Phase II Environmental Site Assessment
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

June 26, 2009

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Contents

Executive Summary ..... **v**

Section 1 Introduction **1-1**

1.1 Background 1-1
1.2 Purpose and Scope 1-1

Section 2 Site Description **2-1**

2.1 Site Location and Description 2-1
2.2 Project Area Background 2-1
2.2.1 Dry Cleaners 2-1
2.2.2 Automotive Fuel/Repair Facilities 2-3
2.3 Topography and General Hydrogeology 2-4

Section 3 Field Investigation **3-1**

3.1 Subsurface Investigation Methods 3-1
3.1.1 Soil Sampling 3-1
3.1.2 Groundwater Sampling 3-2
3.2 Analytical Testing Methods 3-3

Section 4 Findings **4-1**

4.1 Field Observations 4-1
4.2 Analytical Results 4-1
4.2.1 Quality Assurance Review 4-1
4.2.2 Soil 4-2
4.2.3 Groundwater 4-2

Section 5 Conclusions **5-1**

Section 6 References **6-1**

Distribution

Tables

Table 1 Laboratory Analyses by Boring Location
Table 2 Soil Analytes and Reporting Limits
Table 3 Groundwater Analytes and Analytical Reporting Limits
Table 4 Summary of Analytical Detections – Soils
Table 5 Summary of Analytical Detections - Water

Figures

Figure 1 Site Location Map
Figure 2 Boring and Historical Gas Station/Dry Cleaner Location Map
Figure 3 Summary of Chlorinated VOCs and Hydrocarbons in Soil
Figure 4 Summary of Chlorinated VOCs in Groundwater
Figure 5 Summary of Hydrocarbons in Groundwater

Appendices

Appendix A Excerpts from Prior Environmental Data for the Project Area
Appendix B Field Exploration and Sampling Procedures
Appendix C Boring Logs
Appendix D Quality Assurance Review and Laboratory Analytical Reports

Executive Summary

This report presents the results of a Phase II environmental site assessment (ESA) conducted in April 2009 by Camp Dresser & McKee Inc. (CDM) at the City of Bothell Crossroads Redevelopment Project (project area or site) in Bothell, Washington. The project area consists of City of Bothell-owned right-of-way (ROW) within and near the SR 522 and SR 527 intersection. This area is also fully developed with a variety of commercial businesses, and has been occupied by commercial businesses since the early 1900s. A major transformation of public transportation corridors within the project area is being undertaken in an effort to ease congestion. Various environmental studies conducted in preparation of road improvement construction activities, as well as by other consultants on two dry cleaner sites in the project area, identified chlorinated solvents in soil and groundwater attributed to dry cleaning operations. Taken as a whole, these studies indicate extensive offsite migration of chlorinated solvents, comingled plumes and possibly unknown contaminant sources. Suspected and confirmed hydrocarbon contamination, resulting from historical gas stations and automotive repair facilities, was also identified at several private properties during some of these studies. The City of Bothell determined that a better understanding of the nature and extent of contamination along the ROW was necessary prior to undertaking the road improvements.

This investigation was developed to focus on the potential impacts from the following five areas:

- SR 522 between 98th Ave SE and SR 527, focusing on downgradient impacts from the former Simon & Son Dry Cleaning site located at 18107 Bothell Way NE.
- The intersection of SR 527 and NE 183rd St, focusing on the immediate downgradient impacts of the Ultra Cleaners and the former Raincheck Cleaners, located at 18304 Bothell Way NE.
- The intersection of SR 527 and Main St, focusing on further downgradient impacts from the Ultra/Raincheck Cleaners site.
- SR 522 near 101st Ave NE, focusing on the downgradient impacts of the former Bothell Dry Cleaners facility located at 10029 Main Street.
- Intersection of SR 522 and SR 527 focusing on the potential downgradient impacts of former gas station facilities located near this intersection.

Subsurface conditions were explored across the project area by extending 17 soil borings to depths of approximately 15-feet below ground surface (ft bgs) using direct push technology drilling methods. Soil samples were collected from 16 soil borings and were analyzed for halogenated volatile organic compounds (HVOCs), as well as petroleum hydrocarbons at selected locations. Groundwater samples were collected from 17 borings and were analyzed for HVOCs, and, at selected locations, for petroleum hydrocarbons.

The common chlorinated (halogenated) dry cleaning solvent perchloroethene (PCE) and its degradation products were detected in soil and groundwater throughout the project area, indicating multiple sources of PCE releases. Based on the configuration of PCE concentrations with respect to the historical locations of dry cleaners and data collected by others on various private properties, CDM offers the following conclusions:

- PCE that apparently originates at the Ultra Custom Dry Cleaning property is migrating south along utility corridors in SR 527. Since PCE concentrations are higher south of the intersection with NE 183rd Street than the furthest north boring, and based on prior studies by others, it appears that the majority of the PCE is originating from the former Raincheck Cleaners facility.

- PCE concentrations in groundwater at the eastern end of the project area, near the intersection with 101st Avenue NE are lower (by two orders of magnitude) than PCE concentrations observed at the "Riverside" acquisition property to the south. Given this information, the former Bothell Cleaners does not appear to be a source of the PCE underlying SR 522. Rather, there appears to be another, as yet unidentified source of PCE within the acquisition property.

- PCE concentrations downgradient of the former Simon & Sons dry cleaner are low, particularly given the high dissolved PCE concentrations and presence of dense, nonaqueous phase liquid (DNAPL) historically observed on that property. One or several factors may be contributing to these low concentrations: 1) prior interim remedial actions may have served to substantially diminished PCE concentrations, 2) natural attenuation may be effectively reducing contaminant concentrations, and /or 3) the nature and extent of contamination has not been fully defined.

Hydrocarbon contamination was confirmed in groundwater at the SR 522/Main Street intersection. The former Mobile station at the northeast corner of SR 522/SR 527 appears to be the source, but only a moderately high concentration of benzene was detected. Hydrocarbon contamination was also confirmed in soil and groundwater in SR 522 at the intersection of SR 527. The current data is not sufficient to ascertain whether the source is the former Signal station to the south or the former Associated Station to the north across the street – and possibly both sites are sources. However, based on historical development patterns, we surmise that the Signal gas station occupied an area that is now roadway. Given this, and based on the presence of the less mobile oil-range petroleum hydrocarbons observed in soil, the most likely source of the hydrocarbons appears to be the former Signal gas station.

Section 1
Introduction

This report summarizes the results of a Phase II Environmental Site Assessment (ESA) performed by Camp Dresser & McKee Inc. (CDM) for the City of Bothell Crossroads Redevelopment Project located in Bothell, Washington (project area or site) (**Figure 1**). This Phase II ESA was performed on behalf of King County (the County). The project area consists of City of Bothell-owned right-of-way (ROW) within and near the SR 522 and SR527 intersection. CDM's services were performed in accordance with our October 14, 2008 proposal and March 31, 2009 amendment proposal, under Work Order No. 15, Contract No. E00025E. A Quality Assurance Project Plan (QAPP) prepared by CDM and dated December 15, 2008 was also used to direct field activities.

1.1 Background

Major transformation of public transportation corridors within the project area is being undertaken in an effort to ease congestion. Through the acquisition of several properties, SR 522 will be realigned and SR 527 will be extended farther south to meet the new SR 522 alignment. A figure showing the proposed new alignment is provided in **Appendix A.** In 2008 CDM conducted Phase I ESAs on behalf of King County on two parcels within the project area that have been occupied by one or more dry cleaners. A third historical dry cleaner was identified through a historical land use study completed through the King County Brownfields Program (ECOSS, 2008). Further, subsurface soil and groundwater sampling completed by the City of Bothell's consultant HWA Geosciences Inc. (HWA) during studies conducted in preparation of road improvement construction activities, as well as by other consultants on two of the dry cleaner sites, identified chlorinated solvents in soil and groundwater attributed to dry cleaning operations. Taken together, these studies indicate extensive offsite migration of chlorinated solvents, comingled plumes and possibly unknown contaminant sources. Suspected and confirmed hydrocarbon contamination was also identified at several private properties during some of these studies as a result of historical gas stations and automotive repair facilities. The City of Bothell determined that a better understanding of the nature and extent of contamination was necessary prior to undertaking the road improvements. The redevelopment of the project area has been identified by the King County Brownfields Program as a priority Brownfields project and the Phase II ESA was conducted in partnership with the City of Bothell. Additional information regarding prior environmental investigation findings on private and right-of-way properties is provided in Section 2.

1.2 Purpose and Scope

The purpose of this Phase II ESA was to further characterize the nature and extent of soil and groundwater contamination associated with current and historical dry cleaners and gas stations within the project area. CDM's scope of services for the Phase II ESA included:

- Reviewing existing environmental data as provided by HWA GeoSciences Inc. (HWA) and previous investigations conducted in the project area by CDM.
- Scoping out proposed exploration locations in the field based on existing environmental data and accessibility.
- Preparing a traffic control plan.
- Acquiring a right-of-way permit from the City of Bothell.
- Preparing a QAPP for the proposed Phase II ESA activities. In general, the QAPP described the project scope/objectives, field sampling procedures and analytical methods, and laboratory information (reporting limits, QA/QC information, etc.). The QAPP was reviewed and approved by U.S. Environmental Protection Agency (EPA) Region 10 as part of Brownfields grant funding. In addition, a health and safety plan (HASP) was also prepared to minimize potential exposure to hazardous substances during fieldwork activities.
- Performing a cultural resources assessment (CRA) consistent with the National Historic Preservation Act (NHPA) Section 106 process for the proposed Phase II ESA work. The CRA was performed for CDM by AMEC Earth and Environmental (AMEC).
- Advancing eighteen borings within the City of Bothell ROW using direct-push technology (DPT) and collecting soil and groundwater samples from the borings.
- Submitting selected soil and water samples to an analytical laboratory for analysis of potential contaminants of concern.
- Preparing this report documenting the field activities, analytical laboratory sample results, and our evaluation of the data. The QAPP and CRA reports were submitted separately from this report.

Section 2
Site Description

2.1 Site Location and Description

The project area is located in downtown Bothell, centered around the intersection of SR 522 and SR 527. The specific area of this investigation was limited to the City of Bothell ROW on State Routes 522 and 527, Main Street, and 101st Avenue Northeast. The project area spans approximately 1,000 ft along SR 522, 500 ft along SR 527, 350 ft along Main Street, and 20 ft along 101st Ave. Northeast. The surrounding area land use is primarily commercial. Businesses on adjoining properties include a grocery store, an auto parts store, and various restaurants and shops. The Sammamish River is located approximately 730 feet (ft) south of the intersection of SR 522 and SR 527, although due to the way in which SR 522 curves toward the south, the road comes within 140 feet of the river. The site location is shown on **Figure 1.**

2.2 Project Area Background

The intersection of SR 522 and SR 527 has been a major commercial and transportation intersection for decades. Prior research of historical businesses in the project area have identified dry cleaners, gas stations, and other automotive facilities as potential sources of soil and groundwater contamination. The locations of these facilities, as determined from a *Report on Tax Parcel History* prepared by the Environmental Coalition of South Seattle (ECOSS, 2008) are shown on **Figure 2**.

2.2.1 Dry Cleaners

Three parcels within the project area are known to historically have been occupied by dry cleaners. Ultra Custom Dry Cleaning at 18304 Bothell Way NE (aka SR 527) is located in the northern portion of the project area. Historically, this parcel has been occupied by dry cleaners at two different locations. Raincheck Cleaners (1950s and 1960s) occupied a building formerly located at the southwest corner of the parcel. When the building was demolished and a new building constructed in the late 1960s it was occupied by NuLife Cleaner, apparently followed by the current occupant, Ultra Custom Dry Cleaning, which is located at the northeast corner of the parcel. The second dry cleaner is Simon & Sons Fine Dry Cleaning located at 18107 Bothell Way NE, which was located at the western portion of the project area along SR 522. Simon & Sons Fine Dry cleaning operated from approximately 1990 to 2000. A third dry cleaner, Bothell Cleaners, was located at 10029 Main Street near the intersection of Main Street and 101st Avenue NE. – north of the easternmost end of the project area. This dry cleaner is estimated to have occupied this address during the 1940s and 1950s. A summary of known environmental conditions for each of these dry cleaners follows.

CDM completed a Phase I ESA for the property occupied by Ultra Custom Dry Cleaning at 18304 Bothell Way NE in January 2008 (CDM, 2008a). The Phase I ESA researched environmental investigations previously conducted on the property. A

single story commercial building is located on this 0.25 acre lot, which faces Bothell Way NE. At that time, Ultra Custom Cleaning occupied the building and was using the chlorinated dry cleaning solvent perchloroethene (PCE). A Phase II ESA performed in 2002 by Farallon Consulting (Farallon) identified halogenated volatile organic compounds (HVOCs), including PCE, in soil or groundwater, but not at concentrations exceeding Model Toxics Control Act (MTCA) Method A cleanup levels in the immediate vicinity of Ultra Custom Cleaning's facility. However, concentrations of PCE as high as 800 micrograms per liter (µg/L) were measured in groundwater at the southern edge of the property, close to the demolished building historically occupied by Raincheck Cleaners (Farallon 2002). The MTCA Method A cleanup level for PCE is 5 µg/L. In addition, PCE-contaminated water was identified in two catch basins next to Ultra Custom Cleaners facility. Additional subsurface investigation performed by Environmental Partners Inc. (EPI) in 2004 identified PCE and its associated degradation compounds in soil and groundwater in the vicinity of the former Raincheck dry cleaner. PCE concentrations in groundwater ranged from 5 to 6,400 µg/L and PCE concentrations in soils ranged from 0.012 to 0.020 milligrams per kilogram (mg/kg) (EPI, 2004). The highest PCE concentration was identified in a borehole located at the southern edge of the property. Excerpts from these investigations can be found in **Appendix A**. The groundwater flow direction at this property is estimated to be toward the south. Based on this information, PCE and other HVOCs in groundwater originating from this site could migrate into SR 527 and NE 183rd Street.

CDM also completed a Phase I ESA for the property located at 18107 Bothell Way NE in February 2008 (CDM, 2008b). Since completion of the Phase I ESA, Farallon submitted a Cleanup Action Progress Report for the property covering the period of June 2006 through June 2007, dated March 12, 2008 (Farallon, 2008). The property contains one single-story building referred to as the Bothell Service Center. Simon & Sons Fine Dry Cleaning formerly occupied the westernmost tenant space in the current building and is the source area of HVOCs in soil and groundwater identified on the property. Interim remedial actions involving chemical oxidation, soil vapor extraction, and dense non-aqueous phase liquid (DNAPL) removal have been implemented at the property. According to Farallon's March 2008 report, the groundwater flow direction is toward the southeast. PCE concentrations in groundwater at the eastern and southeastern edges of the property ranged between 4,000 and 10,000 µg/L in August 2006. By May 2007, PCE concentrations appeared to be considerably reduced, ranging between 320 and 650 µg/L. Excerpts from the 2008 Farallon report can be found in **Appendix A**. Based on this information; HVOCs could migrate off the Bothell Service Center property into SR522.

The third dry cleaner (Bothell Cleaners) was located on Main Street, near the intersection of 101st Street from the 1940s to the 1950s. The only information available about this site was regarding its existence through the tax assessor records. Therefore, there is no information regarding the dry cleaner's historical use of chlorinated or petroleum-based solvents in dry cleaning operations. Typically, the petroleum-based

Stoddard solvent was the dry cleaning agent of choice during the first half of the 1900s.

HWA has conducted various environmental investigations of the acquisition area south of the current SR 522 alignment and as a part of geotechnical studies along the new alignment for SR 522 and SR 527. Excerpts from some of HWA's historical reports summarizing these data are included in **Appendix A**. PCE and its degradation products have been identified at numerous exploration locations, for example:

- At the intersection of SR 522/SR 527/Main Street, PCE was detected at a concentration of 94 µg/L in groundwater.
- Southwest of the intersection of SR 522/101st Avenue NE ("Riverside" property), PCE was detected in groundwater at a concentration of 110 µg/L and trichloroethene (TCE) at 120 µg/L. At another exploration slightly to the west of this, PCE was detected in groundwater at 320 µg/L and TCE at 140 µg/L. The MTCA Method A cleanup level for TCE is the same as PCE at 5 µg/L.
- At the Beta Bothell Landing property, immediately south of the intersection of SR 522 and SR 527, PCE and TCE have been detected in groundwater. The highest concentration of PCE was reported at 74 µg/L.
- On the Hertz Rentals property immediately to the west of the Beta Bothell Landing property, vinyl chloride was detected at several locations at concentrations ranging between 0.48 and 2 µg/L. The MTCA Method A cleanup level for VC is 0.2 µg/L.

These findings suggest the offsite migration of HVOCs from one or more the dry cleaners identified above and/or as yet unidentified sources of HVOCs.

2.2.2 Automotive Fuel/Repair Facilities

Seven historical gas stations have occupied the project area since the early 1900s (**Figure 2**). Three of these sites are listed leaking underground storage tank (LUST) sites in the Washington Department of Ecology (Ecology) database. Additionally, a Municipal Shop and Garage was located on NE 183rd Street from 1954 to the present, where an underground storage tank (UST) was identified.

HWA has conducted various studies of hydrocarbon contamination for the acquisition area south of SR 522. Excerpts from some of HWA's historical reports summarizing these data are included in **Appendix A**. Areas of hydrocarbon contamination have been identified on the Beta Bothell Landing property, the Hertz property to the west, and the Riverside property to the east. While hydrocarbon affected areas appear to be mainly contained within these property boundaries, petroleum contaminated soil and groundwater, apparently associated with the former Signal gas station on SR 522 (**Figure 2**) was identified to the northern edge of the road right-of-way.

Other potential hydrocarbon contamination sources, particularly the former gas station sites located at the other three corners of the SR 522/SR 527 intersection, appear to be largely uninvestigated.

2.3 Topography and General Hydrogeology

The project area lies at an elevation between approximately 30 to 60 feet above mean sea level (MSL). The land surface along the SR 522 east-west transect is generally flat and slopes slightly upwards towards Main Street. On 101st Avenue Northeast, south of Main Street, the topography slopes more steeply down towards the south. The land surface along the SR 527 north-south transect slopes gently down to the south.

The project area lies just north of the Sammamish River. The Sammamish River, also known as Sammamish Slough, was modified at least twice by the U. S. Army Corps of Engineers by straightening and deepening the channel to allow navigation between Lake Washington and Lake Sammamish. Surficial geology for the project area was reviewed from several published sources. The King County Soil Survey (SCS, 1973) and Geology and Ground-Water Resources of Northwestern King County (Liesch, et al.), indicate the near surface deposits in the project area are Vashon recessional outwash in origin. The more recent publication, a map titled *Composite Geologic Map of the Sno-King Area, Central Puget Lowland, Washington* (Booth, et al.) indicates Vashon till mantles the central portion of the project area and is surrounded by recessional outwash. Immediately to the south of the project area surficial deposits are mapped as younger alluvium with areas of wetland deposits (Booth, et al.).

Alluvial deposits generally consist of fine to coarse sand with lenses of silt and gravel. Vashon recessional deposits generally consist of moderate to well sorted sand and gravel, grading to silt. Vashon till generally consists of a dense, unsorted mixture of sand, silt, and clay containing gravel and occasional boulders.

HWA in its Phase II ESA of the Beta Bothell Landing Property described the subsurface soils as typically consisting of "…three to eight feet of silty sand fill over alluvial soil consisting of interbedded silt and peat. Interbedded alluvial sand and silt was encountered between 11 and 20 feet bgs"(HWA, 2007). EPI in its investigation of the Ultra Custom Cleaning property described subsurface soils as "intermittent intervals of sand, silt and/or gravel mixtures to at least 44 feet bgs and noted a "laterally continuous silty layer at approximately 36 to 40 feet bgs" (EPA 2004). These descriptions are seemingly more consistent with alluvial-derived sediments than what would be typical of Vashon till, or even recessional deposits.

Depth to first encountered groundwater becomes shallower closer to the river. HWA noted depths to groundwater ranging between 4 and 8 feet bgs on the Beta Bothell Landing Property (HWA, 2007) and EPA noted depths to groundwater ranging between 8 and 11 ft bgs on the Ultra Custom Cleaning. The groundwater flow direction on the Bothell Service Center property was reported to be toward the southeast (Farallon, 2008). Across the project area, the groundwater flow direction is anticipated to be generally toward the south to southeast.

There are no surface water features within the project area. Much of the City storm drain system within the project area project area discharges to a channel, known as Horse Creek, that extends south along the property line between the Beta Bothell Landing and Riverside properties, beginning approximately 175 feet south of SR 522. Horse Creek discharges to the Sammamish River. CDM understands that the Horse Creek itself, has been confined to a culvert under the project area and the relationship between the creek and stormwater system are not well understood. A figure showing the storm drain system across the project area is included in **Appendix A**.

Section 3
Field Investigation

CDM's field investigation was conducted between March 31 and April 7, 2009 and consisted of extending eighteen boreholes along the ROW to collect subsurface soil and groundwater samples for laboratory analysis. The work was conducted in accordance with the QAPP prepared for the project dated December 15, 2008 (CDM, 2008c). The following sections summarize the field activities.

3.1 Subsurface Investigation Methods

Prior to drilling, potential soil boring locations were marked in the field and the locations were assessed for possible conflicts with underground utilities. The Utilities Underground Location Center (UULC) was notified prior to drilling. Due to the location of the boreholes in a busy ROW, all of the drilling work was conducted at night between the hours of 8:30 PM and 5:00 AM. Traffic Control Services was contracted to set up and monitor traffic control devices while work was being performed in the ROW. A City of Bothell Police Officer was also present to assist in with traffic control. Setup and break-down of the traffic control devices was observed and approved by a City of Bothell Inspector.

3.1.1 Soil Sampling

A truck-mounted direct push technology (DPT) drill rig was utilized to explore subsurface conditions and collect soil samples. Environmental Services Network Northwest (ESN) of Lacey, Washington was the drilling contractor. The DPT sampling method utilizes a hydraulically powered percussion direct-push machine that drives a tool string connected to sample barrel containing a clear acetate liner directly into the ground with minimal sample disturbance. Drilling was first attempted on March 31, 2009. This first attempt was unsuccessful; it was discovered that the 8-inch thick layer of asphalt in the road was underlain by an additional 8-inch thick concrete slab. Seattle Concrete Coring was then contracted to pre-drill 3-inch diameter cores through the asphalt and concrete during the period from April 1 to 7, 2009.

A CDM geologist observed the soil borings and logged soil conditions. The field investigation methods are detailed in **Appendix B** and summarized below. A total of eighteen DPT borings (denoted B1 through B18) were advanced at the locations shown on **Figure 2**; however, B9 was aborted after two attempts. The presence of pea gravel at one location and controlled density fill (CDF) at another indicated a probable conflict with a subsurface utility. The maximum depth of exploration was 19 feet bgs.

Soil samples were collected continuously from the DPT borings using a 4-foot long, 1.5-inch inside diameter, Macro-Core sampler (manufactured by Geoprobe®) attached to the end of drive rods. The sampler contains a clear acetate liner to contain the soil samples. The liners are cut open to expose the soil cores. Each soil unit was logged

according to the Unified Soil Classification System (USCS) as described on **Figure C1** in **Appendix C**. Boring logs are also provided in **Appendix C**. Soil in the sample cores was visually examined for indications of contamination (staining, noticeable odor, and volatile organic compound [VOC] field screening). Selected soil samples were field-screened for VOCs using an organic vapor meter equipped with a photoionization detector (OVM-PID).

All of the DPT borings were abandoned after completion by backfilling the borehole with bentonite granules followed by asphalt cold-patch. In areas where concrete was located below the asphalt, bentonite chips were backfilled in the borehole to approximately 2 feet bgs, followed by approximately 10 to 12 inches of concrete, and then asphalt to the ground surface.

Soil samples to be submitted for analytical testing were selected based on field screening and depth to groundwater. Samples exhibiting evidence of contamination were selected for analysis; otherwise one soil sample was collected from each borehole near the groundwater interface. Soil samples were collected in laboratory supplied pre-cleaned 4-ounce jars for non-volatile analyses and dry weight determination, and pre-weighed 40-milliliter (mL) volatile organic analysis (VOA) vials pursuant to EPA Method 5035A for volatile analyses. The EPA 5035 sampling method entailed collecting 5-gram core samples using disposable core samplers, which were then dispensed immediately into the VOA vials.

Sample bottles were labeled with an identification number, date and time of collection, and project number. Soil samples were packed in a chilled cooler and transported under chain-of-custody to CDM's Bellevue office for temporary storage. Samples were transported to the laboratory the following morning by a lab courier.

3.1.2 Groundwater Sampling

Groundwater samples were collected from each of the seventeen successful DPT borings. Groundwater samples were collected through the drill rods after pulling back the rods and exposing a telescoping stainless steel screen. The stainless steel well screen was decontaminated between each boring using a three-stage alconox wash and clean water rinse method. A peristaltic pump with dedicated tubing was used to withdraw the groundwater sample. When possible, approximately a half gallon of groundwater was purged from each boring before the groundwater sample was collected. Groundwater samples were collected directly into laboratory supplied glass bottles containing preservatives as appropriate per the analytical methods. Groundwater samples that were analyzed for HVOCs were collected into a 40 milliliter (mL) glass VOA vials containing hydrochloric acid preservative. Selected groundwater samples to be analyzed for petroleum hydrocarbons were collected into 500 mL amber glass bottles containing hydrochloric acid preservative.

Sample bottles were labeled with an identification number, date, and time of collection, and project number. Groundwater samples were packed in a chilled cooler and transported under chain-of-custody to CDM's Bellevue office for temporary

storage. Samples were then transported on the following business day to the laboratory by a lab courier.

3.2 Analytical Testing Methods

Soil and groundwater samples collected during the investigation were submitted for analytical testing to OnSite Environmental Inc. (OnSite) in Redmond, Washington. The samples were analyzed by one or more of the following methods:

- Total petroleum hydrocarbon screening by Northwest Method NWTPH-HCID.
- Gasoline-range total petroleum hydrocarbons (TPH-G) by Northwest Method NWTPH-Gx.
- Diesel and oil-range total petroleum hydrocarbons (TPH-D, TPH-O) by Northwest Method NWTPH-Dx.
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021.
- Halogenated volatile organic compounds (HVOCs) by EPA Method 8260B.

Table 1 summarizes the specific soil and groundwater analyses conducted at each boring location, including the soil sample depths. Method detection limits and practical quantitation limits for each of the analytes are listed in **Table 2** (soil) and **Table 3** (water).

Section 4
Findings

4.1 Field Observations

The subsurface geology was found to be very complex and subject to interpretation. The area of SR 522 appears to be underlain by approximately 4 to 8 feet of silty sand and gravel material characterized as fill overlying alluvial soil consisting of inter-bedded silt and sand. Alluvial soils extended to the maximum explored depth of 19 feet below ground surface (bgs). An approximately 2 foot thick layer of marsh deposits consisting of silt and black organic material overlying alluvial sediments occurred at approximately 4 to 6 feet bgs in the borings B2, B3, B15, and B18. There was no recovery at B14, located between B3 and B15. The marsh deposit appears to extend along SR 522 from the SR 527 intersection east, ending just before 101st Avenue NE. Extending farther north on SR 527, subsurface deposits appear to be the recessional outwash materials identified in published documents.

Shallow groundwater was observed during drilling at depths of approximately 6 to 15 ft bgs.

Hydrocarbon-like odors were observed in B2 at approximately 6 ft bgs, in B3 at approximately 3 to 6 ft bgs, and in B18 at approximately 12 ft bgs. Otherwise no apparent contamination was noted.

4.2 Analytical Results

Laboratory reports are presented in **Appendix D**. Detected compounds are summarized in **Tables 4** and **5**. For purposes of this discussion, the analytical results are compared to MTCA Method A soil and groundwater cleanup levels. Method B cleanup levels were used for comparison when Method A cleanup levels were not available. These levels are also presented in **Tables 4** and **5**.

4.2.1 Quality Assurance Review

A quality assurance (QA) review was conducted on the analytical data. A QA report is included in **Appendix D**. All data were considered acceptable for use. None of the data were flagged with qualifiers with the exception of the duplicate soil sample from B2. Methylene chloride was detected in this sample a concentration that was slightly above the detection limit. Methylene chloride is a common laboratory solvent that may have been introduced during sample preparation. The sample result is flagged with an "H" qualifier to denote this probable bias in sample results.

A duplicate sample was collected for the 7 ft soil sample collected at B2 and the groundwater sample collected at B2. The B2 duplicate soil samples were analyzed for TPH-G, TPH-D, TPH-O, BTEX, and HVOCs. The duplicate groundwater sample from B2 was analyzed for the same compounds. Another duplicate groundwater sample was collected from B13 and was analyzed for HVOCs only. The relative percent differences for the compounds detected in the B2 duplicate soil samples and the B13

duplicate groundwater samples were within ranges indicating good homogeneity. However, the duplicate groundwater sample for B2 had greater than 20% relative percent difference (RPD) for TPH-G, TCE, and PCE, indicating some sample heterogeneity.

4.2.2 Soil

Halogenated VOCs: One soil sample from each borehole was analyzed for PCE, except for B9 and B14. As noted previously, the attempt at B9 was aborted. At B14 there was no soil sample recovery at any depth. PCE was detected in seven of the sixteen soil samples, specifically those collected at: B7, B8, B10, B11, B12, B15, and B16 (**Figure 3**). Detected concentrations ranged from 0.0011 to 0.027 mg/kg, all below the MTCA Method A cleanup level of 0.030 mg/kg. Two of the degradation products of PCE, TCE and cis-1,2-dichloroethene (c-DCE) were detected. TCE was detected in B5 at a concentration of 0.0086 mg/kg, and c-DCE was detected in B5, B6, and B12 at concentrations between 0.0013 and 0.034 mg/kg, below their respective Method A/B cleanup levels.

Petroleum Hydrocarbons: Hydrocarbons were screened for in soil samples collected at five borehole locations. Hydrocarbons were only detected in the 9 ft sample collected at B3 (**Figure 3**). TPH-G was detected at a concentration of 720 mg/kg. This concentration exceeds the MTCA Method A cleanup level of 30 mg/kg. TPH-O was detected at a concentration of 2,400 mg/kg, which exceeds the MTCA Method A cleanup level of 2,000 mg/kg. BTEX were all detected in this sample. Benzene, ethylbenzene, and total xylene concentrations of 6.0, 12, and 11.51, respectively all exceeded their Method A cleanup levels of 0.03, 6.0, and 9.0 mg/kg, respectively.

4.2.3 Groundwater

HVOCs: PCE was detected in all groundwater samples except B4, B5, B7, and B17. These sample locations were the most easterly and westerly ends of the project area, except B7 which is approximately 150 feet west of the SR 522/SR 527 intersection. In many instances, one or more of PCEs' degradation products (TCE, c-DCE, trans 1,2-dichlorothene [t-DCE], and vinyl chloride [VC]) were detected in conjunction with the PCE (**Figure 4**). PCE concentrations ranged from 0.21 µg/L to 57 µg/L. The Method A cleanup level of 5 µg/L for PCE was exceeded in eight samples, specifically: B1, B2, B3, B10, B11, B12, B14, and B18. TCE was detected at B1, B2, B6, B14, and B15 with concentrations ranging from 0.54 to 11 µg/L. TCE concentrations exceeded the MTCA Method A cleanup level of 5 µg/L at B2, B6, and B18. c-DCE was detected at B1, B2, B6, B14, and B15 at concentrations ranging from 0.33 to 76 µg/L. B6 was the only location that had a detection of t-DCE (0.66 µg/L). Vinyl chloride was detected at B6 and B18, at concentrations of 0.89 and 2.7 µg/L, respectively. The MTCA Method A cleanup level for vinyl chloride was exceeded at both B6 and B18 as the cleanup level is 0.2 µg/L.

Other HVOCs detected included 1,2-dichloroethane, chloroform and chlorobenzene. 1,2-dichloroethane was detected only at B6 at a concentration of 6.5 µg/L, which exceeds the Method B carcinogenic-based cleanup level of 0.48 µg/L . Chloroform,

possibly a transient byproduct of chlorinated drinking water, was detected at B8, B10, B11, B12, and B14 at concentrations ranging from 0.22 to 1.6 µg/L, all below the Method B cleanup level of 7.2 µg/L. Chlorobenzene was detected at B2 and B18 at concentrations of 0.22 and 0.55 µg/L, respectively, below the Method B cleanup level of 160 µg/L.

Petroleum Hydrocarbons: Hydrocarbons were detected in three groundwater samples collected near the intersection of SR 522 and SR 527: B2, B3, and B18 (**Figure 5**). TPH-G was detected in groundwater sampled from B2 and B3, but at concentrations below the MTCA Method A cleanup level of 800 µg/L. One or more of the BTEX compounds were detected at B2, B3, and B18. Concentrations of benzene exceeded the MTCA Method A cleanup level of 5.0 µg/L at B3 and B18 with concentrations of 5.7 and 13, respectively.

Section 5
Conclusions

The common dry cleaning solvent PCE and its degradation products were detected in soil and groundwater throughout the project area, indicating multiple sources of PCE releases. Based on the configuration of PCE concentrations with respect to the historical locations of dry cleaners and data collected by others on various private properties, CDM offers the following conclusions:

- PCE that apparently originates at the Ultra Custom Dry Cleaning property is migrating south along utility corridors in SR 527. Since PCE concentrations are higher south of the intersection with NE 183rd Street than the furthest north boring, and based on prior studies by others, it appears that the majority of the PCE is originating from the former Raincheck Cleaners facility.

- PCE concentrations in groundwater at the eastern end of the project area, near the intersection with 101st Avenue NE are lower (by two orders of magnitude) than PCE concentrations observed at the Riverside acquisition property to the south. Given this information, the former Bothell Cleaners does not appear to be a source of the PCE underlying SR 522. Rather, there appears to be another, as yet unidentified source of PCE within the acquisition property.

- PCE concentrations downgradient of the former Simon & Sons dry cleaner are low, particularly given the high dissolved PCE concentrations and presence of DNAPL historically observed on that property. One or several factors may be contributing to these low concentrations: 1) prior interim remedial actions may have served to substantially diminished PCE concentrations, 2) natural attenuation may be effectively reducing contaminant concentrations, and/or 3) the nature and extent of contamination has not been fully defined.

Hydrocarbon contamination was confirmed in groundwater at the SR 522/Main Street intersection. The former Mobile station at the northeast corner of SR 522/SR 527 appears to be the source, but only a moderately high concentration of benzene was detected. Hydrocarbon contamination was also confirmed in soil and groundwater in SR 522 at the intersection of SR 527. The current data is not sufficient to ascertain whether the source is the former Signal station to the south or the former Associated station to the north across the street – and possibly both sites are sources. However, we surmise that the Signal gas station occupied area that is now roadway prior to the current configuration. This, and based on the presence of the concentrations of the less mobile oil-range hydrocarbons observed in soil, the most likely source of the hydrocarbons appears to be the former Signal gas station.

Section 6
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Tables

Table 1
Laboratory Analyses by Boring Location
King County/City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Sample Location	Sample Depth (ft bgs)	Analytical Method							
		EPA Test Methods		Northwest Test Methods					
		8021	8260B	NWTPH-HCID			NWTPH-Gx	NWTPH-Dx	
		BTEX	HVOCs	Gas Range	Diesel Range	Oil Range	Gasoline	Diesel	Lube Oil
Soil									
B1	6		✔						
B2	7		✔	✔	✔	✔			
dup of B2	7		✔	✔	✔	✔			
B3	9	✔	✔	✔	✔	✔	✔	✔	✔
B4	6		✔						
B5	8		✔						
B6	8		✔	✔	✔	✔			
B7	9		✔	✔	✔	✔			
B8	7		✔						
B10	6		✔						
B11	6		✔						
B12	5		✔						
B13	6		✔	✔	✔	✔			
B15	10		✔						
B16	13		✔						
B17	11		✔						
B18	7		✔						
Water									
B1-W	N/A		✔	✔	✔	✔			
B2-W	N/A	✔	✔	✔	✔	✔	✔		
dup of B2-W	N/A	✔	✔	✔	✔	✔	✔		
B3-W	N/A	✔	✔	✔	✔	✔	✔		
B4-W	N/A		✔						
B5-W	N/A		✔						
B6-W	N/A		✔	✔	✔	✔			
B7-W	N/A		✔	✔	✔	✔			
B8-W	N/A		✔						
B10-W	N/A		✔						
B11-W	N/A		✔						
B12-W	N/A		✔	✔	✔	✔			
B13-W	N/A		✔	✔	✔	✔			
B14-W	N/A		✔						
B15-W	N/A		✔						
B16-W	N/A		✔						
B17-W	N/A		✔						
B18-W	N/A	✔	✔	✔	✔	✔	✔		

Notes:
ft bgs - feet below ground surface.
BTEX - benzene, toluene, ethylbenzene, and xylenes.
HVOCs - halogenated volatile organic compounds.
HCID - hydrocarbon identification.
N/A - not applicable.

Table 2
Soil Analytes and Reporting Limits
King County/City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Analyte	Method	Method Detection Limit	Practical Quantitation Limit
Total Petroleum Hydrocarbons			
Hydrocarbon Screening	NWTPH-HCID	N/A	N/A
Gasoline (mg/kg)	NWTPH-Gx	0.609	5.0
Diesel (mg/kg)	NWTPH-Dx	8.78	25
Lube Oil (mg/kg)	NWTPH-Dx	14.6	50
BTEX (mg/kg)	8021B	--	--
Benzene		0.00476	0.010
Toluene		0.00504	0.050
Ethylbenzene		0.00225	0.050
m,p-Xylene		0.00666	0.050
o-Xylene		0.00316	0.050
Halogenated VOCs (µg/kg)	8260B	--	--
Dichlorodifluoromethane		0.732	1.0
Chloromethane		0.453	1.0
Vinyl Chloride		0.588	1.0
Bromomethane		0.468	1.0
Chloroethane		0.583	1.0
Trichlorofluoromethane		0.542	1.0
1,1-Dichloroethene		0.445	1.0
Iodomethane		0.352	5.0
Methylene Chloride		1.290	5.0
(trans) 1,2-Dichloroethene		0.488	1.0
1,1-Dichloroethane		0.386	1.0
2,2-Dichloropropane		0.681	1.0
(cis) 1,2-Dichloroethene		0.279	1.0
Bromochloromethane		0.330	1.0
Chloroform		0.229	1.0
1,1,1-Trichloroethane		0.765	1.0
Carbon Tetrachloride		0.477	1.0
1,1-Dichloropropene		0.516	1.0
1,2-Dichloroethane		0.395	1.0
Trichloroethene		0.355	1.0
1,2-Dichloropropane		0.434	1.0
Dibromomethane		0.361	1.0
Bromodichloromethane		0.392	1.0
2-Chloroethyl Vinyl Ether		0.739	5.0
(cis) 1,3-Dichloropropene		0.260	1.0
(trans) 1,3-Dichloropropene		0.249	1.0
1,1,2-Trichloroethane		0.508	1.0
Tetrachloroethene		0.330	1.0
1,3-Dichloropropane		0.840	1.0
Dibromochloromethane		0.346	1.0

Table 2
Soil Analytes and Reporting Limits
King County/City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Analyte	Method	Method Detection Limit	Practical Quantitation Limit
1,2-Dibromoethane		0.582	1.0
Chlorobenzene		0.281	1.0
1,1,1,2-Tetrachloroethane		0.503	1.0
Bromoform		0.349	1.0
Bromobenzene		0.292	1.0
1,1,2,2-Tetrachloroethane		0.300	1.0
1,2,3-Trichloropropane		0.533	1.0
2-Chlorotoluene		0.558	1.0
4-Chlorotoluene		0.582	1.0
1,2-Dichlorobenzene		0.229	1.0
1,3-Dichlorobenzene		0.317	1.0
1,4-Dichlorobenzene		0.342	1.0
1,2-Dibromo-3-chloropropane		0.608	5.0
1,2,4-Trichlorobenzene		0.378	1.0
Hexachlorobutadiene		0.360	5.0
1,2,3-Trichlorobenzene		0.372	1.0

Notes:
BTEX - benzene, toluene, ethylbenzene, xylenes.
HCID - hydrocarbon identification.
N/A - not applicable
TPH - total petroleum hydrocarbons.
VOCs - volatile organic compounds.
mg/kg - milligrams per kilogram.
µg/kg - micrograms per kilogram.

Table 3
Groundwater Analytes and Reporting Limits
King County/City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Analyte	Method	Method Detection Limit	Practical Quantitation Limit
Total Petroleum Hydrocarbons			
Hydrocarbon Screening	NWTPH-HCID	N/A	N/A
Gasoline (µg/L)	NWTPH-Gx	19.4	100
BTEX (µg/L)	8021B	--	--
Benzene		0.0865	1.0
Toluene		0.227	1.0
Ethylbenzene		0.0915	1.0
m,p-Xylene		0.298	1.0
o-Xylene		0.128	1.0
Halogenated VOCs (µg/L)	8260B	--	--
Dichlorodifluoromethane		0.1080	0.2
Chloromethane		0.1740	1.0
Vinyl Chloride		0.1830	0.2
Bromomethane		0.1350	1.0
Chloroethane		0.1950	1.0
Trichlorofluoromethane		0.1540	0.2
1,1-Dichloroethene		0.1510	0.2
Iodomethane		0.2440	1.0
Methylene Chloride		0.2190	1.0
(trans) 1,2-Dichloroethene		0.1540	0.2
1,1-Dichloroethane		0.0770	0.2
2,2-Dichloropropane		0.0771	0.2
(cis) 1,2-Dichloroethene		0.0662	0.2
Bromochloromethane		0.0848	0.2
Chloroform		0.1500	0.2
1,1,1-Trichloroethane		0.1020	0.2
Carbon Tetrachloride		0.0730	0.2
1,1-Dichloropropene		0.1720	0.2
1,2-Dichloroethane		0.1160	0.2
Trichloroethene		0.1440	0.2
1,2-Dichloropropane		0.1250	0.2
Dibromomethane		0.0777	0.2
Bromodichloromethane		0.0663	0.2
2-Chloroethyl Vinyl Ether		0.1670	1.0
(cis) 1,3-Dichloropropene		0.0888	0.2
(trans) 1,3-Dichloropropene		0.1180	0.2
1,1,2-Trichloroethane		0.0767	0.2
Tetrachloroethene		0.1500	0.2
1,3-Dichloropropane		0.1360	0.2
Dibromochloromethane		0.1620	0.2

Table 3
Groundwater Analytes and Reporting Limits
King County/City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Analyte	Method	Method Detection Limit	Practical Quantitation Limit
1,2-Dibromoethane		0.1060	0.2
Chlorobenzene		0.1540	0.2
1,1,1,2-Tetrachloroethane		0.1110	0.2
Bromoform		0.2010	1.0
Bromobenzene		0.0735	0.2
1,1,2,2-Tetrachloroethane		0.0779	0.2
1,2,3-Trichloropropane		0.1640	0.2
2-Chlorotoluene		0.1850	0.2
4-Chlorotoluene		0.1230	0.2
1,2-Dichlorobenzene		0.0891	0.2
1,3-Dichlorobenzene		0.1140	0.2
1,4-Dichlorobenzene		0.1080	0.2
1,2-Dibromo-3-chloropropane		0.5250	1.0
1,2,4-Trichlorobenzene		0.0681	0.2
Hexachlorobutadiene		0.1320	0.2
1,2,3-Trichlorobenzene		0.0815	0.2

Notes:
BTEX - benzene, toluene, ethylbenzene, xylenes.
HCID - hydrocarbon identification.
N/A - not applicable
TPH - total petroleum hydrocarbons.
VOCs - volatile organic compounds.
mg/L - milligrams per liter.
µg/L - micrograms per liter.

Table 4
Summary of Analytical Detections - Soil
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Analysis	MTCA Method A Cleanup Level [a] (mg/kg)	Sample I.D., Sample Depth (ft bgs), Date Sampled							
		B1	B2*	B3	B4	B5	B6	B7	B8
		6	7	9	6	8	8	9	7
		4/6/2009	4/2/2009	4/3/2009	4/2/2009	4/2/2009	4/1/2009	4/1/2009	4/7/2009
TPH-HCID (mg/kg)									
Gasoline	--	--	ND/ND	D	--	--	ND	ND	--
Diesel	--	--	ND/ND	D	--	--	ND	ND	--
Lube Oil	--	--	ND/ND	D	--	--	ND	ND	--
TPH-Gx (mg/kg)									
Gasoline	30/100 [b]	--	--/--	**720**	--	--	--	--	--
TPH-Dx (mg/kg)									
Diesel	2,000	--	--/--	<46	--	--	--	--	--
Lube Oil	2,000	--	--/--	**2,400**	--	--	--	--	--
BTEX (mg/kg)									
Benzene	0.03	--	--/--	**6.0**	--	--	--	--	--
Toluene	7.0	--	--/--	1.1	--	--	--	--	--
Ethylbenzene	6.0	--	--/--	**12**	--	--	--	--	--
m,p-Xylene	9.0 [c]	--	--/--	**11**	--	--	--	--	--
o-Xylene	9.0 [c]	--	--/--	0.51	--	--	--	--	--

Table 4
Summary of Analytical Detections - Soil
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Analysis	MTCA Method A Cleanup Level [a] (mg/kg)	Sample I.D., Sample Depth (ft bgs), Date Sampled							
		B1 6 4/6/2009	B2* 7 4/2/2009	B3 9 4/3/2009	B4 6 4/2/2009	B5 8 4/2/2009	B6 8 4/1/2009	B7 9 4/1/2009	B8 7 4/7/2009
Halogenated Volatile Organic Compounds (mg/kg)									
Methylene Chloride		< 0.0049	<0.0079/0.84 H	<0.94	<0.0060	<0.0057	<0.0055	<0.0052	<0.0050
(cis) 1,2-Dichloroethene	800[d]	<0.00099	<0.0016/<0.11	<0.19	<0.0012	0.034	0.0027	<0.0010	<0.0010
Trichloroethene	0.03	<0.00099	<0.0016/<0.11	<0.19	<0.0012	0.0086	<0.0011	<0.0010	<0.0010
Tetrachloroethene	0.05	0.0054	<0.0016/<0.11	<0.19	<0.0012	<0.0011	<0.0011	0.0012	0.0017
Vinyl Chloride	670[d]	<0.00099	<0.0016/<0.11	<0.19	<0.0012	<0.0011	<0.0011	<0.0010	<0.0010

Table 4
Summary of Analytical Detections - Soil
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Analysis	MTCA Method A Cleanup Level [a] (mg/kg)	Sample I.D., Sample Depth (ft bgs), Date Sampled							
		B10 6 4/7/2009	B11 6 4/7/2009	B12 5 4/7/2009	B13 6 4/2/2009	B15 10 4/3/2009	B16 13 4/3/2009	B17 11 4/2/2009	B18 7 4/7/2009
TPH-HCID (mg/kg)									
Gasoline	--	--	--	--	ND	--	--	--	--
Diesel	--	--	--	--	ND	--	--	--	--
Lube Oil	--	--	--	--	ND	--	--	--	--
TPH-Gx (mg/kg)									
Gasoline	30/100 [b]	--	--	--	--	--	--	--	--
TPH-Dx (mg/kg)									
Diesel	2,000	--	--	--	--	--	--	--	--
Lube Oil	2,000	--	--	--	--	--	--	--	--
BTEX (mg/kg)									
Benzene	0.03	--	--	--	--	--	--	--	--
Toluene	7.0	--	--	--	--	--	--	--	--
Ethylbenzene	6.0	--	--	--	--	--	--	--	--
m,p-Xylene	9.0 [c]	--	--	--	--	--	--	--	--
o-Xylene	9.0 [c]	--	--	--	--	--	--	--	--

Table 4
Summary of Analytical Detections - Soil
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Analysis	MTCA Method A Cleanup Level [a] (mg/kg)	Sample I.D., Sample Depth (ft bgs), Date Sampled							
		B10 6 4/7/2009	B11 6 4/7/2009	B12 5 4/7/2009	B13 6 4/2/2009	B15 10 4/3/2009	B16 13 4/3/2009	B17 11 4/2/2009	B18 7 4/7/2009
Halogenated Volatile Organic Compounds (mg/kg)									
Methylene Chloride		<0.0048	<0.0054	<0.0045	<0.0055	<0.0085	<0.0051	<0.0057	<0.0065
(cis) 1,2-Dichloroethene	800[d]	<0.00097	<0.0011	0.0013	<0.0011	<0.0017	<0.0010	<0.0011	<0.0013
Trichloroethene	0.03	<0.00097	<0.0011	<0.00090	<0.0011	<0.0017	<0.0010	<0.0011	<0.0013
Tetrachloroethene	0.05	0.016	0.0030	0.0011	<0.0011	0.027	0.0041	<0.0011	<0.0013
Vinyl Chloride	670[d]	<0.00097	<0.0011	<0.00090	<0.0011	<0.0017	<0.0010	<0.0011	<0.0013

Notes:
* Second value is from B19 which is a duplicate of B2.
Values in bold exceed MTCA Method A soil cleanup levels for unrestricted land use.
a) Washington Administrative Code Chapter 173-340, Model Toxics Control Act Cleanup Regulation, Method A suggested soil cleanup level; promulgated August 15, 2001.
b) 100 mg/kg without benzene and total of ethylbenzene, toluene, and xylenes are less than 1% of the gasoline mixture; 30 mg/kg in all other gasoline mixtures
c) Total value for all xylenes.
d) Method B formula values (direct contact pathway as a carcinogen or noncarcinogen whichever is lowest) from the Department of Ecology Cleanup Levels an Risk Calculations (CLARC) tables. Downloaded from Ecology's website May 20, 2009.
mg/kg - milligrams per kilogram.
NWTPH-HCID - Northwest Total Petroleum Hydrocarbons - Hydrocarbon Identification.
NWTPH-Gx - Northwest Total Petroleum Hydrocarbons - Gasoline Range.
NWTPH-Dx - Northwest Total Petroleum Hydrocarbons - Diesel and Lube Oil Ranges.
BTEX - benzene, toluene, ethylbenzene, xylenes.
D - detected.
ND - not detected.
H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
NE - No value is established.
-- not analyzed.
< - analyte not detected at or greater than the listed concentration.

Table 5
Summary of Analytical Detections - Water
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Analysis	MTCA Method A Cleanup Level (µg/L) [a]	Sample I.D. / Date Sampled						
		B1-W	B2-W*	B3-W	B4-W	B5-W	B6-W	B7-W
		4/6/2009	4/2/2009	4/3/2009	4/2/2009	4/2/2009	4/1/2009	4/1/2009
NWTPH-HCID (µg/L)								
Gasoline		ND	D/D	D	--	--	ND	ND
Diesel		ND	ND/ND	ND	--	--	ND	ND
Lube Oil		ND	ND/ND	ND	--	--	ND	ND
NWTPH-Gx (µg/L)								
Gasoline	800/1,000 [b]	--	210/380	270	--	--	--	--
NWTPH-Dx (µg/L)								
Diesel	500	--	--/--	--	--	--	--	--
Lube Oil	500	--	--/--	--	--	--	--	--
BTEX (µg/L)								
Benzene	5.0	--	<1.0/<1.0	**5.7**	--	--	--	--
Toluene	1,000	--	<1.0/<1.0	<1.0	--	--	--	--
Ethylbenzene	700	--	<1.0/<1.0	3.5	--	--	--	--
m,p-Xylene	1,000 [c]	--	1.3/1.5	4.1	--	--	--	--
o-Xylene	1,000 [c]	--	<1.0/<1.0	<1.0	--	--	--	--

Table 5
Summary of Analytical Detections - Water
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Analysis	MTCA Method A Cleanup Level (µg/L) [a]	Sample I.D. Date Sampled						
		B1-W	B2-W*	B3-W	B4-W	B5-W	B6-W	B7-W
		4/6/2009	4/2/2009	4/3/2009	4/2/2009	4/2/2009	4/1/2009	4/1/2009
Volatile Organic Compounds (µg/L)								
Tetrachloroethene	5.0	**20**	**25**	**20**	<0.20	<0.20	3.4	<0.20
Trichloroethene	5.0	1.4	**11**	<0.20	<0.20	<0.20	**6.4**	<0.20
(cis) 1,2-Dichloroethene	80[d]	1.6	5.0	<0.20	<0.20	<0.20	76	<0.20
(trans) 1,2-Dichloroethene	160[d]	<0.20	<0.20	<0.20	<0.20	<0.20	0.66	<0.20
1,2-Dichloroethane	0.48[d]	<0.20	<0.20	<0.20	<0.20	<0.20	6.5	<0.20
Vinyl Chloride	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	**0.89**	<0.20
Chloroform	7.2[d]	<0.20	<0.20	<0.20	<0.20	<0.20	<0.40	<0.20
Chlorobenzene	160[d]	<0.20	0.22	<0.20	<0.20	<0.20	<0.40	<0.20

Table 5
Summary of Analytical Detections - Water
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Analysis	MTCA Method A Cleanup Level (µg/L) [a]	Sample I.D. / Date Sampled						
		B8-W	B10-W	B11-W	B12-W	B13-W	B14-W	B15-W
		4/6/2009	4/7/2009	4/7/2009	4/7/2009	4/2/2009	4/3/2009	4/3/2009
NWTPH-HCID (µg/L)								
Gasoline		--	--	--	ND	ND	--	--
Diesel		--	--	--	ND	ND	--	--
Lube Oil		--	--	--	ND	ND	--	--
NWTPH-Gx (µg/L)								
Gasoline	800/1,000 [b]	--	--	--	--	--	--	--
NWTPH-Dx (µg/L)								
Diesel	500	--	--	--	--	--	--	--
Lube Oil	500	--	--	--	--	--	--	--
BTEX (µg/L)								
Benzene	5.0	--	--	--	--	--	--	--
Toluene	1,000	--	--	--	--	--	--	--
Ethylbenzene	700	--	--	--	--	--	--	--
m,p-Xylene	1,000 [c]	--	--	--	--	--	--	--
o-Xylene	1,000 [c]	--	--	--	--	--	--	--

Table 5
Summary of Analytical Detections - Water
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Analysis	MTCA Method A Cleanup Level (µg/L) [a]	Sample I.D. / Date Sampled						
		B8-W	B10-W	B11-W	B12-W	B13-W	B14-W	B15-W
		4/6/2009	4/7/2009	4/7/2009	4/7/2009	4/2/2009	4/3/2009	4/3/2009
Volatile Organic Compounds (µg/L)								
Tetrachloroethene	5.0	0.37	**54**	**49**	**57**	1.2/1.1 **	**5.9**	3.9
Trichloroethene	5.0	<0.20	<0.40	<0.20	<0.40	<0.20	0.54	1.8
(cis) 1,2-Dichloroethene	80[d]	<0.20	<0.40	<0.20	<0.40	<0.20	0.33	1.4
(trans) 1,2-Dichloroethene	160[d]	<0.20	<0.40	<0.20	<0.40	<0.20	<0.20	<0.20
1,2-Dichloroethane	0.48[d]	<0.20	<0.40	<0.20	<0.40	<0.20	<0.20	<0.20
Vinyl Chloride	0.2	<0.20	<0.40	<0.20	<0.40	<0.20	<0.20	<0.20
Chloroform	7.2[d]	0.22	1.6	1.6	1.5	<0.20	0.72	<0.20
Chlorobenzene	160[d]	<0.20	<0.40	<0.20	<0.40	<0.20	<0.20	<0.20

Table 5
Summary of Analytical Detections - Water
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

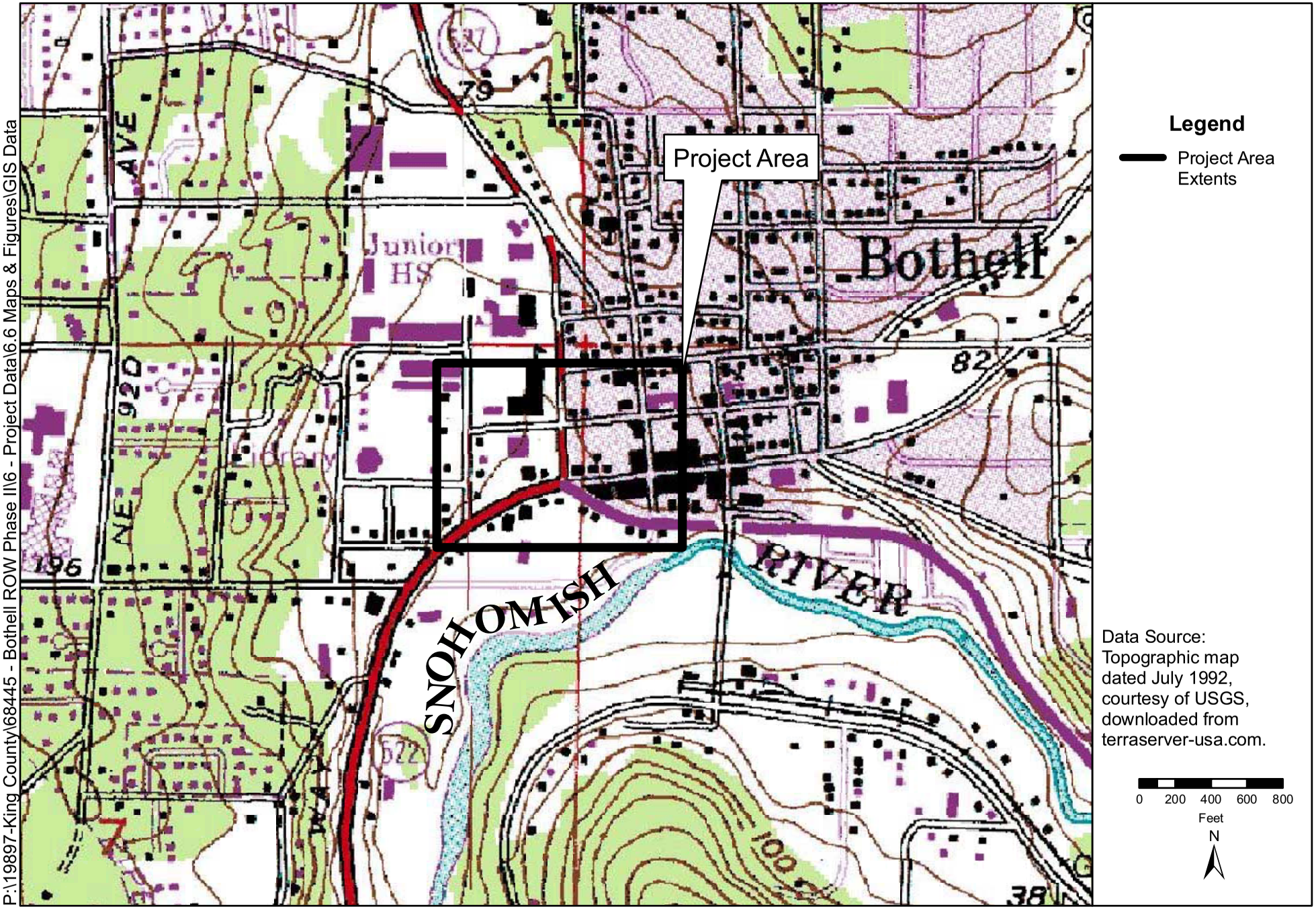
Analysis	MTCA Method A Cleanup Level (µg/L) [a]	Sample I.D. Date Sampled		
		B16-W	B17-W	B18-W
		4/3/2009	4/2/2009	4/6/2009
NWTPH-HCID (µg/L)				
Gasoline		--	--	D
Diesel		--	--	ND
Lube Oil		--	--	ND
NWTPH-Gx (µg/L)				
Gasoline	800/1,000 [b]	--	--	<400
NWTPH-Dx (µg/L)				
Diesel	500	--	--	--
Lube Oil	500	--	--	--
BTEX (µg/L)				
Benzene	5.0	--	--	**13**
Toluene	1,000	--	--	<4.0
Ethylbenzene	700	--	--	<4.0
m,p-Xylene	1,000 [c]	--	--	<4.0
o-Xylene	1,000 [c]	--	--	<4.0

Table 5
Summary of Analytical Detections - Water
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Analysis	MTCA Method A Cleanup Level (µg/L) [a]	Sample I.D. Date Sampled		
		B16-W	B17-W	B18-W
		4/3/2009	4/2/2009	4/6/2009
Volatile Organic Compounds (µg/L)				
Tetrachloroethene	5.0	0.21	<0.20	**57**
Trichloroethene	5.0	<0.20	<0.20	**9.9**
(cis) 1,2-Dichloroethene	80[d]	<0.20	<0.20	6.0
(trans) 1,2-Dichloroethene	160[d]	<0.20	<0.20	<0.40
1,2-Dichloroethane	0.48[d]	<0.20	<0.20	<0.40
Vinyl Chloride	0.2	<0.20	<0.20	**2.7**
Chloroform	7.2[d]	<0.20	<0.20	<0.40
Chlorobenzene	160[d]	<0.20	<0.20	0.55

Notes:
Values in bold exceed MTCA Method A cleanup levels for groundwater.
* Second value is from B19 which is a duplicate of B2.
** Results from separate analyses on 4/7/09 and 4/8 09, respectively.
a) Washington Administrative Code Chapter 173-340, Model Toxics Control Act Cleanup Regulation, Method A suggested groundwater cleanup level; promulgated August 15, 2001.
b) 800 µg/L if benzene is present in groundwater; 1,000 µg/L if no detectable benzene in water.
c) Total value for all xylenes.
d) Method B formula values (carcinogenic or noncarcinogenic, whichever is lower) from the Department of Ecology Risk Calculation (CLARC) tables. Downloaded from Ecology's website May 20, 2009.
µg/L - micrograms per liter.
NWTPH-HCID - Northwest Total Petroleum Hydrocarbons - Hydrocarbon Identification.
NWTPH-Gx - Northwest Total Petroleum Hydrocarbons - Gasoline Range.
NWTPH-Dx - Northwest Total Petroleum Hydrocarbons - Diesel and Lube Oil Ranges.
BTEX - benzene, toluene, ethylbenzene, xylenes.
D - detected.
ND - not detected.
NE - No value is established.
-- not analyzed.
< - analyte not detected at or greater than the listed concentration.

Figures



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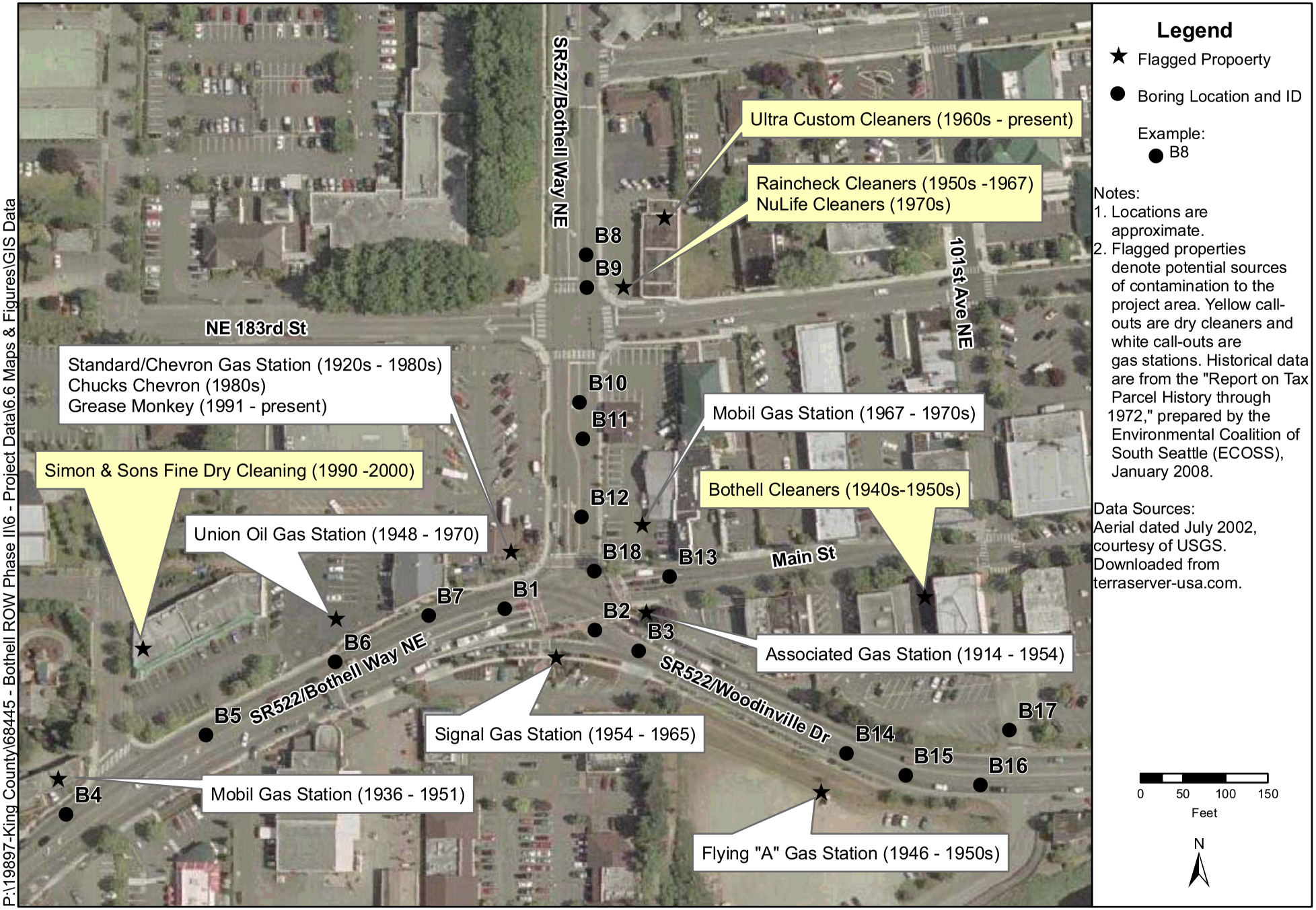
CDM

Phase II Environmental Site Assessment
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Figure 1
Site Location Map



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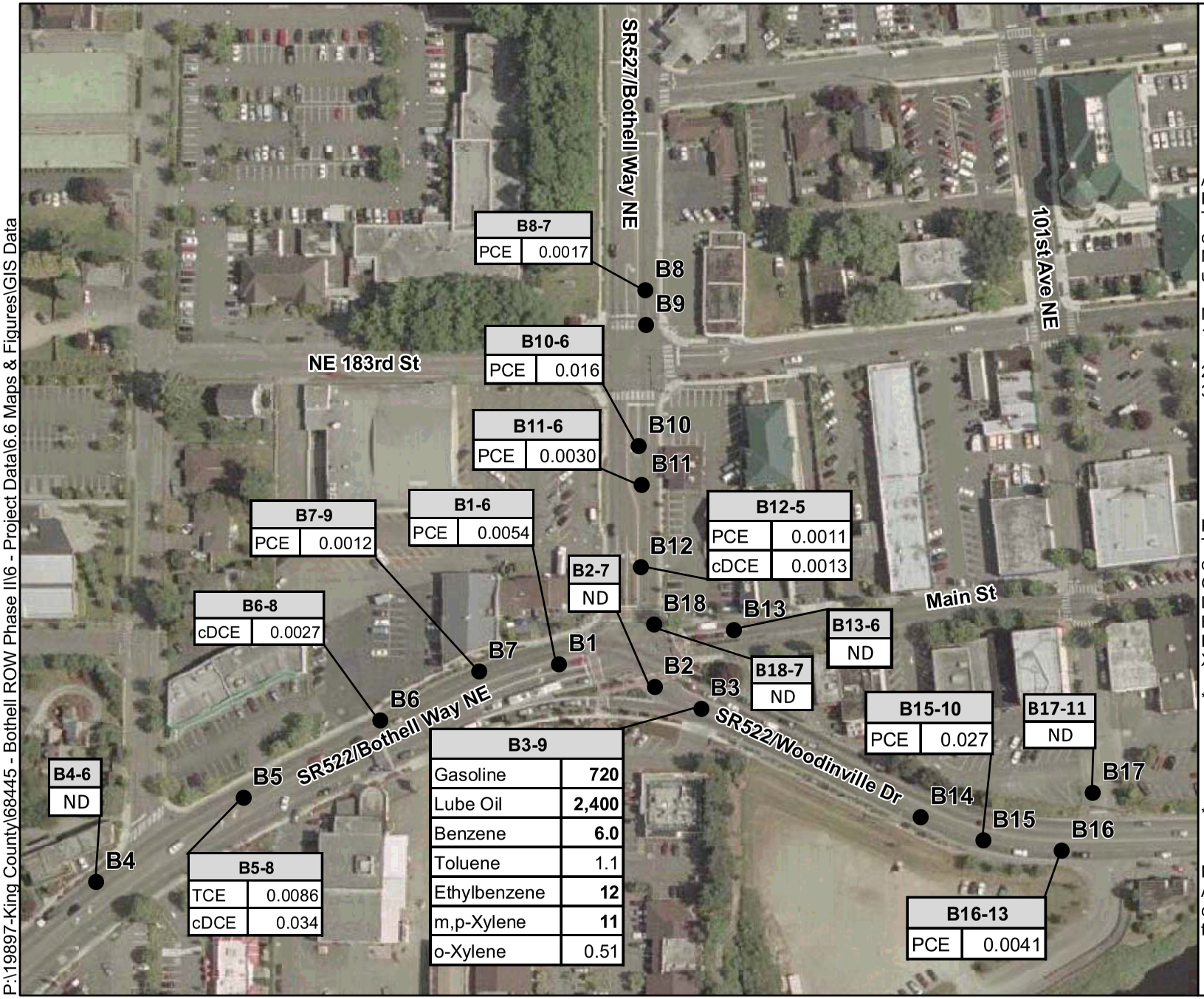
CDM

Phase II Environmental Site Assessment
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Figure 2
Boring and Historical Gas Station/
Dry Cleaning Location Map



Legend

● Boring Location, ID, and Sample Depth (feet)
Example:
B8-6

Abbreviations:

PCE	Tetrachloroethene
TCE	Trichloroethene
cDCE	(cis) 1,2-Dichloroethene
ND	All Analytes Non Detect
ug/L	micrograms per liter

Notes:
1. Boring locations are approximate.
2. B2 has a duplicate sample.
3. Values in bold exceed MTCA Method A soil cleanup levels for unrestricted land use.

MTCA Method A Cleanup Levels (mg/kg):

PCE	0.05
TCE	0.03
cDCE	Not Established
Gasoline*	30/100
Lube oil	2,000
Benzene	0.03
Ethylbenzene	6.0
Xylene (total)**	9.0

*100 mg/kg without benzene and total of ethylbenzene, toluene, and xylenes are less than 1% of the gasoline mixture; 30 mg/kg in all other gasoline mixtures.
** Total value for o, m, and p xylenes.

Data Sources:
Aerial dated July 2002, courtesy of USGS. Downloaded from terraserver-usa.com.

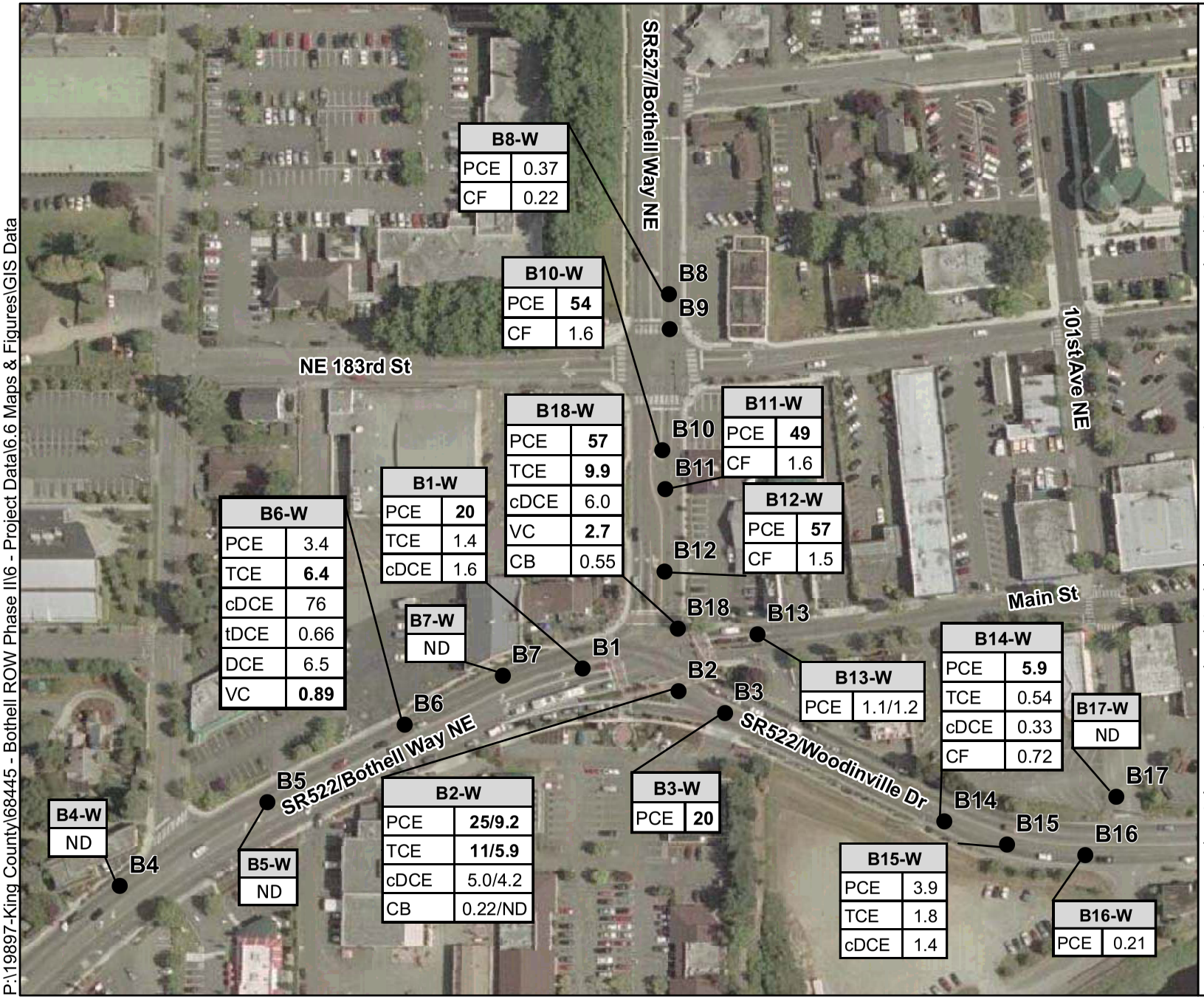
N
0 50 100 150
Feet

P:\19897-King County\68445 - Bothell ROW Phase II\6 - Project Data\6.6 Maps & Figures\GIS Data

CDM

Phase II Environmental Site Assessment
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Figure 3
Summary of Chlorinated VOCs and Hydrocarbons in Soil



Legend

● Boring Location and ID
Example:
● B8

Abbreviations:

PCE	Tetrachloroethene
TCE	Trichlorethene
cDCE	(cis) 1,2-Dichloroethene
tDCE	(trans) 1,2-Dichloroethene
DCE	1,2 Dichloroethane
VC	Vinyl Chloride
CF	Chloroform
CB	Chlorobenzene
ND	All Analytes Non Detect
ug/L	microgram per liter

Notes:
1. Boring locations are approximate.
2. B2 has a duplicate sample.
3. Values in bold exceed MTCA Method A cleanup levels for groundwater.

MTCA Method A Cleanup Levels (ug/L):

PCE	5.0
TCE	5.0
cDCE	Not Established
tDCE	Not Established
DCE	Not Established
VC	0.2
CF	Not Established
CB	Not Established

Data Sources:
Aerial dated July 2002, courtesy of USGS.
Downloaded from terraserver-usa.com.

0 50 100 150
Feet
N

P:\19897-King County\68445 - Bothell ROW Phase II\6 - Project Data\6.6 Maps & Figures\GIS Data

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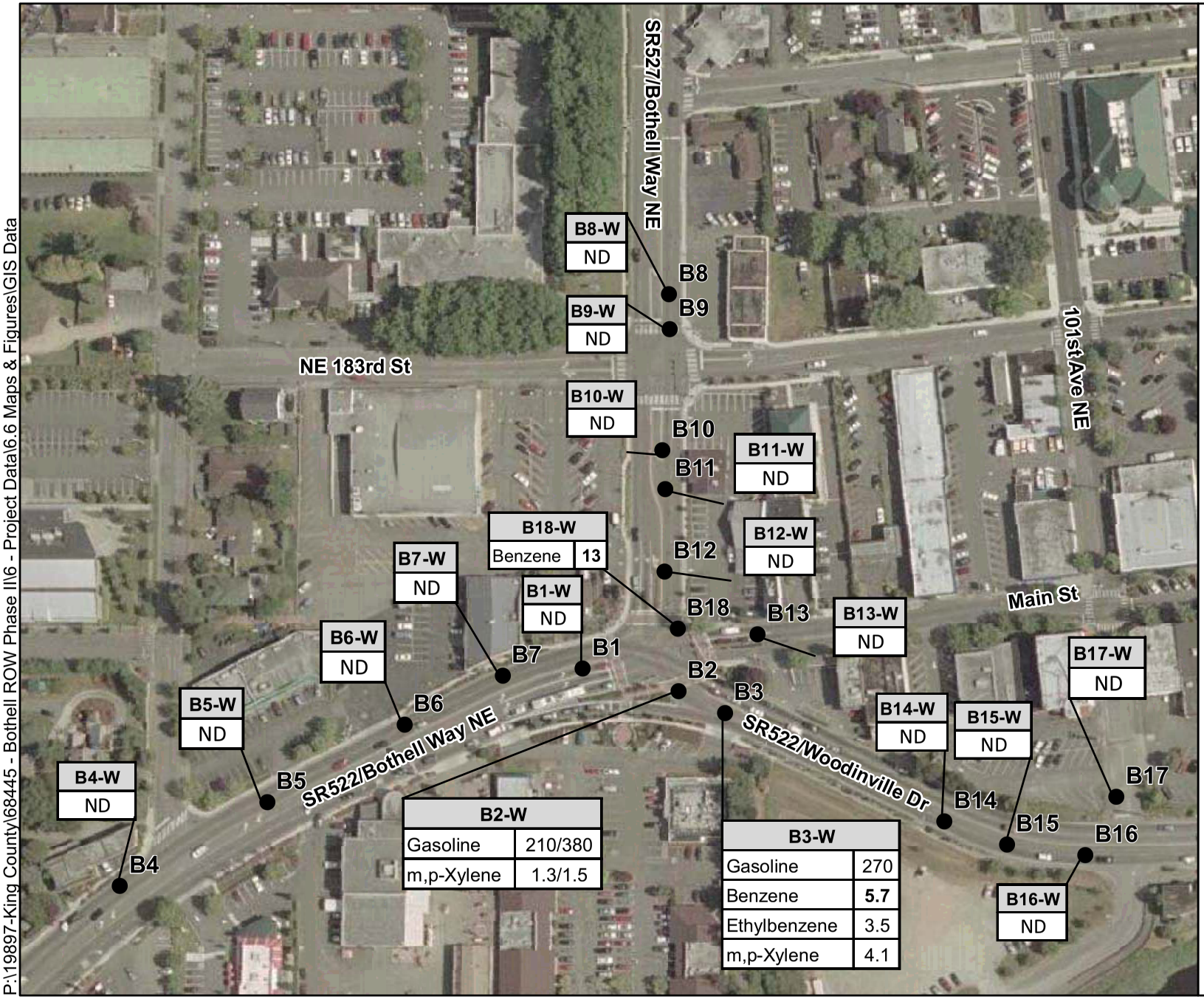
Phase II Environmental Site Assessment
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Figure 4
Summary of Chlorinated VOCs in Groundwater



Legend

● Boring Location and ID

Example:
● B8

Abbreviations:
ND All Analytes Non Detect

Notes:
1. Boring locations are approximate.
2. B2 has a duplicate sample.
3. Values in bold exceed MTCA Method A cleanup levels for groundwater.

MTCA Method A Cleanup Levels (ug/L):

Gasoline*	800/1,000
Benzene	5.0
Ethylbenzene	700
Xylene (total)**	1,000

*1,000 ug/L without benzene and total of ethylbenzene, toluene, and xylenes are less than 1% of the gasoline mixture; 800 ug/L in all other gasoline mixtures.
**Total value for o, m, and p xylenes.

Data Sources:
Aerial dated July 2002, courtesy of USGS. Downloaded from terraserver-usa.com.

P:\19897-King County\68445 - Bothell ROW Phase II\6 - Project Data\6.6 Maps & Figures\GIS Data

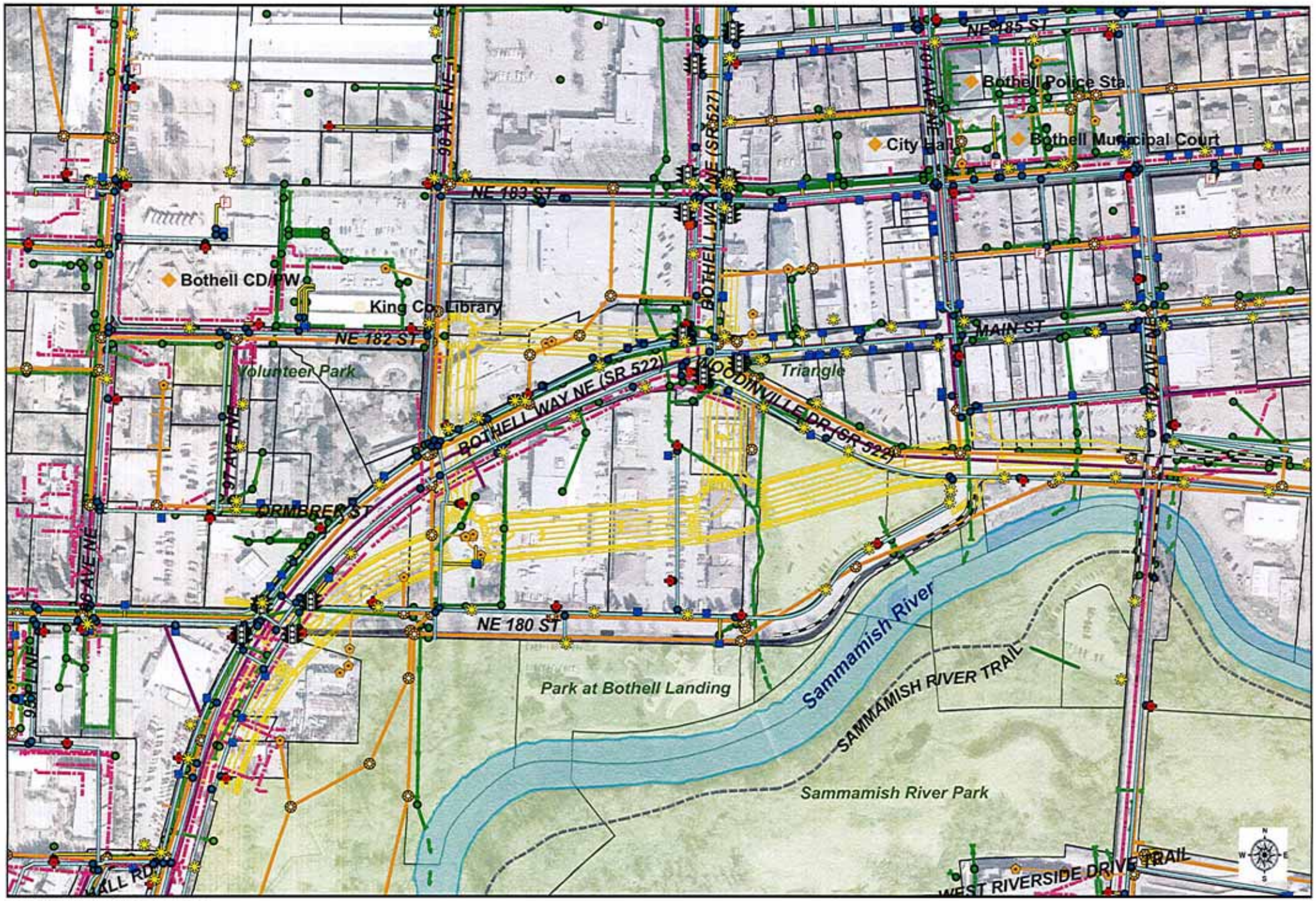
CDM

Phase II Environmental Site Assessment
City of Bothell Crossroads Redevelopment Project
Bothell, Washington

Figure 5
Summary of Hydrocarbons in Groundwater

Appendix A

Excerpts from Prior Environmental Data for the Project Area



Bothell Public Facilities - Legend

- Gateway Proposed Roadway Alignment
- Sewer Pipe
- Sewer Manhole
- Sewer Cleanout
- Water Pipe
- Water Meter
- Fire Hydrant
- Storm Line
- Storm Catchbasin
- AT&T Cable
- Verizon Wireless
- TrafficSignal
- StreetLight
- ControlBox
- Sidewalk
- GuardRail
- Local Government
- School
- Service Organization
- Commuter Trail
- Property Line
- Parks

100 50 0 100 Feet

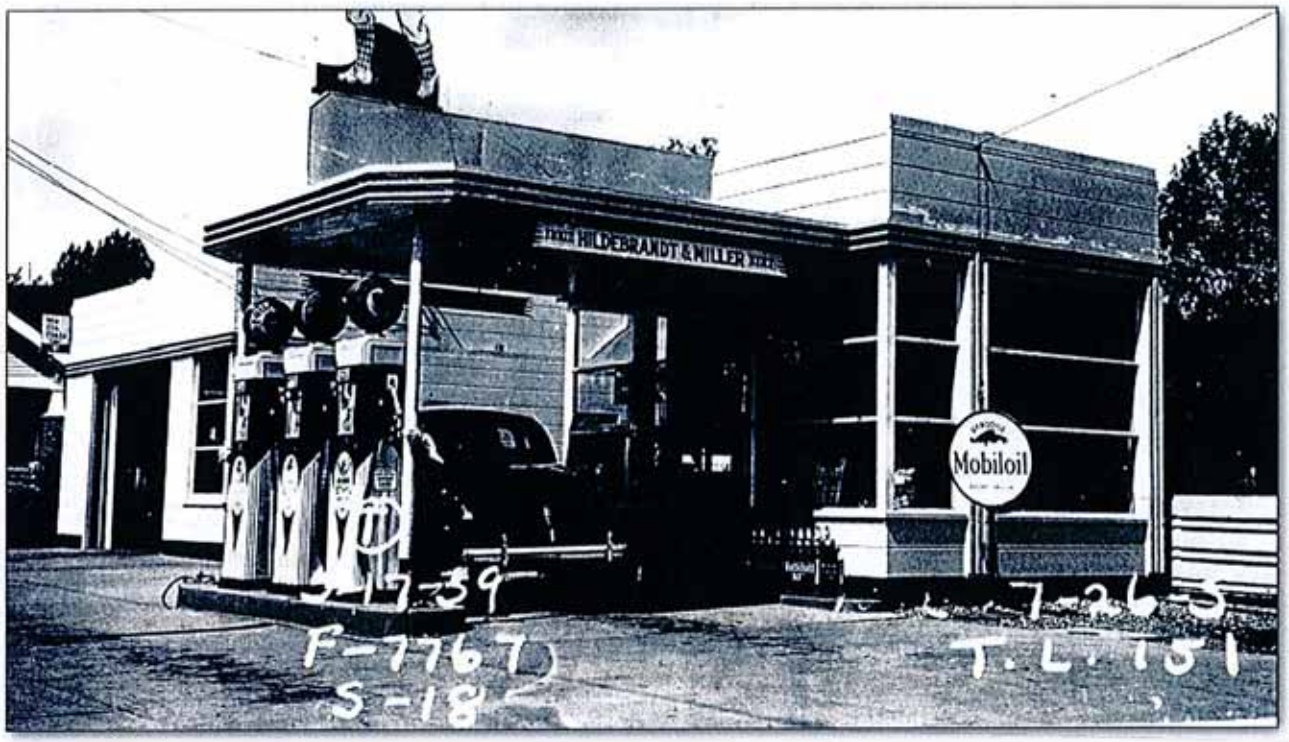
Data Sources:
Washington State Department of Transportation
Verizon
AT&T
Bothell GIS Division

City of Bothell
GIS Services
Map Production Date: October 18, 2006

City of Bothell - Public Facilities

City of Bothell
Revenue Development Area

Report on Tax Parcel History through 1972



Prepared by

Environmental Coalition of South Seattle (ECOSS)
for The King County Brownfields Program
King County Solid Waste Division
Department of Natural Resources and Parks
January 2008

This report was prepared for exclusive use by King County and the City of Bothell for this project only. The scope of the report was developed in conjunction with King County's and the City of Bothell's involvement to achieve specific project objectives, with the intent of establishing an appropriate balance between level of effort and uncertainty. Providing the report to others not party to this mutual scope determination, or using it for other projects or purposes, can result in misunderstandings or incorrect assumptions. ECOSS cannot be responsible for interpretation or extrapolation of the data contained herein, except as stated in the discussion section of the report.

Historical photos courtesy of
Puget Sound Regional Archive, Bellevue, WA

Introduction and Methodology

At a meeting in April 2007 between representatives from the King County Brownfields Program and a Senior Planner with the City of Bothell, it was learned that the city would be interested in having a "historic land use" study done of its Revenue Development Area (RDA), a geographic area designated by the Bothell City Council from which local sales and property tax revenues will be derived and where public improvements projects will be located following redevelopment of the downtown core business and commercial district. This redevelopment is planned to begin in 2009, and the city wishes to avoid "surprises" from contamination or hazardous materials in the soil or groundwater derived from previous land uses. Contamination could complicate redevelopment or reuse of targeted parcels.

The King County Brownfields Program agreed to conduct this study by examining tax and parcel records at the Puget Sound Regional Archives. The study was done by the Environmental Coalition of South Seattle (ECOSS) under contract with King County.

The Puget Sound Regional Archives, located on the campus of Bellevue Community College, provides archival and records management services for King, Pierce and Kitsap Counties. Available property tax information for King County consists of cards showing tax assessments, descriptions and dates of construction, ownership and (sometimes) photographs. These records are only complete up to 1972 and offer snapshot views of developments and commercial activity during the post WW II period when the city of Bothell was undergoing transformation from rural farmland to suburban development. Many businesses that may have given rise to environmental contamination began or were in operation during this period.

In addition to tax records up to 1972, street address listings for specific businesses were obtained from the R.L. Polk Seattle North Suburban Directories for 1975 and 1985 available at the Bellevue Regional Library. These listings generally confirm whether or not a specific business continued in existence until the 1980s. The King County GIS website "iMAP" (http://www.metrokc.gov/gis/mapportal/iMAP_main.htm) was consulted for data on more recent construction.

Finally, the sites (parcels) were checked to see if they were registered with the state in accordance with the Underground Storage Tank Regulations and/or listed on either of the Department of Ecology's Model Toxics Control Act (MTCA) lists: the Confirmed and Suspected Contaminated Sites List (CSCSL) or the Leaking Underground Storage Tank (LUST) list.

Database Development

The city supplied ECOSS with a database containing 365 parcels. Each parcel record was examined at the archive and classified according to whether it had been in residential or commercial use up to 1972. Commercial parcels were further classified to segregate those businesses that most likely could create soil and groundwater contamination such as gas stations, automotive repair shops and dry cleaners. The number of parcels in each category is shown in the table above.

Parcel Use Classification	Number of Parcels
Residential	173
Retail, professional or light manufacturing	82
Gas stations	15
Automotive repairs, garages	8
Dry Cleaning	2
School, library or church	9
Vacant land, or no records	76

ECOSS incorporated this data into the attached map (found on page 6) that uses different colors to distinguish various historic parcel uses. The map identifies 21 parcels or sites with historic uses that might be considered as a "Recognized Environmental Condition" (REC) under a Phase I site assessment. In many cases these historic uses continued long after 1972. At one of the selected sites (#18), a REC didn't occur until the 1990s. It is included however, because contamination from this site may impact adjacent parcels.

Details of the parcels with identified RECs along with historic and contemporary photos are presented in the section beginning on page 7. These sites are also located by number on the attached map. A complete list of parcels along with their principal uses prior to 1972 is provided in the Appendix, beginning on page 28.

Discussion of Findings

Of the 21 sites described, all but four had (or have) underground storage tanks (USTs) containing petroleum products. Under state regulations all commercial USTs must be registered with the state, however according to the UST registration database dated November 8, 2007, only eight of the 17 UST sites are listed. Two of these (Sites #3 and #20) are shown to be "operational" and the remaining six sites have had their tanks removed or closed in place. Site #5 is an operating gas station that for some reason doesn't show up on Ecology's list of registered tanks but is listed on the CSCSL. This leaves eight parcels (sites) with historical records of USTs and little or no public record of tank removal or cleanup.

Two of these sites (#4 and #9) were redeveloped as bank branches in the 1980s and one might presume that the tanks and any attendant contamination were removed prior to construction. However, since the UST regulations did not come into effect until the 1990s, contamination issues may not have been addressed with the rigor that is required today.

Site #6, the Café Ladro Restaurant, is the former Tom's Arco, a gas station dating back to 1965. There are no public records available on the status of the underground tanks. They might have been removed, but again since the station shut down before the tanks were subject to regulation (the R.L. Polk Directory for 1977 lists Empack Enterprises General Contractors at that address), there is no record that the USTs were removed and petroleum contamination assessed.

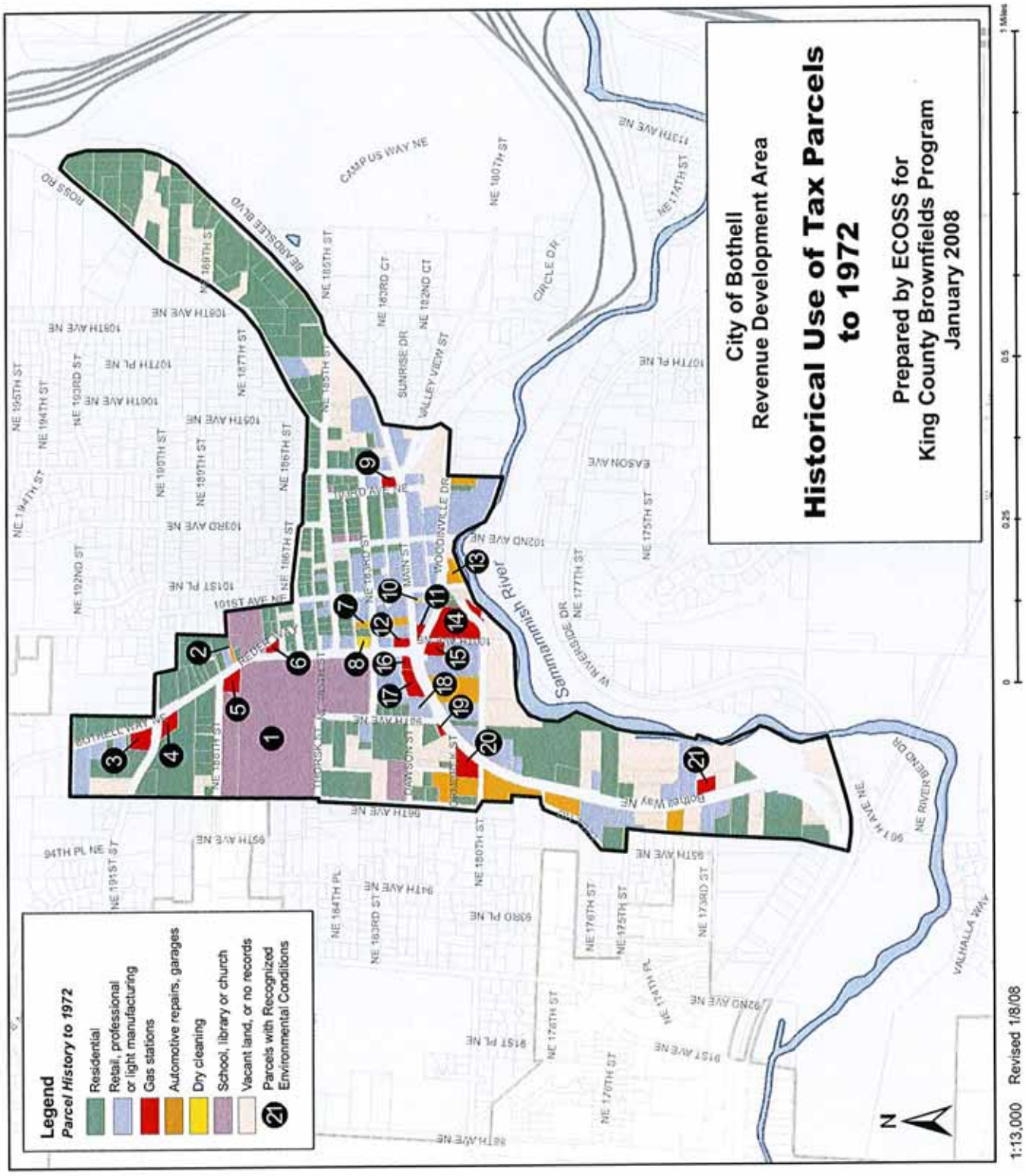
Tax records indicate four small USTs were removed at Site #11 in 1954 but cleanup of any contaminated soil to modern standards would be unlikely.

The remaining four sites (#2, #13, #14 and #19) do not have any public records of tank removal or assessment because the tanks were taken out of service before UST site assessments were required.

In addition to these former UST sites and the former dry cleaners at Sites #8 and #18, another parcel that might be of concern is Site #10 where Bothell Dry Cleaners was located for a time in the 1940s and 1950s. It is unlikely that anyone conducted an assessment for possible solvent contamination in soil and groundwater when the current building was constructed in the 1960s.

Should a developer or the city consider acquiring or reusing any of the 21 parcels described above (or adjacent parcels for that matter), they should conduct a thorough site assessment to determine if contamination is present from past use.

Map of Bothell sites with Recognized Environmental Conditions



Parcels with Recognized Environmental Conditions (RECs)

Site 1

Parcel 0626059052

Northshore School District (NSD) Property 180603 - Bothell Way NE

A portion of this parcel was used as Bothell High School's auto shop and currently is being used as a repair facility for the Northshore School District. The repair facility, located at 18421 98th Ave. NE, is listed on the CSCSL (Site ID 95211555) for petroleum, metals and polycyclic aromatic hydrocarbon (PAH) contamination. It is undergoing independent remedial action under Ecology's Voluntary Cleanup Program (VCP).

Bothell High School Auto Shop

1960s

2007

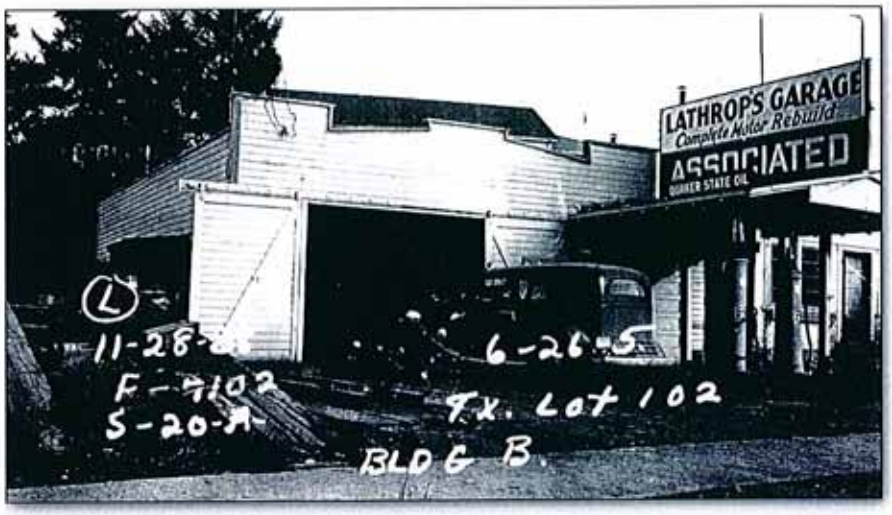
Site 2

Parcel 0626059102

Lathrop's Garage and Associated Gas Station (1938-1948)
Address unknown

A small sliver of land on the east side of Bothell Way NE across from the former High School was once the site of a small garage and gas station. Tax records indicate it had one 550 gallon underground storage tank (UST) and one 285 gallon UST. It is currently empty and used for parking. The upper photo is from the 1930s and the site today is shown in the lower photo. It is not on Ecology's CSCSL or LUST list.

Lathrop's Garage and Gas



1930s

2007

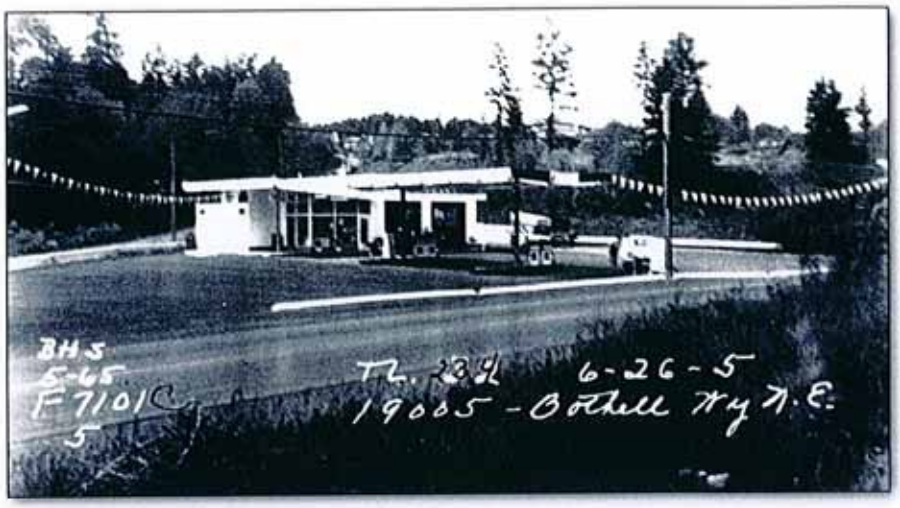
Site 3

Parcel 0626059234

Former Humble Oil Gas Station (1965),
Gary's Exxon (1974)
19005 Bothell Way NE

Humble Oil (now ExxonMobil) built a modern gas station in 1965 as seen in the upper photo. It had one 6,000 gallon UST and two 4,000 gallon USTs for gasoline and a 500 gallon UST for either heating or waste oil as well as two hydraulic lifts. It is listed in the 1975 North Seattle Suburban Directory as Gary's Exxon. It is currently an active Shell Gas Station and minimart as shown in the lower photo, taken in 2007. This site is not on Ecology's CSCSL or LUST list.

Humble Oil Gas Station / Gary's Exxon site



1960s

Currently a Shell Station

2007

Site 4

Parcel 0626059240

Former Texaco Gas Station (1966), Jim's Texaco (1974)
18925 Bothell Way NE

Like Gary's Exxon, this site was developed in the mid-1960s. Tax records say it had two 10,000 gallon USTs and one 300 gallon UST and two hoists. This site was redeveloped in 1981 and is now law offices and a branch of Washington Mutual Savings Bank. It is not on Ecology's CSCSL or LUST list.

Texaco Station

1960s

2007

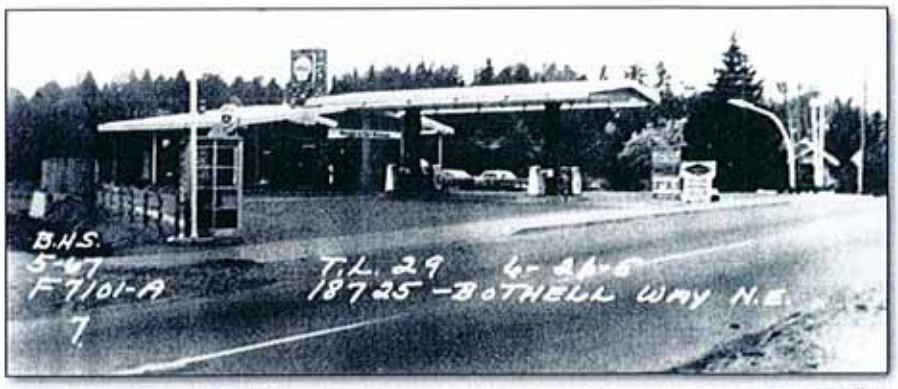
Site 5

Parcel 0626059029

The Gas Station (1975),
Mobil Video Mart (1985)
18725 Bothell Way NE

The archive tax records indicate that this parcel was residential until Shell Oil built a gas station in 1964. The station had one 6,000 gallon UST, one 4,000 gallon UST, one 550 gallon UST and two hydraulic hoists. The R.L. Polk Directory for 1975 has a listing for "The Gas Station" at this address. Today it is a ConocoPhilips 76 gas station and convenience store. It is listed on Ecology's CSCSL as BP Station 11352 (Site ID 2302), but it is not on Ecology's LUST list.

Shell Station



1960s

Current ConocoPhilips Station

2007

Site 6

Parcel 0970000120

Bothell Auto Camp (1922), Richfield Gas Station (1965)
Jack's Arco Station (1974)
18610 Bothell Way NE

This is one of the parcels for which there are a number of historic photos in the archive. Originally developed as the Bothell Auto Camp and cabins in the 1920s, it later became a restaurant that was torn down sometime in the 1950s. A Richfield Gas station was built on the site in 1965 that had one 6,000 gallon UST, two 4,000 gallon USTs and one 500 gallon UST. The station also had two hydraulic hoists. It became Jack's Arco station in 1974. Today the former gas station is the Café Ladro restaurant. The site is not on Ecology's CSCSL or LUST list.

Bothell Auto Camp

1930s

Sugar Bowl Restaurant

1940s

Richfield / Jack's Arco Gas Station

1960s

Cafe Ladro

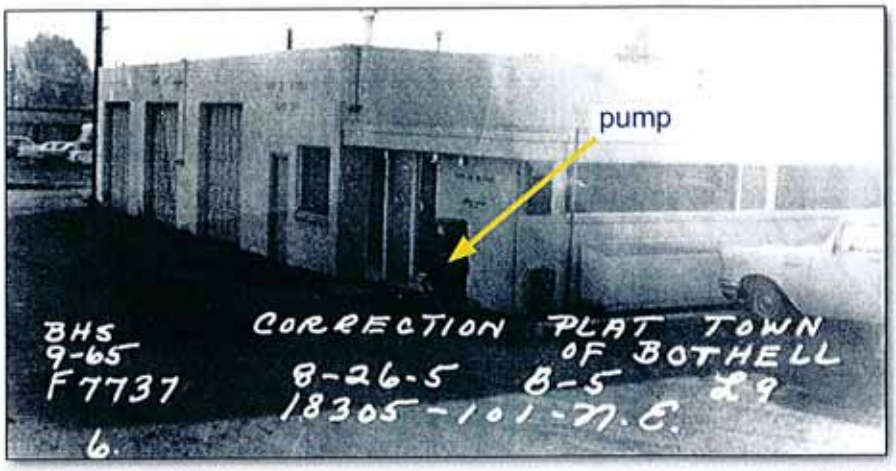
2007

Site 7

Bothell Municipal Shop and Garage

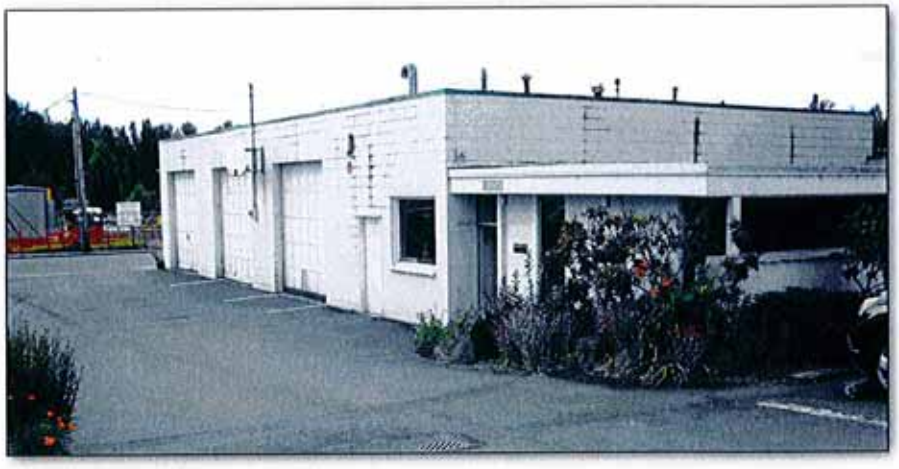
Parcel 0967000300

Municipal shop and garage with gas pump 10016 NE183rd Street (behind city hall 18305 101st Ave NE)



1960s

The municipal shops and garage date from 1954 and it is apparent from the photo above right that there was a gas pump on the east side of the building. In the current view, the pump has been removed and state records indicate the unleaded gas USTs were also taken out. This site is not on Ecology's CSCSL or LUST list.



2007

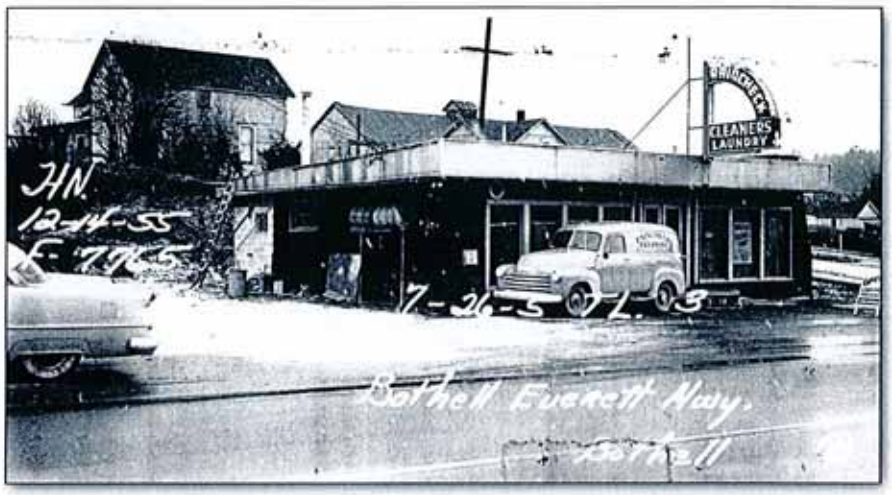
Site 8

Parcel 0726059003

Municipal shop and garage with gas pump
10016 NE183rd Street
(behind city hall, 18305 101st Ave NE)

The property was vacant until after the Second World War when a small restaurant called the Raincheck Lunch was built. In the early 1950s, the Raincheck Lunch was converted into Raincheck Cleaners and Laundry which remained in business until 1967 when the current building was constructed. The 1975 city directory lists this site as NuLife Cleaners. The building was remodeled in 1979 and currently houses a dry cleaner, a hair salon and a coin operated laundry. The site is listed as facility number 379891 on the CSCSL for solvent contamination in soil and groundwater and is currently undergoing a Phase I site assessment through the King County Brownfields Program.

Raincheck Lunch and Dry Cleaner



1950s

2007

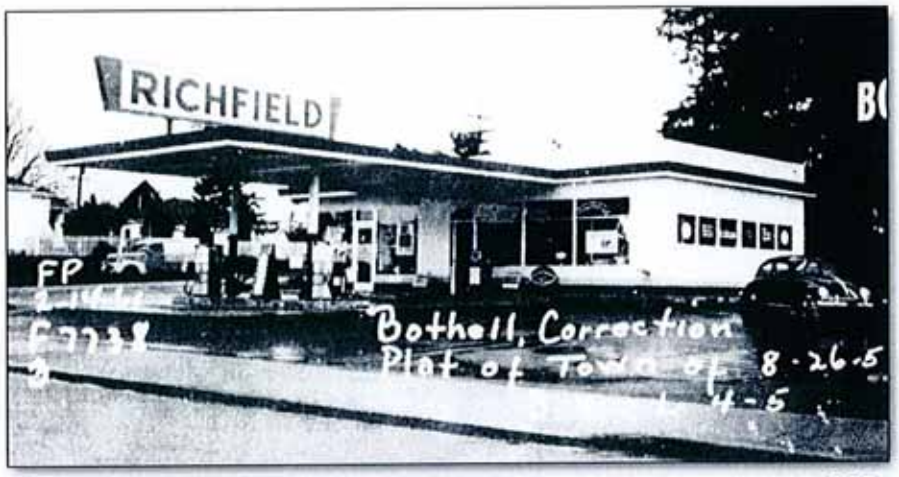
Site 9

Richfield/Arco Gas Station

Parcel 0967000475

Former Richfield Gas Station, Tom's Arco (1974)
10304 Main Street

This site was an unimproved residential lot until 1960 when a Richfield Gas Station was built. It had one 6,000 gallon UST and two 4,000 gallon USTs as well as a small 550 gallon oil tank and two lube bay hoists. It was known as Tom's Arco in 1974. In 1980 the gas station closed and the site redeveloped. It is now a branch office of Frontier Bank. It is not on Ecology's CSCSL or LUST list.



1960s

2007

Site 10

Parcel 0826059207

Bothell Cleaners
(1940s-1964?)
10029 Main Street

Judging by the photograph on the upper right, Bothell Cleaners occupied this address for some period possibly from the 1940s and into the 1950s. The present building was constructed in 1964-65 and is currently an office of Allstate Insurance. No solvent releases have been reported from this site, however it is not known if testing was ever done. It is not on Ecology's CSCSL or LUST list.

Bothell Cleaners

1950s (?)

2007

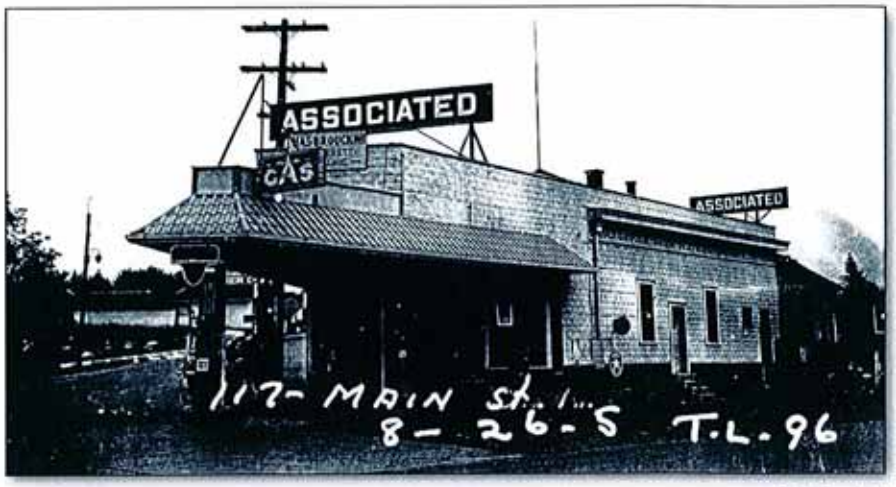
Site 11

Associated Gas Station

Parcels 0826059096 and 9457200010

Former Associated Gas Station
10005 Main St

Probably one of the first gas stations in Bothell, this Associated Station was built in 1914. Old tax records indicate it had four 550 gallon USTs that were removed in 1954. The building at 117 Main Street was torn down in 1963 and the current Baskin and Robbins store built in 1983. The site is not Ecology's CSCSL or LUST list.



1930s (?)

2007

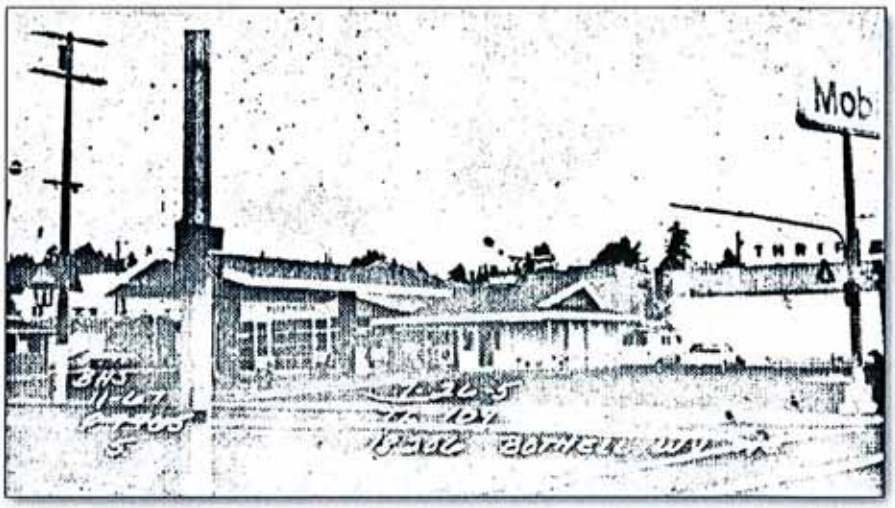
Site 12

Parcel 0726059401

Mobil Oil Gas Station,
Bob's Mobile
18206 Bothell Way NE

Mobil Oil built this gas station in 1967. It had one 10,000 gallon UST, one 8,000 gallon UST, a 100 gallon oil tank and three lube hoists. The business was known as Bob's Mobil in 1974. It is currently the site of Speedy Glass (formerly Speedy Auto Glass). This parcel is listed on Ecology's LUST list as Site Number 482197.

Mobil Gas Station



1960s

2007

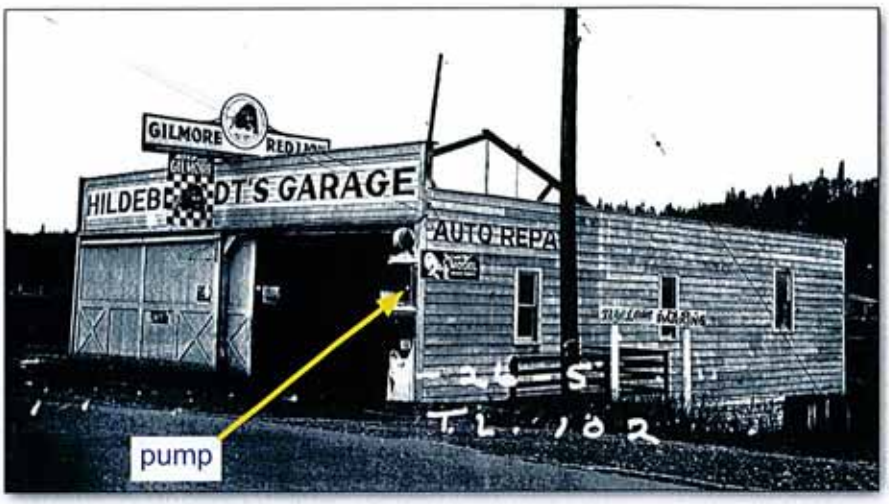
Site 13

Parcel 0826059102

Former Hildebrandt's Garage
10107 Woodinville Drive

This auto repair facility was built in 1918 and stood for almost 50 years. Note the gas pump in front. The current building was constructed in 1983 and is now a dental laboratory. It is not on Ecology's CSCSL or LUST list.

Hidebrandt's Garage



1940s (?)

2007

Site 14

Parcel 0826059120

Associated Gas Station & Copper Kettle Restaurant
Address unknown
(±10075 Woodinville Drive?)

A tax assessor's photo in the parcel file shows an Associated ("Flying A") gas station that opened in October 1946. It had two 1,000 gallon USTs and was next door to the Copper Kettle Restaurant as shown in the right hand photo from the 1950s. The property is now a city owned parking lot, and it is not on Ecology's CSCSL or LUST list.

Associated Gas Station and Restaurant

1950s

2007

Site 15

Signal Gas Station

Parcel 9457200020

Signal Gas Station
10001 Woodinville Drive

1950s

2007

This site was developed as a Signal Gas station in 1954-1955. The tax records show it had at least one 4,000 gallon UST but listings of other tanks are obscured in the photocopy at the archive. The station was torn down in 1965 and the current commercial building was built in 1976. The site is on the CSCSL as the Bothell Landing (Riverside Property) with facility ID number 73975762 and on the LUST list with Site ID 200550. HWA GeoSciences Inc. is currently assessing this parcel on behalf of the city of Bothell.

Site 16

Parcel 2374200115

Former Standard Station (1920), Chuck's Chevron (1974)
18131 Bothell Way NE

This is another pioneer gas station in Bothell built after World War I by Standard Oil Co. It was rebuilt several times and in the 1965 iteration there was one 7,500 gallon UST and one 4,000 gallon UST. The station survived into the 1980s as Chuck's Chevron. The current building was constructed in 1991 and is home to Grease Monkey auto lubrication services. This site is not currently on Ecology's CSCSL or LUST list.

Standard / Chevron Gas Station

1920s

1940s

1960s

2007

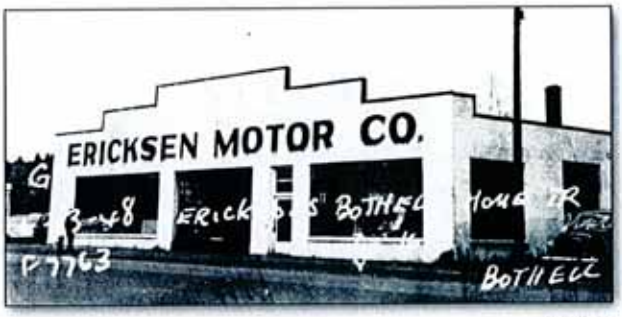
Site 17

Parcel 2374200090

Auto Dealership and
Union Oil Gas Station
18125 Bothell Way NE

This former farm and residential land was developed as Erickson Motor Company shortly after World War II. The parcel also included a Union Oil Company station built in 1948 shown below in two iterations. The station had three 3,000 gallon USTs and two lube hoists. It was torn down in 1970. The site is listed on the CSCSL as the Al's Auto Wexler site (Facility ID 63618231) and on the LUST lists as Al's Auto (Site 200689).

Auto Dealer



1940s

2007

Union Oil Gas Station

1950s

1960

Site 18

Used Auto Dealer

Parcel 2374200065

Auto Dealership,
Commercial Strip
18107 Bothell Way NE

1960s

This parcel was part of a farm until 1962 when it was redeveloped into an auto dealership (Erickson Motor Co) lot. In the 1980s it was redeveloped as a commercial strip with five businesses, one of which was a dry cleaner from 1990-2000. This site is on the CSCSL as Simon and Sons Fine Dry Cleaning (Facility 33215922) and is currently undergoing remediation to cleanup solvent in soil and groundwater.

Site of former Simon and Sons Fine Dry Cleaning (now Quizno's Sub Shop)

2007

Site 19

Parcel 0726059151

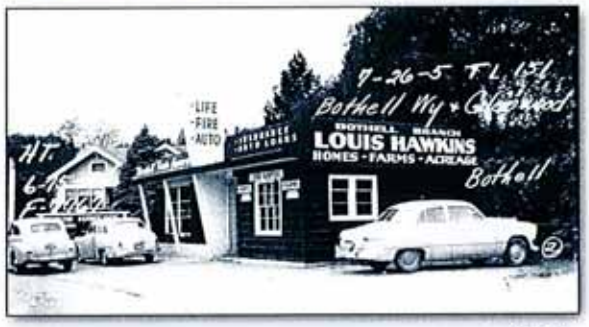
Gas Station,
Real Estate Office
18041 Bothell Way NE

This parcel was residential farm land until 1936 when a Mobil Oil gas station was built. The number and size of USTs are not recorded in the tax file. The station was closed in 1951 and the property redeveloped as a real estate office. The current building (the MPI Insurance Building) was built in 1959. It is not on Ecology's CSCSL or LUST list.

Mobil Gas Station

1930s

Real Estate Office



1950s

1960s

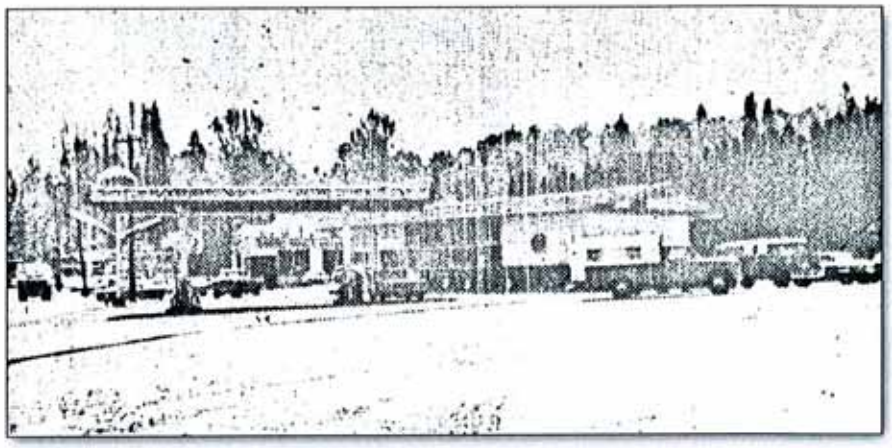
2007

Site 20

Chevron Gas Station

Parcel 0726059114

Chevron Gas Station
1962 to present
18015 Bothell Way NE



1960s

This parcel was residential from 1925 to 1956. In 1962, Chevron built a gas station with two 10,000 USTs and one 280 gallon underground oil tank and two hydraulic hoists. The station became Hayes Union 76 in 1974. It currently is a active Chevron gas station built in 1993 and is on the LUST list as Bothell Chevron (Site 8485).

2007

Site 21

Gulf / Gull Gas Station

Parcel 0726059194

Gulf / Gull Gas Station
1962 to ?
17312 Bothell Way NE

1960s

A gas station was built on this site in 1962 with one 8,000 gallon UST, one 6,000 gallon UST and one 4,000 gallon UST. In 1975 the station was known as Bothell Gulf Station but the 1977 R.L. Polk Directory lists it as Bothell Gull Station. The UST register indicates three tanks were removed and the site is not on Ecology's CSCSL or LUST list. It is now a used car lot.

2007

FARALLON CONSULTING
Quality Service for Environmental Solutions

320 3rd Ave. NE, Suite 200
Issaquah, WA 98027

T: 425 . 427.0061
F: 425 . 427.0067

RECEIVED
OCT 3 2002
DEPT OF ECOLOGY

SUBSURFACE INVESTIGATION REPORT

ULTRA CUSTOM CLEANERS PROPERTY
18300 – 18304 BOTHELL WAY NORTHEAST
BOTHELL, WASHINGTON

Submitted by:
Farallon Consulting, L.L.C.
320 3rd Avenue NE, Suite 200
Issaquah, Washington 98027

Farallon PN: 773-001

Prepared For:
Ms. Teena Williams
Ogden Murphy Wallace P.L.L.C.
1601 Fifth Avenue, Suite 2100
Seattle, Washington 98101-1686

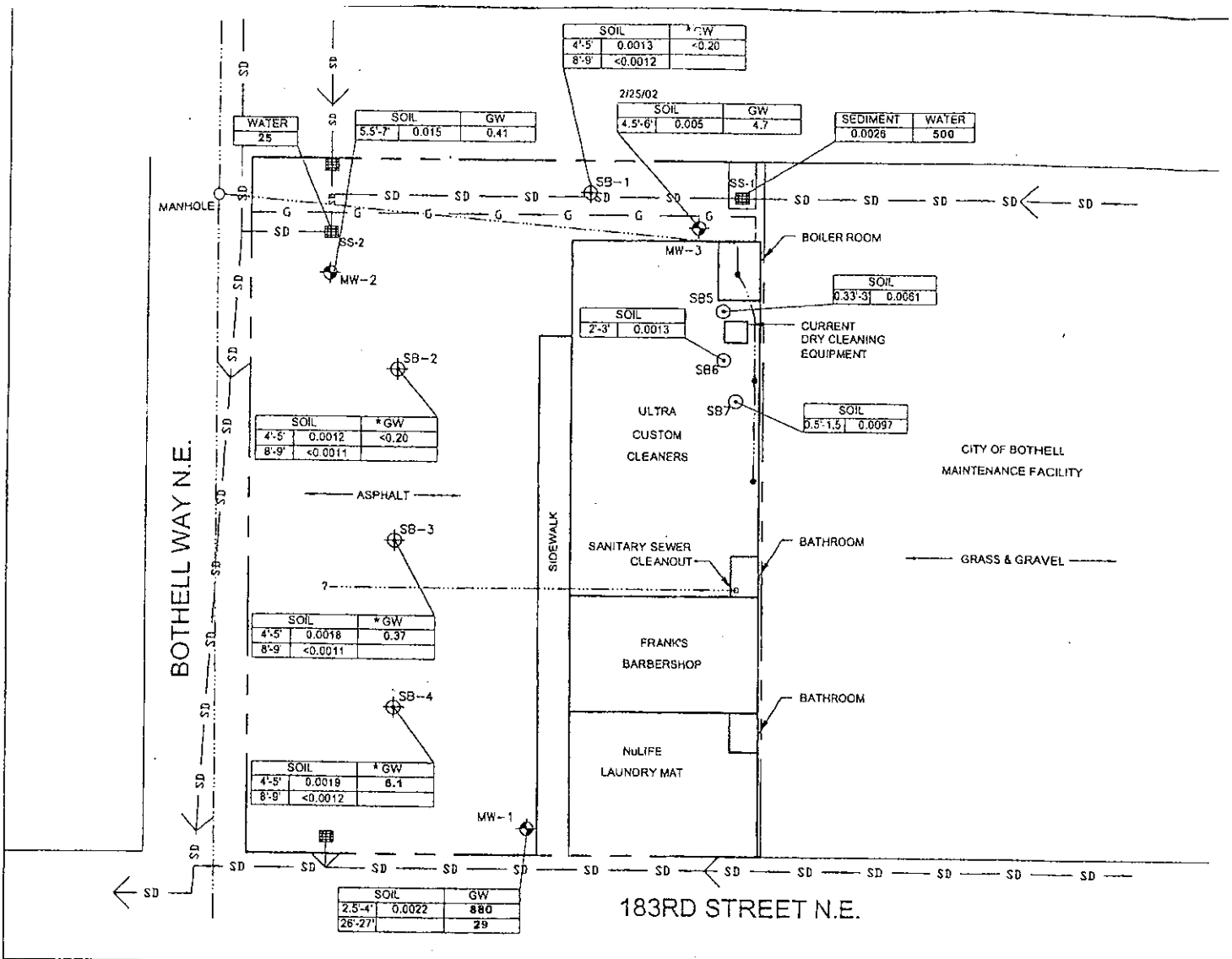
April 19, 2002

Prepared by:

Kim A. Saganski
Project Geologist

Reviewed by:

J. Riley Conkin
Principal Geologist



LEGEND

MW-1 — GROUNDWATER MONITORING WELL LOCATION (FARALLON 2/2002)

SB-3 — SOIL BORING LOCATION (IT CORPORATION 7/2001)

SB5 — SOIL BORING LOCATION (FARALLON 2/2002)

GW/*GW/WATER 25 — GROUNDWATER SAMPLE, RECONNAISSANCE GROUNDWATER SAMPLE, WATER SAMPLE; PCE CONCENTRATION IN MICROGRAMS PER LITER

SOIL 0.5'-1.5 0.0097 — SOIL SAMPLE; PCE CONCENTRATION IN MILLIGRAMS PER KILOGRAM; DEPTH IN FEET BELOW GROUND SURFACE

25 — BOLD INDICATES CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL

PCE = TETRACHLOROETHENE

STORM DRAIN CATCH BASIN

APPROXIMATE PROPERTY BOUNDARY

SD — APPROXIMATE LOCATION OF UNDERGROUND STORM SEWER LINE AND FLOW DIRECTION

SANITARY SEWER

G — NATURAL GAS LINE

FLOOR DRAIN

0 30 60

APPROXIMATE SCALE IN FEET

N

FARALLON CONSULTING
320 3rd Ave. NE, Suite 200
Issaquah, WA 98027

FIGURE 2

PCE CONCENTRATIONS IN SOIL AND WATER
ULTRA CUSTOM CLEANERS SITE
18300 BOTHELL WAY NE
BOTHELL, WASHINGTON

FARALLON PN: 773-001

Drawn By: DEW	Checked By: RC	Date: 4/16/02	Disk Reference: 77300

ENVIRONMENTAL PARTNERS INC 295 NE Gilman Blvd, Suite 201 Issaquah, Washington 98027 ph 425.395.0010 fax 425.395.0011

FILE COPY

November 30, 2004

Ms. Edna Case
C/o Mr. Wayne Case
18680 Woodinville-Duvall Road
Woodinville, Washington 98077

Re: Chlorinated VOC Nature and Extent Investigation Letter Report
Case Property
18300-18304 Bothell Way NE
Bothell, Washington

EPI Project No. 46101.0

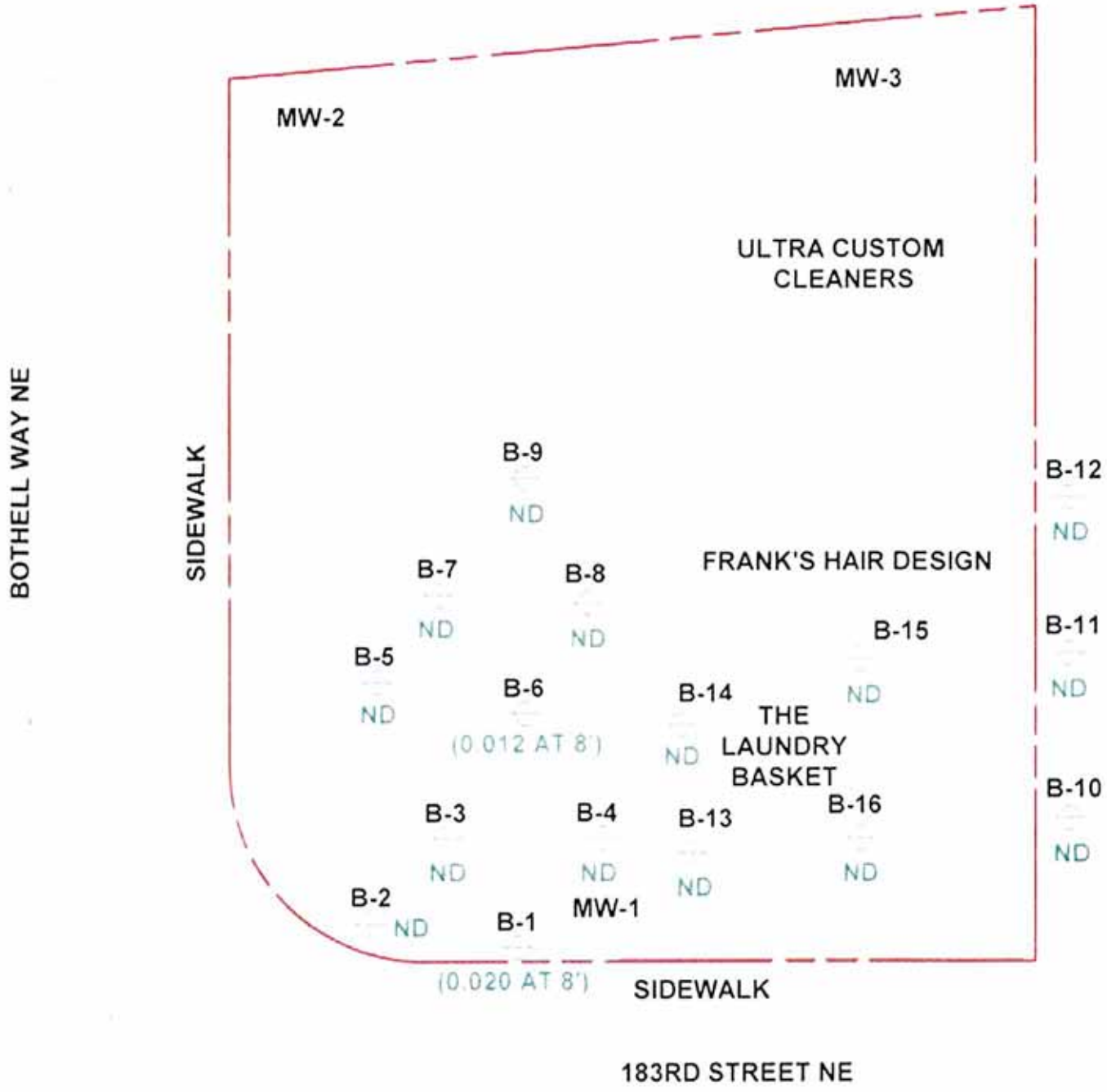
Dear Mr. Case:

Environmental Partners, Inc. (EPI) is pleased to provide this letter report presenting the results of a recently completed Chlorinated VOC Nature and Extent Investigation (Investigation) for the property located at 18300-18304 Bothell Way NE in Bothell, Washington (subject property). The subject property is occupied by the Ultra Custom Cleaners dry cleaning facility, Frank's Hair Design hair salon, and the Laundry Basket laundromat. The general location of the subject property is indicated on Figure 1.

Previous subsurface investigations of the subject property conducted by EHS in 2001 and Farallon Consulting, L.L.C. in 2002 indicated that concentrations of perchloroethene (PCE) and its associated degradation compounds exceeding MTCA Method A Groundwater Cleanup Levels were detected in groundwater on the southwestern portion of the subject property and in storm water and sediment located in catch basins on the northeastern and northwestern portions of the subject property. Concentrations of PCE and its associated degradation compounds were also detected in soil throughout the subject property, but at concentrations below their respective MTCA Method A Soil Cleanup Levels. Previous subsurface investigations did not identify the source of the observed on-site PCE impacts to soil and groundwater.

The work described herein was performed in general accordance with the basic scope of work described in EPI's proposal to Ms. Edna Case, dated June 28, 2004.

The general objective of this Investigation was to assess the vertical and lateral extent of soil and groundwater impacts from PCE and its associated degradation compounds [i.e. trichloroethene (TCE), cis-1,2-dichloroethene, trans-1,2-dichloroethene and vinyl chloride] associated with the historical use of PCE by Ultra Custom Cleaners and the Raincheck Cleaners dry cleaning facility. Raincheck Cleaners was formerly located on the southwestern portion of the subject property. A photograph of the former



KEY
- BORING LOCATIONS
- SUBJECT PROPERTY BOUNDARY
- MONITORING WELL LOCATIONS
- PCE CONCENTATION IN SOIL (MG/KG)
- APPROXIMATE STORM DRAIN LOCATIONS

ND NOT DETECTED ABOVE COMPOUND SPECIFIC LABORATORY DETECTION LIMIT

SCALE 1" = 20'

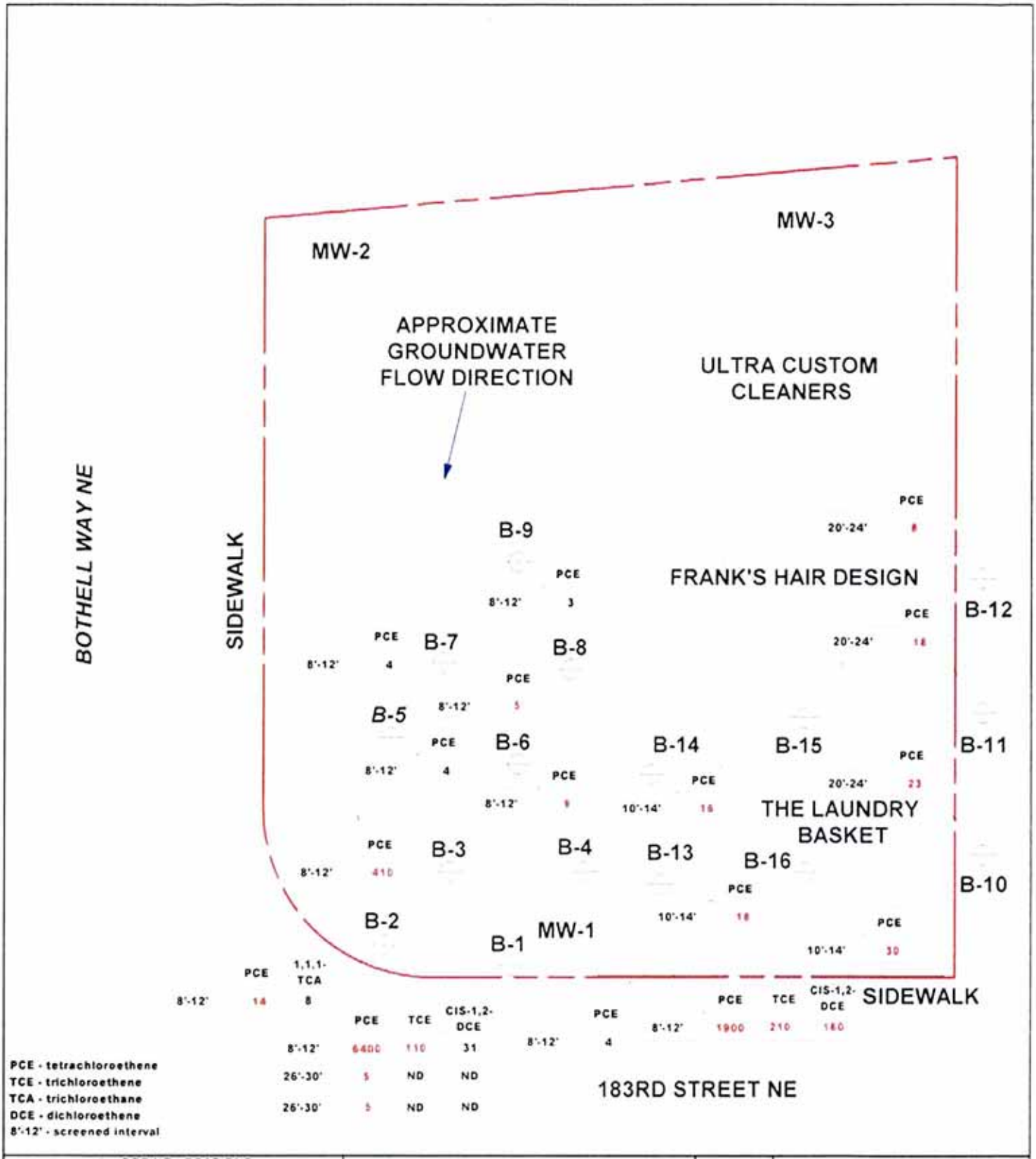
epi ENVIRONMENTAL PARTNERS INC

FIGURE 2

BORING LOCATIONS WITH TETRACHLOROETHENE CONCENTATIONS IN SOIL (MG/KG)

PROJECT	[illegible]
PREPARED FOR	CASE PROPERTIES
LOCATION	18300-18304 BOTHELL WAY NE BOTHELL, WASHINGTON

SHEET	DRAWN BY	REVIEWED BY	DATE
[illegible]	JS	DK	[illegible]



BORING LOCATIONS
SUBJECT PROPERTY BOUNDARY
MONITORING WELL LOCATIONS
CONCENTRATIONS IN µg/L RED INDICATES MTCA METHOD A OR B EXCEEDANCE
APPROXIMATE STORM DRAIN LOCATIONS
ND NOT DETECTED ABOVE COMPOUND SPECIFIC LABORATORY DETECTION LIMIT

SCALE

ENVIRONMENTAL PARTNERS INC

FIGURE 3

BORING LOCATIONS WITH HVOC CONCENTRATIONS IN GROUNDWATER (µg/L)

PROJECT	[illegible]
PREPARED FOR	CASE PROPERTIES
LOCATION	18300-18304 BOTHELL WAY NE BOTHELL, WASHINGTON

SHEET	DRAWN BY	REVIEWED BY	DATE
[illegible]	[illegible]	[illegible]	[illegible]

FARALLON consulting

975 5th Avenue Northwest, Issaquah, Washington 98027
Tel: (425) 295-0800 Fax: (425) 295-0850
www.farallonconsulting.com

CLEANUP ACTION PROGRESS REPORT
JUNE 2006 THROUGH JUNE 2007

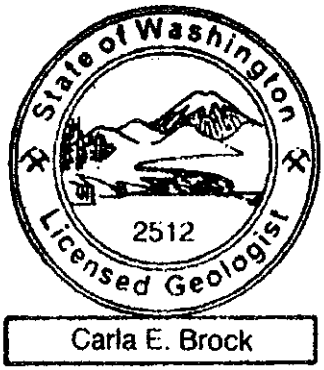
BOTHELL SERVICE CENTER
18107 BOTHELL WAY NORTHEAST
BOTHELL, WASHINGTON

Submitted by:
Farallon Consulting, L.L.C.
975 5th Avenue Northwest
Issaquah, Washington 98027

Farallon PN: 801-001

For:
Mr. Norman L. Olsen, Managing Partner
Bothell Service Center Associates
11711 Southeast 8th Street, Suite 310
Bellevue, Washington 98005

March 12, 2008

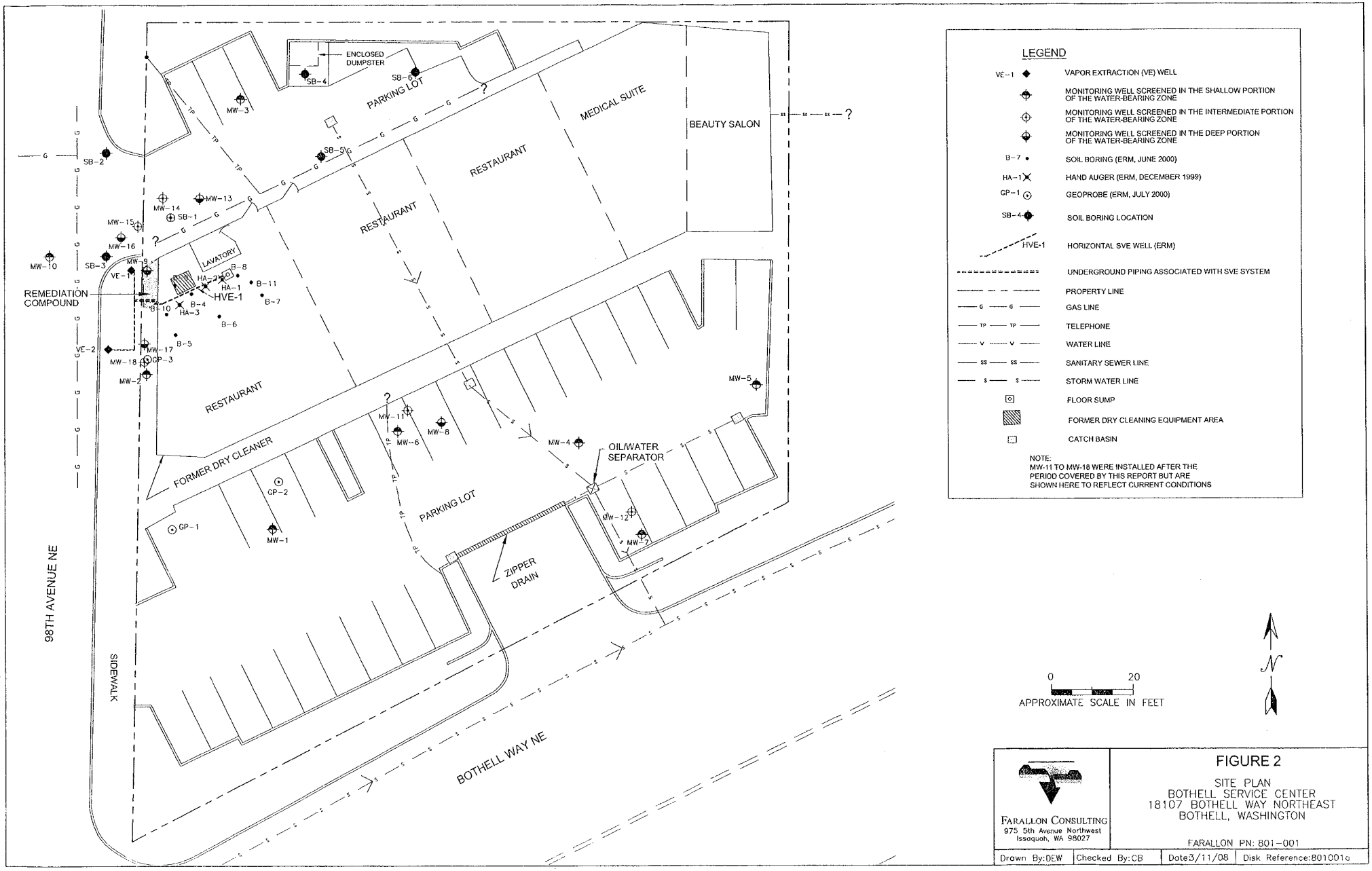


Prepared by:

Carla E. Brock, L.G.
Associate Geologist

Reviewed by:

Clifford T. Schmitt, L.G., L.H.G.
Principal Hydrogeologist



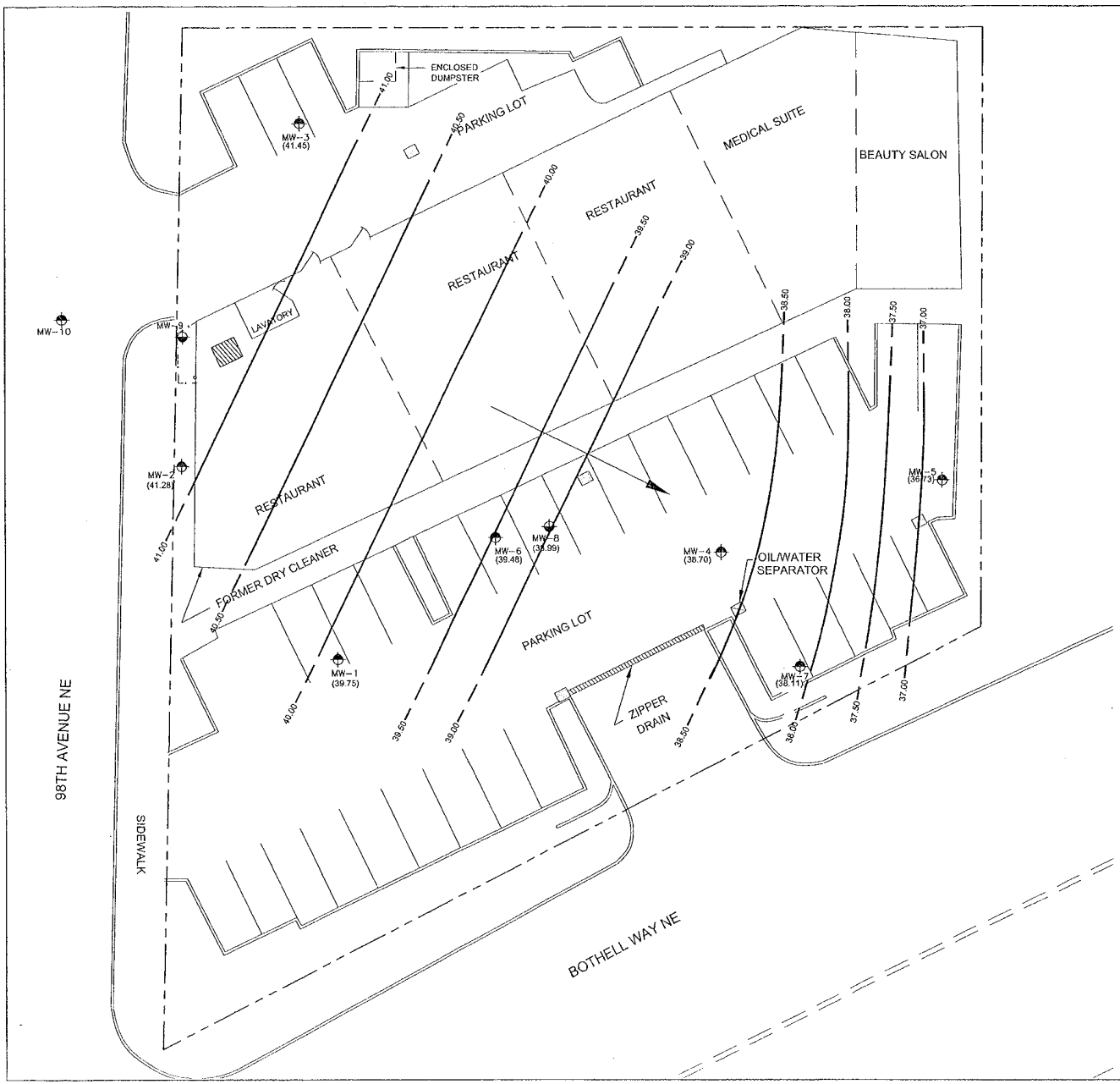
FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

FIGURE 2

SITE PLAN
BOTHELL SERVICE CENTER
18107 BOTHELL WAY NORTHEAST
BOTHELL, WASHINGTON

FARALLON PN: 801-001

Drawn By: DEW	Checked By: CB	Date 3/11/08	Disk Reference: 801001a



LEGEND

- MONITORING WELL SCREENED IN THE SHALLOW PORTION OF THE WATER-BEARING ZONE
- MONITORING WELL SCREENED IN THE DEEP PORTION OF THE WATER-BEARING ZONE
- PROPERTY LINE
- FLOOR SUMP
- FORMER DRY CLEANING EQUIPMENT AREA
- CATCH BASIN
- (38.99) ELEVATION OF GROUNDWATER ABOVE MEAN SEA LEVEL MEASURED FROM TOP OF WELL CASING, AUGUST 2006
- 39.50 GROUNDWATER ELEVATION CONTOUR FOR AUGUST 2006
- GROUNDWATER FLOW DIRECTION

0 20
APPROXIMATE SCALE IN FEET

N

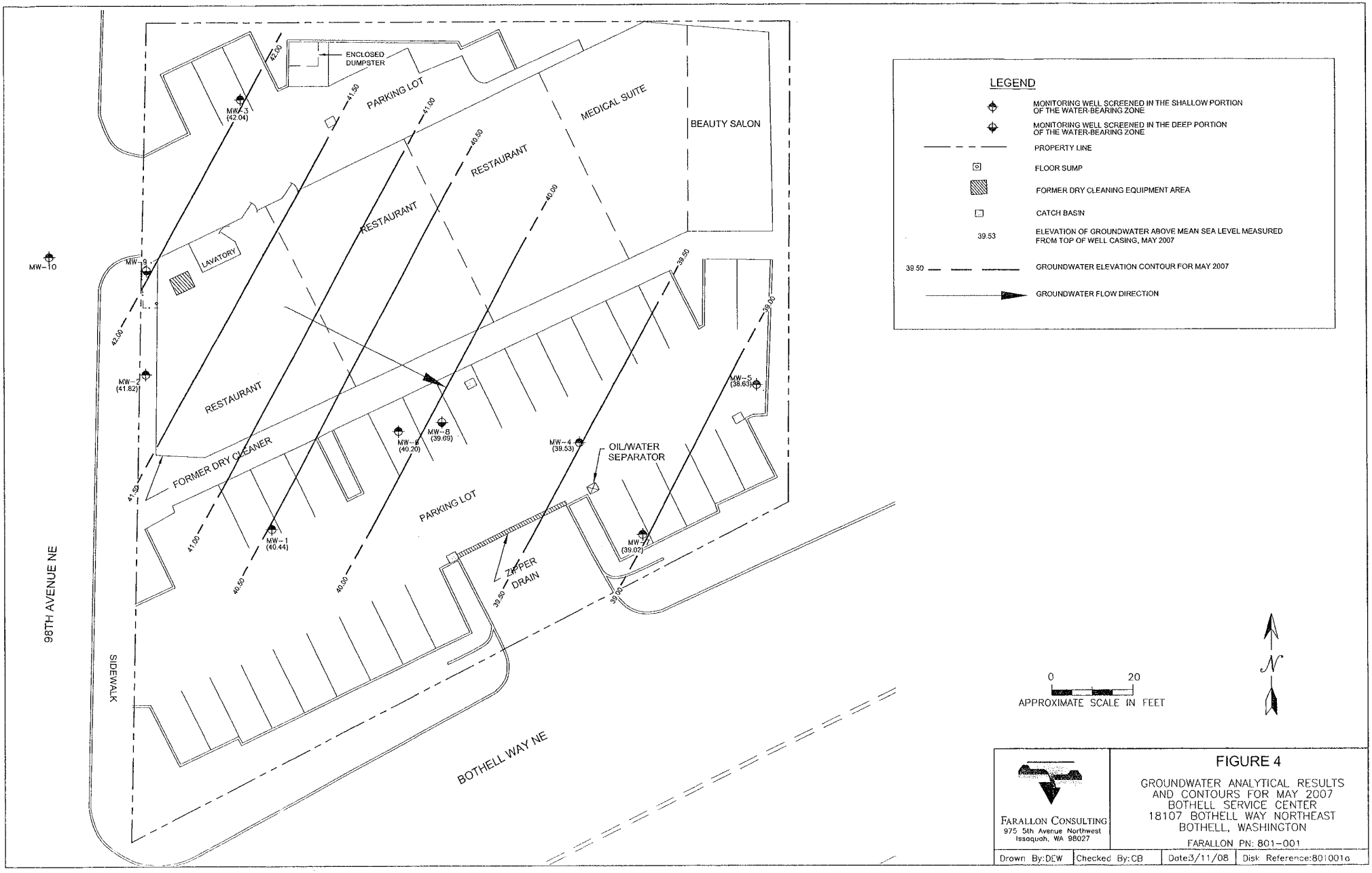
FARALLON CONSULTING
975 5th Avenue Northwest
Issoquah, WA 98027

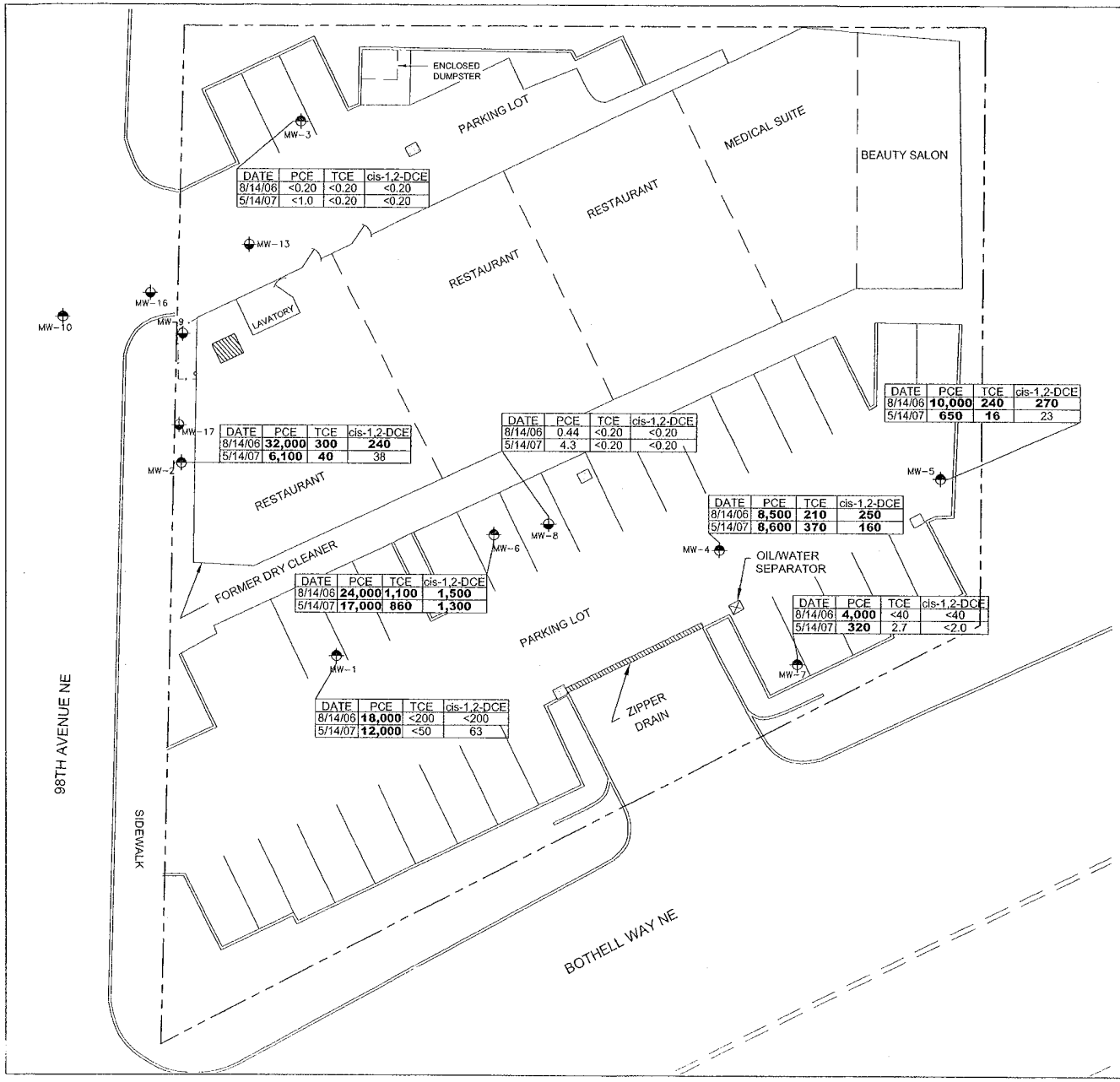
FIGURE 3

GROUNDWATER CONTOUR MAP
FOR AUGUST 2006
BOTHELL SERVICE CENTER
18107 BOTHELL WAY NORTHEAST
BOTHELL, WASHINGTON

FARALLON PN: 801-001

Drawn By: DEW	Checked By: CB	Date: 3/11/08	Disk Reference: 801001c


ENCLOSED DUMPSTER
PARKING LOT
MEDICAL SUITE
BEAUTY SALON
RESTAURANT
RESTAURANT
RESTAURANT
LAVATORY
FORMER DRY CLEANER
PARKING LOT
OIL/WATER SEPARATOR
ZIPPER DRAIN
MW-3 (42.04)
MW-9
MW-10
MW-2 (41.82)
MW-1 (40.44)
MW-6 (40.20)
MW-8 (39.69)
MW-4 (39.53)
MW-7 (39.02)
MW-5 (38.63)
42.00
41.50
41.00
40.50
40.00
39.50
39.00
98TH AVENUE NE
SIDEWALK
BOTHELL WAY NE
LEGEND
MONITORING WELL SCREENED IN THE SHALLOW PORTION OF THE WATER-BEARING ZONE
MONITORING WELL SCREENED IN THE DEEP PORTION OF THE WATER-BEARING ZONE
PROPERTY LINE
FLOOR SUMP
FORMER DRY CLEANING EQUIPMENT AREA
CATCH BASIN
39.53 ELEVATION OF GROUNDWATER ABOVE MEAN SEA LEVEL MEASURED FROM TOP OF WELL CASING, MAY 2007
39.50 GROUNDWATER ELEVATION CONTOUR FOR MAY 2007
GROUNDWATER FLOW DIRECTION
0 20
APPROXIMATE SCALE IN FEET
N
FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027
FIGURE 4
GROUNDWATER ANALYTICAL RESULTS AND CONTOURS FOR MAY 2007
BOTHELL SERVICE CENTER
18107 BOTHELL WAY NORTHEAST
BOTHELL, WASHINGTON
FARALLON PN: 801-001
Drawn By:DEW
Checked By:CB
Date:3/11/08
Disk Reference:801001a



DATE	PCE	TCE	cis-1,2-DCE
8/14/06	<0.20	<0.20	<0.20
5/14/07	<1.0	<0.20	<0.20

DATE	PCE	TCE	cis-1,2-DCE
8/14/06	**32,000**	**300**	**240**
5/14/07	**6,100**	**40**	38

DATE	PCE	TCE	cis-1,2-DCE
8/14/06	0.44	<0.20	<0.20
5/14/07	4.3	<0.20	<0.20

DATE	PCE	TCE	cis-1,2-DCE
8/14/06	**10,000**	**240**	**270**
5/14/07	**650**	**16**	23

DATE	PCE	TCE	cis-1,2-DCE
8/14/06	**8,500**	**210**	**250**
5/14/07	**8,600**	**370**	**160**

DATE	PCE	TCE	cis-1,2-DCE
8/14/06	**24,000**	**1,100**	**1,500**
5/14/07	**17,000**	**860**	**1,300**

DATE	PCE	TCE	cis-1,2-DCE
8/14/06	**4,000**	<40	<40
5/14/07	**320**	2.7	<2.0

DATE	PCE	TCE	cis-1,2-DCE
8/14/06	**18,000**	<200	<200
5/14/07	**12,000**	<50	63

LEGEND

- MONITORING WELL SCREENED IN THE SHALLOW PORTION OF THE WATER-BEARING ZONE
- MONITORING WELL SCREENED IN THE DEEP PORTION OF THE WATER-BEARING ZONE
- PROPERTY LINE
- FLOOR SUMP
- FORMER DRY CLEANING EQUIPMENT AREA
- CATCH BASIN

ALL GROUNDWATER RESULTS IN MICROGRAMS PER LITER
PCE = TETRACHLOROETHENE
TCE = TRICHLOROETHENE
cis-1,2-DCE = cis-1,2-DICHLOROETHENE
BOLD = INDICATES CONCENTRATIONS EXCEED WASHINGTON STATE DEPARTMENT OF ECOLOGY MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD A CLEANUP LEVELS
< = INDICATES CONCENTRATIONS NOT DETECTED ABOVE THE STATED LABORATORY PRACTICAL QUANTITATION LIMIT
ALL LOCATIONS ARE APPROXIMATE

0 20
APPROXIMATE SCALE IN FEET

N

FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

FIGURE 5

GROUNDWATER ANALYTICAL RESULTS
BOTHELL SERVICE CENTER
18107 BOTHELL WAY NORTHEAST
BOTHELL, WASHINGTON

FARALLON PN: 801-001

Drawn By: DEW | Checked By: CB | Date 3/11/08 | Disk Reference: 801001a

PHASE II ENVIRONMENTAL SITE ASSESSMENT
Beta Bothell Landing Property
Parcels No. 9457200015 & 9457200020
Bothell, Washington

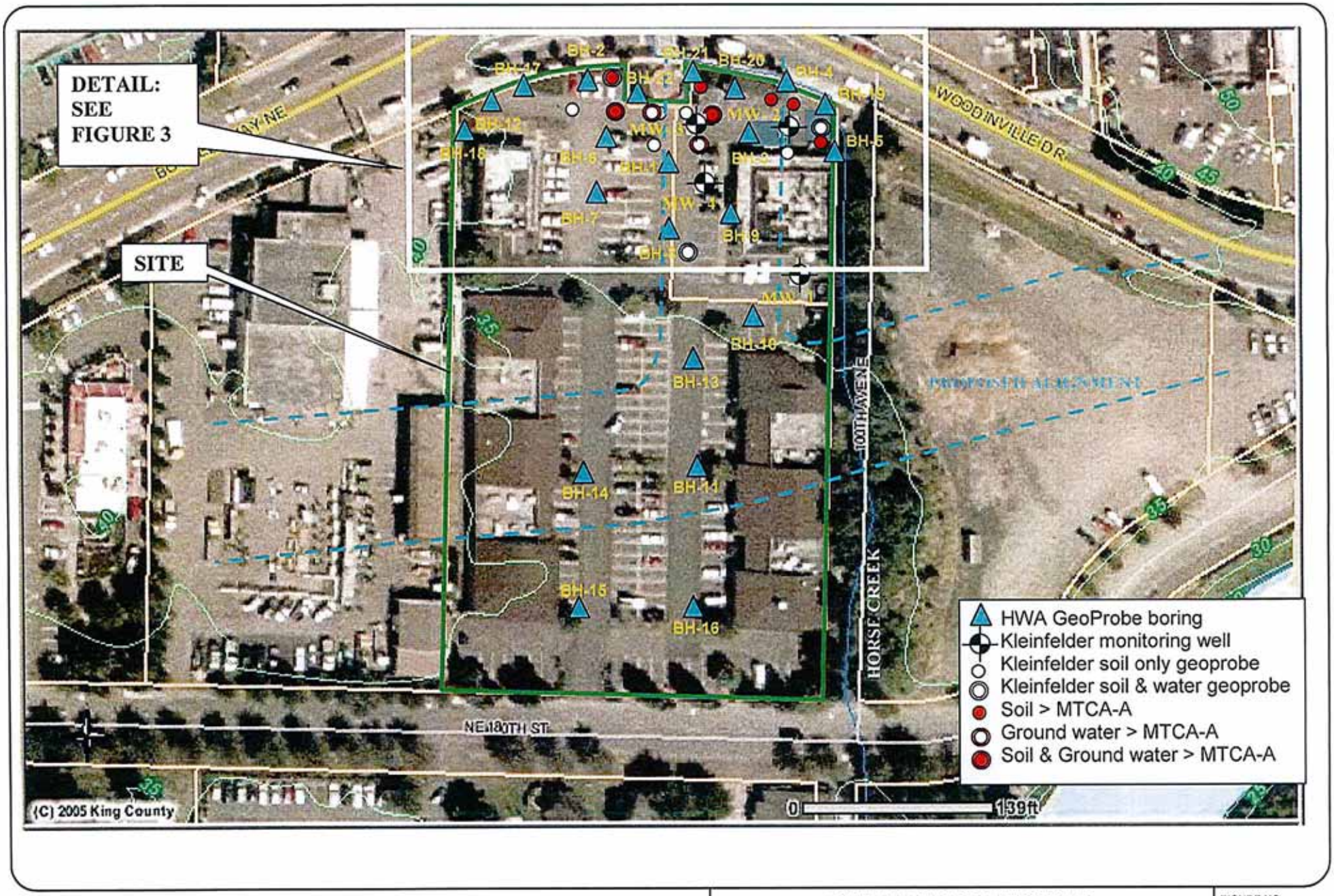
HWA Project No. 2007-098-22

Prepared for
City of Bothell

November 1, 2007

HWA GEOSCIENCES INC.

- *Geotechnical Engineering*
- *Hydrogeology*
- *Geoenvironmental Services*
- *Inspection & Testing*



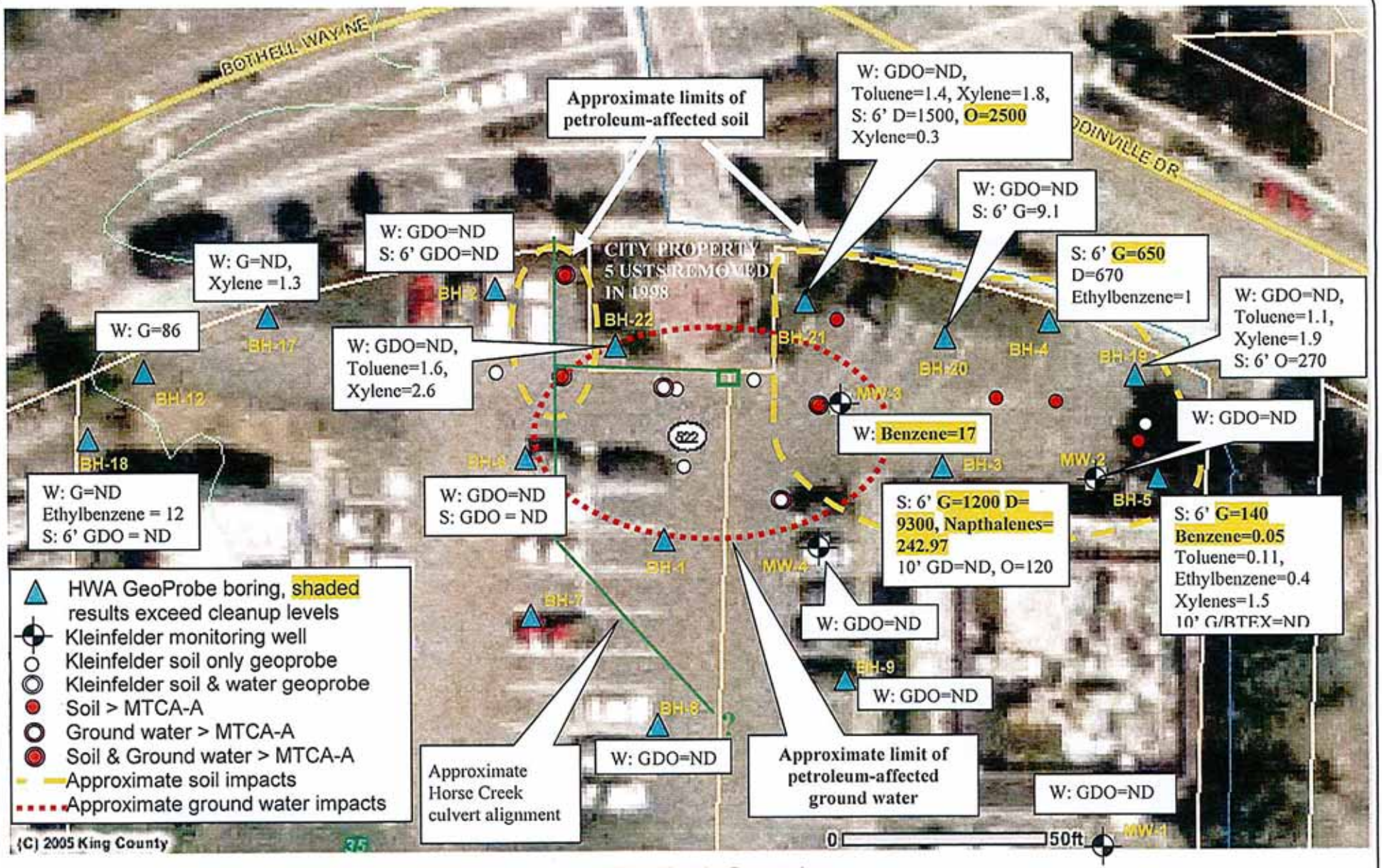
HWA GEOSCIENCES INC.

SITE AND EXPLORATION PLAN

BETA BOTHELL LANDING PROPERTY
PHASE II ENVIRONMENTAL SITE ASSESSMENT
BOTHELL CROSSROADS PROJECT
BOTHELL, WASHINGTON

FIGURE NO. 2

PROJECT NO. 2007-098



G = Gasoline range TPH, D = Diesel range TPH, O = heavy oil range TPH, ND =Not Detected

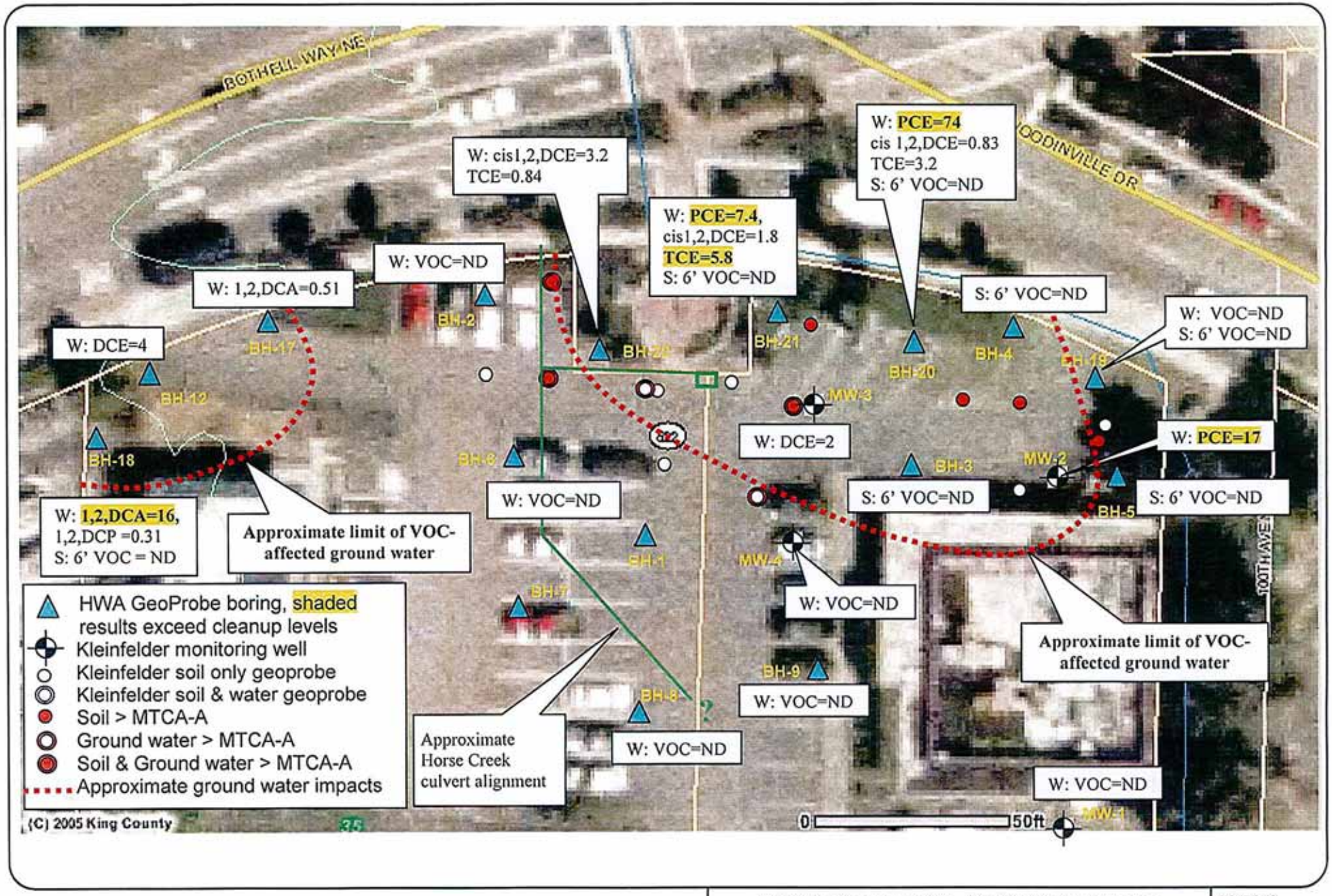
HWA GEOSCIENCES INC.

PETROLEUM RESULTS IN SOIL AND GROUND WATER

BETA BOTHELL LANDING PROPERTY
PHASE II ENVIRONMENTAL SITE ASSESSMENT
BOTHELL CROSSROADS PROJECT
BOTHELL, WASHINGTON

FIGURE NO. 4

PROJECT NO. 2007-098



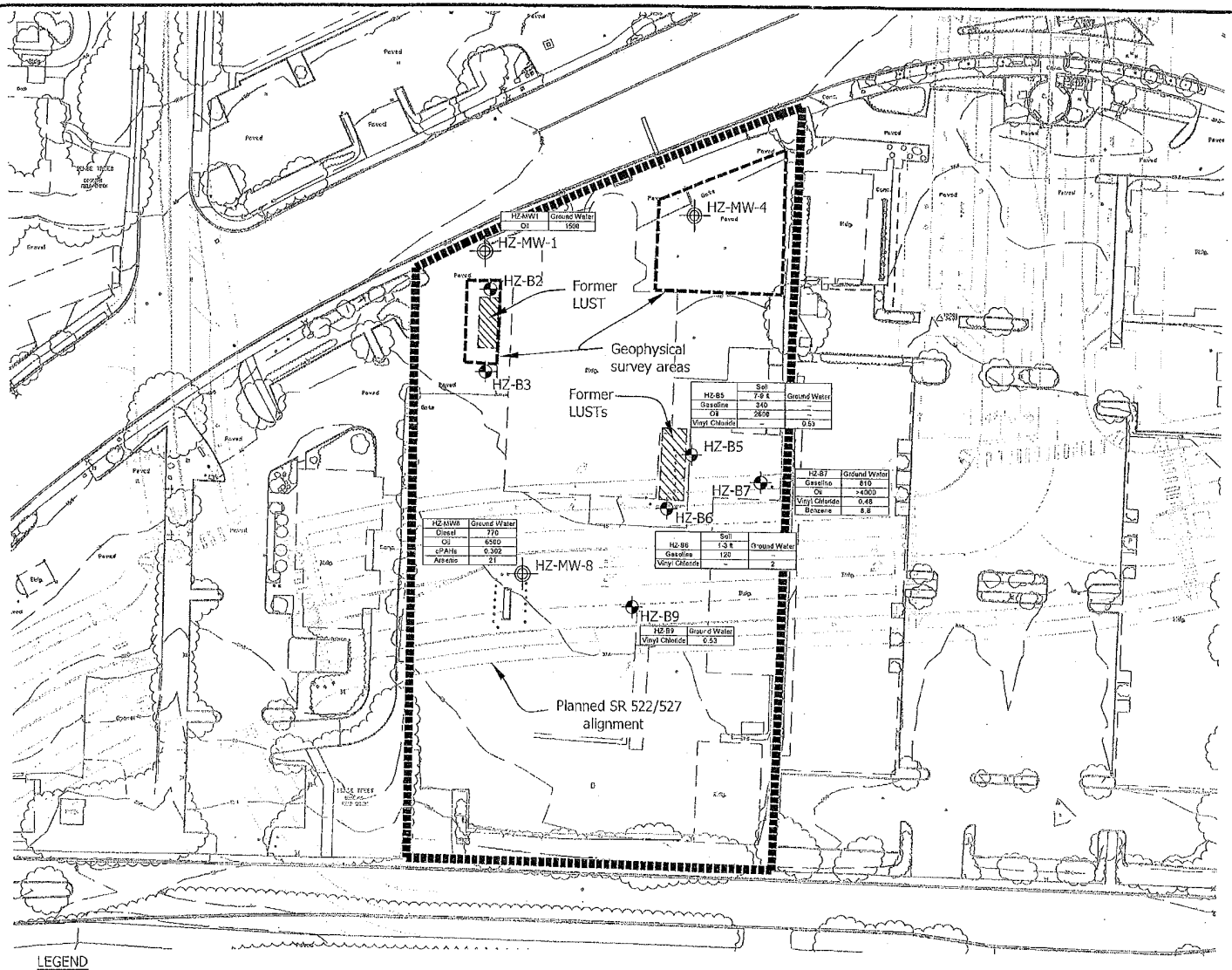
HWA GEOSCIENCES INC.

VOC RESULTS IN SOIL AND GROUND WATER

BETA BOTHELL LANDING PROPERTY
PHASE II ENVIRONMENTAL SITE ASSESSMENT
BOTHELL CROSSROADS PROJECT
BOTHELL, WASHINGTON

FIGURE NO. 5

PROJECT NO. 2007-098



LEGEND

APPROXIMATE LOCATION PROPERTY LINE

HZ-B9 BOREHOLE DESIGNATION AND APPROXIMATE LOCATION

HZ-MW-8 MONITORING WELL DESIGNATION AND APPROXIMATE LOCATION

BASE MAP PROVIDED BY PERTEET ENGINEERING INC

S:\2007 PROJECTS\2007-098-22 BOTHELL CROSSROADS\CAD\HWA 2007-098-21 T210.DWG <FIG 3 Hertz> Plotted: 9/25/2008 2:28 PM

HWA GEOSCIENCES INC.

PHASE II ENVIRONMENTAL SITE ASSESSMENT
HERTZ RENTALS PROPERTY
18030 BOTHELL WAY NE
BOTHELL CROSSROADS PROJECT
BOTHELL, WASHINGTON

SOIL & GROUND WATER CONCENTRATIONS GREATER THAN MTCA METHOD A/B CLEANUP LEVELS

DRAWN BY bCAD
CHECK BY VA
DATE 09.10.08

FIGURE NO. 4
PROJECT NO. 2007-098-241

HERTZ

TABLE 1
SOIL ANALYTICAL DATA
(all results in milligrams per kilogram (mg/kg) except as noted)

	Boring	HZ-MW1/ HZ-B1-10	HZ-B2-6	HZ-B3-6	HZ-B3-10	HZ-MW4/ HZ-B4-1	HZ-B5-7	HZ-B6-1	HZ-B7-1	HZ-MW8/ HZ-B8-1	HZ-MW8/ HZ-B8-3.5	HZ-MW8/ 7HZ-B8-5	BKGD	MTCA Method A/B Cleanup Level
	Location	Northwest, upgradient	North end of former kerosene LUST	South end of former kerosene LUST		Northeast, upgradient	Adjacent E of former diesel and gasoline LUSTs	Adjacent S of former diesel and gasoline LUSTs	East property boundary, stained asphalt	Southwest property				
	Sample interval, ft bgs	10-12	6-8	6-8	10-12	1-3	7-9	1-3	1-3	1-3	3.5-5	5-7		
Petroleum Hydrocarbons	Gasoline Range	NA	**6.3**	**7.8**	**9.2**	<7.5	**340**	**120**	<6.1	<11	NA	NA		100/30*
	Diesel Range	NA	<30	<33	<36	<31	**<580**	**98**	<28	NA	NA	<28		2000
	Oil Range	NA	<60	**130**	<71	<61	**2600**	**410**	**68**	NA	NA	<57		2000
VOCs****	Benzene	<0.00065	<0.02	<0.02	<0.02	<0.0011	<0.066	<0.023	<0.02	<0.023	NA	NA		0.03
	Toluene	<0.0033	<0.063	<0.063	<0.063	<0.0053	<0.33	<0.11	<0.061	<0.11	NA	NA		7
	Ethylbenzene	<0.00065	<0.063	<0.063	<0.063	<0.0011	<0.066	<0.11	<0.061	<0.11	NA	NA		6
	Xylenes	<0.00065	<0.063	<0.063	<0.063	<0.0011	<0.066	**0.23**	<0.061	<0.11	NA	NA		9
	Acetone	<0.0033	NA	NA	NA	<0.0053	<0.33	NA	NA	NA	NA	NA		8000 (B)
	Chlorobenzene	<0.00065	NA	NA	NA	<0.0011	**1**	NA	NA	NA	NA	NA		1600 (B)
	n-Propylbenzene	<0.00065	NA	NA	NA	<0.0011	**0.23**	NA	NA	NA	NA	NA		NE
	1,2,4-Trimethylbenzene	<0.00065	NA	NA	NA	<0.0011	**0.38**	NA	NA	NA	NA	NA		4000 (B)
	sec-Butylbenzene	<0.00065	NA	NA	NA	<0.0011	**0.24**	NA	NA	NA	NA	NA		NE
	1,3-Dichlorobenzene	<0.00065	NA	NA	NA	<0.0011	**0.1**	NA	NA	NA	NA	NA		NE
	p-Isopropyltoluene	<0.00065	NA	NA	NA	<0.0011	**0.088**	NA	NA	NA	NA	NA		NE
	1,4-Dichlorobenzene	<0.00065	NA	NA	NA	<0.0011	**0.64**	NA	NA	NA	NA	NA		42 (B)
	n-Butylbenzene	<0.00065	NA	NA	NA	<0.0011	**0.25**	NA	NA	NA	NA	NA		NE
	Napthalene	<0.00065	NA	NA	NA	<0.0011	**0.11**	NA	NA	NA	NA	NA		5
RCRA Metals****	Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	<11	NA	7	20
	Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	38	NA		5600 (B)
	Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.57	NA	1	2
	Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	13	NA	48	19/2000**
	Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	14	NA	24	250
	Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.28	NA	0.07	2
	Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.57	NA		400

Notes:

MTCA A / B – Ecology MTCA Method A / B soil cleanup levels, Chapter 173-340 WAC, shown for reference only. These cleanup levels may not apply at this site, and are provided as a screening level indication of the environmental quality of the site only.

BKGD - Natural Background Soil Metals Concentrations in Washington State (Ecology, 1994)

NE – Not Established

< - not detected at listed reporting limit

Bold – Analyte Detected

Bold / highlighted – Analyte exceeds cleanup level

* - The Method A Soil cleanup levels for gasoline mixtures without benzene and the total of ethylbenzene, toluene, and xylenes are less than 1% of the gasoline mixture are 100 mg/kg/all other mixtures are 30 mg/kg

** - The Method A soil cleanup levels for Chromium are 19 mg/kg for Cr VI and 2000 mg/kg for Cr III. Analyses are for total chromium.

All diesel range hydrocarbon sample extracts treated with an acid/silica gel cleanup procedure.

No other VOCs or RCRA metals were detected above laboratory reporting limits (see Appendix D for complete list of compounds analyzed).

HERTZ

TABLE 2
GROUND WATER ANALYTICAL DATA
(all results in micrograms per liter (µg/l) except as noted)

Boring		HZ-MW-1	HZ-B2-W	HZ-B3-W	HZ-MW-4	HZ-B5-W	HZ-B6-W	HZ-B7-W	HZ-MW-8	HZ-B9-W	MTCA Method A/B Cleanup level
Location		Northwest, upgradient	North end of former kerosene LUST	South end of former kerosene LUST	Northeast, upgradient	Adjacent east of former diesel and gasoline LUSTs	Adjacent south of former diesel and gasoline LUSTs	East property boundary, stained asphalt	Southwest property	Southeast property	
Approximate Depth to Water (ft bgs)		7.0	6.7	7.0	5.92	6.02	9.3	12	5.42	7.5	
Field Parameters	pH	6.66	6.8	NA***	7.71	6.6	6.3	NA	6.59	6.5	
	Conductivity (µS/cm)	300	NA	NA***	200	201.4	NA	NA	200	338.2	
	Temperature (C)	17.8	19.5	NA***	20.3	18.3	12.8	NA	19.7	15.7	
	Dissolved Oxygen (mg/l)	9.65	6	NA***	10.13	4.2	4.10	NA	9.46	3.0	
Petroleum Hydrocarbons	HCID							Gasoline/ Lube Oil			
	Gasoline Range	<100	<100	<100	<100	<400	<400	810	<400	<400	800/1000*
	Diesel Range	<300	<250	<250	<260	<250	<260	<260	770	<260	500
	Oil Range	1500	<400	<400	<420	<400	<420	>4000**	6500	<420	500
VOCs**	Vinyl Chloride	<0.2	<0.2	<0.2	<0.2	0.53	2	0.48	<0.2	0.53	0.2
	Acetone	<5	<5	5.8	<5	<1.0	<10	<2.0	<5	<10	800(B)
	cis-1,2-Dichloroethene	<0.2	<0.2	<0.2	<0.2	0.39	<0.4	<0.4	<0.2	0.65	80 (B)
	Chloroform	<0.2	0.31	<0.2	0.20	<0.2	<0.4	<0.4	<0.2	<0.4	7.2 (B)
	Benzene	<0.2	<0.2	<0.2	<0.2	1.6	4.9	8.8	3.3	0.83	5
	Trichloroethene	<0.2	0.25	<0.2	<0.2	<0.2	<0.4	<0.4	<0.2	<0.4	5
	Toluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	2	<0.2	<0.4	1000
	Tetrachloroethene	0.58	1.7	<0.2	<0.2	<0.2	<0.4	<0.4	<0.2	<0.4	5
	Chlorobenzene	<0.4	<0.4	<0.4	<0.4	63	<0.4	<0.4	0.35	<0.4	160 (B)
	Ethylbenzene	<0.2	<0.2	<0.2	<0.2	0.25	<0.4	1	<0.2	<0.4	700
	Xylenes	<0.2	<0.2	<0.2	<0.2	0.27	<0.4	32	0.61	<0.4	1000
	Isopropylbenzene	<0.2	<0.2	<0.2	<0.2	0.2	<0.4	2.2	0.62	<0.4	NE
	n-Propylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	5	<0.2	<0.4	NE
	1,3,5-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	16	<0.2	<0.4	400 (B)
	1,2,4-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	1.2	0.65	60	<0.2	<0.4	400 (B)

HERTZ

Boring		HZ-MW-1	HZ-B2-W	HZ-B3-W	HZ-MW-4	HZ-B5-W	HZ-B6-W	HZ-B7-W	HZ-MW-8	HZ-B9-W	MTCA Method A/B Cleanup level
	sec-Butylbenzene	<0.2	<0.2	<0.2	<0.2	**0.2**	<0.4	1.1	<0.2	<0.4	NE
	p-Isopropyltoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	1.6	<0.2	<0.4	NE
	1,4-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	**0.82**	<0.4	<0.40	<0.2	<0.4	1.8 (B)
	1,2-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	**0.44**	<0.2	<0.4	720 (B)
	n-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	**0.50**	<0.4	NE
	Napthalene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.40	**15**	**1.6**	<0.4	160
PAHs	2-Methylnapthalene	NA	NA	NA	NA	NA	NA	NA	**2.4**	NA	320
	1-Methylnapthalene	NA	NA	NA	NA	NA	NA	NA	**2.3**	NA	24
	Phenanthrene	NA	NA	NA	NA	NA	NA	NA	**0.15**	NA	NE
	Pyrene	NA	NA	NA	NA	NA	NA	NA	**0.13**	NA	2400
	Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	**0.067/**	NA	NE
	Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	**0.028/0.0028**	NA	Total cPAHs 0.1
	Chrysene	NA	NA	NA	NA	NA	NA	NA	**0.073/0.00073**	NA	
	Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	**0.023/0.0023**	NA	
	Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	**0.018/0.0018**	NA	
	Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	**0.040/0.040**	NA	
	Ideno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	NA	NA	**0.030/0.0030**	NA	
	Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	**0.023/0.0023**	NA	
	Total cPAHs	NA	NA	NA	NA	NA	NA	NA	**0.302/0.05293******	NA	
RCRA Metals (Dissolved)	Arsenic	NA	NA	NA	<3	NA	NA	NA	**21**	NA	5
	Barium	NA	NA	NA	<25	NA	NA	NA	**370**	NA	3200 (B)

Notes:

MTCA A / B – Ecology MTCA Method A / B soil cleanup levels, Chapter 173-340 WAC, shown for reference only. These cleanup levels may not apply at this site, and are provided as a screening level indication of the environmental quality of the site only.

NE – Not Established

< - not detected at listed reporting limit

NA– Not Analyzed

Bold – detected

Bold / highlighted – Analyte exceeds cleanup level

* - The Method A Ground Water cleanup levels for gasoline mixtures without benzene and the total of ethylbenzene, toluene, and xylenes are less than 1% of the gasoline mixture are 800 mg/l/all other mixtures are 1000 mg/l

** - Result based on estimated concentration from HCID.

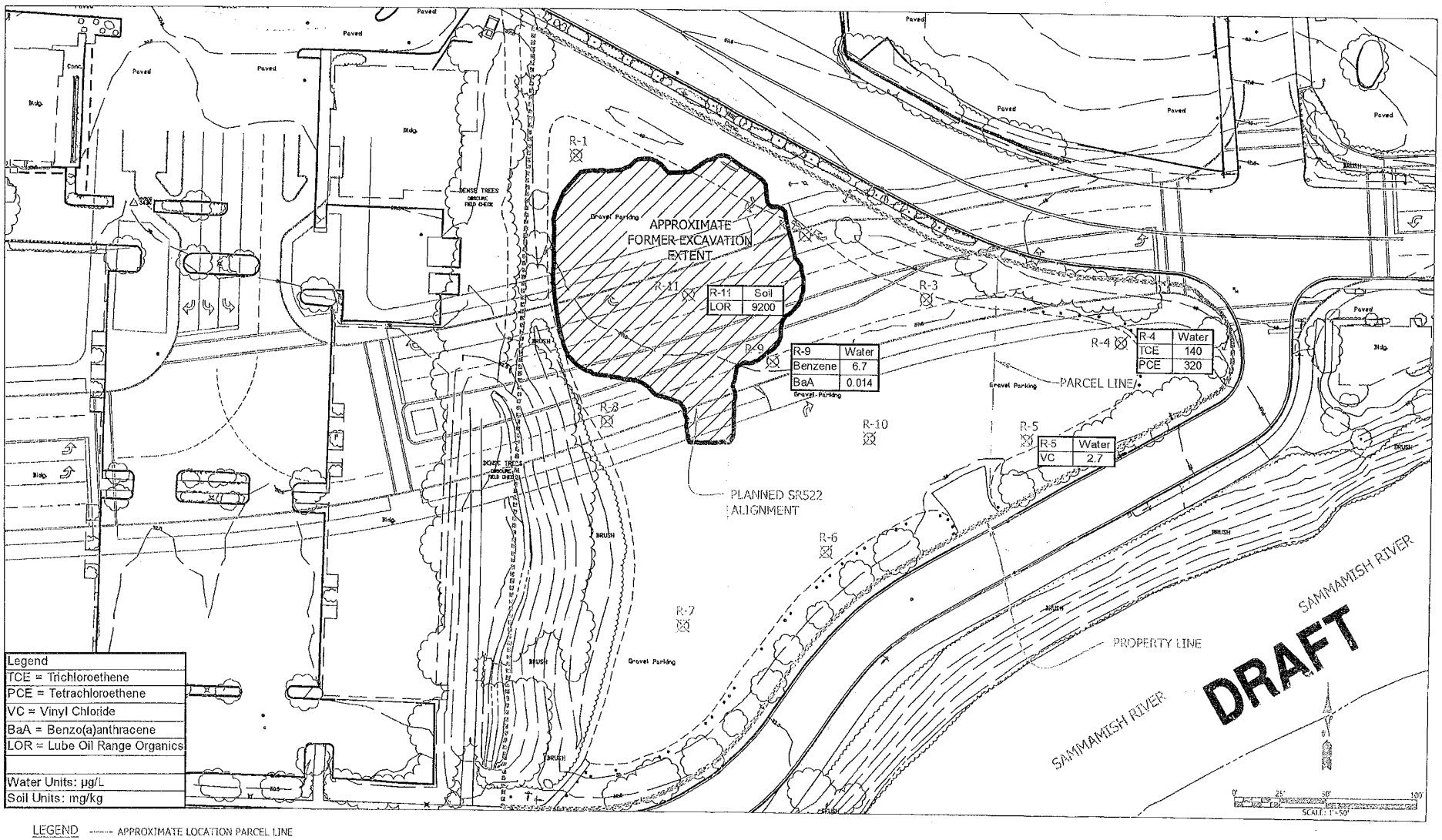
*** Insufficient water volume available in temporary monitoring well.

**** - cPAH values are total/corrected for Toxicity Equivalency Factors under WAC 173-340-708 (c)

All diesel range hydrocarbon sample extracts treated with an acid/silica gel cleanup procedure.

No other VOCs or RCRA metals were detected above laboratory reporting limits (see Appendix D for complete list of compounds analyzed).

DRAFT



LEGEND ------ APPROXIMATE LOCATION PARCEL LINE
---- APPROXIMATE LOCATION PROPERTY LINE
R-11 ⊠ PROBE DESIGNATION AND APPROXIMATE LOCATION

BASE MAP PROVIDED BY PENTEET ENGINEERING INC

S:\2007 PROJECTS\2007-098-22 BOTHELL CROSSROADS\CAD\HWA 2007-098-21 T220.DWG

HWA GEOSCIENCES INC.

RIVERSIDE PROPERTY
PHASE II ENVIRONMENTAL SITE ASSESSMENT
BOTHELL CROSSROADS PROJECT
BOTHELL, WASHINGTON

SOIL & GROUND WATER CONCENTRATIONS GREATER THAN METHOD A/B CLEANUP LEVELS

DRAWN BY EFK
CHECK BY CD
DATE 02-23-08

FIGURE NO. 3
PROJECT NO. 2007-098-21 TASK 220

TABLE 2
SOIL ANALYTICAL RESULTS
(all results in milligrams per kilogram (mg/kg) except as noted)

Sample Identification		R-1-4	R-2-6	R-3-8	R-4-8	R-5-9	R-6-14	R-7-12	R-8-12	R-9-4	R-10-15	R-11-3	MTCA Method A/B Cleanup Level
Location		R-1	R-2	R-3	R-4	R-5	R-6	R-7	R-8	R-9	R-10	R-11	
Sample interval, ft bgs		6-8'	6-8'	10-12'	6-8'	6-8'	10-12'	6-8'	6-8'	2-4'	6-8'	2-4'	
Hydrocarbon Identification	Gasoline Range	NA	NA	<23	<22	<22	<29	<30	NA	NA	<34	<44	100/30*
	Diesel Range	NA	NA	<57	<56	<55	<72	<75	NA	NA	<86	<110	2000
	Lube Oil Range	NA	NA	<110	>110	>110	<140	>150	NA	NA	<170	>220	2000
Total Petroleum Hydrocarbons	Gasoline Range	<5.3	<5.4	NA	NA	NA	NA	NA	<7.8	<5.3	NA	NA	100/30*
	Diesel Range	<28	<28	NA	<28	<28	NA	<37	<31	<28	NA	<260	2000
	Lube Oil Range	**120**	<56	NA	**94**	**800**	NA	**80**	**210**	**93**	NA	**9200**	2000
VOCs**	Acetone	<0.0065	**0.016**	<0.0057	<0.0047	NA	NA	NA	NA	NA	NA	NA	8000
	Tetrachloroethene	<0.0065	<0.0044	<0.0057	**0.009**	NA	NA	NA	NA	NA	NA	NA	0.05

Notes:

MTCA A / B – Ecology MTCA Method A / B soil cleanup levels, Chapter 173-340 WAC, shown for reference only. These cleanup levels may not apply at this site, and are provided as a screening level indication of the environmental quality of the site only.

< - not detected at listed reporting limit

Bold – Analyte Detected

Bold / highlighted – Analyte exceeds cleanup level

* - The Method A Soil cleanup levels for gasoline mixtures without benzene and the total of ethylbenzene, toluene, and xylenes are less than 1% of the gasoline mixture are 100 mg/kg/all other mixtures are 30 mg/kg

** No other VOCs were detected above laboratory reporting limits (see Appendix D for complete list of compounds analyzed).

All diesel range hydrocarbon sample extracts treated with an acid/silica gel cleanup procedure.

DRAFT

TABLE 3
GROUND WATER ANALYTICAL DATA
(all results in milligrams per liter (mg/l) except as noted)

Sample ID		R-1-13	R-1-20	R-2-13	R-2-20	R-3-12	R-4-15	R-5-20	R-6-20	R-7-20	R-8-20	R-9-18	R-10-20	MTCA Method A/B Cleanup level
Screen Interval (feet below ground surface)		10-13	17-20	10-13	17-20	7-12	10-15	15-20	15-20	15-20	15-20	13-18	15-20	
Approximate Depth to Water (ft bgs)		10	16.5	9.5	16	11	9.2	16.5	14.5	16.25	13.5	13.1	11.3	
Field Parameters	pH	6.26	6.63	6.38	7.48	6.35	5.82	6.59	6.68	6.44	6.66	6.8	6.55	
	Conductivity (mS/cm)	526	159	309	115	349	231	359	581	1169	1050	934	457	
	Temperature (C)	8.85	11.3	9.83	10.86	9.35	11.2	12.71	12.57	12.75	11.86	9.03	11.14	
	Dissolved Oxygen (mg/l)#	0.75	0.4	6.1	15.25	6.43	5.07	1.1	0.54	0.44	5.72	9.84	4.08	
Hydrocarbon Identification	Gasoline Range	NA	NA	NA	NA	<0.10	<0.10	<0.10	<0.10	<0.10	NA	NA	<0.10	0.8/1.0*
	Diesel Range	NA	NA	NA	NA	<0.25	<0.25	<0.25	<0.26	<0.25	NA	NA	<0.26	0.5
	Lube Oil Range	NA	NA	NA	NA	<0.40	<0.41	<0.40	<0.41	<0.40	NA	NA	<0.41	0.5
Total Petroleum Hydrocarbons	Gasoline Range	<0.10	<0.10	<0.10	<0.10	NA	NA	NA	NA	NA	<0.10	**0.31**	NA	0.8/1.0*
	Diesel Range	<0.25	<0.25	<0.29	<0.25	NA	NA	NA	NA	NA	<0.25	<0.31	NA	0.5
	Oil Range	<0.40	<0.40	<0.46	<0.41	NA	NA	NA	NA	NA	<0.40	<0.49	NA	0.5
VOCs (µg/L)	Benzene	<0.20	<0.20	<0.20	<0.20	<0.20	<2.0	NA	NA	NA	<1.0	**6.7**	NA	5
	Toluene	<0.20	**0.54**	<0.20	**0.23**	**0.27**	**2.4**	NA	NA	NA	<1.0	**37**	NA	1000
	Ethylbenzene	<0.20	<0.20	<0.20	<0.20	<0.20	<2.0	NA	NA	NA	<1.0	**5.9**	NA	700
	Xylenes	<0.40	<0.40	<0.40	<0.40	<0.40	<4.0	NA	NA	NA	<1.0	**41**	NA	1000
	Vinyl Chloride	<0.20	<0.20	<0.20	<0.20	<0.20	<2.0	**2.7**	<0.20	<0.20	NA	NA	<0.20	0.2
	(trans) 1,2-DCE	<0.20	<0.20	<0.20	<0.20	<0.20	<2.0	**0.65**	<0.20	<0.20	NA	NA	<0.20	160
	(cis) 1,2-DCE	<0.20	<0.20	**0.25**	<0.20	**1.6**	**43**	**14**	<0.20	<0.20	NA	NA	<0.20	80
	TCE	<0.20	<0.20	<0.20	<0.20	**0.39**	**140**	**1.5**	<0.20	<0.20	NA	NA	**0.59**	5
	PCE	<0.20	<0.20	<0.20	<0.20	**0.56**	**320**	<0.20	<0.20	<0.20	NA	NA	**3.9**	5
Polyaromatic Hydrocarbons (µg/L)	Naphthalene	NA	NA	NA	NA	NA	NA	<0.095	<0.095	<0.096	<0.095	**2.2**	NA	160
	2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	<0.095	<0.095	<0.096	<0.095	**0.59**	NA	160
	1-Methylnaphthalene	NA	NA	NA	NA	NA	NA	<0.095	<0.095	<0.096	<0.095	**0.34**	NA	160
	Benzo[a]anthracene	NA	NA	NA	NA	NA	NA	<0.0095	<0.0095	<0.0096	<0.0095	**0.014**	NA	0.012

Sample ID		R-1-13	R-1-20	R-2-13	R-2-20	R-3-12	R-4-15	R-5-20	R-6-20	R-7-20	R-8-20	R-9-18	R-10-20	MTCA Method A/B Cleanup level
Metals (µg/L)	Barium	69	<28	<28	<28	NA	NA	NA	NA	NA	NA	NA	NA	3200
	Lead	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	NA	15

Notes:

MTCA A / B – Ecology MTCA Method A / B soil cleanup levels, Chapter 173-340 WAC, shown for reference only. These cleanup levels may not apply at this site, and are provided as a screening level indication of the environmental quality of the site only.

µg/L- micrograms per liter

< - not detected at listed reporting limit

NA– Not Analyzed

Bold – detected

Bold / highlighted – Analyte exceeds cleanup level

(trans) or (cis)-1,2-DCE - (trans) or (cis)-1,2-Dichloroethylene

TCE – Trichloroethylene

PCE- Tetrachloroethylene

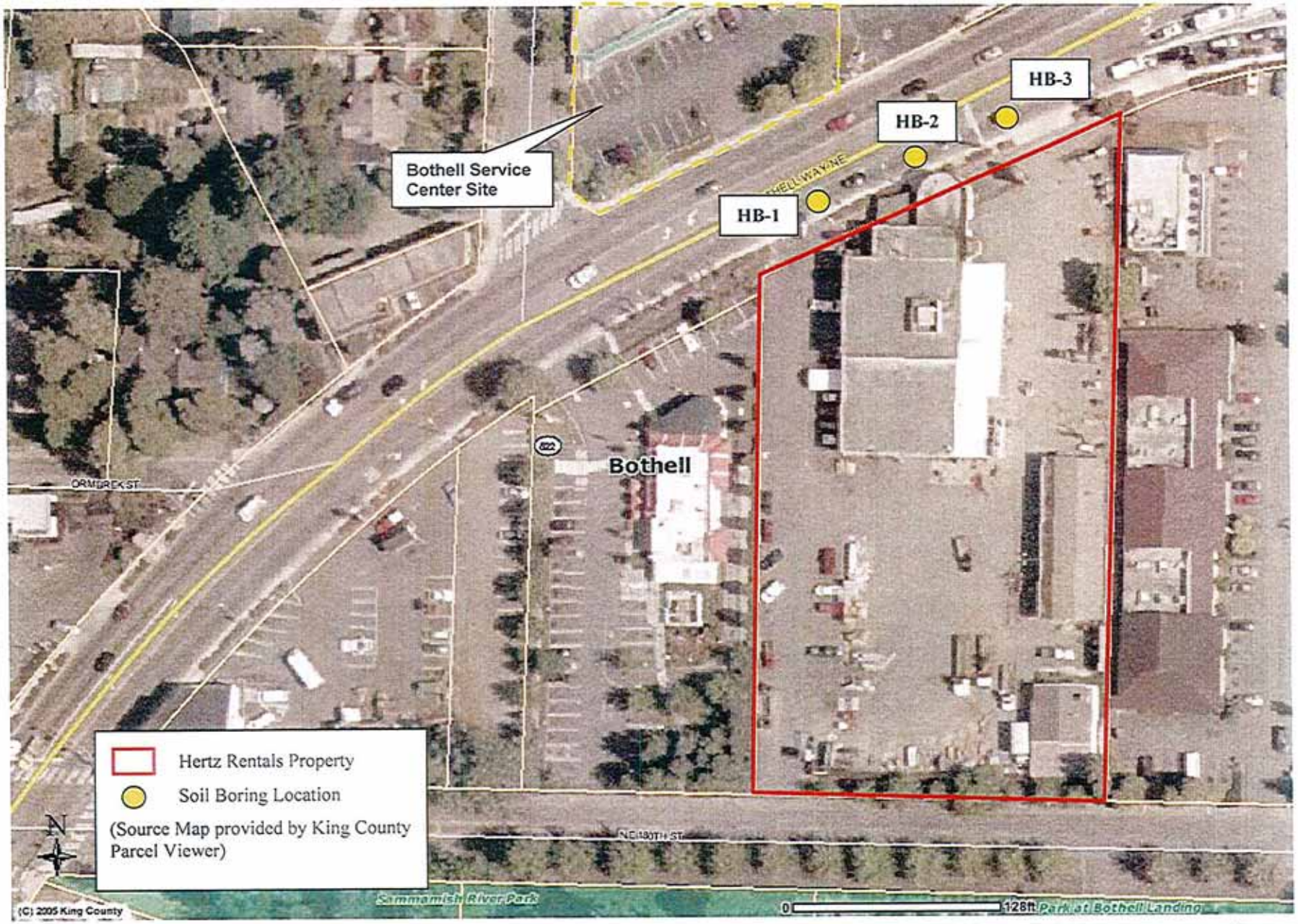
* - The Method A Ground Water cleanup levels for gasoline mixtures without benzene and the total of ethylbenzene, toluene, and xylenes are less than 1% of the gasoline mixture are 800 mg/l/all other mixtures are 1000 mg/l

- Values greater than 5 mg/L may be due to instrument or calibration issues

All diesel range hydrocarbon sample extracts treated with an acid/silica gel cleanup procedure.

No other VOCs PAHs, or RCRA metals were detected above laboratory reporting limits (see Appendix D for complete list of compounds analyzed).

DRAFT



HWA GEOSCIENCES INC.

SITE AND EXPLORATION PLAN

PHASE II ENVIRONMENTAL SITE ASSESSMENT
18030 BOTHELL WAY NE
BOTHELL CROSSROADS PROJECT
BOTHELL, WASHINGTON

FIGURE NO. **1**

PROJECT NO. 2007-098

TABLE 1
SOIL ANALYTICAL DATA
(all results in milligrams per kilogram (mg/kg))

Boring	HB-3-4	MTCA Method A/B Cleanup Level
Sample interval, ft bgs	4-8	
VOCs	ND	Varies

Notes:

MTCA A / B – Ecology MTCA Method A / B soil cleanup levels, Chapter 173-340 WAC, shown for reference only. These cleanup levels may not apply at this site, and are provided as a screening level indication of the environmental quality of the site only.

ND – None of the selected analytes detected. See Appendix B for a full list of analytes

TABLE 2
GROUND WATER ANALYTICAL DATA
(all results in micrograms per liter (µg/l) except as noted)

Boring		HB-1-W	HB-2-W	MTCA Method A/B Cleanup level
Approximate Depth to Water (ft bgs)		9.5	6.9	
Field Parameters	pH	7.55	7.44	
	Conductivity (µS/cm)	204	279	
	Temperature (°C)	11.8	10.8	
	Dissolved Oxygen (mg/l)	1.82	3.32	
VOCs	cis-1,2-DCE	<0.20	**1**	8 (B)
	TCE	<0.20	**1.1**	5
	PCE	**0.26**	**2.7**	5

Notes:

MTCA A / B – Ecology MTCA Method A / B soil cleanup levels, Chapter 173-340 WAC, shown for reference only. These cleanup levels may not apply at this site, and are provided as a screening level indication of the environmental quality of the site only.

< - not detected at listed reporting limit

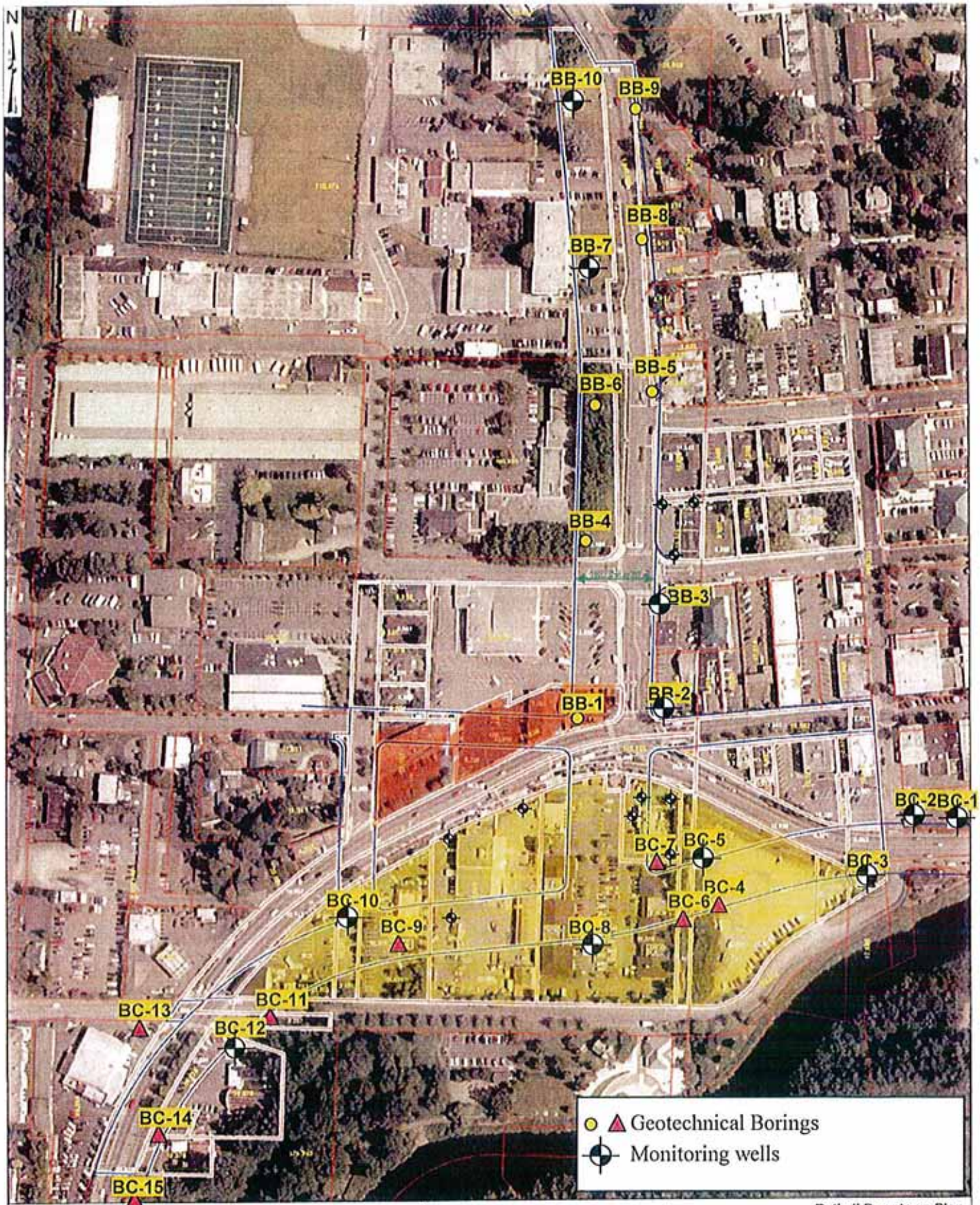
Bold – detected

DCE – Dichloroethylene

TCE – Trichloroethene

PCE - Tetrachloroethylene

No other VOCs were detected above laboratory reporting limits (see Appendix B for complete list of compounds analyzed).



Project Location Map
Figure 1

Bothell Downtown Plan
SR 527 Improvements (160 ft ROW)
Parcel Divisions with Area Calculations

TABLE 1
GEOTECHNICAL EXPLORATIONS
SOIL ANALYTICAL DATA

	Sample Identification	BB-4-7.5	BC-7-7.5	BC-8-7.5	BC-13-10	BC-4-12.5	BB-8-5	BB-9-10	BB-2-7.5	BB-5-7.5	BC-3-17.5	BB-3-10	BC-5-10	BC-10-1	MTCA Method A/B Cleanup Level
	Location	BB-4	BC-7	BC-8	BC-13	BC-4	BB-8	BB-9	BB-2	BB-5	BC-3	BB-3	BC-5	BC-10	
	Sample Depth, ft bgs	7.5	7.5'	7.5'	10'	12.5'	5'	10'	7.5'	7.5'	17.5'	10'	10'	1	
Total Petroleum Hydrocarbons (NWTPH) (mg/kg)	Gasoline Range	<5.6	<6.3	<8.5	<5.7	<9.7	<6.5	<6.3	<7.1	<5.3	<9.7	<6.6	<6.7	<4.8	100/30*
	Diesel Range	<36	<29	<36	<29	<32	<31	<33	<31	<28	<36	<31	<31	<27	2000
	Lube Oil Range	<53	<57	<71	<57	<63	<61	<61	<65	<56	<72	<61	<62	**81**	2000
	BTEX													ND	
VOCs (8260B) (mg/kg)	Acetone		**0.096**	NA	NA	NA	NA	NA	**0.029**	NA	**0.048**	<0.0053	NA	NA	8000
	2-Butanone		0.019	NA	NA	NA	NA	NA	<0.0056	NA	<0.0076	<0.0053	NA	NA	None
	(cis) 1,2-Dichloroethene		<0.0011	NA	NA	NA	NA	NA	<0.0011	NA	0.0059	<0.0011	NA	NA	800
	Trichloroethene		<0.0011	NA	NA	NA	NA	NA	<0.0011	NA	**0.0055**	<0.0011	NA	NA	0.03
	Tetrachloroethene		<0.0011	NA	NA	NA	NA	NA	<0.0011	NA	**0.0036**	**0.0055**	NA	NA	0.05

Notes:

MTCA A / B – Ecology MTCA Method A / B soil cleanup levels, Chapter 173-340 WAC, shown for reference only. These cleanup levels may not apply at this site, and are provided as a screening level indication of the environmental quality of the site only.
mg/kg – milligrams per kilogram
< - not detected at listed reporting limit
NA - Not analyzed
bgs - below ground surface
Bold – Analyte Detected
Bold / shaded – Analyte concentration greater than cleanup level
Other VOCs analyzed but not detected are not included in this table. For full list of analytes see laboratory reports.
* - The Method A Soil cleanup levels for gasoline mixtures without benzene and the total of ethylbenzene, toluene, and xylenes are less than 1% of the gasoline mixture are 100 mg/kg/all other mixtures are 30 mg/kg
All diesel range hydrocarbon sample extracts treated with an acid/silica gel cleanup procedure.

TABLE 2
GEOTECHNICAL EXPLORATIONS
GROUND WATER ANALYTICAL DATA

						Riverside			Giannola		
Boring		BB-2	BB-3	BB-4	BB-6	BC-3	BC-5	BC-8	BC-10	BC-12	MTCA A/B
Screen Interval (feet below ground surface)											
Approximate Depth to Water (ft bgs)											
Field Parameters	pH										
	Conductivity (mS/cm)										
	Temperature (C)										
	Dissolved Oxygen (mg/l)										
Hydrocarbon Identification (HCID) (mg/L)	Gasoline Range			NA	NA						0.8/1.0*
	Diesel Range			NA	NA						0.5
	Lube Oil Range			NA	NA						0.5
Total Petroleum Hydrocarbons (NWTPH) (mg/L)	Gasoline Range	0.15	NA	<0.10	<0.10	NA	<0.10	<0.10			0.8/1.0*
	Diesel Range	<0.25	NA	<0.25	<0.25	NA	<0.26	<0.26			0.5
	Oil Range	<0.40	NA	<0.40	<0.40	NA	**0.72**	<0.41			0.5
VOCs (8260B) (µg/L)	Benzene	<0.40	<0.20	<0.20	NA	<1	<0.20	<0.20			5
	Toluene	<2.0	<1.0	<1.0	NA	<5	<1.0	<1.0			1000
	Ethylbenzene	<0.40	<0.20	<0.20	NA	<1	<0.20	<0.20			700
	Xylenes	<0.80	<0.40	<0.40	NA	<2	<0.40	<0.40			1000
	Vinyl Chloride	<0.40	<0.20	<0.20	NA	<1	<0.20	**0.94**			0.2
	(trans) 1,2-DCE	<0.40	<0.20	<0.20	NA	<1	<0.20	<0.20			160
	(cis) 1,2-DCE	<0.40	<0.20	<0.20	NA	**46**	<0.20	<0.20			80
	TCE	<0.40	<0.20	<0.20	NA	**120**	<0.20	<0.20	PENDING	PENDING	5
	PCE	**94**	**0.51**	<0.20	NA	**110**	<0.20	<0.20	PENDING	PENDING	5
Polynuclear Aromatic Hydrocarbons (8270 SIM) (µg/L)	Naphthalene							**0.79**			160
	2-Methylnaphthalene							**0.18**			160
	1-Methylnaphthalene							**0.93**			160
	Acenapthene							**2.50**			
	Benzo[a]anthracene							<0.0097			0.012
Metals (200.8) (µg/L)	Barium							**28**			3200
	Lead							<1.0			15

Notes:

MTCA A / B – Ecology MTCA Method A / B soil cleanup levels, Chapter 173-340 WAC, shown for reference only. These cleanup levels may not apply at this site, and are provided as a screening level indication of the environmental quality of the site only.

µg/L- micrograms per liter mg/L - milligrams per liter

< - not detected at listed reporting limit

> -Hydrocarbon range concentration greater than reporting limit

NA – Not Analyzed

Bold – detected

Bold / shaded – Analyte concentration greater than cleanup level

Compounds and metals analyzed but not detected are not included in this table. For full list of analytes see laboratory reports.

(trans) or (cis)-1,2-DCE - (trans) or (cis)-1,2-Dichloroethylene

TCE – Trichloroethylene

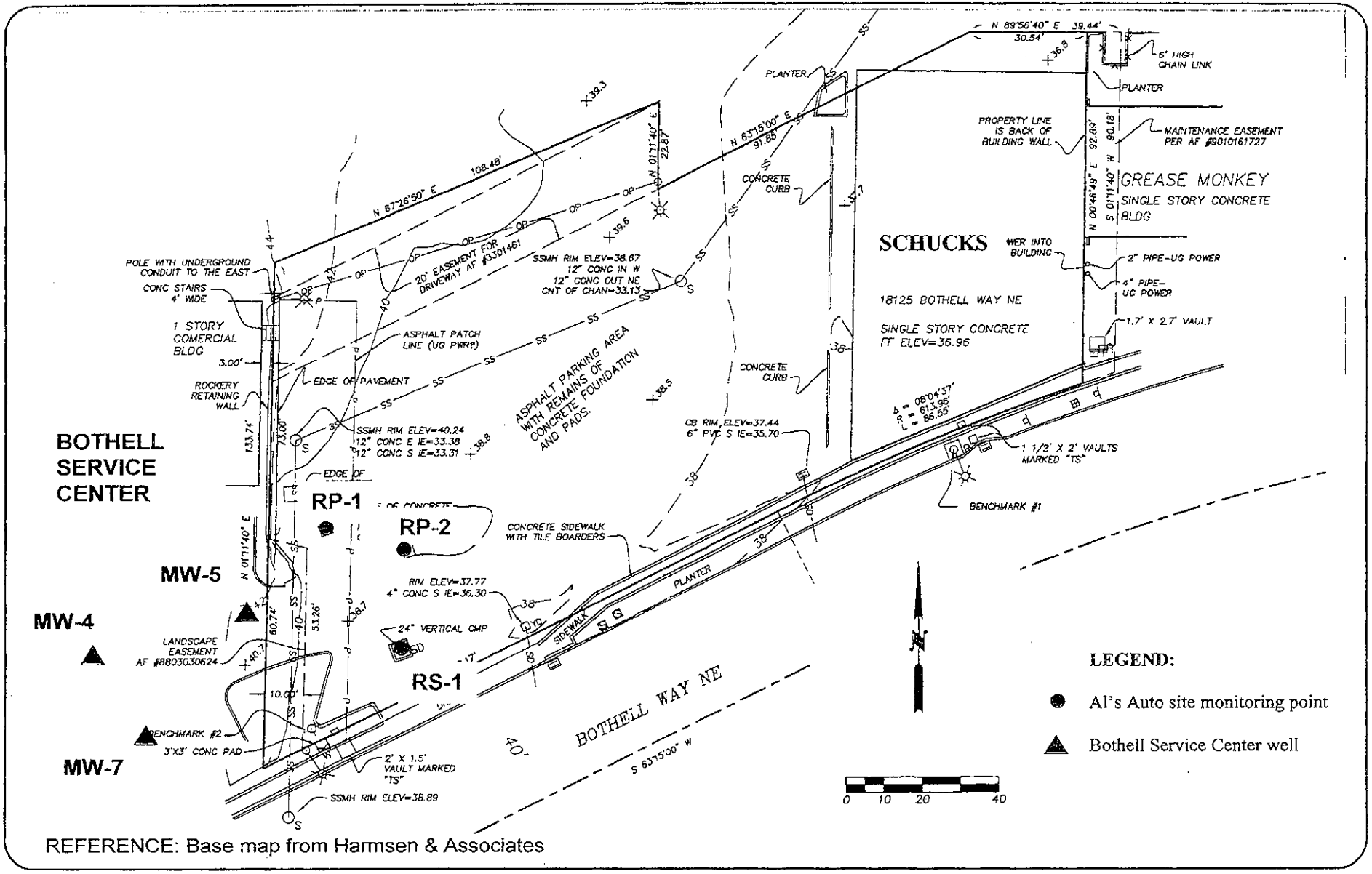
PCE- Tetrachloroethylene

Trip Blanks collected and analyzed for TPH-G and VOC's: No detections during analysis

* - The Method A Ground Water cleanup levels for gasoline mixtures without benzene and the total of ethylbenzene, toluene, and xylenes are less than 1% of the gasoline mixture are 800 mg/l/all other mixtures are 1000 mg/l

Water samples analyzed for concentrations of metals were field filtered using a 0.45 micron filter. Water sample analysis for all other parameters were field filtered using a 1 micron filter.

All diesel range hydrocarbon sample extracts treated with an acid/silica gel cleanup procedure.



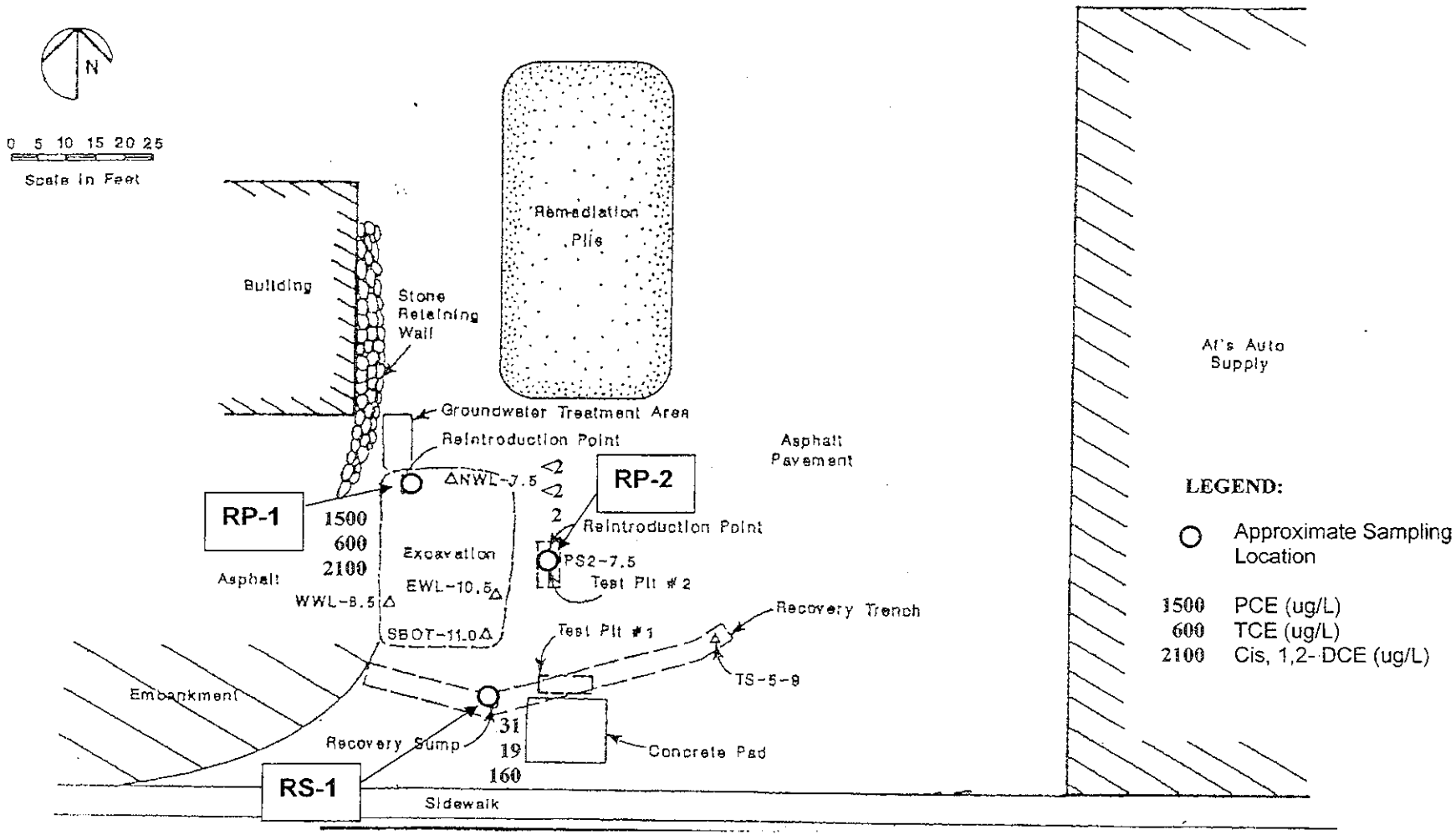
REFERENCE: Base map from Harmsen & Associates

HWA GEOSCIENCES INC.

AL'S AUTO BOTHELL SITE
GROUND WATER SAMPLING
18125 BOTHELL WAY NE
BOTHELL, WASHINGTON

SITE PLAN

PROJECT NO.: 2000-055-21 FIGURE: 2



REFERENCE: Base map from Applied Geotechnology Inc..

HWA GEOSCIENCES INC.

AL'S AUTO BOTHELL SITE
GROUND WATER SAMPLING
18125 BOTHELL WAY NE
BOTHELL, WASHINGTON

SITE PLAN AND APPROXIMATE SAMPLING LOCATIONS

PROJECT NO.: 2000-055-21 FIGURE: 3

Appendix B

Field Exploration and Sampling Procedures

Appendix B
Field Exploration and Sampling Procedures

Drilling

ESN Northwest of Lacey, Washington extended seventeen test holes on April 1 to 7, 2009 for the City of Bothell Crossroads Redevelopment Project. An eighteenth test hole was attempted twice at one location, but the possibility of hitting an underground utility line was considered too great to continue at either location. The test holes were extended to depths of 12 to 19 feet below ground surface (bgs). A Camp Dresser &McKee (CDM) geologist observed the drilling and monitoring well installation. The borings were advanced using a truck- mounted drive-point technology (DPT) rig.

Soil Sampling

Soil was sampled by driving a 4-foot long, 1.5-inch inside diameter, 2.5-inch outside diameter Macro-Core sampler (manufactured by Geoprobe®) attached to the end of the drive rods. The sampler contains a clear plastic liner to contain the soil sample. The liners are cut open to expose the soil cores. Driving was terminated when the full 4 feet drive was completed. Each sampled interval was logged according to the Unified Soil Classification System.

The following procedures were used to collect subsurface soil samples during drilling:

1. Driller retrieved sampler with plastic liner from the borehole.
2. The plastic liner was opened and sample recovery was measured.
3. Soil samples to be analyzed for non-volatile analyses and for dry weight determination were collected in laboratory supplied pre-cleaned 4-ounce wide mouth glass jars. Volatile organic compounds (VOCs) and NWTPH-Gx analyses were collected using approximately 5-gram core samples, and dispensed immediately into pre-weighed 40 mL VOA vials. The samples were collected and the containers were sealed in accordance with EPA Method 5035A. Sample containers were labeled, secured with a chain-of-custody seal and placed in a chilled cooler.
4. A representative sample was placed in a resealable plastic bag to measure headspace using an organic vapor meter equipped with a photoionization detector (OVM-PID).
5. The contents of the sampler were described on the field log.
6. The sampling device was decontaminated by the procedures described later in this appendix.

Field Screening

An OVM-PID was used to screen samples from the soil borings as follows: soil samples were placed in a plastic resealable bag and disaggregated; after approximately 1 minute, the OVM-PID probe was inserted through the bag in the space (headspace) above the soil and the maximum reading on the instrument was recorded. This screening technique is not a compound-specific analysis and is affected by climate (e.g., temperature and

humidity), soil type and condition, and instrument calibration and operation. The intent of this analysis is to qualitatively compare samples and assist in selecting samples for chemical analysis.

DPT Boring Water Sampling

Groundwater samples were by extending the drill string into the saturated zone. Groundwater samples were collected through the rods after pulling back the rods and exposing a telescoping stainless steel screen. A peristaltic pump with dedicated tubing was used to withdraw the groundwater. New tubing was used to purge and sample each DPT boring. Approximately a half gallon of groundwater was purged from each boring before a groundwater sample was collected. After water samples were collected, the tool string was extracted and the borings were filled with bentonite and patched with asphalt. In areas where a concrete slab was below asphalt, bentonite chips were filled in the boring to approximately 2-ft bgs, concrete was filled in the boring to approximately 1-ft bgs, and asphalt was filled in the remaining portion of the boring to the ground surface.

Decontamination Procedures

The following decontamination procedures were used to decontaminate drill rods, soil sampling equipment, and the stainless steel temporary well sampling equipment:

1. Rinse and scrub in potable water.

2. Wash and scrub with nonphosphate-based detergent and potable water.

3. Rinse in potable water.

4. Rinse with deionized water.

5. Store on clean plastic between sample collection.

Sample Handling and Shipping

Soil samples were collected during the night and were not exposed to sunlight. Samples were checked for label completeness and cap tightness. Each sealed sample container was placed in packing material upright in a cooler and chilled with ice. The samples were stored and transported under chain-of-custody procedures. Copies of the completed chain-of-custody forms are presented with the laboratory reports in **Appendix D**.

Materials Generated During Fieldwork

Soil cuttings and decontamination/ purge water generated during fieldwork were placed in dedicated 16-gallon drums, labeled to identify the contents, and temporarily stored onsite pending appropriate disposal.

Other waste generated during assessment activities (rubber gloves, used tubing, empty bags, etc.) were placed in plastic garbage bags and sealed shut. The garbage bags were placed in commercial waste collection containers.

Documentation

The CDM representative reported daily activities on a Field Investigation Daily Report form. Personnel on site, visitors, weather, and general activities planned and performed, and any problems were included on the Daily Report. Documentation of drilling and soil and groundwater sampling was made on a Field Log of Exploration. The log was completed in the field by the CDM representative. Field documentation included a comprehensive discussion of field observations, including visual observations, field parameter measurements, QA observations, and problems encountered. Field notes are maintained within the project files in CDM's Bellevue office.

Appendix C

Boring Logs

SOIL CLASSIFICATION LEGEND

MAJOR DIVISIONS				TYPICAL NAMES
COARSE GRAINED SOILS More than half is larger than No. 200 sieve	GRAVELS More than half coarse fraction is larger than No. 4 sieve size	Clean gravels with little or no fines	GW	Well graded gravels, gravel-sand mixtures
			GP	Poorly graded gravels, gravel-sand mixtures
		Gravel with over 12% fines	GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS More than half coarse fraction is smaller than No. 4 sieve size	Clean sands with little or no fines	SW	Well graded sands, gravelly sands
			SP	Poorly graded sands, gravelly sands
		Sands with over 12% fines	SM	Silty sand, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures
FINE GRAINED SOILS More than half is smaller than No. 200 sieve	SILTS AND CLAYS Liquid limit less than 50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic clays and organic silty clays of low plasticity
	SILTS AND CLAYS Liquid limit greater than 50		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			PT	Peat and other highly organic soils

SAMPLE TYPE SYMBOLS

- Disturbed bag or jar sample
- Std. Penetration Test (2.0" OD)
- Type U Ring Sampler (3.25" OD)
- California Sampler (3.0" OD)
- Undisturbed Tube Sample
- Grab Sample
- Core Run
- Non-standard Penetration Test (with split spoon sampler)

CONTACT BETWEEN UNITS

- Change in geologic unit
- Soil type change within geologic unit
- Obscure or gradational change

DESCRIPTORS FOR SOIL STRATA AND STRUCTURE (ENGLISH/METRIC)

General Thickness or Spacing		Structure		General Attitude	
Parting:	less than 1/16 in. (1/6 cm)	Pocket:	Erratic, discontinuous deposit of limited extent	Near horizontal:	0 to 10 deg.
Seam:	1/16 to 1/2 in. (1/6 to 1 1/4 cm)	Lens:	Lenticular deposit	Low angle:	10 to 45 deg.
Layer:	1/2 to 12 in. (1 1/4 to 30 1/2 cm)	Varved:	Alternating seams of silt and clay	High angle:	45 to 80 deg.
Stratum:	> 12 in. (30 1/2 cm)	Laminated:	Alternating seams	Near Vertical:	80 to 90 deg.
Scattered:	< 1 per ft. (30 1/2 cm)	Interbedded:	Alternating layers		
Numerous:	> 1 per ft. (30 1/2 cm)				

MOISTURE DESCRIPTION

Dry - Free of moisture, dusty

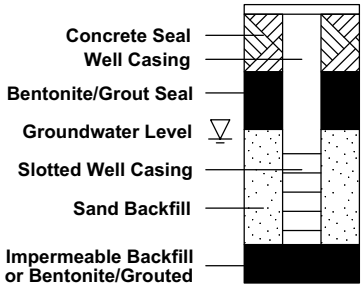
Moist - Damp but no visible free water

Wet - Visible free water, saturated

STRUCTURE DESCRIPTION (cont.)

Fractured	Breaks easily along definite fractured planes
Slickensided	Polished, glossy, fractured planes
Blocky, Diced	Breaks easily into small angular lumps
Sheared	Disturbed texture, mix of strengths
Homogeneous	Same color and appearance throughout

WELL COMPLETIONS



RELATIVE DENSITY OR CONSISTENCY VS. SPT N-VALUE

COARSE GRAINED			FINE GRAINED		
Density	N (blows/ft)	Approx. Relative Density (%)	Consistency	N (blows/ft)	Approx. Undrained Shear Str. (psf)
Very Loose	0 to 4	0 - 15	Very Soft	0 to 2	<250
Loose	4 to 10	15 - 35	Soft	2 to 4	250 - 500
Medium Dense	10 to 30	35 - 65	Medium Stiff	4 to 8	500 - 1000
Dense	30 to 50	65 - 85	Stiff	8 to 15	1000 - 2000
Very Dense	Over 50	85 - 100	Very Stiff	15 to 30	2000 - 4000
			Hard	over 30	>4000

PHYSICAL PROPERTY TEST

AL -	Atterberg Limits
FC -	Fines Content
GSD -	Grain Size Distribution
MC -	Moisture Content
MD -	Moisture Content/Dry Density
Comp -	Compaction Test (Proctor)
SG -	Specific Gravity
CBR -	California Bearing Ratio
RM -	Resilient Modulus
Perm -	Permeability
TXP -	Triaxial Permeability
Cons -	Consolidation
Chem -	Analytical Chemical Analysis
Corr -	Corrosion
VS -	Vane Shear
DS -	Direct Shear
UC -	Unconfined Compression
TX -	Triaxial Compression
UU -	Unconsolidated, Undrained
CU -	Consolidated, Undrained
CD -	Consolidated, Drained

Notes:

1. Sample descriptions in this report are based on visual field and laboratory observations, which include density/consistency, moisture condition, grain size, and plasticity estimates, and should not be construed to imply field or laboratory testing unless presented herein. Visual-manual classification methods in accordance with ASTM D 2488 were used as an identification guide. Where laboratory data are available, soil classifications are in general accordance with ASTM D 2487.

2. Dual symbols are used to indicate gravel and sand units with 5 to 12 percent fines.

3. WOR = weight of rod.

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Project No: 19897.68445 Figure: C1

SOIL CLASSIFICATION/LEGEND 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B1

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										8" Asphalt.	
										8" Concrete.	
				0.5		2				Silty SAND (SM), olive-gray, with fine to coarse gravel (20%), rounded, diam. 1/4-1", medium dense, moist.	
	B1-6					4					
				0.8		6					
	B1-W					▽8		SM		Decreasing gravel (5-10%), becomes wet.	
				0.9		10					
						12					
						14				Boring terminated at 14 ft bgs. Groundwater encountered at 8 ft bgs.	
						16					
						18					
						20					

Station: _____
Surface Elevation: _____
Logged By: AW

Drill Rig: DPT
Equipment/Hammer: Continuous Core/
Date Completed: 4-6-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B1 — Figure: C2
Project No: 19897.68445 — 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B2

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										8" Asphalt.	
										8" Concrete. Empty steel pipe in concrete at 13-14 inches bgs.	
						2		SM		Silty SAND (SM), tan, with fine gravel (20%).	
						4					
								ML		Sandy SILT (ML), black, some organic material (rootlets), moist (Marsh Deposit).	
						6				Silty SAND (SM), tan, medium dense, wet, odor.	
	B2-7 B19-7										
						8				Becomes saturated.	
	B2-W B19-W							SM			
						10					
						12				Boring terminated at 12 ft bgs. Groundwater encountered at 8 ft bgs.	
						14					
						16					
						18					
						20					

Station: _____ Drill Rig: DPT

Surface Elevation: _____ Equipment/Hammer: Continuous Core/

Logged By: AW Date Completed: 4-2-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B2 Figure: C3

Project No: 19897.68445 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B3

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										8" Asphalt.	
										8" Concrete.	
						2		SM		Silty SAND (SM), tan, with gravel (20%), medium dense, moist.	
										Becomes black, odor.	
						4				No recovery.	
						6				Sandy SILT (ML), black, stiff, wet, odor (Marsh Deposit).	
	B3-9					8					
						10		ML		Decreasing organics.	
										Increasing sand, becomes saturated.	
										Decreasing sand, increasing silt.	
						12					
						14				Boring terminated at 14 ft bgs. Groundwater encountered at 11 ft bgs.	
						16					
						18					
						20					

Station: _____
Surface Elevation: _____
Logged By: AW

Drill Rig: DPT
Equipment/Hammer: Continuous Core/
Date Completed: 4-3-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B3 Figure: C4
Project No: 19897.68445 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B4

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										8" Asphalt.	
										8" Concrete.	
						2				Gravelly, Silty SAND (SM), dark gray, gravel is fine to coarse, subangular (25%), moist.	
				0				SM			
						4				Becomes silty sand, sand is medium to coarse grained, decreasing gravel (10%), wet.	
				0							
	B4-6					6				SILT (ML), gray, stiff, wet.	
						▽				Becomes saturated.	
				0		8					
								ML			
				0		10					
	B4-W					12					
										Boring terminated at 13 ft bgs. Groundwater encountered at 7 ft bgs.	
						14					
						16					
						18					
						20					

Station: _____
Surface Elevation: _____
Logged By: AW

Drill Rig: DPT
Equipment/Hammer: Continuous Core/
Date Completed: 4-2-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B4 — Figure: C5
Project No: 19897.68445 — 1 of 1

NEIS BORING LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B5

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										8" Asphalt.	
										8" Concrete.	
				0		2		ML		Sandy SILT (ML), olive-gray, sand is fine to very fine grained, dense, moist.	
						4					
				0		6				Silty SAND (SM), gray, sand is fine grained, dense. Becomes wet at 6.5 ft bgs. Increasing fine silt (SM/ML).	
				0		8		SM		Becomes saturated.	
	B5-8										
						10					
				0				ML		Sandy SILT (ML), becomes wet.	
	B5-W					12					
										Boring terminated at 13 ft bgs. Groundwater encountered at 8 ft bgs.	
						14					
						16					
						18					
						20					

Station: _____
Surface Elevation: _____
Logged By: AW

Drill Rig: DPT
Equipment/Hammer: Continuous Core/
Date Completed: 4-2-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B5 — Figure: C6
Project No: 19897.68445 — 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B6

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										8" Asphalt.	
										8" Concrete.	
										Silty SAND (SM), olive-gray, with gravel (20%), medium dense, moist.	
						2					
				0		4					
				0.6		6				Increasing gravel (30%). 6-inch lens of coarse sand and gravel. Becomes wet to saturated.	
	B6-8			0.7		▽8					
						10		SM			
						12					
						14					
	B6-W					16					
						18				Boring terminated at 18 ft bgs. Groundwater encountered at 8 ft bgs.	
						20					

Station: _____
Surface Elevation: _____
Logged By: AW

Drill Rig: DPT
Equipment/Hammer: Continuous Core/
Date Completed: 4-1-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B6 — Figure: C7
Project No: 19897.68445 — 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B7

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										8" Asphalt.	
										8" Concrete.	
						2				Silty SAND (SM), yellow-red, with gravel (15%), gravel is subangular, medium dense, moist.	
				0.6		4				Increasing density, gravel becomes rounded.	
						6		SM			
				0.8		8				Decreasing gravel, sand becomes medium grained, becomes wet.	
	B7-9			0.8							
						10				Becomes saturated at 10 ft bgs.	
										SILT (ML), light gray, stiff, wet.	
						12		ML			
						14					
										Boring terminated at 14 ft bgs. Groundwater encountered at 10 ft bgs.	
						16					
						18					
						20					

Station: _____ Drill Rig: DPT

Surface Elevation: _____ Equipment/Hammer: Continuous Core/

Logged By: AW Date Completed: 4-1-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B7 Figure: C8

Project No: 19897.68445 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B8

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										14" Asphalt.	
						2				Silty SAND (SM), brown, with gravel (20%) is fine to coarse, subangular, moist.	
				0.5				SM			
						4				Decreasing gravel (trace).	
										SAND (SP), tan-gray, medium grained, medium dense, wet.	
						6					
				0.7							
	B8-7					▽				Becomes saturated.	
	B8-W					8					
								SP			
						10					
				0.7							
						12					
						14				Boring terminated at 14 ft bgs. Groundwater encountered at 7 ft bgs.	
						16					
						18					
						20					

Station: _____ Drill Rig: DPT

Surface Elevation: _____ Equipment/Hammer: Continuous Core/

Logged By: AW Date Completed: 4-7-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B8 Figure: C9

Project No: 19897.68445 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B9a

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										14" Asphalt.	
										Controlled density fill (CDF).	
						2					
										Refusal met at 2.5 ft bgs.	
						4					
						6					
						8					
						10					
						12					
						14					
						16					
						18					
						20					

Station: _____ Drill Rig: DPT

Surface Elevation: _____ Equipment/Hammer: Continuous Core/

Logged By: AW Date Completed: 4-7-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B9a Figure: C10

Project No: 19897.68445 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B9b

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) (reading/background)	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										14" Asphalt.	
						2		GM		Silty, Sandy GRAVEL (GM), gray, pea gravel, moist (Fill).	
										Boring abandoned at 3 ft bgs (possible utility trench).	
						4					
						6					
						8					
						10					
						12					
						14					
						16					
						18					
						20					

Station: _____
Surface Elevation: _____
Logged By: AW

Drill Rig: DPT
Equipment/Hammer: Continuous Core/
Date Completed: 4-7-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

Boring Log B9b
Project No: 19897.68445

Figure: C11
1 of 1

CDM

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B10

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										14" Asphalt.	
				0.7		2		SM		Silty SAND (SM), olive-gray, with some fine to coarse gravel, rounded to subangular, moist.	
						4		ML		Sandy SILT (ML), gray, stiff, moist.	
	B10-6			0.7		6		SM		Silty SAND (SM), brown, dense, wet. Becomes coarse sand and gravel. Becomes gray, saturated.	
	B10-W					8		SW		SAND (SW), gray, medium to coarse grained, decreasing gravel.	
				0.7		10		SM		Silty SAND (SM), brown, sand is fine grained, dense, saturated.	
						12					
						14				Boring terminated at 14 ft bgs. Groundwater encountered at 7 ft bgs.	
						16					
						18					
						20					

Station: _____
Surface Elevation: _____
Logged By: AW

Drill Rig: DPT
Equipment/Hammer: Continuous Core/
Date Completed: 4-7-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B10 Figure: C12
Project No: 19897.68445 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B11

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										14" Asphalt.	
						2				Silty SAND (SM), olive-gray, fine to coarse gravel, subangular, moist to wet.	
				0.4							
						4		SM			
						6					
	B11-6			0.4							
	B11-W							SM		Silty SAND (SM), gray, sand is medium to fine grained, medium dense, wet to saturated.	
						8				Gravelly SAND (SP), gray, sand is medium to coarse grained, gravel is fine to coarse, well graded, saturated.	
						10					
								SP			
				0.7		12					
						14				Boring terminated at 14 ft bgs. Groundwater encountered at 7 ft bgs.	
						16					
						18					
						20					

Station: _____ Drill Rig: DPT

Surface Elevation: _____ Equipment/Hammer: Continuous Core/

Logged By: AW Date Completed: 4-7-09

CDM

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

Boring Log B11 Figure: C13

Project No: 19897.68445 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B12

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										14" Asphalt.	
				0.5		2				Silty SAND (SM), olive-gray, fine to coarse gravel, subangular, medium dense, moist.	
				0.8		4				Poor recovery.	
	B12-5							SM			
						6					
						8				Becomes saturated.	
	B12-W			0.8							
						10		GM		Silty, Sandy GRAVEL (GM), brown, gravel is fine to coarse, subangular.	
				0.5		12		SP		SAND (SP), brown-gray, trace silt, dense, saturated, mm thick bedding of sand with silt partings.	
						14				Boring terminated at 14 ft bgs. Groundwater encountered at 8 ft bgs.	
						16					
						18					
						20					

Station: _____ Drill Rig: DPT

Surface Elevation: _____ Equipment/Hammer: Continuous Core/

Logged By: AW Date Completed: 4-6-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B12 Figure: C14

Project No: 19897.68445 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B13

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										3" Asphalt.	
										6" Concrete.	
										Silty SAND (SM), red-brown, sand is fine to medium grained, medium dense, moist.	
				0		2		SM			
						4					
	B13-6			0		6		SP-SM		Slightly Silty SAND (SP-SM), gray, trace coarse gravel, medium dense, wet.	
						8		SP		SAND (SP), decreasing silt.	
				0		10		SM		Silty SAND (SM), increasing silt.	
								GM		Silty, Sandy GRAVEL (GM), gravel is fine, 1/2" diam., wet.	
	B13-W					12				Boring terminated at 12 ft bgs. Groundwater encountered at 6 ft bgs.	
						14					
						16					
						18					
						20					

Station: _____ Drill Rig: DPT

Surface Elevation: _____ Equipment/Hammer: Continuous Core/

Logged By: AW Date Completed: 4-2-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B13 Figure: C15

Project No: 19897.68445 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B14

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										8" Asphalt.	
										No recovery.	
						2					
						4					
										No recovery.	
						6					
						8				No recovery.	
	B14-W										
						10					
						12					
						14					
						16				Boring terminated at 16 ft bgs.	
						18					
						20					

Station: _____
Surface Elevation: _____
Logged By: AW

Drill Rig: DPT
Equipment/Hammer: Continuous Core/
Date Completed: 4-2-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B14 Figure: C16
Project No: 19897.68445 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B15

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) (reading/background)	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										8" Asphalt.	
										Silty SAND (SM), dark brown, gravel (10%), medium dense, moist.	
						2					
						4		SM		Decreasing silt, tan.	
										Increasing gravel becoming coarse.	
						6					
										Clayey SILT (ML), black, low plasticity (Marsh Deposit).	
						8					
	B15-10					10					
						▽				Increasing clay, becomes wet.	
										Decreasing clay.	
								ML		Becomes gray and tan, stiff.	
						12					
						14					
						16				Boring terminated at 16 ft bgs. Groundwater encountered at approximately 11 ft bgs.	
						18					
						20					

Station: _____ Drill Rig: DPT

Surface Elevation: _____ Equipment/Hammer: Continuous Core/

Logged By: AW Date Completed: 4-3-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B15 Figure: C17

Project No: 19897.68445 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B16

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										8" Asphalt.	
						2				Silty SAND (SM), tan-brown, with fine to coarse gravel (20%), medium dense, moist.	
						4		SM		No recovery.	
						6					
						8				Silty SAND (SM), tan-brown, fine to coarse gravel, medium dense, moist.	
						10		SM			
						12				SILT (ML), tan, stiff, saturated.	
	B16-13					14					
						16		ML			
	B16-W									Increasing sand, becomes sandy SILT (ML), soft, saturated.	
						18				Decreasing sand, becomes SILT (ML), stiff, saturated.	
						20				Boring terminated at 19 ft bgs. Groundwater encountered at 12 ft bgs.	

Station: _____ Drill Rig: DPT

Surface Elevation: _____ Equipment/Hammer: Continuous Core/

Logged By: AW Date Completed: 4-3-09

CDM

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

Boring Log B16 Figure: C18

Project No: 19897.68445 1 of 1

NEIS_BORING LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B-17

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										6" Concrete.	
										SAND (SP), tan, fine to medium grained, trace fine gravel, gravel is rounded, diam. 1/4-1/2", medium dense, moist.	
				0		2					
						4					
						6				Gravel is absent after 5.5 ft bgs.	
				0							
						8					
						10		SP		Becomes bedded with mm thick beds.	
				0.8							
	B17-11					12					
						14					
				0.8		▽				Becomes saturated.	
						16					
	B17-W					18					
										Boring terminated at 19 ft bgs. Groundwater encountered at 15 ft bgs.	
						20					

Station: _____ Drill Rig: DPT

Surface Elevation: _____ Equipment/Hammer: Continuous Core/

Logged By: AW Date Completed: 4-2-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B-17 Figure: C19

Project No: 19897.68445 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Boring Log B-18

Other Tests	Sample No.	Moisture Content (%)	Dry Density (pcf)	PID (ppm) [reading/background]	Penetration Resistance (blows / 6 in.)	Depth (feet)	Sample	USCS	Symbol	DESCRIPTION	Elev. (feet)
										8" Asphalt.	
						2		SM		Silty SAND (SM), olive-gray, with fine to coarse gravel, subangular.	
				0.5							
						4				Decreasing gravel.	
				1.4		6		PT		Organic SILT (PT), black, wood fragments (Marsh Deposit).	
								OH		Becomes fine grained, less organic material.	
	B18-7							ML		Becomes gray.	
				2.1				SM		Silty SAND (SM), gray, medium dense, wet.	
						8				SILT (ML), gray, trace organic material (grass), stiff, wet.	
	B18-W					10		ML			
				9.4		12		SP		SAND (SP), gray, trace silt, medium dense, saturated, odor.	
						14				Boring terminated at 14 ft bgs. Groundwater encountered at 8 ft bgs.	
						16					
						18					
						20					

Station: _____ Drill Rig: DPT

Surface Elevation: _____ Equipment/Hammer: Continuous Core/

Logged By: AW Date Completed: 4-6-09

King County
Bothell Crossroads Redevelopment Project
Bothell, Washington

CDM

Boring Log B-18 Figure: C20

Project No: 19897.68445 1 of 1

NEIS_BORING_LOG 19897-68445-BOTHELL ROW.GPJ CDM_BLLV.GDT 5/22/09 REV.

Appendix D

Quality Assurance Review and Laboratory Analytical Reports

Appendix D

Quality Assurance Review and Laboratory Analytical Reports

Quality Assurance Report

Project and Sample Information

Project Name:	City of Bothell Crossroads Redevelopment Project
Project No.:	19897-68445
Lab Names:	OnSite Environmental, Inc. (OnSite), Redmond, Washington
Lab Numbers:	OnSite lab numbers 0904-018, 0904-032, and 0904-049
Sample Nos:	See Attachment A
Matrices:	Soil and Groundwater

1.0 Quality Assurance Summary

This Quality Assurance Report (QAR) provides a summary of quality assurance (QA) findings. This review of the project data was performed using the Quality Assurance Project Plan (QAPP) Phase II Environmental Assessment City of Bothell Crossroads Redevelopment Property Site; CDM, 2008) and National Functional Guidelines for Organic Data Review (U.S. EPA, 1999).

This report includes a review of holding times, method blanks, surrogate, matrix, and lab control sample spike recoveries, laboratory blank and matrix spike duplicate data, and chain-of-custody records. Selected samples were analyzed for halogenated volatile organic compounds (VOCs) by EPA method 8260B, hydrocarbon identification by method NWTPH-HCID, gasoline-range petroleum hydrocarbons by method NWTPH-Gx with benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA method 8021B, and diesel-range and lube-oil range petroleum hydrocarbons by method NWTPH-Dx.

A cross reference between field sample I.D.'s and laboratory I.D.'s is provided in Attachment A.

The laboratory noted that in the halogenated volatiles analysis of sample B15-10, the internal standard 1,4-dichlorobenzene did not meet acceptance criteria in the original analysis and a re-analysis, indicating a matrix effect. Consequently, results for all target analytes from bromobenzene onward should be considered estimates. No target analytes from bromobenzene onward were detected above the reporting limits in this sample. As a result, the reported values for analytes detected in this sample, which all elute prior to bromobenzene, are not compromised.

The laboratory noted that 5035A vials were not provided for the halogenated volatiles analysis of sample B17-11. Consequently, the sample analysis was run from a four-ounce glass jar. No target analytes were detected in the halogenated volatile analysis of this sample down to reporting limits, which are a magnitude lower than their respective MTCA Method A cleanup criteria.

2.0 Analytical Methods

The following methods were used to analyze the samples:

Analysis	Method
Halogenated Volatiles	EPA 8260B
Hydrocarbon Identification	NWTPH-HCID
Gasoline-Range Hydrocarbons	NWTPH-Gx
Benzene	EPA 8021B
Toluene	8021B
Ethylbenzene	8021B
m,p-Xylene	8021B
o-Xylene	8021B
Diesel-Range	NWTPH-Dx
Lube Oil-RangeHydrocarbons	NWTPH-Dx

3.0 Timeliness

VOCs in Soil and Water

The recommended holding times for VOCs in soil by EPA Method 8260B with method 5035A collection is 2 days until freezing if unpreserved for soils and 14 days for preserved waters. All soil samples were delivered to the laboratory within 2 days of being sampled and all soil and water samples were extracted and analyzed with their recommended holding times. See **Tables D-1** and **D-2** for holding times per sample.

Total Petroleum Hydrocarbons – Hydrocarbon Identification in Soil

The recommended holding time for total petroleum hydrocarbons – hydrocarbon identification by method NWTPH-HCID is 14 days for soils and 14 days for waters that are preserved. All samples were extracted and analyzed within their recommended holding times. See **Table D-3** for holding times per sample.

Total Petroleum Hydrocarbons – Gasoline-Range by Method NWTPH-Gx with BTEX by EPA Method 8021B in Soil and Water

The recommended holding time for NWTPH-GX/BTEX by methods NWTPH-Gx/EPA method 8021B in soil is two days until freezing if unpreserved and 14 days for waters that are preserved. The soil samples for NWTPH-Gx/BTEX were delivered to the laboratory within 2 days from collection and all sol and water samples were extracted and analyzed within the recommended holding times. See **Table D-4** for holding times per sample.

3.0 Timeliness (continued)

Total Petroleum Hydrocarbons – Diesel-Range and Lube Oil-Range by Method NWTPH-Dx in Soil and Water

The recommended holding time for diesel-range and lube oil-range petroleum hydrocarbons by method NWTPH-Dx is 14 days for soils. All samples were extracted and analyzed within the recommended holding times. See **Table D-5** for holding times per sample.

4.0 Chain-of-Custody

Field chain-of-custody forms were complete. All chain-of-custody forms were signed and dated. All samples listed on the chain-of-custody forms were analyzed as indicated.

5.0 Field Quality Control Samples

Two field duplicates were collected for the City of Bothell Redevelopment Project Phase II Environmental Site Assessment.

Sample ID	Duplicate ID
B2-7	B19-7
B2-W	B19-W

Two trip blanks were submitted with the water samples for VOC analyses:

Trip Blanks
TB-1
Trip Blank

Field Duplicates: Relative percent differences can only be calculated for analytes that are detected above the reporting limits in both the sample and its field duplicate.

No analytes were detected above their respective reporting limits in sample B2-7 and its field duplicate B19-7 except for methylene chloride, which was detected in B19-7 at a low level (less than twice the reporting limit) in sample B19-7. The laboratory flagged the detection of methylene chloride in sample B19-7 as likely being the result of laboratory contamination.

The calculated RPDs for sample B2-W and its field duplicate (B19-W) are presented in **Table D-6**. The RPDs for m,p-xylene, and cis-1,2-dichloroethene were less than 20%, which indicates good homogeneity. The RPDs for TPH-Gas, trichloroethene, and tetrachloroethene were greater than the 20% control limit

5.0 Field Quality Control Samples (continued)

for waters at 58%, 61%, and 93%, respectively, indicative of sample heterogeneity.

Vials for VOC analyses for sample B13-W were submitted to the laboratory on April 2, 2009 and April 3, 2009. The calculated RPDs for sample B13-W submitted on April 2, 2009 and its field duplicate (B13-W submitted on April 3, 2009) are presented in **Table D-7**. The RPD for tetrachloroethene was within the laboratory's quality control limits.

Trip Blanks: No volatile compounds were detected at or above their respective reporting limits in the trip blanks.

6.0 Laboratory Quality Control Samples

Method Blanks: VOCs: No target analytes were detected at or above the Reporting Limits (RLs) in the method blanks associated with the VOC analyses of these samples.

NWTPH-HCID: No target analytes were detected at or above the RLs in the method blanks associated with the NWTPH-HCID analyses of these samples.

NWTPH-Gx/BTEX: No target analytes were detected at or above the RLs in the NWTPH-Gx/BTEX method blanks associated with the analyses of these samples.

NWTPH-Dx: No target analytes were detected at or above the RLs in the NWTPH-Dx method blanks associated with the analyses of these samples.

Duplicates: VOCs: No sample duplicates were performed for the VOC analyses of these samples. See Matrix Spikes and Spike Blanks sections for precision data.

NWTPH-HCID: No sample duplicates were performed for the NWTPH-HCID analyses of these samples.

NWTPH-Gx/BTEX: No sample duplicates were performed for the NWTPH-Gx/BTEX analyses. See Matrix Spikes section for precision data.

NWTPH-Dx: No sample duplicates were performed on samples from this project for the NWTPH-Dx analyses. A sample duplicate was performed for the diesel-range petroleum hydrocarbons on a soil sample from another project,

6.0 Laboratory Quality Control Samples

but diesel-range petroleum hydrocarbons were not detected above the reporting limits in either the sample or its field duplicate. Consequently no RPD could be calculated.

Matrix Spikes:

VOCs: A matrix spike matrix spike duplicate (MS/MSD) set was performed on sample B17-11 for the soil VOC analyses. Recoveries (%R) of all spiked analytes and the relative percent differences (RPDs) were all within the limits specified in the control limits specified in the QAPP and the laboratory's in-house quality control limits.

MS/MSD sets were performed on samples B7-W, B2-W, and B1-W for the water VOC analyses. The %R's and RPDs were all within the control limits specified in the QAPP and the laboratory's in-house quality control limits.

NWTPH-HCID: No matrix spikes were performed for the NWTPH-HCID analyses.

NWTPH-Gx/BTEX: No MS/MSD sets were performed on samples from this project for the soil NWTPG-Gx/BTEX analyses. An MS/MSD set was performed on a sample from another project for the soil NWTPH-Gx/BTEX analyses. All %R's and RPD's were within the control limits specified in the QAPP and the laboratory's in-house quality control limits.

MS/MSD sets were performed on samples B2-W and B18-W for the water NWTPH-Gx/BTEX analyses. All %R's and RPD's were within the control limits specified in the QAPP and laboratory's in-house quality control limits.

NWTPH-Dx: No matrix spikes were performed for the NWTPH-Dx analyses.

Lab Control Samples:

VOCs: Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) or spike blank (SB) and spike blank duplicate (SBD) sets were performed for the soil VOC analyses. All %R's and RPD's were within the control limits specified in the QAPP and laboratory's in-house quality control limits.

An SB/SBD set was performed for the water VOC analyses. All %R's and RPD's were within the control limits specified in the QAPP and the laboratory's in-house quality control limits.

Surrogates:

VOCs: Three surrogate compounds were used for the VOC analyses. All recoveries of all spiked surrogates were within the control limits specified in the QAPP and the laboratory's in-house quality control limits.

NWTPH-HCID: One surrogate compound was used for the NWTPH-HCID analyses. All surrogate recoveries were within the control limits specified in the QAPP and the laboratory's in-house quality control limits.

NWTPH-Gx/BTEX: One surrogate compound was used for the NWTPH-Gx/BTEX analyses. All surrogate recoveries were within the control limits specified in the QAPP and the laboratory's in-house quality control limits.

NWTPH-Dx: One surrogate compound was used for the NWTPH-Dx analyses. All surrogate recoveries were within the control limits specified in the QAPP and the laboratory's in-house quality control limits.

Signatures

Prepared by: Mary Lou Fox Date: 5/22/09

Checked by: Pat Morell Date: 5/22/09

Attachment A

Attachment A
Sample Identification Key

Field ID	Lab ID
B4-6	04-018-01
B4-W	04-018-02
B5-8	04-018-03
B5-W	04-018-04
B6-8	04-018-05
B6-W	04-018-06
B13-6	04-018-07
B13-W	04-018-08
B17-11	04-018-09
B17-W	04-018-10
B2-7	04-032-01
B2-W	04-032-02
B3-9	04-032-03
B3-W	04-032-04
B14-W	04-032-05
B15-10	04-032-06
B15-W	04-032-07
B16-13	04-032-08
B16-W	04-032-09
B19-7	04-032-10
B19-W	04-032-11
B13-W	04-032-12
TB-1	04-032-13
B1-6	04-049-01
B1-W	04-049-02
B8-7	04-049-03
B8-W	04-049-04
B10-6	04-049-05
B10-W	04-049-06
B11-6	04-049-07
B11-W	04-049-08
B12-5	04-049-09
B12-W	04-049-10
B18-7	04-049-11
B18-W	04-049-12
Trip Blank	04-049-13

Tables

Table D-1
Sample Holding Times - Soil Halogenated VOCs
Bothell Crossroads II Environmental Site Assessment
Bothell, WA

Sample ID	Matrix	Date Sampled	Time Until Frozen (days)	Date Analyzed	Time Until Analysis (days)
B4-6	Soil	4/2/2009	1	4/3/2009	1
B5-8	Soil	4/2/2009	1	4/3/2009	1
B6-8	Soil	4/1/2009	2	4/3/2009	2
B7-9	Soil	4/1/2009	2	4/3/2009	2
B13-6	Soil	4/2/2009	1	4/3/2009	1
B17-11	Soil	4/2/2009	1	4/3/2009	1
B2-7	Soil	4/2/2009	1	4/3/2009	1
B3-9	Soil	4/3/2009	0	4/6/2009	3
B15-10	Soil	4/3/2009	0	4/6/2009	3
B16-13	Soil	4/3/2009	0	4/6/2009	3
B19-7	Soil	4/2/2009	1	4/6/2009	4
B1-6	Soil	4/6/2009	1	4/9/2009	3
B8-7	Soil	4/7/2009	0	4/9/2009	2
B10-6	Soil	4/7/2009	0	4/9/2009	2
B11-6	Soil	4/7/2009	0	4/9/2009	2
B12-5	Soil	4/7/2009	0	4/9/2009	2
B18-7	Soil	4/6/2009	1	4/10/2009	4

Recommended holding time for halogenated VOCs by EPA methods 5035A/8260B is 2 days until freezing, when unpreserved.

Table D-2
Sample Holding Times - Water VOCs
Bothell Crossroads Phase II Environmental Site Assessment
Bothell, WA

Sample ID	Matrix	Date Sampled	Date Analyzed	Time Until Analysis (days)
B4-W	Water	4/2/2009	4/7/2009	5
B5-W	Water	4/2/2009	4/7/2009	5
B6-W	Water	4/1/2009	4/7/2009	6
B7-W	Water	4/1/2009	4/7/2009	6
B13-W	Water	4/2/2009	4/7/2009	5
B17-W	Water	4/2/2009	4/7/2009	5
B2-W	Water	4/2/2009	4/8/2009	6
B3-W	Water	4/3/2009	4/8/2009	5
B14-W	Water	4/3/2009	4/8/2009	5
B15-W	Water	4/3/2009	4/8/2009	5
B16-W	Water	4/3/2009	4/8/2009	5
B19-W	Water	4/2/2009	4/8/2009	6
B13-W	Water	4/2/2009	4/8/2009	6
B1-W	Water	4/6/2009	4/8/2009	2
B8-W	Water	4/7/2009	4/8/2009	1
B10-W	Water	4/7/2009	4/8/2009	1
B11-W	Water	4/7/2009	4/8&9/2009	2&3
B12-W	Water	4/7/2009	4/9/2009	2
B18-W	Water	4/6/2009	4/9/2009	3

Note:
Recommended holding time for VOCs by EPA Method 8260B is 7 days for preserved water.

Table D-3
Sample Holding Times - NWTPH-HCID
Bothell Crossroads Phase II Environmental Site Assessment
Bothell, WA

Sample ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Time Until Extraction (days)	Time Until Analysis (days)
B6-8	Soil	4/1/2009	4/6/2009	4/6/2009	5	5
B7-9	Soil	4/1/2009	4/6/2009	4/6/2009	5	5
B13-6	Soil	4/2/2009	4/6/2009	4/6/2009	4	4
B2-7	Soil	4/2/2009	4/6/2009	4/6/2009	4	4
B3-9	Soil	4/3/2009	4/6/2009	4/6/2009	3	3
B19-7	Soil	4/2/2009	4/6/2009	4/6/2009	4	4
B6-W	Water	4/1/2009	4/3/2009	4/3/2009	2	2
B7-W	Water	4/2/2009	4/3/2009	4/3/2009	1	1
B13-W	Water	4/3/2009	4/3/2009	4/3/2009	0	0
B2-W	Water	4/2/2009	4/6/2009	4/6 or 7/2009	4	4 or 5
B3-W	Water	4/3/2009	4/6/2009	4/6 or 7/2009	3	3 or 4
B19-W	Water	4/6/2009	4/6/2009	4/6 or 7/2009	0	0 or 1
B1-W	Water	4/7/2009	4/9/2009	4/9/2009	2	2
B12-W	Water	4/6/2009	4/9/2009	4/9/2009	3	3
B18-W	Water	4/6/2009	4/9/2009	4/9/2009	3	3

Note:
Recommended holding time for hydrocrbon identification by Method NWTPH-HCID is 14 days for soils and 7 days for waters.

Table D-4
Sample Holding Times - NWTPH-G/BTEX
Bothell Crossroads Phase II Environmental Site Assessment
Bothell, WA

Sample ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Time Until Extraction (days)	Time Until Analysis (days)
B3-9	Soil	4/3/2009	4/9/2009	4/9/2009	6	6
B2-W	Water	4/2/2009	4/10 or 13/2009	4/10 or 13/2009	8 or 11	8 or 11
B3-W	Water	4/3/2009	4/10 or 13/2009	4/10 or 13/2009	7 or 10	7 or 10
B19-W	Water	4/6/2009	4/10/2009	4/10/2009	4	4
B18-W	Water	4/6/2009	4/13/2009	4/13/2009	0	0

Note:

Recommended holding time for gasoline-range hydrocarbons by Method NWTPH-G/8021B is 14 days for soils and 7 days for waters.

Table D-5
Sample Holding Times - NWTPH-Dx
Bothell Crossroads Phase II Environmental Site Assessment
Bothell, WA

Sample ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Time Until Extraction (days)	Time Until Analysis (days)
B3-9	Soil	4/3/2009	4/9/2009	4/9/2009	6	6

Note:
Recommended holding time for diesel-range and oil-range hydrocarbons by Method NWTPH-Dx is 14 days for soils and 7 days for waters.

Table D-6
Calculation of Relative Percent Difference for Water Field Duplicate
Bothell Crossroads Phase II Environmental Site Assessment
Bothell, WA

Analyte (mg/L)	Sample ID B2-W	Duplicate ID B19-W	RPD %
m,p-Xylene	1.3	1.5	14
TPH-Gas	210	380	58
cis-1,2-Dichloroethene	5	4.2	17
Trichloroethene	11	5.9	61
Tetrachloroethene	25	9.2	93

Table D-7
Calculation of Relative Percent Difference for Water Field Duplicate
Bothell Crossroads Phase II Environmental Site Assessment
Bothell, WA

Analyte (mg/L)	Sample ID B13-W (submitted 4/2/2009)	Duplicate ID B13-W (submitted 4/3/2009	RPD %
Tetrachloroethene	1.2	1.1	8.7

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

Received
APR 14 2009

April 10, 2009

Pam Morrill
CDM
P.O. Box 3885
Bellevue, WA 98009

Re: Analytical Data for Project 19897.68445
Laboratory Reference No. 0904-018

Dear Pam:

Enclosed are the analytical results and associated quality control data for samples submitted on April 3, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881 • Fax (425) 885-4603

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

Case Narrative

Samples were collected on April 1 and 2, 2009, and received by the laboratory on April 3, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Halogenated Volatiles EPA 8260B (soil) Analysis

Per EPA Method 5035A, samples were received by the laboratory (except as noted below) in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Method 5035A VOA vials were not provided for sample B17-11. The sample was therefore extracted from a 4-ounce jar.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Halogenated Volatiles EPA 8260B (water) Analysis

Due to the levels of sediment present in the VOAs provided for sample B4-W, the aqueous layers from two VOAs were combined to perform the requested analysis. Some loss of volatiles may have occurred.

Due to the levels of sediment present in the VOAs provided for sample B5-W, the aqueous layers from three VOAs were combined to perform the requested analysis. Some loss of volatiles may have occurred.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

NWTPH-HCID

Date Extracted: 4-6-09
Date Analyzed: 4-6-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**B6-8**	**B7-9**	**B13-6**
Lab ID:	04-018-05	04-018-07	04-018-09
Gasoline:	**ND**	**ND**	**ND**
PQL:	25	24	24
Diesel Fuel:	**ND**	**ND**	**ND**
PQL:	62	61	61
Lube Oil:	**ND**	**ND**	**ND**
PQL:	120	120	120
Surrogate Recovery:			
o-Terphenyl	98%	98%	96%
Flags:	Y	Y	Y

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

NWTPH-HCID
METHOD BLANK QUALITY CONTROL

Date Extracted:	4-6-09
Date Analyzed:	4-6-09

Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID.	MB0406S1

Gasoline:	**ND**
PQL:	20
Diesel Fuel:	**ND**
PQL:	50
Lube Oil:	**ND**
PQL:	100

Surrogate Recovery:

o-Terphenyl	103%

Flags	Y

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

NWTPH-HCID

Date Extracted: 4-3-09
Date Analyzed: 4-3-09

Matrix: Water
Units: mg/L (ppm)

Client ID:	**B6-W**	**B7-W**	**B13-W**
Lab ID:	04-018-06	04-018-08	04-018-10
Gasoline:	**ND**	**ND**	**ND**
PQL:	0.11	0.11	0.10
Diesel Fuel:	**ND**	**ND**	**ND**
PQL:	0.27	0.26	0.25
Lube Oil:	**ND**	**ND**	**ND**
PQL:	0.44	0.42	0.40
Surrogate Recovery:			
o-Terphenyl	103%	114%	112%
Flags:	Y	Y	Y

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

NWTPH-HCID
METHOD BLANK QUALITY CONTROL

Date Extracted:	4-3-09
Date Analyzed:	4-3-09

Matrix:	Water
Units:	mg/L (ppm)

Lab ID:	MB0403W1

Gasoline:	**ND**
PQL:	0.10
Diesel Fuel:	**ND**
PQL:	0.25
Lube Oil:	**ND**
PQL:	0.40
Surrogate Recovery:	
o-Terphenyl	106%
Flags	Y

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
page 1 of 2

Date Extracted:	4-3-09
Date Analyzed:	4-3-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-018-01
Client ID:	**B4-6**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.0012
Chloromethane	ND		0.0060
Vinyl Chloride	ND		0.0012
Bromomethane	ND		0.0012
Chloroethane	ND		0.0060
Trichlorofluoromethane	ND		0.0012
1,1-Dichloroethene	ND		0.0012
Iodomethane	ND		0.0060
Methylene Chloride	ND		0.0060
(trans) 1,2-Dichloroethene	ND		0.0012
1,1-Dichloroethane	ND		0.0012
2,2-Dichloropropane	ND		0.0012
(cis) 1,2-Dichloroethene	ND		0.0012
Bromochloromethane	ND		0.0012
Chloroform	ND		0.0012
1,1,1-Trichloroethane	ND		0.0012
Carbon Tetrachloride	ND		0.0012
1,1-Dichloropropene	ND		0.0012
1,2-Dichloroethane	ND		0.0012
Trichloroethene	ND		0.0012
1,2-Dichloropropane	ND		0.0012
Dibromomethane	ND		0.0012
Bromodichloromethane	ND		0.0012
2-Chloroethyl Vinyl Ether	ND		0.0060
(cis) 1,3-Dichloropropene	ND		0.0012
(trans) 1,3-Dichloropropene	ND		0.0012

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

page 2 of 2

Lab ID: 04-018-01
Client ID: B4-6

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0012
Tetrachloroethene	ND		0.0012
1,3-Dichloropropane	ND		0.0012
Dibromochloromethane	ND		0.0012
1,2-Dibromoethane	ND		0.0012
Chlorobenzene	ND		0.0012
1,1,1,2-Tetrachloroethane	ND		0.0012
Bromoform	ND		0.0012
Bromobenzene	ND		0.0012
1,1,2,2-Tetrachloroethane	ND		0.0012
1,2,3-Trichloropropane	ND		0.0012
2-Chlorotoluene	ND		0.0012
4-Chlorotoluene	ND		0.0012
1,3-Dichlorobenzene	ND		0.0012
1,4-Dichlorobenzene	ND		0.0012
1,2-Dichlorobenzene	ND		0.0012
1,2-Dibromo-3-chloropropane	ND		0.0060
1,2,4-Trichlorobenzene	ND		0.0012
Hexachlorobutadiene	ND		0.0060
1,2,3-Trichlorobenzene	ND		0.0012

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	82	70-118
Toluene-d8	99	70-121
4-Bromofluorobenzene	84	70-130

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

page 1 of 2

Date Extracted:	4-3-09
Date Analyzed:	4-3-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-018-03
Client ID:	**B5-8**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.0011
Chloromethane	ND		0.0057
Vinyl Chloride	ND		0.0011
Bromomethane	ND		0.0011
Chloroethane	ND		0.0057
Trichlorofluoromethane	ND		0.0011
1,1-Dichloroethene	ND		0.0011
Iodomethane	ND		0.0057
Methylene Chloride	ND		0.0057
(trans) 1,2-Dichloroethene	ND		0.0011
1,1-Dichloroethane	ND		0.0011
2,2-Dichloropropane	ND		0.0011
(cis) 1,2-Dichloroethene	0.034		0.0011
Bromochloromethane	ND		0.0011
Chloroform	ND		0.0011
1,1,1-Trichloroethane	ND		0.0011
Carbon Tetrachloride	ND		0.0011
1,1-Dichloropropene	ND		0.0011
1,2-Dichloroethane	ND		0.0011
Trichloroethene	0.0086		0.0011
1,2-Dichloropropane	ND		0.0011
Dibromomethane	ND		0.0011
Bromodichloromethane	ND		0.0011
2-Chloroethyl Vinyl Ether	ND		0.0057
(cis) 1,3-Dichloropropene	ND		0.0011
(trans) 1,3-Dichloropropene	ND		0.0011

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

page 2 of 2

Lab ID: 04-018-03
Client ID: B5-8

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0011
Tetrachloroethene	ND		0.0011
1,3-Dichloropropane	ND		0.0011
Dibromochloromethane	ND		0.0011
1,2-Dibromoethane	ND		0.0011
Chlorobenzene	ND		0.0011
1,1,1,2-Tetrachloroethane	ND		0.0011
Bromoform	ND		0.0011
Bromobenzene	ND		0.0011
1,1,2,2-Tetrachloroethane	ND		0.0011
1,2,3-Trichloropropane	ND		0.0011
2-Chlorotoluene	ND		0.0011
4-Chlorotoluene	ND		0.0011
1,3-Dichlorobenzene	ND		0.0011
1,4-Dichlorobenzene	ND		0.0011
1,2-Dichlorobenzene	ND		0.0011
1,2-Dibromo-3-chloropropane	ND		0.0057
1,2,4-Trichlorobenzene	ND		0.0011
Hexachlorobutadiene	ND		0.0057
1,2,3-Trichlorobenzene	ND		0.0011

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	86	70-118
Toluene-d8	94	70-121
4-Bromofluorobenzene	81	70-130

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
page 1 of 2

Date Extracted:	4-3-09
Date Analyzed:	4-3-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-018-05
Client ID:	**B6-8**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.0011
Chloromethane	ND		0.0055
Vinyl Chloride	ND		0.0011
Bromomethane	ND		0.0011
Chloroethane	ND		0.0055
Trichlorofluoromethane	ND		0.0011
1,1-Dichloroethene	ND		0.0011
Iodomethane	ND		0.0055
Methylene Chloride	ND		0.0055
(trans) 1,2-Dichloroethene	ND		0.0011
1,1-Dichloroethane	ND		0.0011
2,2-Dichloropropane	ND		0.0011
(cis) 1,2-Dichloroethene	0.0027		0.0011
Bromochloromethane	ND		0.0011
Chloroform	ND		0.0011
1,1,1-Trichloroethane	ND		0.0011
Carbon Tetrachloride	ND		0.0011
1,1-Dichloropropene	ND		0.0011
1,2-Dichloroethane	ND		0.0011
Trichloroethene	ND		0.0011
1,2-Dichloropropane	ND		0.0011
Dibromomethane	ND		0.0011
Bromodichloromethane	ND		0.0011
2-Chloroethyl Vinyl Ether	ND		0.0055
(cis) 1,3-Dichloropropene	ND		0.0011
(trans) 1,3-Dichloropropene	ND		0.0011

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and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
page 2 of 2

Lab ID: 04-018-05
Client ID: B6-8

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0011
Tetrachloroethene	ND		0.0011
1,3-Dichloropropane	ND		0.0011
Dibromochloromethane	ND		0.0011
1,2-Dibromoethane	ND		0.0011
Chlorobenzene	ND		0.0011
1,1,1,2-Tetrachloroethane	ND		0.0011
Bromoform	ND		0.0011
Bromobenzene	ND		0.0011
1,1,2,2-Tetrachloroethane	ND		0.0011
1,2,3-Trichloropropane	ND		0.0011
2-Chlorotoluene	ND		0.0011
4-Chlorotoluene	ND		0.0011
1,3-Dichlorobenzene	ND		0.0011
1,4-Dichlorobenzene	ND		0.0011
1,2-Dichlorobenzene	ND		0.0011
1,2-Dibromo-3-chloropropane	ND		0.0055
1,2,4-Trichlorobenzene	ND		0.0011
Hexachlorobutadiene	ND		0.0055
1,2,3-Trichlorobenzene	ND		0.0011

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	89	70-118
Toluene-d8	102	70-121
4-Bromofluorobenzene	92	70-130

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
page 1 of 2

Date Extracted:	4-3-09
Date Analyzed:	4-3-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-018-07
Client ID:	**B7-9**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.0010
Chloromethane	ND		0.0052
Vinyl Chloride	ND		0.0010
Bromomethane	ND		0.0010
Chloroethane	ND		0.0052
Trichlorofluoromethane	ND		0.0010
1,1-Dichloroethene	ND		0.0010
Iodomethane	ND		0.0052
Methylene Chloride	ND		0.0052
(trans) 1,2-Dichloroethene	ND		0.0010
1,1-Dichloroethane	ND		0.0010
2,2-Dichloropropane	ND		0.0010
(cis) 1,2-Dichloroethene	ND		0.0010
Bromochloromethane	ND		0.0010
Chloroform	ND		0.0010
1,1,1-Trichloroethane	ND		0.0010
Carbon Tetrachloride	ND		0.0010
1,1-Dichloropropene	ND		0.0010
1,2-Dichloroethane	ND		0.0010
Trichloroethene	ND		0.0010
1,2-Dichloropropane	ND		0.0010
Dibromomethane	ND		0.0010
Bromodichloromethane	ND		0.0010
2-Chloroethyl Vinyl Ether	ND		0.0052
(cis) 1,3-Dichloropropene	ND		0.0010
(trans) 1,3-Dichloropropene	ND		0.0010

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and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

Lab ID: 04-018-07
Client ID: B7-9

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0010
Tetrachloroethene	0.0012		0.0010
1,3-Dichloropropane	ND		0.0010
Dibromochloromethane	ND		0.0010
1,2-Dibromoethane	ND		0.0010
Chlorobenzene	ND		0.0010
1,1,1,2-Tetrachloroethane	ND		0.0010
Bromoform	ND		0.0010
Bromobenzene	ND		0.0010
1,1,2,2-Tetrachloroethane	ND		0.0010
1,2,3-Trichloropropane	ND		0.0010
2-Chlorotoluene	ND		0.0010
4-Chlorotoluene	ND		0.0010
1,3-Dichlorobenzene	ND		0.0010
1,4-Dichlorobenzene	ND		0.0010
1,2-Dichlorobenzene	ND		0.0010
1,2-Dibromo-3-chloropropane	ND		0.0052
1,2,4-Trichlorobenzene	ND		0.0010
Hexachlorobutadiene	ND		0.0052
1,2,3-Trichlorobenzene	ND		0.0010

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	94	70-118
Toluene-d8	100	70-121
4-Bromofluorobenzene	91	70-130

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Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

page 1 of 2

Date Extracted:	4-3-09
Date Analyzed:	4-3-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-018-09
Client ID:	**B13-6**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.0011
Chloromethane	ND		0.0055
Vinyl Chloride	ND		0.0011
Bromomethane	ND		0.0011
Chloroethane	ND		0.0055
Trichlorofluoromethane	ND		0.0011
1,1-Dichloroethene	ND		0.0011
Iodomethane	ND		0.0055
Methylene Chloride	ND		0.0055
(trans) 1,2-Dichloroethene	ND		0.0011
1,1-Dichloroethane	ND		0.0011
2,2-Dichloropropane	ND		0.0011
(cis) 1,2-Dichloroethene	ND		0.0011
Bromochloromethane	ND		0.0011
Chloroform	ND		0.0011
1,1,1-Trichloroethane	ND		0.0011
Carbon Tetrachloride	ND		0.0011
1,1-Dichloropropene	ND		0.0011
1,2-Dichloroethane	ND		0.0011
Trichloroethene	ND		0.0011
1,2-Dichloropropane	ND		0.0011
Dibromomethane	ND		0.0011
Bromodichloromethane	ND		0.0011
2-Chloroethyl Vinyl Ether	ND		0.0055
(cis) 1,3-Dichloropropene	ND		0.0011
(trans) 1,3-Dichloropropene	ND		0.0011

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Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

page 2 of 2

Lab ID: 04-018-09
Client ID: B13-6

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0011
Tetrachloroethene	ND		0.0011
1,3-Dichloropropane	ND		0.0011
Dibromochloromethane	ND		0.0011
1,2-Dibromoethane	ND		0.0011
Chlorobenzene	ND		0.0011
1,1,1,2-Tetrachloroethane	ND		0.0011
Bromoform	ND		0.0011
Bromobenzene	ND		0.0011
1,1,2,2-Tetrachloroethane	ND		0.0011
1,2,3-Trichloropropane	ND		0.0011
2-Chlorotoluene	ND		0.0011
4-Chlorotoluene	ND		0.0011
1,3-Dichlorobenzene	ND		0.0011
1,4-Dichlorobenzene	ND		0.0011
1,2-Dichlorobenzene	ND		0.0011
1,2-Dibromo-3-chloropropane	ND		0.0055
1,2,4-Trichlorobenzene	ND		0.0011
Hexachlorobutadiene	ND		0.0055
1,2,3-Trichlorobenzene	ND		0.0011

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	91	70-118
Toluene-d8	98	70-121
4-Bromofluorobenzene	90	70-130

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Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

page 1 of 2

Date Extracted:	4-3-09
Date Analyzed:	4-3-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-018-11
Client ID:	**B17-11**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.0011
Chloromethane	ND		0.0057
Vinyl Chloride	ND		0.0011
Bromomethane	ND		0.0011
Chloroethane	ND		0.0057
Trichlorofluoromethane	ND		0.0011
1,1-Dichloroethene	ND		0.0011
Iodomethane	ND		0.0057
Methylene Chloride	ND		0.0057
(trans) 1,2-Dichloroethene	ND		0.0011
1,1-Dichloroethane	ND		0.0011
2,2-Dichloropropane	ND		0.0011
(cis) 1,2-Dichloroethene	ND		0.0011
Bromochloromethane	ND		0.0011
Chloroform	ND		0.0011
1,1,1-Trichloroethane	ND		0.0011
Carbon Tetrachloride	ND		0.0011
1,1-Dichloropropene	ND		0.0011
1,2-Dichloroethane	ND		0.0011
Trichloroethene	ND		0.0011
1,2-Dichloropropane	ND		0.0011
Dibromomethane	ND		0.0011
Bromodichloromethane	ND		0.0011
2-Chloroethyl Vinyl Ether	ND		0.0057
(cis) 1,3-Dichloropropene	ND		0.0011
(trans) 1,3-Dichloropropene	ND		0.0011

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
page 2 of 2

Lab ID: 04-018-11
Client ID: B17-11

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0011
Tetrachloroethene	ND		0.0011
1,3-Dichloropropane	ND		0.0011
Dibromochloromethane	ND		0.0011
1,2-Dibromoethane	ND		0.0011
Chlorobenzene	ND		0.0011
1,1,1,2-Tetrachloroethane	ND		0.0011
Bromoform	ND		0.0011
Bromobenzene	ND		0.0011
1,1,2,2-Tetrachloroethane	ND		0.0011
1,2,3-Trichloropropane	ND		0.0011
2-Chlorotoluene	ND		0.0011
4-Chlorotoluene	ND		0.0011
1,3-Dichlorobenzene	ND		0.0011
1,4-Dichlorobenzene	ND		0.0011
1,2-Dichlorobenzene	ND		0.0011
1,2-Dibromo-3-chloropropane	ND		0.0057
1,2,4-Trichlorobenzene	ND		0.0011
Hexachlorobutadiene	ND		0.0057
1,2,3-Trichlorobenzene	ND		0.0011

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	97	70-118
Toluene-d8	97	70-121
4-Bromofluorobenzene	92	70-130

This report pertains to the samples analyzed in accordance with the chain of custody.
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Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
page 1 of 2

Date Extracted: 4-3-09
Date Analyzed: 4-3-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0403S1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.0010
Chloromethane	ND		0.0050
Vinyl Chloride	ND		0.0010
Bromomethane	ND		0.0010
Chloroethane	ND		0.0050
Trichlorofluoromethane	ND		0.0010
1,1-Dichloroethene	ND		0.0010
Iodomethane	ND		0.0050
Methylene Chloride	ND		0.0050
(trans) 1,2-Dichloroethene	ND		0.0010
1,1-Dichloroethane	ND		0.0010
2,2-Dichloropropane	ND		0.0010
(cis) 1,2-Dichloroethene	ND		0.0010
Bromochloromethane	ND		0.0010
Chloroform	ND		0.0010
1,1,1-Trichloroethane	ND		0.0010
Carbon Tetrachloride	ND		0.0010
1,1-Dichloropropene	ND		0.0010
1,2-Dichloroethane	ND		0.0010
Trichloroethene	ND		0.0010
1,2-Dichloropropane	ND		0.0010
Dibromomethane	ND		0.0010
Bromodichloromethane	ND		0.0010
2-Chloroethyl Vinyl Ether	ND		0.0050
(cis) 1,3-Dichloropropene	ND		0.0010
(trans) 1,3-Dichloropropene	ND		0.0010

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
page 2 of 2

Lab ID: MB0403S1

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0010
Tetrachloroethene	ND		0.0010
1,3-Dichloropropane	ND		0.0010
Dibromochloromethane	ND		0.0010
1,2-Dibromoethane	ND		0.0010
Chlorobenzene	ND		0.0010
1,1,1,2-Tetrachloroethane	ND		0.0010
Bromoform	ND		0.0010
Bromobenzene	ND		0.0010
1,1,2,2-Tetrachloroethane	ND		0.0010
1,2,3-Trichloropropane	ND		0.0010
2-Chlorotoluene	ND		0.0010
4-Chlorotoluene	ND		0.0010
1,3-Dichlorobenzene	ND		0.0010
1,4-Dichlorobenzene	ND		0.0010
1,2-Dichlorobenzene	ND		0.0010
1,2-Dibromo-3-chloropropane	ND		0.0050
1,2,4-Trichlorobenzene	ND		0.0010
Hexachlorobutadiene	ND		0.0050
1,2,3-Trichlorobenzene	ND		0.0010

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	97	70-118
Toluene-d8	93	70-121
4-Bromofluorobenzene	89	70-130

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
MS/MSD QUALITY CONTROL

Date Extracted: 4-3-09
Date Analyzed: 4-3-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 04-018-11

Compound	Sample Amount	Spike Amount	MS	Percent Recovery	MSD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	ND	0.0500	0.0472	94	0.0516	103	70-130	
Benzene	ND	0.0500	0.0440	88	0.0488	98	70-130	
Trichloroethene	ND	0.0500	0.0542	108	0.0536	107	70-124	
Toluene	ND	0.0500	0.0469	94	0.0507	101	70-130	
Chlorobenzene	ND	0.0500	0.0508	102	0.0515	103	72-127	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	9	14	
Benzene	10	17	
Trichloroethene	1	11	
Toluene	8	16	
Chlorobenzene	1	15	

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Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project. 19897.68445

HALOGENATED VOLATILES by EPA 8260B
page 1 of 2

Date Extracted:	4-7-09
Date Analyzed:	4-7-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-018-02
Client ID:	**B4-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
(trans) 1,2-Dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
page 2 of 2

Lab ID: 04-018-02
Client ID: B4-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	90	71-126
Toluene-d8	88	76-116
4-Bromofluorobenzene	79	70-123

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
page 1 of 2

Date Extracted:	4-7-09
Date Analyzed:	4-7-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-018-04
Client ID:	**B5-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
(trans) 1,2-Dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

page 2 of 2

Lab ID: 04-018-04
Client ID: B5-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	94	71-126
Toluene-d8	88	76-116
4-Bromofluorobenzene	79	70-123

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

page 1 of 2

Date Extracted:	4-7-09
Date Analyzed:	4-7-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-018-06
Client ID:	**B6-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.40
Chloromethane	ND		2.0
Vinyl Chloride	0.89		0.40
Bromomethane	ND		0.40
Chloroethane	ND		2.0
Trichlorofluoromethane	ND		0.40
1,1-Dichloroethene	ND		0.40
Iodomethane	ND		2.0
Methylene Chloride	ND		4.0
(trans) 1,2-Dichloroethene	0.66		0.40
1,1-Dichloroethane	ND		0.40
2,2-Dichloropropane	ND		0.40
(cis) 1,2-Dichloroethene	76		0.40
Bromochloromethane	ND		0.40
Chloroform	ND		0.40
1,1,1-Trichloroethane	ND		0.40
Carbon Tetrachloride	ND		0.40
1,1-Dichloropropene	ND		0.40
1,2-Dichloroethane	6.5		0.40
Trichloroethene	6.4		0.40
1,2-Dichloropropane	ND		0.40
Dibromomethane	ND		0.40
Bromodichloromethane	ND		0.40
2-Chloroethyl Vinyl Ether	ND		2.0
(cis) 1,3-Dichloropropene	ND		0.40
(trans) 1,3-Dichloropropene	ND		0.40

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

Lab ID: 04-018-06
Client ID: B6-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.40
Tetrachloroethene	3.4		0.40
1,3-Dichloropropane	ND		0.40
Dibromochloromethane	ND		0.40
1,2-Dibromoethane	ND		0.40
Chlorobenzene	ND		0.40
1,1,1,2-Tetrachloroethane	ND		0.40
Bromoform	ND		2.0
Bromobenzene	ND		0.40
1,1,2,2-Tetrachloroethane	ND		0.40
1,2,3-Trichloropropane	ND		0.40
2-Chlorotoluene	ND		0.40
4-Chlorotoluene	ND		0.40
1,3-Dichlorobenzene	ND		0.40
1,4-Dichlorobenzene	ND		0.40
1,2-Dichlorobenzene	ND		0.40
1,2-Dibromo-3-chloropropane	ND		2.0
1,2,4-Trichlorobenzene	ND		0.40
Hexachlorobutadiene	ND		0.40
1,2,3-Trichlorobenzene	ND		0.40

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	92	71-126
Toluene-d8	88	76-116
4-Bromofluorobenzene	81	70-123

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
page 1 of 2

Date Extracted:	4-7-09
Date Analyzed:	4-7-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-018-08
Client ID:	**B7-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
(trans) 1,2-Dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
page 2 of 2

Lab ID: 04-018-08
Client ID: B7-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	89	71-126
Toluene-d8	88	76-116
4-Bromofluorobenzene	79	70-123

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

page 1 of 2

Date Extracted:	4-7-09
Date Analyzed:	4-7-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-018-10
Client ID:	**B13-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
(trans) 1,2-Dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

page 2 of 2

Lab ID: 04-018-10
Client ID: B13-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	1.2		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	92	71-126
Toluene-d8	89	76-116
4-Bromofluorobenzene	78	70-123

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
page 1 of 2

Date Extracted:	4-7-09
Date Analyzed:	4-7-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-018-12
Client ID:	**B17-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
(trans) 1,2-Dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

page 2 of 2

Lab ID: 04-018-12
Client ID: B17-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	92	71-126
Toluene-d8	88	76-116
4-Bromofluorobenzene	78	70-123

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
page 1 of 2

Date Extracted:	4-7-09
Date Analyzed:	4-7-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB0407W2

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		2.0
(trans) 1,2-Dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
page 2 of 2

Lab ID: MB0407W2

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	91	71-126
Toluene-d8	89	76-116
4-Bromofluorobenzene	77	70-123

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-018
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
MS/MSD QUALITY CONTROL

Date Extracted: 4-7-09
Date Analyzed: 4-7-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 04-018-08

Compound	Sample Amount	Spike Amount	MS	Percent Recovery	MSD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	ND	10.0	10.6	106	9.87	99	70-130	
Benzene	ND	10.0	11.2	112	10.7	107	70-130	
Trichloroethene	ND	10.0	10.4	104	10.1	101	77-114	
Toluene	ND	10.0	10.8	108	10.7	107	79-121	
Chlorobenzene	ND	10.0	10.1	101	9.99	100	77-108	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	7	11	
Benzene	5	11	
Trichloroethene	3	10	
Toluene	1	11	
Chlorobenzene	2	10	

This report pertains to the samples analyzed in accordance with the chain of custody,
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Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: CDM
Project Number: 19897.68445
Project Name: Bothell X-roads
Project Manager: Pam Morrill
Sampled by: August Welch

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☐ 3 Day
- ☒ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 04-018

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664							% Moisture
1	B4-6	4/2/09	110	S	5					X															X
2	B4-W	4/2/09	125	W	3					X															
3	B5-8	4/2/09	1220	S	5					X															X
4	B5-W	4/2/09	1230	W	3					X															
5	B6-8	4/1/09	2250	S	5	X				X															X
6	B6-W	4/1/09	2335	W	8	X				X															
7	B7-9	4/1/09	1025	S	5	X				X															X
8	B7-W	4/1/09	1045	W	8	X				X															
9	B13-6	4/2/09	200	S	5	X				X															X
10	B13-W	4/2/09	210	W	5~~8~~	X				X															

	Signature	Company	Date	Time
Relinquished by	Jennifer Smith	CDM	4/2/09	430
Received by	[illegible]	OSE	4/2/09	1215
Relinquished by				
Received by	[illegible]	OSE	4/3/09	1200
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:
+ B17-11 VOCs

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: CDM
Project Number: 19897.68445
Project Name: Bothell X-roads
Project Manager: Pam Morrill
Sampled by: August Welch

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Day ☐ 3 Day
☒ Standard (7 working days) (TPH analysis 5 working days)
☐ _____ (other)

Laboratory Number: 04-018

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664							% Moisture
11	B17-11	4/2/09	245	S	~~8~~ 1					X															X
12	B17-W		315	W	3					X															

	Signature	Company	Date	Time
Relinquished by	Jennifer Smith	CDM	4/2/09	430
Received by	[illegible]	OSE	4/2/09	1215
Relinquished by				
Received by	[illegible]	OSE	4/3/09	1200
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:
4 B17-11 vols

Chromatograms with final report ☐

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OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

April 14, 2009

Pam Morrill
CDM
P.O. Box 3885
Bellevue, WA 98009

Re: Analytical Data for Project 19897.68445
Laboratory Reference No. 0904-032

Dear Pam:

Enclosed are the analytical results and associated quality control data for samples submitted on April 3, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Received
APR 17 2009

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881 • Fax (425) 885-4603

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

Case Narrative

Samples were collected on April 2 and 3, 2009, and received by the laboratory on April 3, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX (soil) Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Halogenated Volatiles (soil) EPA 8260B Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Internal Standard 1,4-Dichlorobenzene-d4 does not meet acceptance criteria for sample B15-10 due to sample matrix effects. The sample was re-analyzed with similar results. All results, including Practical Quantitation Limits, from Bromobenzene onward should be considered estimates.

Some MTCA cleanup levels are non-achievable for samples B3-9 and B19-7 due to the necessary dilution of the samples.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-HCID

Date Extracted: 4-6-09
Date Analyzed: 4-6-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**B2-7**	**B3-9**	**B19-7**
Lab ID:	04-032-01	04-032-03	04-032-10
Gasoline:	**ND**	**Gasoline Range Hydrocarbons**	**ND**
PQL:	30	37	30
Diesel Fuel:	**ND**	**Diesel Range Organics**	**ND**
PQL:	75	93	76
Lube Oil:	**ND**	**Lube Oil**	**ND**
PQL:	150	190	150
Surrogate Recovery:			
o-Terphenyl	78%	79%	83%
Flags:	Y	Y	Y

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-HCID
METHOD BLANK QUALITY CONTROL

Date Extracted:	4-6-09
Date Analyzed:	4-6-09

Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	MB0406S1

Gasoline:	**ND**
PQL:	20
Diesel Fuel:	**ND**
PQL:	50
Lube Oil:	**ND**
PQL:	100
Surrogate Recovery:	
o-Terphenyl	103%
Flags	Y

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-HCID

Date Extracted: 4-6-09
Date Analyzed: 4-6&7-09

Matrix: Water
Units: mg/L (ppm)

Client ID:	**B2-W**	**B3-W**	**B19-W**
Lab ID:	04-032-02	04-032-04	04-032-11
Gasoline:	**Gasoline Range Hydrocarbons**	**Gasoline Range Hydrocarbons**	**Gasoline Range Hydrocarbons**
PQL:	0.10	0.12	0.10
Diesel Fuel:	**ND**	**ND**	**ND**
PQL:	0.26	0.30	0.26
Lube Oil:	**ND**	**ND**	**ND**
PQL:	0.42	0.49	0.42
Surrogate Recovery:			
o-Terphenyl	81%	67%	91%
Flags:	Y	Y	Y

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-HCID
METHOD BLANK QUALITY CONTROL

Date Extracted:	4-6-09
Date Analyzed:	4-6-09

Matrix:	Water
Units:	mg/L (ppm)

Lab ID:	MB0406W1

Gasoline:	**ND**
PQL:	0.050
Diesel Fuel:	**ND**
PQL:	0.13
Lube Oil:	**ND**
PQL:	0.20
Surrogate Recovery:	
o-Terphenyl	69%
Flags	Y

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-Gx/BTEX

Date Extracted:	4-9-09
Date Analyzed:	4-9-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**B3-9**
Lab ID:	04-032-03

	Result	Flags	PQL
Benzene	**6.0**		0.030
Toluene	**1.1**		0.15
Ethyl Benzene	**12**		0.15
m,p-Xylene	**11**		0.15
o-Xylene	**0.51**		0.15
TPH-Gas	**720**		15

Surrogate Recovery:
Fluorobenzene 88%

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 4-9-09
Date Analyzed: 4-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0409S1

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050
TPH-Gas	**ND**		5.0

Surrogate Recovery:
Fluorobenzene 84%

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-Gx/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 4-9-09
Date Analyzed: 4-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	04-035-03 **Original**	04-035-03 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	78%	81%		

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-Gx/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 4-9-09
Date Analyzed: 4-9-09

Matrix: Soil
Units: mg/kg (ppm)

Spike Level (ppm): 3.25

Lab ID:	04-035-03 **MS**	Percent Recovery	04-035-03 **MSD**	Percent Recovery	**RPD**	**Flags**
Benzene	**3.30**	**101**	**3.29**	**101**	0	
Toluene	**3.35**	**103**	**3.28**	**101**	2	
Ethyl Benzene	**3.30**	**101**	**3.28**	**101**	1	
m,p-Xylene	**3.30**	**101**	**3.25**	**100**	2	
o-Xylene	**3.18**	**98**	**3.15**	**97**	1	

Surrogate Recovery:

Fluorobenzene	83%	83%

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-Gx/BTEX

Date Extracted: 4-10&13-09
Date Analyzed: 4-10&13-09

Matrix: Water
Units: ug/L (ppb)

Client ID:	**B2-W**			**B3-W**		
Lab ID:	04-032-02			04-032-04		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		1.0	**5.7**		1.0
Toluene	**ND**		1.0	**ND**		1.0
Ethyl Benzene	**ND**		1.0	**3.5**		1.0
m,p-Xylene	**1.3**		1.0	**4.1**		1.0
o-Xylene	**ND**		1.0	**ND**		1.0
TPH-Gas	**210**		100	**270**		100
Surrogate Recovery:						
Fluorobenzene	94%			91%		

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-Gx/BTEX

Date Extracted: 4-10-09
Date Analyzed: 4-10-09

Matrix: Water
Units: ug/L (ppb)

Client ID: **B19-W**
Lab ID: 04-032-11

	Result	Flags	PQL
Benzene	**ND**		1.0
Toluene	**ND**		1.0
Ethyl Benzene	**ND**		1.0
m,p-Xylene	**1.5**		1.0
o-Xylene	**ND**		1.0
TPH-Gas	**380**		100

Surrogate Recovery:
Fluorobenzene 93%

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and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 4-10-09
Date Analyzed: 4-10-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0410W2

	Result	Flags	PQL
Benzene	**ND**		1.0
Toluene	**ND**		1.0
Ethyl Benzene	**ND**		1.0
m,p-Xylene	**ND**		1.0
o-Xylene	**ND**		1.0
TPH-Gas	**ND**		100

Surrogate Recovery:
Fluorobenzene 90%

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 4-13-09
Date Analyzed: 4-13-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0413W1

	Result	Flags	PQL
Benzene	**ND**		1.0
Toluene	**ND**		1.0
Ethyl Benzene	**ND**		1.0
m,p-Xylene	**ND**		1.0
o-Xylene	**ND**		1.0
TPH-Gas	**ND**		100

Surrogate Recovery:
Fluorobenzene 92%

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-Gx/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 4-13-09
Date Analyzed: 4-13-09

Matrix: Water
Units: ug/L (ppb)

Lab ID:	04-032-02 **Original**	04-032-02 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**1.26**	**1.35**	7	
o-Xylene	**ND**	**ND**	NA	
TPH-Gas	**209**	**245**	16	
Surrogate Recovery:				
Fluorobenzene	94%	95%		

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-Gx/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 4-10-09
Date Analyzed: 4-10-09

Matrix: Water
Units: ug/L (ppb)

Spike Level: 50.0 ppb

Lab ID:	04-032-02 **MS**	Percent Recovery	04-032-02 **MSD**	Percent Recovery	**RPD**	**Flags**
Benzene	**49.9**	**100**	**49.0**	**98**	2	
Toluene	**51.7**	**103**	**51.4**	**103**	1	
Ethyl Benzene	**51.0**	**102**	**50.4**	**101**	1	
m,p-Xylene	**50.5**	**98**	**49.8**	**97**	1	
o-Xylene	**50.0**	**100**	**49.5**	**99**	1	

Surrogate Recovery:		
Fluorobenzene	93%	91%

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-Dx

Date Extracted:	4-8-09
Date Analyzed:	4-8-09

Matrix:	Soil
Units:	mg/kg (ppm)

Client ID:	**B3-9**
Lab ID:	04-032-03

Diesel Range:	**ND**
PQL:	46
Identification:	---

Lube Oil Range:	**2400**
PQL:	93
Identification:	Lube Oil

Surrogate Recovery	
o-Terphenyl:	90%

Flags:	Y,M1

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	4-8-09
Date Analyzed:	4-8-09

Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	MB0408S1

Diesel Range:	**ND**
PQL:	25
Identification:	---

Lube Oil Range:	**ND**
PQL:	50
Identification:	---

Surrogate Recovery	
o-Terphenyl:	95%

Flags:	Y

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	4-8-09
Date Analyzed:	4-8-09

Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	04-056-01	04-056-01 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	87%	93%
Flags:	Y	Y

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-6-09
Date Analyzed:	4-6-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-032-01
Client ID:	**B2-7**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.0016
Chloromethane	ND		0.0079
Vinyl Chloride	ND		0.0016
Bromomethane	ND		0.0016
Chloroethane	ND		0.0079
Trichlorofluoromethane	ND		0.0016
1,1-Dichloroethene	ND		0.0016
Iodomethane	ND		0.0079
Methylene Chloride	ND		0.0079
(trans) 1,2-Dichloroethene	ND		0.0016
1,1-Dichloroethane	ND		0.0016
2,2-Dichloropropane	ND		0.0016
(cis) 1,2-Dichloroethene	ND		0.0016
Bromochloromethane	ND		0.0016
Chloroform	ND		0.0016
1,1,1-Trichloroethane	ND		0.0016
Carbon Tetrachloride	ND		0.0016
1,1-Dichloropropene	ND		0.0016
1,2-Dichloroethane	ND		0.0016
Trichloroethene	ND		0.0016
1,2-Dichloropropane	ND		0.0016
Dibromomethane	ND		0.0016
Bromodichloromethane	ND		0.0016
2-Chloroethyl Vinyl Ether	ND		0.0079
(cis) 1,3-Dichloropropene	ND		0.0016
(trans) 1,3-Dichloropropene	ND		0.0016

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-032-01
Client ID: B2-7

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0016
Tetrachloroethene	ND		0.0016
1,3-Dichloropropane	ND		0.0016
Dibromochloromethane	ND		0.0016
1,2-Dibromoethane	ND		0.0016
Chlorobenzene	ND		0.0016
1,1,1,2-Tetrachloroethane	ND		0.0016
Bromoform	ND		0.0016
Bromobenzene	ND		0.0016
1,1,2,2-Tetrachloroethane	ND		0.0016
1,2,3-Trichloropropane	ND		0.0016
2-Chlorotoluene	ND		0.0016
4-Chlorotoluene	ND		0.0016
1,3-Dichlorobenzene	ND		0.0016
1,4-Dichlorobenzene	ND		0.0016
1,2-Dichlorobenzene	ND		0.0016
1,2-Dibromo-3-chloropropane	ND		0.0079
1,2,4-Trichlorobenzene	ND		0.0016
Hexachlorobutadiene	ND		0.0079
1,2,3-Trichlorobenzene	ND		0.0016

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	96	70-118
Toluene-d8	80	70-121
4-Bromofluorobenzene	88	70-130

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-6-09
Date Analyzed:	4-6-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-032-03
Client ID:	**B3-9**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.19
Chloromethane	ND		0.94
Vinyl Chloride	ND		0.19
Bromomethane	ND		0.19
Chloroethane	ND		0.94
Trichlorofluoromethane	ND		0.19
1,1-Dichloroethene	ND		0.19
Iodomethane	ND		0.94
Methylene Chloride	ND		0.94
(trans) 1,2-Dichloroethene	ND		0.19
1,1-Dichloroethane	ND		0.19
2,2-Dichloropropane	ND		0.19
(cis) 1,2-Dichloroethene	ND		0.19
Bromochloromethane	ND		0.19
Chloroform	ND		0.19
1,1,1-Trichloroethane	ND		0.19
Carbon Tetrachloride	ND		0.19
1,1-Dichloropropene	ND		0.19
1,2-Dichloroethane	ND		0.19
Trichloroethene	ND		0.19
1,2-Dichloropropane	ND		0.19
Dibromomethane	ND		0.19
Bromodichloromethane	ND		0.19
2-Chloroethyl Vinyl Ether	ND		0.94
(cis) 1,3-Dichloropropene	ND		0.19
(trans) 1,3-Dichloropropene	ND		0.19

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-032-03
Client ID: B3-9

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.19
Tetrachloroethene	ND		0.19
1,3-Dichloropropane	ND		0.19
Dibromochloromethane	ND		0.19
1,2-Dibromoethane	ND		0.19
Chlorobenzene	ND		0.19
1,1,1,2-Tetrachloroethane	ND		0.19
Bromoform	ND		0.19
Bromobenzene	ND		0.19
1,1,2,2-Tetrachloroethane	ND		0.19
1,2,3-Trichloropropane	ND		0.19
2-Chlorotoluene	ND		0.19
4-Chlorotoluene	ND		0.19
1,3-Dichlorobenzene	ND		0.19
1,4-Dichlorobenzene	ND		0.19
1,2-Dichlorobenzene	ND		0.19
1,2-Dibromo-3-chloropropane	ND		0.94
1,2,4-Trichlorobenzene	ND		0.19
Hexachlorobutadiene	ND		0.94
1,2,3-Trichlorobenzene	ND		0.19

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	93	70-118
Toluene-d8	75	70-121
4-Bromofluorobenzene	87	70-130

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-6-09
Date Analyzed:	4-6-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-032-06
Client ID:	**B15-10**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.0017
Chloromethane	ND		0.0085
Vinyl Chloride	ND		0.0017
Bromomethane	ND		0.0017
Chloroethane	ND		0.0085
Trichlorofluoromethane	ND		0.0017
1,1-Dichloroethene	ND		0.0017
Iodomethane	ND		0.0085
Methylene Chloride	ND		0.0085
(trans) 1,2-Dichloroethene	ND		0.0017
1,1-Dichloroethane	ND		0.0017
2,2-Dichloropropane	ND		0.0017
(cis) 1,2-Dichloroethene	ND		0.0017
Bromochloromethane	ND		0.0017
Chloroform	ND		0.0017
1,1,1-Trichloroethane	ND		0.0017
Carbon Tetrachloride	ND		0.0017
1,1-Dichloropropene	ND		0.0017
1,2-Dichloroethane	ND		0.0017
Trichloroethene	ND		0.0017
1,2-Dichloropropane	ND		0.0017
Dibromomethane	ND		0.0017
Bromodichloromethane	ND		0.0017
2-Chloroethyl Vinyl Ether	ND		0.0085
(cis) 1,3-Dichloropropene	ND		0.0017
(trans) 1,3-Dichloropropene	ND		0.0017

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

Lab ID: 04-032-06
Client ID: B15-10

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0017
Tetrachloroethene	0.027		0.0017
1,3-Dichloropropane	ND		0.0017
Dibromochloromethane	ND		0.0017
1,2-Dibromoethane	ND		0.0017
Chlorobenzene	ND		0.0017
1,1,1,2-Tetrachloroethane	ND		0.0017
Bromoform	ND		0.0017
Bromobenzene	ND		0.0017
1,1,2,2-Tetrachloroethane	ND		0.0017
1,2,3-Trichloropropane	ND		0.0017
2-Chlorotoluene	ND		0.0017
4-Chlorotoluene	ND		0.0017
1,3-Dichlorobenzene	ND		0.0017
1,4-Dichlorobenzene	ND		0.0017
1,2-Dichlorobenzene	ND		0.0017
1,2-Dibromo-3-chloropropane	ND		0.0085
1,2,4-Trichlorobenzene	ND		0.0017
Hexachlorobutadiene	ND		0.0085
1,2,3-Trichlorobenzene	ND		0.0017

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	101	70-118
Toluene-d8	99	70-121
4-Bromofluorobenzene	75	70-130

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-6-09
Date Analyzed:	4-6-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-032-08
Client ID:	**B16-13**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.0010
Chloromethane	ND		0.0051
Vinyl Chloride	ND		0.0010
Bromomethane	ND		0.0010
Chloroethane	ND		0.0051
Trichlorofluoromethane	ND		0.0010
1,1-Dichloroethene	ND		0.0010
Iodomethane	ND		0.0051
Methylene Chloride	ND		0.0051
(trans) 1,2-Dichloroethene	ND		0.0010
1,1-Dichloroethane	ND		0.0010
2,2-Dichloropropane	ND		0.0010
(cis) 1,2-Dichloroethene	ND		0.0010
Bromochloromethane	ND		0.0010
Chloroform	ND		0.0010
1,1,1-Trichloroethane	ND		0.0010
Carbon Tetrachloride	ND		0.0010
1,1-Dichloropropene	ND		0.0010
1,2-Dichloroethane	ND		0.0010
Trichloroethene	ND		0.0010
1,2-Dichloropropane	ND		0.0010
Dibromomethane	ND		0.0010
Bromodichloromethane	ND		0.0010
2-Chloroethyl Vinyl Ether	ND		0.0051
(cis) 1,3-Dichloropropene	ND		0.0010
(trans) 1,3-Dichloropropene	ND		0.0010

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and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-032-08
Client ID: B16-13

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0010
Tetrachloroethene	0.0041		0.0010
1,3-Dichloropropane	ND		0.0010
Dibromochloromethane	ND		0.0010
1,2-Dibromoethane	ND		0.0010
Chlorobenzene	ND		0.0010
1,1,1,2-Tetrachloroethane	ND		0.0010
Bromoform	ND		0.0010
Bromobenzene	ND		0.0010
1,1,2,2-Tetrachloroethane	ND		0.0010
1,2,3-Trichloropropane	ND		0.0010
2-Chlorotoluene	ND		0.0010
4-Chlorotoluene	ND		0.0010
1,3-Dichlorobenzene	ND		0.0010
1,4-Dichlorobenzene	ND		0.0010
1,2-Dichlorobenzene	ND		0.0010
1,2-Dibromo-3-chloropropane	ND		0.0051
1,2,4-Trichlorobenzene	ND		0.0010
Hexachlorobutadiene	ND		0.0051
1,2,3-Trichlorobenzene	ND		0.0010

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	90	70-118
Toluene-d8	99	70-121
4-Bromofluorobenzene	75	70-130

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-6-09
Date Analyzed:	4-6-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-032-10
Client ID:	**B19-7**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.11
Chloromethane	ND		0.56
Vinyl Chloride	ND		0.11
Bromomethane	ND		0.11
Chloroethane	ND		0.56
Trichlorofluoromethane	ND		0.11
1,1-Dichloroethene	ND		0.11
Iodomethane	ND		0.56
Methylene Chloride	0.84	H	0.56
(trans) 1,2-Dichloroethene	ND		0.11
1,1-Dichloroethane	ND		0.11
2,2-Dichloropropane	ND		0.11
(cis) 1,2-Dichloroethene	ND		0.11
Bromochloromethane	ND		0.11
Chloroform	ND		0.11
1,1,1-Trichloroethane	ND		0.11
Carbon Tetrachloride	ND		0.11
1,1-Dichloropropene	ND		0.11
1,2-Dichloroethane	ND		0.11
Trichloroethene	ND		0.11
1,2-Dichloropropane	ND		0.11
Dibromomethane	ND		0.11
Bromodichloromethane	ND		0.11
2-Chloroethyl Vinyl Ether	ND		0.56
(cis) 1,3-Dichloropropene	ND		0.11
(trans) 1,3-Dichloropropene	ND		0.11

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

Lab ID: 04-032-10
Client ID: B19-7

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.11
Tetrachloroethene	ND		0.11
1,3-Dichloropropane	ND		0.11
Dibromochloromethane	ND		0.11
1,2-Dibromoethane	ND		0.11
Chlorobenzene	ND		0.11
1,1,1,2-Tetrachloroethane	ND		0.11
Bromoform	ND		0.11
Bromobenzene	ND		0.11
1,1,2,2-Tetrachloroethane	ND		0.11
1,2,3-Trichloropropane	ND		0.11
2-Chlorotoluene	ND		0.11
4-Chlorotoluene	ND		0.11
1,3-Dichlorobenzene	ND		0.11
1,4-Dichlorobenzene	ND		0.11
1,2-Dichlorobenzene	ND		0.11
1,2-Dibromo-3-chloropropane	ND		0.56
1,2,4-Trichlorobenzene	ND		0.11
Hexachlorobutadiene	ND		0.56
1,2,3-Trichlorobenzene	ND		0.11

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	93	70-118
Toluene-d8	92	70-121
4-Bromofluorobenzene	80	70-130

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Date Extracted:	4-6-09
Date Analyzed:	4-6-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0406S1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.0010
Chloromethane	ND		0.0050
Vinyl Chloride	ND		0.0010
Bromomethane	ND		0.0010
Chloroethane	ND		0.0050
Trichlorofluoromethane	ND		0.0010
1,1-Dichloroethene	ND		0.0010
Iodomethane	ND		0.0050
Methylene Chloride	ND		0.0050
(trans) 1,2-Dichloroethene	ND		0.0010
1,1-Dichloroethane	ND		0.0010
2,2-Dichloropropane	ND		0.0010
(cis) 1,2-Dichloroethene	ND		0.0010
Bromochloromethane	ND		0.0010
Chloroform	ND		0.0010
1,1,1-Trichloroethane	ND		0.0010
Carbon Tetrachloride	ND		0.0010
1,1-Dichloropropene	ND		0.0010
1,2-Dichloroethane	ND		0.0010
Trichloroethene	ND		0.0010
1,2-Dichloropropane	ND		0.0010
Dibromomethane	ND		0.0010
Bromodichloromethane	ND		0.0010
2-Chloroethyl Vinyl Ether	ND		0.0050
(cis) 1,3-Dichloropropene	ND		0.0010
(trans) 1,3-Dichloropropene	ND		0.0010

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Lab ID: MB0406S1

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0010
Tetrachloroethene	ND		0.0010
1,3-Dichloropropane	ND		0.0010
Dibromochloromethane	ND		0.0010
1,2-Dibromoethane	ND		0.0010
Chlorobenzene	ND		0.0010
1,1,1,2-Tetrachloroethane	ND		0.0010
Bromoform	ND		0.0010
Bromobenzene	ND		0.0010
1,1,2,2-Tetrachloroethane	ND		0.0010
1,2,3-Trichloropropane	ND		0.0010
2-Chlorotoluene	ND		0.0010
4-Chlorotoluene	ND		0.0010
1,3-Dichlorobenzene	ND		0.0010
1,4-Dichlorobenzene	ND		0.0010
1,2-Dichlorobenzene	ND		0.0010
1,2-Dibromo-3-chloropropane	ND		0.0050
1,2,4-Trichlorobenzene	ND		0.0010
Hexachlorobutadiene	ND		0.0050
1,2,3-Trichlorobenzene	ND		0.0010

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	97	70-118
Toluene-d8	108	70-121
4-Bromofluorobenzene	96	70-130

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Date Extracted: 4-6-09
Date Analyzed: 4-6-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: SB0406S1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	0.0500	0.0492	98	0.0436	87	70-130	
Benzene	0.0500	0.0467	93	0.0447	89	70-128	
Trichloroethene	0.0500	0.0511	102	0.0531	106	73-121	
Toluene	0.0500	0.0490	98	0.0436	87	74-122	
Chlorobenzene	0.0500	0.0490	98	0.0499	100	76-115	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	12	15	
Benzene	4	12	
Trichloroethene	4	17	
Toluene	12	14	
Chlorobenzene	2	13	

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-8-09
Date Analyzed:	4-8-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-032-02
Client ID:	**B2-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		1.0
(trans) 1,2-dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	5.0		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	11		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

Lab ID: 04-032-02
Client ID: B2-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	25		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	0.22		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	90	71-126
Toluene-d8	91	76-116
4-Bromofluorobenzene	86	70-123

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-8-09
Date Analyzed:	4-8-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-032-04
Client ID:	**B3-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		1.0
(trans) 1,2-dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

Lab ID: 04-032-04
Client ID: B3-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	20		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	95	71-126
Toluene-d8	96	76-116
4-Bromofluorobenzene	88	70-123

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-8-09
Date Analyzed:	4-8-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-032-05
Client ID:	**B14-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		1.0
(trans) 1,2-dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	0.33		0.20
Bromochloromethane	ND		0.20
Chloroform	0.72		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	0.54		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-032-05
Client ID: B14-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	5.9		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	95	71-126
Toluene-d8	89	76-116
4-Bromofluorobenzene	85	70-123

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-8-09
Date Analyzed:	4-8-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-032-07
Client ID:	**B15-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		1.0
(trans) 1,2-dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	1.4		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	1.8		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-032-07
Client ID: B15-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	3.9		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	96	71-126
Toluene-d8	91	76-116
4-Bromofluorobenzene	89	70-123

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-8-09
Date Analyzed:	4-8-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-032-09
Client ID:	**B16-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		1.0
(trans) 1,2-dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-032-09
Client ID: B16-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	0.21		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	97	71-126
Toluene-d8	91	76-116
4-Bromofluorobenzene	89	70-123

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-8-09
Date Analyzed:	4-8-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-032-11
Client ID:	**B19-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		1.0
(trans) 1,2-dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	4.2		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	5.9		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-032-11
Client ID: B19-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	9.2		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	94	71-126
Toluene-d8	93	76-116
4-Bromofluorobenzene	89	70-123

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-8-09
Date Analyzed:	4-8-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-032-12
Client ID:	**B13-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		1.0
(trans) 1,2-dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-032-12
Client ID: B13-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	1.1		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	94	71-126
Toluene-d8	90	76-116
4-Bromofluorobenzene	88	70-123

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-8-09
Date Analyzed:	4-8-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-032-13
Client ID:	**TB-1**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		1.0
(trans) 1,2-dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-032-13
Client ID: TB-1

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	98	71-126
Toluene-d8	91	76-116
4-Bromofluorobenzene	87	70-123

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Date Extracted:	4-8-09
Date Analyzed:	4-8-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB0408W1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		1.0
(trans) 1,2-dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Lab ID: MB0408W1

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	98	71-126
Toluene-d8	90	76-116
4-Bromofluorobenzene	87	70-123

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Laboratory Reference: 0904-032
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
MS/MSD QUALITY CONTROL

Date Extracted: 4-8-09
Date Analyzed: 4-8-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 04-032-02

Compound	Sample Amount	Spike Amount	MS	Percent Recovery	MSD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	ND	10.0	7.99	80	7.78	78	70-130	
Benzene	ND	10.0	9.59	96	9.52	95	70-130	
Trichloroethene	11.3	10.0	20.7	94	19.3	80	77-114	
Toluene	ND	10.0	9.68	97	9.41	94	79-121	
Chlorobenzene	0.221	10.0	10.4	102	9.91	97	77-108	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	3	11	
Benzene	1	11	
Trichloroethene	7	10	
Toluene	3	11	
Chlorobenzene	5	10	

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 14, 2009
Samples Submitted: April 3, 2009
Lab Traveler: 0904-032
Project: 19897.68445

% MOISTURE

Date Analyzed: 4-6-09

Client ID	Lab ID	% Moisture
B2-7	04-032-01	33
B3-9	04-032-03	46
B15-10	04-032-06	33
B16-13	04-032-08	16
B19-7	04-032-10	34

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

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

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

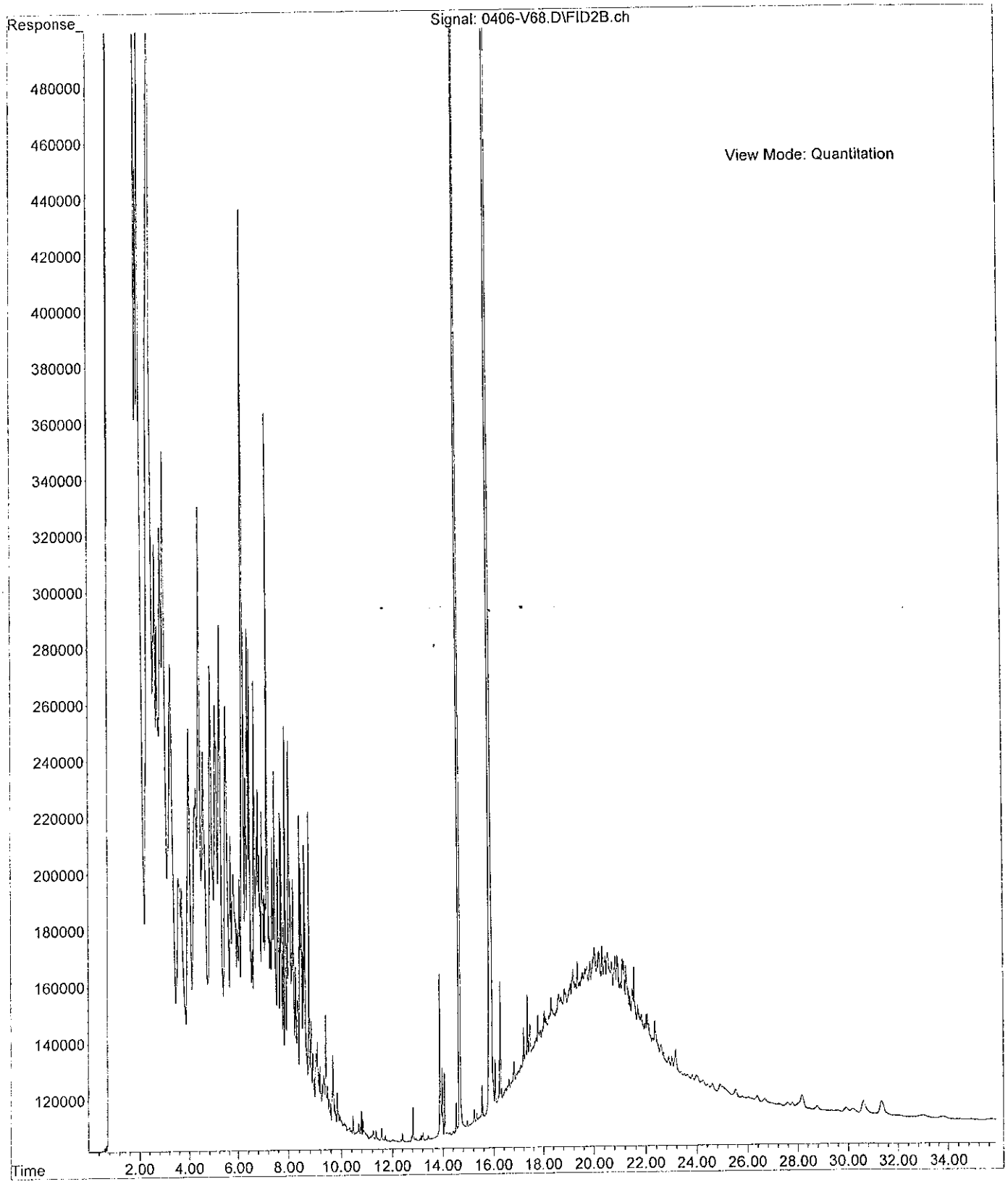
Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

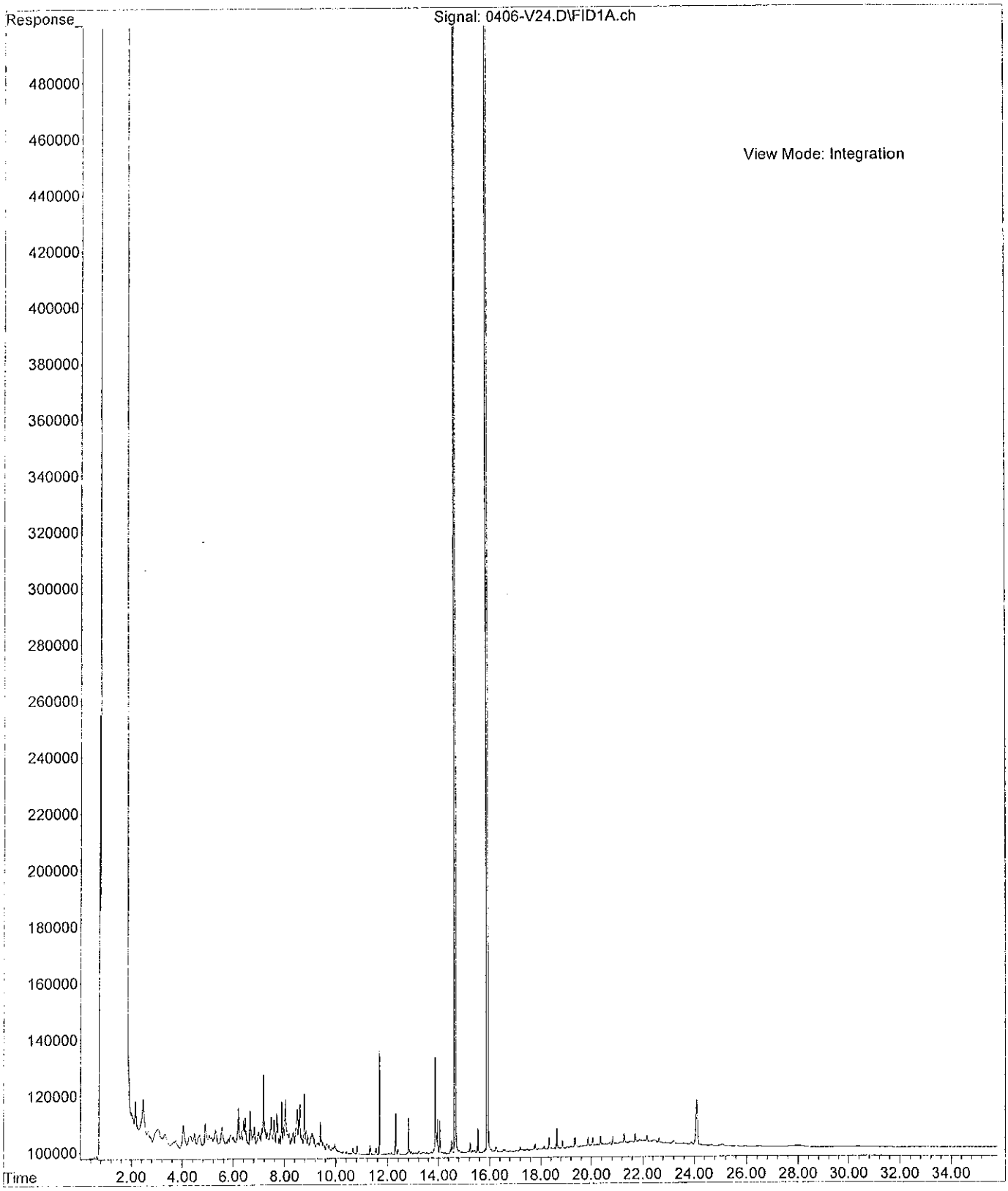
ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

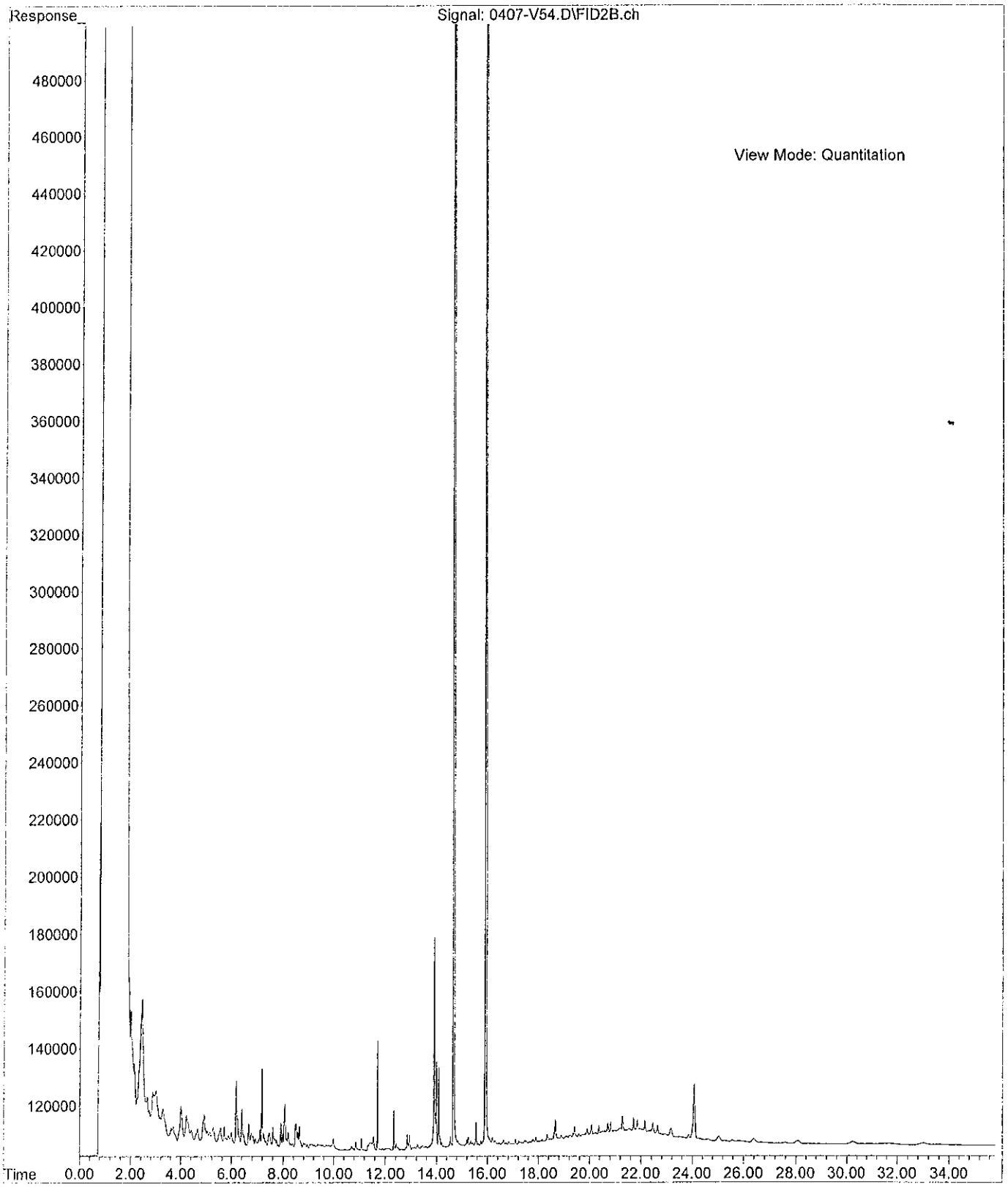
File :C:\msdchem\2\DATA\V090406.SEC\0406-V68.D
Operator : RB
Acquired : 6 Apr 09 10122 p using AcqMethod V090325F.M
Instrument : Vigo
Sample Name: 04-032-03 HC
Misc Info :
Vial Number: 68



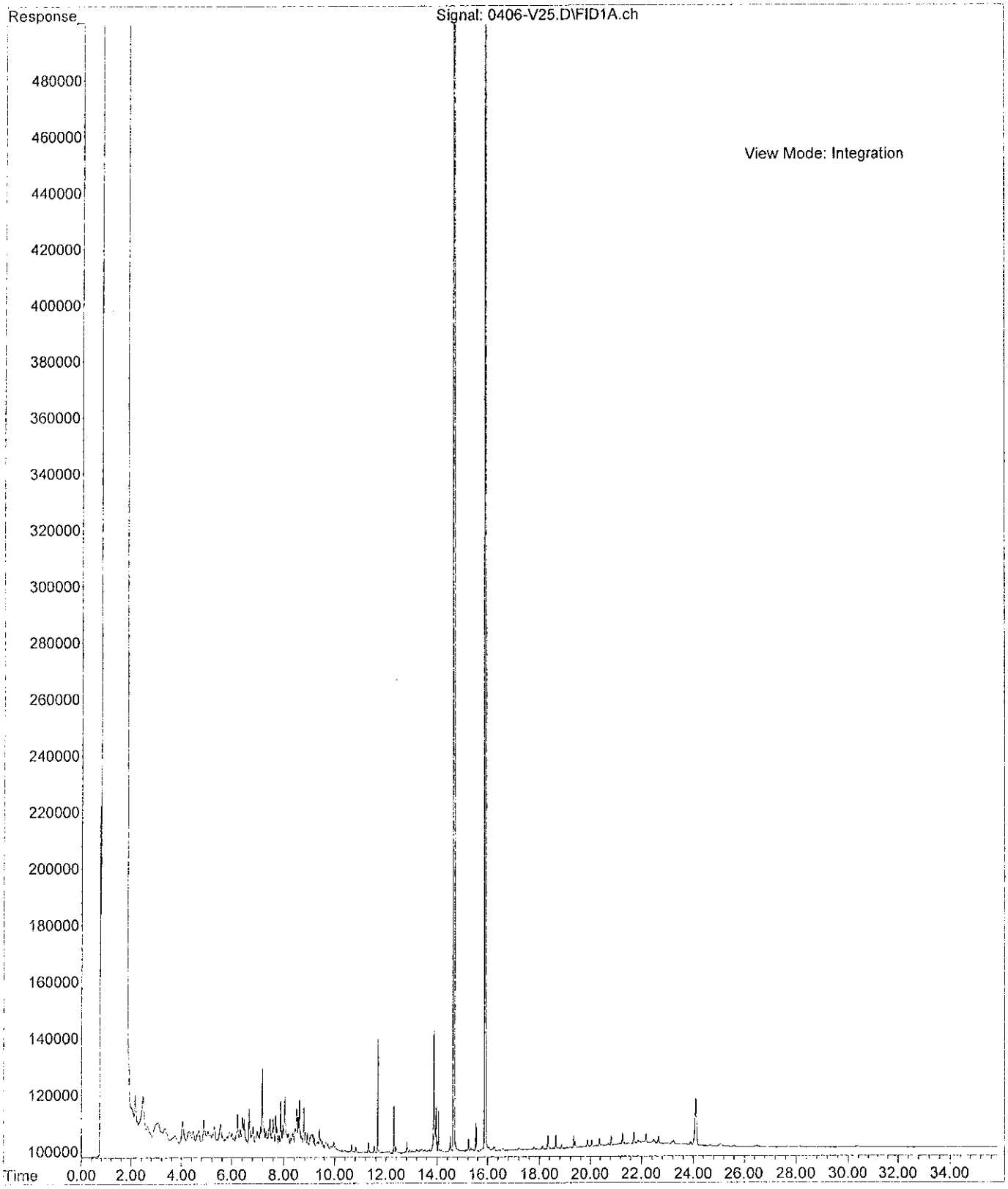
File :C:\msdchem\2\DATA\V090406\0406-V24.D
Operator : RB
Acquired : 7 Apr 09 2:21 a using AcqMethod V090325F.M
Instrument : Vigo
Sample Name: 04-032-02 HC
Misc Info :
Vial Number: 24



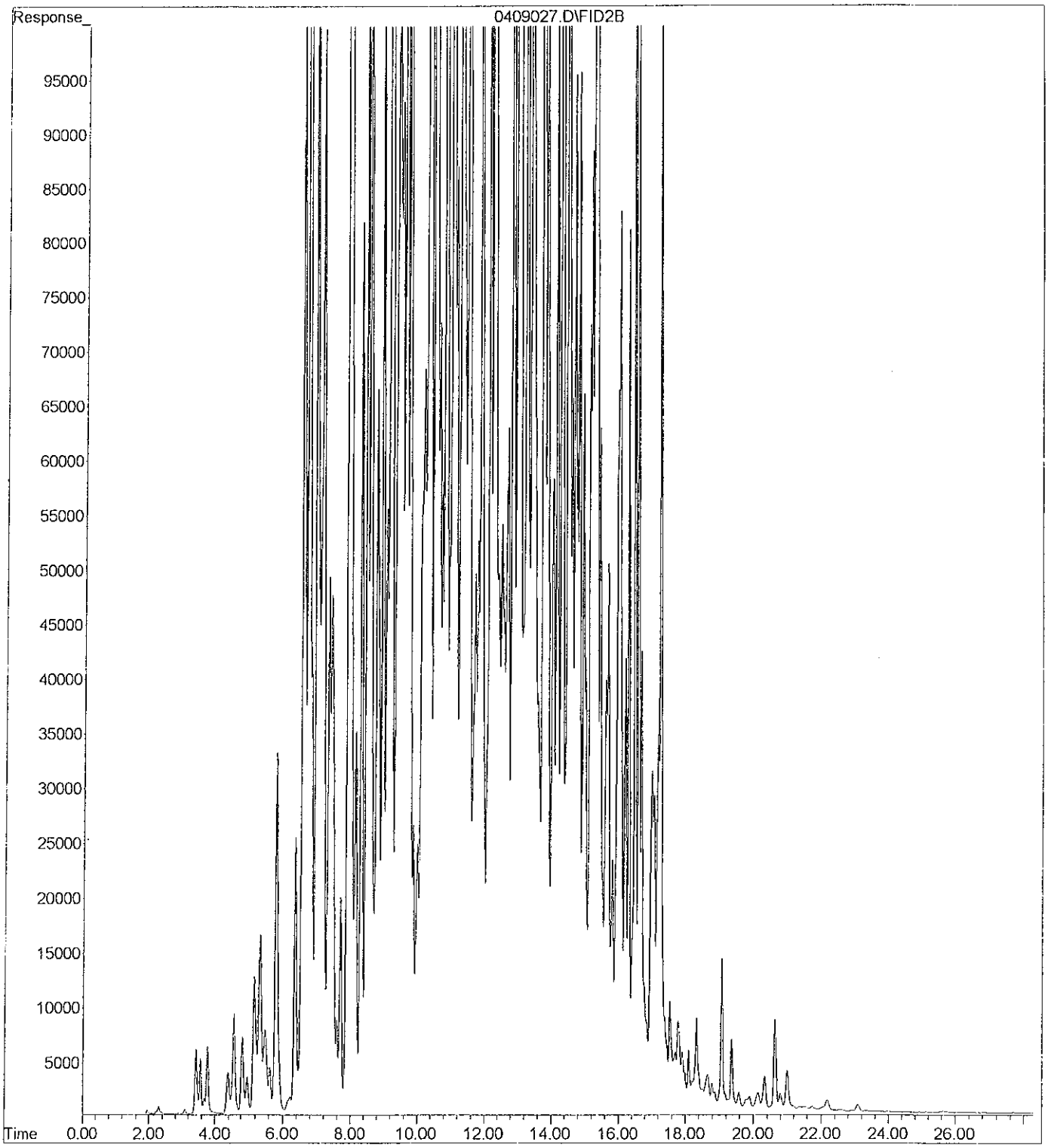
File :C:\msdchem\2\DATA\V090407.SEC\0407-V54.D
Operator : RB
Acquired : 7 Apr 09 3123 p using AcqMethod V090325F.M
Instrument : Vigo
Sample Name: 04-032-04
Misc Info :
Vial Number: 54



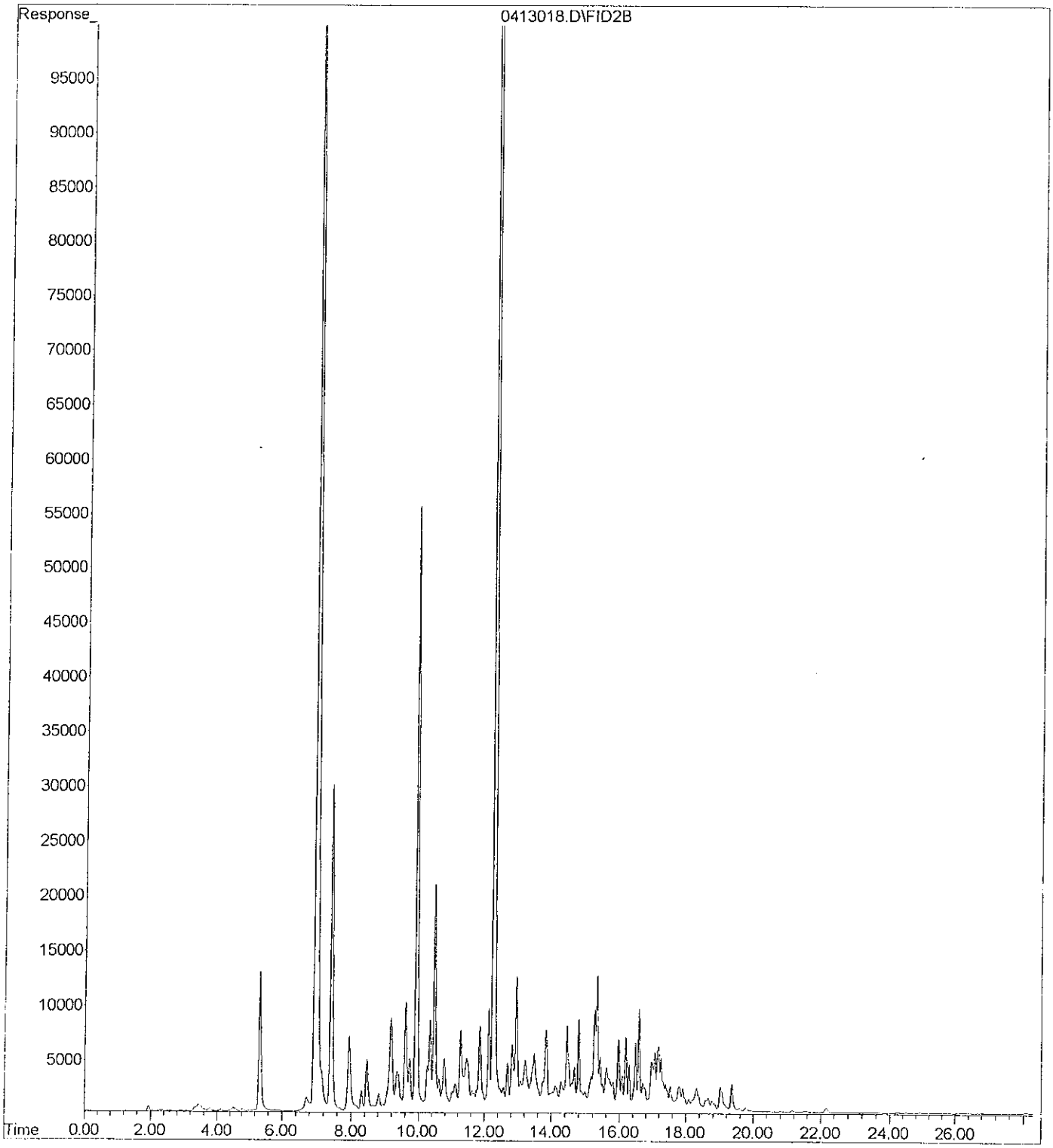
File :C:\msdchem\2\DATA\V090406\0406-V25.D
Operator : RB
Acquired : 7 Apr 09 3:01 a using AcqMethod V090325F.M
Instrument : Vigo
Sample Name: 04-032-11 HC
Misc Info :
Vial Number: 25



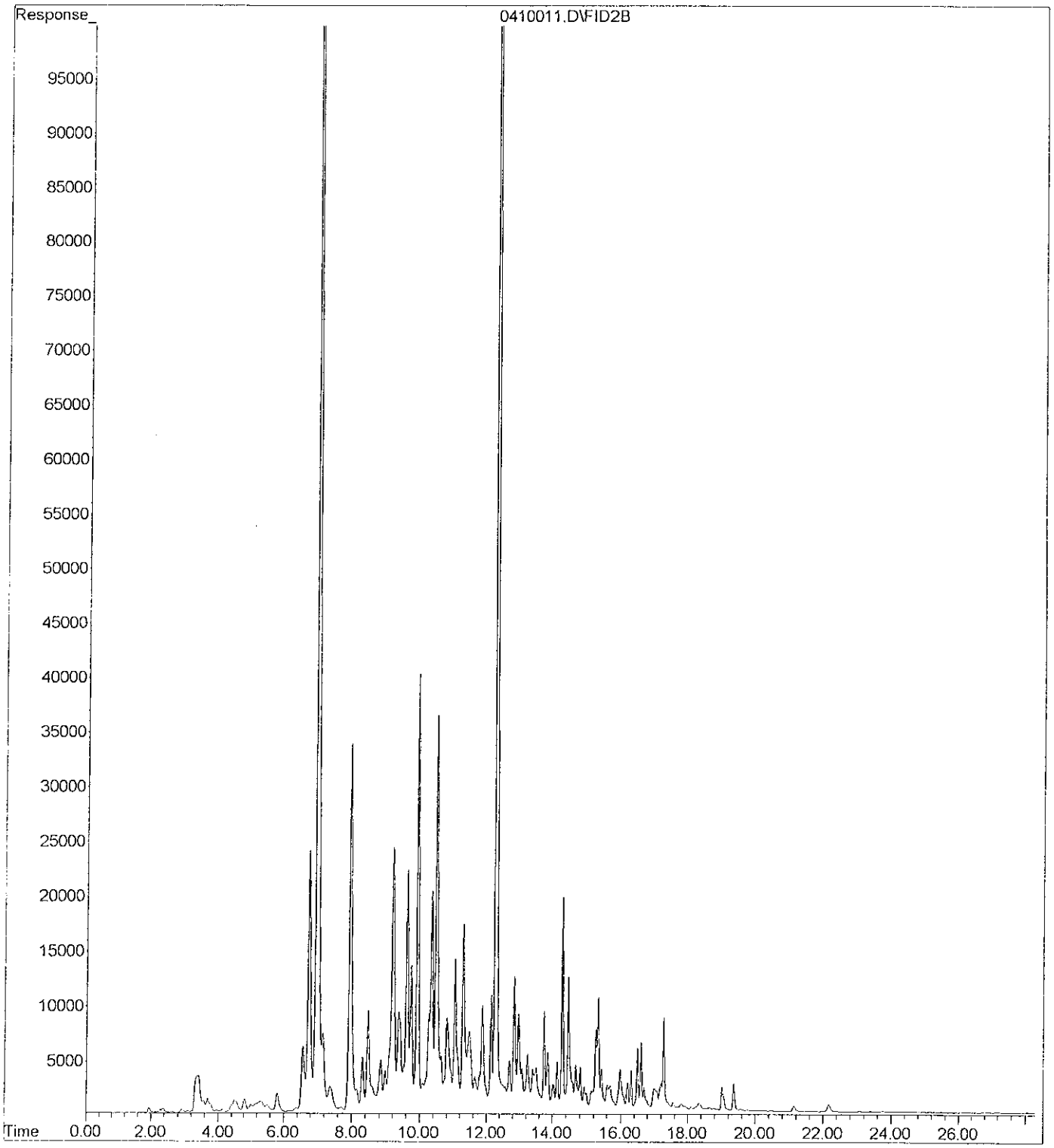
File : X:\BTEX\DARYL\DATA\D090409\0409027.D
Operator :
Acquired : 10 Apr 2009 3:38 using AcqMethod 090408B.M
Instrument : Daryl
Sample Name: 04-032-03s 1:50
Misc Info :
Vial Number: 27



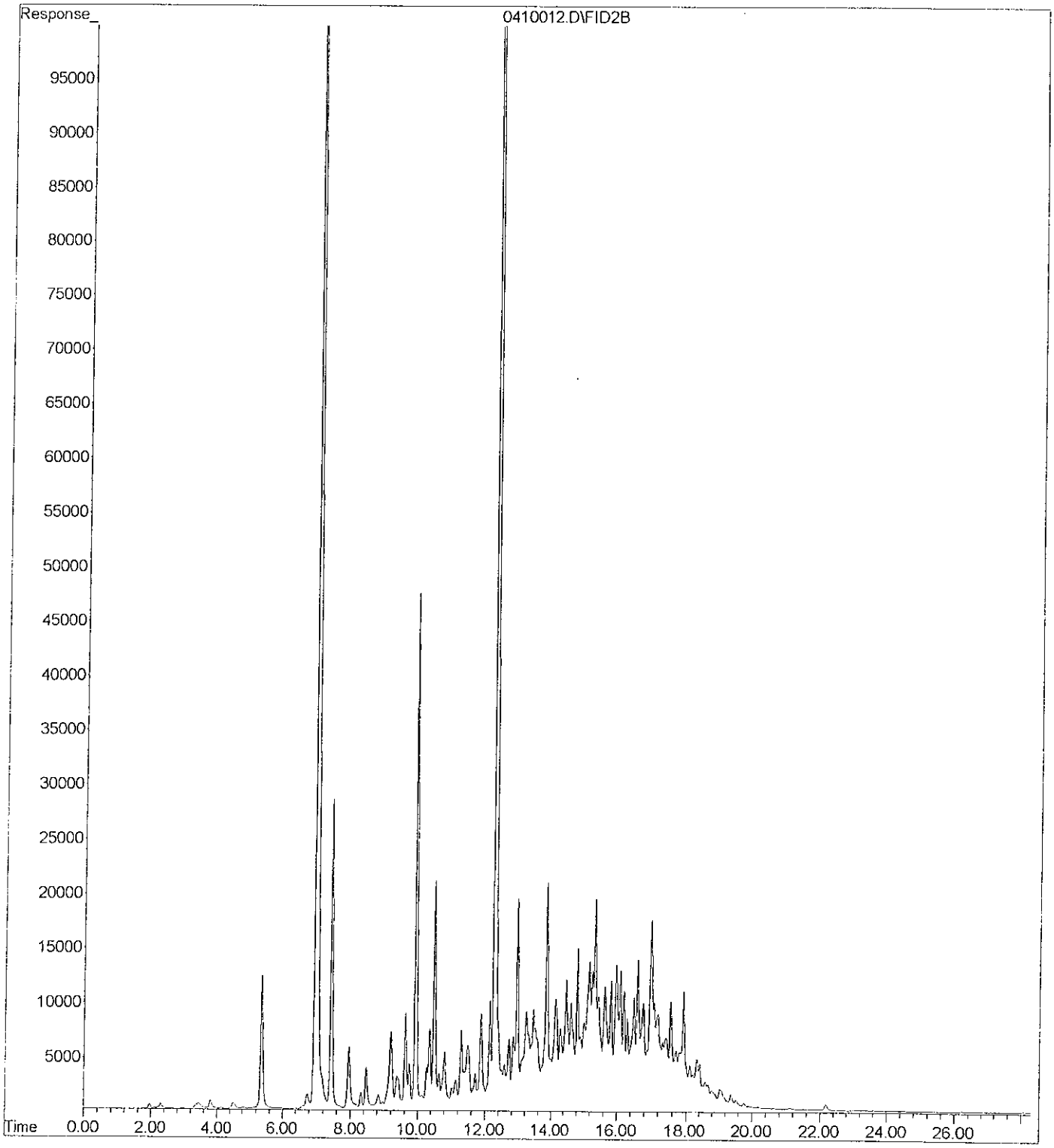
File : X:\BTEX\DARYL\DATA\D090413\0413018.D
Operator :
Acquired : 13 Apr 2009 21:08 using AcqMethod 090408B.M
Instrument : Daryl
Sample Name: 04-032-02f RR
Misc Info :
Vial Number: 18



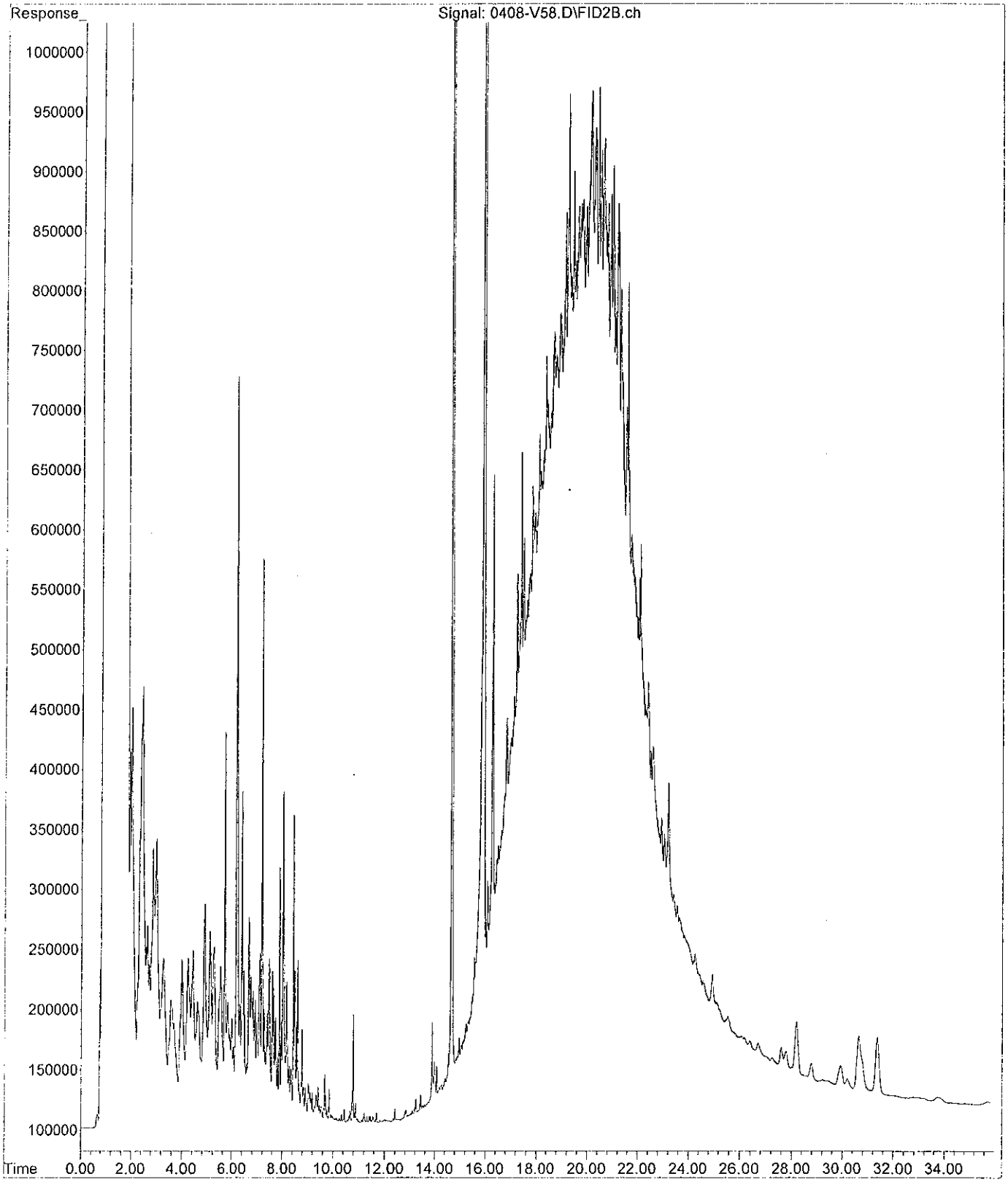
File : X:\BTEX\DARYL\DATA\D090410\0410011.D
Operator :
Acquired : 10 Apr 2009 19:12 using AcqMethod 090408B.M
Instrument : Daryl
Sample Name: 04-032-04c
Misc Info :
Vial Number: 11



File : X:\BTEX\DARYL\DATA\D090410\0410012.D
Operator :
Acquired : 10 Apr 2009 19:47 using AcqMethod 090408B.M
Instrument : Daryl
Sample Name: 04-032-11c
Misc Info :
Vial Number: 12



File :C:\msdchem\2\DATA\V090408.SEC\0408-V58.D
Operator : RB
Acquired : 8 Apr 09 4120 p using AcqMethod V090325F.M
Instrument : Vigo
Sample Name: 04-032-03
Misc Info :
Vial Number: 58



Date of Report: April 10, 2009
Samples Submitted: April 3, 2009
Lab Traveler: 0904-018
Project: 19897.68445

% MOISTURE

Date Analyzed: 4-3-09

Client ID	Lab ID	% Moisture
B4-6	04-018-01	18
B5-8	04-018-03	19
B6-8	04-018-05	19
B7-9	04-018-07	18
B13-6	04-018-09	18
B17-11	04-018-11	12

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

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

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: CDM
Project Number: 19897.68445
Project Name: Rothell X-roads
Project Manager: Pam Morrill
Sampled by: August Welch

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Day ☐ 3 Day
☒ Standard (7 working days) (TPH analysis 5 working days)
☐ _____ (other)

Laboratory Number: 04-032

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	% Moisture
1	B2-7	4/2/09	1040	S	5	X				X									X
2	B2-W	4/2/09	1055	W	8	X	O			X									
3	B3-9	4/3/09	230	S	5	X	⊗	⊗		X									X
4	B3-W	4/3/09	245	W	8	X	O			X									
5	B14-W	4/3/09	1205	W	3					X									
6	B15-10	4/3/09	115	S	5					X									X
7	B15-W	4/3/09	115	W	3					X									
8	B16-13	4/3/09	125	S	5					X									X
9	B16-W	4/3/09	150	W	3					X									
10	B19-7	4/2/09	1045	S	5	X				X									X

	Signature	Company	Date	Time
Relinquished by	August Welch	CDM	4/3/09	430
Received by	[illegible]	OSE	4/3/09	1200
Relinquished by				
Received by				
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:
⊗ Added 4/7/09. DB
O Added 4/9/09 DB

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: CDM
Project Number: 19897.68445
Project Name: Bothell x-roads
Project Manager: Pam Morrill
Sampled by: August Welch

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☐ 3 Day
- ☒ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 04-032

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664						% Moisture
11	B19-W	4/2/09	~~4/2/09~~	W	8	X	O			X														
12	B13-W	4/2/09	1100 210	W	3					X														
~~13~~	~~B17-11~~	~~4/2/09~~	~~245~~	~~S~~	~~4~~					~~X~~														~~X~~
13	TB3-1	4/2/09	—	W	3					X														

	Signature	Company	Date	Time
Relinquished by	August Welch	CDM	4/3/09	430
Received by	[illegible]	OSE	4/3/09	1200
Relinquished by				
Received by				
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

O Added 4/9/09. DB

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

April 15, 2009

Pam Morrill
CDM
P.O. Box 3885
Bellevue, WA 98009

Re: Analytical Data for Project 19897.68445
Laboratory Reference No. 0904-049

Dear Pam:

Enclosed are the analytical results and associated quality control data for samples submitted on April 7, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Received
APR 17 2009

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881 • Fax (425) 885-4603

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

Case Narrative

Samples were collected on April 6 and 7, 2009, and received by the laboratory on April 7, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Halogenated Volatiles (soil) EPA 8260B Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

NWTPH-HCID

Date Extracted: 4-9-09
Date Analyzed: 4-9-09

Matrix: Water
Units: mg/L (ppm)

Client ID:	**B1-W**	**B12-W**	**B18-W**
Lab ID:	04-049-02	04-049-10	04-049-12
Gasoline:	**ND**	**ND**	**Gasoline Range Hydrocarbons**
PQL:	0.11	0.10	0.11
Diesel Fuel:	**ND**	**ND**	**ND**
PQL:	0.27	0.26	0.26
Lube Oil:	**ND**	**ND**	**ND**
PQL:	0.43	0.41	0.42
Surrogate Recovery:			
o-Terphenyl	83%	90%	90%
Flags:	Y	Y	Y

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

NWTPH-HCID
METHOD BLANK QUALITY CONTROL

Date Extracted:	4-9-09
Date Analyzed:	4-9-09

Matrix:	Water
Units:	mg/L (ppm)

Lab ID:	MB0409W1

Gasoline:	**ND**
PQL:	0.10
Diesel Fuel:	**ND**
PQL:	0.25
Lube Oil:	**ND**
PQL:	0.40
Surrogate Recovery:	
o-Terphenyl	91%
Flags	Y

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

Page 1 of 2

Date Extracted:	4-9-09
Date Analyzed:	4-9-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-049-01
Client ID:	**B1-6**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.00099
Chloromethane	ND		0.0049
Vinyl Chloride	ND		0.00099
Bromomethane	ND		0.00099
Chloroethane	ND		0.0049
Trichlorofluoromethane	ND		0.00099
1,1-Dichloroethene	ND		0.00099
Iodomethane	ND		0.0049
Methylene Chloride	ND		0.0049
(trans) 1,2-dichloroethene	ND		0.00099
1,1-Dichloroethane	ND		0.00099
2,2-Dichloropropane	ND		0.00099
(cis) 1,2-Dichloroethene	ND		0.00099
Bromochloromethane	ND		0.00099
Chloroform	ND		0.00099
1,1,1-Trichloroethane	ND		0.00099
Carbon Tetrachloride	ND		0.00099
1,1-Dichloropropene	ND		0.00099
1,2-Dichloroethane	ND		0.00099
Trichloroethene	ND		0.00099
1,2-Dichloropropane	ND		0.00099
Dibromomethane	ND		0.00099
Bromodichloromethane	ND		0.00099
2-Chloroethyl Vinyl Ether	ND		0.0049
(cis) 1,3-Dichloropropene	ND		0.00099
(trans) 1,3-Dichloropropene	ND		0.00099

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-049-01
Client ID: B1-6

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.00099
Tetrachloroethene	0.0054		0.00099
1,3-Dichloropropane	ND		0.00099
Dibromochloromethane	ND		0.00099
1,2-Dibromoethane	ND		0.00099
Chlorobenzene	ND		0.00099
1,1,1,2-Tetrachloroethane	ND		0.00099
Bromoform	ND		0.00099
Bromobenzene	ND		0.00099
1,1,2,2-Tetrachloroethane	ND		0.00099
1,2,3-Trichloropropane	ND		0.00099
2-Chlorotoluene	ND		0.00099
4-Chlorotoluene	ND		0.00099
1,3-Dichlorobenzene	ND		0.00099
1,4-Dichlorobenzene	ND		0.00099
1,2-Dichlorobenzene	ND		0.00099
1,2-Dibromo-3-chloropropane	ND		0.0049
1,2,4-Trichlorobenzene	ND		0.00099
Hexachlorobutadiene	ND		0.0049
1,2,3-Trichlorobenzene	ND		0.00099

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	100	70-118
Toluene-d8	104	70-121
4-Bromofluorobenzene	99	70-130

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-9-09
Date Analyzed:	4-9-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-049-03
Client ID:	**B8-7**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.0010
Chloromethane	ND		0.0050
Vinyl Chloride	ND		0.0010
Bromomethane	ND		0.0010
Chloroethane	ND		0.0050
Trichlorofluoromethane	ND		0.0010
1,1-Dichloroethene	ND		0.0010
Iodomethane	ND		0.0050
Methylene Chloride	ND		0.0050
(trans) 1,2-dichloroethene	ND		0.0010
1,1-Dichloroethane	ND		0.0010
2,2-Dichloropropane	ND		0.0010
(cis) 1,2-Dichloroethene	ND		0.0010
Bromochloromethane	ND		0.0010
Chloroform	ND		0.0010
1,1,1-Trichloroethane	ND		0.0010
Carbon Tetrachloride	ND		0.0010
1,1-Dichloropropene	ND		0.0010
1,2-Dichloroethane	ND		0.0010
Trichloroethene	ND		0.0010
1,2-Dichloropropane	ND		0.0010
Dibromomethane	ND		0.0010
Bromodichloromethane	ND		0.0010
2-Chloroethyl Vinyl Ether	ND		0.0050
(cis) 1,3-Dichloropropene	ND		0.0010
(trans) 1,3-Dichloropropene	ND		0.0010

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-049-03
Client ID: B8-7

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0010
Tetrachloroethene	0.0017		0.0010
1,3-Dichloropropane	ND		0.0010
Dibromochloromethane	ND		0.0010
1,2-Dibromoethane	ND		0.0010
Chlorobenzene	ND		0.0010
1,1,1,2-Tetrachloroethane	ND		0.0010
Bromoform	ND		0.0010
Bromobenzene	ND		0.0010
1,1,2,2-Tetrachloroethane	ND		0.0010
1,2,3-Trichloropropane	ND		0.0010
2-Chlorotoluene	ND		0.0010
4-Chlorotoluene	ND		0.0010
1,3-Dichlorobenzene	ND		0.0010
1,4-Dichlorobenzene	ND		0.0010
1,2-Dichlorobenzene	ND		0.0010
1,2-Dibromo-3-chloropropane	ND		0.0050
1,2,4-Trichlorobenzene	ND		0.0010
Hexachlorobutadiene	ND		0.0050
1,2,3-Trichlorobenzene	ND		0.0010

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	100	70-118
Toluene-d8	110	70-121
4-Bromofluorobenzene	111	70-130

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-9-09
Date Analyzed:	4-9-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-049-05
Client ID:	**B10-6**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.00097
Chloromethane	ND		0.0048
Vinyl Chloride	ND		0.00097
Bromomethane	ND		0.00097
Chloroethane	ND		0.0048
Trichlorofluoromethane	ND		0.00097
1,1-Dichloroethene	ND		0.00097
Iodomethane	ND		0.0048
Methylene Chloride	ND		0.0048
(trans) 1,2-dichloroethene	ND		0.00097
1,1-Dichloroethane	ND		0.00097
2,2-Dichloropropane	ND		0.00097
(cis) 1,2-Dichloroethene	ND		0.00097
Bromochloromethane	ND		0.00097
Chloroform	ND		0.00097
1,1,1-Trichloroethane	ND		0.00097
Carbon Tetrachloride	ND		0.00097
1,1-Dichloropropene	ND		0.00097
1,2-Dichloroethane	ND		0.00097
Trichloroethene	ND		0.00097
1,2-Dichloropropane	ND		0.00097
Dibromomethane	ND		0.00097
Bromodichloromethane	ND		0.00097
2-Chloroethyl Vinyl Ether	ND		0.0048
(cis) 1,3-Dichloropropene	ND		0.00097
(trans) 1,3-Dichloropropene	ND		0.00097

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

Lab ID: 04-049-05
Client ID: B10-6

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.00097
Tetrachloroethene	0.016		0.00097
1,3-Dichloropropane	ND		0.00097
Dibromochloromethane	ND		0.00097
1,2-Dibromoethane	ND		0.00097
Chlorobenzene	ND		0.00097
1,1,1,2-Tetrachloroethane	ND		0.00097
Bromoform	ND		0.00097
Bromobenzene	ND		0.00097
1,1,2,2-Tetrachloroethane	ND		0.00097
1,2,3-Trichloropropane	ND		0.00097
2-Chlorotoluene	ND		0.00097
4-Chlorotoluene	ND		0.00097
1,3-Dichlorobenzene	ND		0.00097
1,4-Dichlorobenzene	ND		0.00097
1,2-Dichlorobenzene	ND		0.00097
1,2-Dibromo-3-chloropropane	ND		0.0048
1,2,4-Trichlorobenzene	ND		0.00097
Hexachlorobutadiene	ND		0.0048
1,2,3-Trichlorobenzene	ND		0.00097

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	101	70-118
Toluene-d8	110	70-121
4-Bromofluorobenzene	108	70-130

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-9-09
Date Analyzed:	4-9-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-049-07
Client ID:	**B11-6**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.0011
Chloromethane	ND		0.0054
Vinyl Chloride	ND		0.0011
Bromomethane	ND		0.0011
Chloroethane	ND		0.0054
Trichlorofluoromethane	ND		0.0011
1,1-Dichloroethene	ND		0.0011
Iodomethane	ND		0.0054
Methylene Chloride	ND		0.0054
(trans) 1,2-dichloroethene	ND		0.0011
1,1-Dichloroethane	ND		0.0011
2,2-Dichloropropane	ND		0.0011
(cis) 1,2-Dichloroethene	ND		0.0011
Bromochloromethane	ND		0.0011
Chloroform	ND		0.0011
1,1,1-Trichloroethane	ND		0.0011
Carbon Tetrachloride	ND		0.0011
1,1-Dichloropropene	ND		0.0011
1,2-Dichloroethane	ND		0.0011
Trichloroethene	ND		0.0011
1,2-Dichloropropane	ND		0.0011
Dibromomethane	ND		0.0011
Bromodichloromethane	ND		0.0011
2-Chloroethyl Vinyl Ether	ND		0.0054
(cis) 1,3-Dichloropropene	ND		0.0011
(trans) 1,3-Dichloropropene	ND		0.0011

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Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-049-07
Client ID: B11-6

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0011
Tetrachloroethene	0.0030		0.0011
1,3-Dichloropropane	ND		0.0011
Dibromochloromethane	ND		0.0011
1,2-Dibromoethane	ND		0.0011
Chlorobenzene	ND		0.0011
1,1,1,2-Tetrachloroethane	ND		0.0011
Bromoform	ND		0.0011
Bromobenzene	ND		0.0011
1,1,2,2-Tetrachloroethane	ND		0.0011
1,2,3-Trichloropropane	ND		0.0011
2-Chlorotoluene	ND		0.0011
4-Chlorotoluene	ND		0.0011
1,3-Dichlorobenzene	ND		0.0011
1,4-Dichlorobenzene	ND		0.0011
1,2-Dichlorobenzene	ND		0.0011
1,2-Dibromo-3-chloropropane	ND		0.0054
1,2,4-Trichlorobenzene	ND		0.0011
Hexachlorobutadiene	ND		0.0054
1,2,3-Trichlorobenzene	ND		0.0011

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	88	70-118
Toluene-d8	101	70-121
4-Bromofluorobenzene	106	70-130

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Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-9-09
Date Analyzed:	4-9-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-049-09
Client ID:	**B12-5**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.00090
Chloromethane	ND		0.0045
Vinyl Chloride	ND		0.00090
Bromomethane	ND		0.00090
Chloroethane	ND		0.0045
Trichlorofluoromethane	ND		0.00090
1,1-Dichloroethene	ND		0.00090
Iodomethane	ND		0.0045
Methylene Chloride	ND		0.0045
(trans) 1,2-dichloroethene	ND		0.00090
1,1-Dichloroethane	ND		0.00090
2,2-Dichloropropane	ND		0.00090
(cis) 1,2-Dichloroethene	0.0013		0.00090
Bromochloromethane	ND		0.00090
Chloroform	ND		0.00090
1,1,1-Trichloroethane	ND		0.00090
Carbon Tetrachloride	ND		0.00090
1,1-Dichloropropene	ND		0.00090
1,2-Dichloroethane	ND		0.00090
Trichloroethene	ND		0.00090
1,2-Dichloropropane	ND		0.00090
Dibromomethane	ND		0.00090
Bromodichloromethane	ND		0.00090
2-Chloroethyl Vinyl Ether	ND		0.0045
(cis) 1,3-Dichloropropene	ND		0.00090
(trans) 1,3-Dichloropropene	ND		0.00090

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and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

Page 2 of 2

Lab ID: 04-049-09
Client ID: B12-5

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.00090
Tetrachloroethene	0.0011		0.00090
1,3-Dichloropropane	ND		0.00090
Dibromochloromethane	ND		0.00090
1,2-Dibromoethane	ND		0.00090
Chlorobenzene	ND		0.00090
1,1,1,2-Tetrachloroethane	ND		0.00090
Bromoform	ND		0.00090
Bromobenzene	ND		0.00090
1,1,2,2-Tetrachloroethane	ND		0.00090
1,2,3-Trichloropropane	ND		0.00090
2-Chlorotoluene	ND		0.00090
4-Chlorotoluene	ND		0.00090
1,3-Dichlorobenzene	ND		0.00090
1,4-Dichlorobenzene	ND		0.00090
1,2-Dichlorobenzene	ND		0.00090
1,2-Dibromo-3-chloropropane	ND		0.0045
1,2,4-Trichlorobenzene	ND		0.00090
Hexachlorobutadiene	ND		0.0045
1,2,3-Trichlorobenzene	ND		0.00090

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	96	70-118
Toluene-d8	103	70-121
4-Bromofluorobenzene	98	70-130

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Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

Page 1 of 2

Date Extracted: 4-9-09
Date Analyzed: 4-10-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 04-049-11
Client ID: B18-7

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.0013
Chloromethane	ND		0.0065
Vinyl Chloride	ND		0.0013
Bromomethane	ND		0.0013
Chloroethane	ND		0.0065
Trichlorofluoromethane	ND		0.0013
1,1-Dichloroethene	ND		0.0013
Iodomethane	ND		0.0065
Methylene Chloride	ND		0.0065
(trans) 1,2-dichloroethene	ND		0.0013
1,1-Dichloroethane	ND		0.0013
2,2-Dichloropropane	ND		0.0013
(cis) 1,2-Dichloroethene	ND		0.0013
Bromochloromethane	ND		0.0013
Chloroform	ND		0.0013
1,1,1-Trichloroethane	ND		0.0013
Carbon Tetrachloride	ND		0.0013
1,1-Dichloropropene	ND		0.0013
1,2-Dichloroethane	ND		0.0013
Trichloroethene	ND		0.0013
1,2-Dichloropropane	ND		0.0013
Dibromomethane	ND		0.0013
Bromodichloromethane	ND		0.0013
2-Chloroethyl Vinyl Ether	ND		0.0065
(cis) 1,3-Dichloropropene	ND		0.0013
(trans) 1,3-Dichloropropene	ND		0.0013

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Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

Lab ID: 04-049-11
Client ID: B18-7

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0013
Tetrachloroethene	ND		0.0013
1,3-Dichloropropane	ND		0.0013
Dibromochloromethane	ND		0.0013
1,2-Dibromoethane	ND		0.0013
Chlorobenzene	ND		0.0013
1,1,1,2-Tetrachloroethane	ND		0.0013
Bromoform	ND		0.0013
Bromobenzene	ND		0.0013
1,1,2,2-Tetrachloroethane	ND		0.0013
1,2,3-Trichloropropane	ND		0.0013
2-Chlorotoluene	ND		0.0013
4-Chlorotoluene	ND		0.0013
1,3-Dichlorobenzene	ND		0.0013
1,4-Dichlorobenzene	ND		0.0013
1,2-Dichlorobenzene	ND		0.0013
1,2-Dibromo-3-chloropropane	ND		0.0065
1,2,4-Trichlorobenzene	ND		0.0013
Hexachlorobutadiene	ND		0.0065
1,2,3-Trichlorobenzene	ND		0.0013

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	97	70-118
Toluene-d8	108	70-121
4-Bromofluorobenzene	104	70-130

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Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Date Extracted:	4-9-09
Date Analyzed:	4-9-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0409S1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.0010
Chloromethane	ND		0.0050
Vinyl Chloride	ND		0.0010
Bromomethane	ND		0.0010
Chloroethane	ND		0.0050
Trichlorofluoromethane	ND		0.0010
1,1-Dichloroethene	ND		0.0010
Iodomethane	ND		0.0050
Methylene Chloride	ND		0.0050
(trans) 1,2-dichloroethene	ND		0.0010
1,1-Dichloroethane	ND		0.0010
2,2-Dichloropropane	ND		0.0010
(cis) 1,2-Dichloroethene	ND		0.0010
Bromochloromethane	ND		0.0010
Chloroform	ND		0.0010
1,1,1-Trichloroethane	ND		0.0010
Carbon Tetrachloride	ND		0.0010
1,1-Dichloropropene	ND		0.0010
1,2-Dichloroethane	ND		0.0010
Trichloroethene	ND		0.0010
1,2-Dichloropropane	ND		0.0010
Dibromomethane	ND		0.0010
Bromodichloromethane	ND		0.0010
2-Chloroethyl Vinyl Ether	ND		0.0050
(cis) 1,3-Dichloropropene	ND		0.0010
(trans) 1,3-Dichloropropene	ND		0.0010

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Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Lab ID: MB0409S1

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0010
Tetrachloroethene	ND		0.0010
1,3-Dichloropropane	ND		0.0010
Dibromochloromethane	ND		0.0010
1,2-Dibromoethane	ND		0.0010
Chlorobenzene	ND		0.0010
1,1,1,2-Tetrachloroethane	ND		0.0010
Bromoform	ND		0.0010
Bromobenzene	ND		0.0010
1,1,2,2-Tetrachloroethane	ND		0.0010
1,2,3-Trichloropropane	ND		0.0010
2-Chlorotoluene	ND		0.0010
4-Chlorotoluene	ND		0.0010
1,3-Dichlorobenzene	ND		0.0010
1,4-Dichlorobenzene	ND		0.0010
1,2-Dichlorobenzene	ND		0.0010
1,2-Dibromo-3-chloropropane	ND		0.0050
1,2,4-Trichlorobenzene	ND		0.0010
Hexachlorobutadiene	ND		0.0050
1,2,3-Trichlorobenzene	ND		0.0010

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	83	70-118
Toluene-d8	95	70-121
4-Bromofluorobenzene	100	70-130

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Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Date Extracted: 4-9-09
Date Analyzed: 4-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: SB0409S1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	0.0500	0.0433	87	0.0435	87	70-130	
Benzene	0.0500	0.0481	96	0.0497	99	70-128	
Trichloroethene	0.0500	0.0503	101	0.0525	105	73-121	
Toluene	0.0500	0.0512	102	0.0525	105	74-122	
Chlorobenzene	0.0500	0.0575	115	0.0567	113	76-115	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	0	15	
Benzene	3	12	
Trichloroethene	4	17	
Toluene	3	14	
Chlorobenzene	1	13	

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Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-8-09
Date Analyzed:	4-8-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-049-02
Client ID:	**B1-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		1.0
(trans) 1,2-Dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	1.6		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	1.4		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

Lab ID: 04-049-02
Client ID: B1-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	20		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	94	71-126
Toluene-d8	87	76-116
4-Bromofluorobenzene	88	70-123

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-8-09
Date Analyzed:	4-8-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-049-04
Client ID:	**B8-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		1.0
(trans) 1,2-Dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	0.22		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-049-04
Client ID: B8-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	0.37		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	90	71-126
Toluene-d8	87	76-116
4-Bromofluorobenzene	85	70-123

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-8-09
Date Analyzed:	4-8-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-049-06
Client ID:	**B10-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.40
Chloromethane	ND		2.0
Vinyl Chloride	ND		0.40
Bromomethane	ND		0.40
Chloroethane	ND		2.0
Trichlorofluoromethane	ND		0.40
1,1-Dichloroethene	ND		0.40
Iodomethane	ND		2.0
Methylene Chloride	ND		2.0
(trans) 1,2-Dichloroethene	ND		0.40
1,1-Dichloroethane	ND		0.40
2,2-Dichloropropane	ND		0.40
(cis) 1,2-Dichloroethene	ND		0.40
Bromochloromethane	ND		0.40
Chloroform	1.6		0.40
1,1,1-Trichloroethane	ND		0.40
Carbon Tetrachloride	ND		0.40
1,1-Dichloropropene	ND		0.40
1,2-Dichloroethane	ND		0.40
Trichloroethene	ND		0.40
1,2-Dichloropropane	ND		0.40
Dibromomethane	ND		0.40
Bromodichloromethane	ND		0.40
2-Chloroethyl Vinyl Ether	ND		2.0
(cis) 1,3-Dichloropropene	ND		0.40
(trans) 1,3-Dichloropropene	ND		0.40

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Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-049-06
Client ID: B10-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.40
Tetrachloroethene	54		0.40
1,3-Dichloropropane	ND		0.40
Dibromochloromethane	ND		0.40
1,2-Dibromoethane	ND		0.40
Chlorobenzene	ND		0.40
1,1,1,2-Tetrachloroethane	ND		0.40
Bromoform	ND		2.0
Bromobenzene	ND		0.40
1,1,2,2-Tetrachloroethane	ND		0.40
1,2,3-Trichloropropane	ND		0.40
2-Chlorotoluene	ND		0.40
4-Chlorotoluene	ND		0.40
1,3-Dichlorobenzene	ND		0.40
1,4-Dichlorobenzene	ND		0.40
1,2-Dichlorobenzene	ND		0.40
1,2-Dibromo-3-chloropropane	ND		2.0
1,2,4-Trichlorobenzene	ND		0.40
Hexachlorobutadiene	ND		0.40
1,2,3-Trichlorobenzene	ND		0.40

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	91	71-126
Toluene-d8	86	76-116
4-Bromofluorobenzene	86	70-123

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Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-8&9-09
Date Analyzed:	4-8&9-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-049-08
Client ID:	**B11-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		1.0
(trans) 1,2-Dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	1.6		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-049-08
Client ID: B11-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	49		0.40
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	93	71-126
Toluene-d8	87	76-116
4-Bromofluorobenzene	86	70-123

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Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-8-09
Date Analyzed:	4-9-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-049-10
Client ID:	**B12-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.40
Chloromethane	ND		2.0
Vinyl Chloride	ND		0.40
Bromomethane	ND		0.40
Chloroethane	ND		2.0
Trichlorofluoromethane	ND		0.40
1,1-Dichloroethene	ND		0.40
Iodomethane	ND		2.0
Methylene Chloride	ND		2.0
(trans) 1,2-Dichloroethene	ND		0.40
1,1-Dichloroethane	ND		0.40
2,2-Dichloropropane	ND		0.40
(cis) 1,2-Dichloroethene	ND		0.40
Bromochloromethane	ND		0.40
Chloroform	1.5		0.40
1,1,1-Trichloroethane	ND		0.40
Carbon Tetrachloride	ND		0.40
1,1-Dichloropropene	ND		0.40
1,2-Dichloroethane	ND		0.40
Trichloroethene	ND		0.40
1,2-Dichloropropane	ND		0.40
Dibromomethane	ND		0.40
Bromodichloromethane	ND		0.40
2-Chloroethyl Vinyl Ether	ND		2.0
(cis) 1,3-Dichloropropene	ND		0.40
(trans) 1,3-Dichloropropene	ND		0.40

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Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 04-049-10
Client ID: B12-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.40
Tetrachloroethene	57		0.40
1,3-Dichloropropane	ND		0.40
Dibromochloromethane	ND		0.40
1,2-Dibromoethane	ND		0.40
Chlorobenzene	ND		0.40
1,1,1,2-Tetrachloroethane	ND		0.40
Bromoform	ND		2.0
Bromobenzene	ND		0.40
1,1,2,2-Tetrachloroethane	ND		0.40
1,2,3-Trichloropropane	ND		0.40
2-Chlorotoluene	ND		0.40
4-Chlorotoluene	ND		0.40
1,3-Dichlorobenzene	ND		0.40
1,4-Dichlorobenzene	ND		0.40
1,2-Dichlorobenzene	ND		0.40
1,2-Dibromo-3-chloropropane	ND		2.0
1,2,4-Trichlorobenzene	ND		0.40
Hexachlorobutadiene	ND		0.40
1,2,3-Trichlorobenzene	ND		0.40

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	92	71-126
Toluene-d8	87	76-116
4-Bromofluorobenzene	86	70-123

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Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	4-8-09
Date Analyzed:	4-9-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	04-049-12
Client ID:	**B18-W**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.40
Chloromethane	ND		2.0
Vinyl Chloride	2.7		0.40
Bromomethane	ND		0.40
Chloroethane	ND		2.0
Trichlorofluoromethane	ND		0.40
1,1-Dichloroethene	ND		0.40
Iodomethane	ND		2.0
Methylene Chloride	ND		2.0
(trans) 1,2-Dichloroethene	ND		0.40
1,1-Dichloroethane	ND		0.40
2,2-Dichloropropane	ND		0.40
(cis) 1,2-Dichloroethene	6.0		0.40
Bromochloromethane	ND		0.40
Chloroform	ND		0.40
1,1,1-Trichloroethane	ND		0.40
Carbon Tetrachloride	ND		0.40
1,1-Dichloropropene	ND		0.40
1,2-Dichloroethane	ND		0.40
Trichloroethene	9.9		0.40
1,2-Dichloropropane	ND		0.40
Dibromomethane	ND		0.40
Bromodichloromethane	ND		0.40
2-Chloroethyl Vinyl Ether	ND		2.0
(cis) 1,3-Dichloropropene	ND		0.40
(trans) 1,3-Dichloropropene	ND		0.40

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Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

Lab ID: 04-049-12
Client ID: B18-W

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.40
Tetrachloroethene	57		0.40
1,3-Dichloropropane	ND		0.40
Dibromochloromethane	ND		0.40
1,2-Dibromoethane	ND		0.40
Chlorobenzene	0.55		0.40
1,1,1,2-Tetrachloroethane	ND		0.40
Bromoform	ND		2.0
Bromobenzene	ND		0.40
1,1,2,2-Tetrachloroethane	ND		0.40
1,2,3-Trichloropropane	ND		0.40
2-Chlorotoluene	ND		0.40
4-Chlorotoluene	ND		0.40
1,3-Dichlorobenzene	ND		0.40
1,4-Dichlorobenzene	ND		0.40
1,2-Dichlorobenzene	ND		0.40
1,2-Dibromo-3-chloropropane	ND		2.0
1,2,4-Trichlorobenzene	ND		0.40
Hexachlorobutadiene	ND		0.40
1,2,3-Trichlorobenzene	ND		0.40

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	90	71-126
Toluene-d8	89	76-116
4-Bromofluorobenzene	87	70-123

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Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

Page 1 of 2

Date Extracted: 4-8-09
Date Analyzed: 4-8-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 04-049-13
Client ID: Trip Blank

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		1.0
(trans) 1,2-Dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B

Page 2 of 2

Lab ID: 04-049-13
Client ID: Trip Blank

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	93	71-126
Toluene-d8	88	76-116
4-Bromofluorobenzene	80	70-123

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Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Date Extracted:	4-8-09
Date Analyzed:	4-8-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB0408W2

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		1.0
(trans) 1,2-Dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Lab ID: MB0408W2

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	94	71-126
Toluene-d8	88	76-116
4-Bromofluorobenzene	78	70-123

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Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Date Extracted:	4-9-09
Date Analyzed:	4-9-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB0409W1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		1.0
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Iodomethane	ND		1.0
Methylene Chloride	ND		1.0
(trans) 1,2-Dichloroethene	ND		0.20
1,1-Dichloroethane	ND		0.20
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Lab ID: MB0409W1

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Bromoform	ND		1.0
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	95	71-126
Toluene-d8	87	76-116
4-Bromofluorobenzene	84	70-123

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Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
MS/MSD QUALITY CONTROL

Date Extracted: 4-8-09
Date Analyzed: 4-8-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 04-049-02

Compound	Sample Amount	Spike Amount	MS	Percent Recovery	MSD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	ND	10.0	7.62	76	7.50	75	70-130	
Benzene	ND	10.0	9.49	95	9.69	97	70-130	
Trichloroethene	1.41	10.0	10.7	93	11.0	96	77-114	
Toluene	ND	10.0	9.38	94	9.63	96	79-121	
Chlorobenzene	ND	10.0	8.96	90	9.03	90	77-108	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	2	11	
Benzene	2	11	
Trichloroethene	2	10	
Toluene	3	11	
Chlorobenzene	1	10	

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Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

HALOGENATED VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Date Extracted: 4-9-09
Date Analyzed: 4-9-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: SB0409W1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	10.0	8.37	84	8.90	89	70-130	
Benzene	10.0	10.6	106	10.4	104	70-130	
Trichloroethene	10.0	10.3	103	10.2	102	70-116	
Toluene	10.0	10.6	106	10.5	105	76-119	
Chlorobenzene	10.0	9.89	99	9.83	98	77-112	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	6	20	
Benzene	2	16	
Trichloroethene	2	16	
Toluene	1	15	
Chlorobenzene	1	15	

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Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

NWTPH-Gx/BTEX

Date Extracted: 4-13-09
Date Analyzed: 4-13-09

Matrix: Water
Units: ug/L (ppb)

Client ID: **B18-W**
Lab ID: 04-049-12

	Result	Flags	PQL
Benzene	**13**		4.0
Toluene	**ND**		4.0
Ethyl Benzene	**ND**		4.0
m,p-Xylene	**ND**		4.0
o-Xylene	**ND**		4.0
TPH-Gas	**ND**		400

Surrogate Recovery:
Fluorobenzene 84%

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 4-13-09
Date Analyzed: 4-13-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0413W1

	Result	Flags	PQL
Benzene	**ND**		1.0
Toluene	**ND**		1.0
Ethyl Benzene	**ND**		1.0
m,p-Xylene	**ND**		1.0
o-Xylene	**ND**		1.0
TPH-Gas	**ND**		100

Surrogate Recovery:
Fluorobenzene 92%

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and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

NWTPH-Gx/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 4-13-09
Date Analyzed: 4-13-09

Matrix: Water
Units: ug/L (ppb)

Lab ID:	04-049-12 **Original**	04-049-12 **Duplicate**	**RPD**	**Flags**
Benzene	**12.7**	**13.7**	8	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	84%	87%		

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Laboratory Reference: 0904-049
Project: 19897.68445

NWTPH-Gx/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 4-13-09
Date Analyzed: 4-13-09

Matrix: Water
Units: ug/L (ppb)

Spike Level: 200 ppb

Lab ID:	04-049-12 **MS**	Percent Recovery	04-049-12 **MSD**	Percent Recovery	**RPD**	**Flags**
Benzene	**190**	**89**	**201**	**94**	5	
Toluene	**179**	**89**	**189**	**95**	6	
Ethyl Benzene	**177**	**88**	**187**	**94**	6	
m,p-Xylene	**174**	**87**	**184**	**92**	6	
o-Xylene	**171**	**85**	**181**	**90**	6	

Surrogate Recovery:		
Fluorobenzene	85%	86%

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 15, 2009
Samples Submitted: April 7, 2009
Lab Traveler: 0904-049
Project: 19897.68445

% MOISTURE

Date Analyzed: 4-9-09

Client ID	Lab ID	% Moisture
B1-6	04-049-01	10
B8-7	04-049-03	15
B10-6	04-049-05	19
B11-6	04-049-07	21
B12-5	04-049-09	11
B18-7	04-049-11	27

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OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

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

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

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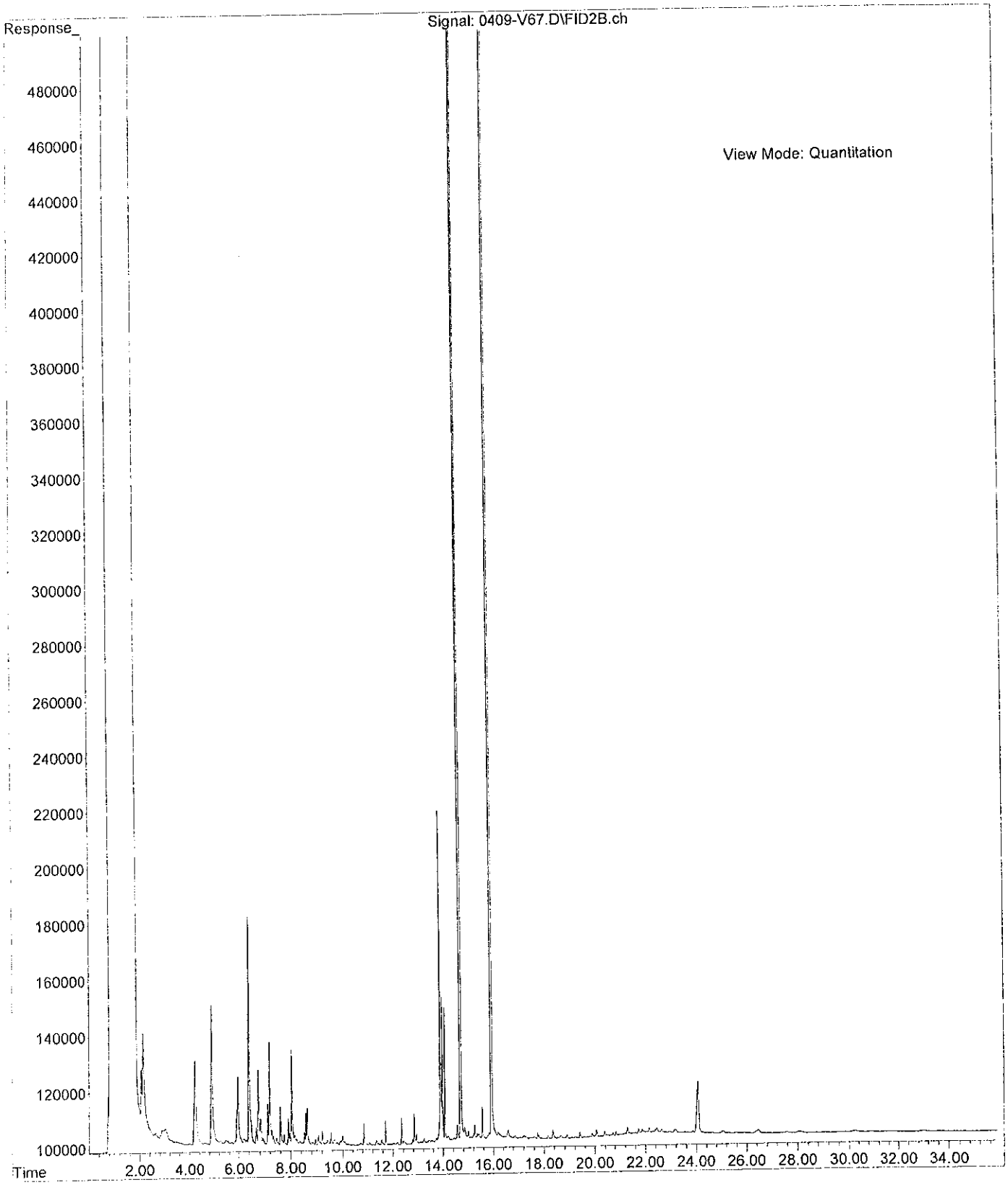
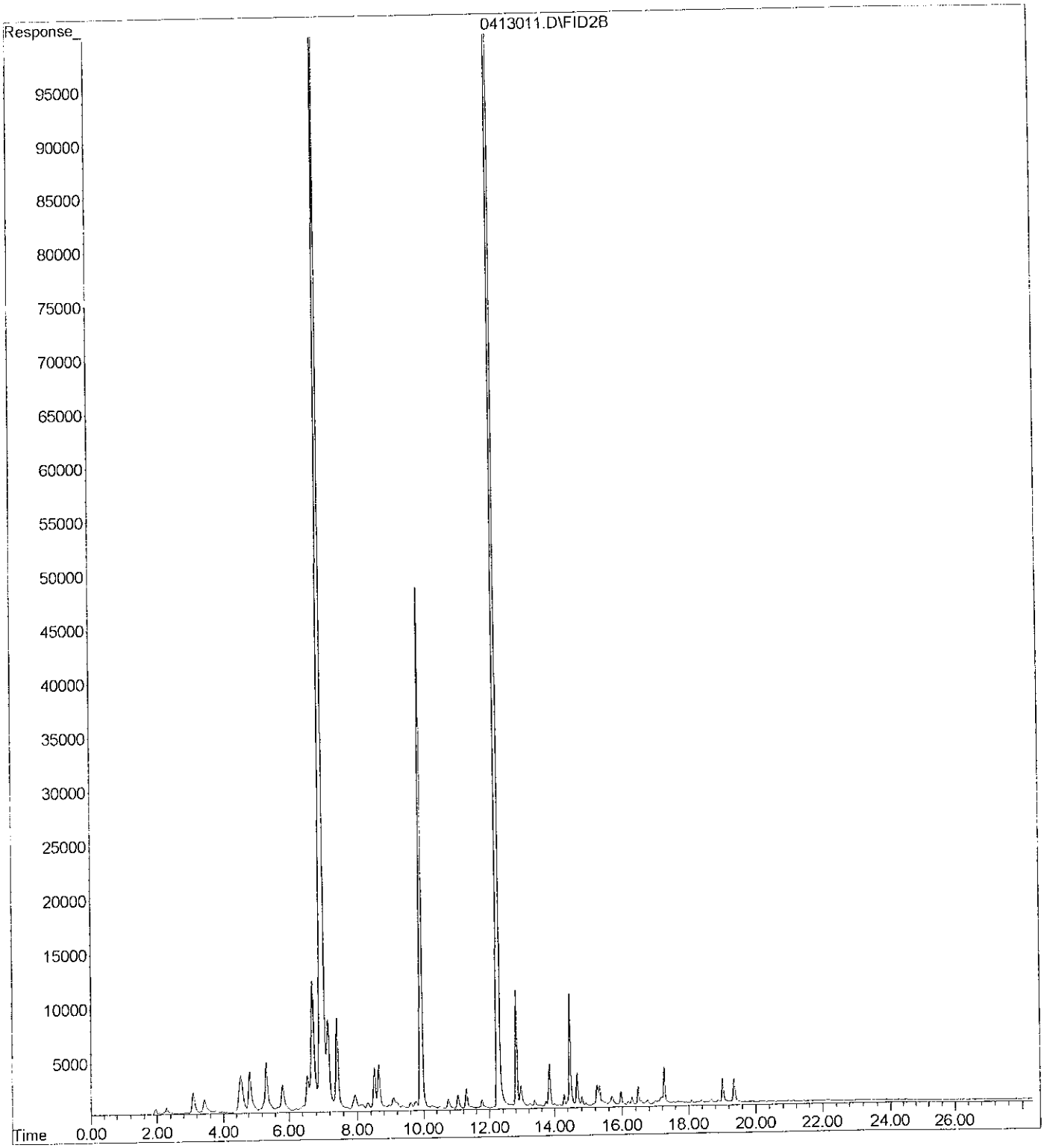
File :C:\msdchem\2\DATA\V090409.SEC\0409-V67.D
Operator : ZT
Acquired : 9 Apr 09 8128 p using AcqMethod V090325F.M
Instrument : Vigo
Sample Name: 04-049-12
Misc Info :
Vial Number: 67



File : X:\BTEX\DARYL\DATA\D090413\0413011.D
Operator :
Acquired : 13 Apr 2009 17:06 using AcqMethod 090408B.M
Instrument : Daryl
Sample Name: 04-049-12e 1:4
Misc Info :
Vial Number: 11



Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: CDM
Project Number: 19897.68445
Project Name: Bothell X-Roads
Project Manager: Pam Morrill
Sampled by: August Welch

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Day ☐ 3 Day
☒ Standard (7 working days) (TPH analysis 5 working days)
☐ _____ (other)

Laboratory Number: 04-049

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664							% Moisture
1	B1-6	4/6/09	1040	S	5					X															X
2	B1-W	4/6/09	1050	W	8	X				X															
3	B8-7	4/7/09	210	S	5					X															X
4	B8-W	4/7/09	215	W	3					X															
5	B10-6	4/7/09	120	S	5					X															X
6	B10-W	4/7/09	125	W	3					X															
7	B11-6	4/7/09	1245	S	5					X															X
8	B11-W	4/7/09	1250	W	3					X															
9	B12-5	4/7/09	1205	S	5					X															X
10	B12-W	4/7/09	1215	W	8	X				X															

	Signature	Company	Date	Time
Relinquished by	August Welch	CDM	4/7/09	430
Received by	[illegible]	Onsite	4-7-09	1235
Relinquished by				
Received by				
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

Chromatograms with final report ☑

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Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: CDM
Project Number: 19897.68445
Project Name: Bothell X-Roads
Project Manager: Pam Morrill
Sampled by: August Welch

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(Check One)
- ☐ Same Day
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- ☐ 2 Day
- ☐ 3 Day
- ☒ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 04-049

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664							% Moisture
11	B18-7	4/6/09	1125	S	5					X															X
12	B18-W	4/6/09	1130	W	8	X	⊗			X															
13	Trip Blank	4/6/09		W	3					X															

	Signature	Company	Date	Time
Relinquished by	August Welch	CDM	4/7/09	430
Received by				
Relinquished by				
Received by				
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:
⊗ Added 4/13/09. DB

Chromatograms with final report ☑

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