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Environmental Site Assessment
Grady Way Complex Property
Renton, Washington

April 29, 1998

PSE Grady Way Renton Complex
VCP
aka LUST # 511315 - Renton Sheffield

For
Puget Sound Energy

ENTERED 6/30/00

DEPARTMENT OF ECOLOGY
NWRO/TCP TANKS UNIT
INTERIM CLEANUP REPORT ☐
SITE CHARACTERIZATION ☐
FINAL CLEANUP REPORT ☐
OTHER S/A ☒
AFFECTED MEDIA: SOIL ☒
OTHER GW ☒
INSPECTOR (INIT.) DATE 6/30/00

File No. 0186-407-00-1150/042998

GeoEngineers

April 29, 1998

Consulting Engineers and Geoscientists
Offices in Washington, Oregon, and Alaska

Puget Sound Energy
Environmental Services
P.O. Box 97034 ME-04
Bellevue, Washington 98009-9734

Attention: Barry Lombard

We are submitting four copies of our "Environmental Site Assessment" report for Puget Sound Energy's (PSE) Grady Way Complex property in Renton, Washington. Our study was completed in accordance with the scope of services described in our letters to PSE dated September 30 and November 21, 1997 and January 27, 1998 and the conditions of our general agreement with Puget Sound Energy (Contract No. BX01074-C01A). Changes in the scope of services were authorized by Barry Lombard of PSE.

We appreciate the opportunity to assist PSE on this project. Please contact us if you have questions regarding this report.

Yours very truly,
GeoEngineers, Inc.

Kurt R. Fraese
Associate

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TABLE OF CONTENTS

EXECUTIVE SUMMARY 1

1.0 INTRODUCTION 3

2.0 SCOPE OF SERVICES 3
2.1 PHASE I 3
2.2 PHASE II 5

3.0 INVOLVED PARTIES 6

4.0 PREVIOUS ENVIRONMENTAL/GEOTECHNICAL INVESTIGATIONS 6

5.0 ENVIRONMENTAL SETTING 7
5.1 REGIONAL PHYSIOGRAPHIC CONDITIONS 7
5.2 SOIL AND GEOLOGIC CONDITIONS 7
5.3 GROUND WATER CONDITIONS 7

6.0 GENERAL SITE CHARACTERISTICS 8
6.1 LOCATION AND LEGAL DESCRIPTION 8
6.2 SITE RECONNAISSANCE OBSERVATIONS 8
6.2.1 Site Improvements 8
6.2.2 Pits, Ponds and Lagoons 9
6.2.3 Site Drainage 9
6.2.4 Stressed Vegetation, Stained Soil or Pavement 9
6.2.5 Water Wells, Sumps and Drains 9
6.2.6 Areas of Standing Water or other Liquids 9
6.2.7 Waste Generation and Disposal 10
6.2.8 Storage Tanks and Containers 10
6.2.9 Indications of PCBs, Transformers and Utilities 10
6.2.10 Radon 11
6.2.11 Other Conditions of Concern 11
6.3 ADJACENT PROPERTY AND VICINITY OBSERVATIONS 11

7.0 ENVIRONMENTAL RECORDS REVIEW 12

8.0 SITE HISTORY 12
8.1 GENERAL 13
8.2 TRANSFORMER REPAIR SHOP AND TRANSFORMER/POLE STORAGE YARD 14
8.3 PREVIOUS REMEDIAL ACTIONS 15
8.4 ENVIRONMENTAL LIENS 15

9.0 PHASE II ENVIRONMENTAL SITE ASSESSMENT 16
9.1 CONCRETE SAMPLES AND ANALYSIS 16
9.2 SOIL SAMPLING AND ANALYSIS 16
9.2.1 PETROLEUM HYDROCARBONS 17
9.2.2 PCB 18
9.2.3 SVOCs 18
9.3 SEDIMENT SAMPLES 18
9.4 GROUND WATER 18
9.5 WELL SEARCH 20

TABLE OF CONTENTS – CON'T

10.0 CONCLUSIONS 20

11.0 LIMITATIONS 22

TABLES	Table No.
Concrete Chemical Analytical Results	1
Soil/Sediment Chemical Analytical Results – Petroleum Hydrocarbons	2
Soil/Sediment Chemical Analytical Data – SVOCs and PCBs	3
Summary of Ground Water Elevations	4
Ground Water Chemical Analytical Results	5
Nearby Water Supply Wells	6

FIGURES	Figure No.
Vicinity Map	1
Site and Surrounding Properties	2
Site Photographs	3A
Site Photographs	3B
Utility Map	4
Sample Locations	5
Cross Section A-A'	6A
Cross Section B-B'	6B
Ground Water Contours	7
Municipal Water Wells	8
Samples with Analyte Concentrations	9

APPENDICES	Page No.
Appendix A – Legal Description	A-1
Appendix B - EDR Report	B-1
Appendix C – Field Procedures	C-1
Concrete Sampling Program	C-1
Soil Sampling Program	C-1
Sediment Sampling	C-2
Field Screening Methods	C-2
Monitoring Well Construction	C-3

TABLE OF CONTENTS – CON'T

	Page No.
Appendix C – Field Procedures (Con't)	
Ground Water Elevations	C-3
Ground Water Sampling	C-3

	Figure No.
APPENDIX C FIGURES	
Soils Classification System	C-1
Key to Boring Log Symbols	C-2
Log of Boring	C-3...C-49
Log of Monitoring Well	C-50...C-56
Log of Test Pit	C-57...C-59

	Page No.
Appendix D – Chemical Analytical Program	D-1
Analytical Methods	D-1
Analytical Data Review	D-1
Analytical Data Review Summary	D-1

	Page No.
Appendix E – Interim TPH Policy	E-1
MTCA Method B Cleanup Level Calculations	E-1
Chemical Analysis	E-2
MTCA Method B Soil Direct Contact Calculations	E-2
Potential Soil-to-Ground Water Transport of Hydrocarbons	E-3
Interim TPH Policy Methods	E-4
Surrogate Approach	E-5
Fate and Transport	E-6
Conclusions	E-7
Interim TPH Policy Limitations	E-7

APPENDIX E TABLES	Table No.
Interim TPH Policy Chemical Analytical Results	E-1
Residential Hazard Index and Carcinogenic Risk for Direct Contact – Sample B-1-3.0	E-2
MTCA Method B Soil Cleanup Level Calculation – Sample B-1-3.0	E-3
Residential Hazard Index and Carcinogenic Risk of Direct Contact – Sample B-32-0.5	E-4
MTCA Method B Soil Cleanup Level Calculation – B-32-0.5	E-5

Residential Hazard Index and Carcinogenic Risk – Sample GWm-4-6.0 E-6
MTCA Method B Soil Cleanup Level Calculation – GMW-4-6.0 E-7
Projected TPH Concentration in Ground Water - Sample B-1-3.0 E-8
Projected TPH Concentration in Ground Water – Sample B-32-0.5 E-9
Projected TPH Concentration in Ground Water – Sample GMW-4-6.0 E-10

EXECUTIVE SUMMARY

GeoEngineers performed a Phase I ESA (environmental site assessment) of Puget Sound Energy's (PSE's) Grady Way Complex property located at 620 South Grady Way in Renton, Washington in October and November 1997. Our Phase I ESA research indicated that the first recorded site use was a coal mining operation in the late 1800s. PSE purchased the site around 1903. PSE's site uses have included transformer storage and maintenance, vehicle fueling and maintenance and storage of power poles treated with preservative. The site currently contains three buildings, three USTs, a storm water drainage system and various electrical equipment and materials stored and used by PSE.

GeoEngineers monitored remedial activities at the site between 1987 and 1990. The remedial activities primarily focussed on the northern half of the property. Approximately 3,750 cubic yards of soil containing residual concentrations of petroleum hydrocarbons associated with former underground storage tanks (USTs) and hydraulic hoists were successfully removed from the site. Remaining petroleum hydrocarbon concentrations detected at the final limits of the hoist and UST remedial excavations were less than applicable cleanup levels.

The results of this Phase I ESA indicated that there is a potential for petroleum hydrocarbons, polychlorinated biphenyls (PCBs) and semi-volatile organic compounds (SVOCs) including polynuclear aromatic hydrocarbons (PAHs), at concentrations of regulatory significance in soil and ground water in the southern half of the subject site. Between December 1997 and February 1998, GeoEngineers performed a Phase II ESA consisting of soil, sediment and ground water sampling and analysis to further evaluate the potential presence of hazardous substances. The Phase II ESA included 38 direct-push soil borings, nine shallow hand auger borings, five test pits, seven monitoring wells (six on-site and one off-site), 10 concrete samples, eight sediment samples and two coal mine tailings samples. In general, our Phase II assessment indicates that soil and ground water contamination of regulatory significance appears to be limited to portions of the southern third of the site. Additionally, our studies indicate that the potential for existing soil and/or ground water contamination of regulatory significance in the northern portion of the site is low. A summary of the Phase II ESA analytical results is presented below:

- Diesel- and heavy oil-range hydrocarbons either were not detected or were detected at concentrations less than the Model Toxics Control Act (MTCA) Method A cleanup level [1 milligram per liter (mg/l)] in ground water samples obtained from the monitoring wells on-site with the exception of GMW-2 (1.37 mg/l total petroleum hydrocarbons).
- Diesel- and heavy oil-range hydrocarbons in soil samples either were not detected or were detected at concentrations [23.4 to 2,120 milligrams per kilogram (mg/kg)] less than the most conservative MTCA Method B cleanup level 3,432 (mg/kg) calculated for

this study using Ecology's *Interim Interpretive and Policy Statement, Cleanup of Total Petroleum Hydrocarbons* (Interim TPH Policy).

- PCBs were detected at concentrations (1.33 to 1.85 mg/kg) exceeding the MTCA Method A cleanup level (1 mg/kg) at three locations in the southern portion of the site.
- PCBs were detected at a concentration [1.17 micrograms per liter (µg/l)] exceeding the MTCA Method A cleanup level (0.1 µg/l) in ground water obtained from GMW-4 in the southern portion of the site.
- Carcinogenic PAHs (cPAHs) were detected at concentrations (1.70 to 2.46 mg/kg) exceeding the MTCA Method A cleanup level (1 mg/kg) at three locations in the southern portion of the site.
- cPAHs were detected at concentrations (2.87 to 6.75 mg/kg) exceeding the MTCA Method A soil cleanup level (1 mg/kg) in two of the six sediment samples obtained from catch basins in the southern portion of the site.

The extent of residual cPAH and/or PCB concentrations exceeding applicable cleanup levels in the vicinity of B-7, B-19, B-23, B-29, B-34 and TP-5 were not fully evaluated by our study. However, based on our experience with these compounds at other similar PSE sites and the soil and ground water analytical results, we expect that the areas of contaminant concentrations exceeding cleanup levels are localized. Our conceptual volume estimate of soil containing PCB and cPAH concentrations exceeding MTCA Method A cleanup levels in the southern portion of the site is 500 cubic yards. The actual volume may vary significantly from this conceptual estimate.

Based on the Phase I/II ESA results, it is our opinion that the potential for existing soil and ground water contamination by hazardous substances of regulatory significance on the subject site is low with the exception of the areas noted above. Chemical analysis did not detect contaminant concentrations exceeding applicable cleanup levels in 73 of the 81 soil/sediment samples and four of the six on-site ground water monitoring well samples submitted for chemical analysis.

Significant concentrations of diesel- and heavy oil-range petroleum hydrocarbons were detected in soil and ground water obtained from monitoring well/boring GMW-7, located in Talbot Road, immediately downgradient from the southern portion of the site. In our opinion the source for the petroleum-related soil and ground water contamination detected in GMW-7 is not likely located on the subject site because petroleum-related contamination of regulatory significance was not detected in the two on-site wells (GMW-5 and GMW-6) located closest to, and upgradient of, GMW-7. Our study did not identify evidence concerning the specific source of the petroleum hydrocarbons detected in GMW-7.

ENVIRONMENTAL SITE ASSESSMENT
GRADY WAY COMPLEX PROPERTY
RENTON, WASHINGTON
FOR
PUGET SOUND ENERGY

1.0 INTRODUCTION

This report summarizes the results of our environmental site assessment (ESA) of Puget Sound Energy's (PSE) Grady Way Complex property located at 620 South Grady Way in Renton, Washington. This property is referred to herein as "the site." The site is shown relative to surrounding physical features in the Vicinity Map, Figure 1. The general layout of the site is shown in Figure 2.

We understand that PSE is planning to sell the site. We further understand that the results of the ESA will be used to (1) evaluate environmental liabilities associated with site ownership and (2) identify remedial options to prepare the site for sale.

GeoEngineers completed previous site characterization and remedial activities at the site as discussed in Sections 4.0 and 8.3 of this report. The previous studies primarily focussed on conditions in the northern half of the property. Chemical analytical results indicate that the remedial activities were successful in removing soil and ground water contamination of regulatory significance in the northern half of the site. The ESA described herein evaluated environmental conditions on the entire site; however, the Phase II portion of this study focussed on the southern half of the property.

2.0 SCOPE OF SERVICES

The purpose of the ESA is to evaluate the presence or likely presence of hazardous substances, including petroleum products that may have resulted from current or past activities on the site or in the site vicinity.

GeoEngineers' ESA services were completed in two phases. Phase I consisted of site reconnaissance, regulatory list evaluation and historical research completed in general accordance with American Society for Testing Materials (ASTM) Standard E1527-97 for Phase I ESAs. Phase II consisted of concrete, soil, sediment and ground water sampling and chemical analysis. Our specific scope of services completed for this ESA follows.

2.1 PHASE I

- Review readily available environmental/geotechnical reports, and/or other relevant documents pertaining to environmental conditions at the site.
- Review federal, state, and local environmental database search results provided by Environmental Data Resources (EDR) for listings of known or suspected environmental

problems at the site or nearby properties. The specific databases and minimum search distances reviewed included the following:

U.S. Environmental Protection Agency Lists	Minimum Search Distance
National Priorities List (NPL)	1 mile
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)	0.5 mile
Resource Conservation and Recovery Act (RCRA), Corrective Action Report (CORRACTS) Facilities List	1 mile
RCRA non-CORRACTS TSD Facilities List	0.5 mile
RCRA Notifiers List, Generators and Transporters	Site and Adjoining Properties
Emergency Response Notification System (ERNS)	Site

State and Local Health Department Lists	Minimum Search Distance
Washington State Department of Ecology (Ecology)	
Department Lists Toxics Cleanup Program Confirmed and Suspected Contaminated Sites List (C&SCS)	0.5 miles
Model Toxics Control Act (MTCA) Site Register	1 mile
Ecology Registered Underground Storage Tank (UST) Sites List	Site and Adjoining Property
Ecology Leaking UST (LUST) Sites List	0.5 mile
Solid Waste Disposal Facility	0.5 mile

- Review regulatory agency files regarding listed sites of potential environmental concern relative to the site.
- Identify key persons with specific knowledge of past and present site use and request that they meet a GeoEngineers' representative on-site for an interview during the site reconnaissance. Interview others familiar with past and present uses of the site and its vicinity as necessary.
- Interview a representative of the local fire department, health department, and/or Ecology regarding the history of the site and surrounding properties relative to the likely presence of hazardous substances.
- Review historical aerial photographs, fire insurance maps, city directories, tax assessor records, other historical maps and building department records, as available and appropriate, to identify past development history on the subject site and adjacent properties relative to the possible use, generation, storage, release or disposal of hazardous substances. We attempted to identify uses of the site from the present to the time that records show no apparent development of the site. However, we did not obtain historical information regarding on site activities prior to the late 1800's, at which time coal mining activities were being conducted on a portion of the site.

- Review current United States Geological Survey (USGS) topographic maps to identify the physiographic setting of the site.
- Identify the sources of potable water for the site; the type of heating systems for site structures; and the type of sewage disposal at the site.
- Provide 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.
- Conduct a visual reconnaissance of the site and adjacent properties to identify any visible evidence of possible contamination and potential sources of contamination.

2.2 PHASE II

1. Obtain 10 concrete surface samples (C-1, C-2 and C-4 through C-11) from selected transformer storage areas at the site. A concrete sample designated as C-3 was not obtained during the study.
2. Submit the concrete samples for chemical analysis of polychlorinated biphenyls (PCBs) by U.S. Environmental Protection Agency (EPA) Method 8081.
3. Obtain soil samples from 38 shallow direct-push borings (B-1 through B-38), nine shallow hand auger borings (B-39 through B-47), five test pit excavations (TP-1 through TP-5) and seven monitoring well borings (GMW-1 through GMW-7) at approximately 1- to 2-foot depth intervals. The explorations were completed to depths of approximately 3.0 to 12.0 feet beneath the ground surface. GMW-7 was completed off-site in Talbot Road, immediately downgradient of the southern portion of the property.
4. Obtain two sediment samples (S-1 and S-2) from a small storm water pond located in the eastern portion of the site; six sediment samples (S-3 through S-8) from inside selected stormwater catch basins on site; and two composite samples (GC-1 and GC-2) of coal mine tailings stockpiled in the eastern portion of the site.
5. Field screen the soil samples for possible petroleum hydrocarbon contamination.
6. Construct 2-inch-diameter monitoring wells in GMW-1 through GMW-7.
7. Survey the well casing elevations relative to an assumed site datum and measure the depth to ground water in each monitoring well on-site.
8. Obtain ground water samples from an existing monitoring well (MW-10), eight direct-push borings (B-30 and B-37) and GMW-1 through GMW-7.
9. Submit selected concrete, soil, sediment, coal mine tailings and ground water samples for one or more of the following chemical analyses:
   a. Diesel- and heavy oil-range hydrocarbons by Washington State Department of Ecology (Ecology) Method NWTPH-D extended. Samples B-1-3.0, B-32-0.5 and GMW-4-6.0 also were analyzed for volatile petroleum hydrocarbon (VPH) fractions; benzene, ethylbenzene, toluene and xylenes (BETX) and/or extractable petroleum hydrocarbon (EPH) fractions by Ecology's *Interim Interpretive and Policy Statement, Cleanup of Total Petroleum Hydrocarbons* (Interim TPH Policy) methods.

b. Halogenated volatile organic compounds (HVOCs) by EPA Method 8010.
c. Polychlorinated biphenyls(PCBs) by EPA Method 8081
d. Semivolatile organic compound (SVOCs) by EPA Method 8270

10. Calculate site-specific Model Toxics Control Act (MTCA) Method B cleanup levels for petroleum hydrocarbons detected in the soil samples using Interim TPH Policy methods.
11. Evaluate the analytical results relative to current environmental regulations.

Our scope of services did not include an environmental compliance audit, asbestos survey, lead-based paint survey, an evaluation of the potential presence of PCBs in light ballasts, or urea-formaldehyde insulation in on-site structures.

Prezant Associates completed an inventory of asbestos, lead-base paint, and PCB in light ballasts in the on-site Stores and Service Center buildings. The results of the Prezant Associates studies are presented in written reports dated July and August 1995. The Prezant Associates reports were provided to GeoEngineers and are on file at PSE's Seattle office.

3.0 INVOLVED PARTIES

The site currently is owned and operated by PSE. We understand that PSE is planning to sell the site through its wholly owned subsidiary, Puget Western Inc.

4.0 PREVIOUS ENVIRONMENTAL/GEOTECHNICAL INVESTIGATIONS

GeoEngineers has provided environmental consulting services related to the subject site since 1987. Written reports summarizing the results of our previous site studies are on file with Ecology and include the following:

- "Final Report - Ground Water Quality Testing, Underground Transformer Oil Tank, Service Center, Renton, Washington" - January 15, 1988.
- "Final Report - Tank Removal and Soil Excavation, Underground Transformer Oil, Tank Service Center, Renton, Washington" - March 3, 1988.
- "Report of Geotechnical Services, Subsurface Contamination Study, Former Renton Transportation Center, Renton, Washington" - July 26, 1988.
- "Report of Remedial Action, Underground Storage Tank Removal, Renton Service Center, Renton, Washington" - December 15, 1989.
- "Supplemental Report - GeoEnvironmental Services, Off-site Subsurface Contamination Study, General Stores Building, Renton Service Center, Renton, Washington" - November 29, 1990.
- "Supplemental Report - GeoEnvironmental Services, Subsurface Contamination Study and Ground Water Monitoring Program, General Stores Building, Renton Service Center, Renton, Washington" - December 18, 1990.
- "Report of Geotechnical Services, UST Removal and Subsurface Contamination Study, Stores Building, Renton Service Center, Renton, Washington" - January 17, 1990.

- "Report of Remedial Action, Underground Storage Tank Removal, Stores Building, Renton Service Center, Renton, Washington" - February 7, 1991.
- "Report of Remedial Action and Geotechnical Services, Hydraulic Fluid Remedial Program, Stores, Building, Renton Service Center, Renton, Washington" - October 4, 1991.

In addition to the studies described above, GeoEngineers conducted research in 1995 to evaluate historical site use. The results of that research are on file at PSE and were used to supplement the site history research (Section 8.0) for the Phase I portion of this study.

5.0 ENVIRONMENTAL SETTING

Our knowledge of the general physiographic setting, geology, and ground water occurrence in the site vicinity is based on our review of the United States Geological Survey (USGS) Renton Quadrangle Topographical Map, dated 1949 (photo revised 1973); the EDR report; USGS Geologic Quadrangle Map of the Renton Quadrangle, King County, Washington, dated 1965; the results of our previous site studies and our general experience in the area.

5.1 REGIONAL PHYSIOGRAPHIC CONDITIONS

The site is located in the northeast quarter of Section 19, the southwest quarter of Section 17 and the northwest quarter of Section 20, all lying within Township 23 North, Range 5 East, Willamette Meridian. The surface elevation of the site is approximately 40 feet above mean sea level. The subject site is located approximately 1/2 mile south of Cedar River and approximately 2 miles south of Lake Washington.

5.2 SOIL AND GEOLOGIC CONDITIONS

The site vicinity is underlain by widespread or discontinuous artificial fill according to the geologic map we reviewed. Subsurface exploration performed by GeoEngineers at the site during previous studies encountered fill generally consisting of gravel, silty sand, silt and/or coal mine tailings to depths of up to 14 feet beneath the site surface. Native sand and silt units underlie the fill.

5.3 GROUND WATER CONDITIONS

GeoEngineers constructed 33 monitoring wells in and around the northern portion of the Stores building during our previous studies. The locations of the monitoring wells previously installed at the site are shown in our previous reports. Additionally, GeoEngineers constructed four monitoring wells in the vicinity of a former transformer oil UST located south of the Stores building. Ground water generally was encountered at depths of approximately 5 to 8 feet beneath the site surface in these areas. The general direction of shallow ground water flow beneath the site is toward the west based on water level measurements. Most of the wells completed during our previous studies were removed during subsequent remedial excavation

activities or abandoned in place. However, monitoring wells MW-4, MW-8, MW-10 and MW-20, located near the north/northwest corner of the Stores building, remain intact.

6.0 GENERAL SITE CHARACTERISTICS

6.1 LOCATION AND LEGAL DESCRIPTION

The site is located at 620 South Grady Way in Renton, Washington. The legal description of the site is presented in Appendix A.

6.2 SITE RECONNAISSANCE OBSERVATIONS

Representatives of GeoEngineers performed a visual reconnaissance of the site on October 7, 1997. Subsequent site reconnaissance was conducted on December 17, 18 and 22, 1997 and February 18, 19, 20, 23 and 26, 1998 during Phase II tasks associated with this study. Primary site access is from South Grady Way. The approximate locations of the features discussed in this section are shown in Figure 2. Photographs of the site were taken to document observations made during our reconnaissance on October 7, 1997. Selected photographs of the site are presented in Figures 3a and 3b. Site features of potential environmental significance are discussed below.

6.2.1 Site Improvements

The site consists of approximately 20.5 acres and is occupied by three buildings: the Stores building, the Service Center building, and the Division Office building. The Stores building serves as a warehouse and transformer storage and repair shop. The Service Center building is used as office space and for equipment/supply storage. The Division Office building is no longer occupied. It is currently used to store office furniture and equipment. Yard and dock areas south, west and east of the buildings currently are being used for transformer storage. A loading bay area located immediately west of the Service Center building currently is used to store PCB containing transformers that have leaked. The leaking transformers are stored in secure basins designed to contain their oil. A portion of the transformer storage yard previously was used to store power poles treated with preservative. A security fence surrounds the area in which the Stores building, Service Center building and transformer/former pole storage yard, and associated parking are located.

A fuel service island and two registered 10,000 gallon fuel (gasoline and diesel) USTs, installed in 1989, are located between the Service Center building and the Stores building. A 2,000 gallon heating oil UST is located immediately east of the Stores building. Eight other fuel and oil USTs were removed from the site between 1987 and 1990 as described in our March 3, 1988, December 15, 1989, January 17, 1990 and February 7, 1991 reports. The majority of the area within the fence is paved with asphaltic concrete. The southern portions of the transformer/former pole storage yard are surfaced with gravel. The site areas south and east of the security fence are undeveloped.

6.2.2 Pits, Ponds and Lagoons

No pits or lagoons were observed on the site. A "marshy area" is located south of the site's security fence. Additionally, a small storm water pond is located in the eastern portion of the property (Figure 2). The pond appears to catch surface water runoff at the base of a hill that slopes up to the adjacent Benson Road South. We did not observe sheens or other physical evidence of contamination by hazardous substances at the pond location.

6.2.3 Site Drainage

Surface drainage primarily is directed toward numerous catch basins on the site. Additionally, water from the previously mentioned pond flows into a drainage ditch (concrete-lined) located adjacent to the fence in the southern portion of the site. Water from the drainage ditch and the catch basins flows into the local storm water system at the southern portion of the site. A utility map, including the general layout of the site's storm water drainage system, is shown in Figure 4.

6.2.4 Stressed Vegetation, Stained Soil or Pavement

Stressed vegetation, attributed to hazardous substances, was not observed on-site. A dark stain was observed on the concrete surface of the loading bay immediately west of the Service Center building. The cause of the stain is unknown. Other dark stains were observed on the pavement surface in areas where vehicles have been parked. These stains generally are less than 3 feet in diameter and, in our opinion, appear to have been caused by periodic low volume dripping of oil or grease from parked cars. Other significant stains were not observed on the site surface.

6.2.5 Water Wells, Sumps and Drains

We observed four monitoring well monuments (MW-4, MW-8, MW-10 and MW-20) which were installed during previous GeoEngineers studies of the Stores building and its vicinity. Additionally, six new monitoring wells (GMW-1 through GMW-6) were constructed on-site during the Phase II portion of this study (Section 9.4). The Stores building contains a sump for condensation water located in the northwest corner of the heating system's boiler room. An "oil water separator", an "oil interceptor" and two "oil trap vaults" also were observed on-site (Figure 2). Additionally, the site contains numerous catch basins for surface water drainage as described in Section 6.2.3. Other evidence of water wells, sumps or drains was not observed on site.

6.2.6 Areas of Standing Water or other Liquids

Areas of standing water or other liquids were not observed on the site with the exception of the small storm water pond described in Section 6.2.2.

6.2.7 Waste Generation and Disposal

Unconfined refuse and/or debris was not observed on the site. PSE representatives we interviewed indicated that PCBs are removed from waste water stored in an AST (Section 6.2.8) located on the Service Center building loading dock and that the treated water is subsequently discharged into the metro sewer system in accordance with a discharge permit.

Stockpiles of coal mine tailings are present between Main Avenue South/Benson Road South and the fence that borders the eastern portion of the storage yard. These stockpiles generally are densely vegetated with blackberry bushes.

6.2.8 Storage Tanks and Containers

Three USTs are located on site: one 10,000-gallon diesel fuel UST and one 10,000-gallon unleaded gasoline UST, installed in 1989, and one 2,000-gallon heating oil UST. The USTs are located between the Stores building and the Service Center building near the north end of the fenced area. Two storage tanks containing up to 119 gallons of propane were observed on the site. Additionally, we observed the 3,700-gallon AST that contains waste water located in the Service Center loading dock. One storage shed ("RCRA shed"), used to contain batteries, was observed south of the Stores building.

We observed 11 containers used to store leaking PCB-containing transformers located in the Service Center Bay area. We also observed approximately one hundred and fifty 55-gallon drums on site during our October 7, 1998 reconnaissance. The approximate drum storage locations observed on October 7, 1997 are shown in Figure 2. Labels on the drums identified the contents as waste soil, oil and other liquids. PCB-containing materials were present in some of the drums. Other drums observed on-site were labeled "non-hazardous." Based on our observations during subsequent site visits and our interviews with PSE representatives, it is apparent that the content and number of drums stored on the site changes regularly. The drums we observed appeared to be in good condition. We did not observe evidence of leakage from the drums.

6.2.9 Indications of PCBs, Transformers and Utilities

The Stores building is utilized, in part, as a transformer repair shop. Some of the transformers contain PCBs. PCB transformers, identified as having leaked, currently are stored in 55-gallon drums which are stored in large plastic containers in the area designated for storage of leaking transformers; this storage area is located west of the Service Center building. PCB-containing materials and PCB storage areas at the site are managed in accordance with federal Toxic Substances Control Act (TSCA) regulations and PSEs PCB-handling program. Numerous non-PCB containing transformers also are stored on the site. The site contains one operating transformer in a vault located immediately east of the Service Center building. The transformer vault was secured in such a manner that access was

not practical during our site reconnaissance. PSE representatives we spoke with indicated that they are unaware of any releases of insulating oil from the transformer in the vault.

The City of Renton supplies the site with water and sewage service. The Stores building is heated with a boiler fueled by heating oil. The Service Center building and the vacated Division office building are heated by electricity.

6.2.10 Radon

We contacted the Washington State Department of Health (DOH) regarding the potential for radon gas in Western Washington. According to DOH, the potential for radon gas in the Puget Sound region is very low. It is estimated to that only one percent of houses in the Puget Sound region have radon gas concentrations exceeding 4 picocuries per liter (pCi/L). The national average for radon gas concentrations in buildings and structures is 4 pCi/L. According to DOH, radon gas is typically not a problem in larger buildings that have forced air or better ventilation.

We also contacted the EPA Radiation Protection Program. EPA representatives concur with the opinion of DOH regarding the radon gas potential in the Puget Sound Region. Additionally, EPA suggested that radon gas concentrations in the Puget Sound region are low for the following reasons: (1) a low uranium content in soils (radon gas is a decay product of uranium 238), (2) moist soil conditions (moisture inhibits radon movement), and (3) a high degree of fines in the soil (lower permeability soils inhibit radon gas movement).

Based on our conversations with personnel from the EPA and DOH, it is our opinion that the potential for radon gas at concentrations in excess of 4 pCi/L at the site is low.

6.2.11 Other Conditions of Concern

We did not observe other conditions of concern regarding the potential for site soil and/or ground water contamination by hazardous substances.

6.3 ADJACENT PROPERTY AND VICINITY OBSERVATIONS

Residential, commercial and undeveloped properties border the subject site to the north. A parking structure is located immediately northeast of the site. The eastern and southern portions of the site are bordered by Main Avenue South and Benson Road South, respectively. Interstate Highway 405 is on the opposite side of Main Avenue South. The adjacent properties to the south and west are occupied by commercial and office buildings that are separated from the site by Benson Road South and Talbot Road South, respectively. An AM/PM ARCO service station is located immediately west of the site, at the intersection between Talbot Road South and South Grady Way.

We did not observe any evidence of past or present use, storage, generation, release, or disposal of hazardous substances on adjacent properties with the exception of fuel storage at the nearby service station, located downgradient (west) of the site.

7.0 ENVIRONMENTAL RECORDS REVIEW

GeoEngineers reviewed the results of an environmental records (regulatory lists) search for those facilities that currently or previously have occupied properties within an ASTM-specified distance from the subject site. The information reviewed was compiled by EDR. The EDR report is included in Appendix B. The report includes details regarding the listed facilities identified and maps showing the locations of the listed facilities relative to the subject site.

The subject site is included on the registered UST and the leaking UST lists according to the EDR report we reviewed. The UST site number for the Grady Way Complex is 8532. The site is listed for the current and former USTs described in Sections 6.2.8 and 8.3 of this report. The site is included on the leaking UST list because of soil conditions encountered around the site's former USTs (now removed). These areas were successfully remediated between 1987 and 1990 as documented in our prior reports.

Those listed off-site facilities found within the specified distance from the subject site were evaluated for potential impact to the subject site. The listed facilities identified either are located a significant distance (1/4 mile or greater) from the site or are located in an inferred down- or cross-gradient location relative to the site, based on our review. In our opinion, the potential for subject site contamination originating from one or more of the listed facilities identified in the EDR report is low. Therefore, we did not review Ecology files for the listed facilities with the exception of the file for the service station located immediately west (downgradient) of the site at 509 S. Grady Way. We reviewed the file for this service station because of its proximity to the subject site. Documents in the Ecology file do not indicate that contamination from the service station facility has impacted the subject site. Additionally, there were no indications that contaminants from the subject site have migrated onto the service station property.

8.0 SITE HISTORY

Our understanding of site history is based on the results of our prior site studies; review of Sanborn fire insurance maps dated 1904, 1909, 1927 and 1929; evaluation of aerial photographs dated 1936, 1946, 1960, 1968, 1974, 1977, 1980, 1985 and 1992; review of various PSE file materials including maps, building plans, spill reports and a spill prevention control and counter measure plan; and interviews with the following persons:

- Larry Herwitz of PSE (08/14/95)
- Manny Wilson of PSE (08/17/95)
- Bob Banasky of PSE (08/17/95)
- Lance Taylor PSE (08/17/95 and 11/19/97)
- Renato Pagalilauan of PSE (08/17/95)
- Kevin Case of PSE (08/17/95)
- Kate Oehler of PSE (08/17/95)

- Bill Carey of PSE (08/17/95)
- Jerry McNeilly of PSE (08/17/95)
- Curtis Dahlgren of Ecology (08/25/95)
- Dave Yasuda of PSE (10/02/97)
- Reid O. Kinne of PSE (10/07/97)
- Julie, Renton Fire Department (11/04/97)
- Brenda Campbell of PSE (11/12/97)
- Patty McClements of PSE (11/17/97)
- Allan Miller of PSE (2/20/98)

A summary of historical site use based on these sources is presented below.

8.1 GENERAL

- PSE purchased most of the site and adjacent property west of the site, across Talbot Road South around 1903. A portion of the adjacent property west of the site was developed as an electrical substation in the early 1940s.
- An entrance to a coal mine was located in the eastern portion of the site in the late 1800s and early 1900s. Large piles of coal mine tailings covered portions of the site at that time. A railroad spur was located in the eastern portion of the site. It appears that PSE owned a part or all of the coal mine operation, based on Sanborn maps and PSE's real estate files. Current site facilities were constructed on fill consisting of the coal mine tailings. The nature of the on-site fill is discussed in Section 9.2.
- The site was used as a pasture for a farm after the coal mine stopped operation.
- The Stores building was constructed in 1951 and the Service Center and Division Office buildings were constructed in 1956, according to tax records. The Division Office building is no longer in use.
- PSE's current and past activities performed at the site include (1) warehousing a stock of supplies for other PSE facilities, (2) storage and maintenance of transformers, and (3) fueling and maintenance of fleet vehicles.
- Some of the materials warehoused at the site include PCBs at concentrations greater than 500 parts per million (ppm).
- Vehicle maintenance and repair took place in the northern (garage) portion of the Stores building until approximately 1991. Hydraulic lifts and USTs in that area were removed.
- A vegetated "marshy" area is located south of the site security fence.
- Some of the PSE personnel we interviewed speculated that transformers may be buried beneath portions of the southern half of the site. Our research did not identify other historical information suggesting that transformers were buried on-site. Test pits TP-1 through TP-5, monitoring well borings GMW-3 through GMW-6 and hand auger borings B-40 through B-47 (Figure 5), were completed during Phase II of this study in

areas identified as possible transformer burial locations based on our interviews. Transformers were not encountered in our subsurface explorations.

- The fire department indicated that they have no records of historical hazardous materials "incidents" (spills or fires) at the subject site.

We did not identify any historical adjacent property use that represents a significant potential source of contamination by hazardous substances on the subject site.

8.2 TRANSFORMER REPAIR SHOP AND TRANSFORMER/POLE STORAGE YARD

- The transformer repair shop has been in use at the site for at least 25 years and is located in the southern portion of the Stores building.
- Two fiberglass ASTs that contained acid and an unidentified "cleaner" were located in the transformer repair shop and were used to clean transformers. Transformers were submerged in the tanks to remove paint. The tanks were taken out of service around 1986. We obtained a ground water sample from boring B-32, located immediately adjacent to the transformer repair shop during Phase II of this study to evaluate the potential presence of solvents (HVOCs) near these former tanks. HVOCs of regulatory significance were not detected in the ground water sample obtained from B-32 (Section 9.4).
- Transformers have been stored on the site for at least 35 years. PSE implemented a program approximately 12 years ago for documenting spills and subsequent cleanups that occur at the Grady Way site. Transformer storage primarily has occurred in the areas south and west of the Stores building and the area south and east of the Service Center. We understand that PCB-containing transformers have been stored and managed separately from non-PCB transformers for at least 12 years.
- PCB-containing transformers currently are stored on the concrete storage docks adjacent to the transformer repair shop and the Service Center building. We understand that some of the PCB-containing transformers may have been stored in the transformer storage yard prior to 1980.
- PSE's Spill Prevention Control and Countermeasure (SPCC) plan identified three areas of the site as current "PCB Storage Areas." These locations are shown in Figure 2.
- A transformer oil AST was located on the storage dock at the southern end of the stores building. According to Lance Taylor, this AST was removed approximately three years ago.
- Power poles treated with creosote were stored on the site in the area south of the Stores building until approximately 1990. We understand that the application of chemical preservatives to the poles did not take place at the site.

8.3 PREVIOUS REMEDIAL ACTIONS

- GeoEngineers monitored the excavation and removal of approximately 650 cubic yards of petroleum-contaminated soil from the vicinity of a waste transformer (insulating/mineral) oil UST in 1987. The contaminated soil and the UST were transported off-site for permitted disposal. The waste transformer oil UST was located south of the transformer repair shop in the transformer storage yard. The UST was connected to a vault in the transformer repair shop by underground piping. The approximate extent of this remedial excavation is shown in Figure 2.
- GeoEngineers consulted Ecology and established a remedial action level (RAL) for total petroleum hydrocarbons of 300 milligrams per kilogram (mg/kg) during remediation of soil contamination near the waste transformer oil UST to account for the effect of the coal tailings on TPH concentrations detected by chemical analysis.
- GeoEngineers monitored the removal of seven additional USTs from the vicinity of the Service Center and Stores buildings in 1989 and 1990. The approximate locations of these former USTs and associated remedial excavations are shown in Figure 2.
- Approximately 3,100 cubic yards of hydraulic fluid-contaminated soil were removed from the former garage area located in the northern portion of the Stores building in 1990. The hydraulic fluid-contaminated soil was transported to a permitted landfill for disposal. The garage, including three hydraulic lifts, was taken out of service in 1990.
- The USTs removed in 1989 and 1990 were replaced with a 10,000-gallon gasoline UST, a 10,000-gallon diesel UST and a fuel island located east of the former garage area. We understand that the new USTs are double-walled and contain interstitial leak detection devices. There have been no reported leaks from the new USTs according to PSE and the Ecology records we reviewed.
- Field screening and chemical analytical results for soil samples obtained from the final limits of the prior remedial excavations indicate that soil containing residual petroleum hydrocarbon concentrations exceeding applicable MTCA cleanup levels were successfully removed from the former UST and hydraulic lift areas.
- A heating oil UST is located east of the Stores building. We understand that the original heating oil UST, installed in approximately 1950 at the site, was replaced with the current heating oil UST in the same location. We further understand that visual observations during the heating oil UST replacement indicated that minor amounts of petroleum-related soil contamination may exist in the vicinity of the UST. Chemical analysis of a ground water sample obtained from boring B-37, located immediately downgradient of the UST, did not detect petroleum hydrocarbons (Section 9.4).

8.4 ENVIRONMENTAL LIENS

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

9.0 PHASE II ENVIRONMENTAL SITE ASSESSMENT

9.1 CONCRETE SAMPLES AND ANALYSIS

A representative of GeoEngineers obtained ten concrete samples (C-1, C-2 and C-4 through C-11) from various transformer storage locations at the site for PCB analysis on December 18 and 22, 1997. The concrete samples were obtained from the surface of the storage/loading docks where transformers have been stored. The approximate concrete sample locations are shown on Figure 5. PCBs were detected in samples C-2, C-4, C-5, C-7, C-8, C-9 and C-11 at concentrations ranging from 75.9 to 1,050 micrograms per kilogram (μg/kg). The concrete analytical results are presented in Table 1. Concrete sampling methods are described in Appendix C. Laboratory reports for the concrete samples are presented in Appendix D.

9.2 SOIL SAMPLING AND ANALYSIS

Soil conditions in the eastern and southern portions of the site were evaluated by obtaining discrete soil samples from 38 shallow direct-push borings (B-1 through B-38), nine shallow hand auger borings (B-39 through B-47), five test pit excavations (TP-1 through TP-5), and seven monitoring well borings (GMW-1 through GMW-7). Additionally, two grab samples were obtained from the coal mine tailings stockpiles (GC-1 and GC-2) at approximately 1- to 2-foot depth intervals.

The explorations were completed between December 18, 1997 and February 23, 1998 to depths of approximately 3.0 to 12.0 feet beneath the ground surface (bgs) at locations of suspected subsurface contamination based on the results of the Phase I ESA. GMW-7 was completed off-site in Talbot Road immediately downgradient of the southern portion of the property (ground water flow direction is discussed in Section 9.4). The approximate locations of the explorations completed for this study are shown in Figure 5. Field sampling methods and soil logs are presented in Appendix C. Geologic cross sections depicting the soil conditions encountered in our explorations are presented in Figures 6a and 6b.

The soil samples were classified and field screened for evidence of potential petroleum hydrocarbon contamination. The explorations generally encountered loose to dense fill consisting of near surface sand or gravel underlain by coal mine tailings. The coal mine tailings consist of black silt and sand with varying amounts of coal fragments. The tailings consist primarily of coal fragments in some portions of the site. Deeper explorations generally encountered native silt or sand approximately 10 to 12 feet bgs. Field screening evidence of petroleum hydrocarbons was not detected in the soil samples obtained from the explorations, with the exception of samples GMW-7-8.0 and GMW-7-11.0.

Seventy-three soil samples were submitted to North Creek Analytical Laboratory of Bothell, Washington for one or more of the chemical analyses described in Section 2.2. Soil samples were selected for analysis based on their location relative to suspected sources of

contamination and/or the ground water table. Many of the soil samples obtained from depths of approximately 0.5 foot of the site surface were submitted for chemical analysis to evaluate the effects of surface spills from transformers and/or impacts from the wood preservative present on the power poles that were formerly stored on-site. Selected soil samples from approximately 2.0 to 3.0 feet bgs were submitted for analysis to evaluate the vertical extent of residual contamination detected in shallower samples. The chemical analytical results are described below.

9.2.1 Petroleum Hydrocarbons

Diesel- and heavy oil-range petroleum hydrocarbons were detected in most of the soil samples submitted for chemical analysis. Our Phase I ESA research and chemical analyses indicate that periodic transformer (insulating/mineral) oil leaks from electrical transformers stored in the southern and eastern portions of site during the past 40 years have resulted in residual concentrations of petroleum hydrocarbons in soil. Transformer oil elutes in the diesel- and heavy oil-range when analyzed by gas chromatography. The residual transformer oil-related hydrocarbons in soil at the site were quantified either as transformer oil and/or undifferentiated diesel- and heavy oil-range hydrocarbons by the laboratory. Chemical analysis also detected hydraulic/lube oil-range hydrocarbons in some of the soil samples. A specific source of these hydraulic/lube oil-range hydrocarbons was not identified by our study.

Site specific MTCA Method B cleanup levels were calculated using Ecology's Interim TPH Policy for the petroleum hydrocarbons detected. MTCA Method B cleanup level calculations are summarized in Appendix E.

Petroleum hydrocarbon concentrations in all the soil samples submitted for analysis were less than the MTCA Method B cleanup levels calculated for the site. The MTCA Method B cleanup levels calculated for the specific hydrocarbon ranges identified were 3,965 mg/kg for transformer oil-related hydrocarbons quantified as diesel- and heavy oil-range hydrocarbons, 3,971 mg/kg for hydrocarbons specifically quantified as transformer oil, and 3,432 mg/kg for hydraulic/lube oil-range hydrocarbons. Petroleum hydrocarbon concentrations detected in soil on-site ranged from 23.4 to 2,120 mg/kg. Petroleum hydrocarbon concentrations in the soil samples tested generally decreased significantly within approximately 3 feet of the site surface.

Chemical analysis detected diesel- and heavy oil-range hydrocarbons at concentrations of 3,890 mg/kg and 2,390 mg/kg respectively in the soil sample obtained from GMW-7 approximately 8.0 feet beneath Talbot Road immediately west of the site. Numerous utility trenches are located beneath Talbot road. Utility trenches can act as a conduit for migration of petroleum hydrocarbons relatively long distances from their source. The source of the petroleum hydrocarbons in GMW-7 was not identified by our study.

Soil chemical analytical results for petroleum hydrocarbons at the site are presented in Table 2. Our review of laboratory QA/QC (quality assurance/quality control) and the laboratory reports are presented in Appendix D.

9.2.2 PCBs

PCBs either were not detected or were detected at concentrations less than the MTCA Method A cleanup level (1 mg/kg) in the 53 soil samples submitted for PCB analysis with the exception of soil samples B-7 (1.33 mg/kg), B-34 (1.62 mg/kg) and TP-5 (1.85 mg/kg). These three samples were obtained from approximately 0.5, 0.5 and 4.0 bgs, respectively. Soil chemical analytical results for PCBs are presented in Table 3. Our review of laboratory QA/QC (quality assurance/quality control) and the laboratory reports are presented in Appendix D.

9.2.3 SVOCs

SVOCs including pentachlorophenol (PCP) and carcinogenic polynuclear aromatic hydrocarbons (cPAHs) either were not detected or were detected at concentrations less than applicable MTCA cleanup levels (8.33 mg/kg PCP and 1 mg/kg cPAHs) with the exception of soil samples B-19 (1.70 mg/kg cPAHs), B-23 (2.46 mg/kg cPAHs) and B-29 (2.05 mg/kg cPAHs). These samples were obtained from a depth of approximately 0.5 foot bgs. Soil chemical analytical results for SVOCs are presented in Table 3. Our review of laboratory QA/QC (quality assurance/quality control) and the laboratory reports are presented in Appendix D.

9.3 SEDIMENT SAMPLES

A representative of GeoEngineers obtained two sediment samples (S-1 and S-2) from the storm water pond and six discrete sediment samples (S-3 through S-8) from selected catch basins on February 18, 1998 at the approximate locations shown in Figure 5. Petroleum hydrocarbons and PCBs either were not detected in the sediment samples or were detected at concentrations less than MTCA soil cleanup levels. Sediment samples S-4 and S-5 contained cPAH concentrations (2.87 and 6.75 mg/kg) exceeding the MTCA Method A soil cleanup level (1 mg/kg) for cPAHs. Freshwater sediment cleanup levels have not been established under MTCA. Sediment chemical analytical results are presented in Tables 2 and 3. Our review of laboratory QA/QC (quality assurance/quality control) and the laboratory reports are presented in Appendix D.

We estimate that the on-site catch basins contain less than two cubic yards (total) of sediment based on our observations.

9.4 GROUND WATER

Ground water conditions beneath the site were explored by obtaining ground water samples from eight of the direct-push borings (B-30 through B-37) and seven monitoring wells (GMW-1 through GMW-7) installed during this phase of work. The approximate boring and well locations are shown in Figures 5 and 7. Well construction details and ground water monitoring methods are presented in Appendix C.

Water levels were measured in existing wells MW-4, MW-8, MW-10 and MW-20 on December 22, 1997 and in new and existing wells MW-4, MW-8, MW-10, MW-20 and GMW-1 through GMW-7 on February 26, 1998. Water levels at the time of our measurements ranged from 1.87 (GMW-3) to 7.84 (MW-8) feet bgs. The ground water table beneath the site was slightly higher in December 1997 than in February 1998 based on our measurements. Ground water depth measurements and calculated ground water table elevations are presented in Table 4. A ground water contour map based on our February 26 measurements is presented in Figure 7. Shallow ground water appears to flow in a westerly direction beneath the site, based on our February 26 measurements.

Ground water samples from selected borings (B-30 through B-37) and MW-10 were obtained on December 18 and 22, 1997 for the chemical analyses described in Section 2.2. Diesel- and heavy oil-range hydrocarbons were detected in ground water samples B-30, B-31, B-34 and B-36 at concentrations ranging from 1.63 to 3.4 milligrams per liter (mg/l), which exceeds the MTCA Method A cleanup level (1 mg/l). Additionally, PCBs and cPAHs were detected in ground water sample B-34 at concentrations [(0.260 and 0.821 micrograms per liter (μg/l), respectively] exceeding the MTCA Method A cleanup level (0.1 μg/l) for these compounds. PCBs also were detected at a concentration (2.82 μg/l) exceeding the MTCA Method A cleanup level in the ground water sample obtained from B-36. Methylene chloride was detected in the ground water sample obtained from boring B-32. The methylene chloride in the B-32 sample was identified as a laboratory contaminant by the laboratory. Other HVOCs were not detected in the ground water sample obtained from B-32. Other analytes were not detected at concentrations exceeding MTCA cleanup levels in the ground water samples obtained from the borings and MW-10.

It is our experience that chemical analytical results from direct-push borings should be used only as a screening tool because they generally are biased high. Therefore, monitoring wells GMW-1, GMW-4, and GMW-6 were constructed to further evaluate ground water conditions in the vicinity of B-30, B-31, B-34 and B-36.

Ground water samples were obtained from GMW-1 through GMW-6 (on-site) and GMW-7 (off-site) on February 20, 1998 and submitted for the chemical analyses described in Section 2.2. Diesel- and heavy oil-range hydrocarbons were detected in GMW-2 at concentrations of 1.37 and 12.27 mg/l, respectively, which exceed the MTCA Method A cleanup level of 1.0 mg/l. GMW-7 is located downgradient of the site, immediately adjacent to numerous utility trenches beneath Talbot Road. Additionally, PCBs were detected in GMW-4 at a concentration (1.17 μg/l) exceeding the MTCA Method A cleanup level (0.1 μg/l). Other analytes either were not detected or were detected at a concentration less than MTCA cleanup levels in the ground water samples submitted for analysis.

Ground water chemical analytical results are presented in Table 5. Our review of laboratory QA/QC (quality assurance/quality control) and the laboratory reports are presented in Appendix D.

9.5 WELL SEARCH

GeoEngineers reviewed Ecology's records for water supply wells located within a 1-mile radius of the site. The wells identified are presented in Table 8. The approximate well locations relative to the subject site are presented in Figure 8. The closest water supply wells in Ecology's records are located approximately ¾-mile northeast (upgradient/cross gradient) of the site.

10.0 CONCLUSIONS

GeoEngineers has performed a Phase I/II ESA of PSE's Grady Way Complex property located at 620 South Grady Way in Renton, Washington. The Phase I ESA portion of our study was conducted in general accordance with the scope and limitations of ASTM E 1527-97. Based on the ESA results, soil and ground water contamination of regulatory significance appears to be limited to portions of the southern third of the site as shown in Figure 9. The results of our studies indicate that the potential for existing soil and/or ground water contamination of regulatory significance in the northern portion of the site is low.

The results of our ESA indicate that soil and ground water contamination is present at concentrations of regulatory significance at the following specific locations in the southern portion of the site (Figure 9):

- Diesel- and heavy oil-range hydrocarbons were detected in a ground water sample obtained from GMW-2 at a concentration (1.37 mg/l) slightly exceeding the MTCA Method A cleanup level (1 mg/l).
- PCBs were detected at concentrations (1.33 to 1.85 mg/kg) slightly exceeding the MTCA Method A cleanup level (1 mg/kg) in soil samples obtained from three locations (B-7 at 0.5 foot bgs, B-34 at 0.5 foot bgs and TP-5 at 4.0 feet bgs).
- PCBs were detected at a concentration (1.17 µg/l) exceeding the MTCA Method A cleanup level (0.1 µg/l) in ground water obtained from GMW-4.
- Carcinogenic PAHs (cPAHs) were detected at concentrations (1.70 to 2.46 mg/kg) exceeding the MTCA Method A cleanup level (1 mg/kg) in shallow (0.5 foot bgs) soil samples obtained from three locations (B-19, B-23 and B-29).
- CPAHs were detected at concentrations (2.87 to 6.75 mg/kg) exceeding the MTCA Method A soil cleanup level (1 mg/kg) in two of the six sediment samples obtained from catch basins.

Additional localized residual PCB and/or PAH concentrations exceeding applicable cleanup levels may be present immediately adjacent to portions of the on-site catch basins, stormwater conveyance pipes and/or buried transformers, if present.

The extent of residual cPAH and/or PCB concentrations exceeding applicable cleanup levels in the vicinity of B-7, B-19, B-23, B-29, B-34 and TP-5 was not fully evaluated by our study. However, based on our experience with these compounds at other similar PSE sites and

the soil and ground water analytical results, we expect that the areas of contaminant concentrations exceeding cleanup levels would be localized. Other soil samples obtained near the areas of PCB and cPAH cleanup level exceedances identified above did not contain concentrations of these compounds that exceed applicable cleanup levels. Our conceptual volume estimate of soil containing PCB and cPAH concentrations exceeding MTCA Method A cleanup levels in the southern portion of the site is 500 cubic yards. This estimate assumes that the PCB and/or cPAH concentrations of regulatory significance are limited to an area within approximately 20 feet of sample locations B-7, B-19, B-23, B-29, B-34 and TP-5-4. The actual volume may vary significantly from this conceptual estimate.

Chemical analysis did not detect contaminant concentrations exceeding applicable cleanup levels in 73 of the 81 soil/sediment samples and four of the six on-site ground water samples submitted for chemical analysis. Diesel- and heavy oil-range hydrocarbons either were not detected or were detected at concentrations less than the Model Toxics Control Act (MTCA) Method A cleanup level (1 mg/l) in ground water samples obtained from the monitoring wells on-site with the exception of GMW-2. MTCA Method B cleanup levels were calculated in accordance with Ecology's Interim TPH Policy for direct contact and soil-to-ground water exposure pathways (Appendix E) using soil analytical data from the site. The MTCA Method B cleanup levels range from 3,432 mg/kg to 3,971 mg/kg for the various types of petroleum hydrocarbons present in soil at the site. Petroleum hydrocarbons were detected in soil at concentrations less than the most conservative MTCA Method B cleanup level (3,432 mg/kg) calculated for the site.

The Interim TPH Policy does not specify an approach for evaluating the potential risk caused by hydrocarbon vapors, therefore the soil-to-air pathway was not specifically evaluated during this study. However, significant concentrations of volatile compounds typically are not associated with transformer oils and hydraulic/lube oils like those detected at the site. Furthermore, benzene was not identified as a contaminant on the site. Institutional controls could be implemented at the site to protect human health from hydrocarbon vapors if future regulatory policy requires specific mitigating measures for protection of human health through the soil-to-air pathway.

Significant concentrations of diesel- and heavy oil-range petroleum hydrocarbons were detected in soil and ground water obtained from monitoring well/boring GMW-7 located in Talbot Road, immediately downgradient from the southern portion of the site. In our opinion the source for the petroleum-related soil and ground water contamination detected in GMW-7 is not likely located on the subject site because petroleum-related contamination of regulatory significance was not detected in the two on-site wells (GMW-5 and GMW-6) located closest to, and upgradient of, GMW-7. Our study did not identify evidence concerning the specific source of the petroleum hydrocarbons detected in GMW-7.

11.0 LIMITATIONS

We have prepared this report for use by Puget Sound Energy and regulatory agencies. This report is not intended for use by others, and the information contained herein is not applicable to other sites. If a lending agency or other parties intend to place reliance on the product of our services, we require that those parties indicate in writing their acknowledgment that the scope of services provided, and the general conditions under which the services were rendered are understood and accepted by them. This is to provide our firm with reasonable protection against open-end litigation by third parties with whom there would be no contractual limits to their actions.

GeoEngineers makes no warranties or guarantees regarding the accuracy or completeness of information provided or compiled by others. The information presented in this report is based on the above-described research and our site visits. GeoEngineers has relied upon information provided by others in our description of historical conditions and in our review of regulatory databases and files. The available data do not provide definite information with regard to all past uses, operations or incidents at the site or adjacent properties.

No ESA can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with a property. Our conclusions are based on chemical analytical results from widely spaced soil and ground water sample locations. There is always a potential that areas with contamination that were not identified during this ESA exist at the site or in the study area. Further evaluation of such potential would require additional research, subsurface exploration, sampling and testing.

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 of all appropriate inquiry or regulatory definitions of hazardous substances change, or if you are required to meet more stringent standards in the future.

GeoEngineers has performed this Phase I ESA of the Puget Sound Energy property at 620 South Grady Way, Renton Washington within the limitations of scope, schedule and budget and in general accordance with ASTM E 1527-97. Our services have been executed in accordance with our general agreement with Puget Sound Energy (Contract No. BX01074-C01A) and 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.

We appreciate the opportunity to assist Puget Sound Energy on this project. Please call if you have questions.

Yours very truly,

GeoEngineers, Inc.

Stephen C. Woodward
Project Geologist

Kurt R. Fraese
Associate

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Attachments

Two copies submitted

TABLE 1
CONCRETE CHEMICAL ANALYTICAL RESULTS
PSE SOUTH GRADY WAY COMPLEX
RENTON, WASHINGTON

Sample Number	Date Sampled	Depth of Sample	PCBs EPA Method 8081 (ug/kg)									
			Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	Total PCBs (ug/kg)
C-1	12/18/97	Surface	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C-2	12/18/97	Surface	ND	ND	ND	ND	ND	ND	102	ND	ND	102
C-4	12/18/97	Surface	ND	ND	ND	155	ND	ND	243	ND	ND	398
C-5	12/18/97	Surface	ND	ND	ND	62.6	ND	ND	94.4	ND	ND	157
C-6	12/22/97	Surface	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C-7	12/18/97	Surface	ND	ND	ND	ND	ND	ND	1050	ND	ND	1050
C-8	12/18/97	Surface	ND	ND	ND	ND	ND	ND	75.9	ND	ND	75.9
C-9	12/18/97	Surface	ND	ND	ND	60.5	ND	ND	175	ND	ND	235.5
C-10	12/22/97	Surface	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C-11	12/18/97	Surface	ND	ND	ND	ND	ND	142	65.1	ND	ND	207.1

Notes:

Approximated concrete sample locations are shown in Figure 4. A sample C-3 was not obtained.
PCBs = polychlorinated biphenyls
µg/kg = micrograms per kilogram
Laboratory reports are presented in Appendix C. Samples were submitted to North Creek Analytical Laboratory in Bothell, Washington for analysis.

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TABLE 2 (Page 1 of 5)
SOIL / SEDIMENT CHEMICAL ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS
PSE GRADY WAY COMPLEX
RENTON, WASHINGTON

Sample[1] Number	Date Sampled	Sample Depth (feet)	Field Screening Results[2] (Sheen)	Diesel and Heavy Oil-Range Hydrocarbons[3] mg/kg		MTCA Method B Cleanup Level [4] (mg/kg)
B-1	12/18/97	0.5	NS	Hydraulic/Lube Oil Range Hydrocarbons	2120	3,432
B-1	12/18/97	3.0	NS	Hydraulic/Lube Oil Range Hydrocarbons	213	3,432
				Diesel Range Hydrocarbons	72.6	
B-2	12/18/97	0.5	NS	Hydraulic/Hydraulic/Lube Oil Range Hydroca	830	3,432
				Diesel Range Hydrocarbons	292	
B-3	12/18/97	0.5	NS	Hydraulic/Lube Oil Range Hydrocarbons	509	3,432
B-4	12/18/97	0.5	SS	Hydraulic/Lube Oil Range Hydrocarbons	169	3,432
				Diesel Range Hydrocarbons	90.9	
B-4	12/18/97	1.5	SS	Hydraulic/Lube Oil Range Hydrocarbons	777	3,432
B-5	12/18/97	0.5	SS	Hydraulic/Lube Oil Range Hydrocarbons	231	3,432
B-6	12/18/97	0.5	NS	Hydraulic/Lube Oil Range Hydrocarbons	204	3,432
				Diesel Range Hydrocarbons	171	
B-7	12/22/97	0.5	NS	Heavy Oil Range Hydrocarbons	347	3,971
				Transformer Oil	365	
B-9	12/22/97	0.5	NS	Transformer Oil	382	3,971
B-10	12/18/97	0.5	NS	Hydraulic/Lube Oil Range Hydrocarbons	1450	3,432
B-11	12/18/97	0.5	NS	Hydraulic/Lube Oil Range Hydrocarbons	1280	3,432
				Transformer Oil	842	3,971
B-11	12/18/97	1.5	NS	Heavy Oil Range Hydrocarbons	129	3,965
				Diesel Range Hydrocarbons	131	
B-12	12/22/97	0.5	NS	Heavy Oil Range Hydrocarbons	30.9	3,971
				Transformer Oil	34.5	
B-13	12/18/97	0.5	NS	ND		–
B-14	12/22/97	0.5	NS	Heavy Oil Range Hydrocarbons	255	3,971
				Transformer Oil	272	
B-15	12/22/97	0.5	NS	Hydraulic/Lube Oil Range Hydrocarbons	1350	3,432
B-15	12/22/97	3.0	NS	Hydraulic/Lube Oil Range Hydrocarbons	316	3,432
				Diesel Range Hydrocarbons	132	
B-16	12/22/97	0.5	SS	Transformer Oil	253	3,971
B-17	12/22/97	0.5	NS	Heavy Oil Range Hydrocarbons	60.2	3,965
				Diesel Range Hydrocarbons	55	
B-18	12/22/97	0.5	NS	Heavy Oil Range Hydrocarbons	52.3	3,971
				Transformer Oil	60.1	

TABLE 2 (Page 2 of 5)
SOIL / SEDIMENT CHEMICAL ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS
PSE GRADY WAY COMPLEX
RENTON, WASHINGTON

Sample[1] Number	Date Sampled	Sample Depth (feet)	Field Screening Results[2] (Sheen)	Diesel and Heavy Oil-Range Hydrocarbons[3] mg/kg		MTCA Method B Cleanup Level [4] (mg/kg)
B-19	12/22/97	0.5	SS	Heavy Oil Range Hydrocarbons	37.7	3,965
				Diesel Range Hydrocarbons	23.4	
B-20	12/22/97	0.5	NS	Hydraulic/Lube Oil Range Hydrocarbons	46.3	3,432
B-21	12/22/97	0.5	NS	Heavy Oil Range Hydrocarbons	1420	3,965
B-21	12/22/97	3.0	NS	Heavy Oil Range Hydrocarbons	100	3,965
				Diesel Range Hydrocarbons	64.9	
B-22	12/22/97	0.5	NS	Heavy Oil Range Hydrocarbons	32.2	3,965
				Diesel Range Hydrocarbons	24.9	
B-23	12/22/97	0.5	NS	Heavy Oil Range Hydrocarbons	42.2	3,965
				Diesel Range Hydrocarbons	14.7	
B-24	12/22/97	0.5	NS	Heavy Oil Range Hydrocarbons	557	3,965
B-25	12/22/97	0.5	NS	Hydraulic/Lube Oil Range Hydrocarbons	65.0	3,432
				Diesel Range Hydrocarbons	19.9	
B-26	12/22/97	0.5	NS	Heavy Oil Range Hydrocarbons	26.3	3,965
B-27	12/22/97	0.5	NS	Heavy Oil Range Hydrocarbons	76.2	3,971
				Transformer Oil	125	
B-28	12/22/97	0.5	NS	Heavy Oil Range Hydrocarbons	100	3,965
				Diesel Range Hydrocarbons	49.9	
B-29	12/22/97	0.5	NS	Hydraulic/Lube Oil Range Hydrocarbons	31.9	3,432
B-30	12/18/97	0.5	NS	Hydraulic/Lube Oil Range Hydrocarbons	517	3,432
B-31	12/18/97	0.5	NS	Hydraulic/Lube Oil Range Hydrocarbons	1190	3,432
				Diesel Range Hydrocarbons	267	
B-31	12/18/97	3.0	NS	Hydraulic/Lube Oil Range Hydrocarbons	338	3,432
				Diesel Range Hydrocarbons	163	
B-32	12/18/97	0.5	NS	Transformer Oil	1100	3,971
B-32	12/18/97	3.0	NS	Heavy Oil Range Hydrocarbons	53.0	3,965
				Diesel Range Hydrocarbons	34.0	
B-33	12/18/97	0.5	NS	ND		--
B-34	12/22/97	0.5	NS	Hydraulic/Lube Oil Range Hydrocarbons	151	3,432
B-35	12/22/97	0.5	NS	Heavy Oil Range Hydrocarbons	95.5	3,965
				Diesel Range Hydrocarbons	59.3	
B-36	12/22/97	0.5	NS	Heavy Oil Range Hydrocarbons	29.1	3,971
				Diesel Range Hydrocarbons	14.9	

TABLE 2 (Page 3 of 5)
SOIL SEDIMENT CHEMICAL ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS
PSE GRADY WAY COMPLEX
RENTON, WASHINGTON

Sample[1] Number	Date Sampled	Sample Depth (feet)	Field Screening Results[2] (Sheen)	Diesel and Heavy Oil-Range Hydrocarbons[3] mg/kg		MTCA Method B Cleanup Level [4] (mg/kg)
B-37	12/22/97	0.5	NS	Hydraulic/Lube Oil Range Hydrocarbons	389	3,432
B-38	12/22/97	0.5	NS	ND		–
B-39	2/23/98	3.0	NS	Transformer Oil Rang Hydrocarbons	632	3,971
B-40	2/23/98	0.5	MS	Transformer Oil Rang Hydrocarbons	437	3,971
B-41	2/23/98	3.0	NS	Diesel Range Hydrocarbons	165	3,432
				Lube Oil Range Hydrocarbons	219	
B-42	2/23/98	3.0	NS	Transformer Oil Rang Hydrocarbons	142	3,971
				Hydraulic/Lube Oil Range Hydrocarbons	83.3	3,432
B-43	2/23/98	3.0	NS	Transformer Oil Rang Hydrocarbons	34.3	3,971
B-44	2/23/98	3.0	SS	ND		--
B-45	2/23/98	1.5	SS	Diesel Range Hydrocarbons	48.9	3,432
				Hydraulic/Lube Oil Range Hydrocarbons	67.6	
B-46	2/23/98	0.5	SS	Diesel Range Hydrocarbons	48.9	3,432
				Hydraulic/Lube Oil Range Hydrocarbons	70.9	
B-47	2/23/98	4.0	SS	Diesel Range Hydrocarbons	20.9	3,432
				Hydraulic/Lube Oil Range Hydrocarbons	32.0	
GMW-1	02/18/98	4.0	SS	Heavy Oil Range Hydrocarbons	226	3,965
				Diesel Range Hydrocarbons	144	
GMW-2	02/18/98	4.0	SS	Heavy Oil Range Hydrocarbons	74.1	3,965
				Diesel Range Hydrocarbons	49.3	
GMW-3	02/18/98	4.0	NS	Heavy Oil Range Hydrocarbons	33.2	3,965
				Diesel Range Hydrocarbons	86.7	
GMW-4	02/18/98	6.0	SS	Heavy Oil Range Hydrocarbons	671	3,965
				Diesel Range Hydrocarbons	1140	
GMW-5	02/18/98	4.0	NS	Heavy Oil Range Hydrocarbons	47.1	3,965
				Diesel Range Hydrocarbons	49.3	
GMW-6	02/18/98	4.0	NS	Hydraulic/Lube Oil Range Hydrocarbons	86.7	3,965
				Diesel Range Hydrocarbons	33.2	
GMW-7	02/18/98	4.0	SS	Heavy Oil Range Hydrocarbons	148	NC
				Diesel Range Hydrocarbons	87.9	
GMW-7	02/18/98	8.0	MS	Heavy Oil Range Hydrocarbons	3890	NC
				Diesel Range Hydrocarbons	2390	
S-1	2/18/98	0.5	NS	Heavy Oil Range Hydrocarbons	78.0	3,965
				Diesel Range Hydrocarbons	15.9	

TABLE 2 (Page 4 of 5)
SOIL SEDIMENT CHEMICAL ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS
PSE GRADY WAY COMPLEX
RENTON, WASHINGTON

Sample[1] Number	Date Sampled	Sample Depth (feet)	Field Screening Results[2] (Sheen)	Diesel and Heavy Oil-Range Hydrocarbons[3] mg/kg		MTCA Method B Cleanup Level [4] (mg/kg)
S-2	2/18/98	0.5	NS	Heavy Oil Range Hydrocarbons	28.4	3,965
S-3	2/18/98	0.5	NS	Heavy Oil Range Hydrocarbons	259	3,965
				Diesel Range Hydrocarbons	58.1	
S-4	2/18/98	0.5	NS	Heavy Oil Range Hydrocarbons	157	3,965
				Diesel Range Hydrocarbons	86.8	
S-5	2/18/98	0.5	NS	Heavy Oil Range Hydrocarbons	643	3,965
				Diesel Range Hydrocarbons	313	
S-6	2/18/98	0.5	NS	Heavy Oil Range Hydrocarbons	161	3,965
				Diesel Range Hydrocarbons	43.0	
S-7	2/18/98	0.5	NS	ND		–
S-8	2/18/98	0.5	MS	Heavy Oil Range Hydrocarbons	176	3,965
				Diesel Range Hydrocarbons	83.0	
GC-1	2/18/98	1.0	NS	Heavy Oil Range Hydrocarbons	123	3,965
				Diesel Range Hydrocarbons	41.2	
GC-2	2/18/98	1.0	NS	Heavy Oil Range Hydrocarbons	377	3,965
				Diesel Range Hydrocarbons	219	
TP-1	12/22/97	0.5	NS	ND		–
TP-1	12/22/97	6.0	NS	Heavy Oil Range Hydrocarbons	45.7	3,965
				Diesel Range Hydrocarbons	26.9	
TP-2	12/22/97	0.5	NS	ND		–
TP-2	12/22/97	4.0	NS	Heavy Oil Range Hydrocarbons	51	3,965
				Diesel Range Hydrocarbons	36.7	
TP-3	12/22/97	0.5	NS	ND		–
TP-3	12/22/97	4.0	NS	Heavy Oil Range Hydrocarbons	48	3,965
				Diesel Range Hydrocarbons	27.7	
TP-4	12/22/97	0.5	NS	ND		--
TP-4	12/22/97	4.0	NS	Heavy Oil Range Hydrocarbons	28.7	3,965
				Diesel Range Hydrocarbons	27.2	
TP-5	12/22/97	0.5	NS	ND		--
TP-5	12/22/97	4.0	NS	Heavy Oil Range Hydrocarbons	986	3,965

TABLE 2 (Page 5 of 5)
SOIL SEDIMENT CHEMICAL ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS
PSE GRADY WAY COMPLEX
RENTON, WASHINGTON

Notes:
[1]Approximate sample locations are shown in Figure 5.
[2]See Appendix B for a description of field screening methods.
[3]Analyzed by Ecology Method NWTPH-D extended with silica gel clean-up.
[4]Calculated using Interim TPH Policy methodology for the "direct contact" exposure pathway as described in Appendix D
"–" = not tested
NC = Not calculated. Samples obtained off-site. Therefore, site specific MTCA Method B cleanup levels identified in Appendix D do not apply. The source of the hydrocarbons in GMW-7 soil samples was not identified by our study.
ND = Not Detected. Detection limits are presented in Appendix C.
NS = No Sheen
SS = Slight Sheen
MS = Moderate Sheen
mg/kg = milligrams per kilogram
All samples were submitted to North Creek Analytical Laboratory in Bothell, Washington for analysis. Laboratory reports are presented in Appendix C.

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TABLE 3 (Page 1 o f 7)
SOIL / SEDIMENT CHEMICAL ANALYTICAL DATA - SVOCs AND PCBs
PSE GRADY WAY COMPLEX
RENTON, WASHINGTON

					Other SVOCs[2]			
Sample[1] Number	Date Sampled	Sample Depth (feet)	cPAHs[2] mg/kg	PCP[2] mg/kg	Compound	Result mg/kg	Method B Cleanup Level mg/kg	PCBs[3] mg/kg
B-1	12/18/97	0.5	–	–	–	–	–	ND
B-1	12/18/97	3.0	0.0869	ND	Benzo (ghi) perylene	0.0183	NC	ND
					Flouranthene	0.0391	3200	
					2-Methylnaphthalene	0.0243	NC	
					Naphthalene	0.0122	3200	
					Phenanthrene	0.0365	NC	
					Pyrene	0.0296	2400	
B-2	12/18/97	0.5	–	–	–	–	–	ND
B-3	12/18/97	0.5	–	–	–	–	–	ND
B-4	12/18/97	0.5	–	–	–	–	–	ND
B-4	12/18/97	1.5	–	–	–	–	–	–
B-5	12/18/97	0.5	–	–	–	–	–	ND
B-6	12/18/97	0.5	–	–	–	–	–	ND
B-7	12/22/97	0.5	–	–	–	–	–	1.33
B-8	12/22/97	0.5	–	–	–	–	–	–
B-9	12/22/97	0.5	–	–	–	–	–	0.243
B-10	12/18/97	0.5	–	–	–	–	–	0.102
B-11	12/18/97	0.5	–	–	–	–	–	ND
B-11	12/18/97	1.5	–	–	–	–	–	–
B-12	12/22/97	0.5	–	–	–	–	–	ND
B-13	12/18/97	0.5	–	–	–	–	–	ND
B-14	12/22/97	0.5	–	–	–	–	–	0.167
B-15	12/22/97	0.5	–	–	–	–	–	0.364
B-16	12/22/97	0.5	–	–	–	–	–	0.146
B-17	12/22/97	0.5	–	–	–	–	–	ND
MTCA Method A Cleanup level[4]			1	8.33[5]	–	–	–	1

Notes appear on page 7 of 7

TABLE 3 (Page 2 o f 7)
SOIL / SEDIMENT A27CHEMICAL ANALYTICAL DATA - SVOCs AND PCBs+A52
PSE GRADY WAY COMPLEX
RENTON, WASHINGTON

					Other SVOCs[2]			
Sample[1] Number	Date Sampled	Sample Depth (feet)	cPAHs[2] mg/kg	PCP[2] mg/kg	Compound	Result mg/kg	Method B Cleanup Level mg/kg	PCBs[3] mg/kg
B-18	12/22/97	0.5	0.268	0.363	Acenanphthylene	0.0109	NC	0.0647
					Anthracene	0.0182	24,000	
					Benzo (ghi) perylene	0.0394	NC	
					Flouranthene	0.0781	3,200	
					Phenanthrene	0.0401	NC	
					Pyrene	0.0817	2,400	
B-19	12/22/97	0.5	1.70	1.95	Acenanphthylene	0.0753	NC	0.0527
					Anthracene	0.110	24,000	
					Benzo (ghi) perylene	0.141	NC	
					Flouranthene	0.593	3,200	
					Naphthalene	0.0112	3,200	
					Phenanthrene	0.159	NC	
					Pyrene	0.480	2,400	
B-20	12/22/97	0.5	0.517	0.373	Anthracene	0.0115	NC	ND
					Benzo (ghi) perylene	0.0843	NC	
					Flouranthene	0.127	3,200	
					Phenanthrene	0.0667	NC	
					Pyrene	0.141	2,400	
B-21	12/22/97	0.5	0.447	1.71	Acenaphthene	0.0190	NC	0.0654
					Acenaphylene	0.0498	NC	
					Anthracene	0.0432	24,000	
					Benzo (ghi) perylene	0.0308	NC	
					Flouranthene	0.491	3,200	
					Flourene	0.0366	3,200	
					Phenanthrene	0.453	NC	
					Pyrene	0.537	2,400	
MTCA Method A Cleanup level[4]			1	8.33[5]	--	--	--	1

Notes appear on page 7 of 7

TABLE 3 (Page 3 o f 7)
SOIL / SEDIMENT CHEMICAL ANALYTICAL DATA - SVOCs AND PCBs
PSE GRADY WAY COMPLEX
RENTON, WASHINGTON

					Other SVOCs[2]			
Sample[1] Number	Date Sampled	Sample Depth (feet)	cPAHs[2] mg/kg	PCP[2] mg/kg	Compound	Result mg/kg	Method B Cleanup Level mg/kg	PCBs[3] mg/kg
B-22	12/22/97	0.5	0.0600	1.92	Anthracene	0.0106	NC	ND
					Flouranthene	0.0616	3,200	
					Phenanthrene	0.0935	NC	
					Pyrene	0.0486	2,400	
B-23	12/22/97	0.5	2.46	1.83	Benzo (ghi) perylene	0.275	NC	0.218
					Flouranthene	0.285	3,200	
					Flourene	0.0185	3,200	
					Phenanthrene	0.133	NC	
					Pyrene	0.438	2,400	
B-24	12/22/97	0.5	0.0422	0.230	Benzo (ghi) perylene	0.0197	NC	0.120
					Flouranthene	0.0124	3,200	
					Phenanthrene	0.0138	NC	
					Pyrene	0.0218	2,400	
B-25	12/22/97	0.5	0.394	0.0834	Anthracene	0.0249	NC	ND
					Benzo (ghi) perylene	0.0242	NC	
					Flouranthene	0.164	3,200	
					Naphthalene	0.0265	3,200	
					Phenanthrene	0.0210	NC	
					Pyrene	0.218	2,400	
B-26	12/22/97	0.5	0.683	0.0496	Anthracene	0.0142	NC	ND
					Benzo (ghi) perylene	0.0938	NC	
					Flouranthene	0.179	3,200	
					Phenanthrene	0.0749	NC	
					Pyrene	0.184	2,400	
MTCA Method A Cleanup level[4]			1	8.33[5]	–	–	–	1

Notes appear on page 7 of 7

TABLE 3 (Page 4 o f 7)
SOIL / SEDIMENT CHEMICAL ANALYTICAL DATA - SVOCs AND PCBs
PSE GRADY WAY COMPLEX
RENTON, WASHINGTON

					Other SVOCs[2]			
Sample[1] Number	Date Sampled	Sample Depth (feet)	cPAHs[2] mg/kg	PCP[2] mg/kg	Compound	Result mg/kg	Method B Cleanup Level mg/kg	PCBs[3] mg/kg
B-27	12/22/97	0.5	0.357	7.13	Acenaphthylene	0.0298	NC	0.0669
					Anthracene	0.0624	24,000	
					Benzo (ghi) perylene	0.0354	NC	
					Flouranthene	0.199	3,200	
					Phenanthrene	0.0928	NC	
					Pyrene	0.169	2,400	
B-28	12/22/97	0.5	0.181	4.75	Acenaphthylene	0.0107	NC	0.0208
					Anthracene	0.0297	24,000	
					Benzo (ghi) perylene	0.0165	NC	
					Flouranthene	0.136	3,200	
					Naphthalene	0.0157	3,200	
					Phenanthrene	0.129	NC	
					Pyrene	0.111	2,400	
B-29	12/22/97	0.5	2.05	0.0907	Anthracene	0.0353	24,000	0.099
					Benzo (ghi) perylene	0.326	NC	
					Flouranthene	0.566	3,200	
					Flourene	0.0134	3,200	
					Phenanthrene	0.226	NC	
					Pyrene	0.529	2,400	
B-30	12/18/97	0.5	–	–	–	–	–	–
B-31	12/18/97	0.5	–	–	–	–	–	0.0529
B-31	12/18/97	3.0	–	–	–	–	–	–
B-32	12/18/97	0.5	–	–	–	–	–	0.276
MTCA Method A Cleanup level[4]			1	8.33[5]	–	–	–	1

Notes appear on page 7 of 7

TABLE 3 (Page 5 o f 7)
SOIL / SEDIMENT CHEMICAL ANALYTICAL DATA - SVOCs AND PCBs
PSE GRADY WAY COMPLEX
RENTON, WASHINGTON

Sample[1] Number	Date Sampled	Sample Depth (feet)	cPAHs[2] mg/kg	PCP[2] mg/kg	Other SVOCs[2] Compound	Result mg/kg	Method B mg/kg	PCBs[3] mg/kg
B-32	12/18/97	3.0	ND	ND	Flouranthene	0.0181	3200	0.276
					2-Methylnapthalene	0.0129	NC	
					Phenanthrene	0.0155	NC	
B-33	12/18/97	0.5	–	–	–	–	–	ND
B-34	12/22/97	0.5	0.268	0.634	Acenaphthylene	0.136	NC	1.62
					Anthracene	0.0143	24,000	
					Benzo (ghi) perylene	0.0358	NC	
					Flouranthene	0.0415	3,200	
					Phenanthrene	0.0272	NC	
					Pyrene	0.0594	2,400	
B-35	12/22/97	0.5	–	–	–	–	–	0.0630
B-36	12/22/97	0.5	0.330	0.0562	Benzo (ghi) perylene	0.0441	NC	–
					Flouranthene	0.0969	3,200	
					Napthalene	0.0251	3,200	
					Phenanthrene	0.058	NC	
					Pyrene	0.0943	3,200	
B-37	12/22/97	0.5	–	–	–	–	–	–
B-38	12/22/97	0.5	0.295	0.193	Benzo (ghi) perylene	0.0267	NC	ND
					Flouranthene	0.0717	3,200	
					Phenanthrene	0.0313	NC	
					Pyrene	0.0694	3,200	
B-39	02/23/98	3.0	–	–	–	–	–	0.252
B-40	02/23/98	0.5	–	–	–	–	–	0.0657
B-41	02/23/98	3.0	–	–	–	–	–	ND
B-42	02/23/98	3.0	–	–	–	–	–	ND
B-43	02/23/98	3.0	–	–	–	–	–	ND
B-44	02/23/98	3.0	–	–	–	–	–	ND
B-45	02/23/98	1.5	–	–	–	–	–	ND
B-46	02/23/98	0.5	–	–	–	–	–	0.0857
B-47	02/23/98	4.0	–	–	–	–	–	ND
MTCA Method A Cleanup level[4]			1	8.33[5]	–	–	–	1

Notes appear on page 7 of 7

TABLE 3 (Page 6 o f 7)
SOIL CHEMICAL ANALYTICAL DATA - SVOCs AND PCBs
PSE GRADY WAY COMPLEX
RENTON, WASHINGTON

					Other SVOCs[2]			
Sample[1] Number	Date Sampled	Sample Depth (feet)	cPAHs[2] mg/kg	PCP[2] mg/kg	Compound	Result mg/kg	Method B Cleanup Level mg/kg	PCBs[3] mg/kg
GMW-1	02/18/98	4.0	--	--	--	--	--	ND
GMW-2	02/18/98	4.0	--	--	--	--	--	ND
GMW-3	02/18/98	4.0	--	--	--	--	--	ND
GMW-4	02/18/98	6.0	0.0520	--	Anthracene	0.0169	24,000	0.586
					Flouranthene	0.0520	3,200	
					Flourene	0.0130	3,200	
					2-Methylnaphthalene	0.1090	NC	
					Naphthalene	0.0390	3,200	
					Phenanthrene	0.0897	NC	
					Pyrene	0.1100	2,400	
GMW-5	02/18/98	4.0	--	--	--	--	--	ND
GMW-6	02/18/98	4.0	--	--	--	--	--	ND
GMW-7	02/19/98	4.0	--	--	--	--	--	ND
GMW-7	02/19/98	8.0	--	--	--	--	--	ND
S-1	02/19/98	0.5	--	--	--	--	--	ND
S-2	02/19/98	0.5	--	--	--	--	--	ND
S-3	02/19/98	0.5	--	--	--	--	--	0.134
S-4	02/19/98	0.5	2.87	0.632	Acenaphthene	0.0554	4,800	0.158
					Anthracene	0.157	24,000	
					Benzo (ghi) perylene	0.402	NC	
					Flouranthene	1.07	3,200	
					Flourene	0.0969	3,200	
					Phenanthrene	0.734	2,400	
					Pyrene	1.06	NC	
S-5	02/19/98	0.5	6.75	3.76	Acenaphthylene	0.081	4,800	0.345
					Anthracene	0.180	24,000	
					Benzo (ghi) perylene	1.02	NC	
					Flouranthene	2.01	3,200	
					Flourene	0.0540	3,200	
					Phenanthrene	0.147	2,400	
					Pyrene	0.230	NC	
S-6	02/19/98	0.5	--	ND	--	--	--	ND
S-7	02/19/98	0.5	--	--	--	--	--	ND
S-8	02/19/98	0.5	0.577	--	Anthracene	0.0237	24,000	0.0745
					Benzo (ghi) perylene	0.0763	NC	
					Flouranthene	0.225	3,200	
					Phenanthrene	0.147	NC	
					Pyrene	0.231	2,400	
MTCA Method A Cleanup level			1	8.33	--	--	--	1

Notes appear on page 7 of 7

TABLE 3 (Page 7 o f 7)
SOIL / SEDIMENT CHEMICAL ANALYTICAL DATA - SVOCs AND PCBs
PSE GRADY WAY COMPLEX
RENTON, WASHINGTON

					Other SVOCs[2]			
Sample[1] Number	Date Sampled	Sample Depth (feet)	cPAHs[2] mg/kg	PCP[2] mg/kg	Compound	Result mg/kg	Method B Cleanup Level mg/kg	PCBs[3] mg/kg
GC-1	02/19/98	1.0	–	–	–			
GC-2	02/19/98	1.0	–	–	–			
TP-1	12/22/97	0.5	ND	ND	–	ND	–	0.141
TP-1	12/22/97	6.0	–	–	–	–	–	ND
TP-2	12/22/97	0.5	ND	ND	–	ND	–	ND
TP-2	12/22/97	4	–	–	–	–	–	0.0655
TP-3	12/22/97	0.5	ND	0.0176	–	ND	–	ND
TP-3	12/22/97	3	–	–	–	–	–	ND
TP-4	12/22/97	0.5	ND	ND	–	ND	–	ND
TP-4	12/22/97	4.0	–	–	–	–	–	ND
TP-5	12/22/97	0.5	0.0891	0.0219	Benzo (ghi) pyrene	0.0177	NC	ND
					Flouranthene	0.0212	3,200	
					Pyrene	0.0219	3,200	
TP-5	12/22/97	4.0	–	–	–	–	–	1.85
MTCA Method A Cleanup level[4]			1	8.33[5]	–	–	–	1

Notes:

[1]Approximate boring locations are shown in Figure 5.

[2]Analyzed by EPA Method 8270

[3]Analyzed by EPA Method 8081

[4]Unless otherwise noted

[5]MTCA Method B Cleanup Level

cPAHs = carcinogenic polynuclear aromatic hydrocarbons (sum total)

cPAHs include Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) flouranthene, Benzo (k) flouranthene, Chrysene, Dibenzo (a,h) anthracene and Indeno (1,2,3-cd) pyrene.

PCP = Pentachlorophenol

SVOCs = Semi-volitile Organic Compounds

PCBs = Polychlorinated Biphenyls

"–" = not tested

mg/kg = milligrams per kilogram

Shaded areas indicate concentrations above MTCA cleanup level.

All samples were submitted to North Creek Analytical Laboratory in Bothell, Washington for analysis. Laboratory reports are presented in Appendix C.

TABLE 4
SUMMARY OF GROUND WATER ELEVATIONS
PSE SOUTH GRADY WAY COMPLEX
RENTON, WASHINGTON

Monitoring Well	Date Measured	Water Depth from Ground Surface (feet)	Ground Water Elevation (feet)
GMW-1	12/22/98	–	–
	02/26/98	**4.07**	**95.59**
GMW-2	12/22/98	–	–
	02/26/98	**3.33**	**96.29**
GMW-3	12/22/98	–	–
	02/26/98	**1.87**	**95.36**
GMW-4	12/22/98	–	–
	02/26/98	**2.97**	**94.10**
GMW-5	12/22/98	–	–
	02/26/98	**3.94**	**93.23**
GMW-6	12/22/98	–	–
	02/26/98	**2.11**	**94.07**
GMW-7	12/22/98	–	–
	02/26/98	**5.12**	**92.39**
MW-4	12/22/98	4.86	93.35
	02/26/98	**4.94**	**93.27**
MW-8	12/22/98	7.73	92.63
	02/26/98	**7.84**	**92.52**
MW-10	12/22/98	7.42	92.93
	02/26/98	**7.60**	**92.75**
MW-20	12/22/98	7.17	92.80
	02/26/98	**7.35**	**92.62**

Notes:

[1]Approximate locations of monitoring wells and corresponding ground water contours are shown in Figure 8.

[2]Elevations were measured relative to a temporary benchmark of 100 feet located at the top of the wall casing on March 20.

"–" = not measured

TABLE 5
GROUND WATER CHEMICAL ANALYTICAL RESULTS
PSE SOUTH GRADY WAY COMPLEX
RENTON, WASHINGTON

Sample Number[1]	Date Sampled	Diesel and Heavy Oil-Range Hydrocarbons[3] mg/l		PCBs[3] (ug/l)	cPAHs[4] (ug/l)	Other SVOCs[4]			HVOCs[5]		
						Compound	Result (ug/l)	Cleanup Level (ug/l)	Compound	Result (ug/l)	MTCA Method A Cleanup Level (ug/l)
B-30	12/18/97	Hydraulic/Lube Oil Range Hydrocarbons	3.40	ND	--	--	--	--	--	--	--
B-31	12/18/97	Hydraulic/Lube Oil Range Hydrocarbons	1.82	ND	--	--	--	--	--	--	--
B-32	12/18/97	Diesel Range Hydrocarbons	0.972	ND	--	--	--	--	Methylene Chloride[6]	6.18	5.00
B-33	12/18/97	Diesel Range Hydrocarbons	0.250	ND	--		ND	--	--		
B-34	12/22/97	Heavy Oil Range Hydrocarbons	0.772	0.260	0.831	Benzo (ghi) pyre	0.113	NC	--	--	--
		Transformer Oil Range Hydrocarbons	0.858			Flouranthene	0.377	640	--	--	--
						Phenanthrene	0.358	NC	--	--	--
						Pyrene	0.453	480	--	--	--
B-35	12/22/97	ND		ND	--	--	--	--	--	--	--
B-36	12/22/97	Heavy Oil Range Hydrocarbons	0.984	2.62	ND	ND	ND	NA	--	--	--
		Transformer Oil Range Hydrocarbons	1.69								
B-37	12/22/97	ND		--	--	--	--	--	--	--	--
GMW-1	02/20/98	Diesel Range Hydrocarbons	0.320	--	--	--	--	--	--	--	--
GMW-2	02/20/98	Diesel Range Hydrocarbons	0.396	--	--	--	--	--	--	--	--
		Heavy Oil Range Hydrocarbons	0.970								
GMW-3	02/20/98	ND		ND	--	--	--	--	--	--	--
GMW-4	02/20/98	Diesel Range Hydrocarbons	0.404	1.17	ND	ND	ND	NA	--	--	--
GMW-5	02/20/98	ND		ND	--	--	--	--	--	--	--
GMW-6	02/20/98	ND		ND	--	--	--	--	--	--	--
GMW-7	02/20/98	Diesel Range Hydrocarbons	4.55	--	--	--	--	--	--	--	--
		Heavy Oil Range Hydrocarbons	7.72		--	--	--	--	--	--	--
MW-10	12/22/97	ND		ND	--	--	--	--	--	--	--
MTCA Method A cleanup level		1.0[7]		0.1	0.1						

Notes:

[1]Approximate boring monitoring well locations are shown in Figure 5.

[2]Analyzed by Ecology Method NWTPH-D extended with silica gel clean-up.

[3]Polychlorinated Biphenyls analyzed by EPA Method 8081.

[4]Semi-Volatile Organic Compounds analyzed by EPA Method 8270. See Appendix C for list of analytes.

[5]Halogenated Volatile Organics analyzed by EPA Method 8010B (modified). See Appendix C for list of analytes.

[6]The methylene chloride in this sample was identified as a laboratory contaminant by the chemist. It likely does not exist in ground water beneath the site.

[7]Sum of all detected hydrocarbons

cPAHs = Carcinogenic Polynuclear Aromatic Hydrocarbons (sum total)

cPAHS include Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) flouranthene, Benzo (k) flouranthene, Chrysene, Dibenzo (a,h) anthracene, and Indeno (1,2,3-cd) pyrene.

SVOC = Semi-Volatile Organic Compound

"--" = not tested

NC= Not Calculated

mg/l = milligrams per liter

ug/l = microgram per liter

Shading indicates concentration exceeds MTCA cleanup level referenced.

All samples were submitted to North Creek Analytical Laboratory in Bothell, Washington for analysis. Laboratory reports are presented in Appendix C.

ND = Not Detected. See Appendix C for detection limits.

NA = Not Applicable

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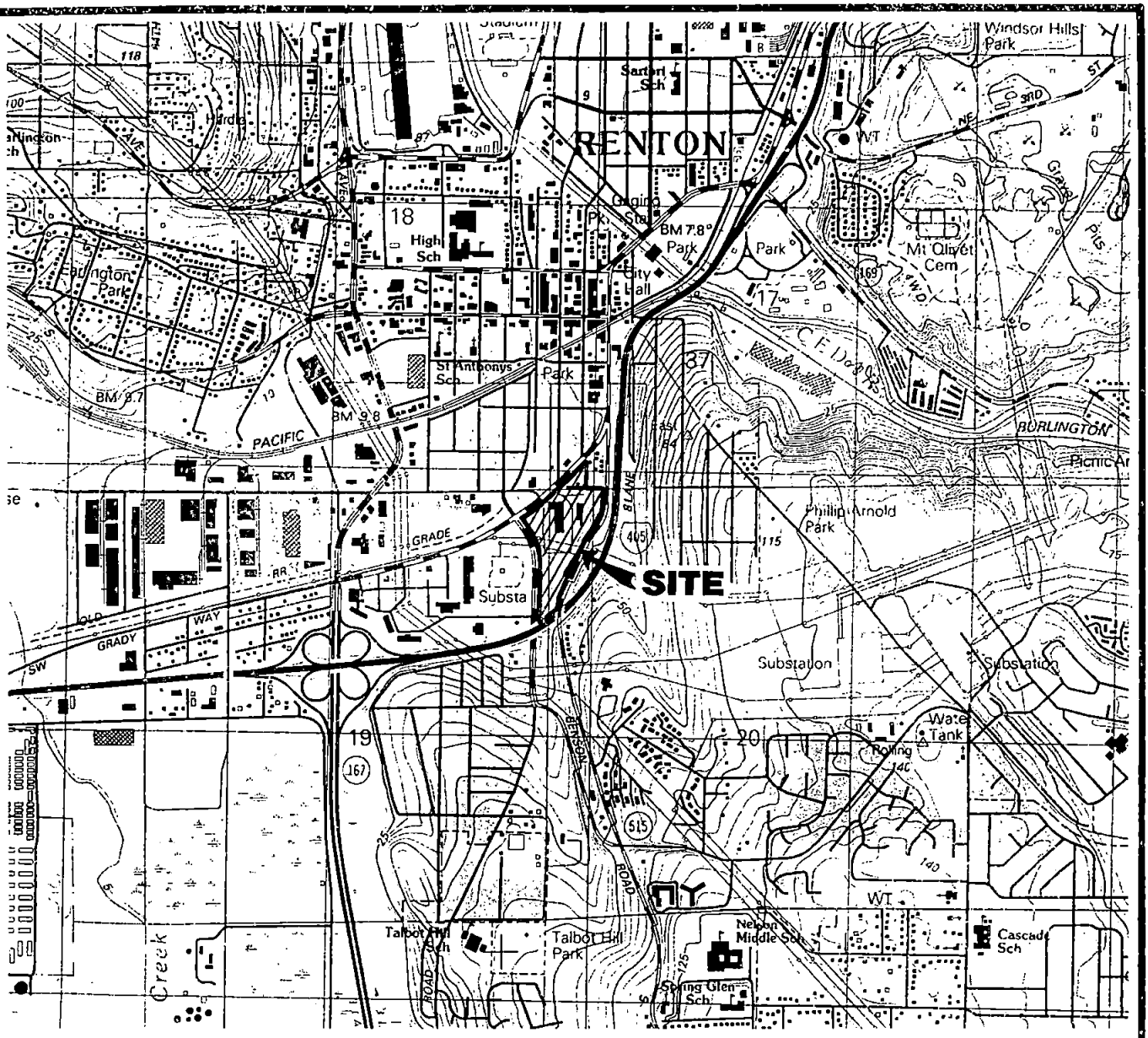
TABLE 6
NEARBY WATER SUPPLY WELLS
PSE GRADY WAY COMPLEX
RENTON, WASHINGTON

Address				Location Relative to Site	Depth (feet)	Depth to Water (feet)	Use
Well	Township	Range	Section				
F-1	23N	5E	17F	3/4 mi NE	50	27	Municipal Well
F-2	23N	5E	17F	3/4 mi NE	100	27	Municipal Well
F-3	23N	5E	17F	3/4 mi NE	96	27	Municipal Well

Notes:

1) Based on review of well logs on file with Ecology

2) See Figure 8 for approximate well locations relative to the subject site



Reference: USGS 7.5' X 15' topographic–bathymetric quadrangle map "Renton, Wash.," dated 1983.

Geo Engineers	**VICINITY MAP**
	FIGURE 1

TNO:HLA 0186-407-85 10/29/97

10/18/95 Sent to Steve

0186.346.R85 LCM:BDH 9/11/95

I-405

MAIN AVENUE S.

Property Boundary

PARKING STRUCTURE

Asphalt Parking

Coal Mine Tailings

Storm Water Detention Pond

Transformer Storage

RESIDENTIAL

BENSON ROAD S.

RESIDENTIAL

Drum Storage

SERVICE CENTER

PCB Storage Area

Dock

O/W

PCB Storage Area

Propane AST

BAY

Waste Water AST

Container for Leaking Transformers

Stain

Approximate Limits of 1989 Remedial Excavation

DIVISION OFFICE (Vacant)

Coal Mine Tailings

Service Island Gasoline & Diesel USTs (10,000 Gallons Each)

Oil AST (Removed)

Gravel

Security Fence

AUTOMOTIVE DESIGN

S. GRADY WAY

Former Drum Storage Area

Approximate Limits of 1987 Remedial Excavation

UNDEVELOPED

Heating Oil UST

Boiler Room

MW-4

Sump

STORES BUILDING

PCB Storage Area

Transformer Repair Shop

Drums

Concrete Flume

Drum Storage

Former Garage Area

Propane AST & PCB Storage Area

Oil Trap Vault

Transformer/Pole Storage Yard

UNDEVELOPED

MW-8

MW-10

Transformer Storage Dock

Edge of Asphalt

Soil Berm

Approximate Limits of 1990 Remedial Excavations

MW-20

RCRA Storage

Gravel

VEGETATED "MARSHY" AREA

Oil Interceptor

Drums

Drums

Oil Trap Vault

Transformer and Drum Storage Area

Gravel

TALBOT ROAD

Cable Storage Area

COMMERCIAL AND OFFICES

COMMERCIAL

SERVICE STATION

EXPLANATION:

MW-10 ●	MONITORING WELL CONSTRUCTED IN 1989
T	TRANSFORMER IN VAULT
O/W	OIL WATER SEPARATOR
	CATCH BASIN
UST	UNDERGROUND STORAGE TANK
AST	ABOVEGROUND STORAGE TANK
PCB	POLYCHLORINATED BIPHENYL
	UST (REMOVED)

Note: The locations of all features shown are approximate.
Reference: Drawings provided by Puget Sound Energy.

N

0 150 300

SCALE IN FEET

Geo Engineers

SITE & SURROUNDING PROPERTIES

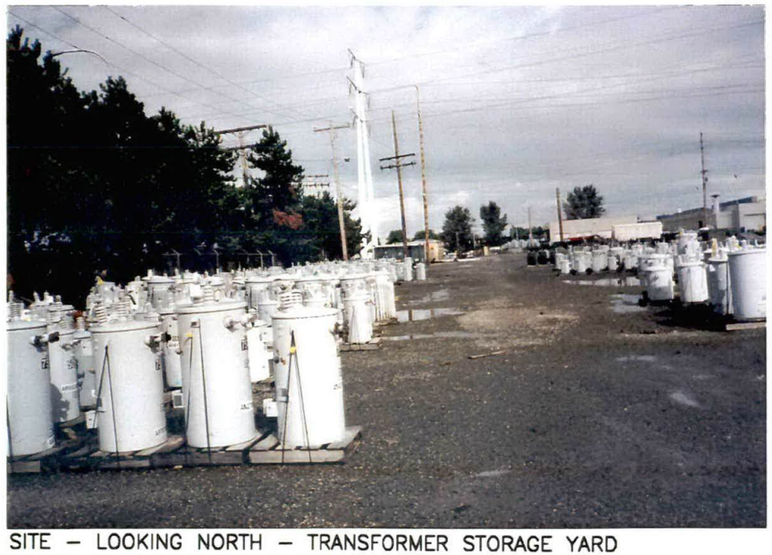
FIGURE 2

04/15/98 D:\0186\407\0186407A.DWG TNO:HLA

SITE – SERVICE ISLAND

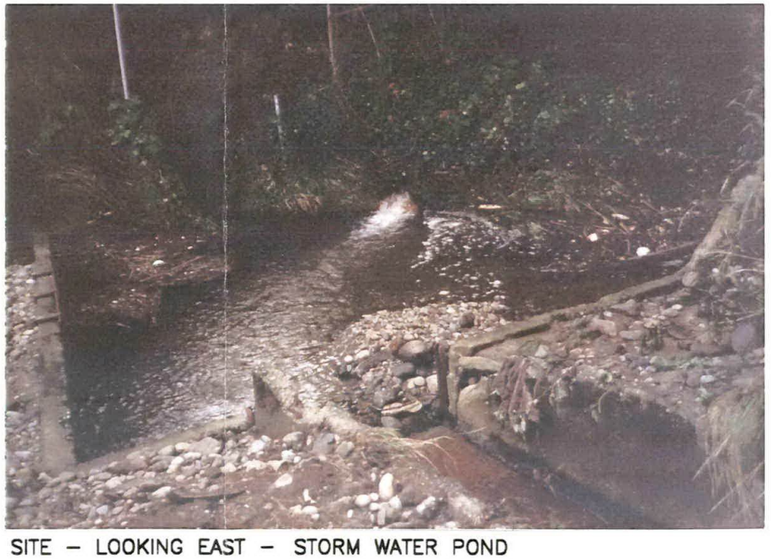
SITE – LOOKING NORTHEAST – DRUM STORAGE AREA

SITE – LOOKING EAST – STORES BUILDING, STORAGE DOCK



SITE – LOOKING NORTH – TRANSFORMER STORAGE YARD SOUTH OF STORES BUILDING

SITE – LOOKING NORTHEAST – LOADING BAY AREA WEST OF SERVICE CENTER



SITE – LOOKING EAST – STORM WATER POND

Geo Engineers

SITE PHOTOGRAPHS

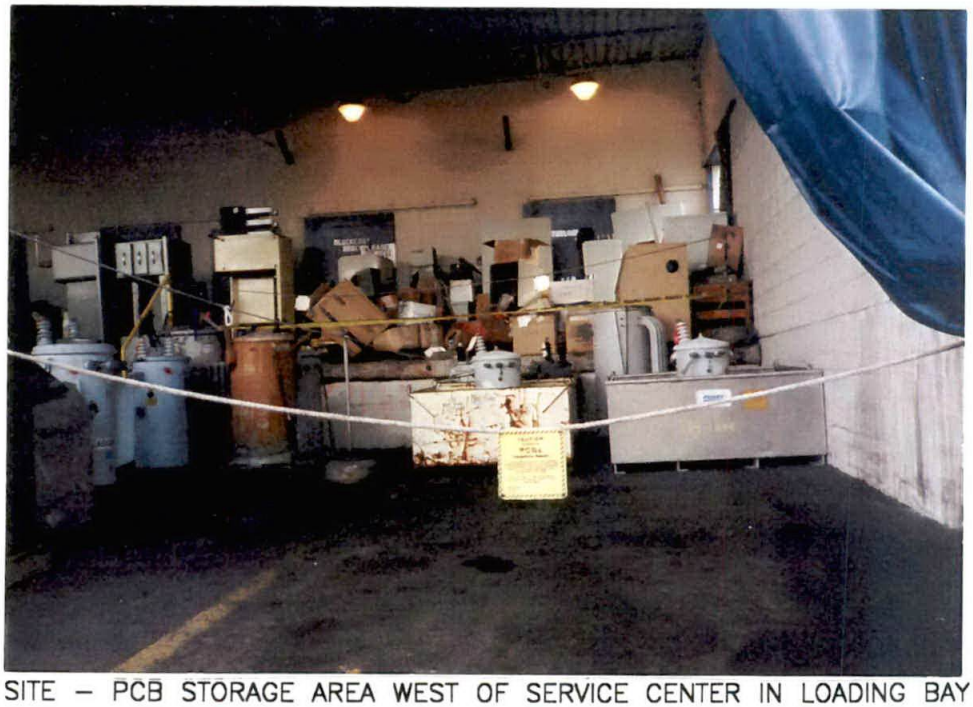
FIGURE 3A

10/29/97

0186-407-85

TNO:HLA

SITE – PCB CONTAINMENT AREA IN STORES BUILDING



SITE – PCB STORAGE AREA WEST OF SERVICE CENTER IN LOADING BAY

10/29/97

0186-407-85

TNO:HLA

Geo Engineers

SITE PHOTOGRAPHS

FIGURE 3B

EXPLANATION:

- P — ELECTRICAL POWER (UNDERGROUND)
- P(OH) — ELECTRICAL POWER (OVERHEAD)
- SS — SANITARY SEWER
- SD — STORM DRAIN
- COM — COMMUNICATION LINE
- T — TELEPHONE
- W — WATER
- CATCH BASIN

BENSON ROAD S.

S. GRADY WAY

TALBOT ROAD

FIBEROPTIC

FIBEROPTIC

N

0 100 200

SCALE IN FEET

Note: The locations of all features shown are approximate.
Reference: Drawings provided by Puget Sound Energy.

TNO:HLA D:\0186\407\0186407D.DWG 03/12/98

Geo Engineers

UTILITY MAP

FIGURE 4

3-17-98 Seattle

MAIN AVENUE S.

I-405

Property Boundary

PARKING STRUCTURE

RESIDENTIAL

BENSON ROAD S.

SERVICE CENTER

BAY

DIVISION OFFICE (Vacant)

S. GRADY WAY

UNDEVELOPED

STORES BUILDING

Transformer Storage Dock

UNDEVELOPED

COMMERCIAL

UNDEVELOPED

VEGETATED AREA

COMMERCIAL AND OFFICES

TALBOT ROAD

SS-1 SS-2 SS-3 SS-4 SS-5 SS-6

S-1 S-2 S-3 S-4 S-5 S-6 S-7 S-8

B-1 B-2 B-3 B-4 B-5 B-6 B-7 B-8 B-9 B-10 B-11 B-12 B-13 B-14 B-15 B-16 B-17 B-18 B-19 B-20 B-21 B-22 B-23 B-24 B-25 B-26 B-27 B-28 B-29 B-30 B-31 B-32 B-33 B-34 B-35 B-36 B-37 B-38 B-39 B-40 B-41 B-42 B-43 B-44 B-45 B-46 B-47

C-1 C-2 C-4 C-5 C-6 C-7 C-8 C-9 C-10 C-11

GMW-1 GMW-2 GMW-3 GMW-4 GMW-5 GMW-6 GMW-7

MW-4 MW-8 MW-10 MW-20

TP-1 TP-2 TP-3 TP-4 TP-5

A A'

B B'

EXPLANATION:

GMW-1 ⊗	MONITORING WELL (1998)
S-1 ◑	SEDIMENT SAMPLE
SS-1 ⊙	COAL MINE TAILINGS USED TO FORM COMPOSITE SAMPLE
MW-10 ●	MONITORING WELL (1989)
C-1 ⊘	CONCRETE SAMPLE
B-1 ⊕	SHALLOW BORING
B-30 ⊕	DEEP BORING
TP-1 ⊕	TEST PIT
T	TRANSFORMER IN VAULT
O/W	OIL WATER SEPARATOR
▥	CATCH BASIN
A____A'	CROSS SECTION LOCATION

0 120 240

SCALE IN FEET

Note: The locations of all features shown are approximate.
Reference: Drawings provided by Puget Sound Energy.

Geo Engineers

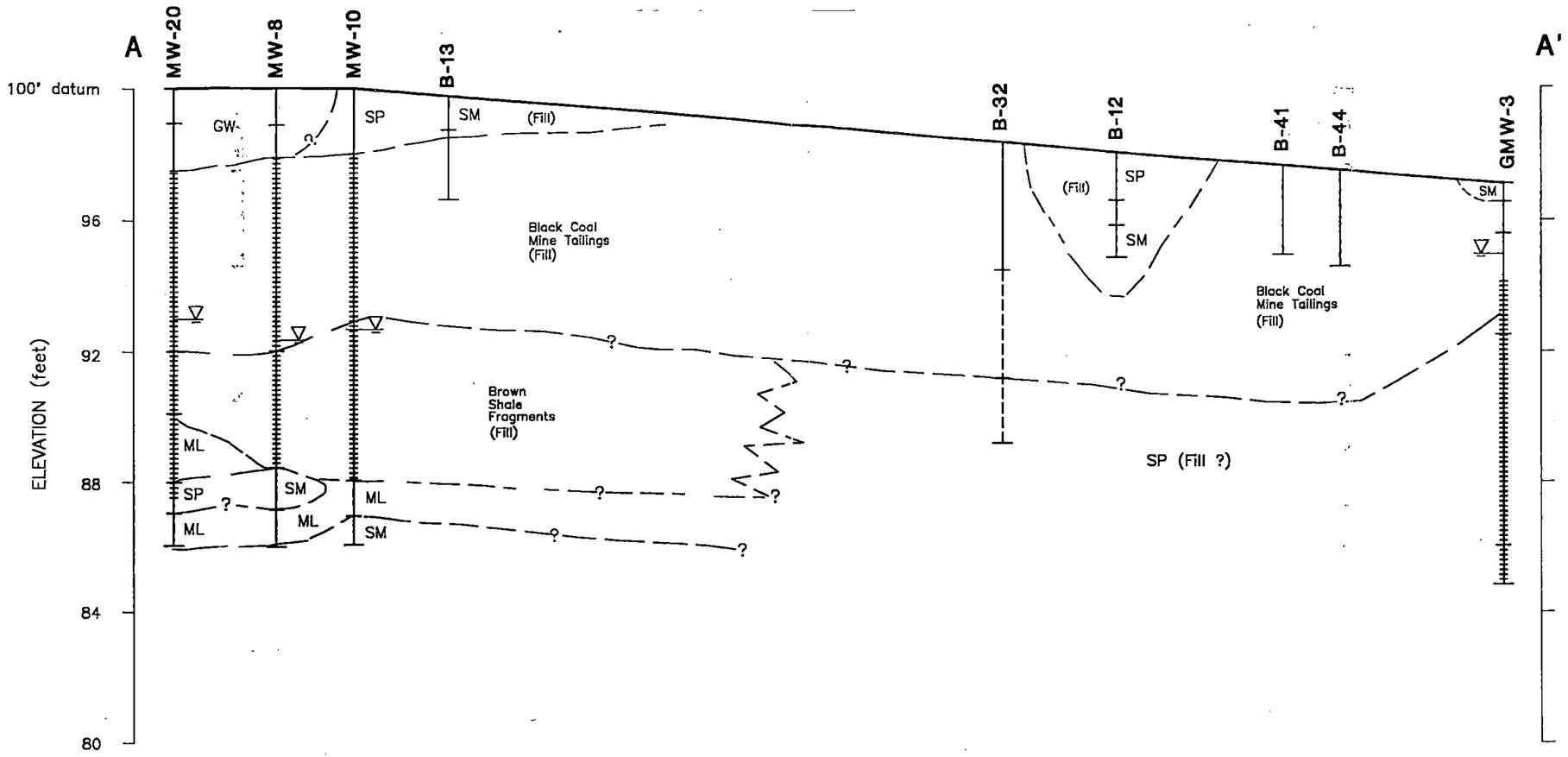
SAMPLE LOCATIONS

FIGURE 5

04/16/98

D:\0186\407\0186407E.DWG

TNO:HLA



EXPLANATION:

MW-20 Monitoring Well or Boring

Water Level (02/26/98)

Well Screen

No Recovery

GW Gravel
SP Sand
SM Silty Sand
ML Silt

Notes:
1. Coal mine tailings – Black silt and sand with varying amounts of coal fragments, portions contain mostly coal fragments
2. The subsurface conditions shown are based on interpolation between widely spaced explorations and should be considered approximate; actual subsurface conditions may vary from those shown.
3. Refer to Figure 5 for location of Section A–A'.

HORIZONTAL SCALE: 1" = 80'
VERTICAL SCALE: 1" = 4'
VERTICAL EXAGGERATION: 20X

Geo Engineers

CROSS SECTION A-A'

FIGURE 6A

D:\0186\407\01864076.DWG 03/12/98

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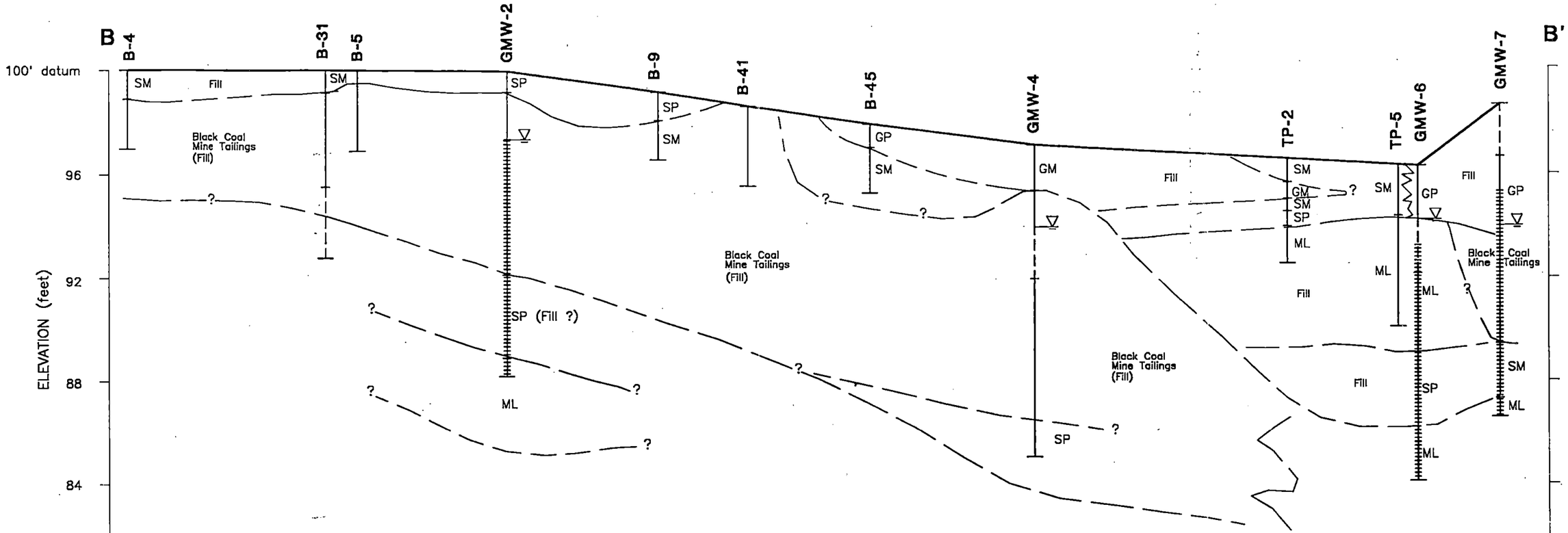

EXPLANATION:

B-4 Monitoring Well Boring or Test Pit

Water Level (02/26/98)

Well Screen

No Recovery

GP Gravel
GM Silty Gravel
SP Sand
SM Silty Sand
ML Silt

Notes:
1. Coal mine tailings – Black silt and sand with varying amounts of coal fragments, portions contain mostly coal fragments
2. The subsurface conditions shown are based on interpolation between widely spaced explorations and should be considered approximate; actual subsurface conditions may vary from those shown.
3. Refer to Figure 5 for location of Section B–B'.

HORIZONTAL SCALE: 1" = 80'
VERTICAL SCALE: 1" = 4'
VERTICAL EXAGGERATION: 20X

Geo Engineers

CROSS SECTION B-B'

FIGURE 6B

D:\0186\407\0186407H.DWG 03/06/98 TNO:HLA

3-17-98 Smith

MAIN AVENUE S.

I-405

Property Boundary

PARKING STRUCTURE

RESIDENTIAL

BENSON ROAD S.

SERVICE CENTER

BAY

DIVISION OFFICE (Vacant)

GMW-1 95.59

GMW-2 96.29

GMW-3 95.36

UNDEVELOPED

S. GRADY WAY

STORES BUILDING

MW-4 93.27

95

94

96

93

UNDEVELOPED

MW-8 92.52

MW-10 92.75

MW-20 92.62

Transformer Storage Dock

GMW-4 94.10

VEGETATED "MARSHY" AREA

GMW-6 94.07

GMW-5 93.23

GMW-7 92.39

TALBOT ROAD

COMMERCIAL AND OFFICES

COMMERCIAL

EXPLANATION:

GMW-1 ⊗ 95.59 — MONITORING WELL GROUND WATER ELEVATION MEASURED ON 02/26/98

MW-4 ● — MONITORING WELL

94 — GROUNDWATER CONTOUR BASED ON 02/26/98 MEASUREMENTS

GENERAL DIRECTION OF GROUNDWATER FLOW ON 02/26/98

CATCH BASIN

0 120 240

SCALE IN FEET

Note: The locations of all features shown are approximate.
Reference: Drawings provided by Puget Sound Energy.

Geo Engineers

GROUND WATER CONTOURS

FIGURE 7

04/22/98

D:\0186\407\0186407I.DWG

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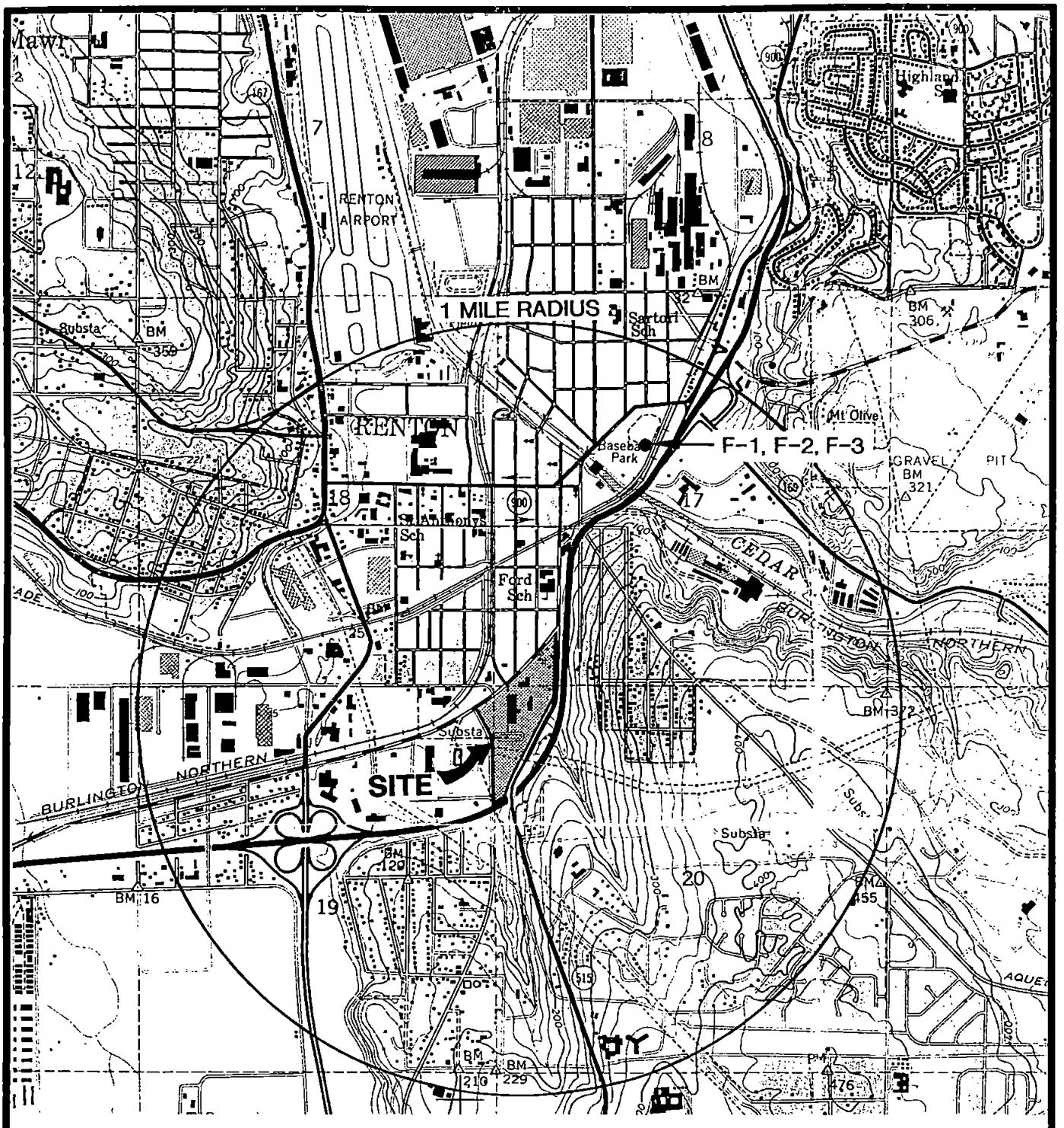

Note: See Table 6 for well descriptions.
Well locations shown are approximate.

Reference: USGS 7.5' topographic quadrangle map "Renton, Wosh." photorevised 1973.

Geo Engineers	MUNICIPAL WATER WELLS
	FIGURE 8

02/27/98

0186-407-85

TNO:HLA

MAIN AVENUE S.

I–405

BENSON ROAD S.

S. GRADY WAY

TALBOT ROAD

DIVISION OFFICE (Vacant)

SERVICE CENTER

BAY

STORES BUILDING

Transformer Storage Dock

EXPLANATION:

- ⊗ MONITORING WELL (1938)
- ◑ SEDIMENT SAMPLE
- ● MONITORING WELL (1989)
- ⊘ CONCRETE SAMPLE
- SHALLOW BORING
- DEEP BORING
- TEST PIT
- T TRANSFORMER IN VAULT
- O/W OIL WATER SEPARATOR
- CATCH BASIN

UST UNDERGROUND STORAGE TANK

µg/l MICROGRAMS PER LITER

mg/kg MILLIGRAMS PER KILOGRAM

PCB POLYCHLORINATED BIPHENYLS

cPAH CARCINOGENIC POLYAROMATIC HYDROCARBONS

DR DIESEL–RANGE HYDROCARBONS

HO HEAVY OIL–RANGE HYDROCARBONS

TPH TOTAL PETROLEUM HYDROCARBONS

PORTION OF SITE WHERE SOIL AND/OR GROUND WATER CONTAMINATION ISSUES OF REGULATORY SIGNIFICANCE WERE IDENTIFIED BASED ON THE ESA RESULTS

SAMPLE	MATRIX	TPH
GMW–2	WATER	1.37
MTCA Cleanup Level		1.0

SAMPLE	MATRIX	DEPTH	PCB
B–7	SOIL	0.5	1.33
MTCA Cleanup Level			1.0

SAMPLE	MATRIX	DEPTH	cPAH
B–19	SOIL	0.5	1.70
MTCA Cleanup Level			1.0

SAMPLE	MATRIX	DEPTH	cPAH
B–23	SOIL	0.5	2.46
MTCA Cleanup Level			1.0

SAMPLE	MATRIX	DEPTH	cPAH
B–29	SOIL	0.5	2.05
MTCA Cleanup Level			1.0

SAMPLE	MATRIX	DEPTH	PCB
TP–5	SOIL	4.0	1.85
MTCA Cleanup Level			1.0

WELL	MATRIX	DEPTH	PCB
B–34	SOIL	0.5	1.62
MTCA Cleanup Level			1.0

SAMPLE	MATRIX	PCB
GMW–4	WATER	1.17
MTCA Cleanup Level		0.1

SAMPLE	MATRIX	DEPTH	DR	HO
GMW–7	WATER	–	4.55	7.72
MTCA Cleanup Level				1.0

Notes:
1. Analyte exceedences in ground water samples from "direct push" borings are not shown. Subsequent results from monitoring well ground water samples are more reliable and supercede the "direct push" ground water sample results.
2. Samples analyzed from other exploration locations did not contain analyte concentrations exceeding applicable MTCA cleanup levels.
3. For a complete list of analytes and detected concentrations see Appendix C.
4. Diesel, Heavy Oil and Transformer Oil concentrations in water are mg/l. PCB concentrations in water are µg/l.
5. All soil concentrations shown are mg/kg.
6. MTCA cleanup levels shown are Method A.

Note: The locations of all features shown are approximate.
Reference: Drawings provided by Puget Sound Energy.

0 120 240
SCALE IN FEET

Geo Engineers

SAMPLES WITH ANALYTE CONCENTRATIONS EXCEEDING CLEANUP LEVELS

FIGURE 9

04/28/98

D:\0186\407\0186407F.DWG

SCW:HLA

APPENDIX A

LEGAL DESCRIPTION

EXHIBI

The land referred to in this commitment is situated in the county of King, state of Washington, and described as follows:

PARCEL A:

That portion of Section 17, Township 23 North, Range 5 East W.M., in King County, Washington, described as follows:

Beginning at a point which is 445.3 feet east of the southwest corner of the southwest quarter of the southwest quarter of said Section 17;
thence north 150 feet;
thence west 57.3 feet;
thence north to the southerly line of South Grady Way;
thence southwesterly along said road to the south line of said southwest quarter;
thence east to the point of beginning.

PARCEL B:

That portion of the northeast quarter of the northeast quarter of Section 19, Township 23 North, Range 5 East W.M., King County, Washington, lying southerly of the south line of Walsworth's First Addition to Renton, according to the plat thereof recorded in Volume 6 of Plats, page 23, in King County, Washington; and easterly of the easterly line of Talbot Road South.

PARCEL C:

That portion of Government Lot 10, Section 17, Township 23 North, Range 5 East, W.M., in King County, Washington; and of Government Lot 1, Section 20, Township 23 North, Range 5 East W.M., in King County, Washington, described as follows:

Beginning on the north line of said Government Lot 1 at a point 528.00 feet west of the northeast corner of said Government Lot 1;
thence north 53.00 feet;
thence west parallel with the south line of said Government Lot 10, a distance of 232.46 feet, more or less, to the east line of a tract of land deeded to Puget Sound Traction, Light and Power Company by deed recorded under King County Recording Number 817107, which line is parallel with and 445.30 feet east of the west line of said Sections 17 and 20;
thence south along said east line 313 feet, more or less, to the north line of a tract of land deeded to Renton Co-operative Coal Company by deed recorded December 26, 1900 under King County Recording Number 200930;

(legal description, continued)

Order No. 321795

A.L.T.A. COMMITMENT
SCHEDULE A
Page 3

LEGAL DESCRIPTION, continued:

thence easterly along said north line to the west line of the east 528.00 feet of said Government Lot 1;
thence north along said west line 260 feet, more or less, to the point of beginning.

PARCEL D:

That portion of Government Lots 1 and 2, Section 20, Township 23 North, Range 5 East W.M., in King County, Washington;
EXCEPT that portion lying within Benson Road South; lying westerly and northerly of Primary State Highway No. 1, as deeded to the State of Washington by Quit Claim Deed recorded May 6, 1964, under Recording Number 5732439;
AND EXCEPT any portion thereof lying within the following described parcel:

That portion of Government Lot 10, Section 17, Township 23 North, Range 5 East, W.M., in King County, Washington; and of Government Lot 1, Section 20, Township 23 North, Range 5 East W.M., in King County, Washington, described as follows:

Beginning on the north line of said Government Lot 1 at a point 528.00 feet west of the northeast corner of said Government Lot 1;
thence north 53.00 feet;
thence west parallel with the south line of said Government Lot 10, a distance of 232.46 feet, more or less, to the east line of a tract of land deeded to Puget Sound Traction, Light and Power Company by deed recorded under King County Recording Number 817107, which line is parallel with and 445.30 feet east of the west line of said Sections 17 and 20;
thence south along said east line 313 feet, more or less, to the north line of a tract of land deeded to Renton Co-operative Coal Company by deed recorded December 26, 1908 under King County Recording Number 200930;
thence easterly along said north line to the west line of the east 528.00 feet of said Government Lot 1;
thence north along said west line 260 feet, more or less, to the point of beginning;
AND EXCEPT that portion thereof deeded to the State of Washington by deed recorded January 16, 1958, under Recording Number 4866269.

(legal description, continued)

LEGAL DESCRIPTION, continued:

PARCEL E:

Those portions of Blocks 1 and 2, Walsworth's First Addition to Renton, according to the plat thereof recorded in Volume 6 of Plats, page 33, in King County, Washington, lying southerly of South Grady Way and northeasterly of Talbot Road South;

TOGETHER WITH those portions of Burnett Avenue South and South 8th Avenue vacated by City of Renton Ordinance Number 2850.

PARCEL F:

That portion of the southeast quarter of the northeast quarter of Section 19, Township 23 North, Range 5 East, W.M., in King County, Washington lying easterly of Talbot Road South and lying northerly of Primary State Highway No. 1, as deeded to the State of Washington by Quit Claim Deed recorded June 26, 1964 under Recording Number 5754046.

PARCEL G:

That portion of Government Lot 1, Section 20, Township 23, Range 5 East, W.M., in King County, Washington, described as follows:

Beginning at a point on the easterly margin of the John F. Benson County Road (Benson Road South) which is South 25°44'34" East 934.11 feet from the northwest corner of said Government Lot 1;
thence south 0°38' West 369.61 feet to the True Point of Beginning;
thence south 0°38' West 109.14 feet, more or less, to the south line of said Government Lot 1;
thence south 88°55' West 183.03 feet to the easterly margin of said John F. Benson County Road;
thence northeasterly along said road, 113.23 feet;
thence north 88°55' East 157.24 feet to the True Point of Beginning;
EXCEPT any portion thereof lying within Primary State Highway No. 1.

NOTE FOR INFORMATIONAL PURPOSES ONLY:

The following may be used as an abbreviated legal description on the documents to be recorded, per amended RCW 65.04. Said abbreviated legal description is not a substitute for a complete legal description within the body of the document.

SW 17-23-05; NE 19-23-05; NW 20-23-05

END OF EXHIBIT A

JMB

APPENDIX B

EDR REPORT

e data resources, inc.

The EDR-Radius Map
with GeoCheck™

PSE,Grady Way
620 South Grady Way
Renton, WA 98055

Inquiry Number: 204020.1s

October 14, 1997

***The* Source For Environmental Risk Management Data**

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Topographic Map	2
GeoCheck Summary	3
Overview Map	5
Detail Map	6
Map Summary - All Sites	7
Map Summary - Sites with higher or the same elevation as the Target Property	8
Map Findings	9
Orphan Summary	25

APPENDICES

GeoCheck Version 2.1	A1
EPA Waste Codes	A6
Government Records Searched / Data Currency Tracking Addendum	A7

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer

This Report contains information obtained from a variety of public sources and EDR makes no representation or warranty regarding the accuracy, reliability, quality, or completeness of said information or the information contained in this report. The customer shall assume full responsibility for the use of this report.
No warranty of merchantability or of fitness for a particular purpose, expressed or implied, shall apply and EDR specifically disclaims the making of such warranties. In no event shall EDR be liable to anyone for special, incidental, consequential or exemplary damages. Copyright (c) 1997 by EDR. All rights reserved.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-97. Search distances are per ASTM standard or custom distances requested by the user.

The address of the subject property for which the search was intended is:

620 SOUTH GRADY WAY
RENTON, WA 98055

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the subject property or within the ASTM E 1527-97 search radius around the subject property for the following Databases:

NPL:	National Priority List
Delisted NPL:	NPL Deletions
RCRIS-TSD:	Resource Conservation and Recovery Information System
CERCLIS:	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP:	Comprehensive Environmental Response, Compensation, and Liability Information System
CORRACTS:	Corrective Action Report
SWF/LF:	Solid Waste Facilities Handbook
RAATS:	RCRA Administrative Action Tracking System
RCRIS-LQG:	Resource Conservation and Recovery Information System
HMIRS:	Hazardous Materials Information Reporting System
PADS:	PCB Activity Database System
ERNS:	Emergency Response Notification System
FINDS:	Facility Index System
TRIS:	Toxic Chemical Release Inventory System
NPL Lien:	Federal Superfund Liens
TSCA:	Toxic Substances Control Act
MLTS:	Material Licensing Tracking System
ROD:	Records Of Decision
CONSENT:	Superfund (CERCLA) Consent Decrees
Air Emissions:	Washington Emissions Data System
Coal Gas:	Former Manufactured gas (Coal Gas) Sites.

Unmapped (orphan) sites are not considered in the foregoing analysis.

Search Results:

Search results for the subject property and the search radius, are listed below:

Subject Property:

The subject property was identified in the following government records. For more information on this property see page 9 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
RENTON LINE HDQTRS 620 S GRADY WAY RENTON, WA 98055	UST WA ICR LUST	N/A
RENTON SERVICE CENTER 620 S GRADY WAY RENTON, WA 98055	UST	N/A

EXECUTIVE SUMMARY

Surrounding Properties:

Elevations have been determined from the USGS 1 degree Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. EDR's definition of a site with an elevation equal to the subject property includes a tolerance of -10 feet. Sites with an elevation equal to or higher than the subject property have been differentiated below from sites with an elevation lower than the subject property (by more than 10 feet). Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

CSCSL: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already by listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data comes from the Department of Ecology's Confirmed & Suspected Contaminated Sites List.

A review of the CSCSL list, as provided by EDR, and dated 06/09/1997 has revealed that there is 1 CSCSL site within approximately 1 Mile of the subject property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
RENTON SCHOOL DIST. #403	***235 AIRPORT WAY S***	***1/2 - 1 NNW***	***29***	***23***

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data comes from the Department of Ecology's Leaking Underground Storage Tanks Site List.

A review of the LUST list, as provided by EDR, and dated 05/01/1997 has revealed that there are 10 LUST sites within approximately 0.5 Miles of the subject property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
GULL 1201	509 SOUTH GRADY WAY	0 - 1/8 W	B11	13
EXXON STATION - BERKWITH	3100 BENSON RD. SOUTH	1/8 - 1/4 S	19	15
PUGET SOUND CHRYSLER PLYMOUTH	***585 RAINIER AVE S***	***1/4 - 1/2 WNW***	***20***	***16***
RENTON 1	***621 RAINIER AVE S***	***1/4 - 1/2 WNW***	***21***	***17***
RENTON CLINIC ASSOCIATION	***215 S 4TH PL***	***1/4 - 1/2 WNW***	***23***	***19***
LES SCHWAB TIRES	710 RAINIER AVE S	1/4 - 1/2 W	E25	20
RENTON LINCOLN MERCURY	***201 S 7TH ST***	***1/4 - 1/2 W***	***E26***	***20***

Lower Elevation	Address	Dist / Dir	Map ID	Page
TAYLORS AUTO BODY	***330 MAIN AVE S***	***1/4 - 1/2 NNE***	***D24***	***20***
MOSCATEL PROPERTY	233 MAIN AVE S	1/4 - 1/2 NNE	27	21
RENTON CO 070276	***225 WILLIAMS AVE S***	***1/4 - 1/2 N***	***28***	***21***

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data comes from the Department of Ecology's Statewide UST Site/Tank Report.

A review of the UST list, as provided by EDR, and dated 05/01/1997 has revealed that there are 2 UST sites within approximately 0.25 Miles of the subject property.

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GULL 1201	509 S GRADY WAY	0 - 1/8 W	B8	12

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
BANKERS AUTO REBUILD	*405 S 7TH ST*	*1/8 - 1/4 W*	*C18*	*15*

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A review of the RCRIS-SQG list, as provided by EDR, and dated 04/01/1997 has revealed that there are 5 RCRIS-SQG sites within approximately 0.25 Miles of the subject property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
TEXACO STA RENTON VLG	*509 S GRADY WAY*	*0 - 1/8 W*	*B6*	*12*
TROJAN LITHOGRAPH CORP	*620 S 7TH ST*	*0 - 1/8 W*	*15*	*14*
REIMAN AUTO PARTS	*617 S GRADY WAY*	*0 - 1/8 NNE*	*16*	*14*
RENTON ISSAQUAH AUTO FREIGHTLI	*423 S 7TH ST*	*1/8 - 1/4 W*	*C17*	*15*
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ICR: These are remedial action reports Ecology has recieved from either the owner or operator of the site. These actions have been conducted without department oversight or approval and are not under an order or decree.

A review of the WA ICR list, as provided by EDR, and dated 03/01/1997 has revealed that there are 14 WA ICR sites within approximately 0.5 Miles of the subject property.

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GULL #1201 (THREE REPORTS)	509 S GRADY WAY	0 - 1/8 W	B3	11
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GULL #1201	509 S GRADY WAY	0 - 1/8 W	B5	11
GULL #1201	509 S GRADY WAY	0 - 1/8 W	B7	12
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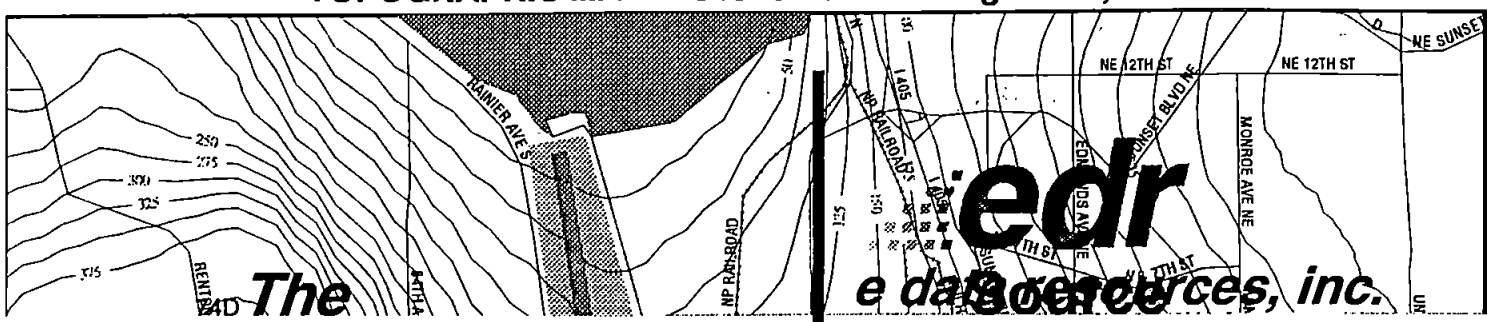
Lower Elevation	Address	Dist / Dir	Map ID	Page
TAYLOR AUTO BODY SHOP	330 MAIN AVE S	1/4 - 1/2 NNE	D22	18
RENTON CO 070276	*225 WILLIAMS AVE S*	*1/4 - 1/2 N*	*28*	*21*

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
STERNOFF METALS CORPORATION	CSCSL
BLACK RIVER CORP PARK TRACT A	CSCSL
FUDS YOUNGS LAKE NIKE 32 33	CSCSL
RENTON MUNICIPAL AIRPORT FIRE TRNG AREA	CSCSL
SUNSET PARK	SWF/LF
VASHON ISLAND	SWF/LF
KENT	SWF/LF
NORTH BEND	SWF/LF
FALL CITY	SWF/LF
HOWARD COOPER CORP	UST,LUST
TEXACO KENT	UST
YOUNKER NISSAN	UST
BOEING CO BCAG RENTON	RCRIS-SQG,FINDS
607 SW GIRDY WAY	ERNS
NORTHWEST PIPELINE METER STATIONS - S. S	WA ICR
GOODYEAR SERVICE CENTER	WA ICR
BLACK RIVER CORP. PARK/TRACK A & B	WA ICR
METRO EAST DIVISION	WA ICR

TOPOGRAPHIC MAP - 204020.1s - Geo Engineers, Inc.



The edr e data resources, inc.

The EDR-Radius Map
with GeoCheck™

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TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Topographic Map	2
GeoCheck Summary	3
Overview Map	5
Detail Map	6
Map Summary - All Sites	7
Map Summary - Sites with higher or the same elevation as the Target Property	8
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APPENDICES

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GULL #1201	509 S GRADY WAY	0 - 1/8 W	B5	11
GULL #1201	509 S GRADY WAY	0 - 1/8 W	B7	12
GULL #1201 (TWO REPORTS)	509 S GRADY WAY	0 - 1/8 W	B9	13
GULL #1201	509 S GRADY WAY	0 - 1/8 W	B10	13
GULL #1201	509 S GRADY WAY	0 - 1/8 W	B12	13
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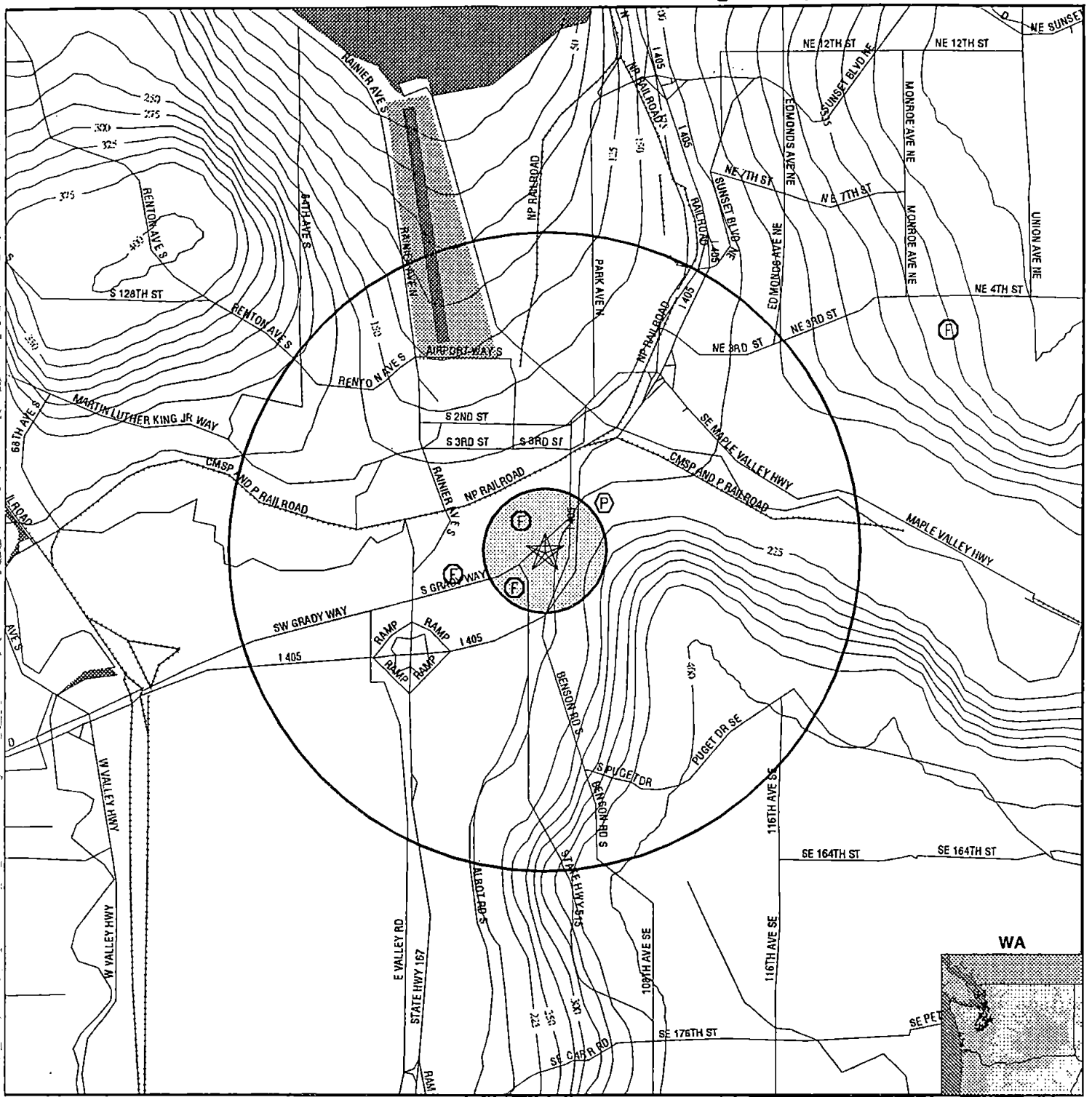
PUGET SOUND CHRYSLER PLYMOUTH	*585 RAINIER AVE S*	*1/4 - 1/2 WNW*	*20*	*16*
RENTON 1	*621 RAINIER AVE S*	*1/4 - 1/2 WNW*	*21*	*17*
RENTON CLINIC ASSOCIATION	*215 S 4TH PL*	*1/4 - 1/2 WNW*	*23*	*19*

Lower Elevation	Address	Dist / Dir	Map ID	Page
TAYLOR AUTO BODY SHOP	330 MAIN AVE S	1/4 - 1/2 NNE	D22	18
RENTON CO 070276	*225 WILLIAMS AVE S*	*1/4 - 1/2 N*	*28*	*21*

Due to poor or inadequate address information, the following sites were not mapped:

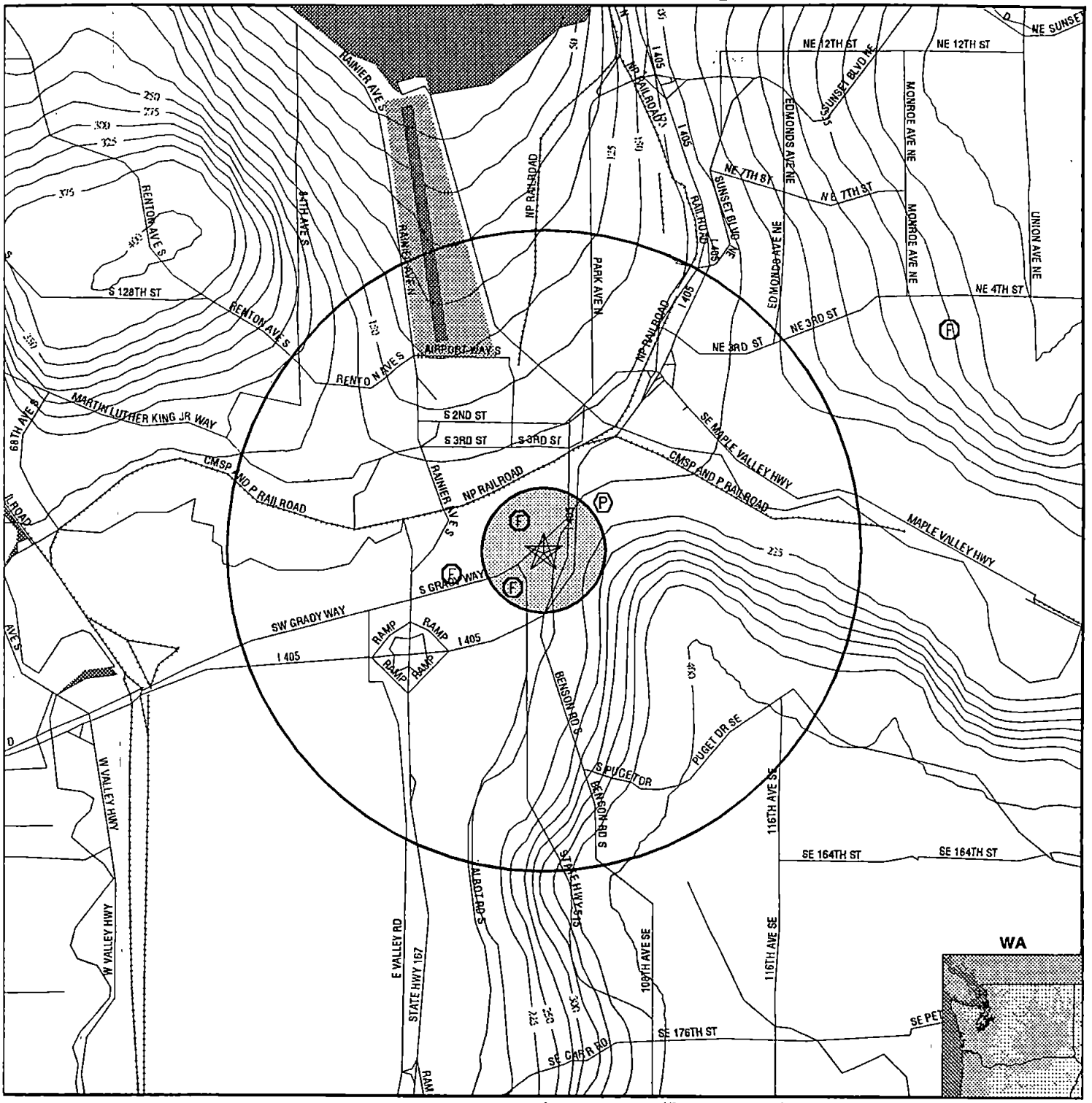
Site Name	Database(s)
STERNOFF METALS CORPORATION	CSCSL
BLACK RIVER CORP PARK TRACT A	CSCSL
FUDS YOUNGS LAKE NIKE 32 33	CSCSL
RENTON MUNICIPAL AIRPORT FIRE TRNG AREA	CSCSL
SUNSET PARK	SWF/LF
VASHON ISLAND	SWF/LF
KENT	SWF/LF
NORTH BEND	SWF/LF
FALL CITY	SWF/LF
HOWARD COOPER CORP	UST,LUST
TEXACO KENT	UST
YOUNKER NISSAN	UST
BOEING CO BCAG RENTON	RCRIS-SQG,FINDS
607 SW GIRDY WAY	ERNS
NORTHWEST PIPELINE METER STATIONS - S. S	WA ICR
GOODYEAR SERVICE CENTER	WA ICR
BLACK RIVER CORP. PARK/TRACK A & B	WA ICR
METRO EAST DIVISION	WA ICR

TOPOGRAPHIC MAP - 204020.1s - Geo Engineers, Inc.



- Major Roads
- Contour Lines
- Waterways
- Airports
- Earthquake epicenter, Richter 5 or greater
- Closest Federal Well in quadrant

TOPOGRAPHIC MAP - 204020.1s - Geo Engineers, Inc.



- Major Roads
- Contour Lines
- Waterways
- Airports
- Earthquake epicenter, Richter 5 or greater
- (F) Closest Federal Well in quadrant
- [S] Closest State Well in quadrant
- (P) Closest Public Water Supply Well

TARGET PROPERTY:	PSE,Grady Way	CUSTOMER:	Geo Engineers, Inc.
ADDRESS:	620 South Grady Way	CONTACT:	Tony Orme
CITY/STATE/ZIP:	Renton WA 98055	INQUIRY #:	204020.1s
LAT/LONG:	47.4739 / 122.2051	DATE:	October 14, 1997 8:09 am

GEOCHECK VERSION 2.1
SUMMARY

TARGET PROPERTY COORDINATES

Latitude (North):	47.473869 - 47° 28' 25.9"
Longitude (West):	122.205139 - 122° 12' 18.5"
Universal Transverse Mercator:	Zone 10
UTM X (Meters):	559895.0
UTM Y (Meters):	5257913.0

GEOLOGIC AGE IDENTIFICATION†

Geologic Code:	Tec
Era:	Cenozoic
System:	Tertiary
Series:	Eocene

ROCK STRATIGRAPHIC UNIT†

Category:	Continental Deposits

GROUNDWATER FLOW INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, including well data collected on nearby properties, regional groundwater flow information (from deep aquifers), or surface topography.‡

General Topographic Gradient:	General West
General Hydrogeologic Gradient:	The hydrogeologic gradient for this report has been determined using the depth to water table information provided below. Where available, the closest well in each quadrant has been identified (up to a radius of 5 miles around the target property) and used in the gradient calculation. While an attempt has been made to segregate shallow from deep aquifers, this cannot always be assured. Groundwater flow in the aquifer associated with the wells appears generally to be to the WSW.

USGS TOPOGRAPHIC MAP ASSOCIATED WITH THIS SITE

Target Property:	2447122-D2 RENTON, WA

FEDERAL DATABASE WELL INFORMATION

WELL QUADRANT	DISTANCE FROM TP	LITHOLOGY	DEPTH TO WATER TABLE
Northern	1/8 - 1/4 Mile	Not Reported	7 ft.
Eastern	1 - 2 Miles	Not Reported	57 ft.
Southern	1/8 - 1/4 Mile	Not Reported	10 ft.
Western	1/4 - 1/2 Mile	Not Reported	Not Reported

STATE DATABASE WELL INFORMATION

WELL QUADRANT	DISTANCE FROM TP

NO WELLS FOUND

† Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).
‡ U.S. EPA Ground Water Handbook, Vol I: Ground Water and Contamination, Office of Research and development EPA/625/6-90/016a,Chapter 4, page 78, September 1990.

GEOCHECK VERSION 2.1
SUMMARY

PUBLIC WATER SUPPLY SYSTEM INFORMATION (EPA-FRDS)

Searched by Nearest Well.
NOTE: PWS System location is not always the same as well location.

PWS Name: RENTON, CITY OF
RENTON, WA 98056
Location Relative to TP: 1/4 - 1/2 Mile East
Well currently has or has had major violation(s): Yes

AREA RADON INFORMATION

EPA Radon Zone for KING County: 3 .

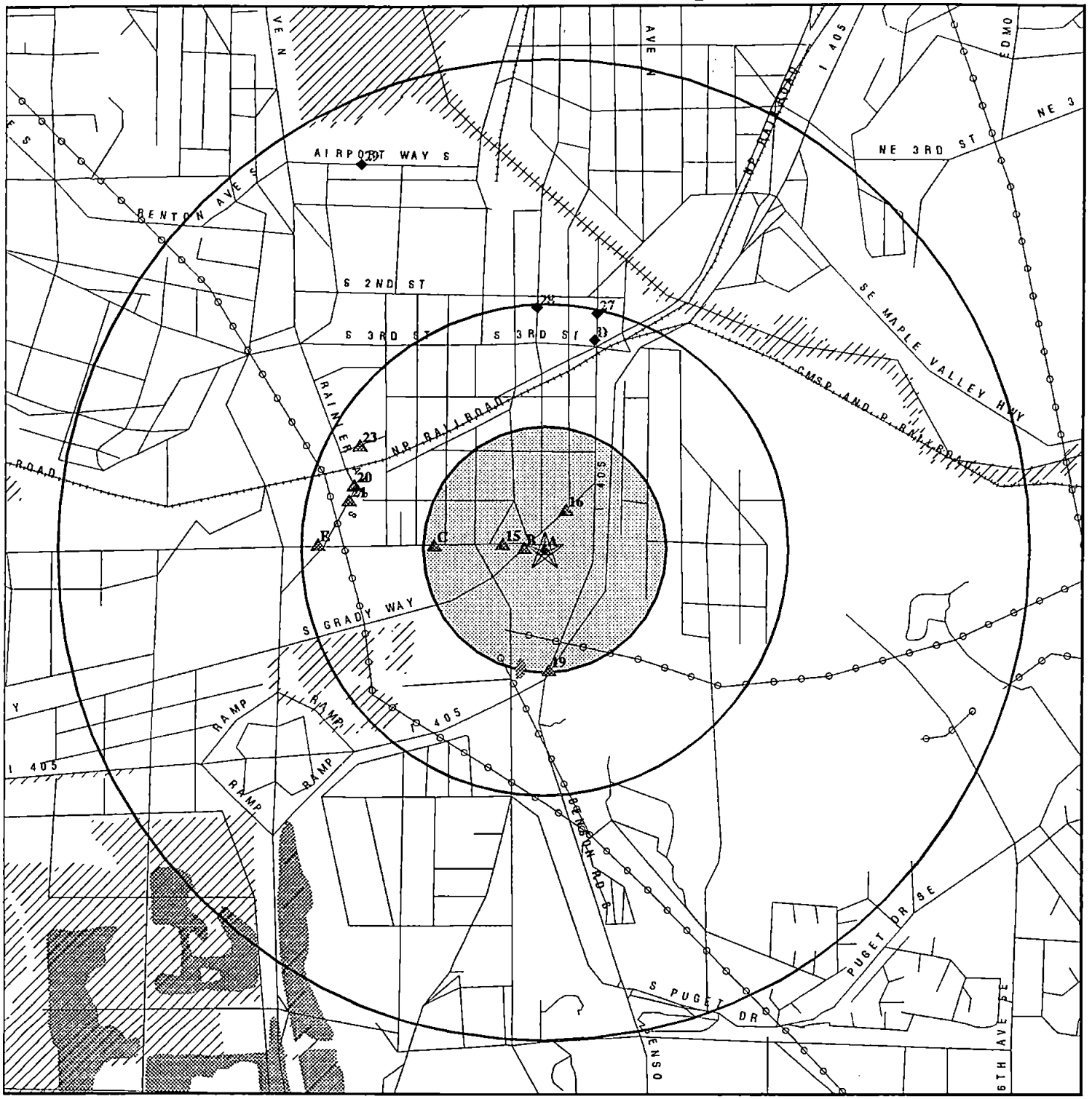
Note: Zone 1 indoor average level > 4pCi/L.
: Zone 2 indoor average level >= 2pCi/L.
: Zone 3 indoor average level < 2pCi/L.

Zip Code: 98055

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.200 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.200 pCi/L	100%	0%	0%

OVERVIEW MAP - 204020.1s - Geo Engineers, Inc.



★ Target Property

▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

Coal Gasification Sites (if requested)

National Priority List Sites

Landfill Sites

Power transmission lines

Oil & Gas pipelines

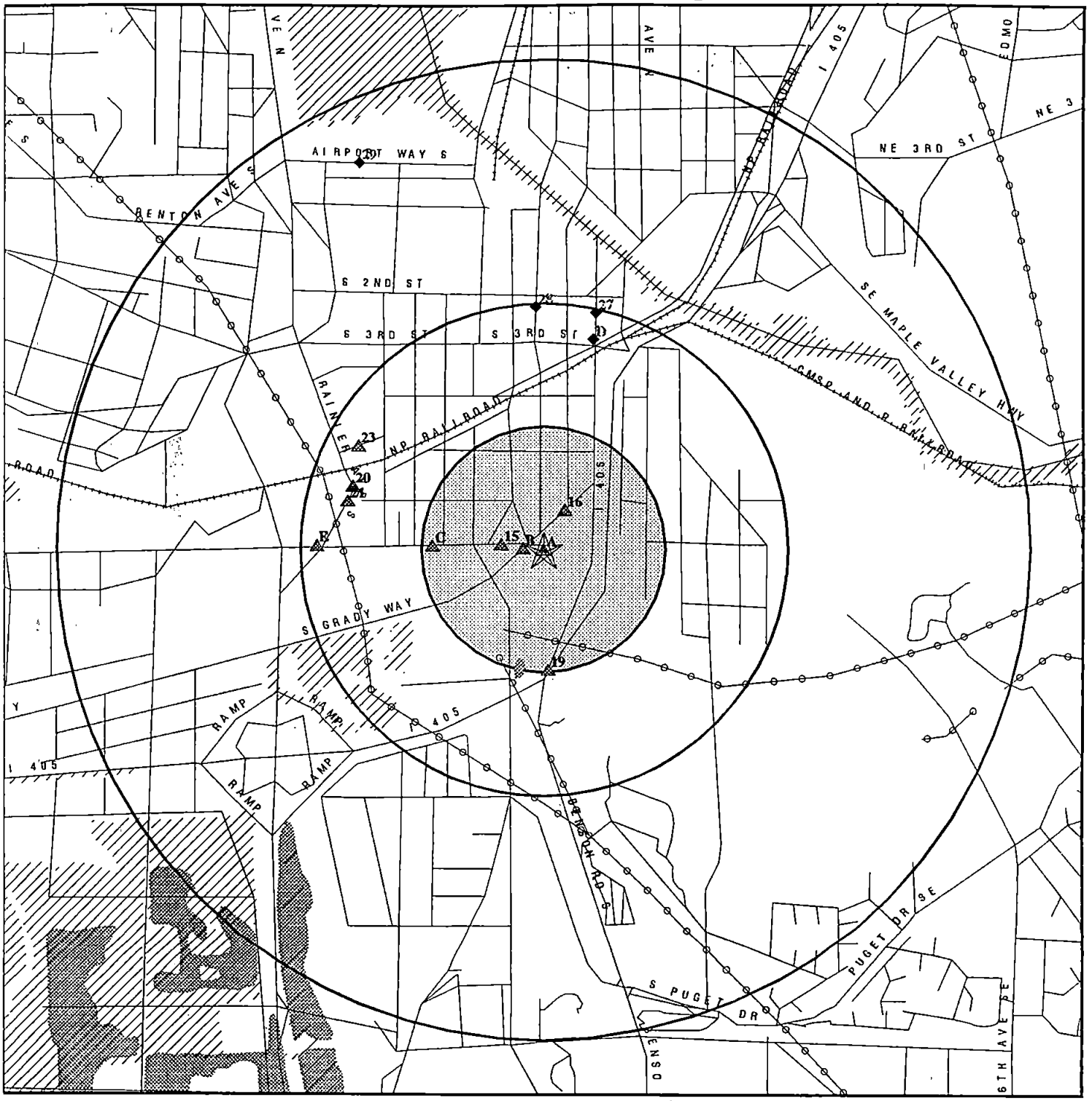
100-year flood zone

500-year flood zone

Wetlands per National Wetlands Inventory (1994)

TARGET PROPERTY:	PSE,Grady Way	CUSTOMER:	Geo Engineers, Inc.
ADDRESS:	620 South Grady Way	CONTACT:	Tony Orme
CITY/STATE/ZIP:	Renton WA 98055	INQUIRY #:	204020.1s
LAT/LONG:	47.4739 / 122.2051	DATE:	October 14, 1997 8:06 am

OVERVIEW MAP - 204020.1s - Geo Engineers, Inc.



0 1/4 1/2 1 Miles

★ Target Property

▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

♟ Coal Gasification Sites (if requested)

National Priority List Sites

Landfill Sites

Power transmission lines

Oil & Gas pipelines

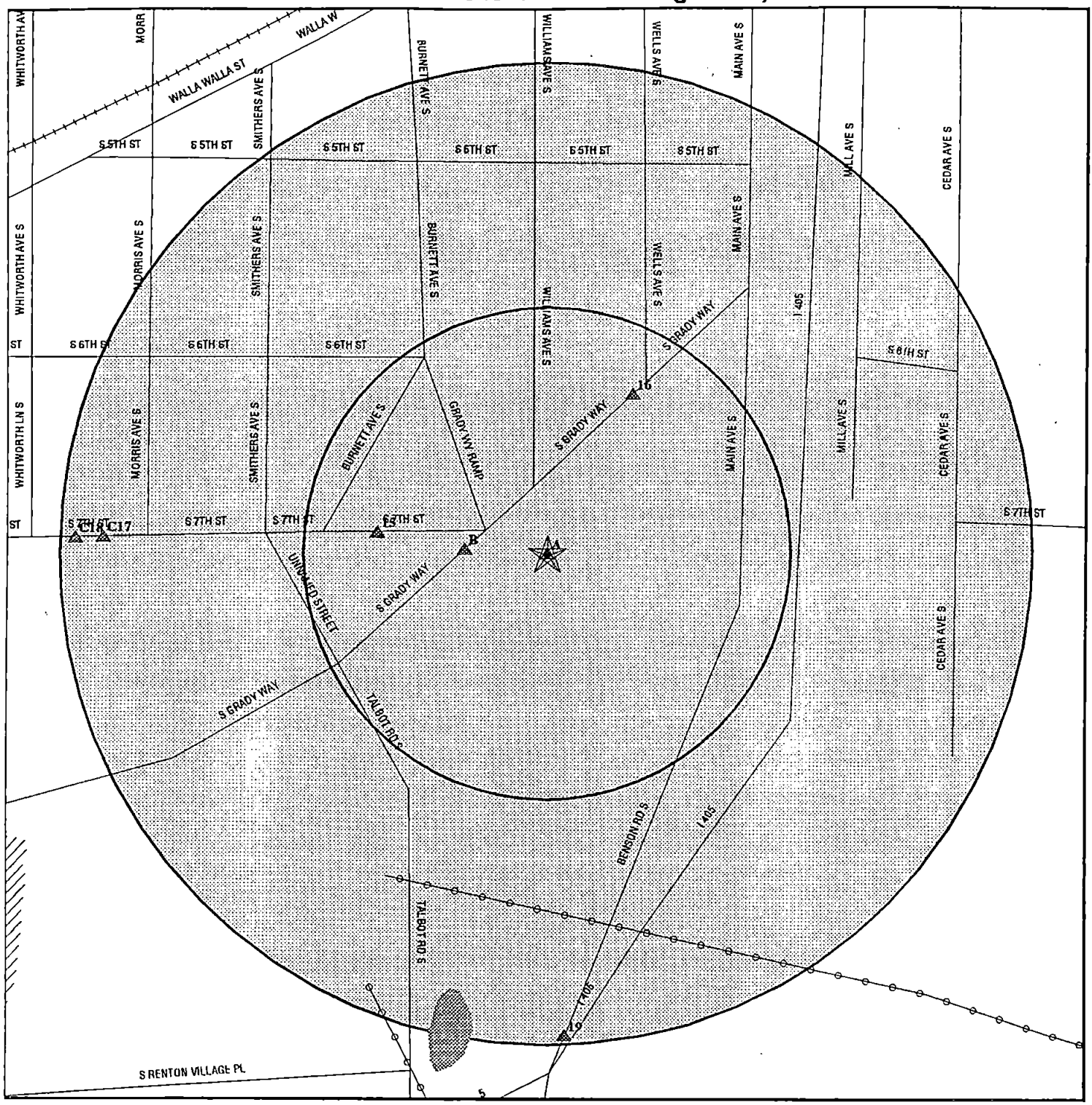
100-year flood zone

500-year flood zone

Wetlands per National Wetlands Inventory (1994)

TARGET PROPERTY:	PSE,Grady Way	CUSTOMER:	Geo Engineers, Inc.
ADDRESS:	620 South Grady Way	CONTACT:	Tony Orme
CITY/STATE/ZIP:	Renton WA 98055	INQUIRY #:	204020.1s
LAT/LONG:	47.4739 / 122.2051	DATE:	October 14, 1997 8:06 am

DETAIL MAP - 204020.1s - Geo Engineers, Inc.



★ Target Property

▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

Coal Gasification Sites (if requested)

Sensitive Receptors

National Priority List Sites

Landfill Sites

Power transmission lines

Oil & Gas pipelines

100-year flood zone

500-year flood zone

Wetlands per National Wetlands Inventory (1994)

TARGET PROPERTY:	PSE,Grady Way	CUSTOMER:	Geo Engineers, Inc.
ADDRESS:	620 South Grady Way	CONTACT:	Tony Orme
CITY/STATE/ZIP:	Renton WA 98055	INQUIRY #:	204020.1s
LAT/LONG:	47.4739 / 122.2051	DATE:	October 14, 1997 8:08 am

MAP FINDINGS SUMMARY SHOWING ALL SITES

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
NPL		1.000	0	0	0	0	NR	0
Delisted NPL		TP	NR	NR	NR	NR	NR	0
RCRIS-TSD		0.500	0	0	0	NR	NR	0
CSCSL		1.000	0	0	0	1	NR	1
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		TP	NR	NR	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
LUST	X	0.500	1	1	8	NR	NR	10
UST	X	0.250	1	1	NR	NR	NR	2
RAATS		TP	NR	NR	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	3	2	NR	NR	NR	5
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
ROD		1.000	0	0	0	0	NR	0
CONSENT		1.000	0	0	0	0	NR	0
Wa Air Emissions (EMI)		TP	NR	NR	NR	NR	NR	0
WA ICR	X	0.500	9	0	5	NR	NR	14
Coal Gas		1.000	0	0	0	0	NR	0

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

MAP FINDINGS SUMMARY SHOWING ONLY SITES HIGHER THAN OR THE SAME ELEVATION AS TP

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
NPL		1.000	0	0	0	0	NR	0
Delisted NPL		TP	NR	NR	NR	NR	NR	0
RCRIS-TSD		0.500	0	0	0	NR	NR	0
CSCSL		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		TP	NR	NR	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
LUST	X	0.500	1	1	5	NR	NR	7
UST	X	0.250	1	1	NR	NR	NR	2
RAATS		TP	NR	NR	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	3	2	NR	NR	NR	5
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
ROD		1.000	0	0	0	0	NR	0
CONSENT		1.000	0	0	0	0	NR	0
Wa Air Emissions (EMI)		TP	NR	NR	NR	NR	NR	0
WA ICR	X	0.500	9	0	3	NR	NR	12
Coal Gas		1.000	0	0	0	0	NR	0

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

MAP FINDINGS SUMMARY SHOWING ONLY SITES HIGHER THAN OR THE SAME ELEVATION AS TP

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
NPL		1.000	0	0	0	0	NR	0
Delisted NPL		TP	NR	NR	NR	NR	NR	0
RCRIS-TSD		0.500	0	0	0	NR	NR	0
CSCSL		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		TP	NR	NR	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
LUST	X	0.500	1	1	5	NR	NR	7
UST	X	0.250	1	1	NR	NR	NR	2
RAATS		TP	NR	NR	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	3	2	NR	NR	NR	5
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
ROD		1.000	0	0	0	0	NR	0
CONSENT		1.000	0	0	0	0	NR	0
Wa Air Emissions (EMI)		TP	NR	NR	NR	NR	NR	0
WA ICR	X	0.500	9	0	3	NR	NR	12
Coal Gas		1.000	0	0	0	0	NR	0

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

A2 Target Property | **RENTON LINE HDQTRS**
620 S GRADY WAY
RENTON, WA 98055

UST | **U001125499**
WA ICR | **N/A**
LUST

LUST:

Facility ID:	8532	Ecology Region:	North Western
Release Date:	8/11/89 0:00:00	Release ID:	1556
Release Status:	REPORTED CLEANED UP	Status Date:	6/1/95 0:00:00
Affected Media:	GROUND WATER	Region:	STATE

Facility ID:	8532	Ecology Region:	North Western
Release Date:	8/11/89 0:00:00	Release ID:	1556
Release Status:	REPORTED CLEANED UP	Status Date:	6/1/95 0:00:00
Affected Media:	SOIL	Region:	STATE

Facility ID:	8532	Ecology Region:	North Western
Release Date:	8/11/89 0:00:00	Release ID:	1556
Release Status:	CLEANUP STARTED	Status Date:	8/11/89 0:00:00
Affected Media:	GROUND WATER	Region:	STATE

Facility ID:	8532	Ecology Region:	North Western
Release Date:	8/11/89 0:00:00	Release ID:	1556
Release Status:	CLEANUP STARTED	Status Date:	8/11/89 0:00:00
Affected Media:	SOIL	Region:	STATE

WA ICR:

Date Ecology Received Report:	01/06/1994
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Groundwater
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Final cleanup report
Site Register Issue:	93-20

Date Ecology Received Report:	01/06/1994
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Interim cleanup report
Site Register Issue:	93-20

Date Ecology Received Report:	01/06/1994
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Groundwater, Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Interim cleanup report
Site Register Issue:	93-20

RENTON LINE HDQTRS (Continued) **U001125499**

Date Ecology Received Report: 01/06/1994
Contaminants Found at Site: Petroleum products
Media Contaminated: Soil
Cause of Contamination: Tank
Region: North Western
Type of Report Ecology Received: Final cleanup report
Site Register Issue: 93-20

UST:

Facility ID:	8532	Tank ID:	227
Install Date:	12/31/64	Status:	Removed
Capacity:	Not reported	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	Not reported
Ecology Region:	North Western		

Facility ID:	8532	Tank ID:	226
Install Date:	12/31/64	Status:	Removed
Capacity:	Not reported	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	UNLEADED GASOLINE
Ecology Region:	North Western		

Facility ID:	8532	Tank ID:	224
Install Date:	12/31/64	Status:	Removed
Capacity:	Not reported	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	USED OIL/WASTE OIL
Ecology Region:	North Western		

Facility ID:	8532	Tank ID:	217
Install Date:	12/31/64	Status:	Closed in Place
Capacity:	111 to 1,100 Gallons	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	Not reported
Ecology Region:	North Western		

Facility ID:	8532	Tank ID:	225
Install Date:	12/31/64	Status:	Removed
Capacity:	111 to 1,100 Gallons	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	USED OIL/WASTE OIL
Ecology Region:	North Western		

Facility ID:	8532	Tank ID:	218
Install Date:	12/31/64	Status:	Closed in Place
Capacity:	111 to 1,100 Gallons	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	LEADED GASOLINE
Ecology Region:	North Western		

A1 Target Property **RENTON SERVICE CENTER**
620 S GRADY WAY
RENTON, WA 98055

UST **U000592914**
N/A

UST:

Facility ID:	8527	Tank ID:	262
Install Date:	10/23/89	Status:	OPERATIONAL
Capacity:	Not reported	Tank Material:	Not reported
Compartment #:	1	Substance:	Not reported
Ecology Region:	North Western		

RENTON SERVICE CENTER (Continued) U000592914

Facility ID:	8527	Tank ID:	192
Install Date:	12/31/64	Status:	Removed
Capacity:	Not reported	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	Not reported
Ecology Region:	North Western		
Facility ID:	8527	Tank ID:	263
Install Date:	10/23/89	Status:	OPERATIONAL
Capacity:	Not reported	Tank Material:	Not reported
Compartment #:	1	Substance:	UNLEADED GASOLINE
Ecology Region:	North Western		

B3 **GULL #1201 (THREE REPORTS)** WA ICR S102514430
West **509 S GRADY WAY** N/A
< 1/8 **RENTON, WA 98055**
Higher

WA ICR:

Date Ecology Received Report:	04/15/1994
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Groundwater, Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Interim cleanup report
Site Register Issue:	93-28

B4 **GULL #1201 (THREE REPORTS)** WA ICR S102514431
West **509 S GRADY WAY** N/A
< 1/8 **RENTON, WA 98055**
Higher

WA ICR:

Date Ecology Received Report:	04/15/1994
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Groundwater, Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Interim cleanup report
Site Register Issue:	93-29

B5 **GULL #1201** WA ICR S102517555
West **509 S GRADY WAY** N/A
< 1/8 **RENTON, WA 98055**
Higher

WA ICR:

Date Ecology Received Report:	08/23/1996
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Groundwater, Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Interim cleanup report
Site Register Issue:	94-36

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
B6 West < 1/8 Higher	**TEXACO STA RENTON VLG** **509 S GRADY WAY** **RENTON, WA 98055**	RCRIS-SQG FINDS	1000659277 WAD988489464

RCRIS:
- Owner: TEXACO REFINING & MARKETING INC
- Record Date: 04/30/96
- Classification: Not reported
- Used Oil Recyc: No
- Violation Status: No violations found

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
B7 West < 1/8 Higher	**GULL #1201** **509 S GRADY WAY** **RENTON, WA 98055**	WA ICR	S102514427 N/A

WA ICR:

Date Ecology Received Report:	02/20/1995
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Groundwater, Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Interim cleanup report
Site Register Issue:	93-48

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
B8 West < 1/8 Higher	**GULL 1201** **509 S GRADY WAY** **RENTON, WA 98055**	UST	U003152716 N/A

UST:

Facility ID:	7725	Tank ID:	2
Install Date:	12/31/64	Status:	Removed
Capacity:	Not reported	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	LEADED GASOLINE
Ecology Region:	North Western		
Facility ID:	7725	Tank ID:	1
Install Date:	12/31/64	Status:	Removed
Capacity:	Not reported	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	UNLEADED GASOLINE
Ecology Region:	North Western		
Facility ID:	7725	Tank ID:	4
Install Date:	12/31/64	Status:	Removed
Capacity:	Not reported	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	UNLEADED GASOLINE
Ecology Region:	North Western		
Facility ID:	7725	Tank ID:	24
Install Date:	12/31/64	Status:	Removed
Capacity:	Not reported	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	UNLEADED GASOLINE
Ecology Region:	North Western		

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
B9 West < 1/8 Higher	**GULL #1201 (TWO REPORTS)** **509 S GRADY WAY** **RENTON, WA 98055**	WA ICR	S102514432 N/A

WA ICR:

Date Ecology Received Report:	10/16/1995
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Groundwater, Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Interim cleanup report
Site Register Issue:	94-15

B10 West < 1/8 Higher	**GULL #1201** **509 S GRADY WAY** **RENTON, WA 98055**	WA ICR	S102514426 N/A

WA ICR:

Date Ecology Received Report:	12/06/1993
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Groundwater, Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Interim cleanup report
Site Register Issue:	93-13

B11 West < 1/8 Higher	**GULL 1201** **509 SOUTH GRADY WAY** **RENTON, WA 98055**	LUST	S102443715 N/A

LUST:

Facility ID:	7725	Ecology Region:	North Western
Release Date:	8/28/89 0:00:00	Release ID:	1578
Release Status:	MONITORING	Status Date:	9/19/94 0:00:00
Affected Media:	GROUND WATER	Region:	STATE
Facility ID:	7725	Ecology Region:	North Western
Release Date:	8/28/89 0:00:00	Release ID:	1578
Release Status:	MONITORING	Status Date:	9/19/94 0:00:00
Affected Media:	SOIL	Region:	STATE
Facility ID:	7725	Ecology Region:	North Western
Release Date:	8/28/89 0:00:00	Release ID:	1578
Release Status:	CLEANUP STARTED	Status Date:	2/19/94 0:00:00
Affected Media:	GROUND WATER	Region:	STATE
Facility ID:	7725	Ecology Region:	North Western
Release Date:	8/28/89 0:00:00	Release ID:	1578
Release Status:	CLEANUP STARTED	Status Date:	2/19/94 0:00:00
Affected Media:	SOIL	Region:	STATE

B12 West < 1/8 Higher	**GULL #1201** **509 S GRADY WAY** **RENTON, WA 98055**	WA ICR	S102514428 N/A

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
	GULL #1201 (Continued)		**S102514428**
	WA ICR: Date Ecology Received Report: 04/24/1995 Contaminants Found at Site: Petroleum products Media Contaminated: Groundwater Cause of Contamination: Tank Region: North Western Type of Report Ecology Received: Interim cleanup report Site Register Issue: 94-03		
B13 **West** **< 1/8** **Higher**	**GULL #1201 (THREE REPORTS)** **509 S GRADY WAY** **RENTON, WA 98055**	**WA ICR**	**S102517929** **N/A**
	WA ICR: Date Ecology Received Report: 02/11/1997 Contaminants Found at Site: Petroleum products Media Contaminated: Groundwater, Soil Cause of Contamination: Tank Region: North Western Type of Report Ecology Received: Interim cleanup report Site Register Issue: 94-46		
B14 **West** **< 1/8** **Higher**	**GULL #1201** **509 S GRADY WAY** **RENTON, WA 98055**	**WA ICR**	**S102514429** **N/A**
	WA ICR: Date Ecology Received Report: 05/30/1995 Contaminants Found at Site: Petroleum products Media Contaminated: Groundwater, Soil Cause of Contamination: Tank Region: North Western Type of Report Ecology Received: Interim cleanup report Site Register Issue: 94-07		
15 **West** **< 1/8** **Higher**	**TROJAN LITHOGRAPH CORP** **620 S 7TH ST** **RENTON, WA 98055**	**RCRIS-SQG** **FINDS**	**1000265396** **WAD061667713**
	RCRIS: Owner: MARVIN D HURTGEN Record Date: 03/22/88 Classification: Not reported Used Oil Recyc: No Violation Status: No violations found		
16 **NNE** **< 1/8** **Higher**	**REIMAN AUTO PARTS** **617 S GRADY WAY** **RENTON, WA 98055**	**RCRIS-SQG** **FINDS**	**1000295576** **WAD982657686**

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
	REIMAN AUTO PARTS (Continued)		**1000295576**

RCRIS:
Owner: ARENSBERG INVESTMENTS
Record Date: 05/16/89
Classification: Not reported
Used Oil Recyc: No
Violation Status: No violations found

C17 West 1/8-1/4 Higher	**RENTON ISSAQUAH AUTO FREIGHTLINES** **423 S 7TH ST** **RENTON, WA 98055**	**RCRIS-SQG** **FINDS**	**1000417406** **WAD005791249**

RCRIS:
Owner: CASTAGNO BROTHERS
Record Date: 09/21/82
Classification: Not reported
Used Oil Recyc: No
Violation Status: No violations found

C18 West 1/8-1/4 Higher	**BANKERS AUTO REBUILD** **405 S 7TH ST** **RENTON, WA 98055**	**RCRIS-SQG** **FINDS** **UST**	**1000269639** **WAD027396266**

RCRIS:
Owner: JAMES E BANKER
Record Date: 05/19/86
Classification: Small Quantity Generator
Used Oil Recyc: No
Violation Status: No violations found

UST:
Facility ID: 2184
Install Date: 12/31/64
Capacity: 111 to 1,100 Gallons
Compartment #: 1
Ecology Region: North Western
Tank ID: 1
Status: Closed in Place
Tank Material: Steel-Unprotected
Substance: LEADED GASOLINE

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19 South 1/8-1/4 Higher	**EXXON STATION - BERKWITH** **3100 BENSON RD. SOUTH** **RENTON, WA 98055**	**LUST**	**S102443723** **N/A**

LUST:
Facility ID: 389585
Release Date: 9/26/96 0:00:00
Release Status: AWAITING CLEANUP
Affected Media: SOIL
Ecology Region: North Western
Release ID: 389635
Status Date: 9/26/96 0:00:00
Region: STATE

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
20 WNW 1/4-1/2 Higher	**PUGET SOUND CHRYSLER PLYMOUTH** **585 RAINIER AVE S** **RENTON, WA 98055**	**RCRIS-SQG** **FINDS** **UST** **WA ICR** **LUST**	**1000223622** **WAD150981496**

RCRIS:

Owner: PUGET SOUND CHRYSLER-PLYMOUTH INC

Record Date: 10/30/86

Classification: Small Quantity Generator

Used Oil Recyc: No

Violation Status: No violations found

LUST:

Facility ID:	11921	Ecology Region:	North Western
Release Date:	9/30/94 0:00:00	Release ID:	5633
Release Status:	MONITORING	Status Date:	6/1/95 0:00:00
Affected Media:	GROUND WATER	Region:	STATE

Facility ID:	11921	Ecology Region:	North Western
Release Date:	9/30/94 0:00:00	Release ID:	5633
Release Status:	MONITORING	Status Date:	6/1/95 0:00:00
Affected Media:	SOIL	Region:	STATE

Facility ID:	11921	Ecology Region:	North Western
Release Date:	9/30/94 0:00:00	Release ID:	5633
Release Status:	CLEANUP STARTED	Status Date:	11/30/93 0:00:00
Affected Media:	SOIL	Region:	STATE

Facility ID:	11921	Ecology Region:	North Western
Release Date:	9/30/94 0:00:00	Release ID:	5633
Release Status:	CLEANUP STARTED	Status Date:	11/30/93 0:00:00
Affected Media:	GROUND WATER	Region:	STATE

WA ICR:

Date Ecology Received Report:	01/04/1994
Contaminants Found at Site:	Metals Petroleum products
Media Contaminated:	Groundwater, Soil
Cause of Contamination:	Drum, SUMP
Region:	North Western
Type of Report Ecology Received:	Interim cleanup report
Site Register Issue:	93-21

Date Ecology Received Report:	01/13/1995
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Groundwater, Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Interim cleanup report
Site Register Issue:	93-44

PUGET SOUND CHRYSLER PLYMOUTH (Continued) **1000223622**

Date Ecology Received Report: 09/30/1994
Contaminants Found at Site: Petroleum products
Media Contaminated: Groundwater, Soil
Cause of Contamination: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 93-44

Date Ecology Received Report: 01/24/1995
Contaminants Found at Site: Petroleum products
Media Contaminated: Groundwater, Soil
Cause of Contamination: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 93-44

UST:

Facility ID:	11921	Tank ID:	1
Install Date:	12/31/64	Status:	Removed
Capacity:	Not reported	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	UNLEADED GASOLINE
Ecology Region:	North Western		

Facility ID:	11921	Tank ID:	2
Install Date:	12/31/64	Status:	Removed
Capacity:	111 to 1,100 Gallons	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	USED OIL/WASTE OIL
Ecology Region:	North Western		

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21 WNW 1/4-1/2 Higher **RENTON 1** **UST** **U000591478**
621 RAINIER AVE S **WA ICR** **N/A**
RENTON, WA 98055 **LUST**

LUST:

Facility ID:	6890	Ecology Region:	North Western
Release Date:	4/12/91 0:00:00	Release ID:	2162
Release Status:	CLEANUP STARTED	Status Date:	6/1/95 0:00:00
Affected Media:	SOIL	Region:	STATE

WA ICR:
Date Ecology Received Report: 12/06/1991
Contaminants Found at Site: Petroleum products
Media Contaminated: Groundwater
Cause of Contamination: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 92-13

RENTON 1 (Continued) **U000591478**

Date Ecology Received Report: 09/02/1992
Contaminants Found at Site: Petroleum products
Media Contaminated: Groundwater, Soil
Cause of Contamination: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 92-33

Date Ecology Received Report: 11/12/1993
Contaminants Found at Site: Petroleum products
Media Contaminated: Soil
Cause of Contamination: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 93-18

Date Ecology Received Report: 11/12/1993
Contaminants Found at Site: Petroleum products
Media Contaminated: Groundwater
Cause of Contamination: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 93-18

Date Ecology Received Report: 09/06/1996
Contaminants Found at Site: Petroleum products
Media Contaminated: Soil
Cause of Contamination: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 94-38

UST:

Facility ID:	6890	Tank ID:	3SUP
Install Date:	12/31/64	Status:	REMOVED
Capacity:	Not reported	Tank Material:	Not reported
Compartment #:	1	Substance:	UNLEADED GASOLINE
Ecology Region:	North Western		
Facility ID:	6890	Tank ID:	1REG
Install Date:	12/31/64	Status:	Removed
Capacity:	Not reported	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	LEADED GASOLINE
Ecology Region:	North Western		
Facility ID:	6890	Tank ID:	2UNLEAD
Install Date:	12/31/64	Status:	Removed
Capacity:	Not reported	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	UNLEADED GASOLINE
Ecology Region:	North Western		

D22 **TAYLOR AUTO BODY SHOP** **WA ICR** **S102515899**
NNE **330 MAIN AVE S** **N/A**
1/4-1/2 **RENTON, WA 98055**
Lower

TAYLOR AUTO BODY SHOP (Continued) **S102515899**

WA ICR:
Date Ecology Received Report: 11/19/1990
Contaminants Found at Site: Petroleum products
Media Contaminated: Soil
Cause of Contamination: Not reported
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 90-17

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23 **RENTON CLINIC ASSOCIATION** **WA ICR** **S101098019**
WNW **215 S 4TH PL** **LUST** **N/A**
1/4-1/2 **RENTON, WA 98055**
Same

LUST:

Facility ID:	200888	Ecology Region:	North Western
Release Date:	3/1/92 0:00:00	Release ID:	3099
Release Status:	REPORTED CLEANED UP	Status Date:	8/14/95 0:00:00
Affected Media:	SOIL	Region:	STATE
Facility ID:	200888	Ecology Region:	North Western
Release Date:	3/1/92 0:00:00	Release ID:	3099
Release Status:	REPORTED CLEANED UP	Status Date:	8/14/95 0:00:00
Affected Media:	GROUND WATER	Region:	STATE
Facility ID:	200888	Ecology Region:	North Western
Release Date:	3/1/92 0:00:00	Release ID:	3099
Release Status:	UNKNOWN	Status Date:	5/21/95 0:00:00
Affected Media:	SOIL	Region:	STATE
Facility ID:	200888	Ecology Region:	North Western
Release Date:	3/1/92 0:00:00	Release ID:	3099
Release Status:	UNKNOWN	Status Date:	5/21/95 0:00:00
Affected Media:	GROUND WATER	Region:	STATE
Facility ID:	200888	Ecology Region:	North Western
Release Date:	3/1/92 0:00:00	Release ID:	3099
Release Status:	CLEANUP STARTED	Status Date:	3/1/92 0:00:00
Affected Media:	SOIL	Region:	STATE
Facility ID:	200888	Ecology Region:	North Western
Release Date:	3/1/92 0:00:00	Release ID:	3099
Release Status:	CLEANUP STARTED	Status Date:	3/1/92 0:00:00
Affected Media:	GROUND WATER	Region:	STATE

WA ICR:
Date Ecology Received Report: 04/01/1991
Contaminants Found at Site: Petroleum products
Media Contaminated: Soil
Cause of Contamination: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 92-45

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number

RENTON CLINIC ASSOCIATION (Continued) — S101098019

Date Ecology Received Report:	05/31/1995
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Groundwater, Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Final cleanup report
Site Register Issue:	94-05

D24 NNE 1/4-1/2 Lower — **TAYLORS AUTO BODY**, **330 MAIN AVE S**, **RENTON, WA 98055** — FINDS, UST, LUST — 1000290874, WAD094616117

LUST:

Facility ID:	3539	Ecology Region:	North Western
Release Date:	10/10/90 0:00:00	Release ID:	2899
Release Status:	REPORTED CLEANED UP	Status Date:	6/1/95 0:00:00
Affected Media:	SOIL	Region:	STATE

Facility ID:	3539	Ecology Region:	North Western
Release Date:	10/10/90 0:00:00	Release ID:	2899
Release Status:	CLEANUP STARTED	Status Date:	10/10/90 0:00:00
Affected Media:	SOIL	Region:	STATE

UST:

Facility ID:	3539	Tank ID:	2
Install Date:	12/31/64	Status:	Closed in Place
Capacity:	111 to 1,100 Gallons	Tank Material:	Not reported
Compartment #:	1	Substance:	Not reported
Ecology Region:	North Western		

Facility ID:	3539	Tank ID:	1
Install Date:	12/31/64	Status:	Closed in Place
Capacity:	111 to 1,100 Gallons	Tank Material:	Not reported
Compartment #:	1	Substance:	HAZARDOUS SUBSTANCE
Ecology Region:	North Western		

E25 West 1/4-1/2 Higher — **LES SCHWAB TIRES**, **710 RAINIER AVE S**, **RENTON, WA 0** — LUST — S101509251, N/A

LUST:

Facility ID:	200708	Ecology Region:	North Western
Release Date:	1/31/95 0:00:00	Release ID:	5620
Release Status:	CLEANUP STARTED	Status Date:	5/21/95 0:00:00
Affected Media:	SOIL	Region:	STATE

E26 West 1/4-1/2 Higher — **RENTON LINCOLN MERCURY**, **201 S 7TH ST**, **RENTON, WA 98055** — RCRIS-SQG, FINDS, UST, LUST — 1000417415, WAD069572675

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

RENTON LINCOLN MERCURY (Continued) **1000417415**

RCRIS:
Owner: JERRY SOLOMON
Record Date: 09/11/86
Classification: Small Quantity Generator

BIENNIAL REPORTS:
Last Biennial Reporting Year: 1993

Waste	Quantity (Lbs)	Waste	Quantity (Lbs)
D001	9140.00	D006	40.00
D018	20020.00	D039	20020.00
D040	40.00	F001	6500.00
F003	6500.00	F005	680.00

Used Oil Recyc: No

Violation Status: No violations found

LUST:
Facility ID: 10054 Ecology Region: North Western
Release Date: 2/14/89 0:00:00 Release ID: 1211
Release Status: CLEANUP STARTED Status Date: 6/1/95 0:00:00
Affected Media: SOIL Region: STATE

UST:
Facility ID: 10054 Tank ID: 2
Install Date: 12/31/64 Status: Removed
Capacity: Not reported Tank Material: Not reported
Compartment #: 1 Substance: LEADED GASOLINE
Ecology Region: North Western

Facility ID: 10054 Tank ID: 1
Install Date: 12/31/64 Status: Removed
Capacity: 111 to 1,100 Gallons Tank Material: Steel-Unprotected
Compartment #: 1 Substance: USED OIL/WASTE OIL
Ecology Region: North Western

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27 NNE 1/4-1/2 Lower **MOSCATEL PROPERTY** **LUST** **S101150635**
233 MAIN AVE S **N/A**
RENTON, WA 0

LUST:
Facility ID: 200765 Ecology Region: North Western
Release Date: 9/11/90 0:00:00 Release ID: 1976
Release Status: REPORTED CLEANED UP Status Date: 5/21/95 0:00:00
Affected Media: SOIL Region: STATE

Facility ID: 200765 Ecology Region: North Western
Release Date: 9/11/90 0:00:00 Release ID: 1976
Release Status: CLEANUP STARTED Status Date: 9/11/90 0:00:00
Affected Media: SOIL Region: STATE

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28 North 1/4-1/2 Lower **RENTON CO 070276** **UST** **U000594148**
225 WILLIAMS AVE S **WA ICR** **N/A**
RENTON, WA 98055 **LUST**

RENTON CO 070276 (Continued) **U000594148**

LUST:

Facility ID:	9993	Ecology Region:	North Western
Release Date:	10/3/90 0:00:00	Release ID:	3059
Release Status:	CLEANUP STARTED	Status Date:	6/1/95 0:00:00
Affected Media:	SOIL	Region:	STATE

Facility ID:	9993	Ecology Region:	North Western
Release Date:	10/3/90 0:00:00	Release ID:	3059
Release Status:	CLEANUP STARTED	Status Date:	6/1/95 0:00:00
Affected Media:	GROUND WATER	Region:	STATE

WA ICR:

Date Ecology Received Report:	11/25/1992
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Groundwater, Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Interim cleanup report
Site Register Issue:	92-47

Date Ecology Received Report:	07/08/1991
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Interim cleanup report
Site Register Issue:	92-07

Date Ecology Received Report:	10/23/1990
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Interim cleanup report
Site Register Issue:	90-16

Date Ecology Received Report:	04/23/1991
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Groundwater, Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Not reported
Site Register Issue:	91-30

UST:

Facility ID:	9993	Tank ID:	3 HEAT
Install Date:	12/31/64	Status:	Exempt
Capacity:	Not reported	Tank Material:	Not reported
Compartment #:	1	Substance:	Not reported
Ecology Region:	North Western		

Facility ID:	9993	Tank ID:	2 STANDBY
Install Date:	1/1/54	Status:	Removed
Capacity:	Not reported	Tank Material:	Not reported
Compartment #:	1	Substance:	KEROSENE
Ecology Region:	North Western		

RENTON CO 070276 (Continued) **U000594148**

Facility ID:	9993	Tank ID:	1 STANDBY
Install Date:	1/1/68	Status:	Closed in Place
Capacity:	Not reported	Tank Material:	Steel-Unprotected
Compartment #:	1	Substance:	KEROSENE
Ecology Region:	North Western		

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29 **RENTON SCHOOL DIST. #403** **WA ICR** **S101098021**
NNW **235 AIRPORT WAY S** **CSCSL** **N/A**
1/2-1 **RENTON, WA 98055**
Lower

SHWS:
Facility ID: 2532
Facility Status: Not reported
Flag: STATE
Rank: Not reported
Responsible Unit: NORTHWEST
Ecology Site Status relative to the MTCA cleanup process:
Independent Remedial Action
Independent Site Status - those sites undergoing an independent cleanup:
Independent Site Assessment of Interim Remedial Action Report received
WARM Bin Number indicates the outcome of the Washington Ranking Model (WARM):
Not reported
Affected Media: Soil
Media Status: C (Confirmed) - The presence of hazardous substances above MTCA cleanup levels has been confirmed by laboratory analysis (or field determination in the case of petroleum contamination)

Base/Neutral/Acid Organics:	Not reported
Halogenated Organic Compounds:	Suspected to be present
EPA Priority Pollutants - Metals and Cyanide:	Suspected to be present
Metals - Other non-priority pollutant medals:	Not reported
Polychlorinated biPhenyls (PCBs):	Not reported
Pesticides:	Not reported
Petroleum Products:	Confirmed above MTCA cleanup levels
Phenolic Compounds:	Not reported
Non-Halogenated Solvents:	Suspected to be present
Dioxin:	Not reported
Polynuclear Aromatic Hydrocarbons (PAH):	Not reported
Reactive Wastes:	Not reported
Corrosive Wastes:	Not reported
Radioactive Wastes:	Not reported
Asbestos:	Not reported
Conventional Contaminants, Organic:	Not reported
Conventional Contaminants, Inorganic:	Not reported

WA ICR:

Date Ecology Received Report:	12/19/1994
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Interim cleanup report
Site Register Issue:	94-05

RENTON SCHOOL DIST. #403 (Continued) **S101098021**

Date Ecology Received Report:	06/07/1995
Contaminants Found at Site:	Petroleum products
Media Contaminated:	Soil
Cause of Contamination:	Tank
Region:	North Western
Type of Report Ecology Received:	Final cleanup report
Site Register Issue:	94-05

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)	Facility ID
KENT	U000925588	TEXACO KENT	E VALLEY HWY & 43 SW	98055	UST	
KING COUNTY	S101517552	SUNSET PARK	SOUTHWEST OF 18TH AVE. S. / S. 136TH S		SWF/LF	
KING COUNTY	S101517554	VASHON ISLAND	WEST OF 130TH AVE. S.W. ACROSS FROM THI		SWF/LF	
KING COUNTY	S101517543	KENT	NORTHEAST OF MAPLE ST. / TILDEN AVENUE		SWF/LF	
KING COUNTY	S101517545	NORTH BEND	WEST OF THE MIDDLE FORK ROAD, ABOUT 1 I		SWF/LF	
KING COUNTY	S101517540	FALL CITY	OLD DUMP RD. AT FIRST ROAD BEND		SWF/LF	
RENTON	S102514997	NORTHWEST PIPELINE METER STATIONS - S. S	800 S 21ST ST.	98055	WA ICR	
RENTON	S102258342	STERNOFF METALS CORPORATION	1600 SW 43RD ST	98055	CSCSL	
RENTON	S102514353	GOODYEAR SERVICE CENTER	207 3RD AVE.	98055	WA ICR	
RENTON	8908888	607 SW GIRDY WAY	607 SW GIRDY WAY		ERNS	
RENTON	1000838875	BOEING CO BCAG RENTON	707 S GRADY WAY BLDG 7 207	98055	RCRIS-SQG, FINDS	
RENTON	S100079754	BLACK RIVER CORP PARK TRACT A	OAKSDALE AV SW	98055	CSCSL	
RENTON	S102513034	BLACK RIVER CORP. PARK/TRACK A & B	OAKSDALE AVE. SW/SW 7TH/MONSTER ROAD	98055	WA ICR	
RENTON	S101703200	FUDS YOUNGS LAKE NIKE 32 33	SE OF RENTON	98055	CSCSL	
RENTON	S102512575	RENTON MUNICIPAL AIRPORT FIRE TRNG AREA	616 W PERIMETER RD	98055	CSCSL	
RENTON	S102517206	METRO EAST DIVISION	RENTON TREATMENT PLANT	98055	WA ICR	
RENTON	U001124389	HOWARD COOPER CORP	4000 WEST VALLEY HWY PO BOX 9800	98055	UST, LUST	6179
RENTON	U003027990	YOUNKER NISSAN	3820 E VALLEY HWY S	98055	UST	

GEOCHECK VERSION 2.1 ADDENDUM
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (Northern Quadrant)

BASIC WELL DATA

Site ID:	472832122122601	Distance from TP:	1/8 - 1/4 Mile
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1960	County:	Not Reported
Altitude:	27.00 ft.	State:	Not Reported
Well Depth:	40.00 ft.	Topographic Setting:	Not Reported
Depth to Water Table:	7.00 ft.	Prim. Use of Site:	Withdrawal of water
Date Measured:	09121960	Prim. Use of Water:	Other

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (Eastern Quadrant)

BASIC WELL DATA

Site ID:	472912122101201	Distance from TP:	1 - 2 Miles
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1920	County:	Not Reported
Altitude:	326.00 ft.	State:	Not Reported
Well Depth:	113.00 ft.	Topographic Setting:	Not Reported
Depth to Water Table:	56.82 ft.	Prim. Use of Site:	Unused
Date Measured:	07291962	Prim. Use of Water:	Unused

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (Southern Quadrant)

BASIC WELL DATA

Site ID:	472818122122801	Distance from TP:	1/8 - 1/4 Mile
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1962	County:	Not Reported
Altitude:	20.00 ft.	State:	Not Reported
Well Depth:	59.00 ft.	Topographic Setting:	Not Reported
Depth to Water Table:	10.10 ft.	Prim. Use of Site:	Test
Date Measured:	Not Reported	Prim. Use of Water:	Not Reported

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series):	Unknown
Principal Lithology of Unit:	Not Reported
Further Description:	Not Reported

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (Western Quadrant)

BASIC WELL DATA

Site ID:	472821122124701	Distance from TP:	1/4 - 1/2 Mile
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1960	County:	Not Reported
Altitude:	22.00 ft.	State:	Not Reported
Well Depth:	33.00 ft.	Topographic Setting:	Not Reported
Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
Date Measured:	Not Reported	Prim. Use of Water:	Other

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
PUBLIC WATER SUPPLY SYSTEM INFORMATION

Searched by Nearest Well.

PWS SUMMARY:

PWS ID:	WA5371850	PWS Status:	Active	Distance from TP:	1/4 - 1/2 Mile
Date Initiated:	Not Reported	Date Deactivated:	Not Reported	Dir relative to TP:	East
PWS Name:	RENTON, CITY OF RENTON, WA 98056				
Addressee / Facility:	Not Reported				
Facility Latitude:	47 28 36		Facility Longitude:	122 12 00	
City Served:	Not Reported				
Treatment Class:	Treated		Population Served:	10,001 - 50,000 Persons	

Well currently has or has had major violation(s): Yes

Violations information not reported.

EPA Waste Codes Addendum

Code	Description
D001	IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.
D006	CADMIUM
D018	BENZENE
D039	TETRACHLOROETHYLENE
D040	TRICHLOROETHYLENE
F001	THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLOROETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
F003	THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
F005	THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM RECORDS:

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA/NTIS
Telephone: 703-413-0223
CERCLIS: CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/30/97
Date Made Active at EDR: 06/30/97
Database Release Frequency: Monthly
Date of Data Arrival at EDR: 05/19/97
Elapsed ASTM days: 42
Date of Last EDR Contact: 08/22/97

ERNS: Emergency Response Notification System
Source: EPA/NTIS
Telephone: 202-260-2342
ERNS: Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/01/97
Date Made Active at EDR: 10/09/97
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 08/29/97
Elapsed ASTM days: 41
Date of Last EDR Contact: 08/26/97

NPL: National Priority List
Source: EPA
Telephone: 703-603-8852
NPL: National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC).

Date of Government Version: 04/01/97
Date Made Active at EDR: 05/29/97
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 04/21/97
Elapsed ASTM days: 38
Date of Last EDR Contact: 07/01/97

RCRIS: Resource Conservation and Recovery Information System
Source: EPA/NTIS
Telephone: 800-424-9346
RCRIS: Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 04/01/97
Date Made Active at EDR: 06/30/97
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 04/25/97
Elapsed ASTM days: 66
Date of Last EDR Contact: 08/04/97

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS: CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/01/96
Date Made Active at EDR: 03/03/97
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 12/30/96
Elapsed ASTM days: 63
Date of Last EDR Contact: 07/07/97

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FEDERAL NON-ASTM RECORDS:

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
BRS: The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/93
Database Release Frequency: Biennially
Date of Last EDR Contact: 08/04/97
Date of Next Scheduled EDR Contact: 09/22/97

CONSENT: Superfund (CERCLA) Consent Decrees
Source: EPA Regional Offices
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: Varies
Database Release Frequency: Varies
Date of Last EDR Contact: Varies
Date of Next Scheduled EDR Contact: N/A

FINDS: Facility Index System
Source: EPA/NTIS
Telephone: 703-908-2493
FINDS: Facility Index System. FINDS contains both facility information and "pointers" to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 09/30/95
Database Release Frequency: Quarterly
Date of Last EDR Contact: 08/22/97
Date of Next Scheduled EDR Contact: 11/04/97

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4526
HMIRS: Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/96
Database Release Frequency: Annually
Date of Last EDR Contact: 07/28/97
Date of Next Scheduled EDR Contact: 10/27/97

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/15/97
Database Release Frequency: Quarterly
Date of Last EDR Contact: 07/14/97
Date of Next Scheduled EDR Contact: 10/13/97

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 205-564-4267
NPL LIENS: Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 08/25/97
Date of Next Scheduled EDR Contact: 11/24/97

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-260-3936
PADS: PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 01/27/97
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 08/19/97
Date of Next Scheduled EDR Contact: 11/17/97

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RAATS: RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 07/01/97
Date of Next Scheduled EDR Contact: 09/15/97

ROD: Records Of Decision
Source: NTIS
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 03/31/95
Database Release Frequency: Annually
Date of Last EDR Contact: 09/03/97
Date of Next Scheduled EDR Contact: 12/01/97

TRIS: Toxic Chemical Release Inventory System
Source: EPA/NTIS
Telephone: 202-260-1531
TRIS: Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/92
Database Release Frequency: Annually
Date of Last EDR Contact: 07/02/97
Date of Next Scheduled EDR Contact: 09/29/97

TSCA: Toxic Substances Control Act
Source: EPA/NTIS
Telephone: 202-260-1444
TSCA: Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site. USEPA has no current plan to update and/or re-issue this database.

Date of Government Version: 01/31/95
Database Release Frequency: Annually
Date of Last EDR Contact: 06/16/97
Date of Next Scheduled EDR Contact: 09/15/97

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STATE OF WASHINGTON ASTM RECORDS:

CSCSL: Confirmed & Suspected Contaminated Sites List
Source: Department of Ecology
Telephone: 360-407-7200
SHWS: State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 06/09/97
Date Made Active at EDR: 07/28/97
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 06/10/97
Elapsed ASTM days: 48
Date of Last EDR Contact: 08/19/97

HSL: Hazardous Sites List
Source: Department of Ecology
Telephone: 360-407-7200
HSL: The Hazardous Sites List is a subset of the CSCSL Report. It includes sites which have been assessed and ranked using the Washington Ranking Method (WARM).

Date of Government Version: 02/20/97
Date Made Active at EDR: 04/24/97
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 03/12/97
Elapsed ASTM days: 43
Date of Last EDR Contact: 06/16/97

LUST: Leaking Underground Storage Tanks Site List
Source: Department of Ecology
Telephone: 360-407-7200
LUST: Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 05/01/97
Date Made Active at EDR: 07/17/97
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 05/19/97
Elapsed ASTM days: 59
Date of Last EDR Contact: 08/04/97

SWF/LF: Solid Waste Facilities Handbook
Source: Department of Ecology
Telephone: 360-407-6132
SWF/LF: Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 06/13/96
Date Made Active at EDR: 12/09/96
Database Release Frequency: Annually
Date of Data Arrival at EDR: 11/22/96
Elapsed ASTM days: 17
Date of Last EDR Contact: 08/18/97

UST: Statewide UST Site/Tank Report
Source: Department of Ecology
Telephone: 360-407-7170
UST: Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 05/01/97
Date Made Active at EDR: 07/03/97
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 05/19/97
Elapsed ASTM days: 45
Date of Last EDR Contact: 08/04/97

STATE OF WASHINGTON NON-ASTM RECORDS:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AIR EMISSIONS: Washington Emissions Data System
Source: Department of Ecology
Telephone: 360-407-6040

Date of Government Version: 12/31/95
Database Release Frequency: Annually

Date of Last EDR Contact: 07/30/97
Date of Next Scheduled EDR Contact: 10/27/97

ICR: Independent Cleanup Reports
Source: Department of Ecology
Telephone: 360-407-7200
ICR: These are remedial action reports Ecology has received from either the owner or operator of the sites. These actions have been conducted without department oversight or approval and are not under an order or decree.

Date of Government Version: 03/01/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/09/97
Date of Next Scheduled EDR Contact: 09/08/97

WASHINGTON COUNTY RECORDS

KING COUNTY:

Seattle - King County Abandoned Landfill Toxicity / Hazard Assessment project
Source: Department of Public Health
Telephone: 206-296-4785
This report presents the Seattle-King County Health Department's follow-up investigation of two city owned and four county owned abandoned landfills which was conducted from February to December 1986.

Date of Government Version: 12/31/86
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 08/14/95
Date of Next Scheduled EDR Contact: N/A

Abandoned Landfill Study in King County
Source: Seattle-King County Department of Public Health
Telephone: 206-296-4785
The King County Abandoned Landfill Survey was conducted from October through December 1984 by the Health Department's Environmental Health Division at the request of the King County Council. The primary objective of the survey was to determine if any public health problems existed at the predetermined 24 sites.

Date of Government Version: 04/30/85
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 10/21/94
Date of Next Scheduled EDR Contact: N/A

Abandoned Landfill Study in the City of Seattle
Source: Seattle - King County Department of Public Health
Telephone: 206-296-4785
The Seattle Abandoned Landfill Survey was conducted in June and July of 1984 by the Health Department's Environmental Health Division at the request of the Mayor's Office. The primary objective of the survey was to determine if any public health problems existed at the predetermined 12 sites.

Date of Government Version: 07/30/84
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 10/21/94
Date of Next Scheduled EDR Contact: N/A

SNOHOMISH COUNTY:

Solild Waste Sites of Record at Snohomish Health District
Source: Snohomish Health District
Telephone: 206-339-5250

Date of Government Version: 06/19/96
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 07/23/97
Date of Next Scheduled EDR Contact: 10/20/97

TACOMA-PIERCE COUNTY:

Closed Landfill Survey
Source: Tacoma-Pierce County Health Department
Telephone: 206-591-6500
Following numerous requests for information about closed dumpsites and landfills in Pierce County, the Tacoma-Pierce County Health Department decided to conduct a study on the matter. The aim of the study was to evaluate public health risks associated with the closed dumpsites and landfills, and to determine the need, if any, for further investigations of a more detailed nature. The sites represent all of the known dumpsites and landfills closed after 1950.

Date of Government Version: 04/15/93
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 01/11/95
Date of Next Scheduled EDR Contact: N/A

Historical and Other Database(s)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

DELISTED NPL: Delisted NPL Sites
Source: EPA
Telephone: 703-603-8769
DELISTED NPL: The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

NFRAP: No Further Remedial Action Planned
Source: EPA/NTIS
Telephone: 703-413-0223
NFRAP: As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

FRDS: Federal Reporting Data System
Source: EPA/Office of Drinking Water
Telephone: 202-260-2805
FRDS provides information regarding public water supplies and their compliance with monitoring requirements, maximum contaminant levels (MCL's), and other requirements of the Safe Drinking Water Act of 1986.

Area Radon Information: The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

Oil/Gas Pipelines/Electrical Transmission Lines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines and electrical transmission lines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

USGS Water Wells: In November 1971 the United States Geological Survey (USGS) implemented a national water resource information tracking system. This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on more than 900,000 wells, springs, and other sources of groundwater.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1994 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Water Dams: National Inventory of Dams
Source: Federal Emergency Management Agency
Telephone: 202-646-2801
WATER DAMS: National computer database of more than 74,000 dams maintained by the Federal Emergency Management Agency.

Water Wells in Kitsap County
Source: Public Utility District No. 1 of Kitsap County
Telephone: 206-779-7656

APPENDIX C
FIELD PROCEDURES

APPENDIX C

FIELD PROCEDURES

CONCRETE SAMPLING PROGRAM

An engineer from GeoEngineers obtained concrete samples from the approximate locations shown in Figure 5 on December 18 and 22, 1997. The samples were obtained by chipping the concrete surface into approximate 1/2-inch pieces using a roto-tap hammer and a chisel. The concrete chips were placed in clean glass jars supplied by the analytical laboratory and were submitted to North Creek Analytical Laboratory in Bothell, Washington for chemical analysis of PCBs. The laboratory crushed the samples prior to analysis. The concrete samples were kept in a cooler and chain-of-custody procedures were followed in transporting the samples to the analytical laboratory.

SOIL SAMPLING PROGRAM

An engineer from GeoEngineers obtained near-surface soil samples at approximately 2-foot-depth intervals from 38 direct-push borings (B-1 through B-38) and 5 test pits (TP-1 through TP-5) on December 18 and 22, 1997; 7 hollow-stem auger borings (GMW-1 through GMW-7) on February 18 and 19, 1998; and 9 hand auger borings (B-39 through B-47) on February 23, 1998 to depths ranging from approximately 0.5 to 12 feet beneath the ground surface at the approximate locations shown in Figure 4. The direct-push borings were completed using equipment owned and operated by TEG. The test pits were completed using a backhoe owned and operated by SME. The hollow-stem auger borings were completed using a drill rig owned and operated by GeoTech Explorations. The hand auger borings were completed by an engineer from GeoEngineers. Soil cuttings from the hollow-stem auger borings are stored on-site in labeled 55-gallon drums.

Soil samples GC-1 and GC-2 were composites of discrete samples obtained from the mine tailings located east of the security fence. Discrete samples SS-1 through SS-3 were combined to form GC-1. Discrete samples SS-4 through SS-6 were combined to form GC-2. The mine tailings samples were obtained with a steel spoon and placed into a plastic bag and shaken for compositing.

Soil sampling equipment was decontaminated between each sampling attempt using a Liquinox wash and a distilled water rinse. Decontamination water was placed on-site in labeled 55-gallon drums.

Soil samples obtained from the explorations were field screened to evaluate for the potential presence of petroleum hydrocarbons and classified in accordance with ASTM D2488-90. An explanation of soil classification and boring log symbols is presented in Figures C-1 and C-2. Soil samples submitted for chemical analysis are denoted on the logs with "CA". Boring logs and test pit logs are presented in Figures C-3 through C-59.

Samples selected for analysis were placed in laboratory supplied jars. The jars were filled completely, tightly sealed and placed in a cooler for transport to the analytical laboratory, North Creek Analytical, of Bothell, Washington. Chain-of-custody procedures were followed in transporting the samples to the analytical laboratory.

SEDIMENT SAMPLING

Six discrete sediment samples were obtained from selected storm water catch basins on the site. Two discrete sediment samples were obtained from the storm water pond located in the eastern portion of the site. The sediment samples were obtained with a stainless steel spoon. Soil sampling equipment was decontaminated between each sampling attempt using a Liquinox wash and a distilled water rinse. Decontamination water was placed on-site in labeled 55-gallon drums.

The sediment samples were placed in laboratory supplied jars filled completely to eliminate headspace. The sample jars were placed in a cooler for transport to the analytical laboratory, North Creek Analytical, of Bothell, Washington. Chain-of-custody procedures were followed in transporting the samples to the analytical laboratory.

FIELD SCREENING METHODS

An engineer from GEI field screened soil samples from the site. Field screening results are used as a general guideline to delineate areas of possible petroleum-related contamination. In addition, screening results can be used to aid in the selection of soil samples for chemical analysis. The screening methods used included (1) visual screening and (2) water sheen screening.

Visual screening consists of inspecting the soil for stains indicative of petroleum-related contamination. Visual screening is generally more effective when contamination is related to heavy petroleum hydrocarbons, such as motor oil, or when hydrocarbon concentrations are high. Water sheen screening is a more sensitive method that has been effective in detecting contamination at concentrations less than regulatory cleanup levels. However, field screening results are site-specific. The effectiveness of field screening varies with temperature, moisture content, organic content, soil type and type and age of contaminant. The presence or absence of a stain or sheen does not necessarily indicate the presence or absence of petroleum hydrocarbons.

Water sheen screening involves placing soil in water and observing the water surface for signs of sheen. Sheen screening may detect both volatile and nonvolatile petroleum hydrocarbons. Sheen 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. Natural organic matter in the soil may produce a slight sheen.

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.

Field screening results are presented in Table 2 and in the boring and test pit logs (Figures C-3 through C-59).

MONITORING WELL CONSTRUCTION

A ground water monitoring well was constructed in borings GMW-1 through GMW-7 at the completion of drilling. Two-inch-diameter, Schedule 40 PVC (polyvinyl chloride) pipe was installed in the borings. The lower portion of the PVC pipe is machine-slotted (0.02-inch slot width) to allow entry of water into the well casing. Medium sand was placed in the borehole annulus surrounding the slotted portion of the well. The well casing is protected within a surface monument and contains a lockable compression cap. Monitoring well construction is shown in Figures C-50 through C-56.

GMW-1 through GMW-7 were developed by removing five saturated well casing volumes of ground water from the well with disposable polyethylene bailers. Water removed from the well was placed in labeled 55-gallon drum on-site along with water generated during decontamination activities.

GROUND WATER ELEVATIONS

We measured the elevations of the well casings to the nearest 0.01 foot with an engineer's level and a fiberglass stadia rod on February 19, 1998. Elevations of the monitoring well casing rims and the ground surface adjacent to the monument are based on a benchmark (MW-20, top of casing) with an assumed elevation of 99.97 feet above MSL (mean sea level).

The depth to ground water relative to the monitoring well casing rims of MW-4, MW-8, MW-10 and MW-20 was measured on December 22, 1997. Similar measurements were obtained from all accessible wells associated with the site, including GMW-1 through GMW-7, on February 26, 1998. The measurements were made using an electric water level indicator. The water level indicator was decontaminated prior to each measurement with a Liquinox wash solution and a distilled water rinse. The decontamination water is stored on-site in a labeled 55-gallon drum.

GROUND WATER SAMPLING

Ground water samples were obtained from monitoring well MW-10 and borings B-30 through B-37 on December 22, 1997. Additional ground water samples were obtained from GMW-1 through GMW-7 on February 20, 1998. The water samples were obtained from the monitoring wells using disposable polyethylene bailers after at least three well volumes of water

were removed from each well casing. The water samples were obtained from the direct-push borings using a peristaltic pump attached to disposable polyethylene tubing supplied by the driller. The pump was decontaminated using a Liquinox before sampling each sampling event. New tubing and bailing rope were used for each sampling attempt. The water samples were transferred to laboratory prepared bottles, filled completely to eliminated headspace, and were kept cool during transport to the testing laboratory, North Creek Analytical of Bothell, Washington. Chain-of-custody procedures were observed during transport of the samples to the testing laboratory.

Purge and decontamination water from the ground water sampling activities was placed in on-site in labeled 55-gallon drums.

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	PEAT

NOTES:

1. Field classification is based on visual examination of soil in general accordance with ASTM D2488-90.
2. Soil classification using laboratory tests is based on ASTM D2487-90.
3. 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

GEI 85-85 Rev. 05/93

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SOIL CLASSIFICATION SYSTEM

FIGURE C-1

LABORATORY TESTS

CA Chemical Analysis

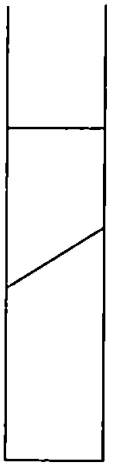
FIELD SCREENING TESTS:

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 Strata

Gradual 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 recovery

Blows required to drive a 1.5-inch I.D. (SPT) split-barrel sampler 12 inches or other indicated distances using a 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.

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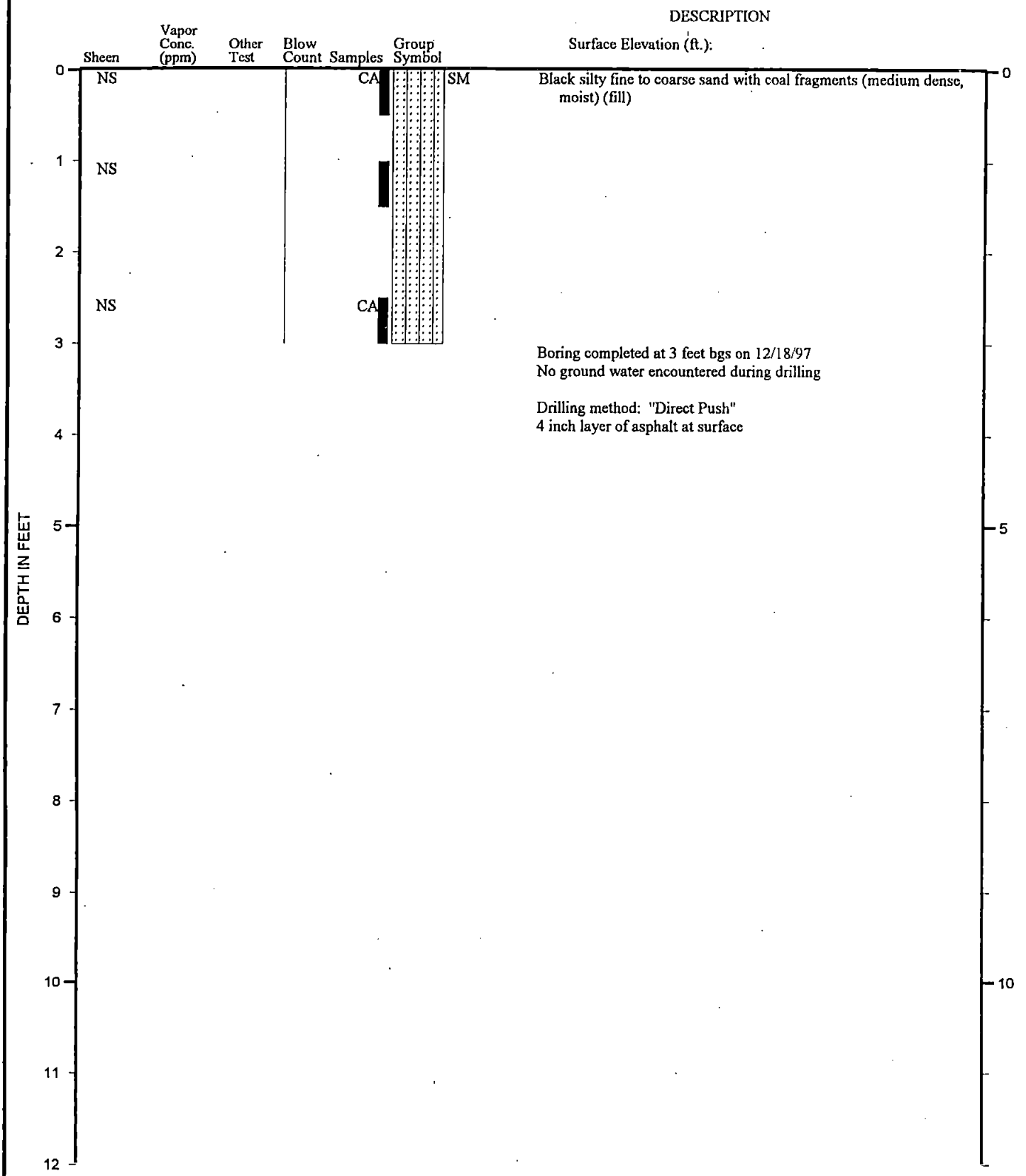
KEY TO BORING LOG SYMBOLS

FIGURE C-2

TEST DATA

BORING B-1



Note: See Figure 2 for explanation of symbols

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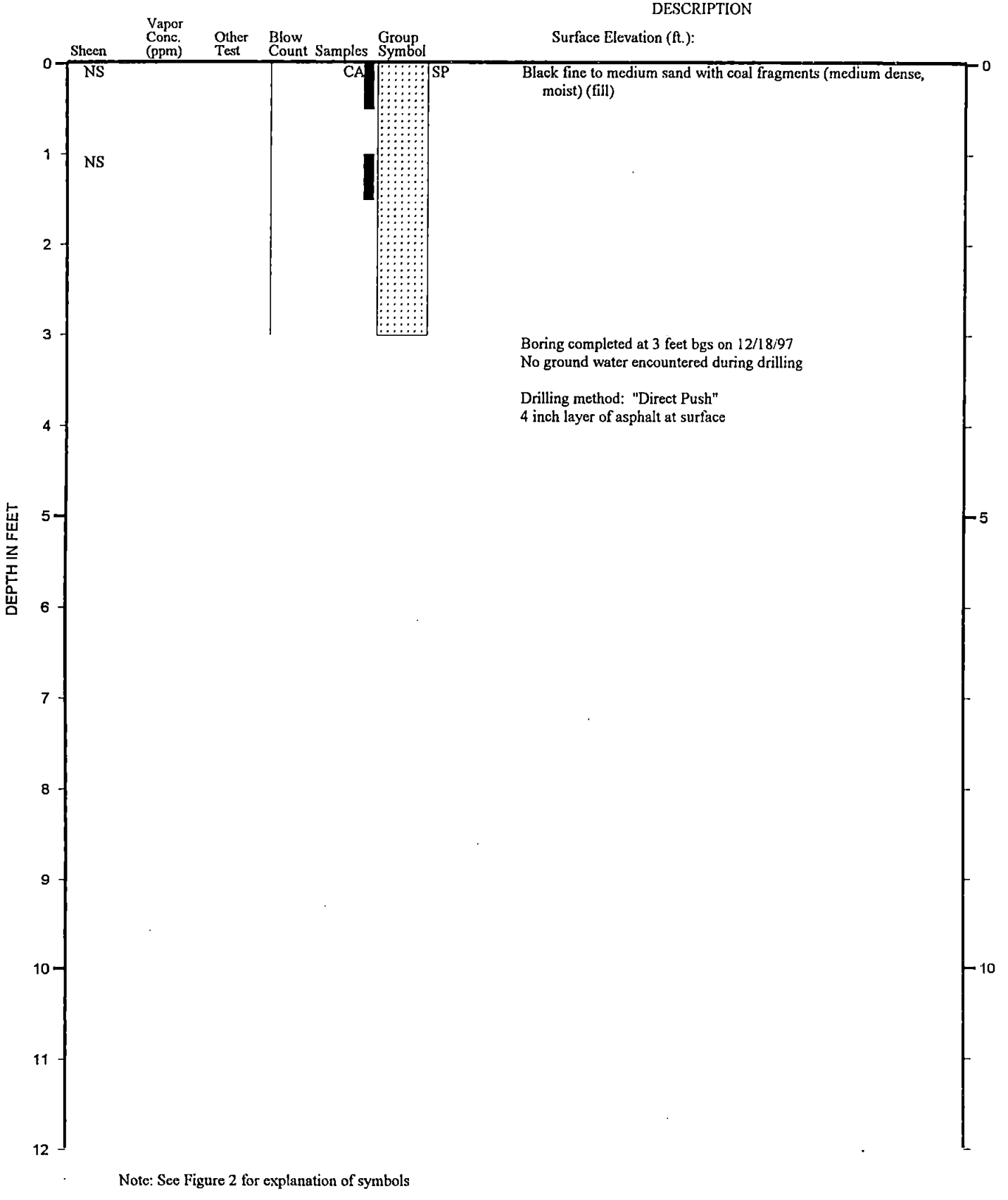
LOG OF BORING

FIGURE C-3

TEST DATA

BORING B-2



Note: See Figure 2 for explanation of symbols

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LOG OF BORING

FIGURE C-4

TEST DATA

BORING B-3

Sheen	Vapor Conc. (ppm)	Other Test	Blow Count	Samples	Group Symbol	DESCRIPTION
					SM	Surface Elevation (ft.): Brown silty medium to coarse sand (medium dense, wet) (fill)
NS				CA	ML	Brown silt with occasional fine to medium sand and wood debris (medium stiff, moist) (fill)
NS						

DEPTH IN FEET

0 1 2 3 4 5 6 7 8 9 10 11 12

0 5 10

Boring completed at 3 feet bgs on 12/18/97
No ground water encountered during drilling

Drilling method: "Direct Push"
4 inch layer fo asphalt at surface

Note: See Figure 2 for explanation of symbols

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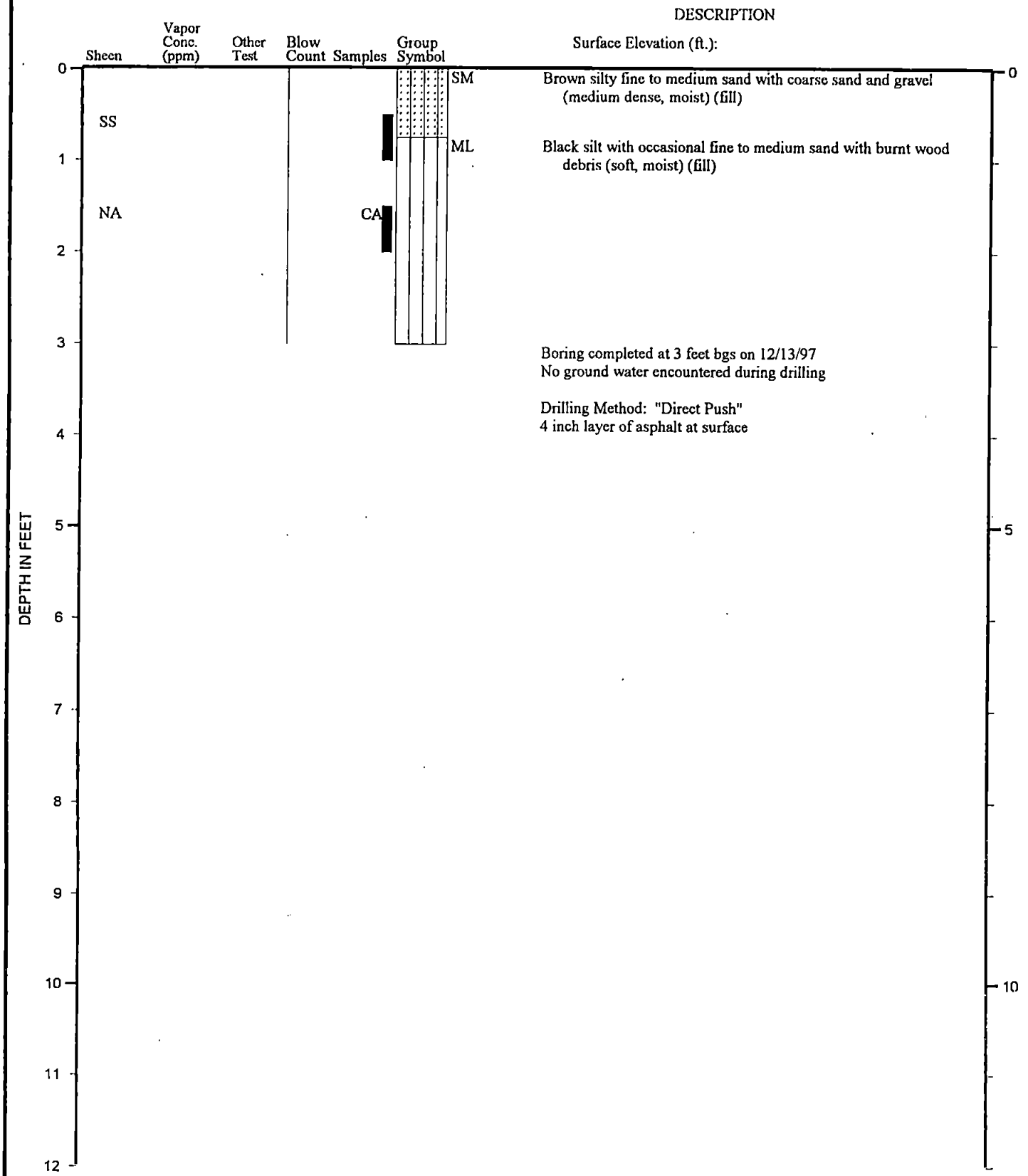
LOG OF BORING

FIGURE C-5

TEST DATA

BORING B-4



Note: See Figure 2 for explanation of symbols

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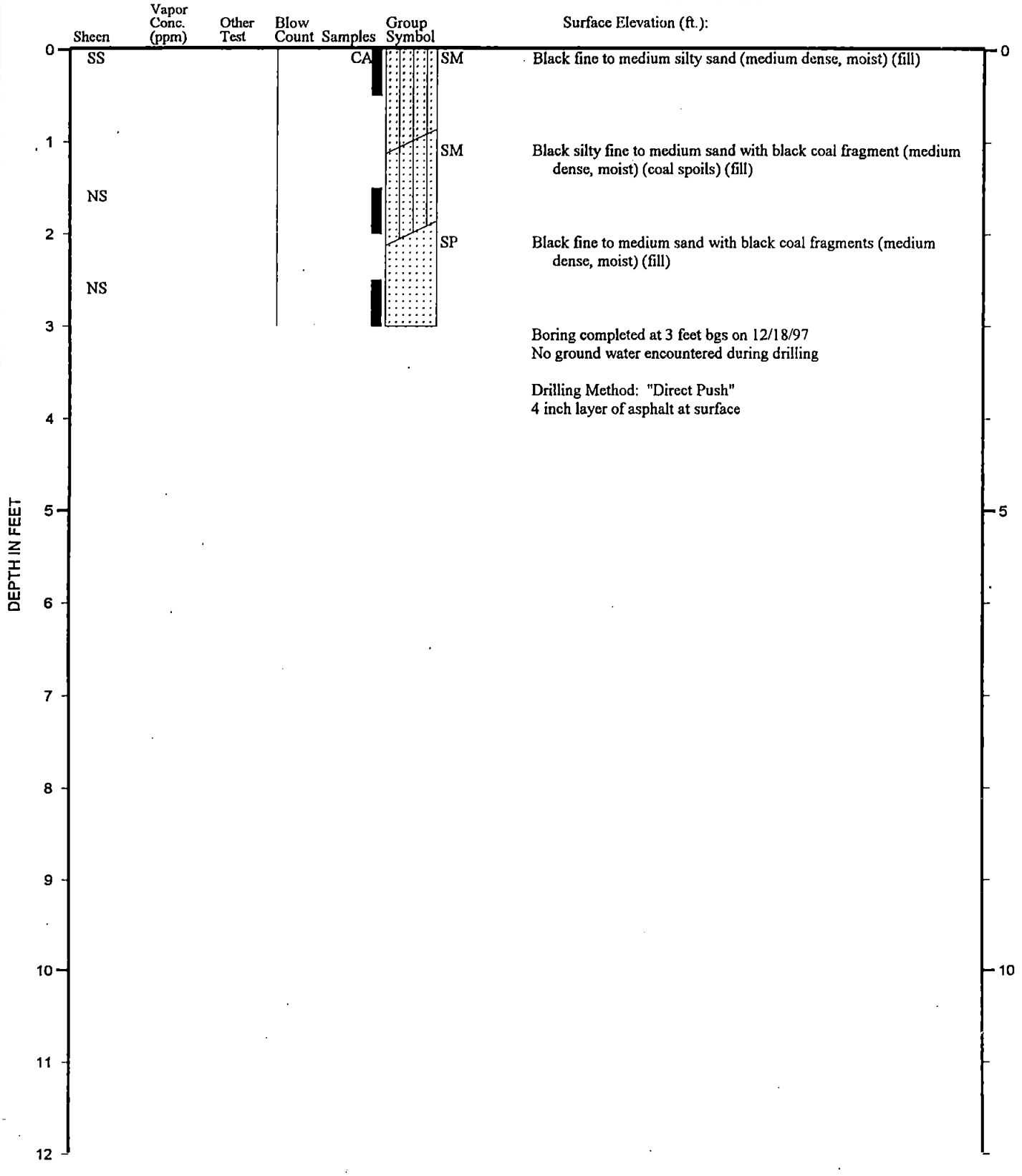
LOG OF BORING

FIGURE C-6

TEST DATA

BORING B-5



Note: See Figure 2 for explanation of symbols

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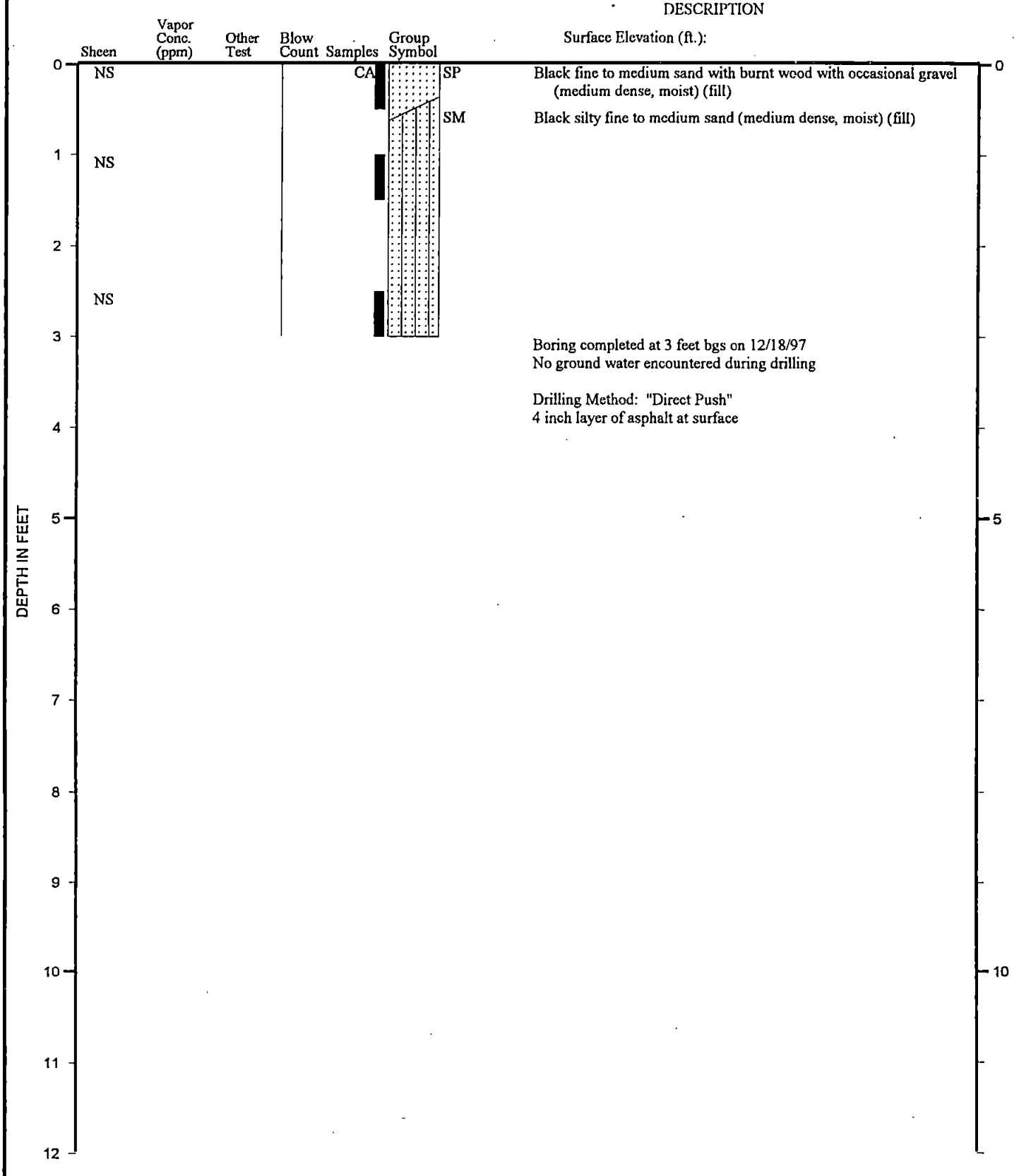
LOG OF BORING

FIGURE C-7

TEST DATA

BORING B-6



Note: See Figure 2 for explanation of symbols

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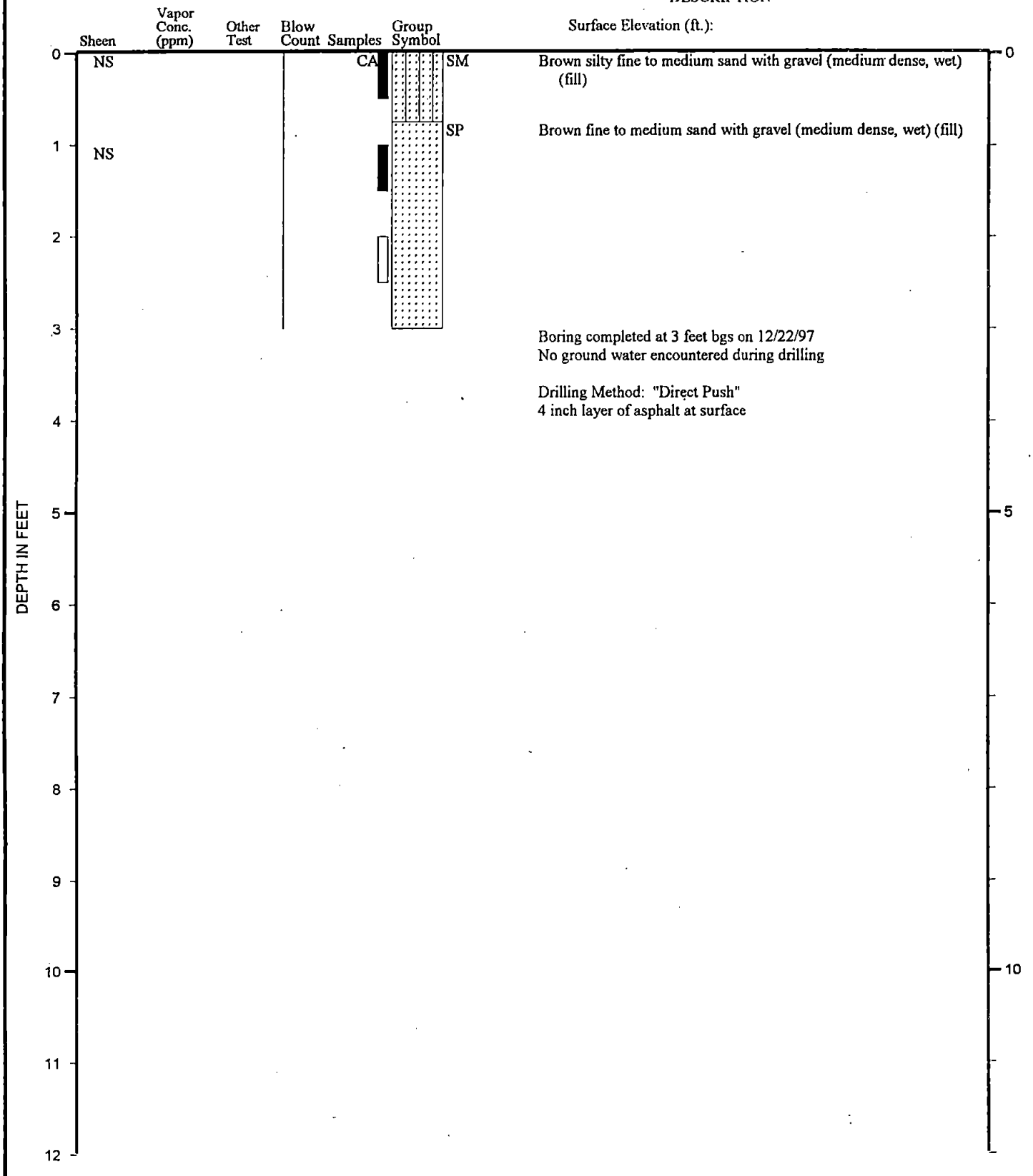
LOG OF BORING

FIGURE C-8

TEST DATA

BORING B-7



Note: See Figure 2 for explanation of symbols

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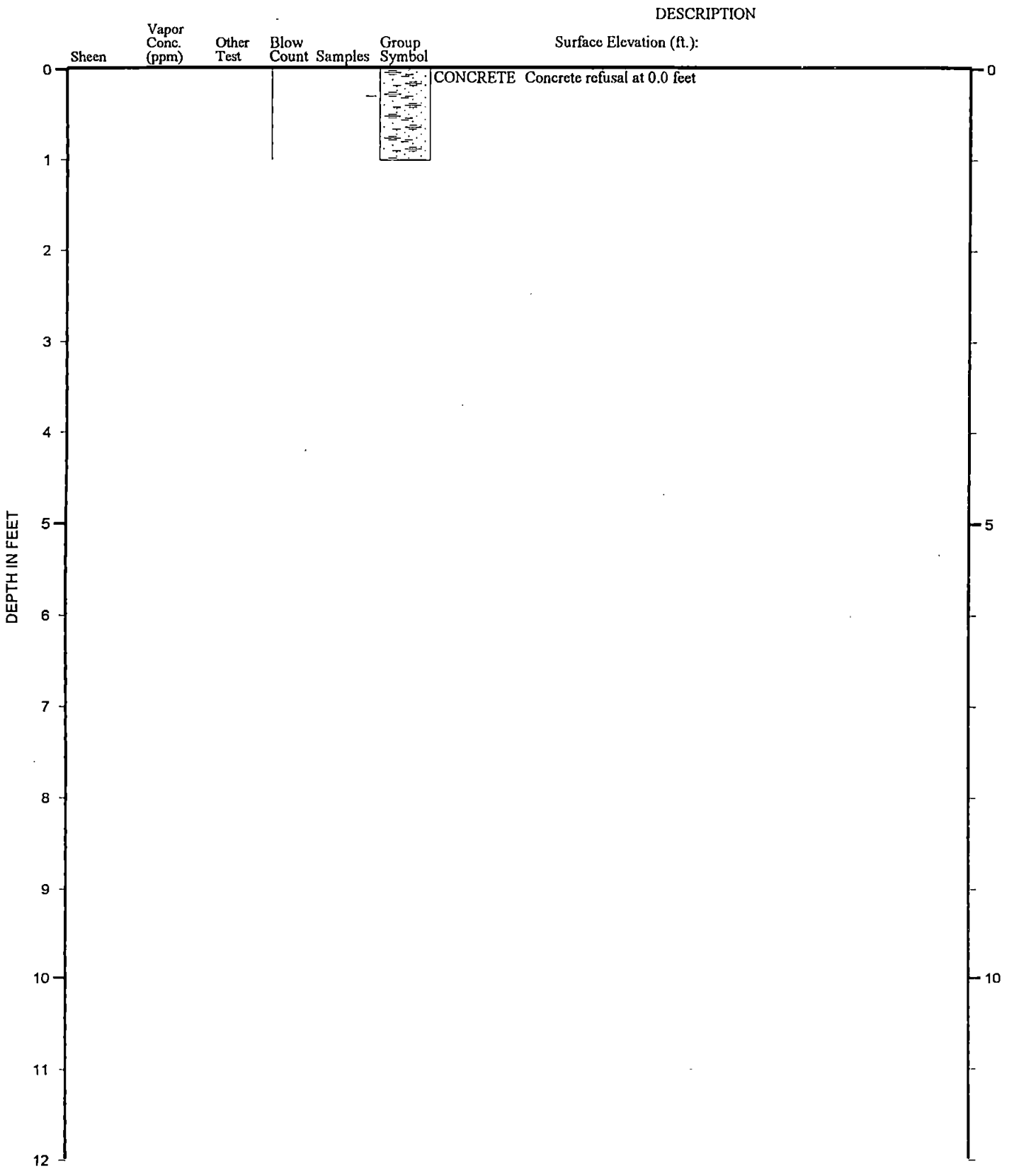
LOG OF BORING

FIGURE C-9

TEST DATA

BORING B-8



Note: See Figure 2 for explanation of symbols

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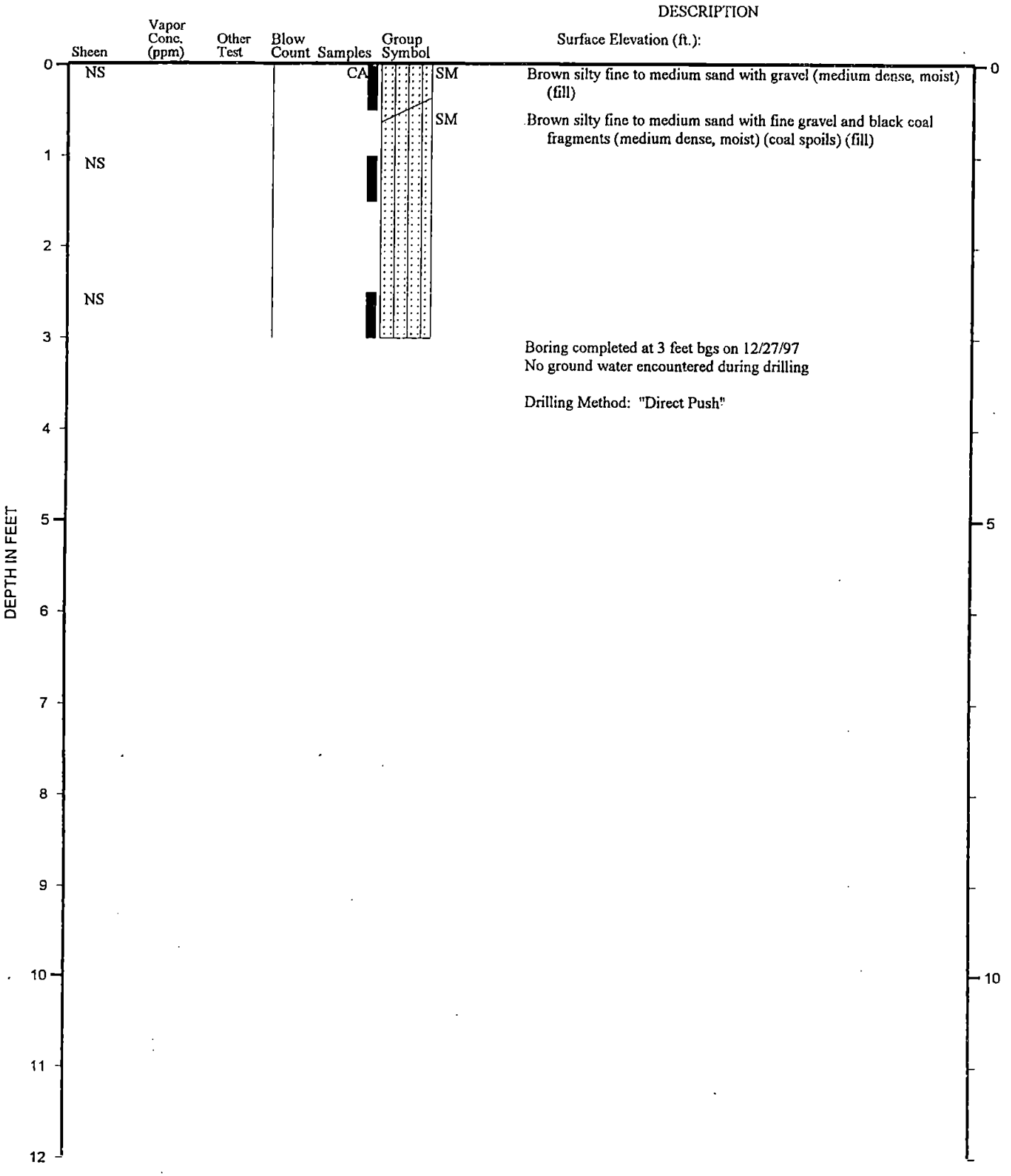
LOG OF BORING

FIGURE C-10

TEST DATA

BORING B-9



Note: See Figure 2 for explanation of symbols

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0186-407-85

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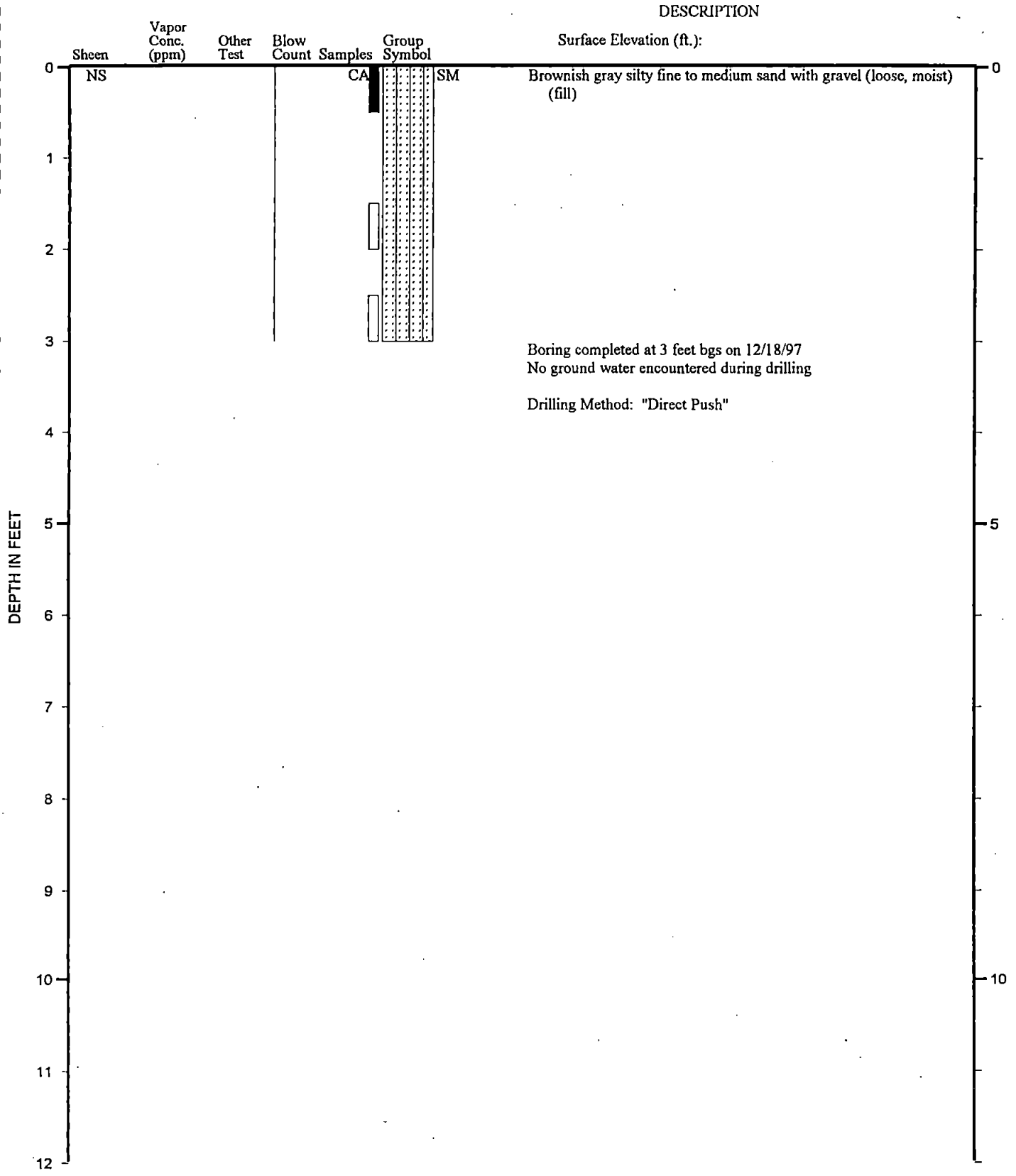
LOG OF BORING

FIGURE C-11

TEST DATA

BORING B-10



Note: See Figure 2 for explanation of symbols

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LOG OF BORING

FIGURE C-12

TEST DATA

BORING B-11

DESCRIPTION

Surface Elevation (ft.):

Sheen	Vapor Conc. (ppm)	Other Test	Blow Count	Samples	Group Symbol	DEPTH IN FEET
NS				CA	SP	0
NS						1
						2
						3
						4
						5
						6
						7
						8
						9
						10
						11
						12

Black fine to medium sand with occasional gravel (medium dense, moist) (fill).

Black fine to medium sand with occasional gravel and burnt wood (medium dense, moist) (fill)

Boring completed at 3 feet bgs on 12/18/97
No ground water encountered during drilling

Drilling Method: "Direct Push"

Note: See Figure 2 for explanation of symbols

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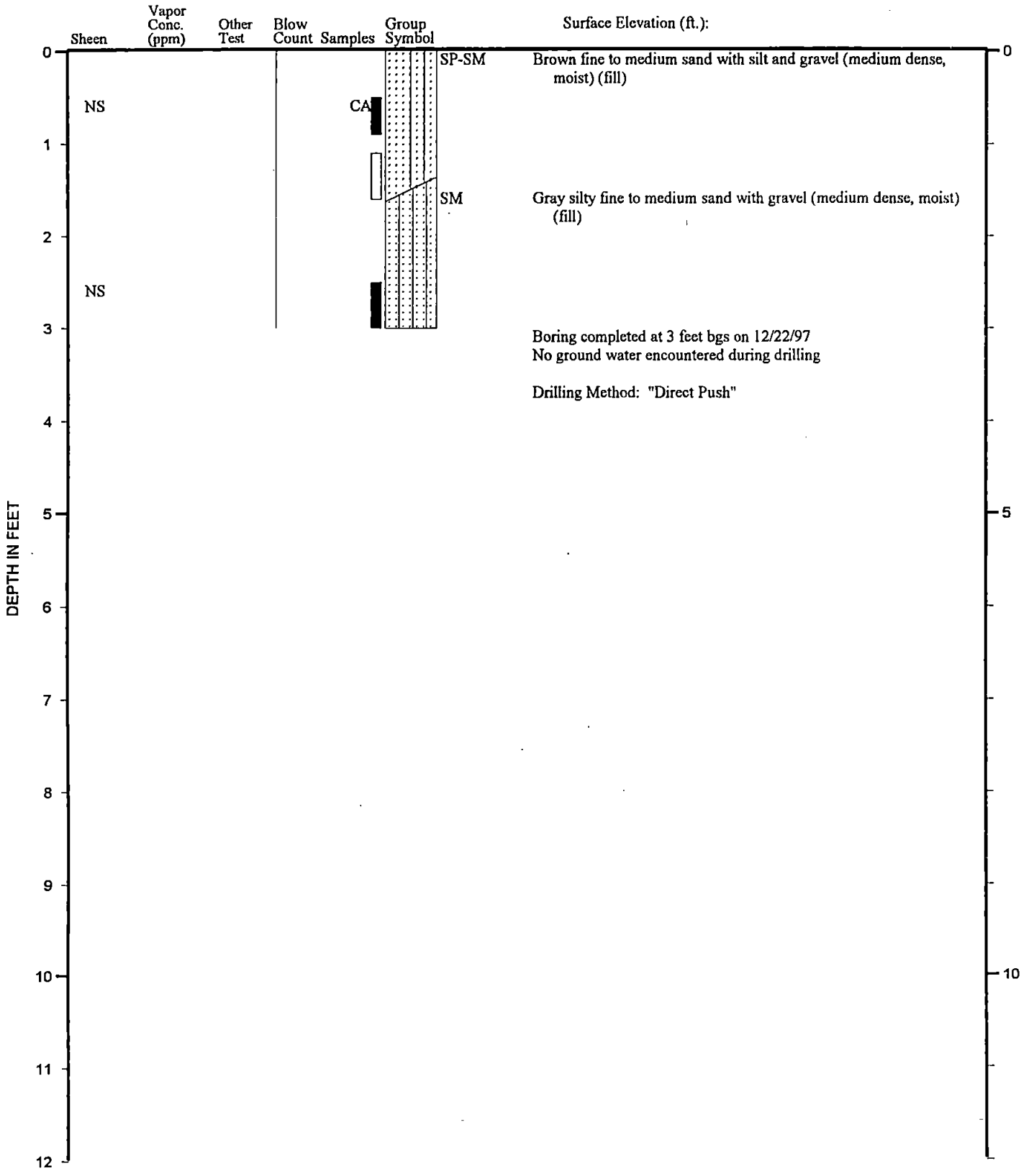
LOG OF BORING

FIGURE C-13

TEST DATA

BORING B-12



Note: See Figure 2 for explanation of symbols

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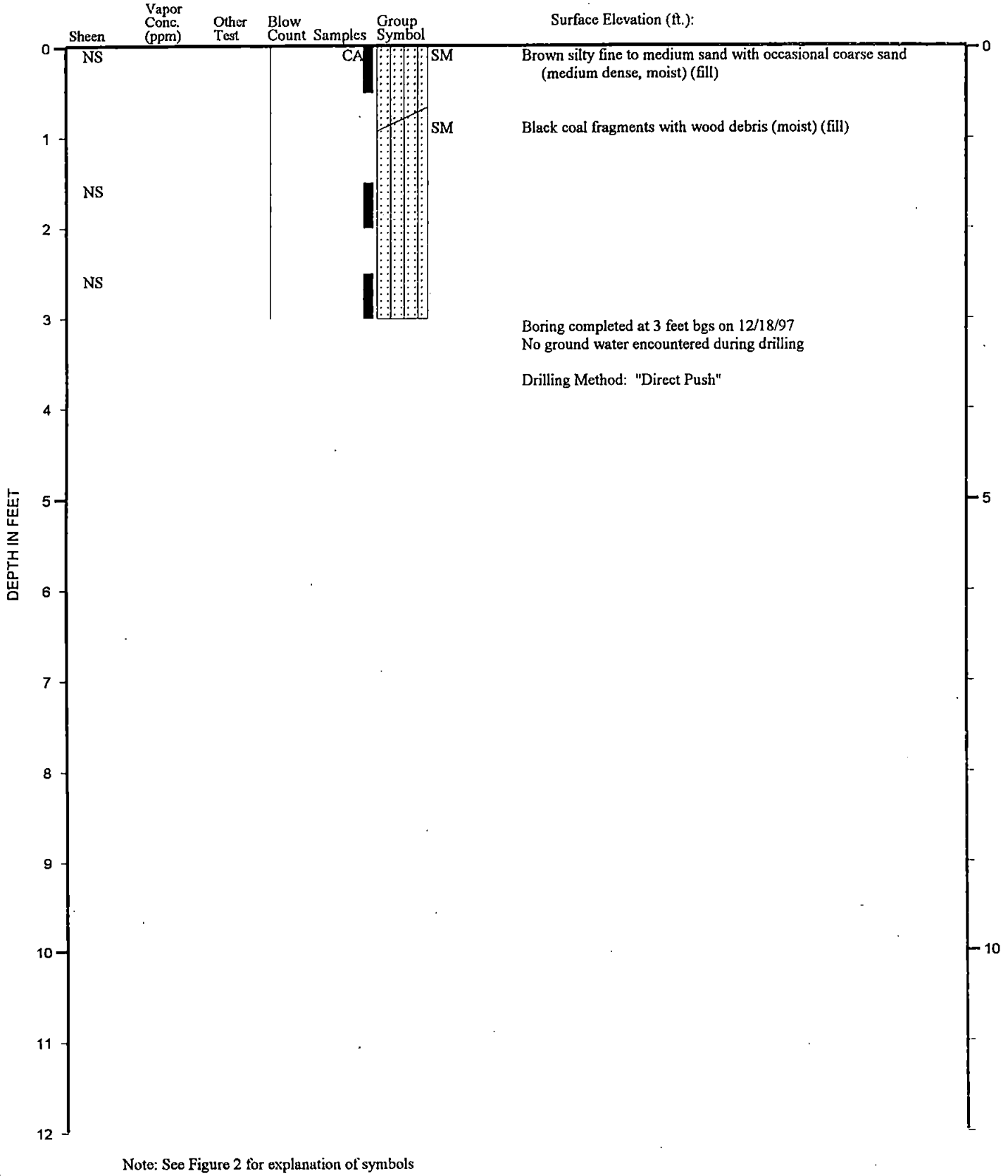
LOG OF BORING

FIGURE C-14

TEST DATA

BORING B-13



Note: See Figure 2 for explanation of symbols

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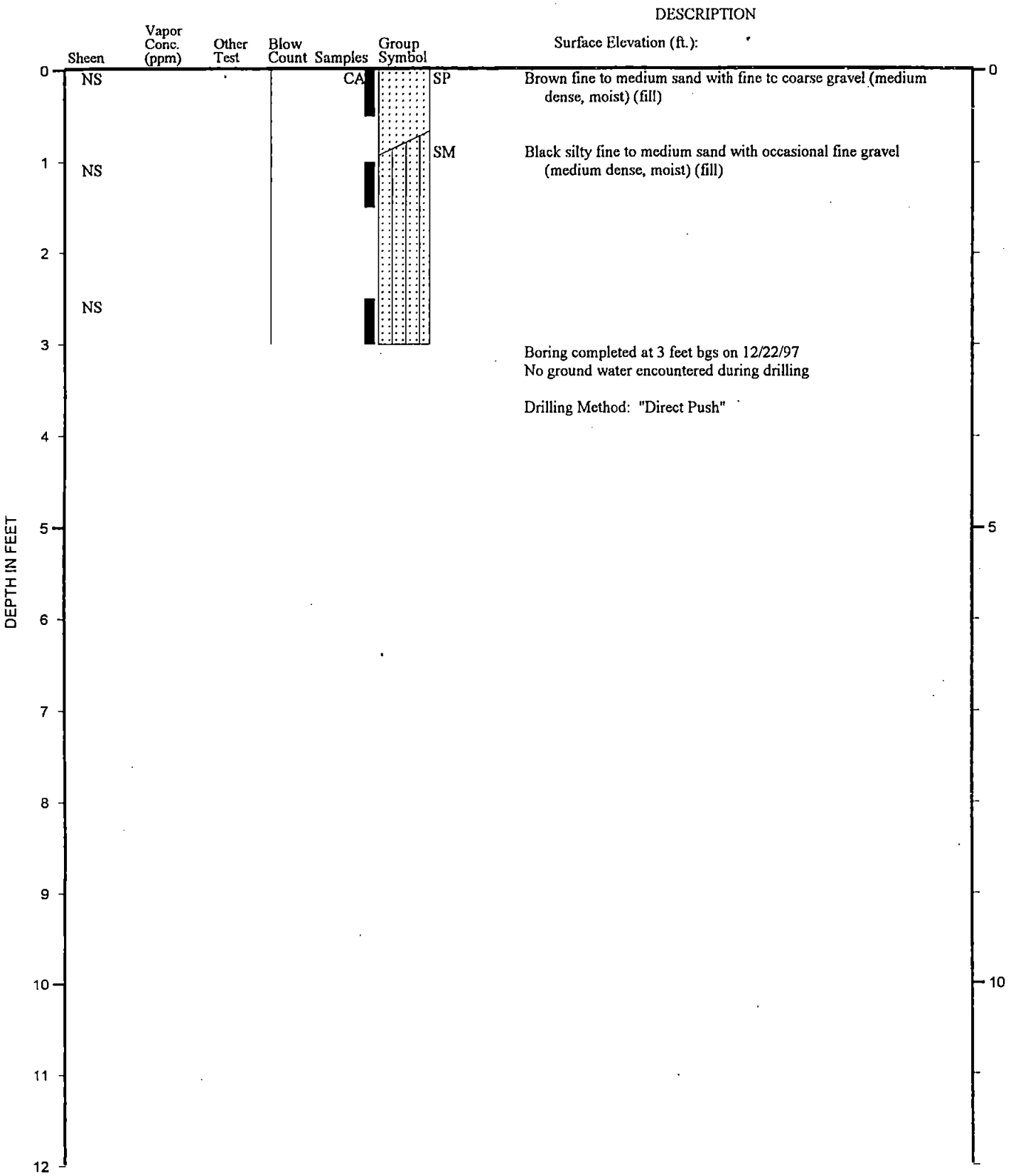
LOG OF BORING

FIGURE C-15

TEST DATA

BORING B-14



Note: See Figure 2 for explanation of symbols

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LOG OF BORING

FIGURE C-16

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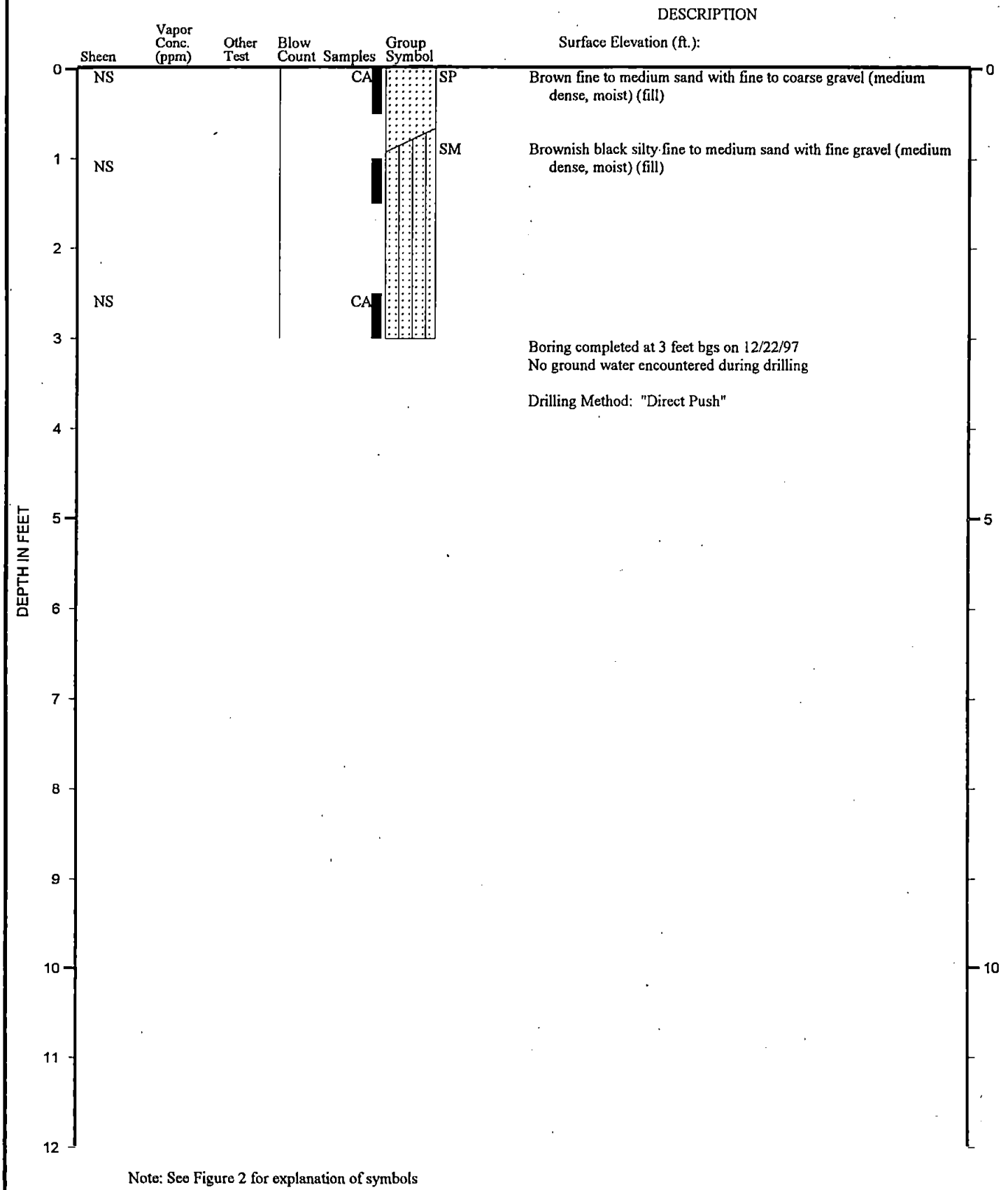
0166-407-85

TEST DATA

BORING B-15



Note: See Figure 2 for explanation of symbols

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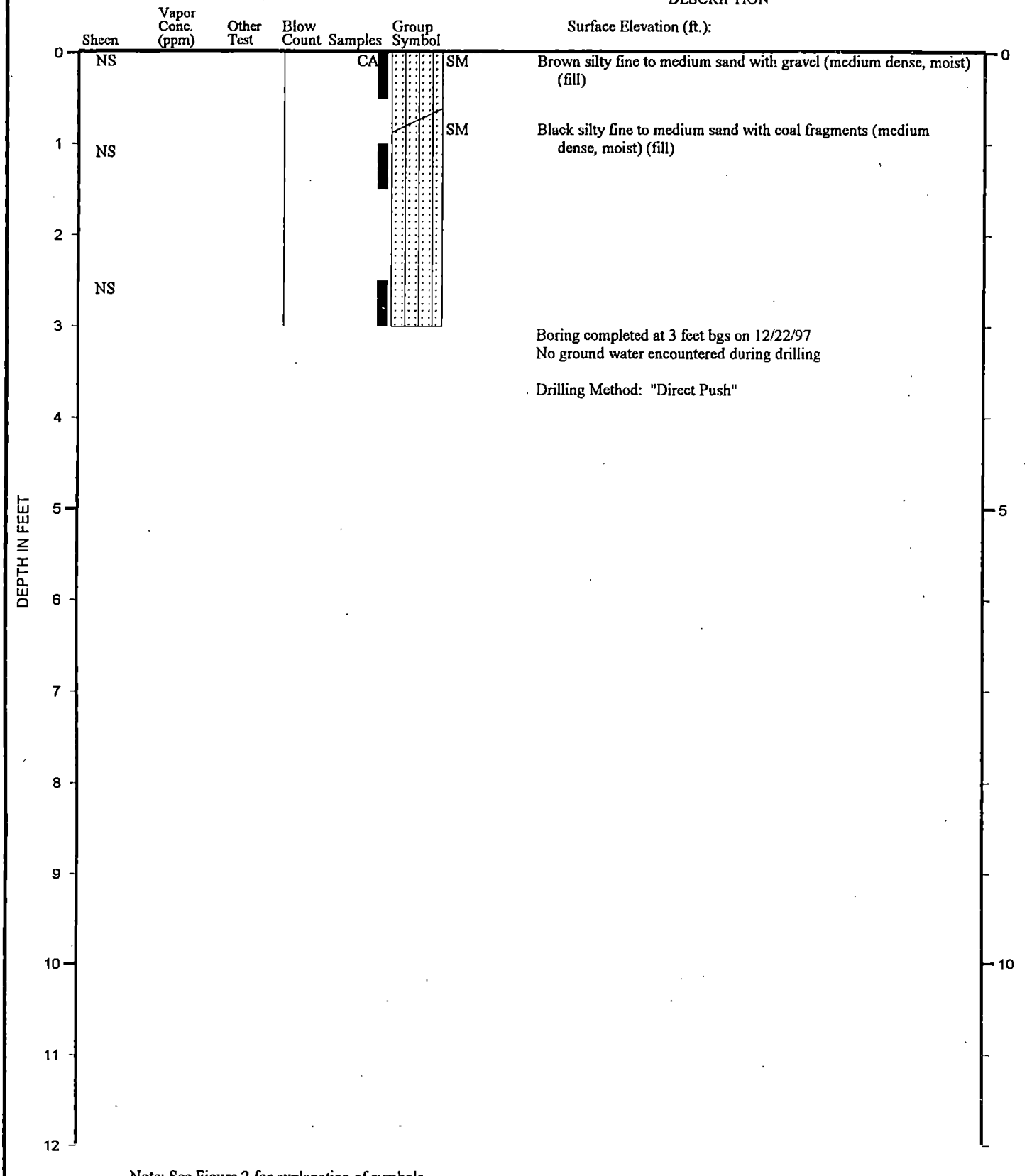
LOG OF BORING

FIGURE C-17

TEST DATA

BORING B-16



Note: See Figure 2 for explanation of symbols

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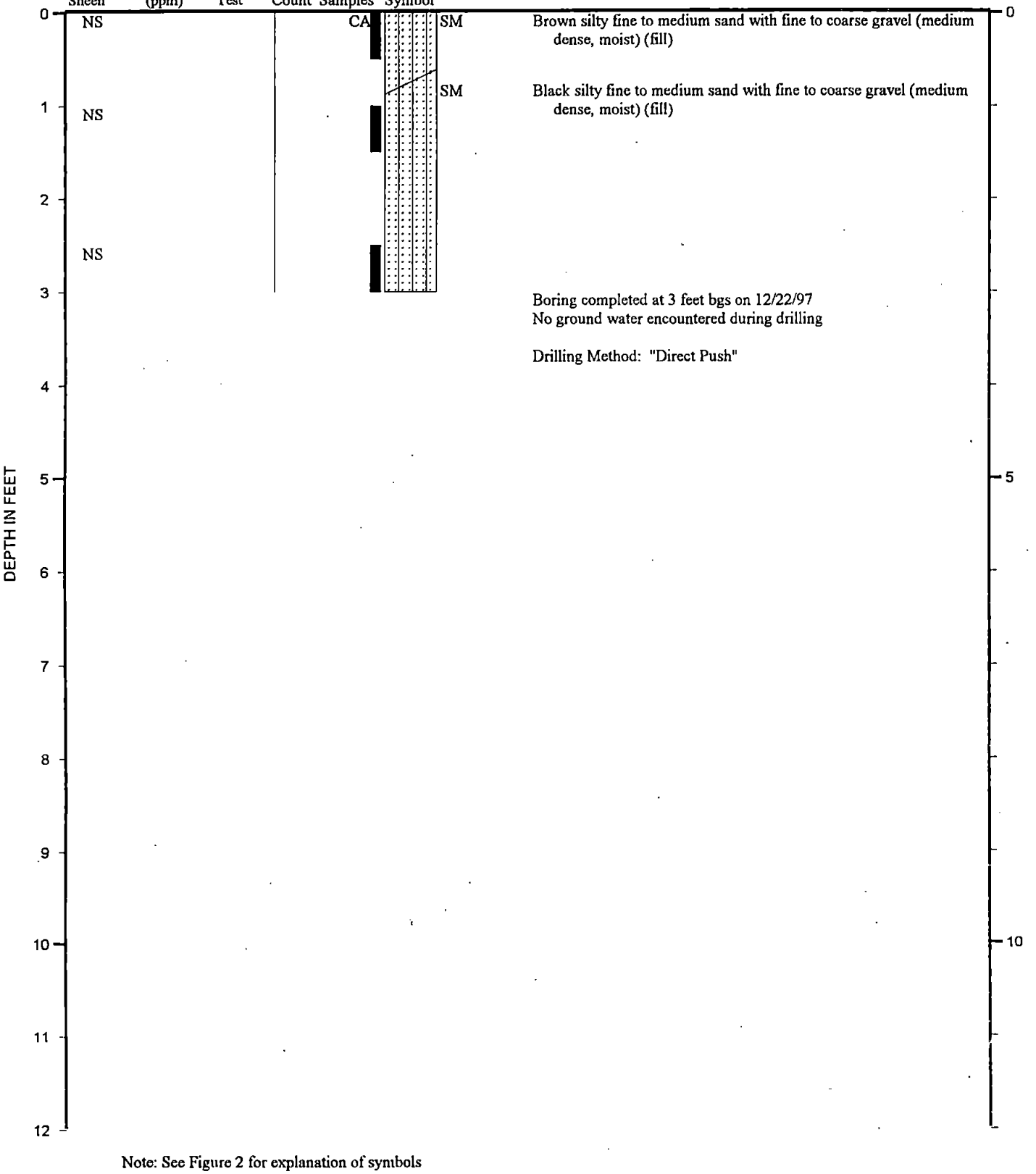
LOG OF BORING

FIGURE C-18

TEST DATA

BORING B-17



Note: See Figure 2 for explanation of symbols

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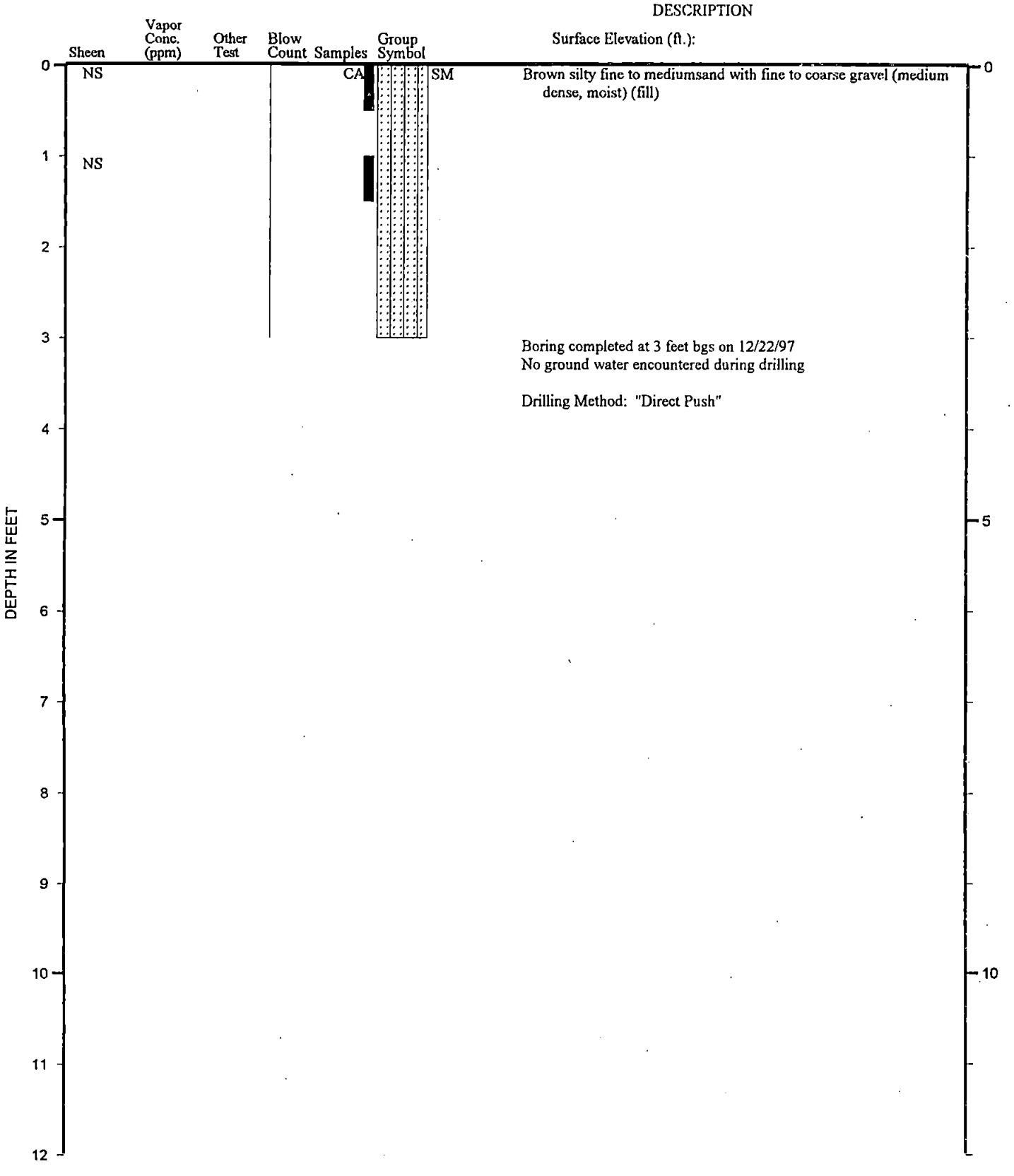
LOG OF BORING

FIGURE C-19

TEST DATA

BORING B-18



Note: See Figure 2 for explanation of symbols

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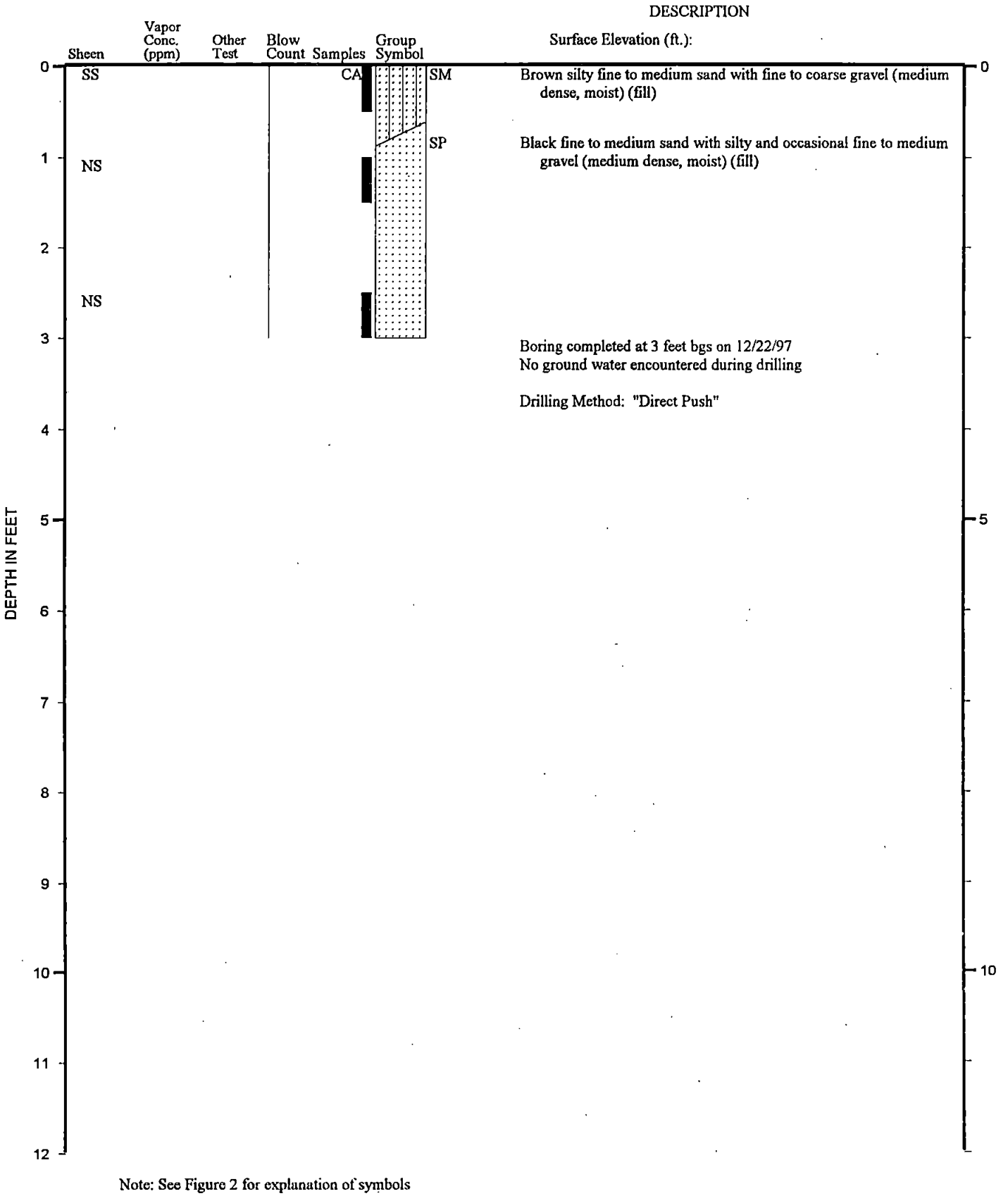
LOG OF BORING

FIGURE C-20

TEST DATA

BORING B-19



Note: See Figure 2 for explanation of symbols

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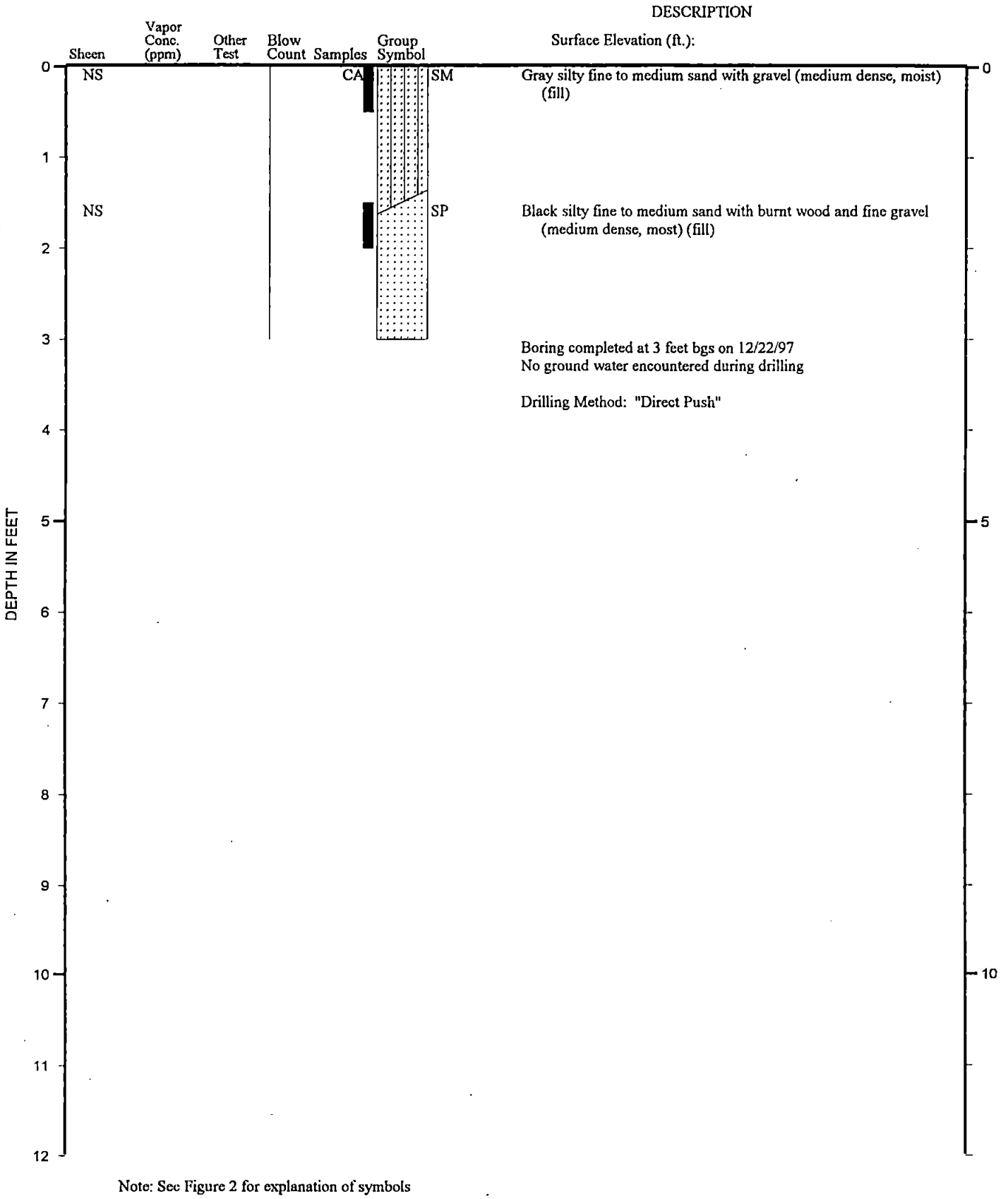
LOG OF BORING

FIGURE C-21

TEST DATA

BORING B-20



Note: See Figure 2 for explanation of symbols

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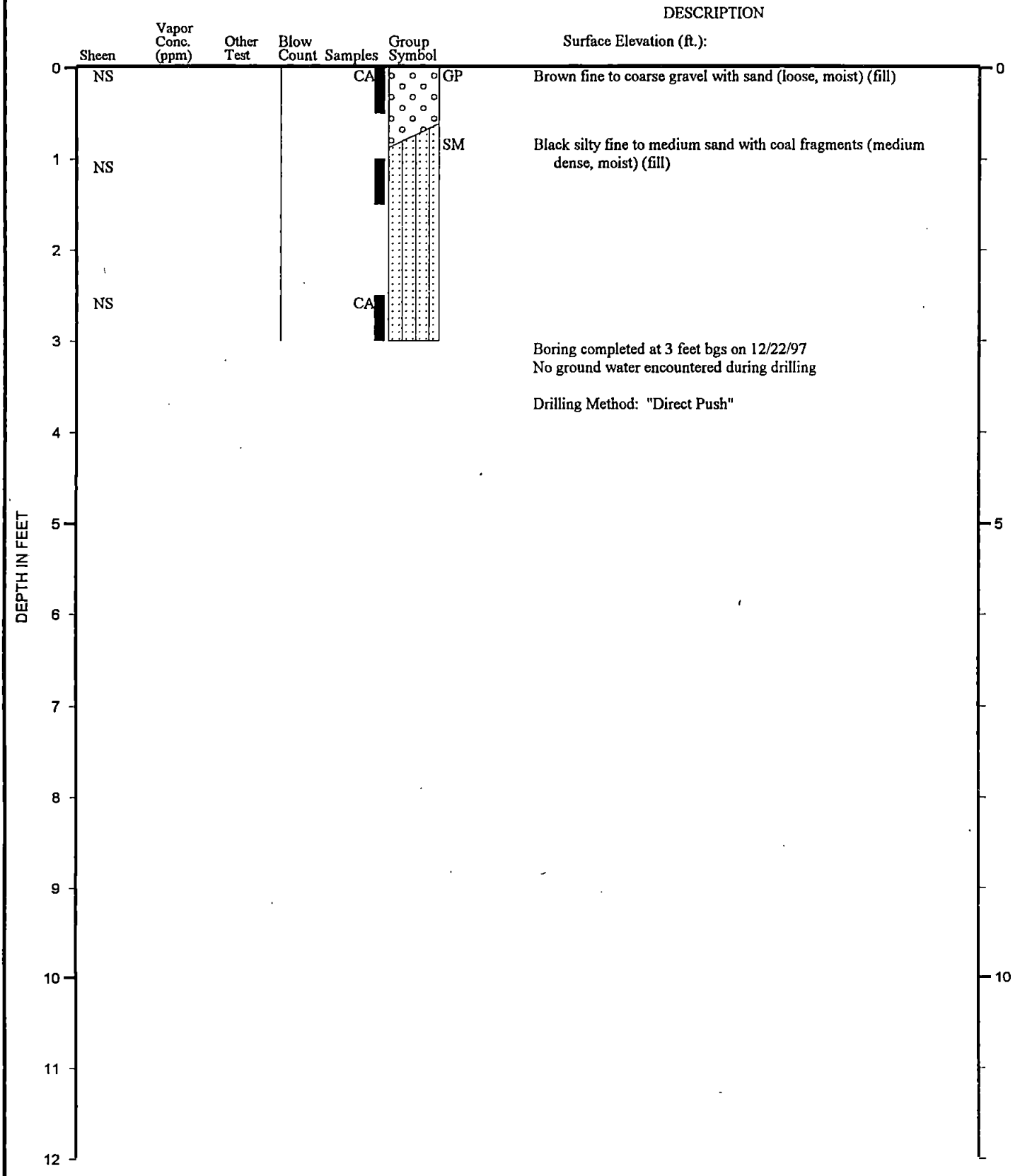
LOG OF BORING

FIGURE C-22

TEST DATA

BORING B-21



Note: See Figure 2 for explanation of symbols

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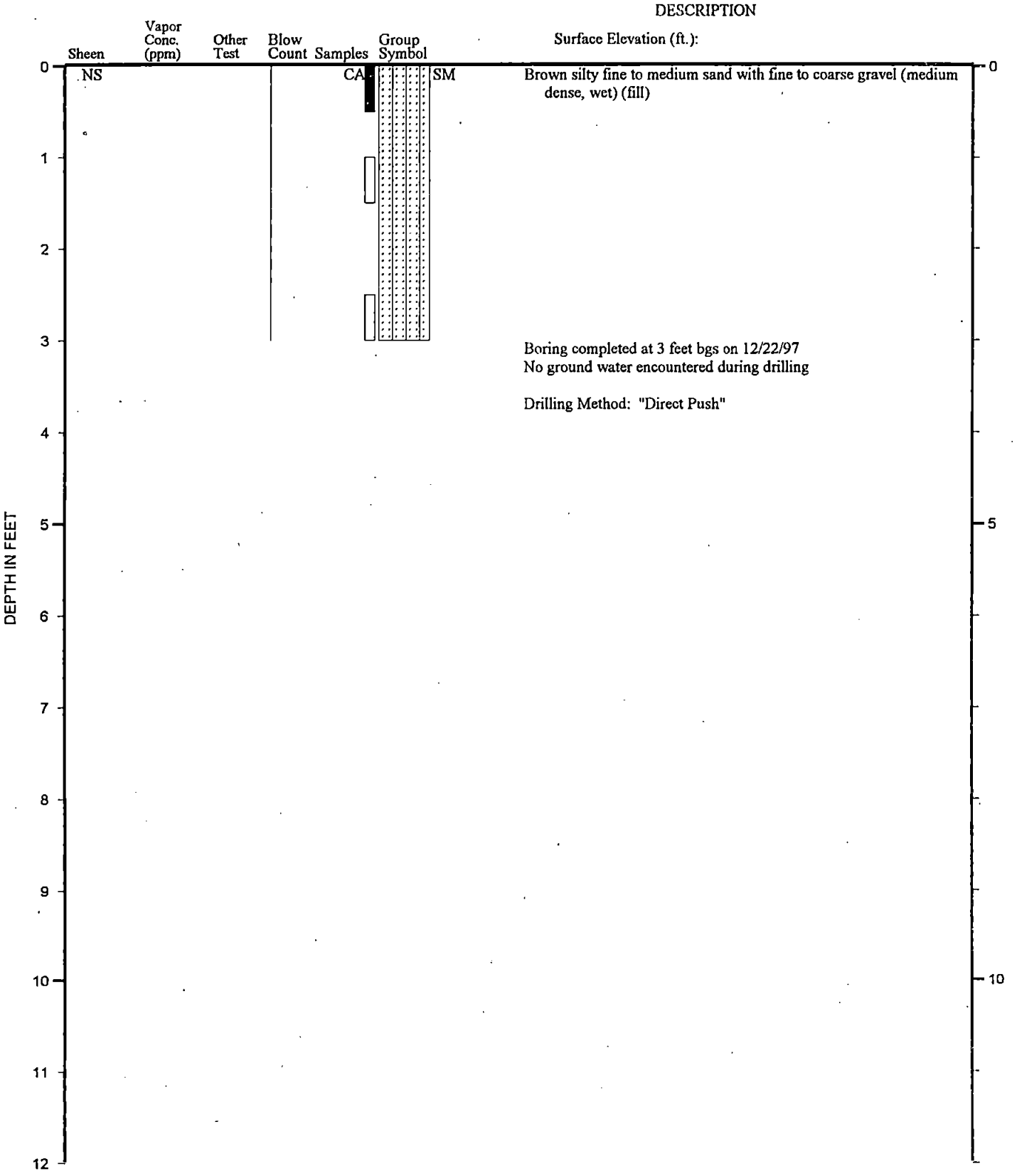
LOG OF BORING

FIGURE C-23

TEST DATA

BORING B-22



Note: See Figure 2 for explanation of symbols

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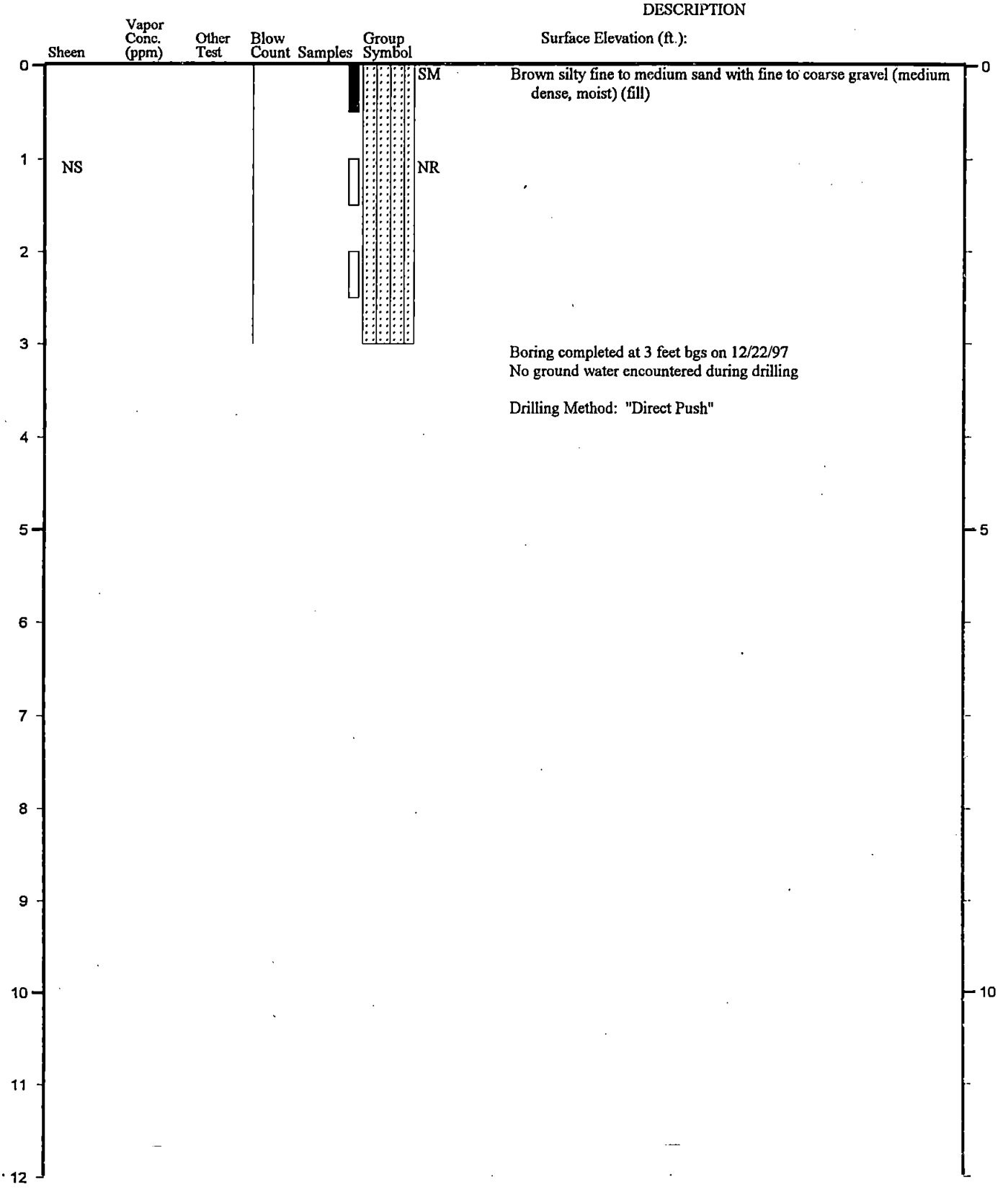
LOG OF BORING

FIGURE C-24

TEST DATA

BORING B-23



Note: See Figure 2 for explanation of symbols

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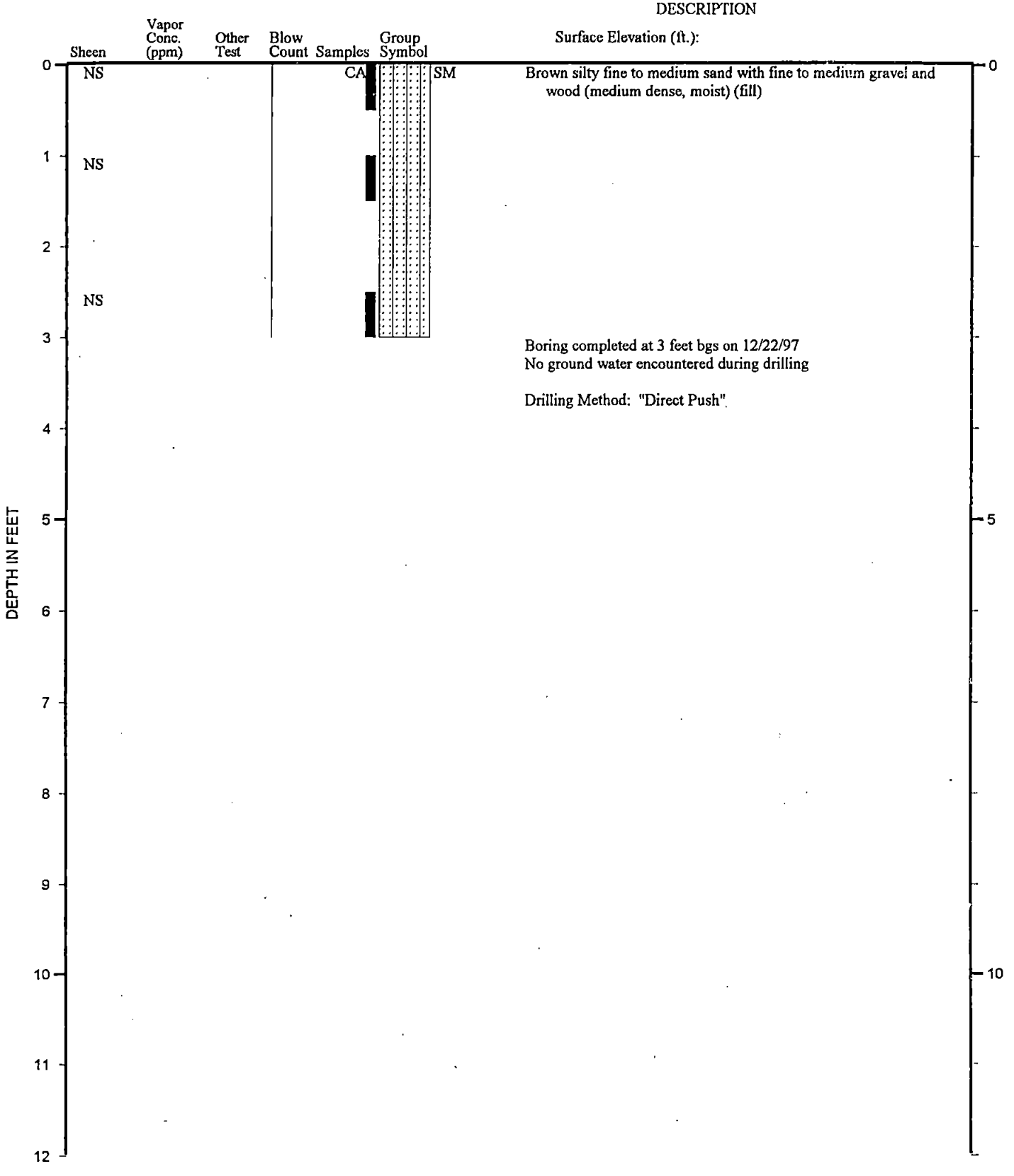
LOG OF BORING

FIGURE C-25

TEST DATA

BORING B-24



Note: See Figure 2 for explanation of symbols

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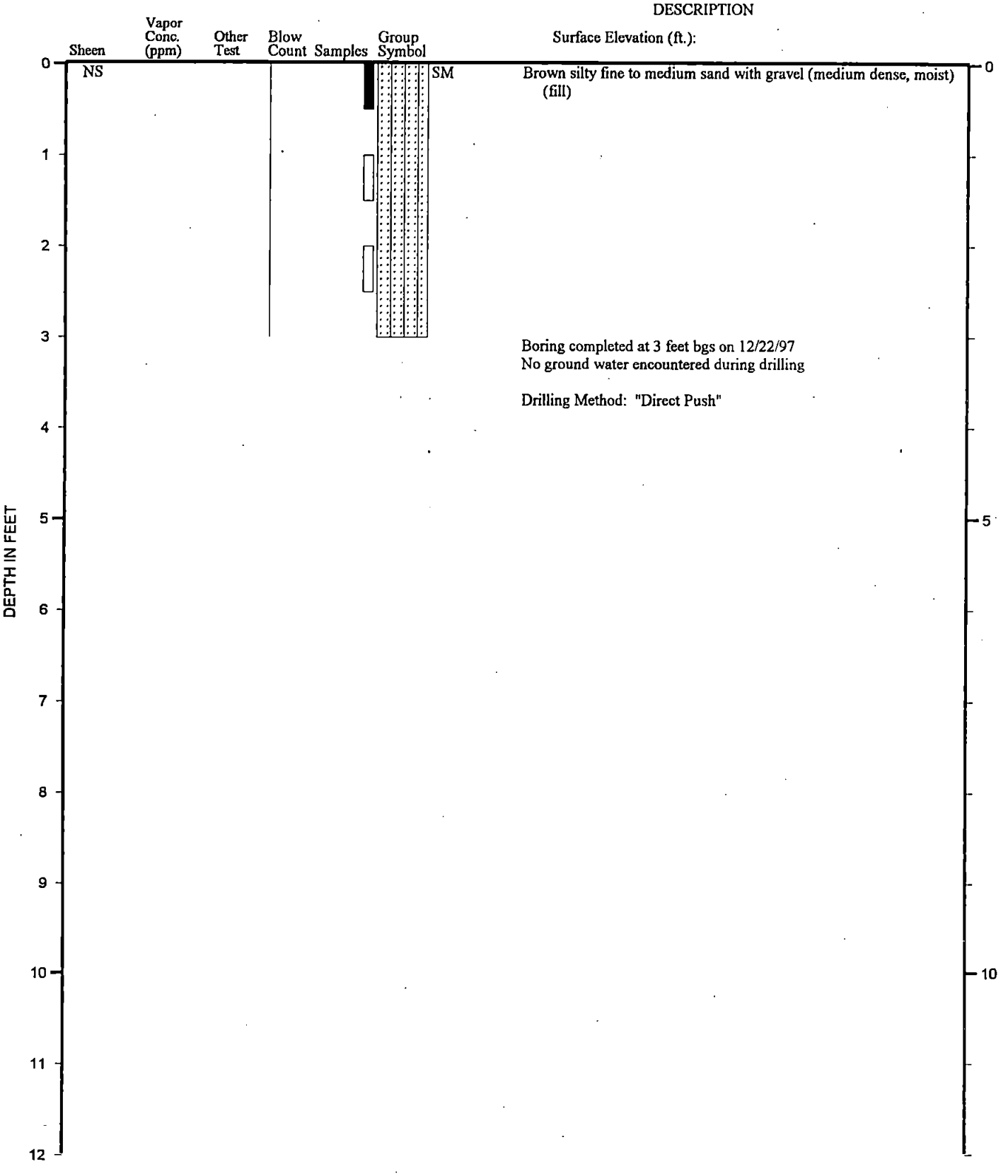
LOG OF BORING

FIGURE C-26

TEST DATA

BORING B-25



Note: See Figure 2 for explanation of symbols

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LOG OF BORING

FIGURE C-27

TEST DATA

BORING B-26

DESCRIPTION

Sheen	Vapor Conc. (ppm)	Other Test	Blow Count	Samples	Group Symbol	Surface Elevation (ft.):
NS				CA	SM	Brown silty fine to medium sand with fine to medium gravel (medium dense, moist) (fill)
NS						

Boring completed at 3 feet bgs on 12/22/97
No ground water encountered during drilling

Drilling Method: "Direct Push"

DEPTH IN FEET

0 1 2 3 4 5 6 7 8 9 10 11 12

0 5 10

Note: See Figure 2 for explanation of symbols

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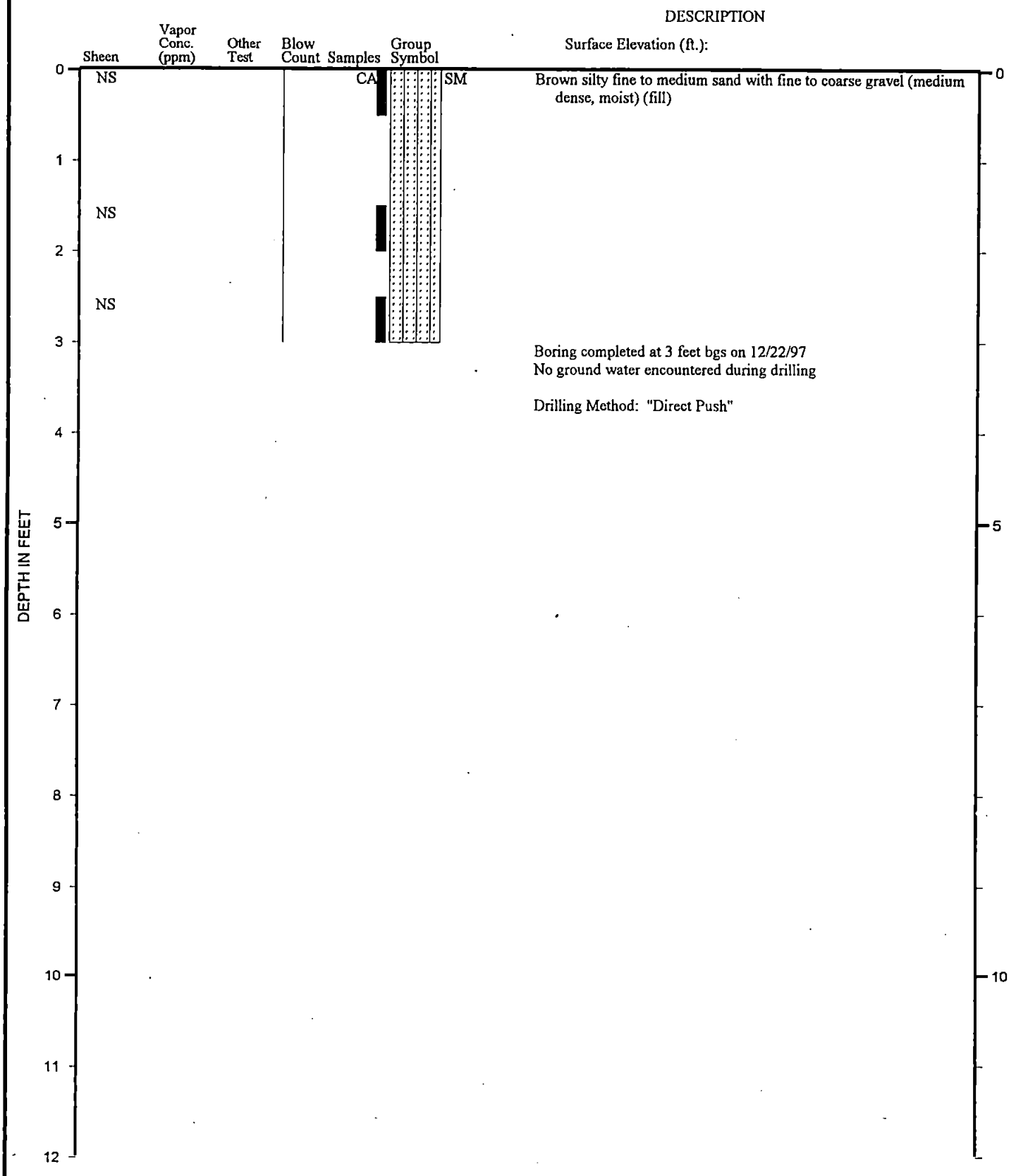
LOG OF BORING

FIGURE C-28

TEST DATA

BORING B-27



Note: See Figure 2 for explanation of symbols

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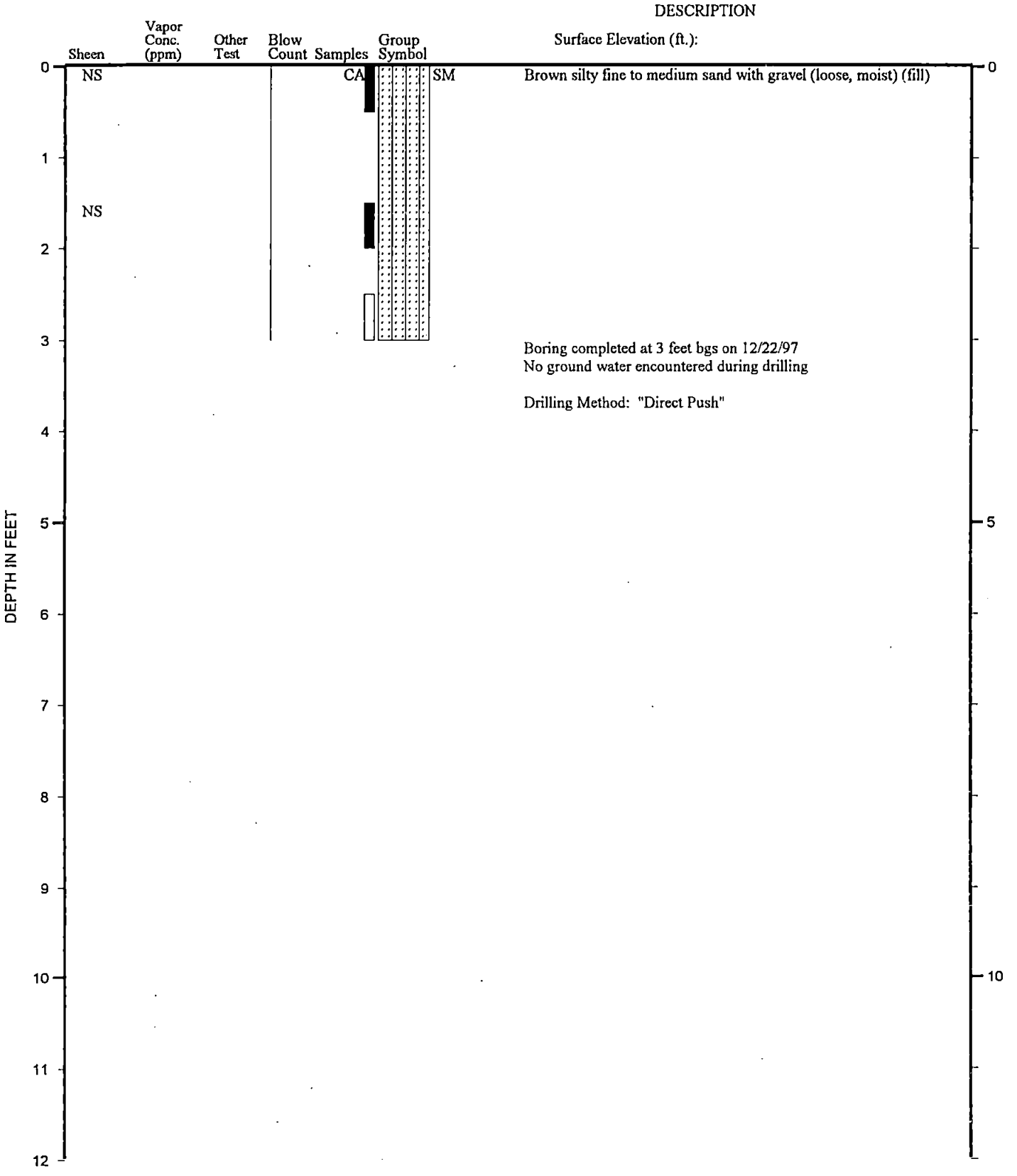
LOG OF BORING

FIGURE C-29

TEST DATA

BORING B-28



Note: See Figure 2 for explanation of symbols

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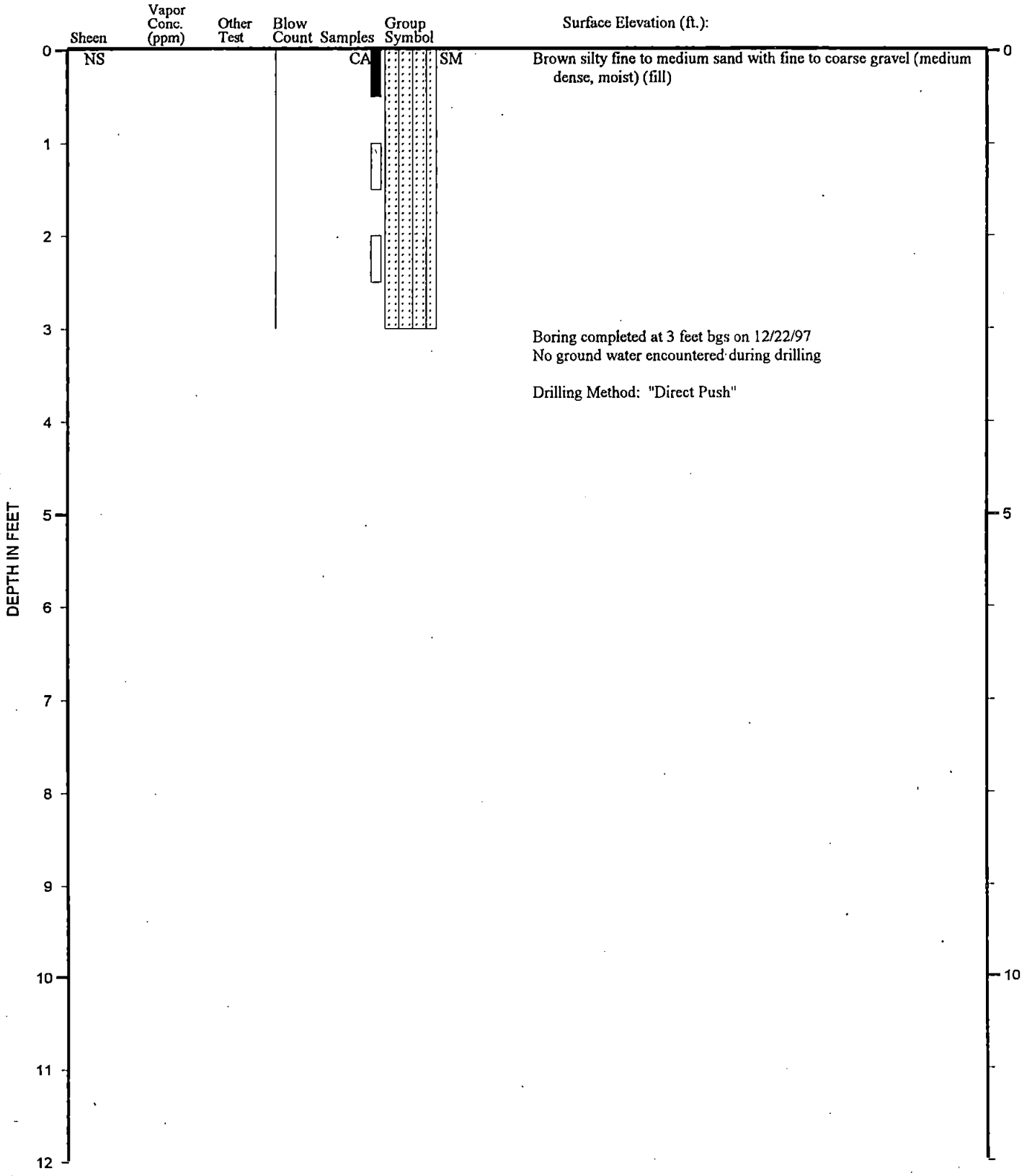
LOG OF BORING

FIGURE C-30

TEST DATA

BORING B-29



Note: See Figure 2 for explanation of symbols

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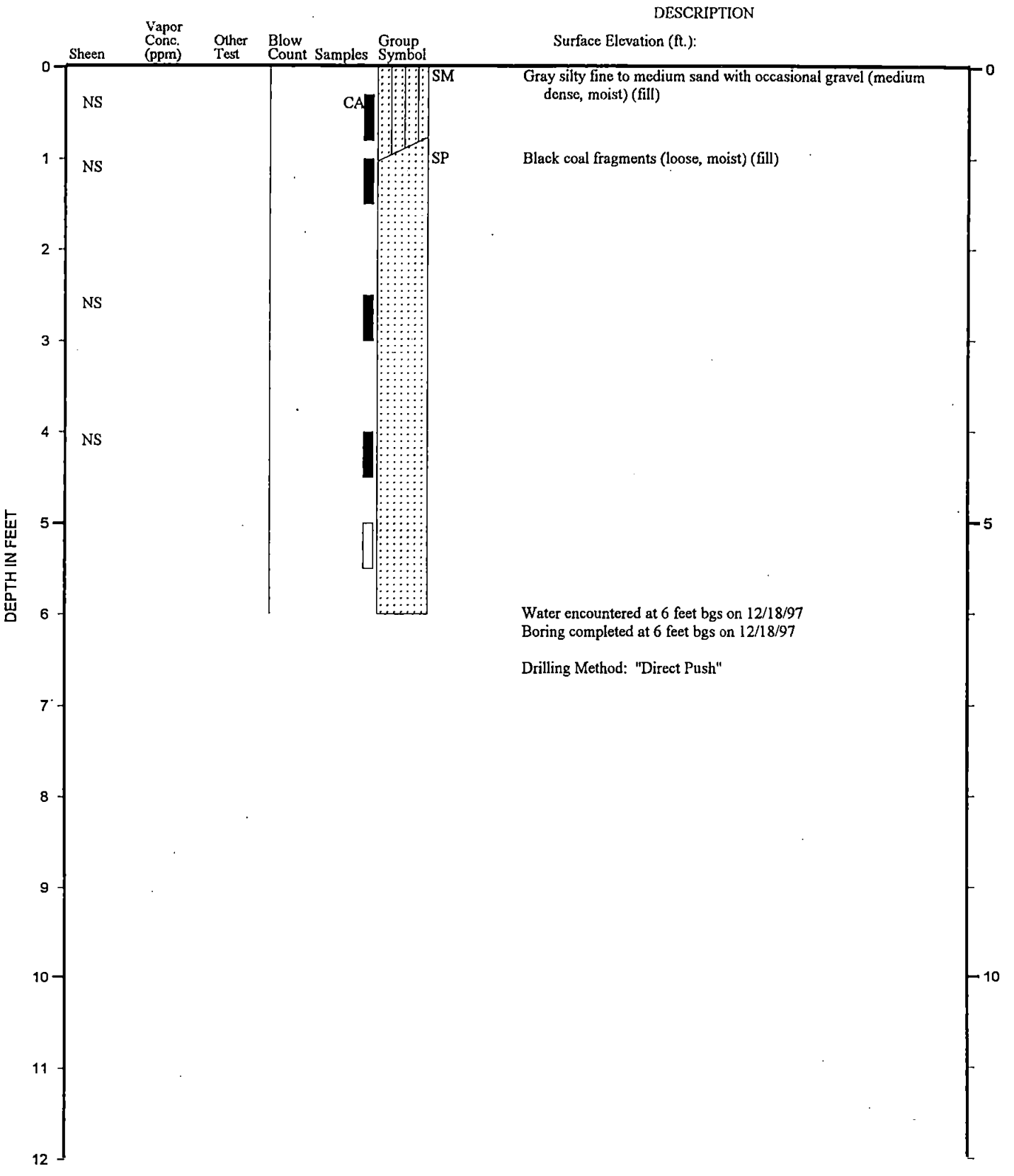
LOG OF BORING

FIGURE C-31

TEST DATA

BORING B-30



Note: See Figure 2 for explanation of symbols

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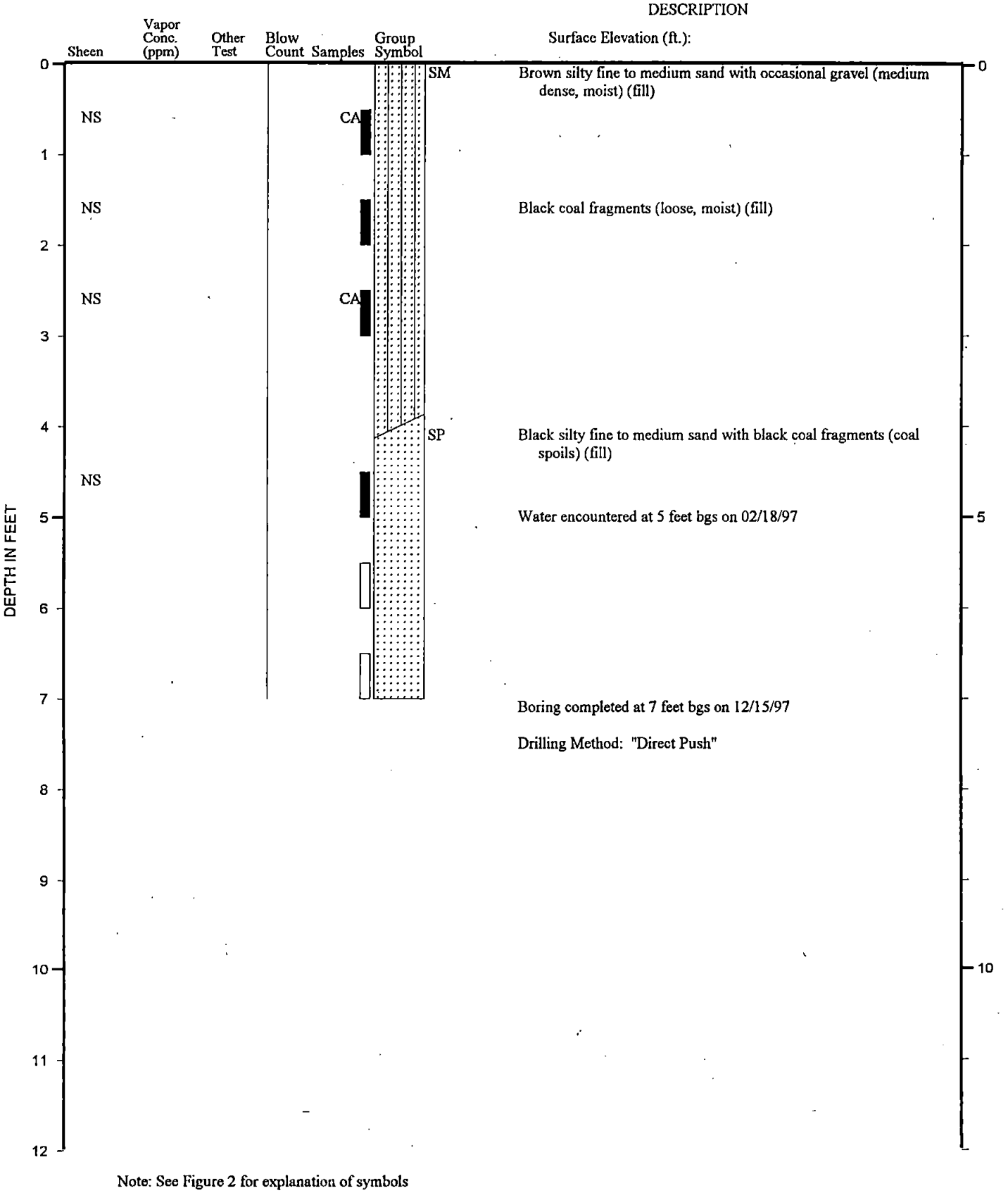
LOG OF BORING

FIGURE C-32

TEST DATA

BORING B-31



Note: See Figure 2 for explanation of symbols

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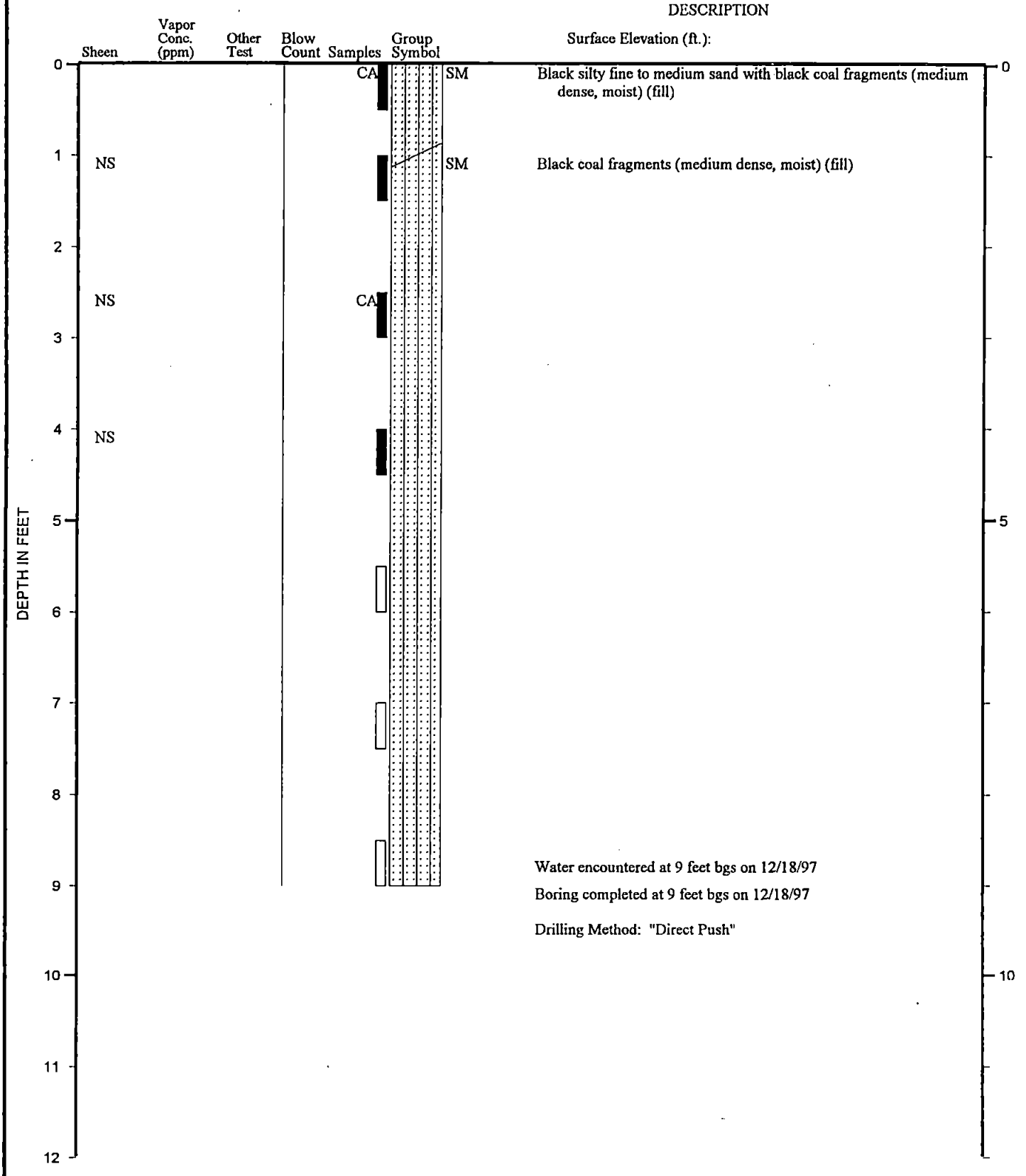
LOG OF BORING

FIGURE C-33

TEST DATA

BORING B-32



Note: See Figure 2 for explanation of symbols

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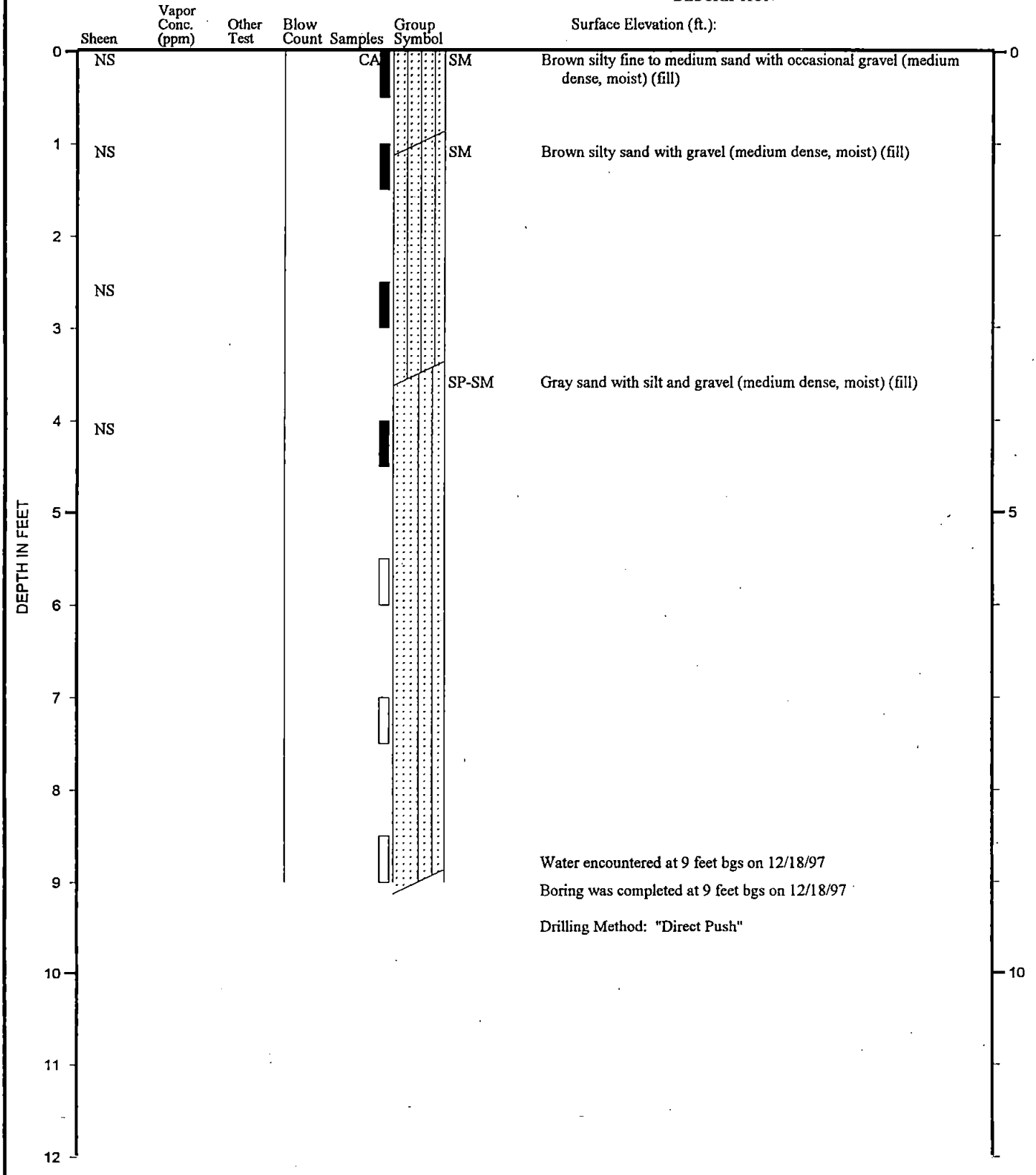
LOG OF BORING

FIGURE C-34

TEST DATA

BORING B-33



Note: See Figure 2 for explanation of symbols

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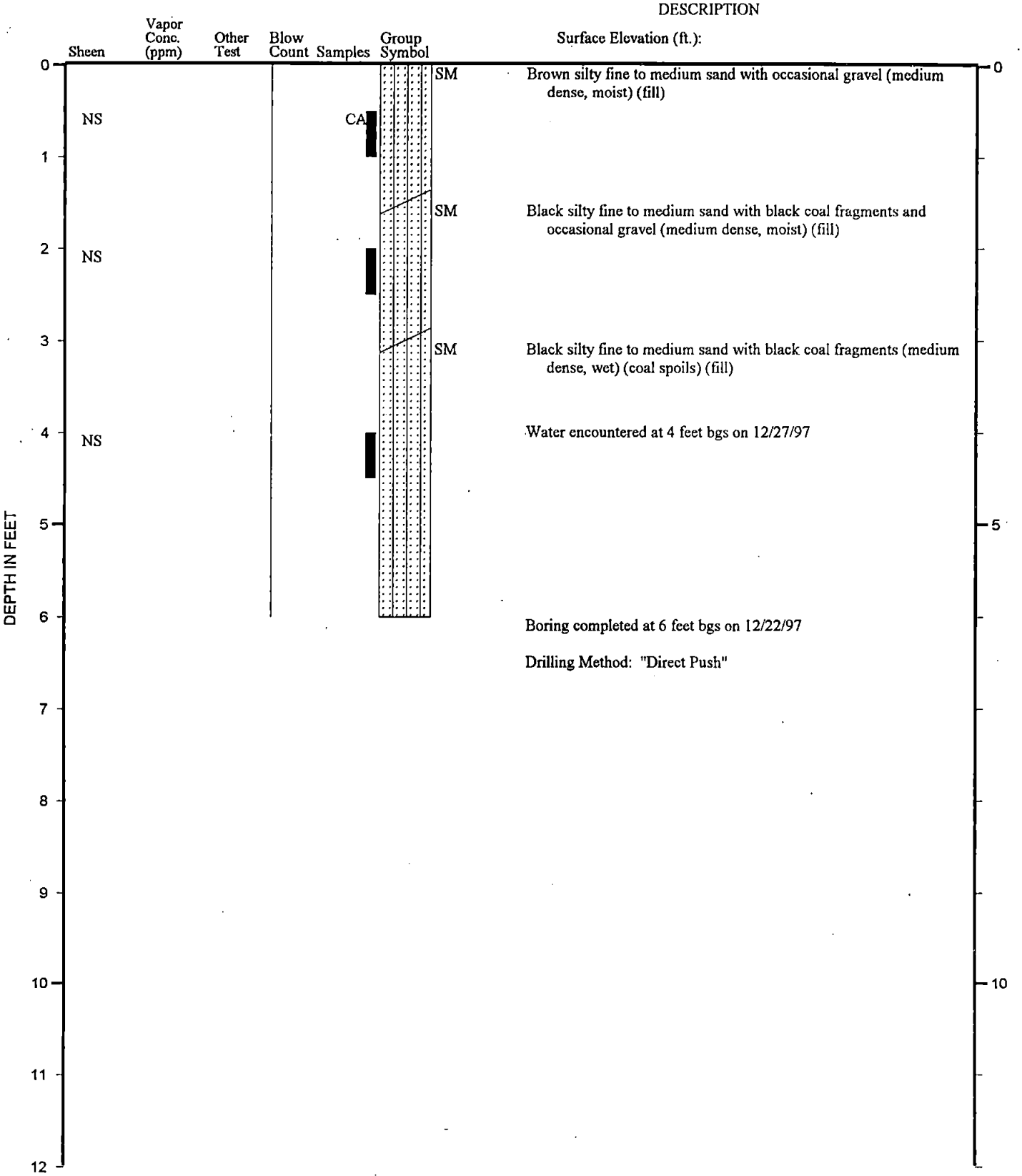
LOG OF BORING

FIGURE C-35

TEST DATA

BORING B-34



Note: See Figure 2 for explanation of symbols

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LOG OF BORING

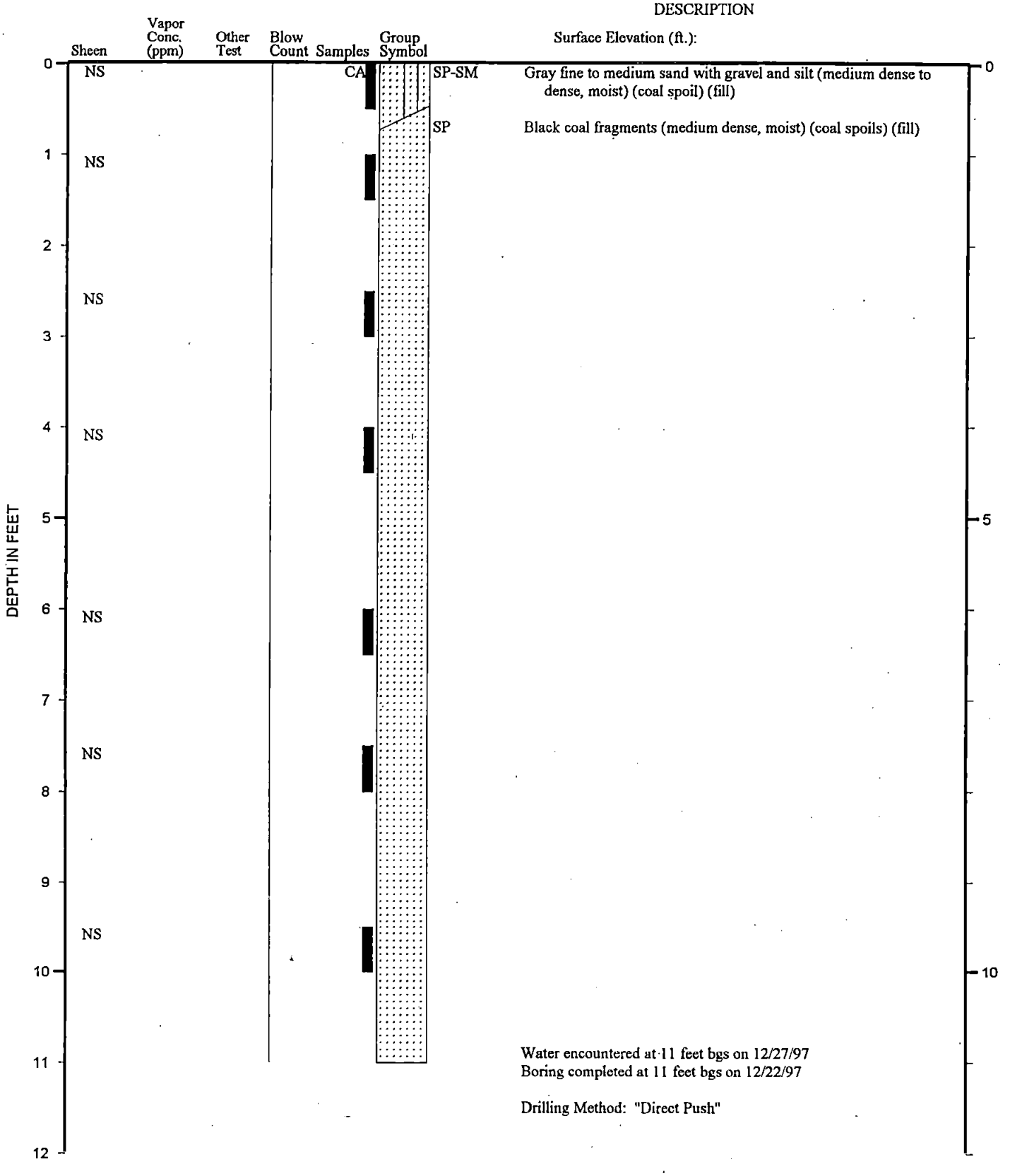
FIGURE C-36

:GRS/TNO 3/12/98

0186-407-85

TEST DATA

BORING B-35



Note: See Figure 2 for explanation of symbols

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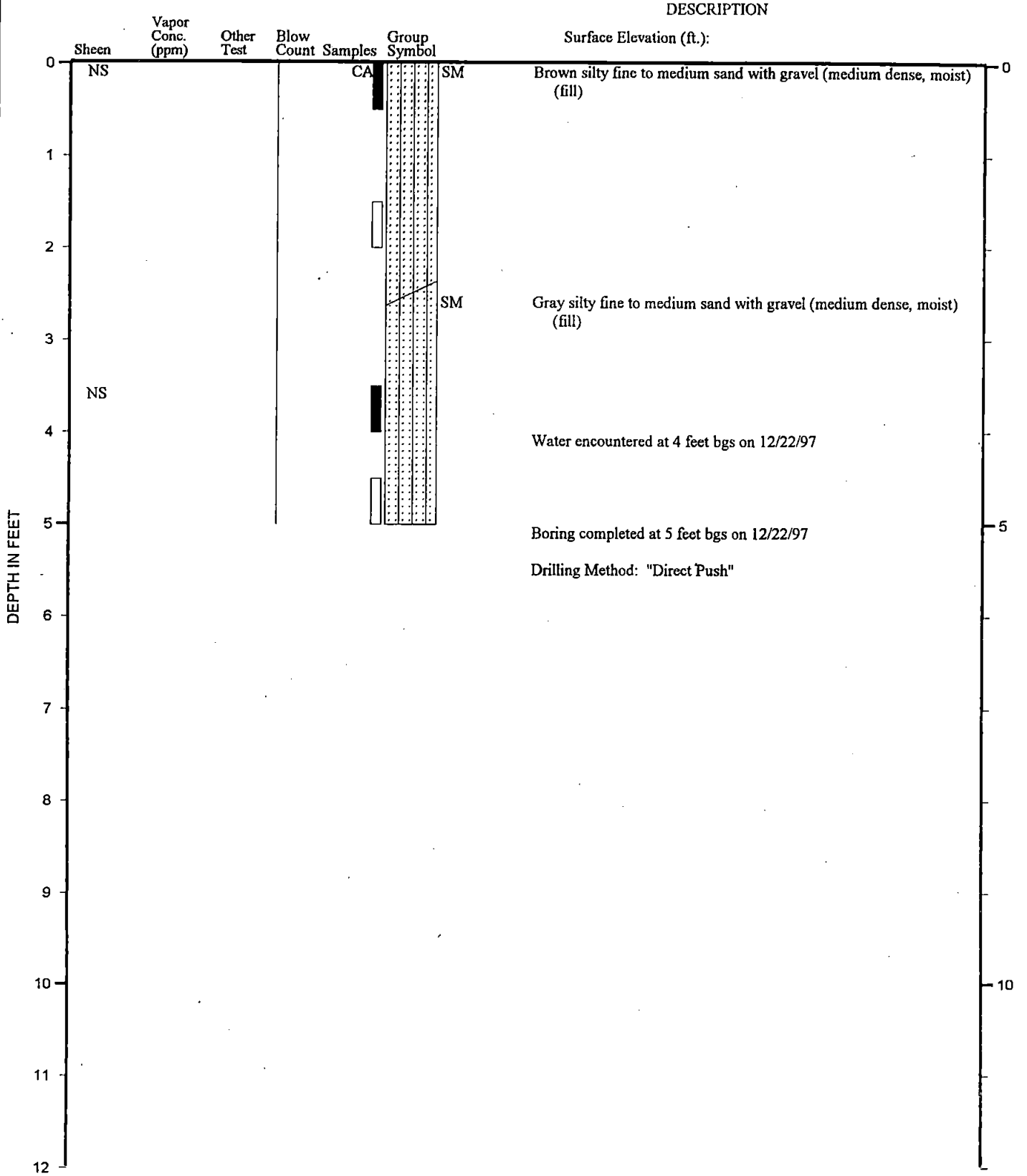
LOG OF BORING

FIGURE C-37

TEST DATA

BORING B-36



Note: See Figure 2 for explanation of symbols

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0186-407-85

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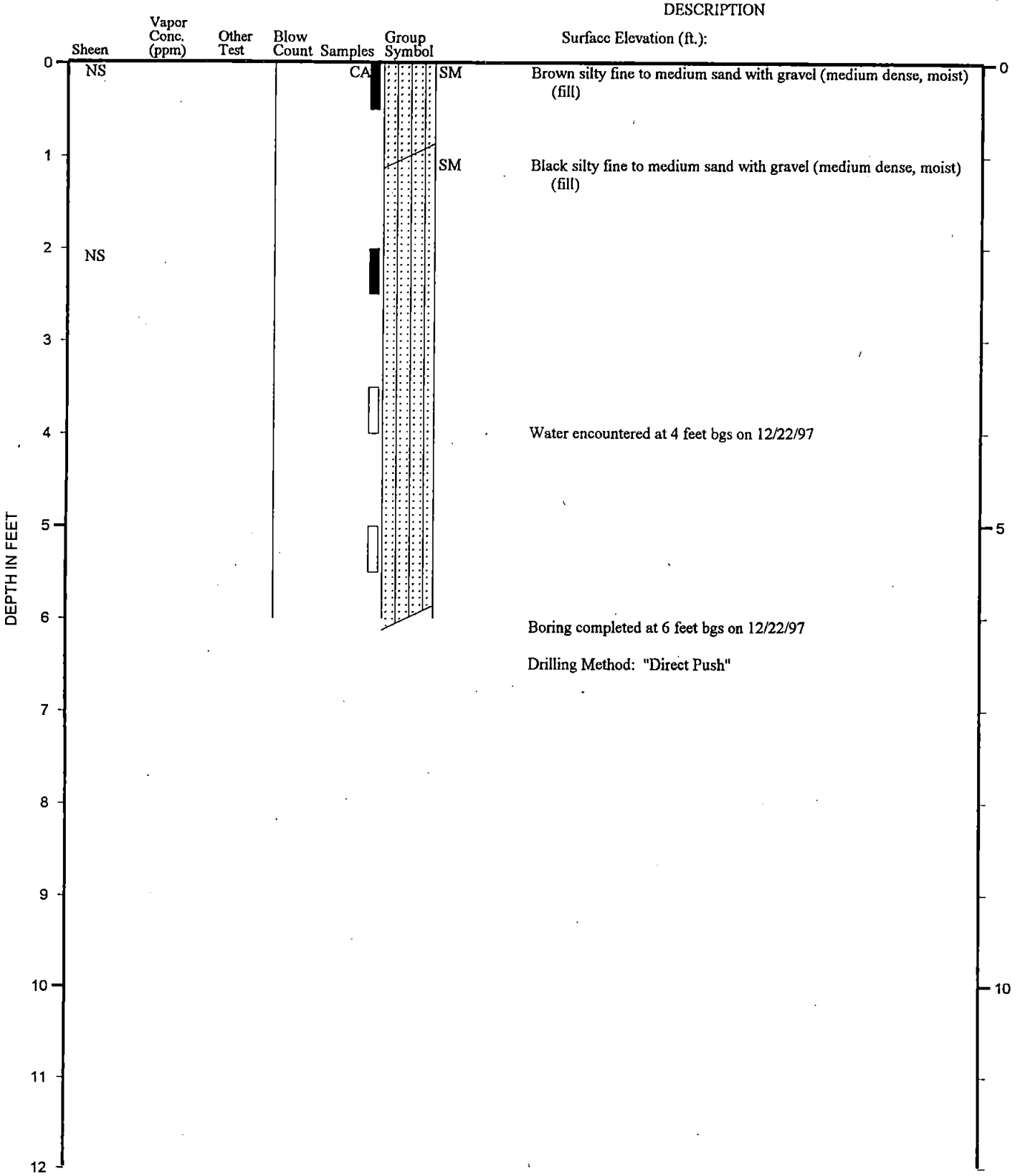
LOG OF BORING

FIGURE C-38

TEST DATA

BORING B-37



Note: See Figure 2 for explanation of symbols

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LOG OF BORING

FIGURE C-39

TEST DATA

BORING B-38

Sheen	Vapor Conc. (ppm)	Other Test	Blow Count	Samples	Group Symbol	DESCRIPTION
						Surface Elevation (ft.):
NS				CA	SM	Brown silty fine to medium sand with fine to coarse gravel (medium dense, wet) (fill)

Boring completed at 3 feet bgs on 12/22/97
No ground water encountered during drilling

Drilling Method: "Direct Push"

DEPTH IN FEET

0 1 2 3 4 5 6 7 8 9 10 11 12

Note: See Figure 2 for explanation of symbols

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0186-407-85

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LOG OF BORING

FIGURE C-40

TEST DATA

BORING B-39

Sheen	Vapor Conc. (ppm)	Other Test	Blow Count	Samples	Group Symbol	DESCRIPTION
						Surface Elevation (ft.):
					SM	Brown silty fine to medium sand with gravel (medium dense, moist) (fill)
NS						
NS				CA		Ground water encountered at 3 feet bgs on 02/23/98
						Boring completed at 3.5 feet bgs on 02/23/98
						Drilling Method: "Hand Auger"

DEPTH IN FEET

0 1 2 3 4 5 6 7 8 9 10 11 12

0 5 10

Note: See Figure 2 for explanation of symbols

:GRS/TNO 3/12/98

0186-407-85

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LOG OF BORING

FIGURE C-41

TEST DATA

BORING B-40

Sheen	Vapor Conc. (ppm)	Other Test	Blow Count	Samples	Group Symbol	DESCRIPTION
						Surface Elevation (ft.):
NS				CA	GP	Brown fine to coarse gravel with fine to coarse sand (medium dense, moist) (fill)
						Ground water encountered at 1 foot bgs on 02/23/98
						Boring completed at 1.5 feet bgs on 02/23/98
						Drilling Method: "Hand Auger"

DEPTH IN FEET

0 1 2 3 4 5 6 7 8 9 10 11 12

0 5 10

Note: See Figure 2 for explanation of symbols

:GRS/TNO 3/12/98

0186-407-85

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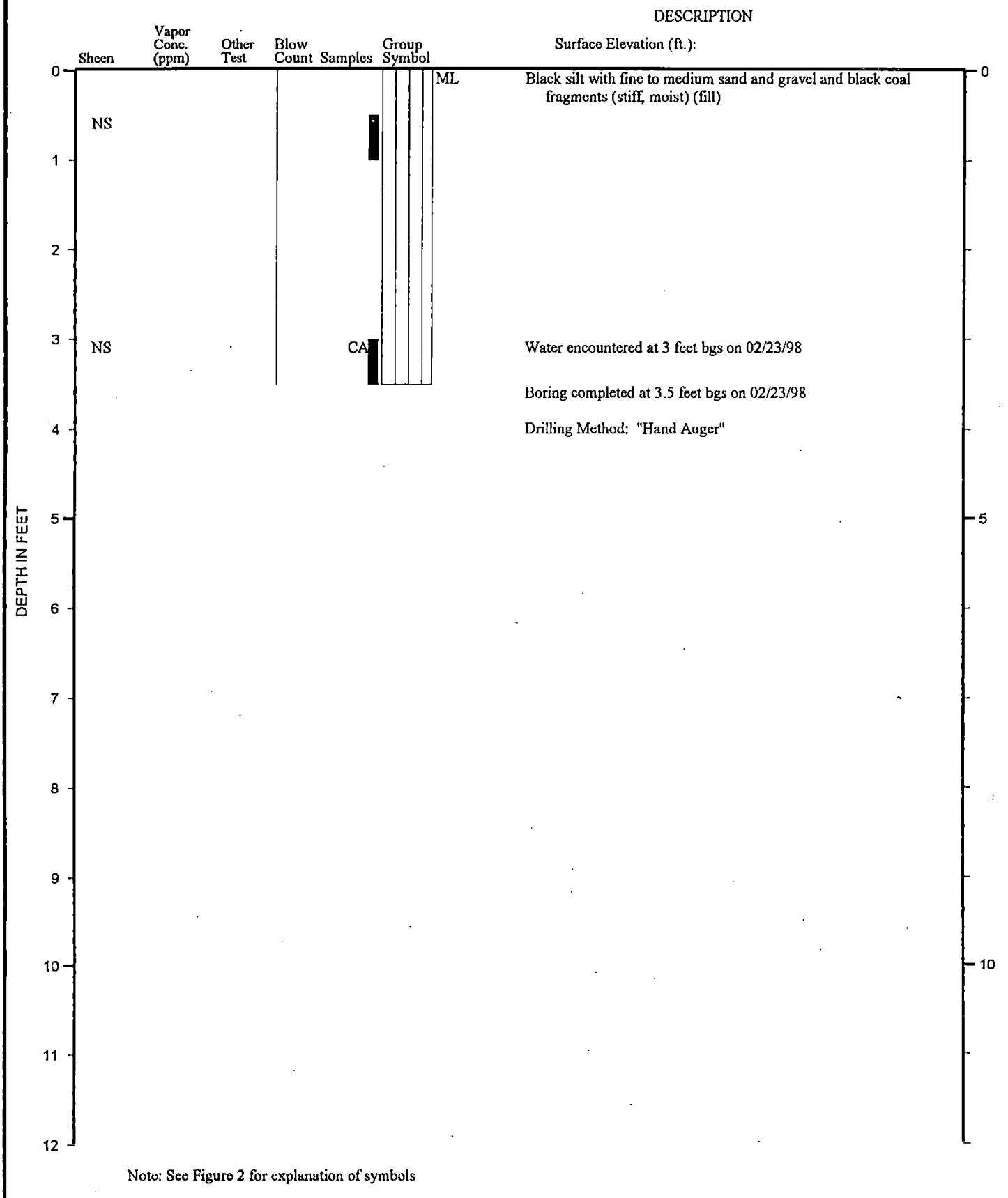
LOG OF BORING

FIGURE C-42

TEST DATA

BORING B-41



Note: See Figure 2 for explanation of symbols

:GRS/TNO 3/12/98

0186-407-85

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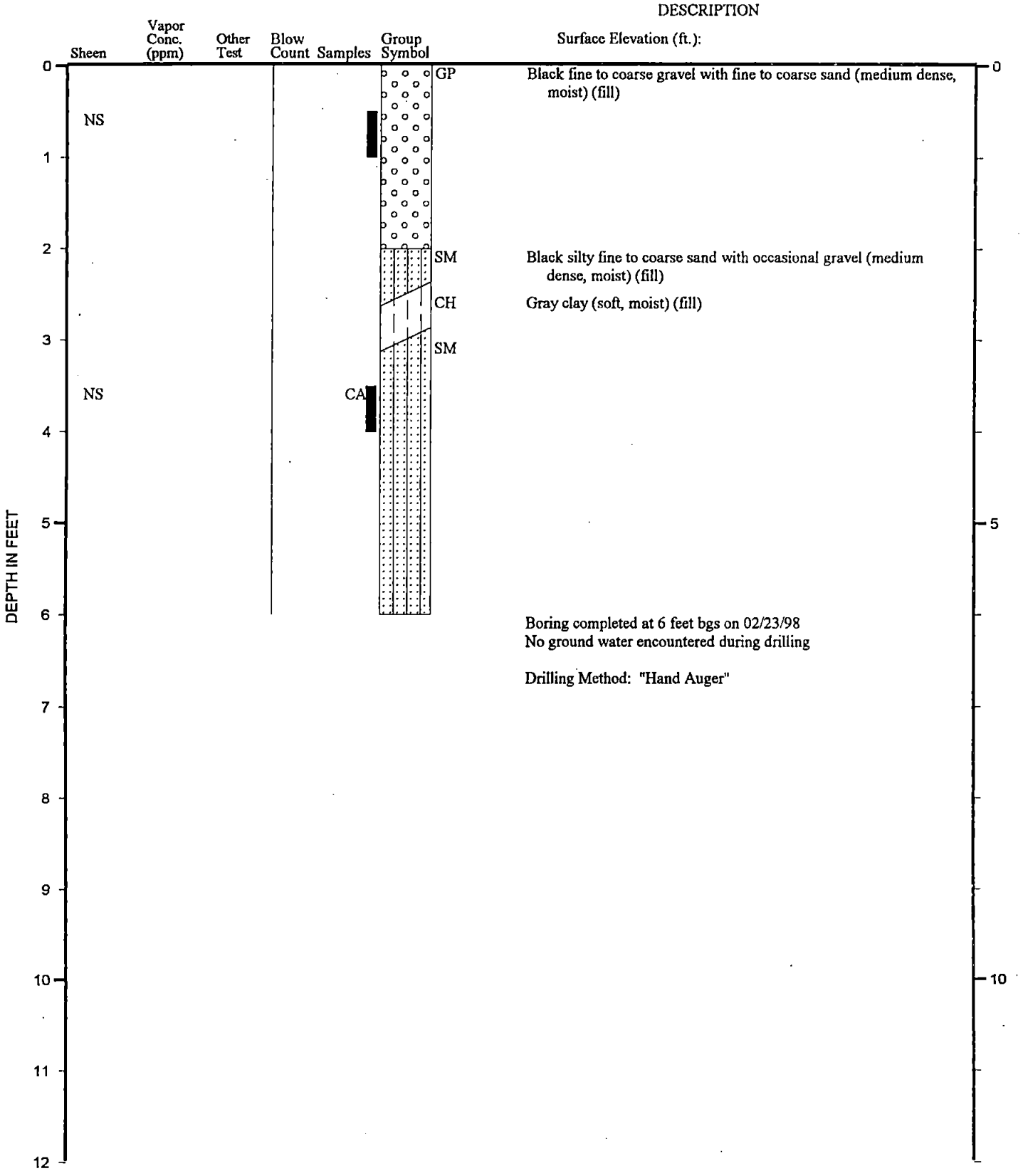
LOG OF BORING

FIGURE C-43

TEST DATA

BORING B-42



Note: See Figure 2 for explanation of symbols

:GRS/TNO 3/12/98

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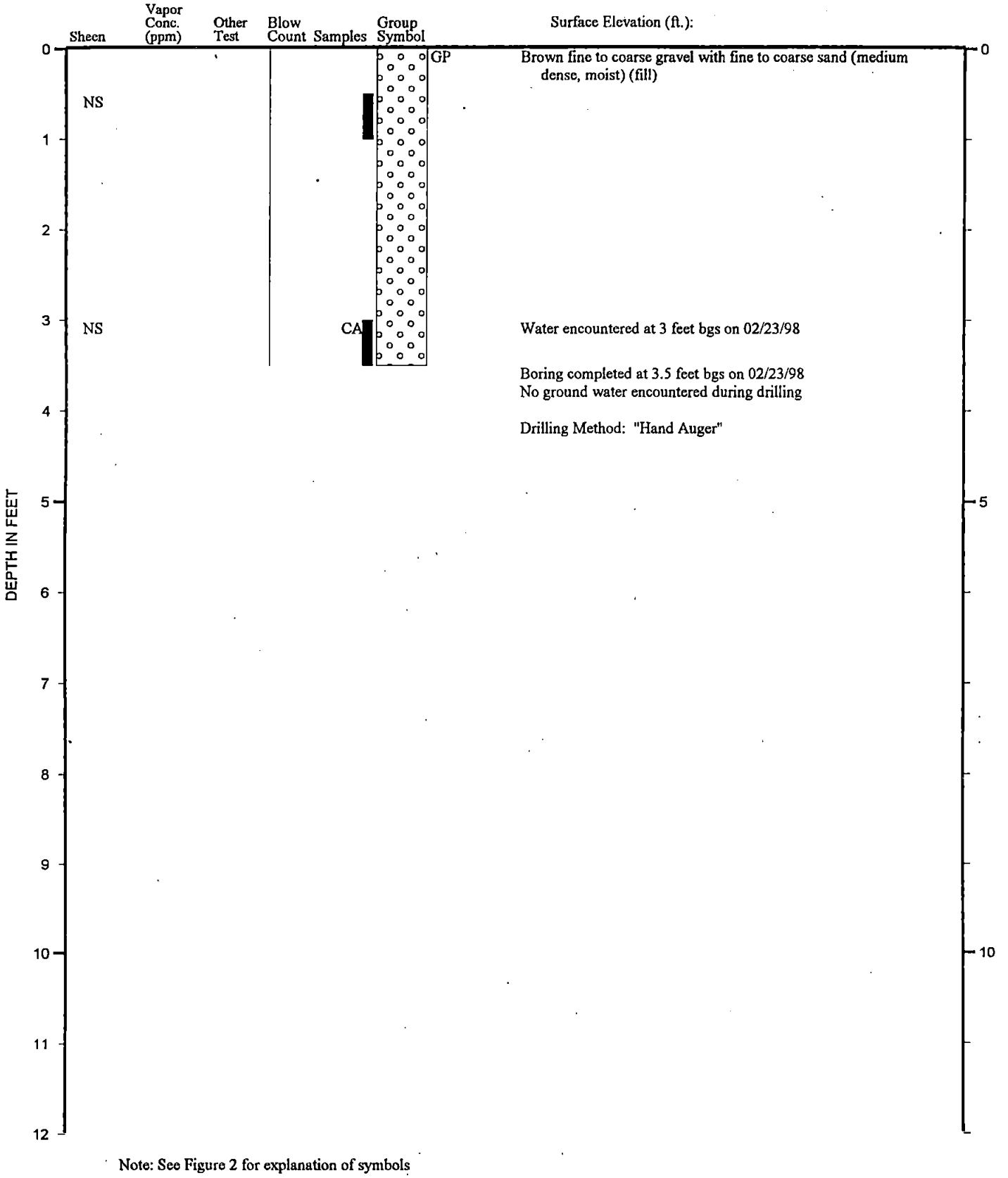
LOG OF BORING

FIGURE C-44

TEST DATA

BORING B-43



Note: See Figure 2 for explanation of symbols

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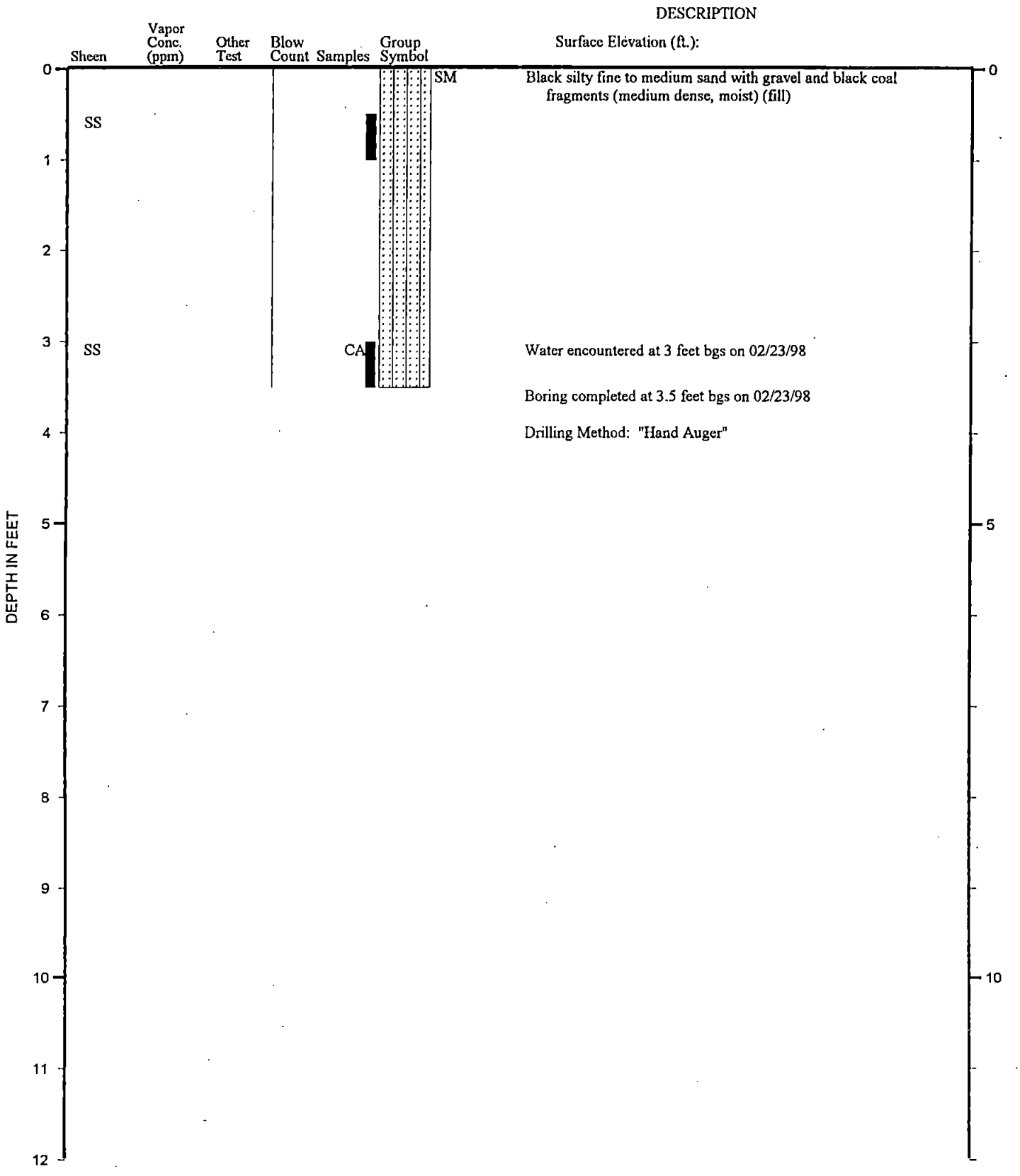
LOG OF BORING

FIGURE C-45

TEST DATA

BORING B-44



Note: See Figure 2 for explanation of symbols

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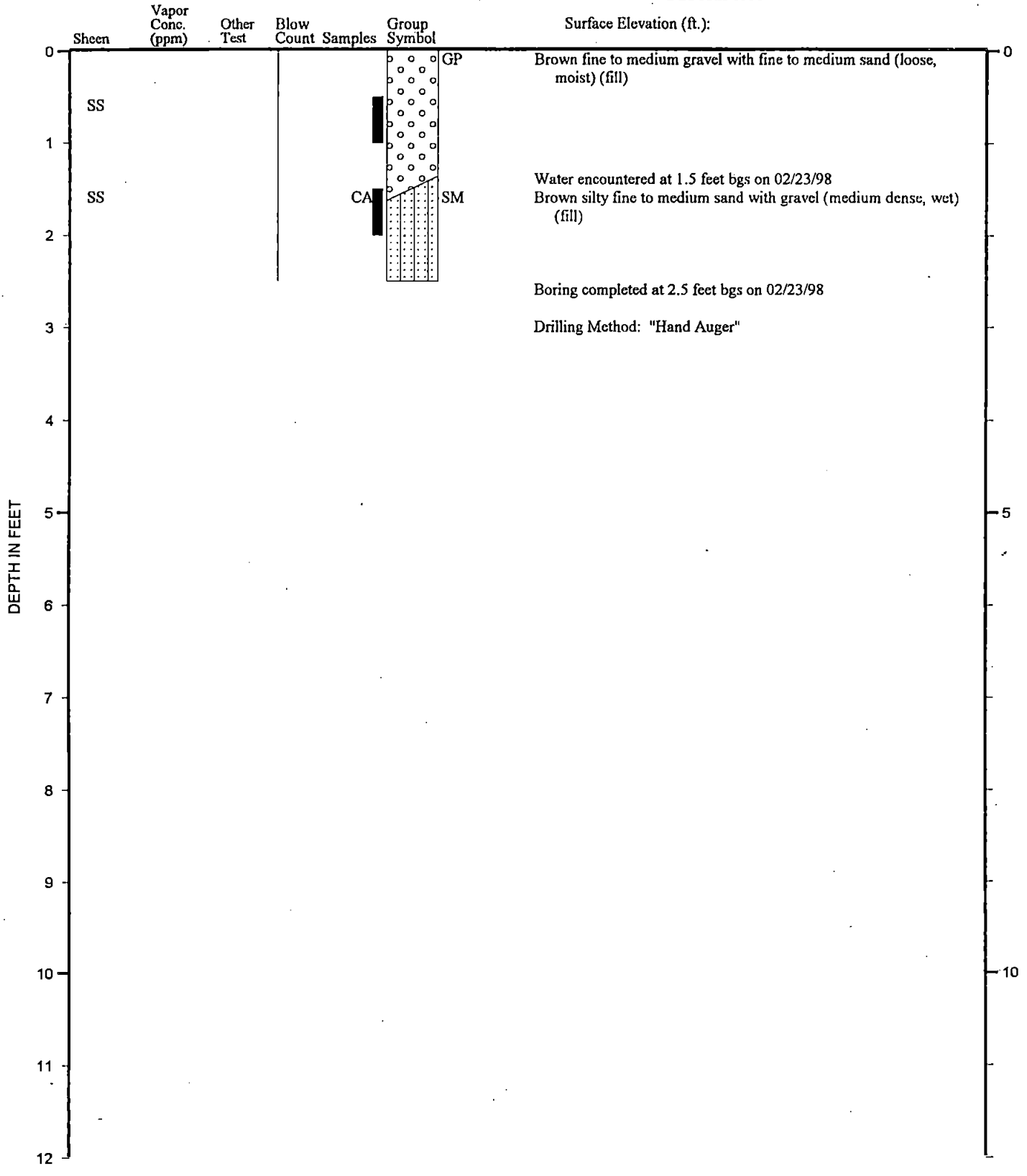
LOG OF BORING

FIGURE C-46

TEST DATA

BORING B-45



Note: See Figure 2 for explanation of symbols

GeoEngineers

LOG OF BORING

FIGURE C-47

:GRS/TNO 3/12/98

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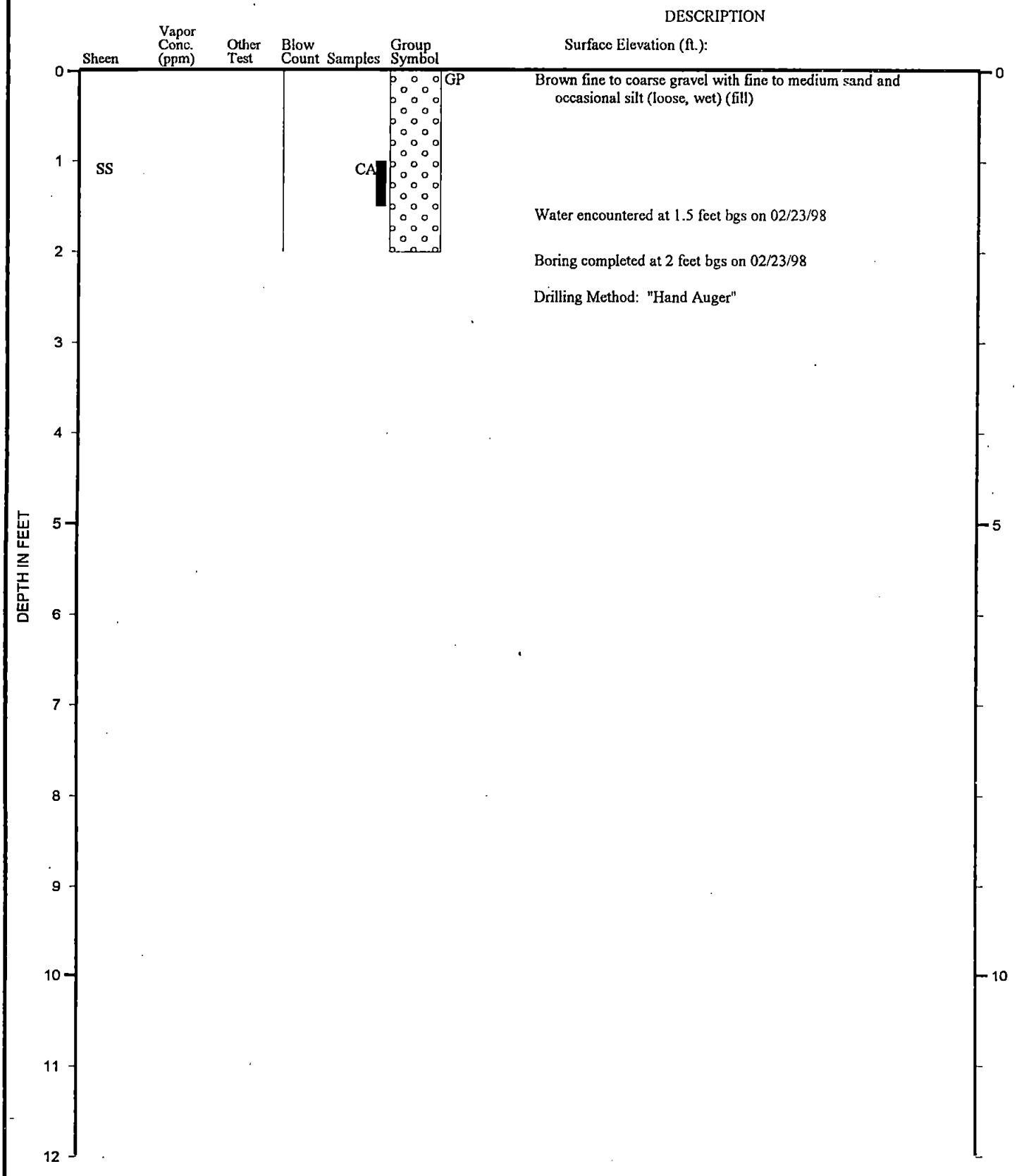
TEST DATA

BORING B-46



Note: See Figure 2 for explanation of symbols

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LOG OF BORING

FIGURE C-48

:GRS/TNO 3/12/98

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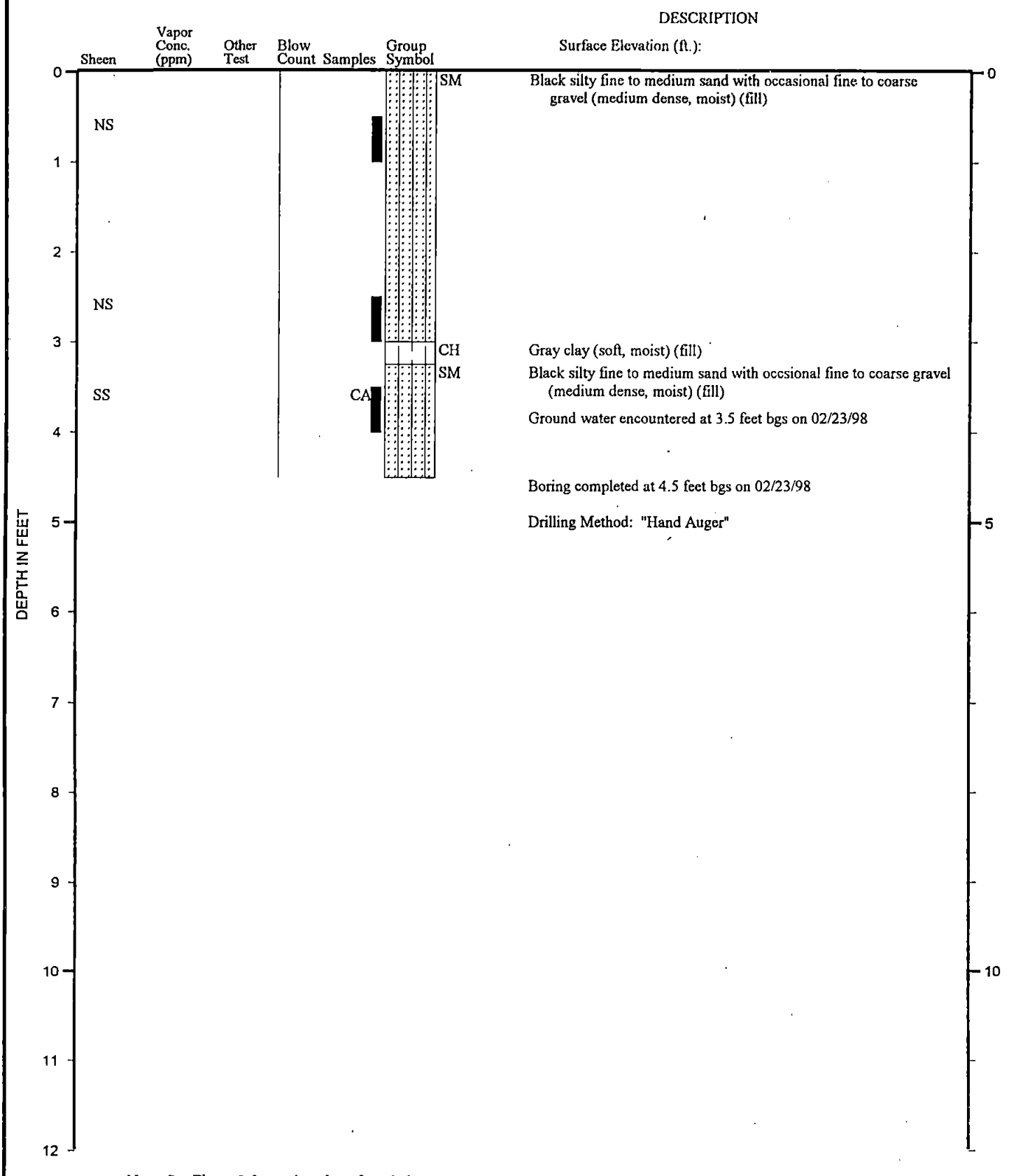
TEST DATA

BORING B-47



Note: See Figure 2 for explanation of symbols

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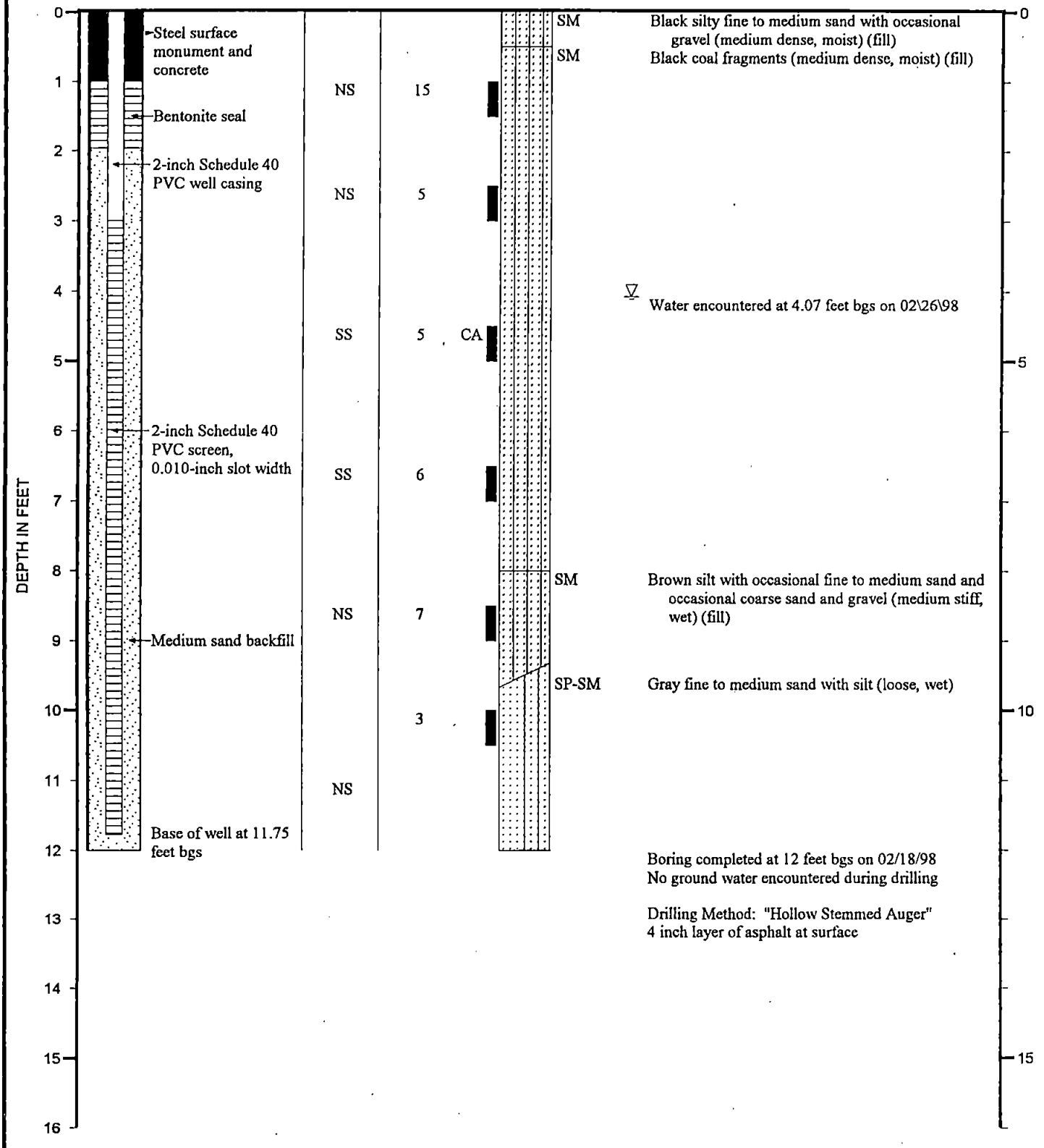
LOG OF BORING

FIGURE C-49

MONITORING WELL GMW-1



Note: See Figure 2 for explanation of symbols

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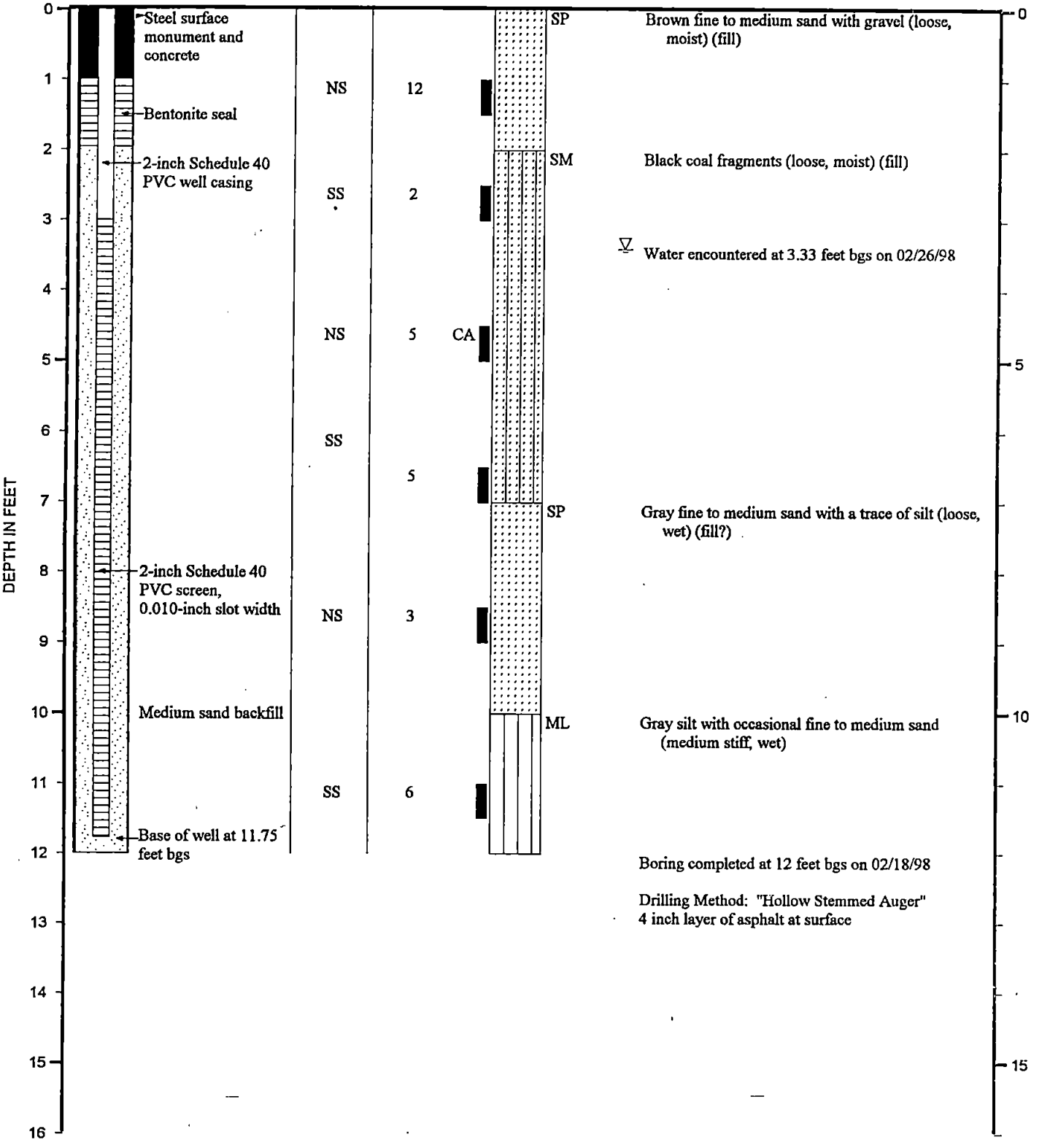
LOG OF MONITORING WELL

FIGURE C-50

MONITORING WELL GMW-2

WELL SCHEMATIC

Casing Elevation (ft.): 99.62
Casing Stickup (ft.): -.27



Boring completed at 12 feet bgs on 02/18/98

Drilling Method: "Hollow Stemmed Auger"
4 inch layer of asphalt at surface

Note: See Figure 2 for explanation of symbols

GRS 3/12/98

0186-407-85

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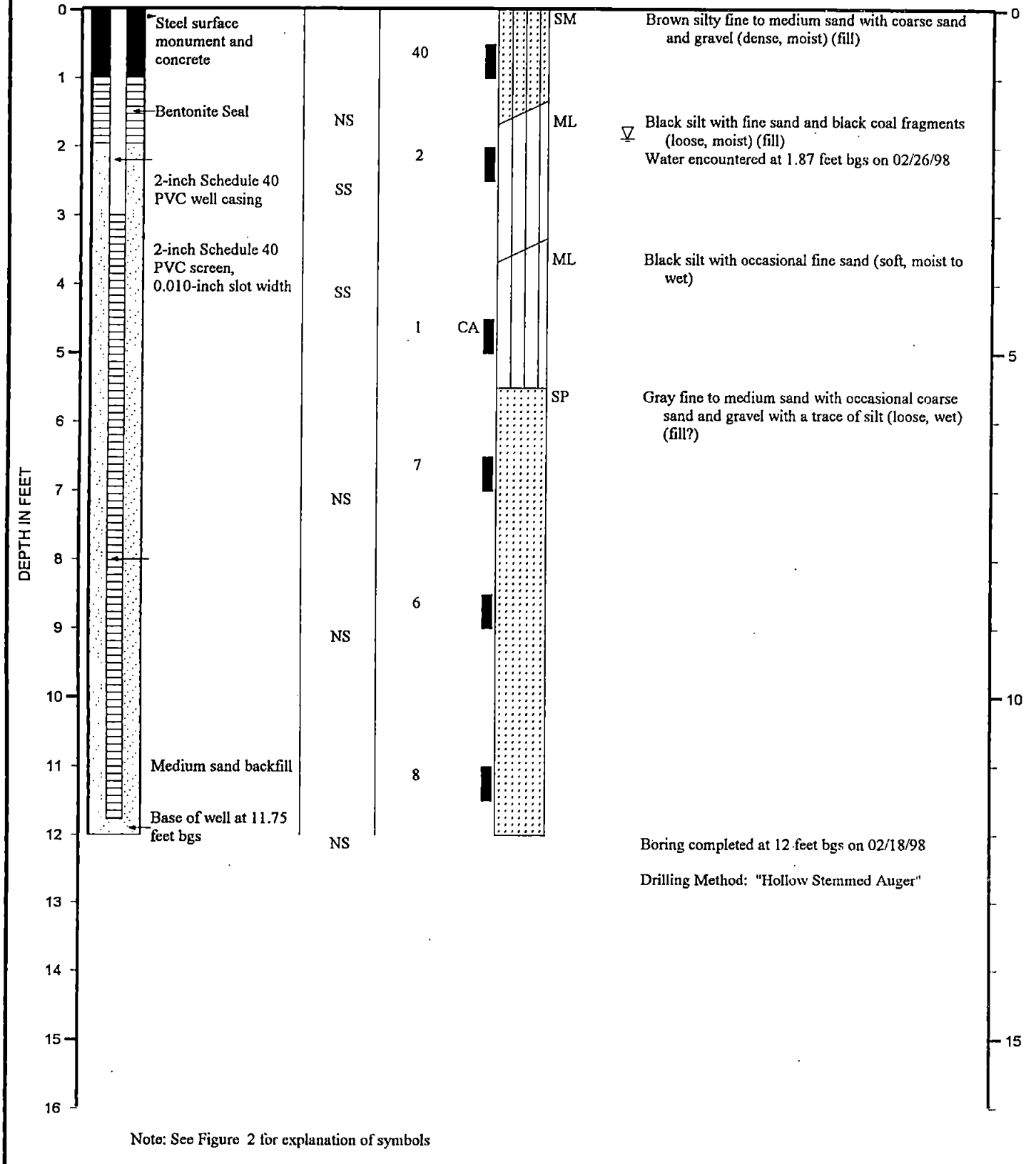
LOG OF MONITORING WELL

FIGURE C-51

MONITORING WELL GMW-3



Note: See Figure 2 for explanation of symbols

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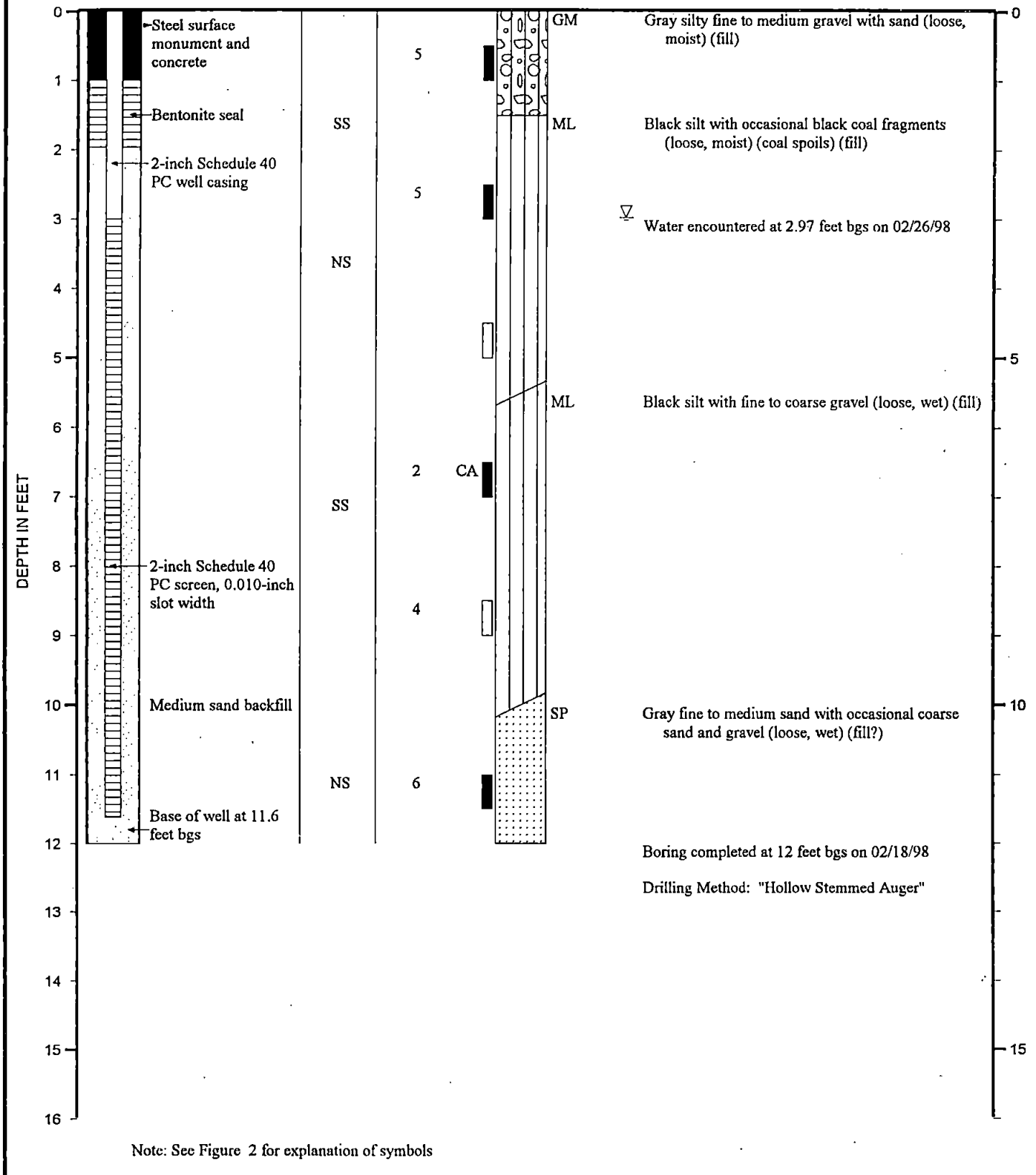
LOG OF MONITORING WELL

FIGURE C-52

MONITORING WELL GMW-4



Note: See Figure 2 for explanation of symbols

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LOG OF MONITORING WELL

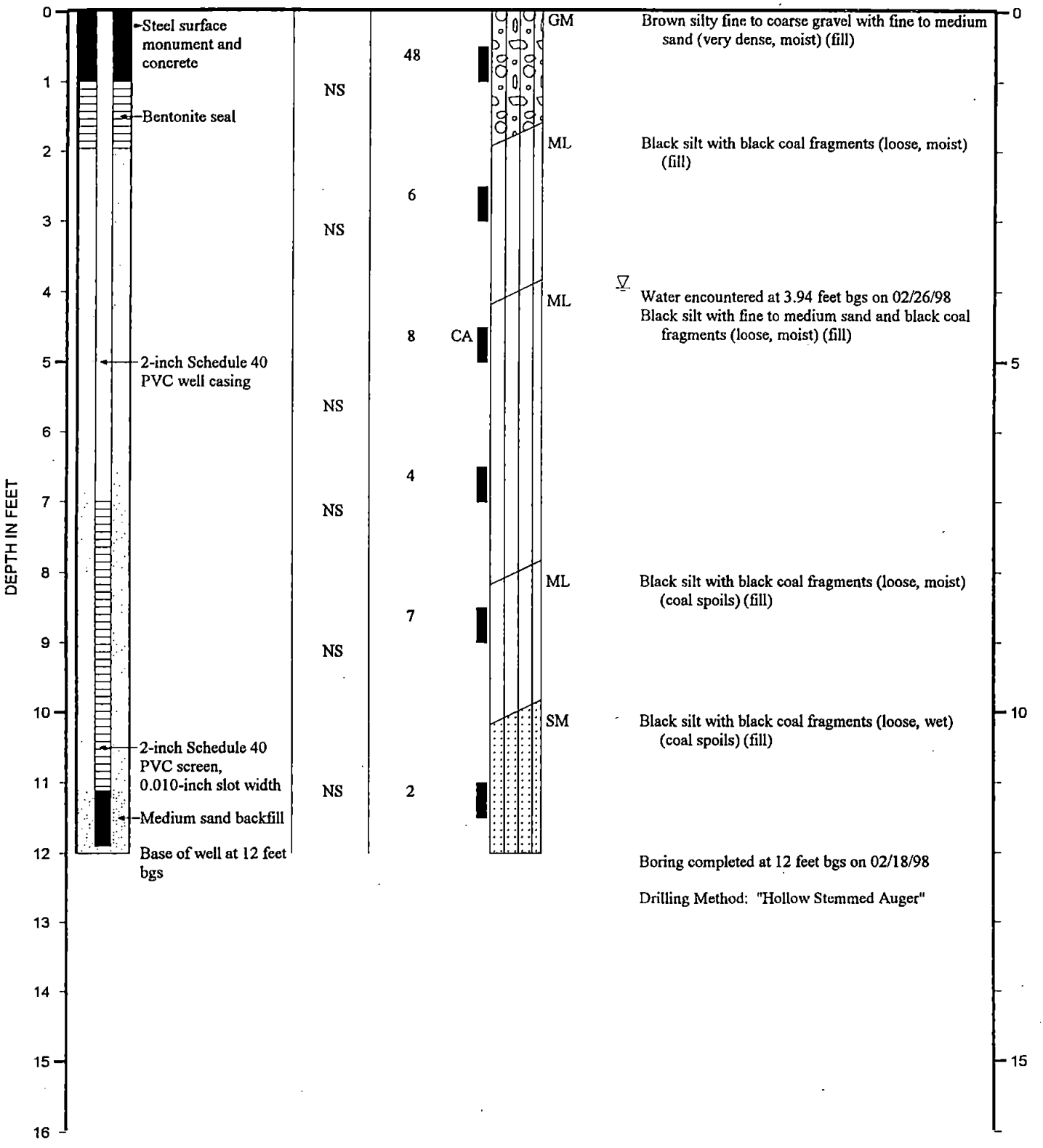
FIGURE C-53

MONITORING WELL GMW-5

WELL SCHEMATIC

Casing Elevation (ft.): 97.17
Casing Stickup (ft.): -.22

Surface Elevation (ft.): 97.39



Note: See Figure 2 for explanation of symbols

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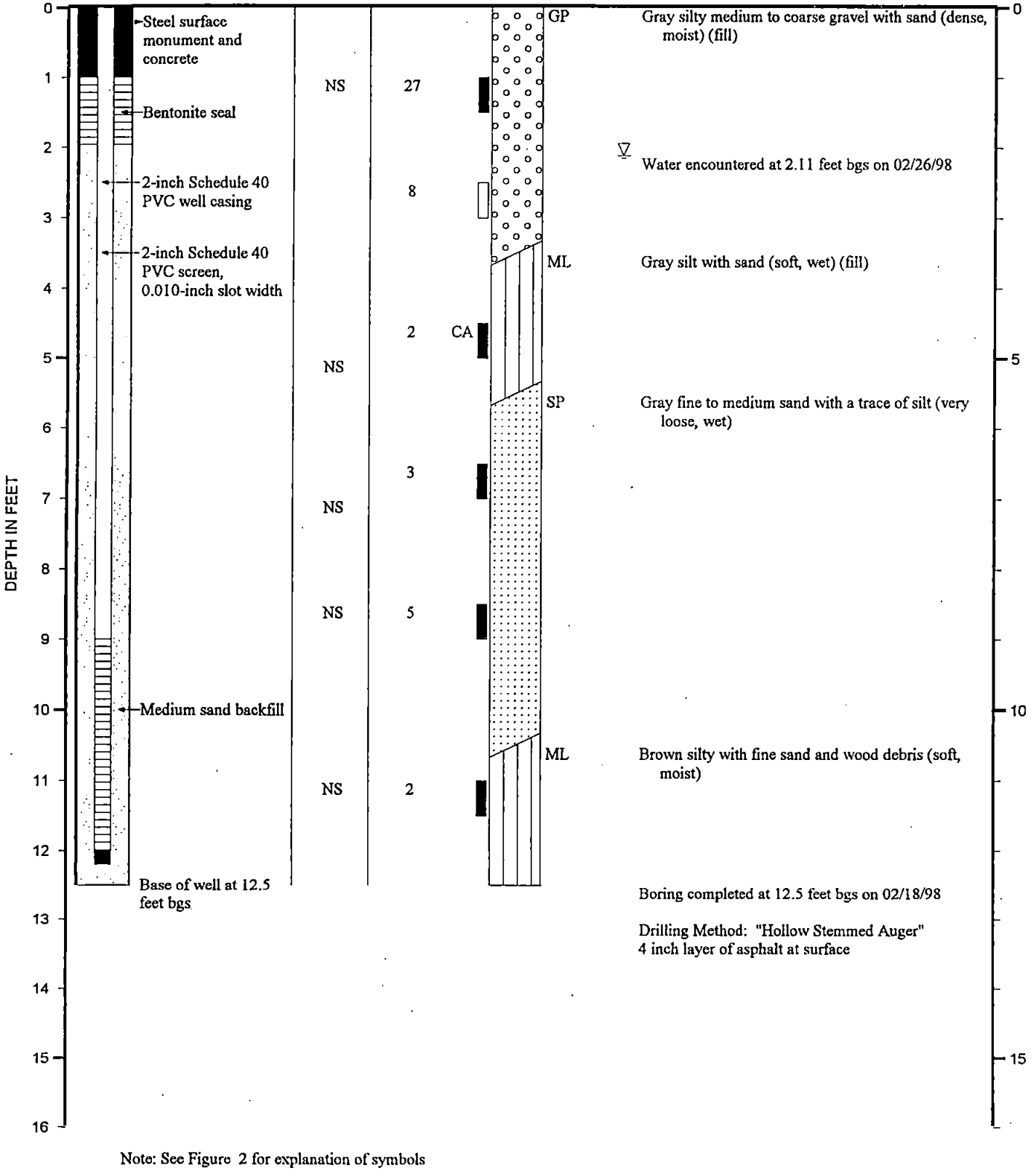
LOG OF MONITORING WELL

FIGURE C-54

MONITORING WELL GMW-6



Note: See Figure 2 for explanation of symbols

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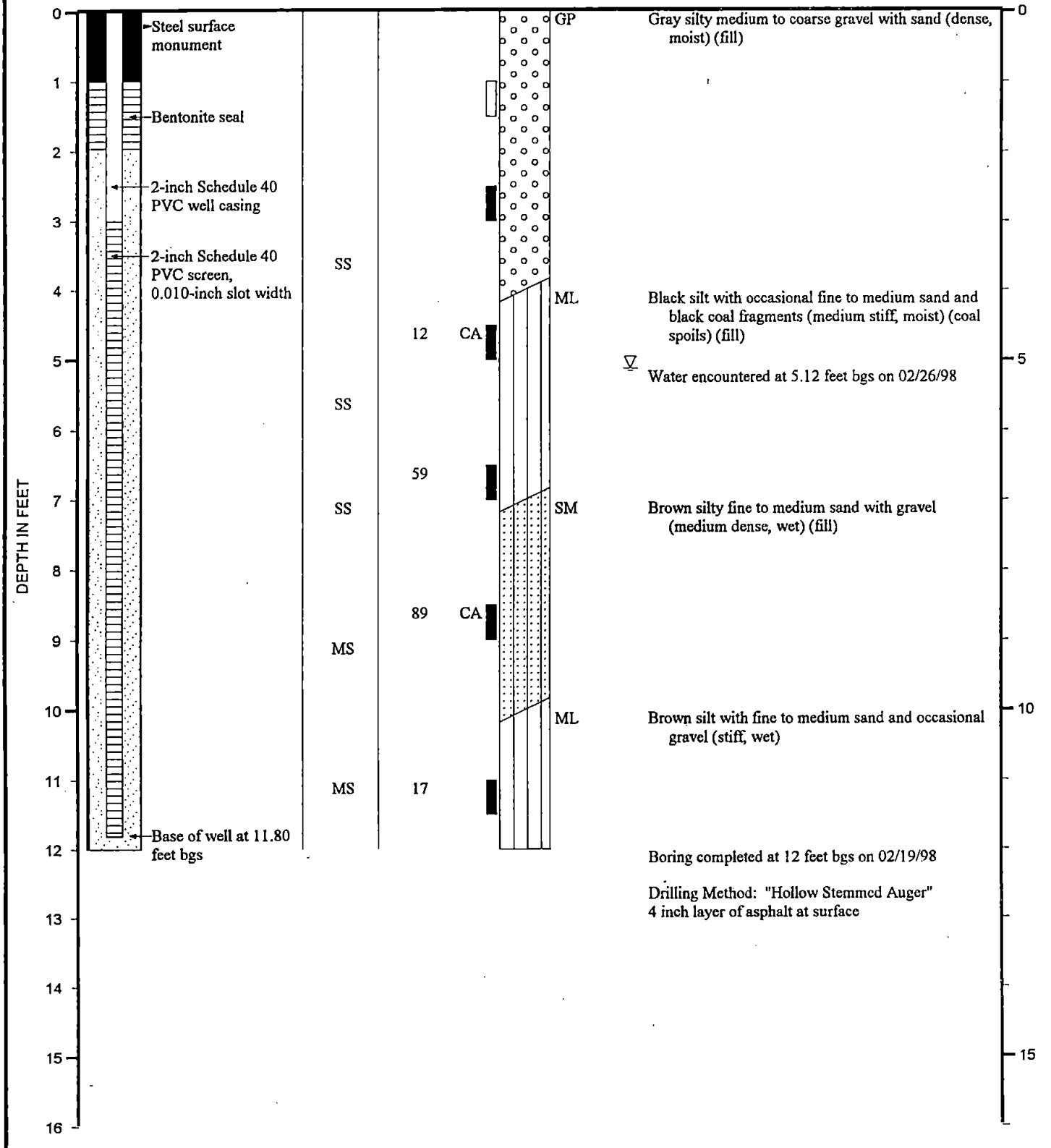
LOG OF MONITORING WELL

FIGURE C-55

MONITORING WELL GMW-7

WELL SCHEMATIC

Casing Elevation (ft.): 97.51
Casing Stickup (ft.): -.91



Note: See Figure 2 for explanation of symbols

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LOG OF MONITORING WELL

FIGURE C-56

LOG OF TEST PIT

DEPTH BELOW GROUND SURFACE (FEET)	SOIL GROUP CLASSIFICATION SYMBOL	DESCRIPTION
		TEST PIT 1
0.0 - 0.8	SM	Brown silty fine to coarse sand with gravel (dense, moist) (fill)
0.8 - 2.0	ML	Gray silt with fine to medium sand (stiff, moist) (fill)
2.0 - 8.0	ML	Brown silt with occasional fine to medium sand and organic debris (medium stiff, moist to wet) (fill)
		Water encountered at 7.5 feet bgs
		Test pit terminated at 8.0 feet bgs on 02/22/98 Moderate ground water seepage observed at 7.5 feet bgs No caving observed Disturbed soil samples obtained at 0.5, 1.5, 4.0, 6.0 and 8.0 feet bgs Samples obtained 0.5 and 6.0 feet bgs submitted for chemical analysis. Field screening results indicated no sheen (NS)
		TEST PIT 2
0.0 - 1.5	SM	Brown silty fine to medium sand with gravel (dense, moist) (fill)
1.5 - 2.0	GM	Gray silty gravel (medium stiff, moist) (fill)
2.0 - 2.3	SM	Brownish-red silty fine to medium sand with occasional brick pieces (stiff, moist) (fill)
2.3 - 2.8	SP	Gray fine to medium sand with trace of silt (medium dense, moist) (fill)
2.8 - 4.5	ML	Brown silt with occasional fine to medium sand (medium stiff, moist) (fill)
		Encountered conduit, 2 to 3 inches in diameter, steel, undamaged
		Test pit terminated at 4.5 feet bgs on 02/22/98 Moderate ground water seepage observed at 5.0 feet bgs No caving observed Disturbed soil samples obtained at 1.0, 2.0 and 4.0 feet bgs Samples from 0.5 and 4.0 feet bgs submitted for chemical analysis. Field screening results indicated no sheen (NS)

THE DEPTHS ON THE TEST PIT LOGS, ALTHOUGH SHOWN TO 0.1 FOOT, ARE BASED ON AN AVERAGE OF MEASUREMENTS ACROSS THE TEST PIT AND SHOULD BE CONSIDERED ACCURATE TO 0.5 FOOT.

Geo Engineers

LOG OF TEST PIT

FIGURE C-57

LOG OF TEST PIT

DEPTH BELOW GROUND SURFACE (FEET)	SOIL GROUP CLASSIFICATION SYMBOL	DESCRIPTION
		TEST PIT 3
0.0 - 1.0	SM	Brown silty fine to medium sand with coarse sand and gravel (dense, moist)
1.0 - 1.3	GM	Gray silty gravel (dense, moist) (fill)
1.3 - 1.8	ML	Brown silt with occasional fine to medium sand and black coal fragments (medium dense, moist) (fill)
1.8 - 2.2	ML	Brown silt with occasional fine to medium sand
2.2 - 6.0	ML	Brownish-black silt with occasional fine to medium sand and gravel
		Test pit terminated at 6.0 feet bgs on 02/22/98 No ground water seepage observed No caving observed Disturbed soil samples obtained at 2.0, 4.0 and 6.0 feet bgs Samples from 0.5 and 4.0 feet bgs submitted for chemical analysis. Field screening results indicated no sheen (NS)
		TEST PIT 4
0.0 - 1.0	SM	Brown silty fine to coarse sand with gravel (dense, moist) (fill)
1.0 - 2.3	ML	Brown silt with occasional fine to medium sand and gravel (stiff, moist) (fill)
2.3 - 5.0	ML	Brown silt with occasional fine to medium sand and organics (soft, moist to wet) (fill)
5.0 - 6.0	ML	Black silt with organics (sticks, twigs) (soft, wet) (fill)
		Test pit terminated at 6.0 feet bgs on 02/22/98 Rapid ground water seepage observed at 5.5 feet bgs No caving observed Disturbed soil samples obtained at 1.0, 2.0, 4.0 and 6.0 feet bgs Samples from 0.5 and 4.0 feet bgs submitted for chemical analysis. Field screening results indicated no sheen (NS)

THE DEPTHS ON THE TEST PIT LOGS, ALTHOUGH SHOWN TO 0.1 FOOT, ARE BASED ON AN AVERAGE OF MEASUREMENTS ACROSS THE TEST PIT AND SHOULD BE CONSIDERED ACCURATE TO 0.5 FOOT.

LOG OF TEST PIT

DEPTH BELOW GROUND SURFACE (FEET)	SOIL GROUP CLASSIFICATION SYMBOL	DESCRIPTION
		TEST PIT 5
0.0 - 1.5	SM	Brown silty fine to coarse sand and gravel (dense, moist) (fill)
1.5 - 2.8	SM	Gray silty fine to medium sand with occasional gravel (medium dense, moist) (fill)
2.8 - 6.5	ML	Gray silt with occasional fine sand (sticks and twigs, stiff, moist to wet) (fill)
		Test pit terminated at 6.5 feet bgs on 02/22/98 Moderate ground water seepage observed at 6.5 feet bgs No caving observed Disturbed soil samples obtained at 1.0, 2.5, 4.0 and 6.0 feet bgs Samples from 0.5 and 4.0 feet bgs submtted for chemical analysis. Field screening results indicated no sheen (NS)

THE DEPTHS ON THE TEST PIT LOGS, ALTHOUGH SHOWN TO 0.1 FOOT, ARE BASED ON AN AVERAGE OF MEASUREMENTS ACROSS THE TEST PIT AND SHOULD BE CONSIDERED ACCURATE TO 0.5 FOOT.

0186-407-85 TNO:cp 030498 tp5.ppt

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LOG OF TEST PIT

FIGURE C-59

APPENDIX D

CHEMICAL ANALYTICAL PROGRAM

APPENDIX D

CHEMICAL ANALYTICAL PROGRAM

ANALYTICAL METHODS

Chain-of-custody procedures were followed during the transport of the water and soil samples to North Creek Analytical in Bothell, Washington. The samples were held in cold storage pending extraction and/or analysis. The analytical results, analytical methods reference and laboratory QA/QC (quality assurance/quality control) records are included in this appendix. The analytical results are also summarized in the text and tables of this report.

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 validity of 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 are 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. Data quality exceptions documented by the laboratory in the laboratory reports are reviewed by GeoEngineers using the applicable data validation guidelines from the following documents: "National Functional Guidelines For Organic Data Review" draft dated 1991 and "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" dated 1988.

ANALYTICAL DATA REVIEW SUMMARY

The laboratory reports did identify some date quality exceptions. However, the data quality exceptions documented in the laboratory reports are not significant Based on our data quality review, it is our opinion that the analytical data are of acceptable quality for their intended use in this report.

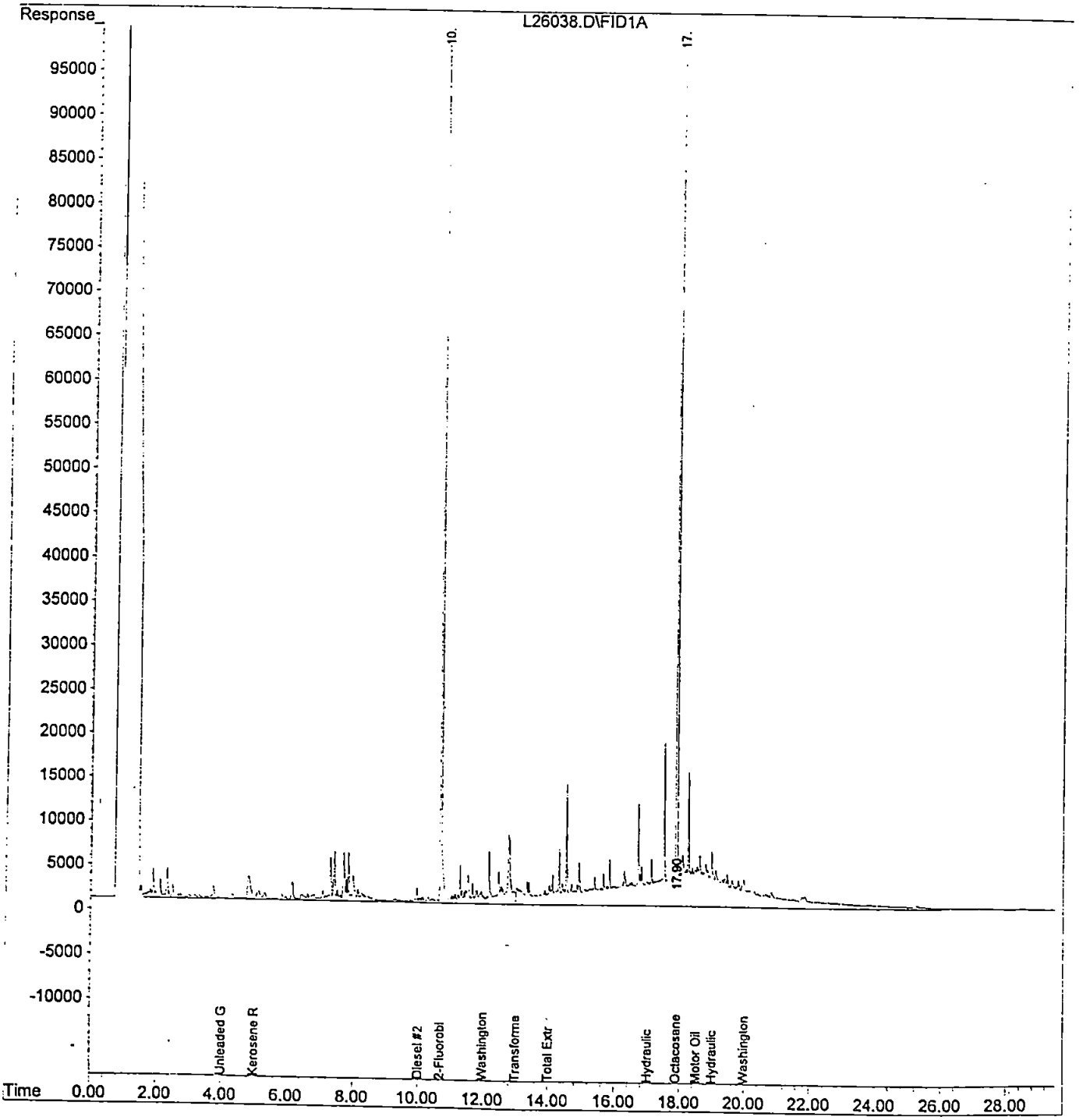
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26038.D
Acq On : 27 Dec 1997 11:46 am
Sample : b712496-29
Misc : S
IntFile : SURR.E
Quant Time: Dec 27 12:23 1997 Quant Results File: NWTPHD.RES

Vial: 26
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

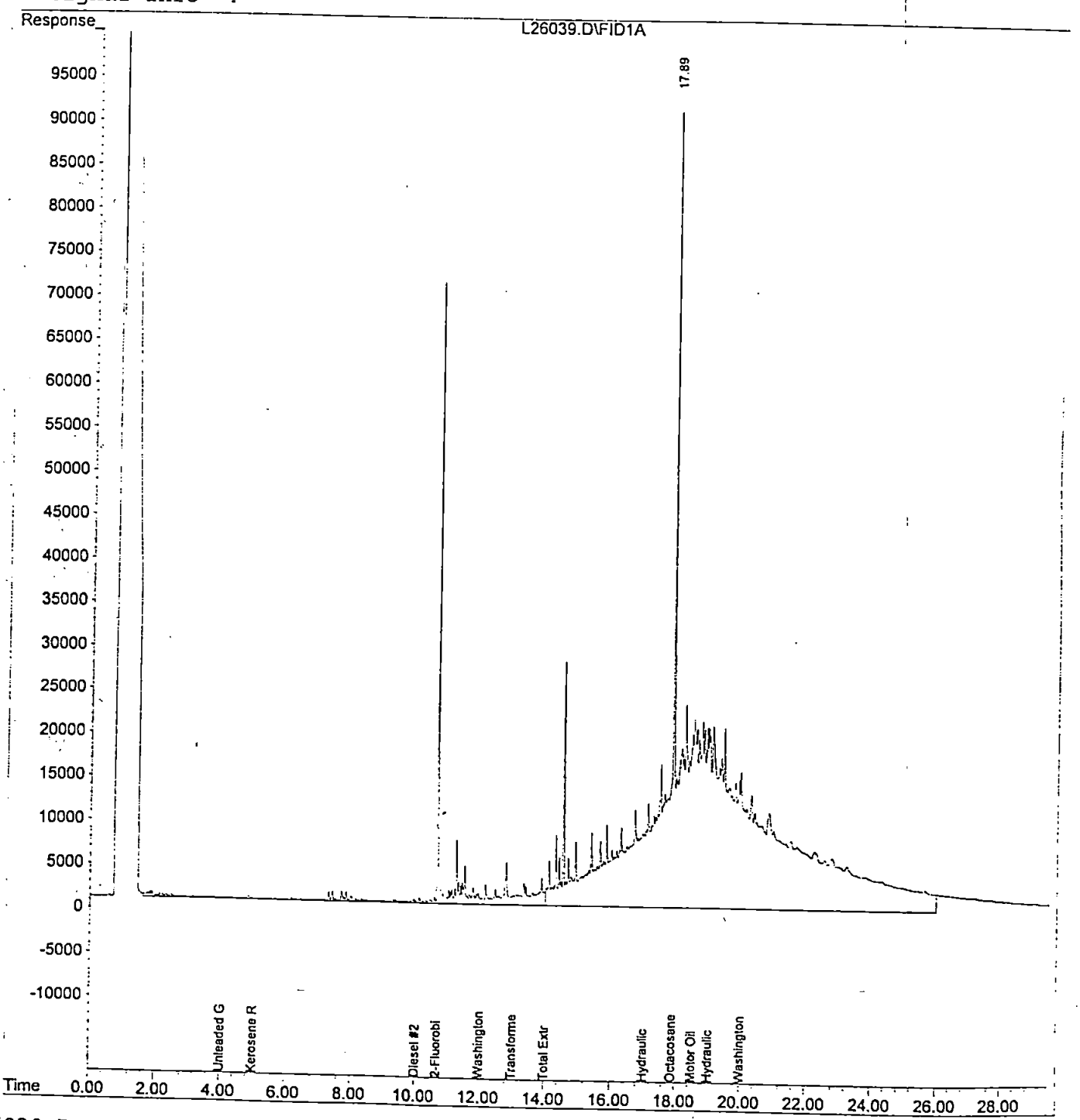


Data File : C:\HPCHEM\2\DATA\L26039.D
Acq On : 27 Dec 1997 12:23 pm
Sample : b712496-30
Misc : S 5x
IntFile : SURR.E
Quant Time: Dec 27 15:03 1997 Quant Results File: NWTPHD.RES

Vial: 27
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

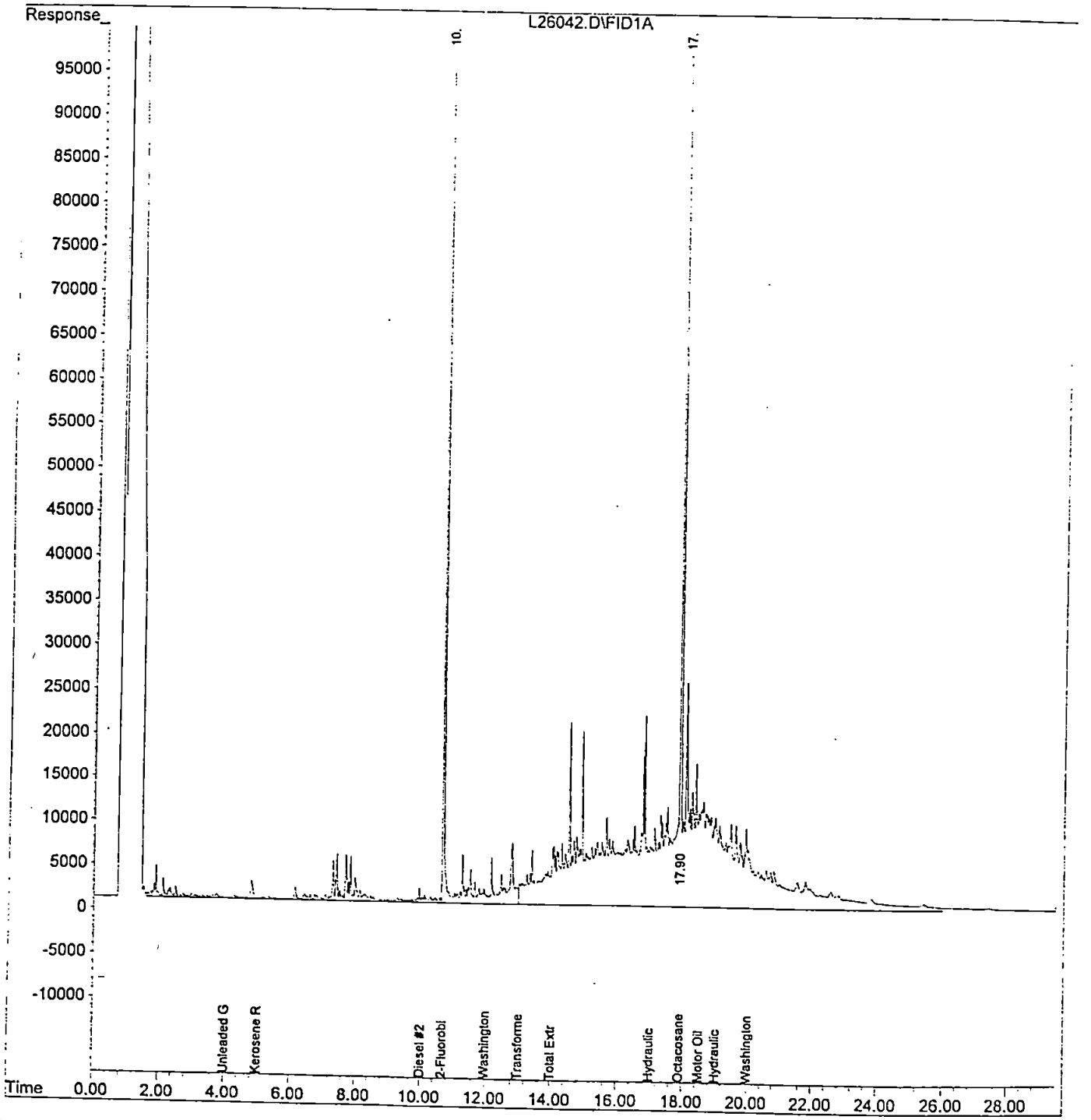


Data File : C:\HPCHEM\2\DATA\L26042.D
Acq On : 27 Dec 1997 2:13 pm
Sample : b712496-34
Misc : S
IntFile : SURR.E
Quant Time: Dec 27 15:06 1997 Quant Results File: NWTPHD.RES

Vial: 28
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Sat Dec 27 15:05:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

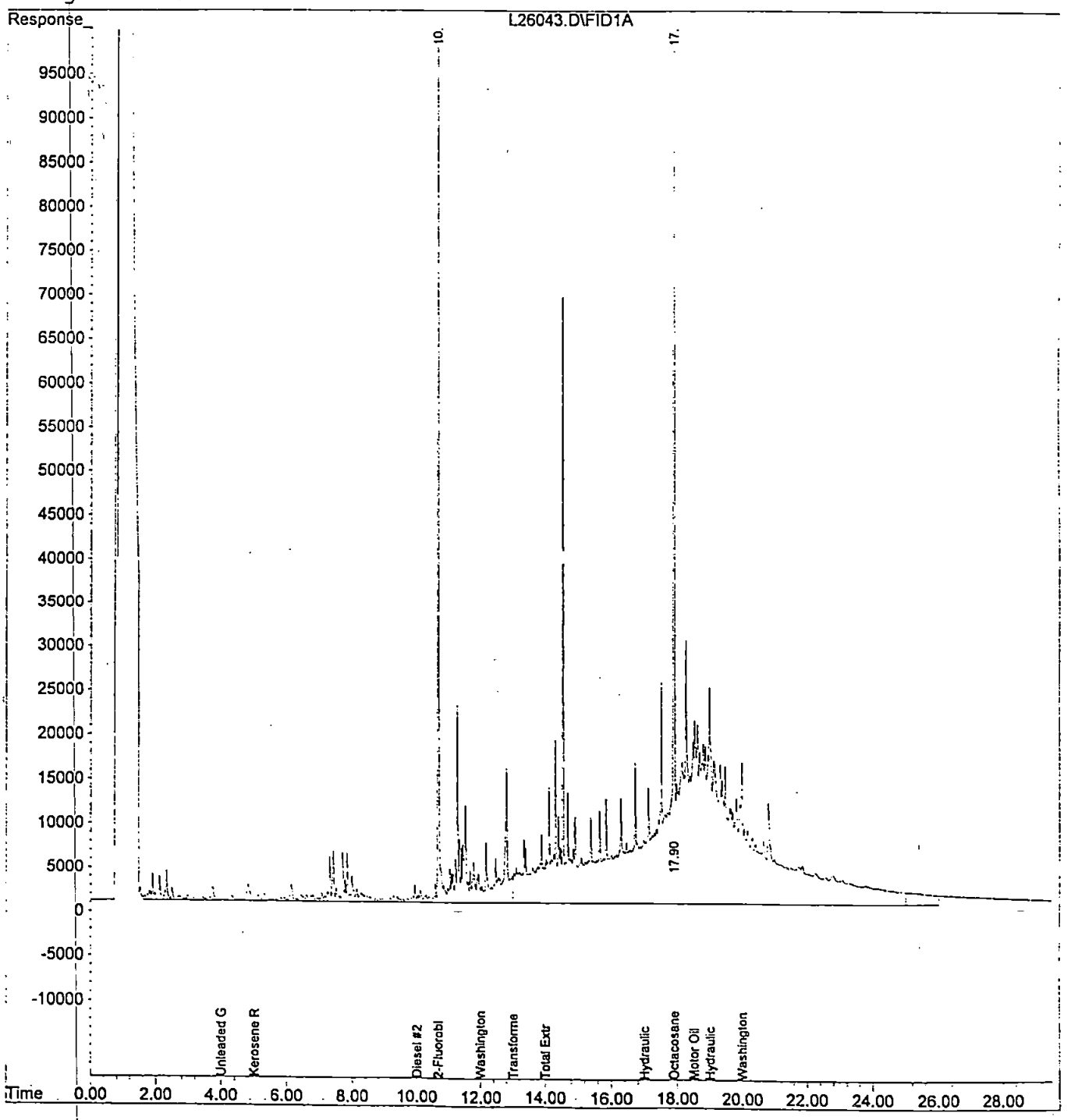


Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26043.D Vial: 29
Acq On : 27 Dec 1997 2:50 pm Operator: bc
Sample : b712496-37 Inst : GC #3
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Dec 28 0:59 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Sat Dec 27 15:05:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B712496

REPORT TO:

ATTENTION: Gary Stevens
ADDRESS: 8410 154th Ave NE
Redmond WA, 98052
PHONE: (425) 861-6000 FAX: 425-861-6050
PROJECT NAME: Grady Way
PROJECT NUMBER: 186-407-85
SAMPLED BY: TNO / GRS

INVOICE TO:

ATTENTION: PSE
ADDRESS:
P.O. NUMBER:
NCA QUOTE #:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: 5 Standard | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: CLP TAL and Pesticides plus II by EPA 8270 modified	RCB by EPA 8081	NWTPH Dx/Dx with Silica Gel Cleanup	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1. TP-1-0.5	12/22/97 1405	B712496-01	X	X	X	S	1	
2. TP-1-2.0	12/22/97 912	02				S	1	Hold
3. TP-1-4.0	12/22/97 912	03				S	1	Hold
4. TP-1-6.0	12/22/97 914	04				S	1	Hold
5. TP-1-8.0	12/22/97 914	05				S	1	Hold
6. TP-2-0.5	12/22/97 1045	06	X	X	X	S	1	
7. TP-3-0.5	12/22/97 1336	07	X	X	X	S	1	
8. TP-4-0.5	12/22/97 1241	08	X	X	X	S	1	
9. TP-5-0.5	12/22/97 1130	09	X	X	X	S	1	
10. TP-2-2.0	12/22/97 1046	10				S	1	Hold

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): Lisa Hurley DATE: 12-23-97
PRINT NAME: Lisa Hurley FIRM: NCA TIME: 1300

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: Dont a/silica gel clean up
Soil containing organic material (Coal, wood)

CLIC Rev 8, 1/96

PAGE 1 OF 5

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B712496

REPORT TO:	INVOICE TO:
ATTENTION: Gary Stevens	ATTENTION: PSE
ADDRESS: 8410 154th Ave NE, Redmond WA, 98052	ADDRESS:
PHONE: (425) 861-6000 FAX: 425-861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: Grady Way	
PROJECT NUMBER: 186-407-85	
SAMPLED BY: TNO / GRS	

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: [X] Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: [X] Standard | 5 | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

Analysis Request: CPAH and Perchlorate by EPA 8270 Modified | PCB by EPA 8081 | NWTPH Dx (Diesel & Oil)

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1. TP-2-4.0	12/22/97 1046	B712496-11	S	1	Hold
2. TP-3-2.0	12/22/97 1337	12	S	1	Hold
3. TP-3-4.0	12/22/97 1338	13	S	1	Hold
4. TP-3-6.0	12/22/97 1340	14	S	1	Hold
5. TP-3-8.0	12/22/97 1345	15	S	1	Hold
6. TP-4-2.0	12/22/97 1243	16	S	1	Hold
7. TP-4-4.0	12/22/97 1244	17	S	1	Hold
8. TP-4-6.0	12/22/97 1249	18	S	1	Hold
9. TP-5-2.0	12/22/97 1136	19	S	1	Hold
10. TP-5-4.0	12/22/97 1140	20	S	1	Hold

RELINQUISHED BY (Signature):	RECEIVED BY (Signature): Lisa Hurley
PRINT NAME: Tony Orme	PRINT NAME: Lisa Hurley
FIRM: GEI	FIRM: NCA
DATE: 12/23/97	DATE: 122397
TIME: 1000	TIME: 1300
RELINQUISHED BY (Signature):	RECEIVED BY (Signature):
PRINT NAME:	PRINT NAME:
FIRM:	FIRM:
DATE:	DATE:
TIME:	TIME:

ADDITIONAL REMARKS:

CoC Rev 8, 1/96

NORTH CREEK ANALYTICAL
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CHAIN OF CUSTODY REPORT

Work Order # B712496

REPORT TO:	INVOICE TO:
ATTENTION: Gary Stevens	ATTENTION: PSE
ADDRESS: 8410 154th Ave NE, Redmond WA, 98052	ADDRESS:
PHONE: (425) 861-6000 FAX: 425-861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: Grady Way	
PROJECT NUMBER: 186-407-85	
SAMPLED BY: TNO/GRS	

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: [10 Standard] [7] [5] [4] [3] [2] [1] [Same Day]
Fuels & Hydrocarbon Analyses: [5 Standard] [3-4] [2] [1] [Same Day]
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: NWTPH Dx+ Mineral oil SGC; BTEX by EPA 8021; cPAH and pentachlorophenol by EPA 8270 m.s.; Filed	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	TP-5-6.0	12/22/97 1153	B712496-21		S	1	Hold
2.	TP-5-8.0	12/22/97 1200	22		S	1	Hold
3.	~~TP~~ B-29-0.5	12/22/97 1430	23	X X X	S	1	
4.	B-20-0.5	12/22/97 1330	24	X X X	S	1	
5.	B-24-0.5	12/22/97 1400	25	X X X	S	1	
6.	B-26-0.5	12/22/97 1430	26	X X X	S	1	
7.	B-34-0.5	12/22/97 1245	27	X X X	S	1	
8.	B-36-0.5	12/22/97 1500	28	X X X	S	1	
9.	B-38-0.5	12/22/97 1345	29	X X X	S	1	
10.	B-37-0.5	12/22/97 1600	30	X	S	1	

RELINQUISHED BY (Signature):	DATE: 12/23/97	RECEIVED BY (Signature): Lisa Hurley	DATE: 12-23-97
PRINT NAME: Tony Orme	FIRM: GEI TIME: 1000	PRINT NAME: Lisa Hurley	FIRM: NCA TIME: 1300
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:

ADDITIONAL REMARKS: Dext w/ silica gel clean-up
Soil contains organic material (Coal, Wood)

CoC Rev 8, 1/96

NORTH CREEK ANALYTICAL
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CHAIN OF CUSTODY REPORT

Work Order # B712496

REPORT TO:
ATTENTION: Gary Stevens
ADDRESS: 8410 154th Ave NE
Redmond WA, 98052
PHONE: (425) 861-6000 FAX: 425-861-6050
PROJECT NAME: Grady Way
PROJECT NUMBER: 186-407-85
SAMPLED BY: TNO / GRS

INVOICE TO:
ATTENTION: PSE
ADDRESS:
P.O. NUMBER:
NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: (Standard) 10 | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: (Standard) 5 | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	NWTPH Dx/Dx Extended to C28	PCB by EPA 8082 (Aroclors)	CPAH's by EPA 8270 SIM modified	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	C-6	12/22/97 1400	B712496-31		X		O	1	Concrete
2.	C-10	12/22/97 805	32		X		O	1	Concrete
3.	B-20-1.5	12/22/97 1330	33				S	1	Hold
4.	B-23-0.5	12/22/97 1315	34	X	X	X	S	1	
5.	B-24-1.5	12/22/97 1400	35				S	1	Hold
6.	B-24-3.0	12/22/97 1400	36				S	1	Hold
7.	B-25-0.5	12/22/97 1400	37	X	X	X			
8.	B-26-1.5	12/22/97 1430	38				S	1	Hold
9.	B-36-4.0	12/22/97 1500	39				S	1	Hold
10.	B-37-2.0	12/22/97 1600	40				S	1	Hold

RELINQUISHED BY (Signature): [signature] DATE: 12/23/97
PRINT NAME: Tony Orme FIRM: GEI TIME: 0800
RECEIVED BY (Signature): Lisa Hurley DATE: 12-23-97
PRINT NAME: Lisa Hurley FIRM: NCA TIME: 1300

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:
RECEIVED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: Dex w/ silica gel clean up
Soil Containg organic material (Coal Ash)

CUC Rev 8, 1/96

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B712496

REPORT TO:

ATTENTION: Gary Stevens
ADDRESS: 8410 154th Ave NE
Redmond WA, 98052
PHONE: (425) 861-6000 FAX: 425-861-6050
PROJECT NAME: Grady Way
PROJECT NUMBER: 186-407-85
SAMPLED BY: TNO / GRS

INVOICE TO:

ATTENTION: PSE
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: [X] Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: [X] Standard | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1. B-35-10	12/22/97 1210	B712496-41		S	1	Hold
2. B-35-4.0	12/22/97 1210	42		S	1	Hold
3. B-35-6.0	12/22/97 1210	43		S	1	Hold
4. B-35-8.0	12/22/97 1210	44		S	1	Hold
5. B-34-2.0	12/22/97 1245	45				
6. B-34-4.0	12/22/97 1245	46				
7.						
8.						
9.						
10.						

RELINQUISHED BY (Signature): [signature] DATE: 12/23/97
PRINT NAME: Tony Olmos FIRM: GEI TIME: 1800

RECEIVED BY (Signature): Lisa Hurley DATE: 12-23-97
PRINT NAME: Lisa Hurley FIRM: NCA TIME: 1300

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

CUC Rev 8, 1/95

LAB DATA EVALUATION FORM

GEI Job # 186-407-85

Lab Job #/Sample IDs: B801169-01

GEI Sample IDs TP-1-6.0
to TP-5-40

Sample Coll Date 12/22/97
Report Recv'd Date 1/22/98

Analysis	Holding Time Exceptions ?	Surrogate Exceptions ?	Blank Hits ?	MS/MSD % Rec Exceptions	Duplicate or MSD RPD Exceptions	Blank Spike or LCS Exceptions (Use if MS/MSD out)
Ecology WTPH-G	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8020 (BETX)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
Ecology WTPH-D Extended	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)
413.1 (FOG)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8010	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8270	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
VPH/BETX/MTBE/Naphthalene	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH-SIM	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
E-TPH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
PCB 8081	No	No	No	Yes	No	No
Affected Sample Numbers						

Data Acceptable for Intended Use? Yes

Date Comp. 3/16/98
Reviewer Initials TWD

Comments:

See notes on Page 9

Exceptions (As shown in report):

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/22/98 14:16

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
TP-1-6.0	B801169-01	Soil	12/22/97
TP-2-4.0	B801169-02	Soil	12/22/97
TP-3-4.0	B801169-03	Soil	12/22/97
TP-4-4.0	B801169-04	Soil	12/22/97
TP-5-4.0	B801169-05	Soil	12/22/97

GeoEngineers

JAN 23 1998

Routing ☐ ☐ ☐
File

North Creek Analytical, Inc.

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.

Joy B Chang, Project Manager

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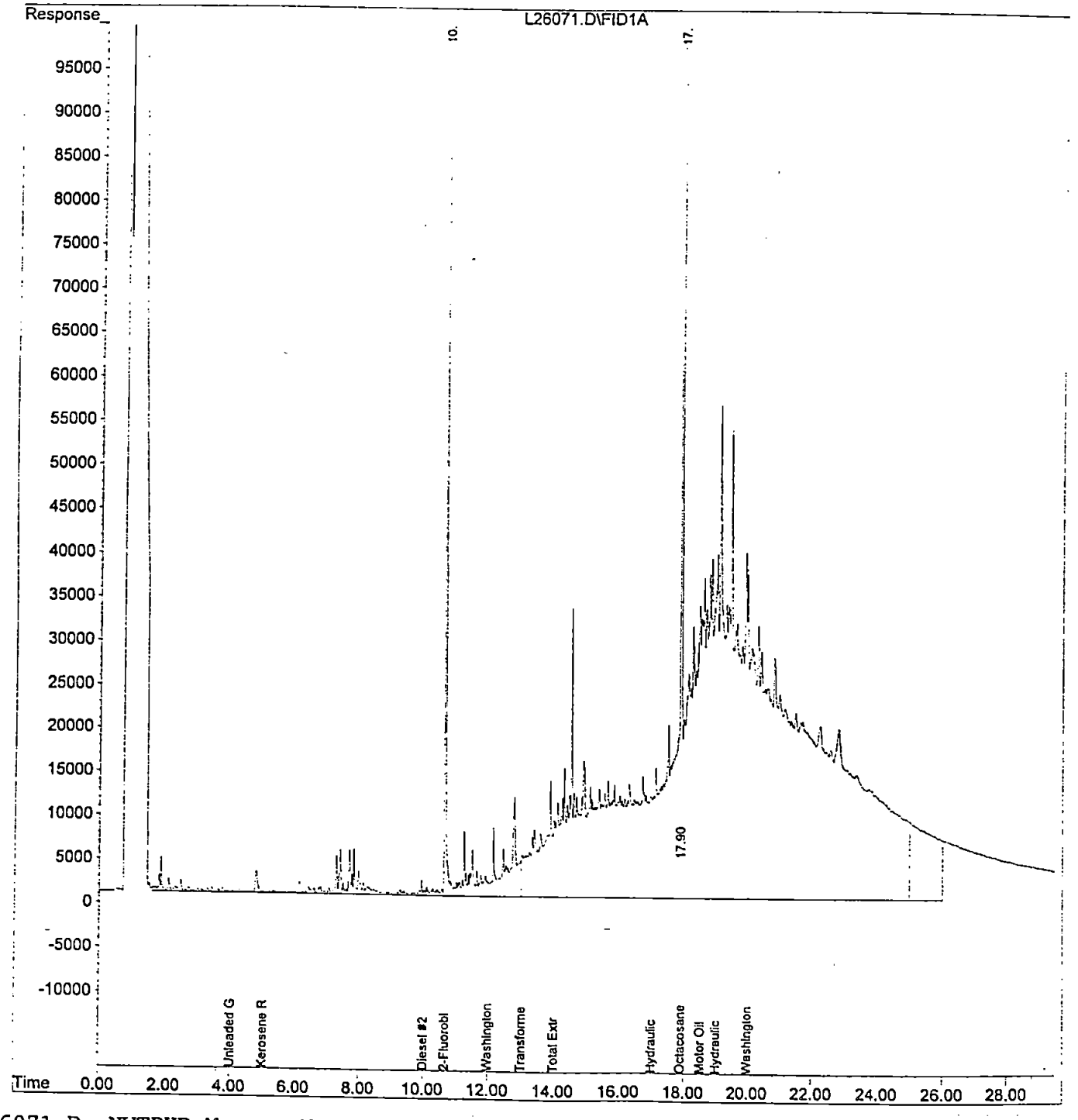
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26071.D
Acq On : 28 Dec 1997 7:57 am
Sample : b712496-27 r1
Misc : S
IntFile : SURR.E
Quant Time: Dec 29 8:18 1997 Quant Results File: NWTPHD.RES

Vial: 47
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



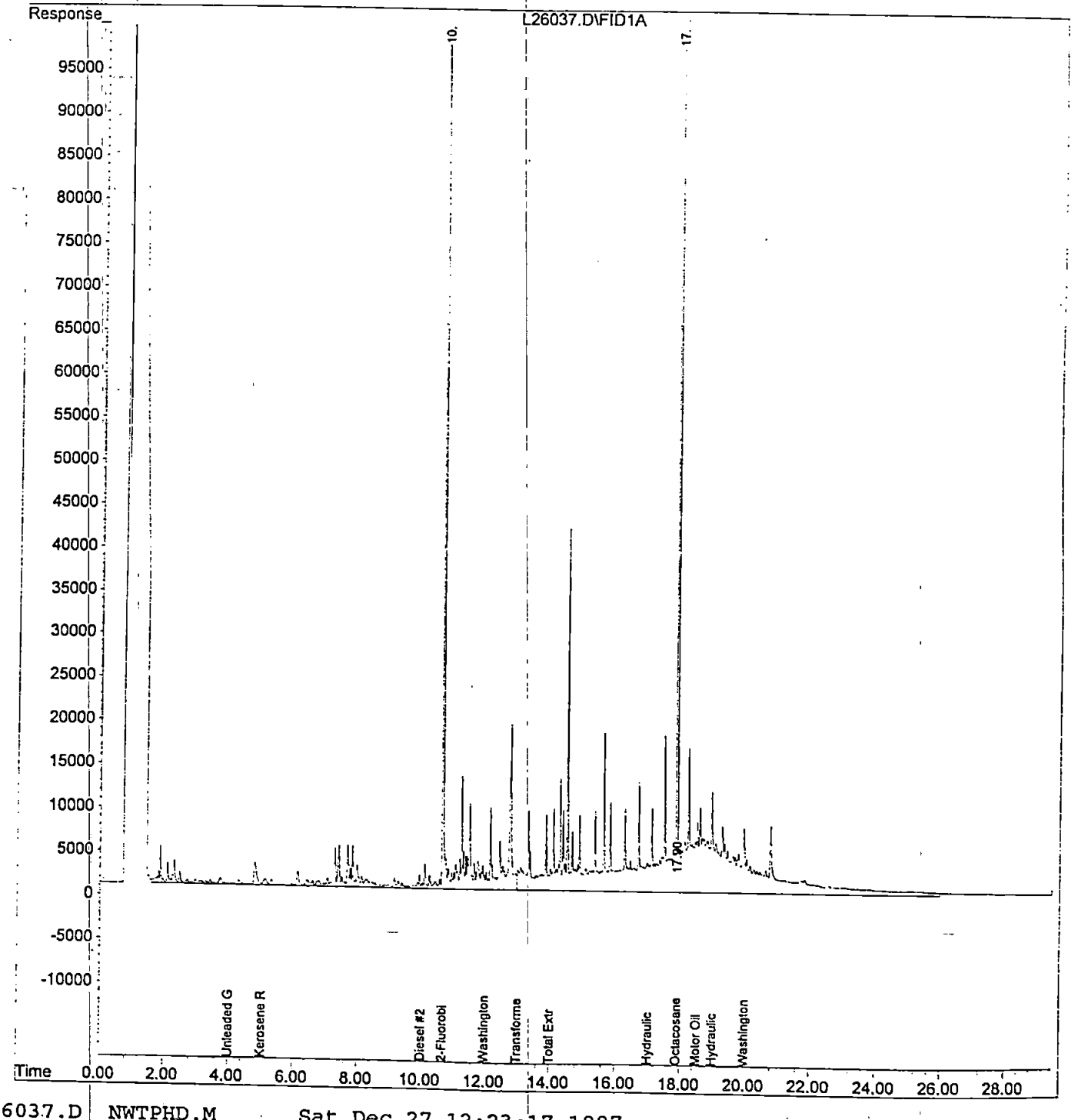
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26037.D
Acq On : 27 Dec 1997 11:09 am
Sample : b712496-28
Misc : S
IntFile : SURR.E
Quant Time: Dec 27 12:23 1997 Quant Results File: NWTPHD.RES

Vial: 25
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



LAB DATA EVALUATION FORM

GEI Job # 186-407-85

Lab Job #/Sample IDs: B712436-01 to B712436-39

GEI Sample IDs B-1-0.5 ~ B-33-0.5

Sample Coll Date 12/18/98

Report Recv'd Date 1/8/98

Analysis	Holding Time Exceptions ?	Surrogate Exceptions ?	Blank Hits ?	MS/MSD % Rec Exceptions	Duplicate or MSD RPD Exceptions	Blank Spike or LCS Exceptions (Use if MS/MSD out)
Ecology WTPH-G	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8020 (BETX)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
Ecology WTPH-D Extended	Yes (No)	Yes No	Yes (No)	Yes (No)	Yes (No)	Yes (No)
413.1 (FOG)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8010	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8270	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
VPH/BETX/MTBE/Naphthalene	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)
EPH/PAH-SIM	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
E-TPH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
PCB Method 8081	No	No	No	No	(Yes)	No
Affected Sample Numbers						

Data Acceptable for Intended Use? Yes

Date Comp. 3/16/98

Reviewer Initials TMD

Comments:

See Notes on Page 27

Exceptions (As shown in report):

GeoEngineers

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

JAN 0 9 1998

Routing MRS

File

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SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 14:24

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
B-1-0.5	B712436-01	Soil	12/18/97
B-1-3.0	B712436-03	Soil	12/18/97
B-2-0.5	B712436-04	Soil	12/18/97
B-3-0.5	B712436-06	Soil	12/18/97
B-4-0.5	B712436-08	Soil	12/18/97
B-4-1.5	B712436-09	Soil	12/18/97
B-5-0.5	B712436-10	Soil	12/18/97
B-6-0.5	B712436-13	Soil	12/18/97
B-10-0.5	B712436-16	Soil	12/18/97
B-11-0.5	B712436-17	Soil	12/18/97
B-11-1.5	B712436-18	Soil	12/18/97
B-13-0.5	B712436-19	Soil	12/18/97
B-32-0.5	B712436-22	Soil	12/18/97
B-32-3.0	B712436-24	Soil	12/18/97
B-33-0.5	B712436-26	Soil	12/18/97
B-30-0.5	B712436-30	Soil	12/18/97
B-31-0.5	B712436-34	Soil	12/18/97
B-31-3.0	B712436-36	Soil	12/18/97
C-1	B712436-38	Other dry	12/18/97
C-2	B712436-39	Other dry	12/18/97

North Creek Analytical, Inc.

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Joy B Chang, Project Manager

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Environmental Laboratory Services

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 14:24

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
C-4	B712436-40	Other dry	12/18/97
C-5	B712436-41	Other dry	12/18/97
C-7	B712436-42	Other dry	12/18/97
C-8	B712436-43	Other dry	12/18/97
C-9	B712436-44	Other dry	12/18/97
C-11	B712436-45	Other dry	12/18/97

NORTH CREEK ANALYTICAL
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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 14:24

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-1-0.5			**B712436-01**				Soil	
Diesel #2	1270588	12/22/97	12/23/97		50.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		50.0	ND	"	
Fuel Oil #2	"	"	"		125	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		125	ND	"	
Transformer Oil	"	"	"		125	ND	"	
Motor Oil	"	"	"		125	ND	"	
Hydraulic Oil	"	"	"		125	**2120**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*64.0*	%	
B-1-3.0			**B712436-03**				Soil	
Diesel #2	0180092	1/6/98	1/6/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	**213**	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**72.6**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*71.5*	%	
B-2-0.5			**B712436-04**				Soil	
Diesel #2	1270588	12/22/97	12/23/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	**830**	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**292**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*92.9*	%	
B-3-0.5			**B712436-06**				Soil	
Diesel #2	1270588	12/22/97	12/23/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-3-0.5 (continued)			B712436-06				Soil	
Hydraulic Oil	1270588	12/22/97	12/23/97		25.0	509	mg/kg dry	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*81.8*	%	
B-4-0.5			B712436-08				Soil	
Diesel #2	1270588	12/22/97	12/23/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	169	"	
Diesel Range Hydrocarbons	"	"	"		10.0	90.9	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*42.0*	%	*1*
B-4-1.5			B712436-09				Soil	
Diesel #2	1270828	12/31/97	1/2/98		50.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		50.0	ND	"	
Fuel Oil #2	"	"	"		125	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		125	ND	"	
Transformer Oil	"	"	"		125	ND	"	
Motor Oil	"	"	"		125	ND	"	
Hydraulic Oil	"	"	"		125	777	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*66.8*	%	
B-5-0.5			B712436-10				Soil	
Diesel #2	1270588	12/22/97	12/23/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	231	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*81.4*	%	
B-6-0.5			B712436-13				Soil	
Diesel #2	1270588	12/22/97	12/23/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	

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8410 154th Ave NE	Project Number: 186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 14:24

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-6-0.5 (continued)			**B712436-13**				Soil	
Fuel Oil #6 (Bunker C)	1270588	12/22/97	12/23/97		25.0	ND	mg/kg dry	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	**204**	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**171**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*82.5*	%	
B-10-0.5			**B712436-16**				Soil	
Diesel #2	1270588	12/22/97	12/23/97		50.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		50.0	ND	"	
Fuel Oil #2	"	"	"		125	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		125	ND	"	
Transformer Oil	"	"	"		125	ND	"	
Motor Oil	"	"	"		125	ND	"	
Hydraulic Oil	"	"	"		125	**1450**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*69.6*	%	
B-11-0.5			**B712436-17**				Soil	
Diesel #2	1270588	12/22/97	12/23/97		50.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		50.0	ND	"	
Fuel Oil #2	"	"	"		125	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		125	ND	"	
Transformer Oil	"	"	"		125	**842**	"	
Motor Oil	"	"	"		125	ND	"	
Hydraulic Oil	"	"	"		125	**1280**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*66.4*	%	
B-11-1.5			**B712436-18**				Soil	
Diesel #2	0180092	1/6/98	1/6/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**131**	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**129**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*74.7*	%	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-13-0.5			B712436-19				Soil	
Diesel #2	1270588	12/22/97	12/23/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*71.7*	%	
B-32-0.5			B712436-22				Soil	
Diesel #2	1270588	12/22/97	12/24/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	**1100**	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*68.6*	%	
B-32-3.0			B712436-24				Soil	
Diesel #2	0180092	1/6/98	1/6/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**34.0**	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**53.0**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*73.9*	%	
B-33-0.5			B712436-26				Soil	
Diesel #2	1270588	12/22/97	12/23/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-33-0.5 (continued)			B712436-26				Soil	
Transformer Oil	1270588	12/22/97	12/23/97		25.0	ND	mg/kg dry	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*85.3*	*%*	
B-30-0.5			B712436-30				Soil	
Diesel #2	1270588	12/22/97	12/24/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	**517**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*82.5*	*%*	
B-31-0.5			B712436-34				Soil	
Diesel #2	1270588	12/22/97	12/24/97		50.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		50.0	ND	"	
Fuel Oil #2	"	"	"		125	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		125	ND	"	
Transformer Oil	"	"	"		125	ND	"	
Motor Oil	"	"	"		125	ND	"	
Hydraulic Oil	"	"	"		125	**1190**	"	
Diesel Range Hydrocarbons	"	"	"		50.0	**267**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*71.6*	*%*	
B-31-3.0			B712436-36				Soil	
Diesel #2	0180092	1/6/98	1/6/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	**338**	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**163**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*87.8*	*%*	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Extractable Petroleum Hydrocarbons by WDOE Interim TPH Policy Method
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-1-3.0			B712436-03				Soil	
C8-C10 Aliphatics	0180086	1/6/98	1/6/98		5.00	ND	mg/kg dry	
C10-C12 Aliphatics	"	"	"		5.00	ND	"	
C12-C16 Aliphatics	"	"	"		5.00	**13.6**	"	
C16-C21 Aliphatics	"	"	"		5.00	**25.7**	"	
C21-C34 Aliphatics	"	"	"		5.00	**89.3**	"	
C10-C12 Aromatics	"	"	"		5.00	ND	"	
C12-C16 Aromatics	"	"	"		5.00	ND	"	
C16-C21 Aromatics	"	"	"		5.00	**10.1**	"	
C21-C34 Aromatics	"	"	"		5.00	**69.2**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*91.7*	*%*	
Surrogate: Octacosane	"	"	"	*50.0-150*		*108*	"	
B-32-3.0			B712436-24				Soil	
C8-C10 Aliphatics	0180086	1/6/98	1/7/98		5.00	ND	mg/kg dry	
C10-C12 Aliphatics	"	"	"		5.00	ND	"	
C12-C16 Aliphatics	"	"	"		5.00	**7.21**	"	
C16-C21 Aliphatics	"	"	"		5.00	**11.1**	"	
C21-C34 Aliphatics	"	"	"		5.00	**22.0**	"	
C10-C12 Aromatics	"	"	"		5.00	ND	"	
C12-C16 Aromatics	"	"	"		5.00	ND	"	
C16-C21 Aromatics	"	"	"		5.00	**6.72**	"	
C21-C34 Aromatics	"	"	"		5.00	**28.0**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*90.3*	*%*	
Surrogate: Octacosane	"	"	"	*50.0-150*		*101*	"	

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8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Polynuclear Aromatic Hydrocarbons by WDOE Interim TPH Policy Method using GC/MS-SIM
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-1-3.0			B712436-03				Soil	
Acenaphthene	0180086	1/6/98	1/8/98		0.0100	ND	mg/kg dry	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	ND	"	
Benzo (a) anthracene	"	"	"		0.0100	**0.0139**	"	
Benzo (a) pyrene	"	"	"		0.0100	**0.0139**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.0191**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.0183**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	ND	"	
Chrysene	"	"	"		0.0100	**0.0226**	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	ND	"	
Fluoranthene	"	"	"		0.0100	**0.0391**	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.0174**	"	
2-Methylnaphthalene	"	"	"		0.0100	**0.0243**	"	
Naphthalene	"	"	"		0.0100	**0.0122**	"	
Phenanthrene	"	"	"		0.0100	**0.0365**	"	
Pyrene	"	"	"		0.0100	**0.0296**	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*68.4*	%	
B-32-3.0			B712436-24				Soil	
Acenaphthene					0.0100	ND	mg/kg dry	
Acenaphthylene					0.0100	ND	"	
Anthracene					0.0100	ND	"	
Benzo (a) anthracene					0.0100	ND	"	
Benzo (a) pyrene					0.0100	ND	"	
Benzo (b) fluoranthene					0.0100	ND	"	
Benzo (ghi) perylene					0.0100	ND	"	
Benzo (k) fluoranthene					0.0100	ND	"	
Chrysene					0.0100	ND	"	
Dibenz (a,h) anthracene					0.0100	ND	"	
Fluoranthene					0.0100	**0.0181**	"	
Fluorene					0.0100	ND	"	
Indeno (1,2,3-cd) pyrene					0.0100	ND	"	
2-Methylnaphthalene					0.0100	**0.0129**	"	
Naphthalene					0.0100	ND	"	
Phenanthrene					0.0100	**0.0155**	"	
Pyrene					0.0100	ND	"	
Surrogate: p-Terphenyl-d14						*67.6*	%	

Benzo (a) anthracen
Benzo (a) pyrene
Benzo (b) Fluoranthen
Chrysene
Indeno (1,2,3-cd) pyrene

use carcinogens

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8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-1-0.5			**B712436-01**				Soil	2,3
Aroclor 1016	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*60.0*	%	
B-2-0.5			**B712436-04**				Soil	2,3
Aroclor 1016	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*46.7*	%	
B-3-0.5			**B712436-06**				Soil	2,3
Aroclor 1016	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*53.5*	%	
B-4-0.5			**B712436-08**				Soil	2,3
Aroclor 1016	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-4-0.5 (continued)			B712436-08				Soil	2,3
Aroclor 1232	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*56.0*	*%*	
B-5-0.5			B712436-10				Soil	2,3
Aroclor 1016	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*59.2*	*%*	
B-6-0.5			B712436-13				Soil	2,3
Aroclor 1016	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*48.5*	*%*	
B-10-0.5			B712436-16				Soil	2,3
Aroclor 1016	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	

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8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-10-0.5 (continued)			B712436-16				Soil	2,3
Aroclor 1248	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	102	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*57.0*	%	
B-11-0.5			B712436-17				Soil	2,3
Aroclor 1016	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*43.4*	%	
B-13-0.5			B712436-19				Soil	2,3
Aroclor 1016	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*43.0*	%	
B-32-0.5			B712436-22				Soil	2,3
Aroclor 1016	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 14:24

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-32-0.5 (continued)			B712436-22				Soil	2,3
Aroclor 1260	1270714	12/26/97	12/30/97		50.0	276	ug/kg dry	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*53.3*	*%*	
B-33-0.5			B712436-26				Soil	2,3
Aroclor 1016	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*59.0*	*%*	
B-30-0.5			B712436-30				Soil	2,3
Aroclor 1016	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*54.4*	*%*	
B-31-0.5			B712436-34				Soil	2,3
Aroclor 1016	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	52.9	"	
Aroclor 1262	"	"	"		50.0	ND	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-31-0.5 (continued)			B712436-34				Soil	2,3
Aroclor 1268	1270714	12/26/97	12/30/97		50.0	ND	ug/kg dry	
Surrogate: TCX	"	"	"	*38.0-117*		*51.9*	*%*	
C-1			B712436-38				Other dry	2,3,4
Aroclor 1016	1270768	12/30/97	1/5/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*49.6*	*%*	
C-2			B712436-39				Other dry	2,3,4
Aroclor 1016	1270768	12/30/97	1/5/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	1/7/98		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	**102**	"	
Aroclor 1262	"	"	1/5/98		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	*1/7/98*	*38.0-117*		*49.9*	*%*	
C-4			B712436-40				Other dry	2,3,4
Aroclor 1016	1270768	12/30/97	1/5/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	1/7/98		50.0	**155**	"	
Aroclor 1248	"	"	1/5/98		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	1/7/97		50.0	**243**	"	
Aroclor 1262	"	"	1/5/98		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	*1/7/98*	*38.0-117*		*51.0*	*%*	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
C-5			B712436-41				Other dry	2,3,4
Aroclor 1016	1270768	12/30/97	1/5/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	1/7/98		50.0	**62.6**	"	
Aroclor 1248	"	"	1/5/98		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	1/7/98		50.0	**94.4**	"	
Aroclor 1262	"	"	1/5/98		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	*1/7/98*	*38.0-117*		*51.4*	%	
C-7			B712436-42				Other dry	2,3,4
Aroclor 1016	1270768	12/30/97	1/5/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	1/7/98		250	**1050**	"	
Aroclor 1262	"	"	1/5/98		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	*1/7/98*	*38.0-117*		*54.1*	%	
C-8			B712436-43				Other dry	2,3,4
Aroclor 1016	1270768	12/30/97	1/5/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	**75.9**	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*46.8*	%	
C-9			B712436-44				Other dry	2,3,4
Aroclor 1016	1270768	12/30/97	1/5/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	

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Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
C-9 (continued)			B712436-44				Other dry	2,3,4
Aroclor 1232	1270768	12/30/97	1/5/98		50.0	ND	ug/kg dry	
Aroclor 1242	"	"	1/7/98		50.0	**60.5**	"	
Aroclor 1248	"	"	1/5/98		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	1/7/98		50.0	**175**	"	
Aroclor 1262	"	"	1/5/98		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	*1/7/98*	*38.0-117*		*47.6*	*%*	
C-11			B712436-45				Other dry	2,3,4
Aroclor 1016	1270768	12/30/97	1/5/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	1/7/98		50.0	**142**	"	
Aroclor 1260	"	"	"		50.0	**65.1**	"	
Aroclor 1262	"	"	1/5/98		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	*1/7/98*	*38.0-117*		*48.2*	*%*	

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Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Dry Weight Determination
North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
B-1-0.5	B712436-01	Soil	93.6	%
B-1-3.0	B712436-03	Soil	76.7	%
B-2-0.5	B712436-04	Soil	78.8	%
B-3-0.5	B712436-06	Soil	92.3	%
B-4-0.5	B712436-08	Soil	68.1	%
B-4-1.5	B712436-09	Soil	86.9	%
B-5-0.5	B712436-10	Soil	93.9	%
B-6-0.5	B712436-13	Soil	73.4	%
B-10-0.5	B712436-16	Soil	95.9	%
B-11-0.5	B712436-17	Soil	89.2	%
B-11-1.5	B712436-18	Soil	78.8	%
B-13-0.5	B712436-19	Soil	65.8	%
B-32-0.5	B712436-22	Soil	76.6	%
B-32-3.0	B712436-24	Soil	77.5	%
B-33-0.5	B712436-26	Soil	89.1	%
B-30-0.5	B712436-30	Soil	84.9	%
B-31-0.5	B712436-34	Soil	90.4	%
B-31-3.0	B712436-36	Soil	82.7	%
C-1	B712436-38	Other dry	99.2	%

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Dry Weight Determination
North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
C-2	B712436-39	Other dry	96.3	%
C-4	B712436-40	Other dry	98.6	%
C-5	B712436-41	Other dry	98.4	%
C-7	B712436-42	Other dry	98.6	%
C-8	B712436-43	Other dry	99.0	%
C-9	B712436-44	Other dry	99.2	%
C-11	B712436-45	Other dry	99.2	%

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Batch: 0180092	**Date Prepared: 1/6/98**					**Extraction Method: EPA 3550**				
Blank	**0180092-BLK1**									
Diesel #2	1/6/98			ND	mg/kg dry	10.0				
Kerosene Range Hydrocarbons	"			ND	"	10.0				
Fuel Oil #2	"			ND	"	25.0				
Fuel Oil #6 (Bunker C)	"			ND	"	25.0				
Transformer Oil	"			ND	"	25.0				
Motor Oil	"			ND	"	25.0				
Hydraulic Oil	"			ND	"	25.0				
Diesel Range Hydrocarbons	"			ND	"	10.0				
Heavy Oil Range Hydrocarbons	"			ND	"	25.0				
Surrogate: 2-FBP	"	*12.1*		*9.43*	"	*50.0-150*	*77.9*			
LCS	**0180092-BS1**									
Diesel #2	1/6/98	66.7		93.2	mg/kg dry	50.0-150	140			
Surrogate: 2-FBP	"	*12.1*		*9.41*	"	*50.0-150*	*77.8*			
Duplicate	**0180092-DUP1**		**B712508-06**							
Diesel #2	1/6/98		ND	ND	mg/kg dry			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Hydraulic Oil	"		316	288	"			50.0	**9.27**	
Diesel Range Hydrocarbons	"		132	117	"			50.0	**12.0**	
Surrogate: 2-FBP	"	*15.3*		*12.0*	"	*50.0-150*	*78.4*			
Batch: 1270588	**Date Prepared: 12/22/97**					**Extraction Method: EPA 3550**				
Blank	**1270588-BLK1**									
Diesel #2	12/23/97			ND	mg/kg dry	10.0				
Kerosene Range Hydrocarbons	"			ND	"	10.0				
Fuel Oil #2	"			ND	"	25.0				
Fuel Oil #6 (Bunker C)	"			ND	"	25.0				
Transformer Oil	"			ND	"	25.0				
Motor Oil	"			ND	"	25.0				
Hydraulic Oil	"			ND	"	25.0				
Diesel Range Hydrocarbons	"			ND	"	10.0				
Heavy Oil Range Hydrocarbons	"			ND	"	25.0				

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Blank (continued)	**1270588-BLK1**									
Surrogate: 2-FBP	*12/23/97*	*12.1*		*9.13*	*mg/kg dry*	*50.0-150*	*75.5*			
LCS	**1270588-BS1**									
Diesel #2	12/23/97	66.7		69.7	mg/kg dry	50.0-150	104			
Surrogate: 2-FBP	"	*12.1*		*11.3*	"	*50.0-150*	*93.4*			
Duplicate	**1270588-DUP1**	**B712436-01**								
Diesel #2	12/24/97		ND	ND	mg/kg dry			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Hydraulic Oil	"		2120	1720	"			50.0	**20.8**	
Surrogate: 2-FBP	"	*13.0*		*8.20*	"	*50.0-150*	*63.1*			
Duplicate	**1270588-DUP2**	**B712436-16**								
Diesel #2	12/24/97		ND	ND	mg/kg dry			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Hydraulic Oil	"		1450	1590	"			50.0	**9.21**	
Surrogate: 2-FBP	"	*12.7*		*8.44*	"	*50.0-150*	*66.5*			
Batch: 1270828	**Date Prepared: 12/31/97**					**Extraction Method: EPA 3550**				
Blank	**1270828-BLK1**									
Diesel #2	1/2/98			**ND**	mg/kg dry	**10.0**				
Kerosene Range Hydrocarbons	"			**ND**	"	**10.0**				
Fuel Oil #2	"			**ND**	"	**25.0**				
Fuel Oil #6 (Bunker C)	"			**ND**	"	**25.0**				
Transformer Oil	"			**ND**	"	**25.0**				
Motor Oil	"			**ND**	"	**25.0**				
Hydraulic Oil	"			**ND**	"	**25.0**				
Diesel Range Hydrocarbons	"			**ND**	"	**10.0**				
Heavy Oil Range Hydrocarbons	"			**ND**	"	**25.0**				
Surrogate: 2-FBP	"	*12.1*		*9.30*	"	*50.0-150*	*76.9*			

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 14:24

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
LCS	1270828-BS1									
Diesel #2	1/2/98	66.7		60.1	mg/kg dry	50.0-150	90.1			
Surrogate: 2-FBP	"	*12.1*		*11.9*	"	*50.0-150*	*98.3*			
Duplicate	1270828-DUP1		B712436-09							
Diesel #2	1/2/98		ND	ND	mg/kg dry			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Hydraulic Oil	"		777	618	"			50.0	**22.8**	
Surrogate: 2-FBP	"	*14.0*		*10.7*	"	*50.0-150*	*76.4*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Extractable Petroleum Hydrocarbons by WDOE Interim TPH Policy Method/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0180086	**Date Prepared: 1/6/98**					**Extraction Method: EPA 3550**				
Blank	**0180086-BLK1**									
C8-C10 Aliphatics	1/6/98			ND	mg/kg dry	5.00				
C10-C12 Aliphatics	"			ND	"	5.00				
C12-C16 Aliphatics	"			ND	"	5.00				
C16-C21 Aliphatics	"			ND	"	5.00				
C21-C34 Aliphatics	"			ND	"	5.00				
C10-C12 Aromatics	"			ND	"	5.00				
C12-C16 Aromatics	"			ND	"	5.00				
C16-C21 Aromatics	"			ND	"	5.00				
C21-C34 Aromatics	"			ND	"	5.00				
Surrogate: 2-FBP	"	*11.9*		*10.1*	"	*50.0-150*	*84.9*			
Surrogate: Octacosane	"	*11.8*		*12.1*	"	*50.0-150*	*103*			
LCS	**0180086-BS1**									
C8-C10 Aliphatics	1/6/98	1.67		1.12	mg/kg dry	60.0-140	67.1			
C10-C12 Aliphatics	"	1.67		1.29	"	60.0-140	77.2			
C12-C16 Aliphatics	"	1.67		1.68	"	60.0-140	101			
C16-C21 Aliphatics	"	1.67		1.83	"	60.0-140	110			
C21-C34 Aliphatics	"	1.67		1.48	"	60.0-140	88.6			
C10-C12 Aromatics	"	1.67		1.36	"	60.0-140	81.4			
C12-C16 Aromatics	"	5.00		4.11	"	60.0-140	82.2			
C16-C21 Aromatics	"	8.33		7.79	"	60.0-140	93.5			
C21-C34 Aromatics	"	13.3		14.5	"	60.0-140	109			
Surrogate: 2-FBP	"	*11.9*		*10.5*	"	*50.0-150*	*88.2*			
Surrogate: Octacosane	"	*11.8*		*12.6*	"	*50.0-150*	*107*			
LCS Dup	**0180086-BSD1**									
C8-C10 Aliphatics	1/6/98	1.67		1.18	mg/kg dry	60.0-140	70.7	40.0	5.22	
C10-C12 Aliphatics	"	1.67		1.33	"	60.0-140	79.6	40.0	3.06	
C12-C16 Aliphatics	"	1.67		1.71	"	60.0-140	102	40.0	0.985	
C16-C21 Aliphatics	"	1.67		1.75	"	60.0-140	105	40.0	4.65	
C21-C34 Aliphatics	"	1.67		1.48	"	60.0-140	88.6	40.0	0	
C10-C12 Aromatics	"	1.67		1.28	"	60.0-140	76.6	40.0	6.08	
C12-C16 Aromatics	"	5.00		4.08	"	60.0-140	81.6	40.0	0.733	
C16-C21 Aromatics	"	8.33		7.63	"	60.0-140	91.6	40.0	2.05	
C21-C34 Aromatics	"	13.3		14.1	"	60.0-140	106	40.0	2.79	
Surrogate: 2-FBP	"	*11.9*		*10.4*	"	*50.0-150*	*87.4*			
Surrogate: Octacosane	"	*11.8*		*12.4*	"	*50.0-150*	*105*			

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 14:24

Extractable Petroleum Hydrocarbons by WDOE Interim TPH Policy Method/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Matrix Spike	0180086-MS1		B712436-03							
C8-C10 Aliphatics	1/6/98	2.17	ND	1.90	mg/kg dry	60.0-140	87.6			
C10-C12 Aliphatics	"	2.17	ND	2.78	"	60.0-140	128			
C12-C16 Aliphatics	"	2.17	13.6	20.4	"	60.0-140	NR			
C16-C21 Aliphatics	"	2.17	25.7	34.0	"	60.0-140	NR			
C21-C34 Aliphatics	"	2.17	89.3	97.0	"	60.0-140	NR			
C10-C12 Aromatics	"	2.17	ND	2.10	"	60.0-140	96.8			
C12-C16 Aromatics	"	6.52	ND	7.74	"	60.0-140	119			
C16-C21 Aromatics	"	10.9	10.1	23.1	"	60.0-140	119			
C21-C34 Aromatics	"	17.4	69.2	97.3	"	60.0-140	161			5
Surrogate: 2-FBP	"	*15.6*		*15.1*	"	*50.0-150*	*96.8*			
Surrogate: Octacosane	"	*15.4*		*16.4*	"	*50.0-150*	*106*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Polynuclear Aromatic Hydrocarbons by WDOE Interim TPH Policy Method using GC/MS-SIM/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0180086	**Date Prepared: 1/6/98**					**Extraction Method: EPA 3550**				
Blank	**0180086-BLK1**									
Acenaphthene	1/7/98			ND	mg/kg dry	0.0100				
Acenaphthylene	"			ND	"	0.0100				
Anthracene	"			ND	"	0.0100				
Benzo (a) anthracene	"			ND	"	0.0100				
Benzo (a) pyrene	"			ND	"	0.0100				
Benzo (b) fluoranthene	"			ND	"	0.0100				
Benzo (ghi) perylene	"			ND	"	0.0100				
Benzo (k) fluoranthene	"			ND	"	0.0100				
Chrysene	"			ND	"	0.0100				
Dibenz (a,h) anthracene	"			ND	"	0.0100				
Fluoranthene	"			ND	"	0.0100				
Fluorene	"			ND	"	0.0100				
Indeno (1,2,3-cd) pyrene	"			ND	"	0.0100				
2-Methylnaphthalene	"			ND	"	0.0100				
Naphthalene	"			ND	"	0.0100				
Phenanthrene	"			ND	"	0.0100				
Pyrene	"			ND	"	0.0100				
Surrogate: p-Terphenyl-d14	"	*1.34*		*0.881*	"	*30.0-150*	*65.7*			
LCS	**0180086-BS1**									
Chrysene	1/7/98	1.67		1.21	mg/kg dry	10.0-125	72.5			
Fluorene	"	1.63		0.954	"	11.0-116	58.5			
Indeno (1,2,3-cd) pyrene	"	1.67		1.38	"	10.0-147	82.6			
Surrogate: p-Terphenyl-d14	"	*1.34*		*0.903*	"	*30.0-150*	*67.4*			
LCS Dup	**0180086-BSD1**									
Chrysene	1/7/98	1.67		1.17	mg/kg dry	10.0-125	70.1	28.0	3.37	
Fluorene	"	1.63		0.941	"	11.0-116	57.7	32.0	1.38	
Indeno (1,2,3-cd) pyrene	"	1.67		1.34	"	10.0-147	80.2	34.0	2.95	
Surrogate: p-Terphenyl-d14	"	*1.34*		*0.881*	"	*30.0-150*	*65.7*			
Matrix Spike	**0180086-MS1**		**B712436-03**							
Chrysene	1/8/98	2.17	0.0226	1.59	mg/kg dry	10.0-125	72.2			
Fluorene	"	2.13	ND	1.27	"	10.0-154	59.6			
Indeno (1,2,3-cd) pyrene	"	2.18	0.0174	1.74	"	10.0-144	79.0			
Surrogate: p-Terphenyl-d14	"	*1.74*		*1.22*	"	*30.0-150*	*70.1*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Polychlorinated Biphenyls by EPA Method 8081/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270714	**Date Prepared: 12/26/97**					**Extraction Method: EPA 3550**				
Blank	**1270714-BLK1**									2
Aroclor 1016	12/29/97			ND	ug/kg dry	50.0				
Aroclor 1221	"			ND	"	50.0				
Aroclor 1232	"			ND	"	50.0				
Aroclor 1242	"			ND	"	50.0				
Aroclor 1248	"			ND	"	50.0				
Aroclor 1254	"			ND	"	50.0				
Aroclor 1260	"			ND	"	50.0				
Aroclor 1262	"			ND	"	50.0				
Aroclor 1268	"			ND	"	50.0				
Surrogate: TCX	"	*6.67*		*4.33*	"	*38.0-117*	*64.9*			
LCS	**1270714-BS1**									2,3
Aroclor 1260	12/29/97	333		278	ug/kg dry	44.0-123	83.5			
Surrogate: TCX	"	*6.67*		*4.42*	"	*38.0-117*	*66.3*			
Matrix Spike	**1270714-MS1**		**B712353-02**							2,3
Aroclor 1260	12/30/97	390	ND	316	ug/kg dry	28.0-132	**81.0**			
Surrogate: TCX	"	*7.80*		*5.20*	"	*38.0-117*	*66.7*			
Matrix Spike Dup	**1270714-MSD1**		**B712353-02**							2,3
Aroclor 1260	12/30/97	390	ND	296	ug/kg dry	28.0-132	**75.9**	23.0	6.50	
Surrogate: TCX	"	*7.80*		*5.19*	"	*38.0-117*	*66.5*			
Batch: 1270768	**Date Prepared: 12/30/97**					**Extraction Method: EPA 3550**				
Blank	**1270768-BLK1**									2,3,4
Aroclor 1016	1/5/98			ND	ug/kg dry	50.0				
Aroclor 1221	"			ND	"	50.0				
Aroclor 1232	"			ND	"	50.0				
Aroclor 1242	"			ND	"	50.0				
Aroclor 1248	"			ND	"	50.0				
Aroclor 1254	"			ND	"	50.0				
Aroclor 1260	"			ND	"	50.0				
Aroclor 1262	"			ND	"	50.0				
Aroclor 1268	"			ND	"	50.0				
Surrogate: TCX	"	*66.7*		*28.8*	"	*38.0-117*	*43.2*			

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Joy B Chang, Project Manager

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 14:24

Polychlorinated Biphenyls by EPA Method 8081/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
LCS	1270768-BS1									2,3,4
Aroclor 1260	1/5/98	333		277	ug/kg dry	44.0-123	83.2			
Surrogate: TCX	"	*66.7*		*29.4*	"	*38.0-117*	*44.1*			
Matrix Spike	1270768-MS1		B712440-04							2,3,4
Aroclor 1260	1/5/98	333	ND	311	ug/kg dry	28.0-132	93.4			
Surrogate: TCX	"	*73.7*		*32.1*	"	*38.0-117*	*43.6*			
Matrix Spike Dup	1270768-MSD1		B712440-04							2,3,4
Aroclor 1260	1/5/98	333	ND	322	ug/kg dry	28.0-132	96.7	23.0	3.47	
Surrogate: TCX	"	*73.7*		*34.7*	"	*38.0-117*	*47.1*			

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Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 14:24

Notes and Definitions

#	Note
1	The surrogate recovery for this sample is out of control limits. There was no sample left for re-extraction.
2	To reduce matrix interference, the sample extract has undergone sulfuric acid clean-up, method 3665, which is specific to hydrocarbon contamination.
3	To reduce matrix interference, the sample extract has undergone copper clean-up, method 3660, which is specific to sulfur contamination.
4	To reduce matrix interference, the sample extract has undergone florisil clean-up, method 3620, which is specific to non-polar compound contamination.
5	The spike recovery for this QC sample is outside of NCA established control limits due to sample matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

Joy B Chang, Project Manager

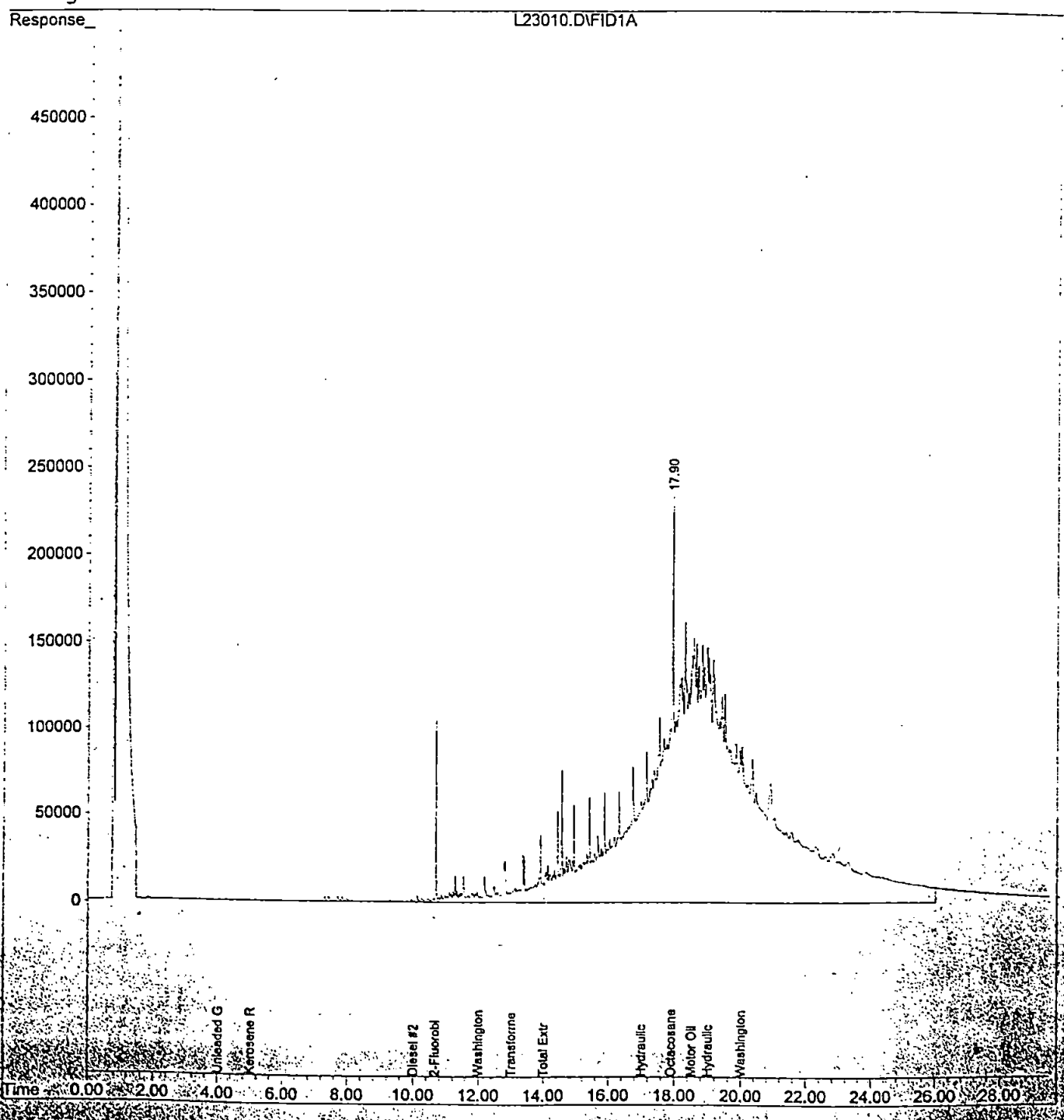
18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

Quantitation Report

Data File : C:\HPCHEM\2\DATA\L23010.D Vial: 8
Acq On : 23 Dec 1997 2:04 pm Operator: bc
Sample : b712436-01 Inst : GC #3
Misc : S 5x Multiplr: 1.00
IntFile : SURR.E
Quant Time: Dec 23 15:22 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



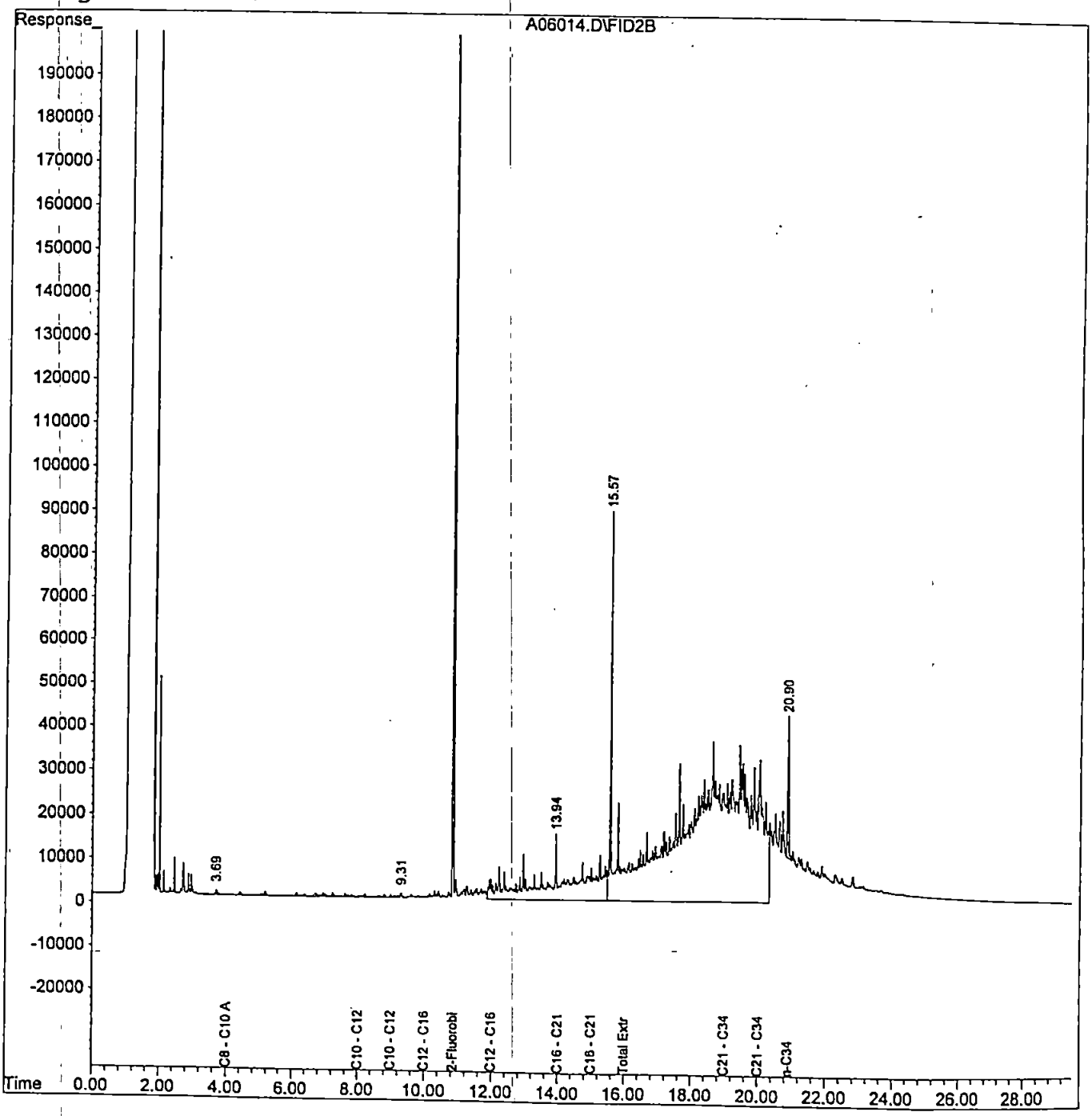
Data File : C:\HPCHEM\3\DATA\A06014.D
Acq On : 6 Jan 1998 11:22 pm
Sample : b712436-03 ar
Misc : s
IntFile : SURR.E
Quant Time: Jan 7 9:02 1998

Vial: 13
Operator:
Inst : GC #5
Multiplr: 1.00

Quant Results File: EPH2.RES

Quant Method : C:\HPCHEM\3\METHODS\EPH2.M (Chemstation Integrator)
Title : EPH Rear Method
Last Update : Wed Jan 07 08:58:42 1998
Response via : Multiple Level Calibration
DataAcq Meth : EPH2.M

Volume Inj. :
Signal Phase :
Signal Info :

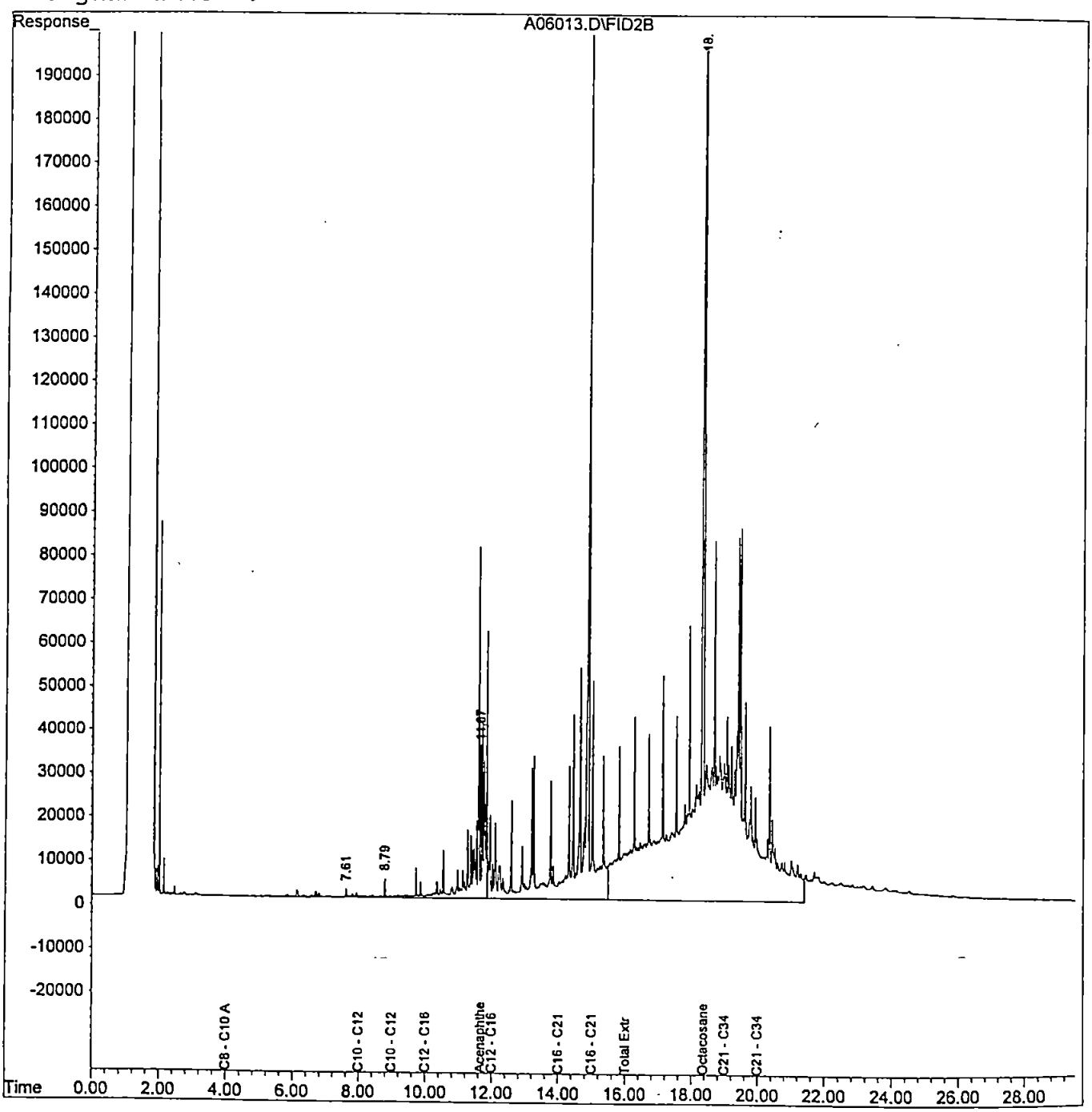


Data File : C:\HPCHEM\3\DATA\A06013.D
Acq On : 6 Jan 1998 10:45 pm
Sample : b712436-03 al
Misc : s
IntFile : SURR.E
Quant Time: Jan 7 8:52 1998 Quant Results File: EPH2.RES

Vial: 12
Operator:
Inst : GC #5
Multiplr: 1.00

Quant Method : C:\HPCHEM\3\METHODS\EPH2.M (Chemstation Integrator)
Title : EPH Rear Method
Last Update : Wed Jan 07 08:46:36 1998
Response via : Multiple Level Calibration
DataAcq Meth : EPH2.M

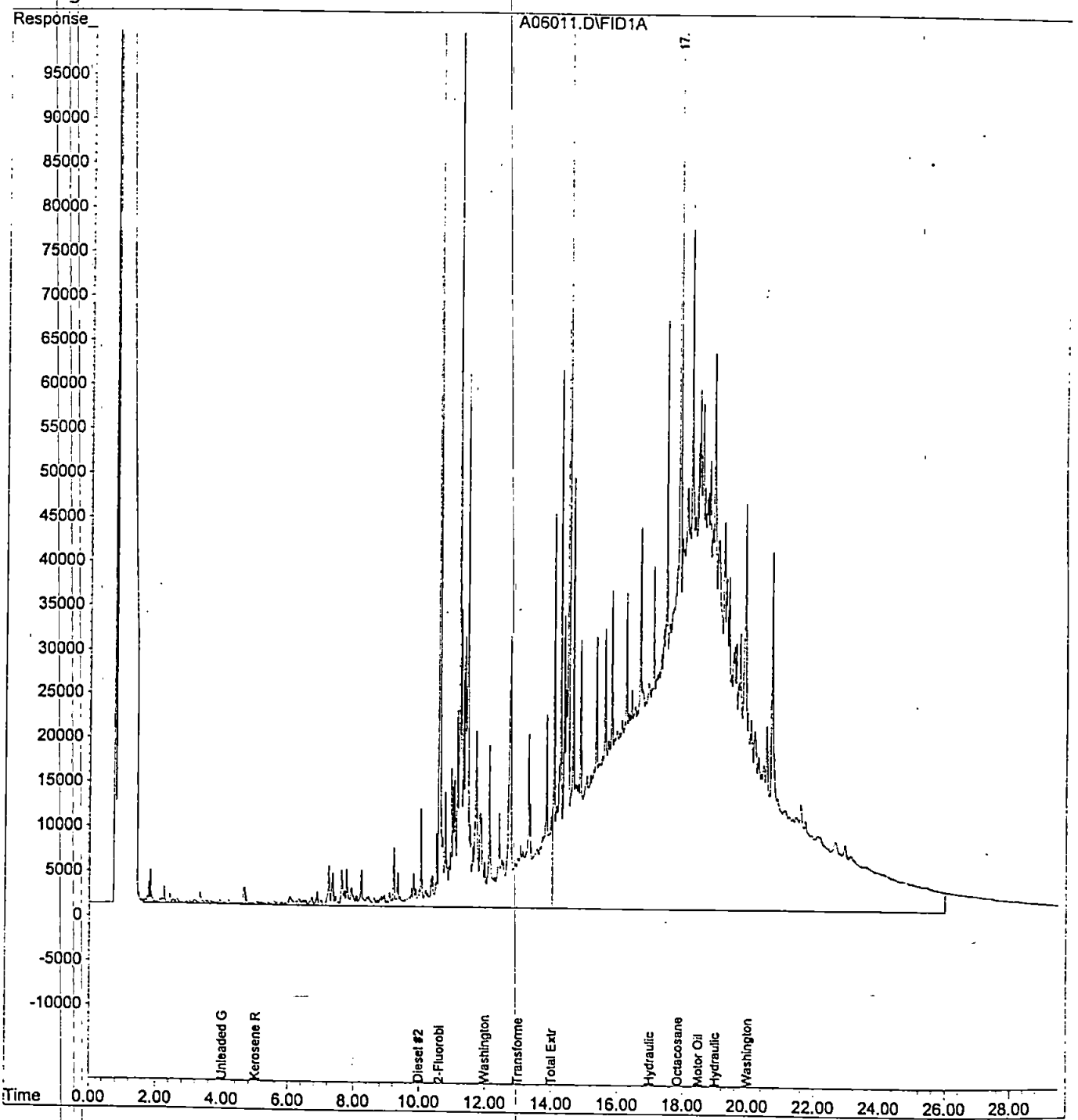
Volume Inj. :
Signal Phase :
Signal Info :



Data File : C:\HPCHEM\2\DATA\010698\A06011.D
Acq On : 6 Jan 1998 8:58 pm
Sample : b712436-03
Misc :
IntFile : SURR.E
Vial: 10
Operator: bc
Inst : GC #3
Multiplr: 1.00
Quant Time: Jan 7 9:13 1998 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Jan 06 10:12:36 1998
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

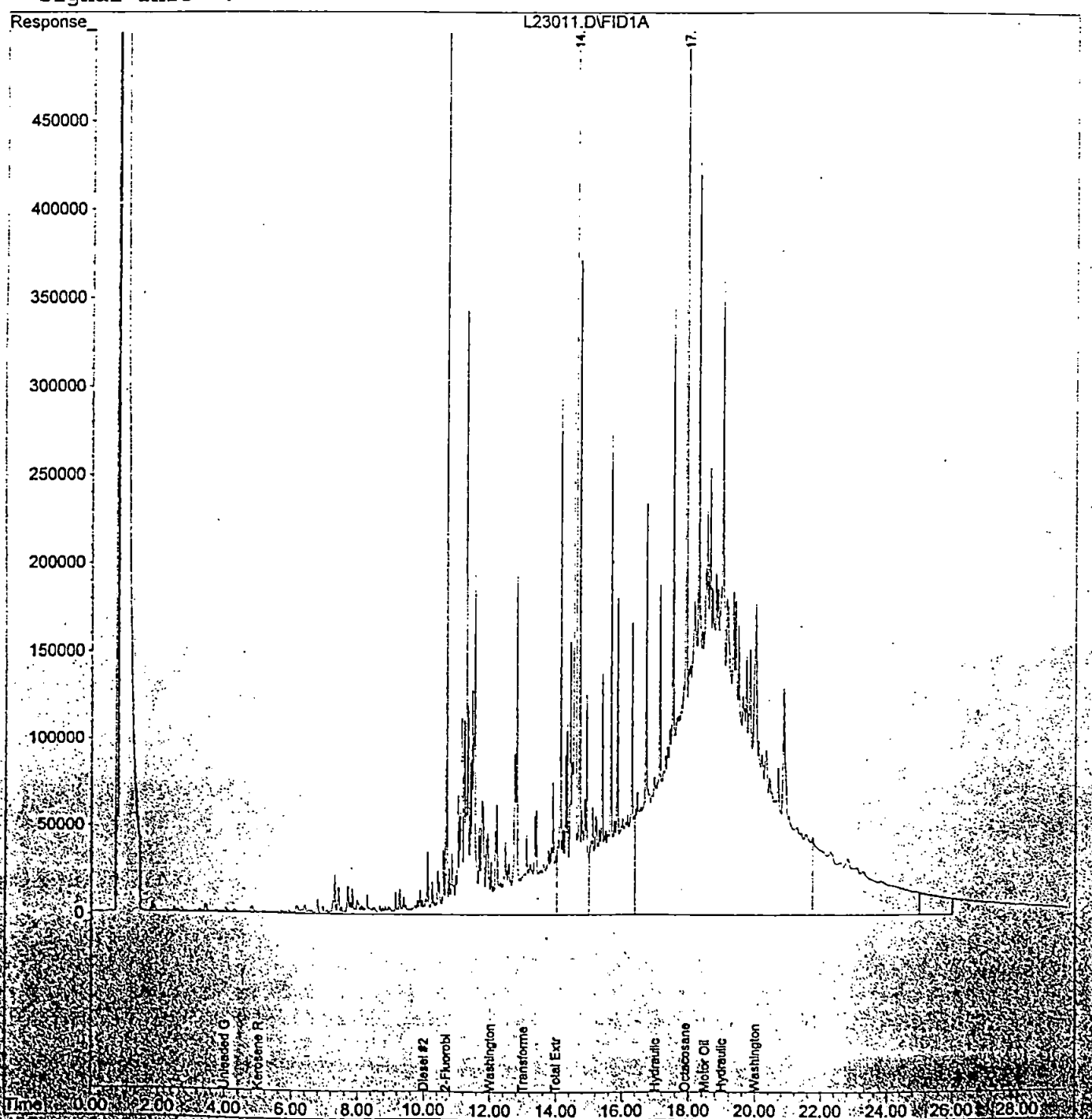


Quantitation Report

Data File : C:\HPCHEM\2\DATA\L23011.D Vial: 9
Acq On : 23 Dec 1997 2:42 pm Operator: bc
Sample : b712436-04 Inst : GC #3
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Dec 23 15:23 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

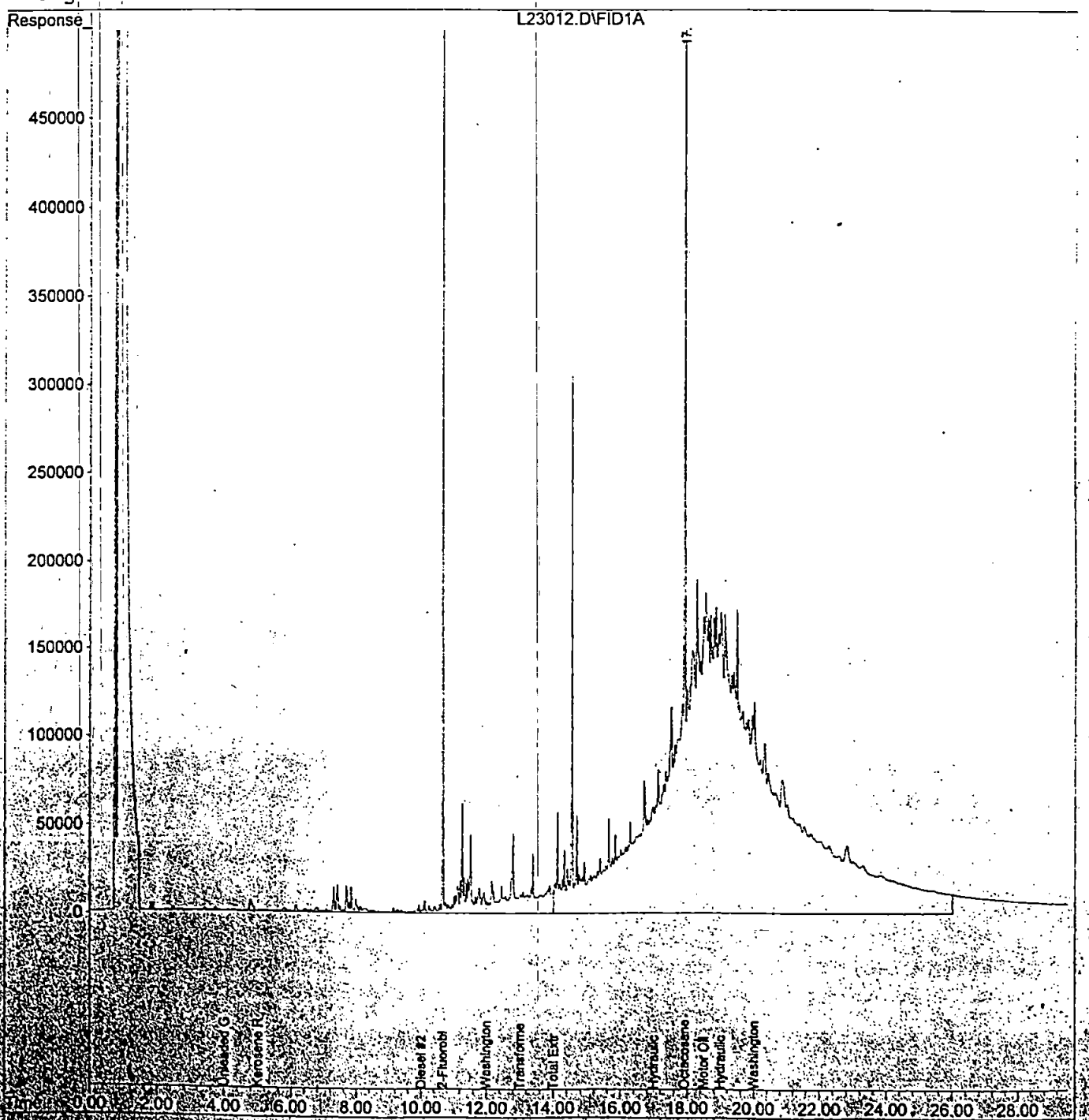


Quantitation Report

Data File : C:\HPCHEM\2\DATA\L23012.D Vial: 10
Acq On : 23 Dec 1997 3:21 pm Operator: bc
Sample : b712436-06 Inst : GC #3
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Dec 23 17:15 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

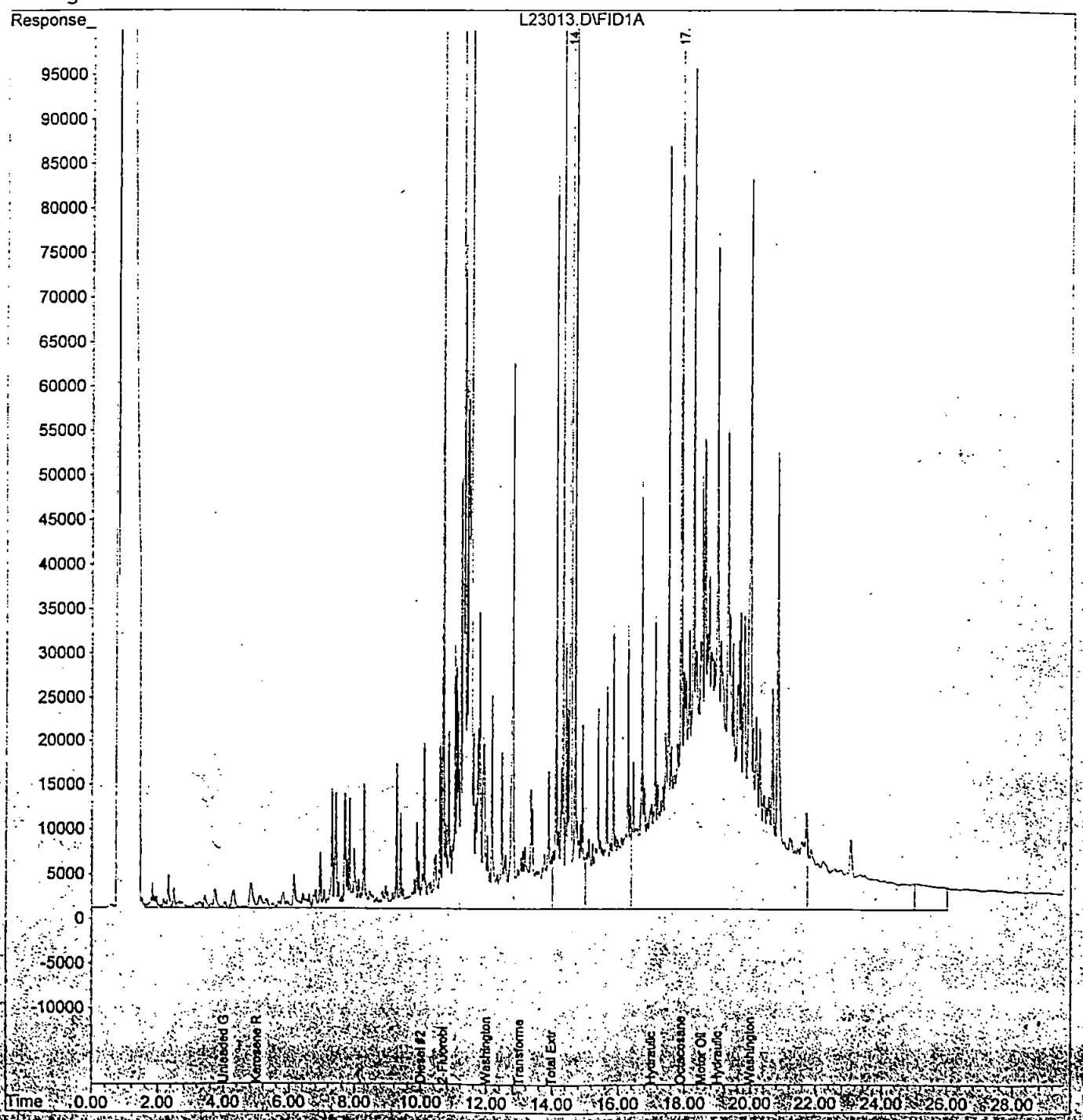


Quantitation Report

Data File : C:\HPCHEM\2\DATA\L23013.D Vial: 11
Acq On : 23 Dec 1997 3:59 pm Operator: bc
Sample : b712436-08 Inst : GC #3
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Dec 24 11:15 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

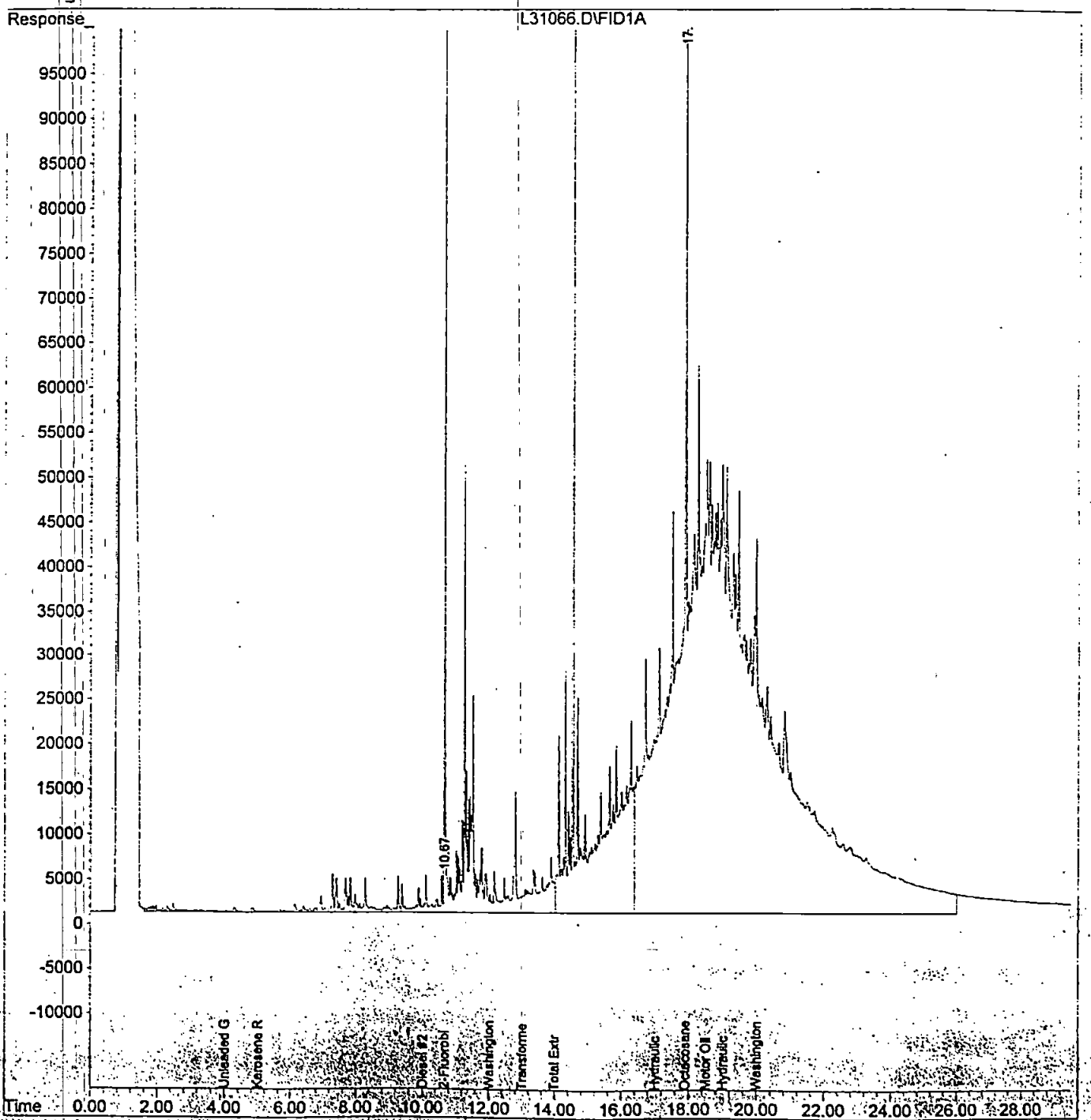


Quantitation Report

Data File : C:\HPCHEM\2\DATA\L31066.D Vial: 47
Acq On : 2 Jan 1998 3:34 am Operator: bc
Sample : b712436-09 Inst : GC #3
Misc : S 5x Multiplr: 1.00
IntFile : SURR.E
Quant Time: Jan 2 8:15 1998 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Dec 30 08:48:52 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

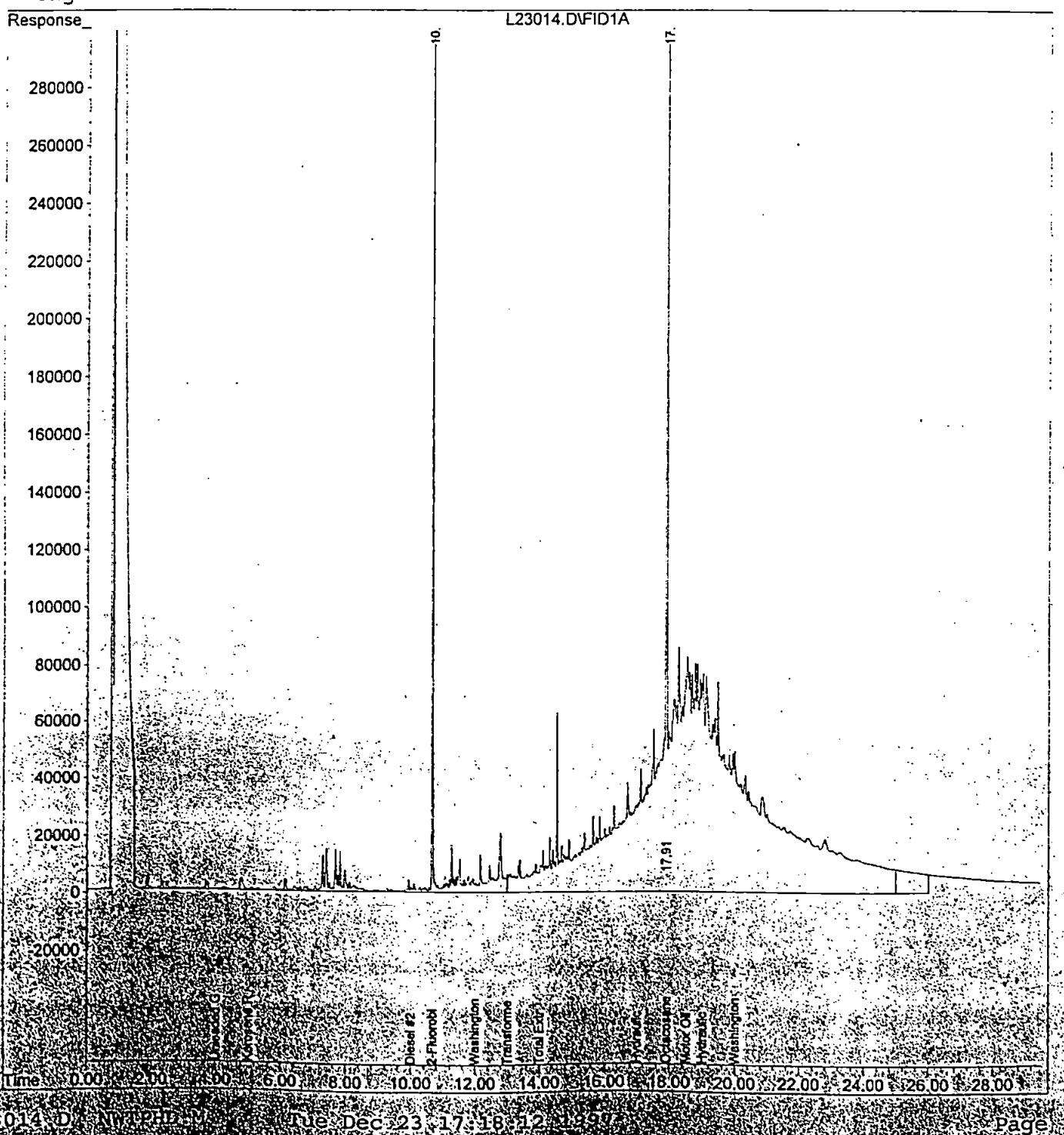


Quantitation Report

Data File : C:\HPCHEM\2\DATA\L23014.D Vial: 12
Acq On : 23 Dec 1997 4:38 pm Operator: bc
Sample : b712436-10 Inst : GC #3
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Dec 23 17:18 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



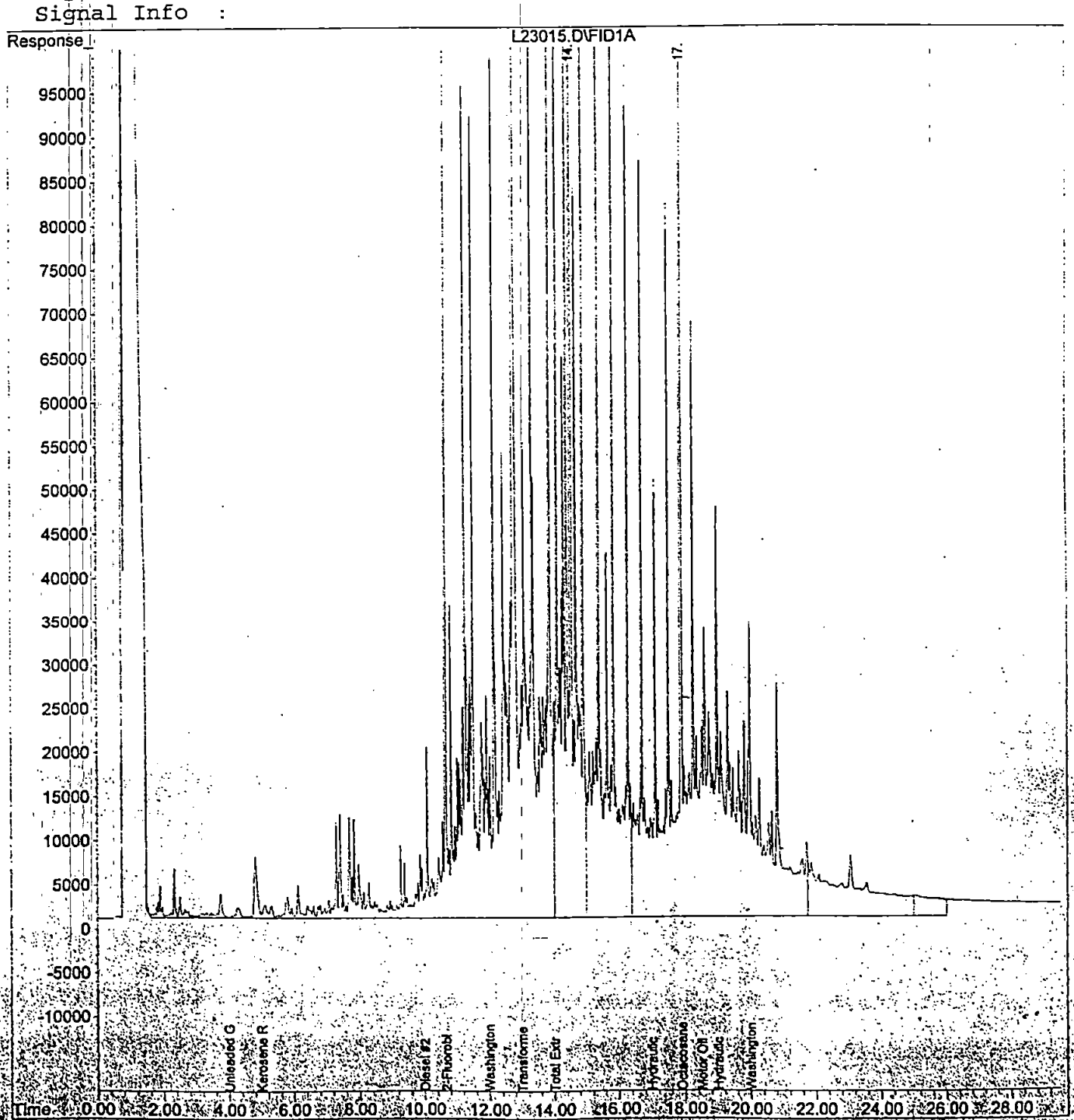
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L23015.D
Acq On : 23 Dec 1997 5:16 pm
Sample : b712436-13
Misc : S
IntFile : SURR.E
Quant Time: Dec 23 19:45 1997 Quant Results File: NWTPHD.RES

Vial: 13
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



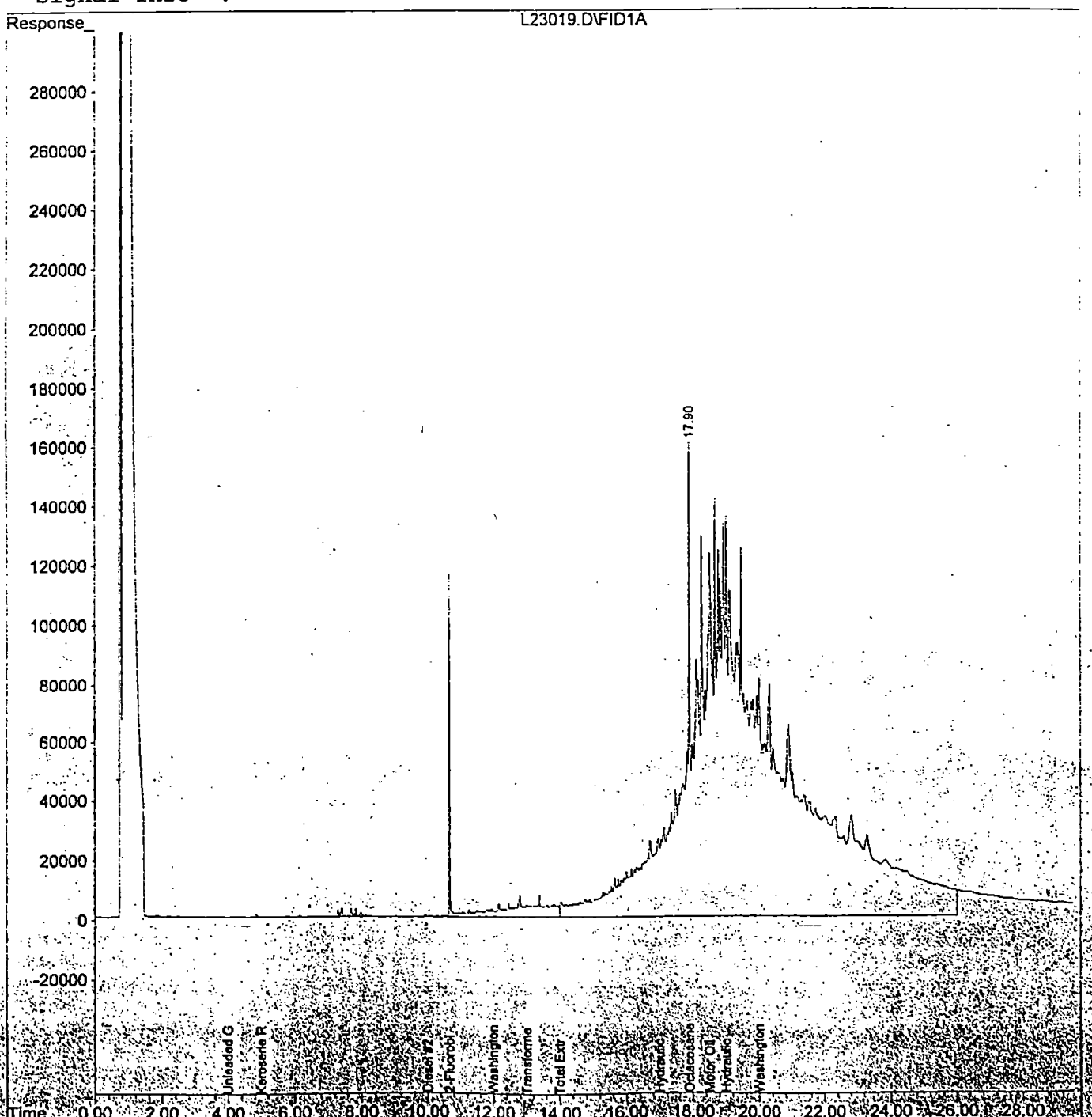
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L23019.D
Acq On : 23 Dec 1997 7:50 pm
Sample : b712436-16
Misc : S 5x
IntFile : SURR.E
Quant Time: Dec 23 20:28 1997 Quant Results File: NWTPHD.RES

Vial: 14
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

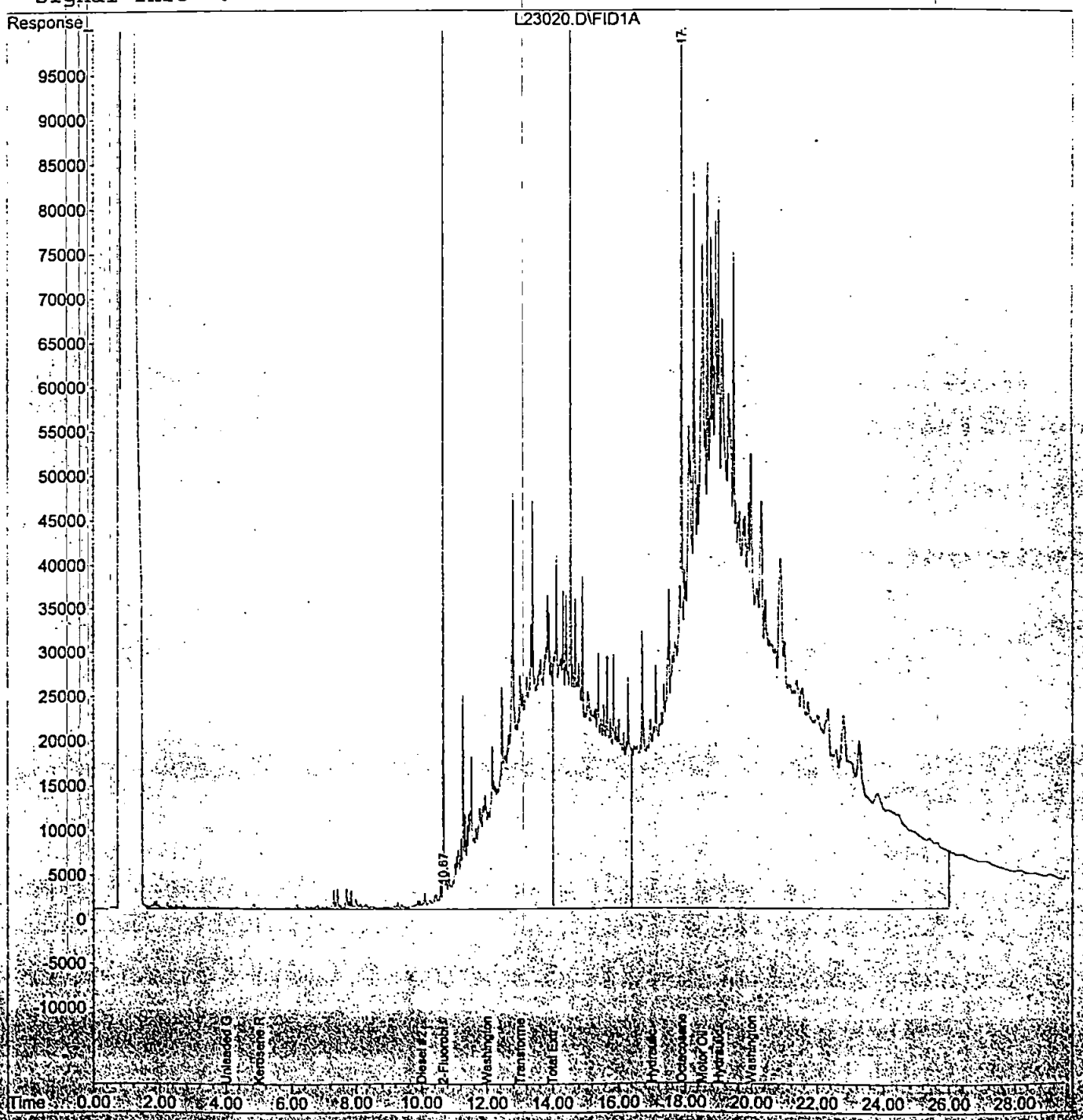


Quantitation Report

Data File : C:\HPCHEM\2\DATA\L23020.D Vial: 15
Acq On : 23 Dec 1997 8:28 pm Operator: bc
Sample : b712436-17 Inst : GC #3
Misc : S 5x Multiplr: 1.00
IntFile : SURR.E
Quant Time: Dec 23 21:12 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

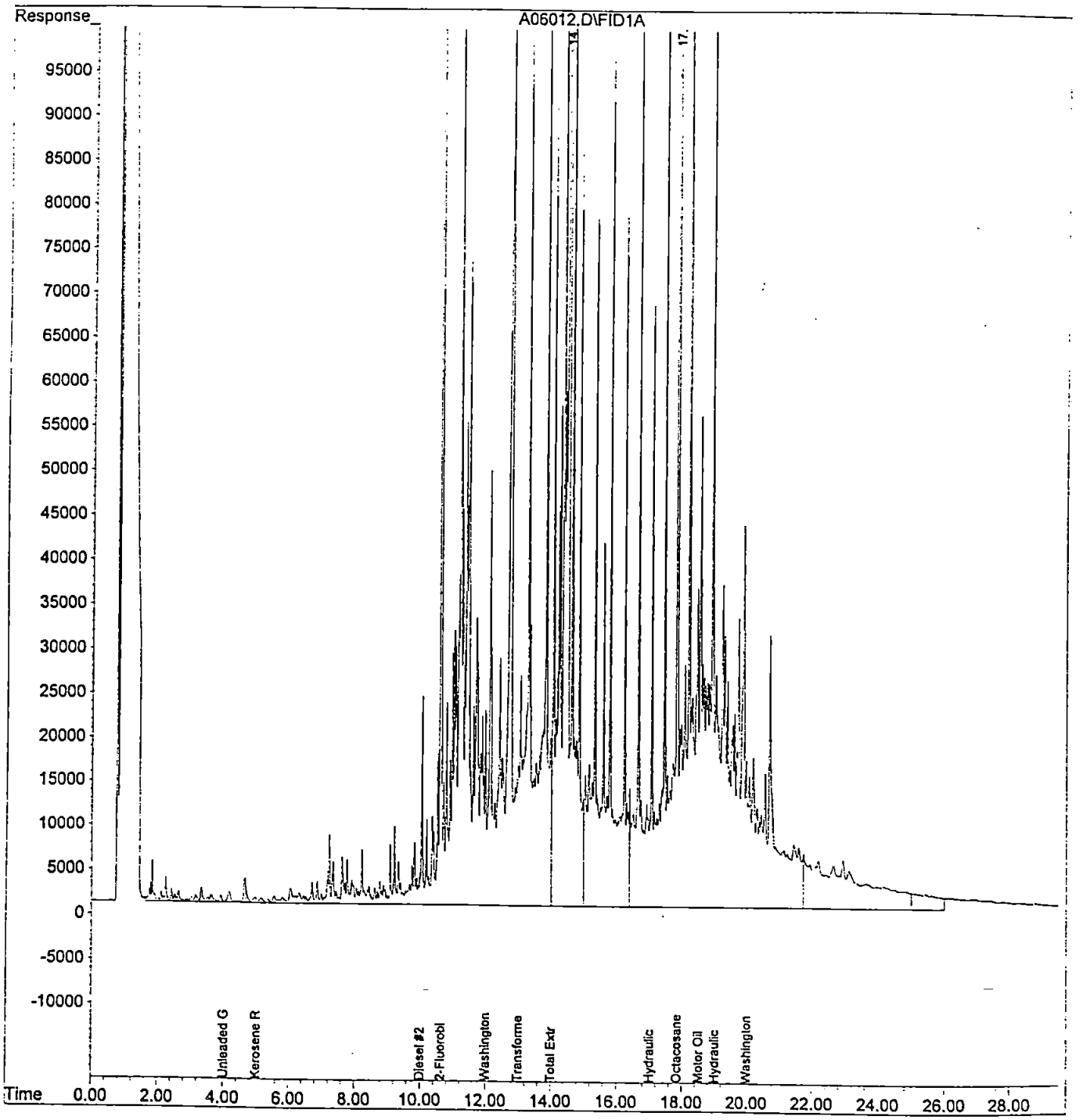


Data File : C:\HPCHEM\2\DATA\010698\A06012.D
Acq On : 6 Jan 1998 9:35 pm
Sample : b712436-18
Misc :
IntFile : SURR.E
Quant Time: Jan 7 9:13 1998 Quant Results File: NWTPHD.RES

Vial: 11
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Jan 06 10:12:36 1998
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



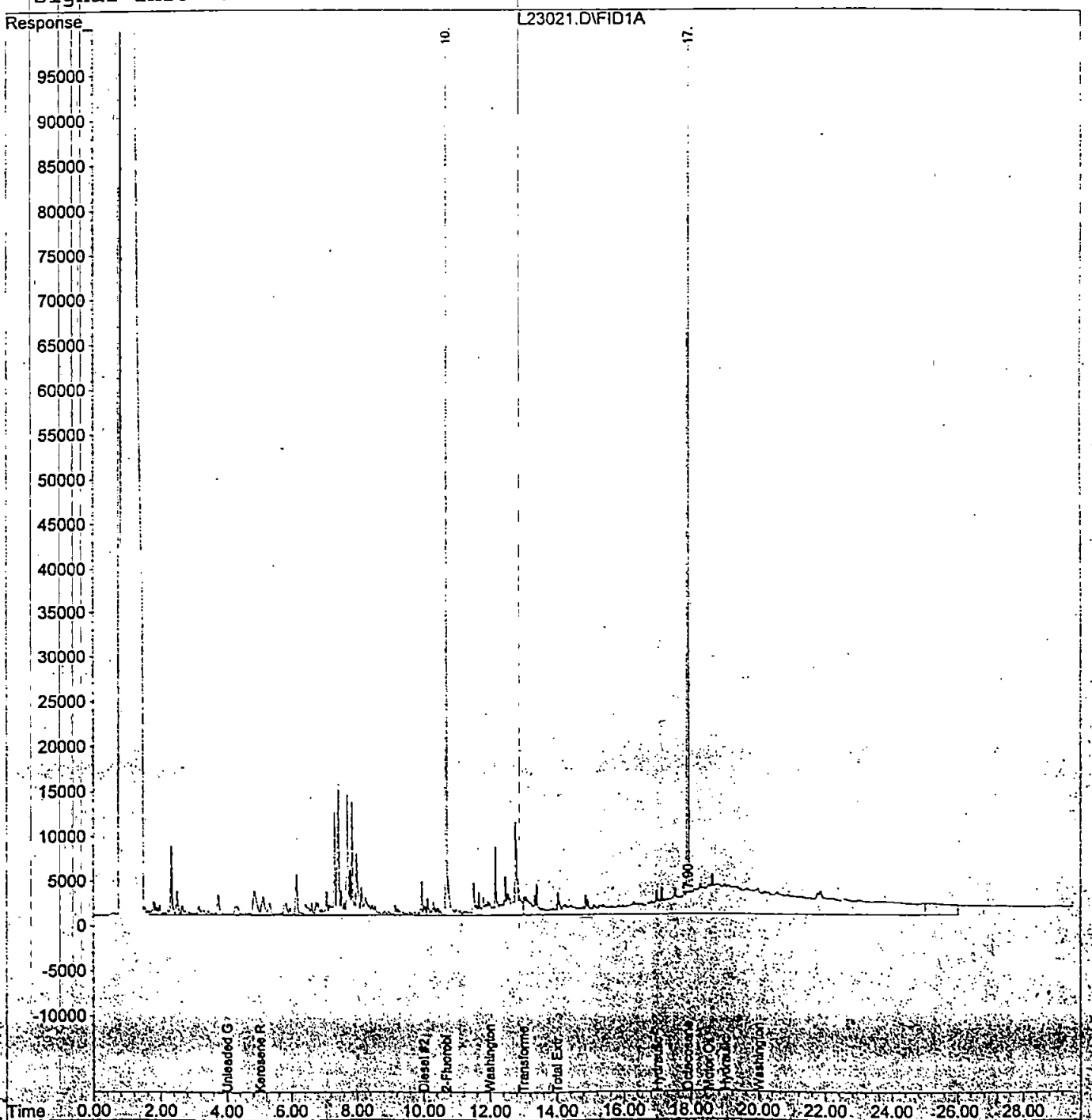
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L23021.D
Acq On : 23 Dec 1997 9:06 pm
Sample : b712436-19
Misc : S
IntFile : SURR.E
Quant Time: Dec 23 21:37 1997 Quant Results File: NWTPHD.RES

Vial: 16
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



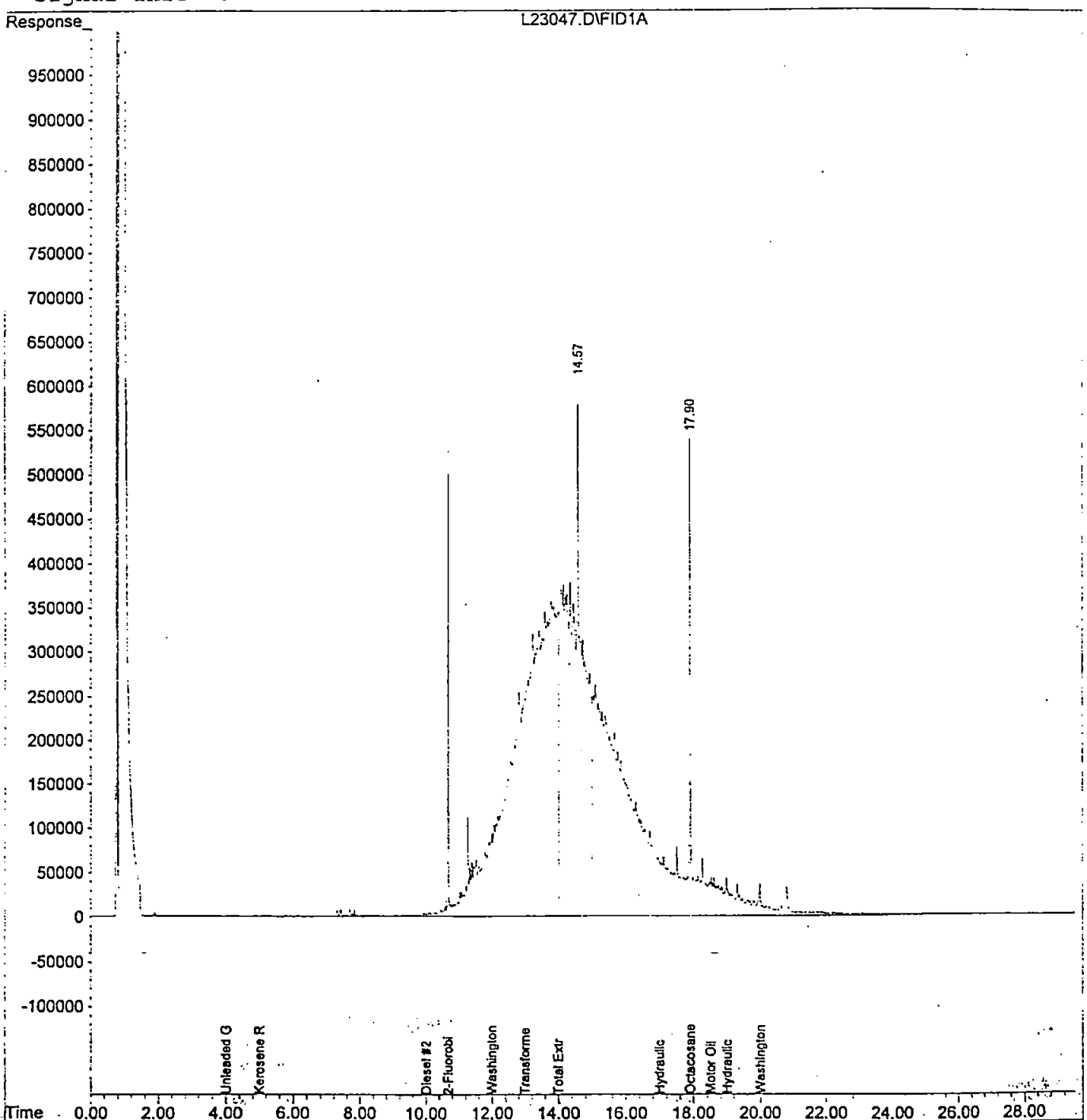
Quantitation Report

Data File : C:\HPCHEM\2\DATA\122397\L23047.D
Acq On : 24 Dec 1997 1:31 pm
Sample : b712436-22 r1
Misc : S
IntFile : SURR.E
Quant Time: Dec 26 13:14 1997 Quant Results File: NWTPHD.RES

Vial: 17
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

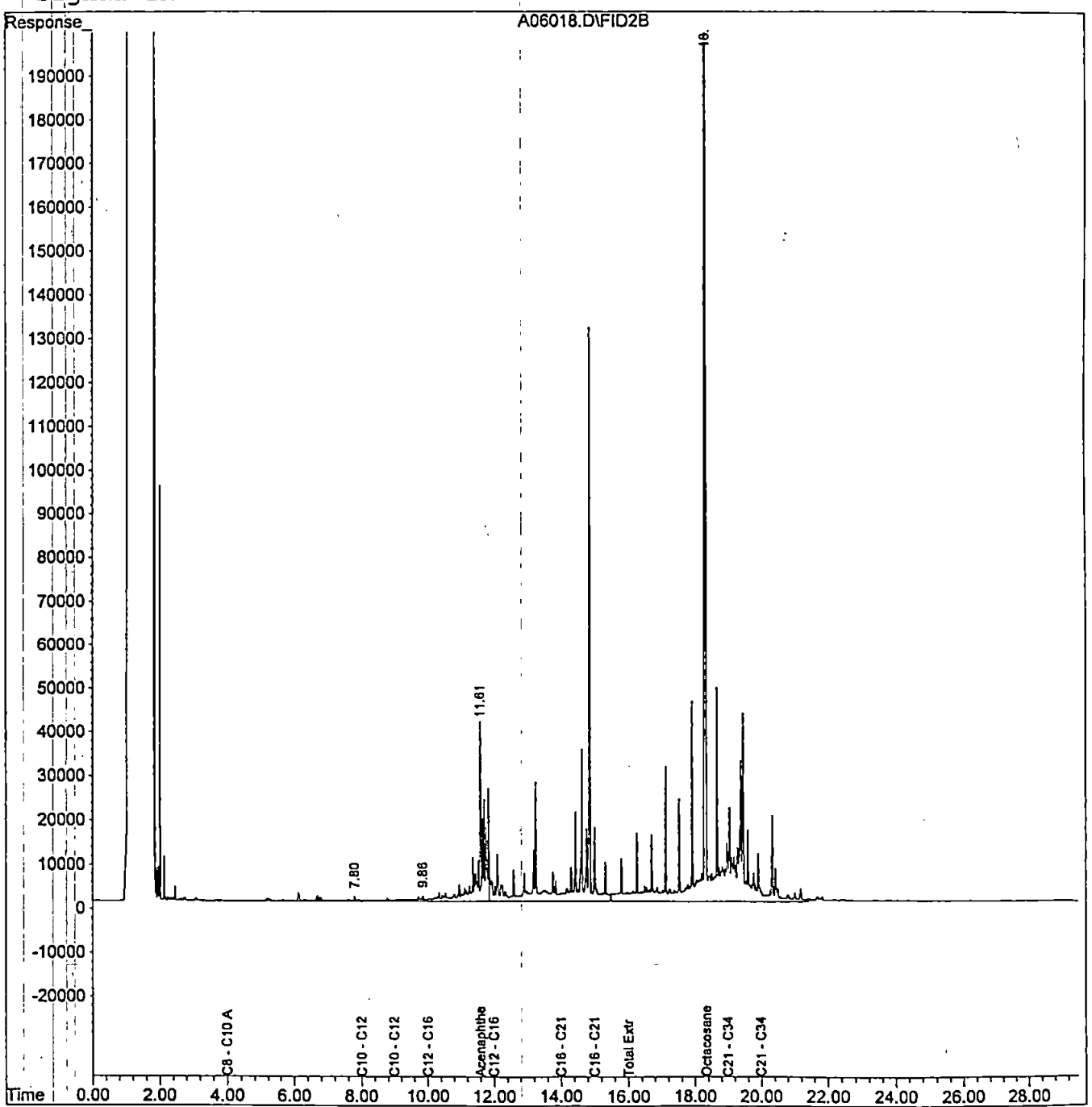
Volume Inj. :
Signal Phase :
Signal Info :



Data File : C:\HPCHEM\3\DATA\A06018.D Vial: 14
Acq On : 7 Jan 1998 1:51 am Operator:
Sample : b712436-24 al Inst : GC #5
Misc : s Multiplr: 1.00
IntFile : SURR.E
Quant Time: Jan 7 8:55 1998 Quant Results File: EPH2.RES

Quant Method : C:\HPCHEM\3\METHODS\EPH2.M (Chemstation Integrator)
Title : EPH Rear Method
Last Update : Wed Jan 07 08:46:36 1998
Response via : Multiple Level Calibration
DataAcq Meth : EPH2.M

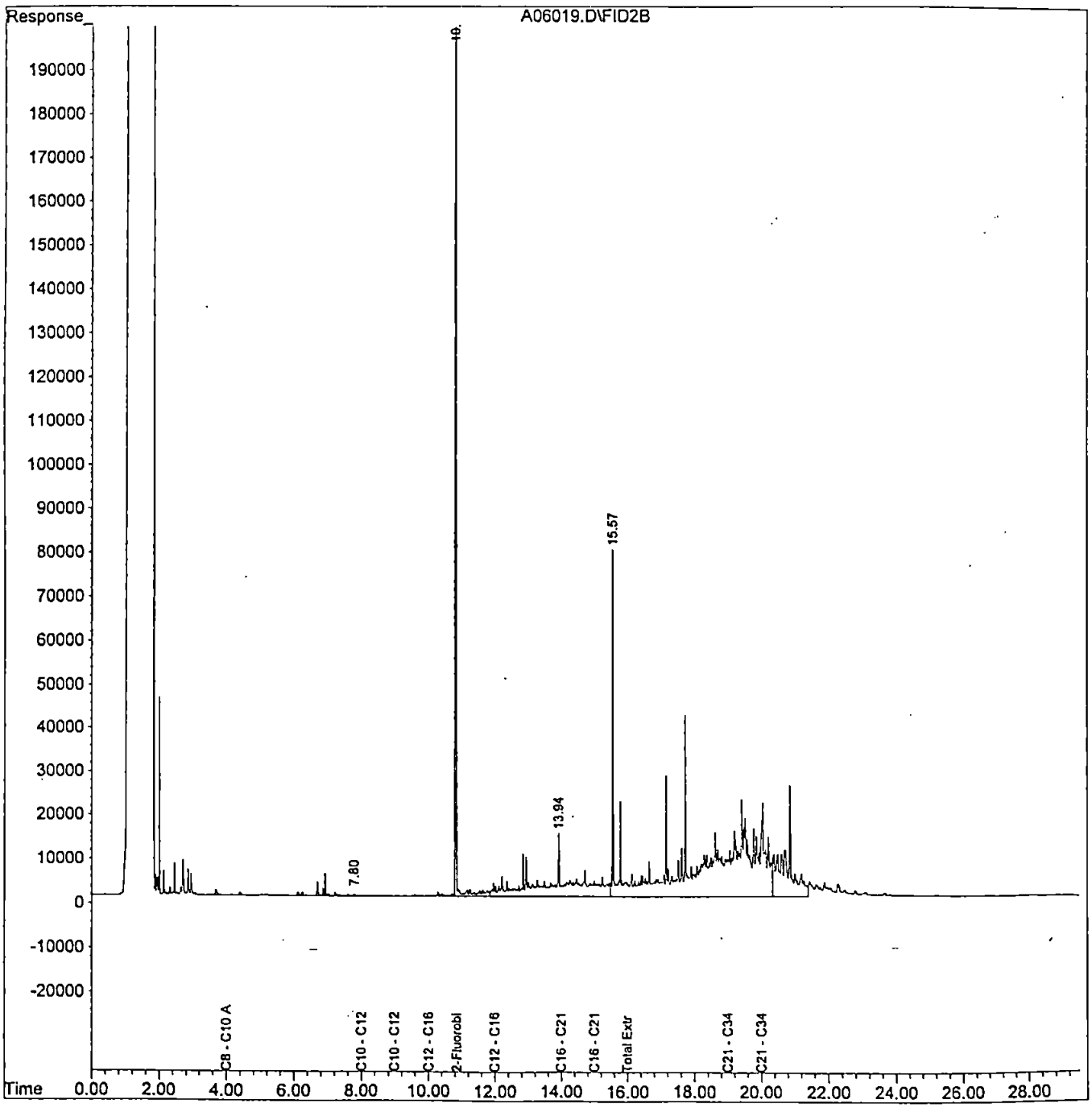
Volume Inj. :
Signal Phase :
Signal Info :



Data File : C:\HPCHEM\3\DATA\A06019.D Vial: 15
Acq On : 7 Jan 1998 2:28 am Operator:
Sample : b712436-24 ar Inst : GC #5
Misc : s Multiplr: 1.00
IntFile : SURR.E
Quant Time: Jan 7 9:03 1998 Quant Results File: EPH2.RES

Quant Method : C:\HPCHEM\3\METHODS\EPH2.M (Chemstation Integrator)
Title : EPH Rear Method
Last Update : Wed Jan 07 08:58:42 1998
Response via : Multiple Level Calibration
DataAcq Meth : EPH2.M

Volume Inj. :
Signal Phase :
Signal Info :

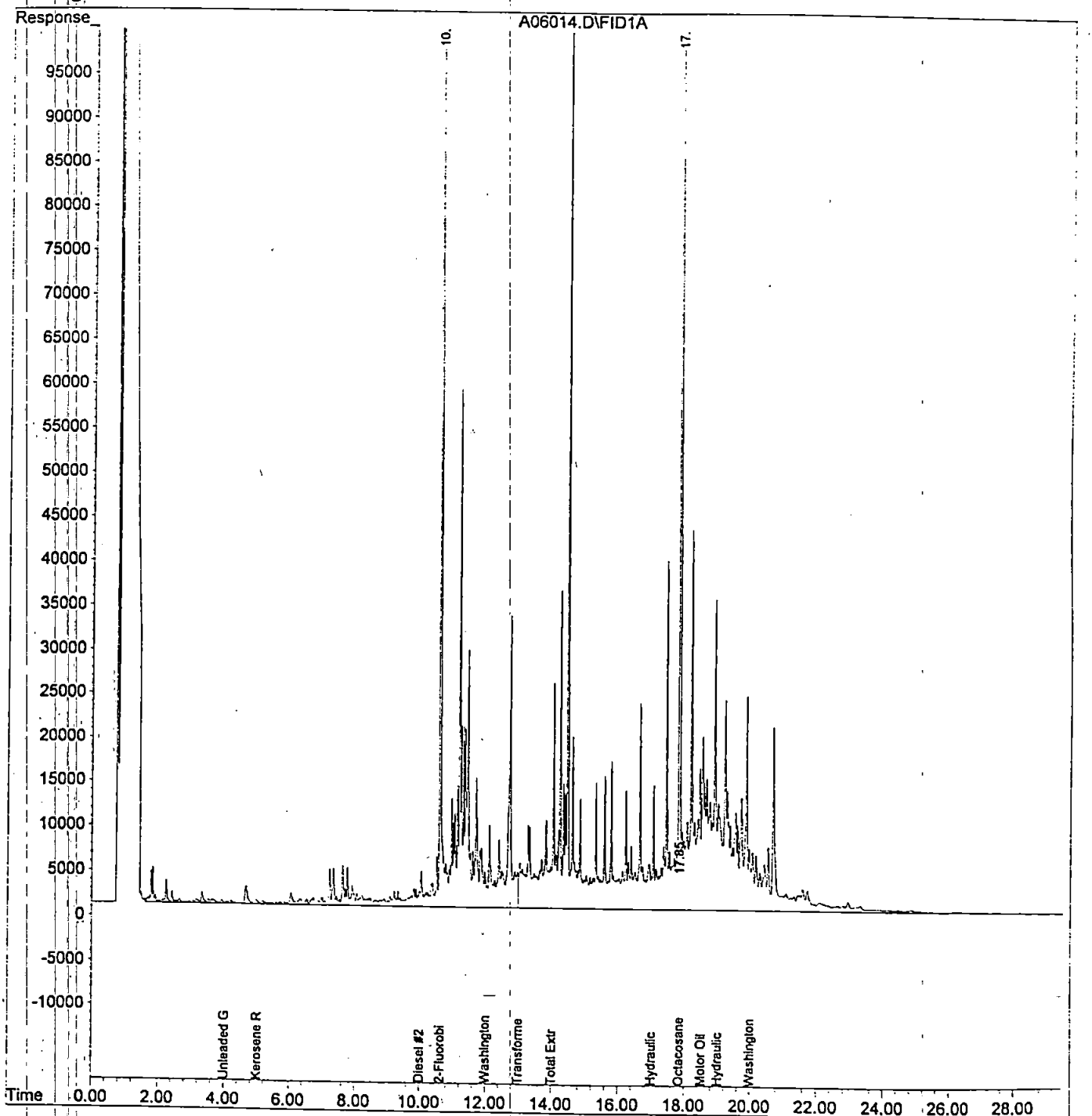


Data File : C:\HPCHEM\2\DATA\010698\A06014.D
Acq On : 6 Jan 1998 10:50 pm
Sample : b712436-24
Misc :
IntFile : SURR.E
Quant Time: Jan 7 9:14 1998 Quant Results File: NWTPHD.RES

Vial: 12
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Jan 06 10:12:36 1998
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

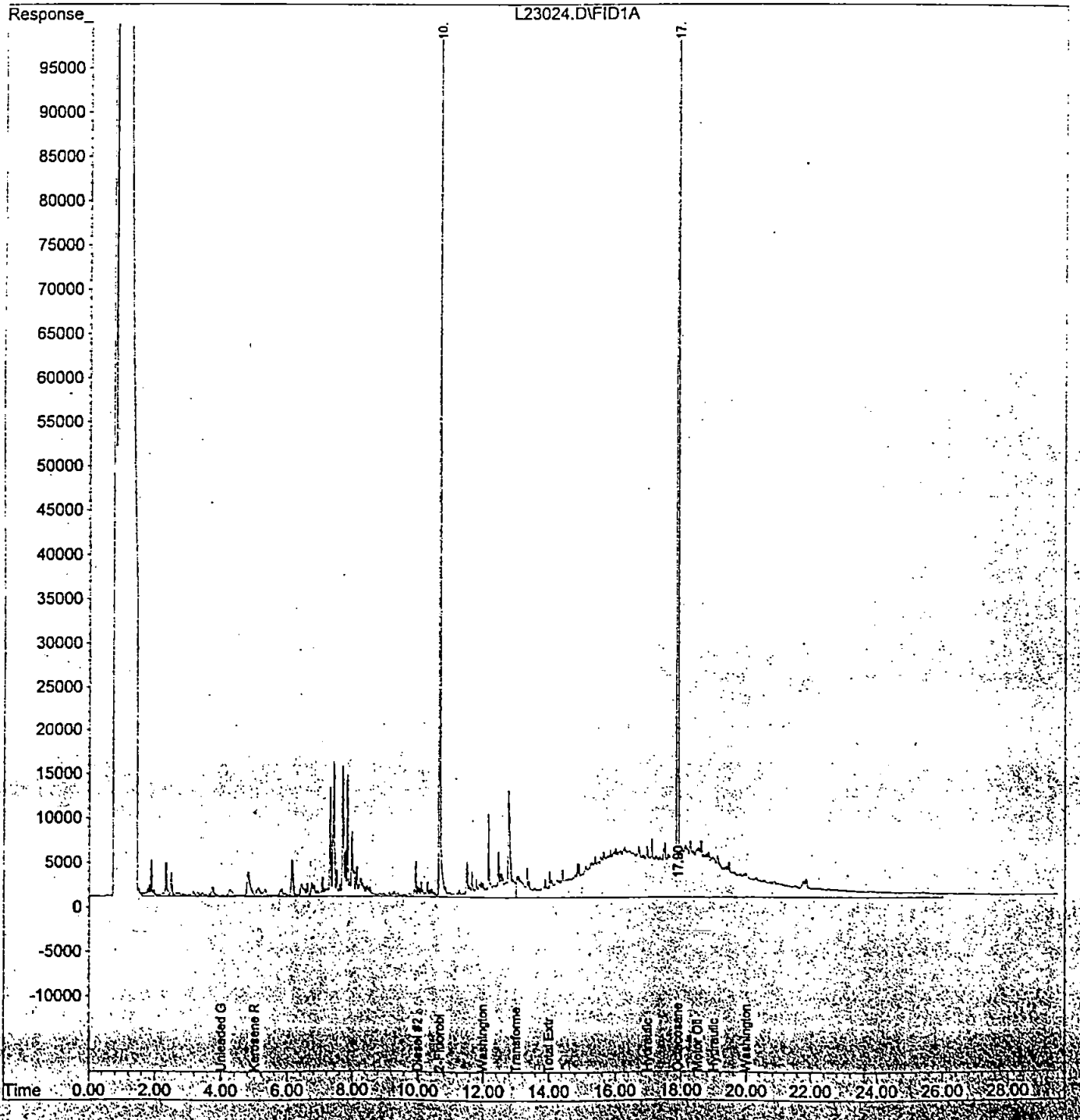


Quantitation Report

Data File : C:\HPCHEM\2\DATA\L23024.D Vial: 18
Acq On : 23 Dec 1997 11:00 pm Operator: bc
Sample : b712436-26 Inst : GC #3
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Dec 24 9:42 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

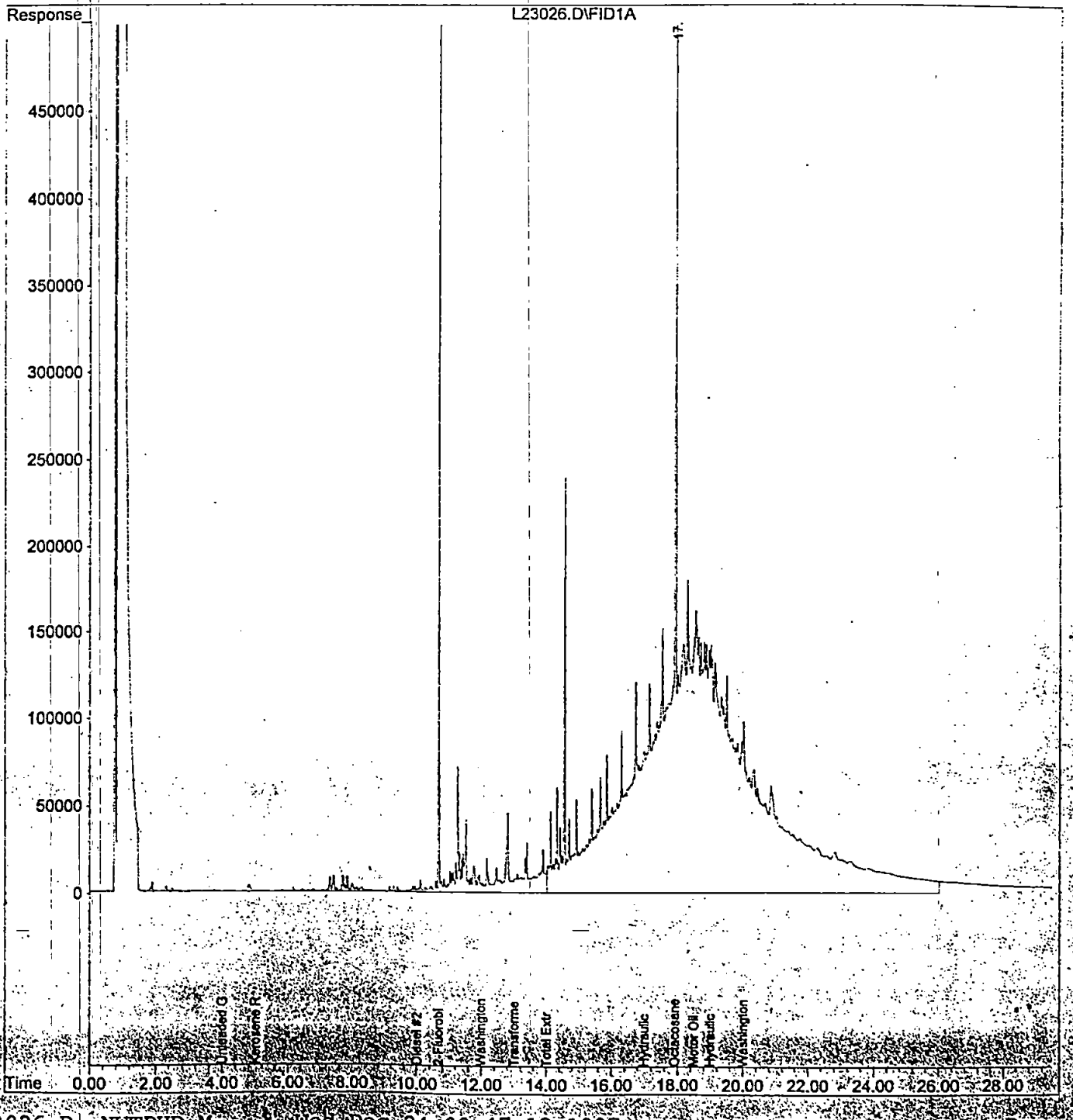


Quantitation Report

Data File : C:\HPCHEM\2\DATA\L23026.D Vial: 19
Acq On : 24 Dec 1997 12:16 am Operator: bc
Sample : b712436-30 Inst : GC #3
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Dec 24 9:47 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



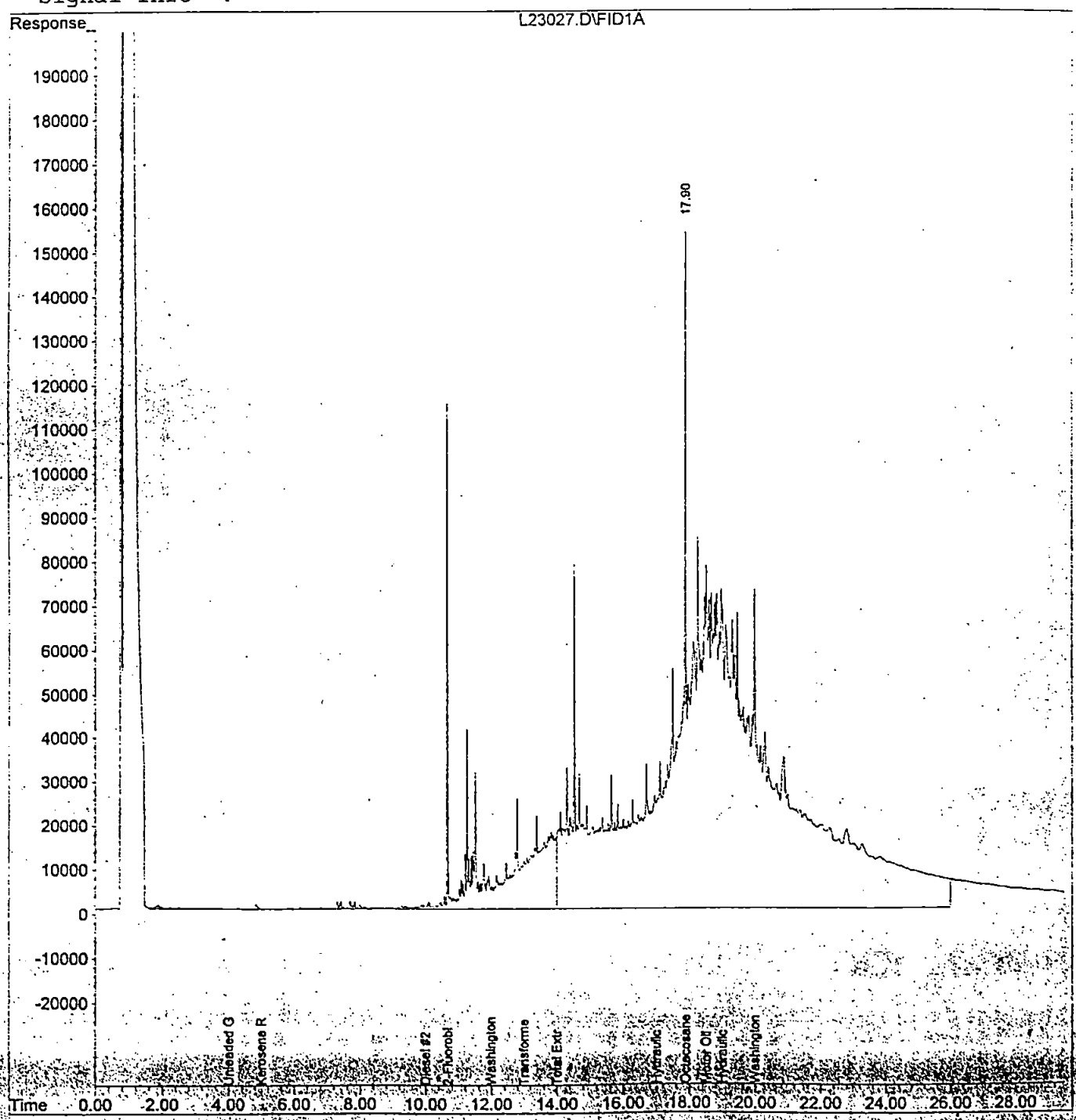
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L23027.D
Acq On : 24 Dec 1997 12:54 am
Sample : b712436-34
Misc : S 5x
IntFile : SURR.E
Quant Time: Dec 24 9:48 1997 Quant Results File: NWTPHD.RES

Vial: 20
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

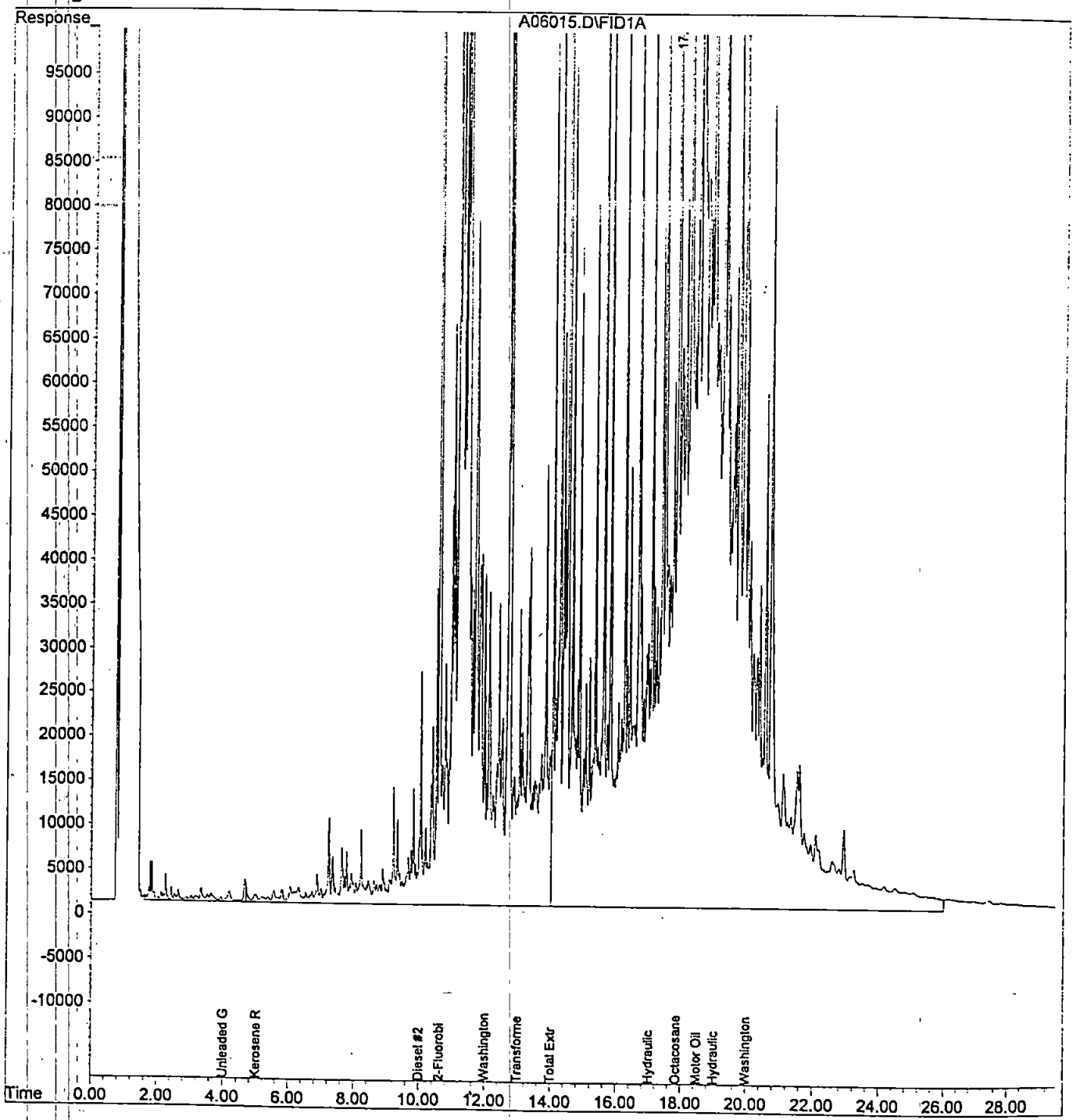


Data File : C:\HPCHEM\2\DATA\010698\A06015.D
Acq On : 6 Jan 1998 11:27 pm
Sample : b712436-36
Misc :
IntFile : SURR.E
Quant Time: Jan 7 9:15 1998 Quant Results File: NWTPHD.RES

Vial: 13
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Jan 06 10:12:36 1998
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B712436

REPORT TO:
ATTENTION: Gary Stevens
ADDRESS: 8410 154th Ave NE
Redmond Wa, 98052
PHONE: 425-861-6000 FAX: 425-861-6050
PROJECT NAME: Grady Way
PROJECT NUMBER: 186-407-05
SAMPLED BY: TNO/CRS

INVOICE TO:
ATTENTION: PSE
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 Standard | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges

Analysis Request: NWTPH-Dx w/ silica gel cleanup to 8081 | PCBs by EPA method 8081

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	NWTPH-Dx w/ silica gel cleanup to 8081	PCBs by EPA method 8081	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	B-1-0,5	12/10/97 840	B712436-01	X	X	S	1	
2.	B-1-1,5	12/10/97 840	-02			S	1	Hold
3.	B-1-3.0	12/10/97 840	-03			S	1	Hold
4.	B-2-0,5	12/10/97 934	-04	X	X	S	1	
5.	B-2-1,5	12/10/97 935	-05			S	1	Hold
6.	B-3-0,5	12/10/97 935	-06	X	X	S	1	
7.	B-3-1.5	12/10/97 934	-07			S	1	Hold
8.	~~B-3 3.0~~ TO	~~12/10/97 935~~ TO	~~-08~~			~~S~~ TO	~~1~~ TO	TO
9.	B-4 0,5	12/10/97 905	-09	X	X	S	1	
10.	B-4 1,5	12/10/97 905	-09			S	1	Hold

RELINQUISHED BY (Signature): DATE: 12/11/97
PRINT NAME: Tony Orme FIRM: C-EI TIME: 900

RECEIVED BY (Signature): K Barker DATE: 12/19/9
PRINT NAME: Kendra Barker FIRM: NCA TIME: 1315

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: Dext w/ silica gel cleanup + transformer oil standard.
High amount of organics detected, dual chromatography used. PCB in S-1 16 w/cs

PAGE OF

NORTH CREEK ANALYTICAL
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CHAIN OF CUSTODY REPORT

Work Order #

REPORT TO:		INVOICE TO:	
ATTENTION:	Gary Stevens	ATTENTION:	PSE
ADDRESS:	8410 154TH Ave NE Redmond Wa 98052	ADDRESS:	
PHONE:	425-861-6000	FAX: 425-861-6050	
PROJECT NAME:	Grady Way	P.O. NUMBER:	NCA QUOTE #:
PROJECT NUMBER:	186-407-85		
SAMPLED BY:	TNO/GRS		

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: [10 Standard] [7] [5] [4] [3] [2] [1] [Same Day]

Fuels & Hydrocarbon Analyses: [X Standard] [3-4] [2] [1] [Same Day]

[OTHER] Specify:

* Turnaround Requests less than standard may incur Rush Charges

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: NWTPH Dx/Dx ext	PCBs by 8082	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	B-5 0.5	12/18/97 950	8712436-10	X	X	S	1	
2.	B-5 - 1.5	12/18/97 950	-11			S	1	Hold
3.	B-5 - 3.0	12/18/97 950	-12			S	1	Hold
4.	B-6 - 0.5	12/18/97 1000	-13	X	X	S	1	
5.	B-6 1.5	12/18/97 1000	-14			S	1	Hold
6.	B-6 - 3.0	12/18/97 1000	-15			S	1	Hold
7.	B-10 - 0.5	12/18/97 1035	-16	X	X	S	1	
8.	B-11 - 0.5	12/18/97 1045	-17	X	X	S	1	
9.	B-11 - 4.5	12/18/97 1045	-18			S	1	Hold
10.	B-13 - 0.5	12/18/97 800	-19	X	X	S	1	

RELINQUISHED BY (Signature):		DATE: 12/19/97	RECEIVED BY (Signature): K Barker
PRINT NAME:	Tony Orme	FIRM: GEI	TIME: 900
RELINQUISHED BY (Signature):		DATE:	RECEIVED BY (Signature):
PRINT NAME:		FIRM:	TIME:
PRINT NAME:	Kendra Barker	FIRM: NCA	TIME: 1315
PRINT NAME:		FIRM:	TIME:

ADDITIONAL REMARKS: Dext w/ silica gel cleanup + transformer oil standard

High amount of organics for Dx ext, chromatogram attached. 6 w/cs

PAGE OF

NORTH CREEK ANALYTICAL
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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B712436

REPORT TO:
ATTENTION: Gary Stevens
ADDRESS: 8410 154th Ave NE
REDMOND Wa, 98052
PHONE: 425-861-6000 FAX: 425-861-6050
PROJECT NAME: Grady Way
PROJECT NUMBER: 186-405-05
SAMPLED BY: TNO/GRS

INVOICE TO:
ATTENTION: PSE
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: (10 Standard) 7 5 4 3 2 1 Same Day
Fuels & Hydrocarbon Analyses: (5 Standard) 3-4 2 1 Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	NWTPH Dext	PCB's by EPA 8021	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	B-13-1.5	12/10/97 8am	B712436-20			TO ~~W~~ S	1	Hold
2.	B-13-3.0	12/10/97 8am	-21			TO ~~W~~ S	1	Hold
3.	B-32-0.5	12/10/97 1115	-22	X	X	TO ~~W~~ S	1	
4.	B-32-1.5	12/10/97 1115	-23			TO ~~W~~ S	1	Hold
5.	B-32-3.0	12/10/97 1115	-24			TO ~~W~~ S	1	Hold
6.	B-32-4.0	12/10/97 1115	-25			TO ~~W~~ S	1	Hold
7.	B-33-0.5	12/10/97 1205	-26	X	X	TO ~~W~~ S	1	
8.	B-33-1.5	12/10/97 1205	-27			TO ~~W~~ S	1	Hold
9.	B-33-3.0	12/10/97 1205	-28			TO ~~W~~ S	1	Hold
10.	B-33-4.0	12/10/97 1205	-29			TO ~~W~~ S	1	Hold

RELINQUISHED BY (Signature): _____ DATE: 12/11/97
PRINT NAME: Tony Orme FIRM: GEI TIME: 900

RECEIVED BY (Signature): K Barker DATE: 12/11/97
PRINT NAME: Kendra Barker FIRM: NCA TIME: 1315

RELINQUISHED BY (Signature): _____ DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): _____ DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: Dext w/ Silica gel cleanup + transformer oil standard
High amount of organics due to Coal or Charcoal / Burnt wood Fill in Soil .6 #/cs

PAGE OF

NORTH CREEK ANALYTICAL
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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B712436

REPORT TO:		INVOICE TO:	
ATTENTION:	Gary Stevens	ATTENTION:	PSE
ADDRESS:	8410 154th Ave NE	ADDRESS:	
	Redmond WA 98052		
PHONE:	425-861-6000	FAX: 425-861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME:	Grady Way		
PROJECT NUMBER:	186-407-85		
SAMPLED BY:	TMO/GRS		

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: ~~10~~ Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: ~~5~~ Standard | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: NWTPH Dx	PCB by EPA 8081	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	B-30-0.5	12/18/97 1345	B712436-30	X	X	S	1	
2.	B-30-1.5	12/18/97 1345	-31			S	1	Hold
3.	B-30-3.0	12/18/97 1345	-32			S	1	Hold
4.	B-30-4.0	12/18/97 1345	-33			S	1	Hold
5.	B-31-0.5	12/18/97 1430	-34	X	X	S	1	
6.	B-31-1.5	12/18/97 1430	-35			S	1	Hold
7.	B-31-3.0	12/18/97 1430	-36			S	1	Hold
8.	B-31-4.0	12/18/97 1430	-37			S	1	Hold
9.	~~C-1~~ TO							
10.	~~C-2~~ TO							

RELINQUISHED BY (Signature):	DATE: 12/19/97	RECEIVED BY (Signature):	DATE: 12/19/97
PRINT NAME: Tony Orme	FIRM: GEI TIME: 900	PRINT NAME: Kendra Barker	FIRM: NCA TIME: 1315
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:

ADDITIONAL REMARKS: Dext w/ silica gel clean up + transformer oil standard

High amount of organics due to coal, charcoal or Burnt wood Fill in soil. 6 w/cs

PAGE OF

NORTH CREEK ANALYTICAL
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CHAIN OF CUSTODY REPORT

Work Order # B712436

REPORT TO:
ATTENTION: Gary Stevens
ADDRESS: 8410 154th Ave NE
REDMOND WA, 98052
PHONE: 425-861-6000 FAX: 425-861-6056
PROJECT NAME: Grady Way
PROJECT NUMBER: 186-407-85
SAMPLED BY: TNO / GRS

INVOICE TO:
ATTENTION: PSE
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: (10 Standard) 7 5 4 3 2 1 Same Day
Fuels & Hydrocarbon Analyses: (5 Standard) 3-4 2 1 Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges

Analysis Request: RCB by EPA 8081

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	C-1	12/10/97 1400	B712436 -38	O	1	Concrete
2.	C-2	12/14/97 1415	-39	O	1	Concrete
3.	~~C-3~~	/		~~O~~	~~1~~	
4.	C-4	12/14/97 1046	-40	O	1	Concrete
5.	C-5	12/14/97 1130	-41	O	1	Concrete
6.	C-7	12/14/97 1315	-42	O	1	Concrete
7.	C-8	12/14/97 1350	-43	O	1	Concrete
8.	C-9	12/14/97 1455	-44	O	1	Concrete
9.	C-11	12/14/97 1427	-45	O	1	Concrete
10.						

RELINQUISHED BY (Signature): DATE: 12/14/97
PRINT NAME: Tony Crome FIRM: GEI TIME: 900

RECEIVED BY (Signature): DATE: 12/19/97
PRINT NAME: Kendra Barker FIRM: NCA TIME: 1315

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: Dext w/ silica gel clean up + transformer oil standard.

. 6 WCS

PAGE OF

LAB DATA EVALUATION FORM

Page _____ of _____

GEI Job # 186-407-85

Lab Job #/Sample IDs: B801221-01

GEI Sample IDs B-32-0,5

Sample Coll Date 12/18/97

Report Recv'd Date 1/22/98

Analysis	Holding Time Exceptions ?	Surrogate Exceptions ?	Blank Hits ?	MS/MSD % Rec Exceptions	Duplicate or MSD RPD Exceptions	Blank Spike or LCS Exceptions (Use if MS/MSD out)
Ecology WTPH-G	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8020 (BETX)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
Ecology WTPH-D Extended	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
413.1 (FOG)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8010	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8270	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
VPH/BETX/MTBE/Naphthalene	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH	Yes (No)	Yes (No)	Yes (No)	(Yes) No	(Yes) No	Yes (No)
EPH/PAH-SIM	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
E-TPH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
Affected Sample Numbers						

Data Acceptable for Intended Use? Yes

Date Comp. 3/16/98

Reviewer Initials TNB

Comments:

See Notes Page 5

Exceptions (As shown in report):

NORTH CREEK ANALYTICAL
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SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/22/98 17:10

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
B-32-0.5	B801221-01	Soil	12/18/97

GeoEngineers

JAN 23 1998

Routing

File

NORTH CREEK ANALYTICAL
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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/22/98 17:10

Extractable Petroleum Hydrocarbons by WDOE Interim TPH Policy Method
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-32-0.5			B801221-01				Soil	
C8-C10 Aliphatics	0180416	1/20/98	1/21/98		5.00	ND	mg/kg dry	
C10-C12 Aliphatics	"	"	"		5.00	ND	"	
C12-C16 Aliphatics	"	"	"		5.00	**56.2**	"	
C16-C21 Aliphatics	"	"	"		5.00	**395**	"	
C21-C34 Aliphatics	"	"	"		5.00	**165**	"	
C10-C12 Aromatics	"	"	"		5.00	ND	"	
C12-C16 Aromatics	"	"	"		5.00	ND	"	
C16-C21 Aromatics	"	"	"		5.00	**73.9**	"	
C21-C34 Aromatics	"	"	"		5.00	**81.3**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*83.3*	*%*	
Surrogate: Octacosane	"	"	"	*50.0-150*		*103*	"	

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/22/98 17:10

Dry Weight Determination
North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
B-32-0.5	B801221-01	Soil	76.6	%

North Creek Analytical, Inc.

Joy B Chang, Project Manager

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/22/98 17:10

Extractable Petroleum Hydrocarbons by WDOE Interim TPH Policy Method/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0180416	**Date Prepared: 1/20/98**					**Extraction Method: EPA 3550**				
Blank	**0180416-BLK1**									
C8-C10 Aliphatics	1/21/98			ND	mg/kg dry	5.00				
C10-C12 Aliphatics	"			ND	"	5.00				
C12-C16 Aliphatics	"			ND	"	5.00				
C16-C21 Aliphatics	"			ND	"	5.00				
C21-C34 Aliphatics	"			ND	"	5.00				
C10-C12 Aromatics	"			ND	"	5.00				
C12-C16 Aromatics	"			ND	"	5.00				
C16-C21 Aromatics	"			ND	"	5.00				
C21-C34 Aromatics	"			ND	"	5.00				
Surrogate: 2-FBP	"	*11.9*		*9.60*	"	*50.0-150*	*80.7*			
Surrogate: Octacosane	"	*11.8*		*10.5*	"	*50.0-150*	*89.0*			
LCS	**0180416-BS1**									
C8-C10 Aliphatics	1/21/98	1.67		1.05	mg/kg dry	60.0-140	62.9			
C10-C12 Aliphatics	"	1.67		1.16	"	60.0-140	69.5			
C12-C16 Aliphatics	"	1.67		1.52	"	60.0-140	91.0			
C16-C21 Aliphatics	"	1.67		1.65	"	60.0-140	98.8			
C21-C34 Aliphatics	"	1.67		1.27	"	60.0-140	76.0			
C10-C12 Aromatics	"	1.67		1.29	"	60.0-140	77.2			
C12-C16 Aromatics	"	5.00		3.90	"	60.0-140	78.0			
C16-C21 Aromatics	"	8.33		7.55	"	60.0-140	90.6			
C21-C34 Aromatics	"	13.3		14.1	"	60.0-140	106			
Surrogate: 2-FBP	"	*11.9*		*9.75*	"	*50.0-150*	*81.9*			
Surrogate: Octacosane	"	*11.8*		*11.5*	"	*50.0-150*	*97.5*			
LCS Dup	**0180416-BSD1**									
C8-C10 Aliphatics	1/21/98	1.67		1.35	mg/kg dry	60.0-140	80.8	40.0	24.9	
C10-C12 Aliphatics	"	1.67		1.08	"	60.0-140	64.7	40.0	7.15	
C12-C16 Aliphatics	"	1.67		1.45	"	60.0-140	86.8	40.0	4.72	
C16-C21 Aliphatics	"	1.67		1.58	"	60.0-140	94.6	40.0	4.34	
C21-C34 Aliphatics	"	1.67		1.23	"	60.0-140	73.7	40.0	3.07	
C10-C12 Aromatics	"	1.67		1.26	"	60.0-140	75.4	40.0	2.36	
C12-C16 Aromatics	"	5.00		3.89	"	60.0-140	77.8	40.0	0.257	
C16-C21 Aromatics	"	8.33		7.31	"	60.0-140	87.8	40.0	3.14	
C21-C34 Aromatics	"	13.3		13.4	"	60.0-140	101	40.0	4.83	
Surrogate: 2-FBP	"	*11.9*		*9.69*	"	*50.0-150*	*81.4*			
Surrogate: Octacosane	"	*11.8*		*11.0*	"	*50.0-150*	*93.2*			

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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Geo Engineers - Redmond	Project: PSE/Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/22/98 17:10

Extractable Petroleum Hydrocarbons by WDOE Interim TPH Policy Method/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Matrix Spike	**0180416-MS1**		**B801221-01**							
C8-C10 Aliphatics	1/21/98	2.18	ND	1.76	mg/kg dry	60.0-140	**80.7**			
C10-C12 Aliphatics	"	2.18	ND	2.82	"	60.0-140	**129**			
C12-C16 Aliphatics	"	2.18	56.2	80.9	"	60.0-140	**NR**			
C16-C21 Aliphatics	"	2.18	395	574	"	60.0-140	**NR**			
C21-C34 Aliphatics	"	2.18	165	257	"	60.0-140	**NR**			
C10-C12 Aromatics	"	2.18	ND	1.30	"	60.0-140	**59.6**			2
C12-C16 Aromatics	"	6.53	ND	6.40	"	60.0-140	**98.0**			
C16-C21 Aromatics	"	10.9	73.9	113	"	60.0-140	**NR**			
C21-C34 Aromatics	"	17.4	81.3	145	"	60.0-140	**NR**			1
Surrogate: 2-FBP	"	*15.6*		*12.4*	"	*50.0-150*	*79.5*			
Surrogate: Octacosane	"	*15.4*		*15.6*	"	*50.0-150*	*101*			

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**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/22/98 17:10

Notes and Definitions

#	Note
1	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte already present in the sample.
2	The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

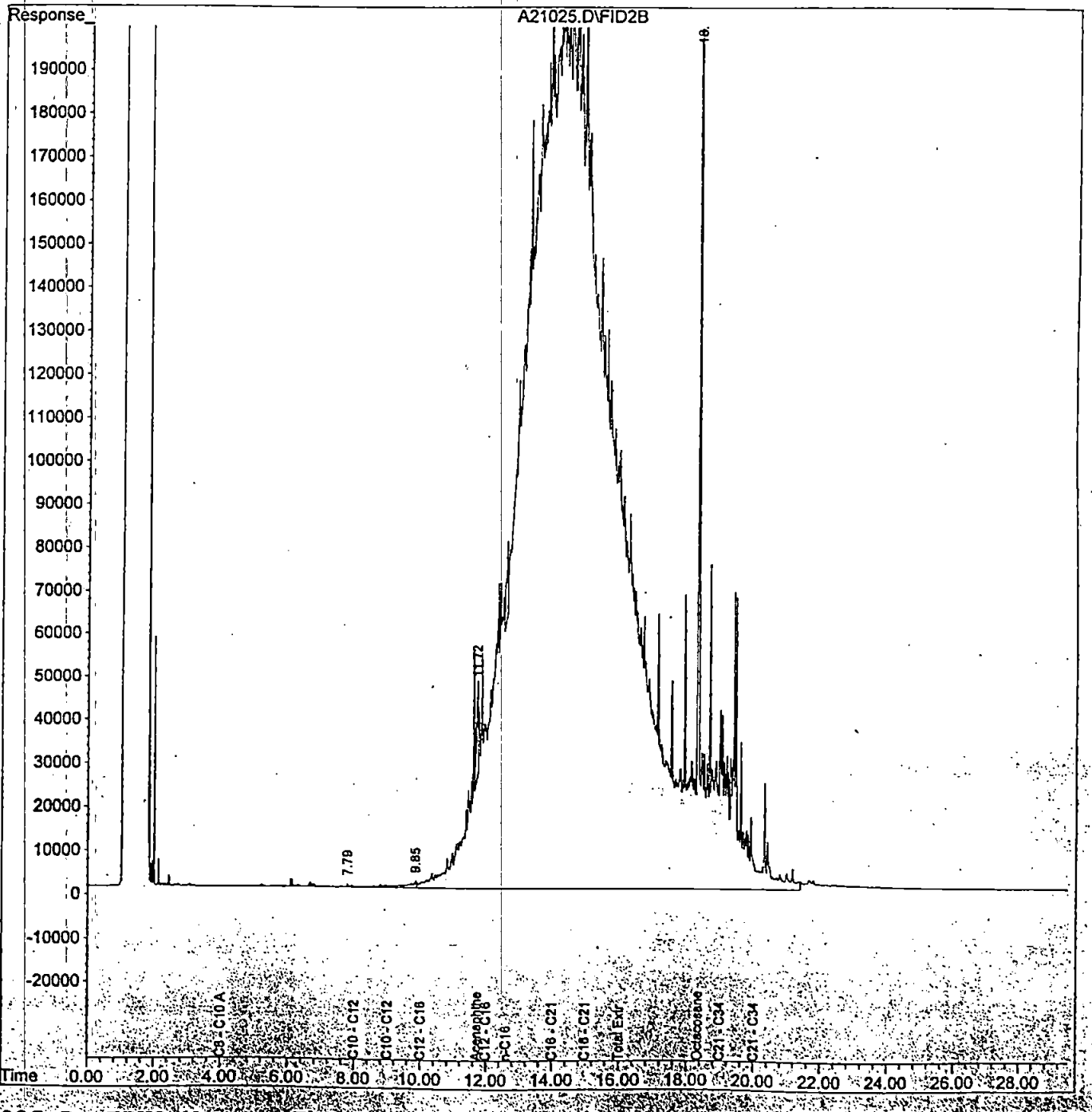
North Creek Analytical, Inc.

Joy B Chang, Project Manager

Data File : C:\HPCHEM\3\DATA.SEC\A21025.D Vial: 22
Acq On : 21 Jan 1998 10:17 pm Operator: hsd
Sample : b801221-01 al Inst : GC #5
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Jan 22 8:02 1998 Quant Results File: EPH2.RES

Quant Method : C:\HPCHEM\3\METHODS\EPH2.M (Chemstation Integrator)
Title : EPH Rear Method
Last Update : Tue Dec 30 10:29:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

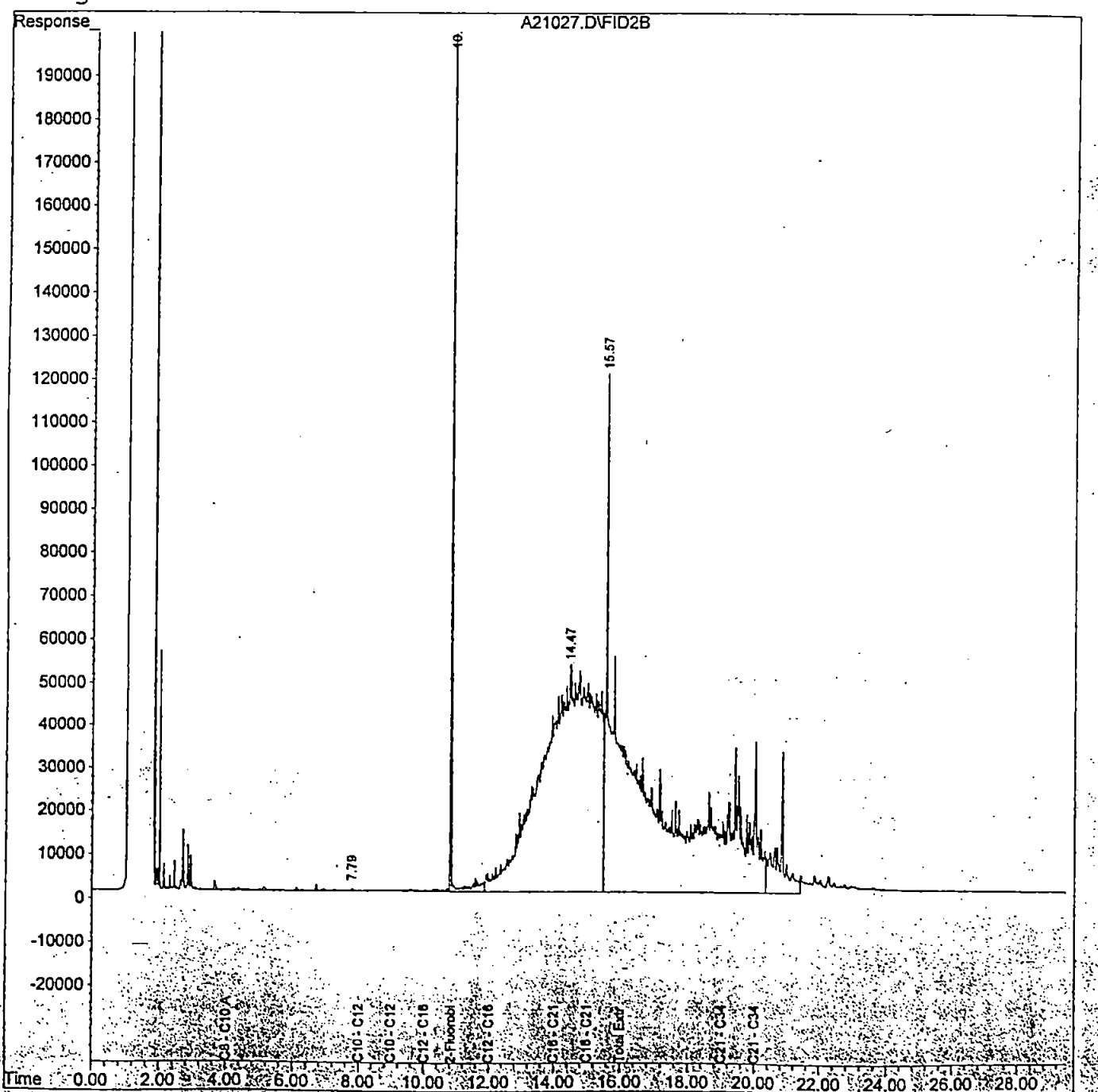
Volume Inj. :
Signal Phase :
Signal Info :



Data File : C:\HPCHEM\3\DATA.SEC\A21027.D Vial: 24
Acq On : 21\Jan 1998 10:55 pm Operator: hsd
Sample : b801221-01 ar Inst : GC #5
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Jan 22 8:02 1998 Quant Results File: EPH2.RES

Quant Method : C:\HPCHEM\3\METHODS\EPH2.M (Chemstation Integrator)
Title : EPH Rear Method
Last Update : Tue Dec 30 10:29:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



NORTH CREEK ANALYTICAL
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East 11115 Montgomery, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus, Beaverton, OR 97008-7132 (503) 644-9200 FAX 644-2202

NEW#
OLD# B801224
Work Order # B712436

CHAIN OF CUSTODY REPORT

REPORT TO:	INVOICE TO:
ATTENTION: Gary Stevens	ATTENTION: PSE
ADDRESS: 8410 154th Ave NE	ADDRESS:
REDMOND Wa, 98052	
PHONE: 425-861-6000 FAX: 425-861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: Grady Way	
PROJECT NUMBER: 186-405-05	
SAMPLED BY: TNO/GRS	

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 Standard | 3-4 | 2 | 1 | Same Day
OTHER Specify
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	NWTPH Dx	PCBs by EPA 8081	TCLP Semi's	EPH	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	B-13-1.5	12/10/97 8AM	B712436-20					S	1	Hold
2.	B-13-3.0	12/10/97 8AM	-21					S	1	Hold
3.	B-32-0.5	12/10/97 1115	B712436-22	X	X	X		S	1	B801224-01
4.	B-32-1.5	12/10/97 1115	-23					S	1	Hold
5.	B-32-3.0	12/10/97 1115	-24					S	1	Hold
6.	B-32-4.0	12/10/97 1115	-25					S	1	Hold
7.	B-33-0.5	12/10/97 1205	-26	X	X			S	1	
8.	B-33-1.5	12/10/97 1205	-27					S	1	Hold
9.	B-33-3.0	12/10/97 1205	-28					S	1	Hold
10.	B-33-4.0	12/10/97 1205	-29					S	1	Hold

Please relay or
1/9/98
ONLY TAT
EPH only

RELINQUISHED BY:	DATE: 12/11/97	RECEIVED BY: K Barker	DATE: 12/11/97
PRINT NAME: Tony Ormo	FIRM: GEI TIME: 900	PRINT NAME: Kendra Barker	FIRM: NCA TIME: 1315
RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:

ADDITIONAL REMARKS: DRXT w/ Silica gel cleanup + transformer oil standard
High amount of organics due to Coal or Charcoal / Burnt wood fill in Soil .6 #/cs

PAGE OF 1

GEU ENGINEERS +++ NORTH CREEK 002

LAB DATA EVALUATION FORM

Page _____ of _____

GEI Job # 186-407-85

Lab Job #/Sample IDs: B712496-01 to 37

GEI Sample IDs TP-1-0.5 to TP-5-0.5
~~B-24-0.5 B-37-95~~
C-C, C-10

Sample Coll Date 12/22/97
Report Recv'd Date 1/8/98

Analysis	Holding Time Exceptions ?	Surrogate Exceptions ?	Blank Hits ?	MS/MSD % Rec Exceptions	Duplicate or MSD RPD Exceptions	Blank Spike or LCS Exceptions (Use if MS/MSD out)
Ecology WTPH-G	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8020 (BETX)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
Ecology WTPH-D Extended	(Yes) (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)
413.1 (FOG)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8010	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8270	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
VPH/BETX/MTBE/Naphthalene	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH-SIM	Yes (No)	Yes (No)	Yes (No)	(Yes) No	(Yes) No	Yes (No)
E-TPH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
PCB 8081	NO	NO	NO	NO	NO	NO
Affected Sample Numbers						

Data Acceptable for Intended Use? YES

Date Comp. 3/16/98
Reviewer Initials TMD

Comments:

See Notes on page 26

Exceptions (As shown in report):

NORTH CREEK ANALYTICAL
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GeoEngineers

JAN 09 1998

Routing
Project: PSE/ Grady Way
File

Geo Engineers - Redmond
8410 154th Ave NE
Redmond, WA 98052

Project Number: 186-407-85
Project Manager: Gary Stevens

Sampled: 12/22/97
Received: 12/23/97
Reported: 1/8/98 15:25

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
TP-1-0.5	B712496-01	Soil	12/22/97
TP-2-0.5	B712496-06	Soil	12/22/97
TP-3-0.5	B712496-07	Soil	12/22/97
TP-4-0.5	B712496-08	Soil	12/22/97
TP-5-0.5	B712496-09	Soil	12/22/97
B-29-0.5	B712496-23	Soil	12/22/97
B-20-0.5	B712496-24	Soil	12/22/97
B-24-0.5	B712496-25	Soil	12/22/97
B-26-0.5	B712496-26	Soil	12/22/97
B-34-0.5	B712496-27	Soil	12/22/97
B-36-0.5	B712496-28	Soil	12/22/97
B-38-0.5	B712496-29	Soil	12/22/97
B-37-0.5	B712496-30	Soil	12/22/97
C-6	B712496-31	Other dry	12/22/97
C-10	B712496-32	Other dry	12/22/97
B-23-0.5	B712496-34	Soil	12/22/97
B-25-0.5	B712496-37	Soil	12/22/97

North Creek Analytical, Inc.

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.

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 15:25

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TP-1-0.5			**B712496-01**				Soil	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*67.9*	%	
TP-2-0.5			**B712496-06**				Soil	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*61.3*	%	
TP-3-0.5			**B712496-07**				Soil	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*59.1*	%	
TP-4-0.5			**B712496-08**				Soil	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 15:25

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TP-4-0.5 (continued)			**B712496-08**				**Soil**	
Fuel Oil #2	1270686	12/26/97	12/27/97		25.0	ND	mg/kg dry	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*64.5*	*%*	
TP-5-0.5			**B712496-09**				**Soil**	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*62.5*	*%*	
B-29-0.5			**B712496-23**				**Soil**	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	**31.9**	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*65.5*	*%*	
B-20-0.5			**B712496-24**				**Soil**	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	

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**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 15:25

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-20-0.5 (continued)			**B712496-24**				**Soil**	
Motor Oil	1270686	12/26/97	12/27/97		25.0	ND	mg/kg dry	
Hydraulic Oil	"	"	"		25.0	**46.3**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*54.6*	*%*	
B-24-0.5			**B712496-25**				**Soil**	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	557	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*67.7*	*%*	
B-26-0.5			**B712496-26**				**Soil**	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**26.3**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*66.3*	*%*	
B-34-0.5			**B712496-27**				**Soil**	
Diesel #2	1270686	12/26/97	12/28/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	**151**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*61.1*	*%*	

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**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 15:25

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes
B-36-0.5			**B712496-28**				**Soil**	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**14.9**	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**29.1**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*57.7*	%	
B-38-0.5			**B712496-29**				**Soil**	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*67.2*	%	
B-37-0.5			**B712496-30**				**Soil**	
Diesel #2	1270686	12/26/97	12/27/97		50.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		50.0	ND	"	
Fuel Oil #2	"	"	"		125	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		125	ND	"	
Transformer Oil	"	"	"		125	ND	"	
Motor Oil	"	"	"		125	ND	"	
Hydraulic Oil	"	"	"		125	**389**	"	
Surrogate: Octacosane	"	"	"	*50.0-150*		*59.6*	%	*1*
B-23-0.5			**B712496-34**				**Soil**	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	

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Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 15:25

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-23-0.5 (continued)			**B712496-34**				**Soil**	
Transformer Oil	1270686	12/26/97	12/27/97		25.0	ND	mg/kg dry	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**14.7**	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**42.2**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*55.0*	%	
B-25-0.5			**B712496-37**				**Soil**	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	65.0	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**19.9**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*53.7*	%	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 15:25

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TP-1-0.5			B712496-01				Soil	2,3
Aroclor 1016	1270811	12/31/97	1/7/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	**141**	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*83.1*	%	
TP-2-0.5			B712496-06				Soil	2,3
Aroclor 1016	1270811	12/31/97	1/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*83.5*	%	
TP-3-0.5			B712496-07				Soil	2,3
Aroclor 1016	1270811	12/31/97	1/7/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*85.4*	%	
TP-4-0.5			B712496-08				Soil	2,3
Aroclor 1016	1270811	12/31/97	1/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 15:25

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TP-4-0.5 (continued)			B712496-08				Soil	2,3
Aroclor 1232	1270811	12/31/97	1/6/98		50.0	ND	ug/kg dry	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*80.8*	%	
TP-5-0.5			B712496-09				Soil	2,3
Aroclor 1016	1270811	12/31/97	1/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*82.6*	%	
B-29-0.5			B712496-23				Soil	2,3
Aroclor 1016	1270811	12/31/97	1/7/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	**99.0**	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*56.0*	%	
B-20-0.5			B712496-24				Soil	2,3
Aroclor 1016	1270811	12/31/97	1/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 15:25

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-20-0.5 (continued)			B712496-24				Soil	2,3
Aroclor 1248	1270811	12/31/97	1/6/98		50.0	ND	ug/kg dry	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*85.4*	%	
B-24-0.5			B712496-25				Soil	2,3
Aroclor 1016	1270811	12/31/97	1/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	**120**	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*99.2*	%	
B-26-0.5			B712496-26				Soil	2,3
Aroclor 1016	1270811	12/31/97	1/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*74.6*	%	
B-34-0.5			B712496-27				Soil	2,3
Aroclor 1016	1270811	12/31/97	1/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	1/7/98		250	**1390**	"	
Aroclor 1248	"	"	1/6/98		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 15:25

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-34-0.5 (continued)			**B712496-27**				**Soil**	**2,3**
Aroclor 1260	1270811	12/31/97	1/6/98		50.0	**234**	ug/kg dry	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*79.6*	%	
B-36-0.5			**B712496-28**				**Soil**	**2,3**
Aroclor 1016	1270811	12/31/97	1/7/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	**60.3**	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*79.0*	%	
B-38-0.5			**B712496-29**				**Soil**	**2,3**
Aroclor 1016	1270811	12/31/97	1/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*84.0*	%	
C-6			**B712496-31**				**Other dry**	**2,3**
Aroclor 1016	1270811	12/31/97	1/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 15:25

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
C-6 (continued)			B712496-31				Other dry	2,3
Aroclor 1268	1270811	12/31/97	1/6/98		50.0	ND	ug/kg dry	
Surrogate: TCX	"	"	"	*38.0-117*		*73.2*	%	
C-10			B712496-32				Other dry	2,3
Aroclor 1016	1270811	12/31/97	1/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*63.8*	%	
B-23-0.5			B712496-34				Soil	2,3
Aroclor 1016	1270811	12/31/97	1/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	218	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*112*	%	
B-25-0.5			B712496-37				Soil	2,3
Aroclor 1016	1270811	12/31/97	1/7/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*80.1*	%	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 15:25

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TP-1-0.5			**B712496-01**				Soil	
Pentachlorophenol	1270777	12/30/97	1/3/98		0.0100	ND	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	ND	"	
Benzo (a) anthracene	"	"	"		0.0100	ND	"	
Benzo (a) pyrene	"	"	"		0.0100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.0100	ND	"	
Benzo (ghi) perylene	"	"	"		0.0100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.0100	ND	"	
Chrysene	"	"	"		0.0100	ND	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	ND	"	
Fluoranthene	"	"	"		0.0100	ND	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	ND	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	ND	"	
Pyrene	"	"	"		0.0100	ND	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*77.9*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*126*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*103*	"	
TP-2-0.5			**B712496-06**				Soil	
Pentachlorophenol	1270777	12/30/97	1/3/98		0.0100	ND	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	ND	"	
Benzo (a) anthracene	"	"	"		0.0100	ND	"	
Benzo (a) pyrene	"	"	"		0.0100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.0100	ND	"	
Benzo (ghi) perylene	"	"	"		0.0100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.0100	ND	"	
Chrysene	"	"	"		0.0100	ND	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	ND	"	
Fluoranthene	"	"	"		0.0100	ND	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	ND	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	ND	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 15:25

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TP-2-0.5 (continued)			B712496-06				Soil	
Pyrene	1270777	12/30/97	1/3/98		0.0100	ND	mg/kg dry	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*85.3*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*135*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*116*	"	
TP-3-0.5			B712496-07				Soil	
Pentachlorophenol	1270777	12/30/97	1/6/98		0.0100	**0.0176**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	ND	"	
Benzo (a) anthracene	"	"	"		0.0100	ND	"	
Benzo (a) pyrene	"	"	"		0.0100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.0100	ND	"	
Benzo (ghi) perylene	"	"	"		0.0100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.0100	ND	"	
Chrysene	"	"	"		0.0100	ND	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	ND	"	
Fluoranthene	"	"	"		0.0100	ND	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	ND	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	ND	"	
Pyrene	"	"	"		0.0100	ND	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*72.7*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*72.2*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*111*	"	
TP-4-0.5			B712496-08				Soil	
Pentachlorophenol	1270777	12/30/97	1/6/98		0.0100	ND	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	ND	"	
Benzo (a) anthracene	"	"	"		0.0100	ND	"	
Benzo (a) pyrene	"	"	"		0.0100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.0100	ND	"	
Benzo (ghi) perylene	"	"	"		0.0100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.0100	ND	"	
Chrysene	"	"	"		0.0100	ND	"	

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 15:25

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TP-4-0.5 (continued)			**B712496-08**				Soil	
Dibenz (a,h) anthracene	1270777	12/30/97	1/6/98		0.0100	ND	mg/kg dry	
Fluoranthene	"	"	"		0.0100	ND	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	ND	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	ND	"	
Pyrene	"	"	"		0.0100	ND	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*89.8*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*91.0*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*109*	"	
TP-5-0.5			**B712496-09**				Soil	
Pentachlorophenol	1270777	12/30/97	1/6/98		0.0100	**0.0219**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	ND	"	
Benzo (a) anthracene	"	"	"		0.0100	ND	"	
Benzo (a) pyrene	"	"	"		0.0100	**0.0148**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.0276**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.0177**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	**0.0106**	"	
Chrysene	"	"	"		0.0100	**0.0177**	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	ND	"	
Fluoranthene	"	"	"		0.0100	**0.0212**	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.0184**	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	ND	"	
Pyrene	"	"	"		0.0100	**0.0219**	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*88.7*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*94.9*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*107*	"	
B-29-0.5			**B712496-23**				Soil	
Pentachlorophenol	1270777	12/30/97	1/6/98		0.0100	**0.0907**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	**0.0353**	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 15:25

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-29-0.5 (continued)			B712496-23				Soil	
Benzo (a) anthracene	1270777	12/30/97	1/6/98		0.0100	**0.230**	mg/kg dry	
Benzo (a) pyrene	"	"	"		0.0100	**0.309**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.550**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.326**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	**0.178**	"	
Chrysene	"	"	"		0.0100	**0.340**	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	**0.0764**	"	
Fluoranthene	"	"	"		0.0100	**0.566**	"	
Fluorene	"	"	"		0.0100	**0.0134**	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.365**	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	**0.226**	"	
Pyrene	"	"	"		0.0100	**0.529**	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*90.8*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*96.7*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*104*	"	
B-20-0.5			B712496-24				Soil	
Pentachlorophenol	1270777	12/30/97	1/6/98		0.0100	**0.373**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	**0.0115**	"	
Benzo (a) anthracene	"	"	"		0.0100	**0.0529**	"	
Benzo (a) pyrene	"	"	"		0.0100	**0.0705**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.139**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.0843**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	**0.0467**	"	
Chrysene	"	"	"		0.0100	**0.103**	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	**0.0192**	"	
Fluoranthene	"	"	"		0.0100	**0.127**	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.0873**	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	**0.0667**	"	
Pyrene	"	"	"		0.0100	**0.141**	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*98.4*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*102*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*110*	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 15:25

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-24-0.5			B712496-25				Soil	
Pentachlorophenol	1270777	12/30/97	1/6/98		0.0100	**0.230**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	ND	"	
Benzo (a) anthracene	"	"	"		0.0100	ND	"	
Benzo (a) pyrene	"	"	"		0.0100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.0167**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.0197**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	ND	"	
Chrysene	"	"	"		0.0100	**0.0124**	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	ND	"	
Fluoranthene	"	"	"		0.0100	**0.0124**	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.0131**	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	**0.0138**	"	
Pyrene	"	"	"		0.0100	**0.0218**	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*93.4*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*94.0*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*102*	"	
B-26-0.5			B712496-26				Soil	
Pentachlorophenol	1270777	12/30/97	1/6/98		0.0100	**0.0496**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	**0.0142**	"	
Benzo (a) anthracene	"	"	"		0.0100	**0.0969**	"	
Benzo (a) pyrene	"	"	"		0.0100	**0.106**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.165**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.0938**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	**0.0599**	"	
Chrysene	"	"	"		0.0100	**0.122**	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	**0.0244**	"	
Fluoranthene	"	"	"		0.0100	**0.179**	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.109**	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	**0.0749**	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
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Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-26-0.5 (continued)			B712496-26				Soil	
Pyrene	1270777	12/30/97	1/6/98		0.0100	**0.184**	mg/kg dry	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*95.9*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*98.0*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*110*	"	
B-34-0.5			B712496-27				Soil	
Pentachlorophenol	1270777	12/30/97	1/6/98		0.0100	**0.634**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	**0.0136**	"	
Anthracene	"	"	"		0.0100	**0.0143**	"	
Benzo (a) anthracene	"	"	"		0.0100	**0.0257**	"	
Benzo (a) pyrene	"	"	"		0.0100	**0.0429**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.0851**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.0358**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	**0.0243**	"	
Chrysene	"	"	"		0.0100	**0.0465**	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	**0.0114**	"	
Fluoranthene	"	"	"		0.0100	**0.0415**	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.0322**	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	**0.0272**	"	
Pyrene	"	"	"		0.0100	**0.0594**	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*95.5*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*96.1*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*101*	"	
B-36-0.5			B712496-28				Soil	
Pentachlorophenol	1270777	12/30/97	1/2/98		0.0100	**0.0562**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	ND	"	
Benzo (a) anthracene	"	"	"		0.0100	**0.0415**	"	
Benzo (a) pyrene	"	"	"		0.0100	**0.0450**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.0934**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.0441**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	**0.0225**	"	
Chrysene	"	"	"		0.0100	**0.0571**	"	

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Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-36-0.5 (continued)			B712496-28				Soil	
Dibenz (a,h) anthracene	1270777	12/30/97	1/2/98		0.0100	**0.0112**	mg/kg dry	
Fluoranthene	"	"	"		0.0100	**0.0969**	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.0597**	"	
Naphthalene	"	"	"		0.0100	**0.0251**	"	
Phenanthrene	"	"	"		0.0100	**0.0580**	"	
Pyrene	"	"	"		0.0100	**0.0943**	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*69.9*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*112*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*90.7*	"	
B-38-0.5			B712496-29				Soil	
Pentachlorophenol	1270777	12/30/97	1/6/98		0.0100	**0.193**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	ND	"	
Benzo (a) anthracene	"	"	"		0.0100	**0.0359**	"	
Benzo (a) pyrene	"	"	"		0.0100	**0.0465**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.0885**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.0267**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	**0.0313**	"	
Chrysene	"	"	"		0.0100	**0.0588**	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	ND	"	
Fluoranthene	"	"	"		0.0100	**0.0717**	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.0343**	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	**0.0313**	"	
Pyrene	"	"	"		0.0100	**0.0694**	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*90.1*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*89.5*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*99.0*	"	
B-23-0.5			B712496-34				Soil	
Pentachlorophenol	1270777	12/30/97	1/2/98		0.0500	**1.83**	mg/kg dry	
Acenaphthene	"	"	1/6/98		0.0100	**0.0126**	"	
Acenaphthylene	"	"	"		0.0100	**0.268**	"	
Anthracene	"	"	"		0.0100	**0.132**	"	

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PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 15:25

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-23-0.5 (continued)			B712496-34				Soil	
Benzo (a) anthracene	1270777	12/30/97	1/6/98		0.0100	**0.294**	mg/kg dry	
Benzo (a) pyrene	"	"	"		0.0100	**0.454**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.675**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.275**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	**0.216**	"	
Chrysene	"	"	"		0.0100	**0.374**	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	**0.0894**	"	
Fluoranthene	"	"	"		0.0100	**0.285**	"	
Fluorene	"	"	"		0.0100	**0.0185**	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.361**	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	**0.133**	"	
Pyrene	"	"	"		0.0100	**0.438**	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*91.4*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*87.0*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*103*	"	
B-25-0.5			B712496-37				Soil	
Pentachlorophenol	1270777	12/30/97	1/6/98		0.0100	**0.0834**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	**0.0249**	"	
Benzo (a) anthracene	"	"	"		0.0100	**0.0686**	"	
Benzo (a) pyrene	"	"	"		0.0100	**0.0670**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.0974**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.0242**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	**0.0312**	"	
Chrysene	"	"	"		0.0100	**0.101**	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	ND	"	
Fluoranthene	"	"	"		0.0100	**0.164**	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.0288**	"	
Naphthalene	"	"	"		0.0100	**0.0265**	"	
Phenanthrene	"	"	"		0.0100	**0.210**	"	
Pyrene	"	"	"		0.0100	**0.218**	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*74.9*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*86.7*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*97.9*	"	

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**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 15:25

Dry Weight Determination
North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
TP-1-0.5	B712496-01	Soil	92.3	%
TP-2-0.5	B712496-06	Soil	93.9	%
TP-3-0.5	B712496-07	Soil	94.5	%
TP-4-0.5	B712496-08	Soil	94.0	%
TP-5-0.5	B712496-09	Soil	94.3	%
B-29-0.5	B712496-23	Soil	69.8	%
B-20-0.5	B712496-24	Soil	87.0	%
B-24-0.5	B712496-25	Soil	91.6	%
B-26-0.5	B712496-26	Soil	84.6	%
B-34-0.5	B712496-27	Soil	93.2	%
B-36-0.5	B712496-28	Soil	77.1	%
B-38-0.5	B712496-29	Soil	87.4	%
B-37-0.5	B712496-30	Soil	81.3	%
C-6	B712496-31	Other dry	93.0	%
C-10	B712496-32	Other dry	95.6	%
B-23-0.5	B712496-34	Soil	90.2	%
B-25-0.5	B712496-37	Soil	85.5	%

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled:	12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received:	12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported:	1/8/98 15:25

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Batch: 1270686	**Date Prepared: 12/26/97**					**Extraction Method: EPA 3550**				
Blank	**1270686-BLK1**									
Diesel #2	12/26/97			**ND**	mg/kg dry	**10.0**				
Kerosene Range Hydrocarbons	"			**ND**	"	**10.0**				
Fuel Oil #2	"			**ND**	"	**25.0**				
Fuel Oil #6 (Bunker C)	"			**ND**	"	**25.0**				
Transformer Oil	"			**ND**	"	**25.0**				
Motor Oil	"			**ND**	"	**25.0**				
Hydraulic Oil	"			**ND**	"	**25.0**				
Diesel Range Hydrocarbons	"			**ND**	"	**10.0**				
Heavy Oil Range Hydrocarbons	"			**ND**	"	**25.0**				
Surrogate: 2-FBP	"	*12.1*		*6.18*	"	*50.0-150*	*51.1*			
LCS	**1270686-BS1**									
Diesel #2	12/26/97	66.7		48.5	mg/kg dry	50.0-150	72.7			
Surrogate: 2-FBP	"	*12.1*		*7.56*	"	*50.0-150*	*62.5*			
Duplicate	**1270686-DUP1**	**B712496-01**								
Diesel #2	12/27/97		ND	ND	mg/kg dry			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Hydraulic Oil	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		ND	ND	"			50.0		
Heavy Oil Range Hydrocarbons	"		ND	ND	"			50.0		
Surrogate: 2-FBP	"	*13.2*		*7.81*	"	*50.0-150*	*59.2*			
Duplicate	**1270686-DUP2**	**B712496-06**								
Diesel #2	12/27/97		ND	ND	mg/kg dry			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Hydraulic Oil	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		ND	ND	"			50.0		
Heavy Oil Range Hydrocarbons	"		ND	ND	"			50.0		

North Creek Analytical, Inc.

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 15:25

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Duplicate (continued)	**1270686-DUP2**		**B712496-06**							
Surrogate: 2-FBP	*12/27/97*	*12.9*		*8.68*	*mg/kg dry*	*50.0-150*	*67.3*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 15:25

Polychlorinated Biphenyls by EPA Method 8081/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270811	**Date Prepared: 12/31/97**					**Extraction Method: EPA 3550**				
Blank	**1270811-BLK1**									2,3
Aroclor 1016	1/6/98			ND	ug/kg dry	50.0				
Aroclor 1221	"			ND	"	50.0				
Aroclor 1232	"			ND	"	50.0				
Aroclor 1242	"			ND	"	50.0				
Aroclor 1248	"			ND	"	50.0				
Aroclor 1254	"			ND	"	50.0				
Aroclor 1260	"			ND	"	50.0				
Aroclor 1262	"			ND	"	50.0				
Aroclor 1268	"			ND	"	50.0				
Surrogate: TCX	"	*6.67*		*5.92*	"	*38.0-117*	*88.8*			
LCS	**1270811-BS1**									2,3
Aroclor 1260	1/6/98	333		252	ug/kg dry	44.0-123	75.7			
Surrogate: TCX	"	*6.67*		*5.72*	"	*38.0-117*	*85.8*			
Matrix Spike	**1270811-MS1**		**B712496-08**							2,3
Aroclor 1260	1/6/98	354	ND	271	ug/kg dry	28.0-132	**76.6**			
Surrogate: TCX	"	*7.09*		*5.80*	"	*38.0-117*	*81.8*			
Matrix Spike Dup	**1270811-MSD1**		**B712496-08**							2,3
Aroclor 1260	1/6/98	354	ND	267	ug/kg dry	28.0-132	**75.4**	23.0	**1.58**	
Surrogate: TCX	"	*7.09*		*5.52*	"	*38.0-117*	*77.9*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 15:25

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270777	**Date Prepared: 12/30/97**					**Extraction Method: EPA 3550**				
Blank	**1270777-BLK1**									
Pentachlorophenol	12/31/98			ND	mg/kg dry	0.0100				
Acenaphthene	"			ND	"	0.0100				
Acenaphthylene	"			ND	"	0.0100				
Anthracene	"			ND	"	0.0100				
Benzo (a) anthracene	"			ND	"	0.0100				
Benzo (a) pyrene	"			ND	"	0.0100				
Benzo (b) fluoranthene	"			ND	"	0.0100				
Benzo (ghi) perylene	"			ND	"	0.0100				
Benzo (k) fluoranthene	"			ND	"	0.0100				
Chrysene	"			ND	"	0.0100				
Dibenz (a,h) anthracene	"			ND	"	0.0100				
Fluoranthene	"			ND	"	0.0100				
Fluorene	"			ND	"	0.0100				
Indeno (1,2,3-cd) pyrene	"			ND	"	0.0100				
Naphthalene	"			ND	"	0.0100				
Phenanthrene	"			ND	"	0.0100				
Pyrene	"			ND	"	0.0100				
Surrogate: 2-FBP	"	*1.67*		*1.33*	"	*30.0-150*	*79.6*			
Surrogate: Nitrobenzene-d5	"	*1.67*		*2.08*	"	*30.0-150*	*125*			
Surrogate: p-Terphenyl-d14	"	*1.67*		*1.55*	"	*30.0-150*	*92.8*			
LCS	**1270777-BS1**									
Chrysene	12/31/98	0.0669		0.0720	mg/kg dry	10.0-125	108			
Fluorene	"	0.0668		0.0747	"	11.0-116	112			
Indeno (1,2,3-cd) pyrene	"	0.0668		0.0900	"	10.0-147	135			
Surrogate: 2-FBP	"	*1.67*		*1.31*	"	*30.0-150*	*78.4*			
Surrogate: Nitrobenzene-d5	"	*1.67*		*2.09*	"	*30.0-150*	*125*			
Surrogate: p-Terphenyl-d14	"	*1.67*		*1.44*	"	*30.0-150*	*86.2*			
Matrix Spike	**1270777-MS1**		**B712496-01**							
Chrysene	1/1/98	0.0725	ND	0.0802	mg/kg dry	10.0-125	**111**			
Fluorene	"	0.0724	ND	0.0867	"	10.0-154	**120**			
Indeno (1,2,3-cd) pyrene	"	0.0724	ND	0.109	"	10.0-144	**151**			4
Surrogate: 2-FBP	"	*1.81*		*1.48*	"	*30.0-150*	*81.8*			
Surrogate: Nitrobenzene-d5	"	*1.81*		*2.32*	"	*30.0-150*	*128*			
Surrogate: p-Terphenyl-d14	"	*1.81*		*1.66*	"	*30.0-150*	*91.7*			

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8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 15:25

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Matrix Spike Dup	1270777-MSD1		B712496-01							
Chrysene	1/1/98	0.0725	ND	0.0787	mg/kg dry	10.0-125	**109**	28.0	**1.82**	
Fluorene	"	0.0724	ND	0.0802	"	10.0-154	**111**	32.0	**7.79**	
Indeno (1,2,3-cd) pyrene	"	0.0724	ND	0.105	"	10.0-144	**145**	47.0	**4.05**	
Surrogate: 2-FBP	"	*1.81*		*1.38*	"	*30.0-150*	*76.2*			
Surrogate: Nitrobenzene-d5	"	*1.81*		*2.20*	"	*30.0-150*	*122*			
Surrogate: p-Terphenyl-d14	"	*1.81*		*1.66*	"	*30.0-150*	*91.7*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
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Notes and Definitions

#	Note
1	Due to an extraction anomaly, results of the secondary surrogate have been used to control the analysis.
2	To reduce matrix interference, the sample extract has undergone copper clean-up, method 3660, which is specific to sulfur contamination.
3	To reduce matrix interference, the sample extract has undergone sulfuric acid clean-up, method 3665, which is specific to hydrocarbon contamination.
4	The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

Joy B Chang, Project Manager

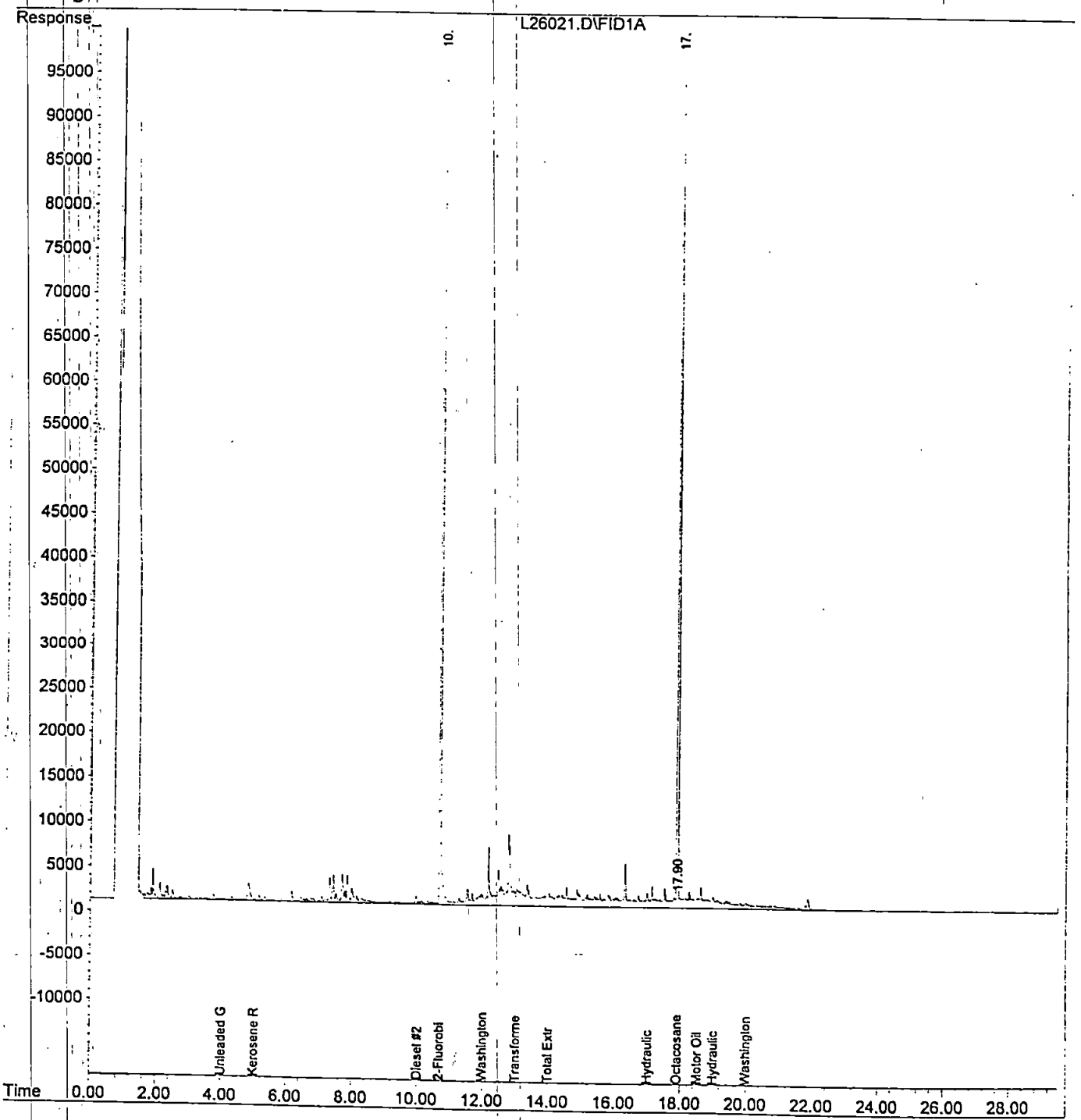
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26021.D
Acq On : 27 Dec 1997 1:15 am
Sample : b712496-01
Misc : S
IntFile : SURR.E
Quant Time: Dec 27 11:04 1997 Quant Results File: NWTPHD.RES

Vial: 15
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



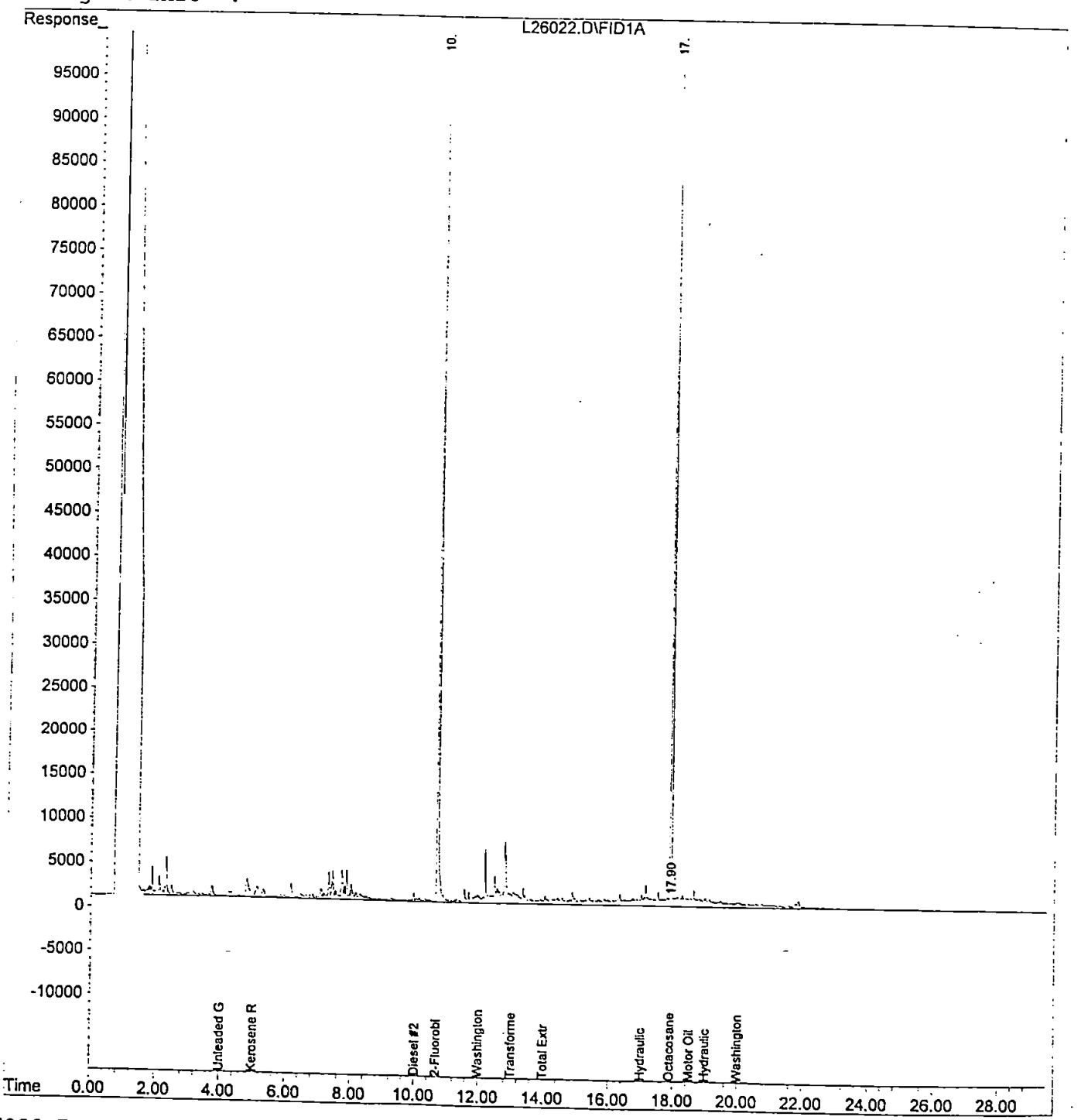
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26022.D
Acq On : 27 Dec 1997 1:52 am
Sample : b712496-06
Misc : S
IntFile : SURR.E
Quant Time: Dec 27 11:05 1997 Quant Results File: NWTPHD.RES

Vial: 16
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



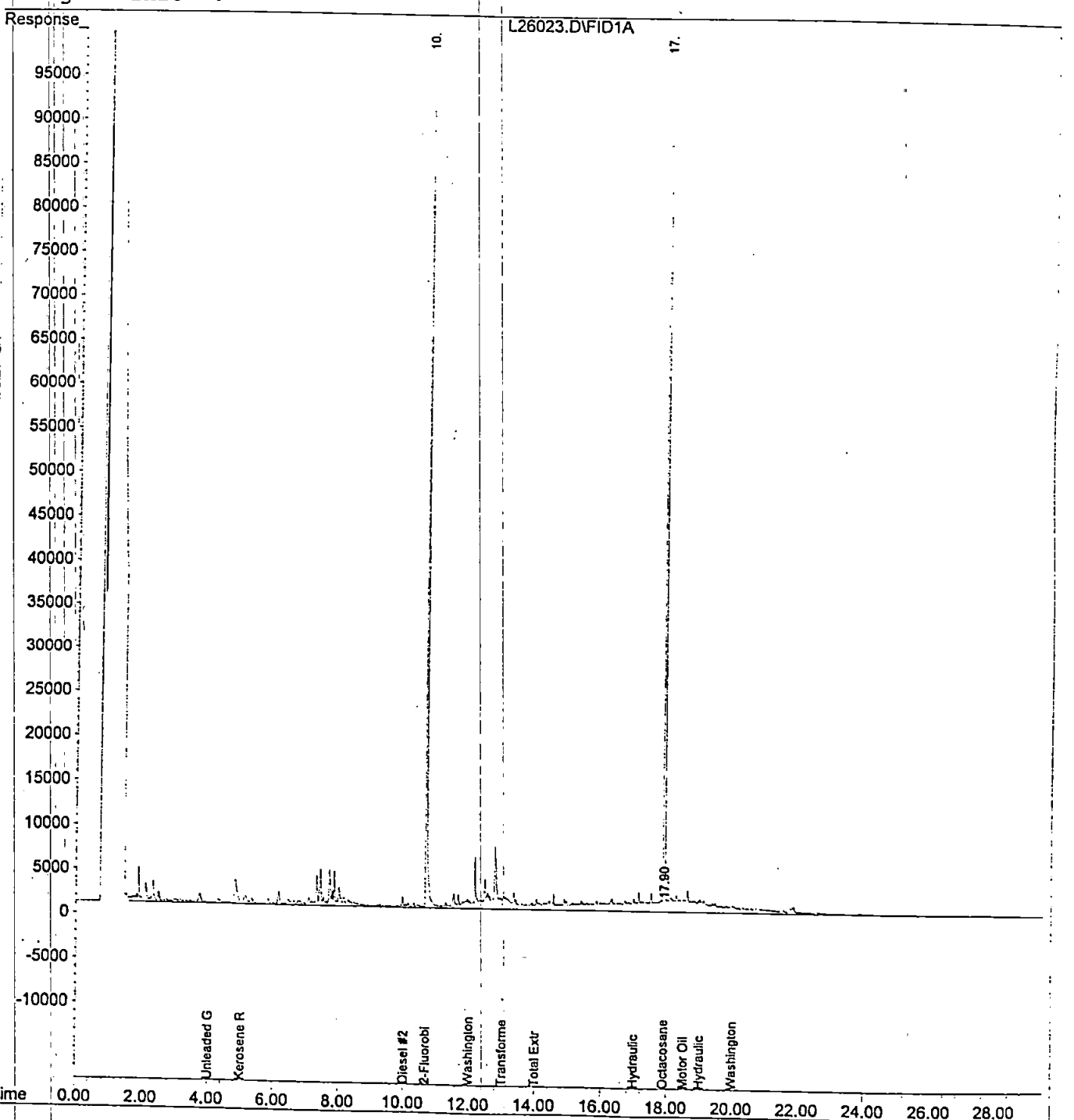
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26023.D
Acq On : 27 Dec 1997 2:29 am
Sample : b712496-07
Misc : S
IntFile : SURR.E
Quant Time: Dec 27 11:06 1997 Quant Results File: NWTPHD.RES

Vial: 17
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



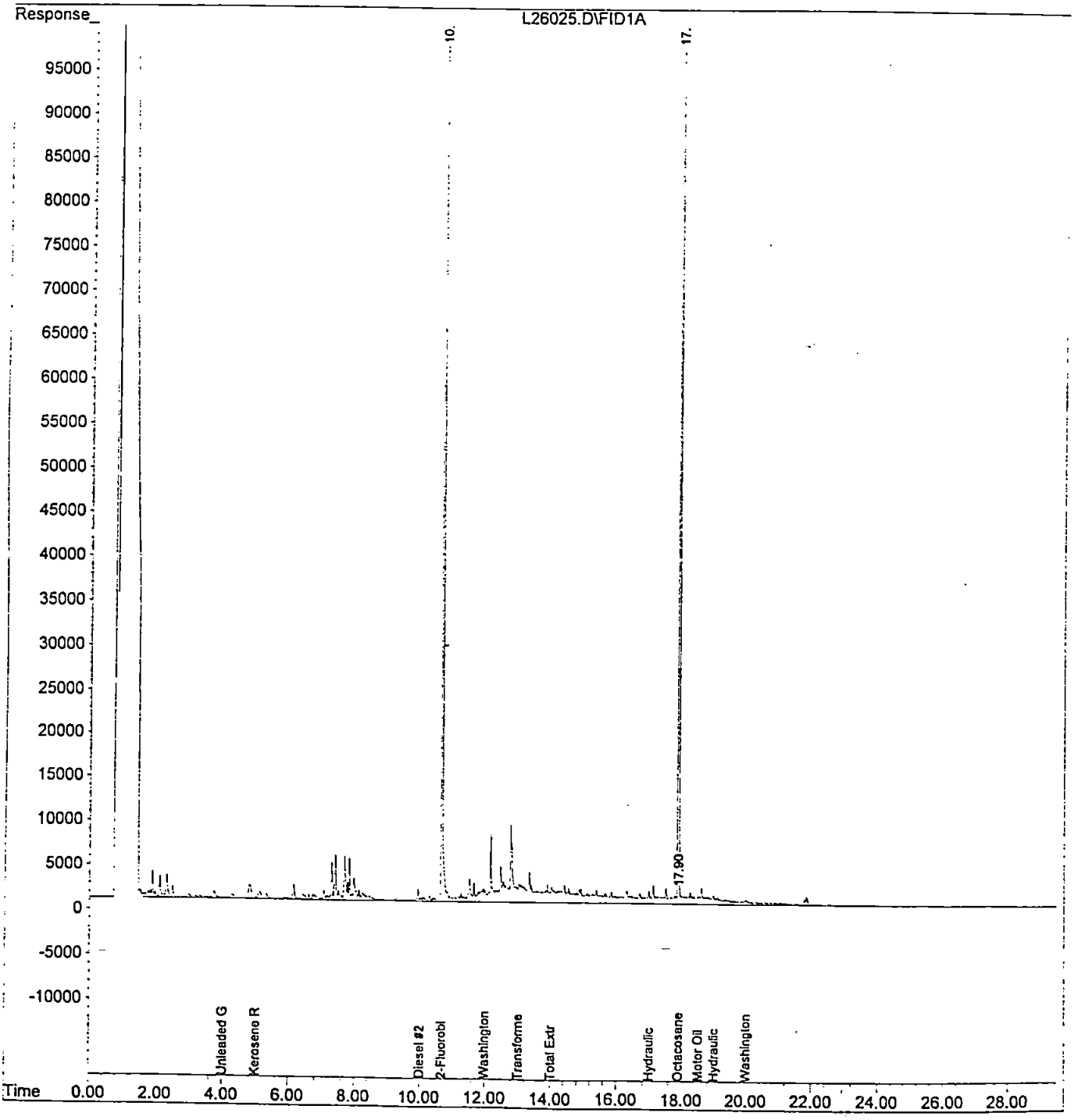
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26025.D
Acq On : 27 Dec 1997 3:44 am
Sample : b712496-08
Misc : S
IntFile : SURR.E
Quant Time: Dec 27 11:12 1997 Quant Results File: NWTPHD.RES

Vial: 18
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



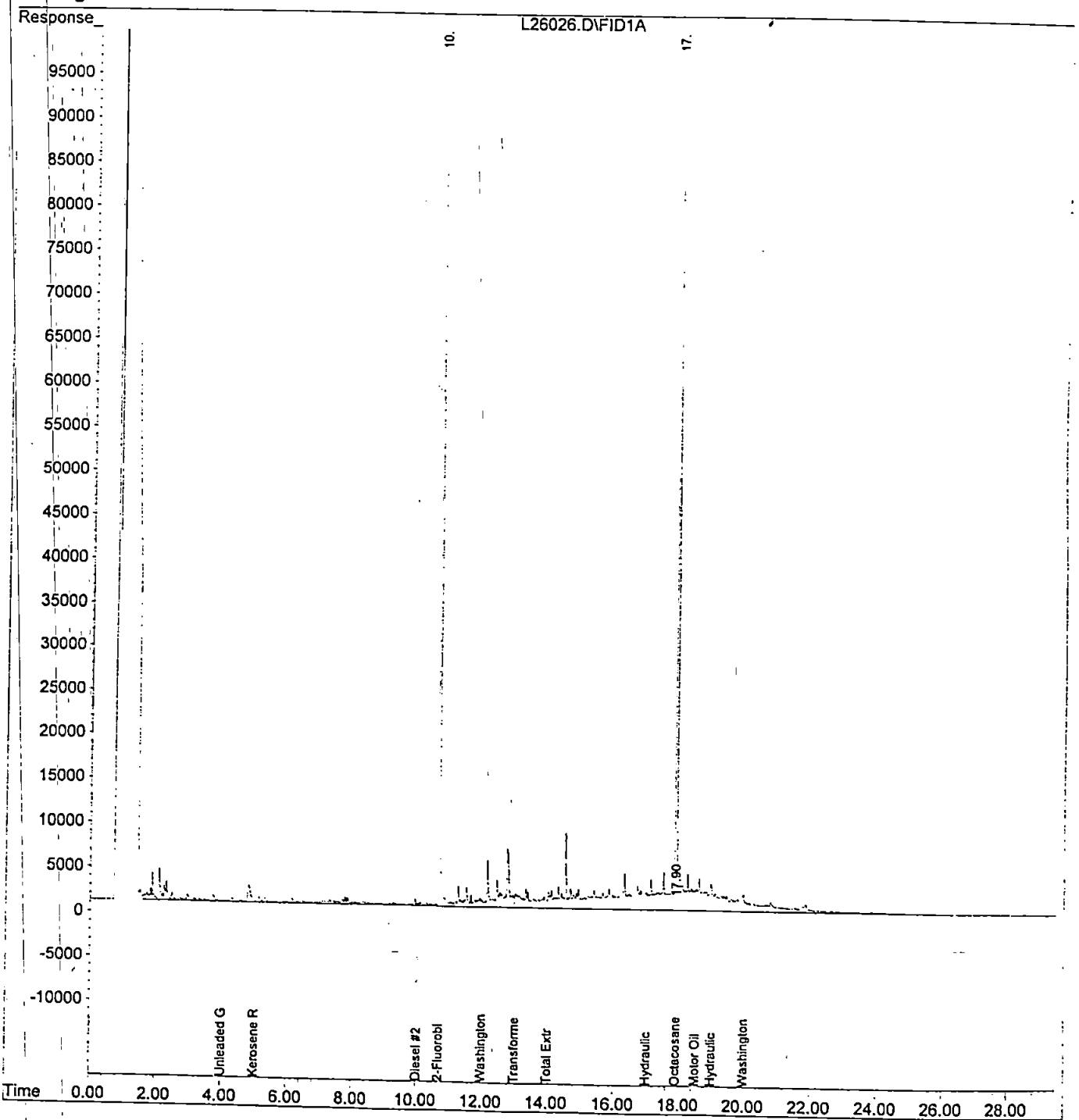
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26026.D
Acq On : 27 Dec 1997 4:21 am
Sample : b712496-09
Misc : S
IntFile : SURR.E
Quant Time: Dec 27 11:13 1997 Quant Results File: NWTPHD.RES

Vial: 19
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



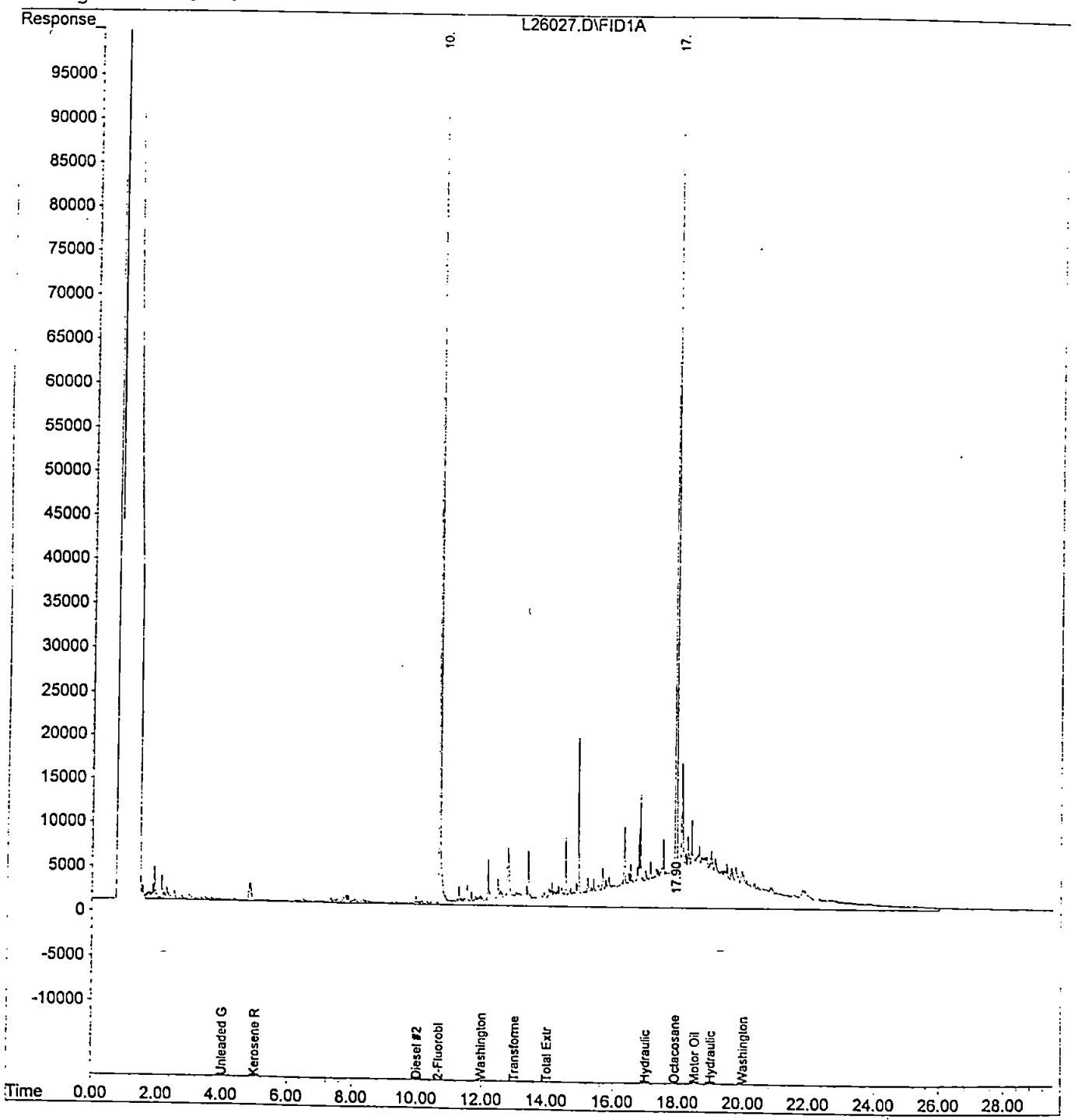
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26027.D
Acq On : 27 Dec 1997 4:59 am
Sample : b712496-23
Misc : S
IntFile : SURR.E
Quant Time: Dec 27 11:13 1997 Quant Results File: NWTPHD.RES

Vial: 20
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

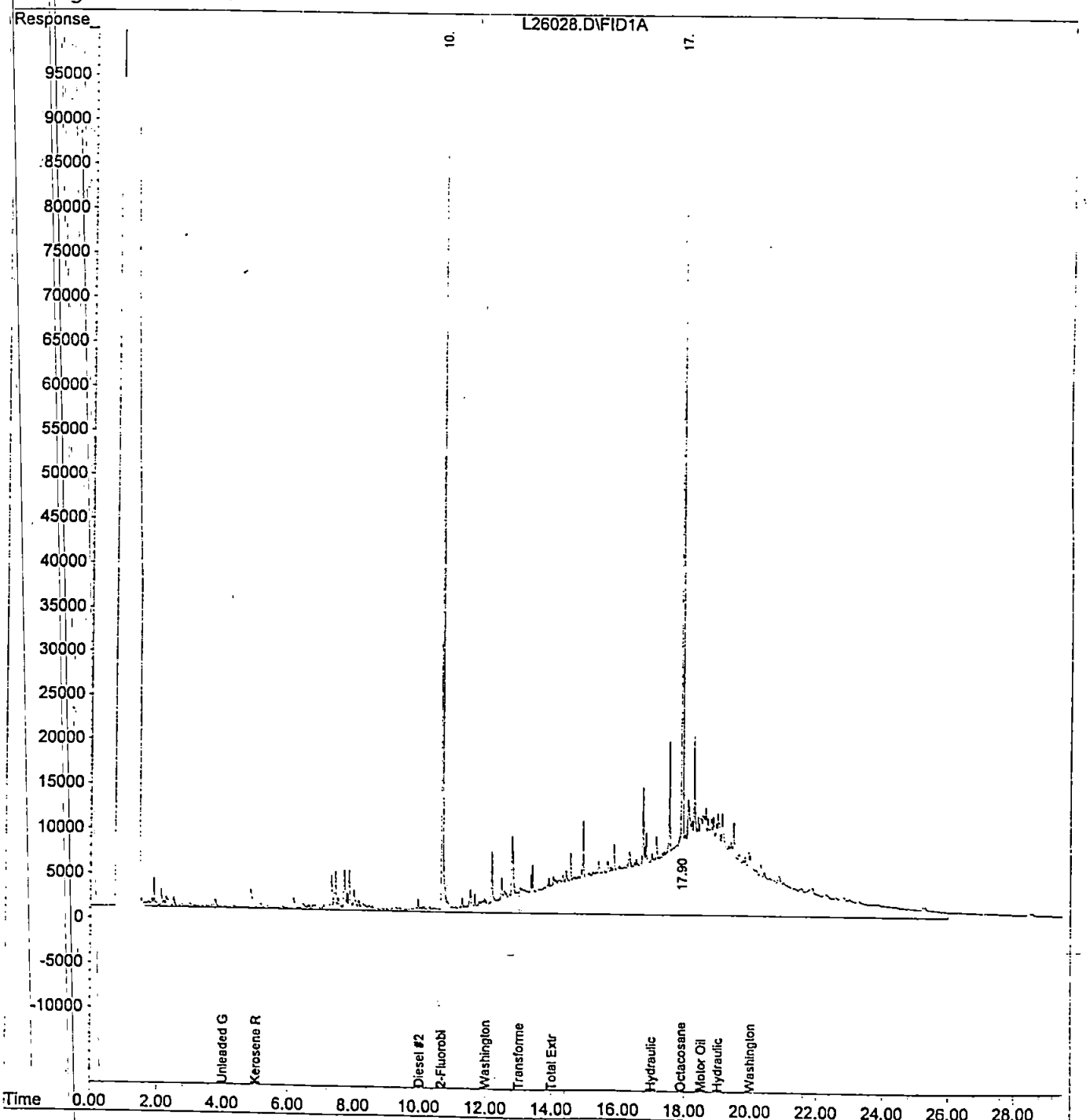
Data File : C:\HPCHEM\2\DATA\L26028.D
Acq On : 27 Dec 1997 5:36 am
Sample : b712496-24
Misc : S
IntFile : SURR.E

Vial: 21
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Time: Dec 27 11:15 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



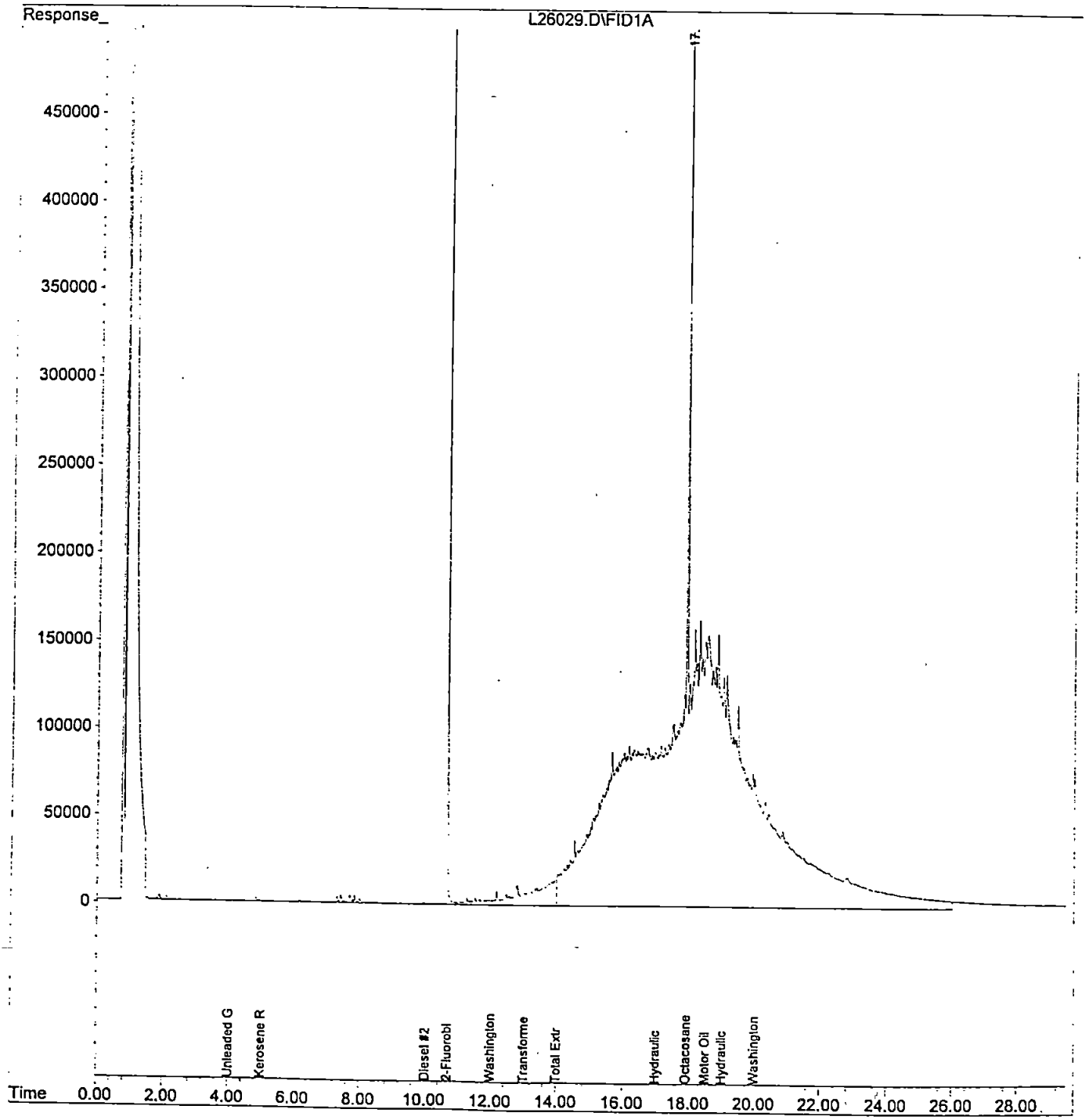
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26029.D
Acq On : 27 Dec 1997 6:13 am
Sample : b712496-25
Misc : S
IntFile : SURR.E
Quant Time: Dec 27 11:16 1997 Quant Results File: NWTPHD.RES

Vial: 22
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

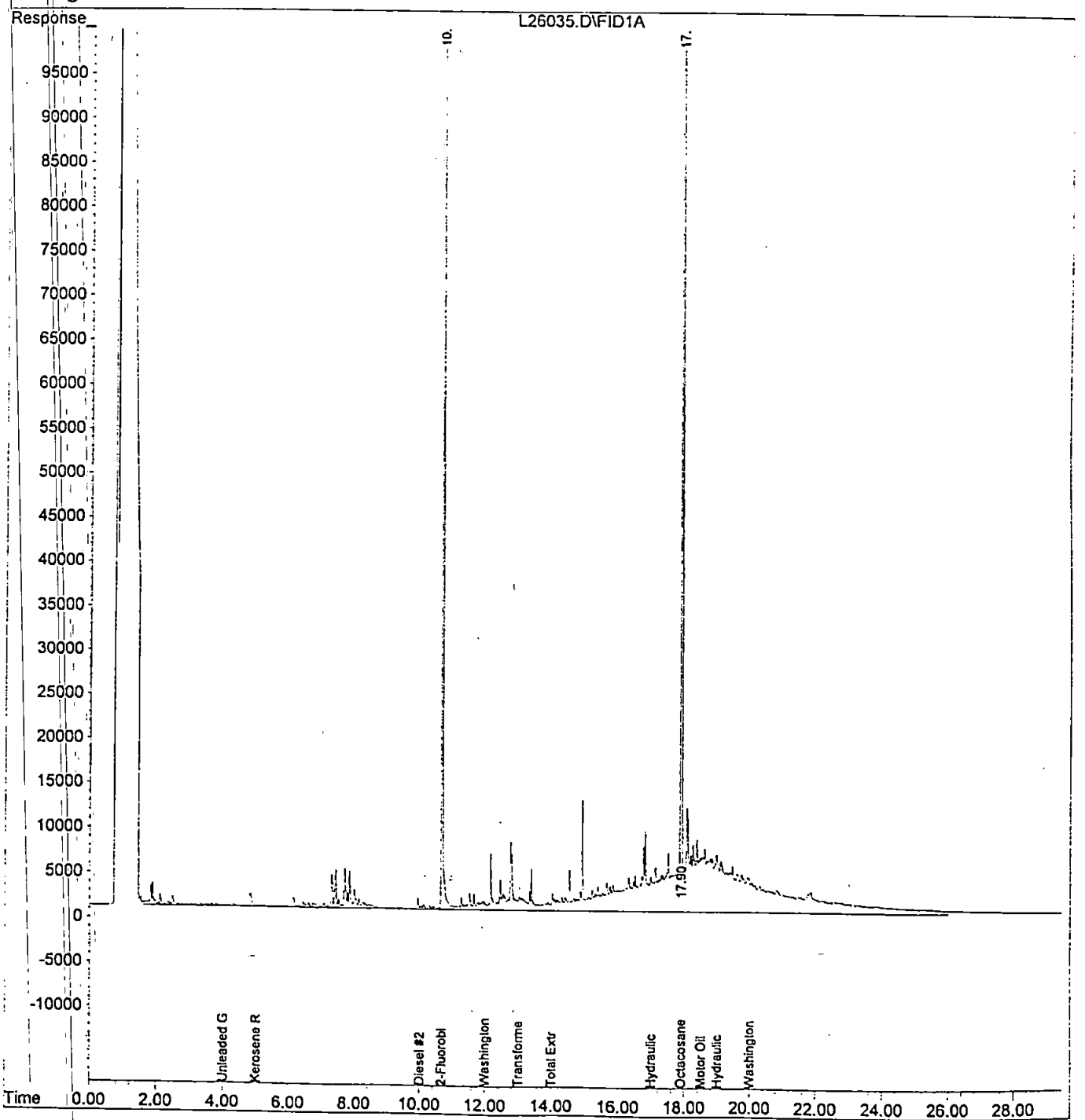
Data File : C:\HPCHEM\2\DATA\L26035.D
Acq On : 27 Dec 1997 9:56 am
Sample : b712496-26
Misc : S
IntFile : SURR.E

Vial: 23
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Time: Dec 27 11:20 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



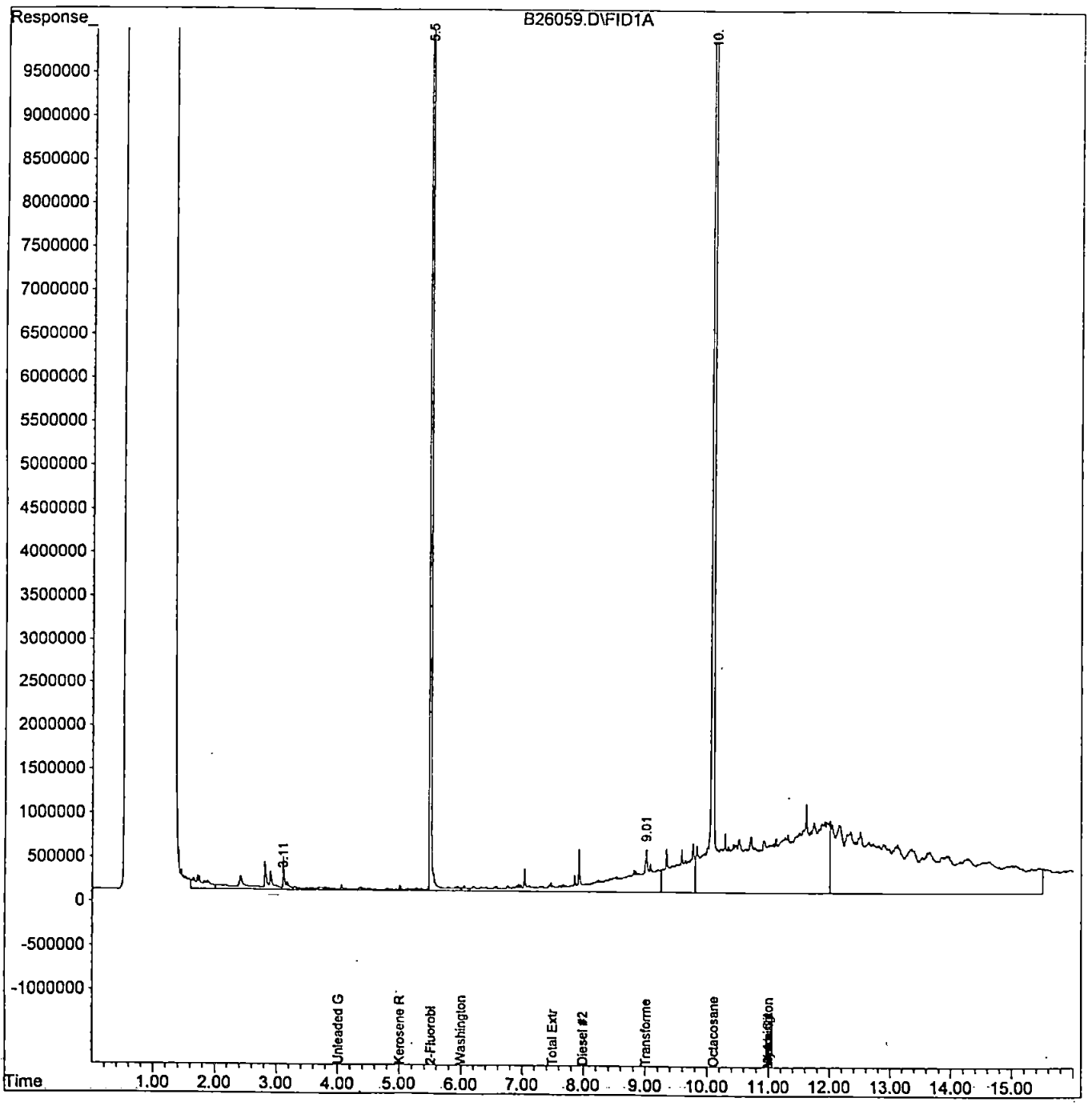
Quantitation Report

Data File : C:\HPCHEM\4\DATA\B26059.D
Acq On : 27-02-1998 3:29:33 AM
Sample : b802390-07
Misc :
IntFile : SURR.E
Quant Time: Feb 27 9:15 1998 Quant Results File: NWTPHD.RES

Vial: 31
Operator: nja
Inst : GC #7
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Fri Feb 27 08:44:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

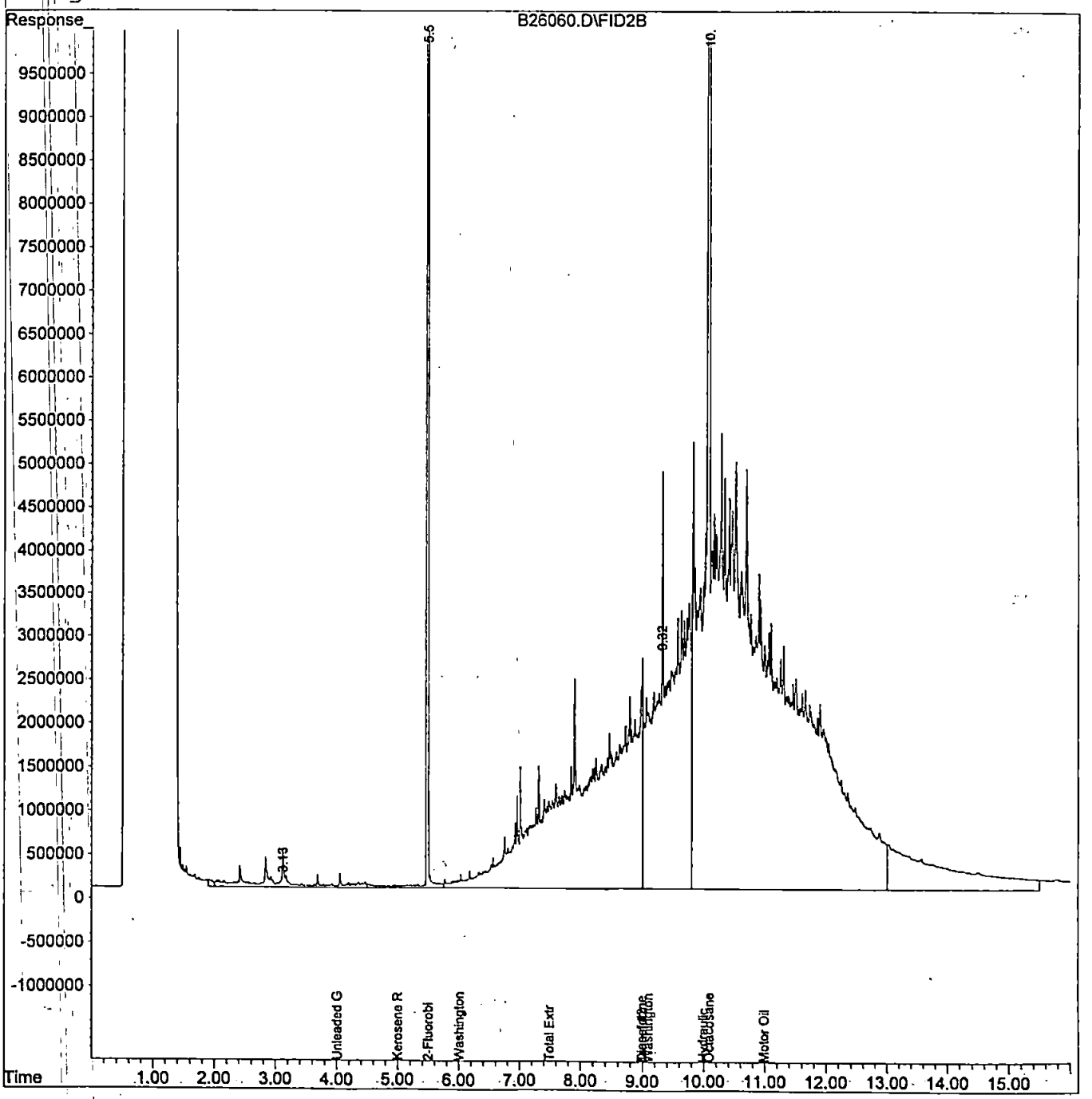


Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\B26060.D Vial: 32
Acq On : 27-02-1998 3:51:48 AM Operator: nja
Sample : b802390-08 Inst : GC #7
Misc : Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 27 9:58 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Thu Feb 26 09:24:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



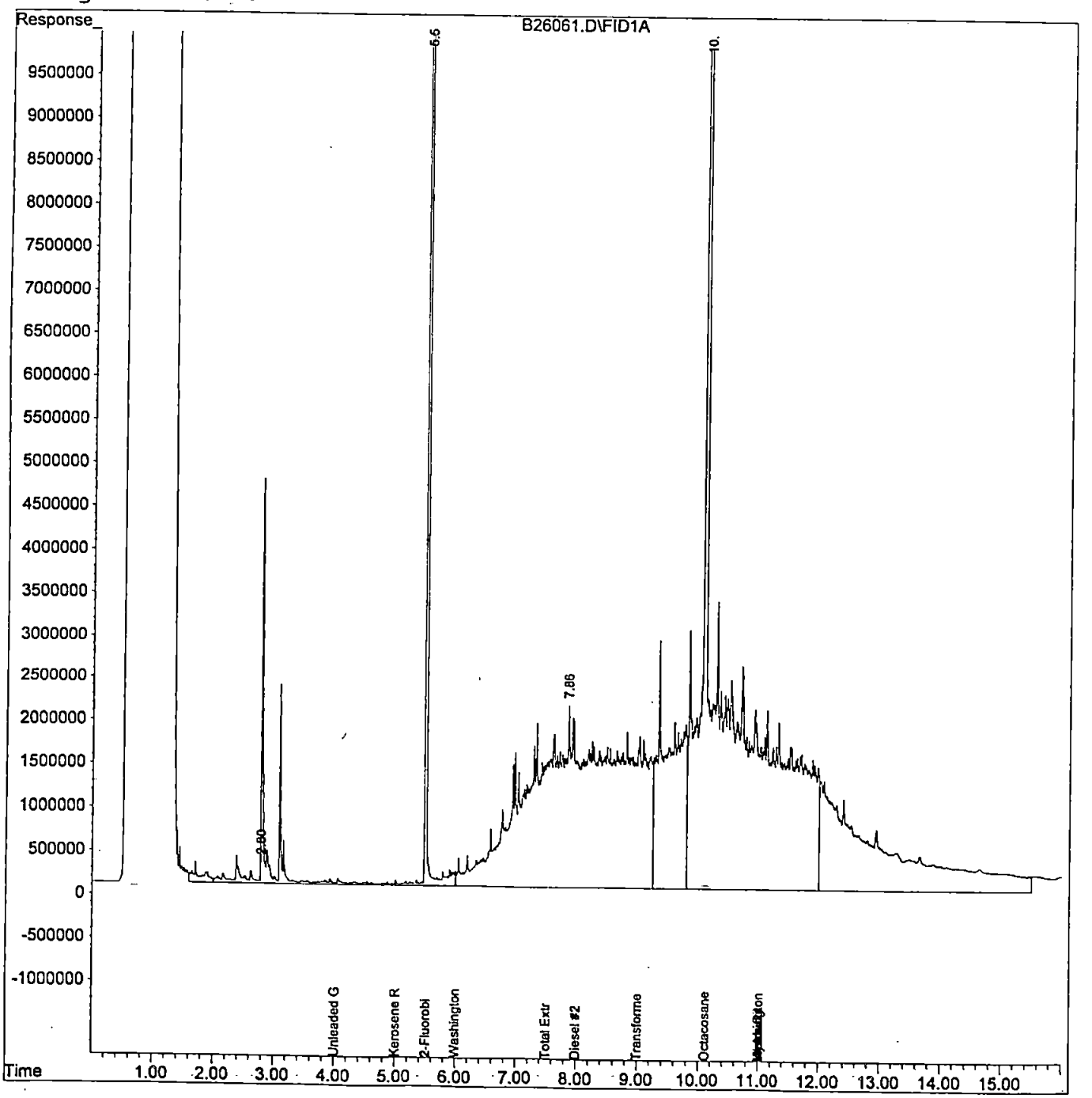
Quantitation Report

Data File : C:\HPCHEM\4\DATA\B26061.D
Acq On : 27-02-1998 3:51:48 AM
Sample : b802390-09
Misc :
IntFile : SURR.E
Quant Time: Feb 27 9:16 1998 Quant Results File: NWTPHD.RES

Vial: 33
Operator: nja
Inst : GC #7
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Fri Feb 27 08:44:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

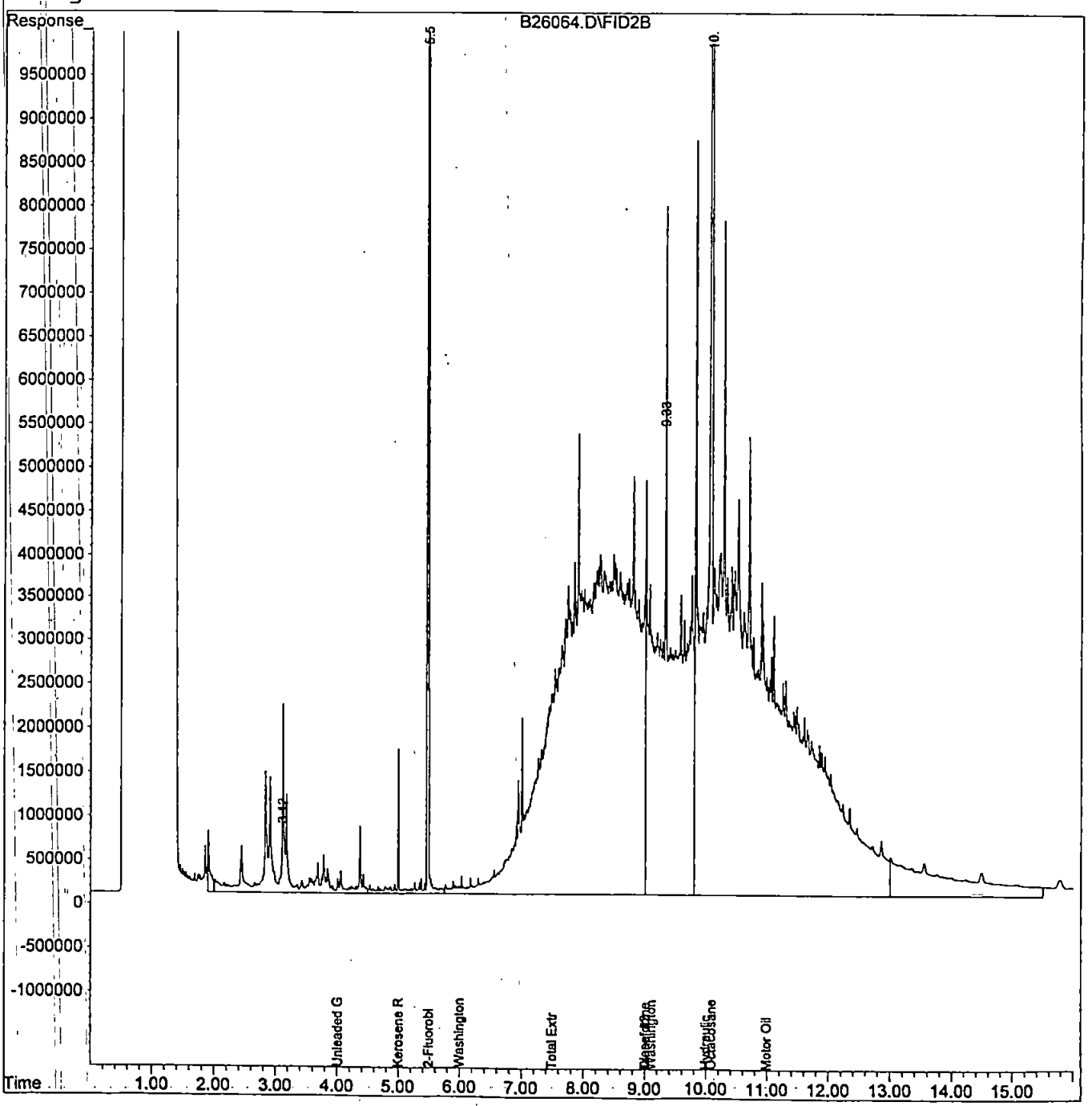


Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\B26064.D Vial: 34
Acq On : 27-02-1998 4:36:22 AM Operator: nja
Sample : b802390-10 Inst : GC #7
Misc : Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 27 10:01 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Thu Feb 26 09:24:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



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Environmental Laboratory Services

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/22/98 14:16

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TP-1-6.0			**B801169-01**				**Soil**	
Diesel #2	0180365	1/16/98	1/21/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**26.9**	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**45.7**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*88.7*	*%*	
TP-2-4.0			**B801169-02**				**Soil**	
Diesel #2	0180365	1/16/98	1/21/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**36.7**	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**51.0**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*74.6*	*%*	
TP-3-4.0			**B801169-03**				**Soil**	
Diesel #2	0180365	1/16/98	1/21/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**27.7**	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**48.4**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*80.2*	*%*	
TP-4-4.0			**B801169-04**				**Soil**	
Diesel #2	0180365	1/16/98	1/21/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	

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**Refer to end of report for text of notes and definitions.*

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/22/98 14:16

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TP-4-4.0 (continued)			B801169-04				Soil	
Fuel Oil #2	0180365	1/16/98	1/21/98		25.0	ND	mg/kg dry	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**27.2**	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**28.7**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*80.5*	%	
TP-5-4.0			B801169-05				Soil	
Diesel #2	0180365	1/16/98	1/21/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	**986**	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*67.1*	%	

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/22/98 14:16

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TP-1-6.0			B801169-01				Soil	1,2
Aroclor 1016	0180354	1/16/98	1/21/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*66.8*	*%*	
TP-2-4.0			B801169-02				Soil	1,2
Aroclor 1016	0180354	1/16/98	1/21/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	**65.5**	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*76.5*	*%*	
TP-3-4.0			B801169-03				Soil	1,2
Aroclor 1016	0180354	1/16/98	1/21/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*68.9*	*%*	
TP-4-4.0			B801169-04				Soil	1,2
Aroclor 1016	0180354	1/16/98	1/21/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/22/98 14:16

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TP-4-4.0 (continued)			**B801169-04**				**Soil**	**1,2**
Aroclor 1232	0180354	1/16/98	1/21/98		50.0	ND	ug/kg dry	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*66.2*	*%*	
TP-5-4.0			**B801169-05**				**Soil**	**1,2**
Aroclor 1016	0180354	1/16/98	1/21/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	1/22/98		250	**1850**	"	
Aroclor 1262	"	"	1/21/98		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*76.2*	*%*	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/22/98 14:16

Dry Weight Determination
North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
TP-1-6.0	B801169-01	Soil	76.3	%
TP-2-4.0	B801169-02	Soil	62.9	%
TP-3-4.0	B801169-03	Soil	74.9	%
TP-4-4.0	B801169-04	Soil	60.8	%
TP-5-4.0	B801169-05	Soil	71.5	%

North Creek Analytical, Inc.

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SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/22/98 14:16

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0180365	**Date Prepared: 1/16/98**					**Extraction Method: EPA 3550**				
Blank	**0180365-BLK1**									
Diesel #2	1/20/98			ND	mg/kg dry	10.0				
Kerosene Range Hydrocarbons	"			ND	"	10.0				
Fuel Oil #2	"			ND	"	25.0				
Fuel Oil #6 (Bunker C)	"			ND	"	25.0				
Transformer Oil	"			ND	"	25.0				
Motor Oil	"			ND	"	25.0				
Hydraulic Oil	"			ND	"	25.0				
Diesel Range Hydrocarbons	"			ND	"	10.0				
Heavy Oil Range Hydrocarbons	"			ND	"	25.0				
Surrogate: 2-FBP	"	*12.1*		*9.51*	"	*50.0-150*	*78.6*			
LCS	**0180365-BS1**									
Diesel #2	1/20/98	66.7		73.8	mg/kg dry	50.0-150	111			
Surrogate: 2-FBP	"	*12.1*		*11.0*	"	*50.0-150*	*90.9*			
Duplicate	**0180365-DUP1**		**B801169-01**							
Diesel #2	1/20/98		ND	ND	mg/kg dry			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Hydraulic Oil	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		26.9	25.4	"			50.0	**5.74**	
Heavy Oil Range Hydrocarbons	"		45.7	36.5	"			50.0	**22.4**	
Surrogate: 2-FBP	"	*15.9*		*13.9*	"	*50.0-150*	*87.4*			

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**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/22/98 14:16

Polychlorinated Biphenyls by EPA Method 8081/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0180354	**Date Prepared: 1/16/98**					**Extraction Method: EPA 3550**				
Blank	**0180354-BLK1**									
Aroclor 1016	1/20/98			ND	ug/kg dry	50.0				1,2
Aroclor 1221	"			ND	"	50.0				
Aroclor 1232	"			ND	"	50.0				
Aroclor 1242	"			ND	"	50.0				
Aroclor 1248	"			ND	"	50.0				
Aroclor 1254	"			ND	"	50.0				
Aroclor 1260	"			ND	"	50.0				
Aroclor 1262	"			ND	"	50.0				
Aroclor 1268	"			ND	"	50.0				
Surrogate: TCX	"	*6.67*		*5.31*	"	*38.0-117*	*79.6*			
LCS	**0180354-BS1**									
Aroclor 1260	1/20/98	333		281	ug/kg dry	44.0-123	84.4			1,2
Surrogate: TCX	"	*6.67*		*5.45*	"	*38.0-117*	*81.7*			
Matrix Spike	**0180354-MS1**		**B801169-05**							
Aroclor 1260	1/20/98	466	1850	NR	ug/kg dry	28.0-132	NR			1,2
Surrogate: TCX	"	*9.32*		*5.95*	"	*38.0-117*	*63.8*			3
Matrix Spike Dup	**0180354-MSD1**		**B801169-05**							
Aroclor 1260	1/20/98	466	1850	NR	ug/kg dry	28.0-132	NR	23.0		1,2
Surrogate: TCX	"	*9.32*		*6.62*	"	*38.0-117*	*71.0*			3

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**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/22/98 14:16

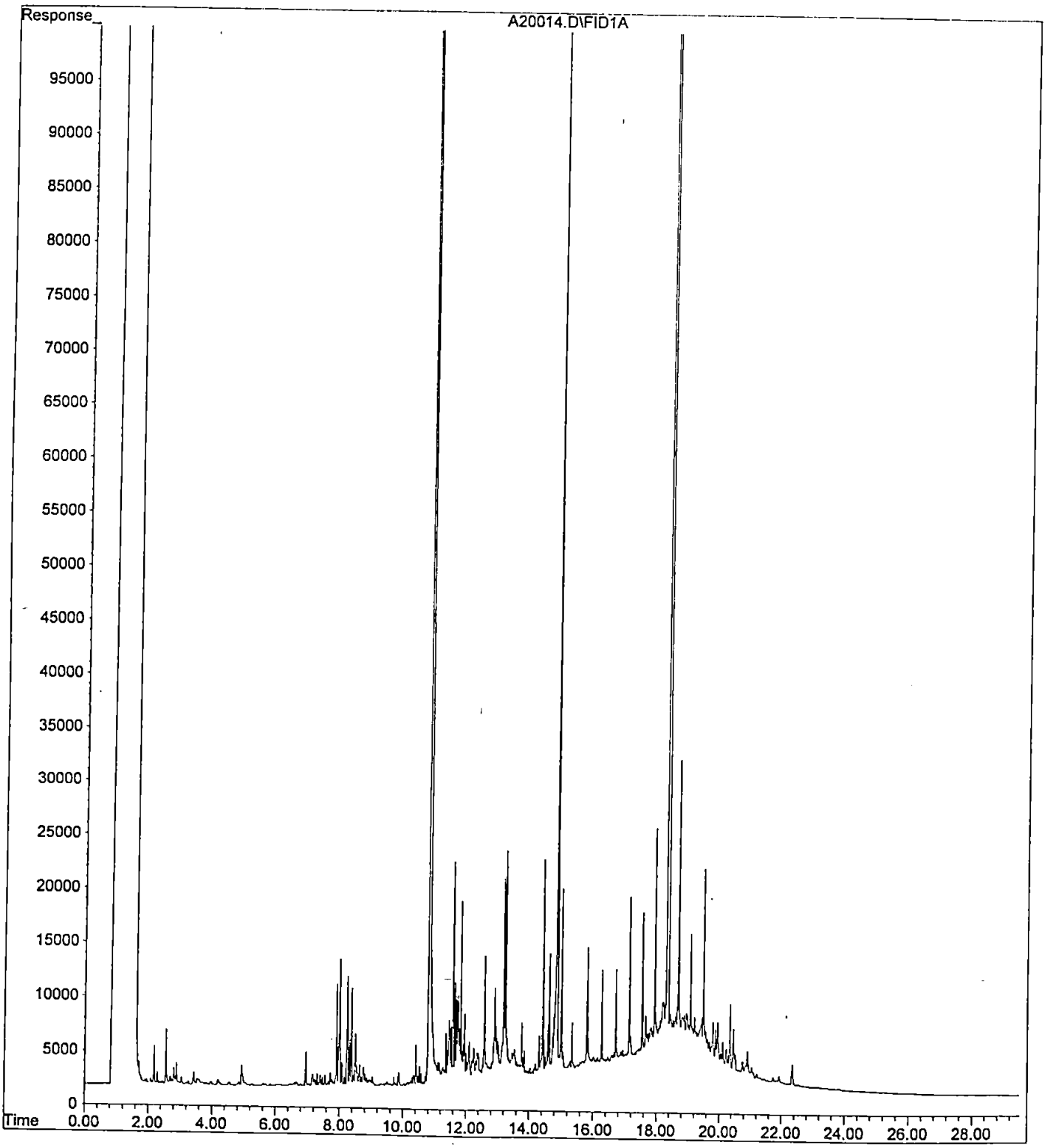
Notes and Definitions

#	Note
1	To reduce matrix interference, the sample extract has undergone copper clean-up, method 3660, which is specific to sulfur contamination.
2	To reduce matrix interference, the sample extract has undergone sulfuric acid clean-up, method 3665, which is specific to hydrocarbon contamination.
3	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte already present in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

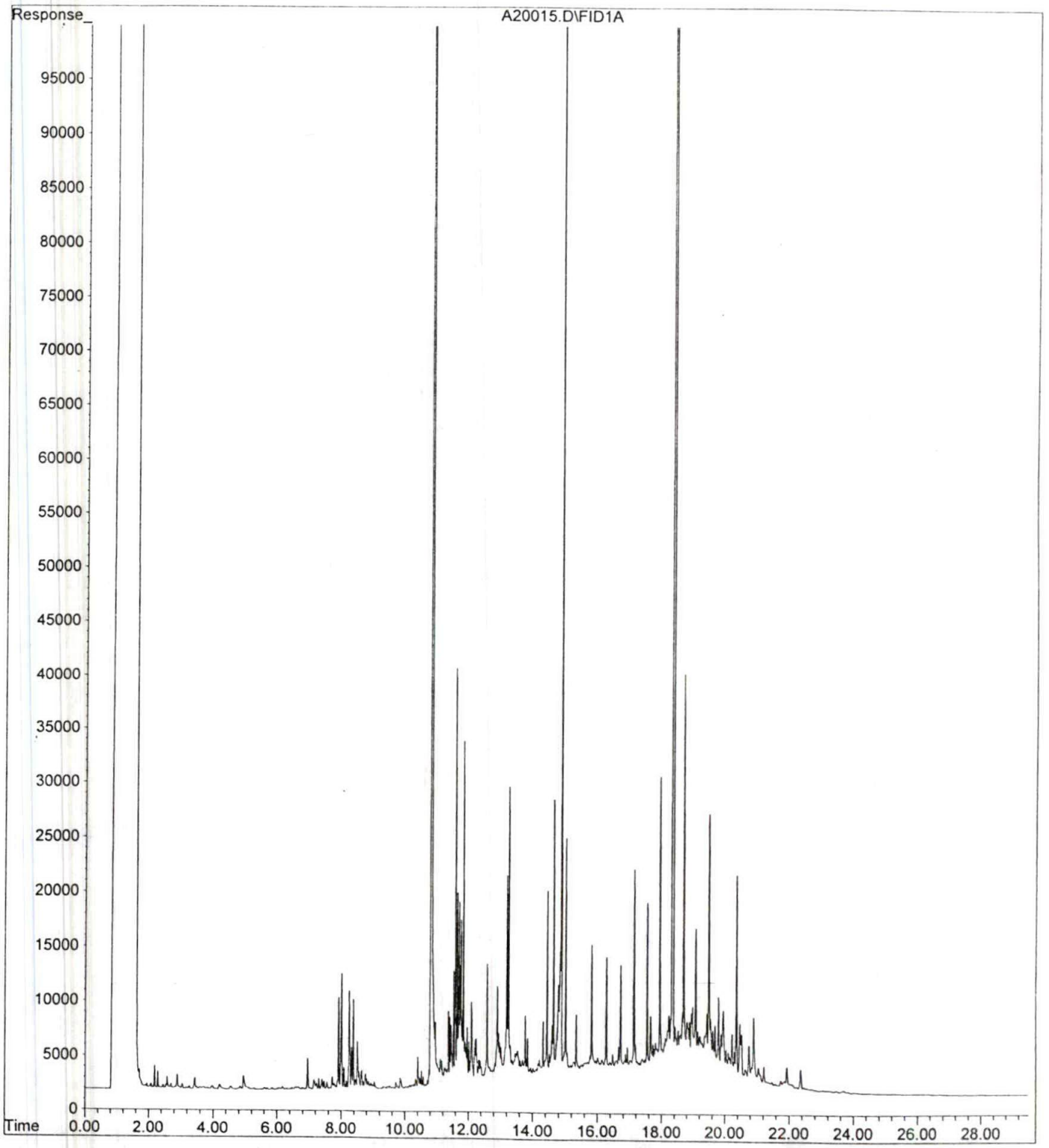
North Creek Analytical, Inc.

Joy B Chang, Project Manager

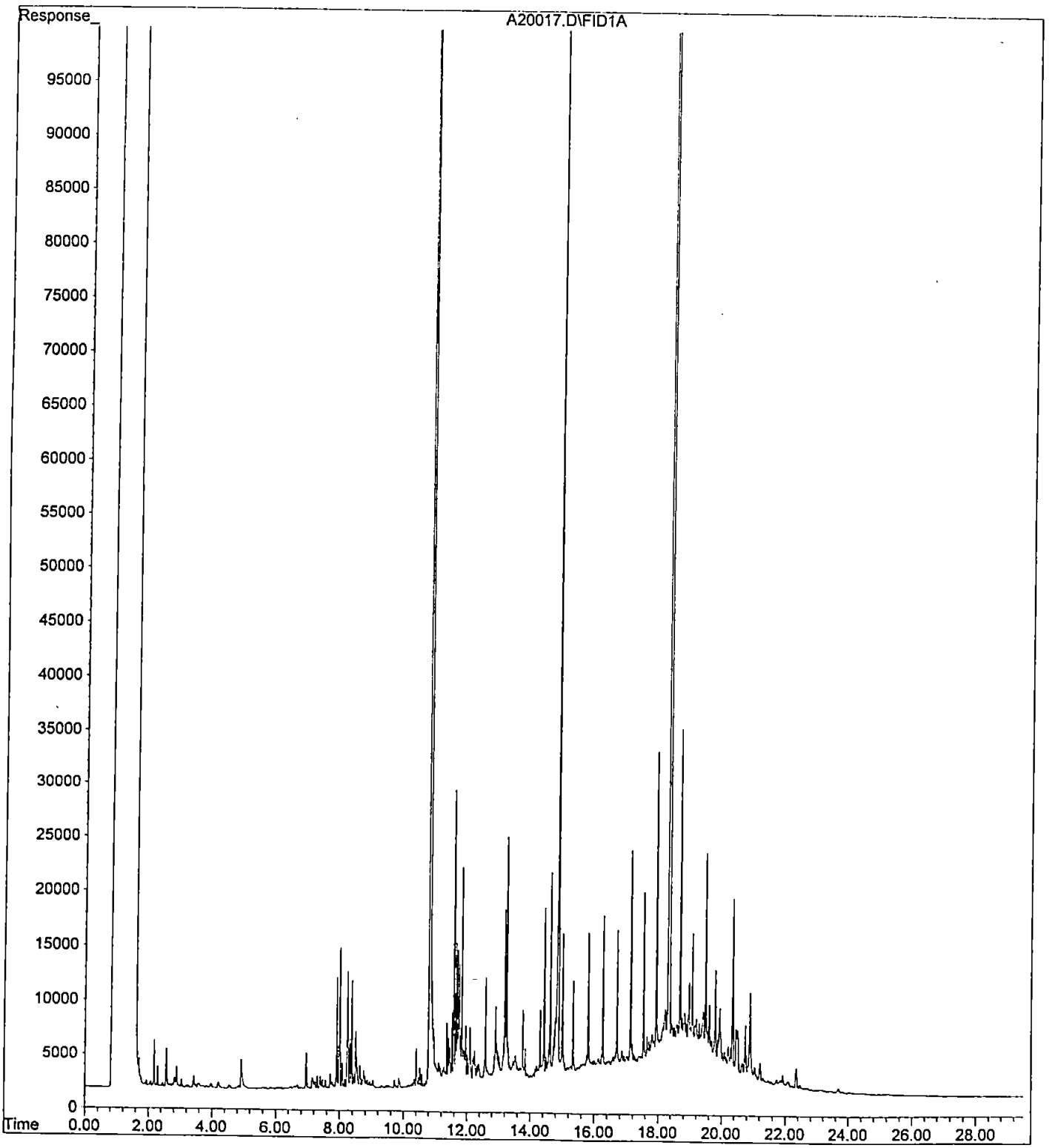
File : C:\HPCHEM\3\DATA\012098C\A20014.D
Operator : hsd
Acquired : 21 Jan 1998 12:13 am using AcqMethod TPHD.M
Instrument : GC #5
Sample Name: b801169-01
Misc Info : S
Vial Number: 12



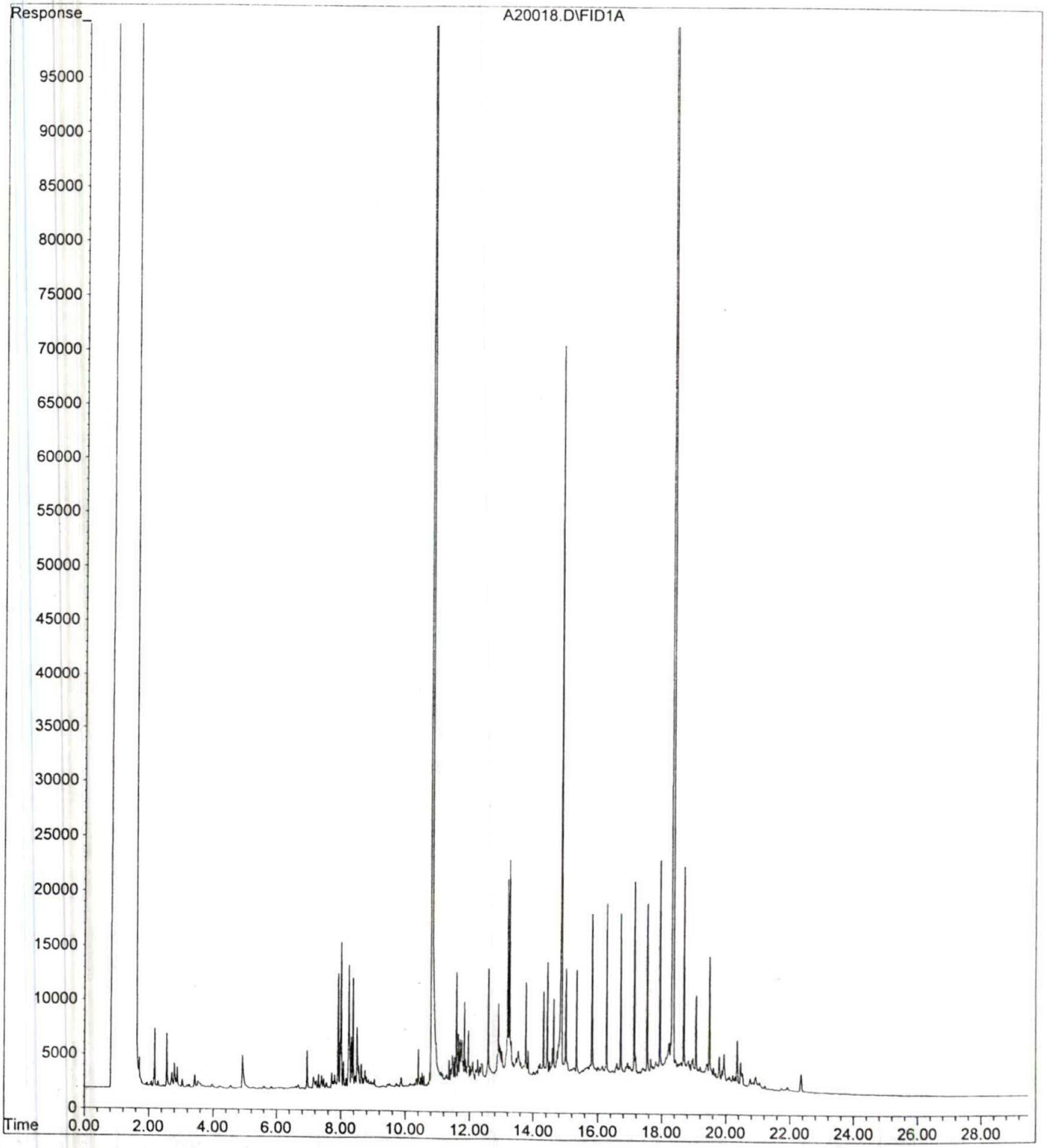
File : C:\HPCHEM\3\DATA\012098C\A20015.D
Operator : hsd
Acquired : 21 Jan 1998 12:50 am using AcqMethod TPHD.M
Instrument : GC #5
Sample Name: b801169-02
Misc Info : S
Vial Number: 13



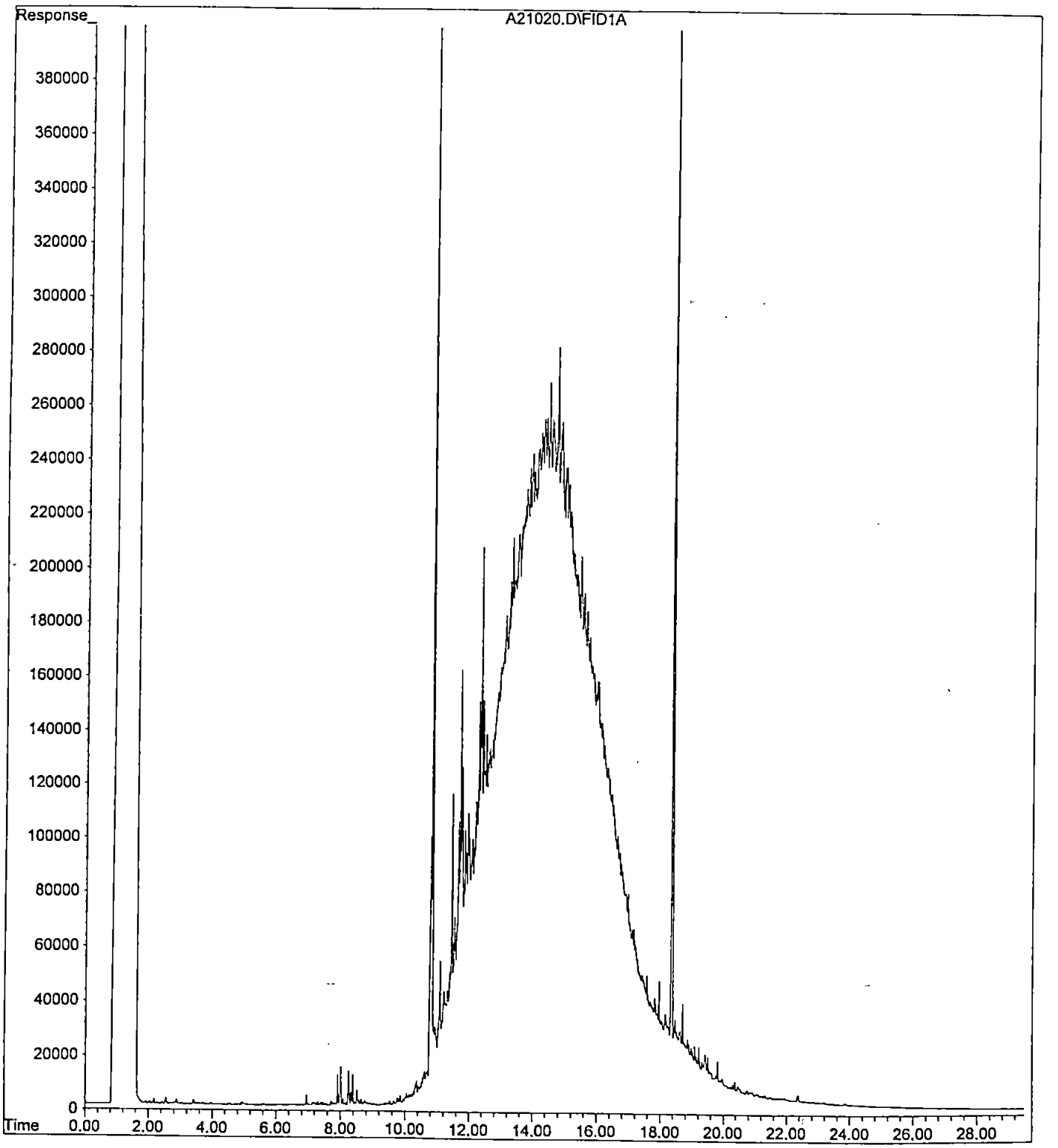
File : C:\HPCHEM\3\DATA\012098C\A20017.D
Operator : hsd
Acquired : 21 Jan 1998 2:04 am using AcqMethod TPHD.M
Instrument : GC #5
Sample Name: b801169-03
Misc Info : S
Vial Number: 14



File : C:\HPCHEM\3\DATA\012098C\A20018.D
Operator : hsd
Acquired : 21 Jan 1998 2:40 am using AcqMethod TPHD.M
Instrument : GC #5
Sample Name: b801169-04
Misc Info : S
Vial Number: 15



File : C:\HPCHEM\3\DATA\012198C\A21020.D
Operator : hsd
Acquired : 21 Jan 1998 8:24 pm using AcqMethod TPHD.M
Instrument : GC #5
Sample Name: b801169-05r1
Misc Info : S
Vial Number: 17



NORTH CREEK ANALYTICAL
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9405 S.W. Nimbus Ave., Beaverton, OR 97008-7132 (503) 643-9200 FAX 643-2202

Newark B801169

CHAIN OF CUSTODY REPORT

Work Order # B772496

REPORT TO:	INVOICE TO:
ATTENTION: Gary Stevens	ATTENTION: PSE
ADDRESS: 8410 154th Ave NE, Redmond WA, 98052	ADDRESS:
PHONE: (425) 861-6000 FAX: 425-861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: Grady Way	
PROJECT NUMBER: 186-407-05	
SAMPLED BY: TNO/GRS	

TURNAROUND REQUEST (in Business Days) *
Organic & Inorganic Analyses: [10 Standard] 7 5 4 3 2 1 [Same Day]
Fuels & Hydrocarbon Analyses: [5 Standard] 3-4 2 1 [Same Day]
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

#	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Requested: CRAB and partition phase by EPA 8270 mod (NW)	RCB by EPA 8081	NWTPH Dest. Tmts Bond oil STD	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	TP-1-0.5	12/22/97 905		X	X	X	S	1	
2.	TP-1-2.0	12/22/97 912					S	1	Hold
3.	TP-1-4.0	12/22/97 912	B801169-01	TQ	Nelson	1/15/98	S	1	Hold
4.	TP-1-6.0	12/22/97 914		X	X	X	S	1	~~Hold~~
5.	TP-1-8.0	12/22/97 914					S	1	Hold
6.	TP-2-0.5	12/22/97 1045		X	X	X	S	1	
7.	TP-3-0.5	12/22/97 1336		X	X	X	S	1	
8.	TP-4-0.5	12/22/97 1241		X	X	X	S	1	
9.	TP-5-0.5	12/22/97 1130		X	X	X	S	1	
10.	TP-2-2.0	12/22/97 1046					S	1	Hold

5 day TAT

RELINQUISHED BY (Signature)	DATE:	RECEIVED BY (Signature)	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:
RELINQUISHED BY (Signature)	DATE:	RECEIVED BY (Signature)	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:

ADDITIONAL REMARKS: Dent a/silica gel clean up
Soil containing organic material (Coal, wood)

PAGE OF

CDC Rev 8, 1/96

JAN 15 '98 09:06 425 861 6050 PAGE.02

JAN 15 '98 09:07- 425 861 6050 PAGE.03

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NCA# B801169

CHAIN OF CUSTODY REPORT

Work Order # B712496

OLD

REPORT TO:	INVOICE TO:
ATTENTION: Gary Stevens	ATTENTION: PSE
ADDRESS: 8410 154th Ave NE, Redmond WA, 98052	ADDRESS:
PHONE: (425) 861-6000 FAX: 425-861-6050	P.O. NUMBER:
PROJECT NAME: Grady Way	NCA QUOTE #:
PROJECT NUMBER: 186-407-85	
SAMPLED BY: TNO/GRS	

TURNAROUND REQUEST In Business Days *

Organic & Inorganic Analyses: [X] Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: [X] Standard | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: CPPH and Perkin-Elmer by EPA 8270 modified	RCB by EPA 8081	NWTPH Dx as Fuel Stnd				MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	TP-2-4.0	12/22/97 1046	B801169-02	X	X	X	Relog	TO	1/15/98	S	1	Hold
2.	TP-3-2.0	12/22/97 1337								S	1	Hold
3.	TP-3-4.0	12/22/97 1338	-03	X	X	X	Relog	To	1/15/98	S	1	Hold
4.	TP-3-6.0	12/22/97 1340								S	1	Hold
5.	TP-3-8.0	12/22/97 1345				5 DAY TAT				S	1	Hold
6.	TP-4-2.0	12/22/97 1243								S	1	Hold
7.	TP-4-4.0	12/22/97 1244	04	X	X	X	Relog	To	1/15/98	S	1	Hold
8.	TP-4-6.0	12/22/97 1249								S	1	Hold
9.	TP-5-2.0	12/22/97 1136								S	1	Hold
10.	TP-5-4.0	12/22/97 1140	05	X	X	X	Relog	To	1/15/98	S	1	Hold

RELINQUISHED BY:	DATE: 12/23/97	RECEIVED BY:	DATE:
PRINT NAME: Tony Orme	FIRM: GEI TIME: 1000	PRINT NAME:	FIRM: TIME:
RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:

ADDITIONAL REMARKS:

PAGE OF

LAB DATA EVALUATION FORM

GEI Job # 186-407-8

Lab Job #/Sample IDs: B712508-01

GEI Sample IDs B-14-0.5 To B-35-0.5

Sample Coll Date 12/22/97

Report Recv'd Date 1/9/98

Analysis	Holding Time Exceptions ?	Surrogate Exceptions ?	Blank Hits ?	MS/MSD % Rec Exceptions	Duplicate or MSD RPD Exceptions	Blank Spike or LCS Exceptions (Use if MS/MSD out)
Ecology WTPH-G	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8020 (BETX)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
Ecology WTPH-D Extended	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)
413.1 (FOG)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8010	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8270	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
VPH/BETX/MTBE/Naphthalene	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH-SIM	Yes (No)	Yes (No)	Yes (No)	(Yes) No	Yes (No)	(Yes) No
E-TPH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
PCB 8081	No	No	No	No	No	No
Affected Sample Numbers						

Data Acceptable for Intended Use? Yes

Date Comp. 3/16/98

Reviewer Initials TNO

Comments:

Exceptions (As shown in report):

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/9/98 11:08

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
B-14-0.5	B712508-01	Soil	12/22/97
B-15-0.5	B712508-04	Soil	12/22/97
B-15-3.0	B712508-06	Soil	12/22/97
B-9-0.5	B712508-07	Soil	12/22/97
B-18-0.5	B712508-10	Soil	12/22/97
B-7-0.5	B712508-12	Soil	12/22/97
B-19-0.5	B712508-14	Soil	12/22/97
B-12-0.5	B712508-17	Soil	12/22/97
B-22-0.5	B712508-19	Soil	12/22/97
B-21-0.5	B712508-20	Soil	12/22/97
B-21-3.0	B712508-22	Soil	12/22/97
B-16-0.5	B712508-23	Soil	12/22/97
B-28-0.5	B712508-26	Soil	12/22/97
B-27-0.5	B712508-28	Soil	12/22/97
B-17-0.5	B712508-31	Soil	12/22/97
B-35-0.5	B712508-34	Soil	12/22/97

GeoEngineers
JAN 12 1998
Routing
File

North Creek Analytical, Inc.

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.

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/9/98 11:08

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-14-0.5			**B712508-01**				**Soil**	
Diesel #2	1270741	12/29/97	12/30/97		50.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		50.0	ND	"	
Fuel Oil #2	"	"	"		125	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		125	ND	"	
Transformer Oil	"	"	"		125	**272**	"	
Motor Oil	"	"	"		125	ND	"	
Hydraulic Oil	"	"	"		125	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		125	**255**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*77.0*	*%*	
B-15-0.5			**B712508-04**				**Soil**	
Diesel #2	1270741	12/29/97	12/30/97		50.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		50.0	ND	"	
Fuel Oil #2	"	"	"		125	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		125	ND	"	
Transformer Oil	"	"	"		125	ND	"	
Motor Oil	"	"	"		125	ND	"	
Hydraulic Oil	"	"	"		125	**1350**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*65.8*	*%*	
B-15-3.0			**B712508-06**				**Soil**	
Diesel #2	0180092	1/6/98	1/7/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	**316**	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**132**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*77.1*	*%*	
B-9-0.5			**B712508-07**				**Soil**	
Diesel #2	1270741	12/29/97	12/30/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	**382**	"	
Motor Oil	"	"	"		25.0	ND	"	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/9/98 11:08

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-9-0.5 (continued)			B712508-07				Soil	
Hydraulic Oil	1270741	12/29/97	12/30/97		25.0	ND	mg/kg dry	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*79.6*	%	
B-18-0.5			B712508-10				Soil	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	**60.1**	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**52.3**	"	
Surrogate: Octacosane	"	"	"	*50.0-150*		*56.0*	%	*1*
B-7-0.5			B712508-12				Soil	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	**365**	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**347**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*50.9*	%	
B-19-0.5			B712508-14				Soil	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**23.4**	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**37.7**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*64.7*	%	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/9/98 11:08

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-12-0.5			**B712508-17**				**Soil**	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	**34.5**	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**30.9**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*60.5*	*%*	
B-22-0.5			**B712508-19**				**Soil**	
Diesel #2	1270686	12/26/97	12/27/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**24.9**	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**32.2**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*55.6*	*%*	
B-21-0.5			**B712508-20**				**Soil**	
Diesel #2	1270741	12/29/97	12/30/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**1420**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*78.9*	*%*	
B-21-3.0			**B712508-22**				**Soil**	
Diesel #2	0180092	1/6/98	1/7/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	

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PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/9/98 11:08

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-21-3.0 (continued)			**B712508-22**				**Soil**	
Transformer Oil	0180092	1/6/98	1/7/98		25.0	ND	mg/kg dry	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**64.9**	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**100**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*86.3*	*%*	
B-16-0.5			**B712508-23**				**Soil**	
Diesel #2	1270741	12/29/97	12/30/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	**253**	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*88.0*	*%*	
B-28-0.5			**B712508-26**				**Soil**	
Diesel #2	1270741	12/29/97	12/30/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**49.9**	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**100**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*72.0*	*%*	
B-27-0.5			**B712508-28**				**Soil**	
Diesel #2	1270741	12/29/97	12/30/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	**125**	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**76.2**	"	

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/9/98 11:08

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-27-0.5 (continued)			B712508-28				Soil	
Surrogate: 2-FBP	*1270741*	*12/29/97*	*12/30/97*	*50.0-150*		*82.2*	*%*	
B-17-0.5			B712508-31				Soil	
Diesel #2	1270741	12/29/97	12/30/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**55.0**	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**60.2**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*73.0*	*%*	
B-35-0.5			B712508-34				Soil	
Diesel #2	1270741	12/29/97	12/30/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**59.3**	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**95.5**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*80.1*	*%*	

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/9/98 11:08

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-14-0.5			**B712508-01**				**Soil**	**2,3**
Aroclor 1016	0180042	1/5/98	1/7/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	**167**	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*84.7*	*%*	
B-15-0.5			**B712508-04**				**Soil**	**2,3**
Aroclor 1016	0180042	1/5/98	1/7/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	**364**	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*79.1*	*%*	
B-9-0.5			**B712508-07**				**Soil**	**2,3**
Aroclor 1016	0180042	1/5/98	1/7/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	**243**	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*77.0*	*%*	
B-18-0.5			**B712508-10**				**Soil**	**2,3**
Aroclor 1016	0180042	1/5/98	1/7/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/9/98 11:08

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-18-0.5 (continued)			B712508-10				Soil	2,3
Aroclor 1232	0180042	1/5/98	1/7/97		50.0	ND	ug/kg dry	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	**64.7**	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*84.8*	*%*	
B-7-0.5			B712508-12				Soil	2,3
Aroclor 1016	0180042	1/5/98	1/7/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	**398**	"	
Aroclor 1260	"	"	"		250	**933**	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*81.2*	*%*	
B-19-0.5			B712508-14				Soil	2,3
Aroclor 1016	0180042	1/5/98	1/7/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	**52.7**	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*78.0*	*%*	
B-12-0.5			B712508-17				Soil	2,3
Aroclor 1016	0180042	1/5/98	1/7/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/9/98 11:08

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-12-0.5 (continued)			**B712508-17**				Soil	2,3
Aroclor 1248	0180042	1/5/98	1/7/97		50.0	ND	ug/kg dry	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*81.9*	*%*	
B-22-0.5			**B712508-19**				Soil	2,3
Aroclor 1016	0180042	1/5/98	1/7/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*86.4*	*%*	
B-21-0.5			**B712508-20**				Soil	2,3
Aroclor 1016	0180042	1/5/98	1/7/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	**65.4**	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*97.0*	*%*	
B-16-0.5			**B712508-23**				Soil	2,3
Aroclor 1016	0180042	1/5/98	1/7/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/9/98 11:08

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-16-0.5 (continued)			**B712508-23**				**Soil**	**2,3**
Aroclor 1260	0180042	1/5/98	1/7/97		50.0	**146**	ug/kg dry	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*75.4*	*%*	
B-28-0.5			**B712508-26**				**Soil**	**2,3**
Aroclor 1016	0180042	1/5/98	1/7/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	**208**	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*78.8*	*%*	
B-27-0.5			**B712508-28**				**Soil**	**2,3**
Aroclor 1016	0180042	1/5/98	1/8/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	**66.9**	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*85.5*	*%*	
B-17-0.5			**B712508-31**				**Soil**	**2,3**
Aroclor 1016	0180042	1/5/98	1/8/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	

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Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-17-0.5 (continued)			B712508-31				Soil	2,3
Aroclor 1268	0180042	1/5/98	1/8/98		50.0	ND	ug/kg dry	
Surrogate: TCX	"	"	"	*38.0-117*		*77.5*	%	
B-35-0.5			B712508-34				Soil	2,3
Aroclor 1016	0180042	1/5/98	1/8/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	**62.9**	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*74.3*	%	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/9/98 11:08

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-18-0.5			B712508-10				Soil	
Pentachlorophenol	1270702	12/26/97	12/29/97		0.0100	**0.363**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	**0.0109**	"	
Anthracene	"	"	"		0.0100	**0.0182**	"	
Benzo (a) anthracene	"	"	"		0.0100	**0.0372**	"	
Benzo (a) pyrene	"	"	"		0.0100	**0.0387**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.0708**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.0394**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	**0.0168**	"	
Chrysene	"	"	"		0.0100	**0.0394**	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	ND	"	
Fluoranthene	"	"	"		0.0100	**0.0781**	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.0555**	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	**0.0401**	"	
Pyrene	"	"	12/29/98		0.0100	**0.0817**	"	
Surrogate: 2-FBP	"	"	*12/29/97*	*30.0-150*		*64.8*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*115*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*74.7*	"	
B-19-0.5			B712508-14				Soil	
Pentachlorophenol	1270702	12/26/97	12/29/97		0.0500	**1.95**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	**0.0753**	"	
Anthracene	"	"	"		0.0100	**0.110**	"	
Benzo (a) anthracene	"	"	"		0.0100	**0.328**	"	
Benzo (a) pyrene	"	"	"		0.0100	**0.272**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.432**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.141**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	**0.111**	"	
Chrysene	"	"	"		0.0100	**0.261**	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	**0.0505**	"	
Fluoranthene	"	"	"		0.0100	**0.593**	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.247**	"	
Naphthalene	"	"	"		0.0100	**0.0112**	"	
Phenanthrene	"	"	"		0.0100	**0.159**	"	

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Geo Engineers - Redmond
8410 154th Ave NE
Redmond, WA 98052

Project: PSE/ Grady Way
Project Number: 186-407-85
Project Manager: Gary Stevens

Sampled: 12/22/97
Received: 12/23/97
Reported: 1/9/98 11:08

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-19-0.5 (continued)			B712508-14				Soil	
Pyrene	1270702	12/26/97	12/29/98		0.0100	**0.480**	mg/kg dry	
Surrogate: 2-FBP	"	"	*12/29/97*	*30.0-150*		*55.0*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*101*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*67.5*	"	
B-22-0.5			B712508-19				Soil	
Pentachlorophenol	1270702	12/26/97	12/29/97		0.0100	**1.92**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	**0.0106**	"	
Benzo (a) anthracene	"	"	"		0.0100	**0.0144**	"	
Benzo (a) pyrene	"	"	"		0.0100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.0243**	"	
Benzo (ghi) perylene	"	"	"		0.0100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.0100	ND	"	
Chrysene	"	"	"		0.0100	**0.0213**	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	ND	"	
Fluoranthene	"	"	"		0.0100	**0.0616**	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	ND	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	**0.0935**	"	
Pyrene	"	"	"		0.0100	**0.0486**	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*51.4*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*91.1*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*64.2*	"	
B-21-0.5			B712508-20				Soil	
Pentachlorophenol	1270702	12/26/97	12/29/97		0.0100	**1.71**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	**0.0190**	"	
Acenaphthylene	"	"	"		0.0100	**0.0498**	"	
Anthracene	"	"	"		0.0100	**0.0432**	"	
Benzo (a) anthracene	"	"	"		0.0100	**0.0578**	"	
Benzo (a) pyrene	"	"	"		0.0100	**0.0439**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.135**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.0308**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	**0.0329**	"	
Chrysene	"	"	"		0.0100	**0.130**	"	

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled:	12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received:	12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported:	1/9/98 11:08

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-21-0.5 (continued)			B712508-20				Soil	
Dibenz (a,h) anthracene	1270702	12/26/97	12/29/97		0.0100	ND	mg/kg dry	
Fluoranthene	"	"	"		0.0100	**0.491**	"	
Fluorene	"	"	"		0.0100	**0.0366**	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.0476**	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	**0.453**	"	
Pyrene	"	"	12/31/97		0.0100	**0.537**	"	
Surrogate: 2-FBP	"	"	*12/29/97*	*30.0-150*		*65.0*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*118*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*69.9*	"	
B-28-0.5			B712508-26				Soil	
Pentachlorophenol	1270702	12/26/97	12/29/97		0.100	**4.75**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	**0.0107**	"	
Anthracene	"	"	"		0.0100	**0.0297**	"	
Benzo (a) anthracene	"	"	"		0.0100	**0.0231**	"	
Benzo (a) pyrene	"	"	"		0.0100	**0.0190**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.0594**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.0165**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	**0.0132**	"	
Chrysene	"	"	"		0.0100	**0.0404**	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	ND	"	
Fluoranthene	"	"	"		0.0100	**0.136**	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.0256**	"	
Naphthalene	"	"	"		0.0100	**0.0157**	"	
Phenanthrene	"	"	"		0.0100	**0.129**	"	
Pyrene	"	"	12/31/97		0.0100	**0.111**	"	
Surrogate: 2-FBP	"	"	*12/29/97*	*30.0-150*		*54.9*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*111*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*66.0*	"	
B-27-0.5			B712508-28				Soil	
Pentachlorophenol	1270702	12/26/97	12/29/97		0.200	**7.13**	mg/kg dry	
Acenaphthene	"	"	"		0.0100	ND	"	
Acenaphthylene	"	"	"		0.0100	**0.0298**	"	
Anthracene	"	"	"		0.0100	**0.0624**	"	

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/9/98 11:08

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-27-0.5 (continued)			B712508-28				Soil	
Benzo (a) anthracene	1270702	12/26/97	12/29/97		0.0100	**0.0453**	mg/kg dry	
Benzo (a) pyrene	"	"	"		0.0100	**0.0418**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.115**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.0354**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	**0.0262**	"	
Chrysene	"	"	"		0.0100	**0.0616**	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	**0.0113**	"	
Fluoranthene	"	"	"		0.0100	**0.199**	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.0553**	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	**0.0928**	"	
Pyrene	"	"	12/31/97		0.0100	**0.169**	"	
Surrogate: 2-FBP	"	"	*12/29/97*	*30.0-150*		*63.8*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*116*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*66.7*	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/9/98 11:08

Dry Weight Determination
North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
B-14-0.5	B712508-01	Soil	90.0	%
B-15-0.5	B712508-04	Soil	92.7	%
B-15-3.0	B712508-06	Soil	79.1	%
B-9-0.5	B712508-07	Soil	82.6	%
B-18-0.5	B712508-10	Soil	91.4	%
B-7-0.5	B712508-12	Soil	75.8	%
B-19-0.5	B712508-14	Soil	83.2	%
B-12-0.5	B712508-17	Soil	91.6	%
B-22-0.5	B712508-19	Soil	87.7	%
B-21-0.5	B712508-20	Soil	91.1	%
B-21-3.0	B712508-22	Soil	75.8	%
B-16-0.5	B712508-23	Soil	91.5	%
B-28-0.5	B712508-26	Soil	80.8	%
B-27-0.5	B712508-28	Soil	94.1	%
B-17-0.5	B712508-31	Soil	86.2	%
B-35-0.5	B712508-34	Soil	83.4	%

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/9/98 11:08

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0180092	**Date Prepared: 1/6/98**					**Extraction Method: EPA 3550**				
Blank	**0180092-BLK1**									
Diesel #2	1/6/98			ND	mg/kg dry	10.0				
Kerosene Range Hydrocarbons	"			ND	"	10.0				
Fuel Oil #2	"			ND	"	25.0				
Fuel Oil #6 (Bunker C)	"			ND	"	25.0				
Transformer Oil	"			ND	"	25.0				
Motor Oil	"			ND	"	25.0				
Hydraulic Oil	"			ND	"	25.0				
Diesel Range Hydrocarbons	"			ND	"	10.0				
Heavy Oil Range Hydrocarbons	"			ND	"	25.0				
Surrogate: 2-FBP	"	*12.1*		*9.43*	"	*50.0-150*	*77.9*			
LCS	**0180092-BS1**									
Diesel #2	1/6/98	66.7		93.2	mg/kg dry	50.0-150	140			
Surrogate: 2-FBP	"	*12.1*		*9.41*	"	*50.0-150*	*77.8*			
Duplicate	**0180092-DUP1**		**B712508-06**							
Diesel #2	1/6/98		ND	ND	mg/kg dry			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Hydraulic Oil	"		316	288	"			50.0	**9.27**	
Diesel Range Hydrocarbons	"		132	117	"			50.0	**12.0**	
Surrogate: 2-FBP	"	*15.3*		*12.0*	"	*50.0-150*	*78.4*			
Batch: 1270686	**Date Prepared: 12/26/97**					**Extraction Method: EPA 3550**				
Blank	**1270686-BLK1**									
Diesel #2	12/26/97			ND	mg/kg dry	10.0				
Kerosene Range Hydrocarbons	"			ND	"	10.0				
Fuel Oil #2	"			ND	"	25.0				
Fuel Oil #6 (Bunker C)	"			ND	"	25.0				
Transformer Oil	"			ND	"	25.0				
Motor Oil	"			ND	"	25.0				
Hydraulic Oil	"			ND	"	25.0				
Diesel Range Hydrocarbons	"			ND	"	10.0				
Heavy Oil Range Hydrocarbons	"			ND	"	25.0				

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/9/98 11:08

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Blank (continued)	**1270686-BLK1**									
Surrogate: 2-FBP	*12/26/97*	*12.1*		*6.18*	*mg/kg dry*	*50.0-150*	*51.1*			
LCS	**1270686-BS1**									
Diesel #2	12/26/97	66.7		48.5	mg/kg dry	50.0-150	72.7			
Surrogate: 2-FBP	"	*12.1*		*7.56*	"	*50.0-150*	*62.5*			
Duplicate	**1270686-DUP1**	**B712496-01**								
Diesel #2	12/27/97		ND	ND	mg/kg dry			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Hydraulic Oil	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		ND	ND	"			50.0		
Heavy Oil Range Hydrocarbons	"		ND	ND	"			50.0		
Surrogate: 2-FBP	"	*13.2*		*7.81*	"	*50.0-150*	*59.2*			
Duplicate	**1270686-DUP2**	**B712496-06**								
Diesel #2	12/27/97		ND	ND	mg/kg dry			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Hydraulic Oil	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		ND	ND	"			50.0		
Heavy Oil Range Hydrocarbons	"		ND	ND	"			50.0		
Surrogate: 2-FBP	"	*12.9*		*8.68*	"	*50.0-150*	*67.3*			

Batch: 1270741	**Date Prepared: 12/29/97**		**Extraction Method: EPA 3550**	
Blank	**1270741-BLK1**			
Diesel #2	12/30/97	**ND**	mg/kg dry	**10.0**
Kerosene Range Hydrocarbons	"	**ND**	"	**10.0**
Fuel Oil #2	"	**ND**	"	**25.0**
Fuel Oil #6 (Bunker C)	"	**ND**	"	**25.0**
Transformer Oil	"	**ND**	"	**25.0**
Motor Oil	"	**ND**	"	**25.0**

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**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/9/98 11:08

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Blank (continued)	**1270741-BLK1**									
Hydraulic Oil	12/30/97			ND	mg/kg dry	25.0				
Diesel Range Hydrocarbons	"			ND	"	10.0				
Heavy Oil Range Hydrocarbons	"			ND	"	25.0				
Surrogate: 2-FBP	"	*12.1*		*9.47*	"	*50.0-150*	*78.3*			
LCS	**1270741-BS1**									
Diesel #2	12/30/97	66.7		55.5	mg/kg dry	50.0-150	83.2			
Surrogate: 2-FBP	"	*12.1*		*10.7*	"	*50.0-150*	*88.4*			
Duplicate	**1270741-DUP1**		**B712508-31**							
Diesel #2	12/30/97		ND	ND	mg/kg dry			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Hydraulic Oil	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		55.0	50.0	"			50.0	9.52	
Heavy Oil Range Hydrocarbons	"		60.2	59.1	"			50.0	1.84	
Surrogate: 2-FBP	"	*14.1*		*11.0*	"	*50.0-150*	*78.0*			

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/9/98 11:08

Polychlorinated Biphenyls by EPA Method 8081/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0180042	**Date Prepared: 1/5/98**					**Extraction Method: EPA 3550**				
Blank	**0180042-BLK1**									2,3
Aroclor 1016	1/7/97			ND	ug/kg dry	50.0				
Aroclor 1221	"			ND	"	50.0				
Aroclor 1232	"			ND	"	50.0				
Aroclor 1242	"			ND	"	50.0				
Aroclor 1248	"			ND	"	50.0				
Aroclor 1254	"			ND	"	50.0				
Aroclor 1260	"			ND	"	50.0				
Aroclor 1262	"			ND	"	50.0				
Aroclor 1268	"			ND	"	50.0				
Surrogate: TCX	"	*6.67*		*5.97*	"	*38.0-117*	*89.5*			
LCS	**0180042-BS1**									2,3
Aroclor 1260	1/7/97	333		288	ug/kg dry	44.0-123	86.5			
Surrogate: TCX	"	*6.67*		*5.80*	"	*38.0-117*	*87.0*			
Matrix Spike	**0180042-MS1**		**B712508-01**							2,3
Aroclor 1260	1/7/97	370	167	409	ug/kg dry	28.0-132	**65.4**			
Surrogate: TCX	"	*7.40*		*5.94*	"	*38.0-117*	*80.3*			
Matrix Spike Dup	**0180042-MSD1**		**B712508-01**							2,3
Aroclor 1260	1/7/97	370	167	429	ug/kg dry	28.0-132	**70.8**	23.0	7.93	
Surrogate: TCX	"	*7.40*		*6.01*	"	*38.0-117*	*81.2*			

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/9/98 11:08

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270702	**Date Prepared: 12/26/97**					**Extraction Method: EPA 3550**				
Blank	**1270702-BLK1**									
Pentachlorophenol	12/29/97			ND	mg/kg dry	0.0100				
Acenaphthene	"			ND	"	0.0100				
Acenaphthylene	"			ND	"	0.0100				
Anthracene	"			ND	"	0.0100				
Benzo (a) anthracene	"			ND	"	0.0100				
Benzo (a) pyrene	"			ND	"	0.0100				
Benzo (b) fluoranthene	"			ND	"	0.0100				
Benzo (ghi) perylene	"			ND	"	0.0100				
Benzo (k) fluoranthene	"			ND	"	0.0100				
Chrysene	"			ND	"	0.0100				
Dibenz (a,h) anthracene	"			ND	"	0.0100				
Fluoranthene	"			ND	"	0.0100				
Fluorene	"			ND	"	0.0100				
Indeno (1,2,3-cd) pyrene	"			ND	"	0.0100				
Naphthalene	"			ND	"	0.0100				
Phenanthrene	"			ND	"	0.0100				
Pyrene	"			ND	"	0.0100				
Surrogate: 2-FBP	"	*1.67*		*1.17*	"	*30.0-150*	*70.1*			
Surrogate: Nitrobenzene-d5	"	*1.67*		*2.10*	"	*30.0-150*	*126*			
Surrogate: p-Terphenyl-d14	"	*1.67*		*1.27*	"	*30.0-150*	*76.0*			
LCS	**1270702-BS1**									
Pentachlorophenol	12/29/97	0.0667		0.118	mg/kg dry	30.0-150	177			4
Chrysene	"	0.0669		0.0760	"	10.0-125	114			
Fluorene	"	0.0668		0.0853	"	11.0-116	128			
Indeno (1,2,3-cd) pyrene	"	0.0668		0.119	"	10.0-147	178			4
Surrogate: 2-FBP	"	*1.67*		*1.28*	"	*30.0-150*	*76.6*			
Surrogate: Nitrobenzene-d5	"	*1.67*		*2.15*	"	*30.0-150*	*129*			
Surrogate: p-Terphenyl-d14	"	*1.67*		*1.37*	"	*30.0-150*	*82.0*			
Matrix Spike	**1270702-MS1**		**B712508-28**							
Pentachlorophenol	12/29/97	0.0709	7.13	8.39	mg/kg dry	30.0-150	NR			5
Chrysene	"	0.0711	0.0616	0.122	"	10.0-125	85.0			
Fluorene	"	0.0710	ND	0.0843	"	10.0-154	119			
Indeno (1,2,3-cd) pyrene	"	0.0710	0.0553	0.176	"	10.0-144	170			4
Surrogate: 2-FBP	"	*1.77*		*1.14*	"	*30.0-150*	*64.4*			
Surrogate: Nitrobenzene-d5	"	*1.77*		*2.17*	"	*30.0-150*	*123*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/9/98 11:08

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike (continued)	**1270702-MS1**		**B712508-28**							
Surrogate: p-Terphenyl-d14	*12/29/97*	*1.77*		*1.15*	*mg/kg dry*	*30.0-150*	*65.0*			
Matrix Spike Dup	**1270702-MSD1**		**B712508-28**							
Pentachlorophenol	12/29/97	0.0709	7.13	9.17	mg/kg dry	30.0-150	NR	50.0	**47.2**	5
Chrysene	"	0.0711	0.0616	0.123	"	10.0-125	**86.4**	28.0	**1.63**	
Fluorene	"	0.0710	ND	0.0857	"	10.0-154	**121**	32.0	**1.67**	
Indeno (1,2,3-cd) pyrene	"	0.0710	0.0553	0.164	"	10.0-144	**153**	47.0	**10.5**	4
Surrogate: 2-FBP	"	*1.77*		*1.15*	"	*30.0-150*	*65.0*			
Surrogate: Nitrobenzene-d5	"	*1.77*		*2.16*	"	*30.0-150*	*122*			
Surrogate: p-Terphenyl-d14	"	*1.77*		*1.17*	"	*30.0-150*	*66.1*			

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/9/98 11:08

Notes and Definitions

#	Note
1	Due to an extraction anomaly, results of the secondary surrogate have been used to control the analysis.
2	To reduce matrix interference, the sample extract has undergone copper clean-up, method 3660, which is specific to sulfur contamination.
3	To reduce matrix interference, the sample extract has undergone sulfuric acid clean-up, method 3665, which is specific to hydrocarbon contamination.
4	The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
5	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to interference from coeluting organic compounds present in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

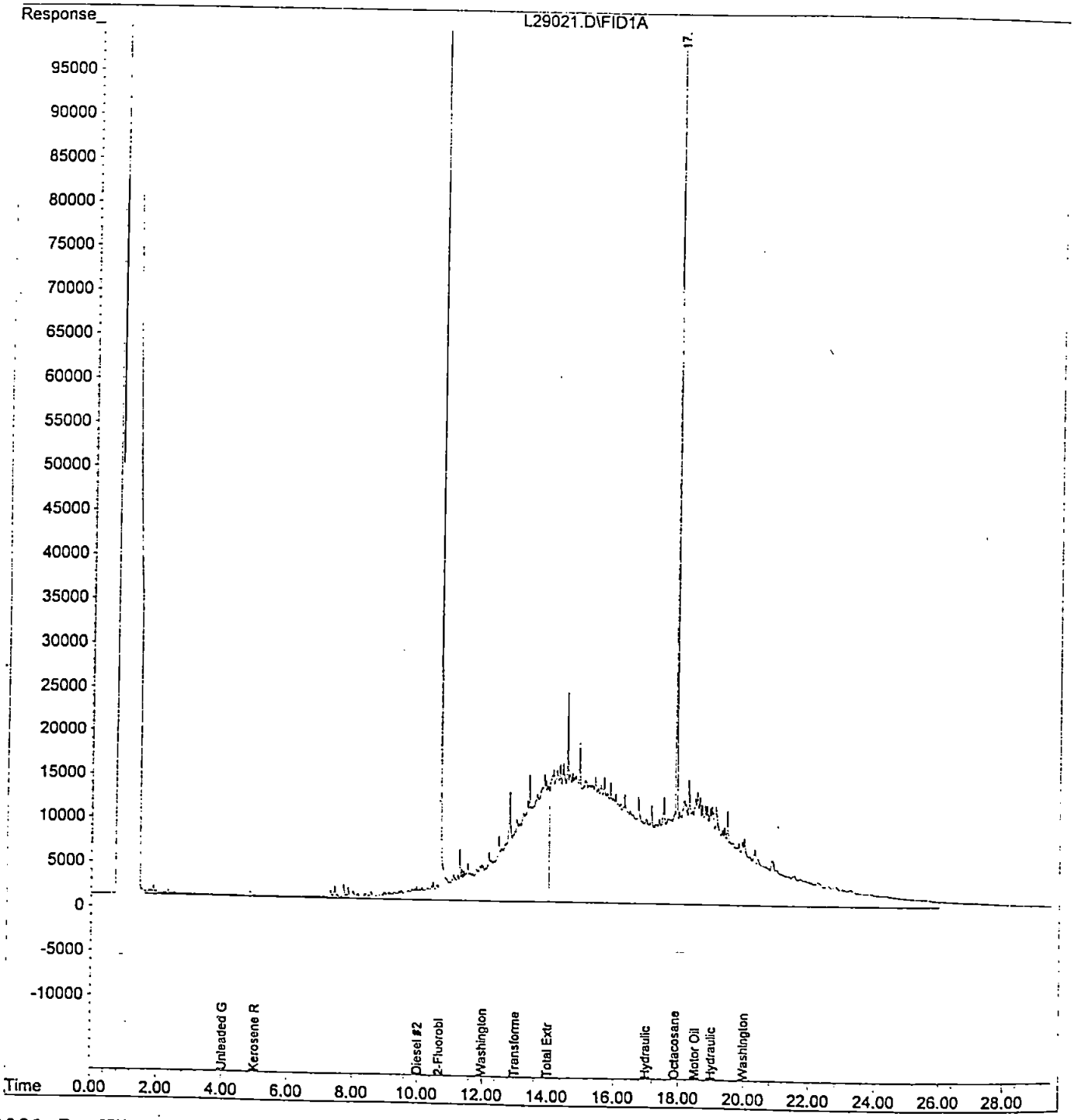
Joy B Chang, Project Manager

Data File : C:\HPCHEM\2\DATA\L29021.D
Acq On : 30 Dec 1997 4:59 am
Sample : b712508-01
Misc : S 5x
IntFile : SURR.E
Quant Time: Dec 30 9:17 1997 Quant Results File: NWTPHD.RES

Vial: 16
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Dec 30 08:48:52 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

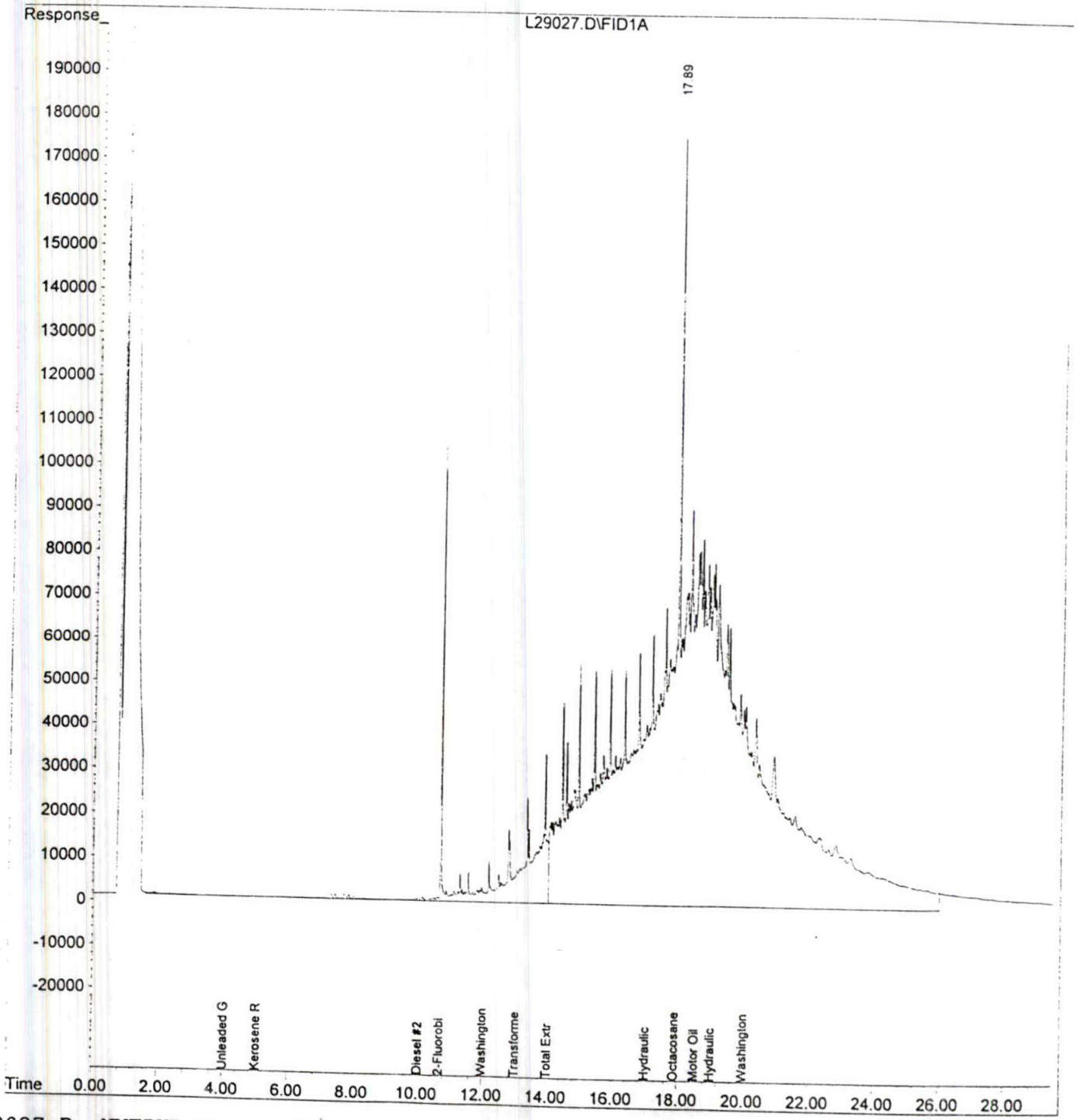
Data File : C:\HPCHEM\2\DATA\L29027.D
Acq On : 30 Dec 1997 8:41 am
Sample : b712508-04
Misc : S 5x
IntFile : SURR.E

Vial: 17
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Time: Dec 30 9:16 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Dec 30 08:48:52 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

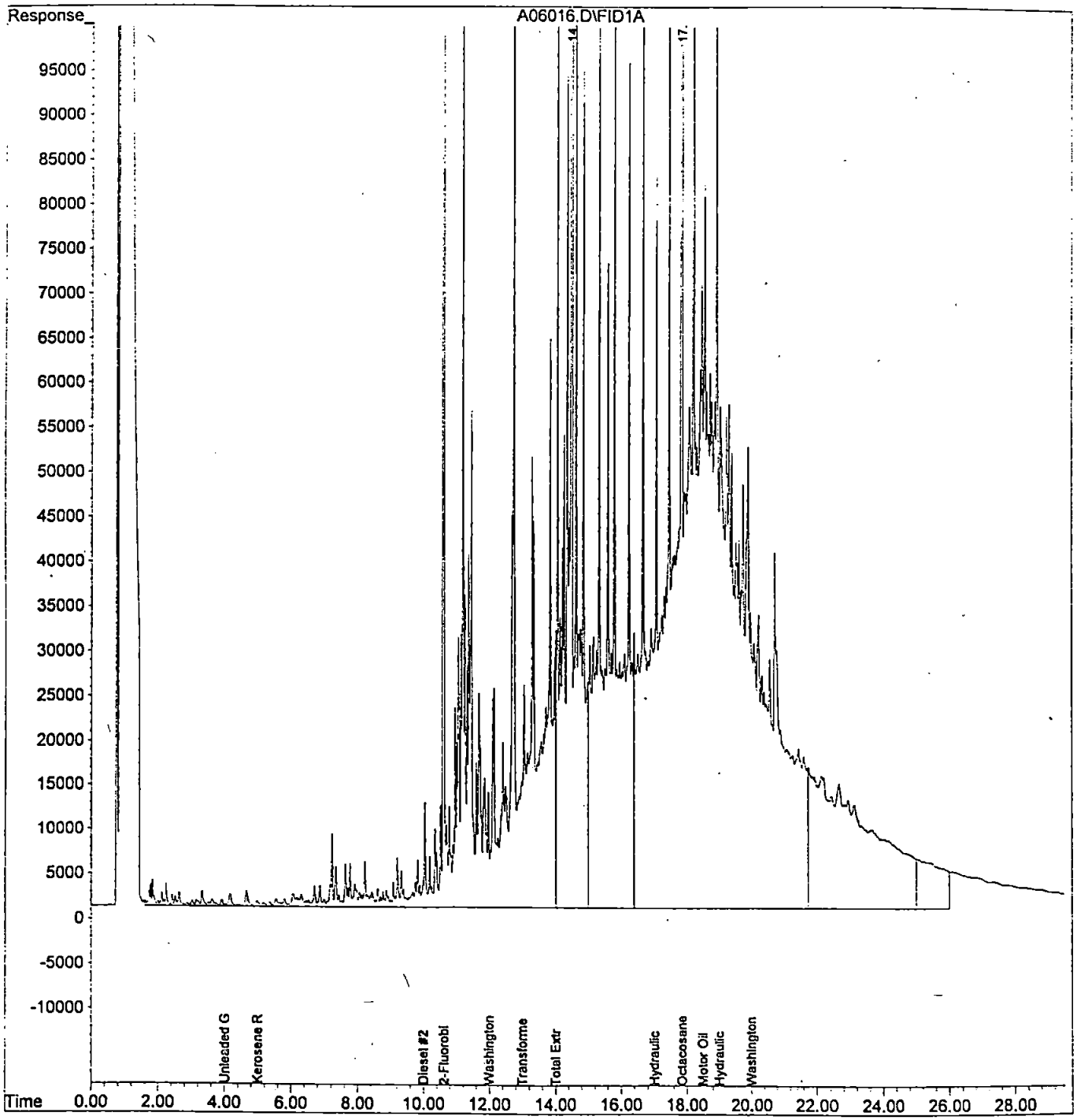
Volume Inj. :
Signal Phase :
Signal Info :



Data File : C:\HPCHEM\2\DATA\010698\A06016.D Vial: 14
Acq On : 7 Jan 1998 12:04 am Operator: bc
Sample : b712508-06 Inst : GC #3
Misc : Multiplr: 1.00
IntFile : SURR.E
Quant Time: Jan 7 9:16 1998 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Jan 06 10:12:36 1998
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

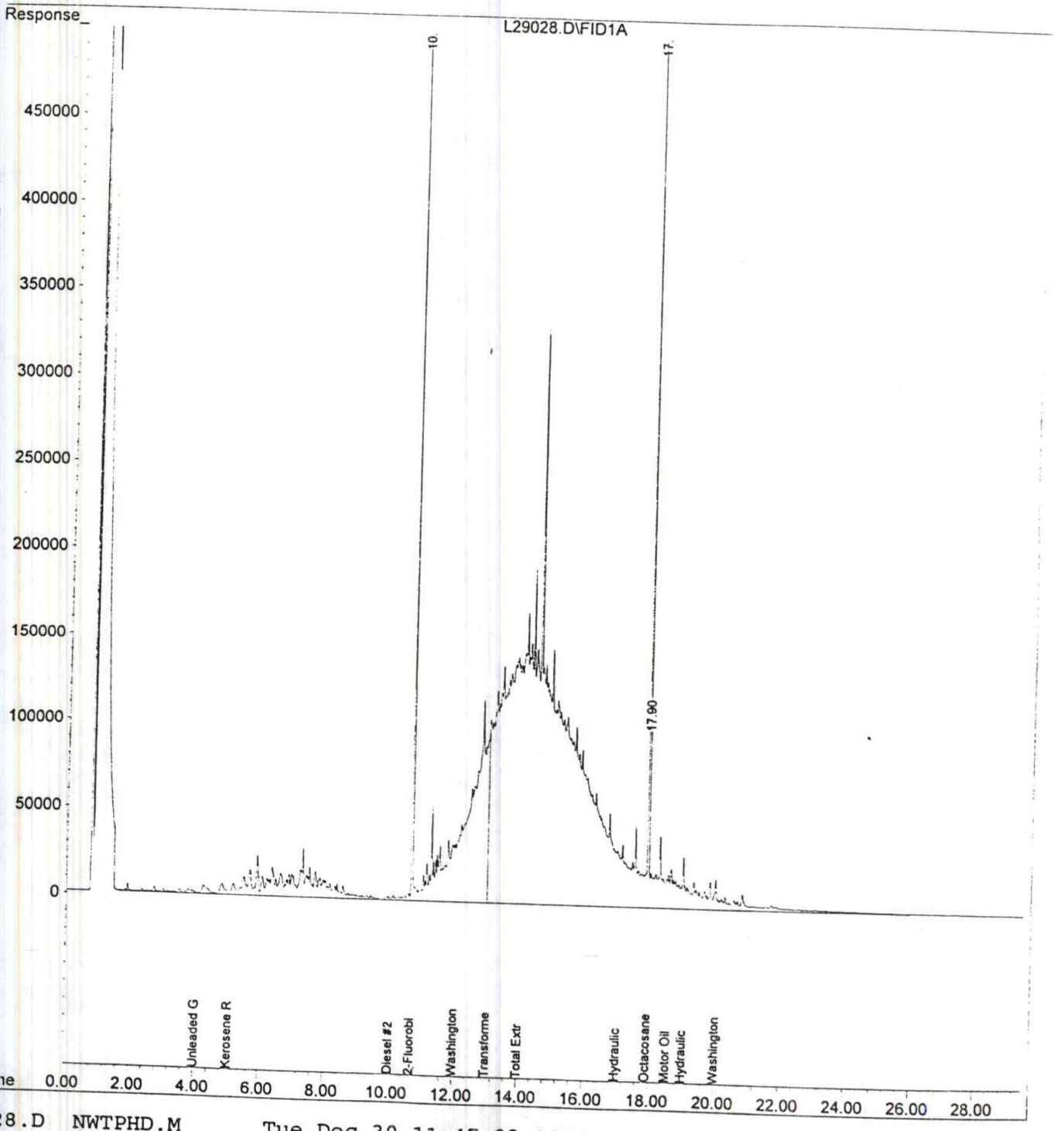


Data File : C:\HPCHEM\2\DATA\L29028.D
Acq On : 30 Dec 1997 9:18 am
Sample : b712508-07
Misc : S
IntFile : SURR.E
Quant Time: Dec 30 11:46 1997 Quant Results File: NWTPHD.RES

Vial: 18
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Dec 30 08:48:52 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

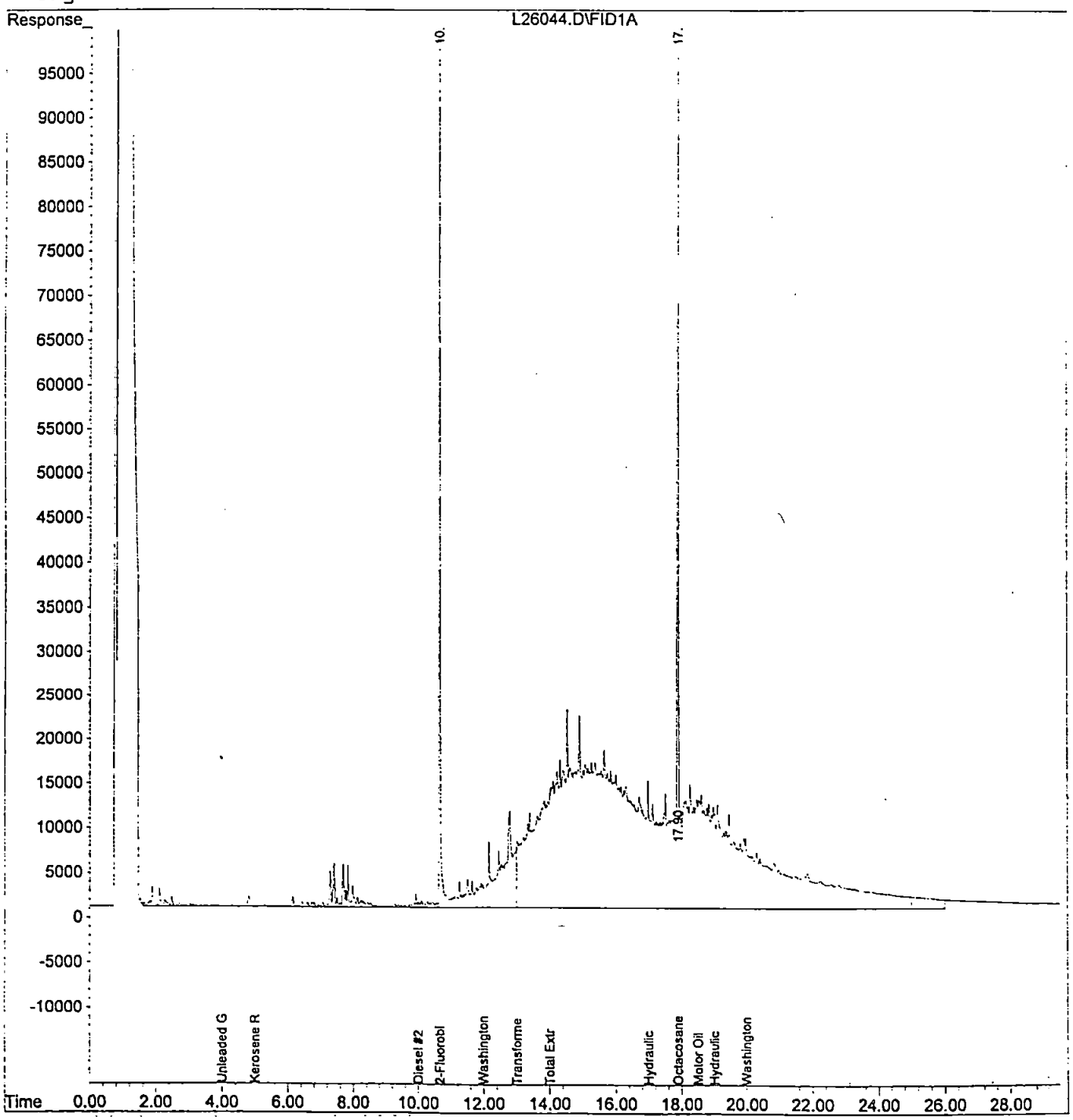


Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26044.D Vial: 30
Acq On : 27 Dec 1997 3:27 pm Operator: bc
Sample : b712508-10 Inst : GC #3
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Dec 28 1:00 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Sat Dec 27 15:05:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

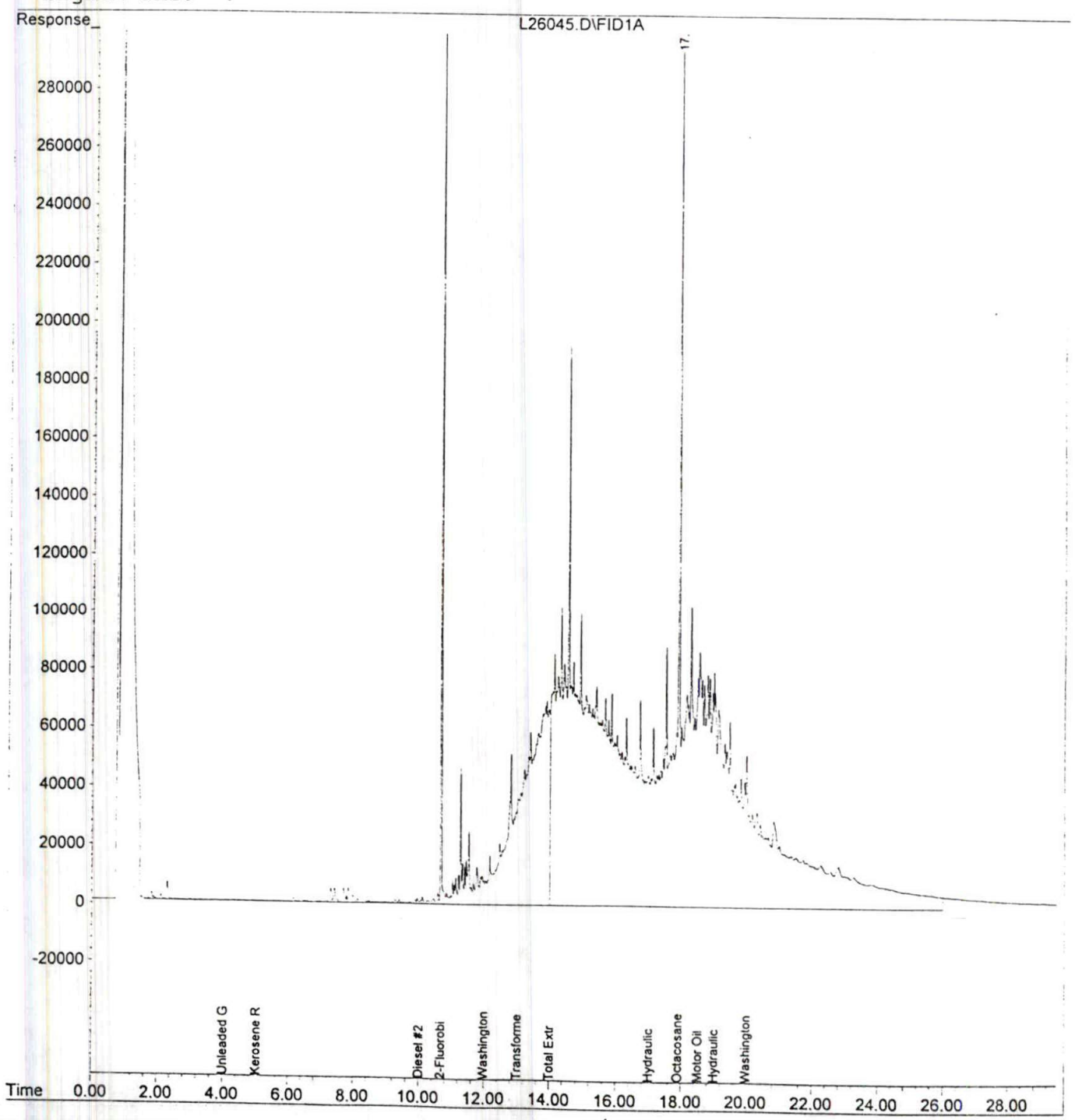


Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26045.D
Acq On : 27 Dec 1997 4:04 pm
Sample : b712508-12
Misc : S
IntFile : SURR.E
Vial: 31
Operator: bc
Inst : GC #3
Multiplr: 1.00
Quant Time: Dec 28 1:01 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Sat Dec 27 15:05:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



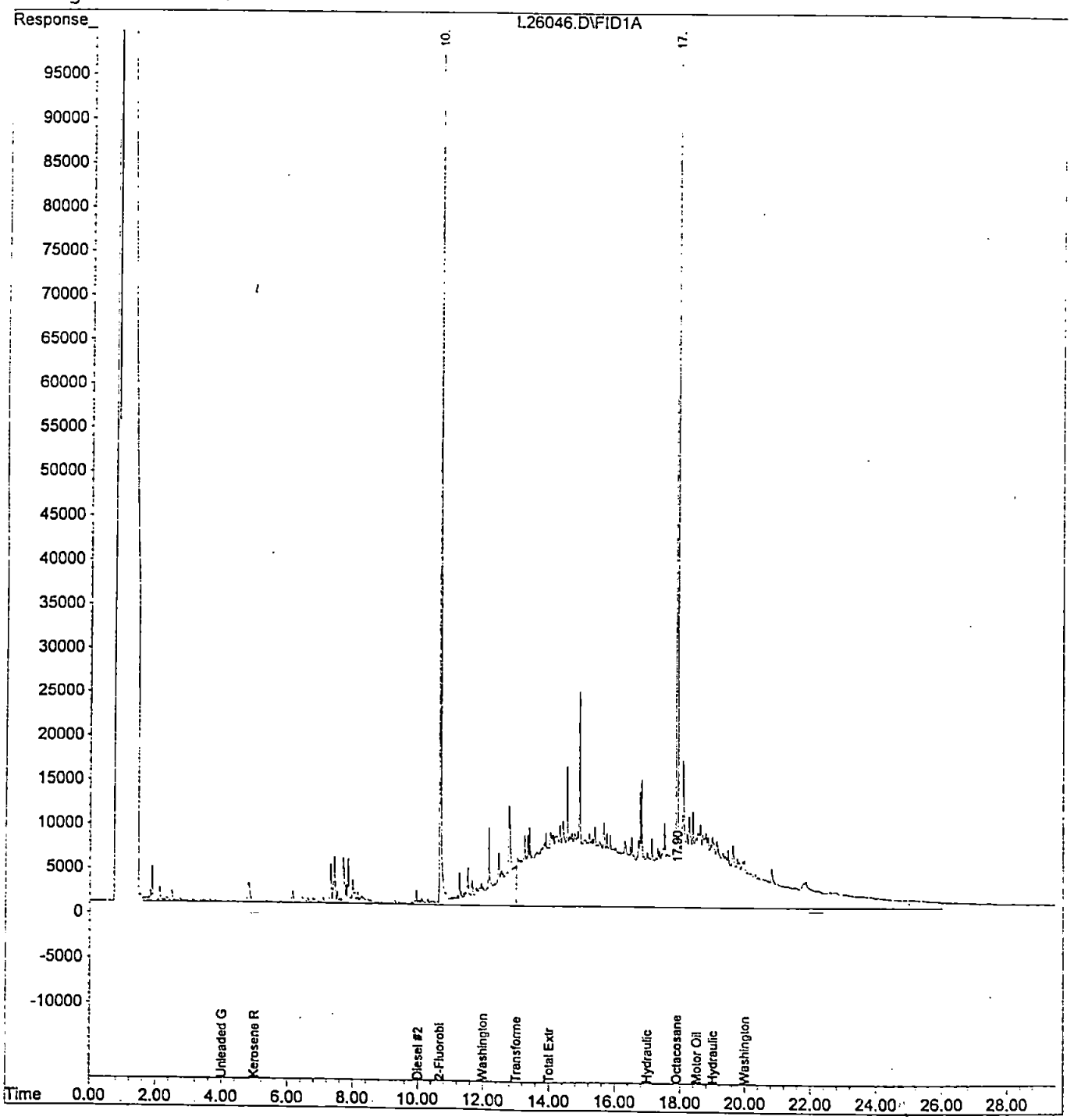
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26046.D
Acq On : 27 Dec 1997 4:41 pm
Sample : b712508-14
Misc : S
IntFile : SURR.E
Quant Time: Dec 28 1:02 1997 Quant Results File: NWTPHD.RES

Vial: 32
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Sat Dec 27 15:05:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



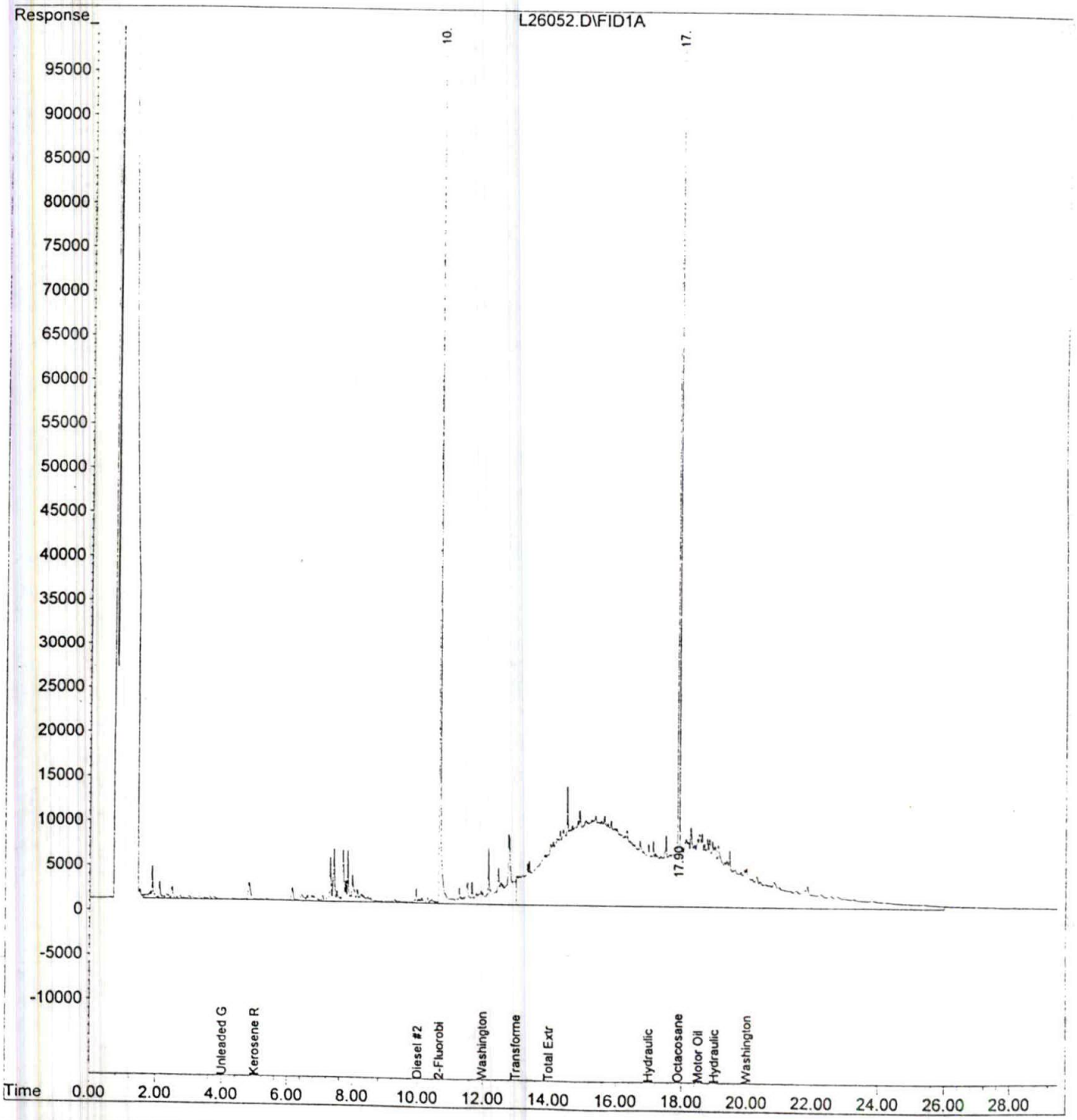
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26052.D
Acq On : 27 Dec 1997 8:22 pm
Sample : b712508-17
Misc : S
IntFile : SURR.E
Quant Time: Dec 28 1:06 1997 Quant Results File: NWTPHD.RES

Vial: 33
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Sat Dec 27 15:05:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



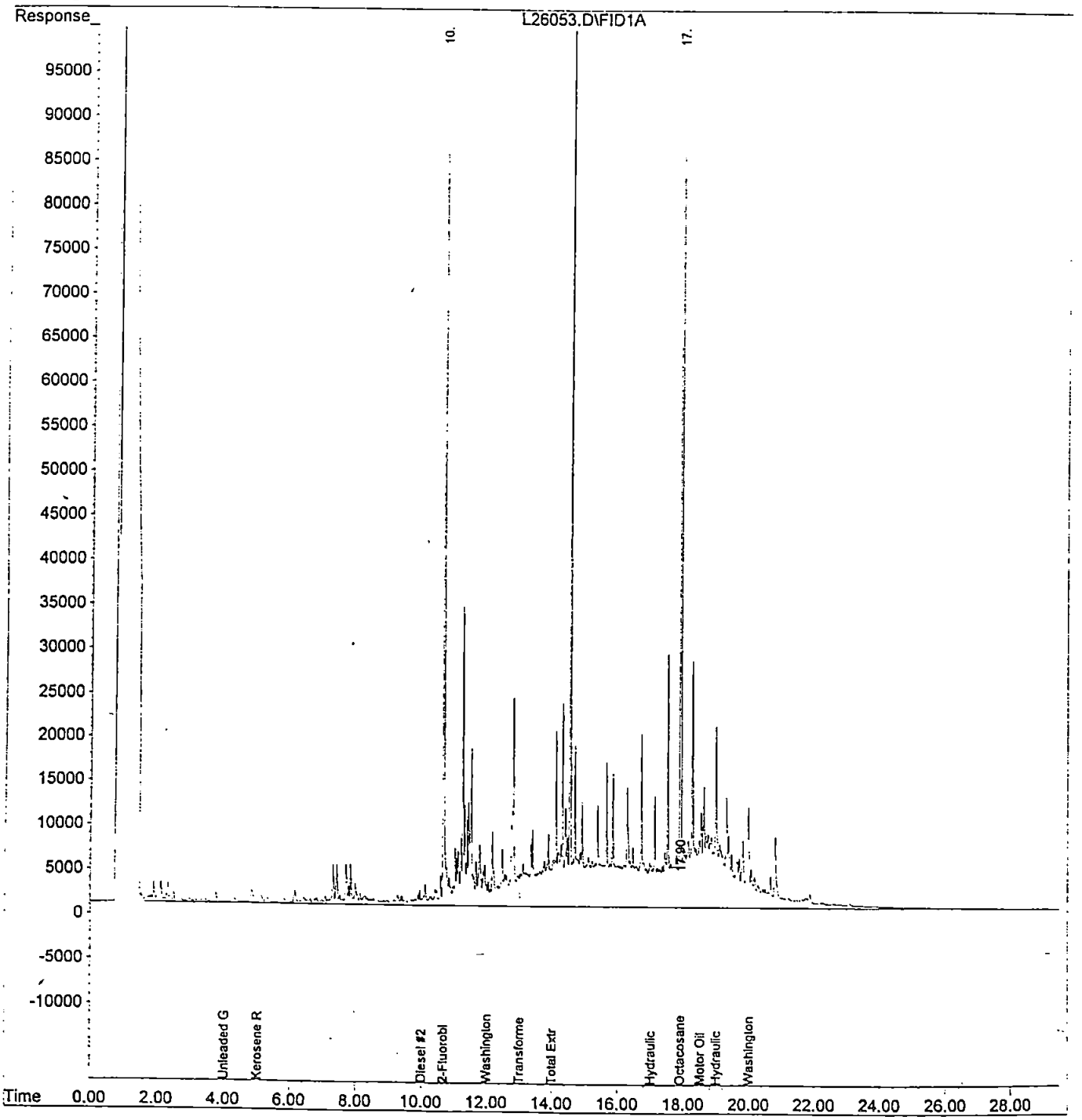
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26053.D
Acq On : 27 Dec 1997 8:58 pm
Sample : b712508-19
Misc : S
IntFile : SURR.E
Quant Time: Dec 28 1:07 1997 Quant Results File: NWTPHD.RES

Vial: 34
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Sat Dec 27 15:05:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

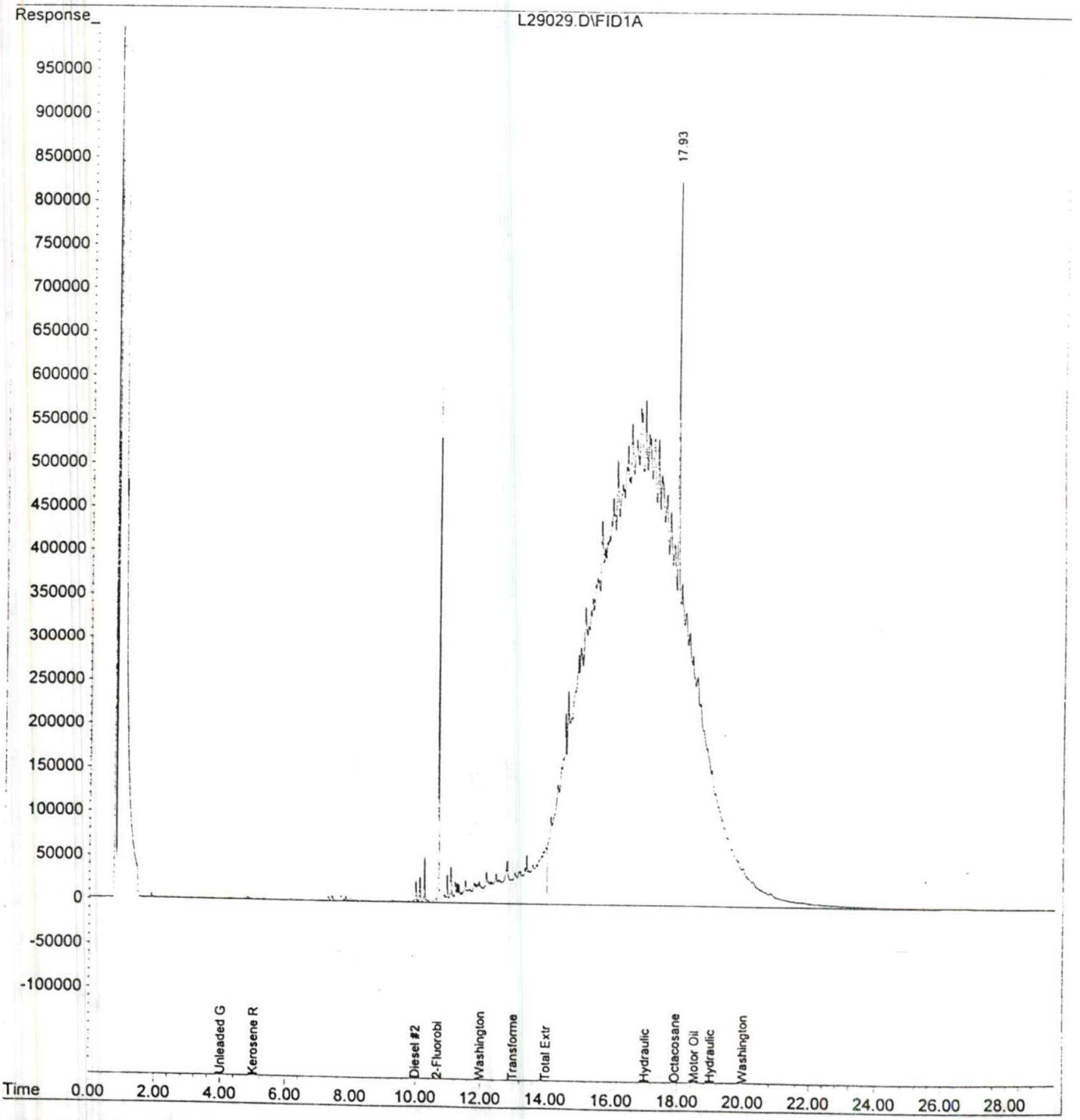


Data File : C:\HPCHEM\2\DATA\L29029.D
Acq On : 30 Dec 1997 9:55 am
Sample : b712508-20
Misc : S
IntFile : SURR.E
Quant Time: Dec 30 11:48 1997 Quant Results File: NWTPHD.RES

Vial: 19
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Dec 30 08:48:52 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

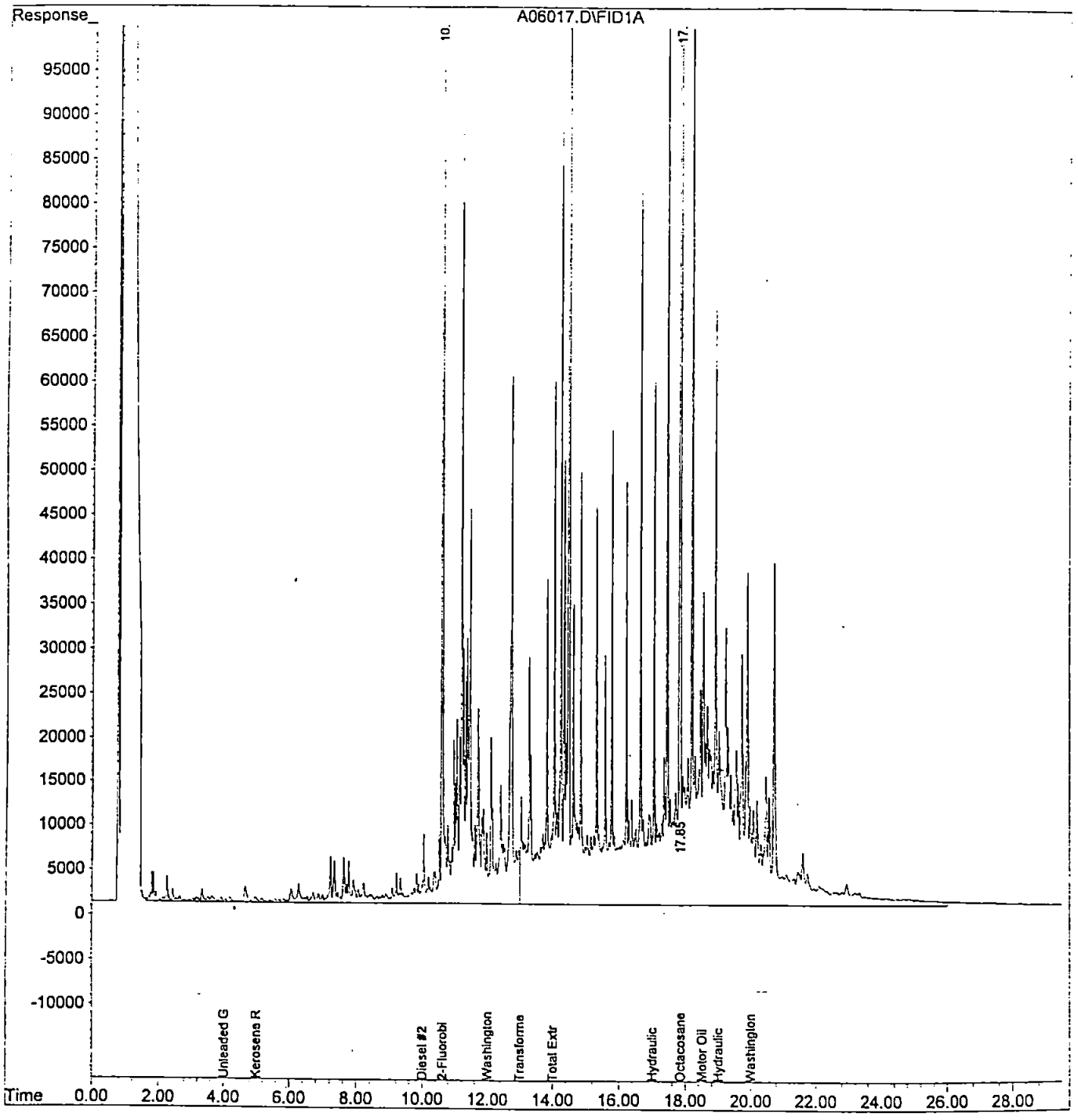
Volume Inj. :
Signal Phase :
Signal Info :



Data File : C:\HPCHEM\2\DATA\010698\A06017.D Vial: 15
Acq On : 7 Jan 1998 12:42 am Operator: bc
Sample : b712508-22 Inst : GC #3
Misc : Multiplr: 1.00
IntFile : SURR.E
Quant Time: Jan 7 9:16 1998 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Jan 06 10:12:36 1998
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

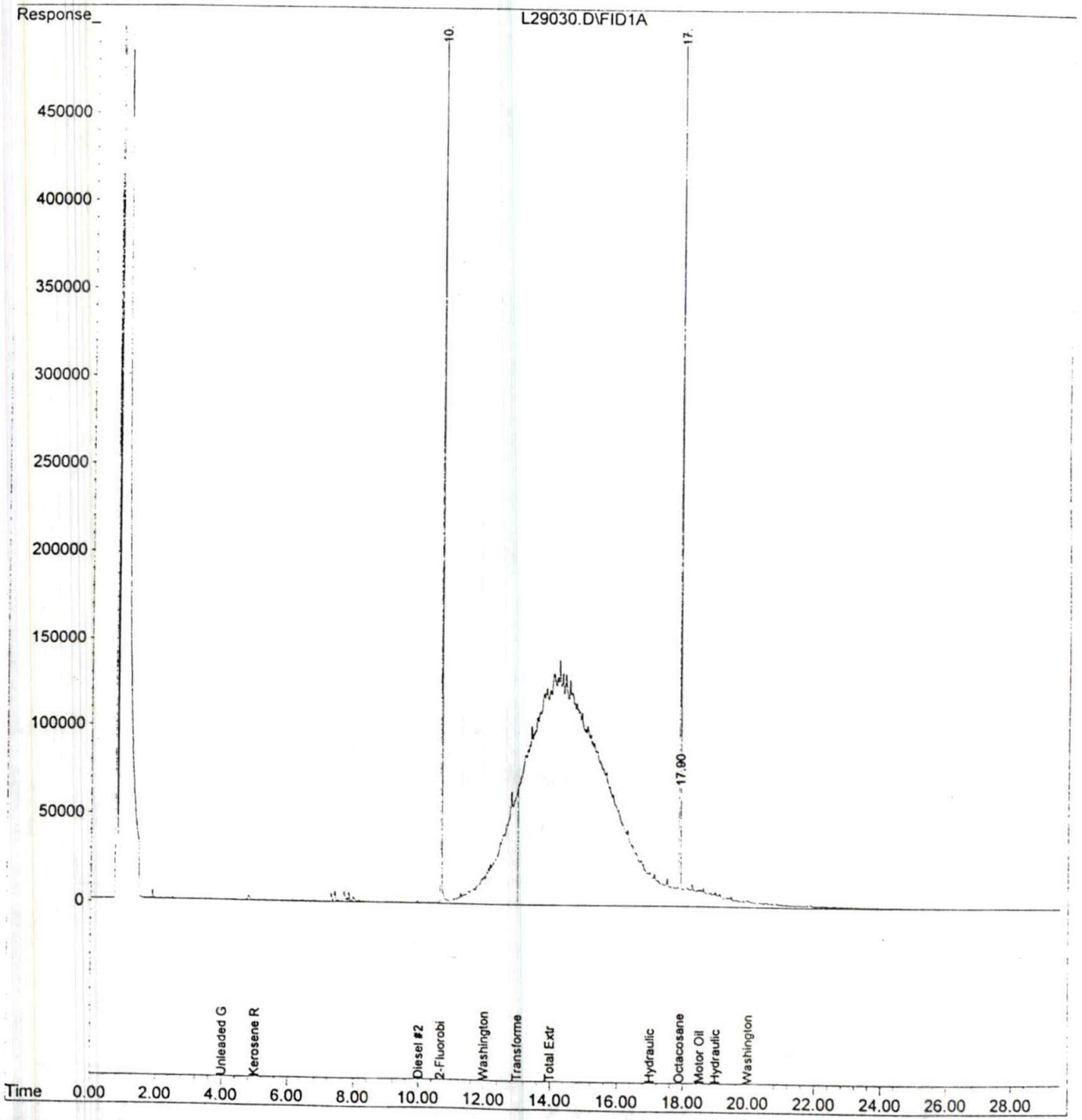
Volume Inj. :
Signal Phase :
Signal Info :



Data File : C:\HPCHEM\2\DATA\L29030.D
Acq On : 30 Dec 1997 10:33 am
Sample : b712508-23
Misc : S
IntFile : SURR.E
Vial: 20
Operator: bc
Inst : GC #3
Multiplr: 1.00
Quant Time: Dec 30 11:49 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Dec 30 08:48:52 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

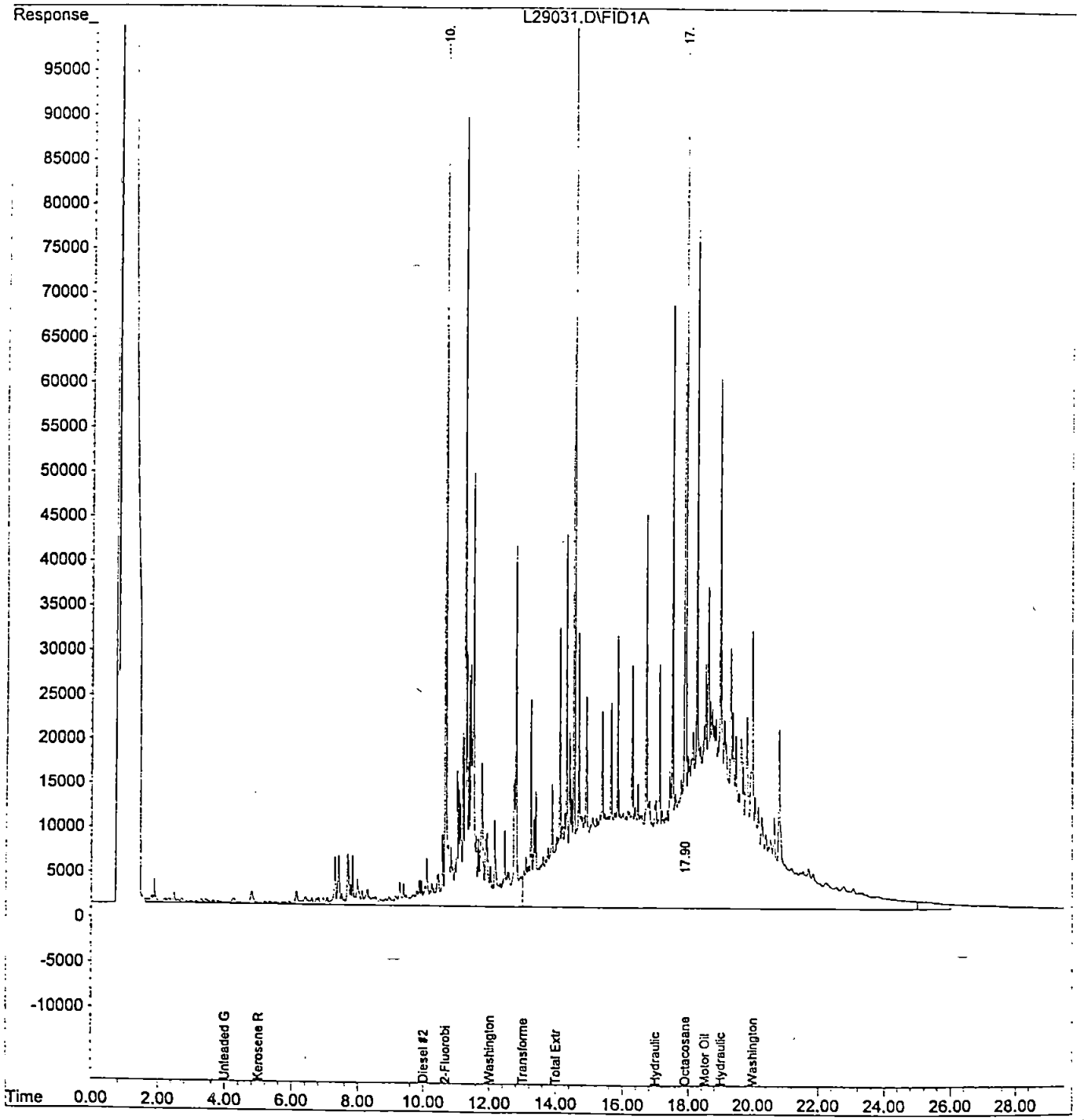


Data File : C:\HPCHEM\2\DATA\L29031.D
Acq On : 30 Dec 1997 11:10 am
Sample : b712508-26
Misc : S
IntFile : SURR.E
Quant Time: Dec 30 11:49 1997 Quant Results File: NWTPHD.RES

Vial: 21
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Dec 30 08:48:52 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

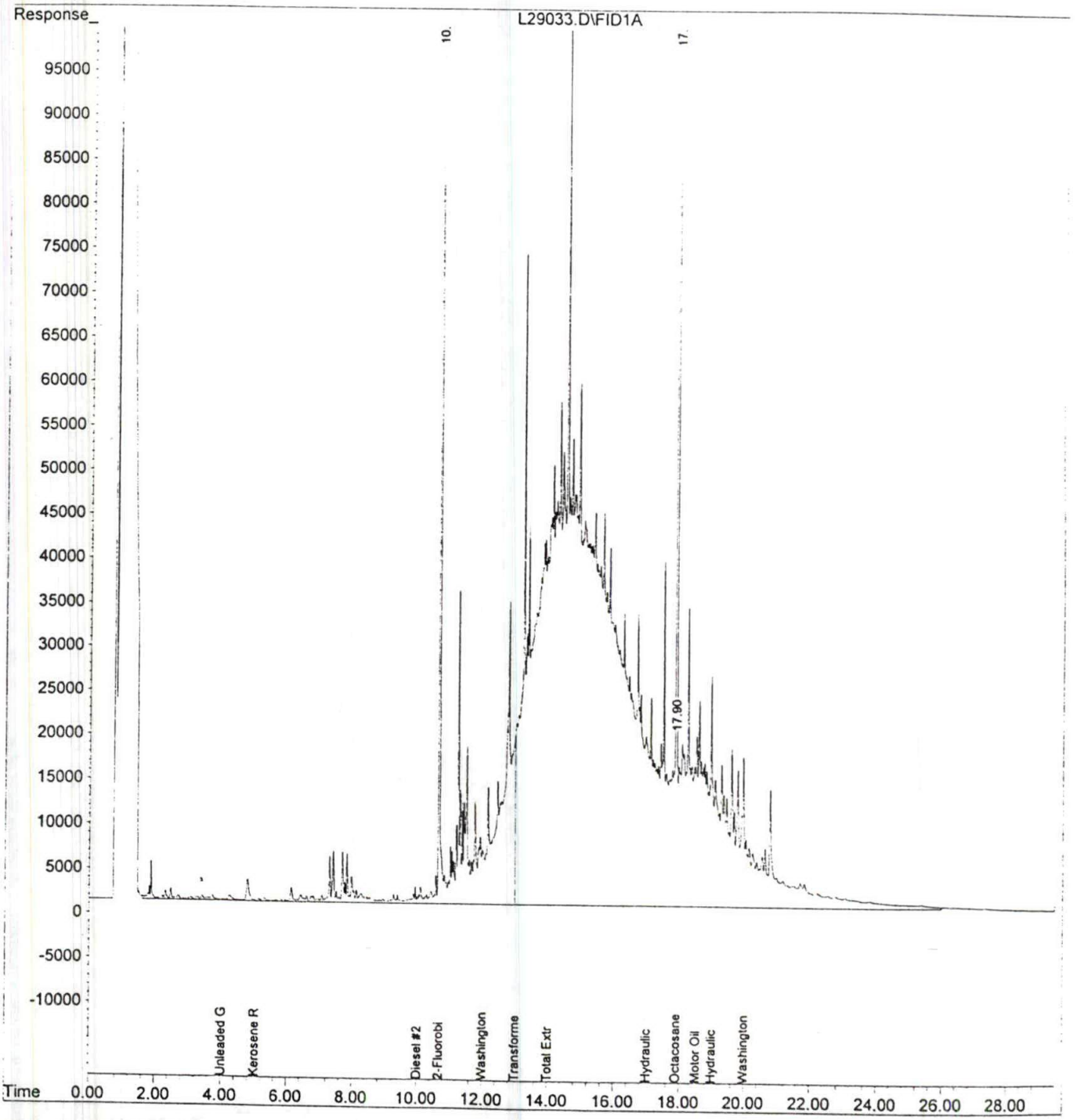


Data File : C:\HPCHEM\2\DATA\L29033.D
Acq On : 30 Dec 1997 12:26 pm
Sample : b712508-28
Misc : S
IntFile : SURR.E
Quant Time: Dec 30 15:33 1997 Quant Results File: NWTPHD.RES

Vial: 22
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Dec 30 08:48:52 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

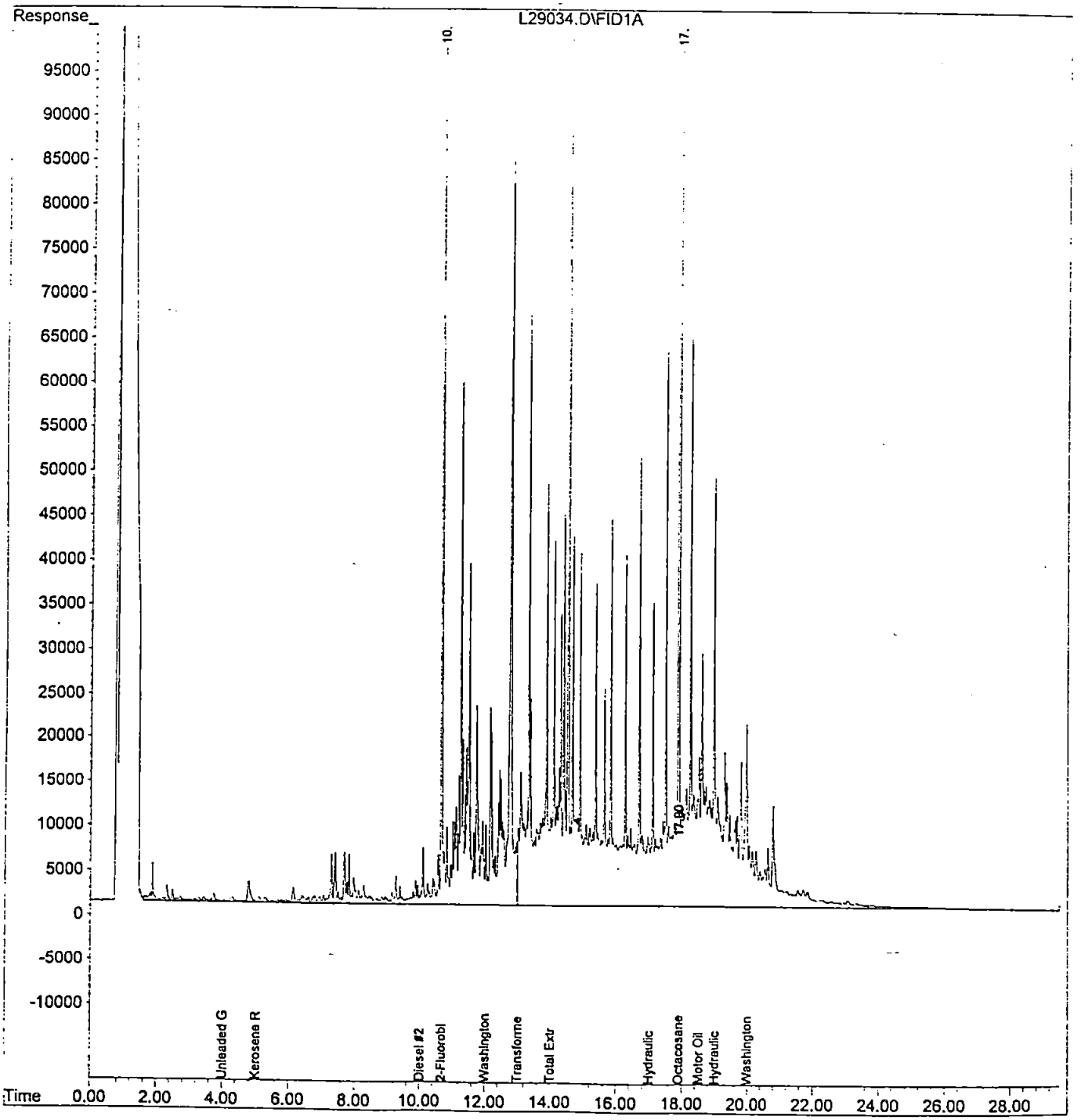


Data File : C:\HPCHEM\2\DATA\L29034.D
Acq On : 30 Dec 1997 1:03 pm
Sample : b712508-31
Misc : S
IntFile : SURR.E
Quant Time: Dec 30 15:39 1997 Quant Results File: NWTPHD.RES

Vial: 23
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Dec 30 08:48:52 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

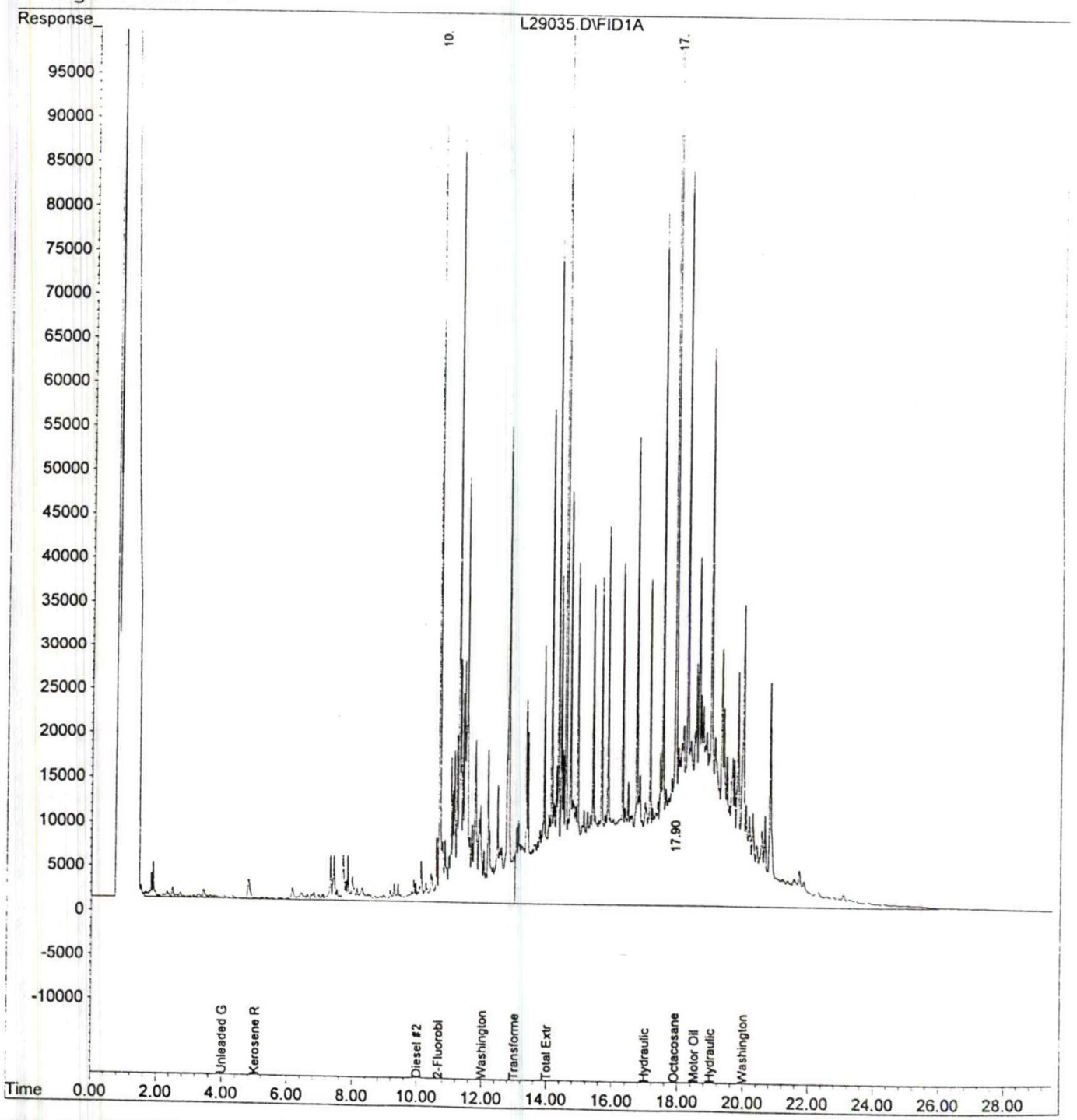


Data File : C:\HPCHEM\2\DATA\L29035.D
Acq On : 30 Dec 1997 1:41 pm
Sample : b712508-34
Misc : S
IntFile : SURR.E
Quant Time: Dec 30 15:41 1997 Quant Results File: NWTPHD.RES

Vial: 24
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Dec 30 08:48:52 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B-712508

REPORT TO:

ATTENTION: Gary Stevens
ADDRESS: 8410 154th Ave NE
Redmond WA, 98052
PHONE: (425) 861-6000 FAX: 425-861-6050
PROJECT NAME: Grady Way
PROJECT NUMBER: 186-407-85
SAMPLED BY: TNO/GRS

INVOICE TO:

ATTENTION: PSE
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: [X] Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: [X] Standard | 5 | 3-4 | 2 | 1 | Same Day
OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges

Analysis Request: NWTPH Dx Treasure Oil 510 | PCB's by EPA 8081 CPAH and Pentachlorophenol by EPA 8270 modified

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1. B-14-0,5	12/22/97 830	B712508-01	S	1	
2. B-14-1,5	12/22/97 830	02	S	1	Hold
3. B-14-3,0	12/22/97 830	03	S	1	Hold
4. B-15-0,5	12/22/97 845	04	S	1	
5. B-15-1,5	12/22/97 845	05	S	1	Hold
6. B-15 3,0	12/22/97 845	06	S	1	Hold
7. B-9-0,5	12/22/97 925	07	S	1	
8. B-9-1,5	12/22/97 925	08	S	1	Hold
9. B-9-3,0	12/22/97 925	09	S	1	Hold
10. B-18-0.5	12/22/97 910	10	S	1	

RELINQUISHED BY (Signature): _____ DATE: 12/23/97
PRINT NAME: Tony Orme FIRM: GEI TIME: 1000

RECEIVED BY (Signature): K Barker DATE: 12/23/97
PRINT NAME: K BARKER FIRM: NCA TIME: 1315

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: Dext w/ Silica gel clean up
Soil contains organic material

14.9 w/cs

PAGE OF

COC Rev 8, 1/96

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CHAIN OF CUSTODY REPORT

Work Order # B712508

REPORT TO:	INVOICE TO:
ATTENTION: Gary Stevens	ATTENTION: PSE
ADDRESS: 8410 154th Ave NE Redmond WA, 98052	ADDRESS:
PHONE: (425) 861-6000 FAX: 425-861-6050	P.O. NUMBER:
PROJECT NAME: Grady Way	NCA QUOTE #:
PROJECT NUMBER: 186-407-85	
SAMPLED BY: TNO/GRS	

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: [X] Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: [X] Standard | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges

Analysis Request: NWTPH-Dx Treat Sgnd o/l SIM; PCB by EPA 8081; PAH's by EPA 8270 modified

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	B-21-1,5	12/22/97 1440	B712508-21	S	1	Hold
2.	B-21-3,0	12/22/97 1040	22	S	1	Hold
3.	B-16-0,5	12/22/97 1140	23	S	1	
4.	B-16-1,5	12/22/97 1100	24	S	1	Hold
5.	B-16-3,0	12/22/97 1100	25	S	1	Hold
6.	~~B-21~~ To B-28-0,5	12/22/97 1105	26	S	1	
7.	B-28-1,5	12/22/97 1105	27	S	1	Hold
8.	B-27-0,5	12/22/97 1115	28	S	1	
9.	B-27 1,5	12/22/97 1115	29	S	1	Hold
10.	B-27-3,0	12/22/97 1115	30	S	1	Hold

RELINQUISHED BY (Signature):		DATE: 12/23/97	RECEIVED BY (Signature): KBarker
PRINT NAME: Tony Orno	FIRM: GEI	TIME: 1000	PRINT NAME: KBARKER FIRM: NCA TIME: 1315
RELINQUISHED BY (Signature):		DATE:	RECEIVED BY (Signature): DATE:
PRINT NAME:	FIRM:	TIME:	PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: Dext w/Silica Gel clean up
Soil contains organic matterial (coal, wood)

14.9 w/rs

PAGE OF

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CHAIN OF CUSTODY REPORT

Work Order # B712508

REPORT TO:		INVOICE TO:	
ATTENTION:	Gary Stevens	ATTENTION:	PSE
ADDRESS:	8410 154th Ave NE Redmond WA, 98052	ADDRESS:	
PHONE:	(425) 861-6000 FAX: 425-861-6050	P.O. NUMBER:	NCA QUOTE #:
PROJECT NAME:	Grady Way		
PROJECT NUMBER:	186-407-85		
SAMPLED BY:	TNO/GRS		

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: (10 Standard) 7 5 4 3 2 1 Same Day
Fuels & Hydrocarbon Analyses: (5 Standard) 3-4 2 1 Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	NWTPH-Dx - Transformer oil STD	PCBs by EPA 8082 (Aroclors and congeners)	CPAH and perchlorinated cmpds by EPA 8270 modified	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	B-16 - 1,5	12/22/97 940	B712508-11				S	1	Hold
2.	B-7 0.5	12/22/97 1000	-12	X	X		S	1	
3.	B-7 1.5	12/22/97 1000	-13				S	1	Hold
4.	B-19 0.5	12/22/97 1015	-14	X	X	X	S	1	
5.	B-19 1.5	12/22/97 1015	-15				S	1	Hold
6.	B-19 3.0	12/22/97 1015	-16				S	1	Hold
7.	B-12 - 0.5	12/22/97 1030	-17	X	X		S	1	
8.	B-12-3.0	12/22/97 1030	-18				S	1	Hold
9.	B-22 - 0.5	12/22/97 1050	-19	X	X	X	S	1	
10.	B-21 - 0.5	12/22/97 1040	-20	X	X	X	S	1	

RELINQUISHED BY (Signature):		DATE: 12/23/97	RECEIVED BY (Signature): KBarker DATE: 12/23/97
PRINT NAME:	Tony Orme	FIRM: GEI TIME: 1000	PRINT NAME: KBARKER FIRM: NCA TIME: 1315
RELINQUISHED BY (Signature):		DATE:	RECEIVED BY (Signature): DATE:
PRINT NAME:		FIRM: TIME:	PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: Dext w/ silica gel clean up
Soil Contains organic material (Coal, wood)

14.9 °C

PAGE OF

CUC Rev 8, 1/96

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B712508

REPORT TO:

ATTENTION: Gary Stevens
ADDRESS: 8410 154th Ave NE
Redmond WA, 98052
PHONE: (425) 861-6000 FAX: 425-861-6050
PROJECT NAME: Grady Way
PROJECT NUMBER: 186-407-85
SAMPLED BY: TNO/GRS

INVOICE TO:

ATTENTION: PSE
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: [10 Standard] 7 5 4 3 2 1 Same Day

Fuels & Hydrocarbon Analyses: [5 Standard] 3-4 2 1 Same Day

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: NWTPH-Dx w/ Transformer oil STD	PCB by EPA 8081	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1. B-17 - 0.5	12/22/97 1200	B712508-31	X	X	S	1	
2. B-17 - 1.5	12/22/97 1200	-32			S	1	Hold
3. B-17 3.0	12/22/97 1200	33			S	1	Hold
4. B-35 0.5	12/22/97 1210	34	X	X	S	1	
5. B-35 1.5	12/22/97 1210	35			S	1	Hold
6. B-35 3.0	12/22/97 1210	36			S	1	Hold
7.							
8.							
9.							
10.							

RELINQUISHED BY (Signature): [signature] DATE: 12/23/97
PRINT NAME: Tony Orme FIRM: GEI TIME: 1000

RECEIVED BY (Signature): [signature] DATE: 12/23/97
PRINT NAME: K BARKER FIRM: NCA TIME: 1315

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: Dext w/ silica gel clean up
Soil contains organic material

14.9 wks

PAGE OF

LAB DATA EVALUATION FORM

Page _____ of _____

GEI Job # 186-407-85

Lab Job #/Sample IDs: B802390-02 to 13

GEI Sample IDs GMW-7-4.0 to GMW-7-8.0 and S1 to S-8

Sample Coll Date 2/19/98

Report Recv'd Date 3/10/98

Analysis	Holding Time Exceptions ?	Surrogate Exceptions ?	Blank Hits ?	MS/MSD % Rec Exceptions	Duplicate or MSD RPD Exceptions	Blank Spike or LCS Exceptions (Use if MS/MSD out)
Ecology WTPH-G	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8020 (BETX)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
Ecology WTPH-D Extended	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)
413.1 (FOG)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8010	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8270	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
VPH/BETX/MTBE/Naphthalene	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH-SIM	Yes (No)	Yes (No)	Yes (No)	Yes (No)	(Yes)	Yes (No)
E-TPH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
PCB 8082	No	No	ND	Yes	Yes	No
Review	No	No	No	NA	NA	NA
[redacted]						
Affected Sample Numbers						

Data Acceptable for Intended Use? Yes

Date Comp. 3/16/98

Reviewer Initials TNO

Comments: See notes page 20

Exceptions (As shown in report):

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SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 906-9200 ▪ FAX 906-9210

Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 2/19/98
8410 154th Ave NE	Project Number: 186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 3/10/98 08:45

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
GMW-7-4.0	B802390-02	Soil	2/19/98
GMW-7-8.0	B802390-04	Soil	2/19/98
S-1	B802390-06	Soil	2/19/98
S-2	B802390-07	Soil	2/19/98
S-3	B802390-08	Soil	2/19/98
S-4	B802390-09	Soil	2/19/98
S-5	B802390-10	Soil	2/19/98
S-6	B802390-11	Soil	2/19/98
S-7	B802390-12	Soil	2/19/98
S-8	B802390-13	Soil	2/19/98

GeoEngineers
MAR 1 1998
Routing
File

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Environmental Laboratory Services

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PORTLAND ▪ (503) 906-9200 ▪ FAX 906-9210

Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/19/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 08:45

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-7-4.0			**B802390-02**				**Soil**	
Diesel #2	0280558	2/23/98	2/27/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**148**	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**87.9**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*93.2*	%	
GMW-7-8.0			**B802390-04**				**Soil**	
Diesel #2	0280558	2/23/98	2/27/98		410	ND	mg/kg dry	
Fuel Oil #2	"	"	"		1030	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		1030	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		1030	**3890**	"	
Hydraulic Oil	"	"	"		1030	ND	"	
Motor Oil	"	"	"		1030	ND	"	
Transformer Oil	"	"	"		1030	ND	"	
Kerosene Range Hydrocarbons	"	"	"		410	ND	"	
Diesel Range Hydrocarbons	"	"	"		410	**2390**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*50.7*	%	
S-1			**B802390-06**				**Soil**	
Diesel #2	0280558	2/23/98	2/27/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**78.0**	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**15.9**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*97.9*	%	
S-2			**B802390-07**				**Soil**	
Diesel #2	0280558	2/23/98	2/27/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/19/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 08:45

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
S-2 (continued)			B802390-07				Soil	
Fuel Oil #6 (Bunker C)	0280558	2/23/98	2/27/98		25.0	ND	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**28.4**	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*102*	%	
S-3			B802390-08				Soil	
Diesel #2	0280558	2/23/98	2/27/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**259**	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**58.1**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*98.3*	%	
S-4			B802390-09				Soil	
Diesel #2	0280558	2/23/98	2/27/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**157**	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**86.8**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*114*	%	
S-5			B802390-10				Soil	
Diesel #2	0280558	2/23/98	2/27/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**643**	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/19/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 08:45

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
S-5 (continued)			B802390-10				Soil	
Hydraulic Oil	0280558	2/23/98	2/27/98		25.0	ND	mg/kg dry	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	313	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*82.3*	%	
S-6			B802390-11				Soil	
Diesel #2	0280558	2/23/98	2/27/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	161	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	43.0	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*90.4*	%	
S-7			B802390-12				Soil	
Diesel #2	0280558	2/23/98	2/27/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*90.4*	%	
S-8			B802390-13				Soil	
Diesel #2	0280558	2/23/98	2/27/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	176	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	

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Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
S-8 (continued)			**B802390-13**				**Soil**	
Transformer Oil	0280558	2/23/98	2/27/98		25.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**83.0**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*97.1*	%	

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Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 08:45

Polychlorinated Biphenyls by EPA Method 8082
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-7-4.0			**B802390-02**				**Soil**	
Aroclor 1221	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*78.8*	*%*	
GMW-7-8.0			**B802390-04**				**Soil**	
Aroclor 1016	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*73.7*	*%*	
S-1			**B802390-06**				**Soil**	
Aroclor 1016	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*60.4*	*%*	
S-2			**B802390-07**				**Soil**	
Aroclor 1016	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	

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Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 08:45

Polychlorinated Biphenyls by EPA Method 8082
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
S-2 (continued)			**B802390-07**				Soil	
Aroclor 1242	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*93.7*	%	
S-3			**B802390-08**				Soil	
Aroclor 1016	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	**134**	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*96.2*	%	
S-4			**B802390-09**				Soil	
Aroclor 1016	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	**158**	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*109*	%	
S-5			**B802390-10**				Soil	
Aroclor 1016	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	

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8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 08:45

Polychlorinated Biphenyls by EPA Method 8082
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
S-5 (continued)			**B802390-10**				**Soil**	
Aroclor 1254	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1260	"	"	"		50.0	**345**	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*119*	*%*	
S-6			**B802390-11**				**Soil**	
Aroclor 1016	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*102*	*%*	
S-7			**B802390-12**				**Soil**	
Aroclor 1016	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*96.0*	*%*	
S-8			**B802390-13**				**Soil**	
Aroclor 1016	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	**74.5**	"	

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Polychlorinated Biphenyls by EPA Method 8082
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
S-8 (continued)			**B802390-13**				**Soil**	
Aroclor 1262	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*99.5*	*%*	

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Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 08:45

Pentachlorophenol by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
S-4			**B802390-09**				Soil	
Pentachlorophenol	0380012	3/2/98	3/4/98		0.500	**0.632**	mg/kg dry	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*71.0*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*73.2*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*73.6*	"	
S-5			**B802390-10**				Soil	
Pentachlorophenol	0380012	3/2/98	3/4/98		0.500	**3.76**	mg/kg dry	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*77.8*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*82.9*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*88.7*	"	
S-8			**B802390-13**				Soil	
Pentachlorophenol	0380012	3/2/98	3/4/98		0.200	ND	mg/kg dry	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*64.6*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*75.9*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*83.0*	"	

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Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
S-4			B802390-09				Soil	
Acenaphthene	0380012	3/2/98	3/4/98		0.0500	**0.0554**	mg/kg dry	
Acenaphthylene	"	"	"		0.0500	ND	"	
Anthracene	"	"	"		0.0500	**0.157**	"	
Benzo (a) anthracene	"	"	"		0.0500	**0.462**	"	
Benzo (a) pyrene	"	"	"		0.0500	**0.462**	"	
Benzo (b) fluoranthene	"	"	"		0.0500	**0.660**	"	
Benzo (ghi) perylene	"	"	"		0.0500	**0.402**	"	
Benzo (k) fluoranthene	"	"	"		0.0500	**0.254**	"	
Chrysene	"	"	"		0.0500	**0.531**	"	
Dibenz (a,h) anthracene	"	"	"		0.0500	**0.0738**	"	
Fluoranthene	"	"	"		0.0500	**1.07**	"	
Fluorene	"	"	"		0.0500	**0.0969**	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0500	**0.425**	"	
Naphthalene	"	"	"		0.0500	ND	"	
Phenanthrene	"	"	"		0.0500	**0.734**	"	
Pyrene	"	"	"		0.0500	**1.06**	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*71.0*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*73.2*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*73.6*	"	
S-5			B802390-10				Soil	
Acenaphthene	0380012	3/2/98	3/4/98		0.0500	ND	mg/kg dry	
Acenaphthylene	"	"	"		0.0500	**0.0810**	"	
Anthracene	"	"	"		0.0500	**0.180**	"	
Benzo (a) anthracene	"	"	"		0.0500	**0.693**	"	
Benzo (a) pyrene	"	"	"		0.0500	**0.855**	"	
Benzo (b) fluoranthene	"	"	"		0.0500	**1.88**	"	
Benzo (ghi) perylene	"	"	"		0.0500	**1.02**	"	
Benzo (k) fluoranthene	"	"	"		0.0500	**0.603**	"	
Chrysene	"	"	"		0.0500	**1.50**	"	
Dibenz (a,h) anthracene	"	"	"		0.0500	**0.207**	"	
Fluoranthene	"	"	"		0.0500	**2.01**	"	
Fluorene	"	"	"		0.0500	**0.0540**	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0500	**1.01**	"	
Naphthalene	"	"	"		0.0500	ND	"	
Phenanthrene	"	"	"		0.0500	**0.990**	"	
Pyrene	"	"	"		0.0500	**2.13**	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*77.8*	%	

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8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
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Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
S-5 (continued)			B802390-10				Soil	
Surrogate: Nitrobenzene-d5	*0380012*	*3/2/98*	*3/4/98*	*30.0-150*		*82.9*	*%*	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*88.7*	"	
S-8			B802390-13				Soil	
Acenaphthene	0380012	3/2/98	3/4/98		0.0200	ND	mg/kg dry	
Acenaphthylene	"	"	"		0.0200	ND	"	
Anthracene	"	"	"		0.0200	**0.0237**	"	
Benzo (a) anthracene	"	"	"		0.0200	**0.0915**	"	
Benzo (a) pyrene	"	"	"		0.0200	**0.0915**	"	
Benzo (b) fluoranthene	"	"	"		0.0200	**0.141**	"	
Benzo (ghi) perylene	"	"	"		0.0200	**0.0763**	"	
Benzo (k) fluoranthene	"	"	"		0.0200	**0.0508**	"	
Chrysene	"	"	"		0.0200	**0.114**	"	
Dibenz (a,h) anthracene	"	"	"		0.0200	ND	"	
Fluoranthene	"	"	"		0.0200	**0.225**	"	
Fluorene	"	"	"		0.0200	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0200	**0.0881**	"	
Naphthalene	"	"	"		0.0200	ND	"	
Phenanthrene	"	"	"		0.0200	**0.147**	"	
Pyrene	"	"	"		0.0200	**0.231**	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*64.6*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*75.9*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*83.0*	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/19/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 08:45

Dry Weight Determination
North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
GMW-7-4.0	B802390-02	Soil	73.4	%
GMW-7-8.0	B802390-04	Soil	90.9	%
S-1	B802390-06	Soil	73.1	%
S-2	B802390-07	Soil	93.0	%
S-3	B802390-08	Soil	90.9	%
S-4	B802390-09	Soil	72.2	%
S-5	B802390-10	Soil	37.0	%
S-6	B802390-11	Soil	57.2	%
S-7	B802390-12	Soil	92.6	%
S-8	B802390-13	Soil	78.7	%

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8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 08:45

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0280558	**Date Prepared: 2/23/98**					**Extraction Method: EPA 3550B**				
Blank	**0280558-BLK1**									
Diesel #2	2/27/98			**ND**	mg/kg dry	**10.0**				
Fuel Oil #2	"			**ND**	"	**25.0**				
Fuel Oil #6 (Bunker C)	"			**ND**	"	**25.0**				
Heavy Oil Range Hydrocarbons	"			**ND**	"	**25.0**				
Hydraulic Oil	"			**ND**	"	**25.0**				
Motor Oil	"			**ND**	"	**25.0**				
Transformer Oil	"			**ND**	"	**25.0**				
Kerosene Range Hydrocarbons	"			**ND**	"	**10.0**				
Diesel Range Hydrocarbons	"			**ND**	"	**10.0**				
Surrogate: 2-FBP	"	*10.7*		*11.5*	"	*50.0-150*	*107*			
LCS	**0280558-BS1**									
Diesel #2	2/27/98	66.7		56.5	mg/kg dry	50.0-150	84.7			
Surrogate: 2-FBP	"	*10.7*		*11.6*	"	*50.0-150*	*108*			
Duplicate	**0280558-DUP1**	**B802390-06**								
Diesel #2	2/27/98		ND	ND	mg/kg dry			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Heavy Oil Range Hydrocarbons	"		78.0	95.3	"			50.0	**20.0**	
Hydraulic Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		15.9	21.3	"			50.0	**29.0**	
Surrogate: 2-FBP	"	*14.6*		*13.8*	"	*50.0-150*	*94.5*			
Duplicate	**0280558-DUP2**	**B802391-08**								
Diesel #2	2/27/98		ND	ND	mg/kg dry			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Heavy Oil Range Hydrocarbons	"		123	97.2	"			50.0	**23.4**	
Hydraulic Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		41.2	47.2	"			50.0	**13.6**	

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 2/19/98
8410 154th Ave NE	Project Number: 186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 3/10/98 08:45

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Duplicate (continued)	**0280558-DUP2**		**B802391-08**							
Surrogate: 2-FBP	*2/27/98*	*13.4*		*14.1*	*mg/kg dry*	*50.0-150*	*105*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/19/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 08:45

Polychlorinated Biphenyls by EPA Method 8082/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0280696	**Date Prepared: 2/27/98**					**Extraction Method: EPA 3550B**				
Blank	**0280696-BLK1**									
Aroclor 1221	3/6/98			**ND**	ug/kg dry	**50.0**				
Aroclor 1232	"			**ND**	"	**50.0**				
Aroclor 1242	"			**ND**	"	**50.0**				
Aroclor 1248	"			**ND**	"	**50.0**				
Aroclor 1254	"			**ND**	"	**50.0**				
Aroclor 1260	"			**ND**	"	**50.0**				
Aroclor 1262	"			**ND**	"	**50.0**				
Aroclor 1268	"			**ND**	"	**50.0**				
Surrogate: TCX	"	*6.67*		*7.22*	"	*38.0-117*	*108*			
LCS	**0280696-BS1**									
Aroclor 1260	3/6/98	333		301	ug/kg dry	44.0-123	90.4			
Surrogate: TCX	"	*6.67*		*7.29*	"	*38.0-117*	*109*			
Matrix Spike	**0280696-MS1**		**B802390-13**							
Aroclor 1260	3/6/98	424	74.5	ND	ug/kg dry	28.0-132	**NR**			1
Surrogate: TCX	"	*8.47*		*8.96*	"	*38.0-117*	*106*			
Matrix Spike Dup	**0280696-MSD1**		**B802390-13**							
Aroclor 1260	3/6/98	424	74.5	ND	ug/kg dry	28.0-132	**NR**	23.0		1
Surrogate: TCX	"	*8.47*		*8.42*	"	*38.0-117*	*99.4*			

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 2/19/98
8410 154th Ave NE	Project Number: 186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 3/10/98 08:45

Pentachlorophenol by GC/MS with Selected Ion Monitoring/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0380012	**Date Prepared: 3/2/98**					**Extraction Method: EPA 3550B**				
Blank	**0380012-BLK1**									
Pentachlorophenol	3/3/98			ND	mg/kg dry	0.100				
Surrogate: 2-FBP	"	*1.67*		*0.959*	"	*30.0-150*	*57.4*			
Surrogate: Nitrobenzene-d5	"	*1.67*		*1.12*	"	*30.0-150*	*67.1*			
Surrogate: p-Terphenyl-d14	"	*1.67*		*1.54*	"	*30.0-150*	*92.2*			

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 2/19/98
8410 154th Ave NE	Project Number: 186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 3/10/98 08:45

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0380012	**Date Prepared: 3/2/98**					**Extraction Method: EPA 3550B**				
Blank (continued)	**0380012-BLK1**									
Acenaphthene	3/3/98			ND	mg/kg dry	0.0100				
Acenaphthylene	"			ND	"	0.0100				
Anthracene	"			ND	"	0.0100				
Benzo (a) anthracene	"			ND	"	0.0100				
Benzo (a) pyrene	"			ND	"	0.0100				
Benzo (b) fluoranthene	"			ND	"	0.0100				
Benzo (ghi) perylene	"			ND	"	0.0100				
Benzo (k) fluoranthene	"			ND	"	0.0100				
Chrysene	"			ND	"	0.0100				
Dibenz (a,h) anthracene	"			ND	"	0.0100				
Fluoranthene	"			ND	"	0.0100				
Fluorene	"			ND	"	0.0100				
Indeno (1,2,3-cd) pyrene	"			ND	"	0.0100				
Naphthalene	"			ND	"	0.0100				
Phenanthrene	"			ND	"	0.0100				
Pyrene	"			ND	"	0.0100				
Surrogate: 2-FBP	"	*1.67*		*0.959*	"	*30.0-150*	*57.4*			
Surrogate: Nitrobenzene-d5	"	*1.67*		*1.12*	"	*30.0-150*	*67.1*			
Surrogate: p-Terphenyl-d14	"	*1.67*		*1.54*	"	*30.0-150*	*92.2*			
LCS	**0380012-BS1**									
Chrysene	3/3/98	0.0667		0.0433	mg/kg dry	10.0-125	64.9			
Fluorene	"	0.0667		0.0413	"	11.0-116	61.9			
Indeno (1,2,3-cd) pyrene	"	0.0667		0.0487	"	10.0-147	73.0			
Surrogate: 2-FBP	"	*1.67*		*0.880*	"	*30.0-150*	*52.7*			
Surrogate: Nitrobenzene-d5	"	*1.67*		*0.997*	"	*30.0-150*	*59.7*			
Surrogate: p-Terphenyl-d14	"	*1.67*		*1.32*	"	*30.0-150*	*79.0*			
Matrix Spike	**0380012-MS1**		**B802390-13**							
Chrysene	3/3/98	0.0847	0.114	0.169	mg/kg dry	10.0-125	**64.9**			
Fluorene	"	0.0847	ND	0.0475	"	10.0-154	**56.1**			
Indeno (1,2,3-cd) pyrene	"	0.0847	0.0881	0.133	"	10.0-144	**53.0**			
Surrogate: 2-FBP	"	*2.12*		*1.19*	"	*30.0-150*	*56.1*			
Surrogate: Nitrobenzene-d5	"	*2.12*		*1.34*	"	*30.0-150*	*63.2*			
Surrogate: p-Terphenyl-d14	"	*2.12*		*1.22*	"	*30.0-150*	*57.5*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/19/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 08:45

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike Dup	**0380012-MSD1**		**B802390-13**							
Chrysene	3/3/98	0.0847	0.114	0.197	mg/kg dry	10.0-125	**98.0**	28.0	**40.6**	2
Fluorene	"	0.0847	ND	0.0534	"	10.0-154	**63.0**	32.0	**11.6**	
Indeno (1,2,3-cd) pyrene	"	0.0847	0.0881	0.158	"	10.0-144	**82.5**	47.0	**43.5**	
Surrogate: 2-FBP	"	*2.12*		*1.23*	"	*30.0-150*	*58.0*			
Surrogate: Nitrobenzene-d5	"	*2.12*		*1.34*	"	*30.0-150*	*63.2*			
Surrogate: p-Terphenyl-d14	"	*2.12*		*1.17*	"	*30.0-150*	*55.2*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/19/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 08:45

Notes and Definitions

#	Note
1	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte already present in the sample.
2	The RPD value for this QC sample is above the established control limit. Review of associated QC indicates the high RPD does not represent an out-of-control condition for the batch.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

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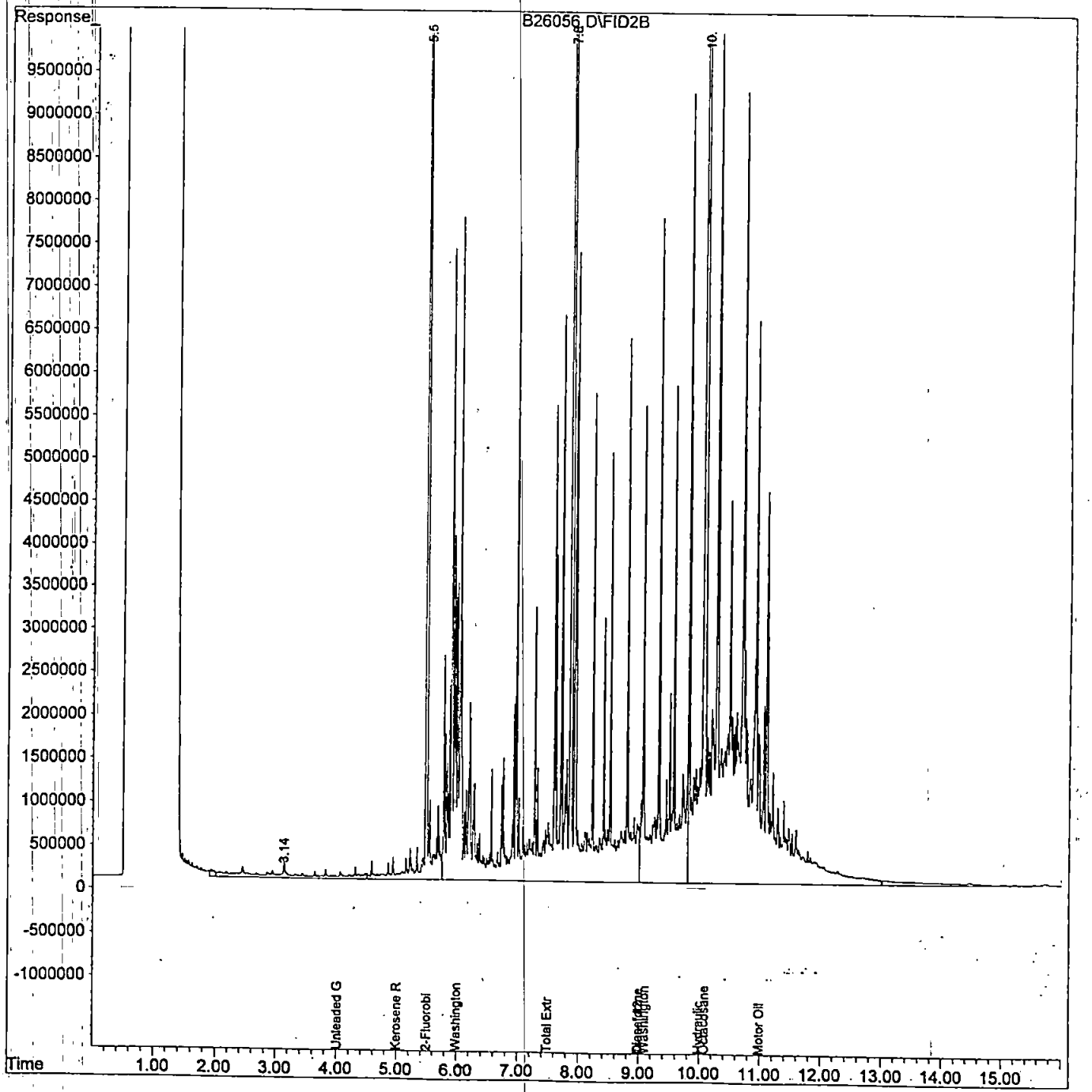
Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\B26056.D
Acq On : 27-02-1998 3:07:14 AM
Sample : b802390-02
Misc :
IntFile : SURR.E
Quant Time: Feb 27 9:56 1998 Quant Results File: NWTPHD2.RES

Vial: 28
Operator: nja
Inst : GC #7
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Thu Feb 26 09:24:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

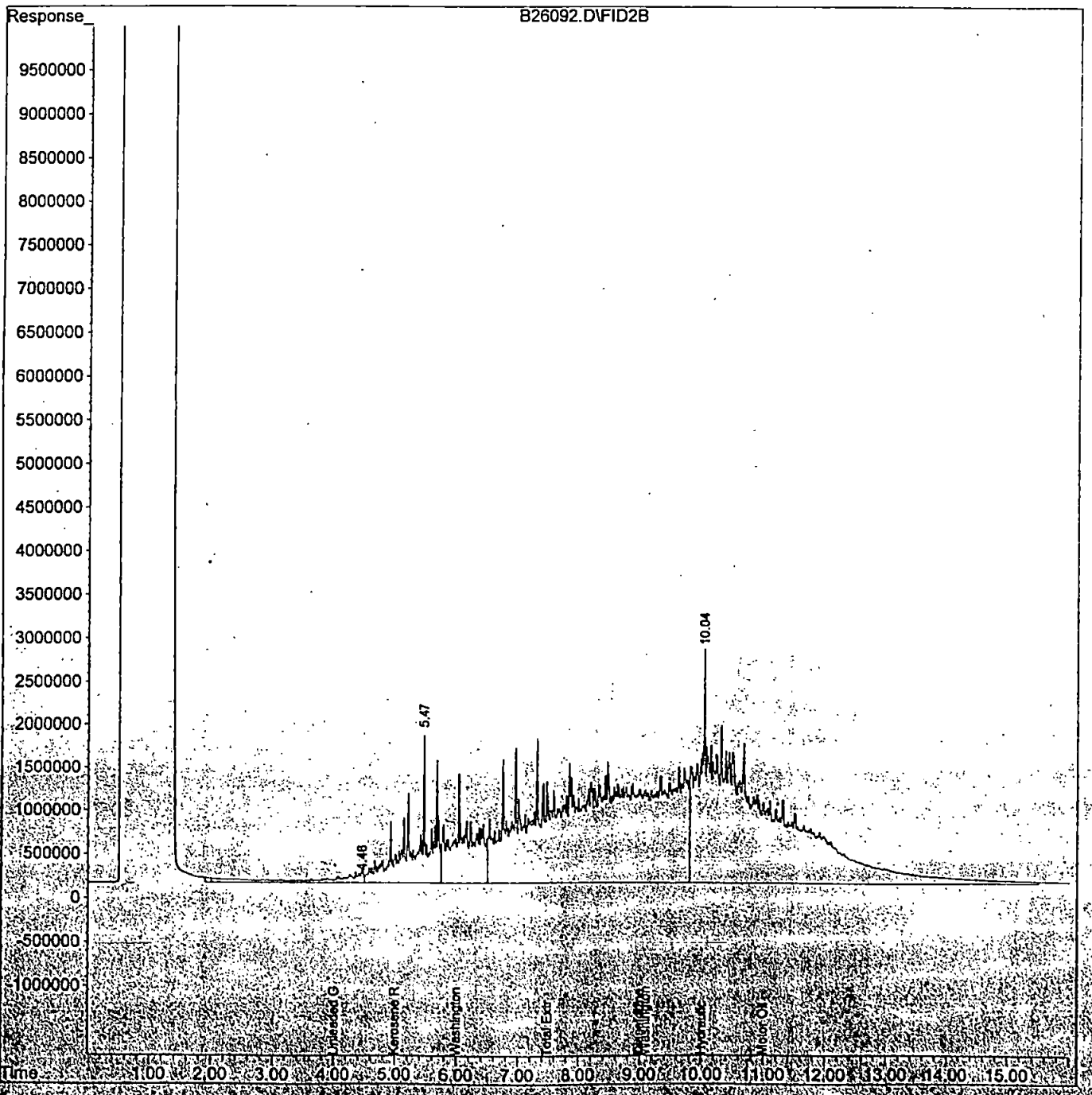


Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\B26092.D Vial: 90
Acq On : 27-02-1998 10:01:49 AM Operator: nja
Sample : b802390-04r1 Inst : GC #7
Misc : 41x Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 27 11:44 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Thu Feb 26 09:24:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



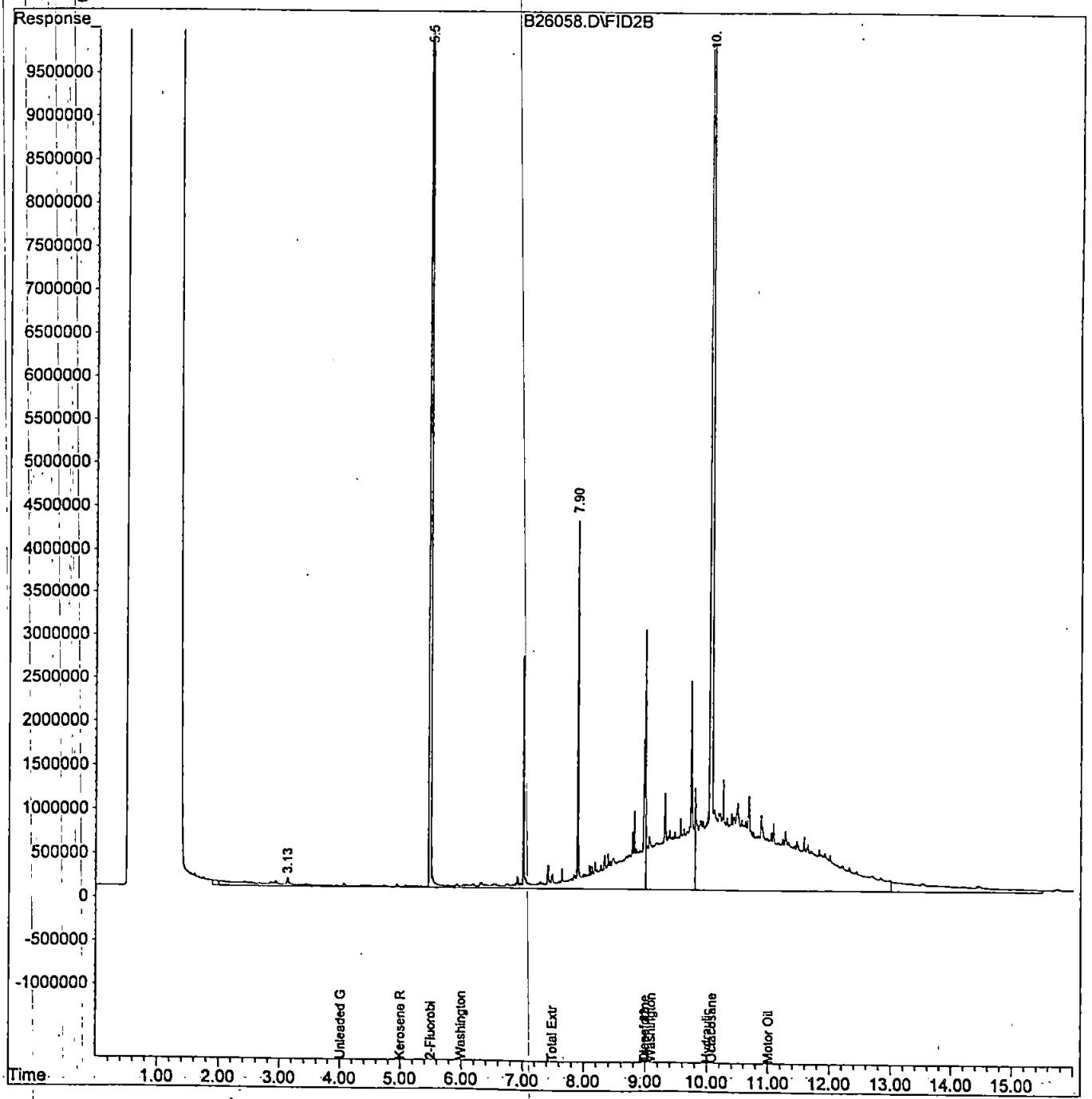
Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\B26058.D
Acq On : 27-02-1998 3:29:33 AM
Sample : b802390-06
Misc :
IntFile : SURR.E
Quant Time: Feb 27 9:57 1998 Quant Results File: NWTPHD2.RES

Vial: 30
Operator: nja
Inst : GC #7
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Thu Feb 26 09:24:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



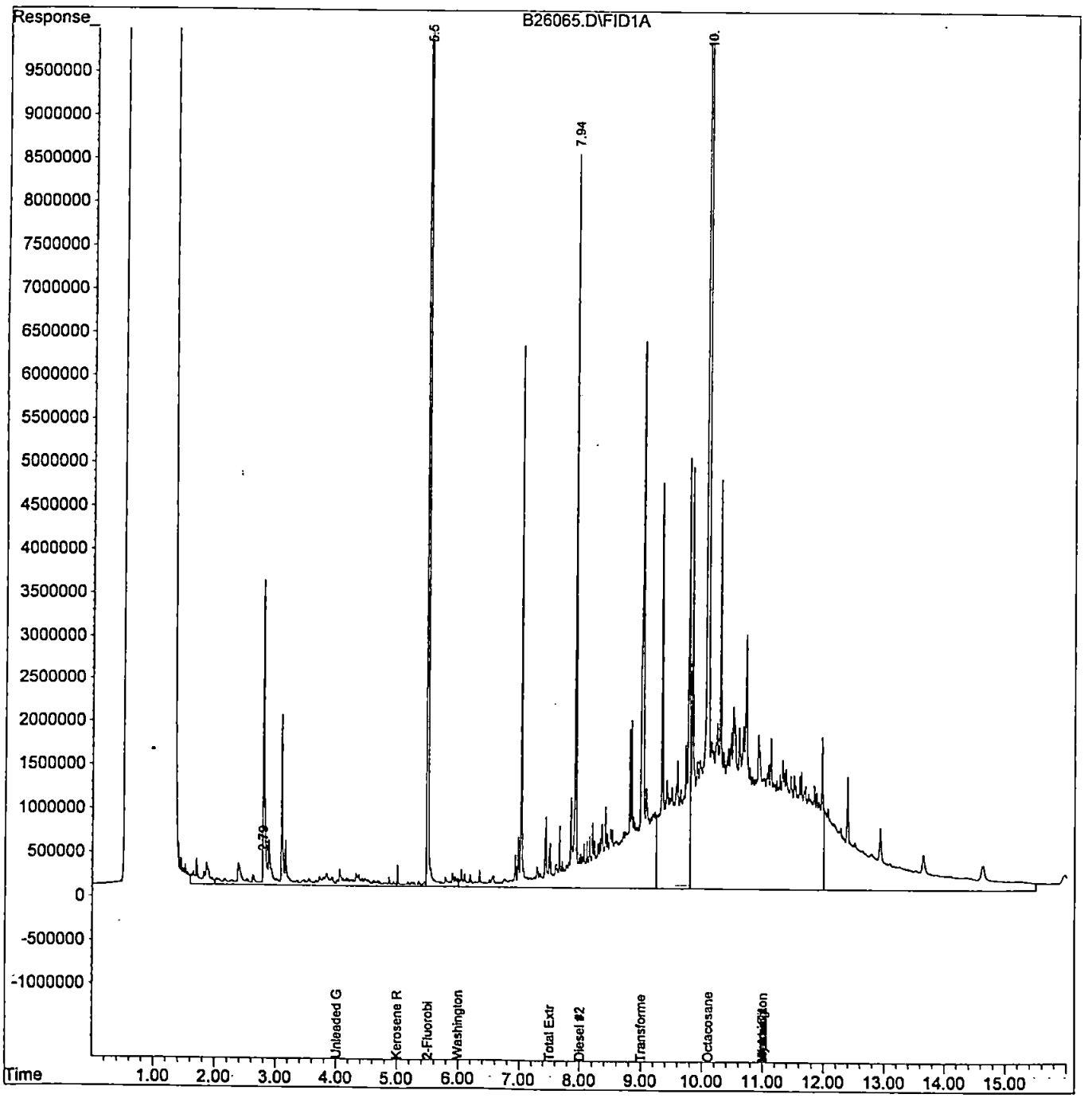
Quantitation Report

Data File : C:\HPCHEM\4\DATA\B26065.D
Acq On : 27-02-1998 4:36:22 AM
Sample : b802390-11
Misc :
IntFile : SURR.E
Quant Time: Feb 27 9:18 1998 Quant Results File: NWTPHD.RES

Vial: 35
Operator: nja
Inst : GC #7
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Fri Feb 27 08:44:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

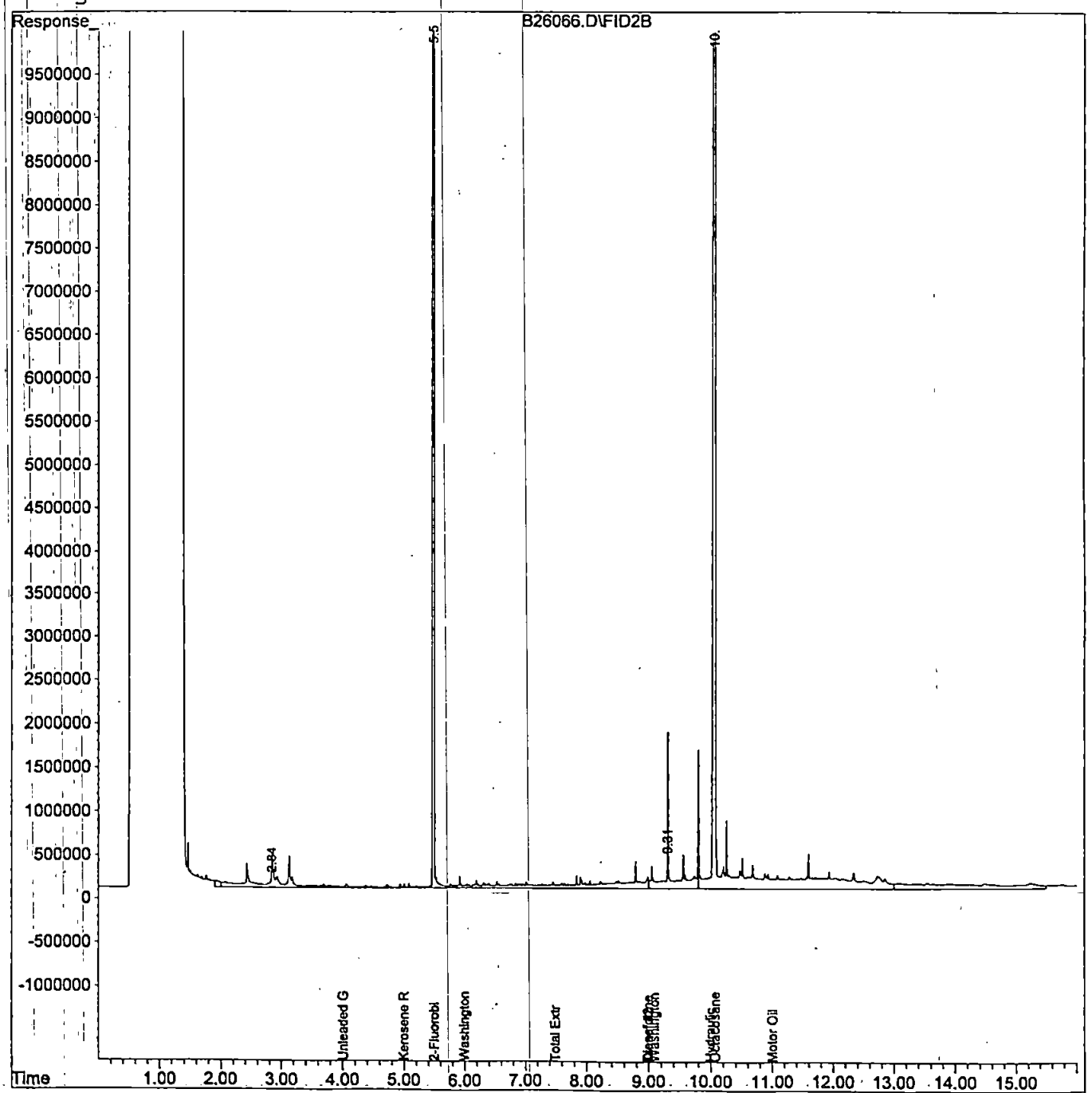


Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\B26066.D Vial: 36
Acq On : 27-02-1998 4:58:41 AM Operator: nja
Sample : b802390-12 Inst : GC #7
Misc : Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 27 10:02 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Thu Feb 26 09:24:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

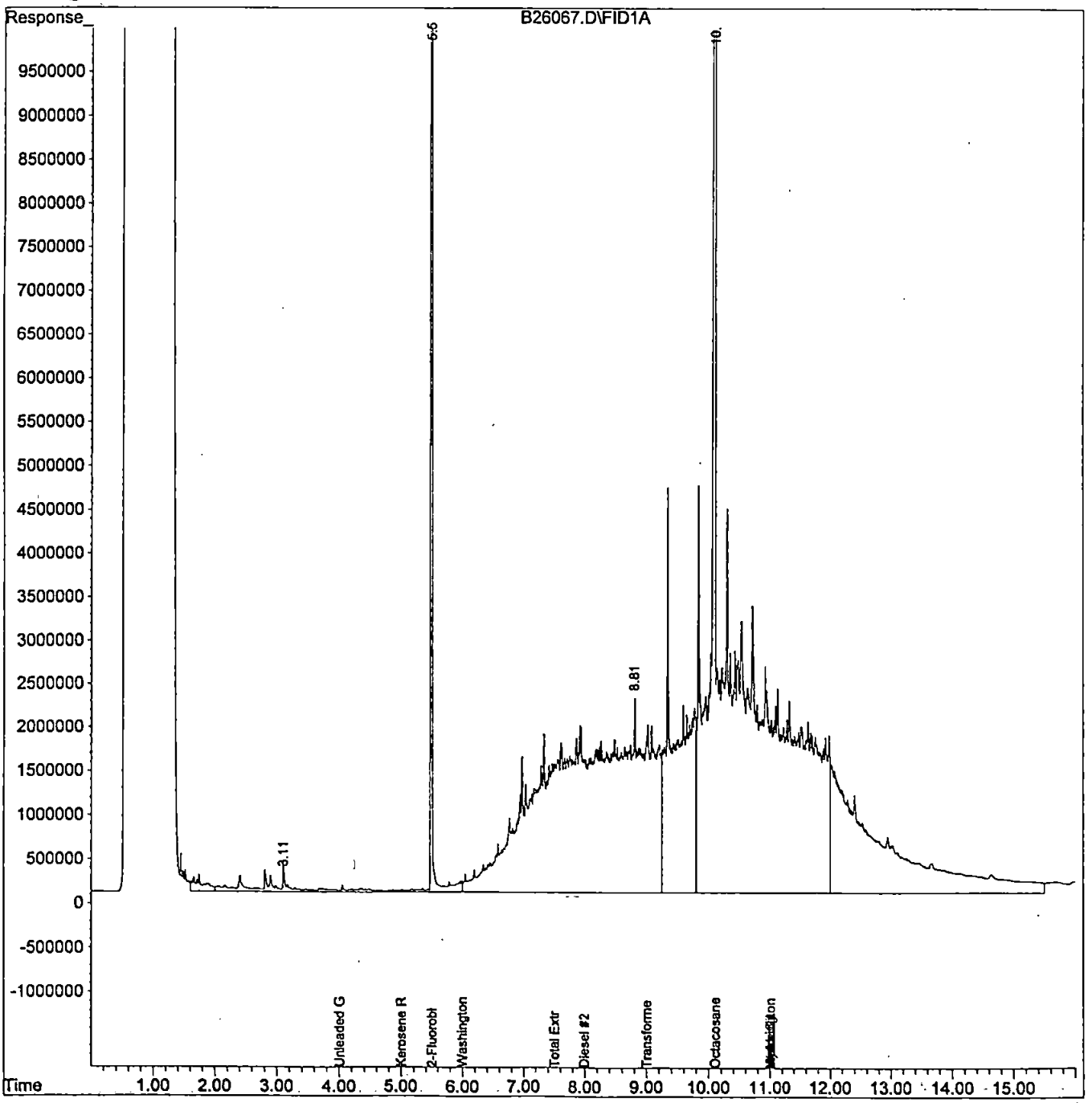


Quantitation Report

Data File : C:\HPCHEM\4\DATA\B26067.D Vial: 37
Acq On : 27-02-1998 4:58:41 AM Operator: nja
Sample : b802390-13 Inst : GC #7
Misc : Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 27 9:19 1998 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Fri Feb 27 08:44:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B802390

REPORT TO:
ATTENTION: Gary Stevens
ADDRESS: 8410 154th Ave Northeast
Redmond WA
PHONE: (425) 861-6000 FAX: 425-861-6050
PROJECT NAME: S. Grady Way
PROJECT NUMBER: 186-407-85
SAMPLED BY: TNO

INVOICE TO:
ATTENTION: Barry Lombard
ADDRESS: PSE
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: [10 Standard] 7 5 4 3 2 1 Same Day
Fuels & Hydrocarbon Analyses: [5 Standard] 3-4 2 1 Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

Analysis Request: NWTPH-D extended; PCB by EPA Method 8081

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	~~GMW-7-0.5~~	~~1000 2/19/98~~		S	1	~~No Sample~~
2.	GMW-7-2.0		B802390-01	S	1	Hold
3.	GMW-7-4.0		02	S	1	
4.	GMW-7-6.0		03	S	1	Hold
5.	GMW-7-8.0		04	S	1	
6.	GMW-7-12.0	↓	05	S	1	Hold
7.						
8.						
9.						
10.						

RELINQUISHED BY (Signature): DATE: 2/19/98
PRINT NAME: Tony Orme FIRM: GET TIME: 1600

RECEIVED BY (Signature): DATE: 2/20/98
PRINT NAME: K Barker FIRM: NCA TIME: 1330

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: D-ext w/ silica gel cleanup
GMW-7-4.0 in Borehole No 7 at a depth of 4 Ft bgs

PAGE 1 OF 2

NORTH CREEK ANALYTICAL
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CHAIN OF CUSTODY REPORT

Work Order # B802390

REPORT TO:	INVOICE TO:
ATTENTION: Gary Stevens	ATTENTION: Barry LamLard
ADDRESS: 8410 154th Ave NE Redmond WA	ADDRESS: PSE
PHONE: 425-861-6000 FAX: 425-861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: S. Grady Way	
PROJECT NUMBER: 186-407-85	
SAMPLED BY: TNO	

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: 5 (Standard) | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* *Turnaround Requests less than standard may incur Rush Charges.*

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: NWTPH Dx Extended	PCBs by EPA-8081	SVOC by EPA-8270	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	S-1	2/19/98 1330	B802390-06	X	X		S	1	
2.	S-2		07	X	X		S	1	
3.	S-3		08	X	X		S	1	
4.	S-4		09	X	X	X	S	1	
5.	S-5		10	X	X	X	S	1	
6.	S-6		11	X	X		S	1	
7.	S-7		12	X	X		S	1	
8.	S-8	↓	13	X	X	X	S	1	
9.	~~EC-1~~	—		X	X		S	1	~~No Sample~~
10.	~~EC-2~~	—		X	X		S	1	~~No Sample~~

RELINQUISHED BY (Signature):	DATE: 2/19/98	RECEIVED BY (Signature): KBarker	DATE: 2/20/
PRINT NAME: Tony Olmo	FIRM: CEI TIME: 1600	PRINT NAME: KBarker	FIRM: NCA TIME: 133
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:

ADDITIONAL REMARKS: D-ext w/ silica gel clean-up

LAB DATA EVALUATION FORM

GEI Job # 186-407-85

Lab Job #/Sample IDs: B902447-01

GEI Sample IDs B39-3.0 to B47-4.0
~~Drum-1, Drum-2~~

Sample Coll Date 2/23/98
Report Recv'd Date ~~3/10/98~~

Analysis	Holding Time Exceptions ?	Surrogate Exceptions ?	Blank Hits ?	MS/MSD % Rec Exceptions	Duplicate or MSD RPD Exceptions	Blank Spike or LCS Exceptions (Use if MS/MSD out)
Ecology WTPH-G	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8020 (BETX)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
Ecology WTPH-D Extended	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)
413.1 (FOG)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8010	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8270	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
VPH/BETX/MTBE/Naphthalene	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH-SIM	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
E-TPH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
WTPH-418.1	No	NA	NA	NA	No	No
BTEX 8021	No	No	No	No	NA	NA
PCBs 8082	No	Yes	No	Yes	NA	No
Affected Sample Numbers						

Data Acceptable for Intended Use? Yes

Date Comp. 3/16/98
Reviewer Initials TMJ

Comments:

Exceptions (As shown in report):

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PORTLAND ▪ (503) 906-9200 ▪ FAX 906-9210

Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 2/23/98
8410 154th Ave NE	Project Number: 186-407-85	Received: 2/24/98
Redmond, WA 98052	Project Manager: Tony Orme	Reported: 3/10/98 17:11

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
B-39-3.0	B802447-01	Soil	2/23/98
B-40-0.5	B802447-02	Soil	2/23/98
B-41-3.0	B802447-03	Soil	2/23/98
B-42-3.0	B802447-04	Soil	2/23/98
B-43-3.0	B802447-05	Soil	2/23/98
B-44-3.0	B802447-06	Soil	2/23/98
B-45-1.5	B802447-07	Soil	2/23/98
B-46-0.5	B802447-08	Soil	2/23/98
B-47-4.0	B802447-09	Soil	2/23/98
DRUM-1	B802447-11	Water	2/23/98
DRUM 2	B802447-12	Water	2/23/98

GeoEngineers

MAR 1 1998

Routing

File

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/23/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/24/98
Redmond, WA 98052	Project Manager:	Tony Orme	Reported: 3/10/98 17:11

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-39-3.0			**B802447-01**				**Soil**	
Gx Range Hydrocarbons [<C10]	0280624	2/25/98	2/25/98		50.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		50.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		50.0	ND	"	
Transformer Oil Range Hydrocarbons	"	"	"		125	**632**	"	
Heavy Fuel Oil Range Hydrocarbons	"	"	"		125	ND	"	
Lube Oil Range Hydrocarbons	"	"	"		125	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*102*	%	
B-40-0.5			**B802447-02**				**Soil**	
Gx Range Hydrocarbons [<C10]	0280624	2/25/98	2/26/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Transformer Oil Range Hydrocarbons	"	"	"		25.0	**437**	"	
Heavy Fuel Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Lube Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*81.6*	%	
B-41-3.0			**B802447-03**				**Soil**	
Gx Range Hydrocarbons [<C10]	0280624	2/25/98	2/26/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**165**	"	
Transformer Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Heavy Fuel Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Lube Oil Range Hydrocarbons	"	"	"		25.0	**219**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*79.6*	%	
B-42-3.0			**B802447-04**				**Soil**	
Gx Range Hydrocarbons [<C10]	0280624	2/25/98	2/26/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Transformer Oil Range Hydrocarbons	"	"	"		25.0	**142**	"	
Heavy Fuel Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Lube Oil Range Hydrocarbons	"	"	"		25.0	**83.3**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*88.5*	%	
B-43-3.0			**B802447-05**				**Soil**	
Gx Range Hydrocarbons [<C10]	0280624	2/25/98	2/26/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/23/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/24/98
Redmond, WA 98052	Project Manager:	Tony Orme	Reported: 3/10/98 17:11

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-43-3.0 (continued)			**B802447-05**				**Soil**	
Diesel Range Hydrocarbons	0280624	2/25/98	2/26/98		10.0	ND	mg/kg dry	
Transformer Oil Range Hydrocarbons	"	"	"		25.0	**34.3**	"	
Heavy Fuel Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Lube Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*88.7*	%	
B-44-3.0			**B802447-06**				**Soil**	
Gx Range Hydrocarbons [<C10]	0280624	2/25/98	2/25/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Transformer Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Heavy Fuel Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Lube Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*61.8*	%	
B-45-1.5			**B802447-07**				**Soil**	
Gx Range Hydrocarbons [<C10]	0280624	2/25/98	2/26/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**48.9**	"	
Transformer Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Heavy Fuel Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Lube Oil Range Hydrocarbons	"	"	"		25.0	**67.6**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*83.7*	%	
B-46-0.5			**B802447-08**				**Soil**	
Gx Range Hydrocarbons [<C10]	0280624	2/25/98	2/26/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**33.9**	"	
Transformer Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Heavy Fuel Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Lube Oil Range Hydrocarbons	"	"	"		25.0	**70.9**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*84.7*	%	
B-47-4.0			**B802447-09**				**Soil**	
Gx Range Hydrocarbons [<C10]	0280624	2/25/98	2/25/98		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**20.9**	"	
Transformer Oil Range Hydrocarbons	"	"	"		25.0	ND	"	

North Creek Analytical, Inc.

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PORTLAND ▪ (503) 906-9200 ▪ FAX 906-9210

Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/23/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/24/98
Redmond, WA 98052	Project Manager:	Tony Orme	Reported: 3/10/98 17:11

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-47-4.0 (continued)			**B802447-09**				**Soil**	
Heavy Fuel Oil Range Hydrocarbons	0280624	2/25/98	2/25/98		25.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	"	"	"		25.0	**32.0**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*89.5*	*%*	

North Creek Analytical, Inc.

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/23/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/24/98
Redmond, WA 98052	Project Manager:	Tony Orme	Reported: 3/10/98 17:11

Heavy Oil Range Hydrocarbons by WTPH-418.1
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
DRUM-1			B802447-11				Water	
Petroleum Oil Hydrocarbons	0280692	2/27/98	2/27/98	WTPH-418.1	1.00	ND	mg/l	
DRUM 2			B802447-12				Water	
Petroleum Oil Hydrocarbons	0280692	2/27/98	2/27/98	WTPH-418.1	1.00	5.01	mg/l	

NORTH CREEK ANALYTICAL
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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 2/23/98
8410 154th Ave NE	Project Number: 186-407-85	Received: 2/24/98
Redmond, WA 98052	Project Manager: Tony Orme	Reported: 3/10/98 17:11

BTEX by EPA Method 8021B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
DRUM-1			B802447-11				Water	
Benzene	0280726	2/28/98	2/28/98		0.500	1.75	ug/l	
Toluene	"	"	"		0.500	12.3	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	1.83	"	
Surrogate: 4-BFB (PID)	"	"	"	*50.0-150*		*95.4*	*%*	
DRUM 2			B802447-12				Water	
Benzene	0280726	2/28/98	2/28/98		0.500	ND	ug/l	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (PID)	"	"	"	*50.0-150*		*94.6*	*%*	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

NORTH CREEK ANALYTICAL
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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/23/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/24/98
Redmond, WA 98052	Project Manager:	Tony Orme	Reported: 3/10/98 17:11

Polychlorinated Biphenyls by EPA Method 8082
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-39-3.0			**B802447-01**				Soil	
Aroclor 1016	0380028	3/3/98	3/9/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	**252**	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*96.1*	%	
B-40-0.5			**B802447-02**				Soil	
Aroclor 1016	0380028	3/3/98	3/9/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	**65.7**	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*81.9*	%	
B-41-3.0			**B802447-03**				Soil	
Aroclor 1016	0380028	3/3/98	3/9/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*73.7*	%	
B-42-3.0			**B802447-04**				Soil	
Aroclor 1016	0380028	3/3/98	3/9/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/23/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/24/98
Redmond, WA 98052	Project Manager:	Tony Orme	Reported: 3/10/98 17:11

Polychlorinated Biphenyls by EPA Method 8082
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-42-3.0 (continued)			**B802447-04**				**Soil**	
Aroclor 1232	0380028	3/3/98	3/9/98		50.0	ND	ug/kg dry	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*70.5*	*%*	
B-43-3.0			**B802447-05**				**Soil**	
Aroclor 1016	0380028	3/3/98	3/9/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*69.8*	*%*	
B-44-3.0			**B802447-06**				**Soil**	
Aroclor 1016	0380028	3/3/98	3/9/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*112*	*%*	
B-45-1.5			**B802447-07**				**Soil**	
Aroclor 1016	0380028	3/3/98	3/9/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/23/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/24/98
Redmond, WA 98052	Project Manager:	Tony Orme	Reported: 3/10/98 17:11

Polychlorinated Biphenyls by EPA Method 8082
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-45-1.5 (continued)			**B802447-07**				**Soil**	
Aroclor 1248	0380028	3/3/98	3/9/98		50.0	ND	ug/kg dry	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*122*	%	*1*
B-46-0.5			**B802447-08**				**Soil**	
Aroclor 1016	0380028	3/3/98	3/9/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	**85.7**	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*69.5*	%	
B-47-4.0			**B802447-09**				**Soil**	
Aroclor 1016	0380028	3/3/98	3/9/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*89.2*	%	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/23/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/24/98
Redmond, WA 98052	Project Manager:	Tony Orme	Reported: 3/10/98 17:11

Dry Weight Determination
North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
B-39-3.0	B802447-01	Soil	91.7	%
B-40-0.5	B802447-02	Soil	75.8	%
B-41-3.0	B802447-03	Soil	63.9	%
B-42-3.0	B802447-04	Soil	77.0	%
B-43-3.0	B802447-05	Soil	93.1	%
B-44-3.0	B802447-06	Soil	76.8	%
B-45-1.5	B802447-07	Soil	72.6	%
B-46-0.5	B802447-08	Soil	77.8	%
B-47-4.0	B802447-09	Soil	70.3	%

North Creek Analytical, Inc.

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/23/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/24/98
Redmond, WA 98052	Project Manager:	Tony Orme	Reported: 3/10/98 17:11

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0280624	**Date Prepared: 2/25/98**					**Extraction Method: EPA 3550B**				
Blank	**0280624-BLK1**									
Transformer Oil Range Hydrocarbons	2/25/98			**ND**	mg/kg dry	**25.0**				
Gx Range Hydrocarbons [<C10]	"			**ND**	"	**10.0**				
Kerosene Range Hydrocarbons	"			**ND**	"	**10.0**				
Diesel Range Hydrocarbons	"			**ND**	"	**10.0**				
Heavy Fuel Oil Range Hydrocarbons	"			**ND**	"	**25.0**				
Lube Oil Range Hydrocarbons	"			**ND**	"	**25.0**				
Surrogate: 2-FBP	"	*10.7*		*10.6*	"	*50.0-150*	*99.1*			
LCS	**0280624-BS1**									
Diesel #2	2/25/98	66.7		51.3	mg/kg dry	50.0-150	76.9			
Diesel Range Hydrocarbons	"	66.7		51.2	"	50.0-150	76.8			
Surrogate: 2-FBP	"	*10.7*		*11.7*	"	*50.0-150*	*109*			
Duplicate	**0280624-DUP1**		**B802447-01**							
Transformer Oil Range Hydrocarbons	2/25/98		632	946	mg/kg dry			50.0	**39.8**	
Gx Range Hydrocarbons [<C10]	"		ND	ND	"			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		ND	ND	"			50.0		
Heavy Fuel Oil Range Hydrocarbons	"		ND	ND	"			50.0		
Lube Oil Range Hydrocarbons	"		ND	ND	"			50.0		
Surrogate: 2-FBP	"	*11.7*		*14.7*	"	*50.0-150*	*126*			
Duplicate	**0280624-DUP2**		**B802447-04**							
Transformer Oil Range Hydrocarbons	2/25/98		142	121	mg/kg dry			50.0	**16.0**	
Gx Range Hydrocarbons [<C10]	"		ND	ND	"			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		ND	ND	"			50.0		
Heavy Fuel Oil Range Hydrocarbons	"		ND	ND	"			50.0		
Lube Oil Range Hydrocarbons	"		83.3	66.5	"			50.0	**22.4**	
Surrogate: 2-FBP	"	*13.9*		*11.5*	"	*50.0-150*	*82.7*			

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Joy B Cheng, Project Manager

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 2/23/98
8410 154th Ave NE	Project Number: 186-407-85	Received: 2/24/98
Redmond, WA 98052	Project Manager: Tony Orme	Reported: 3/10/98 17:11

Heavy Oil Range Hydrocarbons by WTPH-418.1/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0280692	**Date Prepared: 2/27/98**					**Extraction Method: EPA 3510C/600 Series**				
Blank	**0280692-BLK1**									
Petroleum Oil Hydrocarbons	2/27/98			**ND**	mg/l	**1.00**				
LCS	**0280692-BS1**									
Petroleum Oil Hydrocarbons	2/27/98	5.00		3.65	mg/l	62.0-121	73.0			
LCS Dup	**0280692-BSD1**									
Petroleum Oil Hydrocarbons	2/27/98	5.00		3.65	mg/l	62.0-121	73.0	20.0	0	
Duplicate	**0280692-DUP1**		**B802447-11**							
Petroleum Oil Hydrocarbons	2/27/98		ND	ND	mg/l			45.0		

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/23/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/24/98
Redmond, WA 98052	Project Manager:	Tony Orme	Reported: 3/10/98 17:11

BTEX by EPA Method 8021B/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0280726	**Date Prepared: 2/28/98**					**Extraction Method: EPA 5030B (P/T)**				
Blank	**0280726-BLK1**									
Benzene	2/28/98			**ND**	ug/l	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**1.00**				
Surrogate: 4-BFB (PID)	"	*48.0*		*44.8*	"	*50.0-150*	*93.3*			
Matrix Spike	**0280726-MS1**		**B802447-12**							
Benzene	2/28/98	10.0	ND	10.6	ug/l	70.0-130	**106**			
Toluene	"	10.0	ND	10.3	"	70.0-130	**103**			
Ethylbenzene	"	10.0	ND	10.1	"	70.0-130	**101**			
Xylenes (total)	"	30.0	ND	30.4	"	70.0-130	**101**			
Surrogate: 4-BFB (PID)	"	*48.0*		*46.7*	"	*50.0-150*	*97.3*			
Matrix Spike Dup	**0280726-MSD1**		**B802447-12**							
Benzene	2/28/98	10.0	ND	11.3	ug/l	70.0-130	**113**	15.0	**6.39**	
Toluene	"	10.0	ND	10.7	"	70.0-130	**107**	15.0	**3.81**	
Ethylbenzene	"	10.0	ND	10.4	"	70.0-130	**104**	15.0	**2.93**	
Xylenes (total)	"	30.0	ND	30.8	"	70.0-130	**103**	15.0	**1.96**	
Surrogate: 4-BFB (PID)	"	*48.0*		*45.9*	"	*50.0-150*	*95.6*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/23/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/24/98
Redmond, WA 98052	Project Manager:	Tony Orme	Reported: 3/10/98 17:11

Polychlorinated Biphenyls by EPA Method 8082/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0380028	**Date Prepared: 3/3/98**					**Extraction Method: EPA 3550B**				
Blank	**0380028-BLK1**									
Aroclor 1016	3/5/98			**ND**	ug/kg dry	**50.0**				
Aroclor 1221	"			**ND**	"	**50.0**				
Aroclor 1232	"			**ND**	"	**50.0**				
Aroclor 1242	"			**ND**	"	**50.0**				
Aroclor 1248	"			**ND**	"	**50.0**				
Aroclor 1254	"			**ND**	"	**50.0**				
Aroclor 1260	"			**ND**	"	**50.0**				
Aroclor 1262	"			**ND**	"	**50.0**				
Aroclor 1268	"			**ND**	"	**50.0**				
Surrogate: TCX	"	*6.67*		*4.96*	"	*38.0-117*	*74.4*			
LCS	**0380028-BS1**									
Aroclor 1260	3/5/98	333		302	ug/kg dry	44.0-123	90.7			
Surrogate: TCX	"	*6.67*		*5.29*	"	*38.0-117*	*79.3*			
Matrix Spike	**0380028-MS1**		**B802485-03**							
Aroclor 1260	3/5/98	411	ND	ND	ug/kg dry	28.0-132	**NR**			2
Surrogate: TCX	"	*8.23*		*7.04*	"	*38.0-117*	*85.5*			
Matrix Spike Dup	**0380028-MSD1**		**B802485-03**							
Aroclor 1260	3/5/98	411	ND	ND	ug/kg dry	28.0-132	**NR**	23.0		2
Surrogate: TCX	"	*8.23*		*6.37*	"	*38.0-117*	*77.4*			

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**Refer to end of report for text of notes and definitions.*

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/23/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/24/98
Redmond, WA 98052	Project Manager:	Tony Orme	Reported: 3/10/98 17:11

Notes and Definitions

#	Note
1	The surrogate recovery for this sample is outside of established control limits. Review of associated QC indicates the recovery for this surrogate does not represent an out-of-control condition.
2	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to interference from coeluting organic compounds present in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

Joy B Chang, Project Manager

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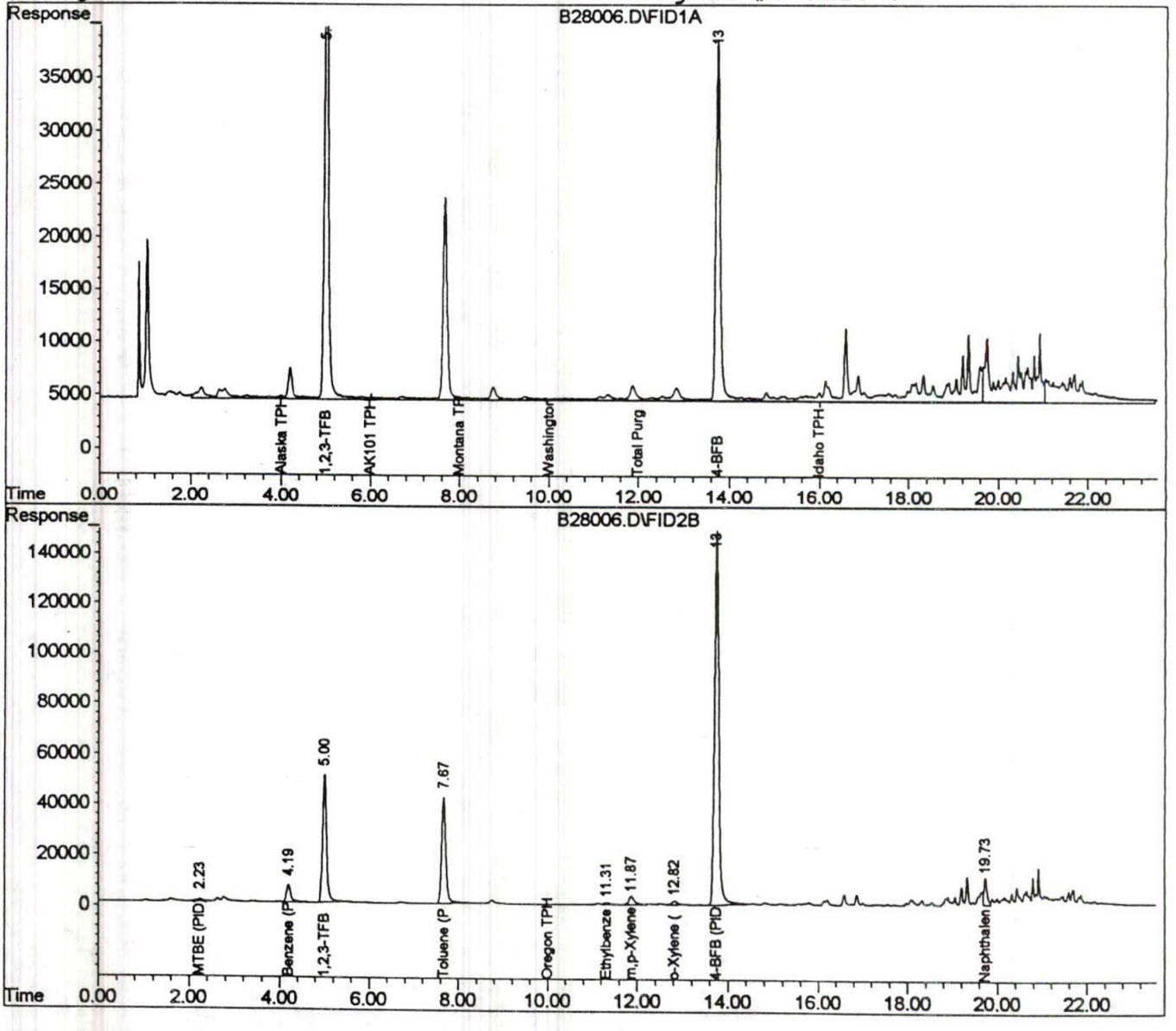
Quantitation Report

Data File : C:\HPCHEM\2\DATA\B28006.D\FID1A.CH Vial: 6
Acq On : 28 Feb 1998 11:16 am Operator: lac
Sample : b802447-11 Inst : GC #4
Misc : 5 mL Multiplr: 1.00
IntFile : SURR.E

Data File : C:\HPCHEM\2\DATA\B28006.D\FID2B.CH Vial: 6
Acq On : 28 Feb 98 11:16 am Operator: lac
Sample : b802447-11 Inst : GC #4
Misc : 5 mL Multiplr: 1.00
IntFile : SURR2.E
Quant Time: Feb 28 11:40 1998 Quant Results File: TPHG.RES

Quant Method : C:\HPCHEM\2\METHODS\TPHG.M (Chemstation Integrator)
Title : TPH-G Water Method
Last Update : Mon Feb 09 08:11:39 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHG.M

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



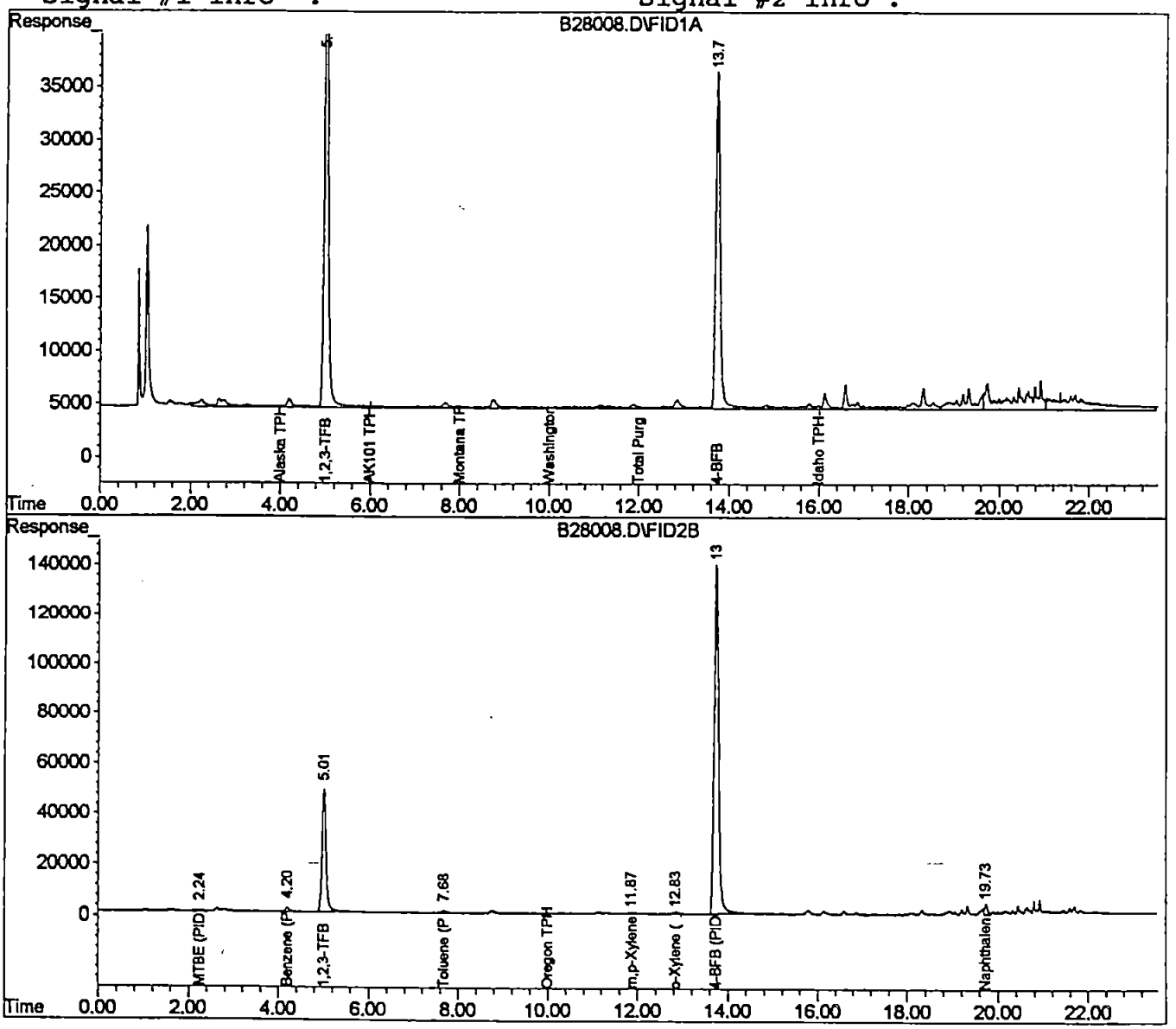
Quantitation Report

Data File : C:\HPCHEM\2\DATA\B28008.D\FID1A.CH Vial: 8
Acq On : 28 Feb 1998 12:16 pm Operator: lac
Sample : b802447-12 Inst : GC #4
Misc : 5 mL Multiplr: 1.00
IntFile : SURR.E

Data File : C:\HPCHEM\2\DATA\B28008.D\FID2B.CH Vial: 8
Acq On : 28 Feb 98 12:16 pm Operator: lac
Sample : b802447-12 Inst : GC #4
Misc : 5 mL Multiplr: 1.00
IntFile : SURR2.E
Quant Time: Feb 28 12:40 1998 Quant Results File: TPHG.RES

Quant Method : C:\HPCHEM\2\METHODS\TPHG.M (Chemstation Integrator)
Title : TPH-G Water Method
Last Update : Mon Feb 09 08:11:39 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHG.M

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

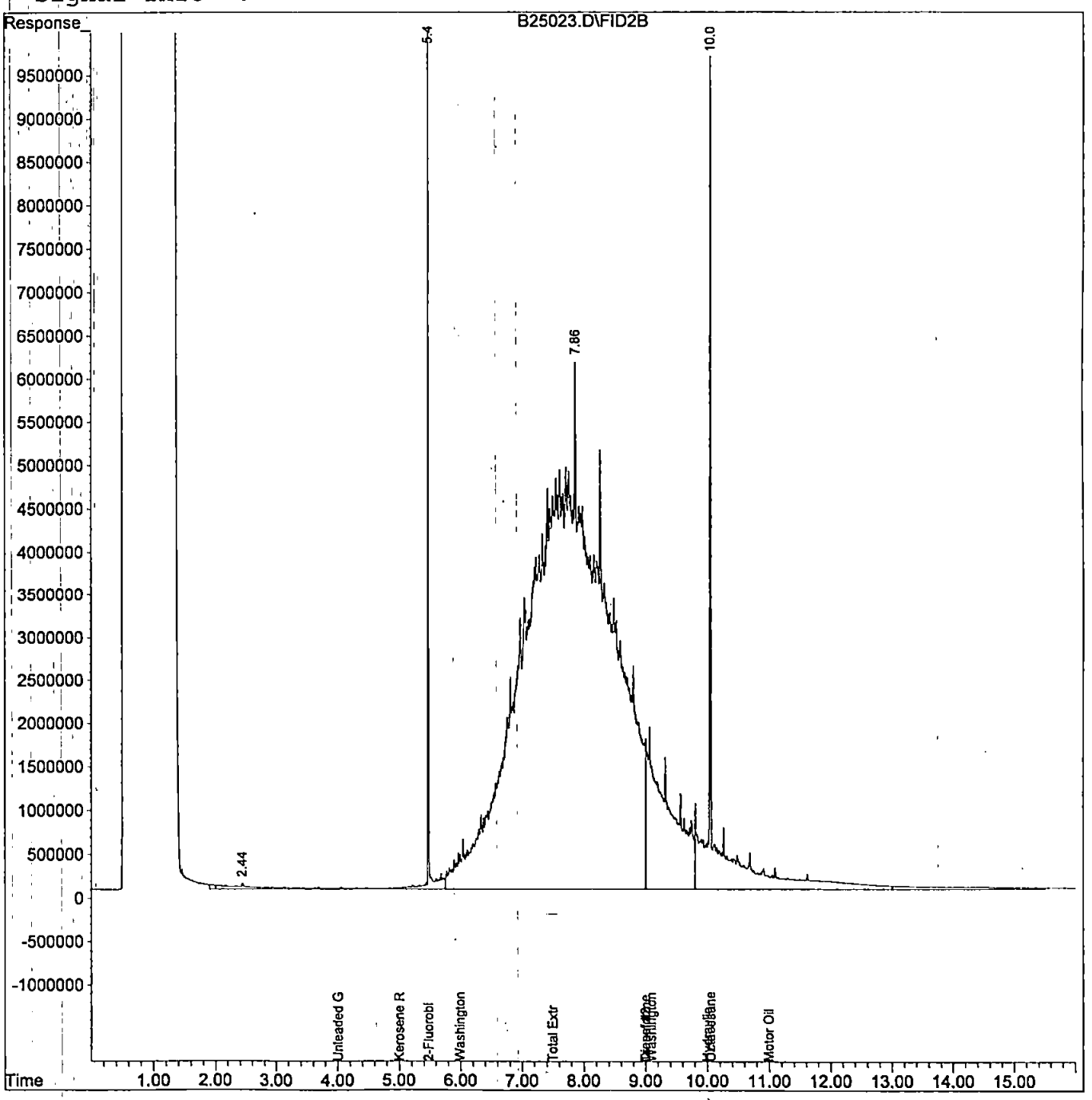


Quantitation Report

Data File : C:\HPCHEM\4\DATA\022598\B25023.D Vial: 18
Acq On : 25-02-1998 3:46:40 PM Operator:
Sample : b802447-01r1 Inst : GC #7
Misc : Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 26 15:41 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Thu Feb 26 09:24:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



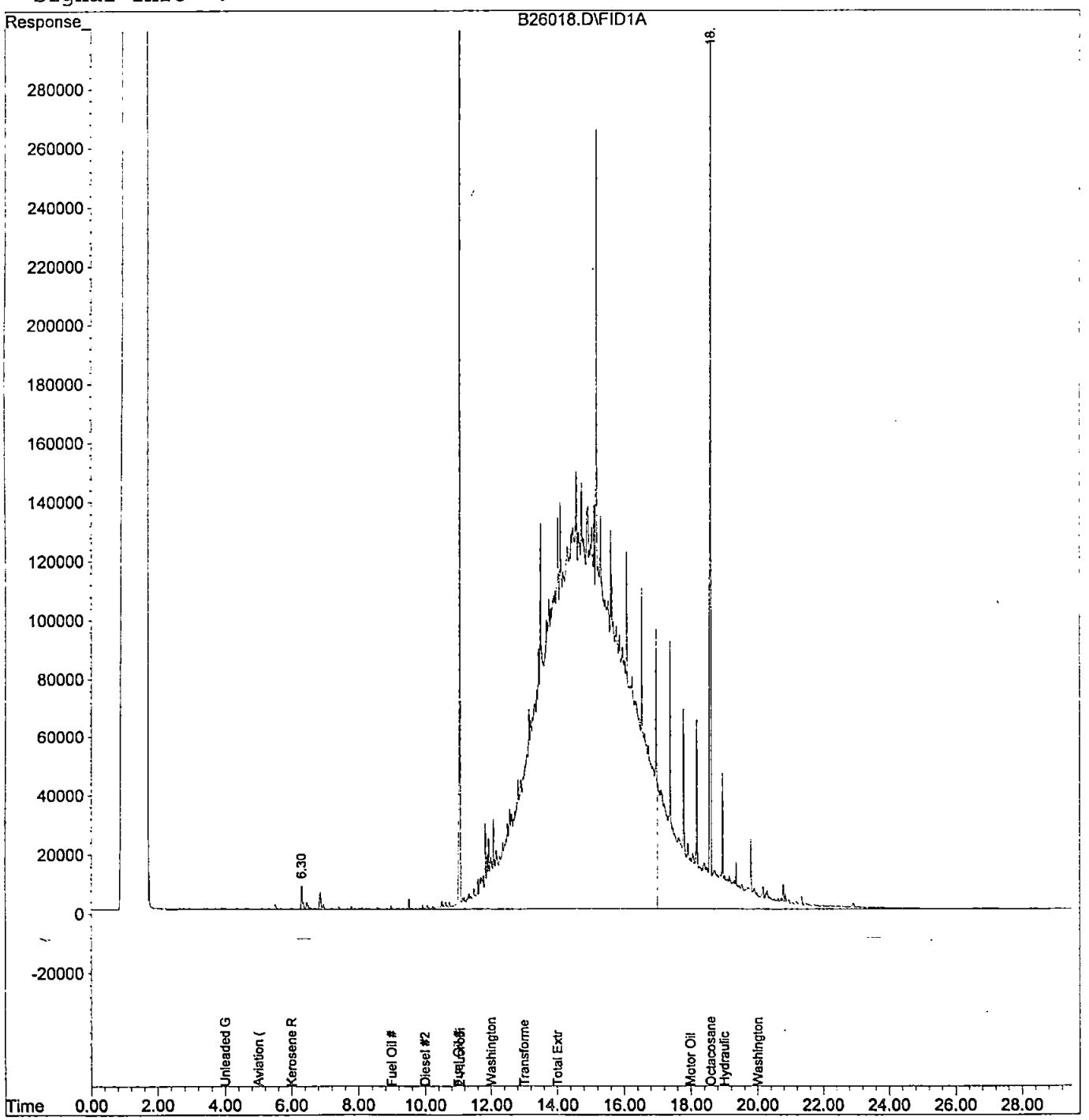
Quantitation Report

Data File : C:\HPCHEM\1\DATA\B26018.D
Acq On : 26 Feb 1998 12:49 pm
Sample : b802447-02 r1
Misc : S
IntFile : SURR.E
Quant Time: Feb 26 13:37 1998 Quant Results File: NWTPHD.RES

Vial: 13
Operator: ajg
Inst : GC #1
Multiplr: 1.00

Quant Method : C:\HPCHEM\1\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Mon Feb 23 09:14:19 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

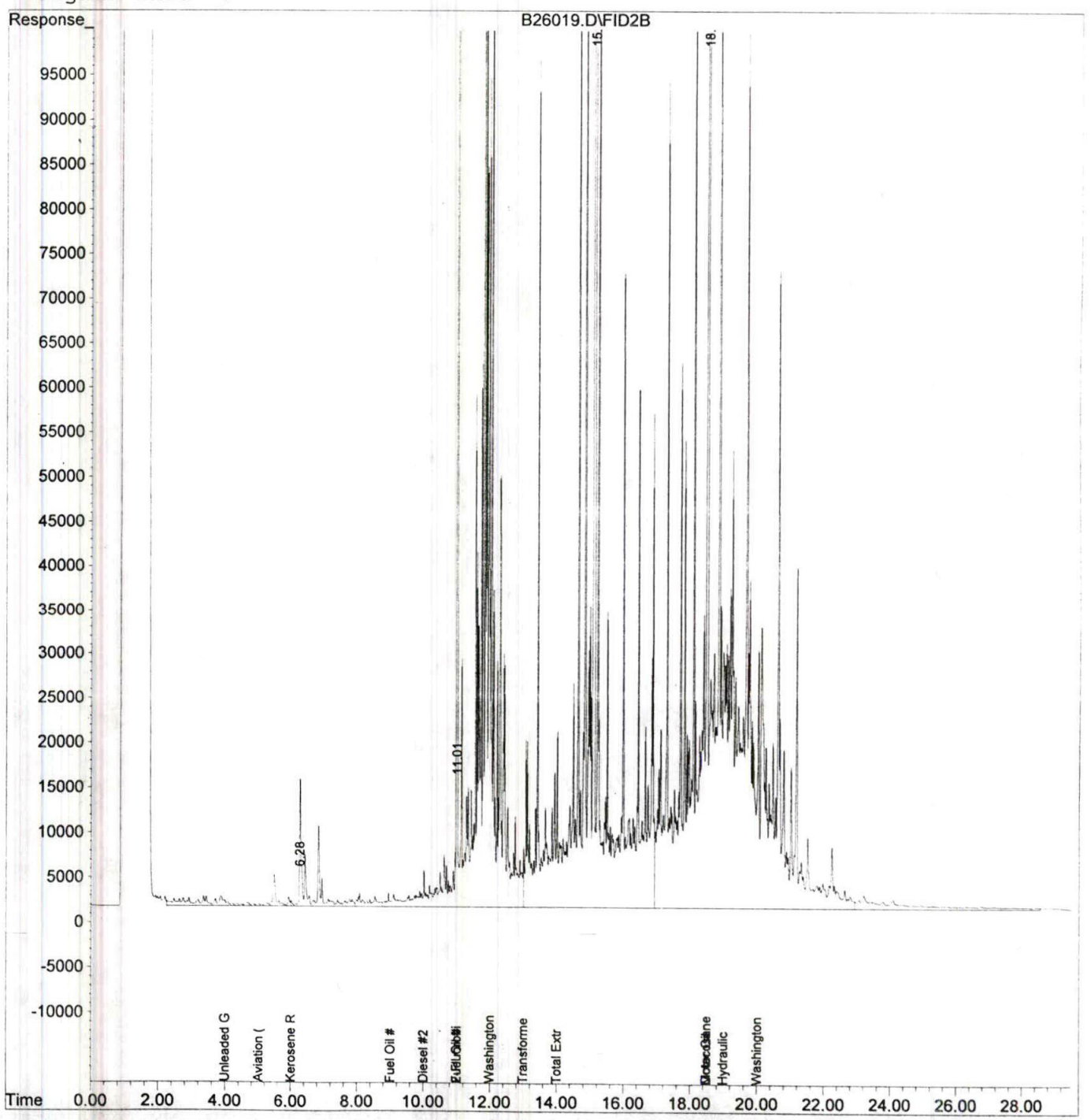


Quantitation Report

Data File : C:\HPCHEM\1\DATA.SEC\B26019.D Vial: 14
Acq On : 26 Feb 1998 1:28 pm Operator: ajg
Sample : b802447-03 r1 Inst : GC #1
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 26 15:24 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\1\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Mon Feb 23 09:25:12 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



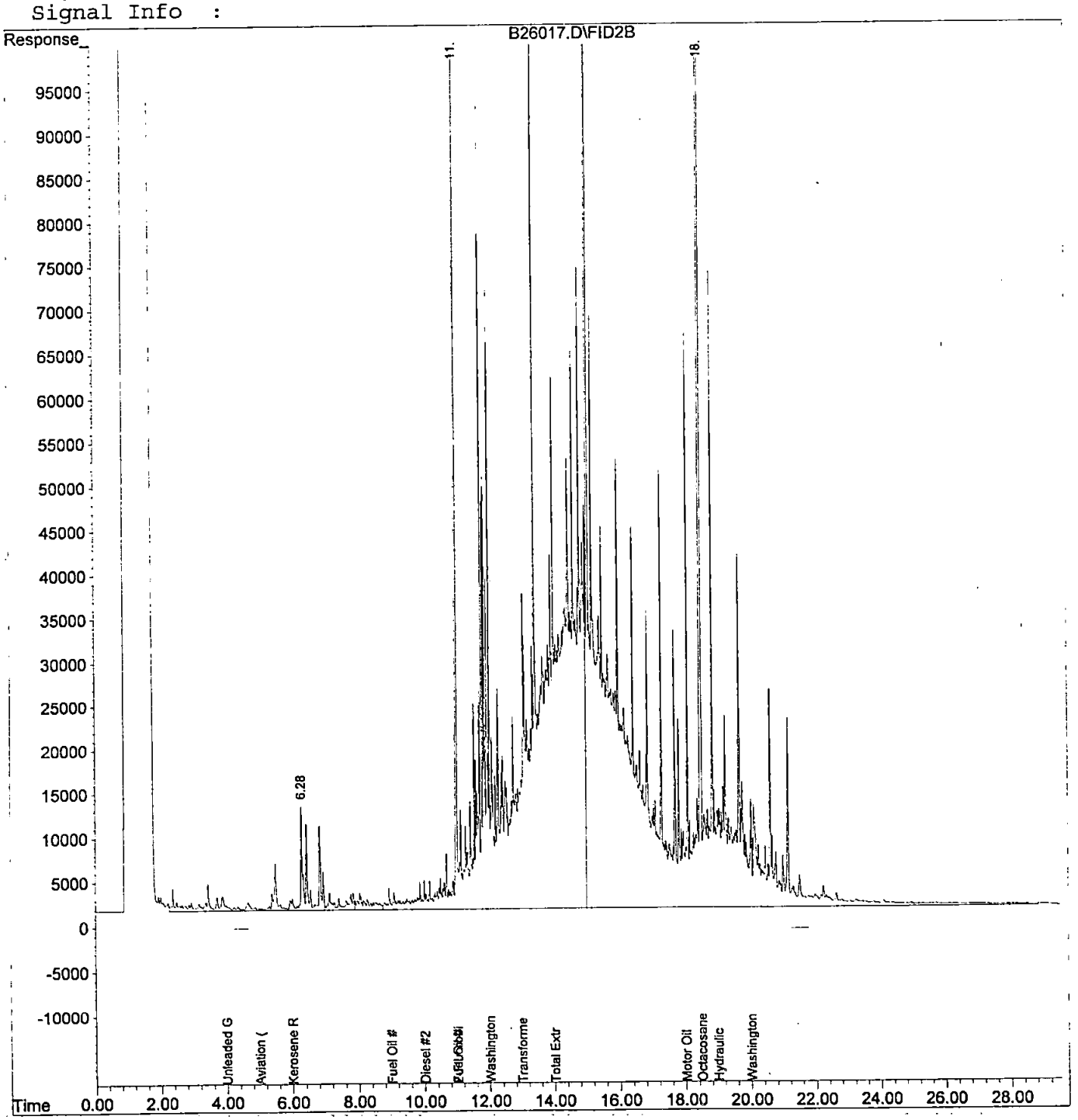
Quantitation Report

Data File : C:\HPCHEM\1\DATA.SEC\B26017.D
Acq On : 26 Feb 1998 12:49 pm
Sample : b802447-04 r1
Misc : s
IntFile : SURR.E
Quant Time: Feb 26 13:39 1998 Quant Results File: NWTPHD.RES

Vial: 12
Operator: ajg
Inst : GC #1
Multiplr: 1.00

Quant Method : C:\HPCHEM\1\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Mon Feb 23 09:14:19 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

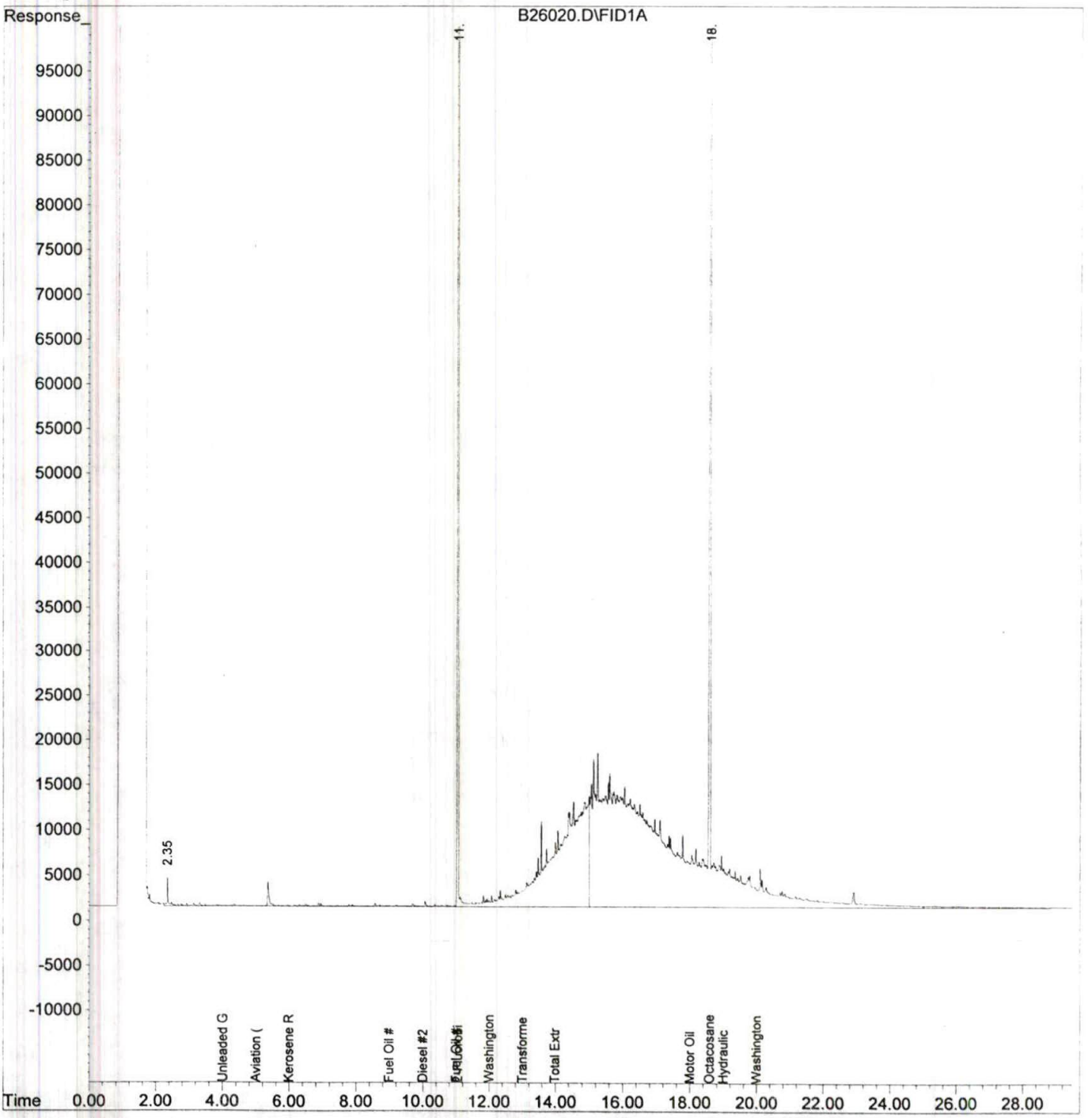


Quantitation Report

Data File : C:\HPCHEM\1\DATA\B26020.D Vial: 15
Acq On : 26 Feb 1998 1:28 pm Operator: ajg
Sample : b802447-05 r1 Inst : GC #1
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 26 15:23 1998 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\1\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Mon Feb 23 09:14:19 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

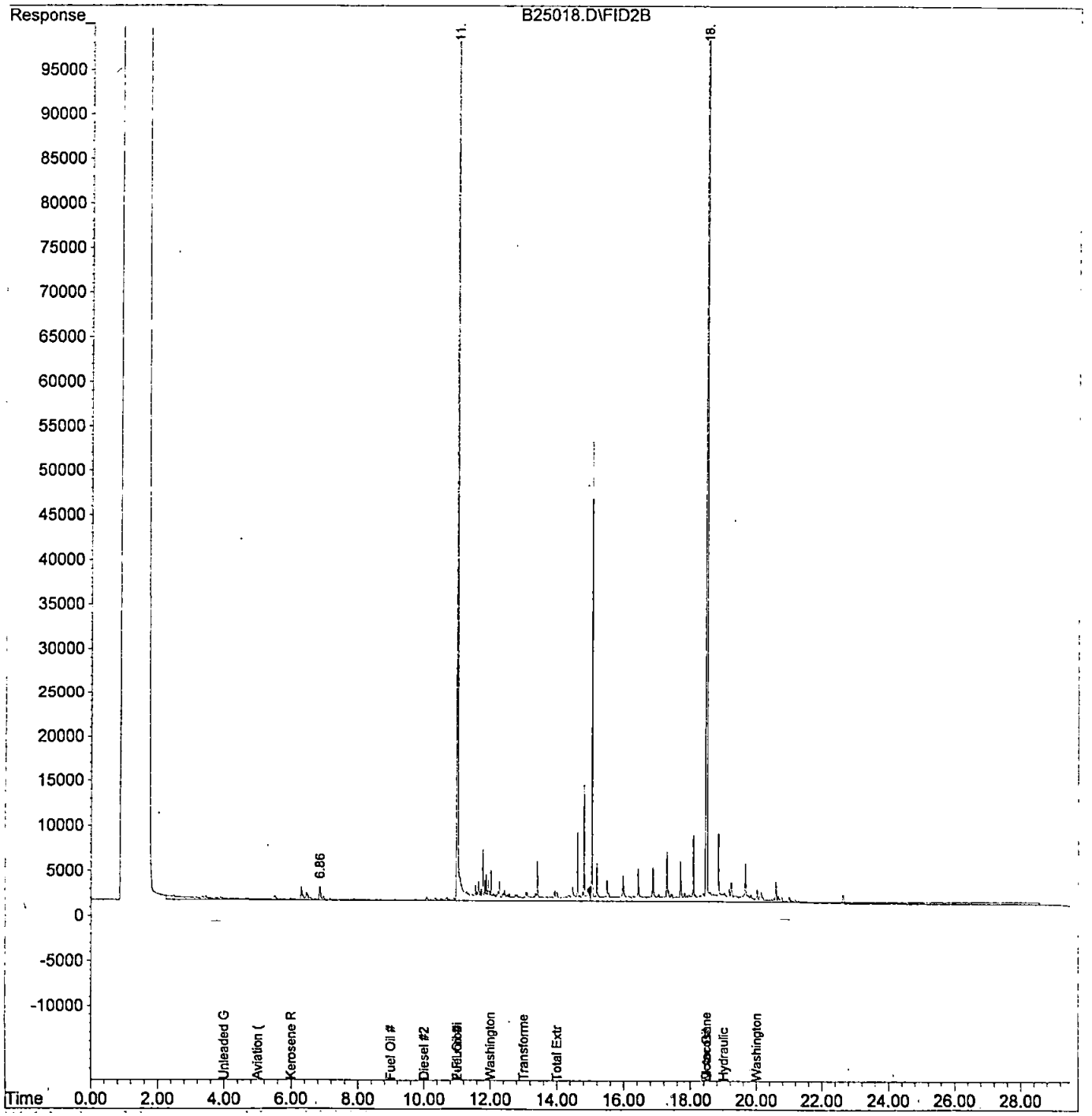


Quantitation Report

Data File : C:\HPCHEM\1\DATA.SEC\B25018.D Vial: 10
Acq On : 25 Feb 1998 7:02 pm Operator: ajg
Sample : b802447-06 Inst : GC #1
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 25 20:37 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\1\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Mon Feb 23 09:25:12 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

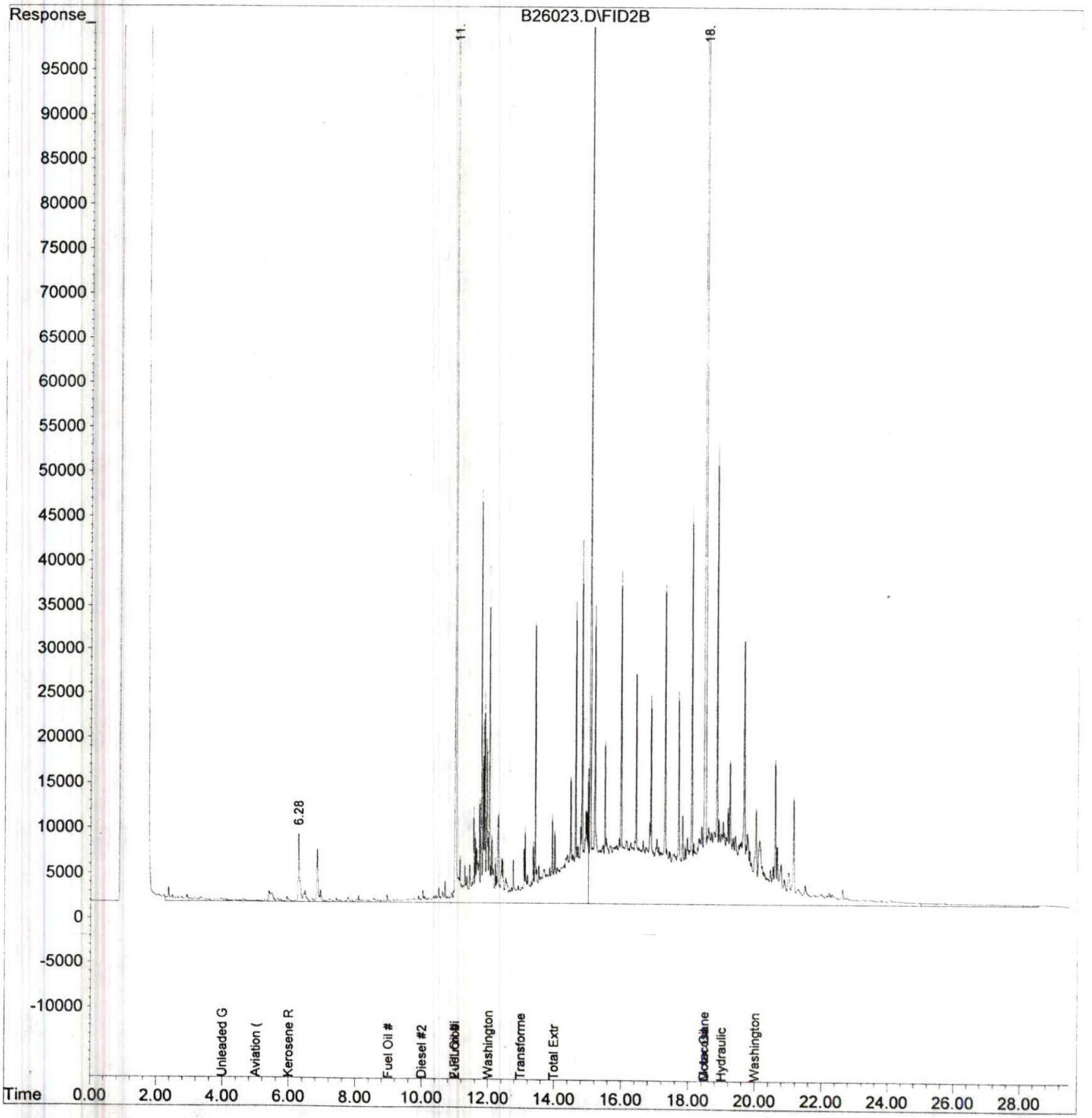


Quantitation Report

Data File : C:\HPCHEM\1\DATA.SEC\B26023.D Vial: 16
Acq On : 26 Feb 1998 2:46 pm Operator: ajg
Sample : b802447-07 r1 Inst : GC #1
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 26 15:19 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\1\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Mon Feb 23 09:25:12 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

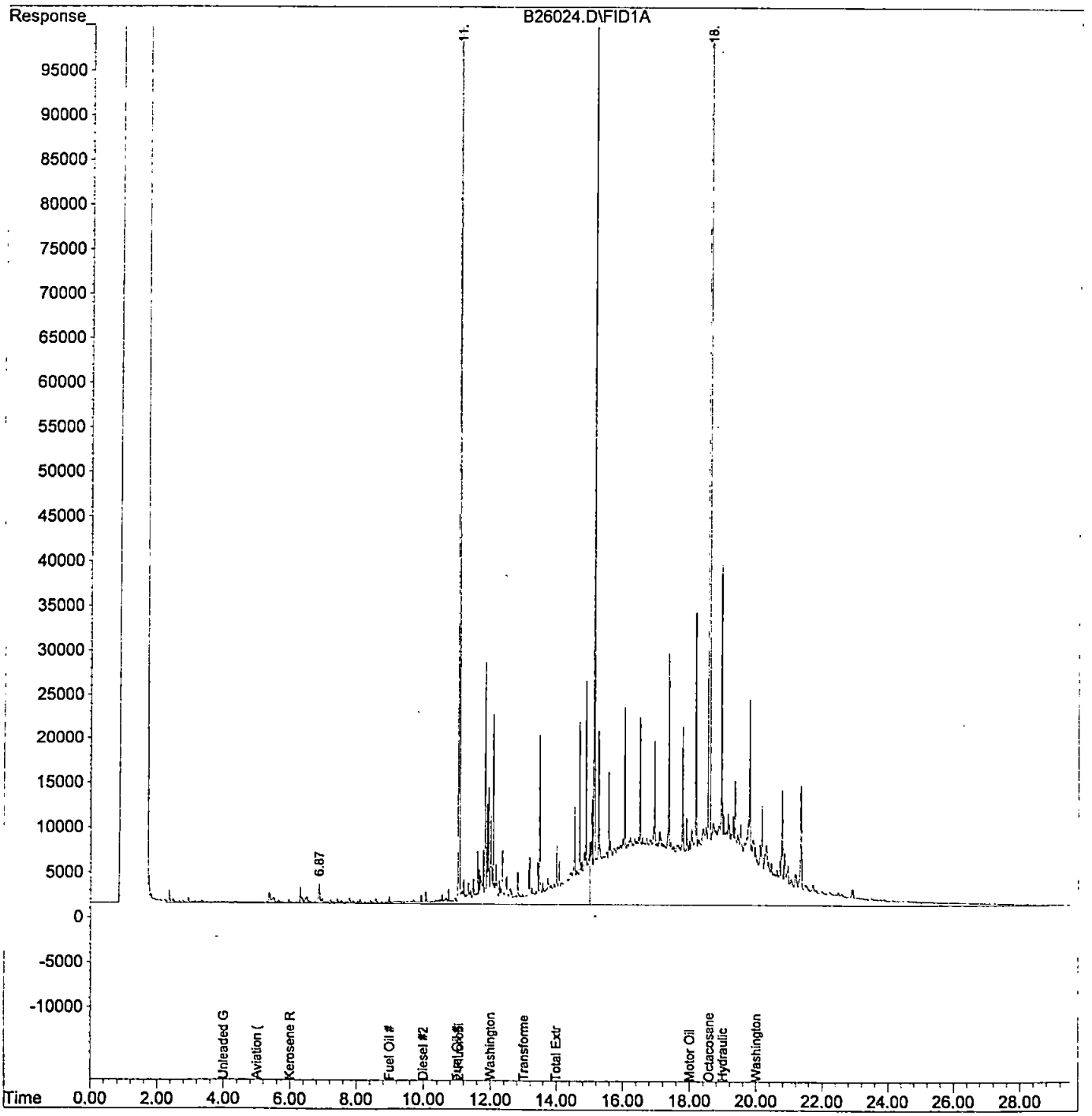


Quantitation Report

Data File : C:\HPCHEM\1\DATA\B26024.D Vial: 17
Acq On : 26 Feb 1998 2:46 pm Operator: ajg
Sample : b802447-08 r1 Inst : GC #1
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 26 15:21 1998 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\1\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Mon Feb 23 09:14:19 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

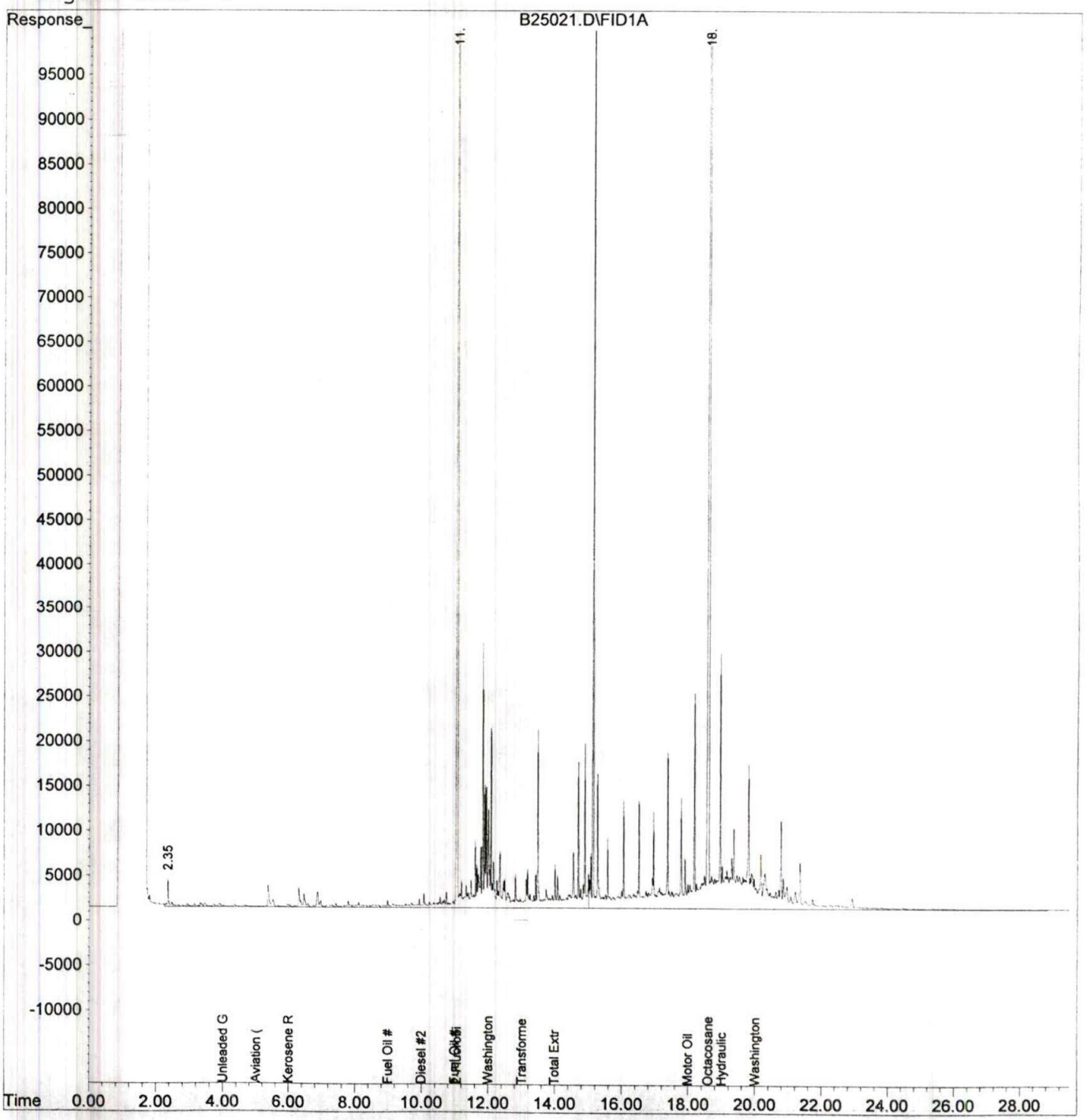


Quantitation Report

Data File : C:\HPCHEM\1\DATA\B25021.D Vial: 13
Acq On : 25 Feb 1998 7:41 pm Operator: ajg
Sample : b802447-09 Inst : GC #1
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 25 20:31 1998 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\1\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Mon Feb 23 09:14:19 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



NORTH CREEK ANALYTICAL
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East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B802447

REPORT TO:	INVOICE TO:
ATTENTION: Tony Orme	ATTENTION: Barry Leonhard
ADDRESS: 8410 154th Ave	ADDRESS: PSE
Redmond	
PHONE: (425) 861-6000 FAX: (425) 861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: Grady Way	
PROJECT NUMBER: 186-407	
SAMPLED BY: TNO	

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: [X] Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: [X] Standard | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: RCRA EPA 8081	NWTPH Dx/t	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	B-39 - 3.0	2/23/98 1415	B802447-01	X	X	S	1	
2.	B-40 - ~~3.0~~ 0.5 TO	2/23/98 1500	-02	X	X	S	1	
3.	B-41 - 3.0	2/23/98 1245	-03	X	X	S	1	
4.	B-42 - 3.0	2/23/98 1300	-04	X	X	S	1	
5.	B-43 - 3.0	2/23/98 1400	-05	X	X	S	1	
6.	B-44 - 3.0	2/23/98 1230	-06	X	X	S	1	
7.	B-45 - ~~3.0~~ 1.5 per client JW 3/4/98	2/23/98 1215	-07	X	X	S	1	
8.	B-46 - 0.5	2/23/98 1145	-08	X	X	S	1	
9.	B-47 - 4.0	2/23/98 1115	-09	X	X	S	1	
10.	B-45 - 0.5 on Hold		-10					Hold per client

RELINQUISHED BY (Signature):	DATE: 2/24/98	RECEIVED BY (Signature): K Barker	DATE: 2/24/98
PRINT NAME: Tony Orme	FIRM: GEI TIME: 900	PRINT NAME: K Barker	FIRM: NCA TIME: 1400
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:

ADDITIONAL REMARKS: NWTPH w/ silica gel clean up Dx/t

PAGE OF

NORTH CREEK ANALYTICAL
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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B802447

REPORT TO:	INVOICE TO:
ATTENTION: Tony Orme	ATTENTION: Barry Lombard
ADDRESS: 8410 154th Ave Redmond	ADDRESS: PSE
PHONE: (425) 861-6000 FAX: (425) 861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: Grady Way	
PROJECT NUMBER: 186-407	
SAMPLED BY: TNO	

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: 5 (Standard) | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: EDB (EPA 418.1)	BETX (8020A)	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	Drum 1	2/23/98 1530	B802447-11	X	X	W	3	
2.	Drum 2	2/23/98 1545	-12	X	X	W	3	
3.	B-39-~~XX~~ 0.5	2/23/98 1445	-13					Hold
4.	B-41-0.5	2/23/98 1245	-14					Hold
5.	B-42-0.5	2/23/98 1300	-15					Hold
6.	B-43-0.5	2/23/98 1410	-16					Hold
7.	B-44-0.5	2/23/98 1230	-17					Hold
8.	B-47-0.5	2/23/98 1115	-18					Hold
9.	B-47-3.0	2/23/98 1115	-19					Hold
10.								Hold

RELINQUISHED BY (Signature):	DATE: 2/24/98	RECEIVED BY (Signature):	DATE: 2/24/98
PRINT NAME: Tony Orme	FIRM: GEI TIME: 900	PRINT NAME: KBarker	FIRM: NCA TIME: 1400
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:

ADDITIONAL REMARKS:

PAGE OF

LAB DATA EVALUATION FORM

GEI Job # 186-407-85

Lab Job #/Sample IDs: B802363 - 03 to 30

GEI Sample IDs 6MW-1-4.0 to 6MW-6-4.0

Sample Coll Date 2/18/98

Report Recv'd Date 3/10/98

Analysis	Holding Time Exceptions ?	Surrogate Exceptions ?	Blank Hits ?	MS/MSD % Rec Exceptions	Duplicate or MSD RPD Exceptions	Blank Spike or LCS Exceptions (Use if MS/MSD out)
Ecology WTPH-G	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8020 (BETX)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
Ecology WTPH-D Extended	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)
413.1 (FOG)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8010	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8270	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
VPH/BETX/MTBE/Naphthalene	(Yes) No	(Yes) No	Yes (No)	Yes (No)	Yes (No)	(Yes) No
EPH/PAH	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)
EPH/PAH-SIM	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
E-TPH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
Affected Sample Numbers						

Data Acceptable for Intended Use? Yes

Date Comp. 3/16/98

Reviewer Initials TNO

Comments:

- See notes on Page 17

Exceptions (As shown in report):

NORTH CREEK ANALYTICAL
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SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 906-9200 ▪ FAX 906-9210

Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number: 186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 3/10/98 10:40

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
GMW-1-4.0	B802363-03	Soil	2/18/98
GMW-2-4.0	B802363-09	Soil	2/18/98
GMW-3-4.0	B802363-15	Soil	2/18/98
GMW-4-6.0	B802363-21	Soil	2/18/98
GMW-5-4.0	B802363-25	Soil	2/18/98
GMW-6-4.0	B802363-30	Soil	2/18/98

GeoEngineers

MAR 1 1998

Routing GPS

File

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PORTLAND ▪ (503) 906-9200 ▪ FAX 906-9210

Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 10:40

Volatile Petroleum Hydrocarbons by WDOE Interim TPH Policy Method
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-4-6.0			**B802363-21**				**Soil**	
C5-C6 Aliphatics	0380093	3/4/98	3/4/98		5.00	ND	mg/kg dry	
C6-C8 Aliphatics	"	"	"		5.00	ND	"	
C8-C10 Aliphatics	"	"	"		5.00	ND	"	
C10-C12 Aliphatics	"	"	"		5.00	ND	"	
C8-C10 Aromatics	"	"	"		5.00	**14.2**	"	
C10-C12 Aromatics	"	"	"		5.00	**16.0**	"	
C12-C13 Aromatics	"	"	"		5.00	**5.56**	"	
Surrogate: 4-BFB (FID)	"	"	"	*60.0-140*		*122*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*60.0-140*		*109*	"	

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Environmental Laboratory Services

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 10:40

BTEX, MTBE and Naphthalene by WDOE Interim TPH Policy Method using GC/MS
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-4-6.0			**B802363-21**				**Soil**	**1**
Methyl tert-butyl ether	0380134	3/5/98	3/5/98		1.00	ND	mg/kg dry	
Benzene	"	"	"		0.200	ND	"	
Toluene	"	"	"		0.200	ND	"	
Ethylbenzene	"	"	"		0.200	ND	"	
m,p-Xylene	"	"	"		0.400	ND	"	
o-Xylene	"	"	"		0.200	ND	"	
Naphthalene	"	"	"		0.200	ND	"	
Surrogate: 2-Bromopropene	"	"	"	*70.0-130*		*71.8*	*%*	
Surrogate: 1,2-DCA-d4	"	"	"	*70.0-130*		*84.9*	"	
Surrogate: Toluene-d8	"	"	"	*70.0-130*		*76.2*	"	
Surrogate: 4-BFB	"	"	"	*70.0-130*		*71.3*	"	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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PORTLAND ▪ (503) 906-9200 ▪ FAX 906-9210

Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 10:40

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-1-4.0			**B802363-03**				**Soil**	
Diesel #2	0280530	2/20/98	2/23/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**226**	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**144**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*82.8*	*%*	
GMW-2-4.0			**B802363-09**				**Soil**	
Diesel #2	0280530	2/20/98	2/23/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**275**	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**133**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*78.8*	*%*	
GMW-3-4.0			**B802363-15**				**Soil**	
Diesel #2	0280530	2/20/98	2/24/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**111**	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**47.4**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*81.6*	*%*	
GMW-4-6.0			**B802363-21**				**Soil**	
Diesel #2	0280530	2/20/98	2/24/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 906-9200 ▪ FAX 906-9210

Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 10:40

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-4-6.0 (continued)			**B802363-21**				**Soil**	
Fuel Oil #6 (Bunker C)	0280530	2/20/98	2/24/98		25.0	ND	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**671**	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**1140**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*79.8*	*%*	
GMW-5-4.0			**B802363-25**				**Soil**	
Diesel #2	0280530	2/20/98	2/24/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**74.1**	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**49.3**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*71.8*	*%*	
GMW-6-4.0			**B802363-30**				**Soil**	
Diesel #2	0280530	2/20/98	2/24/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	**86.7**	"	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**33.2**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*77.5*	*%*	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 10:40

Extractable Petroleum Hydrocarbons by WDOE Interim TPH Policy Method
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-4-6.0			**B802363-21**				**Soil**	
C8-C10 Aliphatics	0380085	3/4/98	3/7/98		5.00	ND	mg/kg dry	
C10-C12 Aliphatics	"	"	"		5.00	ND	"	
C12-C16 Aliphatics	"	"	"		5.00	**46.0**	"	
C16-C21 Aliphatics	"	"	"		5.00	**649**	"	
C21-C34 Aliphatics	"	"	"		5.00	**508**	"	
C10-C12 Aromatics	"	"	"		5.00	ND	"	
C12-C16 Aromatics	"	"	"		5.00	ND	"	
C16-C21 Aromatics	"	"	"		5.00	**154**	"	
C21-C34 Aromatics	"	"	"		5.00	**152**	"	
Extractable Petroleum Hydrocarbons	"	"	"		5.00	**1510**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*74.4*	%	
Surrogate: Octacosane	"	"	"	*50.0-150*		*86.8*	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 10:40

Polynuclear Aromatic Hydrocarbons by GC/MS-SIM
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-4-6.0			**B802363-21**				**Soil**	
Acenaphthene	0380085	3/4/98	3/9/98		0.0100	ND	mg/kg dry	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	**0.0169**	"	
Benzo (a) anthracene	"	"	3/10/98		0.0500	ND	"	2
Benzo (a) pyrene	"	"	"		0.0500	ND	"	2
Benzo (b) fluoranthene	"	"	"		0.0500	ND	"	2
Benzo (ghi) perylene	"	"	"		0.0500	ND	"	2
Benzo (k) fluoranthene	"	"	"		0.0500	ND	"	2
Chrysene	"	"	"		0.0500	**0.0520**	"	2
Dibenz (a,h) anthracene	"	"	"		0.0500	ND	"	2
Fluoranthene	"	"	3/9/98		0.0100	**0.0520**	"	
Fluorene	"	"	"		0.0100	**0.0130**	"	
Indeno (1,2,3-cd) pyrene	"	"	3/10/98		0.0500	ND	"	2
2-Methylnaphthalene	"	"	3/9/98		0.0100	**0.109**	"	
Naphthalene	"	"	"		0.0100	**0.0390**	"	
Phenanthrene	"	"	"		0.0100	**0.0897**	"	
Pyrene	"	"	3/10/98		0.0500	**0.110**	"	2
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*46.6*	%	*2*

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 10:40

Polychlorinated Biphenyls by EPA Method 8082
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-1-4.0			**B802363-03**				Soil	
Aroclor 1016	0280659	2/26/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*62.9*	*%*	
GMW-2-4.0			**B802363-09**				Soil	
Aroclor 1016	0280659	2/26/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*63.2*	*%*	
GMW-3-4.0			**B802363-15**				Soil	
Aroclor 1016	0280659	2/26/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*69.3*	*%*	
GMW-4-6.0			**B802363-21**				Soil	
Aroclor 1016	0280659	2/26/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 10:40

Polychlorinated Biphenyls by EPA Method 8082
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-4-6.0 (continued)			**B802363-21**				**Soil**	
Aroclor 1232	0280659	2/26/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	**586**	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*85.4*	%	
GMW-5-4.0			**B802363-25**				**Soil**	
Aroclor 1016	0280659	2/26/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*71.2*	%	
GMW-6-4.0			**B802363-30**				**Soil**	
Aroclor 1016	0280659	2/26/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*78.3*	%	

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Joy B Chiang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled:	2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received:	2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported:	3/10/98 10:40

Dry Weight Determination
North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
GMW-1-4.0	B802363-03	Soil	73.8	%
GMW-2-4.0	B802363-09	Soil	62.7	%
GMW-3-4.0	B802363-15	Soil	56.3	%
GMW-4-6.0	B802363-21	Soil	51.3	%
GMW-5-4.0	B802363-25	Soil	71.8	%
GMW-6-4.0	B802363-30	Soil	57.0	%

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 10:40

Volatile Petroleum Hydrocarbons by WDOE Interim TPH Policy Method/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0380093	**Date Prepared: 3/4/98**					**Extraction Method: EPA 5030B (MeOH)**				
Blank	**0380093-BLK1**									
C5-C6 Aliphatics	3/4/98			ND	mg/kg dry	5.00				
C6-C8 Aliphatics	"			ND	"	5.00				
C8-C10 Aliphatics	"			ND	"	5.00				
C10-C12 Aliphatics	"			ND	"	5.00				
C8-C10 Aromatics	"			ND	"	5.00				
C10-C12 Aromatics	"			ND	"	5.00				
C12-C13 Aromatics	"			ND	"	5.00				
Surrogate: 4-BFB (FID)	"	*4.00*		*4.04*	"	*60.0-140*	*101*			
Surrogate: 4-BFB (PID)	"	*4.00*		*3.67*	"	*60.0-140*	*91.8*			
LCS	**0380093-BS1**									
C5-C6 Aliphatics	3/4/98	2.00		2.10	mg/kg dry	70.0-130	105			
C6-C8 Aliphatics	"	1.00		1.33	"	70.0-130	133			3
C8-C10 Aliphatics	"	1.00		0.630	"	70.0-130	63.0			3
C10-C12 Aliphatics	"	1.00		0.732	"	70.0-130	73.2			
C8-C10 Aromatics	"	4.00		2.83	"	70.0-130	70.7			
C10-C12 Aromatics	"	1.00		0.822	"	70.0-130	82.2			
C12-C13 Aromatics	"	1.00		0.700	"	70.0-130	70.0			
Surrogate: 4-BFB (FID)	"	*4.00*		*4.39*	"	*60.0-140*	*110*			
Surrogate: 4-BFB (PID)	"	*4.00*		*4.06*	"	*60.0-140*	*101*			
Duplicate	**0380093-DUP1**	**B802490-05**								
C5-C6 Aliphatics	3/4/98		ND	ND	mg/kg dry			25.0		
C6-C8 Aliphatics	"		ND	ND	"			25.0		
C8-C10 Aliphatics	"		ND	ND	"			25.0		
C10-C12 Aliphatics	"		160	167	"			25.0	**4.28**	
C8-C10 Aromatics	"		338	360	"			25.0	**6.30**	
C10-C12 Aromatics	"		246	256	"			25.0	**3.98**	
C12-C13 Aromatics	"		ND	ND	"			25.0		
Surrogate: 4-BFB (FID)	"	*5.22*		*ND*	"	*60.0-140*	*NR*			4
Surrogate: 4-BFB (PID)	"	*5.22*		*10.6*	"	*60.0-140*	*NR*			4

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 10:40

BTEX, MTBE and Naphthalene by WDOE Interim TPH Policy Method using GC/MS/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0380134	**Date Prepared: 3/5/98**					**Extraction Method: EPA 5030B [MeOH]**				
Blank	**0380134-BLK1**									
Methyl tert-butyl ether	3/5/98			**ND**	mg/kg dry	**1.00**				
Benzene	"			**ND**	"	**0.200**				
Toluene	"			**ND**	"	**0.200**				
Ethylbenzene	"			**ND**	"	**0.200**				
m,p-Xylene	"			**ND**	"	**0.400**				
o-Xylene	"			**ND**	"	**0.200**				
Naphthalene	"			**ND**	"	**0.200**				
Surrogate: 2-Bromopropene	"	*2.00*		*2.19*	"	*70.0-130*	*110*			
Surrogate: 1,2-DCA-d4	"	*2.00*		*2.26*	"	*70.0-130*	*113*			
Surrogate: Toluene-d8	"	*2.00*		*2.21*	"	*70.0-130*	*111*			
Surrogate: 4-BFB	"	*2.00*		*2.08*	"	*70.0-130*	*104*			
LCS	**0380134-BS1**									
Benzene	3/5/98	1.00		1.04	mg/kg dry	70.0-130	104			
Toluene	"	1.00		1.01	"	70.0-130	101			
Surrogate: 2-Bromopropene	"	*2.00*		*2.08*	"	*70.0-130*	*104*			
Surrogate: 1,2-DCA-d4	"	*2.00*		*2.22*	"	*70.0-130*	*111*			
Surrogate: Toluene-d8	"	*2.00*		*2.03*	"	*70.0-130*	*101*			
Surrogate: 4-BFB	"	*2.00*		*2.12*	"	*70.0-130*	*106*			
Matrix Spike	**0380134-MS1**		**B803137-11**							
Benzene	3/6/98	1.38	ND	1.32	mg/kg dry	70.0-130	**95.7**			
Toluene	"	1.38	ND	1.32	"	70.0-130	**95.7**			
Surrogate: 2-Bromopropene	"	*2.76*		*2.56*	"	*70.0-130*	*92.8*			
Surrogate: 1,2-DCA-d4	"	*2.76*		*2.68*	"	*70.0-130*	*97.1*			
Surrogate: Toluene-d8	"	*2.76*		*2.54*	"	*70.0-130*	*92.0*			
Surrogate: 4-BFB	"	*2.76*		*2.58*	"	*70.0-130*	*93.5*			
Matrix Spike Dup	**0380134-MSD1**		**B803137-11**							
Benzene	3/6/98	1.38	ND	1.29	mg/kg dry	70.0-130	**93.5**	20.0	**2.33**	
Toluene	"	1.38	ND	1.18	"	70.0-130	**85.5**	20.0	**11.3**	
Surrogate: 2-Bromopropene	"	*2.76*		*2.22*	"	*70.0-130*	*80.4*			
Surrogate: 1,2-DCA-d4	"	*2.76*		*2.97*	"	*70.0-130*	*108*			
Surrogate: Toluene-d8	"	*2.76*		*2.31*	"	*70.0-130*	*83.7*			
Surrogate: 4-BFB	"	*2.76*		*2.43*	"	*70.0-130*	*88.0*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 10:40

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0280530	**Date Prepared: 2/20/98**					**Extraction Method: EPA 3550B**				
Blank	**0280530-BLK1**									
Diesel #2	2/23/98			**ND**	mg/kg dry	**10.0**				
Fuel Oil #2	"			**ND**	"	**25.0**				
Fuel Oil #6 (Bunker C)	"			**ND**	"	**25.0**				
Heavy Oil Range Hydrocarbons	"			**ND**	"	**25.0**				
Hydraulic Oil	"			**ND**	"	**25.0**				
Motor Oil	"			**ND**	"	**25.0**				
Transformer Oil	"			**ND**	"	**25.0**				
Kerosene Range Hydrocarbons	"			**ND**	"	**10.0**				
Diesel Range Hydrocarbons	"			**ND**	"	**10.0**				
Surrogate: 2-FBP	"	*10.7*		*8.33*	"	*50.0-150*	*77.9*			
LCS	**0280530-BS1**									
Diesel #2	2/23/98	66.7		58.4	mg/kg dry	50.0-150	87.6			
Surrogate: 2-FBP	"	*10.7*		*8.85*	"	*50.0-150*	*82.7*			
Duplicate	**0280530-DUP1**	**B802363-30**								
Diesel #2	2/23/98		ND	ND	mg/kg dry			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Hydraulic Oil	"		86.7	93.9	"			50.0	**7.97**	
Motor Oil	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		33.2	34.3	"			50.0	**3.26**	
Surrogate: 2-FBP	"	*18.7*		*13.7*	"	*50.0-150*	*73.3*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 10:40

Extractable Petroleum Hydrocarbons by WDOE Interim TPH Policy Method/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0380085	**Date Prepared: 3/4/98**					**Extraction Method: EPA 3550B**				
Blank	**0380085-BLK1**									
C8-C10 Aliphatics	3/7/98			**ND**	mg/kg dry	**5.00**				
C10-C12 Aliphatics	"			**ND**	"	**5.00**				
C12-C16 Aliphatics	"			**ND**	"	**5.00**				
C16-C21 Aliphatics	"			**ND**	"	**5.00**				
C21-C34 Aliphatics	"			**ND**	"	**5.00**				
C10-C12 Aromatics	"			**ND**	"	**5.00**				
C12-C16 Aromatics	"			**ND**	"	**5.00**				
C16-C21 Aromatics	"			**ND**	"	**5.00**				
C21-C34 Aromatics	"			**ND**	"	**5.00**				
Extractable Petroleum Hydrocarbons	"			**ND**	"	**5.00**				
Surrogate: 2-FBP	"	*12.0*		*8.98*	"	*50.0-150*	*74.8*			
Surrogate: Octacosane	"	*12.0*		*10.9*	"	*50.0-150*	*90.8*			
LCS	**0380085-BS1**									
Extractable Petroleum Hydrocarbons	3/7/98	167		94.7	mg/kg dry	30.0-120	56.7			
Surrogate: 2-FBP	"	*12.0*		*9.08*	"	*50.0-150*	*75.7*			
Surrogate: Octacosane	"	*12.0*		*10.4*	"	*50.0-150*	*86.7*			
LCS Dup	**0380085-BSD1**									
Extractable Petroleum Hydrocarbons	3/7/98	167		97.2	mg/kg dry	30.0-120	58.2	40.0	2.61	
Surrogate: 2-FBP	"	*12.0*		*9.16*	"	*50.0-150*	*76.3*			
Surrogate: Octacosane	"	*12.0*		*10.6*	"	*50.0-150*	*88.3*			
Matrix Spike	**0380085-MS1**		**B802363-21**							
Extractable Petroleum Hydrocarbons	3/7/98	325	1510	1780	mg/kg dry	30.0-120	**83.1**			
Surrogate: 2-FBP	"	*23.4*		*18.1*	"	*50.0-150*	*77.4*			
Surrogate: Octacosane	"	*23.4*		*21.2*	"	*50.0-150*	*90.6*			

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 10:40

Polynuclear Aromatic Hydrocarbons by GC/MS-SIM/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0380085	**Date Prepared: 3/4/98**					**Extraction Method: EPA 3550B**				
Blank	**0380085-BLK1**									
Acenaphthene	3/9/98			**ND**	mg/kg dry	**0.0100**				
Acenaphthylene	"			**ND**	"	**0.0100**				
Anthracene	"			**ND**	"	**0.0100**				
Benzo (a) anthracene	"			**ND**	"	**0.0100**				
Benzo (a) pyrene	"			**ND**	"	**0.0100**				
Benzo (b) fluoranthene	"			**ND**	"	**0.0100**				
Benzo (ghi) perylene	"			**ND**	"	**0.0100**				
Benzo (k) fluoranthene	"			**ND**	"	**0.0100**				
Chrysene	"			**ND**	"	**0.0100**				
Dibenz (a,h) anthracene	"			**ND**	"	**0.0100**				
Fluoranthene	"			**ND**	"	**0.0100**				
Fluorene	"			**ND**	"	**0.0100**				
Indeno (1,2,3-cd) pyrene	"			**ND**	"	**0.0100**				
2-Methylnaphthalene	"			**ND**	"	**0.0100**				
Naphthalene	"			**ND**	"	**0.0100**				
Phenanthrene	"			**ND**	"	**0.0100**				
Pyrene	"			**ND**	"	**0.0100**				
Surrogate: p-Terphenyl-d14	"	*0.250*		*0.122*	"	*30.0-150*	*48.8*			
LCS	**0380085-BS2**									
Chrysene	3/9/98	0.0667		0.0447	mg/kg dry	10.0-125	67.0			
Fluorene	"	0.0667		0.0393	"	11.0-116	58.9			
Indeno (1,2,3-cd) pyrene	"	0.0667		0.0493	"	10.0-147	73.9			
Surrogate: p-Terphenyl-d14	"	*0.250*		*0.147*	"	*30.0-150*	*58.8*			
LCS Dup	**0380085-BSD2**									
Chrysene	3/9/98	0.0667		0.0413	mg/kg dry	10.0-125	61.9	28.0	7.91	
Fluorene	"	0.0667		0.0353	"	11.0-116	52.9	32.0	10.7	
Indeno (1,2,3-cd) pyrene	"	0.0667		0.0433	"	10.0-147	64.9	34.0	13.0	
Surrogate: p-Terphenyl-d14	"	*0.250*		*0.135*	"	*30.0-150*	*54.0*			
Matrix Spike	**0380085-MS2**		**B802363-21**							
Chrysene	3/10/98	0.130	0.0520	0.149	mg/kg dry	10.0-125	**74.6**			
Fluorene	3/9/98	0.130	0.0130	0.0806	"	10.0-154	**52.0**			
Indeno (1,2,3-cd) pyrene	3/10/98	0.130	ND	0.110	"	10.0-144	**84.6**			
Surrogate: p-Terphenyl-d14	"	*0.487*		*0.273*	"	*30.0-150*	*56.1*			

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 10:40

Polychlorinated Biphenyls by EPA Method 8082/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0280659	**Date Prepared: 2/26/98**					**Extraction Method: EPA 3550B**				
Blank	**0280659-BLK1**									
Aroclor 1016	3/6/98			**ND**	ug/kg dry	**50.0**				
Aroclor 1221	"			**ND**	"	**50.0**				
Aroclor 1232	"			**ND**	"	**50.0**				
Aroclor 1242	"			**ND**	"	**50.0**				
Aroclor 1248	"			**ND**	"	**50.0**				
Aroclor 1254	"			**ND**	"	**50.0**				
Aroclor 1260	"			**ND**	"	**50.0**				
Aroclor 1262	"			**ND**	"	**50.0**				
Aroclor 1268	"			**ND**	"	**50.0**				
Surrogate: TCX	"	*6.67*		*7.39*	"	*38.0-117*	*111*			
LCS	**0280659-BS1**									
Aroclor 1260	3/6/98	333		251	ug/kg dry	44.0-123	75.4			
Surrogate: TCX	"	*6.67*		*7.08*	"	*38.0-117*	*106*			
Matrix Spike	**0280659-MS1**		**B802363-30**							
Aroclor 1260	3/6/98	585	ND	428	ug/kg dry	28.0-132	**73.2**			
Surrogate: TCX	"	*11.7*		*9.22*	"	*38.0-117*	*78.8*			
Matrix Spike Dup	**0280659-MSD1**		**B802363-30**							
Aroclor 1260	3/6/98	585	ND	444	ug/kg dry	28.0-132	**75.9**	23.0	**3.62**	
Surrogate: TCX	"	*11.7*		*9.65*	"	*38.0-117*	*82.5*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/18/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/19/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/10/98 10:40

Notes and Definitions

#	Note
1	This sample was analyzed outside the EPA recommended holding time.
2	The reporting limit for this analyte has been raised to account for matrix interference.
3	The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
4	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

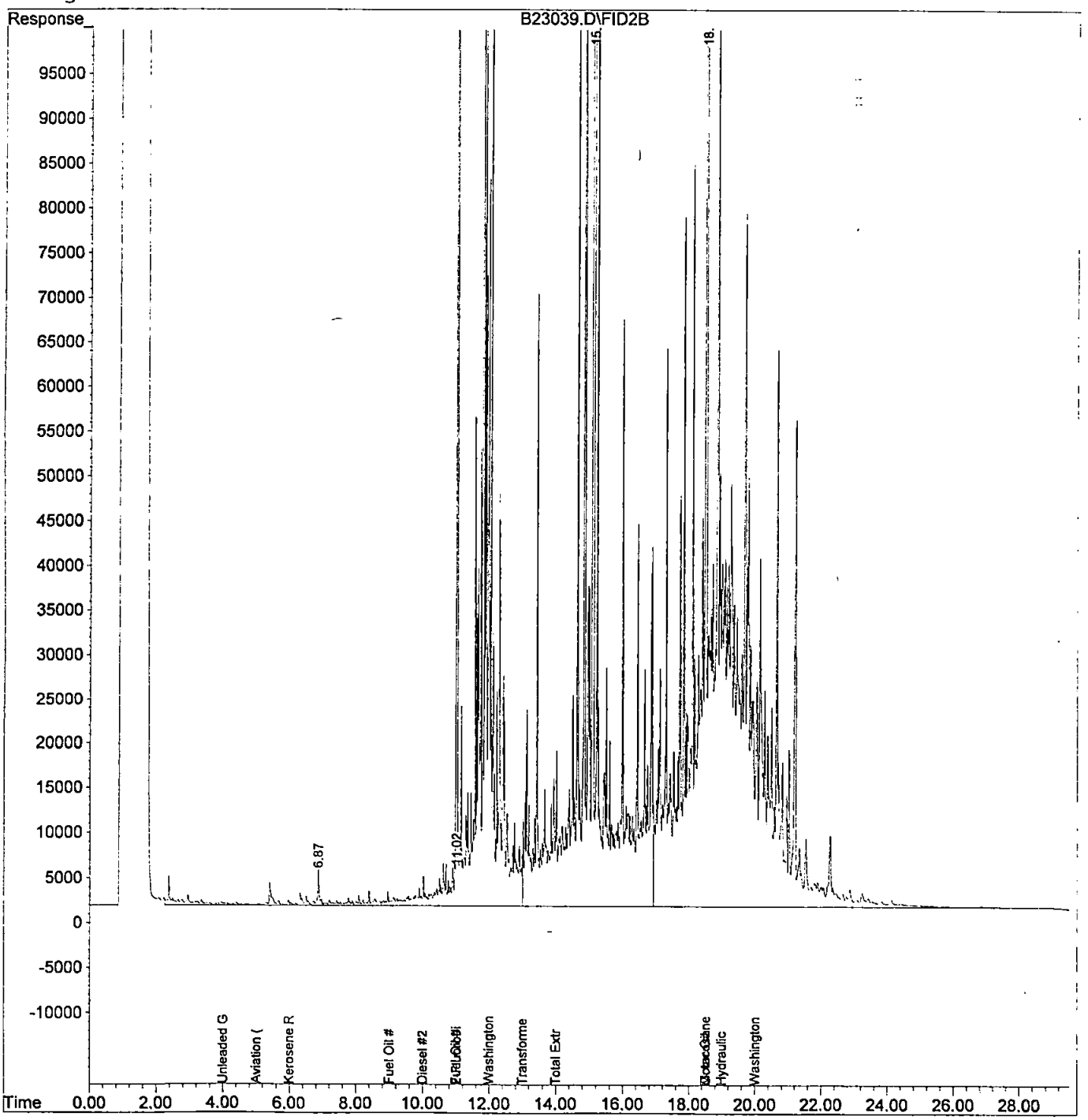
Joy B Chang, Project Manager

Quantitation Report

Data File : C:\HPCHEM\1\DATA.SEC\B23039.D Vial: 24
Acq On : 23 Feb 1998 10:44 pm Operator: ajg
Sample : b802363-03 Inst : GC #1
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 24 9:06 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\1\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Mon Feb 23 09:25:12 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

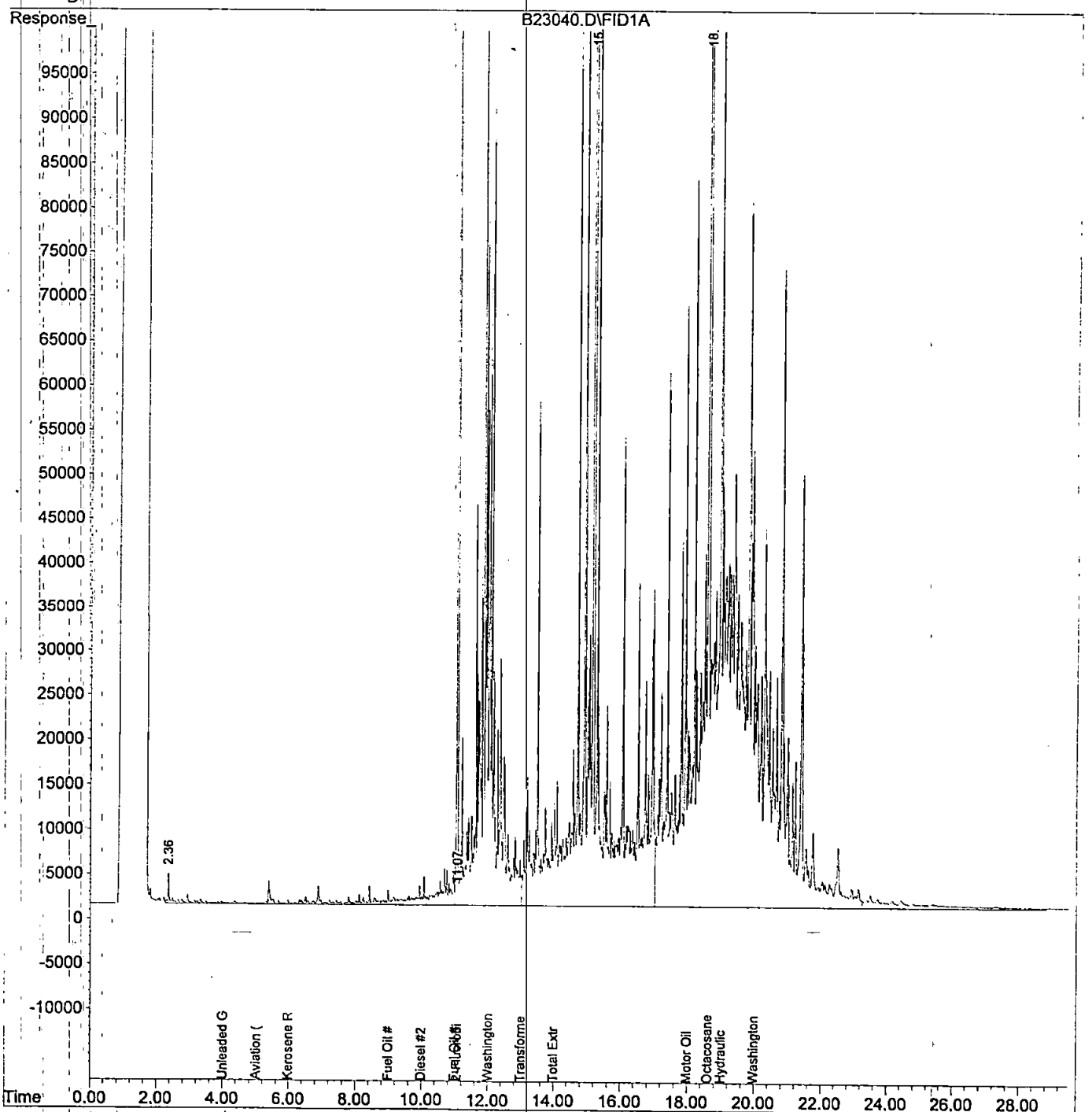


Quantitation Report

Data File : C:\HPCHEM\1\DATA\B23040.D Vial: 25
Acq On : 23 Feb 1998 10:44 pm Operator: ajg
Sample : b802363-09 Inst : GC #1
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 24 8:40 1998 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\1\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Mon Feb 23 09:14:19 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

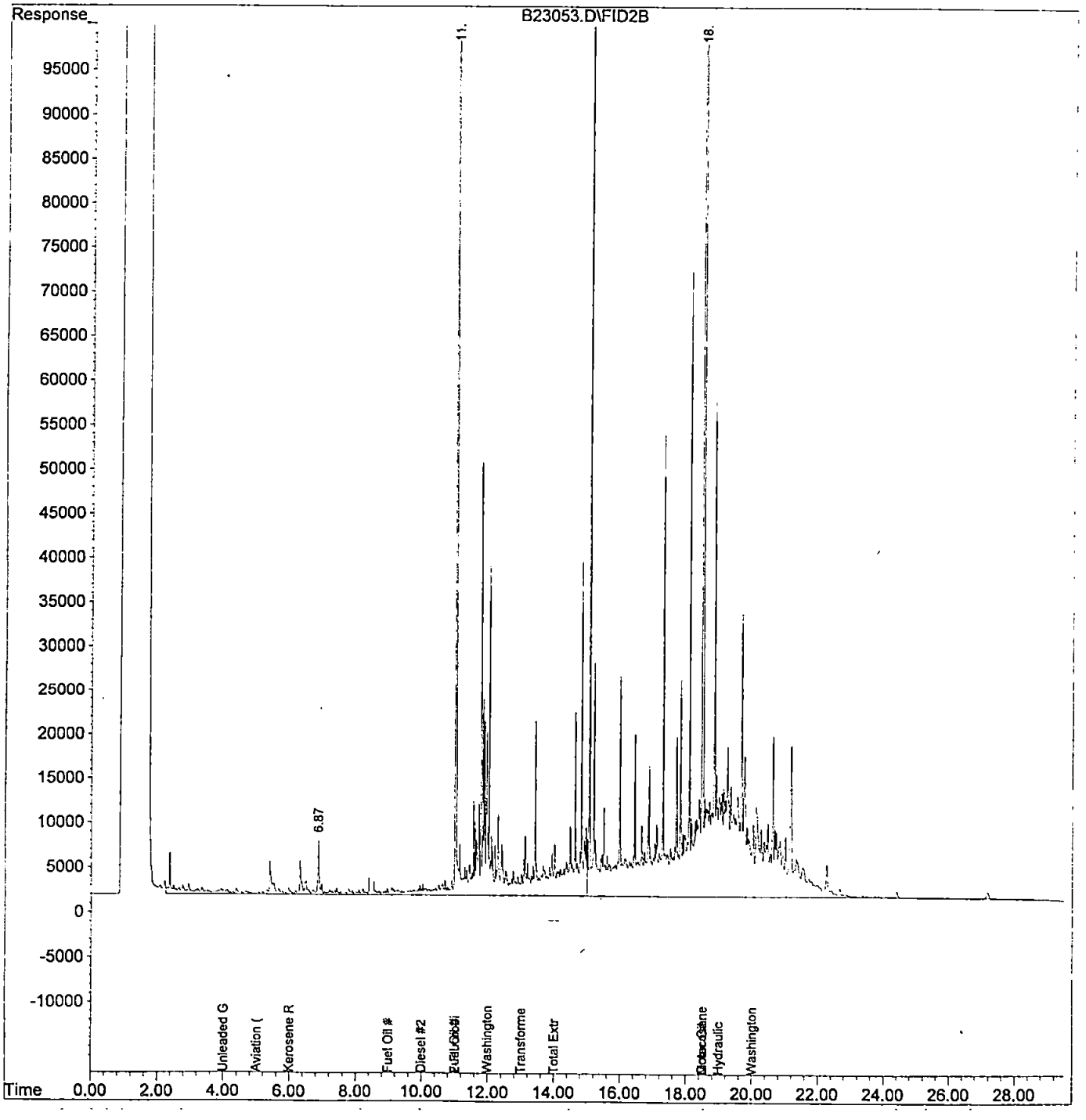


Quantitation Report

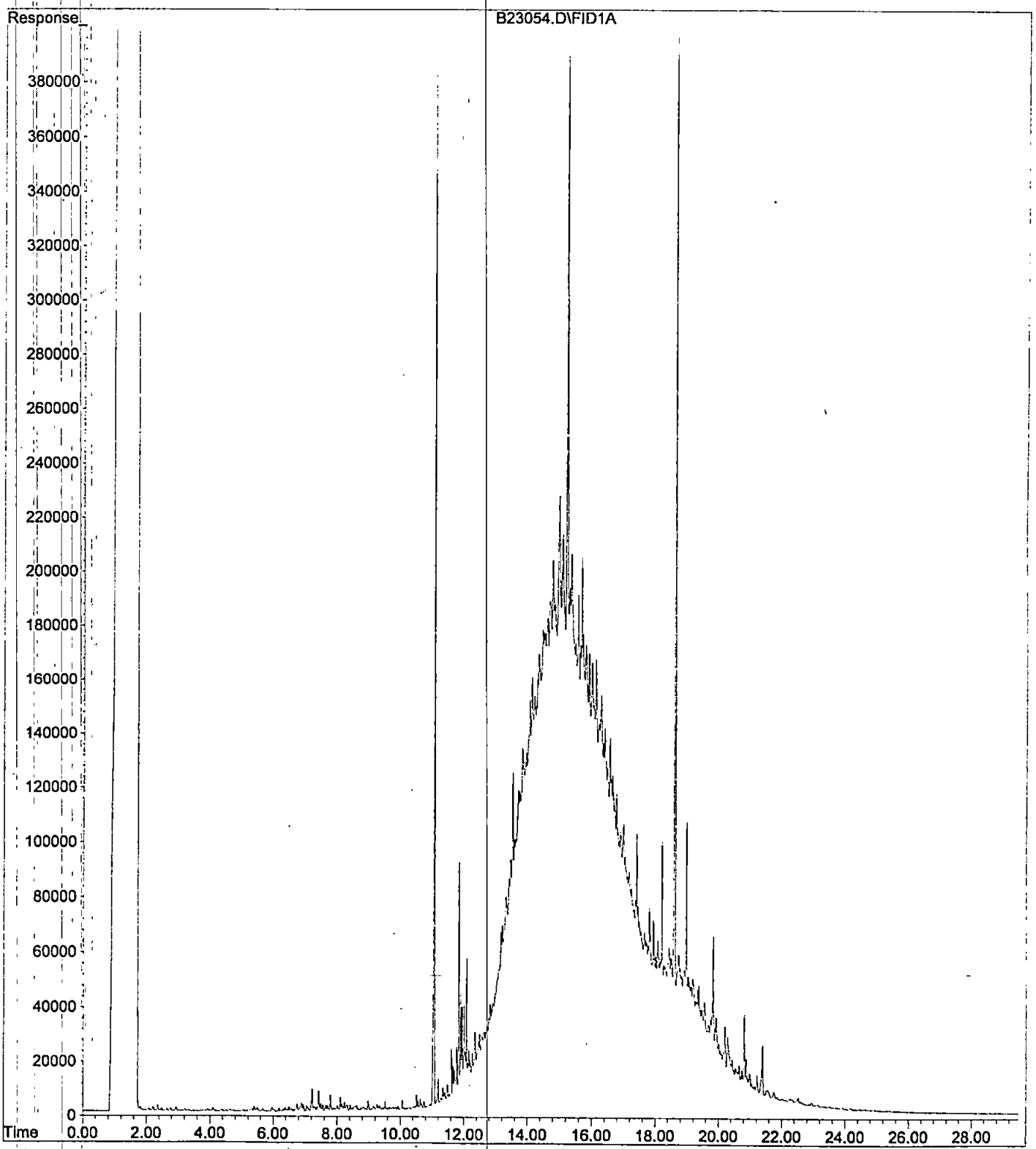
Data File : C:\HPCHEM\1\DATA.SEC\B23053.D Vial: 26
Acq On : 24 Feb 1998 3:10 am Operator: ajg
Sample : b802363-15 Inst : GC #1
Misc : W Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 24 9:12 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\1\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Mon Feb 23 09:25:12 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



File : C:\HPCHEM\1\DATA\B23054.D
Operator : ajg
Acquired : 24 Feb 1998 3:10 am using AcqMethod TPHD.M
Instrument : GC #1
Sample Name: b802363-21
Misc Info : W
Vial Number: 27

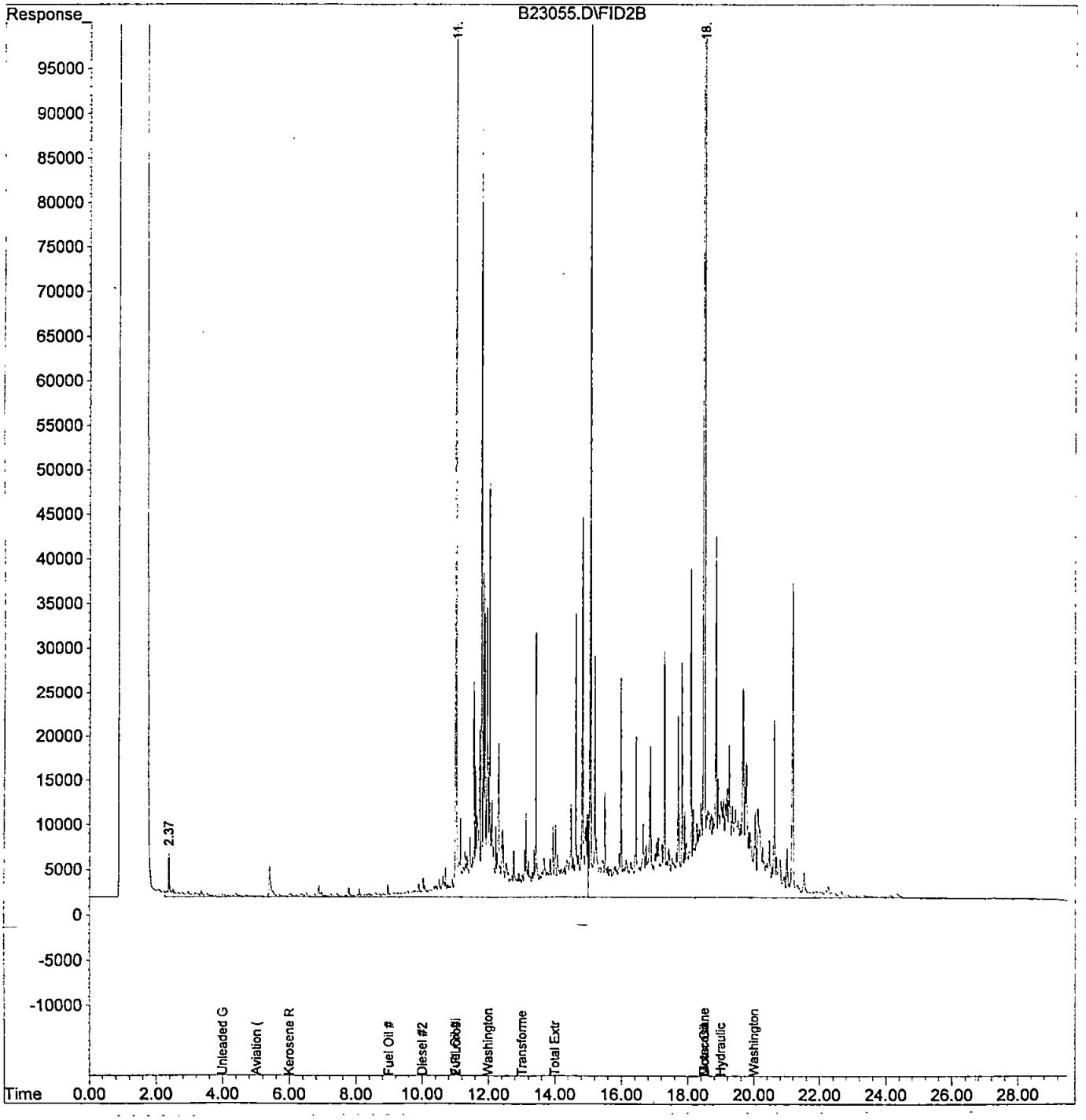


Quantitation Report

Data File : C:\HPCHEM\1\DATA.SEC\B23055.D Vial: 28
Acq On : 24 Feb 1998 3:48 am Operator: ajg
Sample : b802363-25 Inst : GC #1
Misc : W Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 24 9:13 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\1\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Mon Feb 23 09:25:12 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

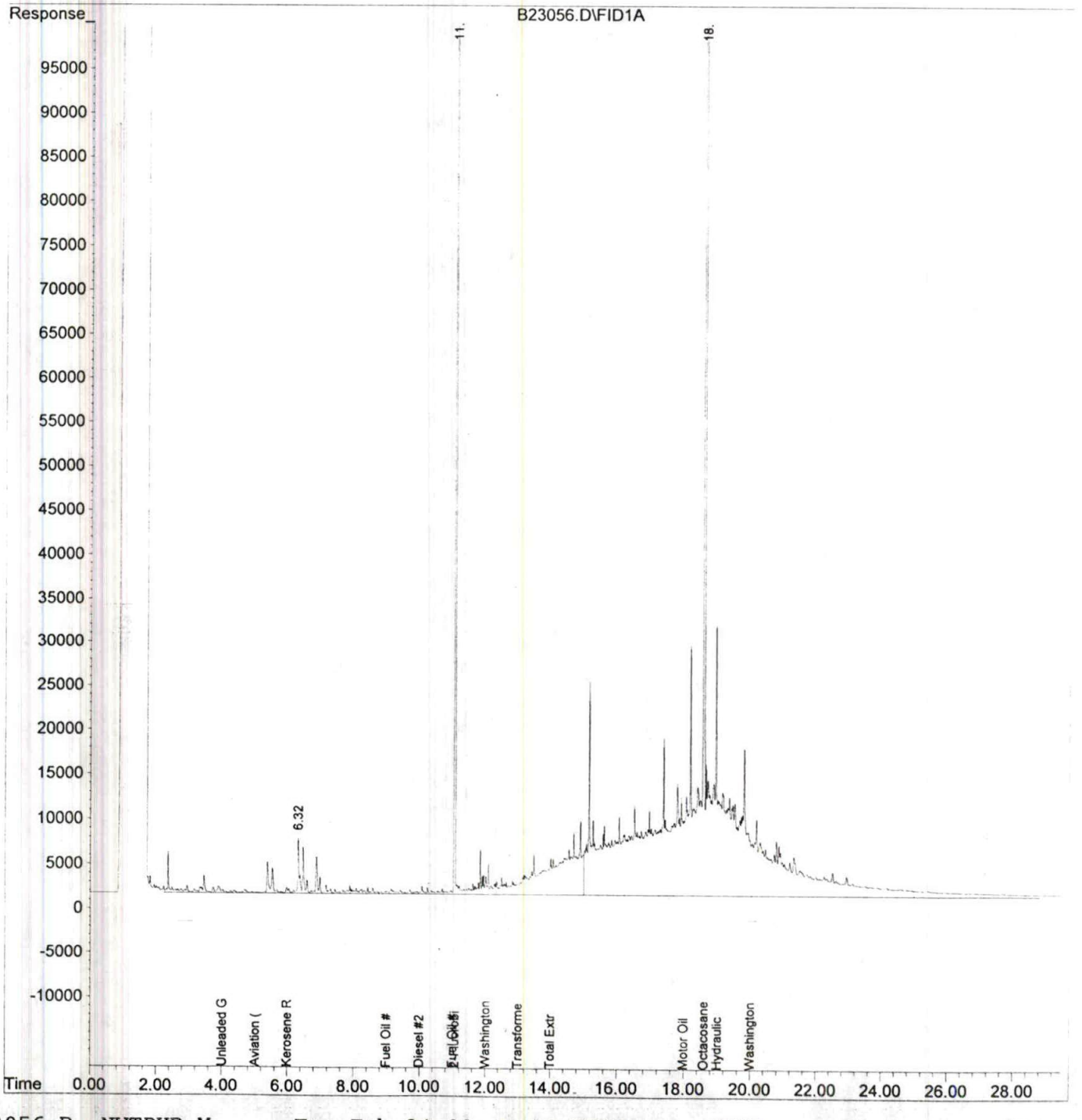


Quantitation Report

Data File : C:\HPCHEM\1\DATA\B23056.D Vial: 29
Acq On : 24 Feb 1998 3:48 am Operator: ajg
Sample : b802363-30 Inst : GC #1
Misc : W Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 24 8:48 1998 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\1\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Mon Feb 23 09:14:19 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



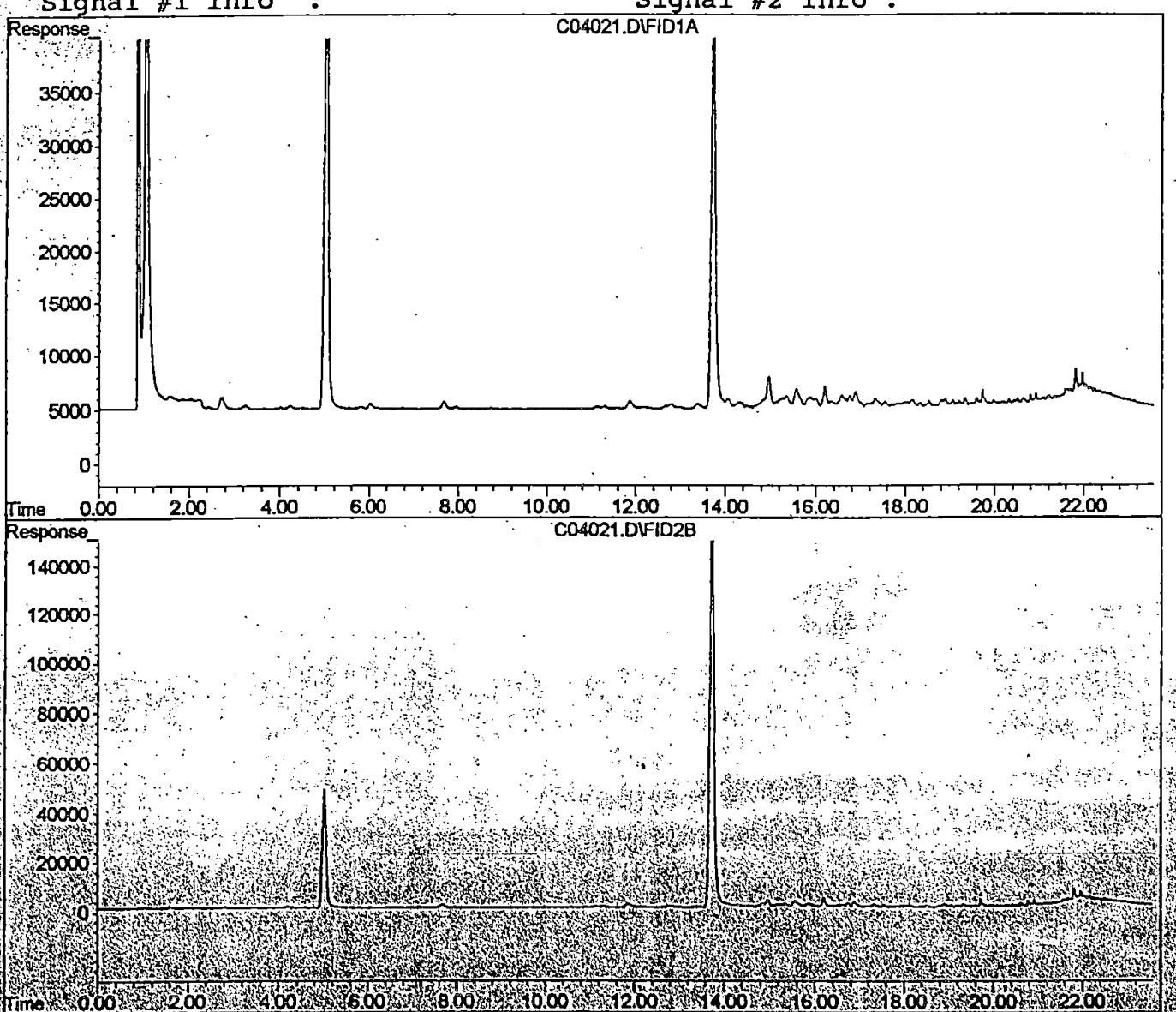
Quantitation Report

Data File : C:\HPCHEM\2\DATA\C04021.D\FID1A.CH Vial: 21
Acq On : 4 Mar 1998 4:41 pm Operator: hsd
Sample : b802363-21 Inst : GC #4
Misc : 100 ul Multiplr: 1.00
IntFile : SURR.E

Data File : C:\HPCHEM\2\DATA\C04021.D\FID2B.CH Vial: 21
Acq On : 4 Mar 98 4:41 pm Operator: hsd
Sample : b802363-21 Inst : GC #4
Misc : 100 ul Multiplr: 1.00
IntFile : SURR2.E
Quant Time: Mar 4 18:11 1998 Quant Results File: VPH.RES

Quant Method : C:\HPCHEM\2\METHODS\VPH.M (Chemstation Integrator)
Title : VPH Water Method
Last Update : Mon Feb 09 08:08:07 1998
Response via : Multiple Level Calibration
DataAcq Meth : VPHS.M

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

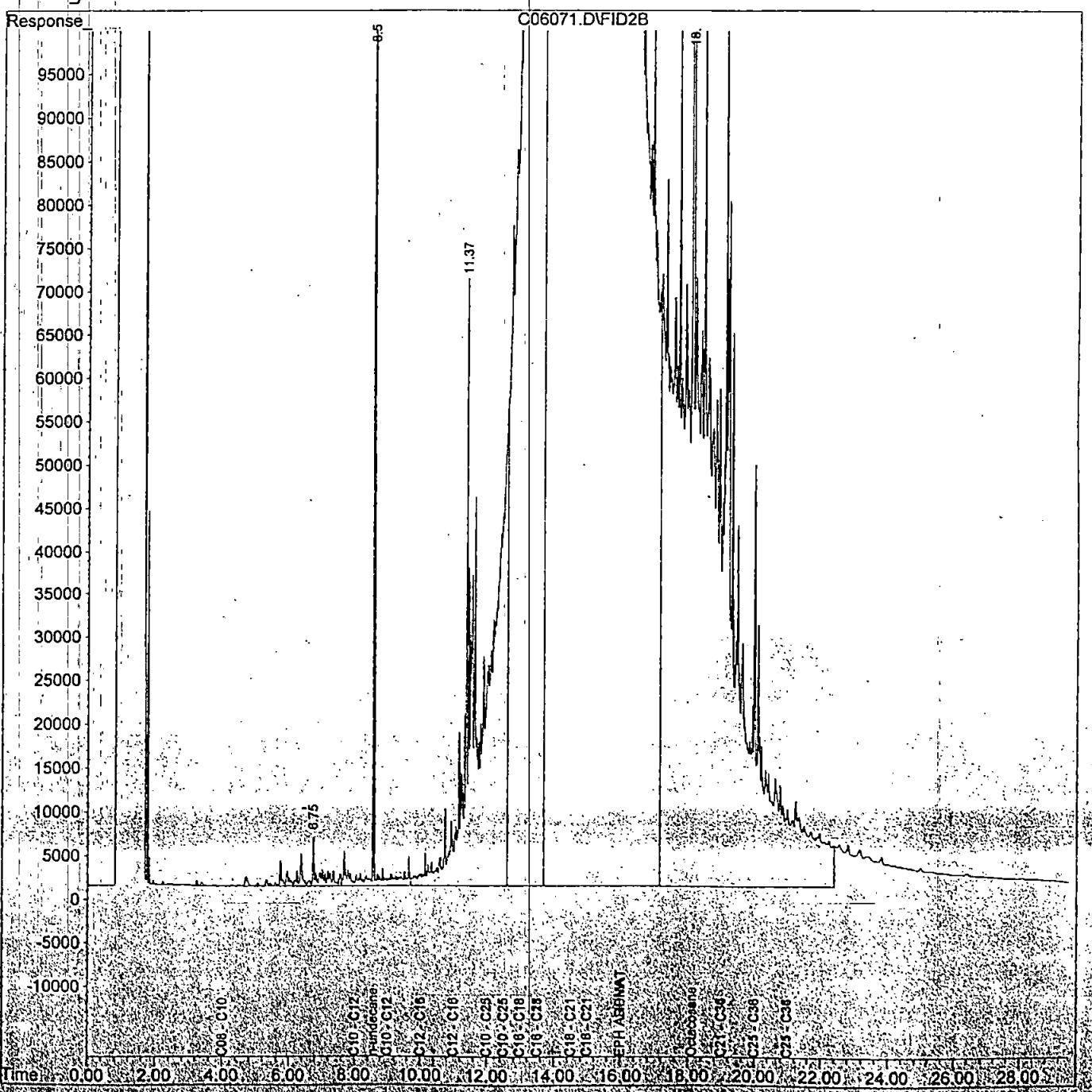


Quantitation Report

Data File : C:\HPCHEM\3\DATA.SEC\C06071.D Vial: 38
Acq On : 7 Mar 1998 5:40 pm Operator: kl
Sample : b802363-21 al Inst : GC #5
Misc : s Multiplr: 1.00
IntFile : SURR.E
Quant Time: Mar 9 8:10 1998 Quant Results File: MTCA2.RES

Quant Method : C:\HPCHEM\3\METHODS\MTCA2.M (Chemstation Integrator)
Title : EPH Rear Method
Last Update : Mon Mar 09 07:48:25 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

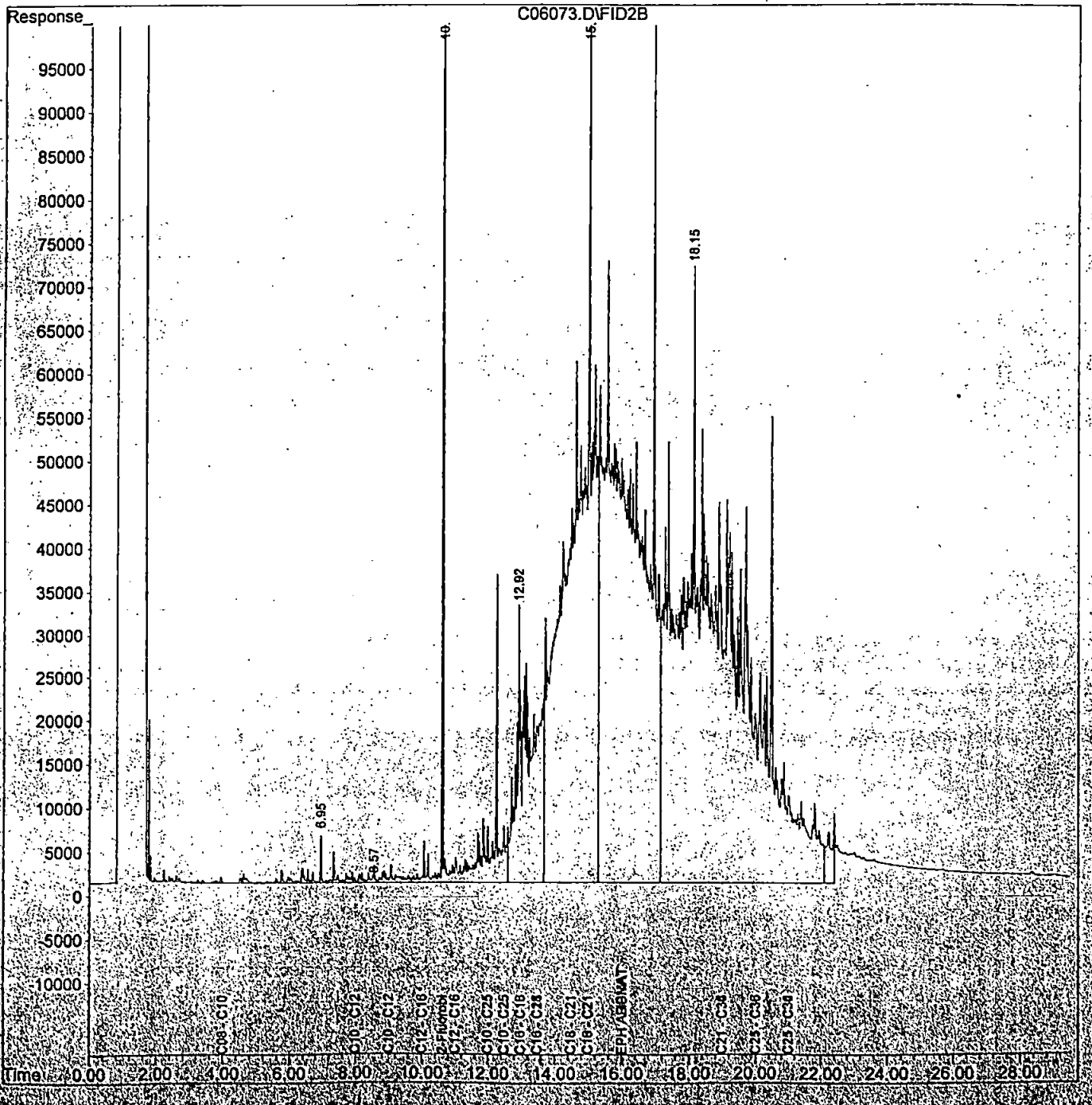


Quantitation Report

Data File : C:\HPCHEM\3\DATA.SEC\C06073.D Vial: 39
Acq On : 7 Mar 1998 6:18 pm Operator: kl
Sample : b802363-21 ar Inst : GC #5
Misc : s Multiplr: 1.00
IntFile : SURR.E
Quant Time: Mar 9 8:36 1998 Quant Results File: MTCA2.RES

Quant Method : C:\HPCHEM\3\METHODS\MTCA2.M (Chemstation Integrator)
Title : EPH Rear Method
Last Update : Mon Mar 09 08:14:16 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B802363

REPORT TO:	INVOICE TO:
ATTENTION: Gary Stevens	ATTENTION: Barry Lombard
ADDRESS: 8410 154 TH Ave Northeast Redmond WA	ADDRESS: PSE
PHONE: (425) - 861-6000 FAX: 425-861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: S. Grady Way	
PROJECT NUMBER: 186-407-85	
SAMPLED BY: TNO	

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: 5 (Standard) | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: NWTPH D extended	PCB by EPA Method 8081	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	GMW-1-0.5	2/18/98 820	B802363-01			S	1	Hold
2.	GMW-1-2.0		02			S	1	Hold
3.	GMW-1-4.0		03	X	X	S	1	
4.	GMW-1-6.0		04			S	1	Hold
5.	GMW-1-8.0		05			S	1	Hold
6.	GMW-1-12.0	↓	06			S	1	Hold
7.								
8.								
9.								
10.								

RELINQUISHED BY (Signature):	DATE: 2/18/98	RECEIVED BY (Signature):	DATE: 2/19/98
PRINT NAME: Tony Ormp	FIRM: EEI TIME: 1900	PRINT NAME: K Barker	FIRM: NCA TIME: 1340
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:

ADDITIONAL REMARKS: D-extended w/ silica gel cleanup

GMW-1-4.0 is Boring No. 1 at a depth of 4 ft bgs

PAGE 1 OF 6

NORTH CREEK ANALYTICAL
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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B802363

REPORT TO:	INVOICE TO:
ATTENTION: Gary Stevens	ATTENTION: Barry Lombard
ADDRESS: 8410 154 TH Ave Northeast Redmond WA	ADDRESS: PSE
PHONE: (425) - 861-6000 FAX: 425-861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: S. Grady Way	
PROJECT NUMBER: 186-407-85	
SAMPLED BY: TNO	

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 Standard | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

Analysis Request: NWTPH D extended; PCB by EPA Method 8081

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	GMW-2-0.5	2/18/98 1020	B802363-07	S	1	Hold
2.	GMW-2-2.0		08	S	1	Hold
3.	GMW-2-4.0		09	S	1	
4.	GMW-2-6.0		10	S	1	Hold
5.	GMW-2-8.0		11	S	1	Hold
6.	GMW-2-12.0	↓	12	S	1	Hold
7.						
8.						
9.						
10.						

RELINQUISHED BY (Signature):	DATE: 2/18/98	RECEIVED BY (Signature):	DATE: 2/19/98
PRINT NAME: Tony Orme	FIRM: GEI TIME: 1700	PRINT NAME: KBaker	FIRM: NCA TIME: 1340
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:

ADDITIONAL REMARKS: D-extended w/ silica gel cleanup
GMW-2-05 is Boring #2 at a depth of 0.5ft bgs

NORTH CREEK ANALYTICAL
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East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B802363

REPORT TO:	INVOICE TO:
ATTENTION: Gary Stevens	ATTENTION: Barry Lombard
ADDRESS: 8410 154 TH Ave Northeast Redmond WA	ADDRESS: PSE
PHONE: (425) - 861-6000 FAX: 425-861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: S. Grady Way	
PROJECT NUMBER: 186-407-85	
SAMPLED BY: TNO	

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: 5 Standard | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

Analysis Request: NWTPH D extended; RCB by EPA Method 8081

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1. GMW-3-0.5	2/13/98 1150	B802363 13	S	1	Hold
2. GMW-3-2.0		14	S	1	Hold
3. GMW-3-4.0		15	S	1	
4. GMW-3-6.0		16	S	1	Hold
5. GMW-3-8.0		17	S	1	Hold
6. GMW-3-12.0	↓	18	S	1	Hold
7.					
8.					
9.					
10.					

X X

RELINQUISHED BY (Signature):	DATE: 2/16/98	RECEIVED BY (Signature):	DATE: 2/19/98
PRINT NAME: Tony Orme	FIRM: GEI TIME: 1700	PRINT NAME: K Barker	FIRM: NCA TIME: 1340
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:

ADDITIONAL REMARKS: D-ext w/ silica gel cleanup

GMW-3-4.0 is Boring B-3 at depth 4'-4.5'

NORTH CREEK ANALYTICAL
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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B802363

REPORT TO:	INVOICE TO:
ATTENTION: Gary Stevens	ATTENTION: Barry Lombard
ADDRESS: 8410 154 TH Ave Northeast Redmond WA	ADDRESS: PSE
PHONE: (425) - 861-6000 FAX: 425-861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: S. Grady Way	
PROJECT NUMBER: 186-407-85	
SAMPLED BY: TNO	

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 (Standard) | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: NWTPH D extended	PCB by EPA Method 8081	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1. GMW-4-0.5	2/18/98 1330	B802363-19			S	1	Hold
2. GMW-4-2.0		20			S	1	Hold
3. ~~GMW-4-4.0~~		21			S	1	No Sample
4. GMW-4-6.0		-21	X	X	S	1	
5. ~~GMW-4-8.0~~					S	1	No Sample
6. GMW-4-12.0		-22			S	1	Hold
7.							
8.							
9.							
10.							

RELINQUISHED BY (Signature):	DATE: 2/19/98	RECEIVED BY (Signature):	DATE: 2/19/98
PRINT NAME: Tony Orme	FIRM: GEI TIME: 1200	PRINT NAME: K Barker	FIRM: NCA TIME: 1340
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:

ADDITIONAL REMARKS: D-ext w/ silica gel clean up
GMW-4-6.0 is Bring # 1 at Depth of Log

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CHAIN OF CUSTODY REPORT

Work Order # B802363

REPORT TO:	INVOICE TO:
ATTENTION: Gary Stevens	ATTENTION: Barry Lombard
ADDRESS: 8410 154 Th Ave Northeast Redmond WA	ADDRESS: PSE
PHONE: (425)-861-6000 FAX: 425-861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: S. Grady Way	
PROJECT NUMBER: 186-407-85	
SAMPLED BY: TNO	

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: 5 (Standard) | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: HWTPH D extended	PCB by EPA Method 8081	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1. GMW-5 0.5	2/18/98 1450	B802363-23			S	1	Hold
2. GMW-5 2.0	↓	24			S	1	Hold
3. GMW-5 4.0		25	X	X	S	1	
4. GMW-5 6.0		26			S	1	Hold
5. GMW-5 8.0		27			S	1	Hold
6. GMW-5 12.0	↓	28			S	1	Hold
7.							
8.							
9.							
10.							

RELINQUISHED BY (Signature):	DATE: 2/18/98	RECEIVED BY (Signature):	DATE: 2/19/98
PRINT NAME: Tony Orme	FIRM: GET TIME: 1700	PRINT NAME: K Barker	FIRM: NCA TIME: 1340
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:

ADDITIONAL REMARKS: D-ext w/ silica gel cleanup
GMW-5-4.0 -> Bring # 5 at depth of 4 ft Lss

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CHAIN OF CUSTODY REPORT

Work Order # B802363

REPORT TO:	INVOICE TO:
ATTENTION: Gary Stevens	ATTENTION: Barry Lombard
ADDRESS: 8410 154 TH Ave Northeast Redmond WA	ADDRESS: PSE
PHONE: (425) - 861-6000 FAX: 425-861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: S. Grady Way	
PROJECT NUMBER: 186-407-85	
SAMPLED BY: TNO	

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: 5 Standard | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: mw TPH D extended	PCB by EPA Method 8081	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1. GMW-6-0.5	2/18/98 1625	B802363 29			S	1	Hold
2. GMW-6-2.0		30			S	1	No sample
3. GMW-6-4.0		30 31	X	X	S	1	
4. GMW-6-6.0		31 32			S	1	Hold
5. GMW-6-8.0		32 33			S	1	Hold
6. GMW-6-12.0		33 34			S	1	Hold
7.							
8.							
9.							
10.							

RELINQUISHED BY (Signature):		DATE: 2/18/98	RECEIVED BY (Signature):		DATE: 2/19/98
PRINT NAME: Tony Crane	FIRM: GET	TIME: 1700	PRINT NAME: Krauter	FIRM: NCA	TIME: 1345
RELINQUISHED BY (Signature):		DATE:	RECEIVED BY (Signature):		DATE:
PRINT NAME:	FIRM:	TIME:	PRINT NAME:	FIRM:	TIME:

ADDITIONAL REMARKS: D-ext w/ Silica gel cleanup

GMW-6-4.0 - Matrix is To Be Sing C at a Depth of 4 ft bgs

LAB DATA EVALUATION FORM

GEI Job # 186-407-85

Lab Job #/Sample IDs: B712489-01 to 04

GEI Sample IDs B-30 to B-33
WATER

Sample Coll Date 12/18/97
Report Recv'd Date 1/7/98

Analysis	Holding Time Exceptions ?	Surrogate Exceptions ?	Blank Hits ?	MS/MSD % Rec Exceptions	Duplicate or MSD RPD Exceptions	Blank Spike or LCS Exceptions (Use if MS/MSD out)
Ecology WTPH-G	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8020 (BETX)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
Ecology WTPH-D Extended	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)
413.1 (FOG)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8010 B Modified	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)
EPA 8270	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
VPH/BETX/MTBE/Naphthalene	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH-SIM	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
E-TPH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
~~HVOC~~						
PCB 8081	No	No	No	No	No	No
Affected Sample Numbers						

Data Acceptable for Intended Use? Yes

Date Comp 3/16/98

Reviewer Initials TNO

Comments:

Exceptions (As shown in report):

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PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/7/98 12:29

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
B-30	B712439-01	Water	12/18/97
B-31	B712439-02	Water	12/18/97
B-32	B712439-03	Water	12/18/97
B-33	B712439-04	Water	12/18/97

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/7/98 12:29

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-30			B712439-01				Water	
Diesel #2	1270666	12/24/97	12/28/97		0.250	ND	mg/l	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Fuel Oil #2	"	"	"		0.500	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	ND	"	
Motor Oil	"	"	"		0.500	ND	"	
Hydraulic Oil	"	"	"		0.500	**3.40**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*56.4*	*%*	
B-31			B712439-02				Water	
Diesel #2	1270666	12/24/97	12/28/97		0.250	ND	mg/l	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Fuel Oil #2	"	"	"		0.500	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	ND	"	
Motor Oil	"	"	"		0.500	ND	"	
Hydraulic Oil	"	"	"		0.500	**1.82**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*64.2*	*%*	
B-32			B712439-03				Water	
Diesel #2	1270666	12/24/97	12/28/97		0.250	ND	mg/l	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Fuel Oil #2	"	"	"		0.500	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	ND	"	
Motor Oil	"	"	"		0.500	ND	"	
Hydraulic Oil	"	"	"		0.500	ND	"	
Diesel Range Hydrocarbons	"	"	"		0.250	**0.972**	"	
Heavy Oil Range Hydrocarbons	"	"	"		0.500	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*61.6*	*%*	
B-33			B712439-04				Water	
Diesel #2	1270666	12/24/97	12/28/97		0.250	ND	mg/l	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Fuel Oil #2	"	"	"		0.500	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	ND	"	
Motor Oil	"	"	"		0.500	ND	"	

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/7/98 12:29

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-33 (continued)			B712439-04				Water	
Hydraulic Oil	1270666	12/24/97	12/28/97		0.500	ND	mg/l	
Diesel Range Hydrocarbons	"	"	"		0.250	**0.250**	"	
Heavy Oil Range Hydrocarbons	"	"	"		0.500	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*75.0*	*%*	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/7/98 12:29

Halogenated Volatile Organics by EPA Method 8010B (modified)
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-32			**B712439-03**				**Water**	
Bromodichloromethane	1270693	12/26/97	12/26/97		1.00	ND	ug/l	
Bromoform	"	"	"		1.00	ND	"	
Bromomethane	"	"	"		1.00	ND	"	
Carbon tetrachloride	"	"	"		1.00	ND	"	
Chlorobenzene	"	"	"		1.00	ND	"	
Chloroethane	"	"	"		1.00	ND	"	
Chloroform	"	"	"		1.00	ND	"	
Chloromethane	"	"	"		1.00	ND	"	
Dibromochloromethane	"	"	"		1.00	ND	"	
1,2-Dichlorobenzene	"	"	"		1.00	ND	"	
1,3-Dichlorobenzene	"	"	"		1.00	ND	"	
1,4-Dichlorobenzene	"	"	"		1.00	ND	"	
1,1-Dichloroethane	"	"	"		1.00	ND	"	
1,2-Dichloroethane	"	"	"		1.00	ND	"	
1,1-Dichloroethene	"	"	"		1.00	ND	"	
cis-1,2-Dichloroethene	"	"	"		1.00	ND	"	
trans-1,2-Dichloroethene	"	"	"		1.00	ND	"	
1,2-Dichloropropane	"	"	"		1.00	ND	"	
cis-1,3-Dichloropropene	"	"	"		1.00	ND	"	
trans-1,3-Dichloropropene	"	"	"		1.00	ND	"	
Methylene chloride	"	"	"		5.00	**6.18**	"	
1,1,2,2-Tetrachloroethane	"	"	"		1.00	ND	"	
Tetrachloroethene	"	"	"		1.00	ND	"	
1,1,1-Trichloroethane	"	"	"		1.00	ND	"	
1,1,2-Trichloroethane	"	"	"		1.00	ND	"	
Trichloroethene	"	"	"		1.00	ND	"	
Trichlorofluoromethane	"	"	"		1.00	ND	"	
Vinyl chloride	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (ELCD)	"	"	"	*50.0-150*		*103*	*%*	
B-33			**B712439-04**				**Water**	
Bromodichloromethane	1270693	12/26/97	12/26/97		1.00	ND	ug/l	
Bromoform	"	"	"		1.00	ND	"	
Bromomethane	"	"	"		1.00	ND	"	
Carbon tetrachloride	"	"	"		1.00	ND	"	
Chlorobenzene	"	"	"		1.00	ND	"	
Chloroethane	"	"	"		1.00	ND	"	
Chloroform	"	"	"		1.00	ND	"	

North Creek Analytical, Inc.

Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/7/98 12:29

Halogenated Volatile Organics by EPA Method 8010B (modified)
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-33 (continued)			B712439-04				Water	
Chloromethane	1270693	12/26/97	12/26/97		1.00	ND	ug/l	
Dibromochloromethane	"	"	"		1.00	ND	"	
1,2-Dichlorobenzene	"	"	"		1.00	ND	"	
1,3-Dichlorobenzene	"	"	"		1.00	ND	"	
1,4-Dichlorobenzene	"	"	"		1.00	ND	"	
1,1-Dichloroethane	"	"	"		1.00	ND	"	
1,2-Dichloroethane	"	"	"		1.00	ND	"	
1,1-Dichloroethene	"	"	"		1.00	ND	"	
cis-1,2-Dichloroethene	"	"	"		1.00	ND	"	
trans-1,2-Dichloroethene	"	"	"		1.00	ND	"	
1,2-Dichloropropane	"	"	"		1.00	ND	"	
cis-1,3-Dichloropropene	"	"	"		1.00	ND	"	
trans-1,3-Dichloropropene	"	"	"		1.00	ND	"	
Methylene chloride	"	"	"		5.00	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		1.00	ND	"	
Tetrachloroethene	"	"	"		1.00	ND	"	
1,1,1-Trichloroethane	"	"	"		1.00	ND	"	
1,1,2-Trichloroethane	"	"	"		1.00	ND	"	
Trichloroethene	"	"	"		1.00	ND	"	
Trichlorofluoromethane	"	"	"		1.00	ND	"	
Vinyl chloride	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (ELCD)	"	"	"	*50.0-150*		*102*	*%*	

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PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/7/98 12:29

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-30			**B712439-01**				Water	1,2
Aroclor 1016	1270631	12/23/97	12/29/97		0.100	ND	ug/l	
Aroclor 1221	"	"	"		0.100	ND	"	
Aroclor 1232	"	"	"		0.100	ND	"	
Aroclor 1242	"	"	"		0.100	ND	"	
Aroclor 1248	"	"	"		0.100	ND	"	
Aroclor 1254	"	"	"		0.100	ND	"	
Aroclor 1260	"	"	"		0.100	ND	"	
Aroclor 1262	"	"	"		0.100	ND	"	
Aroclor 1268	"	"	"		0.100	ND	"	
Surrogate: TCX	"	"	"	*40.0-130*		*62.4*	%	
B-31			**B712439-02**				Water	1,2
Aroclor 1016	1270631	12/23/97	12/29/97		0.100	ND	ug/l	
Aroclor 1221	"	"	"		0.100	ND	"	
Aroclor 1232	"	"	"		0.100	ND	"	
Aroclor 1242	"	"	"		0.100	ND	"	
Aroclor 1248	"	"	"		0.100	ND	"	
Aroclor 1254	"	"	"		0.100	ND	"	
Aroclor 1260	"	"	"		0.100	ND	"	
Aroclor 1262	"	"	"		0.100	ND	"	
Aroclor 1268	"	"	"		0.100	ND	"	
Surrogate: TCX	"	"	"	*40.0-130*		*42.6*	%	
B-32			**B712439-03**				Water	1,2
Aroclor 1016	1270631	12/23/97	12/29/97		0.100	ND	ug/l	
Aroclor 1221	"	"	"		0.100	ND	"	
Aroclor 1232	"	"	"		0.100	ND	"	
Aroclor 1242	"	"	"		0.100	ND	"	
Aroclor 1248	"	"	"		0.100	ND	"	
Aroclor 1254	"	"	"		0.100	ND	"	
Aroclor 1260	"	"	"		0.100	ND	"	
Aroclor 1262	"	"	"		0.100	ND	"	
Aroclor 1268	"	"	"		0.100	ND	"	
Surrogate: TCX	"	"	"	*40.0-130*		*41.5*	%	

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*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager

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SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/7/98 12:29

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes
B-33 (continued)			B712439-04				Water	1,2
Aroclor 1016	1270794	12/30/97	1/5/98		0.100	ND	ug/l	
Aroclor 1221	"	"	"		0.100	ND	"	
Aroclor 1232	"	"	"		0.100	ND	"	
Aroclor 1242	"	"	"		0.100	ND	"	
Aroclor 1248	"	"	"		0.100	ND	"	
Aroclor 1254	"	"	"		0.100	ND	"	
Aroclor 1260	"	"	"		0.100	ND	"	
Aroclor 1262	"	"	"		0.100	ND	"	
Aroclor 1268	"	"	"		0.100	ND	"	
Surrogate: TCX	"	"	"	*40.0-130*		*46.8*	*%*	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/7/98 12:29

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270666	**Date Prepared: 12/24/97**					**Extraction Method: EPA 3520/600 Series**				
Blank	**1270666-BLK1**									
Diesel #2	12/27/97			ND	mg/l	0.250				
Kerosene Range Hydrocarbons	"			ND	"	0.250				
Fuel Oil #2	"			ND	"	0.500				
Fuel Oil #6 (Bunker C)	"			ND	"	0.500				
Transformer Oil	"			ND	"	0.500				
Motor Oil	"			ND	"	0.500				
Hydraulic Oil	"			ND	"	0.500				
Diesel Range Hydrocarbons	"			ND	"	0.250				
Heavy Oil Range Hydrocarbons	"			ND	"	0.500				
Surrogate: 2-FBP	"	*0.364*		*0.296*	"	*50.0-150*	*81.3*			
LCS	**1270666-BS1**									
Diesel #2	12/27/97	2.00		1.79	mg/l	50.0-150	89.5			
Surrogate: 2-FBP	"	*0.364*		*0.314*	"	*50.0-150*	*86.3*			
LCS Dup	**1270666-BSD1**									
Diesel #2	12/27/97	2.00		1.65	mg/l	50.0-150	82.5	50.0	8.14	
Surrogate: 2-FBP	"	*0.364*		*0.288*	"	*50.0-150*	*79.1*			

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**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/7/98 12:29

Halogenated Volatile Organics by EPA Method 8010B (modified)/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270693	**Date Prepared: 12/26/97**					**Extraction Method: EPA 5030 [P/T]**				
Blank	**1270693-BLK1**									
Bromodichloromethane	12/26/97			ND	ug/l	1.00				
Bromoform	"			ND	"	1.00				
Bromomethane	"			ND	"	1.00				
Carbon tetrachloride	"			ND	"	1.00				
Chlorobenzene	"			ND	"	1.00				
Chloroethane	"			ND	"	1.00				
Chloroform	"			ND	"	1.00				
Chloromethane	"			ND	"	1.00				
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				
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				
1,1,2,2-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: 4-BFB (ELCD)	"		*4.00*	*3.99*	"	*50.0-150*	*99.8*			
LCS	**1270693-BS1**									
Chlorobenzene	12/26/97		10.0	9.44	ug/l	70.0-130	94.4			
1,1-Dichloroethene	"		10.0	8.29	"	70.0-130	82.9			
Trichloroethene	"		10.0	10.1	"	70.0-130	101			
Surrogate: 4-BFB (ELCD)	"		*4.00*	*3.65*	"	*50.0-150*	*91.3*			

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/7/98 12:29

Halogenated Volatile Organics by EPA Method 8010B (modified)/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Matrix Spike	1270693-MS1		B712384-01							
Chlorobenzene	12/26/97	10.0	ND	9.65	ug/l	70.0-130	**96.5**			
1,1-Dichloroethene	"	10.0	ND	7.04	"	70.0-130	**70.4**			
Trichloroethene	"	10.0	ND	9.06	"	70.0-130	**90.6**			
Surrogate: 4-BFB (ELCD)	"	*4.00*		*3.59*	"	*50.0-150*	*89.7*			
Matrix Spike Dup	1270693-MSD1		B712384-01							
Chlorobenzene	12/26/97	10.0	ND	9.19	ug/l	70.0-130	**91.9**	20.0	**4.88**	
1,1-Dichloroethene	"	10.0	ND	7.52	"	70.0-130	**75.2**	20.0	**6.59**	
Trichloroethene	"	10.0	ND	9.58	"	70.0-130	**95.8**	20.0	**5.58**	
Surrogate: 4-BFB (ELCD)	"	*4.00*		*3.64*	"	*50.0-150*	*91.0*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/7/98 12:29

Polychlorinated Biphenyls by EPA Method 8081/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270631	**Date Prepared: 12/23/97**					**Extraction Method: EPA 3520/600 Series**				
Blank	**1270631-BLK1**									1,2
Aroclor 1016	12/29/97			ND	ug/l	0.100				
Aroclor 1221	"			ND	"	0.100				
Aroclor 1232	"			ND	"	0.100				
Aroclor 1242	"			ND	"	0.100				
Aroclor 1248	"			ND	"	0.100				
Aroclor 1254	"			ND	"	0.100				
Aroclor 1260	"			ND	"	0.100				
Aroclor 1262	"			ND	"	0.100				
Aroclor 1268	"			ND	"	0.100				
Surrogate: TCX	"	*0.200*		*0.118*	"	*40.0-130*	*59.0*			
LCS	**1270631-BS1**									1,2
Aroclor 1260	12/29/97	10.0		7.56	ug/l	33.0-122	75.6			
Surrogate: TCX	"	*0.200*		*0.113*	"	*40.0-130*	*56.5*			
LCS Dup	**1270631-BSD1**									1,2
Aroclor 1260	12/29/97	10.0		8.45	ug/l	33.0-122	84.5	21.0	11.1	
Surrogate: TCX	"	*0.200*		*0.150*	"	*40.0-130*	*75.0*			
Batch: 1270794	**Date Prepared: 12/30/97**					**Extraction Method: EPA 3520/600 Series**				
Blank	**1270794-BLK1**									1,2,3
Aroclor 1016	1/5/98			ND	ug/l	0.100				
Aroclor 1221	"			ND	"	0.100				
Aroclor 1232	"			ND	"	0.100				
Aroclor 1242	"			ND	"	0.100				
Aroclor 1248	"			ND	"	0.100				
Aroclor 1254	"			ND	"	0.100				
Aroclor 1260	"			ND	"	0.100				
Aroclor 1262	"			ND	"	0.100				
Aroclor 1268	"			ND	"	0.100				
Surrogate: TCX	"	*0.200*		*0.167*	"	*40.0-130*	*83.5*			
LCS	**1270794-BS1**									1,2,3
Aroclor 1260	1/5/98	10.0		9.47	ug/l	33.0-122	94.7			
Surrogate: TCX	"	*0.200*		*0.168*	"	*40.0-130*	*84.0*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/7/98 12:29

Polychlorinated Biphenyls by EPA Method 8081/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
LCS Dup	1270794-BSD1									1,2,3
Aroclor 1260	1/5/98	10.0		9.44	ug/l	33.0-122	94.4	21.0	0.317	
Surrogate: TCX	"	*0.200*		*0.177*	"	*40.0-130*	*88.5*			

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/18/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/19/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/7/98 12:29

Notes and Definitions

#	Note
1	To reduce matrix interference, the sample extract has undergone copper clean-up, method 3660, which is specific to sulfur contamination.
2	To reduce matrix interference, the sample extract has undergone sulfuric acid clean-up, method 3665, which is specific to hydrocarbon contamination.
3	To reduce matrix interference, the sample extract has undergone florisil clean-up, method 3620, which is specific to non-polar compound contamination.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

Joy B Chang, Project Manager

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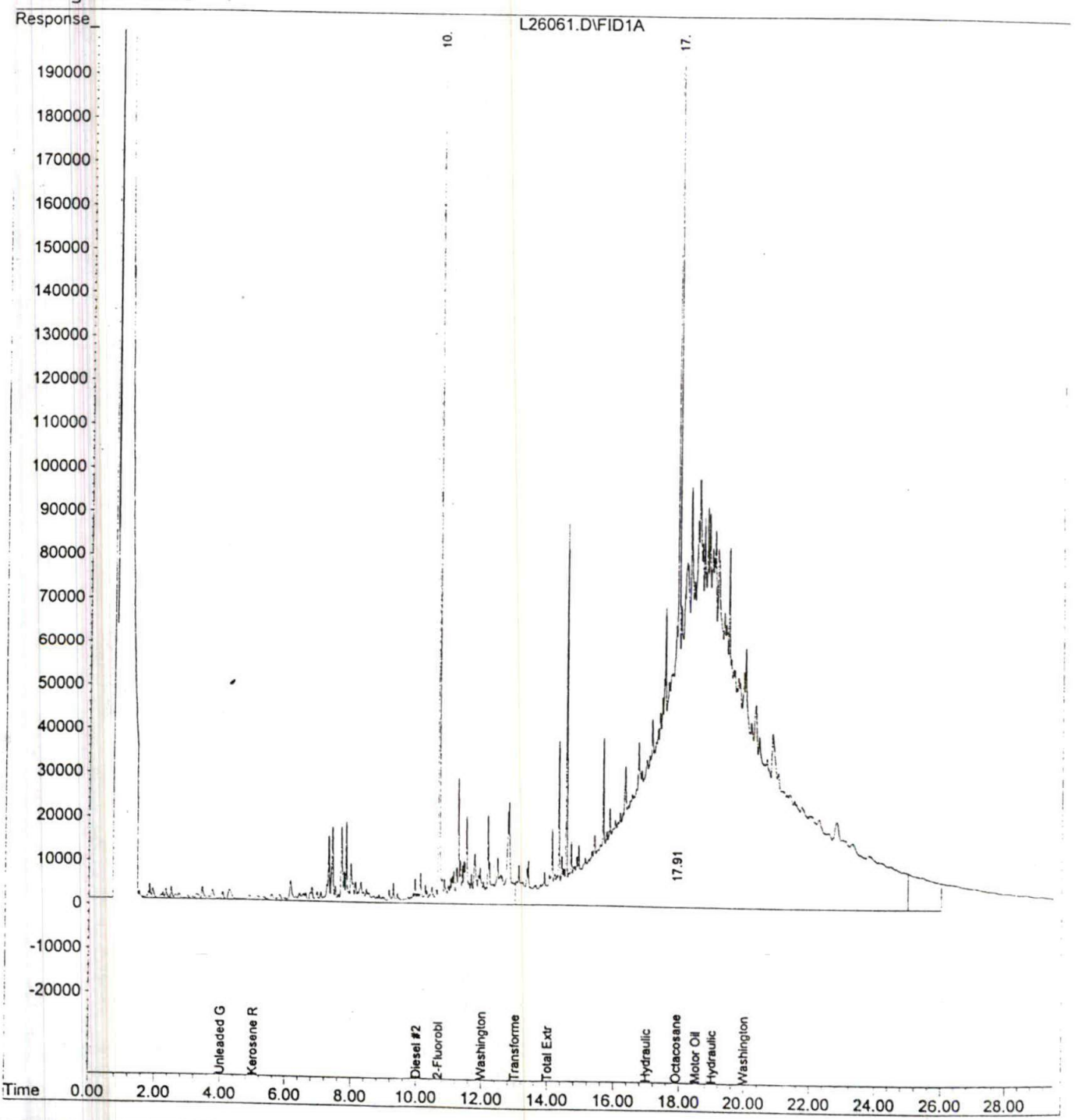
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26061.D
Acq On : 28 Dec 1997 1:51 am
Sample : b712439-01
Misc : W
IntFile : SURR.E
Quant Time: Dec 29 8:10 1997 Quant Results File: NWTPHD.RES

Vial: 41
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



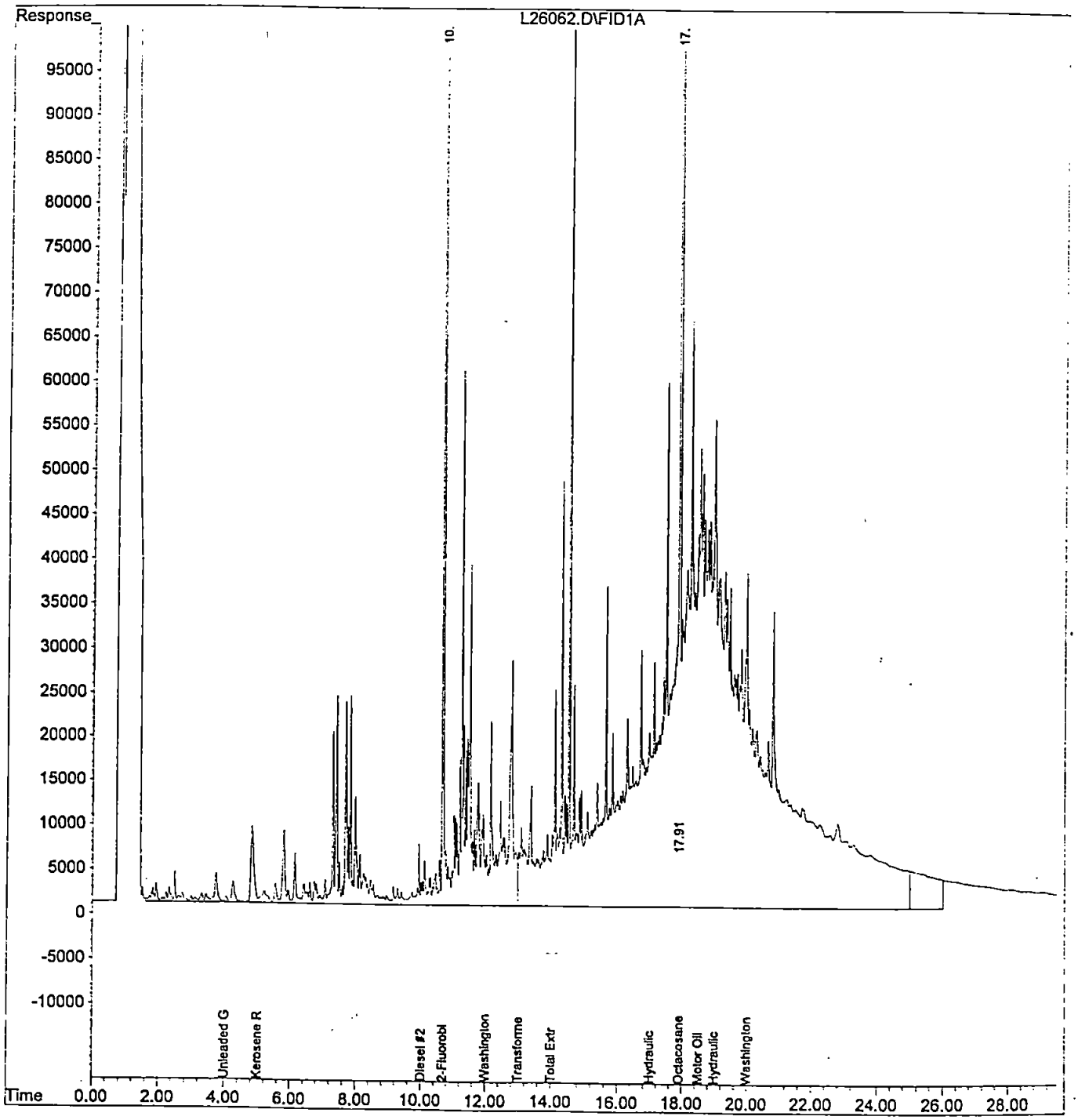
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26062.D
Acq On : 28 Dec 1997 2:28 am
Sample : b712439-02
Misc : W
IntFile : SURR.E
Quant Time: Dec 29 8:11 1997 Quant Results File: NWTPHD.RES

Vial: 42
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



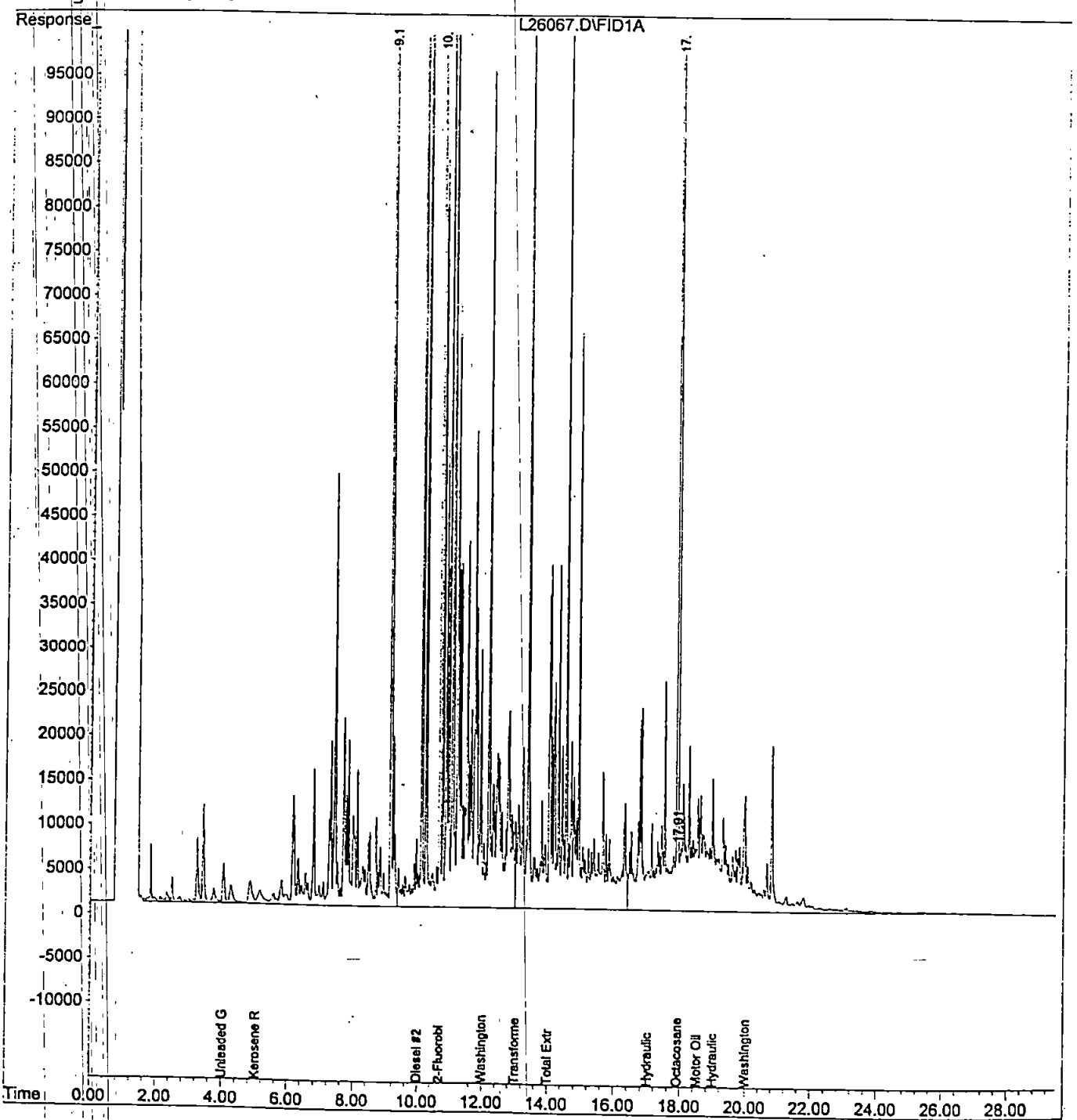
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26067.D
Acq On : 28 Dec 1997 5:31 am
Sample : b712439-03
Misc : W
IntFile : SURR.E
Quant Time: Dec 29 8:15 1997 Quant Results File: NWTPHD.RES

Vial: 43
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

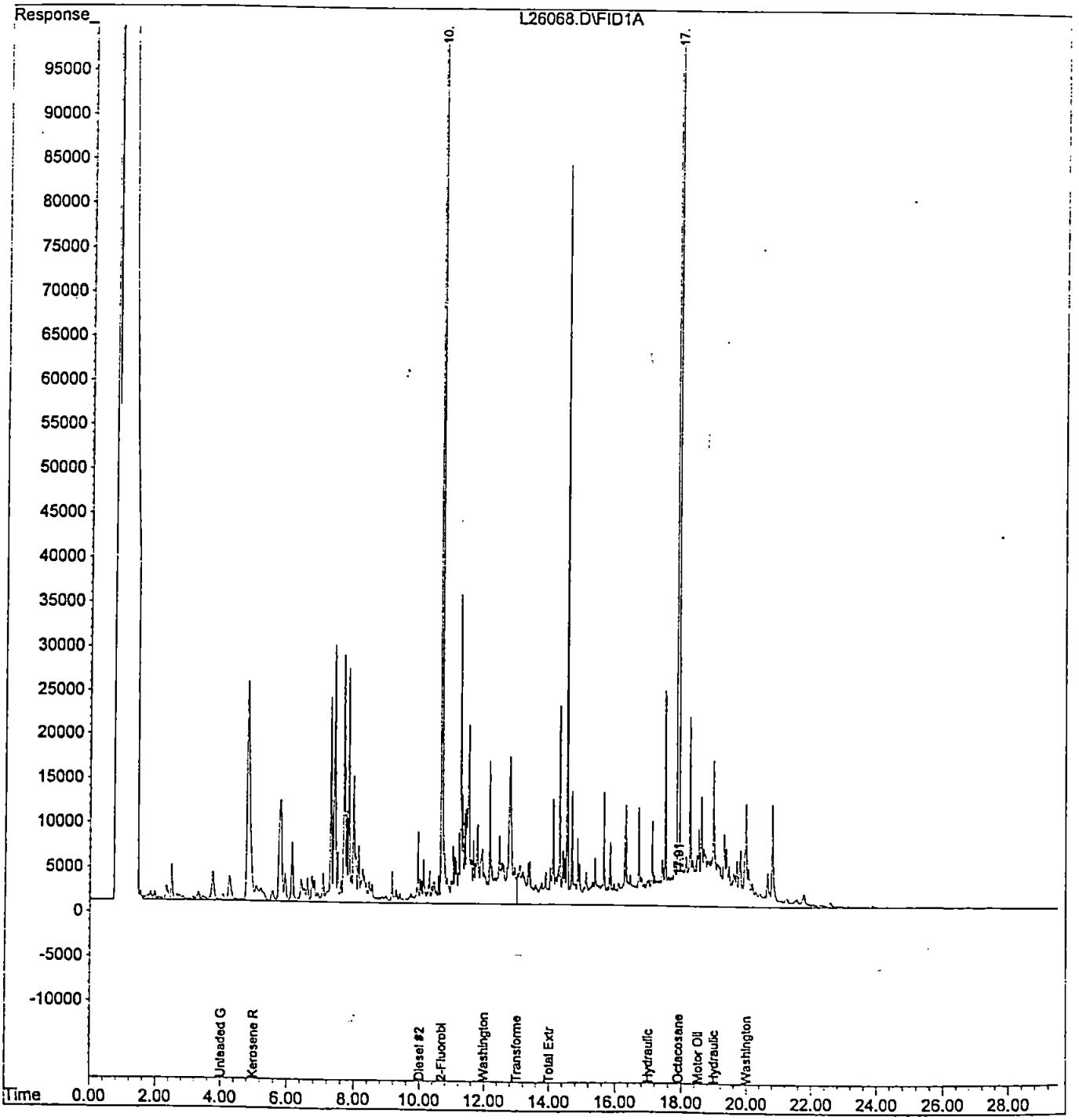
Volume Inj. :
Signal Phase :
Signal Info :



Data File : C:\HPCHEM\2\DATA\L26068.D
Acq On : 28 Dec 1997 6:07 am
Sample : b712439-04
Misc : W
IntFile : SURR.E
Vial: 44
Operator: bc
Inst : GC #3
Multiplr: 1.00
Quant Time: Dec 29 8:16 1997 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



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CHAIN OF CUSTODY REPORT

Work Order # B712439

REPORT TO:	INVOICE TO:
ATTENTION: Gary Stevens	ATTENTION: PSE
ADDRESS: 8410 154th Ave NE	ADDRESS:
REDMOND WA	
PHONE: 425-861-6000 FAX: 425-861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: Gandy Way	
PROJECT NUMBER: 186-407-85	
SAMPLED BY: TNO/GRS	

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: [10] Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: [5] Standard | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: NWTPH-Dext Trans Stm & oil STD	PCB by EPA 8081	HVOC by EPA 8010	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	B-30	12/10/97 1345	B712439-01	X	X		W	5	
2.	B-31	12/10/97 1430	-02	X	X		W	5	
3.	B-32	12/10/97 1115	-03	X	X	X	W	5	
4.	B-33	12/10/97 1205	-04	X	X	X	W	5	
5.									
6.									
7.									
8.									
9.									
10.									

RELINQUISHED BY (Signature):	DATE: 12/14/97	RECEIVED BY (Signature): KBarker	DATE: 12/9/97
PRINT NAME: Tony Orme	FIRM: GEI TIME: 900	PRINT NAME: Kendra Barker	FIRM: NCA TIME: 1315
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:

ADDITIONAL REMARKS: Dext w silica gel clean up

13.2 WCS

PAGE OF

LAB DATA EVALUATION FORM

Page _____ of _____

GEI Job # 186-407-85

Lab Job #/Sample IDs: B7125 12-01 to 03

GEI Sample IDs B-36 - B-34 Waters

Sample Coll Date 12/22/97

Report Recv'd Date

Analysis	Holding Time Exceptions ?	Surrogate Exceptions ?	Blank Hits ?	MS/MSD % Rec Exceptions	Duplicate or MSD RPD Exceptions	Blank Spike or LCS Exceptions (Use if MS/MSD out)
Ecology WTPH-G	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8020 (BETX)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
Ecology WTPH-D Extended	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)
413.1 (FOG)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8010	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8270	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
VPH/BETX/MTBE/Naphthalene	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH-SIM	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)
E-TPH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
PCBs 8081	No	No	No	No	No	No
Affected Sample Numbers						

Data Acceptable for Intended Use? Yes

Date Comp. 3/16/98

Reviewer Initials TDO

Comments:

Exceptions (As shown in report):

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

GeoEngineers

JAN 0 9 1998

Routing JRS

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 11:33

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
B-36	B712512-01	Water	12/22/97
B-34	B712512-02	Water	12/22/97
B-35	B712512-03	Water	12/22/97

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 11:33

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-36			B712512-01				Water	
Diesel #2	1270705	12/26/97	12/30/97		0.250	ND	mg/l	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Fuel Oil #2	"	"	"		0.500	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	**1.69**	"	
Motor Oil	"	"	"		0.500	ND	"	
Hydraulic Oil	"	"	"		0.500	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		0.500	**0.984**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*61.3*	%	
B-34			B712512-02				Water	
Diesel #2	1270705	12/26/97	12/30/97		0.250	ND	mg/l	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Fuel Oil #2	"	"	"		0.500	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	**0.858**	"	
Motor Oil	"	"	"		0.500	ND	"	
Hydraulic Oil	"	"	"		0.500	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		0.500	**0.772**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*81.1*	%	
B-35			B712512-03				Water	
Diesel #2	1270705	12/26/97	12/30/97		0.250	ND	mg/l	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Fuel Oil #2	"	"	"		0.500	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	ND	"	
Motor Oil	"	"	"		0.500	ND	"	
Hydraulic Oil	"	"	"		0.500	ND	"	
Diesel Range Hydrocarbons	"	"	"		0.250	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		0.500	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*88.1*	%	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 11:33

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-36			B712512-01				Water	1,2,3
Aroclor 1016	1270710	12/26/97	1/7/98		0.100	ND	ug/l	
Aroclor 1221	"	"	"		0.100	ND	"	
Aroclor 1232	"	"	"		0.100	ND	"	
Aroclor 1242	"	"	"		0.100	**0.856**	"	
Aroclor 1248	"	"	"		0.100	ND	"	
Aroclor 1254	"	"	"		0.100	ND	"	
Aroclor 1260	"	"	"		0.100	**1.96**	"	
Aroclor 1262	"	"	"		0.100	ND	"	
Aroclor 1268	"	"	"		0.100	ND	"	
Surrogate: TCX	"	"	"	*40.0-130*		*59.6*	*%*	
B-34			B712512-02				Water	1,2,3
Aroclor 1016	1270710	12/26/97	1/7/98		0.100	ND	ug/l	
Aroclor 1221	"	"	"		0.100	ND	"	
Aroclor 1232	"	"	"		0.100	ND	"	
Aroclor 1242	"	"	"		0.100	ND	"	
Aroclor 1248	"	"	"		0.100	ND	"	
Aroclor 1254	"	"	"		0.100	ND	"	
Aroclor 1260	"	"	"		0.100	**0.260**	"	
Aroclor 1262	"	"	"		0.100	ND	"	
Aroclor 1268	"	"	"		0.100	ND	"	
Surrogate: TCX	"	"	"	*40.0-130*		*55.6*	*%*	
B-35			B712512-03				Water	1,2,3
Aroclor 1016	1270710	12/26/97	1/7/98		0.100	ND	ug/l	
Aroclor 1221	"	"	"		0.100	ND	"	
Aroclor 1232	"	"	"		0.100	ND	"	
Aroclor 1242	"	"	"		0.100	ND	"	
Aroclor 1248	"	"	"		0.100	ND	"	
Aroclor 1254	"	"	"		0.100	ND	"	
Aroclor 1260	"	"	"		0.100	ND	"	
Aroclor 1262	"	"	"		0.100	ND	"	
Aroclor 1268	"	"	"		0.100	ND	"	
Surrogate: TCX	"	"	"	*40.0-130*		*87.4*	*%*	

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**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 11:33

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-36			**B712512-01**				**Water**	
Acenaphthene	1270748	12/29/97	1/2/98		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenz (a,h) anthracene	"	"	"		0.100	ND	"	
Fluoranthene	"	"	"		0.300	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.300	ND	"	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.300	ND	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*75.9*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*127*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*100*	"	
B-34			**B712512-02**				**Water**	
Acenaphthene	1270748	12/29/97	1/2/98		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	**0.189**	"	
Benzo (a) pyrene	"	"	"		0.100	**0.132**	"	
Benzo (b) fluoranthene	"	"	"		0.100	**0.189**	"	
Benzo (ghi) perylene	"	"	"		0.100	**0.113**	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	**0.189**	"	
Dibenz (a,h) anthracene	"	"	"		0.100	ND	"	
Fluoranthene	"	"	"		0.300	**0.377**	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	**0.132**	"	
Naphthalene	"	"	"		0.300	ND	"	
Phenanthrene	"	"	"		0.100	**0.358**	"	
Pyrene	"	"	"		0.300	**0.453**	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*73.5*	*%*	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 11:33

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-34 (continued)			**B712512-02**				**Water**	
Surrogate: Nitrobenzene-d5	*1270748*	*12/29/97*	*1/2/98*	*30.0-150*		*129*	*%*	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*100*	"	

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 11:33

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270705	**Date Prepared: 12/26/97**					**Extraction Method: EPA 3520/600 Series**				
Blank	**1270705-BLK1**									
Diesel #2	12/29/97			ND	mg/l	0.250				
Kerosene Range Hydrocarbons	"			ND	"	0.250				
Fuel Oil #2	"			ND	"	0.500				
Fuel Oil #6 (Bunker C)	"			ND	"	0.500				
Transformer Oil	"			ND	"	0.500				
Motor Oil	"			ND	"	0.500				
Hydraulic Oil	"			ND	"	0.500				
Diesel Range Hydrocarbons	"			ND	"	0.250				
Heavy Oil Range Hydrocarbons	"			ND	"	0.500				
Surrogate: 2-FBP	"	*0.364*		*0.321*	"	*50.0-150*	*88.2*			
LCS	**1270705-BS1**									
Diesel #2	12/29/97	2.00		2.06	mg/l	50.0-150	103			
Surrogate: 2-FBP	"	*0.364*		*0.345*	"	*50.0-150*	*94.8*			
LCS Dup	**1270705-BSD1**									
Diesel #2	12/30/97	2.00		2.05	mg/l	50.0-150	102	50.0	0.976	
Surrogate: 2-FBP	"	*0.364*		*0.343*	"	*50.0-150*	*94.2*			

North Creek Analytical, Inc.

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 11:33

Polychlorinated Biphenyls by EPA Method 8081/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270710	**Date Prepared: 12/26/97**					**Extraction Method: EPA 3520/600 Series**				
Blank	**1270710-BLK1**									1,2,3
Aroclor 1221	12/30/98			ND	ug/l	0.100				
Aroclor 1232	"			ND	"	0.100				
Aroclor 1242	"			ND	"	0.100				
Aroclor 1248	"			ND	"	0.100				
Aroclor 1254	"			ND	"	0.100				
Aroclor 1260	"			ND	"	0.100				
Aroclor 1262	"			ND	"	0.100				
Aroclor 1268	"			ND	"	0.100				
Surrogate: TCX	"	*0.200*		*0.198*	"	*40.0-130*	*99.0*			
LCS	**1270710-BS1**									1,2,3
Aroclor 1260	12/30/98	10.0		9.81	ug/l	33.0-122	98.1			
Surrogate: TCX	"	*0.200*		*0.203*	"	*40.0-130*	*101*			
LCS Dup	**1270710-BSD1**									1,2,3
Aroclor 1260	12/30/98	10.0		9.89	ug/l	33.0-122	98.9	21.0	0.812	
Surrogate: TCX	"	*0.200*		*0.213*	"	*40.0-130*	*106*			

North Creek Analytical, Inc.

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 11:33

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270748	Date Prepared: 12/29/97					Extraction Method: EPA 3520/600 Series				
Blank	1270748-BLK1									
Acenaphthene	1/2/98			ND	ug/l	0.100				
Acenaphthylene	"			ND	"	0.100				
Anthracene	"			ND	"	0.100				
Benzo (a) anthracene	"			ND	"	0.100				
Benzo (a) pyrene	"			ND	"	0.100				
Benzo (b) fluoranthene	"			ND	"	0.100				
Benzo (ghi) perylene	"			ND	"	0.100				
Benzo (k) fluoranthene	"			ND	"	0.100				
Chrysene	"			ND	"	0.100				
Dibenz (a,h) anthracene	"			ND	"	0.100				
Fluoranthene	"			ND	"	0.300				
Fluorene	"			ND	"	0.100				
Indeno (1,2,3-cd) pyrene	"			ND	"	0.100				
Naphthalene	"			ND	"	0.300				
Phenanthrene	"			ND	"	0.100				
Pyrene	"			ND	"	0.300				
Surrogate: 2-FBP	"	*50.0*		*38.1*	"	*30.0-150*	*76.2*			
Surrogate: Nitrobenzene-d5	"	*50.0*		*56.7*	"	*30.0-150*	*113*			
Surrogate: p-Terphenyl-d14	"	*50.0*		*56.0*	"	*30.0-150*	*112*			
LCS	1270748-BS1									
Chrysene	1/2/98	2.01		1.96	ug/l	50.0-150	97.5			
Fluorene	"	2.01		2.20	"	50.0-150	109			
Indeno (1,2,3-cd) pyrene	"	2.00		2.62	"	50.0-150	131			
Surrogate: 2-FBP	"	*50.0*		*39.6*	"	*30.0-150*	*79.2*			
Surrogate: Nitrobenzene-d5	"	*50.0*		*59.1*	"	*30.0-150*	*118*			
Surrogate: p-Terphenyl-d14	"	*50.0*		*54.5*	"	*30.0-150*	*109*			
LCS Dup	1270748-BSD1									
Chrysene	1/2/98	2.01		2.00	ug/l	50.0-150	99.5	25.0	2.03	
Fluorene	"	2.01		2.14	"	50.0-150	106	25.0	2.79	
Indeno (1,2,3-cd) pyrene	"	2.00		2.62	"	50.0-150	131	25.0	0	
Surrogate: 2-FBP	"	*50.0*		*36.8*	"	*30.0-150*	*73.6*			
Surrogate: Nitrobenzene-d5	"	*50.0*		*58.9*	"	*30.0-150*	*118*			
Surrogate: p-Terphenyl-d14	"	*50.0*		*54.7*	"	*30.0-150*	*109*			

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 11:33

Notes and Definitions

#	Note
1	To reduce matrix interference, the sample extract has undergone copper clean-up, method 3660, which is specific to sulfur contamination.
2	To reduce matrix interference, the sample extract has undergone florisil clean-up, method 3620, which is specific to non-polar compound contamination.
3	To reduce matrix interference, the sample extract has undergone sulfuric acid clean-up, method 3665, which is specific to hydrocarbon contamination.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

Joy B Chang, Project Manager

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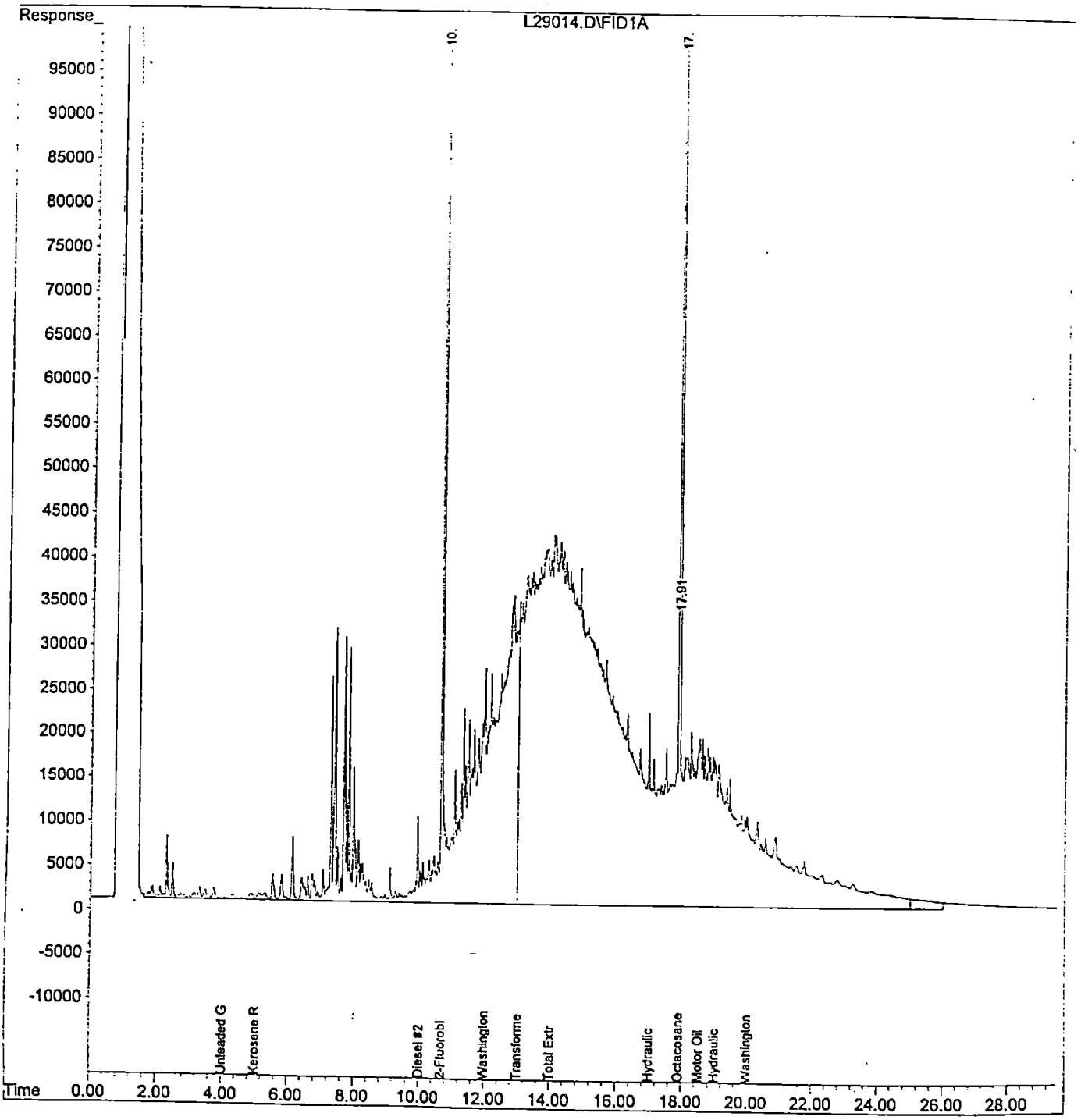
Data File : C:\HPCHEM\2\DATA\L29014.D
Acq On : 30 Dec 1997 12:41 am
Sample : b712512-01
Misc : W
IntFile : SURR.E
Quant Time: Dec 30 9:02 1997 Quant Results File: NWTPHD.RES

Vial: 10
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Dec 30 08:48:52 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

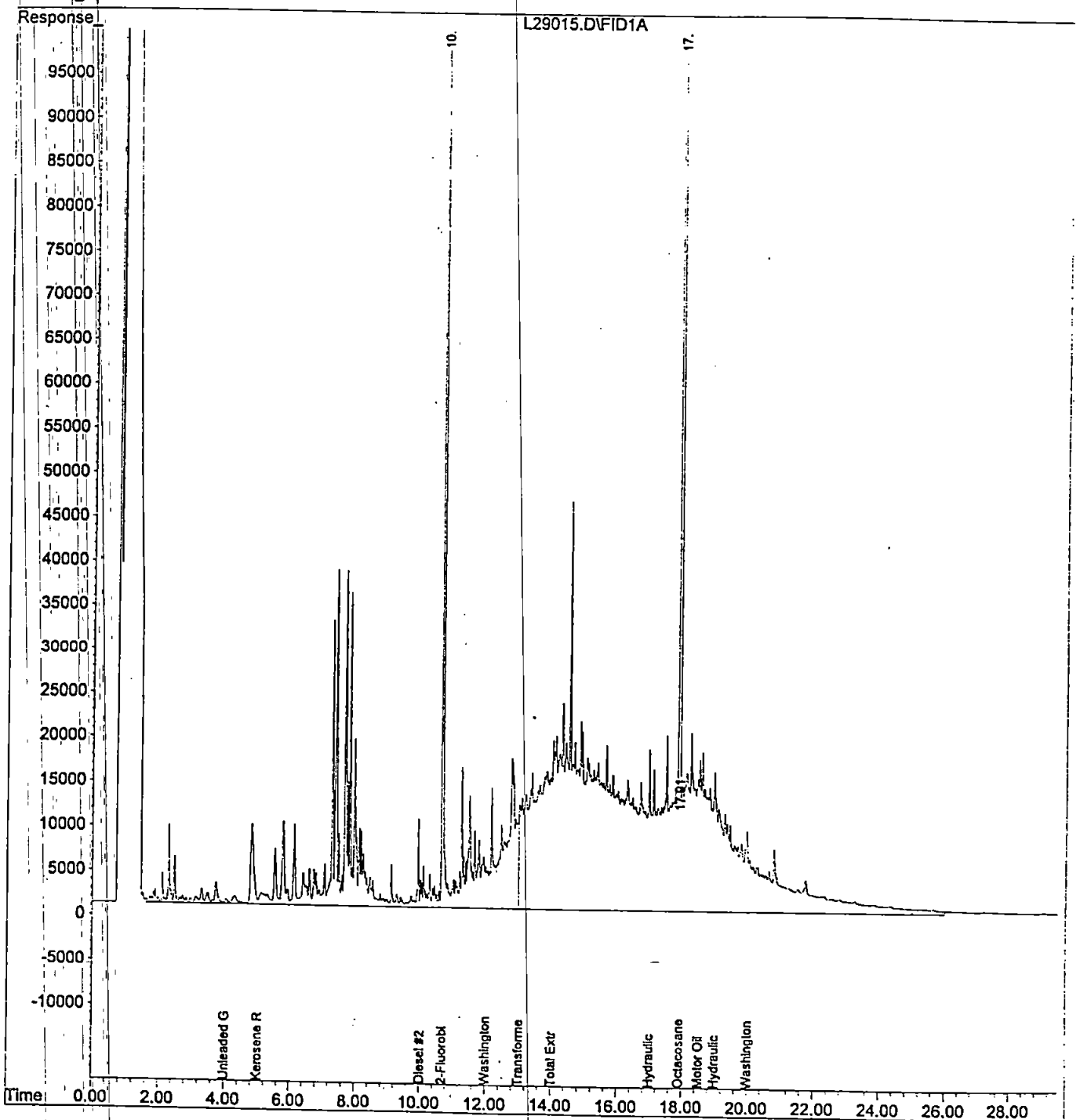


Data File : C:\HPCHEM\2\DATA\L29015.D
Acq On : 30 Dec 1997 1:18 am
Sample : b712512-02
Misc : W
IntFile : SURR.E
Quant Time: Dec 30 9:03 1997 Quant Results File: NWTPHD.RES

Vial: 11
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Dec 30 08:48:52 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

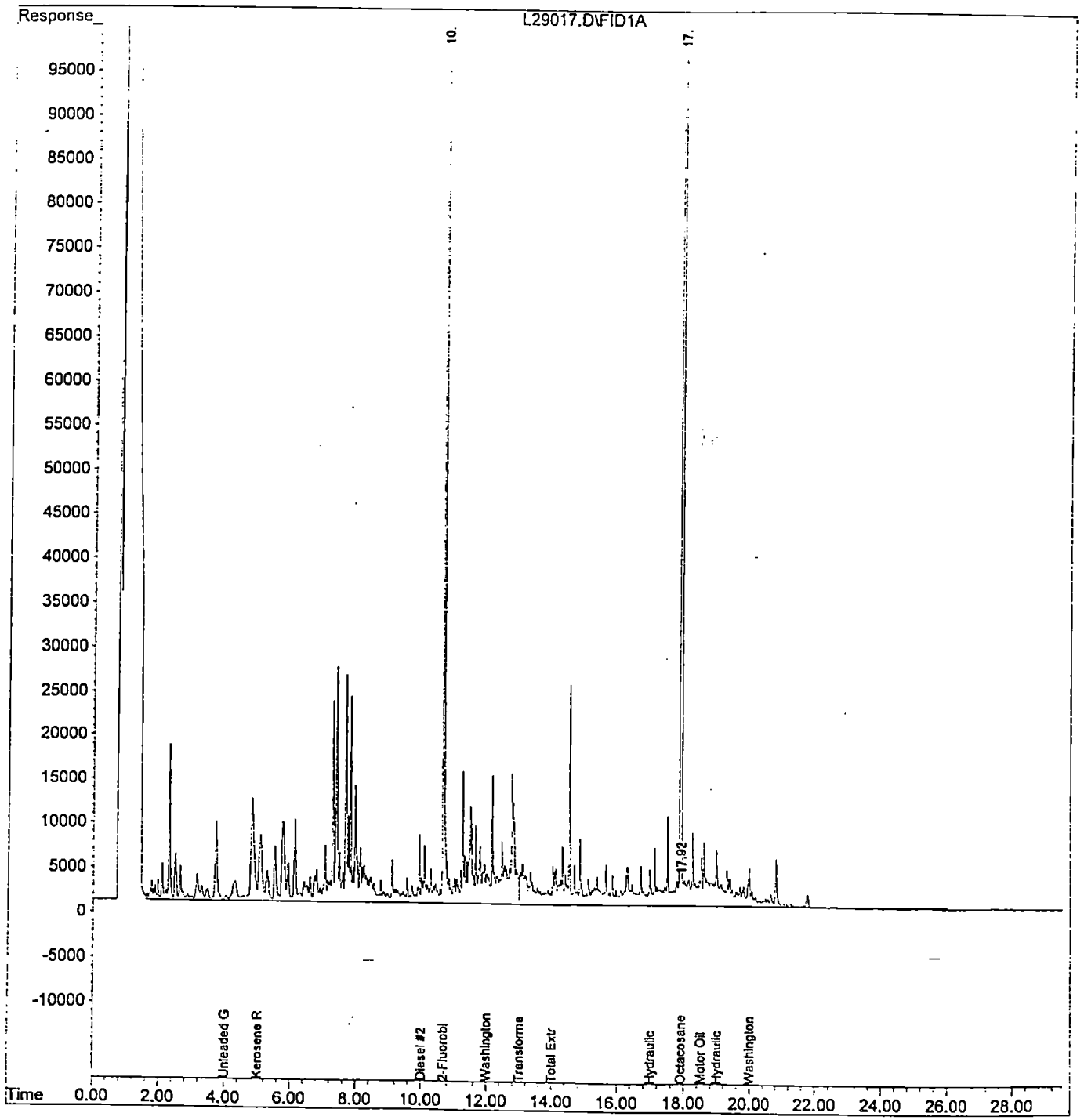


Data File : C:\HPCHEM\2\DATA\L29017.D
Acq On : 30 Dec 1997 2:32 am
Sample : b712512-03
Misc : W
IntFile : SURR.E
Quant Time: Dec 30 9:04 1997 Quant Results File: NWTPHD.RES

Vial: 12
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Tue Dec 30 08:48:52 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



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East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B712512

REPORT TO:

ATTENTION: Gary Stevens
ADDRESS: 8410 154th Ave NE
Redmond WA, 98052
PHONE: (425) 861-6000 FAX: 425-861-6050
PROJECT NAME: Grady Way
PROJECT NUMBER: 186-407-85
SAMPLED BY: TNO / GRS

INVOICE TO:

ATTENTION: PSE
ADDRESS:
P.O. NUMBER:
NCA QUOTE #:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: [X] Standard 10 | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: [X] Standard 5 | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	NWTPH-Dx w/ Transistor & Silica gel SGD	PCBs by EPA method 8081 (Pesticides) & PAHs and Priority Pollutant Metals by EPA 8270	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	B-36	12/22/97 1546	B712512-01	X	X	W	3	
2.	B-34	12/22/97 1245	02	X	X	W	3	
3.	B-35	12/22/97 1210	03	X	X	W	2	
4.								
5.								
6.								
7.								
8.								
9.								
10.								

Analysis Request:

RELINQUISHED BY (Signature): DATE: 12/23/97
PRINT NAME: Tony Orme FIRM: GEI TIME: 1000

RECEIVED BY (Signature): KBarker DATE: 12/23/97
PRINT NAME: KBARKER FIRM: NCA TIME: 1320

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: Dext w/ Silica gel clean up

Soils contain organic matter/coal (low) 17.9 wt-%

CHC Rev 8, 1/96

PAGE 1 OF 1

LAB DATA EVALUATION FORM

Page _____ of _____

GEI Job # 186-407-05

Lab Job #/Sample IDs: B7125035 01 thru 03

GEI Sample IDs B-37, MW-10, Decon

Sample Coll Date 12/22/97

Report Recv'd Date 1/8/98

Analysis	Holding Time Exceptions ?	Surrogate Exceptions ?	Blank Hits ?	MS/MSD % Rec Exceptions	Duplicate or MSD RPD Exceptions	Blank Spike or LCS Exceptions (Use if MS/MSD out)
Ecology WTPH-G	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8020 (BETX)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
Ecology WTPH-D Extended	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)
413.1 (FOG)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8010	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8270	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
VPH/BETX/MTBE/Naphthalene	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH-SIM	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
E-TPH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
PCB 8081	No	No	No	No	No	No
APHA/EPA	No	No	No	No	No	No
Affected Sample Numbers						

Data Acceptable for Intended Use? Yes

Date Comp. 3/16/98

Reviewer Initials TNO

Comments:

Exceptions (As shown in report):

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 11:06

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
B-37	B712503-01	Water	12/22/97
MW-10	B712503-02	Water	12/22/97
Decon	B712503-03	Water	12/22/97

GeoEngineers
JAN 09 1998
Routing
File

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 11:06

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
B-37			B712503-01				Water	
Diesel #2	1270666	12/24/97	12/28/97		0.250	ND	mg/l	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Fuel Oil #2	"	"	"		0.500	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	ND	"	
Motor Oil	"	"	"		0.500	ND	"	
Hydraulic Oil	"	"	"		0.500	ND	"	
Diesel Range Hydrocarbons	"	"	"		0.250	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		0.500	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*87.5*	*%*	
MW-10			B712503-02				Water	
Diesel #2	1270666	12/24/97	12/28/97		0.250	ND	mg/l	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Fuel Oil #2	"	"	"		0.500	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	ND	"	
Motor Oil	"	"	"		0.500	ND	"	
Hydraulic Oil	"	"	"		0.500	ND	"	
Diesel Range Hydrocarbons	"	"	"		0.250	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		0.500	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*82.0*	*%*	

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PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 11:06

BTEX by EPA Method 8020A
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
Decon			**B712503-03**				**Water**	
Benzene	1270719	12/27/97	12/27/97		0.500	ND	ug/l	
Toluene	"	"	"		0.500	**0.831**	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	**1.56**	"	
Surrogate: 4-BFB (PID)	"	"	"	*50.0-150*		*81.5*	*%*	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 11:06

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
MW-10			B712503-02				Water	1,2,3
Aroclor 1016	1270710	12/26/97	1/7/98		0.100	ND	ug/l	
Aroclor 1221	"	"	"		0.100	ND	"	
Aroclor 1232	"	"	"		0.100	ND	"	
Aroclor 1242	"	"	"		0.100	ND	"	
Aroclor 1248	"	"	"		0.100	ND	"	
Aroclor 1254	"	"	"		0.100	ND	"	
Aroclor 1260	"	"	"		0.100	ND	"	
Aroclor 1262	"	"	"		0.100	ND	"	
Aroclor 1268	"	"	"		0.100	ND	"	
Surrogate: TCX	"	"	"	*40.0-130*		*73.0*	*%*	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 11:06

Conventional Chemistry Parameters by APHA/EPA Methods
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
Decon			**B712503-03**				**Water**	
Oil & Grease	1270685	12/26/97	12/26/97	EPA 413.2	1.00	ND	mg/l	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 11:06

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270666	**Date Prepared: 12/24/97**					**Extraction Method: EPA 3520/600 Series**				
Blank	**1270666-BLK1**									
Diesel #2	12/27/97			ND	mg/l	0.250				
Kerosene Range Hydrocarbons	"			ND	"	0.250				
Fuel Oil #2	"			ND	"	0.500				
Fuel Oil #6 (Bunker C)	"			ND	"	0.500				
Transformer Oil	"			ND	"	0.500				
Motor Oil	"			ND	"	0.500				
Hydraulic Oil	"			ND	"	0.500				
Diesel Range Hydrocarbons	"			ND	"	0.250				
Heavy Oil Range Hydrocarbons	"			ND	"	0.500				
Surrogate: 2-FBP	"	*0.364*		*0.296*	"	*50.0-150*	*81.3*			
LCS	**1270666-BS1**									
Diesel #2	12/27/97	2.00		1.79	mg/l	50.0-150	89.5			
Surrogate: 2-FBP	"	*0.364*		*0.314*	"	*50.0-150*	*86.3*			
LCS Dup	**1270666-BSD1**									
Diesel #2	12/27/97	2.00		1.65	mg/l	50.0-150	82.5	50.0	8.14	
Surrogate: 2-FBP	"	*0.364*		*0.288*	"	*50.0-150*	*79.1*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 11:06

BTEX by EPA Method 8020A/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270719	**Date Prepared: 12/27/97**					**Extraction Method: EPA 5030 (P/T)**				
Blank	**1270719-BLK1**									
Benzene	12/27/97			**ND**	ug/l	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**1.00**				
Surrogate: 4-BFB (PID)	"	*48.0*		*39.4*	"	*50.0-150*	*82.1*			
Matrix Spike	**1270719-MS1**		**B712475-02**							
Benzene	12/27/97	10.0	ND	9.33	ug/l	70.0-130	**93.3**			
Toluene	"	10.0	ND	9.18	"	70.0-130	**91.8**			
Ethylbenzene	"	10.0	ND	9.13	"	70.0-130	**91.3**			
Xylenes (total)	"	30.0	ND	26.9	"	70.0-130	**89.7**			
Surrogate: 4-BFB (PID)	"	*48.0*		*39.8*	"	*50.0-150*	*82.9*			
Matrix Spike Dup	**1270719-MSD1**		**B712475-02**							
Benzene	12/27/97	10.0	ND	9.40	ug/l	70.0-130	**94.0**	15.0	**0.747**	
Toluene	"	10.0	ND	9.31	"	70.0-130	**93.1**	15.0	**1.41**	
Ethylbenzene	"	10.0	ND	9.23	"	70.0-130	**92.3**	15.0	**1.09**	
Xylenes (total)	"	30.0	ND	27.6	"	70.0-130	**92.0**	15.0	**2.53**	
Surrogate: 4-BFB (PID)	"	*48.0*		*40.5*	"	*50.0-150*	*84.4*			

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Geo Engineers - Redmond	Project: PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number: 186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager: Gary Stevens	Reported: 1/8/98 11:06

Polychlorinated Biphenyls by EPA Method 8081/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270710	**Date Prepared: 12/26/97**					**Extraction Method: EPA 3520/600 Series**				
Blank	1270710-BLK1									1,2,3
Aroclor 1221	12/30/98			ND	ug/l	0.100				
Aroclor 1232	"			ND	"	0.100				
Aroclor 1242	"			ND	"	0.100				
Aroclor 1248	"			ND	"	0.100				
Aroclor 1254	"			ND	"	0.100				
Aroclor 1260	"			ND	"	0.100				
Aroclor 1262	"			ND	"	0.100				
Aroclor 1268	"			ND	"	0.100				
Surrogate: TCX	"	*0.200*		*0.198*	"	*40.0-130*	*99.0*			
LCS	1270710-BS1									1,2,3
Aroclor 1260	12/30/98	10.0		9.81	ug/l	33.0-122	98.1			
Surrogate: TCX	"	*0.200*		*0.203*	"	*40.0-130*	*101*			
LCS Dup	1270710-BSD1									1,2,3
Aroclor 1260	12/30/98	10.0		9.89	ug/l	33.0-122	98.9	21.0	0.812	
Surrogate: TCX	"	*0.200*		*0.213*	"	*40.0-130*	*106*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 11:06

Conventional Chemistry Parameters by APHA/EPA Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1270685	**Date Prepared: 12/26/97**					**Extraction Method: TPH 418.1**				
Blank	**1270685-BLK1**									
Oil & Grease	12/26/97			**ND**	mg/l	**1.00**				
LCS	**1270685-BS1**									
Oil & Grease	12/26/97	5.00		4.47	mg/l	65.8-123	89.4			
LCS Dup	**1270685-BSD1**									
Oil & Grease	12/26/97	5.00		4.62	mg/l	65.8-123	92.4	60.0	3.30	
Duplicate	**1270685-DUP1**		**B712528-01**							
Oil & Grease	12/26/97		ND	ND	mg/l			60.0		

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Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 12/22/97
8410 154th Ave NE	Project Number:	186-407-85	Received: 12/23/97
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 1/8/98 11:06

Notes and Definitions

#	Note
1	To reduce matrix interference, the sample extract has undergone florisil clean-up, method 3620, which is specific to non-polar compound contamination.
2	To reduce matrix interference, the sample extract has undergone copper clean-up, method 3660, which is specific to sulfur contamination.
3	To reduce matrix interference, the sample extract has undergone sulfuric acid clean-up, method 3665, which is specific to hydrocarbon contamination.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

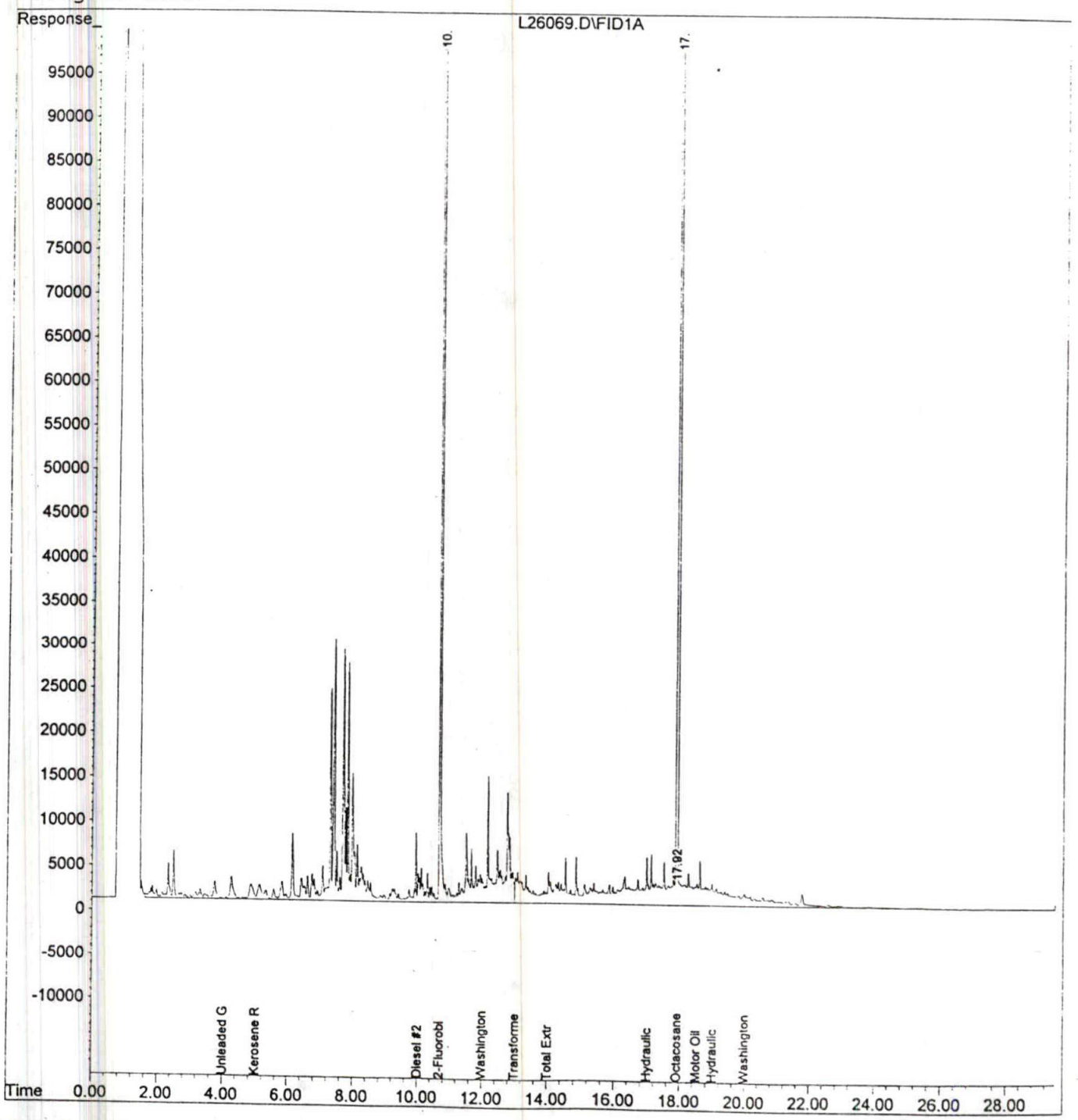
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26069.D
Acq On : 28 Dec 1997 6:44 am
Sample : b712503-01
Misc : W
IntFile : SURR.E
Quant Time: Dec 29 8:17 1997 Quant Results File: NWTPHD.RES

Vial: 45
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



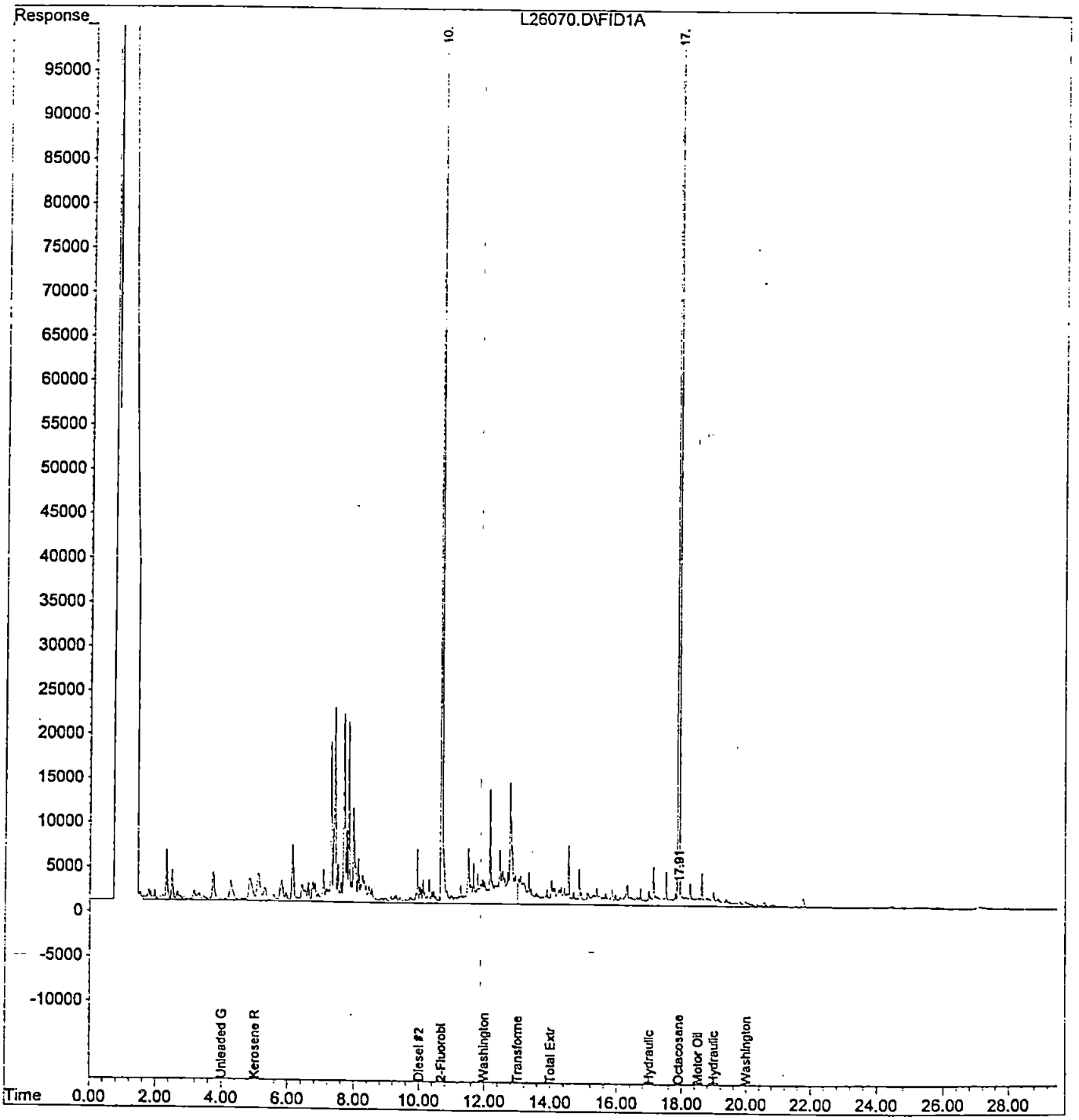
Quantitation Report

Data File : C:\HPCHEM\2\DATA\L26070.D
Acq On : 28 Dec 1997 7:21 am
Sample : b712503-02
Misc : W
IntFile : SURR.E
Quant Time: Dec 29 8:18 1997 Quant Results File: NWTPHD.RES

Vial: 46
Operator: bc
Inst : GC #3
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Thu Dec 04 10:00:40 1997
Response via : Multiple Level Calibration
DataAcq Meth : NWTPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



Data File : C:\HPCHEM\2\DATA\L27013.D\FID1A.CH
Acq On : 27 Dec 1997 4:43 pm
Sample : b712503-03
Misc : 5 ml
IntFile : SURR.E

Vial: 13
Operator: JC
Inst : GC #4
Multiplr: 1.00

Data File : C:\HPCHEM\2\DATA\L27013.D\FID2B.CH
Acq On : 27 Dec 97 4:43 pm
Sample : b712503-03
Misc : 5 ml
IntFile : SURR2.E

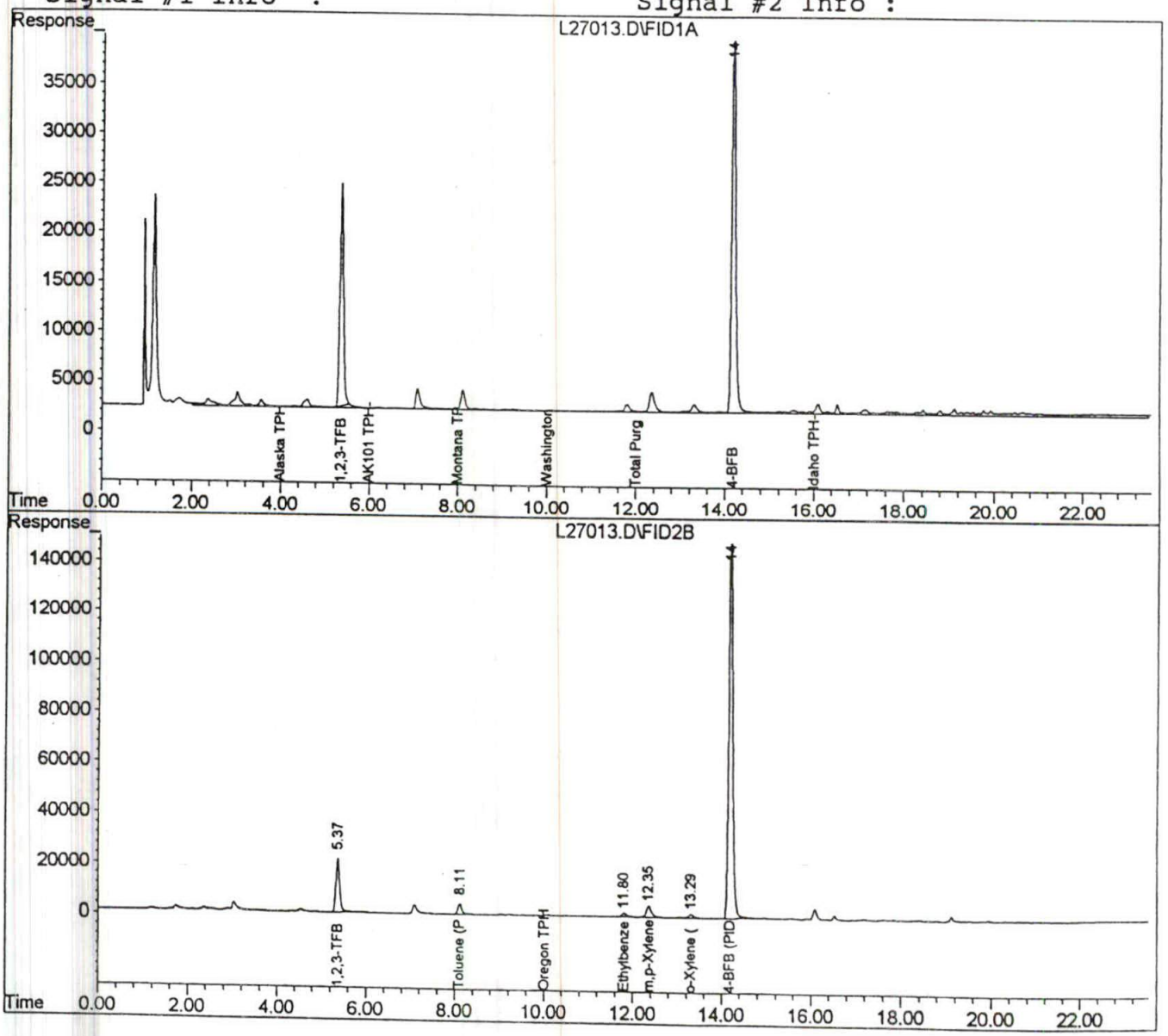
Vial: 13
Operator: JC
Inst : GC #4
Multiplr: 1.00

Quant Time: Dec 27 17:07 1997 Quant Results File: TPHG.RES

Quant Method : C:\HPCHEM\2\METHODS\TPHG.M (Chemstation Integrator)
Title : TPH-G Water Method
Last Update : Wed Dec 24 10:20:44 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHG.M

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

Signal #2 Phase:
Signal #2 Info :



NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B712503

REPORT TO:

ATTENTION: Gary Stevens
ADDRESS: 8410 154th Ave NE
Redmond WA, 98052
PHONE: (425) 861-6000 FAX: 425-861-6050
PROJECT NAME: Grady Way
PROJECT NUMBER: 186-407-85
SAMPLED BY: TNO / GRS

INVOICE TO:

ATTENTION: PSE
ADDRESS:
P.O. NUMBER:
NCA QUOTE #:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: [10 Standard] [7] [5] [4] [3] [2] [1] [Same Day]

Fuels & Hydrocarbon Analyses: [5 Standard] [3-4] [2] [1] [Same Day]

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: NWTPH Dext Transformer oil	BETX by EPA 8020	FOG by EPA 413.2	PCBs by EPA 8081	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	B-37	12/22/97 1600	B712503-01	X				W	2	
2.	MW-10	12/22/97 1625	02	X		X		W	6	
3.	Pecan	12/22/97 1700	03		X	X		W	(5)	rec'd 4 1/2 bottles 1 vial
4.										
5.										
6.										
7.										
8.										
9.										
10.										

RELINQUISHED BY (Signature): [signature] DATE: 12/23/97
PRINT NAME: Tony Orme FIRM: GEI TIME: 1000

RECEIVED BY (Signature): [signature] DATE: 12/23/97
PRINT NAME: Kibarker FIRM: NCA TIME: 1305

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: Dext w/ silica gel cleanup
organic material
Soils contain ~~organics~~ C. (coal, wood)

11.5 w/cs

CHC Rev 8, 1/96

PAGE 1 OF 1

LAB DATA EVALUATION FORM

GEI Job # 186-407-85

Lab Job #/Sample IDs: B802391-01 TO 09

GEI Sample IDs GMW-1 TO GMW-7
~~GE-1 TO GE-2~~

Sample Coll Date

Report Recv'd Date

Analysis	Holding Time Exceptions ?	Surrogate Exceptions ?	Blank Hits ?	MS/MSD % Rec Exceptions	Duplicate or MSD RPD Exceptions	Blank Spike or LCS Exceptions (Use if MS/MSD out)
Ecology WTPH-G	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8020 (BETX)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
Ecology WTPH-D Extended	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes No	Yes (No)
413.1 (FOG)	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8010	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPA 8270	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
VPH/BETX/MTBE/Naphthalene	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
EPH/PAH-SIM	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes No NA	Yes (No)
E-TPH	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
PCB 8082	No	No	No	Yes	No	No
Pentachlorophenol	No	No	No	NA	NA	NA
Affected Sample Numbers						

Data Acceptable for Intended Use? Yes

Date Comp. 3/16/88

Reviewer Initials ~~JW~~

Comments: See Notes pg 17

Exceptions (As shown in report):

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8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/9/98 17:10

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
GMW-1	B802391-01	Water	2/20/98
GMW-2	B802391-02	Water	2/20/98
GMW-3	B802391-03	Water	2/20/98
GMW-4	B802391-04	Water	2/20/98
GMW-5	B802391-05	Water	2/20/98
GMW-6	B802391-06	Water	2/20/98
GMW-7	B802391-07	Water	2/20/98
GC-1	B802391-08	Soil	2/20/98
GC-2	B802391-09	Soil	2/20/98

GeoEngineers

MAR 1 · 1998

Routing

File

North Creek Analytical, Inc.

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.

Joy B Chang, Project Manager

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Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-1			**B802391-01**				**Water**	
Diesel #2	0280571	2/23/98	2/27/98		0.250	ND	mg/l	
Fuel Oil #2	"	"	"		0.500	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		0.500	ND	"	
Hydraulic Oil	"	"	"		0.500	ND	"	
Motor Oil	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	ND	"	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Diesel Range Hydrocarbons	"	"	"		0.250	**0.320**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*104*	*%*	
GMW-2			**B802391-02**				**Water**	
Diesel #2	0280571	2/23/98	2/27/98		0.250	ND	mg/l	
Fuel Oil #2	"	"	"		0.500	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		0.500	**0.970**	"	
Hydraulic Oil	"	"	"		0.500	ND	"	
Motor Oil	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	ND	"	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Diesel Range Hydrocarbons	"	"	"		0.250	**0.396**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*105*	*%*	
GMW-3			**B802391-03**				**Water**	
Diesel #2	0280571	2/23/98	2/27/98		0.250	ND	mg/l	
Fuel Oil #2	"	"	"		0.500	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		0.500	ND	"	
Hydraulic Oil	"	"	"		0.500	ND	"	
Motor Oil	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	ND	"	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Diesel Range Hydrocarbons	"	"	"		0.250	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*110*	*%*	
GMW-4			**B802391-04**				**Water**	
Diesel #2	0280571	2/23/98	2/27/98		0.250	ND	mg/l	
Fuel Oil #2	"	"	"		0.500	ND	"	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/9/98 17:10

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-4 (continued)			**B802391-04**				**Water**	
Fuel Oil #6 (Bunker C)	0280571	2/23/98	2/27/98		0.500	ND	mg/l	
Heavy Oil Range Hydrocarbons	"	"	"		0.500	ND	"	
Hydraulic Oil	"	"	"		0.500	ND	"	
Motor Oil	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	ND	"	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Diesel Range Hydrocarbons	"	"	"		0.250	**0.404**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*105*	*%*	
GMW-5			**B802391-05**				**Water**	
Diesel #2	0280571	2/23/98	2/27/98		0.250	ND	mg/l	
Fuel Oil #2	"	"	"		0.500	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		0.500	ND	"	
Hydraulic Oil	"	"	"		0.500	ND	"	
Motor Oil	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	ND	"	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Diesel Range Hydrocarbons	"	"	"		0.250	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*108*	*%*	
GMW-6			**B802391-06**				**Water**	
Diesel #2	0280571	2/23/98	2/27/98		0.250	ND	mg/l	
Fuel Oil #2	"	"	"		0.500	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		0.500	ND	"	
Hydraulic Oil	"	"	"		0.500	ND	"	
Motor Oil	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	ND	"	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Diesel Range Hydrocarbons	"	"	"		0.250	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*113*	*%*	
GMW-7			**B802391-07**				**Water**	
Diesel #2	0280571	2/23/98	2/27/98		0.250	ND	mg/l	
Fuel Oil #2	"	"	"		0.500	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		0.500	**7.72**	"	

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8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/9/98 17:10

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-7 (continued)			**B802391-07**				**Water**	
Hydraulic Oil	0280571	2/23/98	2/27/98		0.500	ND	mg/l	
Motor Oil	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	ND	"	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Diesel Range Hydrocarbons	"	"	"		0.250	**4.55**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*104*	*%*	
GC-1			**B802391-08**				**Soil**	
Diesel #2	0280558	2/23/98	2/27/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**123**	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**41.2**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*105*	*%*	
GC-2			**B802391-09**				**Soil**	
Diesel #2	0280558	2/23/98	2/27/98		10.0	ND	mg/kg dry	
Fuel Oil #2	"	"	"		25.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**377**	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**219**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*76.2*	*%*	

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8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
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Polychlorinated Biphenyls by EPA Method 8082
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-3			**B802391-03**				**Water**	
Aroclor 1016	0280639	2/25/98	3/6/98		0.100	ND	ug/l	
Aroclor 1221	"	"	"		0.100	ND	"	
Aroclor 1232	"	"	"		0.100	ND	"	
Aroclor 1242	"	"	"		0.100	ND	"	
Aroclor 1248	"	"	"		0.100	ND	"	
Aroclor 1254	"	"	"		0.100	ND	"	
Aroclor 1260	"	"	"		0.100	ND	"	
Aroclor 1262	"	"	"		0.100	ND	"	
Aroclor 1268	"	"	"		0.100	ND	"	
Surrogate: TCX	"	"	"	*40.0-130*		*74.6*	*%*	
GMW-4			**B802391-04**				**Water**	
Aroclor 1016	0280639	2/25/98	3/6/98		0.100	ND	ug/l	
Aroclor 1221	"	"	"		0.100	ND	"	
Aroclor 1232	"	"	"		0.100	ND	"	
Aroclor 1242	"	"	3/9/98		0.100	**1.17**	"	
Aroclor 1248	"	"	3/6/98		0.100	ND	"	
Aroclor 1254	"	"	"		0.100	ND	"	
Aroclor 1260	"	"	"		0.100	ND	"	
Aroclor 1262	"	"	"		0.100	ND	"	
Aroclor 1268	"	"	"		0.100	ND	"	
Surrogate: TCX	"	"	"	*40.0-130*		*68.3*	*%*	
GMW-5			**B802391-05**				**Water**	
Aroclor 1016	0280639	2/25/98	3/6/98		0.100	ND	ug/l	
Aroclor 1221	"	"	"		0.100	ND	"	
Aroclor 1232	"	"	"		0.100	ND	"	
Aroclor 1242	"	"	"		0.100	ND	"	
Aroclor 1248	"	"	"		0.100	ND	"	
Aroclor 1254	"	"	"		0.100	ND	"	
Aroclor 1260	"	"	"		0.100	ND	"	
Aroclor 1262	"	"	"		0.100	ND	"	
Aroclor 1268	"	"	"		0.100	ND	"	
Surrogate: TCX	"	"	"	*40.0-130*		*68.3*	*%*	
GMW-6			**B802391-06**				**Water**	
Aroclor 1016	0280639	2/25/98	3/6/98		0.100	ND	ug/l	
Aroclor 1221	"	"	"		0.100	ND	"	

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Polychlorinated Biphenyls by EPA Method 8082
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-6 (continued)			**B802391-06**				**Water**	
Aroclor 1232	0280639	2/25/98	3/6/98		0.100	ND	ug/l	
Aroclor 1242	"	"	"		0.100	ND	"	
Aroclor 1248	"	"	"		0.100	ND	"	
Aroclor 1254	"	"	"		0.100	ND	"	
Aroclor 1260	"	"	"		0.100	ND	"	
Aroclor 1262	"	"	"		0.100	ND	"	
Aroclor 1268	"	"	"		0.100	ND	"	
Surrogate: TCX	"	"	"	*40.0-130*		*80.4*	*%*	
GMW-7			**B802391-07**				**Water**	
Aroclor 1016	0280639	2/25/98	3/6/98		0.100	ND	ug/l	
Aroclor 1221	"	"	"		0.100	ND	"	
Aroclor 1232	"	"	"		0.100	ND	"	
Aroclor 1242	"	"	"		0.100	ND	"	
Aroclor 1248	"	"	"		0.100	ND	"	
Aroclor 1254	"	"	"		0.100	ND	"	
Aroclor 1260	"	"	"		0.100	ND	"	
Aroclor 1262	"	"	"		0.100	ND	"	
Aroclor 1268	"	"	"		0.100	ND	"	
Surrogate: Decachlorobiphenyl	"	"	"	*50.0-150*		*51.0*	*%*	
GC-1			**B802391-08**				**Soil**	
Aroclor 1016	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*85.4*	*%*	
GC-2			**B802391-09**				**Soil**	
Aroclor 1016	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	

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Polychlorinated Biphenyls by EPA Method 8082
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GC-2 (continued)			**B802391-09**				**Soil**	
Aroclor 1248	0280696	2/27/98	3/6/98		50.0	ND	ug/kg dry	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*94.5*	*%*	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/20/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/9/98 17:10

Pentachlorophenol by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-4			**B802391-04**				**Water**	
Pentachlorophenol	0280704	2/27/98	3/4/98		2.00	ND	ug/l	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*49.2*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*61.0*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*56.6*	"	

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Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/20/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/9/98 17:10

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GMW-4			**B802391-04**				**Water**	
Acenaphthene	0280704	2/27/98	3/4/98		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenz (a,h) anthracene	"	"	"		0.100	ND	"	
Fluoranthene	"	"	"		0.300	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.300	ND	"	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.300	ND	"	
Surrogate: 2-FBP	"	"	"	*30.0-150*		*49.2*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*30.0-150*		*61.0*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*56.6*	"	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled:	2/20/98
8410 154th Ave NE	Project Number:	186-407-85	Received:	2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported:	3/9/98 17:10

Dry Weight Determination
North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
GC-1	B802391-08	Soil	79.9	%
GC-2	B802391-09	Soil	74.5	%

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/20/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/9/98 17:10

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0280558	**Date Prepared: 2/23/98**					**Extraction Method: EPA 3550B**				
Blank	**0280558-BLK1**									
Diesel #2	2/27/98			**ND**	mg/kg dry	**10.0**				
Fuel Oil #2	"			**ND**	"	**25.0**				
Fuel Oil #6 (Bunker C)	"			**ND**	"	**25.0**				
Heavy Oil Range Hydrocarbons	"			**ND**	"	**25.0**				
Hydraulic Oil	"			**ND**	"	**25.0**				
Motor Oil	"			**ND**	"	**25.0**				
Transformer Oil	"			**ND**	"	**25.0**				
Kerosene Range Hydrocarbons	"			**ND**	"	**10.0**				
Diesel Range Hydrocarbons	"			**ND**	"	**10.0**				
Surrogate: 2-FBP	"	*10.7*		*11.5*	"	*50.0-150*	*107*			
LCS	**0280558-BS1**									
Diesel #2	2/27/98	66.7		56.5	mg/kg dry	50.0-150	84.7			
Surrogate: 2-FBP	"	*10.7*		*11.6*	"	*50.0-150*	*108*			
Duplicate	**0280558-DUP1**		**B802390-06**							
Diesel #2	2/27/98		ND	ND	mg/kg dry			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Heavy Oil Range Hydrocarbons	"		78.0	95.3	"			50.0	**20.0**	
Hydraulic Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		15.9	21.3	"			50.0	**29.0**	
Surrogate: 2-FBP	"	*14.6*		*13.8*	"	*50.0-150*	*94.5*			
Duplicate	**0280558-DUP2**		**B802391-08**							
Diesel #2	2/27/98		ND	ND	mg/kg dry			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Heavy Oil Range Hydrocarbons	"		123	97.2	"			50.0	**23.4**	
Hydraulic Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		41.2	47.2	"			50.0	**13.6**	

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/20/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/9/98 17:10

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Duplicate (continued)	**0280558-DUP2**		**B802391-08**							
Surrogate: 2-FBP	*2/27/98*	*13.4*		*14.1*	*mg/kg dry*	*50.0-150*	*105*			
Batch: 0280571	**Date Prepared: 2/23/98**					**Extraction Method: EPA 3520C/600 Series**				
Blank	**0280571-BLK1**									
Diesel #2	2/27/98			ND	mg/l	0.250				
Fuel Oil #2	"			ND	"	0.500				
Fuel Oil #6 (Bunker C)	"			ND	"	0.500				
Heavy Oil Range Hydrocarbons	"			ND	"	0.500				
Hydraulic Oil	"			ND	"	0.500				
Motor Oil	"			ND	"	0.500				
Transformer Oil	"			ND	"	0.500				
Kerosene Range Hydrocarbons	"			ND	"	0.250				
Diesel Range Hydrocarbons	"			ND	"	0.250				
Surrogate: 2-FBP	"	*0.320*		*0.329*	"	*50.0-150*	*103*			
LCS	**0280571-BS1**									
Diesel #2	2/27/98	2.00		1.87	mg/l	50.0-150	93.5			
Surrogate: 2-FBP	"	*0.320*		*0.357*	"	*50.0-150*	*112*			
LCS Dup	**0280571-BSD1**									
Diesel #2	2/27/98	2.00		1.89	mg/l	50.0-150	94.5	50.0	1.06	
Surrogate: 2-FBP	"	*0.320*		*0.363*	"	*50.0-150*	*113*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/20/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/9/98 17:10

Polychlorinated Biphenyls by EPA Method 8082/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0280639	**Date Prepared: 2/25/98**					**Extraction Method: EPA 3520C/600 Series**				
Blank	**0280639-BLK1**									
Aroclor 1016	3/6/98			**ND**	ug/l	**0.100**				
Aroclor 1221	"			**ND**	"	**0.100**				
Aroclor 1232	"			**ND**	"	**0.100**				
Aroclor 1242	"			**ND**	"	**0.100**				
Aroclor 1248	"			**ND**	"	**0.100**				
Aroclor 1254	"			**ND**	"	**0.100**				
Aroclor 1260	"			**ND**	"	**0.100**				
Aroclor 1262	"			**ND**	"	**0.100**				
Aroclor 1268	"			**ND**	"	**0.100**				
Surrogate: TCX	"	*0.200*		*0.144*	"	*40.0-130*	*72.0*			
LCS	**0280639-BS1**									
Aroclor 1260	3/6/98	10.0		8.27	ug/l	33.0-122	82.7			
Surrogate: TCX	"	*0.200*		*0.160*	"	*40.0-130*	*80.0*			
LCS Dup	**0280639-BSD1**									
Aroclor 1260	3/6/98	10.0		8.65	ug/l	33.0-122	86.5	21.0	4.49	
Surrogate: TCX	"	*0.200*		*0.146*	"	*40.0-130*	*73.0*			
Batch: 0280696	**Date Prepared: 2/27/98**					**Extraction Method: EPA 3550B**				
Blank	**0280696-BLK1**									
Aroclor 1221	3/6/98			**ND**	ug/kg dry	**50.0**				
Aroclor 1232	"			**ND**	"	**50.0**				
Aroclor 1242	"			**ND**	"	**50.0**				
Aroclor 1248	"			**ND**	"	**50.0**				
Aroclor 1254	"			**ND**	"	**50.0**				
Aroclor 1260	"			**ND**	"	**50.0**				
Aroclor 1262	"			**ND**	"	**50.0**				
Aroclor 1268	"			**ND**	"	**50.0**				
Surrogate: TCX	"	*6.67*		*7.22*	"	*38.0-117*	*108*			
LCS	**0280696-BS1**									
Aroclor 1260	3/6/98	333		301	ug/kg dry	44.0-123	90.4			
Surrogate: TCX	"	*6.67*		*7.29*	"	*38.0-117*	*109*			
Matrix Spike	**0280696-MS1**		**B802390-13**							
Aroclor 1260	3/6/98	424	74.5	ND	ug/kg dry	28.0-132	**NR**			1

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/20/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/9/98 17:10

Polychlorinated Biphenyls by EPA Method 8082/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike (continued)	**0280696-MS1**		**B802390-13**							
Surrogate: TCX	*3/6/98*	*8.47*		*8.96*	*ug/kg dry*	*38.0-117*	*106*			
Matrix Spike Dup	**0280696-MSD1**		**B802390-13**							
Aroclor 1260	3/6/98	424	74.5	ND	ug/kg dry	28.0-132	**NR**	23.0		1
Surrogate: TCX	"	*8.47*		*8.42*	"	*38.0-117*	*99.4*			

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8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/9/98 17:10

Pentachlorophenol by GC/MS with Selected Ion Monitoring/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0280704	**Date Prepared: 2/27/98**					**Extraction Method: EPA 3520C/600 Series**				
Blank	**0280704-BLK1**									
Pentachlorophenol	3/4/98			**ND**	ug/l	**2.00**				
Surrogate: 2-FBP	"	*50.0*		*27.4*	"	*30.0-150*	*54.8*			
Surrogate: Nitrobenzene-d5	"	*50.0*		*33.5*	"	*30.0-150*	*67.0*			
Surrogate: p-Terphenyl-d14	"	*50.0*		*37.4*	"	*30.0-150*	*74.8*			

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Geo Engineers - Redmond	Project:	PSE/ Grady Way	Sampled: 2/20/98
8410 154th Ave NE	Project Number:	186-407-85	Received: 2/20/98
Redmond, WA 98052	Project Manager:	Gary Stevens	Reported: 3/9/98 17:10

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0280704	**Date Prepared: 2/27/98**					**Extraction Method: EPA 3520C/600 Series**				
Blank (continued)	**0280704-BLK1**									
Acenaphthene	3/4/98			ND	ug/l	0.100				
Acenaphthylene	"			ND	"	0.100				
Anthracene	"			ND	"	0.100				
Benzo (a) anthracene	"			ND	"	0.100				
Benzo (a) pyrene	"			ND	"	0.100				
Benzo (b) fluoranthene	"			ND	"	0.100				
Benzo (ghi) perylene	"			ND	"	0.100				
Benzo (k) fluoranthene	"			ND	"	0.100				
Chrysene	"			ND	"	0.100				
Dibenz (a,h) anthracene	"			ND	"	0.100				
Fluoranthene	"			ND	"	0.300				
Fluorene	"			ND	"	0.100				
Indeno (1,2,3-cd) pyrene	"			ND	"	0.100				
Naphthalene	"			ND	"	0.300				
Phenanthrene	"			ND	"	0.100				
Pyrene	"			ND	"	0.300				
Surrogate: 2-FBP	"	*50.0*		*27.4*	"	*30.0-150*	*54.8*			
Surrogate: Nitrobenzene-d5	"	*50.0*		*33.5*	"	*30.0-150*	*67.0*			
Surrogate: p-Terphenyl-d14	"	*50.0*		*37.4*	"	*30.0-150*	*74.8*			
LCS	**0280704-BS1**									
Chrysene	3/5/98	2.00		1.38	ug/l	50.0-150	69.0			
Fluorene	"	2.00		1.48	"	50.0-150	74.0			
Indeno (1,2,3-cd) pyrene	"	2.00		1.46	"	50.0-150	73.0			
Surrogate: 2-FBP	"	*50.0*		*29.3*	"	*30.0-150*	*58.6*			
Surrogate: Nitrobenzene-d5	"	*50.0*		*34.4*	"	*30.0-150*	*68.8*			
Surrogate: p-Terphenyl-d14	"	*50.0*		*34.6*	"	*30.0-150*	*69.2*			
LCS Dup	**0280704-BSD1**									
Chrysene	3/5/98	2.00		1.48	ug/l	50.0-150	74.0	25.0	6.99	
Fluorene	"	2.00		1.48	"	50.0-150	74.0	25.0	0	
Indeno (1,2,3-cd) pyrene	"	2.00		1.48	"	50.0-150	74.0	25.0	1.36	
Surrogate: 2-FBP	"	*50.0*		*27.5*	"	*30.0-150*	*55.0*			
Surrogate: Nitrobenzene-d5	"	*50.0*		*31.7*	"	*30.0-150*	*63.4*			
Surrogate: p-Terphenyl-d14	"	*50.0*		*35.6*	"	*30.0-150*	*71.2*			

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Geo Engineers - Redmond		Project:	PSE/ Grady Way	Sampled:	2/20/98
8410 154th Ave NE		Project Number:	186-407-85	Received:	2/20/98
Redmond, WA 98052		Project Manager:	Gary Stevens	Reported:	3/9/98 17:10

Notes and Definitions

#	Note
1	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte already present in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

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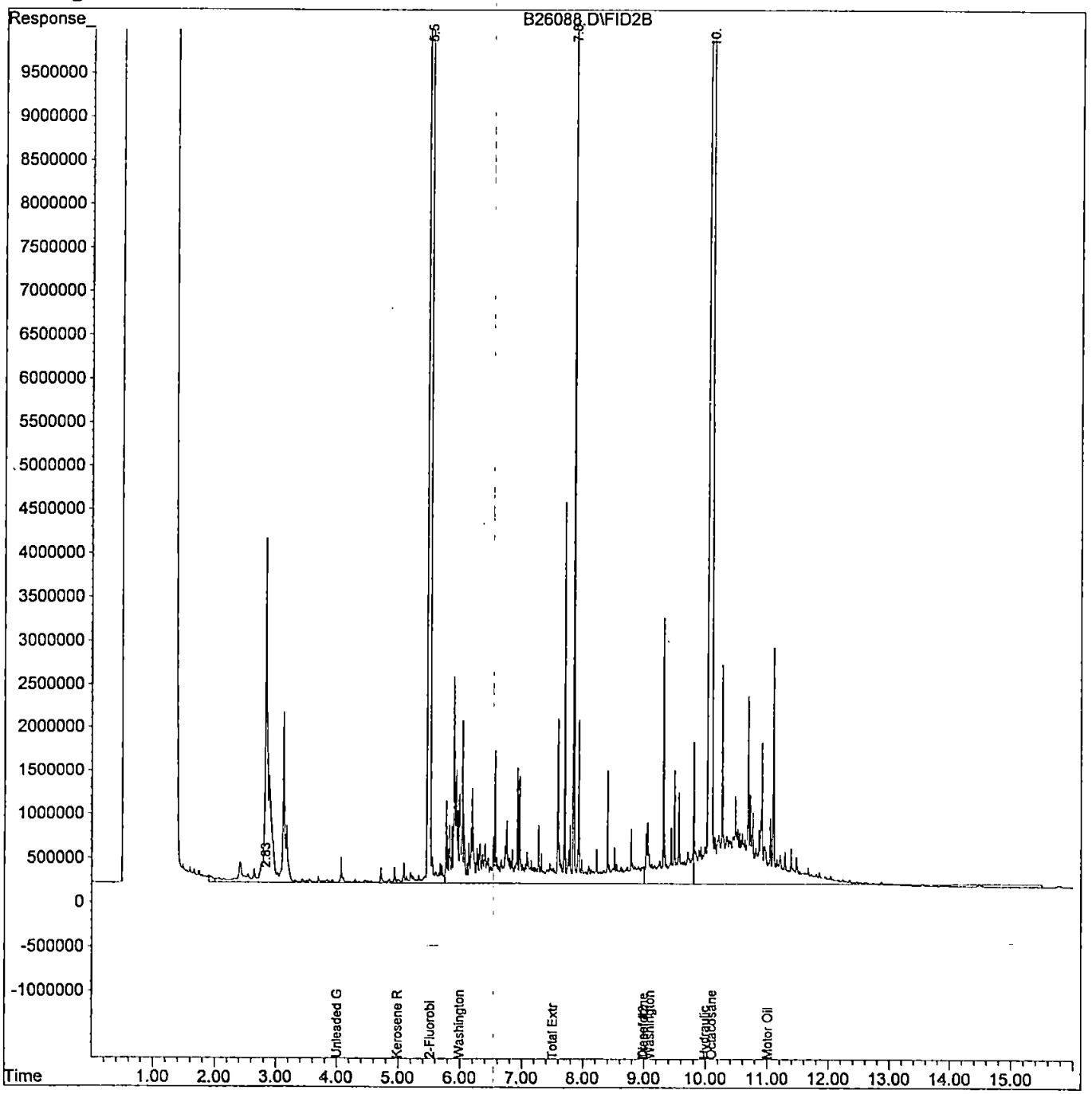
Joy B Chang, Project Manager

Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\B26088.D Vial: 46
Acq On : 27-02-1998 9:15:39 AM Operator: nja
Sample : b802391-01 Inst : GC #7
Misc : Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 27 11:42 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Thu Feb 26 09:24:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

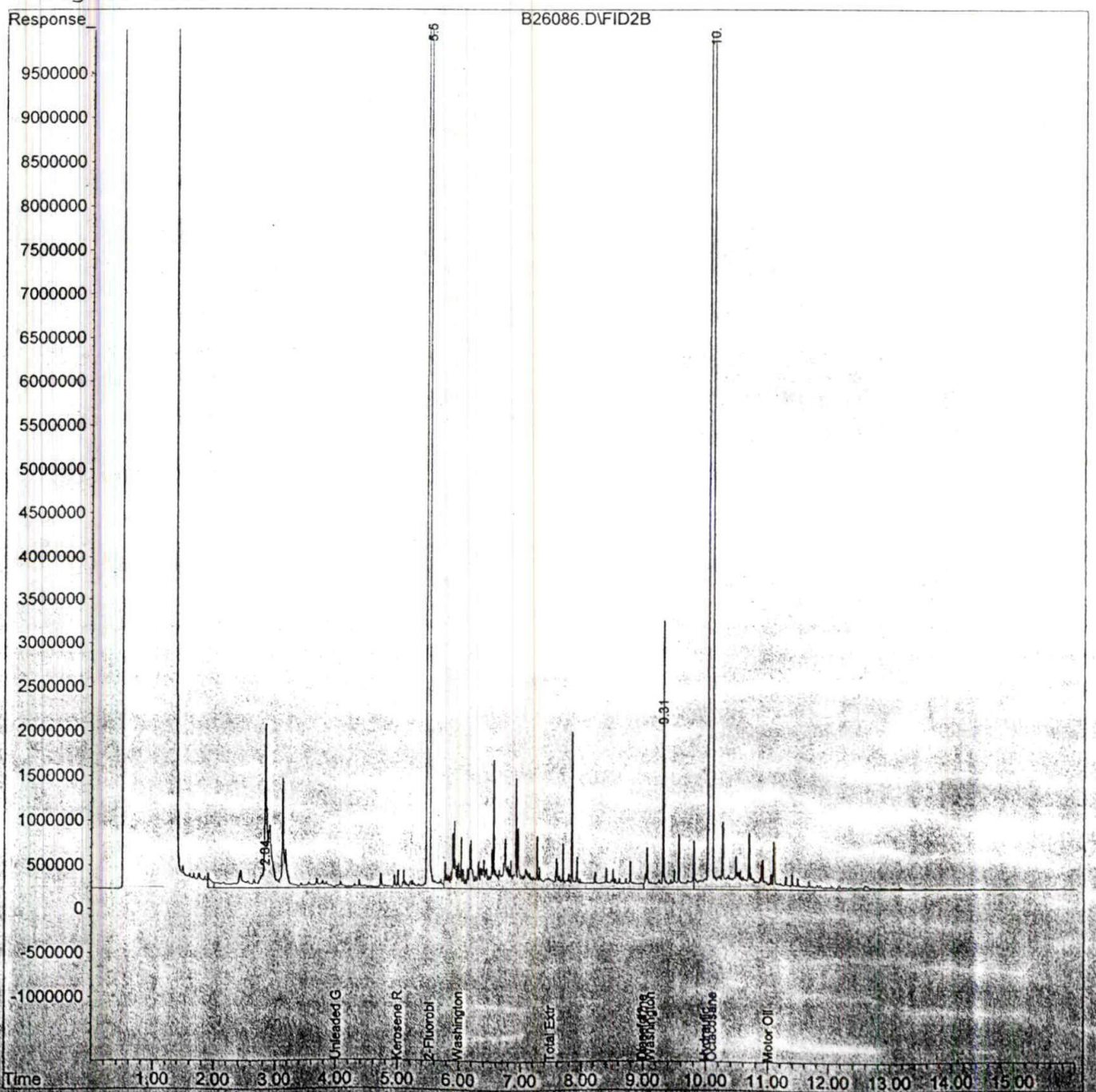


Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\B26086.D Vial: 44
Acq On : 27-02-1998 8:52:48 AM Operator: nja
Sample : b802391-03 Inst : GC #7
Misc : Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 27 10:12 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Thu Feb 26 09:24:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

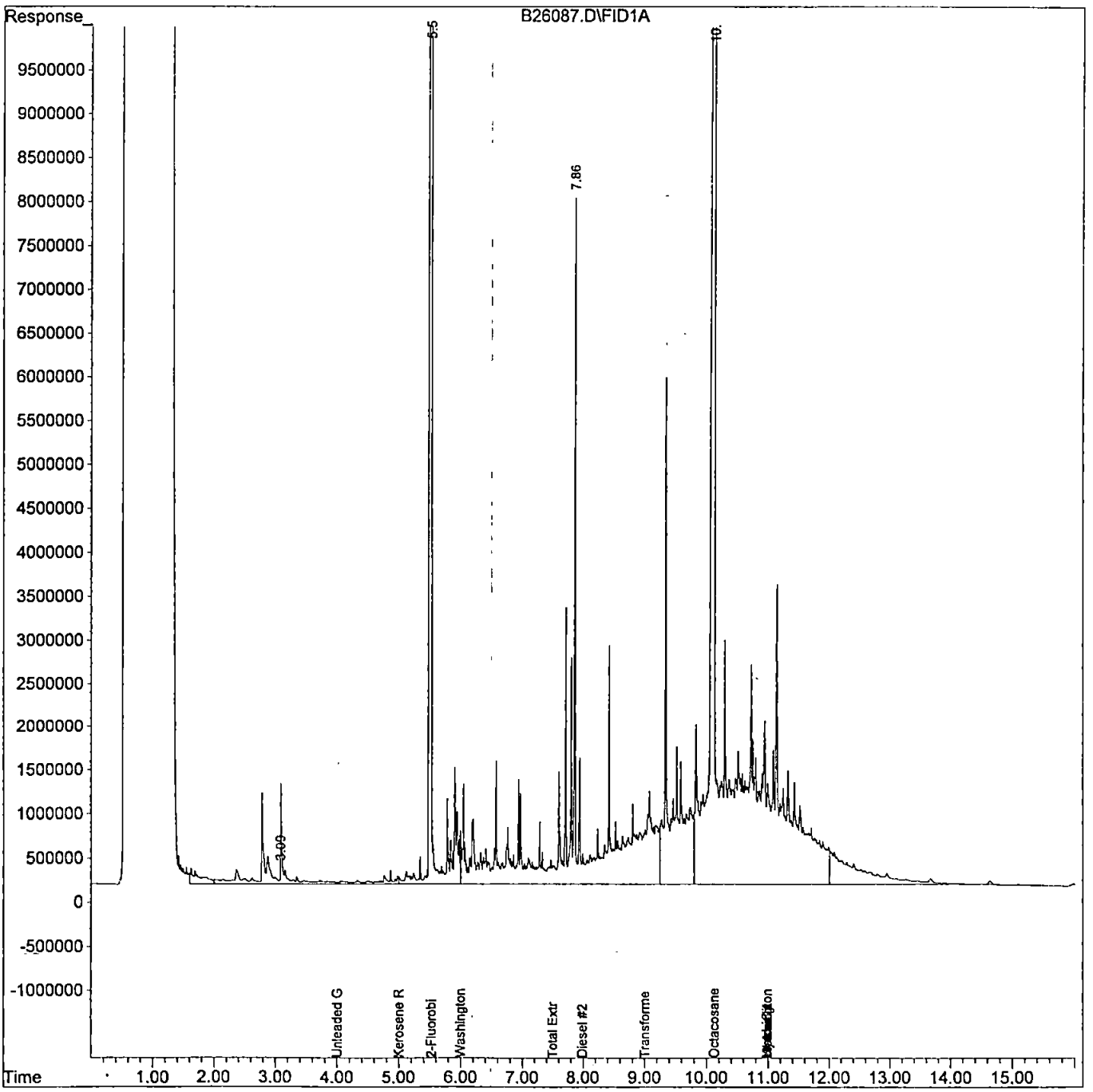


Quantitation Report

Data File : C:\HPCHEM\4\DATA\B26087.D Vial: 45
Acq On : 27-02-1998 8:52:48 AM Operator: nja
Sample : b802391-02 Inst : GC #7
Misc : Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 27 11:36 1998 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Fri Feb 27 08:44:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

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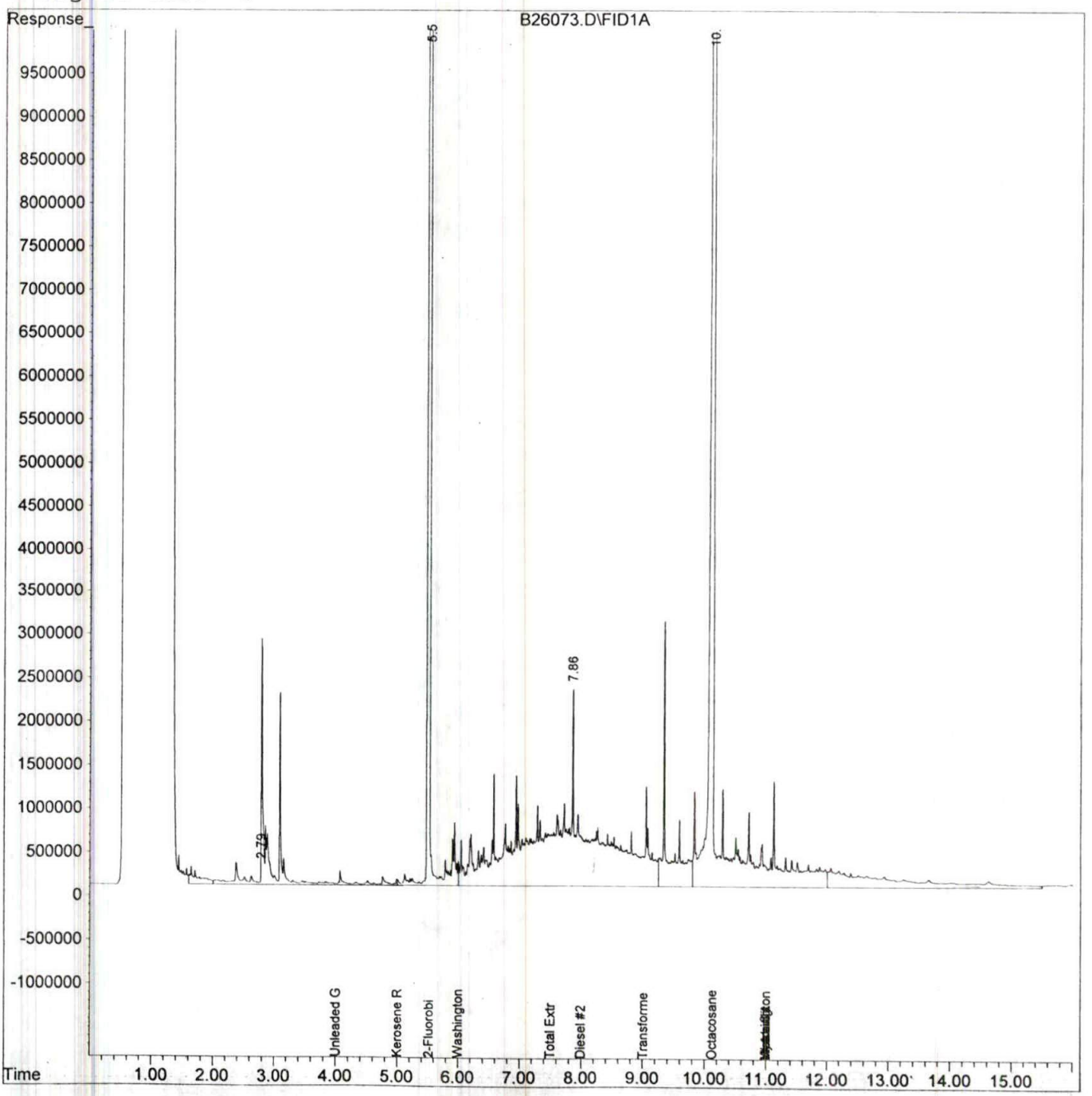
Sample : b802391-04 Inst : GC #7
Misc : Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 27 9:22 1998 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Fri Feb 27 08:44:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

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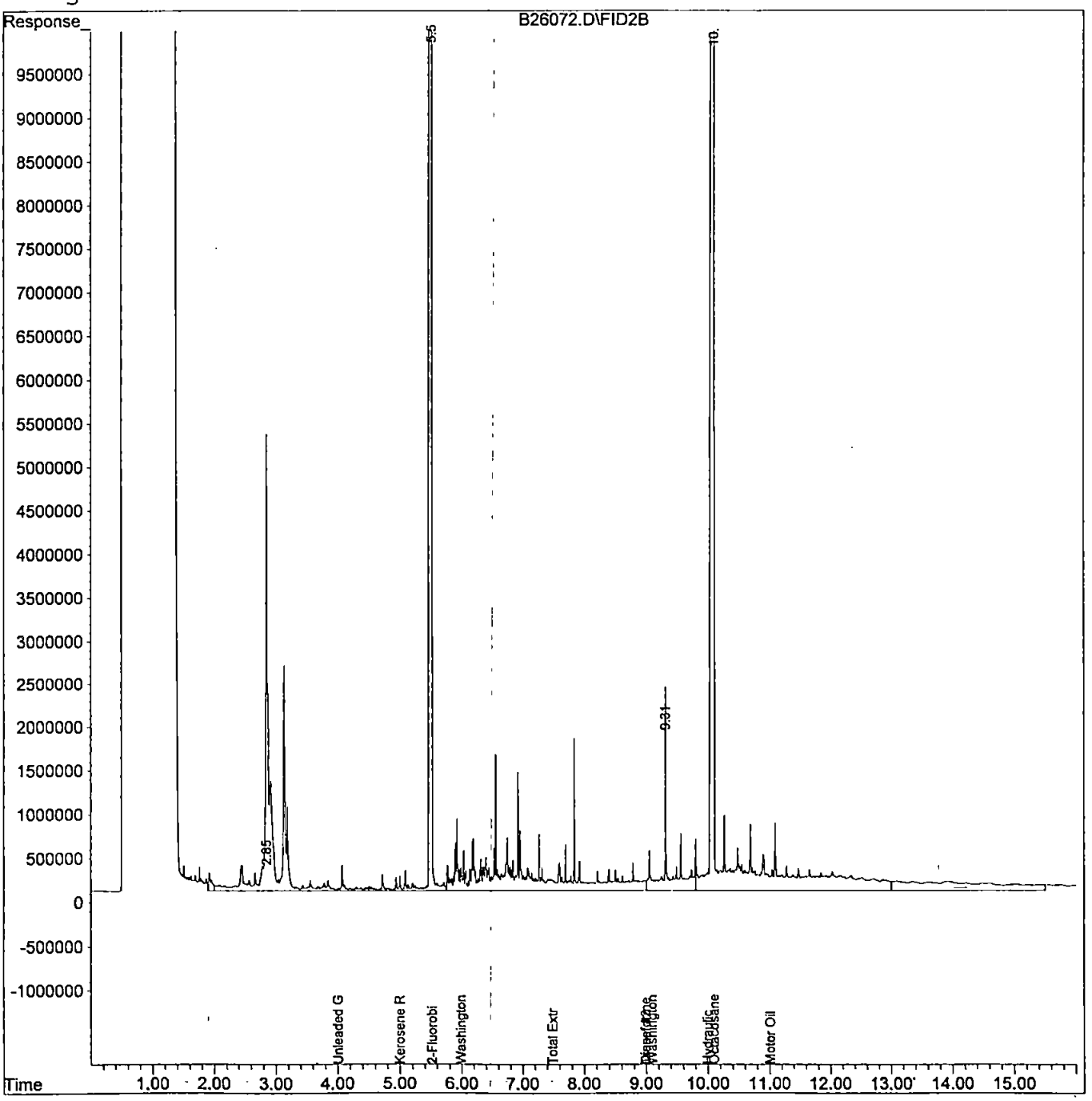
Sample : b802391-05 Inst : GC #7
Misc : Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 27 10:05 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Thu Feb 26 09:24:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

Data File : C:\HPCHEM\4\DATA\B26071.D Vial: 41
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Sample : b802391-06 Inst : GC #7
Misc : Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 27 9:21 1998 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
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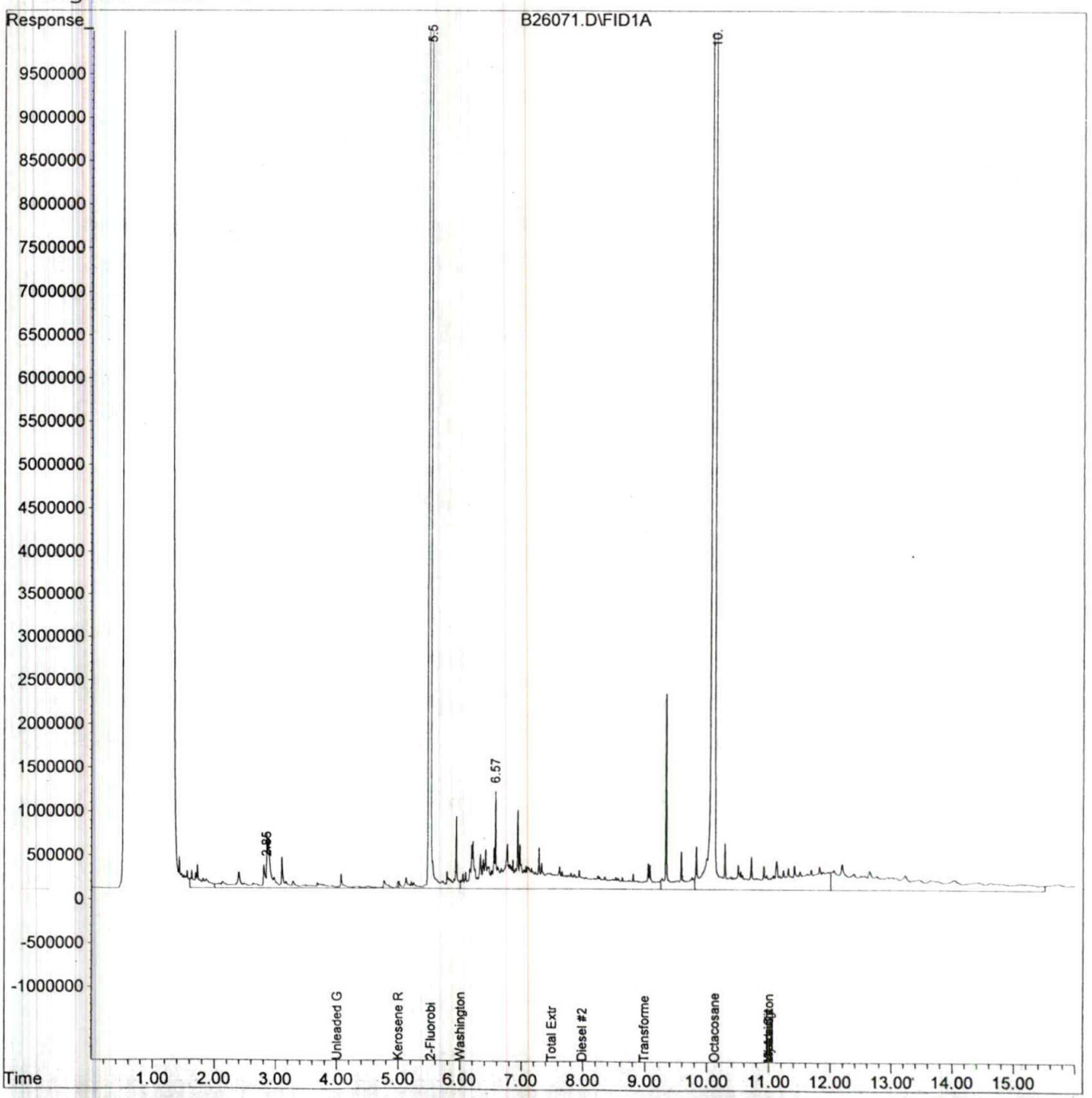
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

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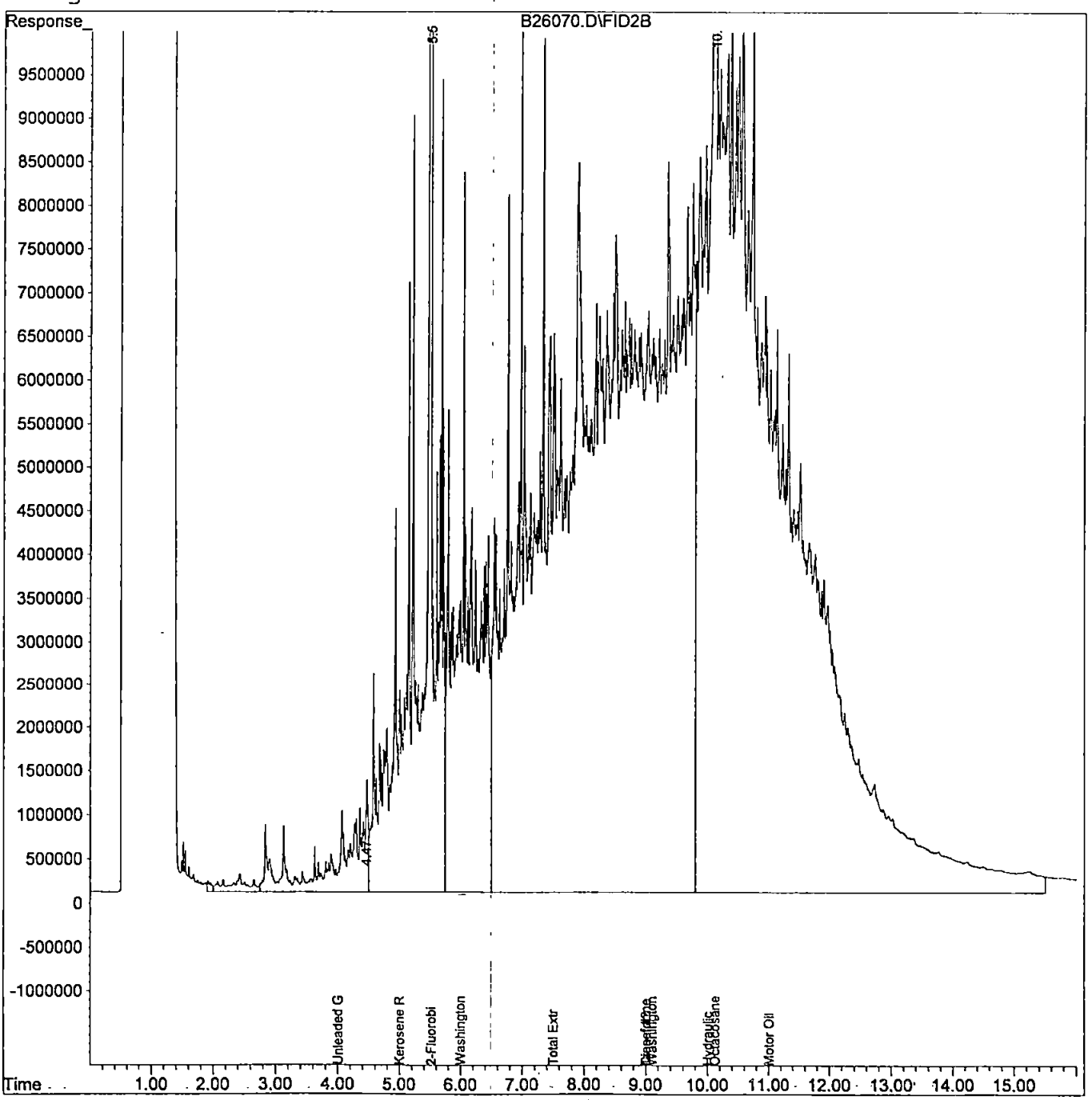
Sample : b802391-07 Inst : GC #7
Misc : Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 27 10:04 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Thu Feb 26 09:24:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

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Sample : b802391-08 Inst : GC #7
Misc : Multiplr: 1.00
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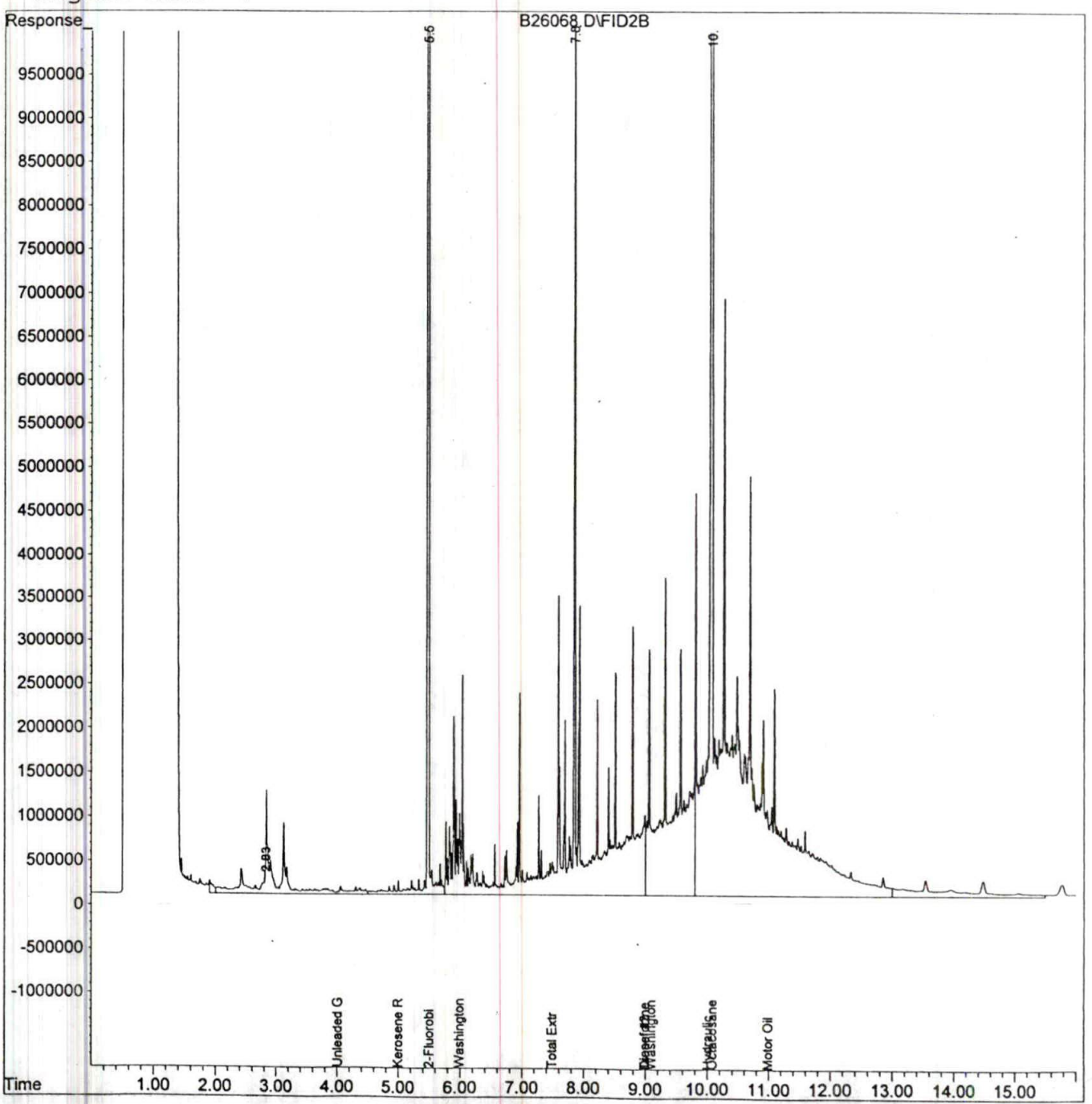
Quant Time: Feb 27 10:03 1998 Quant Results File: NWTPHD2.RES

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD2.M (Chemstation Integrator)
Title : Northwest Rear Method
Last Update : Thu Feb 26 09:24:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

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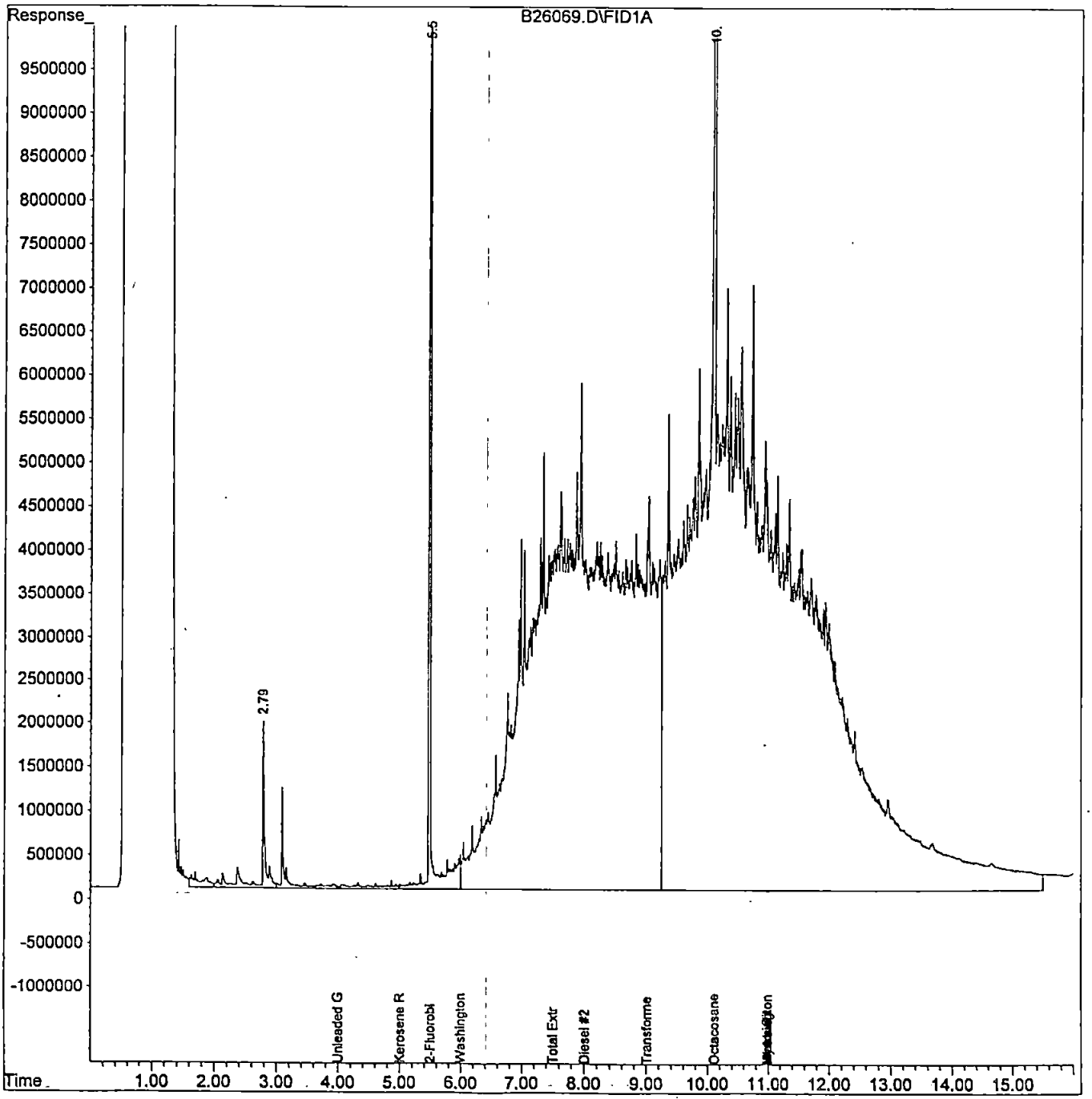
Sample : b802391-09 Inst : GC #7
Misc : Multiplr: 1.00
IntFile : SURR.E
Quant Time: Feb 27 9:20 1998 Quant Results File: NWTPHD.RES

Quant Method : C:\HPCHEM\4\METHODS\NWTPHD.M (Chemstation Integrator)
Title : Northwest Front Method
Last Update : Fri Feb 27 08:44:04 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-299.
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-929
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-220.

CHAIN OF CUSTODY REPORT

Work Order # B802391

REPORT TO:	INVOICE TO:
ATTENTION: Gary Stevens	ATTENTION: Barry LamLard
ADDRESS: 8410 154th Ave NE Redmond WA	ADDRESS: PSE
PHONE: 425-861-6000 FAX: 425-861-6050	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: S. Grady Way	
PROJECT NUMBER: 186-407-85	
SAMPLED BY: TNO	

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: [10 Standard] [7] [5] [4] [3] [2] [1] [Same Day]

Fuels & Hydrocarbon Analyses: [5 Standard] [3-4] [2] [1] [Same Day]

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	NW TPH D-extended	PCBs by EPA 8081	SVOC by EPA Method 8270	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	GMW-1	2/20/98 1020	B802391-01	X			W	1	
2.	GMW-2	2/20/98 1035	02	X			W	1	
3.	GMW-3	1100	03	X	X		W	2	
4.	GMW-4	1130	04	X	X	X	W	3	
5.	GMW-5	1200	05	X	X	⊗	W	2	re-logged 2/23 per client/jpc cancelled per client 2/23/98 jpc
6.	GMW-6	1230	06	X	X	X	W	3	
7.	GMW-7	100	07	X	X		W	2	
8.	GC-1	2/20/98 1400	08	X	X		S	1	
9.	GC-2	2/20/98 1400	09	X	X		S	1	
10.									

RELINQUISHED BY (Signature):	DATE: 2/20/98	RECEIVED BY (Signature): Lisa Hurley	DATE: 2/20/98
PRINT NAME: Tony Crane	FIRM: GEI TIME: 1415	PRINT NAME: Lisa Hurley	FIRM: NCA TIME: 1415
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	DATE:
PRINT NAME:	FIRM: TIME:	PRINT NAME:	FIRM: TIME:

ADDITIONAL REMARKS:

Dext w/ silica gel cleanup. 11.5°NOG

PAGE OF

APPENDIX E
INTERIM TPH POLICY

APPENDIX E
INTERIM TPH POLICY
MTCA METHOD B CLEANUP LEVEL CALCULATIONS

This appendix presents the results of GeoEngineers' calculation of Model Toxics Control Act (MTCA) Method B cleanup levels for diesel- and heavy oil-range hydrocarbons detected in soil at PSE's Grady Way Complex property during the 1997/1998 ESA. The MTCA Method B cleanup levels presented herein were calculated using the Washington State Department of Ecology's (Ecology) *Interim Interpretive and Policy Statement, Cleanup of Total Petroleum Hydrocarbons* (Interim TPH Policy).

Our Phase I ESA research and chemical analyses indicate that periodic transformer (mineral/insulating) oil leaks from electrical transformers stored in the southern and eastern portions of site during the past 40 years have resulted in residual concentrations of petroleum hydrocarbons in soil. Transformer oil elutes in the diesel- and heavy oil-range when analyzed by gas chromatography. Chemical analysis during Phase II of our study quantified the residual transformer oil-related hydrocarbons in soil at the site either as transformer oil and/or undifferentiated diesel- and heavy oil-range hydrocarbons. Chemical analysis also detected hydraulic/lube oil-range hydrocarbons in some of the soil samples. A specific source of these hydraulic/lube oil-range hydrocarbons was not identified by our study.

Recent studies (Insulating Oil Fate and Transport Report, May 1996, prepared for Bonneville Power Administration et. al. by CH2M Hill) have shown that the more toxic constituents typically associated with many petroleum products such as semi-volatile organic compounds, volatile organic compounds and metals are present at trace concentrations or are not detectable in transformer (mineral/insulating) oils. The studies also have shown that transformer oil has a relatively high viscosity, migrates through soil relatively slowly, and has a low potential for volatilization, leaching or transport to ground water.

Remediation of petroleum-hydrocarbon spills historically has been completed using the Model Toxics Control Act (MTCA) Method A cleanup levels for petroleum products. The MTCA Method A cleanup levels for petroleum hydrocarbons in soil (200 milligrams per kilogram [mg/kg] for diesel- and heavy oil-range hydrocarbons and 100 mg/kg for gasoline-range hydrocarbons) cannot be adjusted to account for specific properties of petroleum products such as the absence of the more toxic constituents in transformer and hydraulic/lube oils. The Ecology Interim TPH Policy allows for calculation of a MTCA Method B cleanup level for the petroleum product in soil based on the actual constituents present in the petroleum. The Interim TPH Policy methodology was used to (1) calculate site specific petroleum hydrocarbon cleanup levels, and (2) evaluate the regulatory significance of residual petroleum hydrocarbons in soil at the subject site. A detailed discussion of the Interim TPH Policy methods is presented later in this appendix.

CHEMICAL ANALYSES

Three soil samples (B-1-3.0, B-32-0.5 and GMW-4-6.0) were obtained by GeoEngineers, from portions of the site where chemical analysis indicated the presence of residual petroleum hydrocarbons. The petroleum hydrocarbons in B-1-3.0 were quantified as hydraulic/lube oil. The petroleum hydrocarbons in B-32-05 were quantified as transformer (mineral/insulating) oil. The petroleum hydrocarbons in GMW-4-6.0 were quantified as undifferentiated diesel- and heavy oil-range hydrocarbons that we have attributed to transformer oil. The approximate locations of these soil samples are shown on Figure 5 of the report. The soil samples were submitted to North Creek Analytical of Bothell, Washington for one or more of the following chemical analyses: diesel- and heavy oil-range petroleum hydrocarbons by Ecology Method NWTPH-D extended and benzene, ethylbenzene, toluene and xylenes (BETX), methylene tert-butyl ether (MTBE), naphthalene, volatile petroleum hydrocarbon (VPH) fractions and extractable petroleum hydrocarbon (EPH) fractions using Ecology Interim TPH Policy methods. The chemical analytical results considered in the Interim TPH Policy calculations for this study are presented in Table E-1. Laboratory reports are presented in Appendix D.

Hydraulic/lube oil was detected in B-1-3.0 at a concentration of 213 mg/kg. Aliphatic EPHs were detected in the EC (equivalent carbon) 12-16, EC16-21, and EC21-34 ranges. Aromatic EPHs were detected in the EC16-21 and EC21-34 ranges. Polynuclear aromatic hydrocarbons (cPAHs) were detected in the B-1-3.0 sample at concentrations less than applicable MTCA cleanup levels.

Transformer oil was detected in B-32-0.5 at a concentration of 1,100 milligrams per kilogram (mg/kg). Aliphatic EPHs were detected in the EC12-16, EC16-21, and EC21-34 ranges. Aromatic EPHs were detected in the EC16-21 and EC21-35 ranges. Polynuclear aromatic hydrocarbons (PAHs) were not tested in the B-32-0.5 sample because PAH data was obtained for the higher concentration of transformer oil-related hydrocarbons detected in GMW-4-6.0.

Undifferentiated diesel- and heavy oil-range hydrocarbons were detected in GMW-4-6.0 at concentrations of 1,140 and 671 mg/kg, respectively. Aliphatic VPHs were not detected in the GMW-4-6.0 sample. Aromatic VPHs were detected in the EC8-10 and EC10-12 ranges. Aliphatic EPHs were detected in the EC12-16, EC16-21, and EC21-34 ranges. Aromatic EPHs were detected in the EC16-21 and EC21-34 ranges. BETX and MTBE were not detected in GMW-4-6.0. PAHs either were not detected or were detected at concentrations less than applicable MTCA cleanup levels in the GMW-4-6.0 sample.

MTCA METHOD B SOIL DIRECT CONTACT CALCULATIONS

Petroleum products, including transformer oil, hydraulic/lube oil and other diesel- and heavy oil-range hydrocarbons, contain multiple fractions and individual compounds that have associated noncarcinogenic health effects. MTCA stipulates that individual hazard quotients

associated with these fractions are additive, and that the total hazard index (the sum of all individual hazard quotients) should not exceed 1.0 for the risk to be considered acceptable.

We calculated that the hazard index for the hydraulic/lube oil in soil sample B-1-3.0 is 0.06 as shown in Table E-2. Carcinogenic PAHs were not detected at concentrations exceeding the MTCA Method A cleanup level in B-1-3.0. A site-specific Method B soil cleanup level protective of human health direct contact (noncarcinogen) exposures was calculated for the hydraulic/lube oil using the MTCA Method B equations and the reference dose values as shown in Table E-3. The Method B cleanup level we calculated for hydraulic/lube oil in soil at this site is 3,432 mg/kg.

We calculated that the hazard index for the transformer oil in soil sample B-32-0.5 is 0.19 as shown in Table E-4. A site-specific Method B soil cleanup level protective of human health direct contact (non-carcinogen) exposures was calculated for transformer oil using the MTCA Method B equations and the reference dose values as shown in Table E-5. The Method B cleanup level we calculated for petroleum hydrocarbons quantified as transformer oil in soil at this site is 3,971 mg/kg.

We calculated that the hazard index for the transformer oil related hydrocarbons quantified in the diesel- and heavy oil-ranges in soil sample GMW-4-6.0 is 0.38 as shown in Table E-6. Carcinogenic compounds were not detected at concentrations exceeding applicable MTCA cleanup levels in GMW-4-6.0. A site-specific Method B soil cleanup level protective of human health direct contact (noncarcinogen) exposures was calculated for the transformer oil related hydrocarbons in GMW-4-6.0 using the MTCA Method B equations and the reference dose values as shown in Table E-7. The Method B cleanup level we calculated for petroleum hydrocarbons in GMW-4-6.0 is 3,965 mg/kg.

The Method B cleanup levels we calculated are based on (1) evaluation of the direct contact exposure pathway, and (2) the ratio of aliphatic to aromatic constituents.

POTENTIAL SOIL-TO-GROUND WATER TRANSPORT OF HYDROCARBONS

The Interim TPH Policy also requires that soil contamination be evaluated relative to its potential to migrate to ground water. In accordance with the Policy, the evaluation of this fate and transport pathway was based on a determination of whether TPH remaining in vadose zone soil could cause exceedance of the MTCA Method A ground water cleanup level for TPH of 1 milligram per liter (mg/l). The concentration of TPH partitioning from soil to soil pore water was estimated using Raoult's Law for the hydrocarbons detected in B-1-3.0, B-32-0.5 and GMW-4-6.0. Raoult's Law is used to estimate resultant chemical concentrations dissolved in water when more than one chemical compound (TPH fraction) is present in soil. Each TPH fraction has a different solubility in water. Based on the relative concentration of each fraction, Raoult's Law was used to estimate the resultant concentration of TPH in pore water. Consistent with the Interim TPH Policy, the estimated concentration of TPH in pore water using Raoult's Law was then assumed to directly enter the ground water (assumes that

contaminated soil is in direct contact with ground water). Once the pore water enters the ground water, it is assumed under the Interim TPH Policy that the concentrations of dissolved TPH will be diluted by 20 times before reaching a drinking water well. This diluted concentration of dissolved hydrocarbons is compared to the MTCA Method A ground water cleanup level for TPH of 1 mg/l.

Using the methods described above and the EPH fraction data for B-1-3.0, the predicted hydraulic/lube oil concentration in ground water is approximately 2.9×10^{-3} mg/l as shown in Table E-8. This concentration is significantly less than the MTCA Method A cleanup level for TPH of 1 mg/l

Using the methods described above and the EPH faction data for B-32-0.5, the predicted transformer oil concentration in ground water is approximately 4.1×10^{-3} mg/l as shown in Table E-9. This concentration is significantly less than the MTCA Method A cleanup level for TPH of 1 mg/l.

Using the methods described above and the transformer oil-related hydrocarbon fractions detected in GMW-4-6.0, the predicted total diesel- and heavy oil-range hydrocarbon concentration in ground water is approximately 5.1×10^{-3} mg/l as shown in Table E-10. This concentration is significantly less than the MTCA Method A cleanup level for TPH of 1 mg/l.

INTERIM TPH POLICY METHODS

The MTCA cleanup regulations require that the evaluation of soil contamination and determination of soil cleanup levels be based on consideration of direct contact and on protection of ground water. Similarly, the Interim TPH Policy requires consideration of both components in evaluating petroleum contamination and arriving at a soil cleanup level. To evaluate the level of contamination and calculate a soil cleanup level for the site's transformer oil in accordance with the Interim TPH Policy, identification of the petroleum product hydrocarbon fractions and quantification of their toxicity (using surrogates) and transport characteristics were required. Considerations of current and future site use also were necessary to apply the appropriate MTCA method. For this site, we made the most conservative assumption that the site must meet residential cleanup standards; therefore, MTCA Method B was used for evaluation of contamination and in calculating a soil cleanup level.

The MTCA Method B formula for evaluating soil contamination and calculating a human health risk-based soil cleanup based on direct contact, as applied in the Interim TPH Policy, considers only the soil ingestion exposure pathway. This was considered sufficient for contamination evaluation and calculation of transformer oil and hydraulic/lube oil cleanup levels in soil at this site. The potential for inhalation of vapors from residual transformer oil and hydraulic/lube oil in site soils is considered negligible because of the low volatility of these hydrocarbons. Soil-to-ground water transport of transformer oil and subsequent ingestion of ground water also was considered in our assessment. The reader is referred to the Interim TPH

Policy (Ecology Publication ECY 97-600) for background information and assumptions that pertain to the use of the Interim TPH policy.

SURROGATE APPROACH

Petroleum products typically are composed of thousands of individual chemicals. Toxicity criteria that relate the intake (dose) of a chemical to a response are available for only a handful of the individual chemicals that may be present in petroleum products. A cleanup level cannot be calculated for individual chemicals (or for petroleum products) unless a toxicity criterion, such as a reference dose for a non-carcinogen or a potency factor for a carcinogen, is available. The Interim TPH Policy uses a surrogate approach to account for compound-specific data that is not yet available. In the surrogate approach, a reference compound is identified as a representative of individual petroleum hydrocarbon fractions. These reference compounds are selected because their toxicity is relatively well characterized in that either a reference dose or potency factor is available, or a dose-response value can be developed from available toxicity data. The toxicity criterion identified for the reference compound is then assumed to represent a surrogate toxicity criterion for the associated hydrocarbon fraction.

For the purpose of identifying surrogate toxicity criteria for hydrocarbon fractions, petroleum hydrocarbons are divided into broad chemical classes. Surrogate toxicity criteria are then identified for each group of compounds using the methods described above. Ecology has selected one compound representing the aliphatic fractions (n-hexane) and one compound representing the aromatic fractions (pyrene) that likely have the most conservative toxicity criteria. Surrogate criteria for other hydrocarbon fractions are likely multiples of these. Until sufficient data are made available for developing surrogate toxicity criteria for the other hydrocarbon fractions, the Ecology Interim TPH Policy requires that (1) all aliphatics be grouped together, (2) all aromatics be grouped together and (3) the aliphatic and aromatic groups be represented by the toxicity criteria for n-hexane and pyrene, respectively. This surrogate approach was used in our calculation of the Method B cleanup level for the petroleum hydrocarbons in site soils based on direct contact.

The surrogate method used in the Interim TPH Policy for evaluation of contamination and in calculating petroleum hydrocarbon cleanup levels does not account for the noncarcinogenic toxicity contribution of ethylbenzene, toluene, and xylene. It also does not account for the carcinogenic health effect contribution from benzene and carcinogenic PAHs that may be present in the petroleum product. These compounds are quantified and evaluated separately, and cleanup levels are calculated for each compound using their specific reference dose or potency factors. Evaluation of petroleum contamination and calculation of Method B cleanup levels completed for this study accounts only for petroleum hydrocarbons in the absence of these compounds.

No historical sources of benzene, ethylbenzene, toluene and xylenes were identified in the southern and eastern portions of the site during our studies. Additionally, benzene ethylbenzene, toluene and xylenes were not detected in GMW-4-6.0.

Residual carcinogenic PAHs were detected at concentrations exceeding the MTCA Method A cleanup level for cPAHs in three of the soil samples (B-19, B-23 and B-29) submitted for analysis. The source of these cPAHs are preservatives on power poles formerly stored at the site. They do not appear to be related to the residual transformer and hydraulic/lube oil detected in many of the soil samples.

The hydrocarbon fractions and their associated surrogate toxicity criterion values for the Ecology Interim TPH Policy are summarized in Tables E-2 through E-7. The hydrocarbon compounds are all considered non-carcinogenic, based on the toxicity information currently available. Therefore, only reference dose (ORFD) values are provided.

FATE AND TRANSPORT

The fate and transport of hydrocarbons in the subsurface is a significant component of the Interim TPH Policy. Similar to the approach discussed above for toxicity, surrogate physical and chemical properties of different hydrocarbon fractions are used to represent and evaluate hydrocarbons movement through and into soil and water. Based largely on studies completed by the National TPH Criteria Working Group, the Ecology Interim TPH Policy uses six aliphatic fractions, five aromatic fractions, and benzene and toluene in evaluating the fate and transport of petroleum products. The TPH Criteria Working Group grouped the numerous TPH constituents into the aliphatic and aromatic fractions based on the similarity of their chemical properties. Constituent chemical properties such as equivalent carbon number, soil sorption coefficient, soil organic-carbon fractional content, octanol-water partition coefficient, and Henry's Law Constant, dictate how they are transported in different media and were used to identify the hydrocarbon fractions.

Although MTCA requires that each potential transport pathway of concern be evaluated, the Interim TPH Policy specifically mentions two transport pathways: (1) soil-to-ground water and (2) soil-to-air. An evaluation of the soil-to-ground water pathway determines what petroleum concentrations in soil may be left in place while being protective of ground water. Four methods of evaluating soil-to-ground water cleanup levels are described in the Ecology Interim TPH Policy. The method used for this study was soil/pore water partitioning (Raoult's Law) as summarized in Tables E-8 through E-10.

The methods with which to evaluate risks to human health or the environment associated with hydrocarbons migrating from subsurface soils in the vapor phase have not yet been defined in the Interim TPH Policy. Additionally, significant concentrations of volatile hydrocarbons typically are not associated with transformer oil and hydraulic/lube oil detected in soil at the site. Therefore, we did specifically evaluate the soil to vapor exposure pathway during this ESA.

CONCLUSIONS

Chemical analytical results indicate that residual transformer oil-related hydrocarbons and hydraulic/lube oil-range hydrocarbons detected in site soil are less than calculated MTCA Method B cleanup levels for these hydrocarbons and are protective of human health for the direct contact and soil-to-ground water exposure pathways in the absence of carcinogenic PAHs.

INTERIM TPH POLICY LIMITATIONS

Regulatory policy regarding risk-based evaluations of petroleum hydrocarbon contamination continues to be formulated by Ecology. The Interim TPH Policy is a conservative and temporary measure intended to allow for the use of a risk-based approach to petroleum hydrocarbons while final policy is developed. The policy described herein is subject to future regulatory revisions.

TABLE E-1 (Page 1 of 3)
INTERIM TPH POLICY CHEMICAL ANALYTICAL RESULTS
PUGET SOUND ENERGY SOUTH GRADY WAY COMPLEX
RENTON WASHINGTON

Description	Sample Number [1]			MTCA Method B Cleanup Level [2] (mg/kg)
	B-1-3.0	B-32-0.5	GMW-4-6.0	
Date Sampled	12/18/97	12/18/97	2/18/98	
Depth of Sample (feet bgs)	0.5	0.5	6.0	
Field Screening Results[3]				
Headspace Vapors (ppm)	–	–	–	–
Sheen	NS	NS	SS	–
TPH[4] (mg/kg)				
Hydraulic/Lube oil-range	213	–	–	3,432 [5]
Transformer oil-range	–	1100	–	3,971 [5]
Diesel-range	72.6	ND	1140	3,965 [5]
Heavy Oil-range	–	–	671	3,965 [5]
VPH[4] (mg/kg)				
Aliphatics				
EC5-EC6	–	–	ND	–
EC6-EC8	–	–	ND	–
EC8-EC10	–	–	ND	–
EC10-EC12	–	–	ND	–
Aromatics				
EC8-EC10	–	–	14.2	–
EC10-EC12	–	–	16.0	–
Other Volatile Petroleum Hydrocarbons[6] (mg/kg)				
Benzene	–	–	ND	34.5
Ethylbenzene	–	–	ND	8,000
Toluene	–	–	ND	16,000
Xylenes	–	–	ND	160000
Naphthalene	–	–	ND	3,200
MTBE	–	–	ND	NE

Notes appear on Page 3 of 3.

Table E-1 (Page 2 of 3)

Description	Sample Number [1]			MTCA Cleanup Level [2] (mg/kg)
	B-1-3.0	B-32-0.5	GMW-4-6.0	
EPH[7] (mg/kg)				
Aliphatics				
EC8-EC10	<5.00	<5.00	<5.00	--
EC10-EC12	<5.00	<5.00	<5.00	--
EC12-EC16	13.6	56.2	46.0	--
EC16-EC21	25.7	395	649	--
EC21-EC34	89.3	165	508.0	--
Aromatics				
EC8-EC10	--	--	--	--
EC10-EC12	<5.00	<5.00	<5.00	--
EC12-EC16	<5.00	<5.00	<5.00	--
EC16-EC21	10.1	73.9	154	--
EC21-EC34	69.2	81.3	152.0	--
PAHs[7] (mg/kg)				
Carcinogenic				
Benzo(a)anthracene	0.0139	--	<0.0100	--
Benzo(b)fluoranthene	0.0191	--	<0.0100	--
Benzo(k)fluoranthene	<0.0100	--	<0.0100	--
Benzo(a)pyrene	0.0139	--	<0.0100	--
Chrysene	0.0226	--	<0.0100	--
Dibenzo(a,h)anthracene	<0.0100	--	<0.0100	--
Indeno(1,2,3-cd)pyrene	0.0174	--	<0.0100	--
Total Carcinongenic PAHs	0.0869		<0.0700	1.0 [8]
Noncarcinogenic				
Naphthalene	0.0122	--	<0.0100	3200
Acenaphthene	<0.0100	--	<0.0100	4800
Acenaphthylene	<0.0100	--	<0.0100	NE
Anthracene	<0.0100	--	<0.0100	24000
Benzo(ghi)perylene	0.0183	--	<0.0100	NE
Fluorene	<0.0100	--	<0.0100	3200
Fluoranthene	0.0391	--	0.0181	3200
Phenanthrene	0.0365	--	0.0155	NE
Pyrene	0.0296	--	<0.0100	2400

Notes appear on Page 3 of 3.

TABLE E-2
RESIDENTIAL HAZARD INDEX AND CARCINOGENIC RISK FOR DIRECT CONTACT
SAMPLE B-1-3.0
PUGET SOUND ENERGY SOUTH GRADY WAY COMPLEX
RENTON, WASHINGTON

Compound	Detected Soil Concentration[1] (mg/kg)	ORfD	Residential		
			Factor	Multiplier	HQ
Total aliphatics	129	0.06	1.25E-05	2.08E-04	0.03
Total aromatics	79	0.03	See Below	See Below	See Below
Benzene	0	NA	NA	NA	NA
Ethylbenzene	0	0.1	1.25E-05	1.25E-04	0.00
Toluene	0	0.2	1.25E-05	6.25E-05	0.00E+00
Xylenes	0	2	1.25E-05	6.25E-06	0.00E+00
Total aromatic+B-E-X	79	0.03	1.25E-05	4.17E-04	0.03
Hazard Index					0.06

Notes:

[1]The highest concentration for each compound or fraction detected by VPH or EPH.

Total TPH (sum of aliphatic and aromatics) =	208
% total aliphatics	62.02%
% total aromatics	37.98%

ORfD = oral reference dose

Factor = residential factor as defined in Interim Policy

Multiplier = Factor/ORfD

HQ = hazard quotient

Hazard Index = sum of HQs

NA = not applicable

Table E-1 (Page 3 of 3)

Notes:
[1]Approximate sample locations are shown in Figure 5.
[2]From MTCA Cleanup Levels and Risk Calculations (CLARC II) Update February 1996 Publication #94-145, unless otherwise noted.
[3]Field screening procedures are described in Appendix B. NS = no sheen, SS = slight sheen, MS = moderate sheen, HS = heavy sheen.
[4]TPH = total petroleum hydrocarbons. Gasoline-, diesel- and heavy oil-range hydrocarbons analyzed by Ecology NWTPH series.
[5]Calculated using interim TPH Policy methods for direct contact (non-carcinogen) exposure.
[6]VPH = volatile petroleum hydrocarbons, BETX, naphthalene, and methyl tert butylether (MTBE) by Ecology Method (June 1997).
[7]EPH = extractable petroleum hydrocarbons and polynuclear aromatic hydrocarbons (PAHs) Ecology Method (June 1997).
[8]MTCA Method A Cleanup Level.
mg/kg = milligrams per kilogram.
-- = not analyzed or measured and /or not applicable.
ppm = parts per million.
NE = not established.
Chemical analyses conducted by North Creek Analytical of Bothell, Washington. The laboratory reports are presented in Appendix C.

TABLE E-3

MTCA METHOD B SOIL CLEANUP LEVEL CALCULATION[1]
BASED ON RESIDENTIAL DIRECT CONTACT B-1-3.0

PUGET SOUND ENERGY SOUTH GRADY WAY COMPLEX
RENTON, WASHINGTON

Compound	Soil Concentration	ORfD	Residential		
			Factor	Multiplier	HQ
Total aliphatic[2]	2,129	0.06	1.25E-05	2.08E-04	0.56
Total aromatic[2]	1,303	0.03	Note 2	Note 2	Note 2
Benzene	0	NA	NA	NA	NA
Ethylbenzene	0	0.1	1.25E-05	1.25E-04	0.00
Toluene	0	0.2	1.25E-05	6.25E-05	0.00
Xylenes	0	2	1.25E-05	6.25E-06	0.00
Total aromatic+B-E-X	1,303	0.03	1.25E-05	4.17E-04	0.43
Hazard Index					0.99

MTCA Method B Cleanup Level for TPH	3,432

Notes:

[1]The MTCA Method B cleanup level is that TPH concentration (sum of aliphatics and aromatics) which results in a Hazard Index of 0.99 with the same ratio of aliphatics to aromatics as the sample tested.

Total TPH (sum of aliphatic and aromatics) =	3,432
% total aliphatics	62.03%
% total aromatics	37.97%

mg/kg = milligrams per kilogram
ORfD = oral reference dose
Factor = residential factor
Multiplier = factor/ORfD
HQ = hazard quotient = (soil concentration (mg/kg)) (factor)/ORfD
Hazard Index = sum of HQs
TPH = total petroleum hydrocarbons
NA = not applicable

TABLE E-4
RESIDENTIAL HAZARD INDEX AND CARCINOGENIC RISK FOR DIRECT CONTACT
SAMPLE B-32-0.5
PUGET SOUND ENERGY SOUTH GRADY WAY COMPLEX
RENTON, WASHINGTON

Compound	Detected Soil Concentration[1] (mg/kg)	ORfD	Residential		
			Factor	Multiplier	HQ
Total aliphatics	616	0.06	1.25E-05	2.08E-04	0.13
Total aromatics	155	0.03	See Below	See Below	See Below
Benzene	0.000	NA	NA	NA	NA
Ethylbenzene	0.000	0.1	1.25E-05	1.25E-04	0.00
Toluene	0.000	0.2	1.25E-05	6.25E-05	0.00E+00
Xylenes	0.000	2	1.25E-05	6.25E-06	0.00E+00
Total aromatic+B-E-X	155	0.03	1.25E-05	4.17E-04	0.06
Hazard Index					**0.19**

Notes:

[1]The highest concentration for each compound or fraction detected by VPH or EPH

Total TPH (sum of aliphatic and aromatics) = 771

% total aliphatics 79.90%

% total aromatics 20.10%

ORfD = oral reference dose

Factor = residential factor as defined in Interim Policy

Multiplier = Factor/ORfD

HQ = hazard quotient

Hazard Index = sum of HQs

NA = not applicable

TABLE E-5
MTCA METHOD B SOIL CLEANUP LEVEL CALCULATION[1]
BASED ON RESIDENTIAL DIRECT CONTACT B-32-0.5
PUGET SOUND ENERGY SOUTH GRADY WAY COMPLEX
RENTON, WASHINGTON

Compound	Soil Concentration (mg/kg)	ORfD	Residential		
			Factor	Multiplier	HQ
Total aliphatic[2]	3,172	0.06	1.25E-05	2.08E-04	0.56
Total aromatic[2]	799	0.03	Note 2	Note 2	Note 2
Benzene	0	NA	NA	NA	NA
Ethylbenzene	0	0.1	1.25E-05	1.25E-04	0.00
Toluene	0	0.2	1.25E-05	6.25E-05	0.00
Xylenes	0	2	1.25E-05	6.25E-06	0.00
Total aromatic+B-E-X	799	0.03	1.25E-05	4.17E-04	0.43
Hazard Index					0.99

MTCA Method B Cleanup Level for TPH	3,971				

Notes:

[1]The MTCA Method B cleanup level is the TPH concentration (sum of aliphatics and aromatics) which results in a Hazard Index of 0.99 with the same ratio of aliphatics to aromatics as the sample tested.

Total TPH (sum of aliphatic and aromatics) = 3,971

% total aliphatics 79.88%

% total aromatics 20.12%

mg/kg = milligrams per kilogram

ORfD = oral reference dose

Factor = residential factor

Multiplier = factor/ORfD

HQ = hazard quotient = (soil concentration [mg/kg]) (factor)/ORfD

Hazard Index = sum of HQs

TPH = total petroleum hydrocarbons

NA = not applicable

TABLE E-6
RESIDENTIAL HAZARD INDEX AND CARCINOGENIC RISK FOR DIRECT CONTACT
SAMPLE GMW-4-6.0
PUGET SOUND ENERGY SOUTH GRADY WAY COMPLEX
RENTON, WASHINGTON

Compound	Detected Soil Concentration[1] (mg/kg)	ORfD	Residential		
			Factor	Multiplier	HQ
Total aliphatics	1203	0.06	1.25E-05	2.08E-04	0.25
Total aromatics	306	0.03	See Below	See Below	See Below
Benzene	0	NA	NA	NA	NA
Ethylbenzene	0	0.1	1.25E-05	1.25E-04	0.00
Toluene	0	0.2	1.25E-05	6.25E-05	0.00E+00
Xylenes	0	2	1.25E-05	6.25E-06	0.00E+00
Total aromatic+B-E-X	306	0.03	1.25E-05	4.17E-04	0.13
Hazard Index					0.38

Notes:
[1]The highest concentration for each compound or fraction detected by VPH or EPH.

Total TPH (sum of aliphatic and aromatics) = 1509
% total aliphatics 79.72%
% total aromatics 20.28%
ORfD = oral reference dose
Factor = residential factor as defined in Interim Policy
Multiplier = Factor/ORfD
HQ = hazard quotient
Hazard Index = sum of HQs
NA = not applicable

TABLE E-7

MTCA METHOD B SOIL CLEANUP LEVEL CALCULATION[1]
BASED ON RESIDENTIAL DIRECT CONTACT GMW-4-6.0

PUGET SOUND ENERGY SOUTH GRADY WAY COMPLEX
RENTON, WASHINGTON

Compound	Soil Concentration (mg/kg)	ORfD	Residential		
			Factor	Multiplier	HQ
Total aliphatic[2]	3,200	0.06	1.25E-05	2.08E-04	0.56
Total aromatic[2]	765	0.03	Note 2	Note 2	Note 2
Benzene	0	NA	NA	NA	NA
Ethylbenzene	0	0.1	1.25E-05	1.25E-04	0.00
Toluene	0	0.2	1.25E-05	6.25E-05	0.00
Xylenes	0	2	1.25E-05	6.25E-06	0.00
Total aromatic+B-E-X	765	0.03	1.25E-05	4.17E-04	0.43
Hazard Index					0.99

MTCA Method B Cleanup Level for TPH	3,965				

Notes:

[1] The MTCA Method B cleanup level is the TPH concentration (sum of aliphatics and aromatics) which results in a Hazard Index of 0.99 with the same ratio of aliphatics to aromatics as the sample tested.

Total TPH (sum of aliphatic and aromatics) = 3,965
% total aliphatics 80.71%
% total aromatics 19.29%

mg/kg = milligrams per kilogram
ORfD = oral reference dose
Factor = residential factor
Multiplier = factor/ORfD
HQ = hazard quotient = (soil concentration [mg/kg]) (factor)/ORfD
Hazard Index = sum of HQs
TPH = total petroleum hydrocarbons
NA = not applicable

TABLE E-8
PROJECTED TPH CONCENTRATION IN GROUND WATER
SOIL-TO-GROUND WATER PARTITIONING USING RAOULT'S LAW
VPH AND EPH DATA FOR SAMPLE B-1-3.0

PUGET SOUND ENERGY SOUTH GRADY WAY COMPLEX
RENTON, WASHINGTON

Fraction		Concentration[2] (mg/kg)	% of Mixture	MW (g/mol)	mMoles	X	S (mg/l)	Effective Solubility (mg/l)	DF	C_{gwtr} (mg/l)
Aliphatics	EC 5-6 (5.5)	0.00	0.00%	81	0.0000	0.00	28	0.00000	20	0.0000
	EC >6-8 (7.0)	0.00	0.00%	100	0.0000	0.00	4.2	0.00000	20	0.0000
	EC >8-10 (9.0)	0.00	0.00%	130	0.0000	0.00	0.33	0.00000	20	0.0000
	EC >10-12 (11.0)	0.00	0.00%	160	0.0000	0.00	0.026	0.00000	20	0.0000
	EC >12-16 (14.0)	13.60	11.47%	200	0.0001	0.13	0.00059	0.00008	20	0.0000
	EC >16-21 (19.0)	25.70	21.67%	270	0.0001	0.19	0.000001	0.00000	20	0.0000
TOTAL ALIPHATICS		39.30	33.14%							
Aromatics	Benzene (6.5)	0.00	0.00%	78	0.0000	0.00	1780	0.00000	20	0.0000
	Toluene (7.6)	0.00	0.00%	92	0.0000	0.00	520	0.00000	20	0.0000
	EC >8-10 (9.0)	0.00	0.00%	120	0.0000	0.00	65	0.00000	20	0.0000
	EC >10-12 (11.0)	0.00	0.00%	130	0.0000	0.00	25	0.00000	20	0.0000
	EC >12-16 (14.0)	0.00	0.00%	150	0.0000	0.00	5.8	0.00000	20	0.0000
	EC >16-21 (19.0)	10.1	8.52%	190	0.0001	0.11	0.51	0.05372	20	0.0027
	EC >21-34 (28.0)	69.20	58.35%	240	0.0003	0.57	0.0066	0.00377	20	0.0002
TOTAL AROMATICS		79.30	66.86%							
TOTAL PRODUCT		118.60	100.00%		0.0005	1.00				0.0029

Notes:
[1]Chemical analyses by North Creek Analytical Laboratory reports in Appendix C.
[2]The highest concentration for each fraction detected by either VPH or EPH. Fractions not detected are assumed as zero for the purposes of this calculation.
EC = equivalent carbon
MW = molecular weight
mMoles = milliMoles
X = mole fraction
S = solubility
DF = dilution factor
C_{gwtr} = concentration in ground water (projected)
mg/kg = milligrams per kilogram
g/mol = grams per mole
mg/l = milligrams per liter

TABLE E-9
PROJECTED TPH CONCENTRATION IN GROUND WATER
SOIL-TO-GROUND WATER PARTITIONING USING RAOULT'S LAW
VPH AND EPH DATA FOR SAMPLE B-32-0.5

PUGET SOUND ENERGY SOUTH GRADY WAY COMPLEX
RENTON, WASHINGTON

Fraction		Concentration[2] (mg/kg)	% of Mixture	MW (g/mol)	mMoles	X	S (mg/l)	Effective Solubility (mg/l)	DF	C_{gwtr} (mg/l)
Aliphatics	EC 5-6 (5.5)	0.00	0.00%	81	0.0000	0.00	28	0.00000	20	0.0000
	EC >6-8 (7.0)	0.00	0.00%	100	0.0000	0.00	4.2	0.00000	20	0.0000
	EC >8-10 (9.0)	0.00	0.00%	130	0.0000	0.00	0.33	0.00000	20	0.0000
	EC >10-12 (11.0)	0.00	0.00%	160	0.0000	0.00	0.026	0.00000	20	0.0000
	EC >12-16 (14.0)	56.20	9.27%	200	0.0003	0.11	0.00059	0.00007	20	0.0000
	EC >16-21 (19.0)	395.00	65.14%	270	0.0015	0.59	0.000001	0.00000	20	0.0000
TOTAL ALIPHATICS		451.20	74.41%							
Aromatics	Benzene (6.5)	0.00	0.00%	78	0.0000	0.00	1780	0.00000	20	0.0000
	Toluene (7.6)	0.00	0.00%	92	0.0000	0.00	520	0.00000	20	0.0000
	EC >8-10 (9.0)	0.00	0.00%	120	0.0000	0.00	65	0.00000	20	0.0000
	EC >10-12 (11.0)	0.00	0.00%	130	0.0000	0.00	25	0.00000	20	0.0000
	EC >12-16 (14.0)	0.00	0.00%	150	0.0000	0.00	5.8	0.00000	20	0.0000
	EC >16-21 (19.0)	73.90	12.19%	190	0.0004	0.16	0.51	0.08026	20	0.0040
	EC >21-34 (28.0)	81.30	13.41%	240	0.0003	0.14	0.0066	0.00090	20	0.0000
TOTAL AROMATICS		155.20	25.59%							
TOTAL PRODUCT		606.40	100.00%		0.0025	1.00				0.0041

Notes:
[1]Chemical analyses by North Creek Analytical Laboratory reports in Appendix C.
[2]The highest concentration for each fraction detected by either VPH or EPH. Fractions not detected are assumed as zero for the purposes of this calculation.
EC = equivalent carbon
MW = molecular weight
mMoles = milliMoles
X = mole fraction
S = solubility
DF = dilution factor
C_{gwtr} = concentration in ground water (projected)
mg/kg = milligrams per kilogram
g/mol = grams per mole
mg/l = milligrams per liter

TABLE E-10
PROJECTED TPH CONCENTRATION IN GROUND WATER
SOIL-TO-GROUND WATER PARTITIONING USING RAOULT'S LAW
VPH AND EPH DATA FOR SAMPLE GMW-4-6.0
PUGET SOUND ENERGY SOUTH GRADY WAY COMPLEX
RENTON, WASHINGTON

Fraction		Concentration[2] (mg/kg)	% of Mixture	MW (g/mol)	mMoles	X	S (mg/l)	Effective Solubility (mg/l)	DF	C_{gwtr} (mg/l)
Aliphatics	EC 5-6 (5.5)	0.00	0.00%	81	0.0000	0.00	28	0.00000	20	0.0000
	EC >6-8 (7.0)	0.00	0.00%	100	0.0000	0.00	4.2	0.00000	20	0.0000
	EC >8-10 (9.0)	0.00	0.00%	130	0.0000	0.00	0.33	0.00000	20	0.0000
	EC >10-12 (11.0)	0.00	0.00%	160	0.0000	0.00	0.026	0.00000	20	0.0000
	EC >12-16 (14.0)	46.0	4.60%	200	0.0002	0.06	0.00059	0.00003	20	0.0000
	EC >16-21 (19.0)	649	64.84%	270	0.0024	0.59	0.000001	0.00000	20	0.0000
TOTAL ALIPHATICS		695	69.43%							
Aromatics	Benzene (6.5)	0.00	0.00%	78	0.0000	0.00	1780	0.00000	20	0.0000
	Toluene (7.6)	0.00	0.00%	92	0.0000	0.00	520	0.00000	20	0.0000
	EC >8-10 (9.0)	0.00	0.00%	120	0.0000	0.00	65	0.00000	20	0.0000
	EC >10-12 (11.0)	0.00	0.00%	130	0.0000	0.00	25	0.00000	20	0.0000
	EC >12-16 (14.0)	0.00	0.00%	150	0.0000	0.00	5.8	0.00000	20	0.0000
	EC >16-21 (19.0)	154.00	15.38%	190	0.0008	0.20	0.51	0.10138	20	0.0051
	EC >21-34 (28.0)	152.00	15.18%	240	0.0006	0.16	0.0066	0.00103	20	0.0001
TOTAL AROMATICS		306.00	30.57%							
TOTAL PRODUCT		1001.00	100.00%		0.0041	1.00				0.0051

Notes:
[1]Chemical analyses by North Creek Analytical Laboratory reports in Appendix C.
[2]The highest concentration for each fraction detected by either VPH or EPH. Fractions not detected are assumed as zero for the purposes of this calculation.
EC = equivalent carbon
MW = molecular weight
mMoles = millimoles
X = mole fraction
S = solubility
DF = dilution factor
C_{gwtr} = concentration in ground water (projected)
mg/kg = milligrams per kilogram
g/mol = grams per mole
mg/l = milligrams per liter