Stevens Heathcare
(former Cross Property)

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Phase II Environmental Site Assessment
Former Cross Property
Edmonds, Washington
February 11, 1998

For Stevens Healthcare



February 11, 1998

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

Stevens Healthcare 21601 76th Avenue West Edmonds, Washington 98026

Attention: Greg Andrews

We are pleased to submit this report of our Phase II Environmental Site Assessment of the former Cross property located at 21700 Highway 99 in Edmonds, Washington. Our services were conducted in general accordance with our proposal dated October 2, 1997. We appreciate the opportunity to assist you with this project. Please contact us if you have questions regarding information presented in this report.

Yours very truly,

GeoEngineers, Inc.

Kurt R. Fraese

Associate

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Two copies submitted

GeoEngineers, Inc.
Plaza 600 Building
600 Stewart St., Suite 1215
Seattle, WA 98101
Telephone (206) 728-2674
Fax (206) 728-2732
www.geoengineers.com

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REPORT PHASE II ENVIRONMENTAL SITE ASSESSMENT FORMER CROSS PROPERTY EDMONDS, WASHINGTON FOR STEVENS HEALTHCARE

1.0 INTRODUCTION

1.1 GENERAL

This report presents the results of our Phase II ESA (Environmental Site Assessment) of the property (former Cross property) located at 21700 Highway 99 in Edmonds, Washington. The subject site currently is owned by Stevens Healthcare and is used as a storage facility for used medical equipment and medical records. The location of the subject site relative to surrounding physical features is shown in Figure 1. The general layout of the site is shown in Figure 2.

An automobile wrecking yard, known as Cross Autowrecking, formerly was located on the subject site. A separate automobile wrecking yard (Roberts Autowrecking) formerly occupied the property immediately north of the subject site; a medical clinic (Kruger Clinic) is currently located on this property. Several phases of environmental study have been completed on the Kruger property and the northern portion of the subject site. Subsurface assessments completed by Seacor indicated that solvent-related contamination is present beneath both properties. This Phase II ESA was completed to further evaluate the nature and extent of contamination beneath the subject site and the potential source(s) of the contamination.

1.2 PREVIOUS STUDIES

Subsurface environmental conditions beneath the subject site and the adjacent Kruger property were previously evaluated (Phase II ESA) by Seacor. GeoEngineers reviewed Seacor's previous work and evaluated the potential for site contamination by hazardous substances during completion of a Phase I ESA. The results of our initial studies are presented in the report entitled "Phase I Environmental Site Assessment Report, Former Cross Property, Edmonds, Washington," dated September 16, 1997.

Seacor evaluated subsurface conditions beneath the north-central portion of the subject site by installing four monitoring wells (OMW-1 through OMW-4) to a depth of about 30 feet bgs (below ground surface). PCE (tetrachloroethene) was detected at a concentration exceeding the MTCA Method A cleanup level in one soil sample obtained from a depth of 25.5 feet bgs in OMW-2. Ground water was not encountered by Seacor in any of the monitoring wells that they installed on the subject site.

Seacor also evaluated the adjacent Kruger property by completing soil borings and installing several monitoring wells. PCE was not detected in soil samples obtained by Seacor from the Kruger Property for chemical analysis. However, PCE was detected at concentrations exceeding the MTCA Method A cleanup level in ground water samples obtained by Seacor from two monitoring wells located near the southern boundary of the Kruger site, immediately north of the subject site. It appears that the ground

water samples were obtained from perched ground water at depths of about 20 to 23 feet bgs. Seacor has suggested that the PCE-contaminated ground water beneath the Kruger property migrated in a northerly direction from a source on the subject site.

GeoEngineers evaluated Seacor's Phase II study Report, dated October 4, 1993 during completion of our Phase I ESA. In our opinion, Seacor did not obtain sufficient subsurface information to document a northerly ground water flow direction beneath the subject site. Furthermore, our research indicated that ground water likely flows in a southeasterly direction in the site vicinity, based on Ecology files. This information suggested that the PCE-contaminated ground water identified beneath the Kruger site may not have originated on the subject site.

Our Phase I ESA research identified several suspected areas of contamination related to historic onsite activities, excluding the PCE-contaminated soil in the north-central portion of the site. In general, the suspect areas consist of a former wash rack, four exterior drains, the former location of an automobile crusher, a 500-gallon used waste oil UST (underground storage tank) and former automobile storage areas on site. The results our initial studies indicated that these areas may have subsurface contamination related to petroleum hydrocarbons, solvents and/or metals.

1.3 PURPOSE AND SCOPE

The purpose of our Phase II environmental site assessment is to evaluate the potential presence of subsurface soil and ground water contamination in the vicinity of former Cross Autowrecking facilities, identified as suspected areas of contamination during our Phase I ESA. The facilities of concern include the wash rack, four exterior drains, the former automobile crusher area, the waste oil UST and former automobile storage areas. Additionally, we completed explorations in the north-central portion of the site to further evaluate (1) the extent of PCE-contaminated soil, (2) the potential existence of PCE-contaminated ground water, and (3) the direction of shallow ground water flow. Our specific scope of services included the following:

1.3.1 Evaluation of Former Cross Autowrecking Facilities

- 1. Monitor the drilling of nine exploratory borings (GP-1 through GP-9) using direct-push drilling equipment. The borings were completed to depths ranging between about 6 and 18 feet bgs in the vicinity of the facilities discussed above.
- 2. Monitor the drilling and installation of two monitoring wells (MW-3 and MW-4) using hollow stem auger drilling equipment. The monitoring wells were installed near the catch basin north of the warehouse and wash rack in the southeastern portion of the site. The wells consist of 2-inch-diameter PVC (polyvinyl chloride) casing to depths ranging between 60 and 61 feet bgs. MW-3 and MW-4 were installed because ground water was not encountered in the shallower direct-push explorations (GP-1 through GP-9).
- 3. Obtain soil samples at intervals ranging between 2.5 and 10 feet from the borings for classification and evaluation of potential contamination using field screening techniques.

- 4. Obtain shallow soil samples using hand-held equipment from a depth of approximately 1 foot bgs at five locations in the former automobile storage area.
- 5. Survey the top of the monitoring well casings installed during this study and Seacor's study (OMW-1, OMW-2, OMW-3 and OMW-4) relative to an assumed elevation datum. Measure the depth to ground water in all on-site wells and calculate ground water elevations.
- 6. Develop monitoring wells MW-3 and MW-4, and obtain ground water samples for chemical analytical testing.
- 7. Submit the ground water samples and at least one soil sample from each exploration for one or more of the following chemical analysis: petroleum hydrocarbon identification using Ecology Method WTPH-HCID or NWTPH-HCID, diesel- and heavy oil-range hydrocarbons using Ecology Method NWTPH-D extended, HVOCs (halogenated volatile organic compounds) using EPA Method 8010, and total metals (As, Ba, Cd, Cr, Hg, Pb, Ag and Se) using appropriate EPA 6000- and 7000-Series Methodology.
- 8. Evaluate the field and laboratory data with regard to current environmental regulations and potential environmental liabilities associated with site development.

1.3.2 Evaluation of the North-Central Portion of the Site

- Monitor the drilling and installation of two monitoring wells (MW-1 and MW-2) and one boring (B-5) using hollow stem auger drilling equipment. These explorations were completed to depths ranging between about 50 and 70 feet bgs. The monitoring wells were constructed as discussed in Section 1.3.1. A monitoring well was not constructed in B-5 because ground water was not encountered during drilling.
- 2. Obtain soil samples at approximately 5- to 10-foot depth intervals from the exploratory borings for classification and evaluation of potential contamination using field screening techniques.
- 3. Survey and develop MW-1 and MW-2, measure ground water levels and obtain ground water samples as discussed in Section 1.3.1. One ground water sample also was obtained from Seacor well OMW-2.
- 4. Submit the ground water samples and a total of four soil samples from the borings for chemical analysis of HVOCs using EPA Method 8010.
- 5. Evaluate the field and laboratory data with regard to current environmental regulations and potential environmental liabilities associated with site development.

2.0 SITE DESCRIPTION

2.1 SURFACE CONDITIONS

The site occupies approximately 122,000 square feet, and consists of undeveloped (fenced) lots except for buildings that occupy the southeast portion of the site. The buildings apparently were used by the Cross Autowrecking operations for automobile disassembly, parts storage and cleaning, and offices. The approximate locations of the on-site structures are shown in Figure 2.

3.0 FINDINGS

3.1 FIELD EXPLORATIONS

GeoEngineers monitored the completion of 14 subsurface explorations using power drilling equipment. The approximate locations of the subsurface explorations are shown in Figure 2. Nine of the explorations were completed using direct-push drilling equipment (GP-1 through GP-9). Borings GP-1 through GP-9 were completed to depths ranging between about 6 and 18 feet bgs. Five explorations were completed to depths ranging from about 50 to 70 feet bgs using hollow-stem auger drilling equipment. Ground water monitoring wells were constructed in four of the auger borings (MW-1 through MW-4); a monitoring well was not constructed in B-5 because ground water was not encountered. Additionally, five shallow soil samples (S-1 through S-5) were obtained from a depth of approximately 1 foot bgs using hand-held digging equipment. Details of the field exploration program and logs for the subsurface explorations are presented in Appendix A. Construction details of the monitoring wells also are included in Appendix A.

3.2 SUBSURFACE CONDITIONS

3.2.1 Soil

Our understanding of soil conditions beneath the subject site is based on the explorations completed during this assessment, and our review of logs for the borings previously completed by Seacor. Soil logs for the explorations completed during our assessment are presented in Appendix A. Soil beneath the site generally consists of sand with varying amounts of silt, silt with varying amounts of sand, and gravel. The soil was deposited by advancing and receding glacial activity that occurred throughout the Puget Sound area approximately 10,000 years ago. The sand and gravel units are generally medium dense to very dense; the silt is generally stiff to hard. Glacial till was encountered in monitoring well boring MW-1 at depths ranging between about 23 and 41 feet bgs. Glacial till also appears to be present in Seacor's OMW-2. The glacial till consists of very dense, silty sand with gravel. Glacial till was not encountered in the other explorations completed by GeoEngineers or Seacor. It appears that the glacial till is present in the north to northwest portion of the site. Less dense recessional outwash sand and gravel is present beneath the remainder of the subject site based on the results of our soil borings.

An interpretive cross-section based on soil conditions encountered in our site exploratory borings is shown in Figure 3. The cross-section is oriented in a north-south direction, trending from the Kruger property to the southeast corner of the subject site as shown on Figure 2. Soil boring and monitoring well locations, and screened intervals are shown on the cross-section. A relatively discontinuous gravel and sand unit appears to overlie a more continuous sand unit at the site. A silt unit was encountered in the lower portions of several explorations (MW-1(Seacor), MW-2 and B-5) in the northern portion of the subject site and beneath the Kruger site. The presence of this silt unit is significant as it relates to seasonally perched ground water observed in the northern portion of the site (discussed below).

3.2.2 Ground Water

In our opinion, seasonally perched ground water is present at the contact between the shallow fine sand units and the underlying silt that is present in the northern portion of the subject site and the Kruger

property. The shallow perched ground water appears to be seasonally present in the northern portion of the subject site and the Kruger property (Figure 3). Based on our review of previous Seacor reports, this perched water was encountered at depths of approximately 8 and 19 feet below ground surface during January and May 1993 in MW-1(Seacor). Additionally, the perched water was not detected in OMW-2(Seacor) during August 1993 but was detected at a depth of approximately 23 feet below ground surface during our most recent monitoring event (November 1997). The downward infiltration of ground water is likely impeded by the silt unit, which has a relatively low permeability and represents an aquitard in the northern portion of the site. The flow direction of the perched ground water is likely controlled by the geometry of the top of the silt unit. It appears that the 30 foot bgs monitoring wells installed by Seacor are completed in the seasonally perched zone (above the silt unit); this includes monitoring well OMW-2, located on the subject site, and Seacor's MW-1, located on the Kruger property (Figures 2 and 3).

A glacial outwash ground water aquifer (hereafter referred to as the "aquifer") was encountered beneath the subject site in monitoring wells MW-2, MW-3 and MW-4, shown in Figures 2 and 3. This aquifer does not appear to be seasonal. The silt unit in the north portion of the site overlies the glacial outwash aquifer. The aquifer may be semi-confined beneath the northern portion of the subject site and possibly the Kruger property because of the presence of the silt aquitard discussed above. The presence of semi-confined conditions beneath a portion of the subject site is supported by our observations in MW-2. The static ground water level in this well appears to be higher than the saturated zone. Additionally, the silt unit in boring B-5 did not appear to be saturated at the time of drilling.

GeoEngineers measured ground water levels at the site on November 12, 1997. Ground water elevations based on these measurements are presented in Table 3 and Figure 4. Ground water elevation contours for the aquifer also are shown in Figure 4. Based on these measurements, the ground water flow direction in the aquifer is toward the southeast at a gradient of about 0.07 feet per foot. The ground water elevations in monitoring wells OMW-2 and GeoEngineers' MW-1 were not used to produce the contour map shown in Figure 4 because of the following:

- Monitoring well OMW-2 appears to be completed in the perched zone above the silt unit.
- The ground water elevation in GeoEngineers' MW-1 is representative of ground water present in the glacial till that was encountered in this boring, not in the underlying aquifer shown in Figure 3.

To supplement our ground water flow direction observations we reviewed the USGS 7.5 minute East-Edmonds topographic map for the site area. The subject site's surface elevation is approximately 325 feet above mean sea level. Lake Ballinger, located approximately 1-mile south of the site is located at a surface elevation of approximately 250 to 275 feet (a 50 to 75 foot difference in elevation). The depth to ground water in MW-4 (the most downgradient well at the site) at the subject site was measured at approximately 55 feet below ground surface during November 1997 (Table 3). Therefore, it is our opinion that Lake Ballinger is the discharge location for ground water observed in the aquifer beneath the site. Furthermore it appears that ground water beneath the site follows the topography which decreases from north to south-southeast.

3.3 SUBSURFACE ENVIRONMENTAL CONDITIONS

3.3.1 Field Screening Results

Field screening was performed on soil samples obtained from the power borings and hand-dug explorations to evaluate the potential presence of contamination. A description of field screening methods is included in Appendix A. Field screening results are presented in Table 1 and in the soil boring logs (Appendix A).

Field screening results indicated the potential presence of petroleum hydrocarbons in three soil samples obtained from borings GP-1, GP-3 and GP-4 at depths ranging between about 4 and 7 feet bgs, and one soil sample obtained from MW-4 at a depth of 14 feet bgs. These soil samples exhibited a moderate sheen and/or elevated headspace vapors (relative to the other soil samples). Field screening evidence of contamination was not observed in other soil samples obtained from the explorations.

3.3.2 Soil Chemical Analyses

Soil samples obtained from the explorations were submitted to North Creek Analytical Laboratory in Bothell, Washington for chemical analyses. One or more soil samples from each exploration were selected for chemical analyses based the following criteria: (1) field screening results, (2) the depth of the soil sample relative to the depth of ground water or suspect subsurface facilities, and (3) the contaminant type (source) known or suspected to be present at the exploration location. The soil samples most likely to be contaminated, based on these criteria, were submitted for chemical analysis (described in Section 1.3.1). Chemical analytical results for the soil samples are presented in Table 1. Laboratory reports and chain-of-custody records are included in Appendix B.

At least one soil sample from each exploration, excluding those located in the northern portion of the site (MW-1, MW-2 and B-5), was submitted for analysis of petroleum hydrocarbons. Petroleum hydrocarbons were detected in only one soil sample (S-3). Diesel- and heavy oil-range hydrocarbons were detected in this soil sample at concentrations less than the MTCA Method A cleanup level (200 milligrams per kilograms (mg/kg). Selected soil samples from MW-3, MW-4, and GP-1 through GP-6 also were submitted for analysis of HVOCs. PCE was detected at a concentration less than the MTCA Method A cleanup level in sample MW-4-19. This sample was obtained from a depth of about 19 feet bgs near the wash rack. HVOCs were not detected in the other soil samples selected for analysis from the borings.

Soil samples obtained from the borings located in the northern portion of the site (MW-1, MW-2 and B-5) were submitted only for analysis of HVOCs. PCE was detected at concentrations less than the MTCA Method A cleanup level in two soil samples obtained from boring B-5. These samples were obtained from depths of approximately 34 and 39 feet bgs. HVOCs were not detected in the soil samples submitted for analysis from MW-1 and MW-2.

Two soil samples GP-5-8 and GP-6-9, located near the wash rack and UST, respectively were submitted for analysis of RCRA metals. Barium, cadmium and/or chromium were detected in the soil samples at concentrations less than MTCA cleanup levels.

3.3.3 Ground Water Chemical Analyses

Ground water samples were obtained from the new monitoring wells (GeoEngineers' MW-1, MW-2, MW-3 and MW-4) and previously existing monitoring well (Seacor's OMW-2) between November 6 and 12, 1997 for chemical analysis. Chemical analytical results for the ground water samples are presented in Table 2. Laboratory reports and chain of custody records are included in Appendix B.

All of the ground water samples obtained for the site were submitted for analysis of HVOCs. PCE was detected at concentrations of 16.3 μ g/l (micrograms per liter) and 1,020 μ g/l in the ground water samples obtained from MW-3 and OMW-2, respectively. The concentrations of PCE detected in these ground water samples exceed the MTCA Method A cleanup level for this analyte (5.0 μ g/l). Additionally, two other HVOCs were detected in the OMW-2 sample; TCE (trichloroethene) was detected at a concentration of 7.02 μ g/l and DCE (cis-1,2-dichloroethene) was detected at a concentration of 2.94 μ g/l. The concentration of TCE detected in OMW-2 exceeds the MTCA Method A cleanup level for this analyte (5.0 μ g/l). A MTCA Method A cleanup level has not been established for DCE. However, the concentration of DCE detected in OMW-2 does not exceed the MTCA Method B cleanup level for DCE (80 μ g/l). Other HVOCs were not detected in the ground water samples tested.

The ground water samples obtained from monitoring wells MW-3 and MW-4 also were submitted for analysis of petroleum-related contamination. Gasoline-range hydrocarbons and benzene were detected at concentrations less than the MTCA Method A cleanup levels in MW-3 and MW-4. Toluene also was detected at a concentration less than the MTCA Method A cleanup level in MW-3. Diesel- and heavy oil-range hydrocarbons, and other BETX compounds were not detected in the ground water samples obtained from MW-3 and MW-4.

4.0 CONCLUSIONS

In our opinion, sources of PCE related to automobile parts cleaning likely existed on both the subject site and the Kruger property, based on our knowledge of historical activities on these sites. PCE-contaminated soil, from uncontrolled disposal of solvents in drains or the ground surface may be present on the subject site and/or the Kruger property. However, a significant area with concentrations of PCE-contaminated soil exceeding the MTCA cleanup level was not identified during this assessment. The information obtained during this assessment suggests that soil containing residual PCE concentrations exceeding the MTCA cleanup level, originally identified in the north-central portion of the site (OMW-2) by Seacor, is limited in extent. Chemical analysis did not detect PCE concentrations of regulatory significance in the soil samples tested for this study.

PCE is present in ground water beneath the subject site at concentrations exceeding the MTCA Method A cleanup level. The PCE concentration detected in the seasonally perched ground water in the north portion of the site (OMW-2) is significantly greater than the concentration detected in the glacial outwash aquifer that underlies the entire subject site. It is likely that the downward infiltration of PCE-contaminated ground water is impeded by the underlying silt aquitard. During this and previous assessments, PCE was detected in the perched ground water that was obtained from monitoring wells which appear to be screened above the silt layer (Seacor's MW-1 and OMW-2). PCE also was detected in

the glacial outwash aquifer at one location where the silt aquitard was not present (GeoEngineers' MW-3). PCE was not detected in ground water samples obtained from monitoring wells screened in the aquifer, below the silt aquitard (GeoEngineers' MW-1 and MW-2).

Seacor previously suggested that PCE contamination in the shallow perched ground water beneath the Kruger property is a result of northerly ground water flow from the subject site. In our opinion, the direction of ground water flow in the shallow perched zone likely is controlled by the topography of the top of the silt aquitard that is present beneath the north-central portion of the subject site and the Kruger property. The top of the silt aquitard appears to slope down to the south-southeast based on the results of our widely spaced site explorations. Therefore, the inferred direction of ground water flow in the shallow perched ground water is toward the southeast. Additionally, the ground water flow direction of the aquifer located beneath the entire site is to the south-southeast toward Lake Ballinger.

It is our opinion, that with the exception of the solvents detected in ground water beneath the site, the potential for contamination by other hazardous substances of regulatory significance in soil and ground water beneath the site is low based on the results of our studies. Petroleum hydrocarbons and metals were either not detected or were detected at concentrations less than MTCA cleanup levels in the soil and ground water samples submitted for analysis.

5.0 RECOMMENDATIONS

We recommend that the following be completed prior to site development:

- Prepare a soil and ground water handling and disposal plan that can be provided to contractors to
 assist them in implementing contigencies in the event that contaminated soil and/or ground water is
 encountered during site development.
- Notifiy Ecology that PCE was detected in ground water beneath the north and central portions of the site. This can be accomplished by providing Ecology a copy of this report.
- Prepare a deed restriction limiting the use of ground water at the site.
- Prepare a long term ground water monitoring plan.
- Remove the waste oil UST. The following tasks also should be completed in conjunction with the
 UST removal: (1) chemical analytical testing of at least two soil samples from the the base and
 eastwall of the UST excavation; (soil samples tested during this study can be used for documenting
 conditions on the north, south and west sidewalls), (2) preparation of an UST removal and soil
 sampling report and (3) submittal of UST closure forms to Ecology.

6.0 LIMITATIONS

This report has been prepared for use by Stevens Healthcare, its agents, and regulatory agencies. The 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 legal 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 contract 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 otherwise be no contractual limits to their actions.

No ESA can wholly eliminate uncertainty regarding the potential for contamination by hazardous substances. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for contamination by hazardous substances in connection with a property. Our interpretation of subsurface conditions during this assessment is based on a limited number of widely spaced field explorations and chemical analysis of selected samples from these explorations. It is always possible that contamination may exist in areas of the site that were not explored, sampled or analyzed. Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in this area at the time this report was prepared. No other conditions, express or implied, should be understood.

We appreciate the opportunity to provide these services. Please contact us if you have questions regarding this report.

Yours very truly,

GeoEngineers, Inc.

David A. Cook

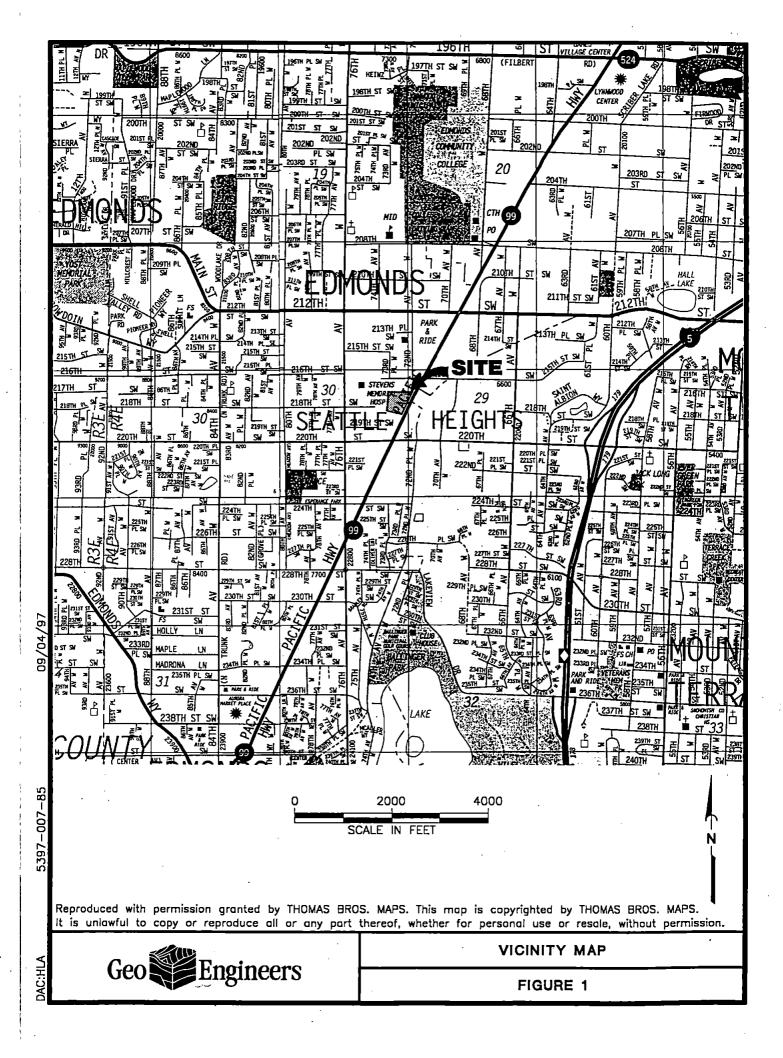
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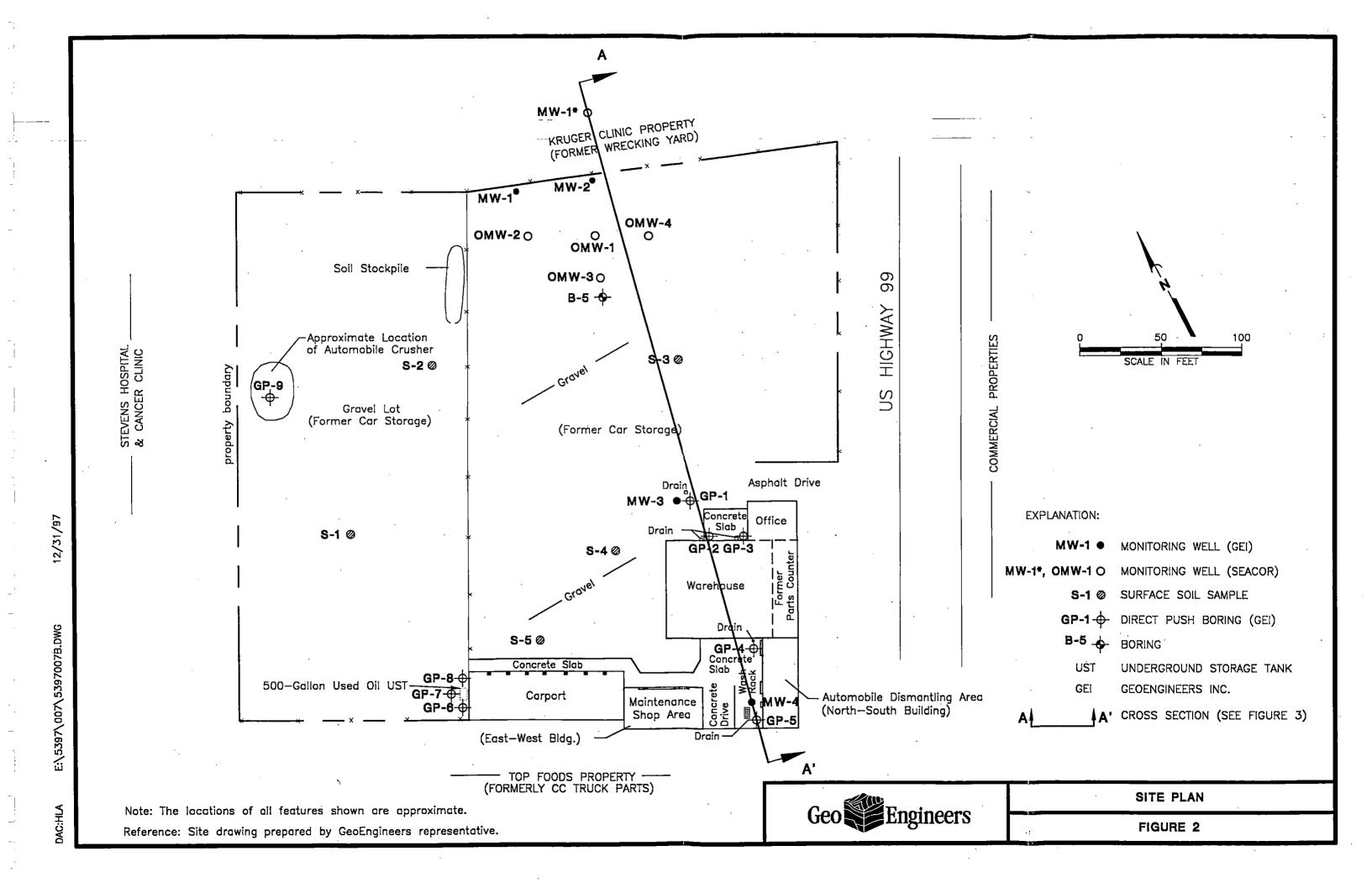
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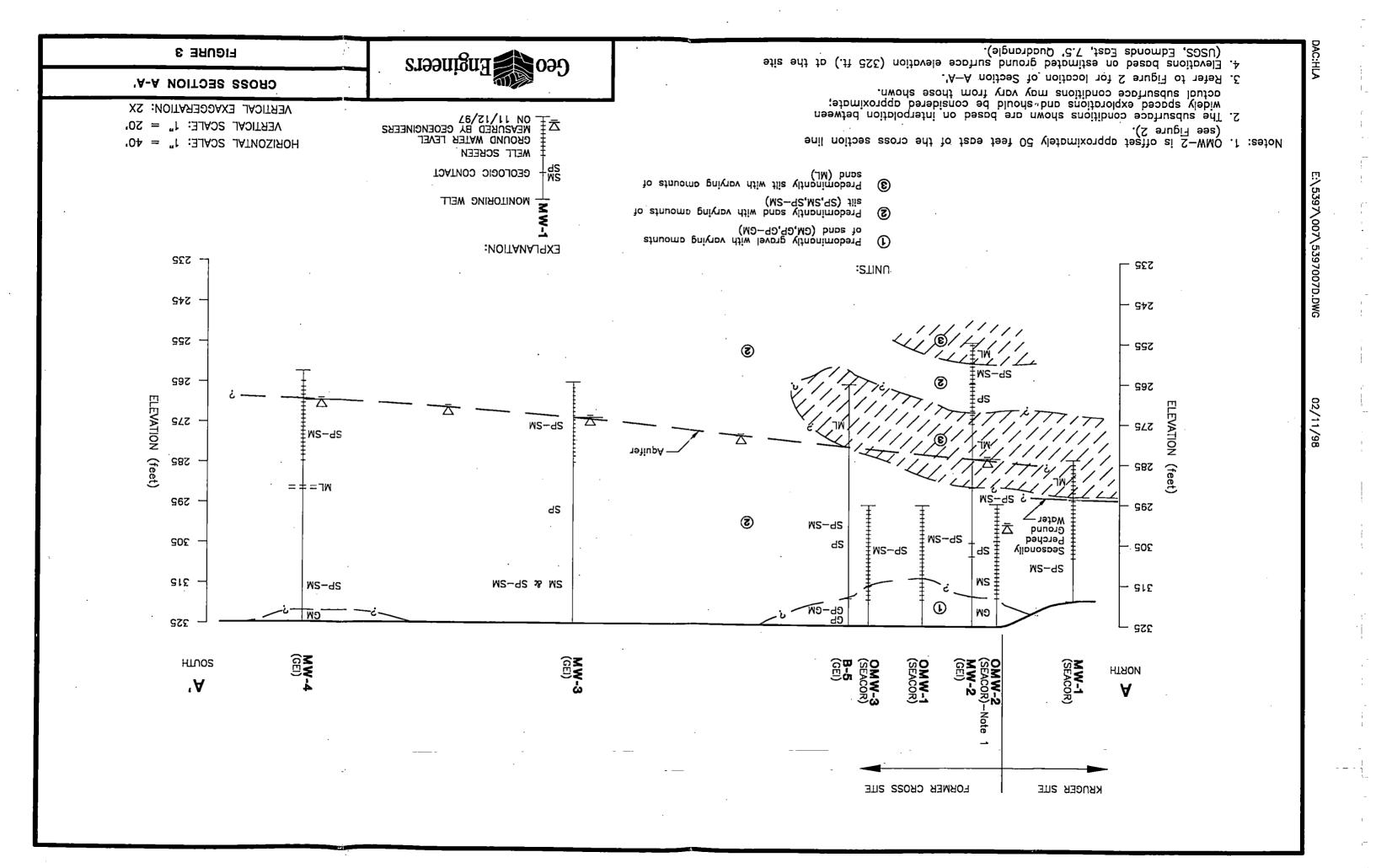
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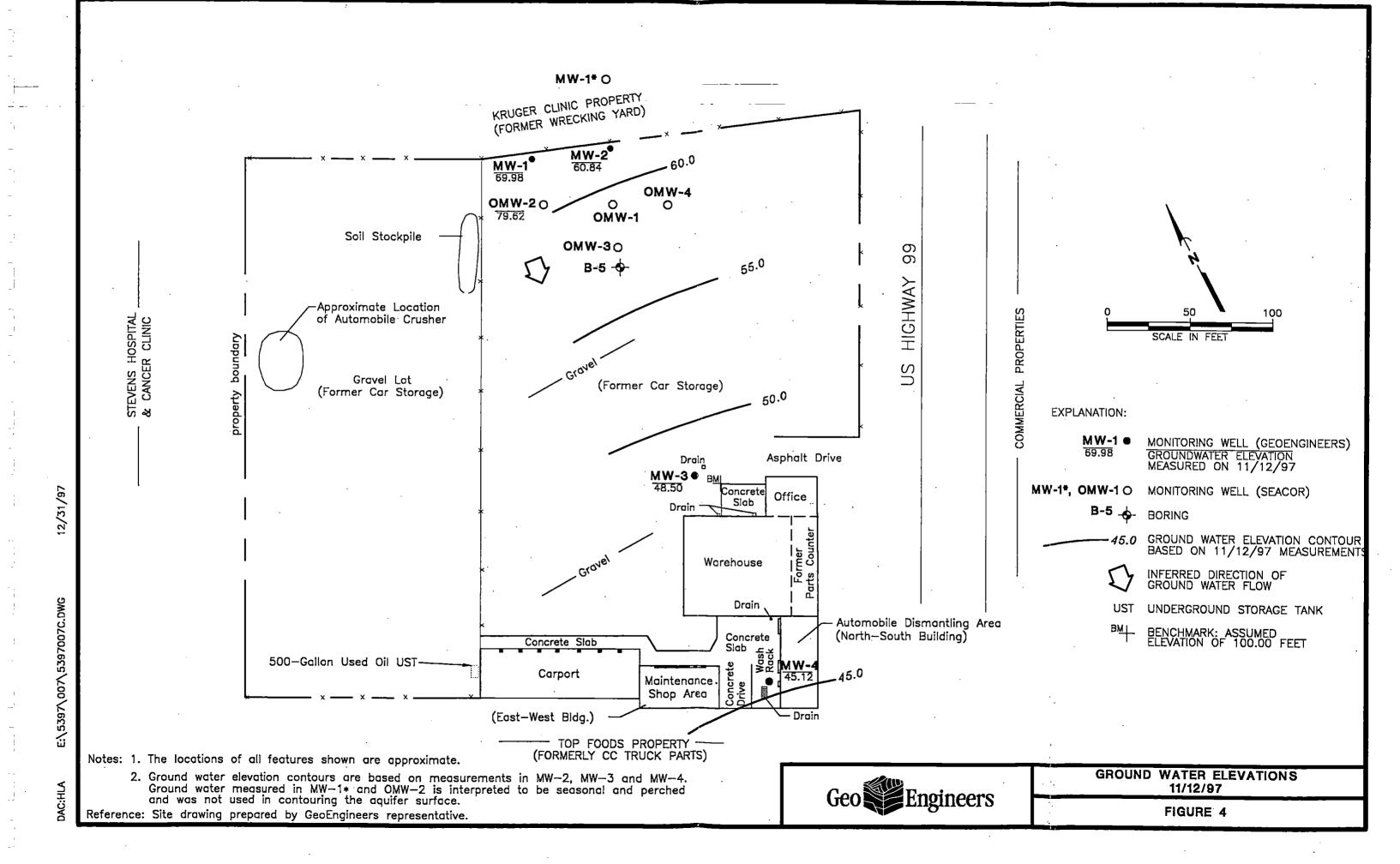
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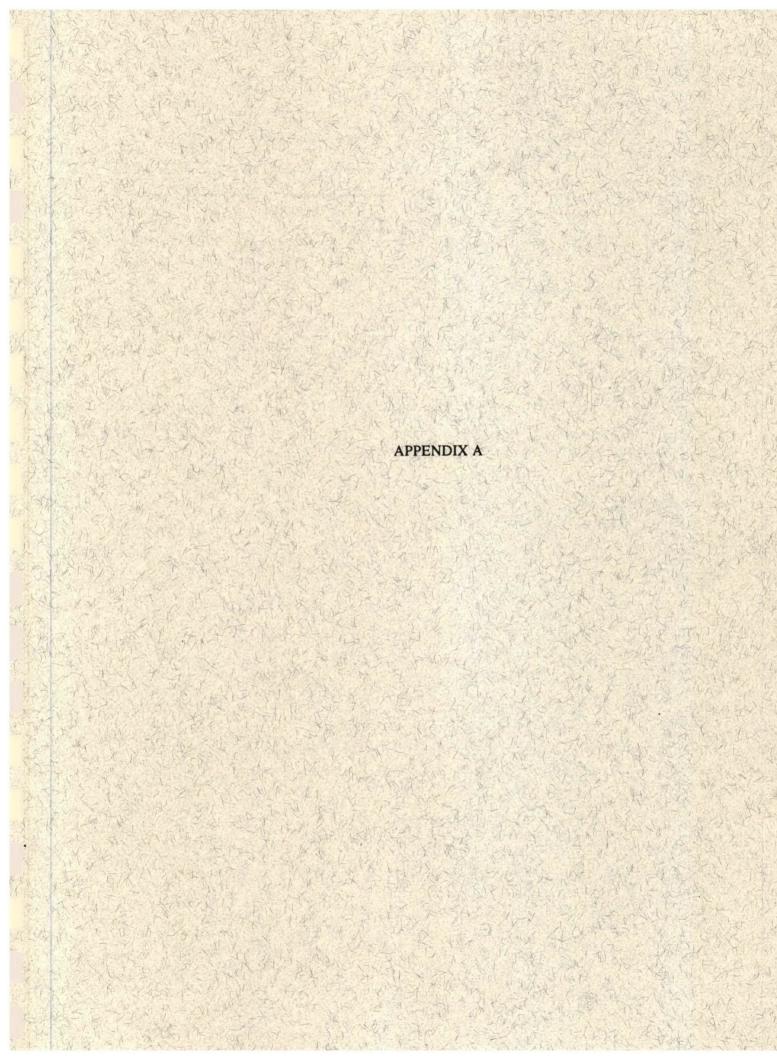
Attachments











APPENDIX A

FIELD EXPLORATION PROGRAM

GENERAL

Subsurface conditions at the site were explored by completing five borings using hollow-stem auger drilling equipment, nine borings using direct-push drilling equipment, and five shallow explorations using hand-held digging equipment. A geologist from our staff determined the exploration locations, examined and classified the soils encountered, and prepared a detailed log of each exploration. Soils encountered were visually classified in general accordance with ASTM D-2488-94, which is described in Figure A-1. The boring logs are presented in Figures A-3 through A-16. Additionally, ground water monitoring wells were constructed in four of the auger borings. Well construction and ground water sampling procedures are described below.

DRILLING AND SOIL SAMPLING

Subsurface conditions on the site were explored during this phase of study by drilling five hollow-stem auger borings (MW-1 through MW-4 and B-5) and nine direct-push borings (GP-1 through GP-9) during November 1997. The hollow stem auger borings were drilled to depths ranging from approximately 50.0 to 70.0 feet using truck-mounted, hollow-stem auger equipment owned and operated by Holt Testing Incorporated of Puyallup, Washington. The direct-push borings were drilled to depths ranging from 6 to 18 feet below ground surface using StrataprobeTM equipment owned and operated by TEG Northwest Incorporated of Lacey, Washington. The hollow-stem auger drilling equipment was cleaned with a hotwater pressure washer before each boring was drilled. The StrataprobeTM sampling equipment was decontaminated before each sampling attempt with a Liquinox solution wash and two distilled water rinses.

Hollow-stem auger soil samples from the borings were obtained from approximate 5-foot intervals using a Dames & Moore split-barrel sampler. The sampler was driven a maximum of 18 inches by a 300-pound weight falling a vertical distance of approximately 30 inches. The number of blows needed to advance the sampler the final 12 inches or other specified distance is indicated to the left of the corresponding sample notation on the boring log. The direct-push borings were sampled at 1.0- to 3.0-foot intervals using a 1.5-inch-diameter split-barrel push sampler driven with a pneumatic hammer.

The sampling equipment was decontaminated before each sampling attempt with a Liquinox wash, a fresh water rinse and a distilled water rinse. At least one sample from each boring was selected for chemical analysis, based on field screening results and the depth of the sample in relation to the water table. The soil samples were kept cool before and during transport to the laboratory. Chain-of-custody procedures were followed in transporting the soil samples to the laboratory.

FIELD SCREENING OF SOIL SAMPLES

Soil samples obtained from the borings were screened in the field for evidence of petroleum-related contamination using (1) visual examination, (2) sheen screening, and (3) headspace vapor screening with a MicroTip photoionization detector. The results of headspace and sheen screening are included in Table 1 of this report.

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 hydraulic oil, or when hydrocarbon concentrations are high. Sheen screening and headspace vapor screening are more sensitive methods that have been effective in detecting contamination at concentrations less than regulatory cleanup guidelines.

Sheen screening involves placing soil in a pan of water and observing the water surface for signs of sheen. 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.

Moderate Sheen (MS)

Light to heavy sheen, may have some color/iridescence; spread is

irregular to flowing; 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.

Headspace vapor screening involves placing a soil sample in a plastic sample bag. Air is captured in the bag and the bag is shaken to expose the soil to the air trapped in the bag. The probe of a MicroTip is inserted in the bag and the instrument measures the concentration of ionizable vapor in the air removed from the sample headspace. The MicroTip measures concentrations in ppm (parts per million) and is calibrated to isobutylene. The MicroTip is designed to quantify combustible gas and organic vapor concentrations in the range between 1 and 1,000 ppm.

Field screening results are site-specific and vary with soil type, soil moisture content, temperature and type of contaminant.

MONITORING WELL CONSTRUCTION

A ground water monitoring well was constructed in borings MW-1 through MW-4 at the completion of drilling. Two-inch-diameter, Schedule 40 PVC (polyvinyl chloride) pipe was installed in the borings. The lower of the PVC pipe is machine-slotted (0.02-inch slot width) to allow entry of water, free product and vapors 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 with a lockable compression cap. The monitoring wells were developed by GeoEngineers during November 1997 at the conclusion of monitoring well installation. Approximately 10 to 20 gallons of ground water was removed from each well using a stainless steel bailer. Development water was placed in 55-gallon drums located on site.

GROUND WATER MEASUREMENTS

Depths to ground water were measured in the monitoring wells on November 12, 1997. The ground water measurements were obtained using an electronic water level indicator. The water level indicator was cleaned with a Liquinox wash and distilled water rinse prior to use in each well.

GROUND WATER SAMPLING PROGRAM

Ground water samples were obtained from monitoring wells MW-1 through MW-4 and OMW-2 on November 11 and 12, 1997. The water samples were obtained after a minimum of three well volumes of water was purged from the well. After purging, ground water samples were obtained from each well using disposable polyethylene bailers and transferred to laboratory-prepared bottles in the field and kept cool during transport to the testing laboratory. Chain-of-custody procedures were observed during transport of the samples to the laboratory.

PURGE WATER AND DRILL CUTTINGS DISPOSAL

Purge water was collected from the well development and sampling activities and placed in two 55-gallon drums located on site. Because HVOCs are present in the purge water, it remains on site pending removal by an appropriate disposal or recycling contractor. Additionally, soil cuttings generated during drilling activities remains in 55-gallon drums at the site.

SOIL CLASSIFICATION SYSTEM

	MAJOR DIVISIONS		GROUP SYMBOL	GROUP NAME
	GRAVEL	CLEAN	GW	WELL-GRADED GRAVEL, FINE TO COARSE GRAVEL
GRAINED	SOILS More Than 50% of Coarse Fraction GRAVEL		GP	POORLY-GRADED GRAVEL
SOILS			GM	SILTY GRAVEL
Retained on No. 4 Sieve	WITH FINES	GC	CLAYEY GRAVEL	
More Than 50% Retained on	SAND	CLEAN SAND	sw	WELL-GRADED SAND, FINE TO COARSE SAND
of Coa			SP	POORLY-GRADED SAND
	More Than 50% of Coarse Fraction	SAND WITH FINES	SM	SILTY SAND
	Passes No. 4 Sieve		sc	CLAYEY SAND
FINE	1		ML	SILT
GRAINED SOILS		INORGANIC	CL	CLAY
	Liquid Limit Less Than 50	ORGANIC	OL	ORGANIC SILT, ORGANIC CLAY
More Than 50% Passes No. 200 Sieve	SILT AND CLAY	.MH	SILT OF HIGH PLASTICITY, ELASTIC SILT	
		INUNGANIC	СН	CLAY OF HIGH PLASTICITY, FAT CLAY
	Liquid Limit 50 or More	ORGANIC	он	ORGANIC CLAY, ORGANIC SILT
HIGHLY ORGANIC SOILS		PT	PEAT	

NOTES:

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

SOIL MOISTURE MODIFIERS:

Dry - Absence of moisture, dusty, dry to the touch

Moist - Damp, but no visible water

Wet - Visible free water or saturated, usually soil is

obtained from below water table



LABORATORY TESTS

CA Chemical Analysis

FIELD SCREENING TESTS:

Headspace vapor concentration data given in parts per million

Sheen classification system:

NS No Visible Sheer	NS	No	Visible	Sheer
---------------------	----	----	---------	-------

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.

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.

"P" indicates sampler pushed with weight of hammer or against weight

Location of relatively undisturbed sample

Location of disturbed sample

Location of sampling attempt with no recovery

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

Location of SPT sampling attempt with no recovery

Location of grab sample

- 26 ∏

NOTES:

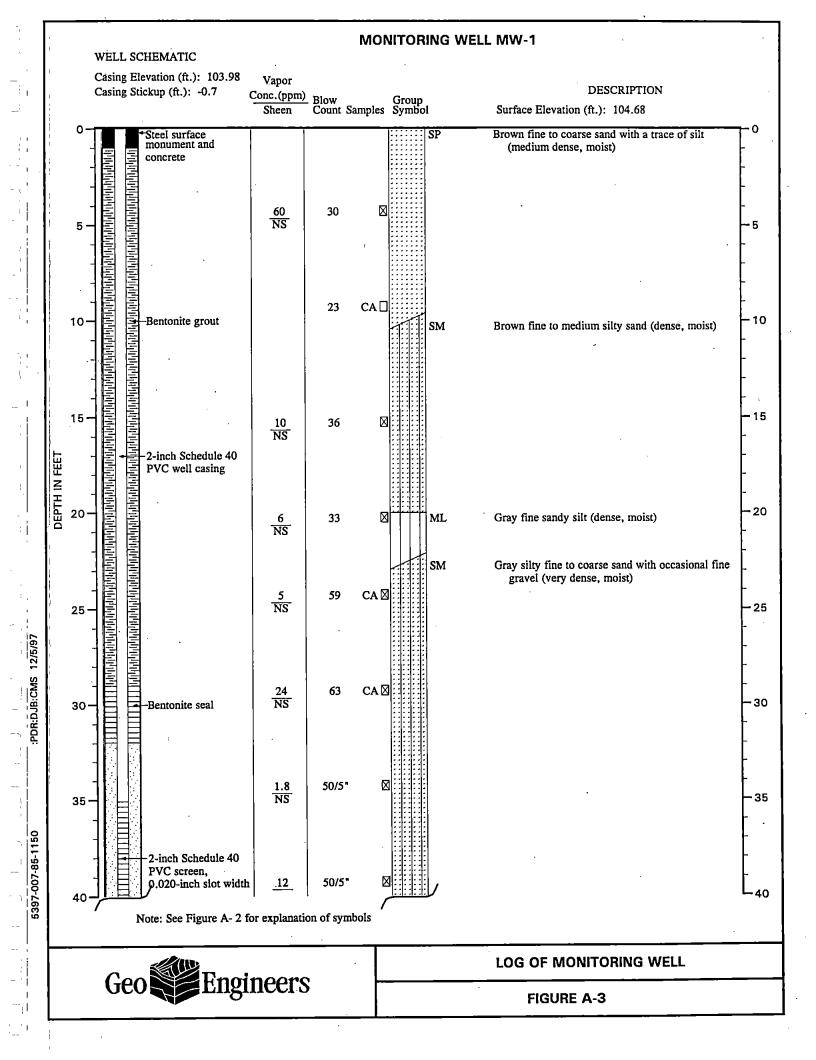
of drill rig.

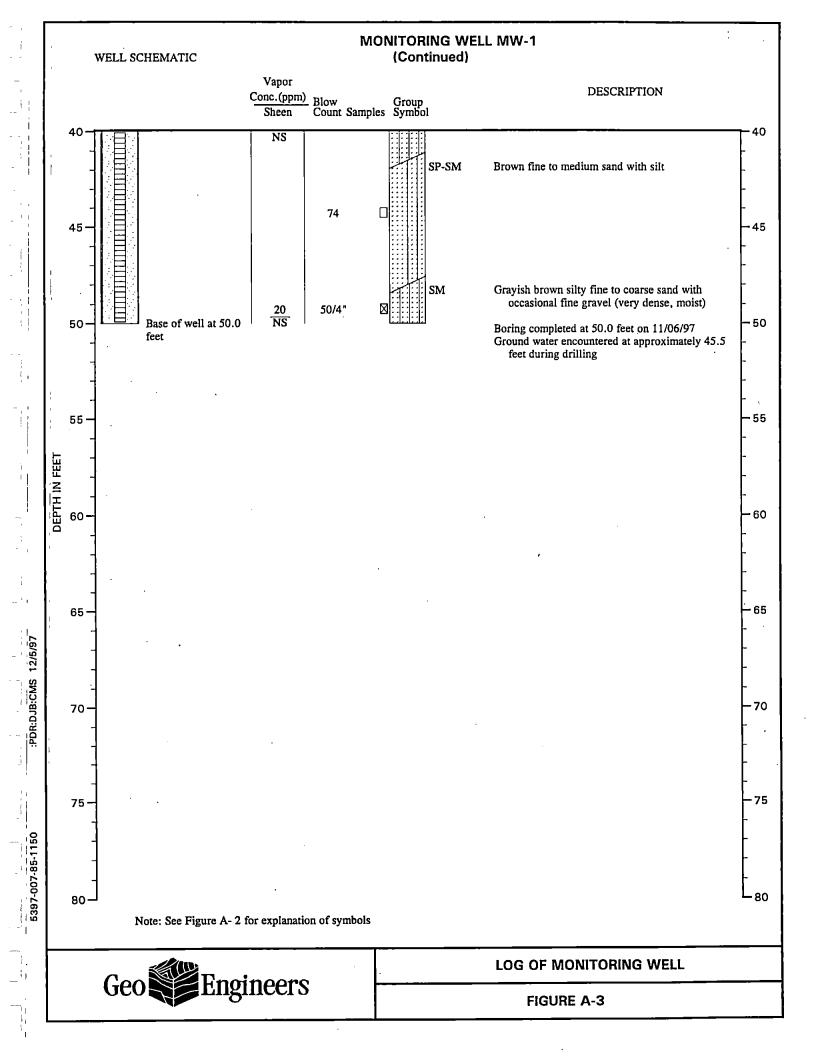
- 1. The reader must refer to the discussion in the report text, the Key to Boring Log Symbols and the exploration logs for a proper understanding of subsurface conditions.
- 2. Soil classification system is summarized in Figure A-1.

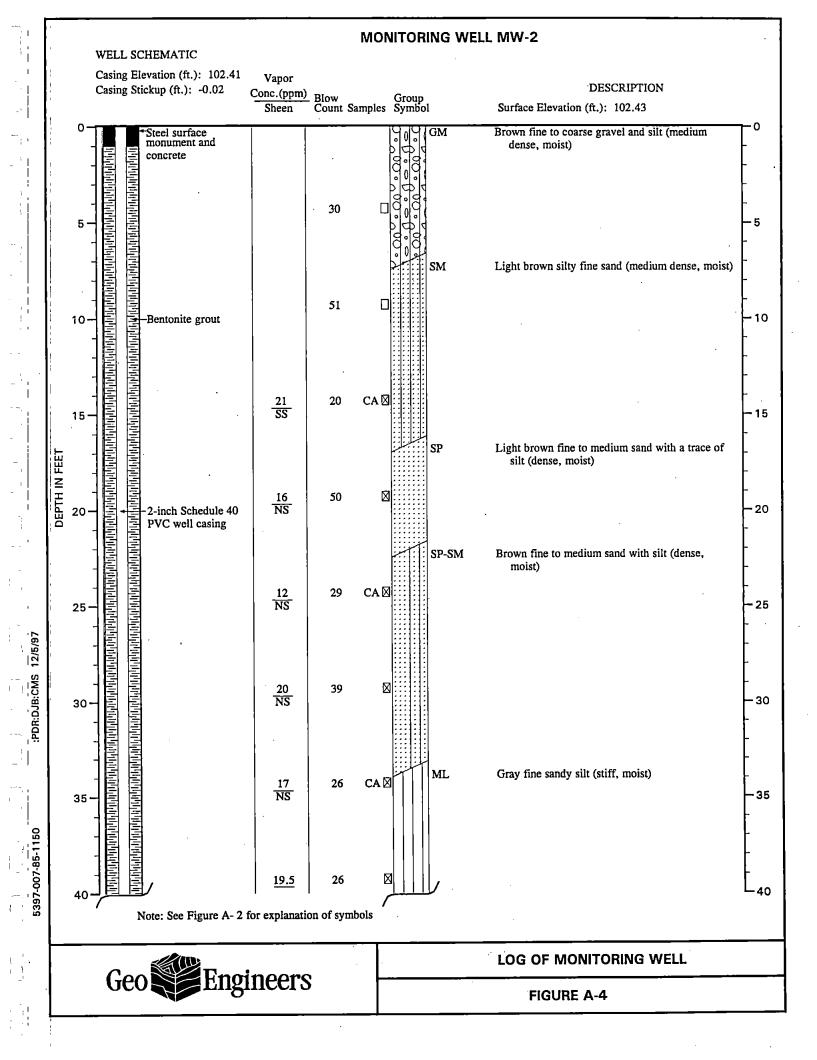


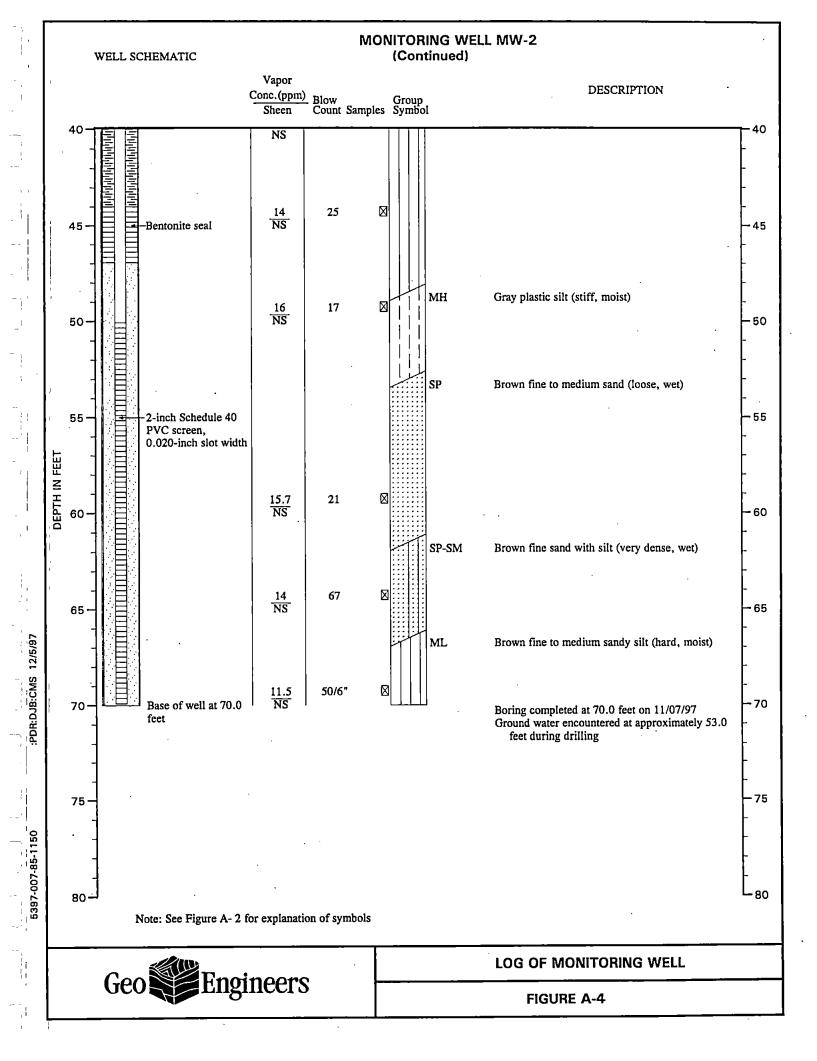
KEY TO BORING LOG SYMBOLS

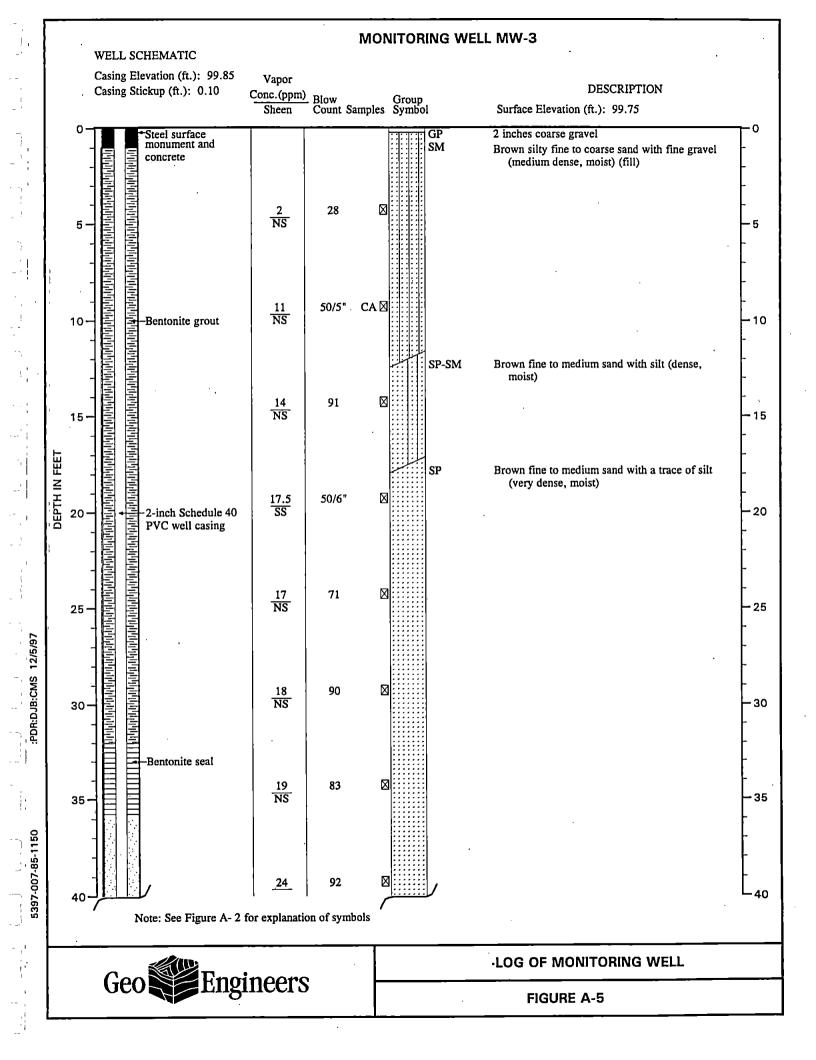
FIGURE A-2

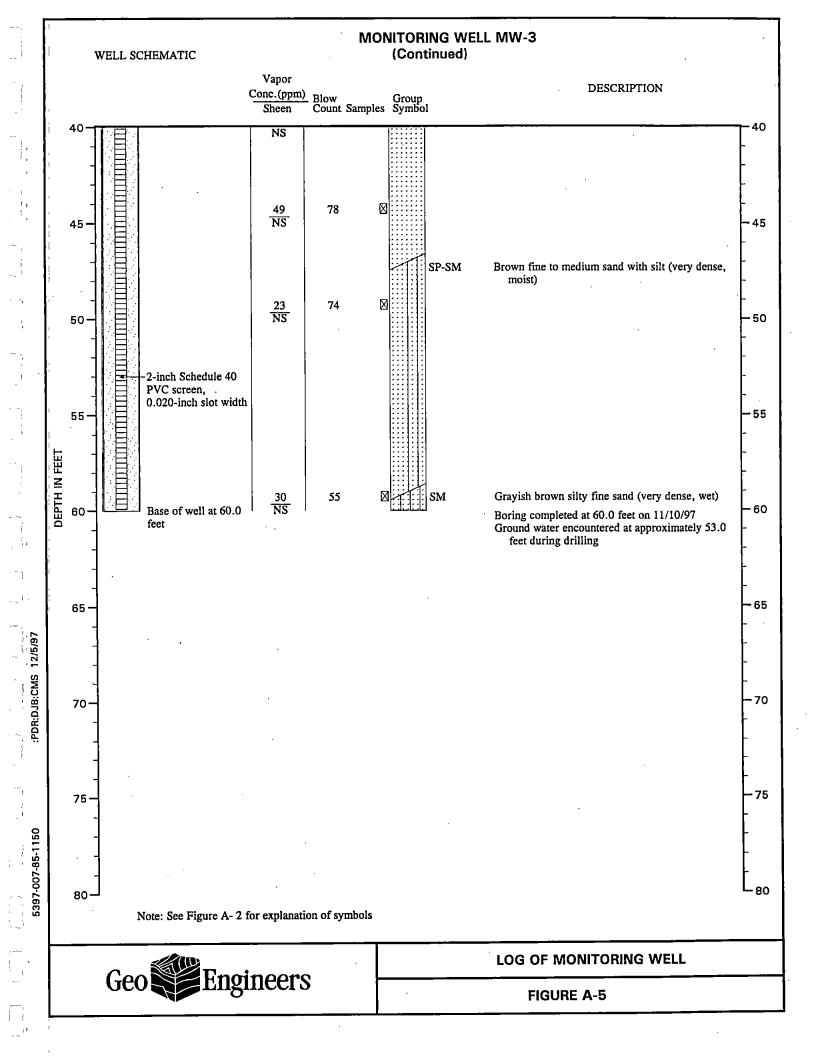


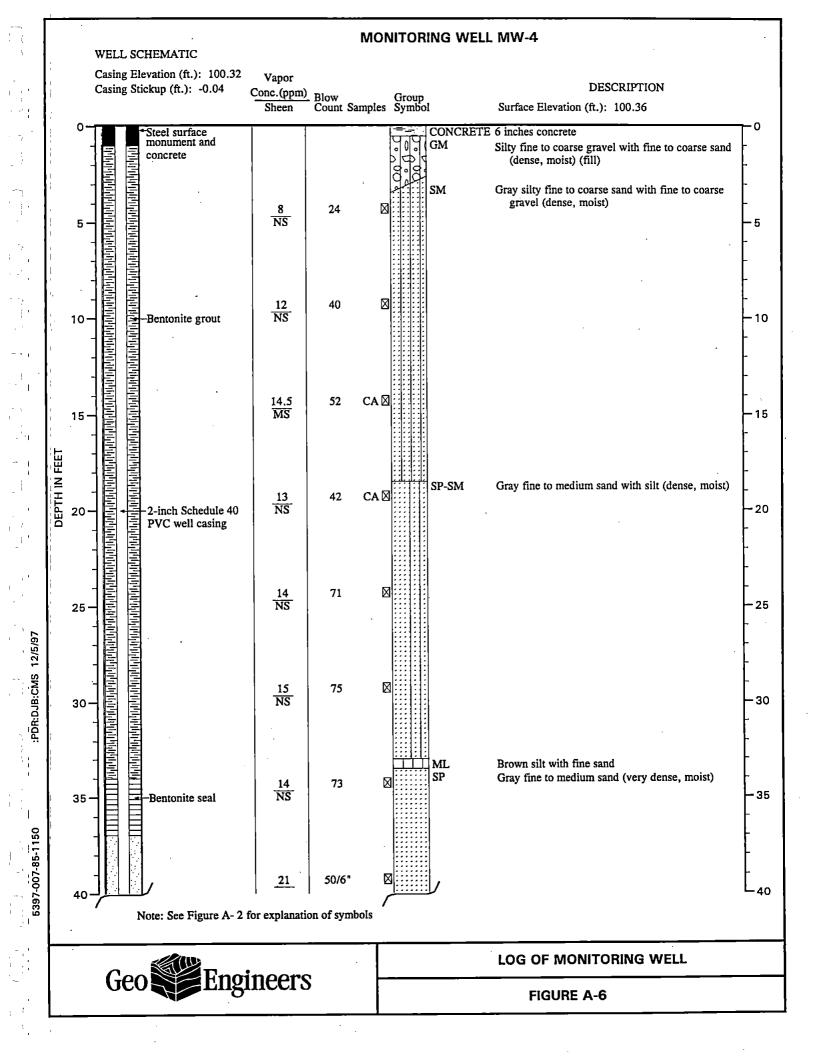


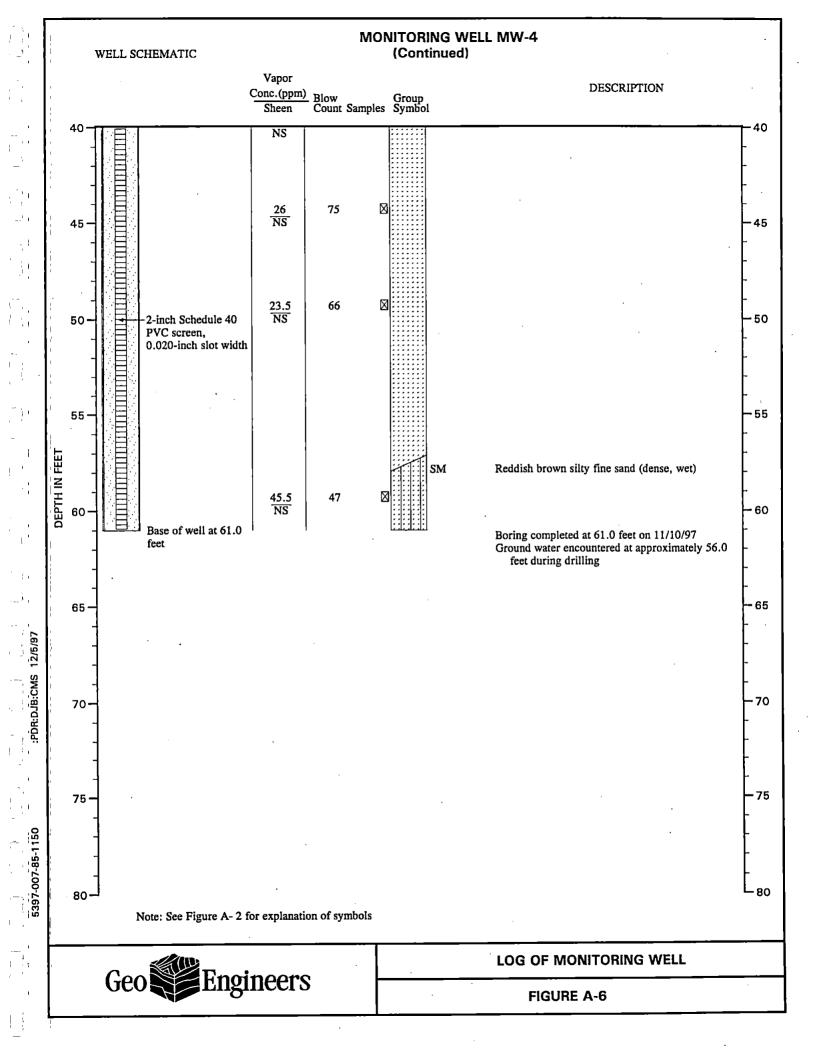


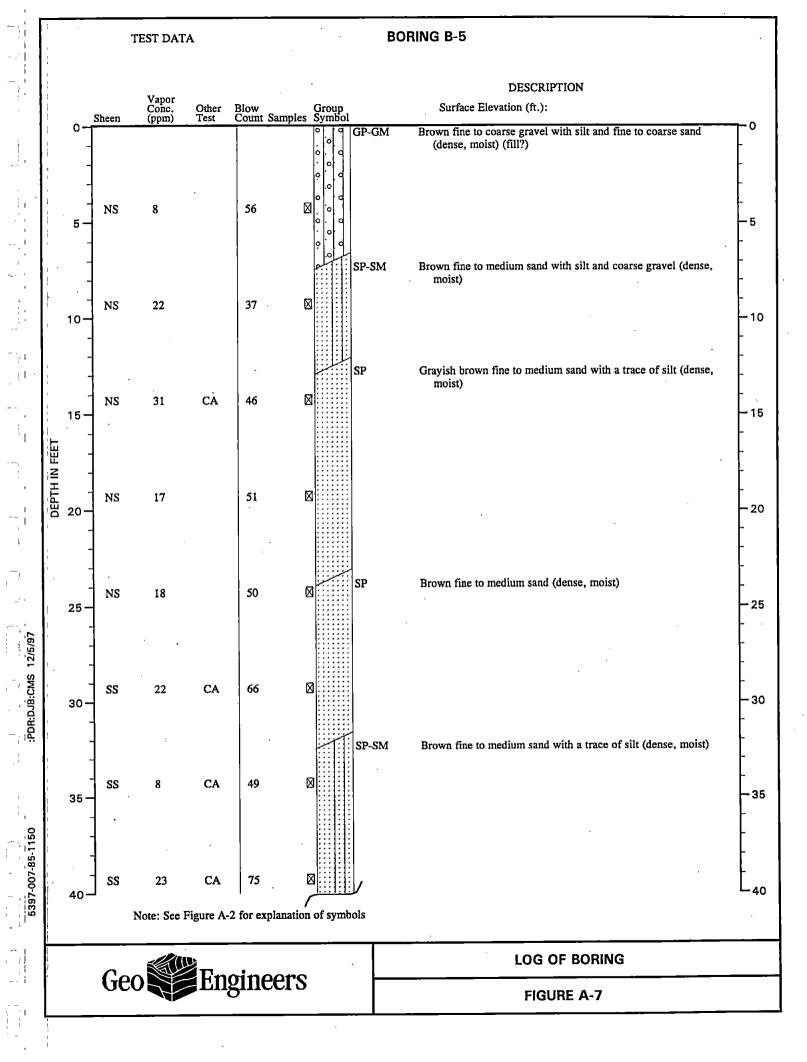


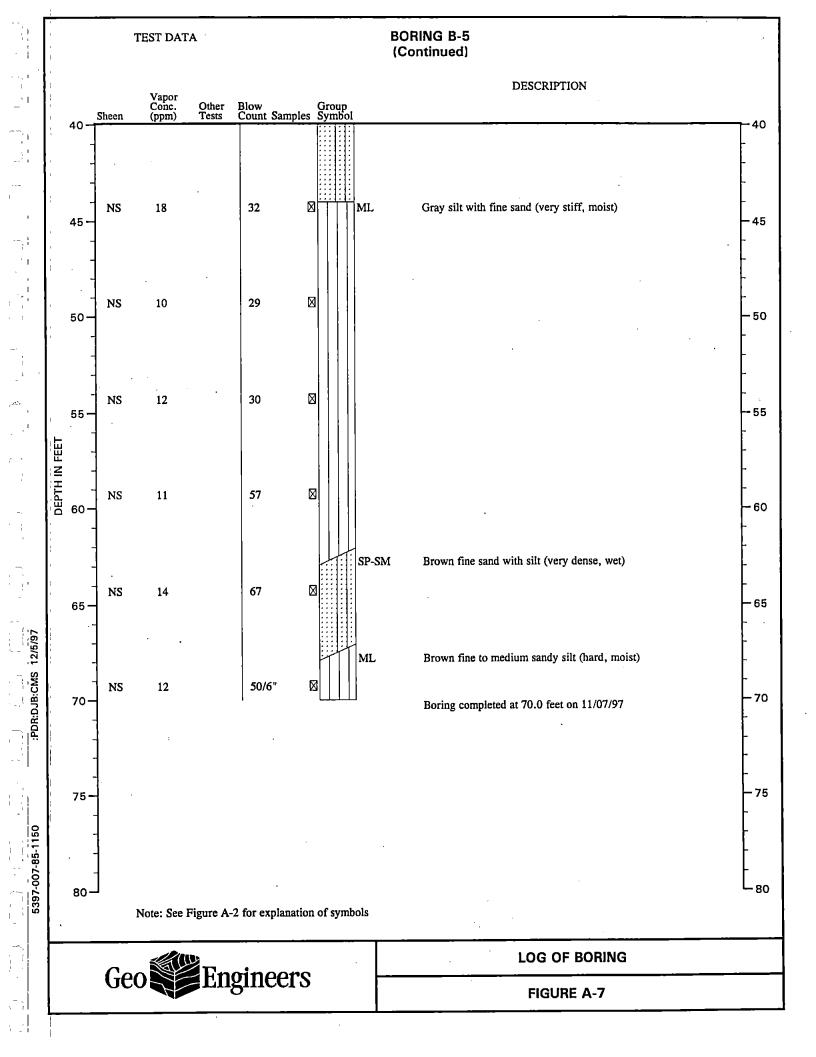


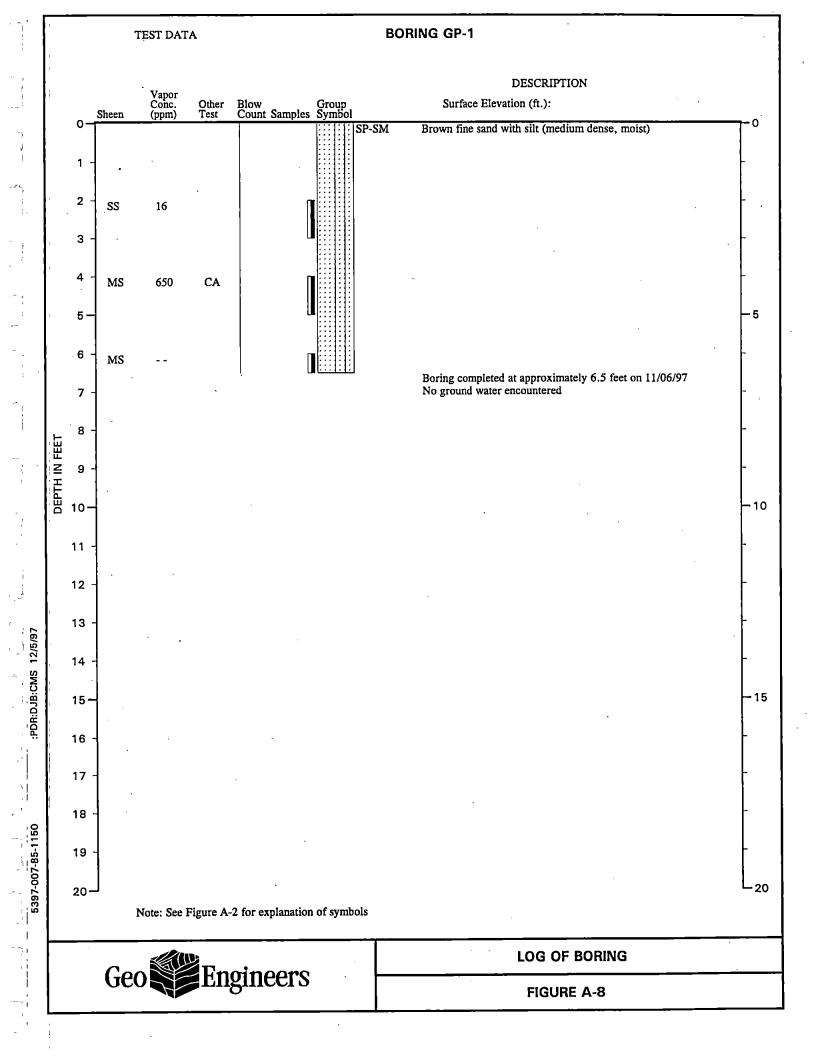


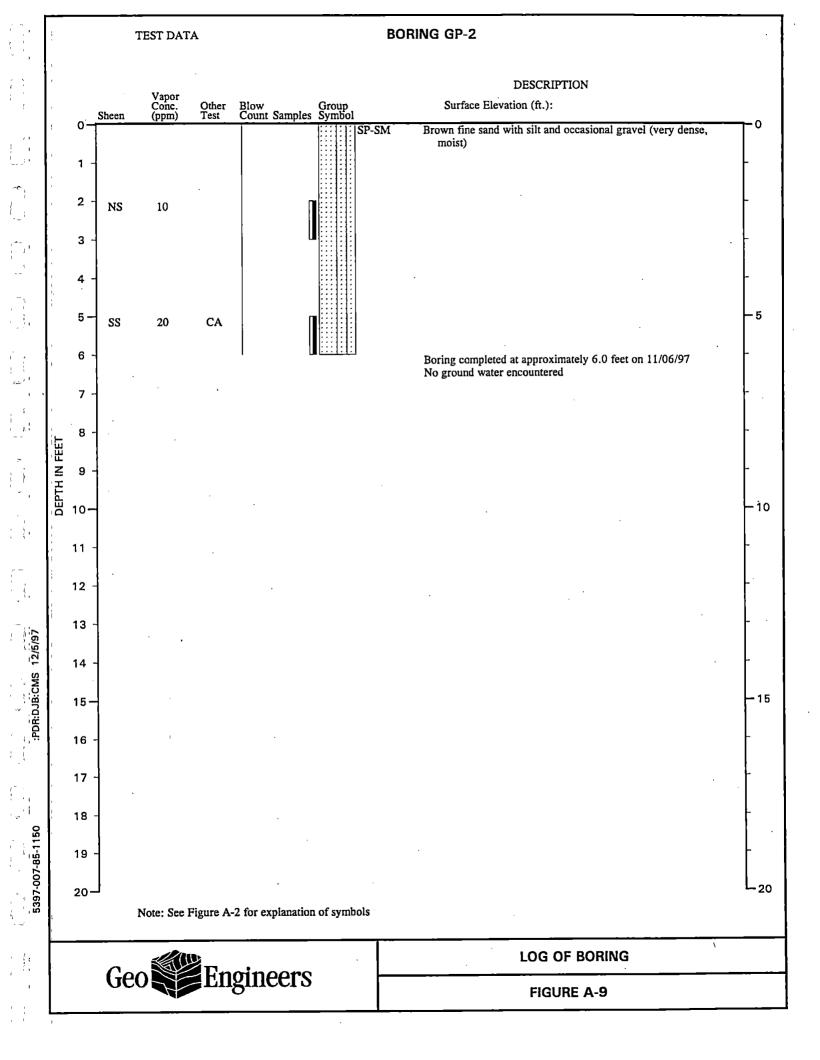


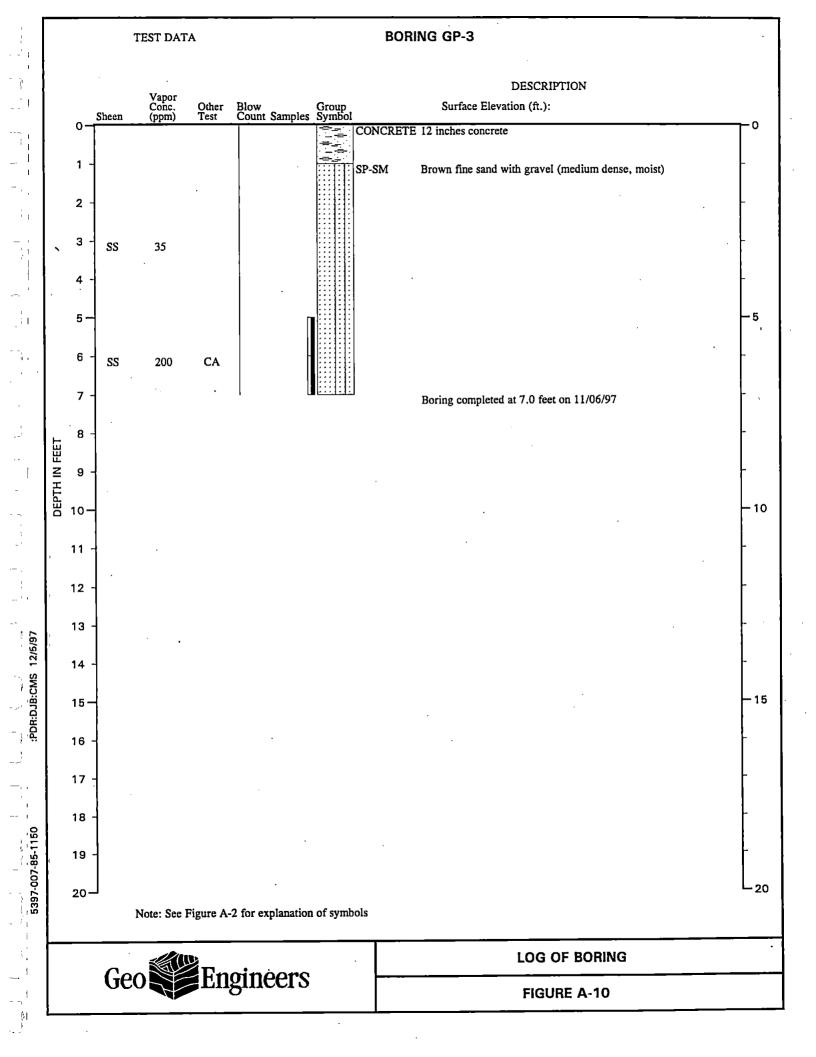


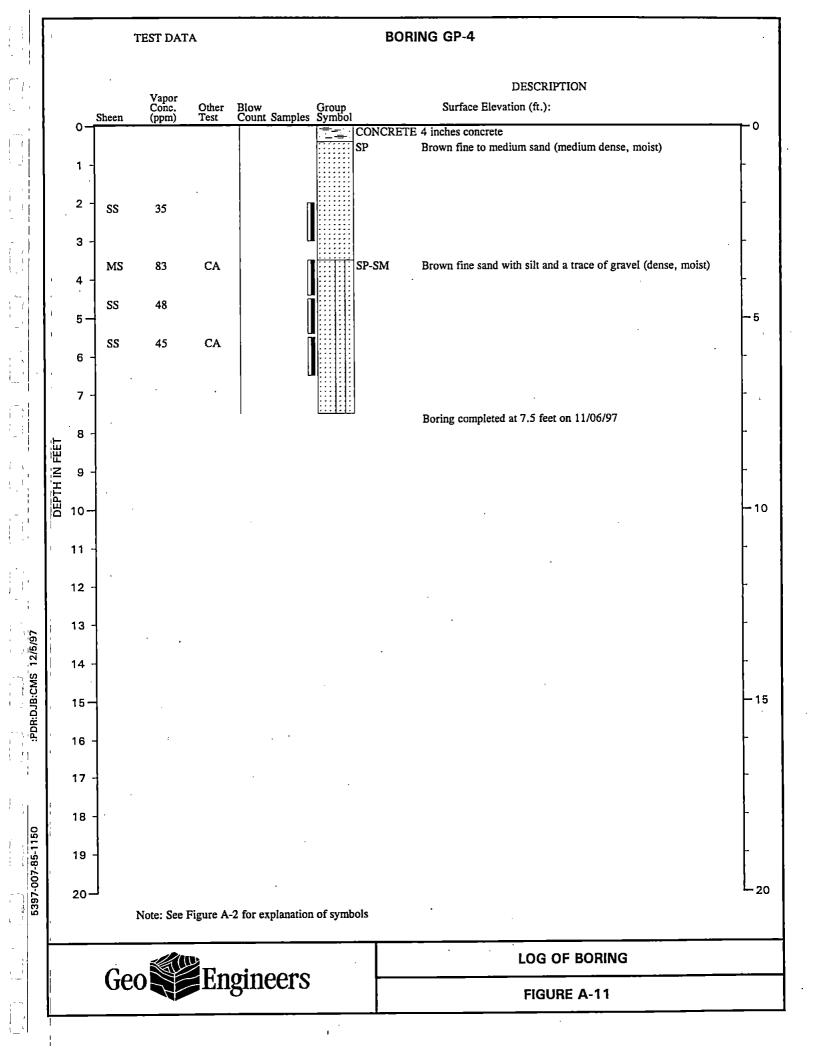


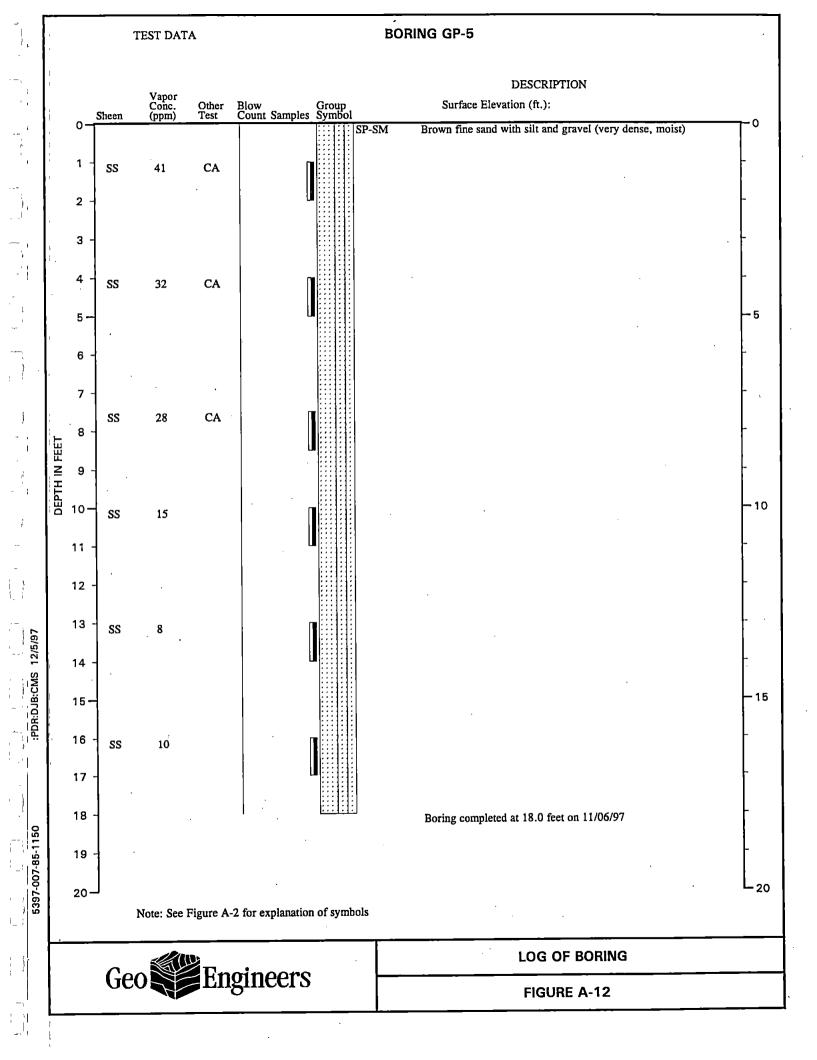


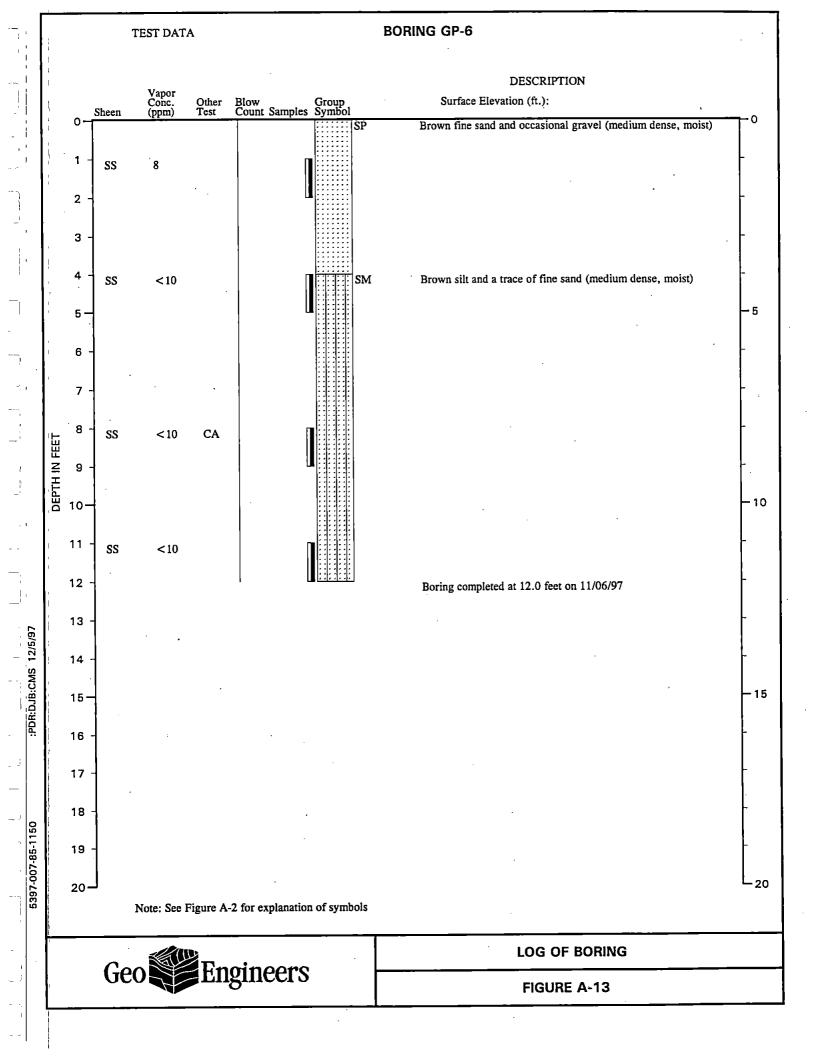


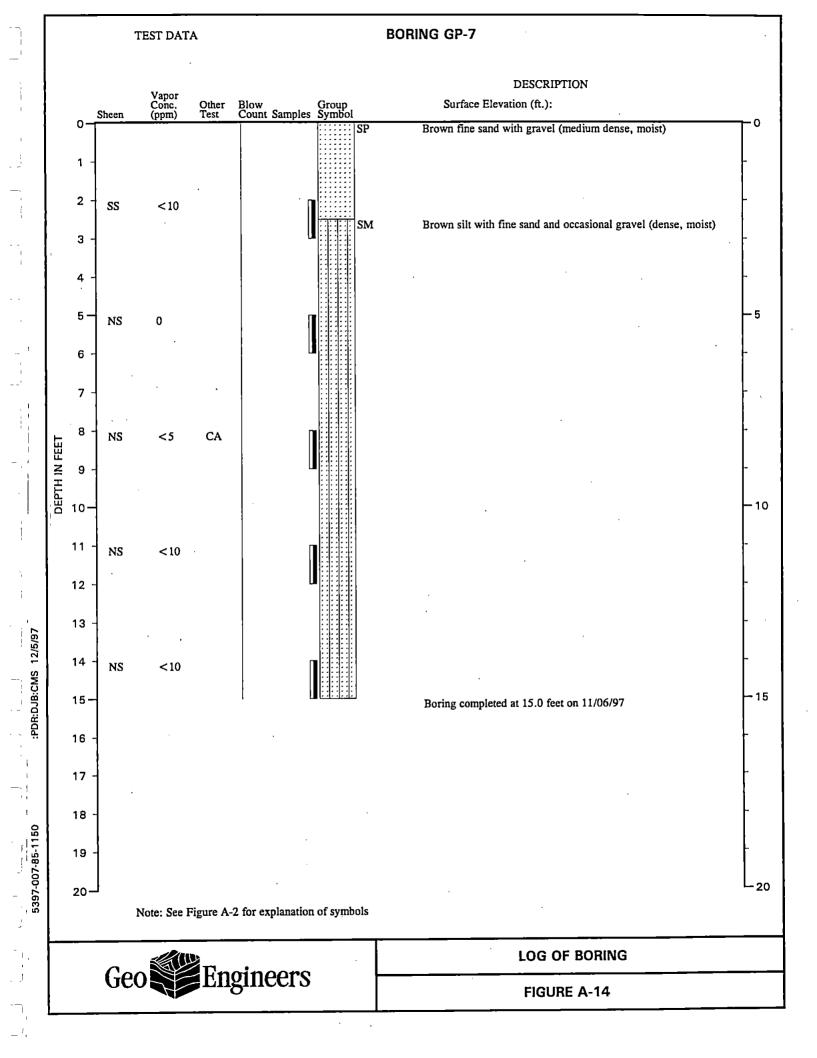


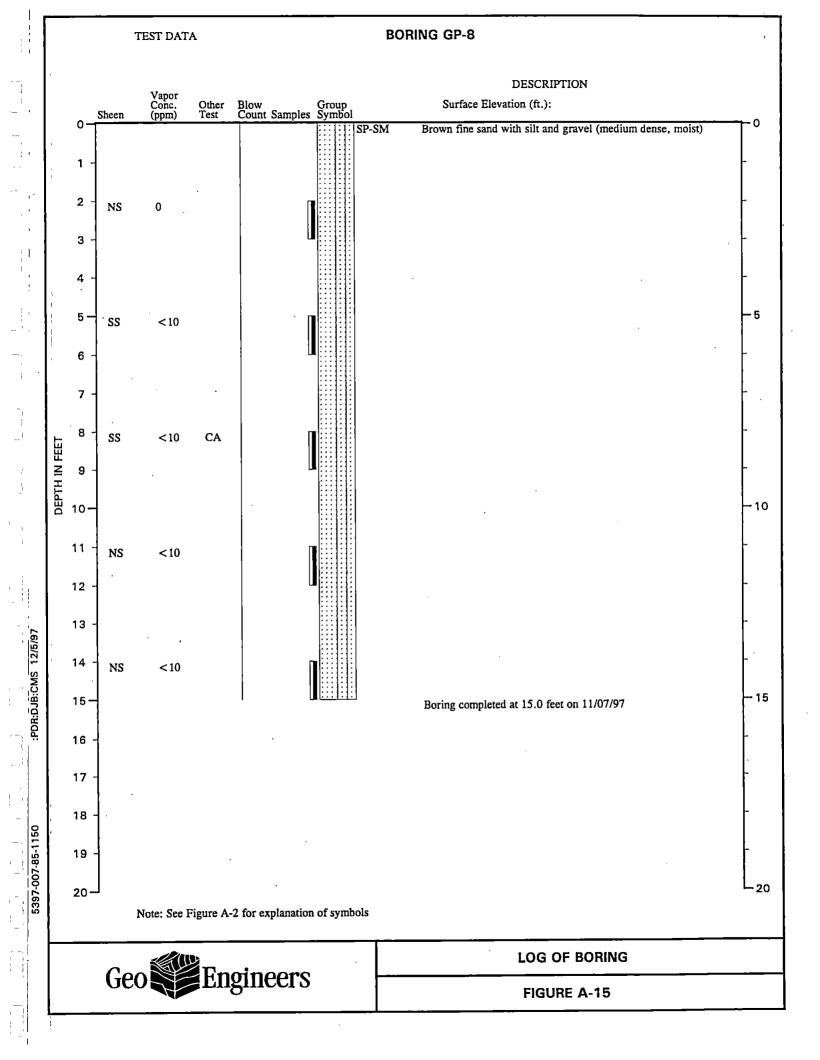


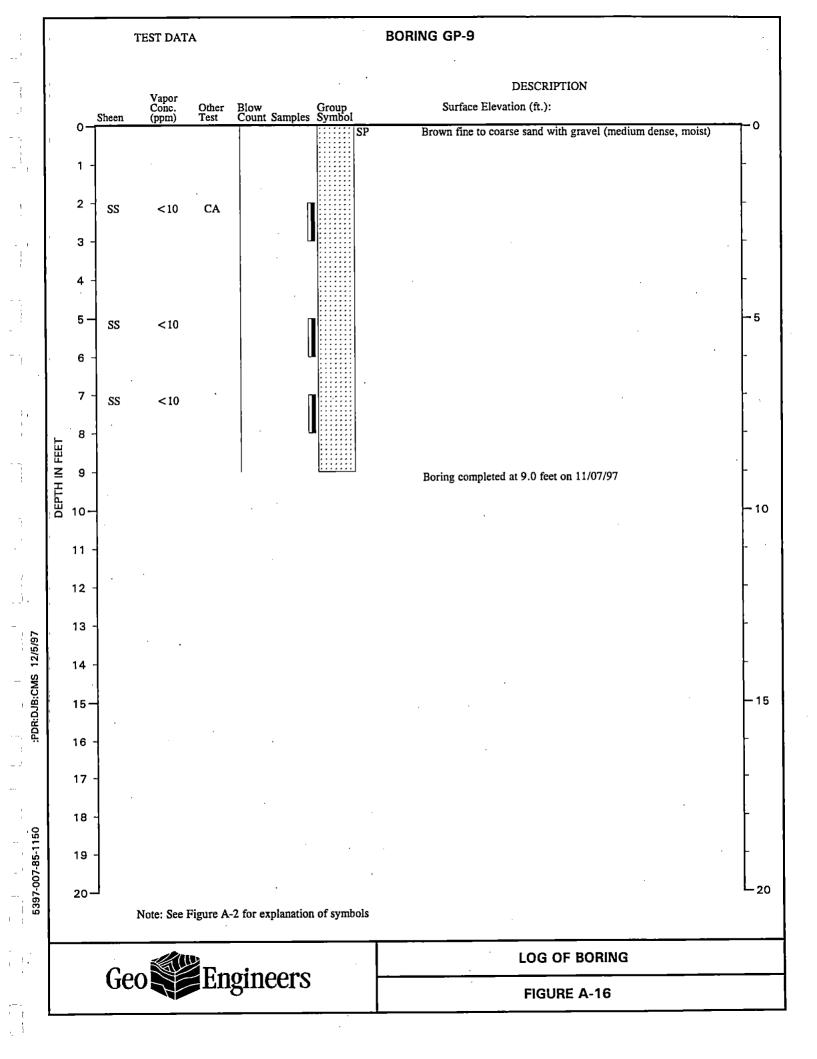


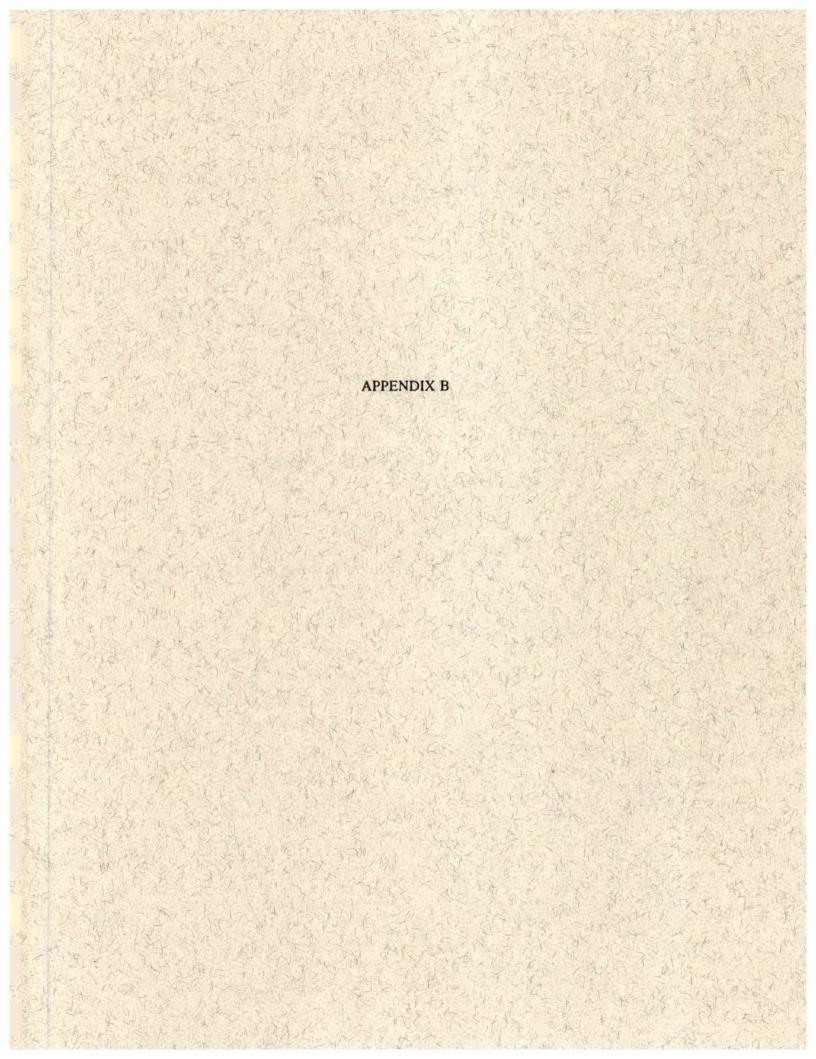












APPENDIX B

CHEMICAL ANALYTICAL PROGRAM

ANALYTICAL METHODS

Chain-of-custody procedures were followed during the transfer of field samples to the on-site mobile analytical laboratory. 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 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 were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted any exceptions in the laboratory report. The data quality exceptions documented by the laboratory in the laboratory reports were reviewed by GeoEngineers using the applicable data validation guidelines from the following documents: "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" dated 1988 (EPA document number EPA540/R94/083); "USEPA Contract Laboratory Program National Function Guidelines for Organic Data Review" dated February 1994 (EPA document number EPA540/R94/012).

ANALYTICAL DATA REVIEW SUMMARY

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



DECEIVED

HOTHELL = (425) 481-9200 = FAX 485-2992 SHOKANE = (509) 924-9200 = FAX 924-9290

PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle 600 Stewart Street, Suite 1215 Seattle, WA 98101 Project Stevens Health Care

Project Number: 5397-007
Project Manager: Dave Cook

Sampled: 11/6/97 to 11/7/97

Received: 11/10/97 Reported: 12/8/97 15:29

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
S-1	B711179-01	Soil	11/7/97
· S-2	B711179-02	Soil	11/7/97
S-3	B711179-03	Soil	11/7/97
S-4	B711179-04	Soil	11/7/97
S-5	B711179-05	Soil	11/7/97
GP-1-5	B711179-06	Soil	11/6/97
GP-2-6	B711179-07	Soil	11/6/97 '
GP-3-7	B711179-08	Soil	11/6/97
GP-4-4	B711179-09	Soil	11/6/97
GP-4-6	B711179-10	Soil	11/6/97
OMW-2	B711179-11	Water	11/7/97
MW-1	B711.179-12	Water	11/7/97
GP-5-8	B711179-13	Soil	11/6/97
GP-6-9	B711179-14	Soil	11/6/97
GP-7-9	B711179-15	Soil	11/6/97
GP-8-9	B711179-16	Soil	11/7/97
GP-9-3	B711179-17	Soil	11/7/97

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.





Geo Engineers - Seattle

600 Stewart Street, Suite 1215 Seattle, WA 98101

Project: Stevens Health Care

Project Number: 5397-007

Project Manager: Dave Cook

Sampled: 11/6/97 to 11/7/97

Received: 11/10/97

Reported: 12/8/97 15:29

Hydrocarbon Identification by Washington DOE Method NWTPH-HCID North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			-
Analyte .	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
Analyte .	1.0111001	i topaica						
<u>S-1</u>			<u>B7111′</u>	79-01	!		Soil	
Gasoline	1170308	11/13/97	11/12/97		20.0	ND	mg/kg dry	
Aviation Gasoline	11	17	11		20.0	ND	" .	
Mineral Spirits	11	**		•	20.0	ND	11	
Weathered Gasoline		10	н		20.0	ND	n	
VM&P Naphtha	"	11	11		20.0	ND	Ħ	,
Gasoline Range Hydrocarbons		n	10		20.0	ND	11	
Diesel #2	U		н		50.0	ND	19	
Kerosene Range Hydrocarbons	**	14	H		50.0	ND	O	
Diesel Range Hydrocarbons	II .	i n	11		50.0	ND	n	
Fuel Oil #6 (Bunker C)	н	11	Ħ		100	ND	"	
Transformer Oil	H	**	n		1:00	ND		
Motor Oil	H .	0	**		1'00	ND	**	
Hydraulic Oil	u	**		•	100	ND	II .	
Fuel Oil #2	11	n	11		100	ND	н	
Heavy Oil Range Hydrocarbons	11	19	**		1,00	ND	*1	
Surrogate: 2-FBP	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		"	50.0-150		127	%	
					ı			
<u>S-2</u>			<u>B7111</u>	<u>79-02</u>			<u>Soil</u>	
Gasoline	1170308	11/13/97	11/12/97		20.0	ND	mg/kg dry	
Aviation Gasoline	11	"	11		20.0	ND	n	
Mineral Spirits	rt .	"	H		20.0	ND	11	ļ
Weathered Gasoline	**	10	н		20.0	ND	O	
VM&P Naphtha	n	11	**		20.0	ND	"	
Gasoline Range Hydrocarbons	н	n	II		20.0	ND	H	
Diesel #2	n		17		50.0	ND	"	
Kerosene Range Hydrocarbons	n	н .	11		50.0	ND	**	
Diesel Range Hydrocarbons	u ,	19	10		50.0	ND	"	
Fuel Oil #6 (Bunker C)	rr rr	н	n	•	100	ND	н	,
Transformer Oil	"	u	11		100	ND	n	
Motor Oil	п	**	11		100	ND	11	
Hydraulic Oil	H	11	11		100	ND	н	
Fuel Oil #2	n	н	n		100	ND	t†	
Heavy Oil Range Hydrocarbons	11	. n	n		100	ND	H	
Surrogate: 2-FBP	"	n	n ·	50.0-150	i	1.18	%	
•					1			,
<u>S-3</u>	•		B7111	1 79-03 .	1		<u>Soil</u>	
Gasoline	1170308	11/13/97	11/12/97		20.0	ND	mg/kg dry	
Aviation Gasoline	m	Ħ	**		20.0	ND	**	(
a a remit of Gardenia								

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definition



PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle 600 Stewart Street, Suite 1215

Seattle, WA 98101

Project: Stevens Health Care

Project Number: 5397-007
Project Manager: Dave Cook

Sampled: 11/6/97 to 11/7/97

Received: 11/10/97 Reported: 12/8/97 15:29

Hydrocarbon Identification by Washington DOE Method NWTPH-HCID North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit _	Result	Units	Notes*
S-3 (continued)			<u>B7111′</u>	79-03			Soil	
Mineral Spirits	1170308	11/13/97	11/12/97		20.0	ND	mg/kg dry	
Weathered Gasoline	1170300	"	11/12/7/		20.0	ND	mg/kg dry	
VM&P Naphtha	10	n	II .		20.0	ND	**	
Gasoline Range Hydrocarbons	19	n	II .		20.0	ND	n	
Diesel #2	If	11	O		50.0	ND	it.	
Kerosene Range Hydrocarbons	**	II.	**		50.0	ND		* *
Diesel Range Hydrocarbons	**	II	11		50.0	ND	11	
Fuel Oil #6 (Bunker C)	11	ti	u		100	ND	n	
Transformer Oil		11	10		100	ND	n	
Motor Oil	11	11	н		100	DET	**	
Hydraulic Oil	H	n	n		100	ND	IF	
Fuel Oil #2	n	H	U		100	ND	ıı .	
Heavy Oil Range Hydrocarbons	tt.		ti .		100	· ND	19	
Surrogate: 2-FBP	н	ii .	, <i>"</i>	50.0-150		112	%	
5.4			07111	70.04			Soil	
S-4 Gasoline	1170308	11/13/97	<u>B7111′</u> 11/12/97	13-04	20.0	ND	mg/kg dry	
Aviation Gasoline	1170308	11/13/97	11/12/97		20.0	ND	mg/kg ury	
	O C	 II	u .		20.0	ND	11	
Mineral Spirits	n		"		20.0	ND	u	•
Weathered Gasoline	11	n .	"		20.0	ND ND	**	
VM&P Naphtha	u	n	"		20.0	ND ND	17	
Gasoline Range Hydrocarbons Diesel #2	10	n .	11		50.0	ND ND	II.	
Kerosene Range Hydrocarbons			11		50.0	ND ND	n	
Diesel Range Hydrocarbons		11	II.		50.0	ND		
Fuel Oil #6 (Bunker C)	n	11	11		100	ND	u	
Transformer Oil		11	n		100	ND	**	
Motor Oil	n	te	n		100	ND	11	
Hydraulic Oil	u	t)	II .		100	ND	n	
Fuel Oil #2	17	**	11		100	ND	n	
Heavy Oil Range Hydrocarbons	14	"	н		100	ND	r y	
Surrogate: 2-FBP	tr ·	"	"	50.0-150		122	_ %	
							a	
<u>S-5</u>			<u>B7111</u>	<u>79-05</u>			<u>Soil</u>	
Gasoline	1170308	11/13/97	11/12/97		20.0	ND	mg/kg dry	
Aviation Gasoline	17 .	H	#		20.0	ND		
Mineral Spirits	n	H	н		20.0	ND	n	
Weathered Gasoline	n	11	n		20.0	ND	n	

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*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager



Geo Engineers - Seattle

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

Project: Stevens Health Care Sampled: 11/6/97 to 11/7/97

 600 Stewart Street, Suite 1215
 Project Number: 5397-007
 Received: 11/10/97

 Seattle, WA 98101
 Project Manager: Dave Cook
 Reported: 12/8/97 15:29

Hydrocarbon Identification by Washington DOE Method NWTPH-HCID North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting Limit	Result	Units	Notes:
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Onus	notes
S-5 (continued)	•		<u>B7111</u>	<u>79-05</u>			<u>Soil</u>	
VM&P Naphtha	1170308	11/13/97	11/12/97		20.0	ND	mg/kg dry	
Gasoline Range Hydrocarbons	n	ti	Ħ		20.0	ND		
Diesel #2	n	19			50.0	ND	tt	
Kerosene Range Hydrocarbons	11	H	II .		50.0	ND	11	
Diesel Range Hydrocarbons	11	**	0		50.0	ND		
Fuel Oil #6 (Bunker C)	n	**	**		100	ND	ti	
Transformer Oil	ti				100	ND	n	
Motor Oil	11	H	**		100	ND		
Hydraulic Oil	n	17	tt		100	ND	II .	
Fuel Oil #2	н	11	n		100	ND	**	
Heavy Oil Range Hydrocarbons	•	н	u .		100	ND	11	٠.
Surrogate: 2-FBP	ii.	"	"	50.0-150		102	%	
CD 1 "			<u>B7111</u>	70 06		•	<u>Soil</u>	
<u>GP-1-5</u>	1170308	11/13/97	11/12/97	77-00	20.0	ND	mg/kg dry	
Gasoline	1170306	11/13/97	11/12/97		20.0	ND	mg/kg diy	
Aviation Gasoline	,,		11		20.0	ND	11	
Mineral Spirits		11			20.0	ND	II.	
Weathered Gasoline			"		20.0	ND	н	
VM&P Naphtha			••		20.0	ND	11	
Gasoline Range Hydrocarbons					50.0	ND	11	
Diesel #2		"			50.0	ND	11	
Kerosene Range Hydrocarbons		" 0	" n		50.0	ND ND	n	
Diesel Range Hydrocarbons	"		ı		100	ND	11	
Fuel Oil #6 (Bunker C)			н		100	ND	н	
Transformer Oil		"	" "		100	ND	"	
Motor Oil	, , , , , , , , , , , , , , , , , , ,	"	"		100	ND	11	
Hydraulic Oil	11	"	" "			ND ND	н	
Fuel Oil #2	" n	19	n		100			
Heavy Oil Range Hydrocarbons Surrogate: 2-FBP		- "	"	50.0-150	100	ND 116	%	
Surrogaie: 2-FDF.				J0.0-1J0				
<u>GP-2-6</u>			<u>B7111</u>	<u> 79-07</u>	, ,		Soil	
Gasoline	1170308	. 11/13/97	11/13/97		20.0	ND	mg/kg dry "	
Aviation Gasoline	•	н	11		20.0	ND	"	
Mineral Spirits	Ħ	н	H		20.0	ND		
Weathered Gasoline	n .	н	r		20.0	ND	n	
VM&P Naphtha	17	n	n		20.0	ND	**	
Gasoline Range Hydrocarbons	п	n	н		20.0	ND	n	

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definition:





Geo Engineers - Seattle

Seattle, WA 98101

600 Stewart Street, Suite 1215

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Sampled: 11/6/97 to 11/7/97 Received: 11/10/97

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Hydrocarbon Identification by Washington DOE Method NWTPH-HCID North Creek Analytical - Bothell

Project: Stevens Health Care

Project Number: 5397-007

	Batch	Date	Date	Surrogate	Reporting			
Analyte .	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
GP-2-6 (continued)			<u>B7111</u>	79-07			Soil	
Diesel #2	1170308	11/13/97	11/13/97	<u> 19-07</u>	50.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	1170300	11/13/97	11/13/7/		50.0	ND	" .	
Diesel Range Hydrocarbons	II.	U	10		50.0	ND	11	
· ·	10	11	U		100	ND	II	
Fuel Oil #6 (Bunker C)	U	11	U		100	ND	ш	
Transformer Oil	o o		,,		100	ND	11	
Motor Oil			11		100	ND	11	•
Hydraulic Oil		n e			100	ND	11	
Fuel Oil #2		"	19		100	ND	u	
Heavy Oil Range Hydrocarbons	"	<u>"</u>	"	50.0.150	100	103		
Surrogate: 2-FBP	TT .	"	**	50.0-150		103	70	
GP-3-7			<u>B7111</u>	<u>79-08</u>			<u>Soil</u>	
Gasoline	1170308	11/13/97	11/13/97	•	20.0	· ND	mg/kg dry	
Aviation Gasoline	U		н		20.0	ND	1)	
Mineral Spirits	II .	11	••		20.0	ND	If	
Weathered Gasoline	11	o o	10		20.0	ND	11	
VM&P Naphtha	II .	•			20.0	ND	U	
Gasoline Range Hydrocarbons	n	"			20.0	ND	н	
Diesel #2	n		n		50.0	ND	R	
Kerosene Range Hydrocarbons	n		11		50.0	ND	11	
Diesel Range Hydrocarbons	11	n	ш		50.0	ND	n	
Fuel Oil #6 (Bunker C)	19	••	11		100	ND	11	
Transformer Oil	n	11	o o		100	ND	10	
Motor Oil	11	11	и		100	ND	n .	
Hydraulic Oil	11	ıı	11		100	ND	11	
Fuel Oil #2	10	0	n		100	ND	II .	
Heavy Oil Range Hydrocarbons		и	u		100	ND	п	
Surrogate: 2-FBP	"	"	**	50.0-150		93.7	%	
_							s ::	
<u>GP-4-4</u>			<u>B7111</u>	<u>79-09</u>			<u>Soil</u>	
Gasoline	1170308	11/13/97	11/13/97		20.0	ND	mg/kg dry "	
Aviation Gasoline	19	"	18		20.0	ND		
Mineral Spirits	18	. "	17		20.0	ND	,,	
Weathered Gasoline	t t	11	11		20.0	ND	"	
VM&P Naphtha	, tt	n	H-		20.0	ND	"	
Gasoline Range Hydrocarbons		m	P		20.0	ND	**	
Diesel #2	17	Ħ	Ħ		50.0	ND	н	
Kerosene Range Hydrocarbons	re	n	н		50.0	ND	n	

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.

roject\Manager



Geo Engineers - Seattle

Project: Stevens Health Care

Sampled: 11/6/97 to 11/7/97

600 Stewart Street, Suite 1215

Project Number: 5397-007

Date

Batch

Surrogate

Reporting

Received: 11/10/97

Seattle, WA 98101

Project Manager: Dave Cook

Reported: 12/8/97 15:29

Hydrocarbon Identification by Washington DOE Method NWTPH-HCID North Creek Analytical - Bothell

Date

Analyte				Surrogate	Reporting			
Allatyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
GP-4-4 (continued)			<u>B7111</u>	79-09			<u>Soil</u>	. 1
Diesel Range Hydrocarbons	1170308	11/13/97	11/13/97	<u>, 7-92</u>	50.0	ND	mg/kg dry	. '
Fuel Oil #6 (Bunker C)	1170500	"	"		100	ND	" .	
Transformer Oil	19	11	**		100	ND	**	
Motor Oil	H	10			100	ND	u	ı
Hydraulic Oil	11	n	H		100	ND	II .	
Fuel Oil #2	11		н		100	ND	"	· · · · · · · · · · · · · · · · · · ·
Heavy Oil Range Hydrocarbons	ti .	11	**		100	ND	11	1
Surrogate: 2-FBP	"	11	11	50.0-150		101	%	
an			<u>B7111</u>	70.10			Soil	!
<u>GP-4-6</u>	1170200	11/12/07		<u> </u>	20.0	ND		
Gasoline	1170308	11/13/97	11/13/97		20.0	ND ND	mg/kg dry "	
Aviation Gasoline	.,	"	.,	•	20.0	ND ND	0	
Mineral Spirits		"			20.0	ND	н	
Weathered Gasoline		"			20.0 20.0	ND DN	11	
VM&P Naphtha					20.0 20.0	ND ND	·n	
Gasoline Range Hydrocarbons		" II			50.0		11	
Diesel #2		 H	, .			ND		
Kerosene Range Hydrocarbons	"	"	"		50.0	ND		
Diesel Range Hydrocarbons		" "	"		50.0	ND	11	
Fuel Oil #6 (Bunker C)	"	" D	u u		100	ND		
Transformer Oil			••		100	ND	"	
Motor Oil	1) H				100	ND	" "	
Hydraulic Oil			"		100	ND	н	
Fuel Oil #2					100	ND	"	l
Heavy Oil Range Hydrocarbons					100	ND		
Surrogate: 2-FBP		- "	"	50.0-150		109	%	•
<u>GP-5-8</u>			<u>B7111</u>	<u>79-13</u>			<u>Soil</u>	(
Gasoline	1170308	11/13/97	11/13/97		20.0	ND	mg/kg dry	
Aviation Gasoline	n	n	II		20.0	ND	19	
Mineral Spirits	19	n	10		20.0	ND	n	
Weathered Gasoline	11	10	II .		20.0	ND	n	
VM&P Naphtha	17	. "	11		20.0	ND	19	(
Gasoline Range Hydrocarbons	11	19	n		20.0	ND	n	
Diesel #2	**	H	10		50.0	ND	n	'
Kerosene Range Hydrocarbons	n .	n	n		50.0	ND	Ħ	
	n	**	n		50.0	ND	**	•
Diesel Range Hydrocarbons					20.0			

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definition

Project Manager



Geo Engineers - Seattle

600 Stewart Street, Suite 1215 Seattle, WA 98101

Project: Stevens Health Care

Project Number: 5397-007

Project Manager: Dave Cook

Sampled: 11/6/97 to 11/7/97

Received: 11/10/97

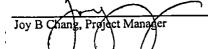
Reported: 12/8/97 15:29

Hydrocarbon Identification by Washington DOE Method NWTPH-HCID North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
GP-5-8 (continued)			<u>B7111</u>	79-13			<u>Soil</u>	
Transformer Oil	1170308	11/13/97	11/13/97		100	ND	mg/kg dry	
Motor Oil		n	u .		100	ND	" .	
Hydraulic Oil	u	eı	•		100	ND	n	
Fuel Oil #2	**	**	**		100	ND	н	
Heavy Oil Range Hydrocarbons	н		11		100	ND	н	
Surrogate: 2-FBP	"	"	" "	50.0-150		101	%	· ·
<u>GP-7-9</u>			<u>B7111</u>	79-15			<u>Soil</u>	
Gasoline	1170308	11/13/97	11/13/97		20.0	ND	mg/kg dry	
Aviation Gasoline	н	II	11		20.0	ND	, ,	
Mineral Spirits	11	п			20.0	ND	11	
Weathered Gasoline	n	*1	н		20.0	ND	n	
· VM&P Naphtha	10	16	et e	•	20.0	ND	n	
Gasoline Range Hydrocarbons	*1	IF.	11		20.0	ND	ti .	
Diesel #2	11	o o	10		50.0	ND	11	
Kerosene Range Hydrocarbons	n	ŧı	U		50.0	ND		
Diesel Range Hydrocarbons	**	10	*1		50.0	ND	п	
Fuel Oil #6 (Bunker C)	tr.		0 -		100	ND	11	
Transformer Oil	D	н	10		100	ND		
Motor Oil	11		11		100	ND	H .	•
Hydraulic Oil	Ħ		11		100	ND	n	
Fuel Oil #2	o	10	10		100	ND	н	
Heavy Oil Range Hydrocarbons		U			100	ND	IF	
Surrogate: 2-FBP	"	"	"	50.0-150		99.8	%	
CD 9 0			<u> </u> B7111	79-16			Soil -	
GP-8-9 Gasoline	1170308	11/13/97	11/13/97	17 -10	20.0	ND	mg/kg dry	
Aviation Gasoline	1170308	11/15/7/	"		20.0	ND	II	
Mineral Spirits	10	11	u	1	20.0	ND		
Weathered Gasoline	n	n	н		20.0	ND	11	
	11	н	н		20.0	ND	11	
VM&P Naphtha	11		11		20.0	ND	11	
Gasoline Range Hydrocarbons		11	н		50.0	ND	11	
Diesel #2			11		50.0	ND	n	
Kerosene Range Hydrocarbons		n	ri		50.0	ND	11	
Diesel Range Hydrocarbons		n			100	ND ND	n	
Fuel Oil #6 (Bunker C)	" ·	"	n		100	ND ND	n	
Transformer Oil		n	"					
Motor Oil	п	re	n		100	ND		

North Creek Analytical, Inc.

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Geo Engineers - Seattle

Seattle, WA 98101

600 Stewart Street, Suite 1215

Project: Stevens Health Care

Project Number: 5397-007

Project Manager: Dave Cook

Sampled: 11/6/97 to 11/7/97

Received: 11/10/97

Reported: 12/8/97 15:29

Hydrocarbon Identification by Washington DOE Method NWTPH-HCID North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte .	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
GP-8-9 (continued)			<u>B7111</u>	79 <u>-16</u>			<u>Soil</u>	
Hydraulic Oil	1170308	11/13/97	11/13/97		100	ND	mg/kg dry	
Fuel Oil #2	n	**	n .		100	ND	" .	
Heavy Oil Range Hydrocarbons	"	n	Ħ		100	ND		
Surrogate: 2-FBP	11	n	"	50.0-150	ı	95.5	%	
GP-9-3			<u>B7111</u>	79 -17			Soil	* •
Gasoline	1170308	11/13/97	11/13/97		20.0	ND	mg/kg dry	
Aviation Gasoline	11	rı .	11		20.0	ND	"	
Mineral Spirits	11	lt .	11		20.0	ND	11	
Weathered Gasoline	11	**	н		20.0	` ND	**	
VM&P Naphtha	n	1)	н		20.0	ND	11	
Gasoline Range Hydrocarbons	*1	11	11		20.0	ND	11	
Diesel #2	112	11	11	•	50.0	ND	н	
Kerosene Range Hydrocarbons	"	n	11		50.0	ND	н	
Diesel Range Hydrocarbons	11	17	n		50.0	ND	H .	
Fuel Oil #6 (Bunker C)	D	17	**		100	ND	II.	
Transformer Oil	**		D		100	ND	11	
Motor Oil	11	н			100	ND	u ·	
Hydraulic Oil	II .	н	H		100	ND	n	
Fuel Oil #2	11	tt .	ti .		100	ND	11	•
Heavy Oil Range Hydrocarbons	II .	"	11		100	ND	II .	
Surrogate: 2-FBP	"	"	и .	50.0-150		119	%	

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions



Geo Engineers - Seattle

Project: Stevens Health Care

Sampled: 11/6/97 to 11/7/97

600 Stewart Street, Suite 1215 Seattle, WA 98101

Project Number: 5397-007 Project Manager: Dave Cook Received: 11/10/97

Reported: 12/8/97 15:29

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

	Batch	Date	Date	Surrogate	Reporting			,
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
			B7111	70 02			Soil	
. S-3	444			<u> 19-113</u>	10.0	ND	<u>Soil</u>	,
Diesel #2	1170496	11/19/97	11/24/97		10.0	ND	mg/kg dry "	
Kerosene Range Hydrocarbons	н	11	11		10.0	ND	•	
Diesel Range Hydrocarbons	н	11	н		10.0	32.2		
Fuel Oil #6 (Bunker C)	"	n	n		25.0	ND	н .	
Transformer Oil	11	n	**		25.0	ND	n .	, , , , , , , , , , , , , , , , , , ,
Motor Oil	H	••	"		25.0	ND	n .	
Hydraulic Oil	i i	11	ü	·	25.0	ND	•	ı
Fuel Oil #2	n.	н	н		25.0	ND	n ·	ı
Heavy Oil Range Hydrocarbons	11	n	tī		25.0	63.8	н '	
Surrogate: 2-FBP	11	"		50.0-150		86.9	%	
								•
<u>GP-6-9</u>			<u>B7111</u>	<u>79-14</u>			<u>Soil</u>	
Diesel #2	1170282	11/12/97	11/13/97	•	10.0	. ND	mg/kg dry	1
Kerosene Range Hydrocarbons	н	U	*1		10.0	ND	u	
Diesel Range Hydrocarbons	11	**	n		10.0	ND	II .	
Fuel Oil #6 (Bunker C)	Ħ	10	n		25.0	ND	n	1
Transformer Oil	11	10	re		25.0	ND	"	
Motor Oil	11	O	н .		25.0	ND	11	
Hydraulic Oil	11	•	"		25.0	ND	D	
Fuel Oil #2	U		n		25.0	ND	н	•
	tt	10	n		25.0	ND		
Heavy Oil Range Hydrocarbons	<u> </u>	<i>"</i>		50.0-150		105	<u></u> %	
Surrogate: 2-FBP				20.0-120		203	, 0	-

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.

Project Manager



Geo Engineers - Seattle

Project: Stevens Health Care

Sampled: 11/6/97 to 11/7/97

600 Stewart Street, Suite 1215

Project Number: 5397-007

97-007

Received: 11/10/97

Seattle, WA 98101

Project Manager: Dave Cook

Reported: 12/8/97 15:29

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

	Batch	Date	Date	Specific	Reporting	-		
Analyte .	Number	Prepared	Analyzed	Method	Limit	Result	Units	Notes*
<u>GP-5-8</u>	•		<u>B7111</u>	7013			<u>Soil</u>	
	1170622	11/24/97	11/25/97	EPA 6010A	10.0	ND		
Arsenic			-				mg/kg dry "	
Barium	1270057	12/2/97	12/2/97	EPA 6010A	2.00	31.2	•	
Cadmium	1170622	11/24/97	11/25/97	EPA 6010A	0.300	ND	"	
Chromium	II .	н	H	EPA 6010A	0.500	15.4	11	
Lead	, 11	O	"	EPA 6010A	10.0	ND	11	
Selenium	1270057	12/2/97	12/4/97	EPA 6010A	0.125	ND	II .	
Mercury	1170625	11/24/97	11/24/97	EPA 7471A	0.0500	ND	II	
Silver	1170622	**	11	EPA 7760A	1.00	12.1	(I	
<u>GP-6-9</u>			<u>B7111</u>	79-14	1		Soil	
Arsenic	1170622	11/24/97	11/25/97	EPA 6010A	10.0	ND	mg/kg dry	
Barium	1270057	12/2/97	12/2/97	EPA 6010A	2.00	33.5	н	
Cadmium	1170622	11/24/97	11/25/97	EPA 6010A	0.300	0.488	u "	
Chromium	II	II .	II .	EPA 6010A	0.500	13.3	ti	
Lead	11	19	ш	EPA 6010A	10.0	ND	н	
Selenium	1270057	12/2/97	12/4/97	EPA 6010A	0.125	ND	n .	
Mercury	1170625	11/24/97	11/24/97	EPA 7471A	0.0500	ND	II .	
Silver	1170622	"	ii .	EPA 7760A	1.00	15.5	n	

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions

Joy B Chang, Project Manager



Geo Engineers - Seattle

600 Stewart Street, Suite 1215

Seattle, WA 98101

Project: Stevens Health Care

Project Number: 5397-007

Project Manager: Dave Cook.

Sampled: 11/6/97 to 11/7/97

Received: 11/10/97

Reported: 12/8/97 15:29

Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting	-		
Analyte .	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
	,			-0.04			,	
<u>GP-1-5</u>	1.50000	11/10/05	<u>B7111′</u>	<u>79-06</u>	0.0500	» III»	<u>Soil</u>	
Bromodichloromethane	1170309	11/12/97	11/13/97		0.0500	ND	mg/kg dry "	
Bromoform			11		0.0500	ND		
Bromomethane	11	11	11		0.0500	ND	"	
Carbon tetrachloride	"		19		0.0500	ND	"	
Chlorobenzene					0.0500	ND	"	V
Chloroethane	11	"			0.0500	ND		
Chloroform	II.	11	**		0.0500	ND		
Chloromethane	"	11	H		0.0500	ND		
Dibromochloromethane	11	D			0.0500	ND	11	
1,2-Dichlorobenzene	"	"	10		0.0500	ND	**	
1,3-Dichlorobenzene	n	**	"		0.0500	ND		
1,4-Dichlorobenzene	ı)	11	"		0.0500	ND	n	
1,1-Dichloroethane	II	**	"		0.0500	· ND		
1,2-Dichloroethane	"	n .	II.		0.0500	ND	"	
1,1-Dichloroethene	11	**	II .		0.0500	ND	и.	
cis-1,2-Dichloroethene	11	**	n		0.0500	ND	15	
trans-1,2-Dichloroethene	tr.	11	11		0.0500	ND	u	
1,2-Dichloropropane	**	n	n .		0.0500	ND	U	
cis-1,3-Dichloropropene	10	ii .	11		0.0500	ND	11	
trans-1,3-Dichloropropene	11	"	D		0.0500	ND	II	
Methylene chloride	n .	11	n		0.500	ND	tt.	
1,1,2,2-Tetrachloroethane	n	11	. "		0.0500	ND	11	
Tetrachloroethene	11	II .	11		0.0500	ND	11	
1,1,1-Trichloroethane	11	n	II		0.0500	ND	11	
1,1,2-Trichloroethane	O	"	n	•	0.0500	ND	11	
Trichloroethene	D .	II	n .		0.0500	ND	11	
Trichlorofluoromethane			11		0.0500	ND	н .	
Vinyl chloride	11	U	н		0.0500	ND	,	
Surrogate: 4-BFB (ELCD)	"	"	"	50.0-150		103	%	
							•	
<u>GP-2-6</u>			<u>B7111</u>	<u>79-07</u>			<u>Soil</u>	
Bromodichloromethane	1170309	11/12/97	11/12/97		0.0500	ND	mg/kg dry	
Bromoform	н	n	10		0.0500	ND	n	
Bromomethane	tr	II .			0.0500	ND	н	
Carbon tetrachloride	77	11	U .		0.0500	ND	r	
Chlorobenzene	11 .	19	н		0.0500	ND	n	
Chloroethane	IF.	H	n		0.0500	ND	10	
Chloroform		н	19		0.0500	ND	n	
Chlorotothi					0.0000			

North Creek Analytical, Inc.

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Geo Engineers - Seattle 600 Stewart Street, Suite 1215 Project:

Stevens Health Care

Sampled: 11/6/97 to 11/7/97

Seattle, WA 98101

Project Number: 5397-007

Received: 11/10/97

Project Manager:

Dave Cook

Reported: 12/8/97 15:29

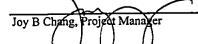
Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit_	Result	Units	Notes*
GP-2-6 (continued)			<u>B7111′</u>	79-0 <u>7</u>	1		<u>Soil</u>	
Chloromethane	1170309	11/12/97	11/12/97		0.0500	ND	mg/kg dry	
Dibromochloromethane	0	н	17		0.0500	ND	" .	
1,2-Dichlorobenzene	H	10	••		0.0500	.ND	II .	
1,3-Dichlorobenzene	"	14	10		0.0500	ND	tt	
1,4-Dichlorobenzene	. "	u	17		0.0500	ND	**	
1,1-Dichloroethane	n	**	n		0.0500	ND	11	
1,2-Dichloroethane	"	u .	11		0.0500	ND	н	
1,1-Dichloroethene	11	19	11		0.0500	ND	11	
cis-1,2-Dichloroethene	II	"			0.0500	ND	н	
trans-1,2-Dichloroethene	n	"	**		0.0500	ND	n	
1,2-Dichloropropane	11		n		0.0500	ND	18	
cis-1,3-Dichloropropene	n	n	tt		0.0500	ND	III	
trans-1,3-Dichloropropene	11		**	•	0.0500	ND	o	
Methylene chloride	"		U		0.500	ND	n	
1,1,2,2-Tetrachloroethane	II.	1*	n		0.0500	ND	H	
Tetrachloroethene	н	m .	"		0.0500	ND	"	
1,1,1-Trichloroethane	н		**		0.0500	ND	11	
1,1,2-Trichloroethane	n	II.			0.0500	ND	11	
Trichloroethene	11	19	H		0:0500	ND	n	
Trichlorofluoromethane	II.	II .	n		0.0500	ND	11	*
Vinyl chloride	n	"	11		0.0500	ND	11	
Surrogate: 4-BFB (ELCD)	"	, #	"	50.0-150		101	%	-
					1			

,						9
<u>GP-3-7</u>			B711179-08	ı		<u>Soil</u>
Bromodichloromethane	1170309	11/12/97	11/12/97	0.0500	ND	mg/kg dry
Bromoform	11	19	ii.	0.0500	ND	
Bromomethane	ıı '	19	n	0.0500	ND	н •
Carbon tetrachloride	íi.	11	ii .	0.0500	ND	n
Chlorobenzene	n	IF.	ii .	0.0500	ND	•
Chloroethane	11	"	n	0.0500	ND	it .
Chloroform	tt-	**	ii	0.0500	ND ·	n
Chloromethane	19	11	ti	0.0500	ND	n
Dibromochloromethane	**	. #	н	0.0500	ND	n
1,2-Dichlorobenzene	1P		n	0.0500	ND	n
1,3-Dichlorobenzene	н	n	н	0.0500	ND	"
1,4-Dichlorobenzene	н .	**	Ħ	0.0500	ND	,
1,1-Dichloroethane	п	19	n	0.0500	ND	н
1,2-Dichloroethane	17	п	n	0.0500	ND	**

North Creek Analytical, Inc.

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PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle Project: Stevens Health Care Sampled: 11/6/97 to 11/7/97
600 Stewart Street, Suite 1215 Project Number: 5397-007 Received: 11/10/97

 600 Stewart Street, Suite 1215
 Project Number: 5397-007
 Received: 11/10/97

 Seattle, WA 98101
 Project Manager: Dave Cook.
 Reported: 12/8/97 15:29

Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
GP-3-7 (continued)			<u> B7111'</u>	<u>79-08</u>			<u>Soil</u>	
1,1-Dichloroethene	1170309	11/12/97	11/12/97		0.0500	ND	mg/kg dry	
cis-1,2-Dichloroethene	"	II .	n		0.0500	ND		
trans-1,2-Dichloroethene	"	н	"		0.0500	ND	H	
1,2-Dichloropropane	II	11	"		0.0500	ND	11	
cis-1,3-Dichloropropene	. "	II .	11		0.0500	ND	"	,
, trans-1,3-Dichloropropene	11	11	н		0.0500	ND	u .	
Methylene chloride	rr ·	O .	U		0.500	ND	H	1
1,1,2,2-Tetrachloroethane	11	11	••		0.0500	ND	11	
Tetrachloroethene	II	"	II .		0.0500	ИD	11	
1,1,1-Trichloroethane	11	II.	11		0.0500	ND	"	
1,1,2-Trichloroethane	n	u ,	0		0.0500	ND		
Trichloroethene	U	II .	n		0.0500	ND	0	
Trichlorofluoromethane	w '	II	"	•	0.0500	. ND	411	
Vinyl chloride	11	"	11		0.0500	ND	D .	;
Surrogate: 4-BFB (ELCD)	"	"	"	50.0-150		109	%	
<u>GP-4-4</u>			<u> 187111</u>	<u>79-09</u>			<u>Soil</u>	
Bromodichloromethane	1170309	11/12/97	11/12/97		0.0500	ND	mg/kg dry	
' Bromoform	**	0			0.0500	ND	II .	1.
Bromomethane	11	"			0.0500	ND	11	
Carbon tetrachloride	н	"	O		0.0500	ND	II .	
Chlorobenzene	U	u	11		0.0500	ND	II.	
Chloroethane	"	"	u		0.0500	ND	O .	
: Chloroform	"	11	11		0.0500	ND	11	
Chloromethane	10	н	tt.		0.0500	ND	II	
Dibromochloromethane	19	O	•		0.0500	ND	II .	
1,2-Dichlorobenzene	n .	**	10		0.0500	ND	•	•
1,3-Dichlorobenzene	"	n	10		0.0500	ND		
1,4-Dichlorobenzene	u		U		0.0500	ND	10	
1,1-Dichloroethane	и	19	"		0.0500	ND	u	
1,2-Dichloroethane	**	**	**		0.0500	ND	11	
1,1-Dichloroethene	**	**	t#		0.0500	ND	н	
cis-1,2-Dichloroethene	п	. "	n		0.0500	ND	10	
trans-1,2-Dichloroethene	'n	н	n		0.0500	ND	н	
1,2-Dichloropropane	n	n	19		0.0500	ND	u u	
cis-1,3-Dichloropropene	n .	"	19		0.0500	ND	п	I
trans-1,3-Dichloropropene	tr .	if .	Ħ		0.0500	ND	Ħ	
Methylene chloride	19	t)	19		0.500	ND	n	
111041710110 011101100								1

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.





Geo Engineers - Seattle

Project: Stevens Health Care

Sampled: 11/6/97 to 11/7/97

600 Stewart Street, Suite 1215 Seattle, WA 98101

Project Number: 5397-007 Project Manager: Dave Cook Received: 11/10/97 Reported: 12/8/97 15:29

Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting	<u> </u>		
Analyte .	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
GP-4-4 (continued)			D#111	70.00	İ		C 11	
1,1,2,2-Tetrachloroethane	1170309	11/12/97	<u>B7111</u> 11/12/97	<u> 19-09</u>	0.0500	ND	<u>Soil</u>	
Tetrachloroethene	1170309	11/12/97	11/12/97		0.0500	ND ND	mg/kg dry "	
	,,	19	H		0.0500			
1,1,1-Trichloroethane	,,					ND		Į
1,1,2-Trichloroethane	, ,				0.0500	ND	"	
Trichloroethene			**		0.0500	ND	"	, (
Trichlorofluoromethane	n	"	"		0.0500	ND		
Vinyl chloride	<u>"</u> -	-",	"		0.0500	ND	"	
Surrogate: 4-BFB (ELCD)	"	"	"	50.0-150		98.1	%	
<u>GP-4-6</u>		•	B7111	79-10	I		Soil	
Bromodichloromethane	1170309	11/12/97	11/12/97		0.0500	ND	mg/kg dry	
Bromoform	u	. 11	10		0.0500	ND	"	
Bromomethane	n		II.	•	0.0500	ND	н	
Carbon tetrachloride	II .	11	н		0.0500	ND	11	
Chlorobenzene	н	II.	11		0.0500	ND	II .	
Chloroethane	**	11	U		0.0500	ND	11	1
Chloroform	**	11	н		0.0500	ND	H	
Chloromethane	**	н			0.0500	ND		Į
Dibromochloromethane	er e	10	•		0.0500	ND	11	
1,2-Dichlorobenzene	,,	rr	•		0.0500	ND	n .	
1,3-Dichlorobenzene	11	11			0.0500	ND	n	
1,4-Dichlorobenzene	11	н			0.0500	ND	l†	
1.1-Dichloroethane	n	17	11		0.0500	ND	ti	(
1,2-Dichloroethane		**	и		0.0500	ND	**	Ì
1,1-Dichloroethene	н	17	н		0.0500	ND	**	1,
cis-1,2-Dichloroethene	19		**		0.0500	ND	**	
trans-1,2-Dichloroethene	н .	**	11		0.0500	ND	11	
1,2-Dichloropropane	n	11	19		0.0500	ND	11	
	н	n	10		0.0500	ND	u .	
cis-1,3-Dichloropropene	,,		n		0.0500	ND	11	1
trans-1,3-Dichloropropene	,		n					1
Methylene chloride			 n		0.500	ND		Ι,
1,1,2,2-Tetrachloroethane			" "		0.0500	ND		
Tetrachloroethene		, "		•	0.0500	ND		
1,1,1-Trichloroethane					0.0500	ND		1
1,1,2-Trichloroethane		"	**		0.0500	ND		
Trichloroethene		n	11		0.0500	ND	н	ť
Trichlorofluoromethane		n	n		0.0500	ND	n	
Vinyl chloride	· #	•	n		0.0500	ND	n	(

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*Refer to end of report for text of notes and definitions

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PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle

Project: Stevens Health Care

Sampled: 11/6/97 to 11/7/97

600 Stewart Street, Suite 1215 Seattle, WA 98101

Project Number: 5397-007 Project Manager: Dave Cook: Received: 11/10/97

Reported: 12/8/97 15:29

Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
			P=444	TO 10			6.9	
GP-4-6 (continued)	1170300	11/12/07	<u>B7111′</u>	<u> 50.0-150</u>		101	Soil %	
Surrogate: 4-BFB (ELCD)	1170309	11/12/97	11/12/97	30.0-130		101	70	•
OMW-2	٠		<u>B7111</u>	79-11			Water	
Bromodichloromethane	1170506	11/19/97	11/19/97		1.00	ND	ug/l	
Bromoform	· " .	11	"		1.00	ND		
Bromomethane	II	u	0		1.00	ND	n	•
Carbon tetrachloride	n	fl	II .		1.00	ND	U	
Chlorobenzene	u	"	u		1.00	ND	n .	
Chloroethane	11		ti		1.00	ND		
Chloroform	11	и	D		1.00	ND	11	
Chloromethane	10	n	11		1.00	ND	11	
Dibromochloromethane	ń	11	10		1.00	ND	n	
1.2-Dichlorobenzene	**	11	19	•	1.00	ND		
1,3-Dichlorobenzene	11	11	11		1.00	ND	U	
1,4-Dichlorobenzene	II .	u	11		1.00	ND	u	
1,1-Dichloroethane	и	w	II s	0	1.00	ND	"	
1,2-Dichloroethane	ti .	11	U		1.00	ND	"	
1,1-Dichloroethene	**	11			1.00	ND		
cis-1,2-Dichloroethene		19	n		1.00	2.94	o o	
trans-1,2-Dichloroethene	II .	17	n		1.00	ND	н	
1,2-Dichloropropane	11	17	II .		1.00	ND	10	
cis-1,3-Dichloropropene	O	11	н		1.00	ND	11	
trans-1,3-Dichloropropene	11		11		1.00	ND	n n	
Methylene chloride	u	, P	II .		5.00	ND	"	
1,1,2,2-Tetrachloroethane	11		H		1.00	ND	11	
Tetrachloroethene	n	**	11/20/97		50.0	1020	II	
1,1,1-Trichloroethane		10	11/19/97		1.00	ND.	19	
1,1,2-Trichloroethane	10	u .	D		1.00	ND	D	
Trichloroethene	II	n	10		1.00	7.02	13	
Trichlorofluoromethane	11	•	10		1.00	ND	**	
Vinyl chloride	11	н	17		1.00	ND	11	
Surrogate: 4-BFB (ELCD)	"	"	ii .	50.0-150		77.7	%	-
MW-1			B7111	70_12			<u>Water</u>	
MW-1 Bromodichloromethane	1170506	11/19/97	<u>11/19/97</u>		1.00	ND	ug/l	
· ·	1170506	11/19/97	11/13/37		1.00	ND	ng/1	
Bromoform	 n				1.00	ND	n	
Bromomethane	.,	11			1.00	ND ND	n	
Carbon tetrachloride	 ,		••		1.00	מאו		

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager



Geo Engineers - Seattle 600 Stewart Street, Suite 1215

Seattle, WA 98101

Project: Stevens Health Care

Project Number: 5397-007

Project Manager: Dave Cook

Sampled:

11/6/97 to 11/7/97

Received: 11/10/97

Reported: 12/8/97 15:29

Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
MW-1 (continued)			<u> B7111</u>	79-12	1		Water	
Chlorobenzene	1170506	11/19/97	11/19/97		1.00	ND	ug/l	
Chloroethane	11	19			1.00	ND	" .	
Chloroform	11	tt			1.00	ND	n	
Chloromethane	Ħ	**	10		1.00	ND	n	
Dibromochloromethane	. "	II .	Ħ		1.00	ND	11	
1,2-Dichlorobenzene	11	19	11		1.00	ND	n	
1,3-Dichlorobenzene	11	n	n		1.00	ND	n .	
1,4-Dichlorobenzene	H .		10		1.00	ND	. "	
1,1-Dichloroethane	"		0		1.00	ND	11	
1,2-Dichloroethane	11		**		1.00	ND	n	
1,1-Dichloroethene	11	n	17		1.00	ND	10	
cis-1,2-Dichloroethene	ņ	•	U		1.00	ND	u	
trans-1,2-Dichloroethene	**	11	н	. •	1.00	ND	er .	
1,2-Dichloropropane	II.	11	"		1.00	ND	н	
cis-1,3-Dichloropropene		n			1.00	ND	n	
trans-1,3-Dichloropropene	H	•	ıı .		1.00	ND	n	
Methylene chloride	**	•	н		5.00	7.66	19	1
1,1,2,2-Tetrachloroethane	11	10	н .		1.00	ND	11	_
Tetrachioroethene		D	••		1.00	ND	11	
1,1,1-Trichloroethane	.,	н	11		1.00	ND	Ħ	÷
1,1,2-Trichloroethane		**	н		1.00	ND	11	
Trichloroethene	u	11	U		1.00	ND	U	
Trichlorofluoromethane	u	н	н		1.00	ND		
Vinyl chloride	D.	n	11		1.00	ND	**	
Surrogate: 4-BFB (ELCD)	. "	"	"	50.0-150		79.8	%	
<u>GP-5-8</u>			B7111	79-13	, ¹		Soil	
<u> </u>	*****		11/10/07		0.0500	NES		•

<u>GP-5-8</u>			B711179-13	r		Soil .
Bromodichloromethane	1170309	11/12/97	11/12/97	0.0500	ND	mg/kg dry
Bromoform	**	**	11	0.0500	ND	11
Bromomethane	11	**	10	0.0500	ND	10
Carbon tetrachloride	n	**	H	0.0500	ND	n
Chlorobenzene	н	н	II .	0.0500	ND	11
Chloroethane	n		11	0.0500	ND	н
Chloroform	н	н	ir	0.0500	ND .	Ħ
Chloromethane	111	**	н	0.0500	ND	n
Dibromochloromethane	m ,	**	н	0.0500	ND	11
1.2-Dichlorobenzene	n	н	11	0.0500	ND	
1,3-Dichlorobenzene	**	II .	17	0.0500	ND	n

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definition





Geo Engineers - Seattle

Project: Stevens Health Care Sampled: 11/6/97 to 11/7/97

600 Stewart Street, Suite 1215

Project Number: 5397-007

Received: 11/10/97

Seattle, WA 98101

Project Manager: Dave Cook:

Reported: 12/8/97 15:29

Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

		Batch	Date	Date	Surrogate	Reporting			· .]
	Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
۱ -							-		1
. 1	GP-5-8 (continued)			<u>B71117</u>	<u> 19-13</u>			<u>Soil</u>	
Ì	1,4-Dichlorobenzene	1170309	11/12/97	11/12/97		0.0500	ND	mg/kg dry	
. !	I,I†Dichloroethane	II .	11	"		0.0500	ND	•	
; ;	1,2-Dichloroethane	н	·	"		0.0500	ND	II .	
. !	1,1-Dichloroethene	n	II	н		0.0500	ND	n ,	
i	cis-1,2-Dichloroethene	17	Ħ	n		0.0500	ND	**	
; ا.	trans-1,2-Dichloroethene	11	11	11		0.0500	ND	11	
Ì	1,2-Dichloropropane	II	10	**		0.0500	ND	11	
į	cis-1,3-Dichloropropene	'ii	"	11		0.0500	ND	н ′	
j	trans-1,3-Dichloropropene	ii	tr	11		0.0500	ND	TI	
ļ	Methylene chloride	**	"	H		0.500	ND	11	•
	1,1,2,2-Tetrachloroethane	"	11	н		0.0500	ND	11	4
i	Tetrachloroethene	ii	10	11		0.0500	ND	n	1
ì	1,1,1-Trichloroethane		11	II.	•	0.0500	. ND	**	1
	1,1,2-Trichloroethane	11	11	10		0.0500	ND	11	1
;	Trichloroethene	t t	**	u		0.0500	ND		L
	Trichlorofluoromethane	11	11	n		0.0500	ND	n	
,	Vinyl chloride	II .	n	"		0.0500	ND	"	
4	Surrogate: 4-BFB (ELCD)	"	".	<i>n</i> ·	50.0-150		100	%	1
									I
٠,	GP-6-9			<u>B7111</u>	<u>79-14</u>			<u>Soil</u>	1
, ;	Bromodichloromethane	1170309	11/12/97	11/12/97		0.0500	ND	mg/kg dry	
1	Bromoform		ń	"		0.0500	ND	II	1 -
:	Bromomethane	. 16	19	11		0.0500	ND	н	
,	Carbon tetrachloride	11	H	11		0.0500	ND	n	
Ì	Chlorobenzene	tt.	u '	**		0.0500	ND	u	
١	Chloroethane	" ,	11	"		0.0500	ND	11	
	Chloroform		10	"		0.0500	ND	19	
ļ	Chloromethane	10	n	11		0.0500	ND	H	4
į	Dibromochloromethane	10	"	н		0.0500	ND	11	1
ì	1,2-Dichlorobenzene	n	u	H		0.0500	ND	н	İ
ļ	1,3-Dichlorobenzene	14	ш	H		0.0500	ND	n	
	1,4-Dichlorobenzene	11	10	**		0.0500	ND	11	İ
1 1. I	1,1-Dichloroethane	n .	n	11		0.0500	ND	11	
H	1,2-Dichloroethane	H	11			0.0500	ND	•	
1	1.1-Dichloroethene	н	n	n		0.0500	ND	m	I
į	cis-1,2-Dichloroethene	н .	11	Ħ		0.0500	ND	n	1
ļ	trans-1,2-Dichloroethene		19	n		0.0500	ND	н	
į	1,2-Dichloropropane	**	n	10		0.0500	ND	n	
í			,						1

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.

Project Manage



Geo Engineers - Seattle

Project: Stevens Health Care

Sampled: 11/6/97 to 11/7/97

600 Stewart Street, Suite 1215

Project Number: 5397-007

Received: 11/10/97

Seattle, WA 98101

Project Manager: Dave Cook

Reported: 12/8/97 15:29

Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
					1	<u> </u>		
GP-6-9 (continued)			<u>B7111</u>	<u> 79-14</u>	ļ		<u>Soil</u>	
cis-1,3-Dichloropropene	1170309	11/12/97	11/12/97		0.0500	ИD	mg/kg dry	•
trans-1,3-Dichloropropene	n	11	"		0.0500	ND	" .	
Methylene chloride	**	tf	II .		0.500	ND	ŋ	
1,1,2,2-Tetrachloroethane	**	**	n		0.0500	ND	"	
Tetrachloroethene		19	ti		0.0500	ND	"	,
1,1,1-Trichloroethane	II .	11	н		0.0500	ND	n	
1,1,2-Trichloroethane	II .	II .	"		0.05,00	ND	n	
Trichloroethene	11	H	•		0.0500	ND	11 '	
Trichlorofluoromethane	11	**	11		0.0500	ND	н	
Vinyl chloride	"	IT	11		0.0500	ND	11	
Surrogate: 4-BFB (ELCD)	"	"	"	50.0-150		105	%	

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions

Joy B Chang



PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle

Project: Stevens Health Care

Sampled: 11/6/97 to 11/7/97

600 Stewart Street, Suite 1215 Seattle, WA 98101 Project Number: 5397-007 Project Manager: Dave Cook

Rece

Received: 11/10/97 Reported: 12/8/97 15:29

Dry Weight Determination North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
S-1	B711179-01	Soil	81.6	%
S-2	B711179-02	Soil	87.1	%
S-3	B711179-03	Soil	87.4	%
S-4	B711179-04	Soil	84.0	%
S-5	B711179-05	Soil	93.0	%
GP-1-5	B711179-06	Soil	93.8	%
GP-2-6	B711179-07	Soil	95.1	%
GP-3-7	B711179-08	Soil	93.6	%
GP-4-4	B711179-09	Soil	92.7	%
GP-4-6	B711179-10	Soil	94.9	%
GP-5-8	B711179-13	Soil	90.4	%
GP-6-9	B711179-14	Soil	92.8	%
GP-7-9	B711179-15	Soil	86.6	%
GP-8-9	B711179-16	Soil	94.1	%
GP-9-3	B711179-17	Soil	88.0	%

North Creek Analytical, Inc.





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Geo Engineers - Seattle

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600 Stewart Street, Suite 1215 Seattle, WA 98101

Project Number: 5397-007

Received: 11/10/97

Project Manager:

Dave Cook

12/8/97 15:29 Reported:

Hydrocarbon Identification by Washington DOE Method NWTPH-HCID/Quality Control

North Creek Analytical - Bothell

	Date	Spike	Sample	QC	R	leporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% No	otes*
Batch: 1170308	Date Prepa	red: <u>11/13</u>	<u>/97</u>		Extraction	on Method: HCI	<u>D (WA)</u>	ì		
Blank	1170308-B	LK1				1				
Gasoline	11/12/97			ND	mg/kg dr	y 20.0				
Aviation Gasoline	11			ND	n	20.0				
Mineral Spirits	11			ND	11	20.0				,
Weathered Gasoline	II			ND	II .	20.0			· ·	
VM&P Naphtha	н			ND	n .	20.0				
Gasoline Range Hydrocarbons	tt .			ND	"	20.0				
Diesel #2	n			ND	11	50.0				
Kerosene Range Hydrocarbons	11			ND	н	50.0				1
Diesel Range Hydrocarbons	10			ND	IP.	50.0				
Fuel Oil #6 (Bunker C)	ti .			ND	**	100				,
Transformer Oil	н			ND .	11	100				
Motor Oil	••			ND	II .	100				ſ
Hydraulic Oil	11			ND	II	100				
Fuel Oil #2	II .			ND	ti	100				
Heavy Oil Range Hydrocarbons	u			ND	**	100				1
Surrogate: 2-FBP	"	DET		DET	"	50.0-150	113			

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions



PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle

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600 Stewart Street, Suite 1215 Seattle, WA 98101

Project Number: 5397-007

Received: 11/10/97

Project Manager: Dave Cook.

Reported: 12/8/97 15:29

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

	Date	Spike	Sample	QC	R	eporting Limit	Recov.	RPD	RPD
Analyte .	Analyzed	Level	Result	Result	Units	Recov. Limits	· %	Limit	% Notes*
Batch: 1170282	<u>Date Prepa</u>	red: 11/	12/97	,	Extraction	on Method: EPA	3550		
Blank	1170282-BI								
Diesel #2	11/13/97			ND	mg/kg dr	y 10.0			
Kerosene Range Hydrocarbons	u u			ND	н	10.0			
Diesel Range Hydrocarbons	11			ND	11	10.0			
Fuel Oil #6 (Bunker C)	11			ND	11	25.0			
Transformer Oil	19			ND	11	25.0			ı
Motor Oil	11			ND	II	25.0		-	•
Hydraulic Oil	**			$_{\Omega}$ ND	н	25.0			,
Fuel Oil #2	II .			ND	**	25.0			•
Heavy Oil Range Hydrocarbons	11		9	ND	11	25.0			
Surrogate: 2-FBP	"	11.9		12.8	n	50.0-150	108		
								,	
LCS	1170282-B	<u>51</u>							
Diesel #2	11/13/97	66.7	7	68.8	mg/kg dr	y 50.0-150	103		
Surrogate: 2-FBP	11	11.9		12.8	"	50.0-150	108		
<u>Duplicate</u>	1170282-D	UP1	<u>B711203-06</u>						
Diesel #2	11/13/97		ND	ND	mg/kg dr	у		50.0	_
Kerosene Range Hydrocarbons	0		ND	ND	11			50.0	
Diesel Range Hydrocarbons	ti .		ND	ND	10			50.0	
Fuel Oil #6 (Bunker C)	II .		ND	ND	н			50.0	
Transformer Oil	11		379	360	"			50.0	5.14
Motor Oil	U		ND	ND	n'			50.0	
Hydraulic Oil	Ħ		ND	ND				50.0	
Fuel Oil #2	ti .		ND	ND	tt .			50.0	
Heavy Oil Range Hydrocarbons	11		ND	ND	11			50.0	
Surrogate: 2-FBP	н .	15.7		15.4	"	50.0-150	98.1		
,									

Batch: 1170496	Date Prepared: 11/19/97		Extraction Meth	od: EPA 3550
Blank	<u>1170496-BLK1</u>			1
Diesel #2	11/24/97	ND	mg/kg dry	10.0
Kerosene Range Hydrocarbons	· #	ND	"	10.0
Diesel Range Hydrocarbons		ND	10	10.0
Fuel Oil #6 (Bunker C)	н	ND	n	25.0
Transformer Oil	tf .	ND	H	25.0
Motor Oil	10 .	ND	17	25.0
Hydraulic Oil	Ħ	ND	#	25.0
Fuel Oil #2	n	ND	n	25.0

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manage



PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle

Project: Stevens Health Care

Sampled: 11/6/97 to 11/7/97

600 Stewart Street, Suite 1215 Seattle, WA 98101

Project Number: 5397-007

Received: 11/10/97

Project Manager: Dave Cook

Reported: 12/8/97 15:29

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

	Date	Spike	Sample	QC	Re	eporting Limit	Recov.	RPD	RPD	
Analyte _	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Not
Blank (continued)	1170496-BL	KĮ				1				
Heavy Oil Range Hydrocarbons	11/24/97			ND	mg/kg dry	25.0	•			
Surrogate: 2-FBP		11.9		10.2	","	50.0-150	85.7	•		
LCS	1170496-BS	1								
Diesel #2	11/24/97	66.7		53.2	mg/kg dry	50.0-150	79.8			
Surrogate: 2-FBP	"	11.9		10.1	"	50.0-150	84.9			
<u>Duplicate</u>	1170496-DU	<u> </u>	<u> 8711179-03</u>							
Diesel #2	11/24/97		ND	ND	mg/kg dry	y		50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		32.2	46.1				50.0	35.5	
Fuel Oil #6 (Bunker C)	11		ND	ND	19			50.0		
ransformer Oil	"		ND	ND	II .			50.0		
Aotor Oil	II .		ND	ND	n	T		50.0		
lydraulic Oil	II .		ND	ND	n			50.0		
uel Oil #2	п		ND	ND	n			50.0		
leavy Oil Range Hydrocarbons	n		63.8	88.8	u			50.0	32.8	
urrogate: 2-FBP	····	13.7		11.4	"	50.0-150	83.2			

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions

oje¢t Manager Joy B Chapg, P



Geo Engineers - Seattle Project: Stevens Health Care Sampled: 11/6/97 to 11/7/97

600 Stewart Street, Suite 1215 Project Number: 5397-007 Received: 11/10/97
Seattle, WA 98101 Project Manager: Dave Cook Reported: 12/8/97 15:29

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

	Date	Spike	Sample	QC		rting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units R	ecov. Limits	·%	Limit	% Not	es*
			-	-			-			_
Batch: 1170622	Date Prepar	red: 11/24	<u>/97</u>		Extraction N	Method: EP	A 3050			
<u>Blank</u>	<u>1170622-BI</u>	<u>.K1</u>					•		·	
Arsenic	11/25/97			ND	mg/kg dry	10.0				
Cadmium	11			ND	11	0.300				
Chromium	er e			ND	11	0.500				
Lead	, "			ND	H	10.0			٠.	
Silver	11/24/97			ND	н	1.00				
1			,					•		
LCS	1170622-BS	<u> </u>								
Arsenic	11/25/97	50.0		49.5	mg/kg dry	70.0-130	99.0		' (
Cadmium	10	50.0		43.2	TP	70.0-130	86.4			
Chromium		50.0		37.0		70.0-130	74.0			
Lead	17	50.0	·	40.5	**	70.0-130	81.0			
: Silver	11/24/97	50.0		52.5	11	75.0-125	105			
, i						•				
LCS	1170622-BS									
Arsenic	11/25/97	71.5		79.8	mg/kg dry	70.0-130	112		•	
Cadmium	n	58.8		51.5	H	70.0-130	87.6			
Chromium	H	90.2		66.2	"	70.0-130	73.4			
Lead	**	143		121	II .	70.0-130				
Silver	. 11/24/97	73.3		67.2	"	75.0-125	91.7			
•			•				•			
<u>Duplicate</u>	1170622-DI	<u>UP1 B</u>	<u>711284-05</u>							
Arsenic	11/25/97		ND	ND	mg/kg dry			20.0		
Cadmium	!		0.426	0.378	n			20.0	11.9	
Chromium	II		2.86	4.33	n			20.0	40.9	2 .
· Lead	11		ND	ND	17			20.0		
Silver	11/24/97		ND	ND	17			20.0	į	
T p										
Matrix Spike	<u>1170622-M</u>		<u>711284-05</u>							
Arsenic	11/25/97	56.9	ND	49.0	mg/kg dry	60.0-140	86.1			
Cadmium	n	56.9	0.426	48.1		70.0-130	83.8			
Chromium	11	56.9	2.86	52.9	•	70.0-130	87.9			
Lead	97	56.9	ND	51.7		70.0-130	90.9		1	
: Silver	11/24/97	56.9	ND	57.7	II .	75.0-125	101			
1									•	
Matrix Spike	<u>1170622-M</u>		711284-05							
, Arsenic	11/25/97	118	ND	113	mg/kg dry	60.0-140	95.8			
Cadmium	п	118	0.426	104	n	70.0-130	87.8			
	•								T.	

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.





PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle 600 Stewart Street, Suite 1215 Seattle, WA 98101

Project: Stevens Health Care

Project Manager:

Project Number: 5397-007 Dave Cook

Sampled: 11/6/97 to 11/7/97 Received: 11/10/97 Reported: 12/8/97 15:29

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

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	Date	Spike	Sample	QC	R	eporting Limit	Recov.	RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	· %	Limit	% Note
Matrix Spike (continued)	1170622-MS	S2 B2	711284-0 <u>5</u>						
Chromium	11/25/97	118	2.86	105	mg/kg dry	70.0-130	86.6		
Lead	11/25/57	118	ND	107	"	70.0-130	90.7	-	
			•						
Matrix Spike Dup	1170622-MS	EDL B	7 <u>11284-05</u>			i			
Arsenic	11/25/97	56.9	ND	51.1	mg/kg dr	60.0-140	89.8	20.0	4.21
Cadmium	II .	56.9	0.426	47.6	II .	70.0-130	82.9	20.0	1.08
Chromium	II .	56.9	2.86	51.6	II .	70.0-130	85.7	20.0	2.53
Lead	n	56.9	ND	53.9	tt.	70.0-130	94.7	20.0	4.09
Silver	11/24/97	56.9	ND	57.8	**	75.0-125	102	20.0	0.985
Batch: 1170625	Date Prepar	ed: 11/24	/97		Extraction	n Method: Br	CI Digest	ion_	
Blank	1170625-BL				-	1	_	•	
Mercury	11/24/97			ND	mg/kg dr	y 0.0500			
•									
<u>LCS</u>	<u>1170625-BS</u>	1							
Mercury .	11/24/97	0.250		0.236	mg/kg dr	y 80.0-120	94.4		
<u>Duplicate</u>	1170625-DU	<u> P1 B</u>	711284-05			1			
Mercury	11/24/97		ND	ND	mg/kg dr	у ,		20.0	٠
Matrix Spike	1170625-MS	S1 B	711284-05						
Mercury	11/24/97	0.302	ND	0.291	mg/kg dr	y 80.0-120	96.4		
,									
Matrix Spike Dup	1170625-MS	<u>SD1 B</u>	<u>711284-05</u>			1			
Mercury	11/24/97	0.293	ND	0.287	mg/kg dr	y 80.0-120	98.0	20.0	1.65
Batch: 1270057	Date Prepar	red: 12/2/	<u>97</u>		Extraction	on Method: EP	A 3050		
Blank	1270057-BL	<u>.K1</u>							
Barium	12/2/97			ND	mg/kg dr	y 2.00			
Selenium	12/4/97			ND	,	, 0.125			
	•					l į			
<u>LCS</u>	1270057-BS					1			•
Barium	12/2/97	50.0		39.3	mg/kg dr				
Selenium	12/4/97	50.0		38.9	**	70.0-130	77.8		
LCS	1270057-BS	<u>32</u>		71					
Barium	12/2/97	91.1		68.3	mg/kg dr	y 70.0-130	75.0		
Selenium	12/4/97	67.5		55.3		70.0-130	81.9		
		-							

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definition



Geo Engineers - Seattle

Project: Stevens Health Care

Sampled: 11/6/97 to 11/7/97

600 Stewart Street, Suite 1215 Seattle, WA 98101

Project Number: 5397-007 Project Manager: Dave Cook Received: 11/10/97 Reported: 12/8/97 15:29

Total Metals by EPA 6000/7000 Series Methods/Quality Control

North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	-	orting Limit lecov. Limits	Recov.	RPD Limit	RPD ;	lotes*
i		-								
<u>Duplicate</u>	1270057-DI	<u>UP1 B7</u>	11284-05							
Barium	12/2/97		77.6	85.4	mg/kg dry	•	•	20.0	9.57	
Selenium	12/4/97		ND	ND	II			20.0	,	
Matrix Spike	<u>1270057-M</u>	<u>S1 B7</u>	11284-05							
Barium	12/2/97	56.9	77.6	117	mg/kg dry	70.0-130	69.2			3
Selenium	12/4/97	56.9	ND	42.7	11	60.0-140	75.0		. '	
Matrix Spike	1270057-M	<u>S2</u> <u>B</u> 3	11284-05						:	
Barium	12/2/97	114	77.6	180	mg/kg dry	70.0-130	89.8		·	
Matrix Spike Dup	1270057-M	SD1 B	711284-0 <u>5</u>							
Barium	12/2/97	59.8	77.6	110	mg/kg dry	70.0-130	54.2	20.0	24.3	3
Selenium	12/4/97	59.8	ND	46.2	н	60.0-140	77.3	20.0	3.02	

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.

oject Manage Joy B Chang



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Sampled: 11/6/97 to 11/7/97 Received: 11/10/97

Reported: 12/8/97 15:29

Geo Engineers - Seattle

600 Stewart Street, Suite 1215 Seattle, WA 98101 Project Number: 5397-007 Project Manager: Dave Cook

Halogenated Volatile Organics by EPA Method 8010B (modified)/Quality Control North Creek Analytical - Bothell

Project: Stevens Health Care

	Date	Spike	Sample	QC	Rep	orting Limit	Recov.	RPD	RPD ,	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	<u> </u>	Limit	% Notes*	
						!				
Batch: 1170309	Date Prepa	red: 11/12	<u>/97</u>		Extraction Method: EPA 5030 [MeOH]					
Blank	<u>1170309-BI</u>	.K1								
Bromodichloromethane	11/12/97			ND	mg/kg dry	0.0500			(
Bromoform	U .			ND	**	0.0500			1	
Bromomethane	11			ND	**	0.0500			_	
Carbon tetrachloride	• 11			ND	"	0.0500				
Chlorobenzene	н			ND	**	0.0500			ŕ	
Chloroethane	li .			ND	н	0.0500			}	
Chloroform	ti			ND	II .	0.0500				
Chloromethane	**		,	ND	н	0.0500			ſ	
Dibromochloromethane	II .			ND	11	0.0500			,	
1,2-Dichlorobenzene				ND	"	0.0500			×	
1,3-Dichlorobenzene	ıi			ND	11	0.0500			جان .	
1,4-Dichlorobenzene	n			ND.	H	0.0500			1	
1,1-Dichloroethane	t)			ND	n	0.0500			·	
1,2-Dichloroethane	Ħ			ND	n	0.0500				
1,1-Dichloroethene	11			ND	11	0.0500			ſ	
cis-1,2-Dichloroethene	11			ND	10	0.0500			. 1	
trans-1,2-Dichloroethene	н			ND	II .	0.0500			(
1,2-Dichloropropane	17			ND	u	0.0500			-	
cis-1,3-Dichloropropene	tt			ND	n	0.0500				
trans-1,3-Dichloropropene	н			ND	n	0.0500			١.	
Methylene chloride	"			ND	**	0.500				
1,1,2,2-Tetrachloroethane	" 1			ND	11	0.0500			ſ	
Tetrachloroethene	11			ND	10	0.0500				
1,1,1-Trichloroethane	n			ND	n	0.0500			۲ -	
1,1,2-Trichloroethane	r			ND	H	0.0500			,	
Trichloroethene	и .			ND	tt	0.0500			;	
Trichlorofluoromethane	· ·			ND	n	0.0500			Ţ	
Vinyl chloride	u			ND	11	0.0500				
Surrogate: 4-BFB (ELCD)	n	2.00		2.03	**	50.0-150	101			
LCS	1170309-B	<u> </u>							Ĺ	
Chlorobenzene	11/12/97	1.00		0.898	mg/kg dry	60.0-140	89.8		(
1,1-Dichloroethene	n	1.00	•	0.870	, ,	60.0-140	87.0		1	
Trichloroethene	11	1.00		1.01	**	60.0-140			٠	
Surrogate: 4-BFB (ELCD)	" .	2.00		1.86	<i>n</i>	50.0-150	93.0			

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions

Joy B Charg, Project Manager



PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle.

Project: Stevens Health Care

Sampled: 11/6/97 to 11/7/97

600 Stewart Street, Suite 1215 Seattle, WA 98101

Project Number: 5397-007 Project Manager: Dave Cook ... Received: 11/10/97 Reported: 12/8/97 15:29

Halogenated Volatile Organics by EPA Method 8010B (modified)/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC	Re	porting Limit	Recov.	RPD	RPD '	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	· %	Limit	<u>% 1</u>	Notes*
Matrix Spike	1170309-M	S1 B	711179-06			_				
Chlorobenzene	11/12/97	1.07	ND	0.890	mg/kg dry	60.0-140	83.2			
1.1-Dichloroethene	Ħ	1.07	ND	0.864	0	60.0-140	80.7			
Trichloroethene	Ħ	1.07	ND	0.952	**	60.0-140	89.0			
Surrogate: 4-BFB (ELCD)		2.13		1.86	"	50.0-150	87.3			
Matrix Spike Dup	1170309-M	SDI B	711179-06							
Chiorobenzene	11/12/97	1.07	ND	0.909	mg/kg dry	60.0-140	85.0	30.0	2.14	
1,1-Dichloroethene	n	1.07	ND	0.861	"	60.0-140	80.5	30.0	0.248	
Trichloroethene	11	1.07	ND	1.01	**	60.0-140	94.4	30.0	5.89	
Surrogate: 4-BFB (ELCD)	"	2.13		1.81	"	50.0-150	85.0			
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Data Burna				.	n Mathade ED				

	•				
Batch: 1170506	Date Prepared: 11/19/97	<u>7</u> .	Extraction M	ethod: EPA 5030 [P/T]	
<u>Blank</u>	<u>1170506-BLK1</u>			•	
Bromodichloromethane	11/19/97	ND	ug/l	1.00	
Bromoform		ND	**	1.00	
Bromomethane	n	ND	iı	1.00	
Carbon tetrachloride	u	ND	"	1.00	,
Chlorobenzene	n	ND	11	1.00	
Chloroethane	"	. ND	H	1.00	r
Chloroform	11	ND	н	1.00	
Chloromethane	*	ND	н	1.00	
Dibromochloromethane	n	ND	n	1.00	
1,2-Dichlorobenzene	"	ND	**	1.00	
1,3-Dichlorobenzene	**	ND	11	1.00	
1,4-Dichlorobenzene	n	ND	11	1.00	
1,1-Dichloroethane	п	ND	н	1.00	*
1,2-Dichloroethane	н	ND	н	1.00	
1,1-Dichloroethene	. "	ND	n	1.00	
cis-1,2-Dichloroethene	n	ND	11	1.00	
trans-1,2-Dichloroethene	n	ND	п,	1.00	
1,2-Dichloropropane	IF	ND	II	1.00	
cis+1,3-Dichloropropene	n	ND	н	1.00	
trans-1,3-Dichloropropene	,	ND	н	1.00	
Methylene chloride	n	5.62	11	5.00	1
1,1,2,2-Tetrachloroethane	n	ND	n ·	1.00	
Tetrachloroethene	17	ND	n	1.00	
1,1,1-Trichloroethane	n	ND	н	1.00	
1,1,2-Trichloroethane	n	ND	n	1.00	
-,-,			•		

North Creek Analytical, Inc.

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PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle

Project: Stevens Health Care

Sampled: 11/6/97 to 11/7/97

600 Stewart Street, Suite 1215

Project Number: 5397-007

Received: 11/10/97

Seattle, WA 98101

Project Manager: Dave Cook

Reported: 12/8/97 15:29

Halogenated Volatile Organics by EPA Method 8010B (modified)/Quality Control

North Creek Analytical - Bothell

						1				
	Date	Spike	Sample	QC	-	Reporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	· %	Limit	% N	lotes
Blank (continued)	1170506-BI	LKI				1				
Trichloroethene	11/19/97			ND	ug/l	1.00				
Trichlorofluoromethane	н			ND	"	1.00				
Vinyl chloride	H			ND	17	1.00				
Surrogate: 4-BFB (ELCD)	, "	4.00		3.65	"	50.0-150	91.3			
LCS	1170506-B	51				1			١	
Chlorobenzene	11/19/97	5.00		4.43	ug/l	70.0-130	88.6			
1.1-Dichloroethene	11	5.00		4.88	**	70.0-130	97.6			
Trichloroethene	11	5.00		5.60	17	70.0-130	112			
Surrogate: 4-BFB (ELCD)	"	4.00		4.14	it	50.0-150	103			
Matrix Spike	1170506-M	SI B	711131-01			1				
Chlorobenzene	11/19/97	10.0	ND	9.23	ug/i	70.0-130	92.3			
1.1-Dichloroethene	U	10.0	ND	9.44	11	70.0-130	94.4			
Trichloroethene	n	10.0	ND	10.1	10	70.0-130	101			
Surrogate: 4-BFB (ELCD)	. "	4.00		3.40	<i>"</i>	50.0-150	85.0			
Matrix Spike Dup	1170506-M	SD1 B	711131-01			l I				
Chlorobenzene	11/19/97	10.0	ND	9.08	ug/l	70.0-130	90.8	20.0	1.64	
1,1-Dichloroethene	n	10.0	ND	9.20	"	70.0-130	92.0	20.0	2.58	
Trichloroethene	n	10.0	ND	9.98		70.0-130	99.8	20.0	1.20	
Surrogate: 4-BFB (ELCD)	н	4.00		3.35	11	50.0-150	83.7			
						I				

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions

Joy B Chang, Project Manager



PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle Project: Stevens Health Care Sampled: 11/6/97 to 11/7/97

600 Stewart Street, Suite 1215 Project Number: 5397-007 Received: 11/10/97
Seattle, WA 98101 Project Manager: Dave Cook Reported: 12/8/97 15:29

Notes and Definitions

Note Methylene chloride is a suspected laboratory contaminant. Please refer to the Method Blank. 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. Multiple analyses indicate the percent recovery is outside the control limits due to a matrix effect. Analyte DETECTED DET Analyte NOT DETECTED at or above the reporting limit ND NR. Not Reported Sample results reported on a dry weight basis dry Recovery Recov. Relative Percent Difference RPD

9405 S.W. Nimbus Avenue. Beaverton. OR 97008-7132

North Creek Analytical, Inc.

Joy B Chang Project Manager

Quantitation Report

Data File : C:\HPCHEM\4\DATA\K24010.D

Vial: 5

: 24-11-1997 10:38:32 Acq On : b711179-03

Operator:

Sample 4

Inst : GC #7 Multiplr: 1.00

Misc IntFile

: SURR.E Quant Time: Nov 24 10:55 1997 Quant Results File: TPHD.RES

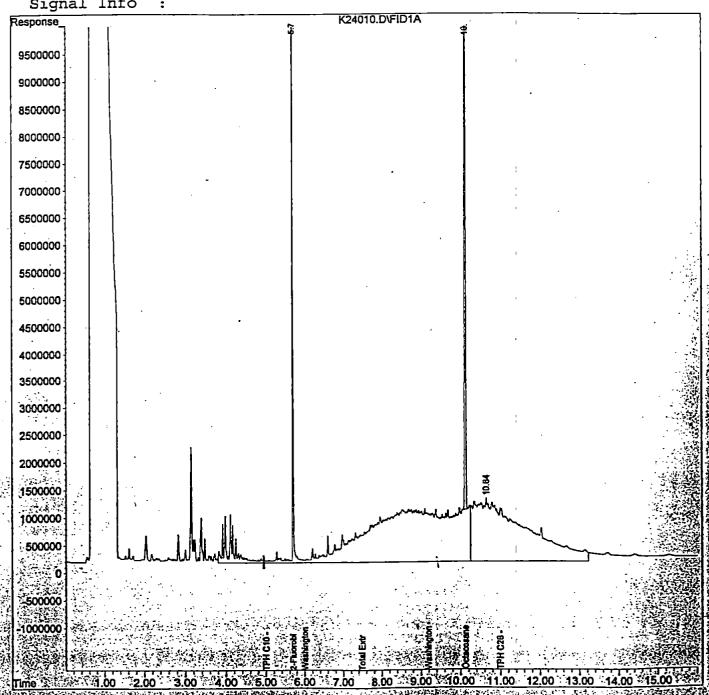
Quant Method : C:\HPCHEM\4\METHODS\TPHD.M (Chemstation Integrator)

: TPH-D Front Method Title

Last Update : Fri Nov 07 07:43:08 1997 Response via : Multiple Level Calibration

DataAcq Meth : TPHD.M

Volume Inj. Signal Phase : Signal Info



Quantitation Réport

Data File : C:\HPCHEM\4\DATA.SEC\K12079.D Vial: 55
Acq On : 13-11-1997 4:21:05 Operator:

Acq On : 13-11-1997 4:21:05

Sample : 711179-14

Misc : S Multiplr: 1.00

Misc : S IntFile : SURR.E

Quant Time: Nov 13 7:27 1997 Quant Results File: TPHD2.RES

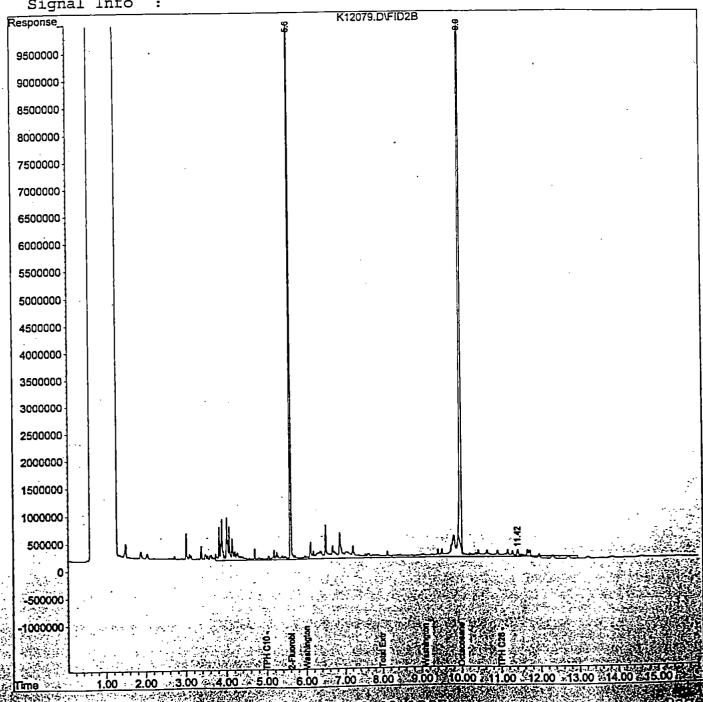
Quant Method : C:\HPCHEM\4\METHODS\TPHD2.M (Chemstation Integrator)

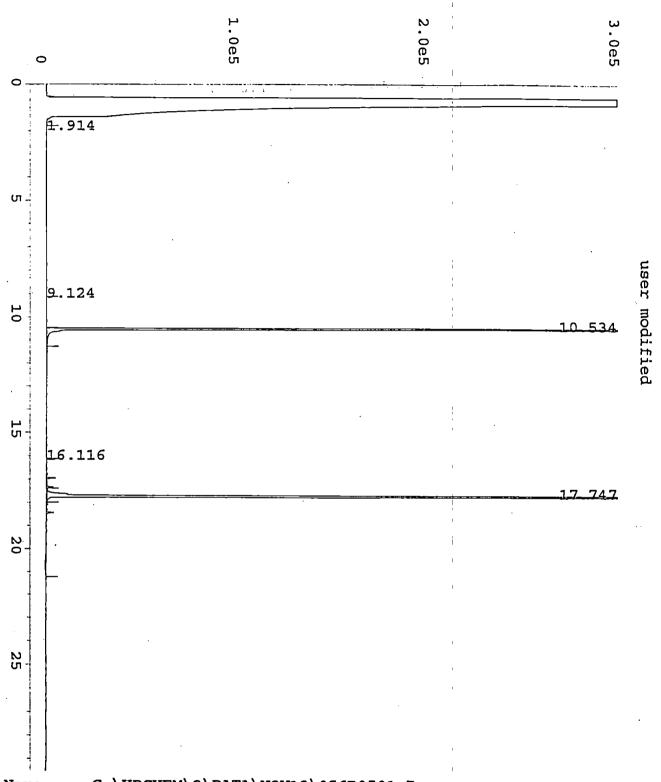
Title : TPH-D Rear Method

Last Update : Fri Nov 07 09:00:13 1997 Response via : Multiple Level Calibration

DataAcq Meth : TPHD.M

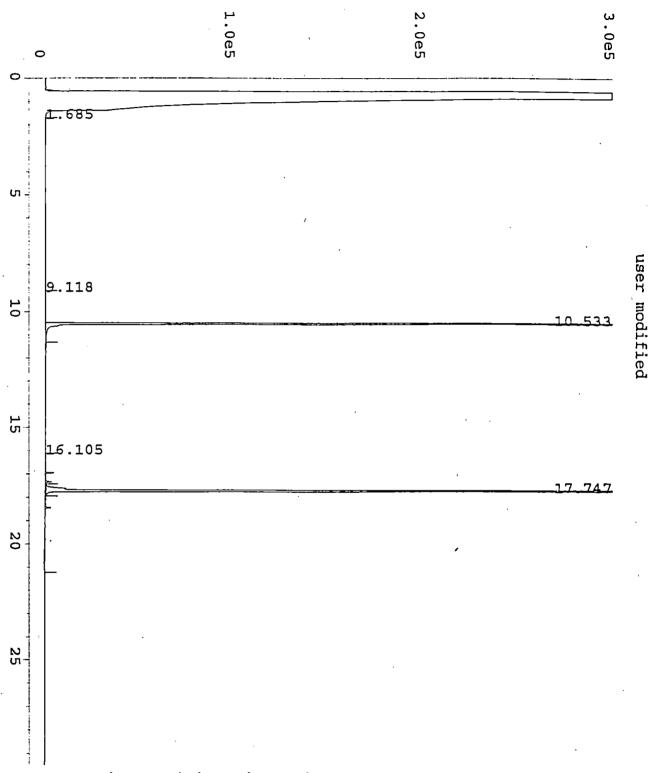
Volume Inj. : Signal Phase : Signal Info :



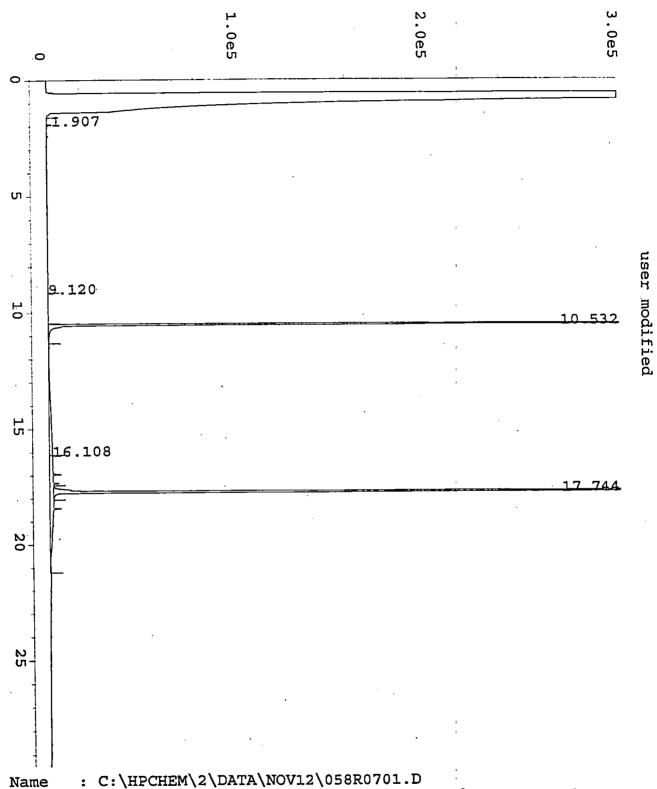


```
Data File Name
                    C:\HPCHEM\2\DATA\NOV12\056R0501.D
Operator
                     TF
                                                     Page Number
Instrument
                   : BOB
                                                     Vial Number
                                                                         : 56
                                                      Injection Number
Sample Name
                   : 711179-01 h
                                                     Sequence Line : 5
Instrument Method: TPHER.MTH
Run Time Bar Code:
Acquired on
                   : 12 Nov 97
                                  06:26 PM
```

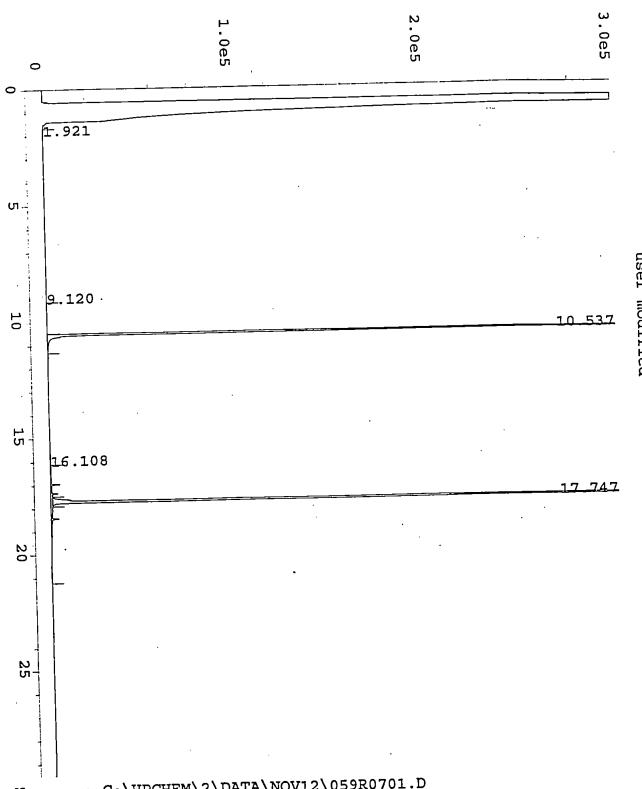
Report Created on: 13 Nov 97 06:26 PM Instrument Method: TPHER.MTH Analysis Method: TPHD.MTH



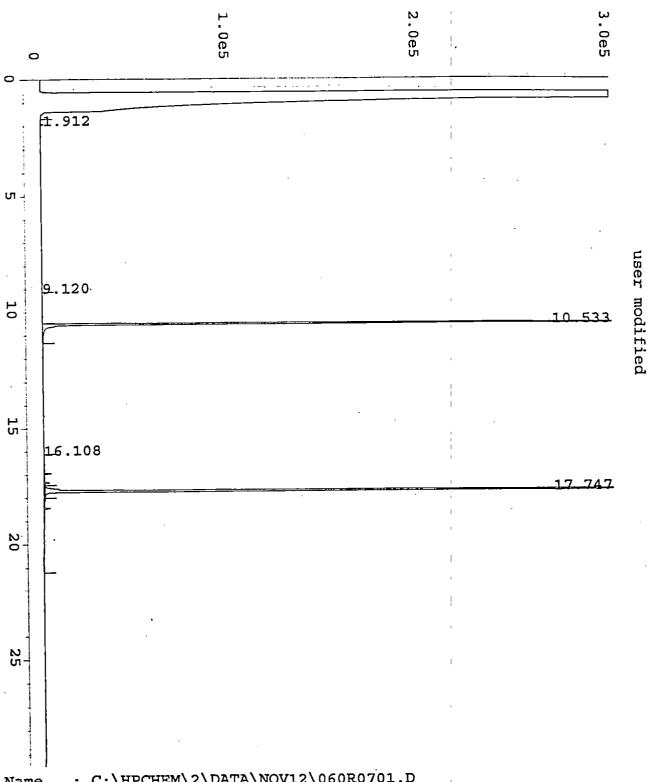
Acquired on : 12 Nov 97 07:43 PM Instrument Method: TPHER.MTH Report Created on: 13 Nov 97 08:26 AM Analysis Method : TPHD.MTH



Data File Name Page Number Vial Number Operator : TF 58 : BOB Instrument Injection Number : 1 Sample Name : 711179-03 h : 7 Sequence Line Run Time Bar Code: Instrument Method: TPHER.MTH : 12 Nov 97 08:21 PM Acquired on Analysis Method : TPHD.MTH 08:28 AM Report Created on: 13 Nov 97

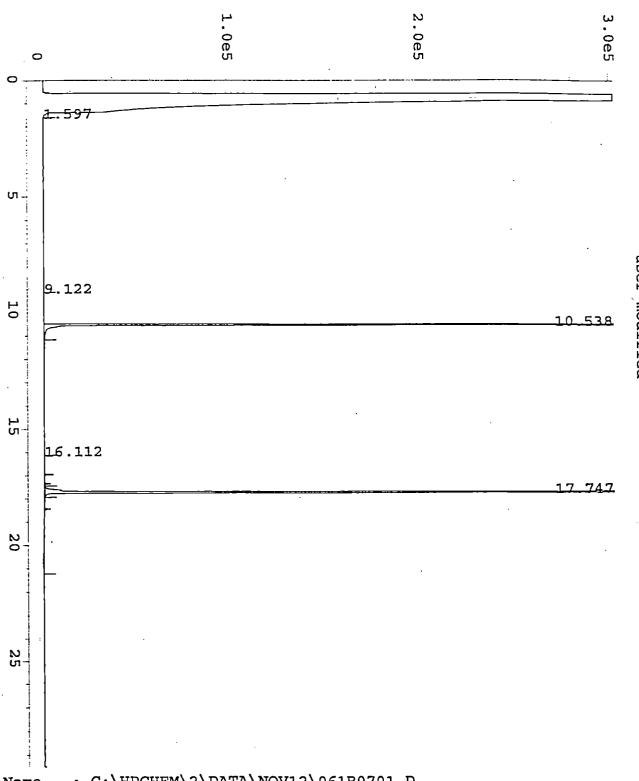


```
: C:\HPCHEM\2\DATA\NOV12\059R0701.D
Data File Name
                                                 Page Number
                  : TF
Operator
                                                                   : 59
                                                  Vial Number
                  : BOB
Instrument
                                                  Injection Number
                                                                   : 1
                  : 711179-04 h
Sample Name
                                                 Sequence Line
Run Time Bar Code:
                                                  Instrument Method: TPHER.MTH
                               08:59 PM
                  : 12 Nov 97
Acquired on
                                                                  : TPHD.MTH
                                                  Analysis Method
Report Created on: 13 Nov 97
                               08:31 AM
```



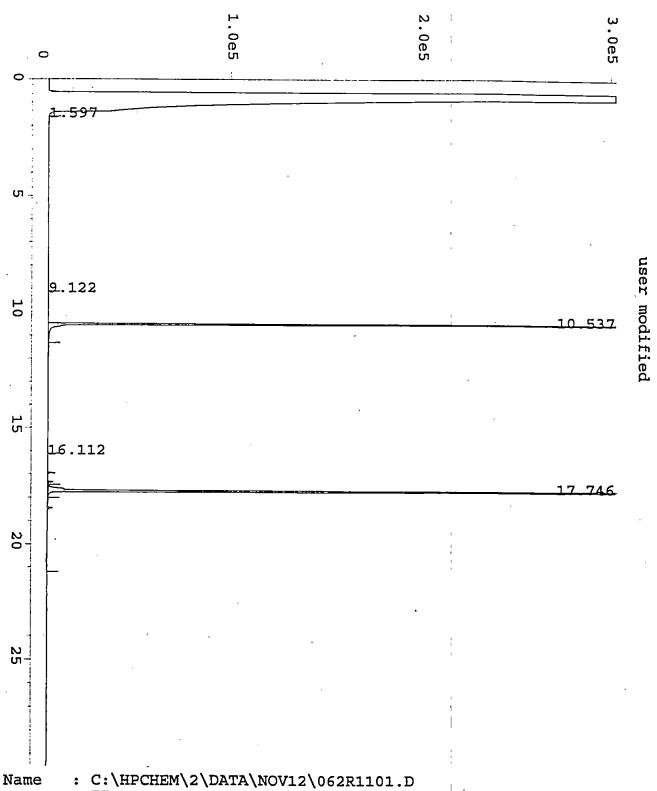
: C:\HPCHEM\2\DATA\NOV12\060R0701.D Data File Name Page Number Operator : TF Vial Number : BOB Instrument Injection Number : 1 : 711179-05 h Sample Name : 7 Sequence Line Run Time Bar Code: Instrument Method: TPHER.MTH

Acquired on : 12 Nov 97 09:37 PM Instrument Method: TPHER.MTR Report Created on: 13 Nov 97 08:32 AM Analysis Method : TPHD.MTH

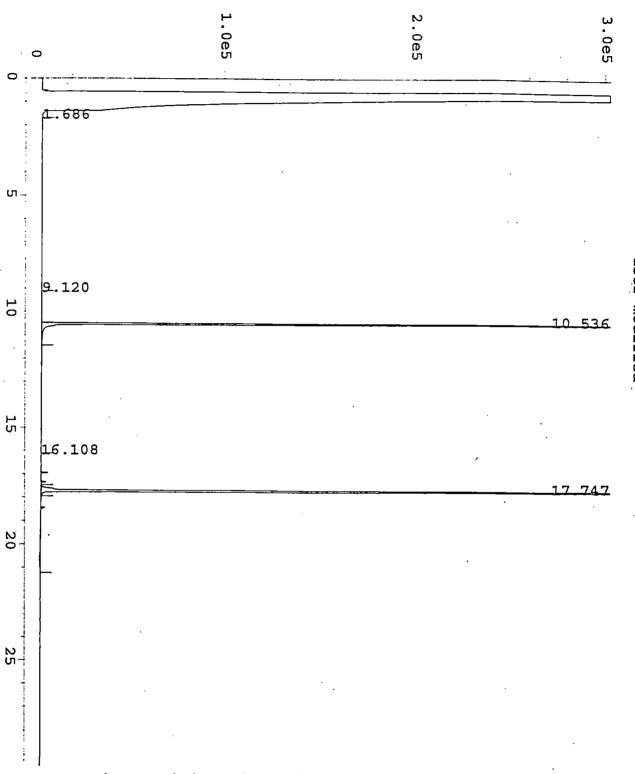


: C:\HPCHEM\2\DATA\NOV12\061R0701.D Data File Name : TF Page Number Operator Vial Number : 61 Instrument : BOB Injection Number: 711179-06 h 1 Sample Name Sequence Line : 7 Run Time Bar Code: 10:15 PM

Acquired on : 12 Nov 97 10:15 PM Instrument Method: TPHER.MTH Report Created on: 13 Nov 97 08:33 AM Analysis Method : TPHD.MTH

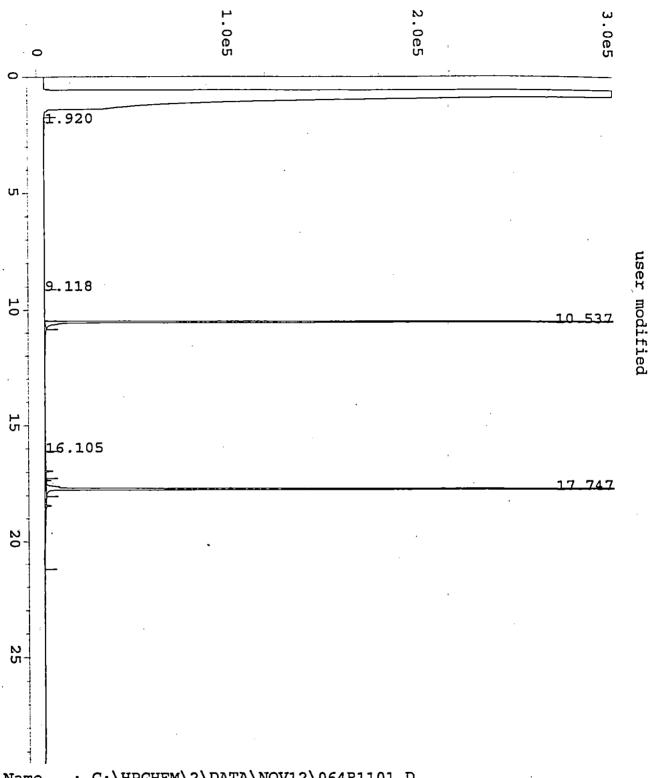


Data File Name Operator : TF Page Number 1 Instrument Vial Number : BOB 62 : 711179-07 h Sample Name Injection Number: 1 Run Time Bar Code: Sequence Line : 11 Acquired on : 13 Nov 97 Instrument Method: TPHER.MTH 00:46 AM Report Created on: 13 Nov 97 08:34 AM Analysis Method : TPHD.MTH

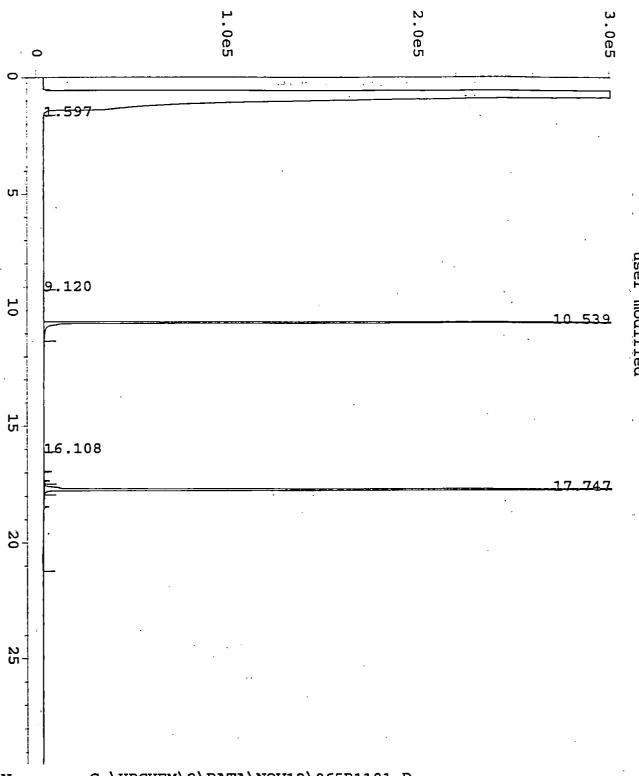


```
Data File Name
                  : C:\HPCHEM\2\DATA\NOV12\063R1101.D
Operator Instrument
                   : TF
                                                   Page Number
                   : BOB
                                                   Vial Number
                                                                      : 63
                  : 711179-08 h
Sample Name
                                                   Injection Number: 1
Run Time Bar Code:
                                                   Sequence Line : 11
Acquired on
                  : 13 Nov 97
                                01:23 AM
```

Instrument Method: TPHER.MTH Report Created on: 13 Nov 97 08:35 AM Analysis Method : TPHD.MTH



: C:\HPCHEM\2\DATA\NOV12\064R1101.D Data File Name Operator : TF Page Number 1 Vial Number : BOB : 64 Instrument Sample Name Injection Number: 1 : 711179-09 h Sequence Line : 11 Run Time Bar Code: Instrument Method: TPHER.MTH Acquired on : 13 Nov 97 02:01 AM Report Created on: 13 Nov 97 : TPHD.MTH 08:36 AM Analysis Method

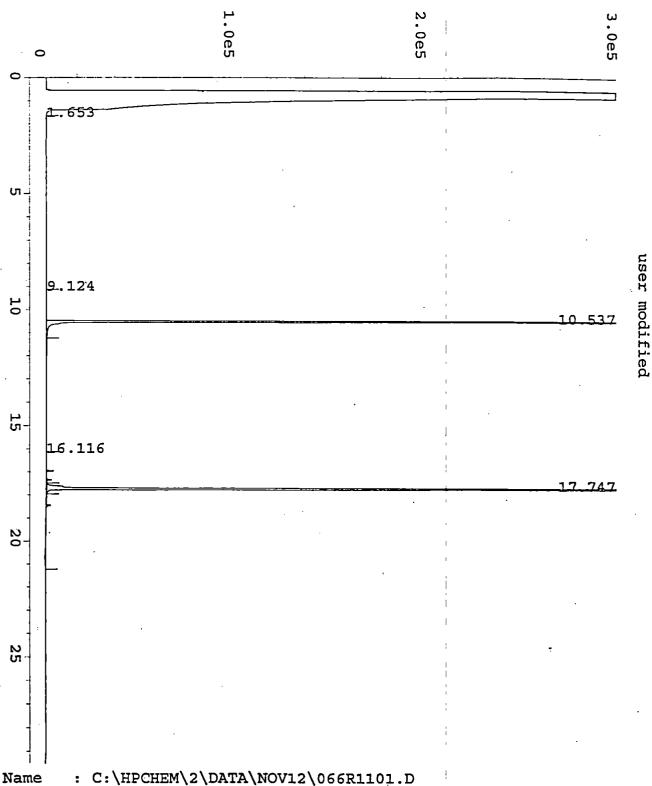


```
: C:\HPCHEM\2\DATA\NOV12\065R1101.D
Data File Name
Operator
                                                     Page Number
                   : TF
                                                    Vial Number
                                                                        : 65.
Instrument
                   : BOB
                                                    Injection Number : 1
Sequence Line : 11
                  : 711179-10 h
Sample Name
Run Time Bar Code:
                                                     Instrument Method: TPHER.MTH
Acquired on
                   : 13 Nov 97
                                 02:38 AM
```

08:38 AM

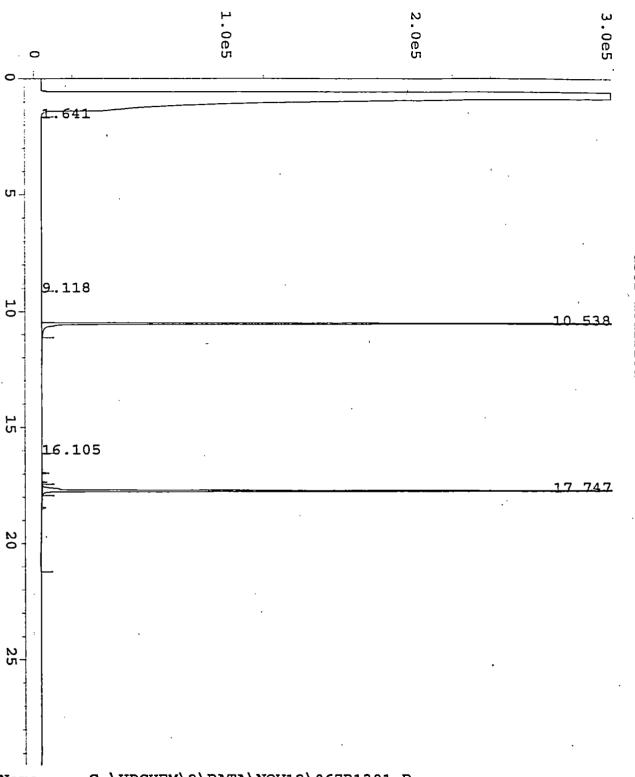
Analysis Method : TPHD.MTH

Report Created on: 13 Nov 97

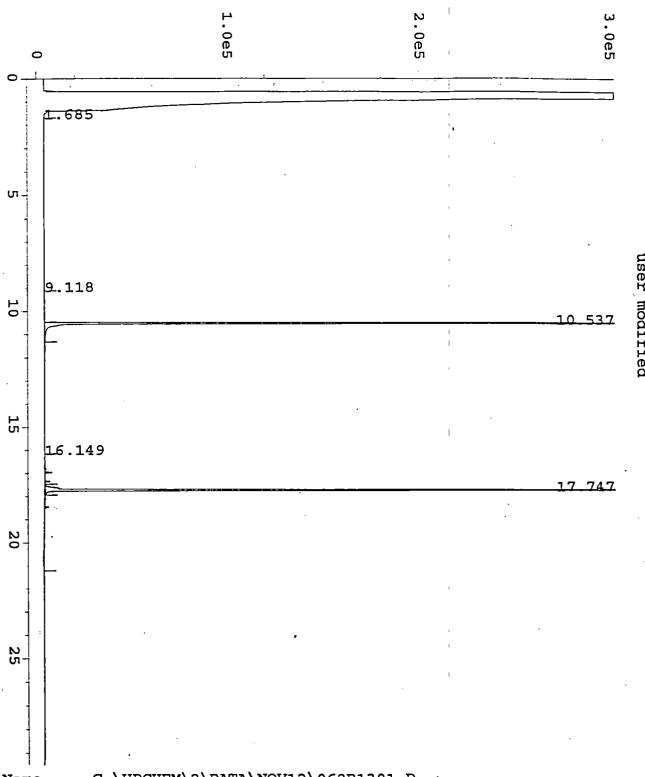


Data File Name Operator : TF Page Number Instrument Vial Number : BOB Sample Name Injection Number Sequence Line : 711179-13 h : 1 Run Time Bar Code: : 11 Acquired on Acquired on : 13 Nov 97 Report Created on: 13 Nov 97 Instrument Method: TPHER.MTH 03:16 AM

08:40 AM Analysis Method : TPHD.MTH

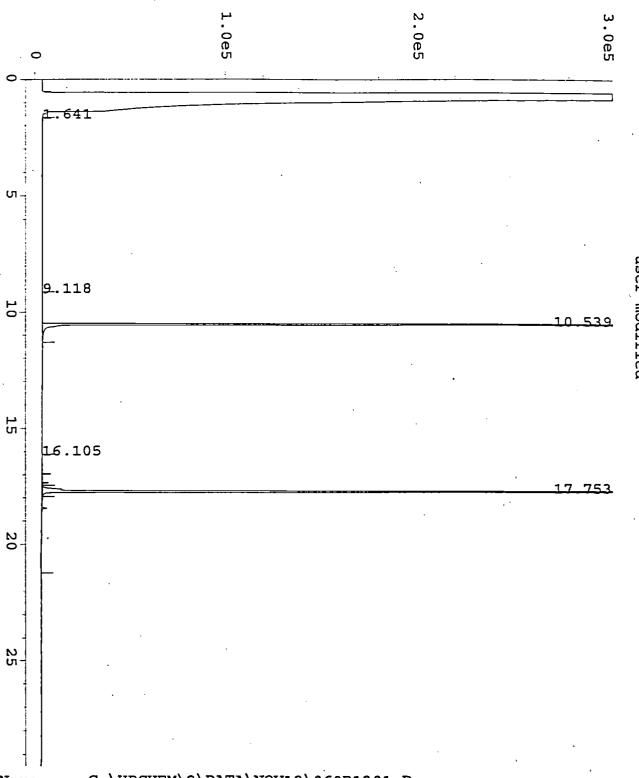


Acquired on : 13 Nov 97 04:31 AM Instrument Method: TPHER.MTH Report Created on: 13 Nov 97 08:41 AM Analysis Method : TPHD.MTH



Data File Name : C:\HPCHEM\2\DATA\NOV12\068R1301.D Page Number Operator. : TF Vial Number : 68
Injection Number : 1
Sequence Line : 13
Instrument Method: TPHER.MTH Instrument : BOB Sample Name : 711179-16 h Run Time Bar Code: 05:08 AM

Acquired on : 13 Nov 97 Report Created on: 13 Nov 97 Analysis Method : TPHD.MTH 08:42 AM



```
Data File Name
                   : C:\HPCHEM\2\DATA\NOV12\069R1301.D
Operator
                   : TF
                                                     Page Number
Vial Number
Instrument
                   : BOB
                                                                        : 69
                   : 711179-17 h
                                                     Injection Number
Sample Name
Run Time Bar Code:
                                                     Sequence Line
                                                                        : 13
                                 05:45 AM .
Acquired on
                   : 13 Nov 97
```

Acquired on : 13 Nov 97 05:45 AM Instrument Method: TPHER.MTH
Report Created on: 13 Nov 97 08:43 AM Analysis Method : TPHD.MTH



18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992

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 CU			Order #:	6711179	•
ADDRESS:	REPORT TO: GEO ATTENTION: DAV		TURNAI	ROUND REQUEST in Bu	- 1
ADDRESS: SEATILE OFFICE				5 3	2 1
	BILLING TO: SP	ME	\ <u>\</u>	Fuels & Hydrocarb	on Analyses
PHONE: 728-2674 FAX: 861-6550	NCA QUOTE #:			5 3	2 1
PROJECT NAME: Stevens Healthcare	Analysis		7	·	
PROJECT NUMBER: 5-397-007-85	Request:			OTHER Specif	fy:
SAMPLED BY: D & AUM & MM J BN	Z 3 Q 2		* Turnaround Re	equests less than standard ma	y incur Rush Charges.
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RELINQUISHED BY:	DATE:	RECEIVED BY:	,)	DAT	re:
PRINT NAME: FIRM:	TIME:	PRINT NAME:	FIRM	: TIM	IE:
ADDITIONAL REMARKS:					,
Please run petroleum analyses a	1th North	west methods	(Thonk)	PAGE	OF
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NORTH CREEK ANALYTICAL

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992

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

AIANAL	YTICAL CHA	IN OF CUS	TODY	RE	POR	T	sou filenta	Worl	or Or	der #:	67111	79
CLIENT: Groing	hord		REPORT TO	· Ox	AVE	Ci	004			TURNA	DOIND BEOLES	T in Business Days •
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SAMPLED BY: P BA				E CO			7 /	/ /		• Turnaround Ri	equests less than stan	dard may incur Rush Charges.
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B711179-11	1.0mw-2	11/7/17/230			\times					W	3	
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	s.GP-7-9	116 1635	X							S	(•	
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1	ume Antism FIRM: G		TIME: (4		PRIN	т наме	100 4 3:	1250	1+1	7-6 FIRM	· NA	TIME 70-0
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ADDITIONAL REMARKS:							-		-			~
Please Ru	n Petroleum	analysis c	-1th 1	orts.	Last	met	hod.	•	<i>:</i>	•	,	PAGE 2 OF
COC Rev 7, 8/95			-	,,, ,	7.			-	_		- 1	12-13-8112



PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle 600 Stewart Street, Suite 1215 Seattle, WA 98101 Project: Stevens Health Care

Sampled: 11/6/97 Received: 11/10/97

Project Number: Project Manager:

5397-007 Dave Cook

Reported: 11/24/97 15:04

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
MW-1-28.5	B711180-03	Soil	11/6/97
MW-2-14	B711180-04	Soil	11/6/97
B-5-34	B711180-09	Soil	11/6/97
B-5-39	B711180-10	Soil	11/6/97

North Creek Analytical, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody documen

This analytical report must be reproduced in its entirety

Joy B Chang, Project Manager



Geo Engineers - Seattle 600 Stewart Street, Suite 1215 Project Number: 5397-007

Project: Stevens Health Care

Sampled: 11/6/97 Received: 11/10/97

Seattle, WA 98101 Project Manager: Dave Cook Reported: 11/24/97 15:04

Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			,
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
MW-1-28.5			<u>B7111</u>	Rn_n3			<u>Soil</u>	
Bromodichloromethane	1170309	11/12/97	11/12/97	30-42	0.0500	ND	mg/kg dry	
Bromoform	"	1 1/1 2/ <i>7 /</i>	11/12/7/		0.0500	ND	" Gradin	•
Bromomethane	**	0	11		0.0500	ND	н .	
Carbon tetrachloride	11	n	te ·		0.0500	ND		'
Chlorobenzene	. "	11	19		0.0500	ND	11	
Chloroethane	n	11	н		0.0500	ND	II	5)
Chloroform	ti .		v		0.0500	ND	н	
Chloromethane	11	H			0.0500	ND	17	
Dibromochloromethane	11	_ n			0.0500	ND	n	
1.2-Dichlorobenzene	11	**	19		0.0500	ND	"	
1,3-Dichlorobenzene		11	U		0.0500	ND		
1,4-Dichlorobenzene	n	n	**		0.0500	ND		
1,1-Dichloroethane		II .			0.0500	ND	in.	
1,2-Dichloroethane	11	u u	10		0.0500	ND	11	
1,1-Dichloroethene	1)				0.0500	ND	11	•
cis-1,2-Dichloroethene	U	11	н		0.0500	ND	11	
trans-1,2-Dichloroethene		10			0.0500	ND	11	
	u	н	и .		0.0500	ND	II .	
1,2-Dichloropropane	n	n	11		0.0500	ND	11	
cis-1,3-Dichloropropene	0	11	D		0.0500	ND	n	
trans-1,3-Dichloropropene		"			0.500	ND ND	н	
Methylene chloride					0.0500	ND ND	11	
1,1,2,2-Tetrachloroethane	n'				0.0500	ND	t)	
Tetrachloroethene					0.0500	ND	11	
1,1,1-Trichloroethane		.,	 n		0.0500		0	
1,1,2-Trichloroethane		"	"			ND ND	19	
Trichloroethene	,,	"	"		0.0500		n	1
Trichlorofluoromethane	" ·	n	n		0.0500	ND ND		
Vinyl chloride			"	50.0.150	0.0500	102	%	
Surrogate: 4-BFB (ELCD)	, "	,,	,,	50.0-150		102	70	
MW-2-14			B7111	8n_na			Soil	
Bromodichloromethane	1170309	11/12/97	.11/12/97	00-0-	0.0500	ND	mg/kg dry	'
	1170309	11/1 <i>2/3/</i>	:11/12/7/ H	•	0.0500	ND	n and we orly	
Bromoform	H	, n	м		0.0500	ND	II .	
Bromomethane	11	n .	 19		0.0500	ND		
Carbon tetrachloride	n		n		0.0500			
Chlorobenzene	n ,	n	n n			ND	н	
Chloroethane	**	"	т м		0.0500	ND		
Chloroform	π	**	77		(0.0500	ND		

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.





Geo Engineers - Seattle

Project:

600 Stewart Street, Suite 1215

Project Number: 5397-007

Received: 11/10/97

Sampled:

11/6/97

Seattle, WA 98101

Project Manager: Dave Cook

Reported: 11/24/97 15:04

Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

Stevens Health Care

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
MW-2-14 (continued)			<u>B71113</u>	80-04			<u>Soil</u>	
Chloromethane	1170309	11/12/97	11/12/97	· 	0.0500	ND	mg/kg dry	
Dibromochloromethane	11	10	н		0.0500	ND	n .	C
1,2-Dichlorobenzene	11	н	17		0.0500	ND	11	
1,3-Dichlorobenzene	н	et .	n		0.0500	ND	n	L
1,4-Dichlorobenzene	т н	**	••		0.0500	ND	н	
1,1-Dichloroethane	n	11	11		0.0500	ND	n	, l
1,2-Dichloroethane	H	11	11		0.0500	ND	17	
1,1-Dichloroethene	11	II .	н		0.0500	ND	u .	
cis-1,2-Dichloroethene	•	n	H		0.0500	ND	· ·	ſ
trans-1,2-Dichloroethene	н	n	#		0.0500	ND	n	1
1,2-Dichloropropane	n	U	n		0.0500	ND	tt	Ĺ
cis-1,3-Dichloropropene	ü	**	**		0.0500	ND	Ħ	.=
trans-1,3-Dichloropropene	11	11	11	•	0.0500	. ND	n	1
Methylene chloride	11	10	10		0. <i>5</i> 00	ND	II .	- 1
1,1,2,2-Tetrachloroethane	11	11	11		0.0500	ND	#	
Tetrachloroethene	ii .	н	m .		0.0500	ND	tf]
1,1,1-Trichloroethane	17	17	n		0.0500	ND	Ħ	1
1,1,2-Trichloroethane	н	Ð	н .		0.0500	ND	**	ι.
Trichloroethene	ti .	**	••		0.0500	ND	U	
Trichlorofluoromethane	**	11	11		0.0500	ND	11	,
Vinyl chloride	11	10	11		0.0500	ND	н	- (
Surrogate: 4-BFB (ELCD)	"	n	n	50.0-150	1	106	%	
			200111		1		6.7	

<u>B-5-34</u>			<u>B711180-09</u>	1		Soil
Bromodichloromethane	1170309	11/12/97	11/12/97	0.0500	ND	mg/kg dry
Bromoform	n	11	· ·	0.0500	ND	н
Bromomethane	n ·	10	11	0.0500	ND	tt
Carbon tetrachloride	11	11	ti	0.0500	ND	11
Chlorobenzene	Ħ	10	t†	0.0500	ND	11
Chloroethane	tt	ti .	n	0.0500	ND	ti
Chloroform	11	15	n	0.0500	ND	m .
Chloromethane	H	n	n	0.0500	ND	n
Dibromochloromethane	Ħ	. **	Ħ	0.0500	ND	n
1,2-Dichlorobenzene	Ħ	10	n	0.0500	ND	•
1,3-Dichlorobenzene	11	11	11	0.0500	ND	н
1,4-Dichlorobenzene	n .	н	H	0.0500	ND	
1,1-Dichloroethane	n	n	n	0.0500	ND	n
1,2-Dichloroethane	n	**	n	0.0500	ND	n ,

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions





PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle 600 Stewart Street, Suite 1215 Project: Stevens Health Care

Sampled: 11/6/97

Seattle, WA 98101

Project Number: 5397-007 Project Manager: Dave Cook Received: 11/10/97 Reported: 11/24/97 15:04

Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
			D#111	22.00			6.9	
B-5-34 (continued)	1170200	11/10/07	B71113	<u>80-09</u>	0.0500	ND	<u>Soil</u>	
1,1-Dichloroethene	1170309	11/12/97	11/12/97		0.0500 0.0500		mg/kg dry.	
cis-1,2-Dichloroethene	**	"	"			ND		
trans-1,2-Dichloroethene	**	"	" "		0.0500	ND		
1,2-Dichloropropane					0.0500	ND		
cis-1,3-Dichloropropene		11	11	,	0.0500	ND	, .	y
trans-1,3-Dichloropropene	10	n	Ħ		0.0500	ND		1 .
Methylene chloride	"	н	ti		0.500	ND		,
1,1,2,2-Tetrachloroethane	н	tt			0.0500	ND	"	
Tetrachloroethene	tt	n	"		0.0500	0.155	н	1
1,1,1-Trichloroethane		11	"		0.0500	ND	"	
1,1,2-Trichloroethane	"	n	19		0.0500	ND	"	1.1
Trichloroethene	ų.	п	**		0.0500	ND	н	
Trichlorofluoromethane	19	н	TP .	•	0.0500	ND	12.	
Vinyl chloride	t t	11	11		0.0500	ND	n	
Surrogate: 4-BFB (ELCD)	"	II .	tt .	50.0-150	-	90.4	%	
İ								
<u>B-5-39</u>			<u>B7111</u>	<u>80-10</u>			Soil	
Bromodichloromethane	1170309	11/12/97	11/12/97		0.0500	ND	mg/kg dry	
Bromoform	n		11		0.0500	ND	11	
Bromomethane	n	II.	II .		0.0500	ND	II	
Carbon tetrachloride	u	n	н		0.0500	ND		•
Chlorobenzene	11	н	"		0.0500	ND	"	
Chloroethane	n		0		0.0500	ND	II .	
Chloroform	н	11	u		0.0500	ND	11	1
Chloromethane	11		H		0.0500	ND	11	
Dibromochloromethane	**	10			0.0500	ND	Ħ	
1.2-Dichlorobenzene	n ·		**		0.0500	ND	n	
1,3-Dichlorobenzene	n	u	11		0.0500	ND	17	
1,4-Dichlorobenzene	n	11	10	•	0.0500	ND	**	
1,1-Dichloroethane	10	11	19		0.0500	ND		
1,2-Dichloroethane	10	**	n		0.0500	ND	17	·
1.1-Dichloroethene	19	н	п		0.0500	ND	n	,
cis-1,2-Dichloroethene	IT	11	rr .		0.0500	ND	н	
trans-1,2-Dichloroethene	Ħ		m		0.0500	ND	н	
1	**	n	n		0.0500	ND	11	
1,2-Dichloropropane	71	11	11		0.0500	ND	•	•
cis-1,3-Dichloropropene	, , ,				0.0500	ND	п	
trans-1,3-Dichloropropene		**	 P		0.500	ND ND	н -	
Methylene chloride	••	,,			0.500	מא		

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.





Geo Engineers - Seattle

Project:

Stevens Health Care

Sampled: 11/6/97

600 Stewart Street, Suite 1215 Seattle, WA 98101 Project Number: 5397-007 Project Manager: Dave Cook Received: 11/10/97 Reported: 11/24/97 15:04

Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

· · ·						•		
	Batch	Date	Date	Surrogate	Reporting	_		
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
					İ			
<u>B-5-39 (continued)</u>			<u>B7111</u>	<u>80-10</u>	Į.		<u>Soil</u>	
1,1,2,2-Tetrachloroethane	1170309	11/12/97	11/12/97		0.0500	ND	mg/kg dry	
Tetrachloroethene	11	n	n		0.0500	0.197	n .	ı
1,1,1-Trichloroethane	tt .	n	"		0.0500	ND	tt	I
1,1,2-Trichloroethane	Ħ	"	"		0.0500	ND	11	
Trichloroethene	. #	11	11		0.0500	ND	11	
Trichlorofluoromethane	n	11	ш		0.0500	ND	11	
Vinyl chloride	**	U	II .		0.0500	ND	н	
Surrogate: 4-BFB (ELCD)	"	"	"	50.0-150		101	%	

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions





PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle 600 Stewart Street, Suite 1215 Seattle, WA 98101 Project: Stevens Health Care

Sampled: 11/6/97

Project Number: 5397-007

Received: 11/10/97

Project Manager: Dave Cook

Reported: 11/24/97 15:04

Dry Weight Determination North Creek Analytical - Bothell

				1.	_	
Sample Name	Lab ID	Matrix		·	Result	Units
MW-1-28.5	B711180-03	Soil	•	_	89.7	%
MW-2-14	B711180-04	Soil	,	·	93.6	%
B-5-34	B711180-09	Soil			80.4	%
B-5-39	B711180-10	Soil			93.2	%

North Creek Analytical, Inc.





Geo Engineers - Seattle

600 Stewart Street, Suite 1215

Seattle, WA 98101

Project: Stevens Health Care

Project Number: 5397-007

Project Manager: - Dave Cook --

Sampled: 11/6/97

Received: 11/10/97

Reported: 11/24/97 15:04

Halogenated Volatile Organics by EPA Method 8010B (modified)/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC	R	eporting Limit	Recov.	RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Notes
		,				Ţ.			
Batch: 1170309	<u>Date Prepa</u>		<u>/97</u>		Extraction	on Method: EPA	5030 L	MeOH]	
<u>Blank</u>	<u>1170309-BI</u>	UK1			•				
Bromodichloromethane	11/12/97			ND	mg/kg dr				
Bromoform	н			ND	n	0.0500			
Bromomethane	H			ND	**	0.0500			
Carbon tetrachloride	, n			ND	11	0.0500			3
Chlorobenzene	**			ND	11	0.0500			
Chloroethane	11			ND	11	0.0500			
Chloroform	D			ND	н	0.0500			
Chloromethane	H			ND	n	0.0500			
Dibromochloromethane	н			ND	n	0.0500			
1,2-Dichlorobenzene.	н			ND	11	0.0500			
1,3-Dichlorobenzene	Ų			ND	11	0.0500			
1,4-Dichlorobenzene	**			ND.	II	0.0500			
1,1-Dichloroethane	11			ND	10	0.0500			
1,2-Dichloroethane	10			ND	н	0.0500			
1,1-Dichloroethene	II.			ND	n	0.0500			
cis-1,2-Dichloroethene				ND	Ħ	0.0500			
trans-1,2-Dichloroethene	ti .			ND	n	0.0500			
1,2-Dichloropropane	D .			ND	U	0.0500			
cis-1,3-Dichloropropene	n			ND	11	0.0500			,
trans-1,3-Dichloropropene	Ħ			ND	U	0.0500			
Methylene chloride	•			ND	11	0.500			
1,1,2,2-Tetrachloroethane	11		• •	ND	n .	0.0500			
Tetrachloroethene	n		·	ND	ti	0.0500			
1,1,1-Trichloroethane	re ·			ND	11	0.0500			
1,1,2-Trichloroethane	19			ND	H	0.0500			
Trichloroethene				ND	11	0.0500			
Trichlorofluoromethane				ND	**	0.0500			
Vinyl chloride	11			ND	H	0.0500			
Surrogate: 4-BFB (ELCD)	"	2.00		2.03	"	50.0-150	101		
LCS	1170309-B	<u>S1</u>		-		,			
Chlorobenzene	11/12/97	1.00		0.898	mg/kg dr	y 60.0-140	89.8		
1,1-Dichloroethene	n .	1.00		0.870	n	60.0-140	87.0		
Trichloroethene	, "	1.00		1.01	11	60.0-140	101		
Surrogate: 4-BFB (ELCD)	<i>m</i> .	2.00		1.86	<u>n</u>	50.0-150	93.0		

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions





PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle 600 Stewart Street, Suite 1215 Project: Stevens Health Care

Sampled: 11/6/97

| Stewart Street, Suite 121: | Seattle, WA 98101 Project Number: 5397-007
Project Manager: Dave Cook

Received: 11/10/97 Reported: 11/24/97 15:04

reported.

Halogenated Volatile Organics by EPA Method 8010B (modified)/Quality Control

North Creek Analytical - Bothell

	Date	Spike	Sample	QC	Re	porting Limit	Recov.	RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	· %	Limit	% Notes*
 <u>Matrix Spike</u>	1170309-M	<u>S1 B</u>	711179-06						•
Chlorobenzene	11/12/97	1.07	ND	0.890	mg/kg dry	60.0-140	83.2		
1,1-Dichloroethene	n	1.07	ND	0.864		60.0-140	80.7		i
Trichloroethene	н	1.07	ND	0.952	10	60.0-140	89.0		•
Surrogate: 4-BFB (ELCD)	"	2.13		1.86	"	50.0-150	87.3		1
Matrix Spike Dup	1170309-M	SDL B	711179-06						, i
Chlorobenzene	11/12/97	1.07	ND	0.909	mg/kg dry	60.0-140	85.0	30.0	2.14
1,1-Dichloroethene	н	1.07	ND	0.861	н	60.0-140	80.5	30.0	0.248
Trichloroethene	17	1.07	ND	1.01	11	60.0-140	94.4	30.0	5.89 \(\).
Surrogate: 4-BFB (ELCD)	n	2.13		1.81	"	50.0-150	85.0		1

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.





Geo Engineers - Seattle

600 Stewart Street, Suite 1215

Seattle, WA 98101

Project: Stevens Health Care

Project Number: 5397-007

Project Manager: Dave Cook

Sampled: 11/6/97

Received: 11/10/97

Reported: 11/24/97 15:04

Notes and Definitions

#	Note			,
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	ī		
Recov.	Recovery			
RPD	Relative Percent Difference	ı		
		1		

North Creek Analytical, Inc.





18939 120th-Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
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

A ANAL	YTICAL CHAI	N OF CUS	STO	DY	RI	EP(· · · · · · · · · · · · · · · · · · · ·			Ord		#:	B	711	180
CLIENT: G eu thy	Imees		REPO	RT TO:	G	EJ	<u> </u>						-	TURNA	ROUN	D REQUES	ST In Business Days •
ADDRESS:			ATTENTION: DAVE COOK							Organic & Inorganic Analyses							
SEATT	F OFFICE	•	BILLING TO:							5 3 2 1							
			BILLING TO: P.O. NUMBER: SOME							Fuels & Hydrocarbon Analyses							
PHONE: 728-26	74 FAX: 80	61-6050		QUOTE								-			5	3	2 1
PROJECT NAME: Steres Health cox			Analy	sis	/	(g)	7	$\overline{}$	$\overline{}$	7	$\overline{}$	/				₫ ¹	J
PROJECT NUMBER: 53	97-007		Reque	:st:		(000) (0)						/				THER	Specify:
SAMPLED BY: PBPU	many			/		γ,	/ /	/	/ /	/ /	/ /		• Tur	naround R	equests	less than stan	durd may incur Rush Charges.
NCA SAMPLE	CLIENT SAMPLE	SAMPLING		/\	ر کی								M	ATRIX		# OF	. COMMENTS &
NUMBER 0	IDENTIFICATION	DATE / TIME	-	$\overline{}$	<u>"</u>	_	//	<u>/</u>	_	<u> </u>				, S, O)	CON	TAINERS	PRESERVATIVES USED
	1. MW-1-15	11/6		Ŀ		L								<u> </u>		(HOLD
02	2. Mw-1-24												1	<u></u>	1	,	HOLD
	3. MU-1 - 28,5		_	X												-	
04	4. ML-2 - 14			X											1	e e	
05	5. ma-2-24					-											HOLD
	6.m~2-34		\downarrow										-			·. :	HOLD
	7.13-5-14					ļ											HOLD
	8.13-5-29		_							$ \bot $			\perp	;		<u>.</u>	HOLD
	9. 13-5-34	 .		X									\perp				
	10.13-5-39			X		t				2			N.			1	, ,
RELINQUISHED BY:			DATE:	(1/10	147		RECEIV	ED BY	v: (X	WZ	H	W	lle	7			DATE: 11/10(9 3)
PRINT NAME: PBPV	ng Anten firm: G	EI	TIME:	140	O		PRINT 1	•		30	Hu	cle	5	FIRM	ı: <i>l</i>	1c4	TIME: 1700
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ADDITIONAL REMARKS:	Morthnest	-methods		-	-		-		,					-		 	PAGE , OF , /
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PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle

600 Stewart Street, Suite 1215

Seattle, WA 98101

Project: Stevens Health Care

Project Number: 5397-007-85

Project Manager: Dave Cook

Sampled: 11/10/97 to 11/12/97

Received: 11/13/97

Reported: 11/24/97 09:57

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
MW-2	B711256-01	Water	11/12/97
MW-3	B711256-02	Water	11/12/97
MW-4	B711256-03	Water	11/12/97
MW-4 #3-14.0	B711256-04	Soil	11/10/97
MW-4 #4-19	B711256-05	Soil	11/10/97
MW-3 #2-9.0	B711256-06	Soil	11/10/97

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





Geo Engineers - Seattle

600 Stewart Street, Suite 1215

Seattle, WA 98101

Project:

Stevens Health Care

Project Number: 5397-007-85

Project Manager: Dave Cook

Sampled: 11/10/97 to 11/12/97

Received: 11/13/97

Reported: 11/24/97 09:57

Hydrocarbon Identification by Washington DOE Method WTPH-HCID North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			1
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
NASSY 4 #2 14 0			<u>B7112</u>	56 04			<u>Soil</u>	,
MW-4 #3-14.0	1170200	11/14/07	-	30-74	20.0	'nD		١.
Gasoline Range Hydrocarbons	1170380	11/14/97	11/14/97				mg/kg dry	
Diesel Range Hydrocarbons		**			50.0	ND	·	
Heavy Oil Range Hydrocarbons	11	11	"		100	ND		
Surrogate: 2-FBP		"	"	50.0-150		104	%	_
MW-4 #4-19		B711256-05					Soil	ž.,
	1170380	11/14/97	11/14/97	50-75	20.0	ND	mg/kg dry	
Gasoline Range Hydrocarbons	1170300	11/14/97	11/14/9/				mg/kg dry	
Diesel Range Hydrocarbons					50.0	ND		
Heavy Oil Range Hydrocarbons	n	ti			100	ND		
Surrogate: 2-FBP	"	n	"	50.0-150		109	%	
MW-3 #2-9.0			B7112	56-06			Soil	
Gasoline Range Hydrocarbons	1170380	11/14/97	11/14/97	 .	20.0	· ND	mg/kg dry	
Diesel Range Hydrocarbons	"	"			50.0	ND	"	
	*1		**		100	ND	11	
Heavy Oil Range Hydrocarbons		"		50 0 150	100		%	
Surrogate: 2-FBP	••		••	50.0-150		115	70	
				,				

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.





PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle 600 Stewart Street, Suite 1215 Seattle, WA 98101 Project: Stevens Health Care

Sampled: 11/10/97 to 11/12/97 Received: 11/13/97

Project Number: 5397-007-85

Project Manager: Dave Cook

Reported: 11/24/97 09:57

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits -	Limit	Result	Units	Note
<u>MW-3</u>			B7112	<u>56-02</u>			Water	
Gasoline Range Hydrocarbons	1170381	11/17/97	11/17/97		50.0	54.5	ug/l	
Benzene	н	н	u		0.500	0.806	,	
Toluene	n		н		0.500	0.956	11	
Ethylbenzene	v	II .	u		0.500	ND	n	
Xylenes (total)	н	н	11		1.00	ND	11	
Surrogate: 4-BFB (FID)	"	н	"	50.0-150		83.1	%	
Surrogate: 4-BFB (PID)	"	ar .	n	<i>50.0-150</i>		77.7		
<u>MW-4</u>			<u>B7112</u>	<u>56-03</u>			<u>Water</u>	
Gasoline Range Hydrocarbons	1170381	11/17/97	11/17/97		50.0	51.8	ug/l	
Benzene	"	10	n		0.500	0.583	11	
Toluene	II	D.			0.500	ND	11	
Ethylbenzene	•	**	#1	•	0.500	· ND	10 '	
Xylenes (total)	11	11			1.00	ND	**	
Surrogate: 4-BFB (FID)		"	"	50.0-150		83.8	%	
Surrogate: 4-BFB (PID)	"	"	"	50.0-150		77.9	"	

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definition:





Geo Engineers - Seattle

Project: Stevens Health Care

Sampled: 11/10/97 to 11/12/97

600 Stewart Street, Suite 1215

Project Number: 5397-007-85

Received:

Seattle, WA 98101

Project Manager: Dave Cook

11/13/97

Reported: 11/24/97 09:57

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
<u>MW-3</u>			B7112	<u>56-02</u>			<u>Water</u>	
Diesel Range Hydrocarbons	1170405	11/17/97	11/18/97		0.250	ŃD	mg/l	
Heavy Oil Range Hydrocarbons	п	n	0		0.750	ND	n .	
Surrogate: 2-FBP	"	11	"	50.0-150		70.7	%	
<u>MW-4</u>			B7112	56-0 <u>3</u>			<u>Water</u>	V
Diesel Range Hydrocarbons	1170405	11/17/97	11/19/97		0.250	ND	mg/l	
Heavy Oil Range Hydrocarbons	n	II .	t#		0.750	ND	н	
Surrogate: 2-FBP	"	it	ii .	50.0-150		94.4	%	

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.





PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle 600 Stewart Street, Suite 1215 Seattle, WA 98101 Project: Stevens Health Care
Project Number: 5397-007-85

Sampled: 11/10/97 to 11/12/97 Received: 11/13/97

Project Manager: Dave Cook

Reported: 11/24/97 09:57

Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting		· · · · · · · · · · · · · · · · · · ·	
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
MW-2			B7112	56-01			<u>Water</u>	
Bromodichloromethane	1170506	11/19/97	11/20/97		1.00	ND	ug/l	
Bromoform	11	.119	н		1.00	ND	" ,	
Bromomethane	17	"	n		1.00	ND	II .	
Carbon tetrachloride	"	"	n		1.00	ND	11	
Chlorobenzene		"	tt		1.00	ND	11	
Chloroethane	11	••	n		1.00	ND	U	
Chloroform	II	"	*		1.00	ND	tt	
Chloromethane	н	" .	"		1.00	ND	**	
Dibromochloromethane	н	11	11		1.00	ND	"	
1,2-Dichlorobenzene	11	n	"		1.00	ND	11	
1,3-Dichlorobenzene	Œ	11	u		1.00	ND	11	
1,4-Dichlorobenzene	ri.	**	u		1.00	ND	II .	
1,1-Dichloroethane	**	n	n	•	1.00	· ND	ıı .	
1,2-Dichloroethane	er e	U	н		1.00	ND	19	
1,1-Dichloroethene	**		n .		1.00	ND	U	
cis-1,2-Dichloroethene	19	n	n		1.00	ND	ts	
trans-1,2-Dichloroethene	11	**	n		1.00	ND	ti	
1,2-Dichloropropane	11	**			1.00	ND	19	
cis-1,3-Dichloropropene	11	n	"		1.00	ND	19	
trans-1,3-Dichloropropene	11	n			1.00	ND	п	
Methylene chloride	11	11			5.00	ND	19	
1,1,2,2-Tetrachloroethane	н	10	"		1.00	ND	II.	
Tetrachloroethene	н	10	n		1.00	ND	11	
1,1,1-Trichloroethane	If	н	н		1.00	ND	n	
1,1,2-Trichloroethane	11	10	H		1.00	ND	u	
Trichloroethene	**	10	11		1.00	ND	**	
Trichlorofluoromethane	n .	19	II .		1.00	ND	n	
Vinyl chloride	U	n	tt		1.00	ND	11	
Surrogate: 4-BFB (ELCD)	"	•	"	50.0-150	. '	82.0	%	
<u>MW-3</u>			<u>B7112</u>	56-02			<u>Water</u>	
Bromodichloromethane	1170506	11/19/97	11/20/97		1.00	ND	ug/l	
Bromoform	"	. #	H		1.00	ND	ug.	
Bromomethane	н				1.00	ND	•	
Carbon tetrachloride		n	n		1.00	ND		

North Creek Analytical, Inc.

Chlorobenzene

Chloroethane

Chloroform

*Refer to end of report for text of notes and definitions

ND

ND

ND

1.00

1.00

1.00

Joy B Chang, Project Manager



Geo Engineers - Seattle

600 Stewart Street, Suite 1215

Seattle, WA 98101

Project: Stevens Health Care

Project Number: 5397-007-85

Project Manager: Dave Cook

Sampled:

11/10/97 to 11/12/97

Received:

11/13/97

Reported: 11/24/97 09:57

Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit_	Result	Units	Notes*
MW-3 (continued)			B71125	56-0 <u>2</u>			Water	
Chloromethane	1170506	11/19/97	11/20/97		1.00	ND	ug/l	
Dibromochloromethane	,	u .	10		1.00	ND	n ·	
1,2-Dichlorobenzene	**	n	11		1.00	ND	17	
1,3-Dichlorobenzene	11	n	н		1.00	ND	11	
1,4-Dichlorobenzene	` "	**	u .		1.00	ND	10	V.
1,1-Dichloroethane	11	II .	D		1.00	ND	10	
1,2-Dichloroethane	11	11	o o		1.00	ND	10	
1,1-Dichloroethene	II .	11	"		1.00	ND	19	
cis-1,2-Dichloroethene	II .	u	"		1.00	ND	II .	
trans-1,2-Dichloroethene	ti	n	11		1.00	ND	u ,	
1,2-Dichloropropane	#1	11	11		1.00	ND	" .	
cis-1,3-Dichloropropene	D	H	11		1.00	ND	"	
trans-1,3-Dichloropropene	11	"	n		1.00	. ND	"	
Methylene chloride	D	11	O .		5.00	ND		
1,1,2,2-Tetrachloroethane	10	11	н		1.00	ND	II	
Tetrachloroethene	10	11			1.00	16.3	II .	
1,1,1-Trichloroethane	II .	11	•		1.00	ND	*1	,
1,1,2-Trichloroethane	U	и			1.00	ND	"	•
Trichloroethene	, и	lt.	11		1.00	ND	II	
Trichlorofluoromethane	er e	**	11		1.00	ND	ıı .	
Vinyl chloride	17	U	19		1.00	ND	n	
Surrogate: 4-BFB (ELCD)	"	<i>;;</i>	"	50.0-150		81.7	%	
<u>MW-4</u>			B7112	56-03			<u>Water</u>	

<u>MW-4</u>			B711256-03			Water
Bromodichloromethane	1170506	11/19/97	11/20/97	1.00	ND	ug/l
Bromoform	II	IP.	II .	1.00	ND	11
Bromomethane	n,	11	n	1.00	ND	
Carbon tetrachloride	U	n	· ·	1.00	ND	n
Chlorobenzene	n	n	H	1.00	ND	17
Chloroethane	U	**	n	1.00	ND	n
Chloroform	19	"	н	1.00	ND	11
Chloromethane	91	u	11	1.00	ND	н
Dibromochloromethane	11	. н	H .	1.00	ND	17
1,2-Dichlorobenzene	и	**	ti	1.00	ND	n
1,3-Dichlorobenzene	n	н	11	1.00	ND	H
1,4-Dichlorobenzene		n	n	1.00	ND	н
1,1-Dichloroethane	"	•	n	1.00	ND	н
1,2-Dichloroethane	n	n	н	1.00	ND	Ħ

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.





Batch

Date

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

Geo Engineers - Seattle 600 Stewart Street, Suite 1215 Seattle, WA 98101

Project: Stevens Health Care

Date

Project Number: 5397-007-85 Project Manager: Dave Cook

Sampled: 11/10/97 to 11/12/97

Received: 11/13/97 Reported: 11/24/97 09:57

Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

Surrogate

Reporting

	Datell	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
MW-4 (continued)			<u>B7112</u>	56-0 <u>3</u>	1		<u>Water</u>	Į
1,1-Dichloroethene	1170506	11/19/97	11/20/97		1.00	ND	ug/l	
cis-1,2-Dichloroethene	- 11	II .	H .		1.00	ND	n .	1
trans-1,2-Dichloroethene	11	19	••		1.00	ND	11	
1,2-Dichloropropane	19		11		1.00	ND	n	Į,
cis-1,3-Dichloropropene		••	II .		1.00	ND	11	
trans-1,3-Dichloropropene	11	11	**		1.00	ND	11	
Methylene chloride	11		n		5.00	ND	II .	-
1,1,2,2-Tetrachloroethane	II .	н	11		1.00	ND	н	•
Tetrachloroethene	H	H			1.00	ND	**	ſ
1,1,1-Trichloroethane	n	••	11		1.00	ND	n	
1,1,2-Trichloroethane	**	11	n		1.00	ND	11	
Trichloroethene	17	tr .	n		1.00	ND	n	1
Trichlorofluoromethane		11	10		1.00	ND	tt	
Vinyl chloride	H	**	10		1.00	ND	11	· ·
Surrogate: 4-BFB (ELCD)	u .	"	rt .	50.0-150	1	93.5	%	ſ
MW-4 #4-19			<u>B7112</u>	E6 05			Soil	
Bromodichloromethane	1170471	11/18/97	11/18/97	<u>50-05</u>	0.0500	ND	mg/kg dry	ί,
Bromoform	1170471	11/10/9/	11/10/9/		0.0500	ND	mg/kg di y	
Bromorom	н	v	19		0.0500	ND	U	
Carbon tetrachloride	п	**	Ð		0.0500	ND		Į.
Chlorobenzene	er e		••		0.0500	ND		
Chloroethane	11	n			0.0500	ND	u	ſ
Chloroform	n	11	11		0.0500	ND	н	
Chloromethane		•			0.0500	ND		,
Dibromochloromethane			n		0.0500	ND	11	
1,2-Dichlorobenzene		11			0.0500	ND	u	
1,3-Dichlorobenzene	n	11	•		0.0500	ND	н	Į,
1,4-Dichlorobenzene	11	19	**	•	0.0500	ND	17	
1.1-Dichloroethane	10		11		0.0500	ND	n	ſ
1,2-Dichloroethane	n	*1	Ħ		0.0500	ND	n	-
· ·	n	**	n		0.0500	ND	m	
1,1-Dichloroethene	н	. 11	10		0.0500	ND	n	ſ
cis-1,2-Dichloroethene	n	n	10		0.0500	ND	11	
trans-1,2-Dichloroethene	 H	n	11		0.0500	ND	н	I.
1,2-Dichloropropane	n ·	n	n		0.0500	ND	19	
cis-1,3-Dichloropropene	 n	'n	n		0.0500	ND	п	1
trans-1,3-Dichloropropene		" "	 n		0.500	ND ND	n	Į,
Methylene chloride	•	•-			0.500	שא		

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions



Geo Engineers - Seattle

Project: Stevens Health Care

Sampled: 11/10/97 to 11/12/97

600 Stewart Street, Suite 1215

Project Number: 5397-007-85

Received: 11/13/97

Seattle, WA 98101

Project Manager: Dave Cook

Reported: 11/24/97 09:57

Halogenated Volatile Organics by EPA Method 8010B (modified) North Creek Analytical - Bothell

·	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
					•			
MW-4 #4-19 (continued)			<u>B7112</u> :	<u>56-05</u>			Soil	
1,1,2,2-Tetrachloroethane	1170471	11/18/97	11/18/97		0.0500	ND	mg/kg dry	•
Tetrachloroethene	n .	11	O		0.0500	0.0503	н	
1,1,1-Trichloroethane	"	H	"		0.0500	ND	п	
1,1,2-Trichloroethane	11	11	•		0.0500	ND		
Trichloroethene	` II	n .	11		0.0500	ND	II .	*
Trichlorofluoromethane	н	n	H ·		0.0500	ND	11	
Vinyl chloride	II .		n		0.0500	ND	N	
Surrogate: 4-BFB (ELCD)	"	n	"	50.0-150		99.1	%	
MW-3 #2-9.0			B7112	56-06			Soil	
Bromodichloromethane	1170471	11/18/97	11/18/97		0.0500	ND	mg/kg dry	•
Bromoform	10	•	0		0.0500	ND		
Bromomethane	n	**	н	•	0.0500	ND	ŧı	
Carbon tetrachloride	n	11	n		0.0500	ND	**	
Chlorobenzene	n	11	**		0.0500	ND	10	•
Chloroethane	11	11	11		0.0500	ND		
Chloroform	n	н	11		0.0500	ND	10	
Chloromethane	11	н	,		0.0500	ND	п	•
Dibromochloromethane	11		н		0.0500	ND	11	•
1,2-Dichlorobenzene	n	n	n		0.0500	ND	н	
1,3-Dichlorobenzene	n	11	"		0.0500	ND	u	
1,4+Dichlorobenzene		n	п		0.0500	ND	u	
1,1+Dichloroethane	11	n	11		0.0500	ND	n	
1,1-Dichloroethane	II .	n	II.		0.0500	ND	**	
1,1-Dichloroethene	10	"	н		0.0500	ND	**	
cis-1,2-Dichloroethene	.,	11			0.0500	ND	н	
trans-1,2-Dichloroethene		н			0.0500	ND	u	•
1,2-Dichloropropane		10	18		0.0500	ND	tt	-•
cis-1,3-Dichloropropene		o	o o		0.0500	ND	**	
	н	17			0.0500	ND	n	
trans-1,3-Dichloropropene	If				0.500	ND	п	-
Methylene chloride	M		u		0.0500	ND	H .	
1,1,2,2-Tetrachloroethane								
Tetrachloroethene	9	. " H	". n		0.0500	ND		
1,1,1-Trichloroethane	"	"	n		0.0500	ND		
1,1,2-Trichloroethane					0.0500	ND	" #	
Trichloroethene	н ,	"			0.0500	ND	n	
Trichlorofluoromethane		н	11		0.0500	ND		
Vinyl chloride	11	**	**		0.0500	ND	•	

North Creek Analytical, Inc.





BOTHELL = (425) 481-9200 = FAX 485-2992 SPOKANE = (509) 924-9200 = FAX 924-9290

PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle 600 Stewart Street, Suite 1215 Seattle, WA 98101

Project: Stevens Health Care Project Number: 5397-007-85

Sampled: 11/10/97 to 11/12/97 11/13/97 Received:

Project Manager: Dave Cook

Reported:

11/24/97 09:57

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*
MW-3 #2-9.0 (continued)			B7112	56-0 <u>6</u>			<u>Soil</u>	
Surrogate: 4-BFB (ELCD)	1170471	11/18/97	11/18/97	50.0-150		98.2	%	

North Creek Analytical, Inc.



Geo Engineers - Seattle

600 Stewart Street, Suite 1215

Seattle, WA 98101

Project: Stevens Health Care

Project Number: 5397-007-85

Project Manager: Dave Cook

Sampled: 11/10/97 to 11/12/97

Received: 11/13/97

Reported: 11/24/97 09:57

Dry Weight Determination North Creek Analytical - Bothell

		· 		
Sample Name	Lab ID	Matrix	Result	Units
MW-4 #3-14.0	B711256-04	Soil	90.5	%
MW-4 #4-19	B711256-05	Soil	92.9	%
MW-3 #2-9.0	B711256-06	Soil	88.4	%

North Creek Analytical, Inc.





BOTHELL = (425) 481-9200 = FAX 485-2992 SPOKANE = (509) 924-9200 = FAX 924-9290

PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle 600 Stewart Street, Suite 1215 Project:

Stevens Health Care

Sampled: 11/10/97 to 11/12/97

Seattle, WA 98101

Project Number: 5397-007-85

Received: 11/13/97

Project Manager: Dave Cook Reported: 11/24/97 09:57

Hydrocarbon Identification by Washington DOE Method WTPH-HCID/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD	—— ₁
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
						i				
Batch: 1170380	<u>Date Prepa</u>	<u>red: 11/14</u>	<u> 197</u>		Extract	tion Method: HC	ID (WA)	ì		l_
<u>Blank</u>	<u>1170380-B</u> I	LK1				i	•			
Gasoline Range Hydrocarbons	11/14/97			ND	mg/kg c	iry 20.0		,		ſ ⁻
Diesel Range Hydrocarbons				ND	10	50.0				
Heavy Oil Range Hydrocarbons	TT .			ND	m 	100				l
Surrogate: 2-FBP	"	DET		DET	"	50.0-150	105			

North Creek Analytical, Inc.



Geo Engineers - Seattle 600 Stewart Street, Suite 1215 Project: Stevens Health Care
Project Number: 5397-007-85

Sampled: 11/10/97 to 11/12/97 Received: 11/13/97

Seattle, WA 98101 Project 1

Project Manager: Dave Cook

Reported: 11/24/97 09:57

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A/Quality Control North Creek Analytical - Bothell

Batch: 1170381 Date Blank 1170 Gasoline Range Hydrocarbons 11/1 Benzene " Toluene " Ethylbenzene " Xylenes (total) " Surrogate: 4-BFB (FID) " Surrogate: 4-BFB (PID) " LCS 1170 Gasoline Range Hydrocarbons 11/1 Surrogate: 4-BFB (FID) "	lyzed Level	11/17/97	Result	Result ND ND ND	Units Extract ug/l	Recov. Limits ion Method: EP 50.0 0.500	<u>%</u> A 5030 (P	Limit P/T)	<u>%</u>	Notes*
Blank 1170 Gasoline Range Hydrocarbons 11/1 Benzene " Toluene " Ethylbenzene " Xylenes (total) " Surrogate: 4-BFB (FID) " LCS 1170 Gasoline Range Hydrocarbons 11/1 Surrogate: 4-BFB (FID) " Duplicate 1170	0381-BLK1 7/97 48			ND	ug/l	50.0	<u>A 5030 (F</u>	<u>,\tag{LD}</u>		
Gasoline Range Hydrocarbons 11/1 Benzene " Toluene " Ethylbenzene " Xylenes (total) " Surrogate: 4-BFB (FID) " Surrogate: 4-BFB (PID) " LCS 1170 Gasoline Range Hydrocarbons 11/1 Surrogate: 4-BFB (FID) " Duplicate 1170	7/97 48			ND			•			
Benzene	48			ND						
### Benzene #################################					н	0 500				
Ethylbenzene " Xylenes (total) " Surrogate: 4-BFB (FID) " Surrogate: 4-BFB (PID) " LCS 1170 Gasoline Range Hydrocarbons 11/1 Surrogate: 4-BFB (FID) " Duplicate 1170				ND		0.500				
Ethylbenzene Xylenes (total) ** **Surrogate: 4-BFB (FID) Surrogate: 4-BFB (PID) ** **LCS Gasoline Range Hydrocarbons 11/1 Surrogate: 4-BFB (FID) ** **Duplicate 1176					17	0.500				
Xylenes (total)				ND	"	0.500			* .	
Surrogate: 4-BFB (FID)				ND		1.00				
LCS 1170 Gasoline Range Hydrocarbons 11/1 Surrogate: 4-BFB (FID) " Duplicate 1170	48	.0		38.2	"	50.0-150	79.6			
Gasoline Range Hydrocarbons 11/1 Surrogate: 4-BFB (FID) " Duplicate 1176		.0		3 9.5	"	50.0-150	82.3			
Gasoline Range Hydrocarbons 11/1 Surrogate: 4-BFB (FID) " Duplicate 1176)381-BS1									
Surrogate: 4-BFB (FID) " Duplicate 1176		00		520	ug/l	75.0-125	104			
	48			42.5	",	50.0-150	88.5			
	0381-DUP1	B711	168-03			•				
Casolitic Mange 117 di comboni		<u> </u>	527	479	ug/l	•		25.0	9.54	
Surrogate: 4-BFB (FID) "		3.0		46.2	"	50.0-150	96.3			
Duplicate 1170	0381-DUP2	B711	257-04							
	7/97		26900	28400	ug/l			25.0	5.42	
Surrogate: 4-BFB (FID) "	48	. <i>0</i>		49.8	"	50.0-150	104			
Matrix Spike 1170	0381-MS1	B711	1248-01							
		0.0	ND	9.03	ug/l	70.0-130	90.3			
Toluene "		0.0	ND	8.89	n J	70.0-130	88.9			
Ethylbenzene "	10	0.0	ND	8.87	11	70.0-130	88.7			
Xylenes (total)		0.0	ND	26.4	н	70.0-130	88.0			
Surrogate: 4-BFB (PID) "		3.0		39.3	,,	50.0-150				
Matrix Spike Dup 1170	0381-MSD1	B711	1248-01							
		0.0	ND	9.22	ug/l	70.0-130	92.2	15.0	2.08	
Toluene "		0.0	ND	9.04	"	70.0-130		15.0	1.67	
Ethylbenzene "		0.0	ND	8.89	**	70.0-130		15.0	0.225	
Xylenes (total) "				0.05						
Surrogate: 4-BFB (PID) "		0.0	ND	26.2	11	70.0-130	87.3	15.0	0.799	

North Creek Analytical, Inc.





Geo Engineers - Seattle

Project Manager: Dave Cook

Project: Stevens Health Care

Sampled: 11/10/97 to 11/12/97

600 Stewart Street, Suite 1215 Seattle, WA 98101

Project Number: 5397-007-85

Received: 11/13/97

Reported: 11/24/97 09:57

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended)/Quality Control

North Creek Analytical - Rothell

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
Batch: 1170405	Date Prepa	red: 11/1	7/97		Extrac	tion Method: EP	A 3520/6	00 Series		
Blank	1170405-BI					ı	•			
Diesel Range Hydrocarbons	11/18/97			ND	mg/l	0.250				ı
Heavy Oil Range Hydrocarbons	O			ND	11	0.750				j
Surrogate: 2-FBP	"	0.358		0.361	17	50.0-150	101			
LCS	1170405-B	51								` 1
Diesel Range Hydrocarbons	11/18/97	2.00		1.92	mg/l	60.0-140	96.0			i
Surrogate: 2-FBP	"	0.358		0.340	"	50.0-150	95.0	-		
Duplicate	1170405-D	<u>UP1</u> F	3711207-22							
Diesel Range Hydrocarbons	11/18/97		0.264	ND	mg/l			44.0		'
Surrogate: 2-FBP	"	0.682		0.610	"	50.0-150	89.4			. 1
Duplicate	1170405-D	UP2 F	<u>3711207-24</u>			,				-
Diesel Range Hydrocarbons	11/18/97		ND	ND	mg/l			44.0		
Surrogate: 2-FBP	n	0.682		0.645	"	50.0-150	94.6			

North Creek Analytical, Inc.



Geo Engineers - Seattle

Project: Stevens Health Care

Sampled: 11/10/97 to 11/12/97

600 Stewart Street, Suite 1215

Project Number: 5397-007-85

Received: 11/13/97

Seattle, WA 98101

Project Manager: Dave Cook

11/24/97 09:57 Reported:

Halogenated Volatile Organics by EPA Method 8010B (modified)/Quality Control North Creek Analytical - Bothell

1		Date	Spike	Sample	QC	R	eporting Limit	Recov.	RPD	RPD				
	Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	<u>%</u>	Limit	% Note:				
	i									· · · · · · · · · · · · · · · · · · ·				
	Batch: 1170471	Date Prepar	ed: 11/18/	<u>97</u>		Extraction Method: EPA 5030 [MeOH]								
	Blank	<u>1170471-BL</u>	<u>K1</u>				•	•						
	Bromodichloromethane	11/18/97			ND	mg/kg dr			٠	•				
i fr	Bromoform				ND	"	0.0500			'				
,	Bromomethane	н			ND	11	0.0500							
,	Carbon tetrachloride	н			ND	17	0.0500			5				
í	Chlorobenzene	"			ND	**	0.0500							
	Chloroethane	IF			ND	11	0.0500							
	Chloroform	n			ND	н	· 0.0500							
) ' (Chloromethane	н			ND	н	0.0500							
Ė	Dibromochloromethane	II			ND	n	0.0500							
` ;	1,2 Dichlorobenzene	n			ND	**	0.0500							
	1,3-Dichlorobenzene	*1			ND .	11	0.0500							
,	1,4-Dichlorobenzene	"			ND	11	0.0500							
· 1	1,1-Dichloroethane	, n			ND		0.0500			,				
	1,2-Dichloroethane	10			ND	0	0.0500							
,	1,1-Dichloroethene	tt (ND	" .	0.0500							
٠,	cis-1,2-Dichloroethene	n			ND	10	0.0500			•				
	trans-1,2-Dichloroethene	11		•	ND	н	0.0500							
,	1,2-Dichloropropane	11			ND	rı .	0.0500							
,	cis-1,3-Dichloropropene	п			ND	tt	0.0500							
,	trans-1,3-Dichloropropene	Ħ			ND	tt	0.0500							
	Methylene chloride	**			ND	n	0.500							
	1,1,2,2-Tetrachloroethane	11			ND	11	0.0500							
	Tetrachloroethene	n ,			ND	11	0.0500			,				
,	1,1,1-Trichloroethane	D.		,	ND	19	0.0500							
	1,1,2-Trichloroethane	"			ND	n	0.0500							
	Trichloroethene	, .			ND	"	0.0500			•				
. •	Trichlorofluoromethane	0			ND	II	0.0500							
ì	Vinyl chloride	H .			ND	н	0.0500							
ı	Surrogate: 4-BFB (ELCD)	."	2.00	-	1.93	n'	50.0-150	96.5						
									,					
	LCS	1170471-BS	<u> 1</u>											
,	Chlorobenzene	11/18/97	1.00		0.851	mg/kg dr								
	1,1-Dichloroethene	11	1.00		0.840	19	60.0-140	84.0						
1	Trichloroethene	t•	1.00		0.952	**	60.0-140	95.2						
	Surrogate: 4-BFB (ELCD)	<i>n</i> ·	2.00		1.75	"	50.0-150	87.5						

North Creek Analytical, Inc.





BOTHELL = (425) 481-9200 = FAX 485-2992 SPOKANE = (509) 924-9200 = FAX 924-9290

PORTLAND = (503) 643-9200 = FAX 644-2202

Geo Engineers - Seattle 600 Stewart Street, Suite 1215 Seattle, WA 98101 Project: Stevens Health Care

Project Manager: Dave Cook

Project Number: 5397-007-85

Sampled: 11/10/97 to 11/12/97 Received: 11/13/97

Reported: 11/24/97 09:57

Halogenated Volatile Organics by EPA Method 8010B (modified)/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC	Re	porting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% N	Votes*
Matrix Spike	<u>1170471-M</u>	<u>S1 B</u>	<u>711152-08</u>			i				
Chlorobenzene	11/18/97	1.17	ND	0.918	mg/kg dry	60.0-140	78.5			
1,1-Dichloroethene	tt	1.17	ND	0.787	.,	60.0-140	67.3			
Trichloroethene	n	1.17	ND	0.973	17	60.0-140	83.2			
Surrogate: 4-BFB (ELCD)		2.33		1.95	"	50.0-150	83.7			
Matrix Spike Dup	<u>1170471-M</u>	SD1 B	711152-08			1				
Chlorobenzene	11/18/97	1.17	ND	0.885	mg/kg dry	60.0-140	75.6	30.0	3.76	
1,1-Dichloroethene	n	1.17	ND	0.810	"	60.0-140	69.2	30.0	2.78	
Trichloroethene	••	1.17	ND	0.999	"	60.0-140	85.4	30.0	2.61	1
Surrogate: 4-BFB (ELCD)	"	2.33	-	1.96	"	50.0-150	84.1			

Batch: 1170506	Date Prepared: 11/19/97	•	Extraction	Method: EPA 5030 [P/T]
<u>Blank</u>	1170506-BLK1			1
Bromodichloromethane	11/19/97	ND	ug/l	1.00
Bromoform	u .	ND	II .	1.00
Bromomethane.	и	ND	11	1.00
Carbon tetrachloride	Ħ	ND	11	1.00
Chlorobenzene	n	ND	11	1.00
Chloroethane	11	ND	н	1.00
Chloroform	п	ND	II .	1.00
Chloromethane	Ħ	ND	II .	1.00
Dibromochloromethane	H	ND	n	1.00
1,2-Dichlorobenzene	п	ND	н	1.00
1,3-Dichlorobenzene	II .	ND	11	1.00
1,4-Dichlorobenzene	n	ND	17	1.00
1,1-Dichloroethane	n	ND	0	1.00
1,2-Dichloroethane	н	ND	••	1.00
1,1-Dichloroethene	11	ND	te .	1.00
cis-1,2-Dichloroethene	IP .	ND	IT.	1.00
trans-1,2-Dichloroethene	te.	ND	**	1.00
1,2-Dichloropropane	н	ND	11	1.00
cis-1,3-Dichloropropene	11	ND	11	1.00
trans-1,3-Dichloropropene	u .	ND	19	1.00
Methylene chloride	rt	5.62	n	5.00
1,1,2,2-Tetrachloroethane	rr	ND		1.00
Tetrachloroethene	m · ·	ND	•	1.00
1,1,1-Trichloroethane	п	ND	**	1.00
1,1,2-Trichloroethane	n	ND	H	1.00
-,-,1.0				

North Creek Analytical, Inc.





Geo Engineers - Seattle

Project: Stevens Health Care

Sampled: 11/10/97 to 11/12/97

600 Stewart Street, Suite 1215

Project Number: 5397-007-85

Received: 11/13/97

Seattle, WA 98101

Project Manager: Dave Cook

Reported: 11/24/97 09:57

Halogenated Volatile Organics by EPA Method 8010B (modified)/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD	_
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	<u>%</u>	Limit	%	Notes*
Blank (continued)	1170506-BLK	1								
Trichloroethene	11/19/97			ND	ug/l	1.00	•			4
Trichlorofluoromethane	11			ND	"	1.00				
Vinyl chloride	11			ND	11	1.00				
Surrogate: 4-BFB (ELCD)	"	4.00		3.65	"	50.0-150	91.3		•	
LCS	1170506-BS1								•	•
Chlorobenzene	11/19/97	5.00		4.43	ug/l	70.0-130	88.6			
1,1-Dichloroethene	**	5.00		4.88	,, ~	70.0-130	97.6			
Trichloroethene	n	5.00		5.60		70.0-130	112			
Surrogate: 4-BFB (ELCD)	"	4.00		4.14	"	50.0-150	103			
Matrix Spike	1170506-MS1		B711131-01							
Chlorobenzene	11/19/97	10.0	ND	9.23	ug/l	70.0-130	92.3			
1,1-Dichloroethene	"	10.0	ND	9.44	n	70.0-130	94.4			
Trichloroethene	II .	10.0	ND	10.1	n	70.0-130	101			
Surrogate: 4-BFB (ELCD)	"	4.00		3.40	"	50.0-150	85.0			
Matrix Spike Dup	1170506-MSD) 1	B711131-01							
Chlorobenzene	11/19/97	10.0	•	9.08	ug/l	70.0-130	90.8	20.0	1.64	
1,1-Dichloroethene	**	10.0		9.20	ıı Ö	70.0-130	92.0	20.0	2.58	
Trichloroethene	11	10.0	ND	9.98	n	70.0-130	99.8	20.0	1.20	
Surrogate: 4-BFB (ELCD)	11	4.00		3.35	"	50.0-150	83.7			

North Creek Analytical, Inc.





Geo Engineers - Seattle Project: Stevens Health Care Sampled: 11/10/97 to 11/12/97

600 Stewart Street, Suite 1215 Project Number: 5397-007-85 Received: 11/13/97
Seattle, WA 98101 Project Manager: Dave Cook Reported: 11/24/97 09:57

Notes and Definitions

Note

Analyte is a suspected laboratory contaminant. Please refer to the Method Blank.

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

Recovery

RPD Relative Percent Difference

North Creek Analytical, Inc.

Joy B Charg, Project Manager

IntFile : SURR2.E

Quant Time: Nov 17 10:23 1997 Quant Results File: TPHG.RES

Quant Method: C:\HPCHEM\2\METHODS\TPHG.M (Chemstation Integrator)

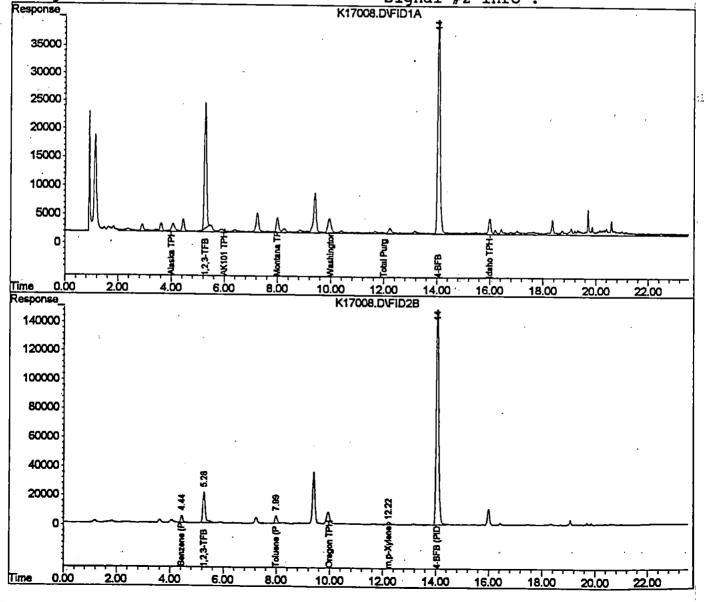
Title : TPH-G Water Method

Last Update : Fri Nov 14 12:14:18 1997 Response via : Multiple Level Calibration

DataAcq Meth : TPHG.M

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

Signal #2 Phase: Signal #2 Info:



Data File : C:\HPCHEM\2\DATA\K17009.D\FID1A.CH

: 17 Nov 1997 10:29 am : b711256-03

Misc : 5 mL IntFile : SURR.E

Sample

Operator: LAC Inst : GC #4 Multiplr: 1.00

Vial: 9

Data File : C:\HPCHEM\2\DATA\K17009.D\FID2B.CH

: 17 Nov 97 10:29 am Aca On Sample : b711256-03

Vial: 9 Operator: LAC Inst : GC #4 Multiplr: 1.00

Misc : 5 mL

: SURR2.E IntFile

Quant Time: Nov 17 10:53 1997 Quant Results File: TPHG.RES

Quant Method: C:\HPCHEM\2\METHODS\TPHG.M (Chemstation Integrator)

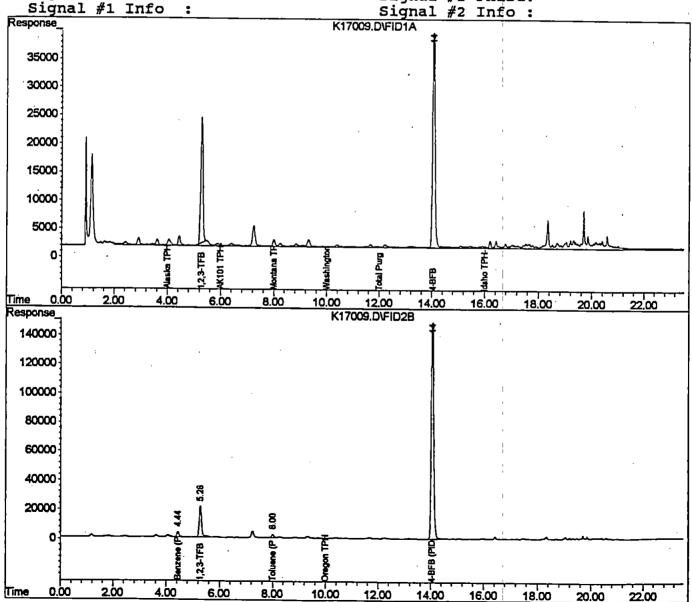
Title : TPH-G Water Method

Last Update : Fri Nov 14 12:14:18 1997 Response via : Multiple Level Calibration

DataAcq Meth : TPHG.M

Volume Inj. Signal #1 Phase:

Signal #2 Phase:



Data File : C:\HPCHEM\4\DATA\K18051.D

Acq On : 18-11-1997 23:49:35

Operator: Inst : GC #7

Sample Misc

: b711256-02

Multiplr: 1.00

Vial: 37

IntFile

: SURR.E

Quant Time: Nov 19 7:44 1997 Quant Results File: TPHD.RES

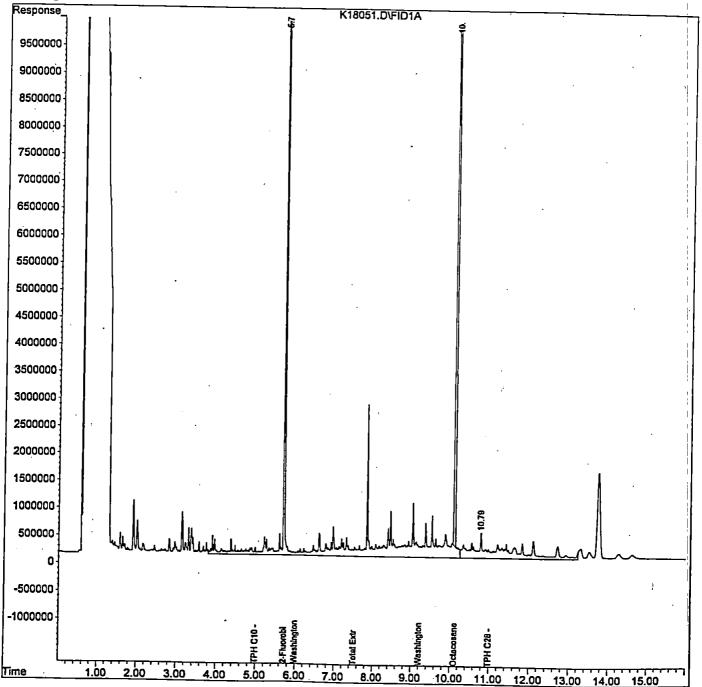
Quant Method : C:\HPCHEM\4\METHODS\TPHD.M (Chemstation Integrator)

Title : TPH-D Front Method

Last Update : Fri Nov 07 07:43:08 1997 Response via : Multiple Level Calibration

DataAcq Meth : TPHD.M

Volume Inj. Signal Phase : Signal Info



Data File : C:\HPCHEM\4\DATA.SEC\K18052.D

Vial: 38

Acq On : 19-11-1997 12:12:33 Sample : b711256-03

Operator:
Inst : GC #7

Misc :

Multiplr: 1.00

IntFile : SURR.E

Quant Time: Nov 19 8:05 1997 Quant Results File: TPHD2.RES

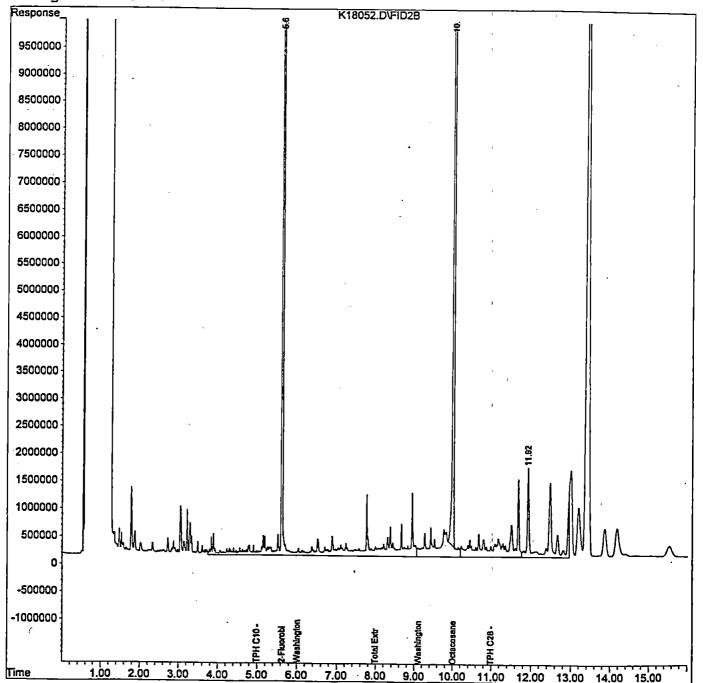
Quant Method: C:\HPCHEM\4\METHODS\TPHD2.M (Chemstation Integrator)

Title : TPH-D Rear Method

Last Update : Sat Nov 15 12:29:32 1997 Response via : Multiple Level Calibration

DataAcq Meth : TPHD.M

Volume Inj. : Signal Phase : Signal Info :



Data File : C:\HPCHEM\4\DATA\111497\K14027.D Vial: 22

Acq On : 14-11-1997 16:14:11

Operator: Inst : GC #7

Sample : B711256-04 H Misc

Multiplr: 1.00 IntFile : SURR.E

Quant Time: Nov 17 16:01 1997 Quant Results File: HCID2.RES

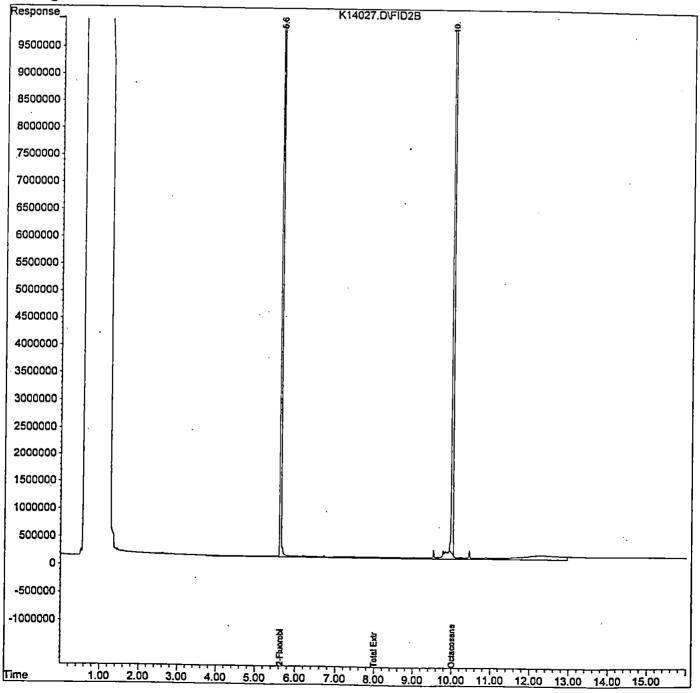
Quant Method: C:\HPCHEM\4\METHODS\HCID2.M (Chemstation Integrator)

Title : TPH-D Rear Method

Last Update : Mon Nov 17 15:31:17 1997 Response via : Multiple Level Calibration

DataAcq Meth : TPHD.M

Volume Inj. : Signal Phase : Signal Info :



Data File : C:\HPCHEM\4\DATA\111497\K14028.D Vial: 23 Operator:

: 14-11-1997 16:14:11 Acq On

Sample : B711256-05 H Inst : GC #7 Misc Multiplr: 1.00

IntFile : TPH.E

Quant Time: Nov 17 15:41 1997 Quant Results File: HCID.RES

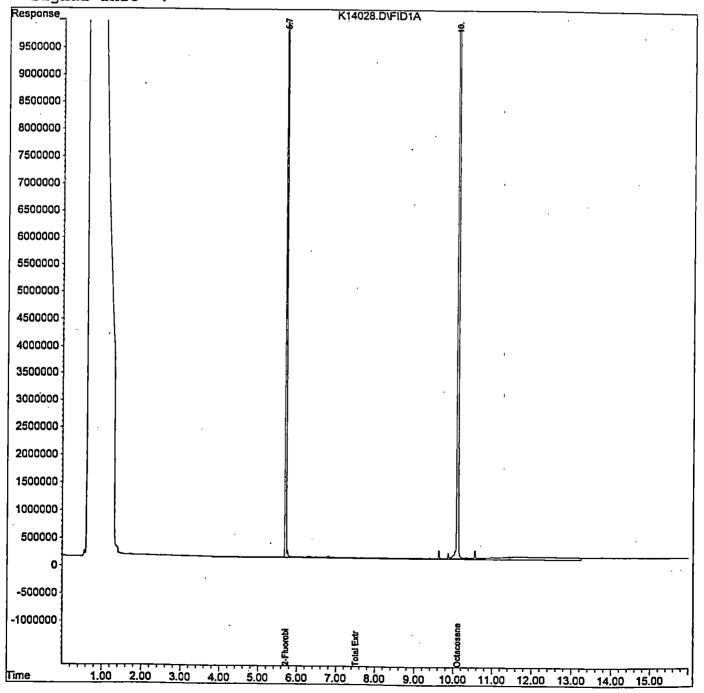
Quant Method: C:\HPCHEM\4\METHODS\HCID.M (Chemstation Integrator)

Title : TPH-D Front Method

Last Update : Mon Nov 17 15:18:45 1997 Response via : Multiple Level Calibration

DataAcq Meth : TPHD.M

Volume Inj. : Signal Phase : Signal Info



Data File : C:\HPCHEM\4\DATA\111497\K14029.D Vial: 24 Acq On : 14-11-1997 16:37:49

Operator: Sample : B711256-06 H Inst : GC #7 Misc Multiplr: 1.00

IntFile : SURR.E

Quant Time: Nov 17 16:02 1997 Quant Results File: HCID2.RES

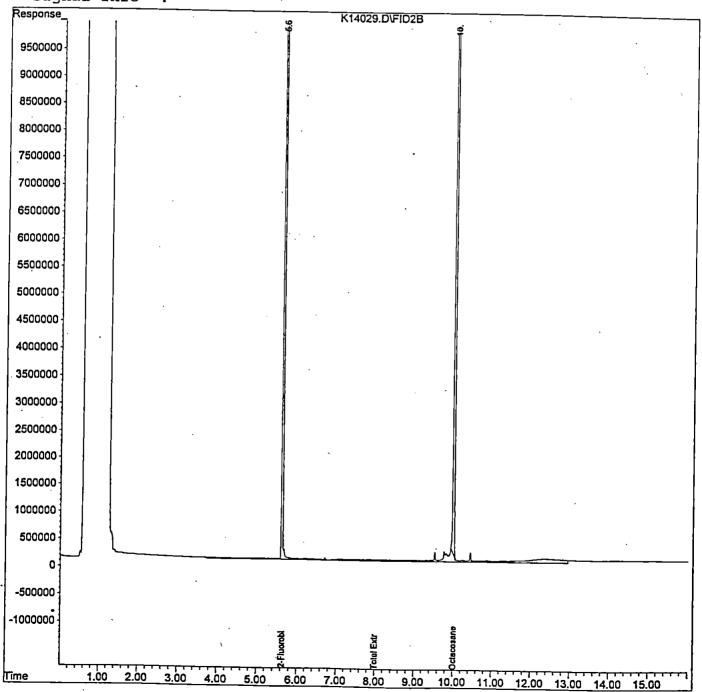
Quant Method : C:\HPCHEM\4\METHODS\HCID2.M (Chemstation Integrator)

: TPH-D Rear Method Title

Last Update : Mon Nov 17 15:31:17 1997 Response via : Multiple Level Calibration

DataAcq Meth : TPHD.M

Volume Inj. Signal Phase : Signal Info





18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992 East 11115 Montgumery, 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 # 871/256

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REPORT TO:			IOVOI	CE TO	:												
ATTENTION: DAVE COOK	GET SE	ATTLE	ATTEN	TION.	\Box	A. 10		<u> </u>		12	٧ ٢	500	*	IUKN	IAROUND REQ		•
ADDRESS: PLAZA GOO BL	DG: 600 ·	STEINERT AT ATE	40000	ree.	12			<u> </u>	/	<u> </u>		<u>ו האל</u>	1112	[]	7	norganic Anal	yses
SEATTLE WA	90101	<u> </u>	ADDRE	:33;		· ·		<u>-</u>						Stantly 7			
PHIONE: (206) 728.2674		728-2732	P.O. NU	MBER:			•		NCA Q	JOTE #:	<u> </u>				Fuels & H	lydrocarbon A	Name Day
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CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		X /3	74. He.	2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/	10 X					MATRIX (W. S. A. O)	# OF		COMMENTS
1. MW-Z	11/12 1500	B711256-01		X										w	2		
, mw-3	11/12 13/10	-62		X			X	X						w	5		
1. MW-4	1/12 1600	-03		Χ			X	X						w	5		
14.0' HW-4 #3 14.0'	11/10	-04		W	1	X								3	l	OULY	WTPH-HCID
s mw-4 #4 19.0'	1/10	-05		X		X	.]	•						<u> </u>	١		
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