADEC ground water cleanup levels in GP-2. HVOCs were not detected in either sample submitted. The ground water throughout the rest of the site was not characterized

during this investigation, but the potential for contamination in exceedance of cleanup levels, based on soil analytical results, is high.

REPORTING

It should be noted by all parties involved that Alaska state law requires that the current owner report any exceedances of cleanup levels outlined in ADEC 18AAC75 Oil and Other Hazardous Substances Pollution Control regulations. During the course of this investigation, the evaluated data has found contamination exceeding ADEC 18AAC75 cleanup levels. It is recommended that ADEC be notified of the results of this Phase II ESA to discuss further investigation and for cleanup options.

LIMITATIONS

We have prepared this report for the exclusive use of Williams Kastner & Gibbs PLLC and Ocean Beauty Seafoods, Inc. for the Uganik Bay Processing Plant, their authorized agents and regulatory agencies.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

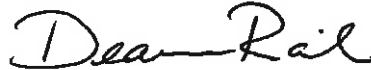
Please refer to the Appendix C titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.



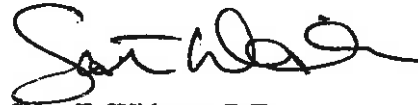
We appreciate the opportunity to be of service to Williams Kastner & Gibbs PLLC and Ocean Beauty Seafoods, Inc. Please call if you have questions regarding this report.

Yours very truly,

GeoEngineers, Inc.



Deanne K. Raiha
Geotechnical Engineer



Scott E. Widness, P.E.
Principal

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TABLE 1
SUMMARY OF
CHEMICAL ANALYTICAL RESULTS - SOIL¹
UGANIK BAY PROCESSING PLANT
KODIAK, ALASKA
GEI JOB #6765-002-01

Sample ID	Date Sampled	Depth (feet)	DRO ² (mg/kg)	RRO ³ (mg/kg)
HA-2(1.0)	05/18/02	1.0	19,600	4,100
HA-2(1.5)	05/18/02	1.5	2,000	1,750
HA-2(4.0)	05/18/02	4.0	4,280	910
HA-3(2.5)	05/18/02	2.5	6,290	385
HA-4(0.5)	05/18/02	0.5	100	132
HA-5(0.5)	05/18/02	0.5	4,080	<521
HA-5(1.5)	05/18/02	1.5	4,390	<250
HA-6(1.5)	05/18/02	1.5	106,000	<24,200 ⁴
HA-6(3.0)	05/18/02	3.0	12,100	<2,500
HA-7(0.5)	05/18/02	0.5	64,200	2,050
HA-7(3.0)	05/18/02	3.0	14,400	<2,500
HA-8(1.0)	05/18/02	1.0	37,400	<2,040
	05/18/02*	1.0	31,700	<2,020
HA-8(2.0)	05/18/02	2.0	2,980	<637
HA-9(1.0)	05/18/02	1.0	20,800	<2,500
HA-9(2.0)	05/18/02	2.0	2,990	<504
HA-10(1.5)	05/18/02	1.5	5,490	<250
HA-11(1.5)	05/18/02	1.5	4.85	<25.0
ADEC Method 2 Cleanup Levels			230	9,700

Notes:

¹ Laboratory analysis conducted by North Creek Analytical in Bothell, Washington.

² DRO = Diesel-Range Organics by Alaska Method AK102

³ RRO = Residual-Range Organics by Alaska Method AK103

⁴ Method reporting limit is greater than cleanup level due to sample dilution.

mg/kg = milligrams per kilogram

"<" = analyte not detected at or greater than laboratory method reporting limits shown

* = duplicate

ADEC = Alaska Department of Environmental Conservation

Shading indicates concentration exceeds ADEC Method 2 Petroleum Hydrocarbon Soil Cleanup Levels; Over 40-Inch Zone, Migration to Ground Water Pathway.

TABLE 2
SUMMARY OF CHEMICAL ANALYTICAL RESULTS - WATER¹
UGANIK BAY PROCESSING PLANT
KODIAK ISLAND, ALASKA
GEI JOB #6765-002-01

Sample Identification	Date Sampled	BETX ² Method AK101 (µg/l)				GRO ³ (mg/l)	DRO ⁴ (mg/l)	RRO ⁵ (mg/l)
		B	E	T	X			
GP-1	05/18/02	<0.200	<0.500	<0.500	<1.00	<0.0500	—	—
GP-2	05/18/02	<0.200	<0.500	<0.500	<1.00	<0.0500	0.238	<0.750
	05/18/02*	<0.200	<0.500	<0.500	<1.00	<0.0500	—	—
Trip Blank	05/18/02	<0.200	<0.500	<0.500	<1.00	<0.0500	—	—
ADEC Table C Cleanup Levels		5.0	700	1,000	10,000	1.3	1.5	1.1

Notes:

¹Ground water samples were submitted to North Creek Analytical Laboratory in Bothell, Washington, for chemical analysis.

²B = benzene, E = ethylbenzene, T = toluene, X = xylenes

³GRO = Gasoline-Range Organics by AK101

⁴DRO = Diesel-Range Organics by AK102

⁵RRO = Residual-Range Organics by AK103

µg/l = micrograms per liter

mg/l = milligrams per liter

"<" = analyte not detected at or greater than laboratory method reporting limits shown

"—" = sample not analyzed for this parameter

"*" = duplicate

ADEC = Alaska Department of Environmental Conservation

Shading indicates concentration exceeds ADEC Table C Cleanup Levels.

TABLE 3
SUMMARY OF CHEMICAL ANALYTICAL RESULTS - WATER¹
TOTAL DISSOLVED METALS
UGANIK BAY PROCESSING PLANT
KODIAK ISLAND, ALASKA
GEI JOB #6765-002-01

Sample Identification	Date Sampled	Total Dissolved Metals EPA Methods 6000/7000 Series (mg/l)							
		Silver	Arsenic	Barium	Cadmium	Chromium	Mercury	Lead	Selenium
GP-2 ²	05/18/02	0.00174	0.00104	0.0394	<0.00100	<0.00100	<0.00100	0.00202	<0.00100
ADEC Table C Cleanup Levels		0.18	0.05	2.0	0.005	0.1	0.002	0.015	0.05

Notes:

¹Laboratory analysis conducted by North Creek Analytical in Bothell, Washington.

²Sample field filtered by GeoEngineers field personnel.

EPA = U.S. Environmental Protection Agency

mg/l = milligrams per liter

"<" = analyte not detected at or greater than laboratory method reporting limits shown

ADEC = Alaska Department of Environmental Conservation

Shading indicates concentration exceeds ADEC Table C cleanup levels.

TABLE 4
SUMMARY OF CHEMICAL ANALYTICAL RESULTS - WATER¹
HALOGENATED VOLATILE ORGANIC COMPOUNDS
UGANIK BAY PROCESSING PLANT
KODIAK ISLAND, ALASKA
GEI JOB #6765-002-01

GeoProbe® Well Number	Date Sampled	HVOCs ² (µg/l)			
		1,2-Dichloroethane	1,1-Dichloroethane	Chloroethane	Tetrachloroethene
GP-1	05/18/02	<1.00	<1.00	<1.00	<1.00
GP-2	05/18/02	<1.00	<1.00	<1.00	<1.00
ADEC Table C Cleanup Levels		0.005	3.65	NE	0.005

Notes

¹Chemical analysis conducted by North Creek Analytical, Inc. of Bothell, Washington.

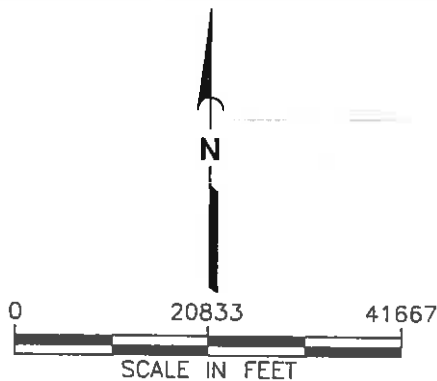
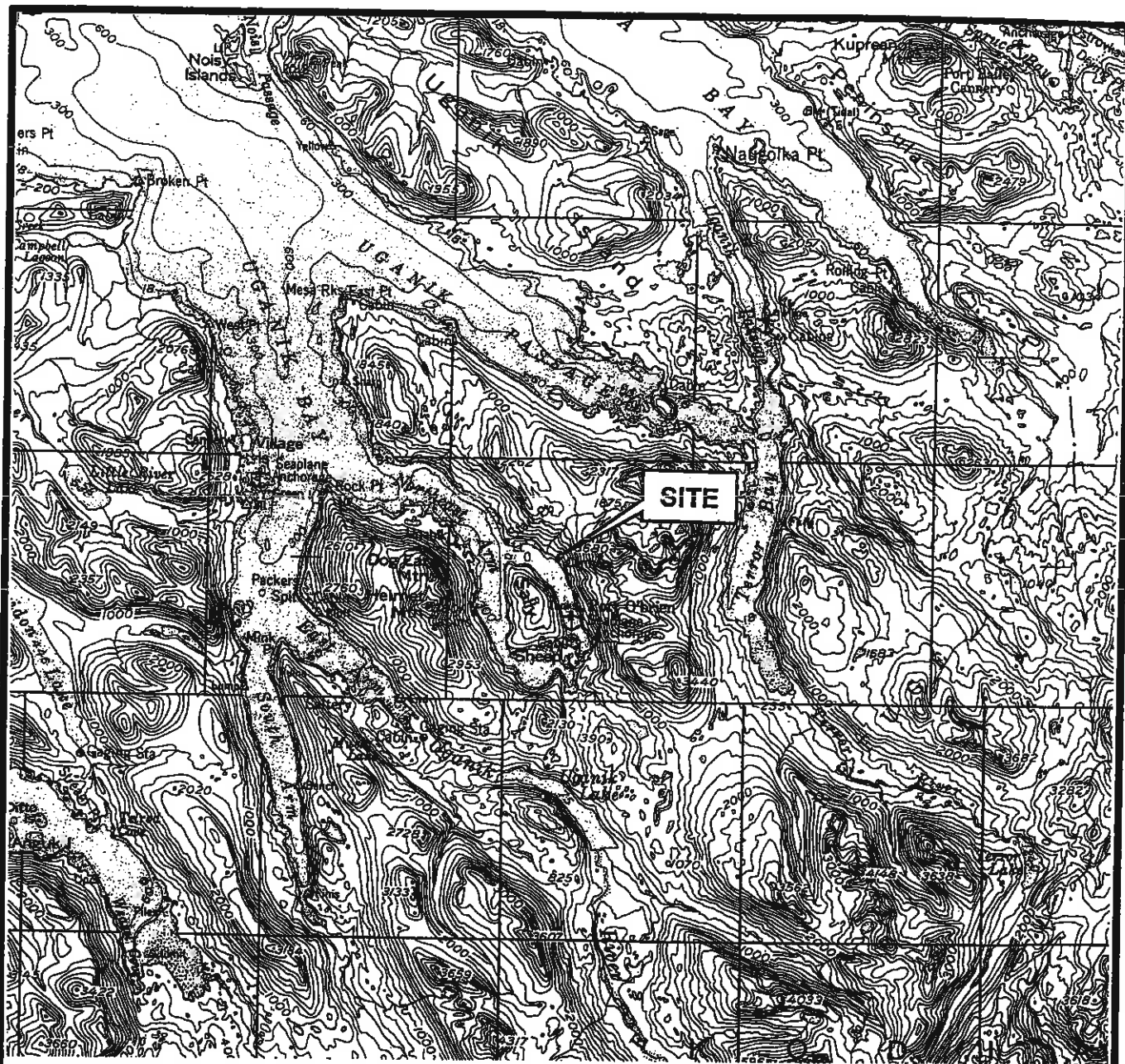
²HVOCs = Halogenated Volatile Organic Compounds by U.S. Environmental Protection Agency Method 8260B. All other compounds tested were not detected at or greater than laboratory method reporting limits, except as noted.

µg/l = micrograms per liter

NE = not established

ADEC = Alaska Department of Environmental Conservation

Shading indicates concentration exceeds ADEC Table C cleanup levels.



References:
USGS topographic quadrangle map "Kodiak, AK." 1952, limited revision 1983.

Geo  Engineers

VICINITY MAP

FIGURE 1

References:

Site Plan by Hugh A. Thompson
& Associates, Inc., dated February 1992;
site reconnaissance notes.

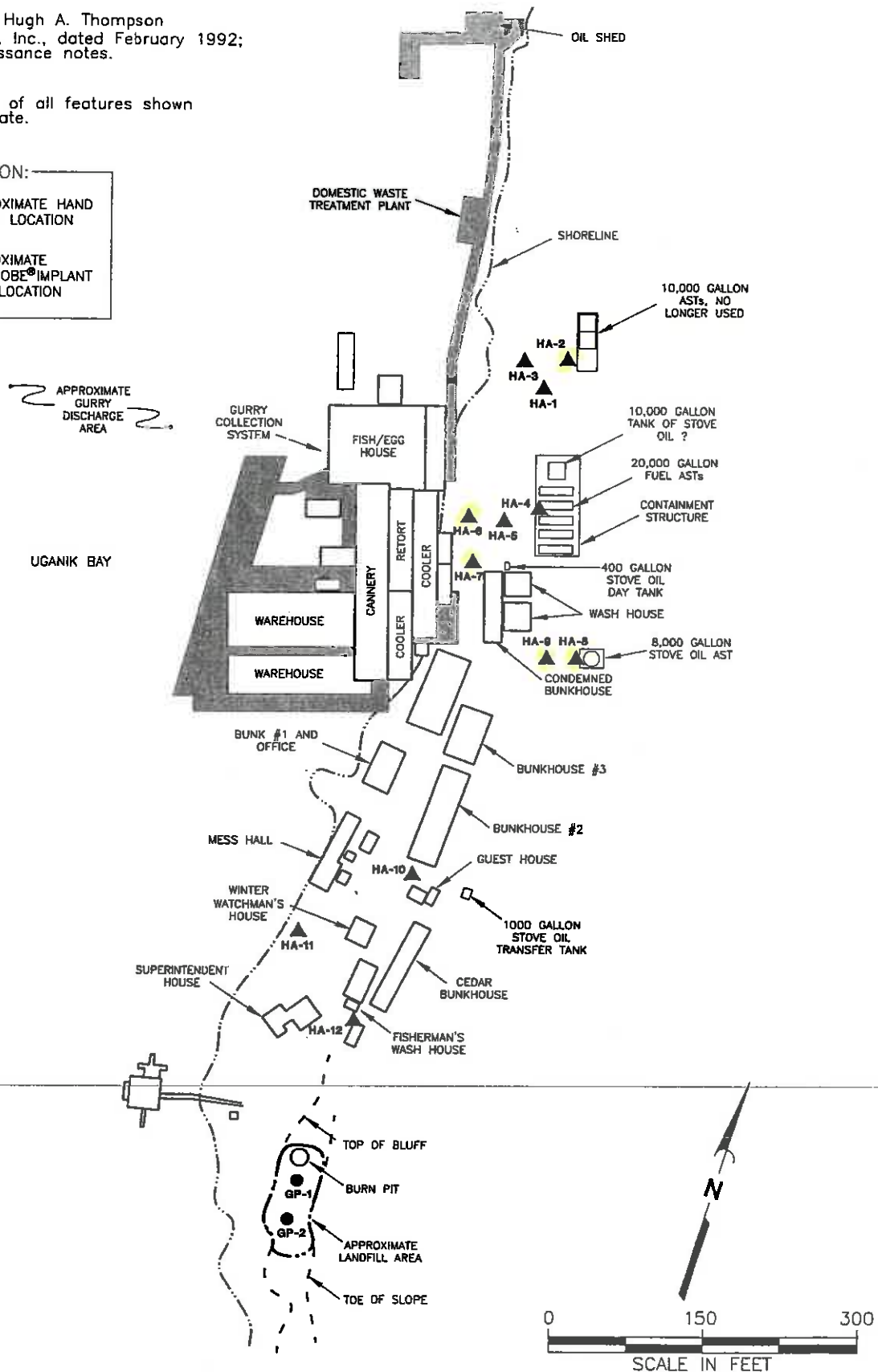
Note:

The locations of all features shown
are approximate.

EXPLANATION:

▲ HA-1 APPROXIMATE HAND
AUGER LOCATION

● GP-1 APPROXIMATE
GEOPROBE® IMPLANT
WELL LOCATION



References:

Site Plan by Hugh A. Thompson & Associates, Inc., dated February 1992; site reconnaissance notes.

Notes:

The locations of all features shown are approximate.

See Figure 2 for feature labels.

Shading indicates concentration exceeds ADEC Method 2 Petroleum Hydrocarbon Soil Cleanup Levels, under 40-inch zone, migration to ground water pathway.

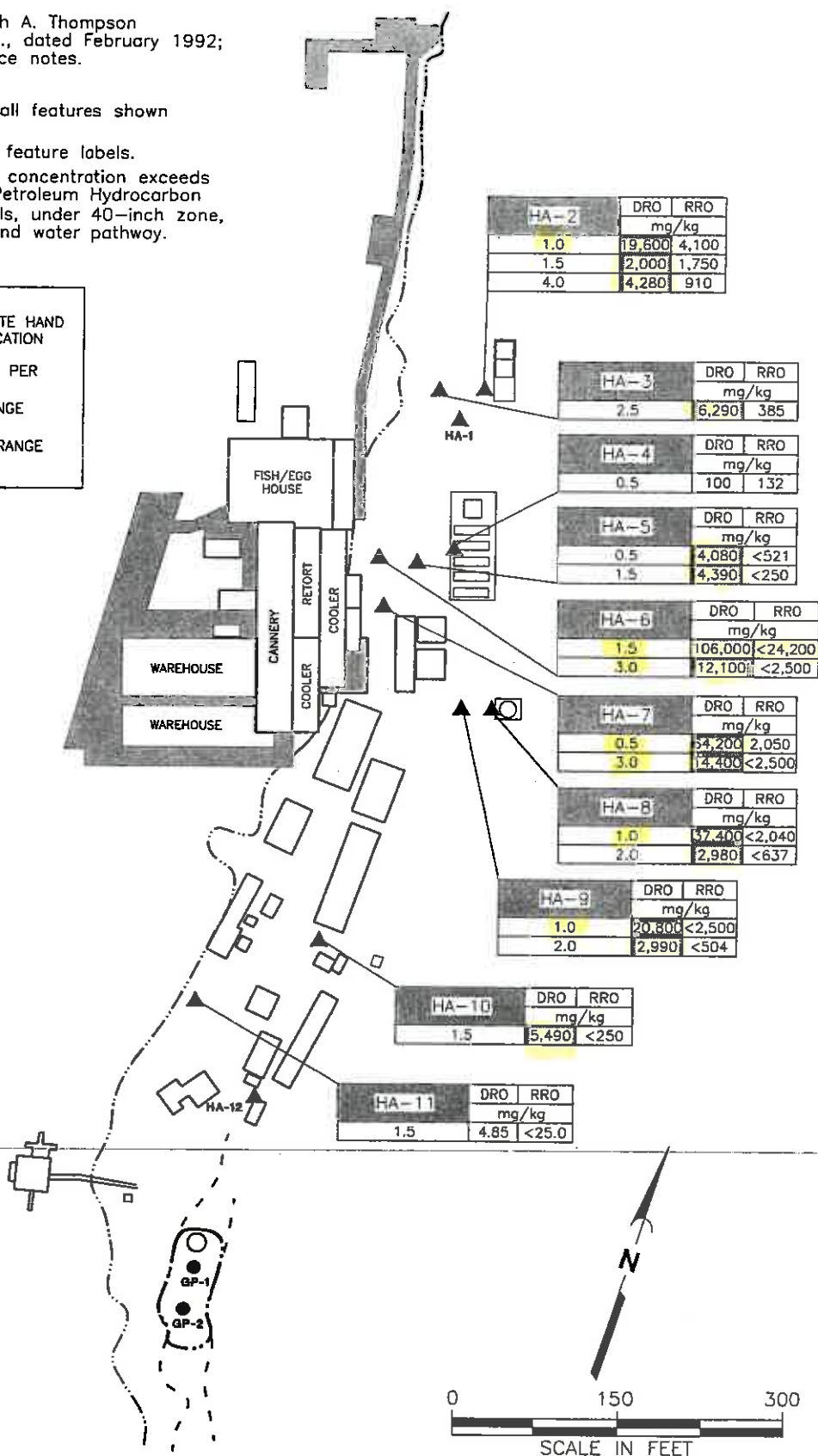
EXPLANATION:

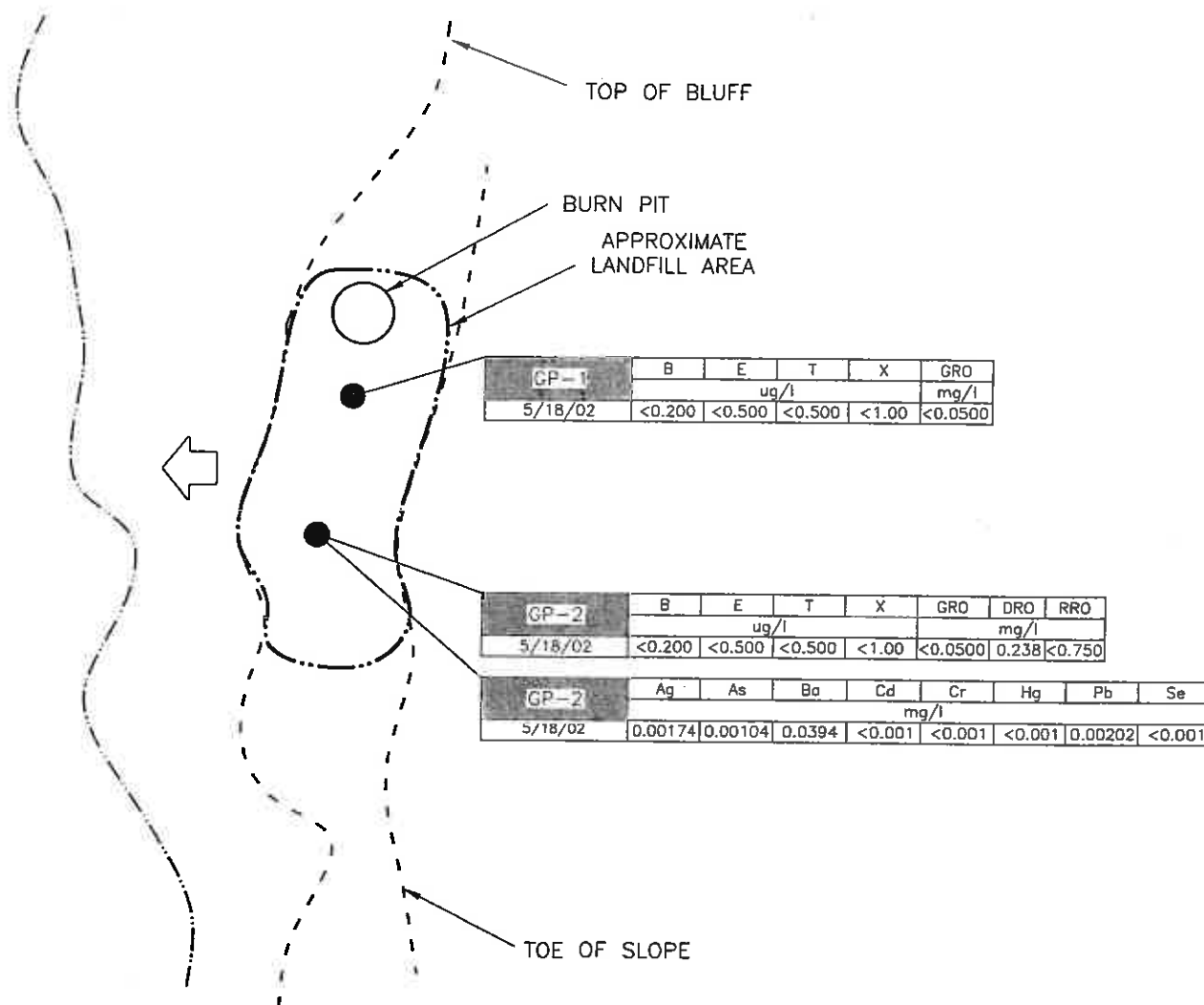
▲ APPROXIMATE HAND AUGER LOCATION
HA-1

mg/kg MILLIGRAMS PER KILOGRAM

DRO DIESEL-RANGE ORGANICS

RRO RESIDUAL-RANGE ORGANICS





GP-1	B	E	T	X	GRO
	ug/l				mg/l
5/18/02	<0.200	<0.500	<0.500	<1.00	<0.0500

GP-2	B	E	T	X	GRO	DRO	RRO
	ug/l				mg/l		
5/18/02	<0.200	<0.500	<0.500	<1.00	<0.0500	0.238	<0.750

GP-2	Ag	As	Ba	Cd	Cr	Hg	Pb	Se
	mg/l							
5/18/02	0.00174	0.00104	0.0394	<0.001	<0.001	<0.001	0.00202	<0.001

EXPLANATION:

- GP-1 APPROXIMATE GEOPROBE[®] IMPLANT WELL LOCATION
- ← APPROXIMATE GROUND WATER FLOW DIRECTION
- ug/l MICROGRAMS PER LITER
- mg/l MILLIGRAMS PER LITER
- BETX BENZENE, ETHYLBENZENE, TOLUENE AND XYLENES
- GRO GASOLINE-RANGE ORGANICS
- DRO DIESEL-RANGE ORGANICS
- RRO RESIDUAL-RANGE ORGANICS
- Ag SILVER
- As ARSENIC
- Ba BARIUM
- Cd CADMIUM
- Cr CHROMIUM
- Hg MERCURY
- Pb LEAD
- Se SELENIUM

Notes:

The locations of all features shown are approximate.

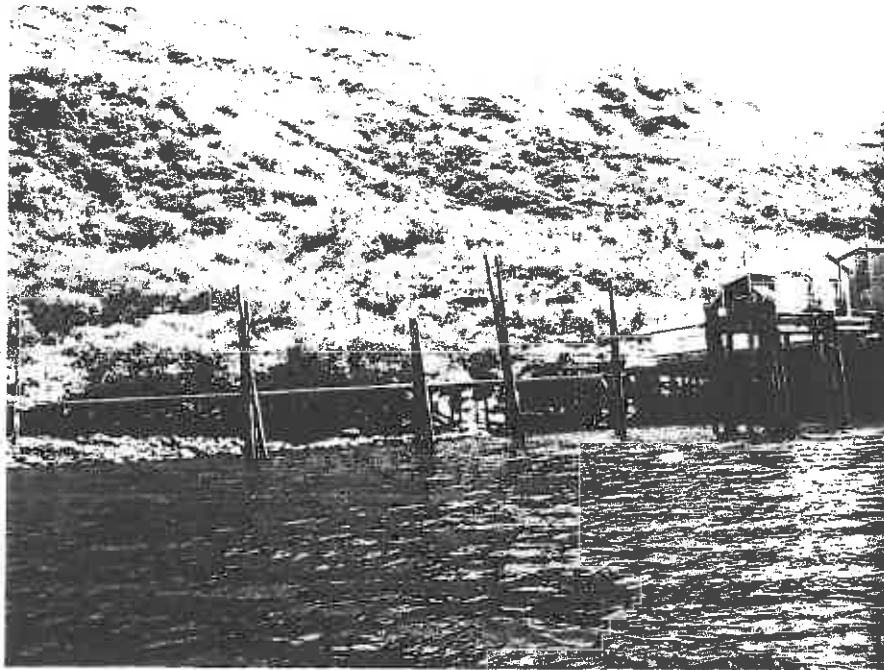
References:

Site Plan by Hugh A. Thompson & Associates, Inc., dated February 1992; site reconnaissance notes.

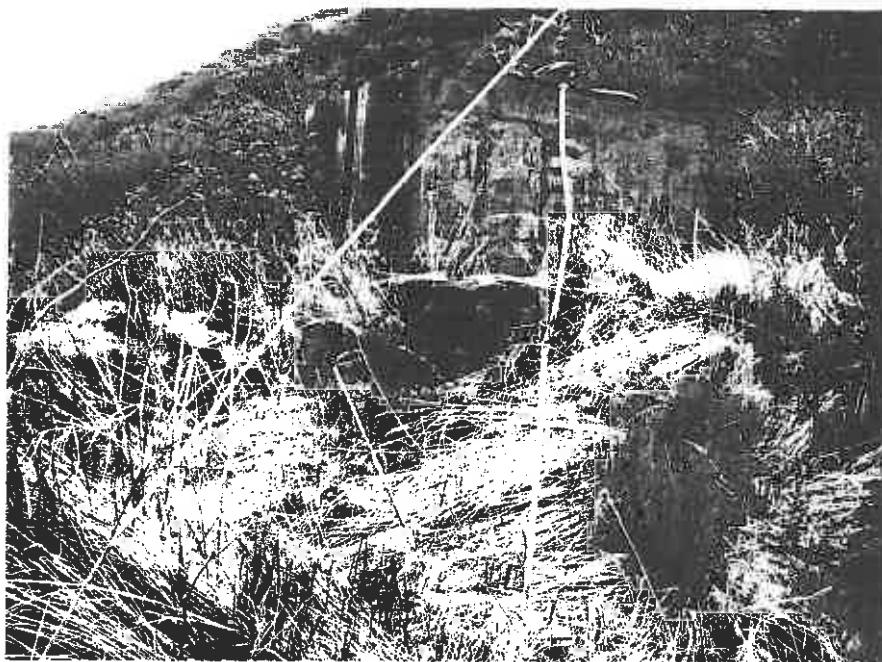


CHEMICAL ANALYTICAL RESULTS - GROUND WATER

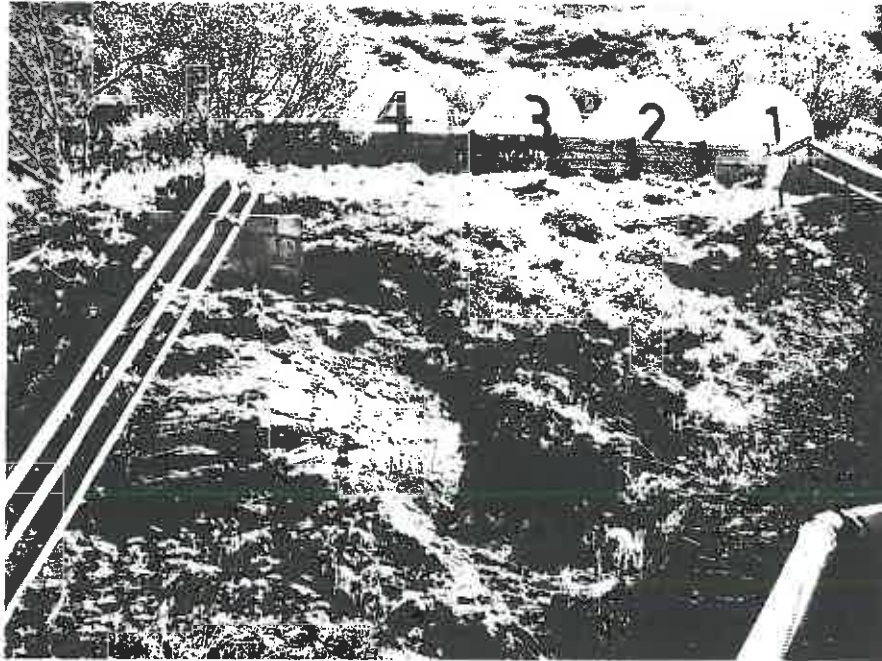
FIGURE 4



View from Uganik Bay looking southeast at the old rectangular ASTs in the center of the picture and the five 20,000 gallon ASTs on the right side.



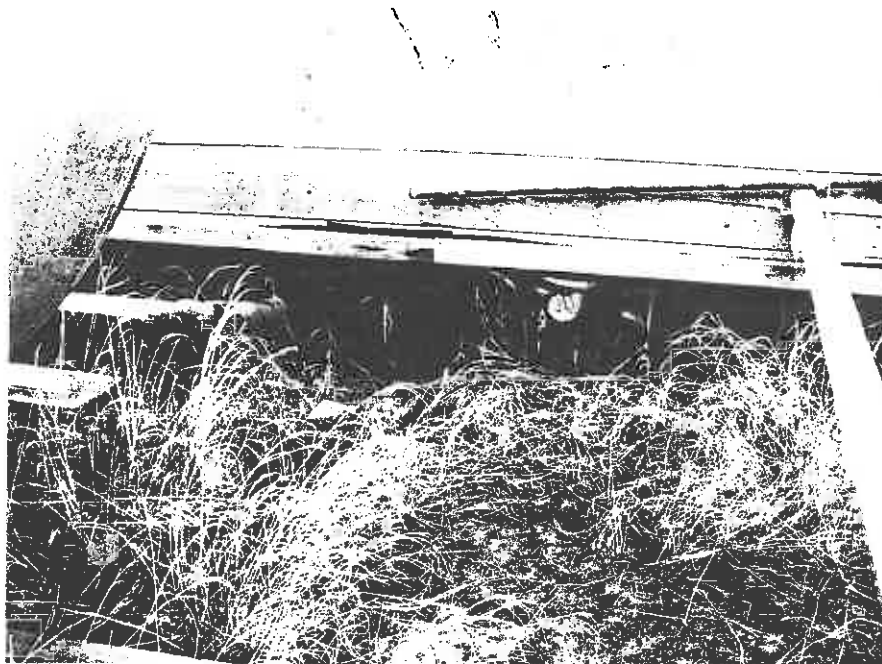
View looking north-northeast at the old rectangular ASTs. HA-1 was located below the valve seen in the foreground, and HA-2 was directly below the valve of the third tank which was moved to the 20,000-gallon tank containment structure.



View looking east at the five 20,000-gallon ASTs that contain diesel in Tanks 1 through 4 and gasoline in Tank 5. In the upper left corner is the old rectangular AST that was moved into the containment structure seen in front of the ASTs. HA-5 was located about halfway between Tank 3 and the top of the stairs.



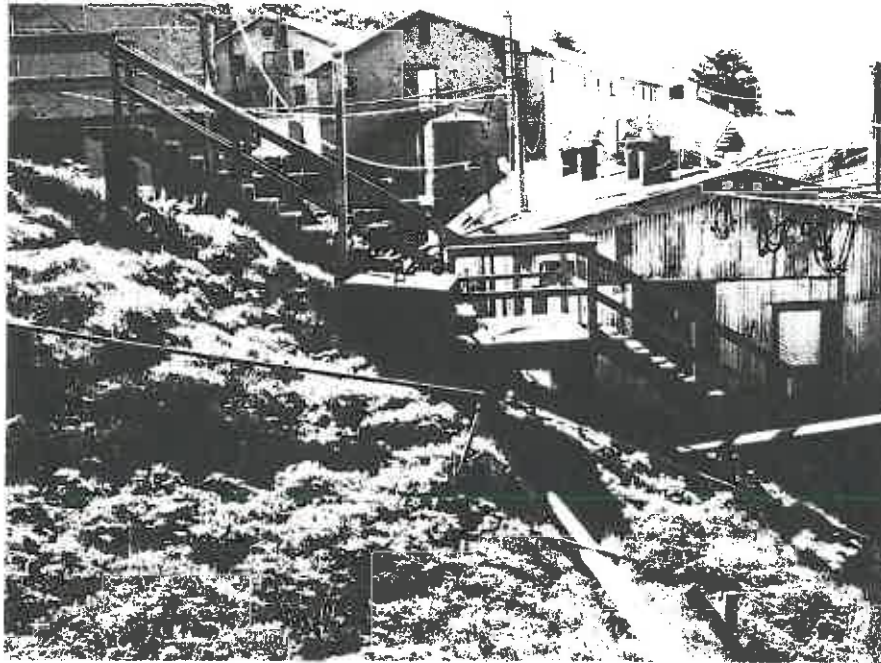
View looking east from the top of the stairs shown above, looking at HA-5 in the center of the picture.



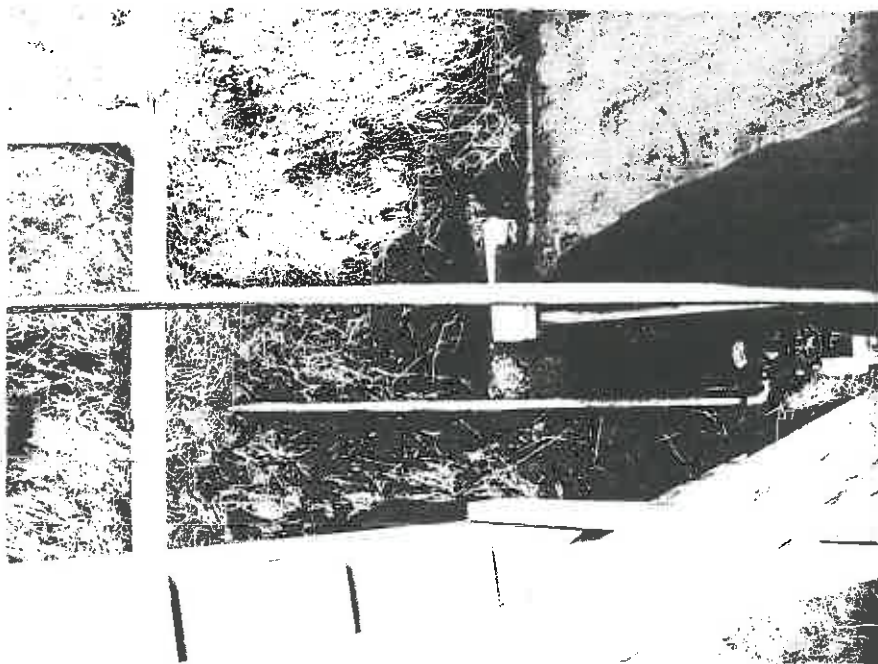
View looking west from inside the containment structure with part of Tank 4 on the left. Note the hole in the liner and containment structure.



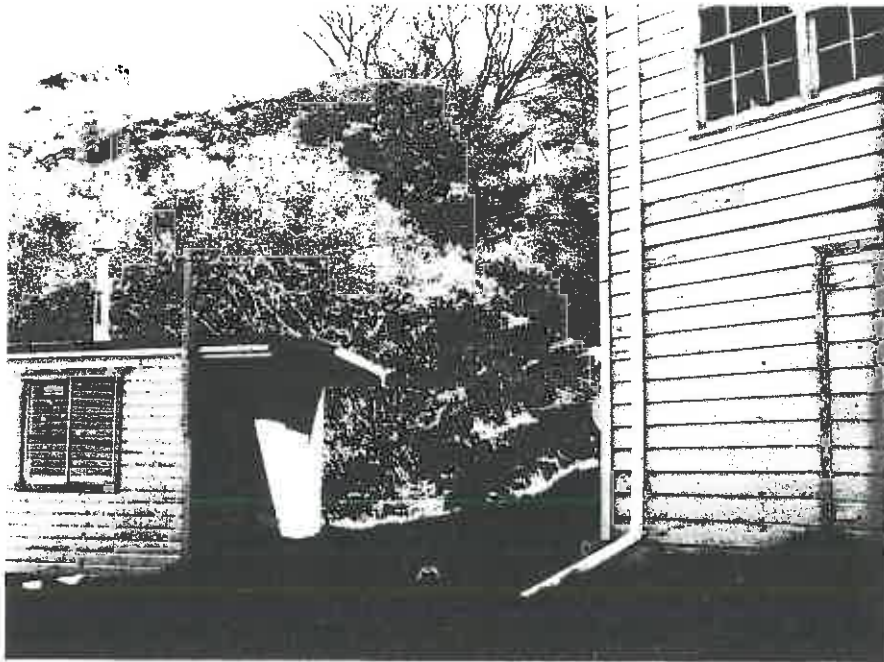
View looking south at the bottom of Tank 4. Note surface staining below the tank.



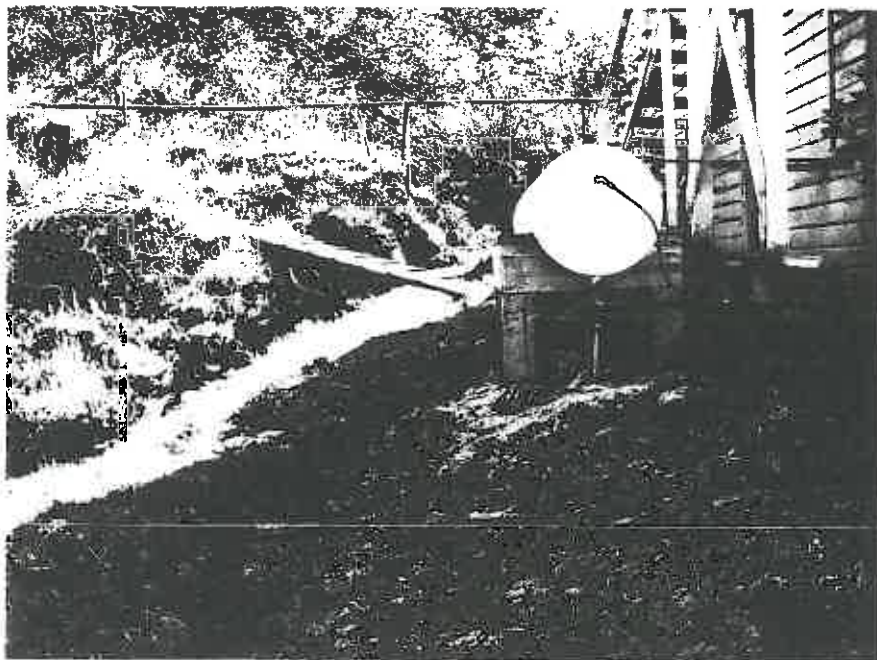
View looking south at the 400-gallon stove oil AST that supplies the generator building in the background. HA-7 was located near the end of the 1-foot-wide plank on the right side of the picture.



View looking down from the top of the stairs shown above at the valve of the AST and surface staining below the outflow pipe.



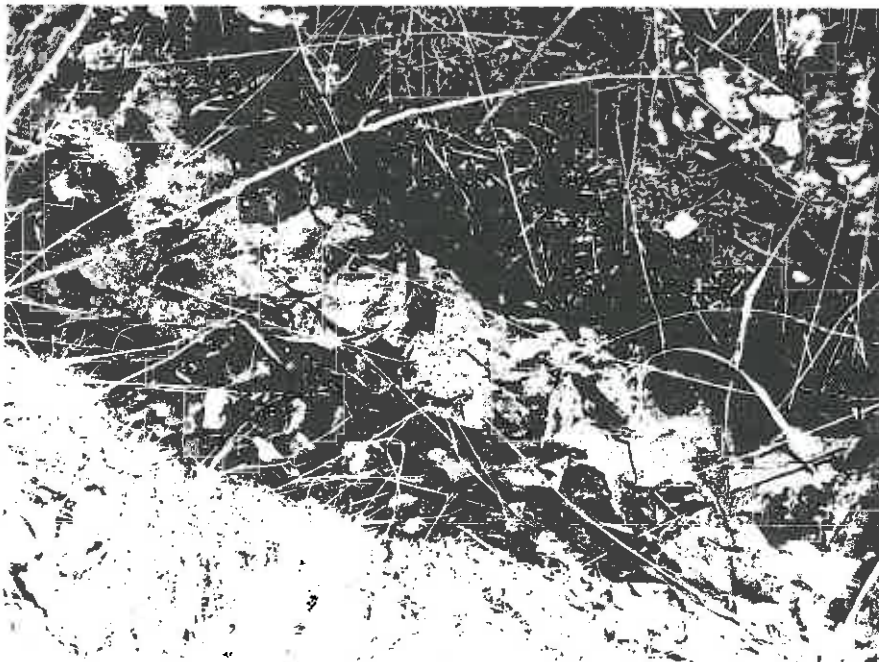
View looking northeast at the green 8,000-gallon stove oil tank that is up on the hill.



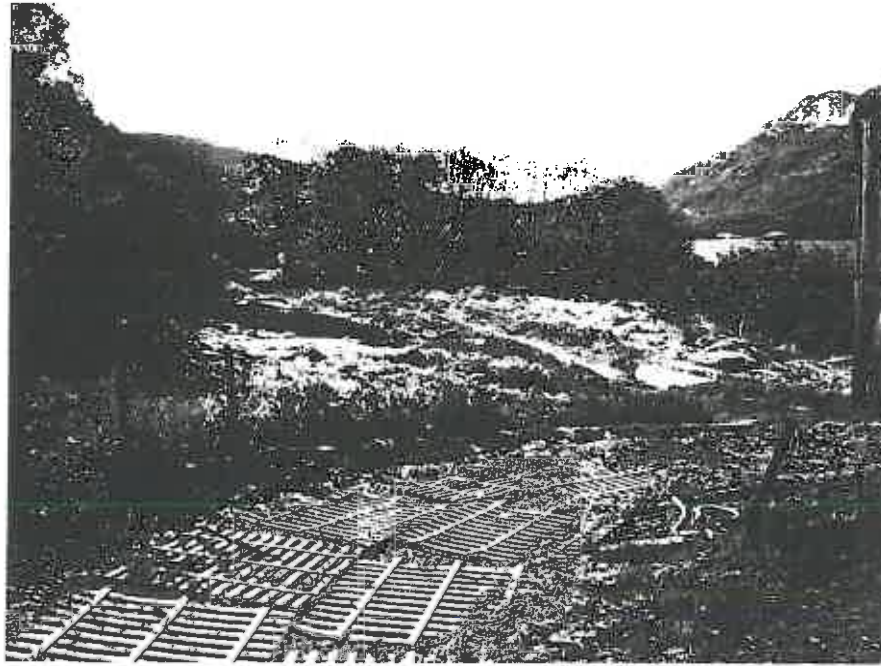
View looking east at a typical day tank that supplies the building on the right with heating oil. Also pictured is a typical stream flowing through the site in close proximity to the day tank.



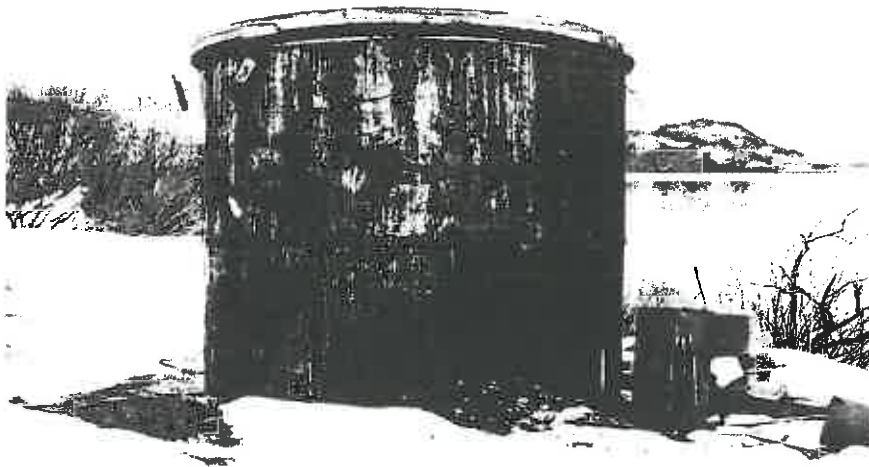
View looking east at the 1,000-gallon stove oil transfer tank located about 30 feet northeast of the guest house. Note the surface water channel to the left of the red bag (shown up close below) and the stream on the right.



Close-up of surface water with visible sheen below the 1,000-gallon AST shown above.



View looking south at the landfill area with the burn pit on the right.



View looking southwest at the landfill area with the solid waste incinerator in the foreground.

APPENDIX A

APPENDIX A

FIELD EXPLORATION PROGRAM

GENERAL

Subsurface conditions for this study were explored by completing 12 hand auger borings (HA-1 through HA-12) and two Geoprobe® implant wells (GP-1 and GP-2) on May 18, 2002. The approximate locations of the hand auger borings and implant wells are shown on Figure 2.

The hand auger borings were completed to depths of 0.5 to 4.0 feet below ground surface (bgs). An engineer from our staff determined the boring locations, examined and classified the soil encountered, and prepared a detailed log of each boring. The hand auger borings were located where surface staining was encountered or subsurface contamination was suspected.

The Geoprobe® implant wells were driven to refusal on bedrock at depths of 8 feet bgs in GP-1 and 6 feet bgs in GP-2. The implant well locations were determined by GeoEngineers field engineer based on the results of our Phase I Environmental Site Assessment (ESA) and visual observations.

SOIL SAMPLING PROGRAM

The hand auger borings were completed using a 4-inch stainless steel hand auger manually advanced by a GeoEngineers engineer. Soil samples were obtained at intervals of 1 and 2 feet bgs from the borings that exhibited potential contamination during field screening.

Soil sampling equipment was cleaned with a Liquinox wash and a tap water rinse between each sampling event. The soil samples were obtained from the hand auger barrel using a pair of new nitrile gloves and a new sampling spool. Soil samples were placed in laboratory-cleaned 8-ounce jars. The sealed jars were placed in a cooler on ice and standard chain-of-custody procedures were observed during transport of the samples to the testing laboratory.

SOIL CLASSIFICATION AND FIELD SCREENING OF SOIL SAMPLES

Soil encountered was classified visually in general accordance with American Society of Testing and Materials (ASTM) D-2488-95, the Standard Practice for Description and Identification of Soils, and the Unified Soil Classification System (USCS), which is described on Figure A-1. An explanation of symbols is presented on Figure A-2. The hand auger boring logs are included as Figures A-3 through A-8.

A GeoEngineers representative conducted field screening on soil samples obtained from the hand auger borings. Field screening results are used as a general guideline to delineate areas of possible hydrocarbon contamination in soil. In addition, screening results are used to aid in the selection of soil samples for chemical analysis. The field screening methods used were vapor detection with a photoionization detector (PID), visual examination and sheen screening. PIDs are used to evaluate the concentration of hydrocarbon vapors exuded from bagged soil samples. Visual screening consists of inspecting the soil for stains or odor indicative of hydrocarbon contamination. Sheen screening is a more sensitive screening method that has been effective in detecting hydrocarbon contamination at concentrations less than regulatory cleanup guidelines.

Sheen screening involves placing soil in a pan of water and observing the water surface for signs of sheen. Sheens classifications are as follows:

No Sheen (NS)	No visible sheen on water surface.
Slight Sheen (SS)	Light, colorless, dull sheen; spread is irregular, not rapid; sheen dissipates rapidly.
Moderate Sheen (MS)	Light to heavy sheen; may have some color/iridescence; spread is irregular to flowing, may be rapid; few remaining areas of no sheen on water surface.
Heavy Sheen (HS)	Heavy sheen with color/iridescence; spread is rapid; entire water surface may be covered with sheen.

GROUND WATER SAMPLING PROGRAM

The Geoprobe® implant wells were advanced to refusal on bedrock using a detachable point on the end of hollow 1-inch-diameter steel rod that was driven to depth with a slide hammer. The field engineer then attached a 1/2-inch-diameter stainless steel screen, approximately 6 inches in length, to 1/4-inch-diameter polyethylene tubing, and connected to the drive point by passing it down the hollow pipe and screwing it into the drive point. Lastly, the pipe was extracted from the ground leaving behind the drive point, well screen and tubing. Samples were collected into a new transfer bottle using a vacuum pump. The water samples were then transferred into the laboratory-supplied containers and placed in a cooler on ice. New nitrile gloves were worn during handling and transferring of the water samples. Standard chain-of-custody procedures were observed during transport of the samples to the testing laboratory.

SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE GRAINED SOILS More Than 50% Retained on No. 200 Sieve	GRAVEL More Than 50% of Coarse Fraction Retained on No. 4 Sieve	CLEAN GRAVEL	GW	WELL-GRADED GRAVEL, FINE TO COARSE GRAVEL
			GP	POORLY-GRADED GRAVEL
		GRAVEL WITH FINES	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	SAND More Than 50% of Coarse Fraction Passes No. 4 Sieve	CLEAN SAND	SW	WELL-GRADED SAND, FINE TO COARSE SAND
			SP	POORLY-GRADED SAND
		SAND WITH FINES	SM	SILTY SAND
			SC	CLAYEY SAND
FINE GRAINED SOILS More Than 50% Passes No. 200 Sieve	SILT AND CLAY Liquid Limit Less Than 50	INORGANIC	ML	SILT
			CL	CLAY
		ORGANIC	OL	ORGANIC SILT, ORGANIC CLAY
	SILT AND CLAY Liquid Limit 50 or More	INORGANIC	MH	SILT OF HIGH PLASTICITY, ELASTIC SILT
			CH	CLAY OF HIGH PLASTICITY, FAT CLAY
		ORGANIC	OH	ORGANIC CLAY, ORGANIC SILT
	HIGHLY ORGANIC SOILS			PT

NOTES:

- Field classification is based on visual examination of soil in general accordance with ASTM D2488-90.
- Soil classification using laboratory tests is based on ASTM D2487-90.
- Descriptions of soil density or consistency are based on interpretation of blow count data, visual appearance of soils, and/or test data.

SOIL MOISTURE MODIFIERS:

- Dry -** Absence of moisture, dusty, dry to the touch
Moist - Damp, but no visible water
Wet - Visible free water or saturated, usually soil is obtained from below water table

LABORATORY TESTS:

CA Chemical Analysis

FIELD SCREENING TESTS:Headspace vapor concentration data
given in parts per million

Sheen classification system:

NS No Visible Sheen

SS Slight Sheen

MS Moderate Sheen

HS Heavy Sheen

NT Not Tested

SOIL GRAPH:SM Soil Group Symbol
(See Note 2)Distinct Contact Between
Soil StrataGradual or Approximate
Location of Change
Between Soil Strata
 Water Level
 Bottom of Boring
BLOW-COUNT/SAMPLE DATA:Blows required to drive a 2.4-inch I.D.
split-barrel sampler 12 inches or
other indicated distances using a
300-pound hammer falling 30 inches.

22 ■

Location of relatively
undisturbed sample

12 ☒

Location of disturbed sample

17 □

Location of sampling attempt
with no recoveryBlows required to drive a 1.5-inch I.D.
(SPT) split-barrel sampler 12 inches
or other indicated distances using
140-pound hammer falling 30 inches.

10 ☐

Location of sample obtained
in general accordance with
Standard Penetration Test
(ASTM D 1586) procedures

26 ☐

Location of SPT sampling
attempt with no recovery

☐

Location of grab sample

"P" indicates sampler pushed with
weight of hammer or against weight
of drill-rig.**NOTES:**

1. The reader must refer to the discussion in the report text, the Key to Boring Log Symbols and the exploration logs for a proper understanding of subsurface conditions.
2. Soil classification system is summarized in Figure A-1.

Date Excavated: 05/18/02

Logged by: DKR

Equipment: Hand Auger

Surface Elevation (ft): —

Elevation feet	Depth feet	Sample	Testing	Water	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	HeadSpace Vapor TLV(ppm)	NOTES
0						ML	Brown silt with sand and occasional gravel (medium dense, moist)			
						GP	Dark gray angular cobbles (stiff, moist)	NS	0.0	
						SP	Tan fine-medium sand (loose, moist)	NS	0.0	
						ML	Black silt with gravel (stiff, moist)	NS	0.0	
							Refusal on bedrock at 3.5 feet on 05/18/02. No ground water encountered during hand auger boring.	NS	0.0	
5										
10										

Note: See Figure A-2 for explanation of symbols

LOG OF HAND AUGER HA-1



Project: Cook Inlet Processing Plant - Uganik Bay

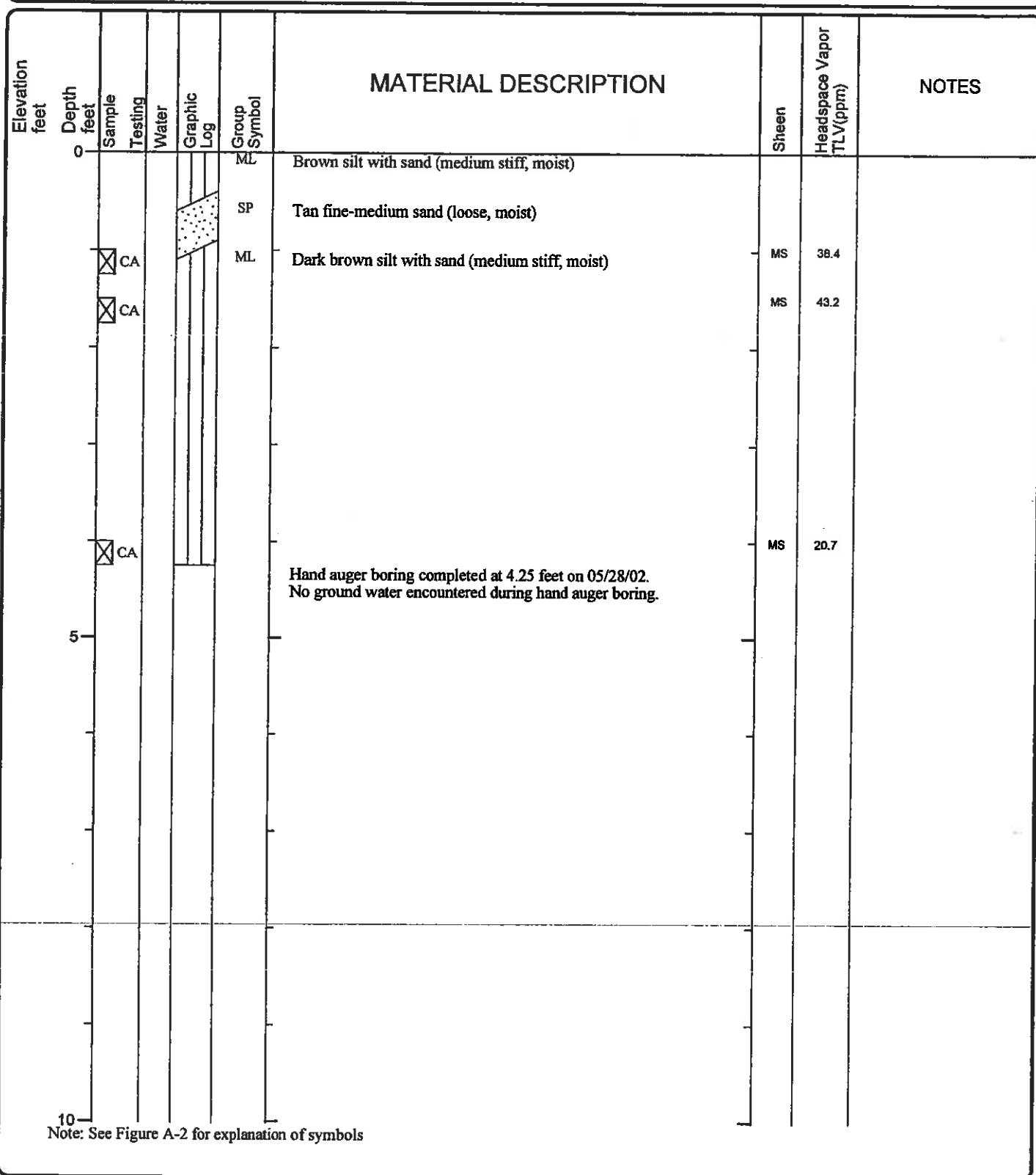
Project Location: Kodiak, Alaska

Project Number: 6765-002-01

Figure: A-3
Sheet 1 of 1

Logged by: DKR

Surface Elevation (ft): --



LOG OF HAND AUGER HA-2



Project: Cook Inlet Processing Plant - Uganik Bay
Project Location: Kodiak, Alaska
Project Number: 6765-002-01

Figure: A-4
Sheet 1 of 1

Logged by: DKR

Surface Elevation (ft): _____

[illegible]

LOG OF HAND AUGER HA-3



Project: Cook Inlet Processing Plant - Uganik Bay

Project Location: Kodiak, Alaska

Project Number: 6765-002-01

Figure: A-5
Sheet 1 of 1

Logged by: DKR

Surface Elevation (ft): _____

Elevation feet	Depth feet	Sample	Testing	Water	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0						ML	Brown silt with sand and occasional gravel (soft, wet)			
		X CA					Hand auger boring completed at 0.75 feet on 05/18/02. No ground water encountered during hand auger boring.	MS	7.0	
5										
10										

Note: See Figure A-2 for explanation of symbols

LOG OF HAND AUGER HA-4



Project: Cook Inlet Processing Plant - Uganik Bay
Project Location: Kodiak, Alaska
Project Number: 6765-002-01

Figure: A-6
Sheet 1 of 1

Date Excavated: 05/18/02

Logged by: DKR

Equipment: Hand Auger

Surface Elevation (ft): --

Elevation feet	Depth feet	Sample	Testing	Water	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
	0					ML	Dark brown silt with sand (medium stiff, wet)			
		☒ CA						MS	64.8	
		☒ CA		∇				MS	98.3	
							Refusal on bedrock at 2.0 feet on 05/18/02. Ground water encountered at 1.5 feet on 05/18/02.	HS	115	
	5									
	10									

Note: See Figure A-2 for explanation of symbols

LOG OF HAND AUGER HA-5



Project: Cook Inlet Processing Plant - Uganik Bay

Project Location: Kodiak, Alaska

Project Number: 6765-002-01

Figure: A-7
Sheet 1 of 1

Date Excavated: 05/18/02

Logged by: DKR

Equipment: Hand Auger

Surface Elevation (ft): --

Elevation feet	Depth feet	Sample	Testing	Water	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
	0					ML	Dark brown silt with sand (medium stiff, moist)			
		⊗						SS	12.9	
				⚡						
		⊗				SP	Gray silty sand with gravel (medium dense, wet)	HS	361	
							Refusal on bedrock at 3.5 feet on 05/18/02. Ground water encountered at 2.0 feet on 05/18/02.			
	5									
	10									

Note: See Figure A-2 for explanation of symbols

LOG OF HAND AUGER HA-6



Project: Cook Inlet Processing Plant - Uganik Bay

Project Location: Kodiak, Alaska

Project Number: 6765-002-01

Figure: A-8
Sheet 1 of 1

Date Excavated: 05/18/02

Logged by: DKR

Equipment: Hand Auger

Surface Elevation (ft): -

Elevation feet	Depth feet	Sample	Testing	Water	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
	0					ML	Brown silt with sand (medium stiff, moist)			
		CA						SS	83.6	
		CA					Refusal on bedrock at 3.25 feet on 05/18/02. No ground water encountered during hand auger boring.	MS	188	
	5									
	10									

Note: See Figure A-2 for explanation of symbols

LOG OF HAND AUGER HA-7



Project: Cook Inlet Processing Plant - Uganik Bay

Project Location: Kodiak, Alaska

Project Number: 6765-002-01

Figure: A-9
Sheet 1 of 1

Date Excavated: 05/18/02

Logged by: DKR

Equipment: Hand Auger

Surface Elevation (ft): --

Elevation feet	Depth feet	Sample	Testing	Water	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0						SP	Tan fine to medium sand (medium dense, moist)			
		✕						MS	383	
				▽		ML	Dark brown silt (medium stiff, moist)			
		✕						SS	458	
							Refusal on bedrock at 2.25 feet on 05/18/02. Ground water encountered at 1.5 feet on 05/18/02.			
5										
10										

Note: See Figure A-2 for explanation of symbols

LOG OF HAND AUGER HA-8



Project: Cook Inlet Processing Plant - Uganik Bay

Project Location: Kodiak, Alaska

Project Number: 6765-002-01

Figure: A-10
Sheet 1 of 1

Date Excavated: 05/18/02

Logged by: DKR

Equipment: Hand Auger

Surface Elevation (ft): --

Elevation feet	Depth feet	Sample	Testing	Water	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0						SP	Tan fine to medium sand (medium dense, moist)			
		CA						SS	117	
		CA						MS	285	
							Refusal on bedrock at 2.25 feet on 05/18/02. Ground water encountered at 1.75 feet on 05/18/02.			
5										
10										

Note: See Figure A-2 for explanation of symbols

LOG OF HAND AUGER HA-9



Project: Cook Inlet Processing Plant - Uganik Bay

Project Location: Kodiak, Alaska

Project Number: 6765-002-01

Figure: A-11
Sheet 1 of 1

Date Excavated: 05/18/02

Logged by: DKR

Equipment: Hand Auger

Surface Elevation (ft): -

Elevation feet	Depth feet	Sample	Testing	Water	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
	0					ML	Brown silt (medium stiff, moist)			
						SP	Tan fine to medium sand (loose, wet)	NS	81	
		CA						MS	325	
							Refusal on bedrock at 1.75 feet on 05/18/02. Ground water encountered at 1.25 feet on 05/18/02.			
	5									
	10									

Note: See Figure A-2 for explanation of symbols

LOG OF HAND AUGER HA-10



Project: Cook Inlet Processing Plant - Uganik Bay

Project Location: Kodiak, Alaska

Project Number: 6765-002-01

Figure: A-12
Sheet 1 of 1

Date Excavated: 05/18/02

Logged by: DKR

Equipment: Hand Auger

Surface Elevation (ft): --

Elevation feet	Depth feet	Sample	Testing	Water	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	HeadSpace Vapor TLV(ppm)	NOTES
	0					ML	Brown silt (medium stiff, moist)			
						SP	Tan fine to medium sand (loose, dry)	NS	0.0	
		CA				ML	Dark brown silt (medium stiff, wet)	NS	0.0	
							Refusal on bedrock at 2.0 feet on 05/18/02. No ground water encountered during hand auger boring.	NS	0.0	
	5									
	10									

Note: See Figure A-2 for explanation of symbols

LOG OF HAND AUGER HA-11



Project: Cook Inlet Processing Plant - Uganik Bay

Project Location: Kodiak, Alaska

Project Number: 6765-002-01

Figure: A-13
Sheet 1 of 1

Logged by: _____ DKR

Surface Elevation (ft): _____

Elevation feet	Depth feet	Sample	Testing	Water	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0						SP	Tan fine to medium sand (medium dense, moist)			
							Refusal on bedrock at 1.0 feet on 05/18/02. No ground water encountered during hand auger boring.	NS	7.2	
5										
10										

Note: See Figure A-2 for explanation of symbols

LOG OF HAND AUGER HA-12



Project: Cook Inlet Processing Plant - Uganik Bay

Project Location: Kodiak, Alaska

Project Number: 6765-002-01

Figure: A-14
Sheet 1 of 1

APPENDIX B

APPENDIX B

CHEMICAL ANALYTICAL DATA

SAMPLES

Chain-of-custody procedures were followed during the transport of the field samples to the accredited analytical laboratory. The samples were held in cold storage pending extraction and/or analysis. The analytical results and quality control records are included in this appendix.

ANALYTICAL DATA REVIEW

The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries, and blank spike duplicate recoveries to evaluate the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted any exceptions in the laboratory report. Any data quality exceptions documented by the accredited laboratory were reviewed by GeoEngineers and are addressed in the data quality exception section of this appendix.

DATA QUALITY EXCEPTION SUMMARY

Soil

A field duplicate soil sample was collected from hand auger boring HA-8 at 1 foot below ground surface (bgs). The sample was identified as "Duplicate" on the laboratory chain-of-custody. Diesel-range organics (DRO) were detected in the duplicate sample at a concentration found to be within the established control limits when compared to HA-8(1.0) sample results. Residual-range organics (RRO) were not detected in either sample so a comparison could not be made.

Analytical Data Quality Notes:

- Results in the diesel-range for soil sample HA-3(2.5) are primarily due to overlap from a heavy oil-range product.
- Surrogate recoveries for several of the soil samples with higher concentrations of hydrocarbons were not available due to sample dilution. Surrogate recoveries were within control limits for other samples and for laboratory quality control (QC) samples. Based on the large number of samples for which surrogate recoveries were acceptable, and other acceptable QC parameters, the exceptions do not affect the use of these data in our opinion.

Water

A field duplicate ground water sample was collected from implant well GP-2. The sample was identified as "Duplicate" on the laboratory chain-of-custody. Benzene, ethylbenzene, toluene

and xylenes (BETX) and gasoline-range organics (GRO) were not detected in the duplicate sample or in GP-2, so a comparison could not be made.

Analytical Data Quality Notes:

- The sample chromatographic pattern for DRO in ground water sample GP-2 does not resemble the fuel standard used for quantitation. The contaminant detection may be weathered fuel oil number 6 or biogenics.

SUMMARY

Based on our data quality review, it is our opinion that the analytical data are of acceptable quality for their intended use.

Geo Engineers - Alaska
951 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
05/29/02 07:40

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HA-2 (1.0)	B2E0510-01	Soil	05/18/02 08:50	05/20/02 08:45
HA-2 (1.5)	B2E0510-02	Soil	05/18/02 09:00	05/20/02 08:45
HA-2 (4.0)	B2E0510-03	Soil	05/18/02 09:10	05/20/02 08:45
HA-3 (2.5)	B2E0510-04	Soil	05/18/02 10:30	05/20/02 08:45
HA-4 (0.5)	B2E0510-05	Soil	05/18/02 11:35	05/20/02 08:45
HA-5 (0.5)	B2E0510-06	Soil	05/18/02 12:10	05/20/02 08:45
HA-5 (1.5)	B2E0510-07	Soil	05/18/02 12:30	05/20/02 08:45
HA-6 (1.5)	B2E0510-08	Soil	05/18/02 12:55	05/20/02 08:45
HA-6 (3.0)	B2E0510-09	Soil	05/18/02 13:00	05/20/02 08:45
HA-7 (0.5)	B2E0510-10	Soil	05/18/02 13:20	05/20/02 08:45
HA-7 (3.0)	B2E0510-11	Soil	05/18/02 13:30	05/20/02 08:45
HA-8 (1.0)	B2E0510-12	Soil	05/18/02 14:20	05/20/02 08:45
HA-8 (2.0)	B2E0510-13	Soil	05/18/02 14:30	05/20/02 08:45
HA-9 (1.0)	B2E0510-14	Soil	05/18/02 15:30	05/20/02 08:45
HA-9 (2.0)	B2E0510-15	Soil	05/18/02 15:35	05/20/02 08:45
HA-10 (1.5)	B2E0510-16	Soil	05/18/02 15:45	05/20/02 08:45
HA-11 (1.5)	B2E0510-17	Soil	05/18/02 16:00	05/20/02 08:45
Duplicate	B2E0510-18	Soil	05/18/02 12:00	05/20/02 08:45

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So Engineers - Alaska
4951 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
05/29/02 07:40

Diesel Hydrocarbons (C10-C25) and Heavy Oil (C25-C36) by AK102 and AK103
North Creek Analytical - Bothell

Sample	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HA-2 (1.0) (B2E0510-01) Soil Sampled: 05/18/02 08:50 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	19600	400	mg/kg dry	100	2E22051	05/22/02	05/23/02	AK102/103	
Residual Range Organics	4100	2500	"	"	"	"	"	"	
Surrogate: 2-FBP	%	50-150			"	"	"	"	S-01
Surrogate: Octacosane	84.5 %	50-150			"	"	"	"	
HA-2 (1.5) (B2E0510-02) Soil Sampled: 05/18/02 09:00 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	2000	153	mg/kg dry	10	2E22051	05/22/02	05/23/02	AK102/103	
Residual Range Organics	1750	959	"	"	"	"	"	"	
Surrogate: 2-FBP	78.1 %	50-150			"	"	"	"	
Surrogate: Octacosane	123 %	50-150			"	"	"	"	
HA-2 (4.0) (B2E0510-03) Soil Sampled: 05/18/02 09:10 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	4280	40.0	mg/kg dry	10	2E22051	05/22/02	05/23/02	AK102/103	
Residual Range Organics	910	250	"	"	"	"	"	"	
Surrogate: 2-FBP	68.3 %	50-150			"	"	"	"	
Surrogate: Octacosane	78.9 %	50-150			"	"	"	"	
HA-3 (2.5) (B2E0510-04) Soil Sampled: 05/18/02 10:30 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	6290	40.0	mg/kg dry	10	2E22051	05/22/02	05/23/02	AK102/103	
Residual Range Organics	385	250	"	"	"	"	"	"	D-09
Surrogate: 2-FBP	66.7 %	50-150			"	"	"	"	
Surrogate: Octacosane	116 %	50-150			"	"	"	"	
HA-4 (0.5) (B2E0510-05) Soil Sampled: 05/18/02 11:35 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	100	4.00	mg/kg dry	1	2E22051	05/22/02	05/23/02	AK102/103	
Residual Range Organics	132	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	67.9 %	50-150			"	"	"	"	
Surrogate: Octacosane	69.3 %	50-150			"	"	"	"	

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Geo Engineers - Alaska
 51 Eagle St
 Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
 Project Number: 6765-002-01
 Project Manager: Deanne Raiha

Reported:
 05/29/02 07:40

Diesel Hydrocarbons (C10-C25) and Heavy Oil (C25-C36) by AK102 and AK103
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HA-5 (0.5) (B2E0510-06) Soil Sampled: 05/18/02 12:10 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	4080	83.3	mg/kg dry	10	2E22051	05/22/02	05/23/02	AK102/103	
Residual Range Organics	ND	521	"	"	"	"	"	"	
Surrogate: 2-FBP	83.1 %	50-150			"	"	"	"	
Surrogate: Octacosane	53.7 %	50-150			"	"	"	"	
HA-5 (1.5) (B2E0510-07) Soil Sampled: 05/18/02 12:30 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	4390	40.0	mg/kg dry	10	2E22051	05/22/02	05/23/02	AK102/103	
Residual Range Organics	ND	250	"	"	"	"	"	"	
Surrogate: 2-FBP	64.9 %	50-150			"	"	"	"	
Surrogate: Octacosane	82.0 %	50-150			"	"	"	"	
HA-6 (1.5) (B2E0510-08) Soil Sampled: 05/18/02 12:55 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	106000	3880	mg/kg dry	200	2E22051	05/22/02	05/24/02	AK102/103	
Residual Range Organics	ND	24200	"	"	"	"	"	"	
Surrogate: 2-FBP	%	50-150			"	"	"	"	S-01
Surrogate: Octacosane	%	50-150			"	"	"	"	S-01
HA-6 (3.0) (B2E0510-09) Soil Sampled: 05/18/02 13:00 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	12100	400	mg/kg dry	100	2E22051	05/22/02	05/24/02	AK102/103	
Residual Range Organics	ND	2500	"	"	"	"	"	"	
Surrogate: 2-FBP	%	50-150			"	"	"	"	S-01
Surrogate: Octacosane	79.6 %	50-150			"	"	"	"	
HA-7 (0.5) (B2E0510-10) Soil Sampled: 05/18/02 13:20 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	64200	319	mg/kg dry	40	2E22051	05/22/02	05/23/02	AK102/103	
Residual Range Organics	2050	1990	"	"	"	"	"	"	
Surrogate: 2-FBP	126 %	50-150			"	"	"	"	
Surrogate: Octacosane	%	50-150			"	"	"	"	S-01

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Geo Engineers - Alaska
951 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
05/29/02 07:40

Diesel Hydrocarbons (C10-C25) and Heavy Oil (C25-C36) by AK102 and AK103
North Creek Analytical - Bothell

Sample	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HA-7 (3.0) (B2E0510-11) Soil Sampled: 05/18/02 13:30 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	14400	400	mg/kg dry	100	2E22051	05/22/02	05/24/02	AK102/103	
Residual Range Organics	ND	2500	"	"	"	"	"	"	
Surrogate: 2-FBP	126 %	50-150			"	"	"	"	
Surrogate: Octacosane	%	50-150			"	"	"	"	S-01
HA-8 (1.0) (B2E0510-12) Soil Sampled: 05/18/02 14:20 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	37400	327	mg/kg dry	40	2E22051	05/22/02	05/23/02	AK102/103	
Residual Range Organics	ND	2040	"	"	"	"	"	"	
Surrogate: 2-FBP	%	50-150			"	"	"	"	S-01
Surrogate: Octacosane	%	50-150			"	"	"	"	S-01
HA-8 (2.0) (B2E0510-13) Soil Sampled: 05/18/02 14:30 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	2980	102	mg/kg dry	10	2E22051	05/22/02	05/23/02	AK102/103	
Residual Range Organics	ND	637	"	"	"	"	"	"	
Surrogate: 2-FBP	76.1 %	50-150			"	"	"	"	
Surrogate: Octacosane	83.3 %	50-150			"	"	"	"	
HA-9 (1.0) (B2E0510-14) Soil Sampled: 05/18/02 15:30 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	20800	400	mg/kg dry	100	2E22051	05/22/02	05/24/02	AK102/103	
Residual Range Organics	ND	2500	"	"	"	"	"	"	
Surrogate: 2-FBP	%	50-150			"	"	"	"	S-01
Surrogate: Octacosane	106 %	50-150			"	"	"	"	
HA-9 (2.0) (B2E0510-15) Soil Sampled: 05/18/02 15:35 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	2990	80.6	mg/kg dry	10	2E22051	05/22/02	05/23/02	AK102/103	
Residual Range Organics	ND	504	"	"	"	"	"	"	
Surrogate: 2-FBP	66.8 %	50-150			"	"	"	"	
Surrogate: Octacosane	83.2 %	50-150			"	"	"	"	

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Geo Engineers - Alaska
 951 Eagle St
 Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
 Project Number: 6765-002-01
 Project Manager: Deanne Raiha

Reported:
 05/29/02 07:40

Diesel Hydrocarbons (C10-C25) and Heavy Oil (C25-C36) by AK102 and AK103
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LA-10 (1.5) (B2E0510-16) Soil Sampled: 05/18/02 15:45 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	5490	40.0	mg/kg dry	10	2E22051	05/22/02	05/23/02	AK102/103	
Residual Range Organics	ND	250	"	"	"	"	"	"	
Surrogate: 2-FBP	50.5 %	50-150			"	"	"	"	
Surrogate: Octacosane	119 %	50-150			"	"	"	"	
LA-11 (1.5) (B2E0510-17) Soil Sampled: 05/18/02 16:00 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	4.85	4.00	mg/kg dry	1	2E22051	05/22/02	05/23/02	AK102/103	
Residual Range Organics	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	67.9 %	50-150			"	"	"	"	
Surrogate: Octacosane	83.6 %	50-150			"	"	"	"	
LA-12 (1.5) (B2E0510-18) Soil Sampled: 05/18/02 12:00 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	31700	323	mg/kg dry	40	2E22051	05/22/02	05/23/02	AK102/103	
Residual Range Organics	ND	2020	"	"	"	"	"	"	
Surrogate: 2-FBP	%	50-150			"	"	"	"	S-01
Surrogate: Octacosane	%	50-150			"	"	"	"	S-01

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541.383.9310 fax 541.382.7588

Geo Engineers - Alaska
951 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
05/29/02 07:40

Physical Parameters by APHA/ASTM/EPA Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
HA-2 (1.0) (B2E0510-01) Soil Sampled: 05/18/02 08:50 Received: 05/20/02 08:45										
Dry Weight	73.8	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07		
HA-2 (1.5) (B2E0510-02) Soil Sampled: 05/18/02 09:00 Received: 05/20/02 08:45										
Dry Weight	26.1	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07		
HA-2 (4.0) (B2E0510-03) Soil Sampled: 05/18/02 09:10 Received: 05/20/02 08:45										
Dry Weight	70.8	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07		
HA-3 (2.5) (B2E0510-04) Soil Sampled: 05/18/02 10:30 Received: 05/20/02 08:45										
Dry Weight	71.0	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07		
HA-4 (0.5) (B2E0510-05) Soil Sampled: 05/18/02 11:35 Received: 05/20/02 08:45										
Dry Weight	58.6	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07		
HA-5 (0.5) (B2E0510-06) Soil Sampled: 05/18/02 12:10 Received: 05/20/02 08:45										
Dry Weight	48.0	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07		
HA-5 (1.5) (B2E0510-07) Soil Sampled: 05/18/02 12:30 Received: 05/20/02 08:45										
Dry Weight	57.5	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07		
HA-6 (1.5) (B2E0510-08) Soil Sampled: 05/18/02 12:55 Received: 05/20/02 08:45										
Dry Weight	41.1	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07		
HA-6 (3.0) (B2E0510-09) Soil Sampled: 05/18/02 13:00 Received: 05/20/02 08:45										
Dry Weight	80.5	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07		

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Geo Engineers - Alaska
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 Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
 Project Number: 6765-002-01
 Project Manager: Deanne Raiha

Reported:
 05/29/02 07:40

Physical Parameters by APHA/ASTM/EPA Methods
North Creek Analytical - Bothell

Analyste	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LA-7 (0.5) (B2E0510-10) Soil Sampled: 05/18/02 13:20 Received: 05/20/02 08:45									
Dry Weight	50.4	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07	
LA-7 (3.0) (B2E0510-11) Soil Sampled: 05/18/02 13:30 Received: 05/20/02 08:45									
Dry Weight	62.2	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07	
LA-8 (1.0) (B2E0510-12) Soil Sampled: 05/18/02 14:20 Received: 05/20/02 08:45									
Dry Weight	62.5	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07	
LA-8 (2.0) (B2E0510-13) Soil Sampled: 05/18/02 14:30 Received: 05/20/02 08:45									
Dry Weight	39.3	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07	
LA-9 (1.0) (B2E0510-14) Soil Sampled: 05/18/02 15:30 Received: 05/20/02 08:45									
Dry Weight	54.3	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07	
LA-9 (2.0) (B2E0510-15) Soil Sampled: 05/18/02 15:35 Received: 05/20/02 08:45									
Dry Weight	49.6	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07	
LA-10 (1.5) (B2E0510-16) Soil Sampled: 05/18/02 15:45 Received: 05/20/02 08:45									
Dry Weight	60.9	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07	
LA-11 (1.5) (B2E0510-17) Soil Sampled: 05/18/02 16:00 Received: 05/20/02 08:45									
Dry Weight	78.0	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07	
Duplicate (B2E0510-18) Soil Sampled: 05/18/02 12:00 Received: 05/20/02 08:45									
Dry Weight	61.6	1.00	%	1	2E23023	05/23/02	05/24/02	BSOPSPL003R07	

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Bo Engineers - Alaska
51 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
05/29/02 07:40

Diesel Hydrocarbons (C10-C25) and Heavy Oil (C25-C36) by AK102 and AK103 - Quality Control
North Creek Analytical - Bothell

Sample	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E22051: Prepared 05/22/02 Using EPA 3550B										
Blank (2E22051-BLK1)										
Diesel Range Hydrocarbons	ND	4.00	mg/kg							
Residual Range Organics	ND	25.0	"							
Surrogate: 2-FBP	10.0		"	12.8		78.1	50-150			
Surrogate: Octacosane	10.4		"	12.8		81.2	50-150			
Lot 3 (2E22051-BS1)										
Diesel Range Hydrocarbons	64.5	4.00	mg/kg	80.0		80.6	75-125			
Surrogate: 2-FBP	10.4		"	12.8		81.2	50-150			
Lot 3 (2E22051-BS2)										
Residual Range Organics	75.9	25.0	mg/kg	80.0		94.9	60-120			
Surrogate: Octacosane	10.2		"	12.8		79.7	50-150			
Lot 3 Dup (2E22051-RSD1)										
Diesel Range Hydrocarbons	69.9	4.00	mg/kg	80.0		87.4	75-125	8.04	20	
Surrogate: 2-FBP	10.7		"	12.8		83.6	50-150			
Lot 3 Dup (2E22051-RSD2)										
Residual Range Organics	76.5	25.0	mg/kg	80.0		95.6	60-120	0.787	20	
Surrogate: Octacosane	10.2		"	12.8		79.7	50-150			

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Geo Engineers - Alaska
951 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
05/29/02 07:40

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
North Creek Analytical - Bothell

Analyste	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E23023: Prepared 05/23/02 Using Dry Weight										
Blank (2E23023-BLK1)										
Weight	100	1.00	%							

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Geo Engineers - Alaska
951 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
05/29/02 07:40

Notes and Definitions

- D-09 Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
- 01 The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
- DET Analyte DETECTED
- D Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- y Sample results reported on a dry weight basis
- RPD Relative Percent Difference

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

Page 10 of 10

Data File : C:\HPCHEM\4\DATA.SEC\E23059.D

Vial: 27

Acq On : 23 May 2002 9:04 pm

Operator: EDL

Sample : b2e0510-01

Inst : GC #1

Misc : 100x ak102/103 s

Multiplr: 1.00

IntFile : SURR.E

Quant Time: May 23 21:25 2002 Quant Results File: 13402@1B.RES

Quant Method : C:\HPCHEM\4\METHODS\13402@1B.M (Chemstation Integrator)

Title : TPH-D Rear Method

Last Update : Fri May 17 14:41:41 2002

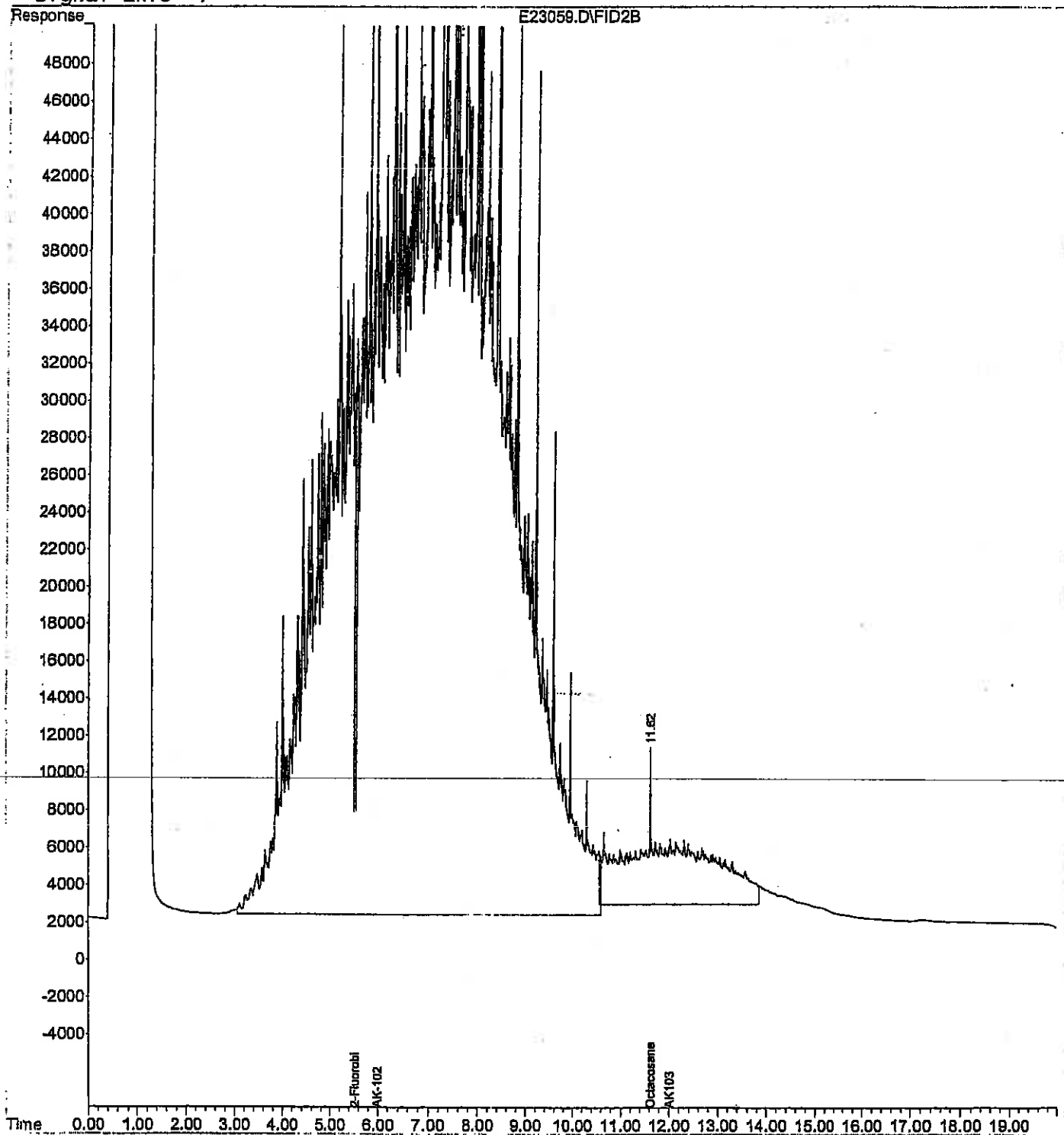
Response via : Multiple Level Calibration

DataAcq Meth : 13402@1A.M

Volume Inj. :

Signal Phase :

Signal Info :



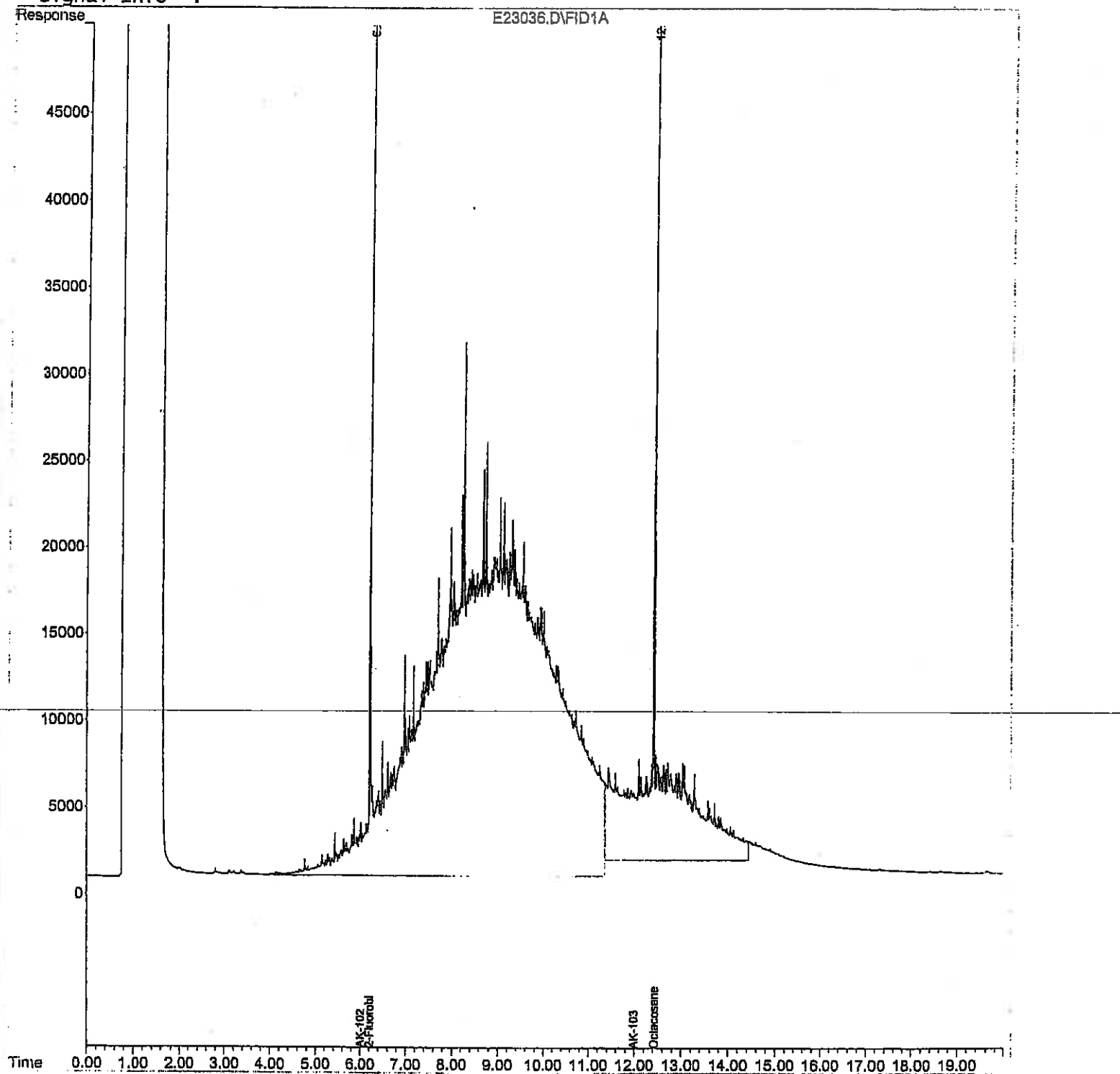
Data File : C:\HPCHEM\4\DATA\E23036.D
Acq On : 23 May 2002 3:05 pm
Sample : b2e0510-02
Misc : 10x ak102/103 s
IntFile : SURR.E
Quant Time: May 23 15:25 2002

Vial: 10
Operator: EDL
Inst : GC #1
Multiplr: 1.00

Quant Results File: 13402@1A.RES

Quant Method : C:\HPCHEM\4\METHODS\13402@1A.M (Chemstation Integrator)
Title : TPH-D Rear Method
Last Update : Fri May 17 14:38:28 2002
Response via : Multiple Level Calibration
DataAcq Meth : 13402@1A.M

Volume Inj. :
Signal Phase :
Signal Info :



Data File : C:\HPCHEM\4\DATA.SEC\E23037.D

Vial: 11

Acq On : 23 May 2002 3:35 pm

Operator: EDL

Sample : b2e0510-03

Inst : GC #1

Misc : 10x ak102/103 s

Multiplr: 1.00

IntFile : SURR.E

Quant Time: May 23 15:55 2002 Quant Results File: 13402@1B.RES

Quant Method : C:\HPCHEM\4\METHODS\13402@1B.M (Chemstation Integrator)

Title : TPH-D Rear Method

Last Update : Fri May 17 14:41:41 2002

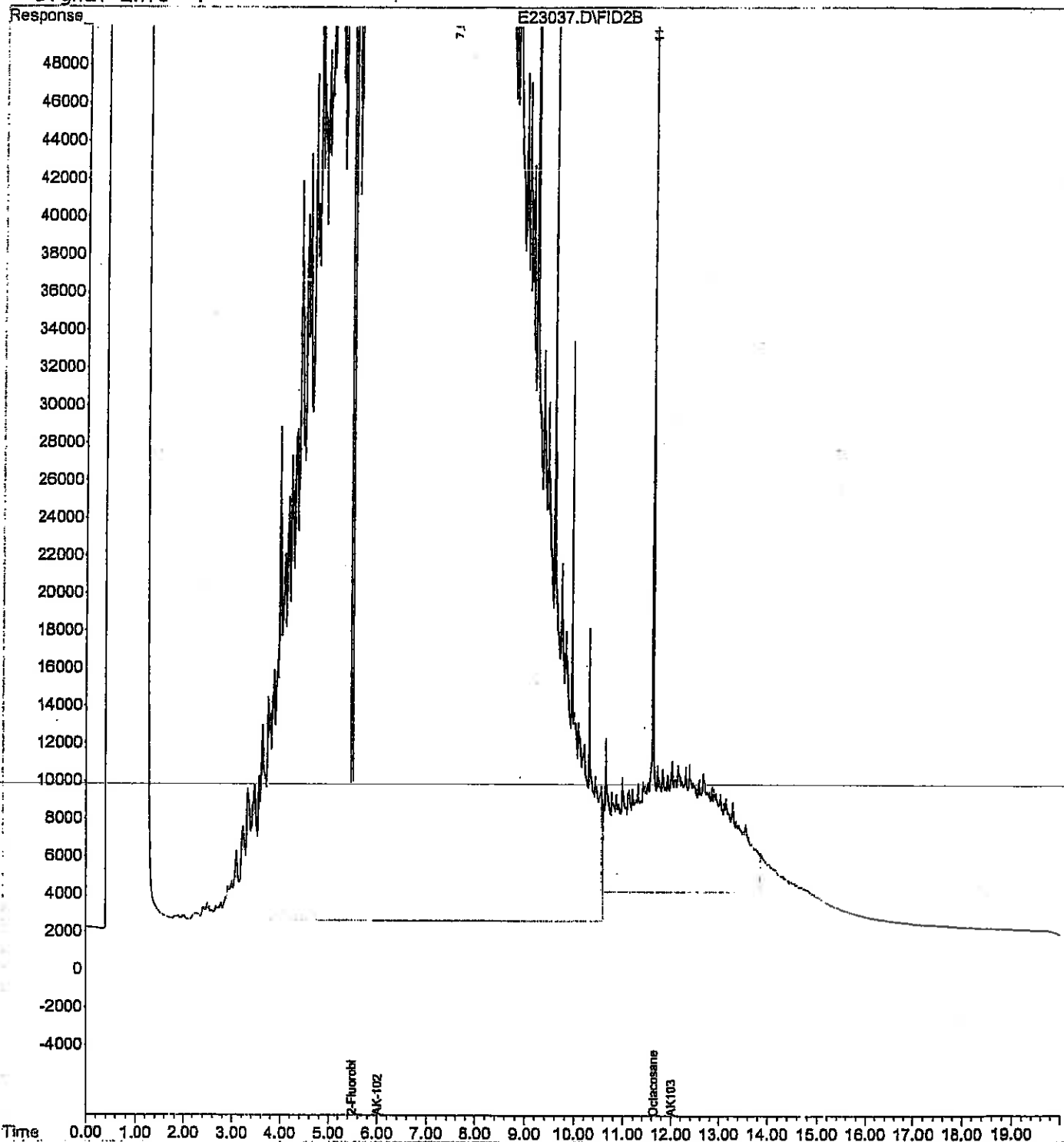
Response via : Multiple Level Calibration

DataAcq Meth : 13402@1A.M

Volume Inj. :

Signal Phase :

Signal Info :



Data File : C:\HPCHEM\4\DATA\E23038.D

Vial: 12

Acq On : 23 May 2002 3:35 pm

Operator: EDL

Sample : b2e0510-04

Inst : GC #1

Misc : 10x ak102/103 s

Multiplr: 1.00

IntFile : SURR.E

Quant Time: May 23 15:57 2002 Quant Results File: 13402@1A.RES

Quant Method : C:\HPCHEM\4\METHODS\13402@1A.M (Chemstation Integrator)

Title : TPH-D Rear Method

Last Update : Fri May 17 14:38:28 2002

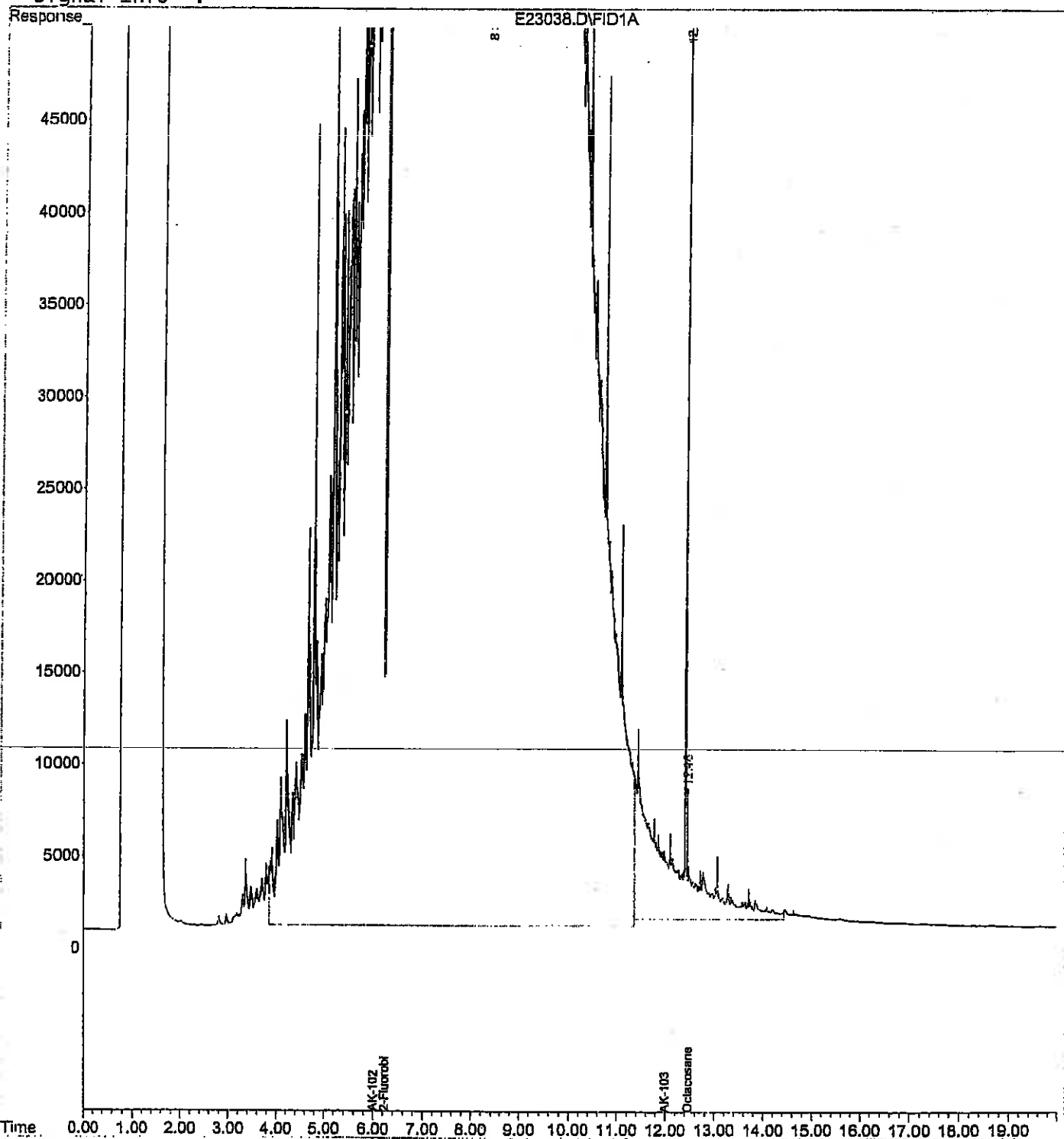
Response via : Multiple Level Calibration

DataAcq Meth : 13402@1A.M

Volume Inj. :

Signal Phase :

Signal Info :



Data File : C:\HPCHEM\4\DATA.SEC\E23039.D

Vial: 13

Acq On : 23 May 2002 4:05 pm

Operator: EDL

Sample : b2e0510-05

Inst : GC #1

Misc : 1x ak102/103 s

Multiplr: 1.00

IntFile : SURR.E

Quant Time: May 23 16:25 2002 Quant Results File: 13402@1B.RES

Quant Method : C:\HPCHEM\4\METHODS\13402@1B.M (Chemstation Integrator)

Title : TPH-D Rear Method

Last Update : Fri May 17 14:41:41 2002

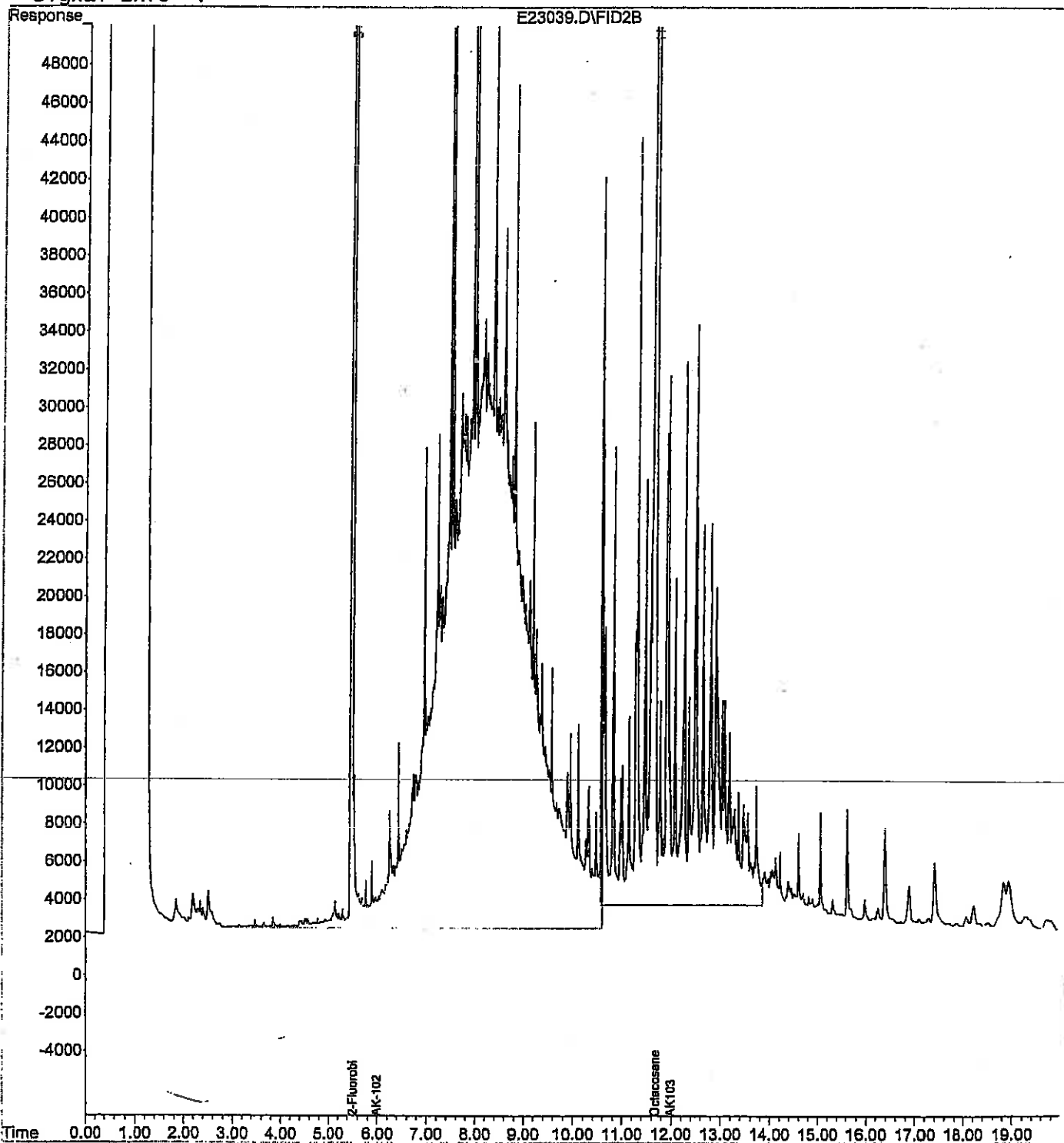
Response via : Multiple Level Calibration

DataAcq Meth : 13402@1A.M

Volume Inj. :

Signal Phase :

Signal Info :



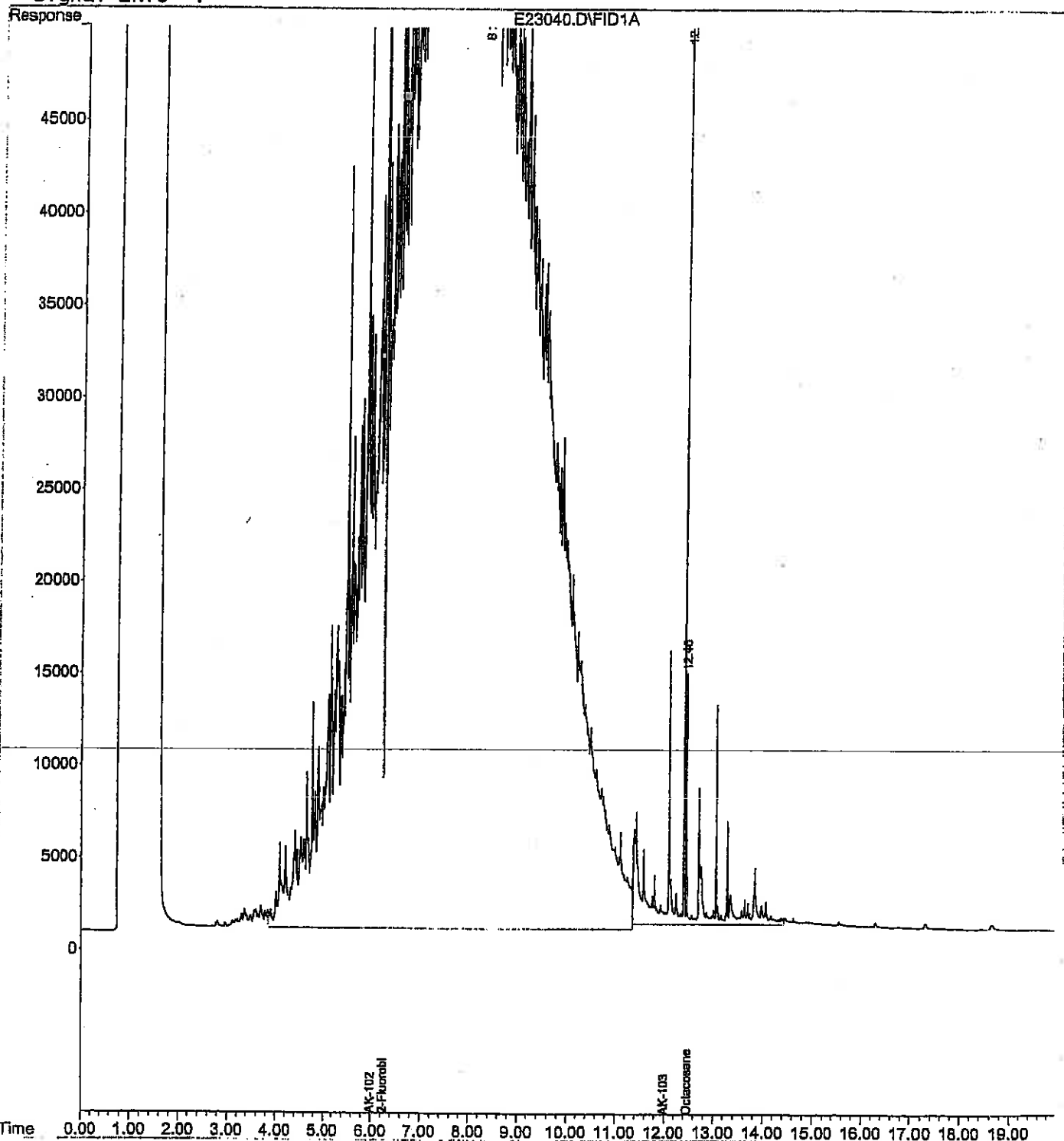
Data File : C:\HPCHEM\4\DATA\E23040.D
 Acq On : 23 May 2002 4:05 pm
 Sample : b2e0510-06
 Misc : 10x ak102/103 s
 IntFile : SURR.E
 Quant Time: May 23 16:25 2002

Vial: 14
 Operator: EDL
 Inst : GC #1
 Multiplr: 1.00

Quant Results File: 13402@1A.RES

Quant Method : C:\HPCHEM\4\METHODS\13402@1A.M (Chemstation Integrator)
 Title : TPH-D Rear Method
 Last Update : Fri May 17 14:38:28 2002
 Response via : Multiple Level Calibration
 DataAcq Meth : 13402@1A.M

Volume Inj. :
 Signal Phase :
 Signal Info :



Data File : C:\HPCHEM\4\DATA.SEC\E23041.D

Acq On : 23 May 2002 4:35 pm

Sample : b2e0510-07

Misc : 10x ak102/103 s

IntFile : SURR.E

Quant Time: May 23 16:55 2002 Quant Results File: 13402@1B.RES

Vial: 15

Operator: EDL

Inst : GC #1

Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\13402@1B.M (Chemstation Integrator)

Title : TPH-D Rear Method

Last Update : Fri May 17 14:41:41 2002

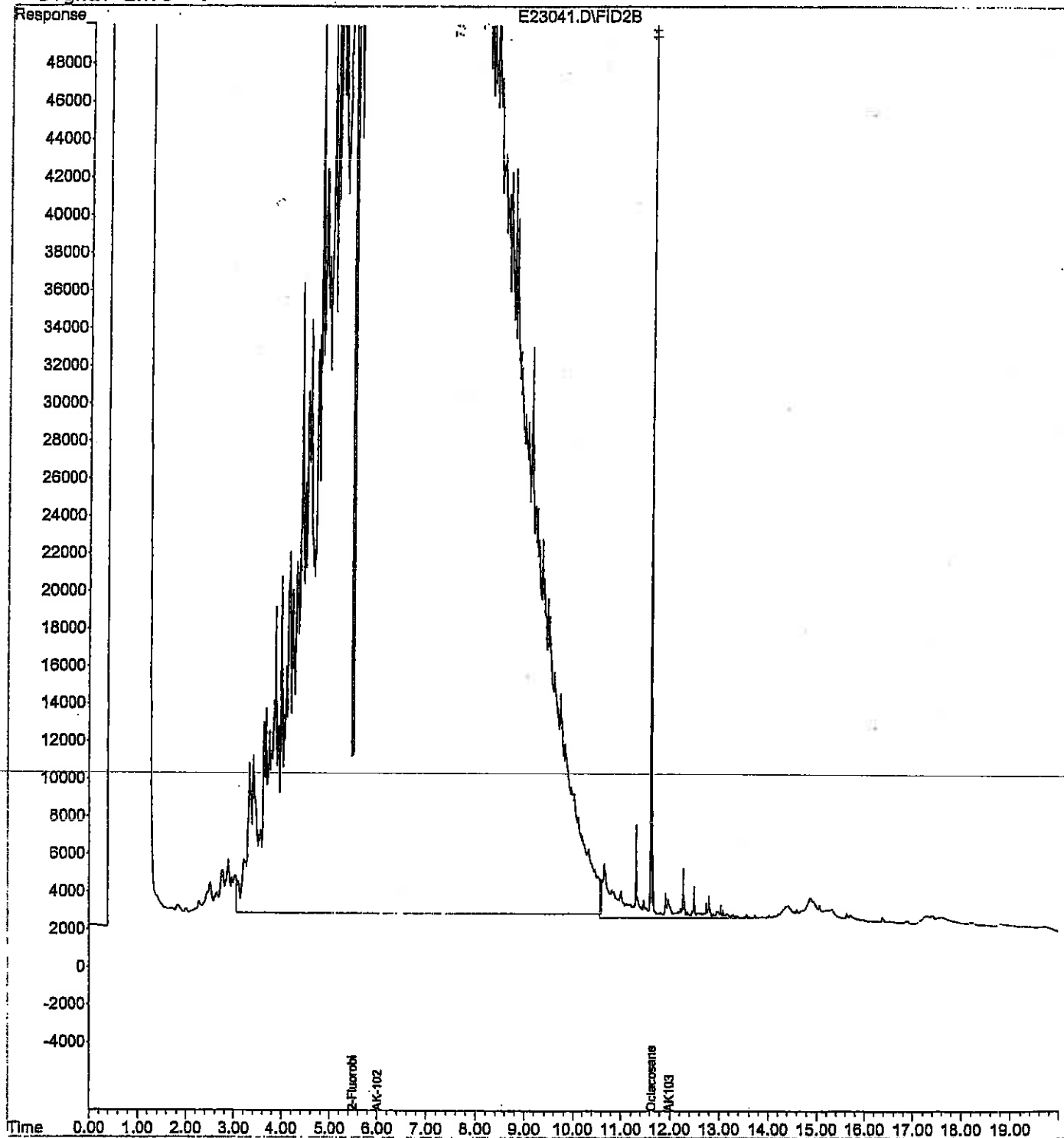
Response via : Multiple Level Calibration

DataAcq Meth : 13402@1A.M

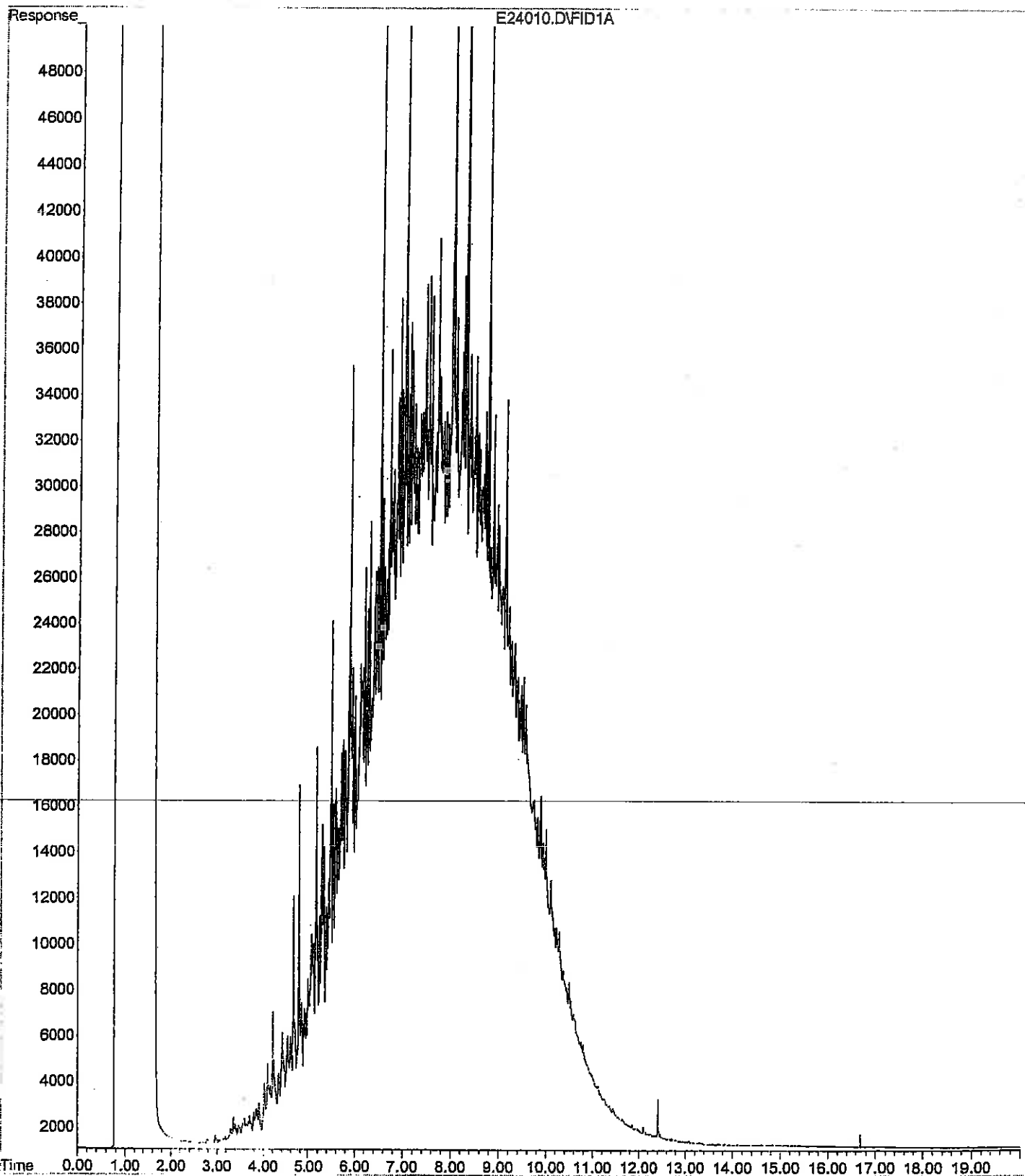
Volume Inj. :

Signal Phase :

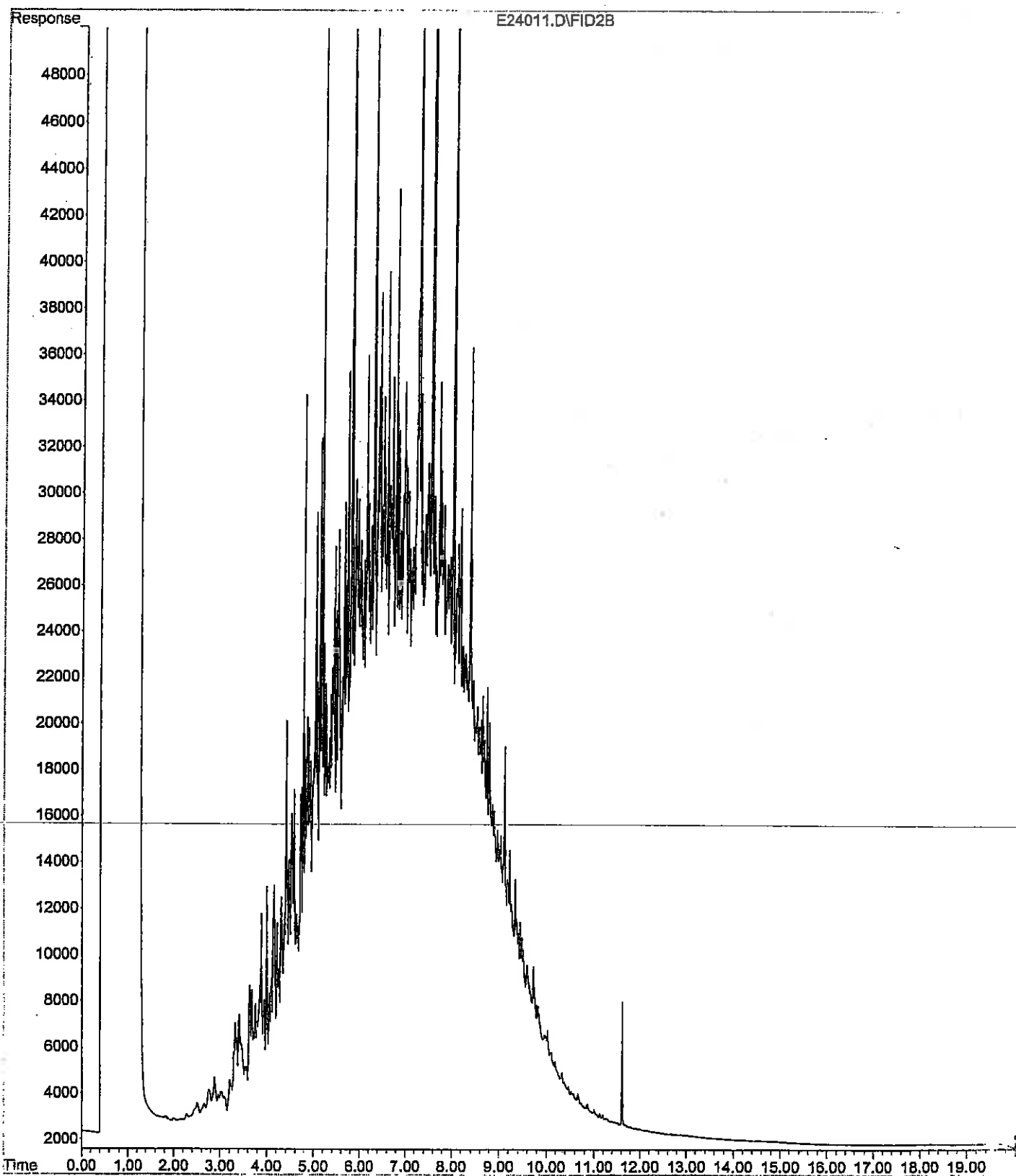
Signal Info :



File : C:\HPCHEM\4\DATA\E24010.D
Operator : EDL
Acquired : 24 May 2002 9:25 am using AcqMethod 13402@1A.M
Instrument : GC #1
Sample Name: b2e0510-08
Misc Info : 200x ak102-103
Vial Number: 4



File : C:\HPCHEM\4\DATA.SEC\E24011.D
Operator : EDL
Acquired : 24 May 2002 9:55 am using AcqMethod 13402@1A.M
Instrument : GC #1
Sample Name: b2e0510-09
Misc Info : 100x ak102-103
Vial Number: 5



Data File : C:\HPCHEM\4\DATA\E23044.D

Vial: 18

Acq On : 23 May 2002 5:05 pm

Operator: EDL

Sample : b2e0510-10

Inst : GC #1

Misc : 40x ak102/103 s

Multiplr: 1.00

IntFile : SURR.E

Quant Time: May 23 17:25 2002 Quant Results File: 13402@1A.RES

Quant Method : C:\HPCHEM\4\METHODS\13402@1A.M (Chemstation Integrator)

Title : TPH-D Rear Method

Last Update : Fri May 17 14:38:28 2002

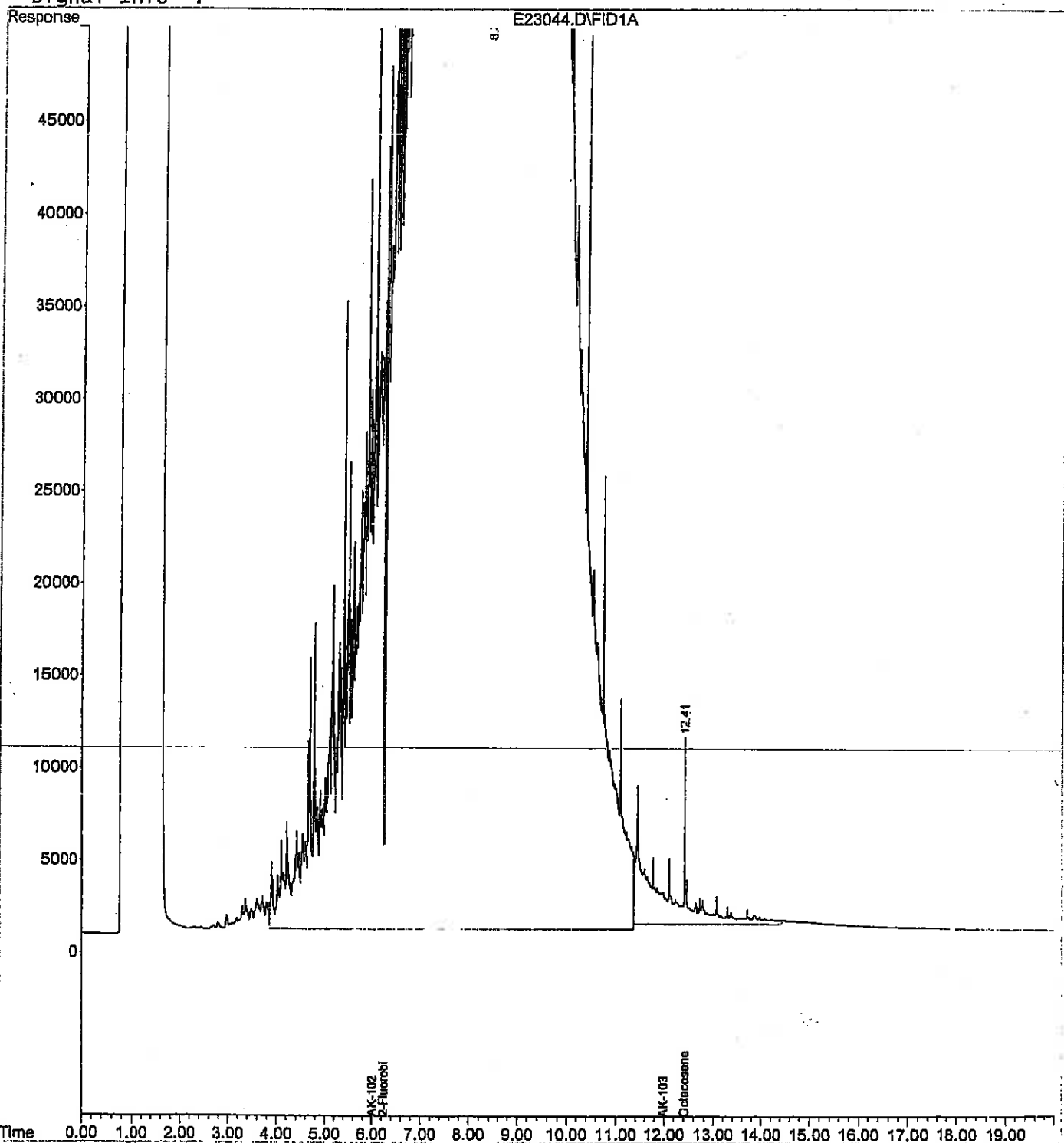
Response via : Multiple Level Calibration

DataAcq Meth : 13402@1A.M

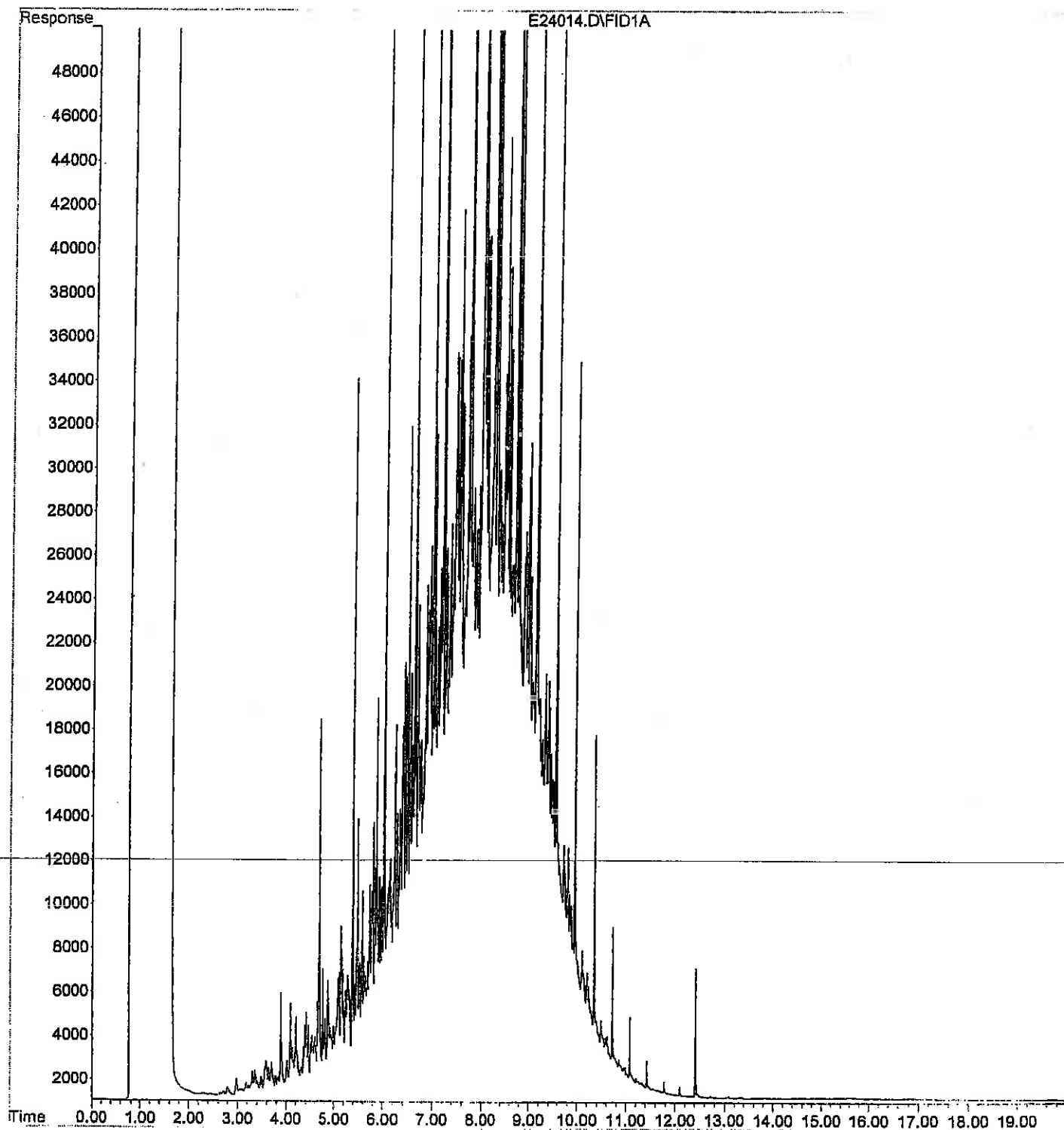
Volume Inj. :

Signal Phase :

Signal Info :



File : C:\HPCHEM\4\DATA\E24014.D
Operator : EDL
Acquired : 24 May 2002 10:32 am using AcqMethod 13402@1A.M
Instrument : GC #1
Sample Name: b2e0510-11
Misc Info : 100x ak102-103 re2
Vial Number: 8



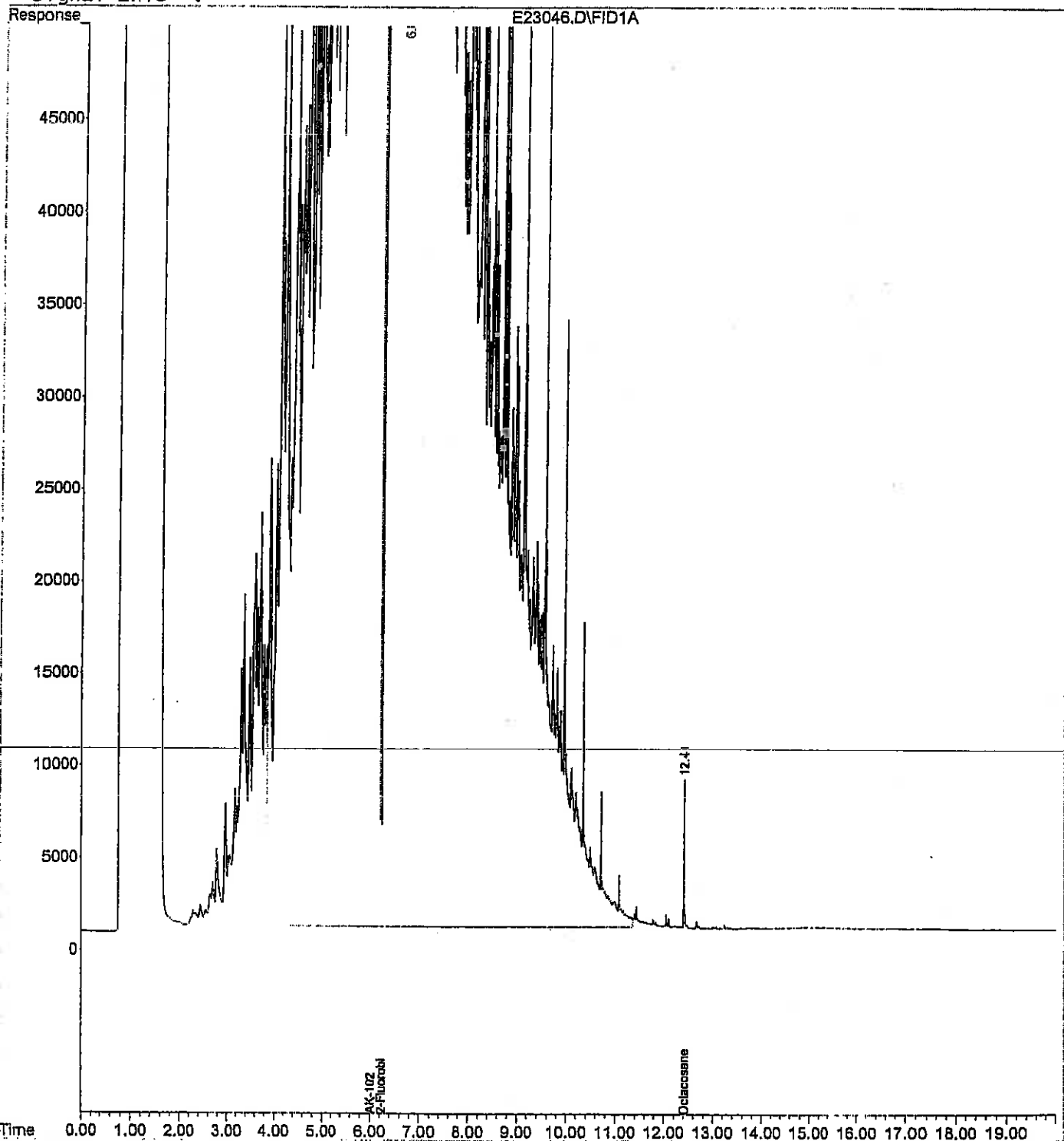
Data File : C:\HPCHEM\4\DATA\E23046.D
 Acq On : 23 May 2002 5:35 pm
 Sample : b2e0510-12
 Misc : 40x ak102/103 s
 IntFile : SURR.E
 Quant Time: May 23 17:55 2002

Vial: 20
 Operator: EDL
 Inst : GC #1
 Multiplr: 1.00

Quant Results File: 13402@1A.RES

Quant Method : C:\HPCHEM\4\METHODS\13402@1A.M (Chemstation Integrator)
 Title : TPH-D Rear Method
 Last Update : Fri May 17 14:38:28 2002
 Response via : Multiple Level Calibration
 DataAcq Meth : 13402@1A.M

Volume Inj. :
 Signal Phase :
 Signal Info :



AK-102
2-Fluorob

Decalocane

Time 0.00 1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00

Data File : C:\HPCHEM\4\DATA.SEC\E23047.D

Vial: 21

Acq On : 23 May 2002 6:05 pm

Operator: EDL

Sample : b2e0510-13

Inst : GC #1

Misc : 10x ak102/103 s

Multiplr: 1.00

IntFile : SURR.E

Quant Time: May 23 18:25 2002 Quant Results File: 13402@1B.RES

Quant Method : C:\HPCHEM\4\METHODS\13402@1B.M (Chemstation Integrator)

Title : TPH-D Rear Method

Last Update : Fri May 17 14:41:41 2002

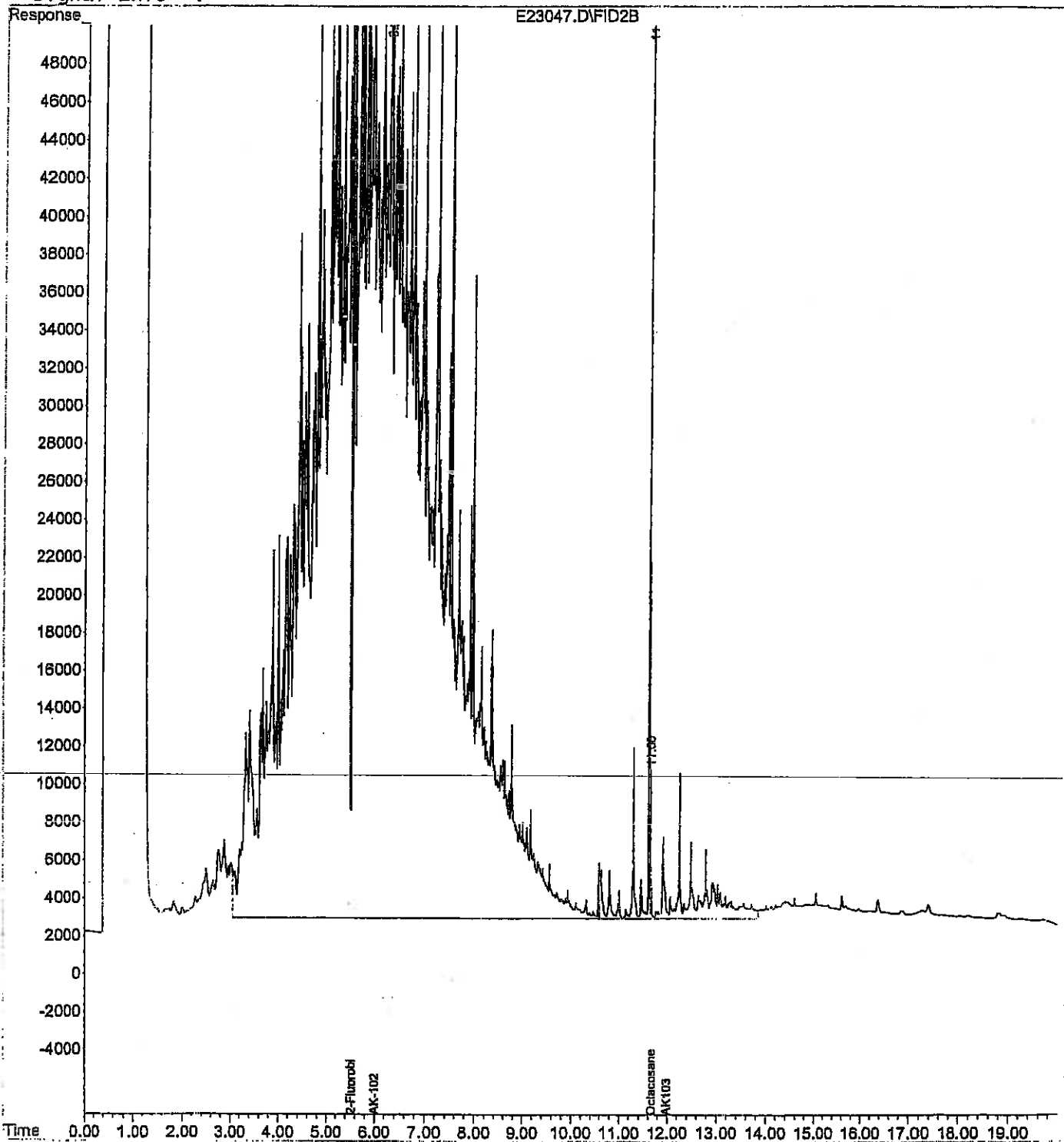
Response via : Multiple Level Calibration

DataAcq Meth : 13402@1A.M

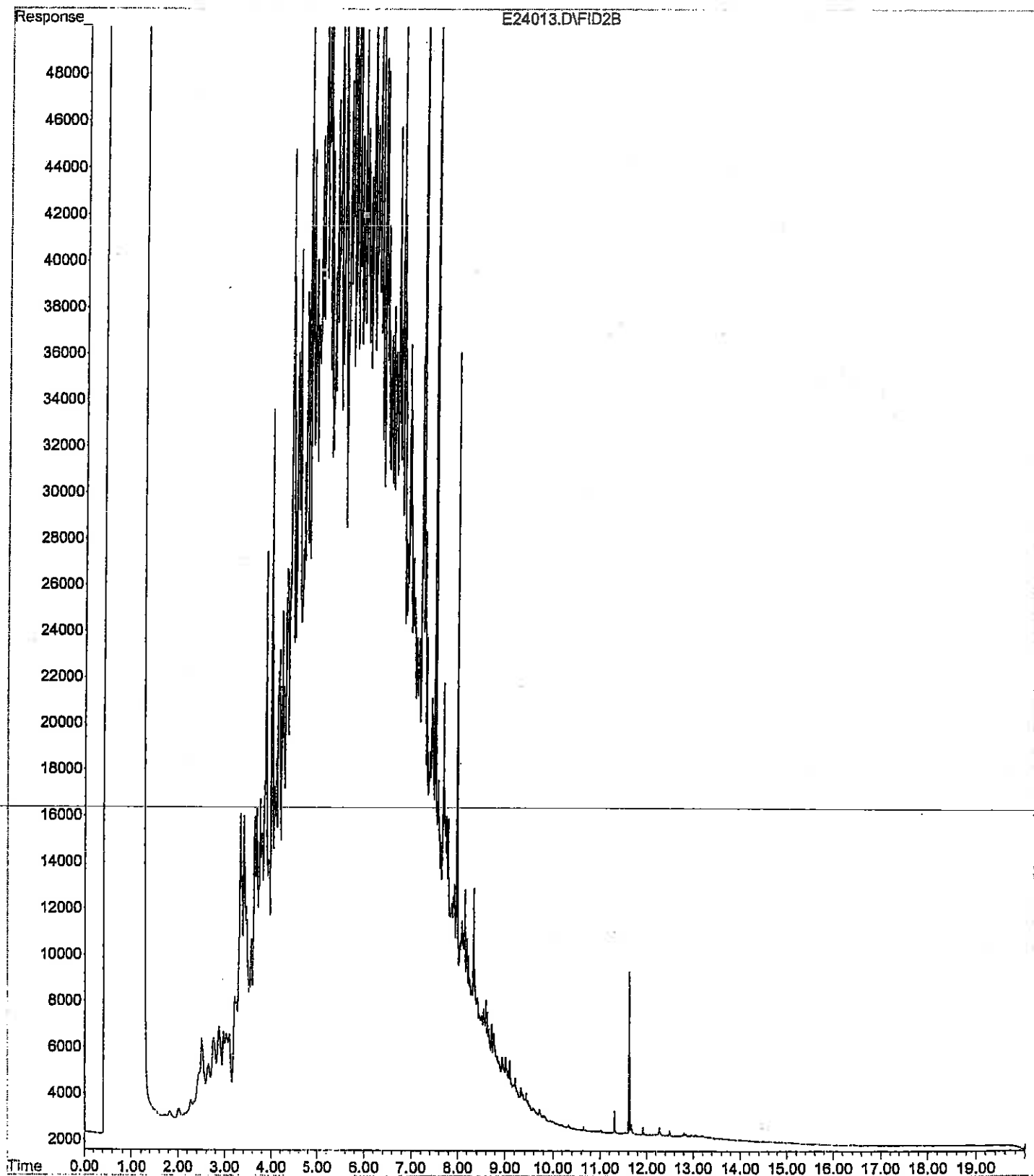
Volume Inj. :

Signal Phase :

Signal Info :



File : C:\HPCHEM\4\DATA.SEC\E24013.D
Operator : EDL
Acquired : 24 May 2002 10:32 am using AcqMethod 13402@1A.M
Instrument : GC #1
Sample Name: b2e0510-14
Misc Info : 100x ak102-103
Vial Number: 7



Data File : C:\HPCHEM\4\DATA.SEC\E23049.D

Vial: 23

Acq On : 23 May 2002 6:35 pm

Operator: EDL

Sample : b2e0510-15

Inst : GC #1

Misc : 10x ak102/103 s

Multiplr: 1.00

IntFile : SURR.E

Quant Time: May 23 18:55 2002 Quant Results File: 13402@1B.RES

Quant Method : C:\HPCHEM\4\METHODS\13402@1B.M (Chemstation Integrator)

Title : TPH-D Rear Method

Last Update : Fri May 17 14:41:41 2002

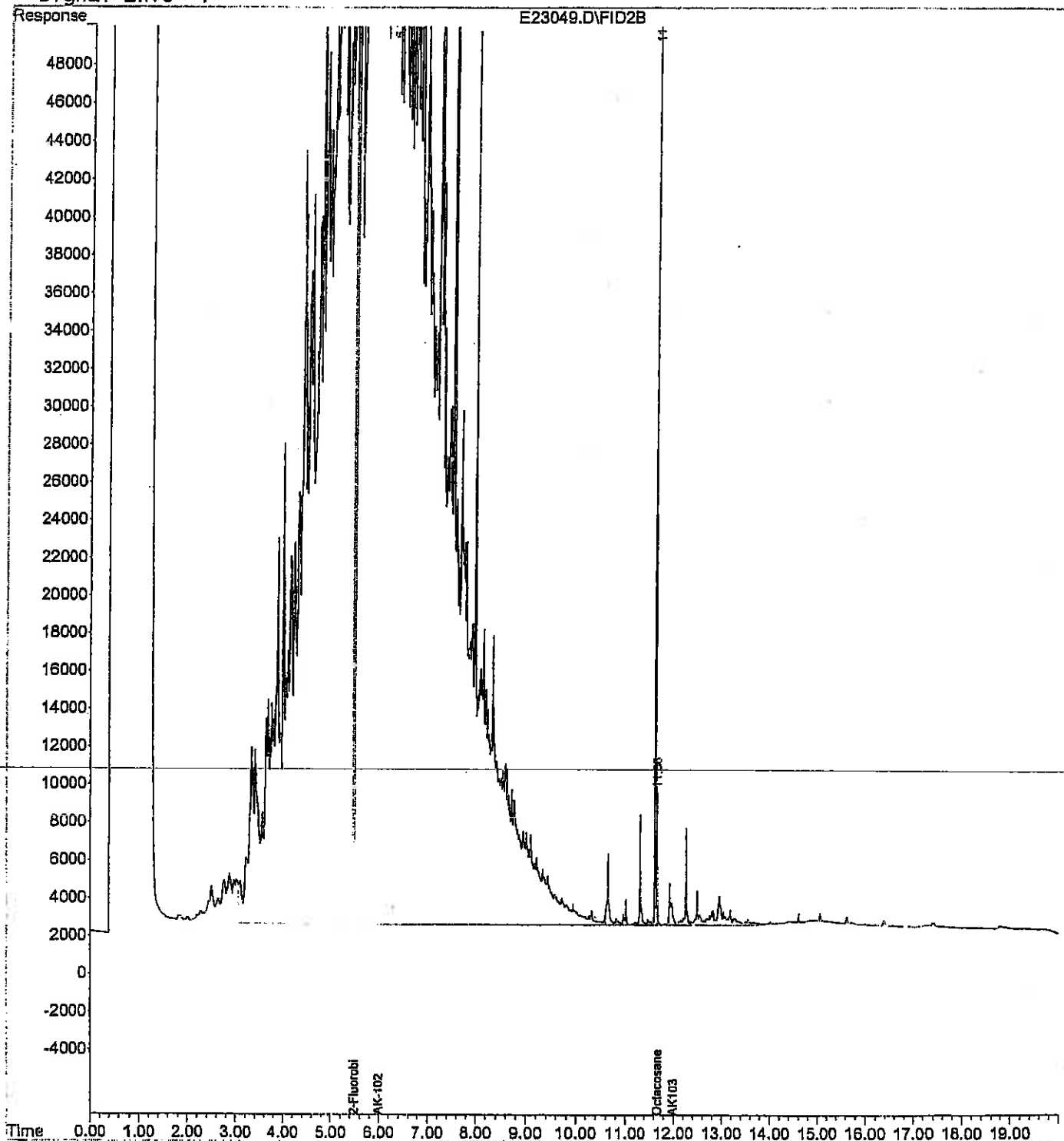
Response via : Multiple Level Calibration

DataAcq Meth : 13402@1A.M

Volume Inj. :

Signal Phase :

Signal Info :



Data File : C:\HPCHEM\4\DATA\E23056.D

Vial: 24

Acq On : 23 May 2002 8:04 pm

Operator: EDL

Sample : b2e0510-16

Inst : GC #1

Misc : 10x ak102/103 s

Multiplr: 1.00

IntFile : SURR.E

Quant Time: May 23 20:24 2002 Quant Results File: 13402@1A.RES

Quant Method : C:\HPCHEM\4\METHODS\13402@1A.M (Chemstation Integrator)

Title : TPH-D Rear Method

Last Update : Fri May 17 14:38:28 2002

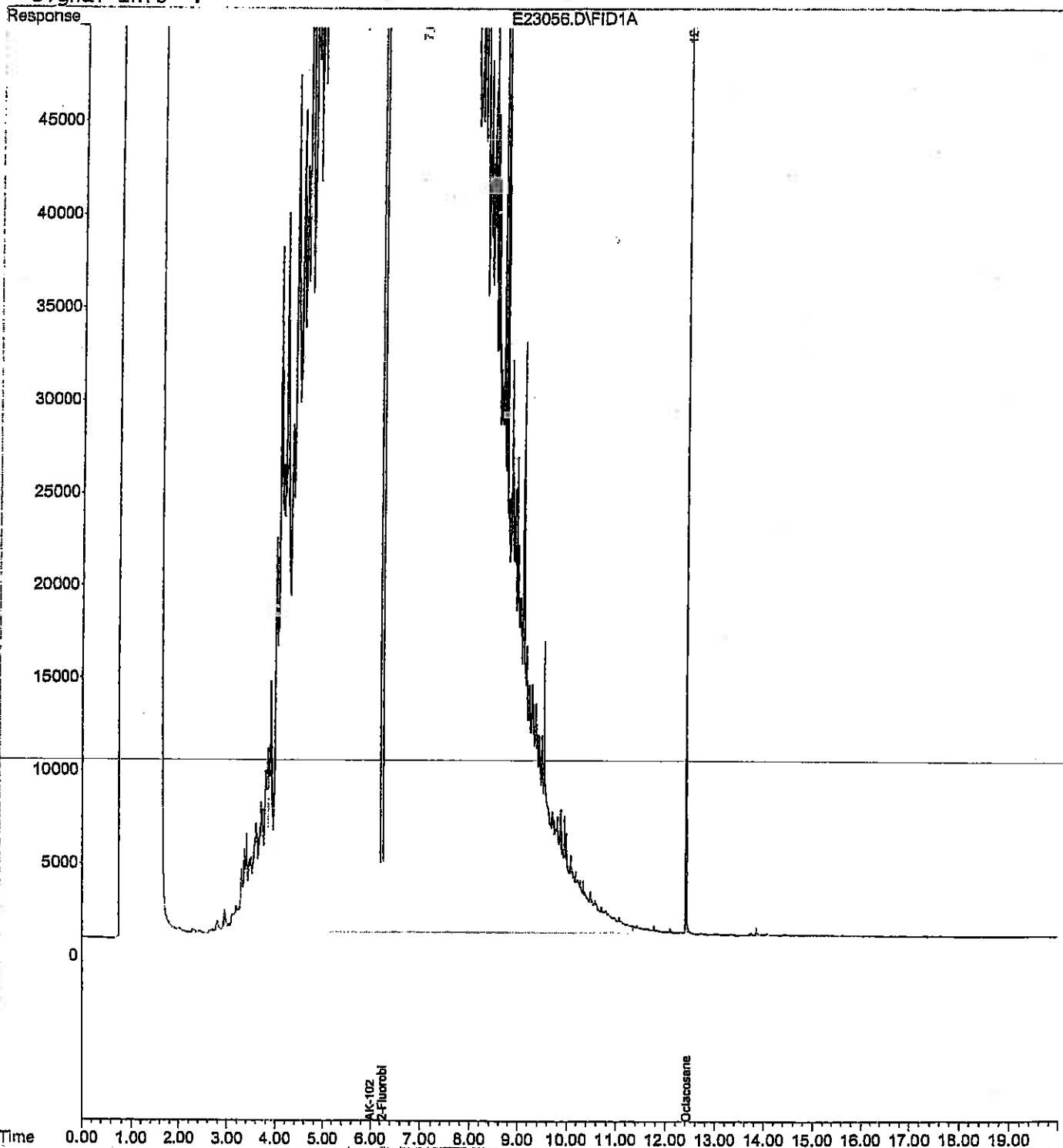
Response via : Multiple Level Calibration

DataAcq Meth : 13402@1A.M

Volume Inj. :

Signal Phase :

Signal Info :



Data File : C:\HPCHEM\4\DATA.SEC\E23057.D

Vial: 25

Acq On : 23 May 2002 8:34 pm

Operator: EDL

Sample : b2e0510-17

Inst : GC #1

Misc : 1x ak102/103 s

Multiplr: 1.00

IntFile : SURR.E

Quant Time: May 23 20:54 2002 Quant Results File: 13402@1B.RES

Quant Method : C:\HPCHEM\4\METHODS\13402@1B.M (Chemstation Integrator)

Title : TPH-D Rear Method

Last Update : Fri May 17 14:41:41 2002

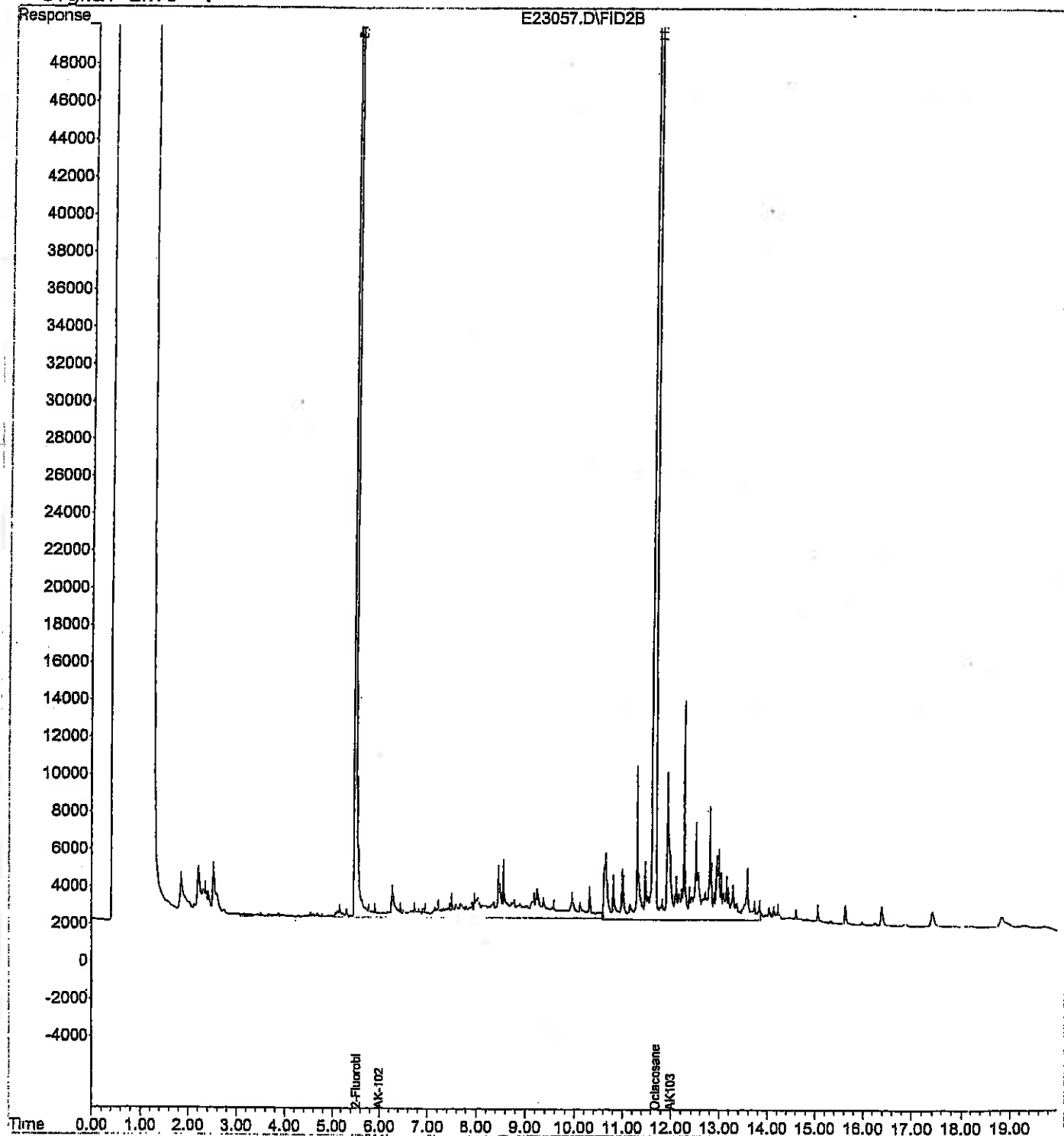
Response via : Multiple Level Calibration

DataAcq Meth : 13402@1A.M

Volume Inj. :

Signal Phase :

Signal Info :



Data File : C:\HPCHEM\4\DATA\E23058.D

Vial: 26

Acq On : 23 May 2002 8:34 pm

Operator: EDL

Sample : b2e0510-18

Inst : GC #1

Misc : 40x ak102/103 s

Multiplr: 1.00

IntFile : SURR.E

Quant Time: May 23 20:54 2002 Quant Results File: 13402@1A.RES

Quant Method : C:\HPCHEM\4\METHODS\13402@1A.M (Chemstation Integrator)

Title : TPH-D Rear Method

Last Update : Fri May 17 14:38:28 2002

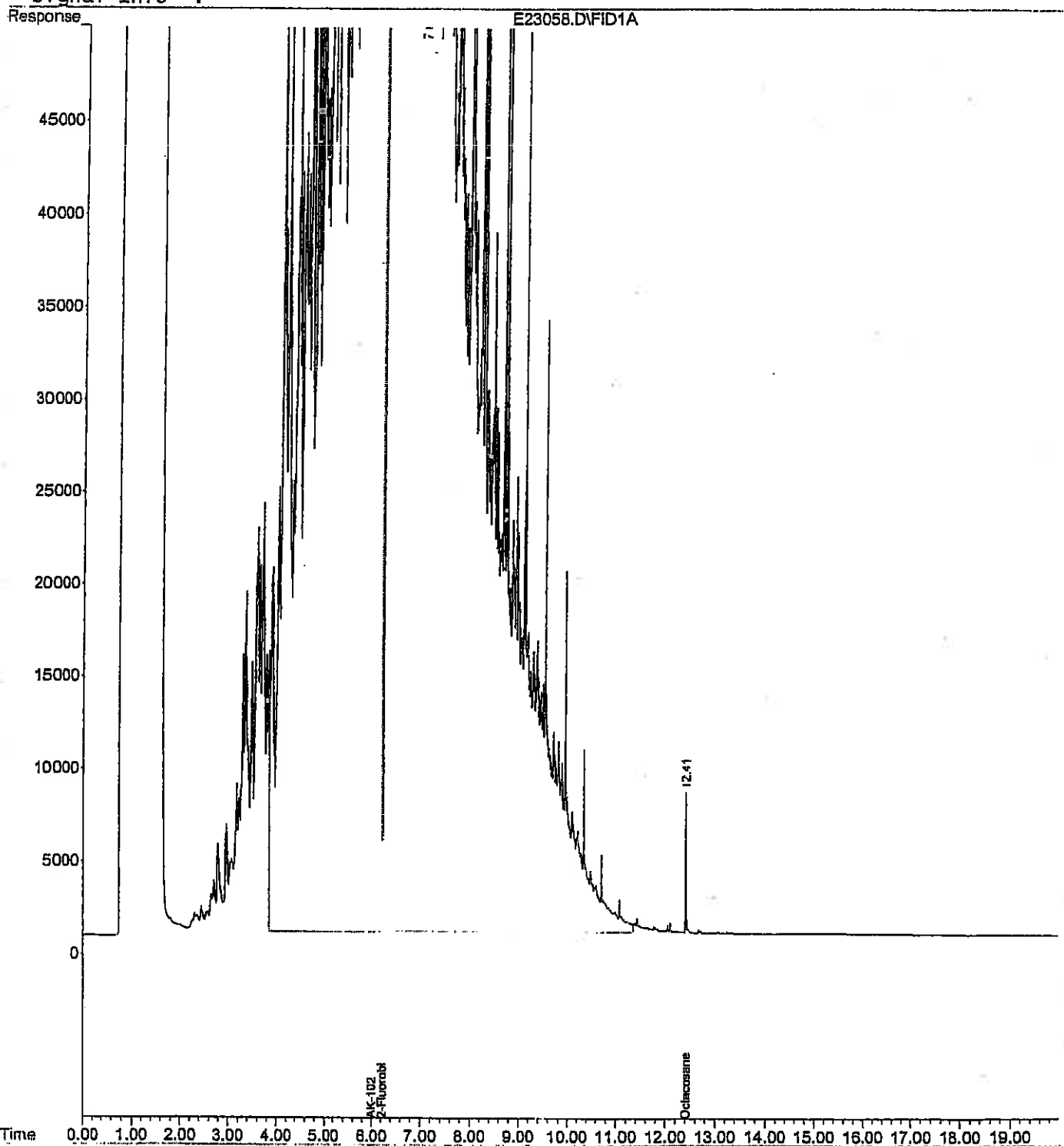
Response via : Multiple Level Calibration

DataAcq Meth : 13402@1A.M

Volume Inj. :

Signal Phase :

Signal Info :



CHAIN OF CUSTODY REPORT

Work Order #: **B2ED510**

CLIENT: Geo Engineers REPORT TO: Deanne Raiha ADDRESS: 4951 Eagle St Anchorage, AK 99507 PHONE: (907) 561-3478 FAX: 561-5123		INVOICE TO: Geo Engineers 4951 Eagle St Anchorage, AK 99507 P.O. NUMBER:		TURNAROUND REQUEST in Business Days* Organic & Inorganic Analyses <input checked="" type="checkbox"/> 10 <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. Petroleum Hydrocarbon Analyses <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. OTHER: Please Specify _____ <small>*Turnaround Requests less than standard may incur Rush Charges.</small>	
PROJECT NAME: Ocean Beauty-Uganik Bay PROJECT NUMBER: 6765-002-01 SAMPLED BY: DKR		REQUESTED ANALYSES			
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	DRD/RRO AK102/103			
1. HA-2(1.0)	5/17/02 - 0850	X			
2. HA-2(1.5)	5/18/02 - 0900	X			
3. HA-2(4.0)	5/18/02 - 0910	X			
4. HA-3(2.5)	5/18/02 - 1030	X			
5. HA-4(0.5)	5/19/02 - 1135	X			
6. HA-5(0.5)	5/18/02 - 1210	X			
7. HA-5(1.5)	5/18/02 - 1230	X			
8. HA-6(1.5)	5/18/02 - 1255	X			
9. HA-6(3.0)	5/18/02 - 1300	X			
10. HA-7(0.5)	5/19/02 - 1320	X			
11. HA-7(3.0)	5/18/02 - 1330	X			
12. HA-8(1.0)	5/18/02 - 1420	X			
13. HA-8(2.0)	5/18/02 - 1430	X			
14. HA-9(1.0)	5/18/02 - 1530	X			
15. HA-9(2.0)	5/18/02 - 1535	X			
RELINQUISHED BY: Deanne Raiha PRINT NAME: Deanne Raiha FIRM: GEI		DATE: 5/19/02 TIME: 1400		RECEIVED BY: <i>Karla Kalle</i> PRINT NAME: Karla Kalle FIRM: NCA	
RELINQUISHED BY: PRINT NAME: FIRM:		DATE: TIME:		DATE: 5/20/02 TIME: 0845	
ADDITIONAL REMARKS:		Samples were not @2-6C Upon Receipt			



(475) 470-9200 FAX 420-0210
(509) 924-9200 FAX 924-9290
(503) 906-9200 FAX 906-9210
(541) 383-9310 FAX 382-7588

X

Work Order #:

CLIENT:		INVOICE TO:		TURNAROUND REQUEST in Business Days*							
REPORT TO:		P.O. NUMBER:		Organic & Inorganic Analyses							
ADDRESS: SEE Pg 1				<input checked="" type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1							
PHONE:				STD. Petroleum Hydrocarbon Analyses							
FAX:				<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1							
PROJECT NAME:		REQUESTED ANALYSES		STD. OTHER Please Specify							
PROJECT NUMBER:				*Turnaround Requests less than standard may incur Rush Charges.							
SAMPLED BY:											
CLIENT SAMPLE IDENTIFICATION		SAMPLING DATE/TIME		MATRIX (W, S, O)		# OF CONT.		COMMENTS		NCA WO ID	
1. HA-10 (1.5)		5/18/02- 1545		S		1		B2ED510		16	
2. HA-11 (1.5)		5/18/02- 1600		↓		↓				17	
3. Duplicate		5/18/02		↓		↓				18	
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											
13.											
14.											
15.											
RELINQUISHED BY: Deanne Raiha		DATE: 5/19/02		RECEIVED BY: Karla K...		DATE: 5/20/02					
PRINT NAME: Deanne Raiha		TIME: 1400		PRINT NAME: Karla K...		TIME: 1845					
RELINQUISHED BY:		DATE:		RECEIVED BY:		DATE:					
PRINT NAME:		TIME:		PRINT NAME:		TIME:					
FIRM: GEC				FIRM: NCA							
FIRM:				FIRM:							
ADDITIONAL REMARKS:											
COC REV 3/99				Samples were not @2-6C Upon Receipt		Wln		TEMP: 12.9		2 or 2	

Geo Engineers - Alaska
951 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
06/03/02 11:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
P-1	B2E0512-01	Water	05/18/02 18:10	05/20/02 08:45
P-2	B2E0512-02	Water	05/18/02 19:00	05/20/02 08:45
Duplicate	B2E0512-03	Water	05/18/02 12:00	05/20/02 08:45
Tip Blank	B2E0512-04	Water	05/18/02 12:00	05/20/02 08:45

GeoEngineers
ANCHORAGE

JUN 7 2002

Routing... ☒ ☒ ☒ ☐ ☐ ☐
File... 4765-002-01

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jeff Gerdes

Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

Page 1 of 18

Geo Engineers - Alaska
51 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
06/03/02 11:34

Gasoline Hydrocarbons (n-Hexane to <n-Decane) and BTEX by AK101
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GP-1 (B2E0512-01) Water Sampled: 05/18/02 18:10 Received: 05/20/02 08:45									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	2E24006	05/24/02	05/24/02	AK 101	
Benzene	ND	0.200	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	100 %	60-120			"	"	"	"	
Surrogate: 4-BFB (PID)	97.7 %	60-120			"	"	"	"	
GP-2 (B2E0512-02) Water Sampled: 05/18/02 19:00 Received: 05/20/02 08:45									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	2E24006	05/24/02	05/24/02	AK 101	
Benzene	ND	0.200	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	101 %	60-120			"	"	"	"	
Surrogate: 4-BFB (PID)	97.7 %	60-120			"	"	"	"	
Duplicate (B2E0512-03) Water Sampled: 05/18/02 12:00 Received: 05/20/02 08:45									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	2E24006	05/24/02	05/24/02	AK 101	
Benzene	ND	0.200	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	102 %	60-120			"	"	"	"	
Surrogate: 4-BFB (PID)	97.9 %	60-120			"	"	"	"	

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

Page 2 of 18

Geo Engineers - Alaska

51 Eagle St

Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay

Project Number: 6765-002-01

Project Manager: Deanne Raiha

Reported:

06/03/02 11:34

Gasoline Hydrocarbons (n-Hexane to <n-Decane) and BTEX by AK101

North Creek Analytical - Bothell

Sample	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trip Blank (B2E0512-04) Water Sampled: 05/18/02 12:00 Received: 05/20/02 08:45									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	2E24006	05/24/02	05/24/02	AK 101	
Benzene	ND	0.200	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	99.8 %	60-120			"	"	"	"	
Surrogate: 4-BFB (PID)	97.3 %	60-120			"	"	"	"	

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Geo Engineers - Alaska
51 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
06/03/02 11:34

Diesel Hydrocarbons (C10-C25) and Heavy Oil (C25-C36) by AK102 and AK103
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GP-2 (B2E0512-02) Water Sampled: 05/18/02 19:00 Received: 05/20/02 08:45									
Diesel Range Hydrocarbons	0.238	0.100	mg/l	1	2E23013	05/23/02	05/24/02	AK102/103	D-06
Residual Range Organics	ND	0.750	"	"	"	"	"	"	
Surrogate: 2-FBP	83.9 %	50-150			"	"	"	"	
Surrogate: Octacosane	85.2 %	50-150			"	"	"	"	

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Geo Engineers - Alaska
 951 Eagle St
 Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
 Project Number: 6765-002-01
 Project Manager: Deanne Raiha

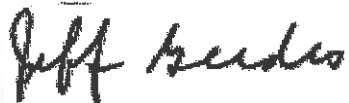
Reported:
 06/03/02 11:34

Dissolved Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

alyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GP-2 (B2E0512-02) Water Sampled: 05/18/02 19:00 Received: 05/20/02 08:45									
Copper	0.00174	0.00100	mg/l	1	2E24053	05/24/02	05/29/02	EPA 6020	
Chromium	0.00104	0.00100	"	"	"	"	"	"	
Barium	0.0394	0.0100	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Mercury	ND	0.00100	"	"	2E28039	05/28/02	05/29/02	EPA 7470A	
Lead	0.00202	0.00100	"	"	2E24053	05/24/02	05/30/02	EPA 6020	
Chromium	ND	0.00100	"	"	"	"	05/29/02	"	

North Creek Analytical - Bothell

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30 Engineers - Alaska
151 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
06/03/02 11:34

Volatile Organic Compounds by EPA Method 8260B
North Creek Analytical - Bothell

Sample	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GP-1 (B2E0512-01) Water Sampled: 05/18/02 18:10 Received: 05/20/02 08:45									
Bromodichloromethane	ND	1.00	ug/l	1	2E21018	05/21/02	05/21/02	EPA 8260B	
Bromoform	ND	1.00	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
Dibromochloromethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
N-hylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %	73-137			"	"	"	"	
Surrogate: Toluene-d8	93.0 %	75-124			"	"	"	"	
Surrogate: 4-BFB	102 %	77-120			"	"	"	"	

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Geo Engineers - Alaska

951 Eagle St

Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay

Project Number: 6765-002-01

Project Manager: Deanne Raiha

Reported:

06/03/02 11:34

Volatile Organic Compounds by EPA Method 8260B

North Creek Analytical - Bothell

analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GP-2 (B2E0512-02) Water Sampled: 05/18/02 19:00 Received: 05/20/02 08:45									
monochloromethane	ND	1.00	ug/l	1	2E30009	05/29/02	05/29/02	EPA 8260B	
monomethane	ND	1.00	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	
chloromethane	ND	5.00	"	"	"	"	"	"	
monochloromethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
-Dichloroethane	ND	1.00	"	"	"	"	"	"	
-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
ns-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
-Dichloropropane	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
ethylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
chlorofluoromethane	ND	1.00	"	"	"	"	"	"	
yl chloride	ND	1.00	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	98.5 %	73-137			"	"	"	"	
rogate: Toluene-d8	106 %	75-124			"	"	"	"	
rogate: 4-BFB	98.5 %	77-120			"	"	"	"	

North Creek Analytical - Bothell

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30 Engineers - Alaska
51 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
06/03/02 11:34

Gasoline Hydrocarbons (n-Hexane to <n-Decane) and BTEX by AK101 - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2E24006: Prepared 05/24/02 Using EPA 5030B (P/T)

Blank (2E24006-BLK1)

Gasoline Range Hydrocarbons	ND	50.0	ug/l							
Benzene	ND	0.200	"							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Surrogate: 4-BFB (FID)	43.3		"	48.0		90.2	60-120			
Surrogate: 4-BFB (PID)	42.7		"	48.0		89.0	60-120			

LCS (2E24006-BS1)

Gasoline Range Hydrocarbons	504	50.0	ug/l	500		101	60-120			
Benzene	6.03	0.200	"	6.19		97.4	60-120			
Toluene	32.6	0.500	"	37.6		86.7	60-120			
Ethylbenzene	8.77	0.500	"	8.83		99.3	60-120			
Xylenes (total)	41.5	1.00	"	44.5		93.3	60-120			
Surrogate: 4-BFB (FID)	54.1		"	48.0		113	60-120			
Surrogate: 4-BFB (PID)	45.4		"	48.0		94.6	60-120			

LCS Dup (2E24006-BS1)

Gasoline Range Hydrocarbons	492	50.0	ug/l	500		98.4	60-120	2.41	20	
Benzene	6.11	0.200	"	6.19		98.7	60-120	1.32	20	
Toluene	32.1	0.500	"	37.6		85.4	60-120	1.55	20	
Ethylbenzene	8.77	0.500	"	8.83		99.3	60-120	0.00	20	
Xylenes (total)	41.1	1.00	"	44.5		92.4	60-120	0.969	20	
Surrogate: 4-BFB (FID)	53.3		"	48.0		111	60-120			
Surrogate: 4-BFB (PID)	45.2		"	48.0		94.2	60-120			

Mix Spike (2E24006-MS1)

Source: B2E0445-01

Gasoline Range Hydrocarbons	458	50.0	ug/l	500	ND	89.4	60-120			
Benzene	6.03	0.200	"	6.19	ND	97.4	60-120			
Toluene	32.4	0.500	"	37.6	ND	86.2	60-120			
Ethylbenzene	8.70	0.500	"	8.83	ND	98.5	60-120			
Xylenes (total)	41.3	1.00	"	44.5	ND	92.8	60-120			
Surrogate: 4-BFB (FID)	53.0		"	48.0		110	60-120			
Surrogate: 4-BFB (PID)	46.4		"	48.0		96.7	60-120			

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51 Eagle St

Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay

Project Number: 6765-002-01

Project Manager: Deanne Raiha

Reported:

06/03/02 11:34

Gasoline Hydrocarbons (n-Hexane to <n-Decane) and BTEX by AK101 - Quality Control
North Creek Analytical - Bothell

alyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 2E24006: Prepared 05/24/02 Using EPA 5030B (P/T)									
Matrix Spike Dup (2E24006-MSD1)					Source: B2E0445-01				
oline Range Hydrocarbons	445	50.0	ug/l	500	ND	86.8	60-120	2.88	20
Benzene	6.22	0.200	"	6.19	ND	100	60-120	3.10	20
ylene	33.3	0.500	"	37.6	ND	88.6	60-120	2.74	20
lbenzene	8.79	0.500	"	8.83	ND	99.5	60-120	1.03	20
Xylenes (total)	41.8	1.00	"	44.5	ND	93.9	60-120	1.20	20
rogate: 4-BFB (FID)	49.8		"	48.0		104	60-120		
rogate: 4-BFB (PID)	46.7		"	48.0		97.3	60-120		

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Geo Engineers - Alaska
 151 Eagle St
 Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
 Project Number: 6765-002-01
 Project Manager: Deanne Raiha

Reported:
 06/03/02 11:34

Diesel Hydrocarbons (C10-C25) and Heavy Oil (C25-C36) by AK102 and AK103 - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E23013: Prepared 05/23/02 Using EPA 3520C										
Blank (2E23013-BLK1)										
Diesel Range Hydrocarbons	ND	0.100	mg/l							
Residual Range Organics	ND	0.750	"							
Surrogate: 2-FBP	0.278		"	0.320		86.9	50-150			
Surrogate: Octacosane	0.253		"	0.320		79.1	50-150			
LCS (2E23013-BS1)										
Diesel Range Hydrocarbons	1.51	0.100	mg/l	2.00		75.5	75-125			
Surrogate: 2-FBP	0.249		"	0.320		77.8	50-150			
LCS (2E23013-BS2)										
Residual Range Organics	1.76	0.750	mg/l	2.00		88.0	60-120			
Surrogate: Octacosane	0.232		"	0.320		72.5	50-150			
LCS Dup (2E23013-BSD1)										
Diesel Range Hydrocarbons	1.62	0.100	mg/l	2.00		81.0	75-125	7.03	20	
Surrogate: 2-FBP	0.285		"	0.320		89.1	50-150			
LCS Dup (2E23013-BSD2)										
Residual Range Organics	1.80	0.750	mg/l	2.00		90.0	60-120	2.25	20	
Surrogate: Octacosane	0.235		"	0.320		73.4	50-150			

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Geo Engineers - Alaska
951 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
06/03/02 11:34

Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Bothell

alyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2E24053: Prepared 05/24/02 Using EPA 3005A

nk (2E24053-BLK1)

enic	ND	0.00100	mg/l							
Barium	ND	0.0100	"							
ium	ND	0.00100	"							
mium	ND	0.00100	"							
Lead	ND	0.00100	"							
elenium	ND	0.00100	"							
er	ND	0.00100	"							

LCS (2E24053-BS1)

enic	0.204	0.00100	mg/l	0.200		102	80-120			
ium	0.203	0.0100	"	0.200		102	80-120			
Cadmium	0.204	0.00100	"	0.200		102	80-120			
Chromium	0.195	0.00100	"	0.200		97.5	80-120			
id	0.198	0.00100	"	0.200		99.0	80-120			
Selenium	0.208	0.00100	"	0.200		104	80-120			
Silver	0.200	0.00100	"	0.200		100	77-120			

S Dup (2E24053-BSD1)

Arsenic	0.205	0.00100	mg/l	0.200		102	80-120	0.489	20	
Barium	0.204	0.0100	"	0.200		102	80-120	0.491	20	
mium	0.205	0.00100	"	0.200		102	80-120	0.489	20	
Cadmium	0.194	0.00100	"	0.200		97.0	80-120	0.514	20	
Lead	0.192	0.00100	"	0.200		96.0	80-120	3.08	20	
ium	0.209	0.00100	"	0.200		104	80-120	0.480	20	
er	0.201	0.00100	"	0.200		100	77-120	0.499	20	

Matrix Spike (2E24053-MS1)

Source: B2E0512-02

enic	0.215	0.00100	mg/l	0.200	0.00104	107	75-125			
Barium	0.250	0.0100	"	0.200	0.0394	105	73-129			
Cadmium	0.210	0.00100	"	0.200	ND	105	75-125			
mium	0.198	0.00100	"	0.200	ND	98.6	64-128			
id	0.204	0.00100	"	0.200	0.00202	101	75-125			
Selenium	0.218	0.00100	"	0.200	ND	109	73-125			
er	0.161	0.00100	"	0.200	0.00174	79.6	32-127			

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eo Engineers - Alaska
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Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
06/03/02 11:34

Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2E24053: Prepared 05/24/02 Using EPA 3005A

Matrix Spike Dup (2E24053-MSD1)

Source: B2E0512-02

Arsenic	0.216	0.00100	mg/l	0.200	0.00104	107	75-125	0.464	20	
Barium	0.251	0.0100	"	0.200	0.0394	106	73-129	0.399	20	
Cadmium	0.212	0.00100	"	0.200	ND	106	75-125	0.948	20	
Chromium	0.199	0.00100	"	0.200	ND	99.1	64-128	0.504	20	
Lead	0.202	0.00100	"	0.200	0.00202	100	75-125	0.985	20	
Selenium	0.218	0.00100	"	0.200	ND	109	73-125	0.00	20	
Silver	0.175	0.00100	"	0.200	0.00174	86.6	32-127	8.33	50	

Post Spike (2E24053-PS1)

Source: B2E0512-02

Arsenic	1.04	0.00500	mg/l	1.00	ND	104	75-125			
Barium	1.11	0.0500	"	1.00	ND	107	75-125			
Cadmium	1.03	0.00500	"	1.00	ND	103	75-125			
Chromium	1.03	0.00500	"	1.00	ND	103	75-125			
Lead	1.05	0.00500	"	1.00	ND	105	0-200			
Selenium	1.04	0.00500	"	1.00	ND	104	75-125			
Silver	0.990	0.00500	"	1.00	ND	98.8	80-120			

Batch 2E28039: Prepared 05/28/02 Using EPA 7470A Diss

Blank (2E28039-BLK1)

Mercury	ND	0.00100	mg/l							
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LCS (2E28039-BS1)

Mercury	0.00475	0.00100	mg/l	0.00500		95.0	80-120			
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LCS Dup (2E28039-BSD1)

Mercury	0.00479	0.00100	mg/l	0.00500		95.8	80-120	0.839	20	
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North Creek Analytical - Bothell

Jeff Gerdes

Jeff Gerdes, Project Manager

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North Creek Analytical, Inc.
Environmental Laboratory Network

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Geo Engineers - Alaska
51 Eagle St
 Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
06/03/02 11:34

Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Bothell

Sample Type	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E28039: Prepared 05/28/02 Using EPA 7470A Diss										
Matrix Spike (2E28039-MS1)					Source: B2E0512-02					
Ury	0.00484	0.00100	mg/l	0.00500	ND	96.8	70-130			
Matrix Spike Dup (2E28039-MSD1)					Source: B2E0512-02					
Ury	0.00481	0.00100	mg/l	0.00500	ND	96.2	70-130	0.622	20	

North Creek Analytical - Bothell

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509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

30 Engineers - Alaska
51 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
06/03/02 11:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 2E21018: Prepared 05/21/02 Using EPA 5030B

Blank (2E21018-BLK1)

Bromodichloromethane	ND	1.00	ug/l							
Bromoform	ND	1.00	"							
Bromomethane	ND	2.00	"							
Carbon tetrachloride	ND	1.00	"							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloroform	ND	1.00	"							
Chloromethane	ND	5.00	"							
Dibromochloromethane	ND	1.00	"							
1,1-Dichlorobenzene	ND	1.00	"							
1,3-Dichlorobenzene	ND	1.00	"							
1,4-Dichlorobenzene	ND	1.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
cis-1,3-Dichloropropene	ND	1.00	"							
trans-1,3-Dichloropropene	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
1,1,2-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Trichlorofluoromethane	ND	1.00	"							
Vinyl chloride	ND	1.00	"							
Surrogate: 1,2-DCA-d4	20.3		"	20.0		102	73-137			
Surrogate: Toluene-d8	19.0		"	20.0		95.0	75-124			
Surrogate: 4-BFB	20.2		"	20.0		101	77-120			

North Creek Analytical - Bothell

Jeff Gerdes

Jeff Gerdes, Project Manager

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Environmental Laboratory Network

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Geo Engineers - Alaska
51 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
06/03/02 11:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Sample Type	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%RBC Limits	RPD	RPD Limit	Notes
Batch 2E21018: Prepared 05/21/02 Using EPA 5030B										
MS (2E21018-BS1)										
Chlorobenzene	10.2	1.00	ug/l	10.0		102	77-120			
1,1-Dichloroethene	8.20	1.00	"	10.0		82.0	80-120			
Trichloroethene	9.35	1.00	"	10.0		93.5	80-120			
Surrogate: 1,2-DCA-d4	20.3		"	20.0		102	73-137			
Surrogate: Toluene-d8	19.4		"	20.0		97.0	75-124			
Surrogate: 4-BFB	20.5		"	20.0		102	77-120			
Dup (2E21018-BSD1)										
Chlorobenzene	9.74	1.00	ug/l	10.0		97.4	77-120	4.61	20	
1,1-Dichloroethene	8.50	1.00	"	10.0		85.0	80-120	3.59	20	
Trichloroethene	9.17	1.00	"	10.0		91.7	80-120	1.94	20	
Surrogate: 1,2-DCA-d4	20.5		"	20.0		102	73-137			
Surrogate: Toluene-d8	19.0		"	20.0		95.0	75-124			
Surrogate: 4-BFB	20.2		"	20.0		101	77-120			
Matrix Spike (2E21018-MS1) Source: B2E0461-01										
Chlorobenzene	10.1	1.00	ug/l	10.0	ND	101	75-125			
1,1-Dichloroethene	8.58	1.00	"	10.0	ND	85.8	40-154			
Trichloroethene	10.6	1.00	"	10.0	1.42	91.8	73-131			
Surrogate: 1,2-DCA-d4	20.8		"	20.0		104	73-137			
Surrogate: Toluene-d8	18.5		"	20.0		92.5	75-124			
Surrogate: 4-BFB	20.6		"	20.0		103	77-120			
Matrix Spike Dup (2E21018-MSD1) Source: B2E0461-01										
Chlorobenzene	9.78	1.00	ug/l	10.0	ND	97.8	75-125	3.22	20	
1,1-Dichloroethene	8.25	1.00	"	10.0	ND	82.5	40-154	3.92	30	
Trichloroethene	9.91	1.00	"	10.0	1.42	84.9	73-131	6.73	20	
Surrogate: 1,2-DCA-d4	20.6		"	20.0		103	73-137			
Surrogate: Toluene-d8	18.7		"	20.0		93.5	75-124			
Surrogate: 4-BFB	19.8		"	20.0		99.0	77-120			

North Creek Analytical - Bothell

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541.383.9310 fax 541.382.7588

Geo Engineers - Alaska
51 Eagle St
Anchorage AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
06/03/02 11:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E30009: Prepared 05/29/02 Using EPA 5030B										
Blank (2E30009-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Bromoform	ND	1.00	"							
Bromomethane	ND	2.00	"							
Carbon tetrachloride	ND	1.00	"							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloroform	ND	1.00	"							
Chloromethane	ND	5.00	"							
Dibromochloromethane	ND	1.00	"							
1,2-Dichlorobenzene	ND	1.00	"							
1,3-Dichlorobenzene	ND	1.00	"							
1,4-Dichlorobenzene	ND	1.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,3-Dichloropropene	ND	1.00	"							
cis-1,3-Dichloropropene	ND	1.00	"							
Acetylene chloride	ND	5.00	"							
1,1,1,2-Tetrachloroethane	ND	1.00	"							
1,1,2-Trichloroethane	ND	1.00	"							
1,1,2-Trichloroethene	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Trichlorofluoromethane	ND	1.00	"							
Vinyl chloride	ND	1.00	"							
Surrogate: 1,2-DCA-d4	21.2		"	20.0		106	73-137			
Surrogate: Toluene-d8	20.0		"	20.0		100	75-124			
Surrogate: 4-BFB	19.7		"	20.0		98.5	77-120			

North Creek Analytical - Bothell

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Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

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Geo Engineers - Alaska

951 Eagle St

Unalaska AK/USA, 99503-7432

Project: Ocean Beauty-Uganik Bay

Project Number: 6765-002-01

Project Manager: Deanne Raiha

Reported:

06/03/02 11:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E30009: Prepared 05/29/02 Using EPA 5030B										
CS (2E30009-BS1)										
monobenzene	9.88	1.00	ug/l	10.0		98.8	77-120			
1,1-Dichloroethene	10.1	1.00	"	10.0		101	80-120			
1,2-Dichloroethene	9.63	1.00	"	10.0		96.3	80-120			
Surrogate: 1,2-DCA-d4	21.6		"	20.0		108	73-137			
Surrogate: Toluene-d8	20.3		"	20.0		102	75-124			
Surrogate: 4-BFB	19.1		"	20.0		95.5	77-120			
S Dup (2E30009-BSD1)										
monobenzene	10.0	1.00	ug/l	10.0		100	77-120	1.21	20	
1,1-Dichloroethene	9.81	1.00	"	10.0		98.1	80-120	2.91	20	
1,2-Dichloroethene	9.92	1.00	"	10.0		99.2	80-120	2.97	20	
Surrogate: 1,2-DCA-d4	21.2		"	20.0		106	73-137			
Surrogate: Toluene-d8	20.1		"	20.0		100	75-124			
Surrogate: 4-BFB	19.7		"	20.0		98.5	77-120			

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Environmental Laboratory Network

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Geo Engineers - Alaska
51 Eagle St
Anchorage AK/USA, 99503-7432

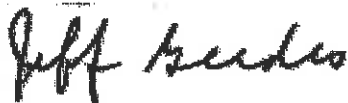
Project: Ocean Beauty-Uganik Bay
Project Number: 6765-002-01
Project Manager: Deanne Raiha

Reported:
06/03/02 11:34

Notes and Definitions

- D-06 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
- IT Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

North Creek Analytical - Bothell

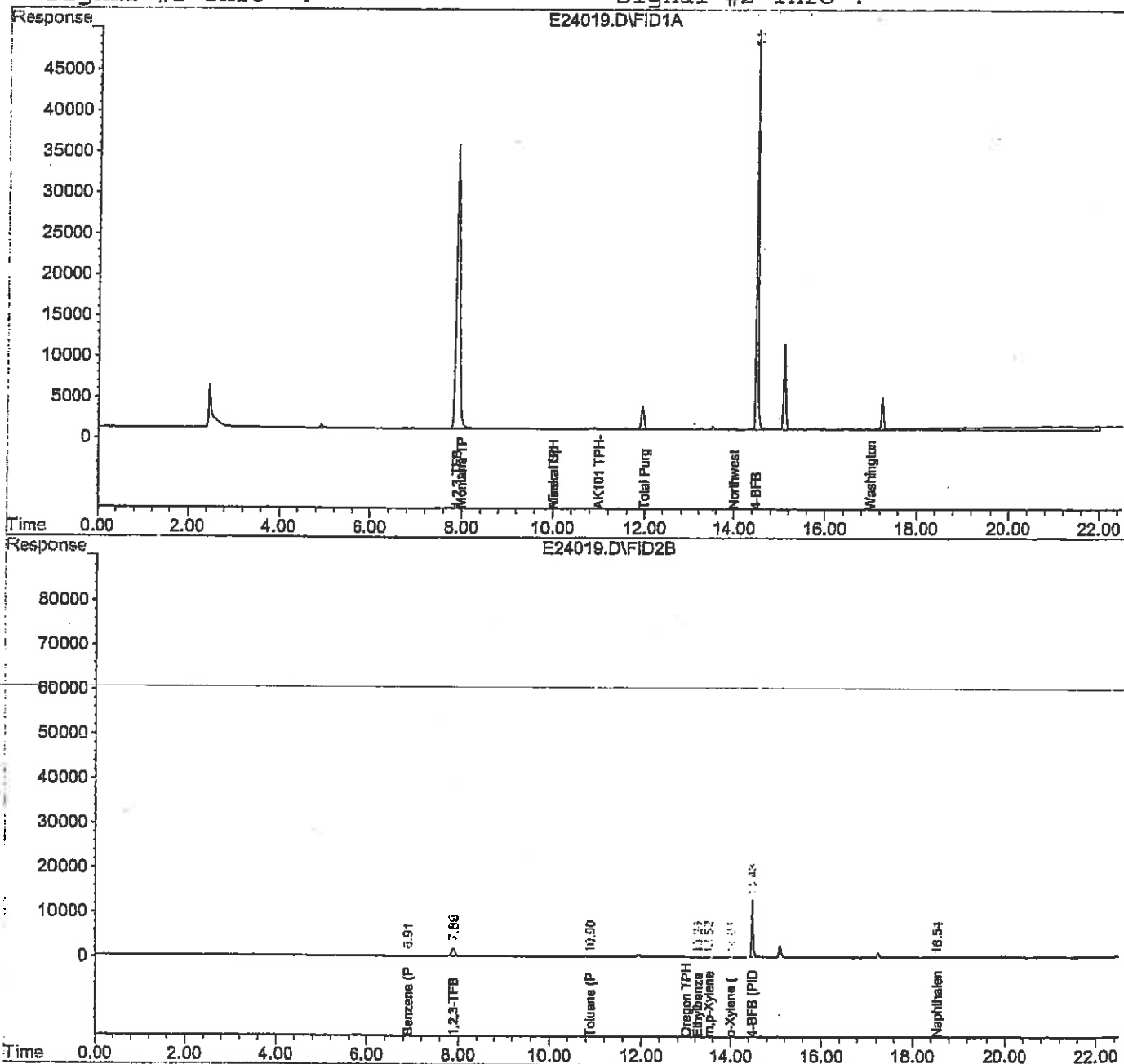


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Signal #1 : D:\HPCHEM\4\DATA\052402\E24019.D\FID1A.CH Vial: 19
Signal #2 : D:\HPCHEM\4\DATA\052402\E24019.D\FID2B.CH
Acq On : 24 May 2002 15:52 Operator: sk
Sample : b2e0512-01 Inst : GC #8
Misc : 1x 5 ml Multiplr: 1.00
IntFile Signal #1: TPH.E IntFile Signal #2: SURR2.E
Quant Time: May 24 16:15 2002 Quant Results File: TEST502A.RES

Quant Method : D:\HPCHEM\4\METHODS\TEST502A.M (Chemstation Integrator)
Title : TPH-G Water Method
Last Update : Tue May 21 13:19:28 2002
Response via : Multiple Level Calibration
DataAcq Meth : TEST502A.M

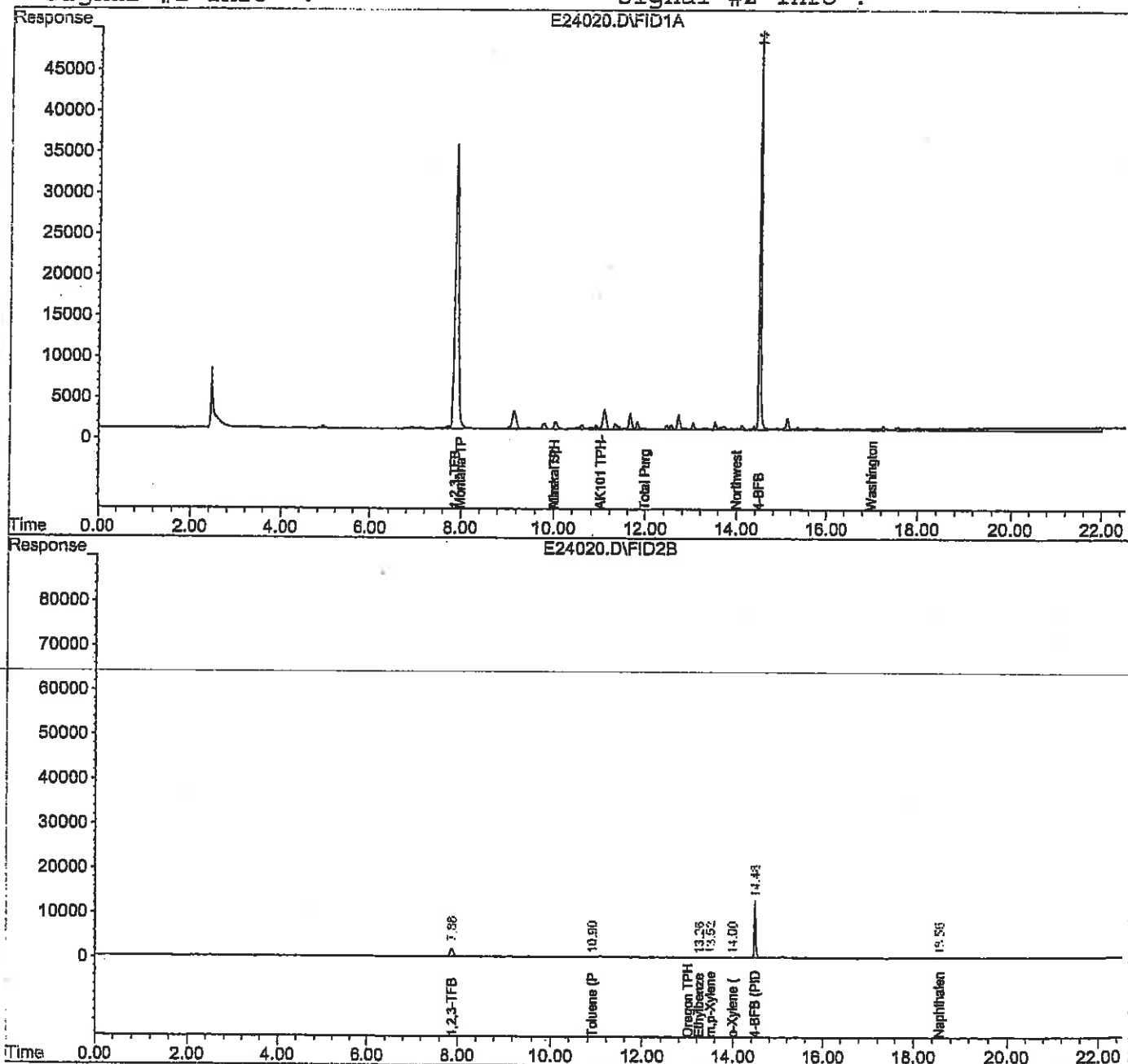
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



Signal #1 : D:\HPCHEM\4\DATA\052402\E24020.D\FID1A.CH Vial: 20
Signal #2 : D:\HPCHEM\4\DATA\052402\E24020.D\FID2B.CH
Acq On : 24 May 2002 16:21 Operator: sk
Sample : b2e0512-02 Inst : GC #8
Misc : 1x 5 ml Multiplr: 1.00
IntFile Signal #1: TPH.E IntFile Signal #2: SURR2.E
Quant Time: May 24 16:44 2002 Quant Results File: TEST502A.RES

Quant Method : D:\HPCHEM\4\METHODS\TEST502A.M (Chemstation Integrator)
Title : TPH-G Water Method
Last Update : Tue May 21 13:19:28 2002
Response via : Multiple Level Calibration
DataAcq Meth : TEST502A.M

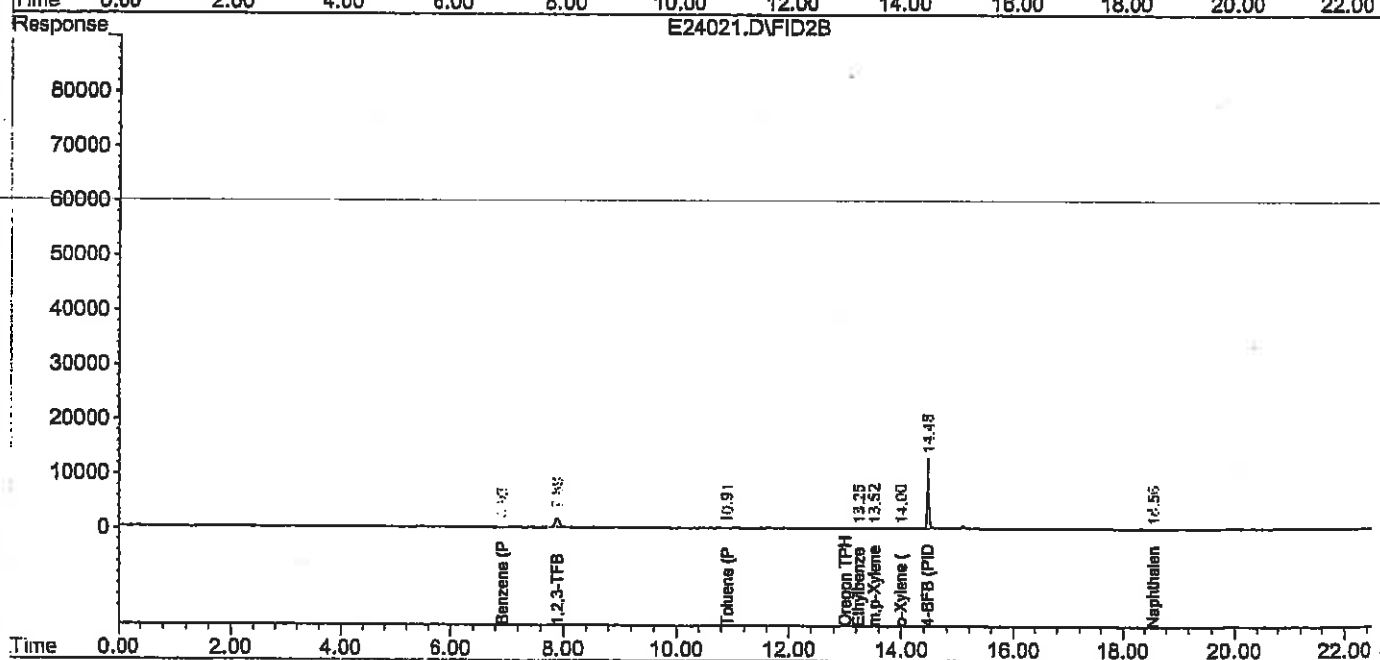
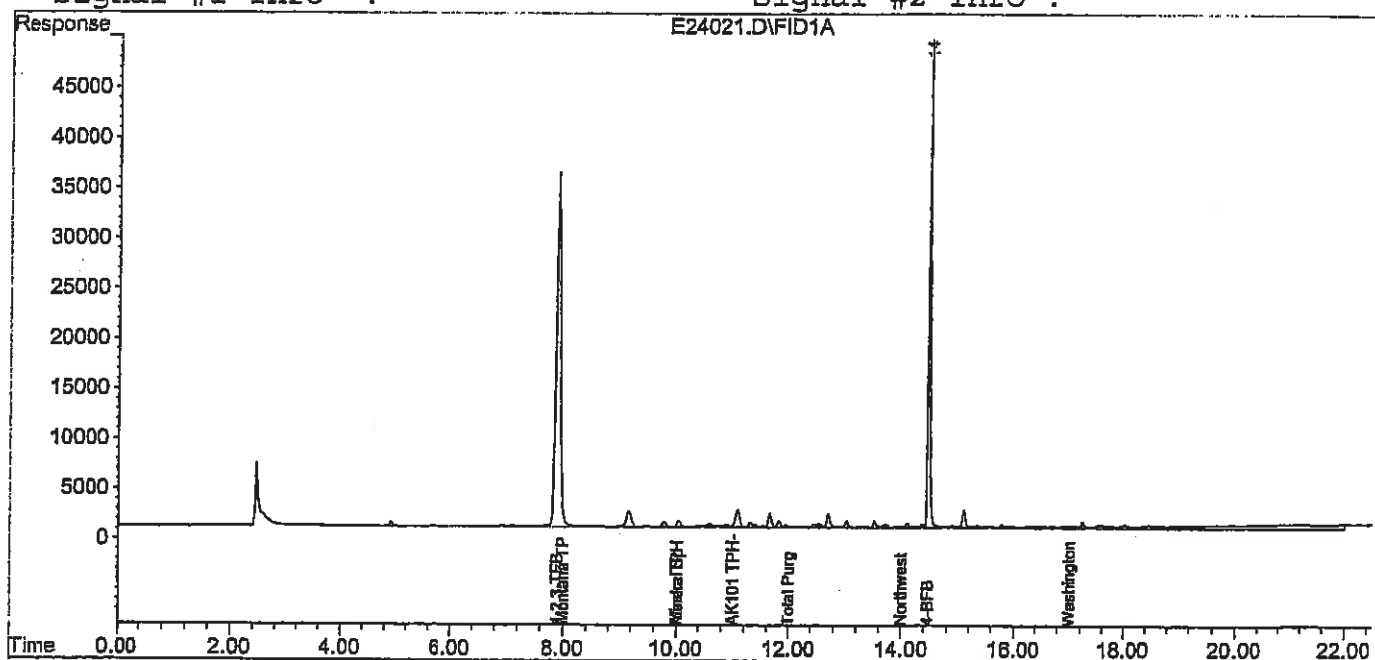
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



Signal #1 : D:\HPCHEM\4\DATA\052402\E24021.D\FID1A.CH Vial: 21
 Signal #2 : D:\HPCHEM\4\DATA\052402\E24021.D\FID2B.CH
 Acq On : 24 May 2002 16:50 Operator: sk
 Sample : b2e0512-03 Inst : GC #8
 Misc : 1x 5 ml Multiplr: 1.00
 IntFile Signal #1: TPH.E IntFile Signal #2: SURR2.E
 Quant Time: May 24 17:12 2002 Quant Results File: TEST502A.RES

Quant Method : D:\HPCHEM\4\METHODS\TEST502A.M (Chemstation Integrator)
 Title : TPH-G Water Method
 Last Update : Tue May 21 13:19:28 2002
 Response via : Multiple Level Calibration
 DataAcq Meth : TEST502A.M

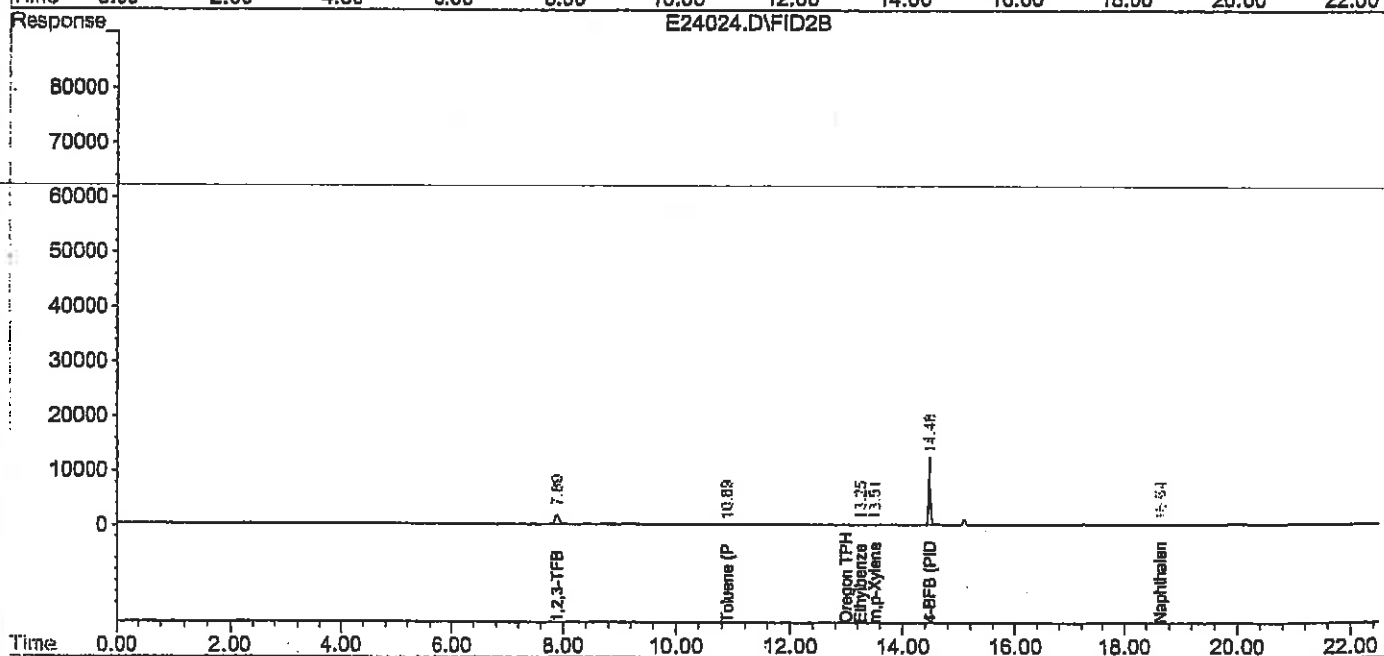
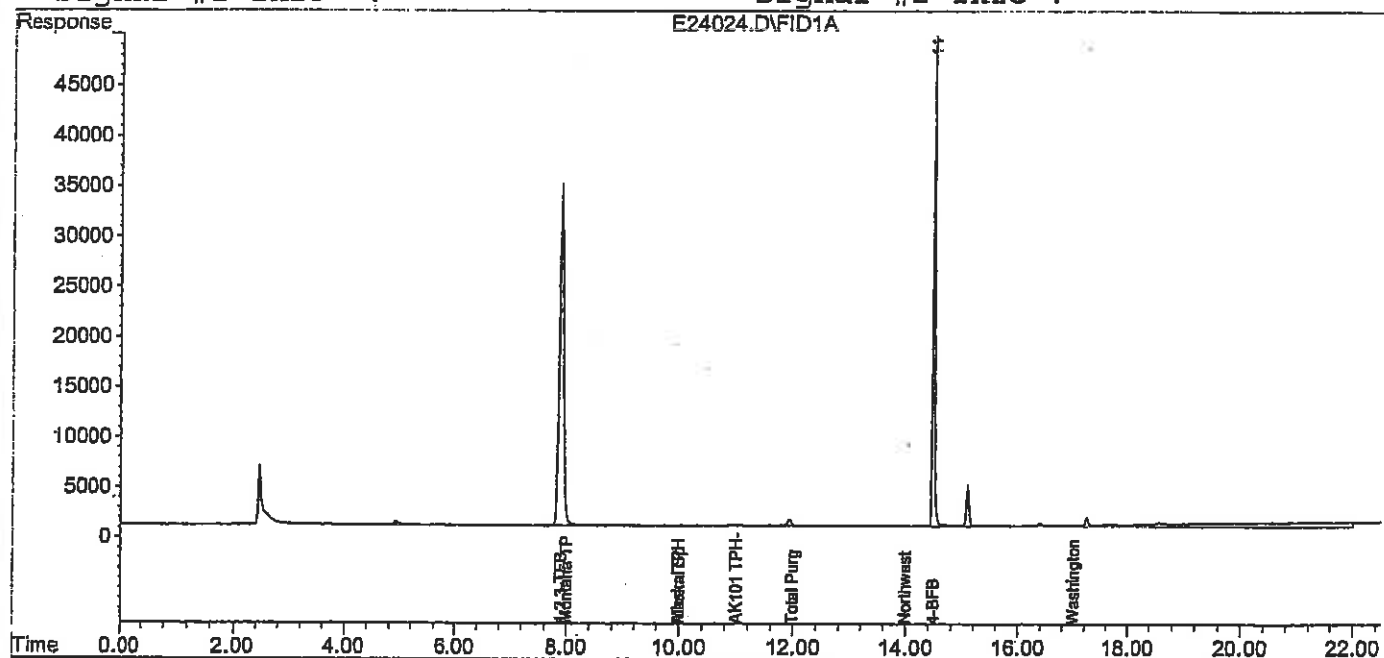
Volume Inj. :
 Signal #1 Phase : Signal #2 Phase:
 Signal #1 Info : Signal #2 Info :



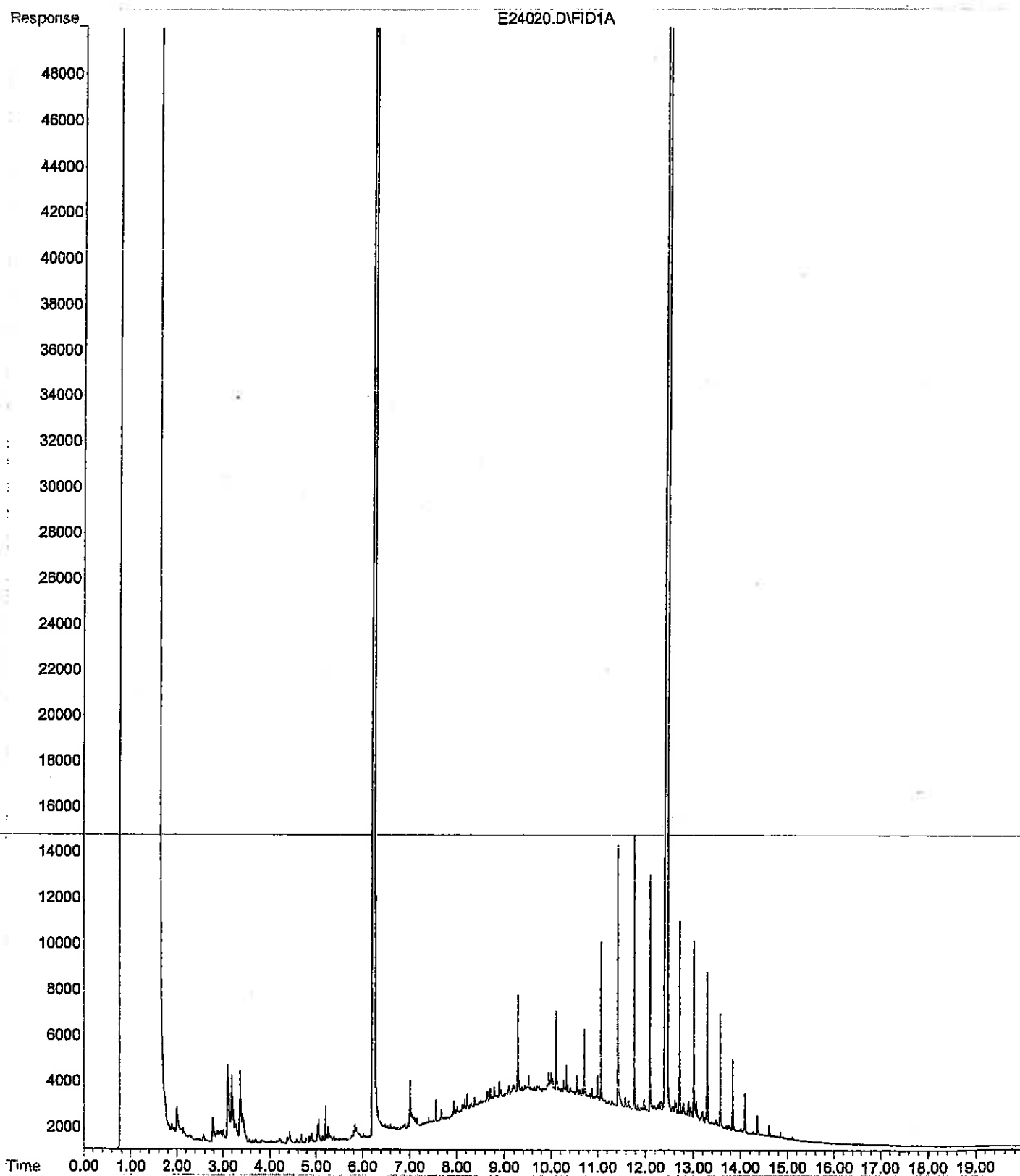
Signal #1 : D:\HPCHEM\4\DATA\052402\E24024.D\FID1A.CH Vial: 24
Signal #2 : D:\HPCHEM\4\DATA\052402\E24024.D\FID2B.CH
Acq On : 24 May 2002 18:16 Operator: sk
Sample : b2e0512-04 TB Inst : GC #8
Misc : 1X 5 mL Multiplr: 1.00
IntFile Signal #1: TPH.E IntFile Signal #2: SURR2.E
Quant Time: May 24 18:39 2002 Quant Results File: TEST502A.RES

Quant Method : D:\HPCHEM\4\METHODS\TEST502A.M (Chemstation Integrator)
Title : TPH-G Water Method
Last Update : Tue May 21 13:19:28 2002
Response via : Multiple Level Calibration
DataAcq Meth : TEST502A.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



File : C:\HPCHEM\4\DATA\E24020.D
Operator : EDL
Acquired : 24 May 2002 12:03 pm using AcqMethod 13402@1A.M
Instrument : GC #1
Sample Name: b2e0512-02
Misc Info :
Vial Number: 14





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 (509) 924-9200 FAX 924-9290
 (503) 906-9200 FAX 906-9210
 (541) 383-9310 FAX 382-7588



CHAIN OF CUSTODY REPORT

Work Order #: **B2E0512**

CLIENT: GeoEngineers		INVOICE TO: GeoEngineers 4951 Eagle St Anchorage, AK 99507		TURNAROUND REQUEST in Business Days*														
REPORT TO: Deanne Raiha				Organic & Inorganic Analyses														
ADDRESS: 4951 Eagle St Anchorage, AK 99507				<input checked="" type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1														
PHONE: (907) 561-3478		FAX: (907) 561-5123		STD. <input checked="" type="checkbox"/> PETROLEUM HYDROCARBON ANALYSES														
PROJECT NAME: Ocean Beauty - Ugnalik Bay		P.O. NUMBER:		<input checked="" type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1														
PROJECT NUMBER: 6765-000-01		REQUESTED ANALYSES		OTHER: <input type="checkbox"/> Please Specify														
SAMPLED BY: DKR				*Turnaround Request less than standard may incur Rush Charges														
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	Geo/BETX AK101	DRO AK102	HYDC SC603	Distal vial Method EPA 600/7-000	RR0 AK103									MATRIX (W,S,D)	# OF CONT.	COMMENTS	NCA W/O ID
1. GP-1	5/18/02 - 6:10 PM	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>											W	6	B2E0512	01
2. GP-2	5/18/02 - 1900	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									W	9	Dissolved metal field filtered	02
3. Duplicate	5/18/02	<input checked="" type="checkbox"/>													W	3		03
4. Trip Blank	5/18/02	<input checked="" type="checkbox"/>													W	4		04
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		
11.																		
12.																		
13.																		
14.																		
15.																		

Revised Chain of Custody

RELINQUISHED BY: Deanne Raiha	FIRM: GEI	DATE: 5/19/02	TIME: 1400	RECEIVED BY: K. Kuczkowski	FIRM: NCA	DATE: 5/20/02	TIME: 0845
RELINQUISHED BY:	FIRM:	DATE:	TIME:	RECEIVED BY:	FIRM:	DATE:	TIME:
ADDITIONAL REMARKS:				TEMP: _____			

05/20/02 13:21 907 561 5123 GEO ENGINEERS 002

APPENDIX C

APPENDIX C

REPORT LIMITATIONS AND GUIDELINES FOR USE¹

This appendix provides information to help you manage your risks with respect to the use of this report.

ENVIRONMENTAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES, PERSONS AND PROJECTS

This report has been prepared for the exclusive use of Williams Kastner & Gibbs PLLC and Ocean Beauty Seafoods, Inc., their authorized agents and regulatory agencies. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, an environmental site assessment study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except Williams Kastner & Gibbs PLLC and Ocean Beauty Seafoods, Inc. should rely on this environmental report without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

THIS ENVIRONMENTAL REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

This report has been prepared for the Uganik Bay Processing Plant. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

RELIANCE CONDITIONS FOR THIRD PARTIES

Our report was prepared for the exclusive use of our Client. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement

¹ Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

with the Client and generally accepted environmental practices in this area at the time this report was prepared.

ENVIRONMENTAL REGULATIONS ARE ALWAYS EVOLVING

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

UNCERTAINTY MAY REMAIN EVEN AFTER THIS PHASE II ESA IS COMPLETED

No ESA can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely-spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

SUBSURFACE CONDITIONS CAN CHANGE

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or ground water fluctuations. Always contact GeoEngineers before applying this report to determine if it is still applicable.

SOIL AND GROUND WATER END USE

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other sites or for other on-site uses of the affected media (soil and/or ground water). Note that hazardous substances may be present in some of the site soil and/or ground water at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or ground water from the subject site or reuse of the affected media on site to evaluate the potential for associated environmental liabilities. We cannot be responsible for potential environmental liability arising out of the transfer of soil and/or ground water from the subject site to another location or its reuse on site in instances that we were not aware of or could not control.

MOST ENVIRONMENTAL FINDINGS ARE PROFESSIONAL OPINIONS

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are

taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

DO NOT REDRAW THE EXPLORATION LOGS

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design drawings. Only photographic or electronic reproduction is acceptable, but recognize that separating logs from the report can elevate risk.

READ THESE PROVISIONS CLOSELY

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these "Report Limitations and Guidelines for Use" apply to your project or site.

GEOTECHNICAL, GEOLOGIC AND GEOENVIRONMENTAL REPORTS SHOULD NOT BE INTERCHANGED

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

BIOLOGICAL POLLUTANTS

GeoEngineers' Scope of Work specifically excludes the investigation, detection, or assessment of the presence of Biological Compounds that are Pollutants in or around any structure. Accordingly, this report includes no interpretations, recommendations, findings, or conclusions for the purpose of detecting, assessing, or abating Biological Pollutants. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.