Bothell Paint and Decorating Remedial Investigation/Feasibility Study Revision No. 1

Prepared for

City of Bothell
9654 NE 182nd Street
Bothell, WA 98011

Prepared by

Parametrix
411 108th Avenue NE, Suite 1800
Bellevue, WA 98004-5571
T. 425.458.6200 F. 425.458.6363
www.parametrix.com

December 2009 | 555-1647-019 (02/0410)

CITATION

Parametrix. 2009. Bothell Paint and Decorating Remedial
Investigation/Feasibility Study
Revision No. 1. Prepared by Parametrix, Bellevue, Washington.
December 2009.

CERTIFICATION

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, whose seal, as a professional hydrogeologist licensed to practice as such, is affixed below.

Prepared by Sandra Matthews, LG, LHG

Checked by Brandon Ball, PE

Approved by Steve Fuller, LEG, PG

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

TABLE OF CONTENTS (CONTINUED)

LIST OF FIGURES

LIST OF TABLES

TABLE OF CONTENTS (CONTINUED)

APPENDICES

ACRONYMS AND ABBREVIATIONS

ARAR	applicable relevant and appropriate requirement
As	arsenic
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
City	City of Bothell
COC	contaminant of concern
COPC	contaminant of potential concern
cPAH	carcinogenic polyaromatic hydrocarbon
CSM	conceptual site model
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
ESA	environmental site assessment
Fe	iron
ft/min	feet per minute
GFH	granular ferric hydroxide
gpm	gallons per minute
HVOC	halogenated volatile organic compound
HWA	HWA GeoSciences Inc
LUST	leaking underground storage tank
µg/L	microgram per liter
mg/kg	milligrams per kilogram
Mn	manganese
MRC™	Metals Remediation Compound
MTCA	Model Toxics Control Act
NPDES	National Pollutant Discharge Elimination System
PID	photoionization detector
PVC	polyvinyl chloride
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROW	right-of-way
sf	square feet

ACRONYMS AND ABBREVIATIONS (CONTINUED)

Site	Bothell Paint and Decorating site
SR	State Route
SVOC	semivolatile organic compound
TCLP	Toxicity Characteristic Leaching Procedure
TPH	total petroleum hydrocarbons
USCS	Unified Soil Classification System
UST	underground storage tank
VOC	volatile organic compound
WAC	Washington Administrative Code

1. INTRODUCTION

This Remedial Investigation/Feasibility Study (RI/FS) is prepared for the Bothell Paint and Decorating site (Site) in Bothell, Washington (Figure 1-1). The RI/FS is being conducted under Agreed Order DE 6296, dated February 3, 2009, between the City of Bothell (City) and the Washington State Department of Ecology (Ecology). The purpose of the Agreed Order was to conduct an RI/FS and submit a cleanup action plan to address known contamination related to historical releases of hazardous substances.

The City currently owns the property. The 0.79-acre property consisting of two parcels is located on the south side of State Route (SR) 522, between SR 522 and 180th Street NE (Figure 1-2). Current property use is mixed commercial and retail. A portion of the property will accommodate the realignment of SR 522, scheduled for construction in 2010. Remnant portions of the property will be redeveloped as part of the City's overall Downtown Revitalization Plan. In general, cleanup approaches discussed in this document will address anticipated future property uses as envisioned in the Downtown Revitalization Plan. Figure 1.1 from the Bothell Downtown Subarea Plan is provided in Appendix A for reference. The figure shows proposed future land uses in the vicinity of the Site.

1.1 PURPOSE /REGULATORY FRAMEWORK

This RI/FS was completed per the Agreed Order and Washington Administrative Code (WAC) 173-340, Model Toxics Control Act (MTCA) (Ecology 2007). The purpose of the RI/FS was to evaluate the nature and extent of environmental contamination at the Site and to develop and evaluate cleanup action alternatives so that a cleanup action may be selected for the Site. MTCA requires an RI/FS to include cleanup action alternatives that protect human health and the environment by eliminating, reducing, or otherwise controlling risks posed through each exposure pathway and migration route. Each alternative may consist of one or more cleanup action components. Alternatives may include remediation levels to define when particular cleanup action components will be used. Each alternative shall be evaluated on the basis of the requirements stated in WAC 173-340-360:

- Protection of human health and the environment
- Compliance with cleanup standards
- Compliance with applicable state and federal laws
- Provision for compliance monitoring.

The selected cleanup action shall also use permanent solutions to the maximum extent practicable, provide for a reasonable restoration time frame, and consider public concerns. Cleanup standards under MTCA as defined in WAC 173-340-700(3) include:

- Cleanup levels for hazardous substances present at the Site
- The location where the cleanup levels must be met (point of compliance)
- Other regulatory requirements applicable to the Site.

The Site underwent a LUST removal in 1988. Groundwater assessment or monitoring was not performed after LUST removal by Northwest EnviroService, Inc (HWA 2008a). Neither groundwater assessment or monitoring was not performed after LUST removal.

1.2 OVERVIEW OF RI/FS REPORT

This report is divided into five chapters and includes:

- **Chapter 1: Introduction—**includes the purpose/regulatory framework for completing this report and an overview of the RI/FS report.
- **Chapter 2: Site Background—**describes Site information, including description and history, summary of historical investigations/remedial action, and physical characteristics (topography, geology/hydrogeology, surface water hydrology, and current ecological conditions).
- **Chapter 3: Remedial Investigation—**describes the nature and extent of contamination, the developed conceptual site model (CSM), applicable or relevant and appropriate requirement (ARAR) analysis results, an assessment of risk, selection of cleanup standards, and chapter summary.
- **Chapter 4: Feasibility Study—**discusses remedial action objectives (RAOs), the screening of remedial technologies, development of remedial alternatives, threshold requirements, a detailed analysis of remedial alternatives, and selection of a preferred remedial alternative.
- **Chapter 5: References—**provides completed citations for documents cited in this report.

2. SITE BACKGROUND

This chapter presents background information including a description of the Site and its history, a summary of previous investigation, and physical characteristics.

2.1 SITE DESCRIPTION AND HISTORY

The Paint and Decorating site is located on the south side of SR 522, between downtown Bothell and the Sammamish River (Figure 2-1) and is 0.79 acres. The property consists of two parcels: the Victory parcel (0.54 acre) and the Giannola parcel (0.25 acre). Historical operations on the Victory parcel included automobile repair and dealerships, retail paint and flooring, and sand blasting. Documented historical site use of the Giannola parcel is limited to residential usage and parking.

Victory Parcel

HWA GeoSciences Inc (HWA) completed a Phase I environmental site assessment (ESA) in April 2008 (HWA 2008a). According to historical information and interviews, the Site has been developed since 1914. A leaking underground storage tank (LUST) removal was conducted in 1988. The tank containing gasoline and Stoddard solvent (petroleum distillates) was found to have released product to soil and groundwater. A composite soil sample collected from the north and south sidewalls of the excavation contained 1,400 milligrams per kilogram (mg/kg) of gasoline-range petroleum hydrocarbons, above current Ecology cleanup levels. Soil over-excavation was not conducted at the time due to the proximity of structures and rockery adjacent to the west and north sides of the LUST excavation. Approximately 1,000 gallons of water and product were pumped from the excavation prior to backfilling. Neither a groundwater assessment nor monitoring was performed after LUST removal.

A sand blasting contractor operated on this parcel for approximately 40 years. According to tenant information, sand blast grit and soil staining reportedly related to compressor blowdown have been observed to the west and south of the tenant space now occupied by McVay Welding. Sand blasting grit was reportedly removed, but stained soils were not assessed or removed.

Historical information indicates that one of the buildings was used as a garage and body shop, and that petroleum companies were listed as lessees of the property in the 1920s and 1930s.

An agreement between King County and a former subject property owner dated 1963 allowed the import of fill onto the subject property. The source of this fill was not identified, although it may have been associated with dredging and channelization of the Sammamish River by King County.

The Phase II site investigation for the Victory parcel was conducted by HWA Geosciences in 2008 (HWA 2008d). Soil and groundwater samples were collected based on former activities on the parcel.

Soil samples from borings VB-6 and VB-7 northeast of the Affordable Flooring building were collected to assess the former LUST area. Diesel and oil-range hydrocarbons below MTCA Method A cleanup levels were detected in shallow soil. Volatile organic compounds (VOCs) below MTCA cleanup levels were detected in borings VB-6 and VB-7. The detected VOCs are likely associated with historical gasoline or Stoddard solvent used or released from the LUST.

Shallow soils in the southern portion of the property in the vicinity of former sand blasting activities (VB-8, VB-9, and VB-10) contained arsenic above MTCA Method A cleanup levels. These results likely indicate impacts from past sand blasting activities. Elevated metals concentrations are typically associated with sand blasting grit. Borings VB-3, VB-8, VB-9, and VB-10 contained petroleum hydrocarbons below the MTCA cleanup levels except VB-9. Oil-range petroleum hydrocarbons exceeding MTCA Method A cleanup levels were detected in boring VB-9 in samples collected at the southwest exterior corner of the McVay Welding building, at the location of a reported former compressor blowdown discharge pipe.

VB-8 contained cadmium exceeding Dangerous Waste criteria. A second sample collected at approximately 2 feet below ground surface (bgs) did not exceed Dangerous Waste screening criteria for cadmium though it did exceed MTCA cleanup levels.

Suspected fill soils in the center of the site (VB-1) contained arsenic above MTCA Method A cleanup levels. Soil samples collected from other locations at the subject property contained petroleum hydrocarbons, HVOCs, and metals, but at concentrations below MTCA cleanup levels.

Arsenic was detected in groundwater at concentrations exceeding MTCA cleanup levels at boring VB-3, located east of the former sand blasting tenant building. Low concentrations of HVOCs were detected in groundwater at the north end of the Victory property, possibly due to impacts to groundwater from historical UST and/or dry cleaner releases in the property vicinity. These concentrations were below MTCA cleanup levels and impacts appear to be limited. Low concentrations of HVOCs were detected in groundwater near the former LUST adjacent to the Affordable Flooring building. These concentrations were below MTCA cleanup levels and impacts appear to be limited. A deeper groundwater sample collected from one boring near the former LUST did not contain detectable concentrations of HVOCs.

Giannola Parcel

HWA completed a Phase I ESA at the subject property in March 2008 (HWA 2008b). According to historical information and interviews, the subject property has been developed since at least 1919, and use was originally residential. In the 1960s, the residence was demolished and the property has been used for parking since that time. An agreement between King County and a former subject property owner dated 1963 allowed the import of fill onto the subject property. The source of this fill may have been associated with dredging and channelization of the Sammamish River by King County.

HWA completed a Phase II site investigation in April 2008. Shallow fill soils in the southern portion of the property, in the vicinity of the former sand blasting activities on the Victory property, contained cadmium and lead exceeding Ecology MTCA Method A cleanup levels (HWA 2008c). A deeper soil sample was analyzed for metals and did not contain cadmium or lead above cleanup levels. The shallow fill soils also contained oil-range petroleum hydrocarbons and VOCs, but at concentrations below MTCA cleanup levels. Shallow fill soils on this parcel appear to be impacted by historical uses at the Victory parcel. Aromatic hydrocarbon (toluene and xylenes) concentrations below MTCA Method A cleanup levels were detected in groundwater at the north end of the subject property, possibly due to impacts to groundwater from historical UST releases in the property vicinity or an upgradient source.

Historical sampling locations for the above referenced investigations are shown on Figure 2-1.

A Phase II ESA was performed in the SR 522 right-of-way (ROW) by CDM during summer 2009 to identify contaminants within the ROW (CDM 2009). A total of 18 push-probe borings were drilled in the ROW, one (B-4) was located north of the Site. No halogenated volatile organic compounds (HVOCs) were detected in groundwater. The CDM report concluded that the Bothell dry cleaning facilities north of the Site do not appear to be a source of VOCs underlying SR 527 and SR 522 (CDM 2009).

Metals, in particular, arsenic, cadmium, and lead were detected in the soil around the former sand blasting building. Petroleum hydrocarbons were left in place during the removal of a LUST due to proximity to structures. Hydrocarbons adjacent to the compressor blowdown pipe were not addressed during the removal of some sand blasting grit present on the Site. VOCs were detected in the soil along the east side of the Site, at the northern Site boundary, and in the area of the former LUST.

Arsenic and lead were detected in groundwater at concentrations above the cleanup levels. Hydrocarbons and VOCs were detected in groundwater in the area where the two parcels meet.

2.2 PHYSICAL CHARACTERISTICS OF THE SITE

This section includes descriptions of the topography, geology, hydrogeology, surface water hydrology, and current ecological conditions.

2.2.1 Topography

The property slopes gently to the south/southeast with an elevation of approximately 30 feet above mean sea level (USGS 1981). A retaining wall is located in the west-central portion of the property. The surrounding land is generally flat or slopes down to the south and east.

2.2.2 Geologic and Hydrogeologic Conditions

Based on subsurface investigations conducted at nearby properties (HWA 2007), soils typically consist of silty sand fill over alluvial soil consisting of interbedded silt and peat. Interbedded alluvial sand and silt occurs below the peat. Much of the fill material is likely dredged spoils placed on the property from realignment of the Sammamish River in the 1960s (HWA 2008d). Boring logs from the various investigations are included in Appendix B.

Peat or silt beds with high organic content up to 2 feet thick are present within the alluvial soil, generally at depths greater than 10 feet bgs. These organic-rich beds appear to underlie most of the property but may not represent a contiguous layer. South of the Site the peat thickness increases to 4 to 8 feet.

Groundwater in monitoring wells on nearby properties was encountered between approximately 5.5 and 9.5 feet bgs. Based on water level surveys, groundwater flow is to the east-southeast, toward the Sammamish River. A site plan and groundwater potentiometric surface map for September 2009 groundwater levels is provided as Figure 2-2. A potentiometric surface map for November 2009 groundwater levels is provided as Figure 2-3. The nearest surface water body is the Sammamish River, which is located approximately 300 feet to the southeast. Groundwater typically occurs in soil borings at depths of approximately 5 to 16 feet bgs (HWA 2008c,d). During summer 2009 field activities, depth to water in monitoring wells ranged between 3.6 and 6.5 feet bgs. Groundwater flow was previously reported to vary from southeasterly to easterly based on the gauging data. The measured groundwater gradient ranged from 0.03536 to 0.0576.

The horizontal hydraulic conductivity was estimated using slug testing data collected during the September 2009 field activities (HWA 2009b). Based on the results of the slug test data analysis, the estimated hydraulic conductivity for the water-bearing zone ranged from 6.8×10^{-4} to 1.1×10^{-3} feet per minute (ft/min).

2.2.3 Surface Water Hydrology

The Sammamish River is located approximately 300 feet south of the property and separated from the property by NE 180th Street.

2.2.4 Current Ecological Conditions

Potential ecological receptors are defined as terrestrial animals (e.g., birds, mammals, and plants) that inhabit or use, or have the potential to inhabit or use, the terrestrial habitats of the Site. Birds such as the bald eagle and the American robin as well as various local bird species may visit the Site. A wide range of mammals including the short-tailed shrew, the raccoon, and the white-tailed deer could also frequent the Site.

3. REMEDIAL INVESTIGATION

The purpose of the RI is to collect and evaluate data necessary to adequately characterize the Site for the ultimate purpose of developing and evaluating cleanup action alternatives. The RI includes the results of the September 2009 investigation, including several historical investigations and characterization activities. This chapter presents the results of the RI including assessment of the nature and extent of contamination, determination of contaminants of potential concern, development of the CSM, identification of ARARs, and assessment of risk and associated cleanup standards.

3.1 REMEDIAL INVESTIGATION ACTIVITIES

The activities for this RI/FS study, detailed in the RI/FS work plan (HWA 2009) were selected to meet the requirements of the Agreed Order in accordance with the MTCA cleanup regulation (WAC 173-340), fill data gaps, complete a FS, and select a cleanup action as described in WAC 173-340-360 through 173-340-390. Activities performed during the RI comprised both surface and subsurface investigation and sampling and included the following:

- Installation of three new groundwater monitoring wells
- Placement of 26 soil push probes
- Collection of soil and groundwater samples from the wells and push probes
- Collection of groundwater samples from two existing monitoring wells
- Aquifer (slug) testing to determine aquifer hydraulic conductivity values
- Analytical and physical laboratory testing of selected soil and groundwater samples.

3.1.1 Monitoring Well Installation and Sampling

A total of three groundwater monitoring wells were installed during the RI. Two wells were installed on the Site (BPMW-1 and BPMW-3) and the third was completed off-Site south of NE 180th Street immediately south of BPMW-1 (BPMW-2). Locations of the wells are shown on Figure 3-1.

All borings for the well installation were advanced using a hollow-stem auger drill rig. Soil samples were collected from each of the borings at 5-foot intervals using a split-spoon sampler. Soil samples were visually examined and logged using the Unified Soil Classification System (USCS) and field screened using a photoionization detector (PID) for the presence of VOCs. Soil samples were collected from pre-determined depths described in the work plan (HWA 2009a) or based on field screening. In general, samples included a shallow subsurface soil sample and a deeper sample collected at the groundwater table depth. All collected samples were placed into the appropriate containers and submitted for laboratory analysis.

At the desired depth, each well was constructed of 2-inch-diameter polyvinyl chloride (PVC) with a 0.010-inch slot screen spanning the bottom 5 to 10 feet. Wells were constructed using a filter sand pack to within 4 feet of the surface. Hydrated bentonite chips were used to create a seal to within 3 feet of the ground surface. The top 3 feet was filled with concrete and the well was secured with a locking cap and flush-mounted monument. Logs of each boring and well construction are provided in Appendix B. Appendix B also contains logs of historical borings and monitoring wells for reference. Following installation and construction, wells were allowed to sit for a minimum of 24 hours prior to development. All wells were fully developed using a surge and bail technique with a truck-mounted surge block and portable submersible pump until water quality parameters stabilized.

Following development, all newly installed wells were sampled using low-flow techniques and a down-hole, positive-displacement pump. The two existing wells (BC-10 and BC-11) were also sampled using the same method.

3.1.2 Push Probe Installation and Sampling

Twenty-four soil probes (BP-1 through BP-26, except BP-15 and BP-22) were advanced using a hydraulically operated probe rig to 15 and 20 feet bgs. Continuous samples were captured in acetate sleeves at 4-foot intervals and split at the surface to reveal the sample. Samples were logged and field screened in a similar fashion to borings for the monitoring well installation. Soil samples were collected from pre-determined depths submitted for laboratory analysis. A single groundwater sample was collected from probes BP-23 through BP-25 at the time of installation.

3.1.3 Aquifer Testing

In conjunction with the well installation and groundwater sampling, aquifer testing was conducted using a known volume (slug) to displace groundwater within each well. Recovery time and water levels were measured using pressure transducers. The results of the testing were used to determine an estimated hydraulic conductivity value for the aquifer at the well location. As reported in Section 2.2.2, the estimated hydraulic conductivity for the Site's shallow aquifer ranged from 6.8×10^{-4} to 1.1×10^{-3} ft/min. This indicates that the flow in the area is fast.

3.1.4 Analytical/Physical Laboratory Testing

Soil and groundwater samples collected during the RI were submitted to OnSite Environmental Inc. of Redmond, Washington for analytical testing. The samples were analyzed for contaminants of concern (COCs) including gasoline; diesel; lube oil; benzene, toluene, ethylbenzene, and total xylenes (BTEX); MTCA metals; and HVOCs. One probe boring sample was analyzed for semivolatile organic compounds (SVOCs) for possible future development. Analytical results for soil are summarized in Table 3-1 and groundwater results are summarized in Table 3-2. An analytical data validation memorandum, data tables, and analytical laboratory reports are provided in Appendix C.

One soil sample from the soil boring advanced for well BPMW-3 was submitted for physical testing including moisture content, particle size analysis, plasticity index, and hydraulic conductivity. The laboratory report for the physical tests is provided in Appendix C.

3.2 NATURE AND EXTENT OF CONTAMINATION

The objective of the RI sampling was to supplement the historical site data, address data gaps as identified in the RI/FS Work Plan (HWA 2009a), and provide a basis for selecting a cleanup action. The following sections describe contaminant nature and extent and are organized by medium and contaminant. Both current and historical analytical data were considered in evaluating the nature and extent of contamination. For clarity, summaries of pertinent RI/historical soil and groundwater analytical data are provided in Figures 3-1 through 3-5. Summaries of soil and groundwater analytical data from the HWA (2008c,d) Phase II ESA reports are presented in tabular form in Tables 3-3 and 3-4.

3.2.1 Soil

Historical site investigations have typically focused on the metals contamination from the sand blasting operation and petroleum contamination near the LUST removal site, as well as the compressor blowdown pipe south of the former sand blasting building. The 2008 Phase II ESAs by HWA also considered possible volatile contamination migration from upgradient sources. For evaluation of nature and extent of contamination, the historical and current analytical data were compared to the following screening criteria:

- MTCA Method A Soil Cleanup Levels for Unrestricted Land Use (Table 740-1).
- MTCA Ecological Indicator Soil Concentrations for Protection of Terrestrial Plants and Animals (Table 749-3). The lowest of three values (for plants, soil biota, and wildlife) was selected for the evaluation.
- Background metals concentrations per Natural Background Soil Metals Concentrations in Washington State (Ecology 1994) for the Puget Sound area.

Soil analytical results are compared to the screening criteria in Tables 3-1 and 3-3.

3.2.1.1 Metals

Sampling for metals was conducted during the 2008 HWA investigation and RI. In 2008, five locations were sampled and analyzed for Resource Conservation and Recovery Act (RCRA) metals including arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury. Samples collected during the RI were analyzed for MTCA metals, which include arsenic, cadmium, chromium, lead, and mercury.

Elevated metals concentrations were observed from the center to over the southeastern portion of the Site to a depth of 4 to 5 feet. Mercury concentrations generally did not exceed the MTCA Method A screening criteria. During the Phase II ESA (HWA 2008d), cadmium exceeded the Dangerous Waste criteria. During the RI sampling, cadmium was detected above the screening criteria in seven locations; however, none exceeded the Dangerous Waste criteria. Arsenic and lead concentrations exceeded the screening criteria for most of the samples analyzed and were particularly high in BP-8, BP-9, and BP-11. The borings that exceeded the ecological indicator concentration were located within the footprint of the future SR 522 alignment. Following the cleanup action during summer 2010, paving will eliminate this ecological contact receptor pathway.

3.2.1.2 Petroleum Hydrocarbons (including BTEX)

The LUST removal completed in 1988 removed a UST containing gasoline and Stoddard solvent (petroleum distillates) from the Site. Affected soil was left on the Site due to the proximity of the excavation to the building and a rock wall adjacent to the west and north sides of the UST excavation. A composite soil sample collected from the north and south sidewalls of the excavation contained 1,400 mg/kg of gasoline-range petroleum hydrocarbons, above MTCA Method A cleanup levels. Soil and groundwater were contaminated.

RI boring BP-23 was installed to investigate the southern extent of petroleum-contaminated soil. No hydrocarbons were detected in the soil or groundwater samples from that boring. During the HWA Phase II investigation (HWA 2008d), motor oil concentrations next to the blowdown compressor pipe at VB-9 were 1,800,000 mg/kg at 0.5 foot and 29,000 mg/kg at 1.5 feet bgs. During the RI sampling, motor oil was detected in the two soil samples analyzed from borings BP-20 and BP-21 adjacent to VB-9, at concentrations less than the screening criteria.

In RI boring BP-5, diesel range hydrocarbon concentrations were detected at less than the MTCA Method A cleanup criteria but greater than the ecological indicator. Benzene above the screening criteria was detected in BP-26. Motor oil hydrocarbons were detected in the shallow soil at the three new well locations (BPMW-1 through BPMW-3). All the soil samples (0.5 foot, 2 feet, and 5 feet) from BPMW-3 showed concentrations of motor oil hydrocarbons. The sample at 2 feet bgs exceeded the screening criteria for motor oil. Toluene and xylene were also detected in that sample at concentrations below the screening criteria.

3.2.1.3 HVOCs

No HVOCs were detected in Site soils during any of the investigations except where noted in association with hydrocarbons.

3.2.1.4 SVOCs

SVOCs were detected in the one soil sample analyzed at BP-26. Total carcinogenic polyaromatic hydrocarbons (cPAHs) were above the MTCA method A cleanup criteria. This sample was a shallow soil sample collected in area of potential future redevelopment outside of the new road alignment. Further investigation is required to determine the possible source of the cPAHs.

3.2.2 Groundwater

Groundwater at the Site has been investigated for metals, petroleum, and HVOCs. For evaluation purposes, both historical and current groundwater data were compared to the following screening criteria:

- MTCA Method A Cleanup Levels for Groundwater (Table 720-1).

Groundwater analytical results are compared to the screening criteria in Tables 3-2 and 3-4.

3.2.2.1 Metals

Historical data from 2008 compiled by HWA showed MTCA exceedances of total arsenic in the groundwater at VB-11, BC-10, and BC-11, and dissolved arsenic in the groundwater at VB-3 and VB-11. Elevated arsenic concentrations in alluvial aquifers of Snohomish and King Counties have been well documented as a regional issue (HWA 2008d), however, the concentrations of metals in surficial soil are likely contributing to elevated concentrations of arsenic above regional “background” concentrations. A total of six groundwater samples collected during the RI were analyzed for metals; arsenic was detected in all the samples at a concentration above the screening criterion except the samples from BPMW-2 and BC-11. Groundwater results for dissolved metals are provided in Figure 3-5.

3.2.2.2 Petroleum Hydrocarbons (including BTEX)

Petroleum hydrocarbons were detected in BC-10 in the motor oil range and GB-2 in the gasoline range. The BC-10 concentration was above the screening criteria and the GB-2 concentration was less than the screening criteria. BTEX was also detected in GB-1, GB-2, VB-2, VB-4, VB-5, and VB-6; all were detected at less than the screening criteria.

All groundwater samples collected during the RI were analyzed for petroleum hydrocarbons. One constituent (gasoline) was detected below the screening criterion in a single well (BPMW-2).

3.2.2.3 HVOCs

HVOCs were detected in the Phase II investigation in GB-2, VB-2, VB-4, VB-5, AND VB-6 at concentrations less than the screening criteria. No HVOCs were detected in any of the groundwater samples collected during the RI.

3.3 SUMMARY OF CHEMICALS OF POTENTIAL CONCERN

Based on the above evaluation, the chemicals of potential concern (COPCs) for soil at the Site include:

- Metals (arsenic, barium, cadmium, chromium, lead, silver, and mercury)
- Total petroleum hydrocarbons (diesel- and motor oil-range)
- Aromatic hydrocarbons (benzene).

For groundwater, COPCs include:

- Metals (arsenic and lead).

3.4 CONCEPTUAL SITE MODEL

The CSM identifies the primary contaminant sources, release mechanisms, transport mechanisms, secondary contaminant sources, potential pathways, and exposure routes. Existing chemical data, Site characterization data, and identification of potential human and ecological receptors were used to develop the model presented in Figure 3-6. Further discussion of the CSM is presented below.

3.4.1 Primary Sources of Contamination and Primary Release Mechanisms

The primary contaminant source is the former sand blasting facility, including the compressor blowdown pipe and residual contamination from a LUST removal. The primary contaminants associated with the sand blasting business include metals and petroleum hydrocarbons.

Dust is the primary potential release mechanism for contaminants associated with metals in the surface soil. There are two sources of arsenic in Groundwater. The first is naturally occurring background concentrations. The second source is potential leaching of arsenic from sand blast grit and dust mixed with surface soil.

3.4.2 Secondary Sources and Release Mechanisms

When a released contaminant is retained in an environmental medium, such as soil, the medium functions as a secondary source for further chemical release. Secondary release mechanisms for contaminants potentially present at the Site include the following:

- Leaching from soil to groundwater
- Volatilization from soil and groundwater to air
- Downgradient discharge from groundwater to surface water.

The degree of contaminant leaching is limited by chemical properties of the contaminants, groundwater chemical properties, physical properties of the soil, characteristics of the groundwater flow system, and precipitation recharge. Volatilization is controlled by the concentration and chemical properties of the contaminants, physical properties of the soil, and soil gas characteristics. Contaminant discharge from groundwater to surface water is controlled limited by the groundwater flow path, and the concentrations present in groundwater at the point where it discharges into surface water.

3.4.3 Pathways and Potential Receptors

An exposure pathway is a mechanism by which receptors are assumed to contact COPCs. EPA (1989) describes a complete exposure pathway in terms of four components:

- A source and mechanism of chemical release (e.g., a release of COPCs to the subsurface)
- A retention or transport medium (e.g., groundwater)
- A receptor at a point of potential exposure to a contaminated medium (e.g., commercial worker in an on-Site building located above the groundwater plume)
- An exposure route at the exposure point (e.g., inhalation of vapors).

If any of these four components is not present, then a potential exposure pathway is considered incomplete and is not evaluated further in a risk assessment. If all four components are present, a pathway is considered complete.

Potential exposure routes for human and ecological receptors at the Site include the following:

- **Dermal/Direct Contact.** Exposure to chemicals in soil at the Site may occur through direct contact with soil. Direct contact is a potential exposure route for current and future on-Site workers, visitors or residence. Proposed zoning provides for the potential of residential housing and activity center. Burrowing or ground-dwelling mammals and invertebrates may be exposed directly to the soil contaminants.
- **Inhalation.** Particulates from soil can be transported by air and inhaled by potential on-Site and off-Site receptors. Emissions of volatile chemicals from soil and groundwater may also be transported as vapors by air. Terrestrial biota could also be exposed to chemicals volatilizing to outdoor air, but if this exposure actually occurs the duration of exposure is expected to be relatively short. Burrowing animals (e.g., shrew) may be exposed to volatile air contaminants in underground stagnant air while spending time within the burrow.
- **Ingestion.** Ingestion of chemicals in Site soil is a primary exposure route for human and ecological receptors. Uptake by plants is also a potential exposure route.

Potentially complete exposure pathways include the following:

- Current/future indoor retail worker:
  - Inhalation of vapors from the subsurface (groundwater and soil) in indoor air
  - Direct ingestion of contaminated groundwater used as drinking water.
- Current/future construction/utility worker:
  - Incidental soil ingestion and dermal contact
  - Inhalation of dust from the subsurface soil in outdoor air
  - Inhalation of vapors or dermal contact with groundwater in a trench or excavation.
- Current/future Site visitor or residence (adult and child):
  - Inhalation of dust from surface soil.
- Ecological receptors
  - Incidental soil ingestion and dermal contact
  - Inhalation of vapors from the subsurface soil in outdoor air or in a burrow
  - Inhalation of vapors from or dermal contact with groundwater in a burrow.

3.4.4 Fate and Transport

This section describes the general fate and transport processes for metals and petroleum that may be applicable to this site.

The primary contaminant transport mechanism is dispersion caused by seepage of groundwater through the Site's shallow aquifer. Leachable metals in the surface soils can be mobilized during infiltration of stormwater runoff through the unsaturated zone and affect groundwater in the upper aquifer. As the chemical equilibrium of the groundwater changes largely due to mixing with contaminated material—changes in dissolved gas concentrations, pH and redox potential, metals have the potential to come out of solution and adsorb onto the aquifer matrix. Arsenic is more mobile under reducing conditions.

Metals dissolved in groundwater are transported to surface water in the streams that originate as groundwater flow south of the Site. These metals can be transported downstream as dissolved components in surface water or can adsorb to sediments and particulate matter in the creek beds. Subsequent migration of metals in sediments can then occur under the influence of surface water flow.

Petroleum constituents desorb from contaminated soil particles into groundwater and are transported in the downgradient direction where they may resorb to clean soil particles. Analytical data suggest that petroleum constituents are transported only a short distance as concentrations of concern. Dissolved petroleum constituents are typically subject to biodegradation by naturally occurring aerobic soil bacteria. Low dissolved oxygen concentrations measured in monitoring wells during sampling suggest that anaerobic biodegradation is occurring (Table 3-3).

3.5 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Cleanup actions under MTCA (WAC 173-340-710) require the identification of all ARARs. These requirements are defined as:

"Applicable" requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a site.

"Relevant and appropriate" requirements means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a site, address problems or situations sufficiently similar to those encountered at the site that their use is well suited to the particular site.

The potential ARARs for the Site include three types:

- Chemical-specific
- Location-specific
- Action-specific.

Chemical-specific ARARs are typically health- or risk-based values that when applied to site-specific conditions represent cleanup standards. Location-specific ARARs are related to the geographical position and/or physical condition of the site and may affect the type of remedial action selected for the site. Action-specific ARARs are usually technology-based or activity-based requirements or limitations on actions or conditions taken with respect to specific hazardous substances. The action-specific requirements do not determine the selected remedial alternative, but indicate how or to what level a selected alternative must perform.

Potential ARARs were identified for each medium of potential concern. These potential ARARs are shown in Table 3-5.

3.6 ASSESSMENT OF RISK

Exposure to contaminants could occur via the potentially complete exposure pathways described in Section 3.4.3 above. Based on the nature of the Site and the extent of contamination, current risks appear limited. The likely greatest potential risk to human receptors is inhalation of contaminant vapors and dust in the workplace. Note, however, that only one of the occupied buildings on the Site is underlain (partially) by contaminated soil and groundwater with the potential to cause vapor intrusion. The second most likely exposure risk is to construction workers during soil-disturbing activities. Ecological receptors have limited risk of exposure because the majority of the Site contains buildings or pavement. However, this risk increases under the future development scenario under which approximately the southern third of the Site may become park space (see Figure 1.1 in Appendix A).

These risks can be mitigated under a cleanup action that either removes the contaminants to concentrations that are protective to receptors or that places controls to prevent exposure. One example of a control is the placement of paving over contaminated soil to eliminate this direct contact exposure route. Such risk mitigation was a primary factor used in evaluating cleanup action alternatives under the FS (described in Chapter 4).

3.7 CLEANUP LEVELS SELECTION

Applicable cleanup levels were selected from WAC 173-340-720 through 173-340-760. A conservative approach was used to select standards that were most protective of human health and the environment for soil and groundwater. Selected standards by which media were evaluated against are listed below.

The following cleanup levels were selected for soil:

- MTCA Method A Soil Cleanup Levels for Unrestricted Land Use (WAC 173-340, Table 740-1).
- MTCA Ecological Indicator Soil Concentrations for Protection of Terrestrial Plants and Animals (Table 749-3).
- Background metals concentrations per Natural Background Soil Metals Concentrations in Washington State (Ecology 1994) for the Puget Sound area.

Background concentrations were used to assess whether metals detected in soil above the MTCA criteria were possibly naturally occurring and not the result of past Site uses.

For groundwater, the following cleanup levels were selected:

- MTCA Method A Cleanup Levels for Groundwater (WAC 173-340, Table 720-1). However, the upgradient concentration of arsenic in groundwater is 0.01 mg/L which is elevated with respect to Method A (0.005 mg/L).

Background metals concentrations for the Puget Sound area based on peat content will also be considered.

3.8 SUMMARY OF RESULTS

RI results are summarized below to addresses data gaps identified in the RI/FS Work Plan:

- Elevated soil total petroleum hydrocarbon (TPH) concentrations have been documented in the soil of the former compressor blowdown area. Additional soil sampling data collected indicates the contaminated soil is limited in extent to within 30 feet of the pipe to 2 feet bgs.

- Elevated metals concentrations have been documented in soil in the former sand blasting area. Data were collected to delineate the extent of metal-contaminated soil. Contamination starts in the middle of the Site and extends into the ROW southeast of the property, and to a depth of 4 to 5 feet bgs.
- Elevated groundwater arsenic concentrations have been documented at the Site. New monitoring wells confirm arsenic in the groundwater is a Site-wide issue and may be contributed to by leaching from contaminated in soil in the former sand blast area. No other metals were detected.
- Site-specific data on the groundwater flow measurements were collected from a network of newly installed and existing monitoring wells in order to calculate direction and magnitude of hydraulic gradients, groundwater flow velocity, and seasonal variations in the groundwater flow system.
- Aquifer material is fill overlying interbedded peat and sand. Stratigraphy was recorded and physical testing of aquifer material completed to characterize aquifer materials.

4. FEASIBILITY STUDY

In this section, remediation alternatives are developed from remedial technologies to meet the goals of the cleanup in accordance with MTCA requirements and guidelines. The process of developing remediation alternatives begins with a broad overview of all types of remediation systems. A comprehensive list of relevant technologies was developed using professional knowledge and judgment, experience, and screening information prepared by the U.S. Environmental Protection Agency (EPA) for sites across the United States.

The list of technologies is given a cursory screening to eliminate any technologies that do not apply to the COCs or site-specific conditions. The technologies retained are then given a more comprehensive screening before being accepted or rejected. The accepted technologies are then combined to create a range of alternatives that represent various approaches to achieving the RAOs.

4.1 REMEDIAL ACTION OBJECTIVES

The following RAOs have been established for remediation alternatives:

- Achieve the MTCA Method A soil cleanup standards for heavy oil-range TPH, benzene, arsenic, cadmium, and lead.
- Reduce or eliminate human exposure through direct contact (incidental ingestion, skin contact, and inhalation of vapors) with contaminated soil and groundwater that exceed protective regulatory levels.
- Reduce or eliminate risks to ecological receptors from contaminated soil and groundwater.
- Use permanent solutions to the maximum extent practicable (which includes consideration of cost-effectiveness).

4.2 POINT OF COMPLIANCE

WAC 173-340-200 defines "Point of Compliance" as the point or points where cleanup levels established in accordance with WAC 173-340-720 through 173-340-760 shall be attained. The point of compliance for Site soil is the soils throughout the site from the ground surface to fifteen feet below the ground surface. The point of compliance for the Site groundwater is established throughout the site from the uppermost level of the saturated zone extending vertically to the lowest most depth which could potentially be affected by the site.

4.3 REMEDIAL TECHNOLOGY SCREENING

EPA technology screening guidance provides an assessment of general classes of technologies classified by media (soil and water) and type of treatment (in situ, ex situ, chemical, biological, etc.). The guidance is relatively comprehensive and recent, and was used to identify potential technologies for the Site in conjunction with professional knowledge, judgment, and Parametrix experience. The EPA guidance provides the information on an interactive Web site, which contains the latest version—EPA Technology Screening Matrix and Reference Guide, Version 4.0 (EPA 2001). This technology screening guidance can be accessed at http://www.frtr.gov/scrntools.htm.

4.4 RELEVANT TECHNOLOGY CATEGORIES

The EPA technology screening guidance offers seven general categories of treatment applicable to soil that include:

- In Situ Biological Treatment
- In Situ Physical/Chemical Treatment
- In Situ Thermal Treatment
- Ex Situ Biological Treatment
- Ex Situ Physical/Chemical Treatment
- Ex Situ Thermal Treatment
- Containment.

The EPA technology screening guidance offers five general categories of treatment applicable to groundwater that include:

- In Situ Biological Treatment
- In Situ Physical/Chemical Treatment
- Ex Situ Biological Treatment
- Ex Situ Physical/Chemical Treatment
- Containment

4.5 INITIAL SCREENING OF APPLICABLE TECHNOLOGIES

This section describes the results of an initial screening of the applicable technologies identified in this study.

4.5.1 Screening Criteria

The following are the Site-specific conditions that serve as screening criteria to determine relevant technologies:

- Media: Surface soil (0 – 4 feet); shallow groundwater
- Contaminants: Heavy oil-range TPH and metals
- Site Usage: Site is zoned commercial

4.5.2 Screening of Applicable Technologies

This section describes the initial screening of soil and groundwater remediation technologies.

4.5.2.1 Soil Remediation Technologies

For the seven relevant technology categories identified for soil, Table 4-1 provides a summary of the applicability screening of those technologies based on the specific circumstances at the Site. Technologies that are screened out because they are not applicable to the Site conditions and contaminants are lined out, and an explanation is provided for the reason for removal. Technologies that are retained for further evaluation are highlighted in bold.

4.5.2.2 Groundwater Remediation Technologies

For the five relevant technology categories identified for groundwater, Table 4-2 provides a summary of the applicability screening of those technologies based on the specific circumstances at the Site. Technologies that are screened out because they are not applicable to the Site conditions and contaminants are lined out, and an explanation is provided for the reason for removal. Technologies that are retained for further evaluation are highlighted in bold.

4.5.3 Technologies Retained for Further Screening

Treatment technologies retained for further screening are either ex situ or in situ. The in situ treatment technologies would be applied below ground, within the soil, and/or groundwater. All of the ex situ technologies would be applied above ground to either excavated soil or groundwater extracted through pumping. The technologies retained for further screening are as follows:

Soil Remediation Technologies:

- Chemical Oxidation (In Situ Physical/Chemical)
- Electrokinetic Separation (In Situ Physical/Chemical)
- Excavation and Off-Site Disposal (Containment)
- Low Permeability Cap (Containment)

Groundwater Remediation Technologies:

- Monitored Natural Attenuation
- Complexation (In Situ Physical/Chemical)
- Adsorption/Absorption (Ex Situ Physical/Chemical)

4.6 REMEDIAL TECHNOLOGY DESCRIPTIONS

Four remedial technologies for soil and three remedial technologies for groundwater pertinent to the Site are described in detail below.

4.6.1 Soil Remediation Technology—Chemical Oxidation

Chemical oxidation converts hazardous organic contaminants to non-hazardous or less toxic compounds that are more stable, less mobile, and/or inert. The oxidizing agents most commonly used are ozone, hydrogen peroxide, permanganate, proprietary formulations, and Fenton's Reagent (hydrogen peroxide mixed with an iron catalyst). Chemical oxidants have been able to cause the rapid and complete chemical destruction of many toxic organic chemicals. Other organics are amenable to partial degradation as an aid to subsequent bioremediation. In general the oxidants have been capable of achieving high treatment efficiencies (e.g., > 90 percent) for VOCs.

Both in situ and ex situ field applications have shown that matching the oxidant and delivery system to site conditions is the key to achieving successful implementation and performance goals. Given the relatively indiscriminate and rapid rate of reaction of the oxidants, the method of delivery and distribution throughout a subsurface region or mixing throughout an aboveground process is of paramount importance. Factors that may limit the applicability and effectiveness of chemical oxidation include the requirement for handling large quantities of hazardous oxidizing chemicals due to the oxidant demand of the target organic chemicals, the unproductive oxidant consumption of the material to be treated, and the potential for process-induced detrimental effects. Historically, ex situ field applications were used because in situ delivery and mixing was difficult to accomplish and achieve an even distribution of oxidant within the soil matrix. Recently, in situ technologies have been developed that allow for adequate and repeatable mixing of many types of in situ soils to achieve results comparable to ex situ soil mixing.

4.6.2 Soil Remediation Technology—Electrokinetic Separation

The principle of electrokinetic remediation relies upon application of a low-intensity direct current through the soil between ceramic electrodes that are divided into a cathode array and an anode array. This process mobilizes charged species, causing ions and water to move toward the electrodes. Metal ions, ammonium ions, and positively charged organic compounds move toward the cathode. Anions such as chloride, cyanide, fluoride, nitrate, and negatively charged organic compounds move toward the anode. The current creates an acid front at the anode and a base front at the cathode. This generation of acidic condition in situ may help to mobilize sorbed metal contaminants for transport to the collection system at the cathode.

Two primary mechanisms transport contaminants through the soil towards one or the other electrodes: electromigration and electroosmosis. In electromigration, charged particles are transported through the substrate. In contrast, electroosmosis is the movement of a liquid containing ions relative to a stationary charged surface. Of the two, electromigration is the main mechanism for the electrokinetic remediation process. The direction and rate of movement of an ionic species will depend on its charge, both in magnitude and polarity, as well as the magnitude of the electroosmosis-induced flow velocity. Non-ionic species, both inorganic and organic, will also be transported along with the electroosmosis-induced water flow.

Two approaches are taken during electrokinetic remediation: Enhanced Removal and Treatment without Removal.

- Enhanced Removal is achieved by electrokinetic transport of contaminants toward the polarized electrodes to concentrate the contaminants for subsequent removal and ex situ treatment. Removal of contaminants at the electrode may be accomplished by several means, among which are electroplating at the electrode; precipitation or co-precipitation at the electrode; pumping of water near the electrode; or complexing with ion exchange resins.
- Treatment without Removal is achieved by electro-osmotic transport of contaminants through treatment zones placed between electrodes. The polarity of the electrodes is reversed periodically, which reverses the direction of the contaminants back and forth through treatment zones. The frequency with which electrode polarity is reversed is determined by the rate of transport of contaminants through the soil. This approach can be used on in situ remediation of soils contaminated with organic species.

Electrokinetic separation is a new technology and has not been implemented on many full-scale remediation projects. The technology is primarily in the early stages of development and additional research is necessary to document feasibility for full-scale applications.

4.6.3 Soil Remediation Technology—Excavation and Off-Site Disposal

For this technology, contaminated material is excavated and transported to permitted off-site treatment and/or disposal facilities.

4.6.4 Low Permeability Cap

Caps can be used to:

- Minimize exposure to contaminated surface soil.
- Prevent vertical infiltration of water into contaminated soil.
- Contain contaminated soil while treatment is being applied.

Capping is a common form of remediation because it is generally less expensive than other technologies and effectively manages the human and ecological risks associated with a remediation site. When properly designed, capping can also be incorporated into redevelopment of contaminated property.

The most effective single-layer caps are composed of concrete or bituminous asphalt. These materials are used to form a surface barrier between the contaminated soil and the environment. An asphalt concrete cap would reduce leaching of contaminants from soil to the aquifer below.

Capping does not lessen toxicity or the volume of hazardous substances, but does mitigate mobility. Caps are most effective where most of the underlying contamination is above the water table. A cap, by itself, cannot prevent the horizontal flow of groundwater through the contaminated material, only the vertical entry of water into the contamination zone.

Institutional Control

Institutional controls provide protection from exposure through the use of non-engineered or legal controls that limit land or resource use, such as access controls and property restrictions. Although institutional controls provide no reduction of toxicity, volume, or mobility of contaminants, they can reduce or eliminate direct exposure pathways and resultant risk. Institutional controls are usually most effective when used in combination with other measures, such as source removal, containment and MNA.

4.6.5 Groundwater Remediation Technology—Monitored Natural Attenuation

Natural attenuation generally describes a range of physical and biological processes which, unaided, reduce the concentration, toxicity, or mobility of chemical contaminants. These processes take place whether or not other active cleanup measures are in place.

Groundwater monitoring is necessary to demonstrate that contaminant concentrations continue to decrease at a rate sufficient to ensure that they will not become a health threat or violate regulatory criteria at the point of compliance. Monitoring should be designed to verify that potentially toxic transformation products are not created at levels that are a threat to human health; that a plume is not expanding; that there are no further releases that could affect the remedy; and that there are no changes in hydrogeological, geochemical, or microbiological parameters that might reduce the effectiveness of natural attenuation. Natural attenuation is not appropriate where imminent site risks are present.

4.6.6 Groundwater Remediation Technology—Complexation

Metals Remediation Compound (MRC™) is a proprietary compound produced by Regenesis. MRC™ directly affects geochemical processes to remove metals from groundwater quickly, effectively, and at a relatively low cost.

MRC™ is a non-toxic formulation that, upon injection into the contaminated subsurface, removes dissolved metals from groundwater under reducing conditions.

The active compound in MRC™ is a benign organosulfur compound that is environmentally safe. Once MRC™ becomes hydrated and subject to microbial biodegradation, it slowly releases the organosulfur compound. Upon contact with metal ions, the organosulfur compound irreversibly reacts to produce a metal-organosulfur complex (complexation). This metal-organosulfur complex sorbs strongly to soil and is immobile in the subsurface. Over time, the immobilized metals may be incorporated into the soil matrix as sulfide solids. The immobilized metals are stable under low redox potential and may be stable under oxidizing conditions.

Based on vendor documentation and bench-scale testing, MRC™ is applicable to treat arsenic within the groundwater; however, our understanding of the chemical processes involved with complexation of arsenic would preclude the use of MRC™ under reducing conditions. Full-scale implementation of MRC™ has only been used to remediate hexavalent chromium.

4.6.7 Groundwater Remediation Technology—Adsorption/Absorption

Adsorption mechanisms are generally categorized as either physical adsorption, chemisorption, or electrostatic adsorption. Weak molecular forces, such as Van der Waals forces, provide the driving force for physical adsorption, while a chemical reaction forms a chemical bond between the compound and the surface of the solid in chemisorption. Electrostatic adsorption involves the adsorption of ions through Coulombic forces.

The most common adsorbents for the removal of arsenic include activated alumina, granular ferric hydroxide, iron removal processes, and synthetic resins.

Activated Alumina

Activated alumina is a filter media made by treating aluminum ore so that it becomes porous and highly adsorptive. Activated alumina will remove a variety of contaminants, including excessive fluoride, arsenic, and selenium. The medium requires influent water pH adjustment and periodic cleaning with an appropriate regenerant such as alum or acid in order to remain effective.

Granular Ferric Hydroxide

Granular ferric hydroxide (GFH) is a filter media whose main application is the removal of the reduced form of arsenic (As III) and the dominant, oxidized form of arsenic (As V). Several commercial vendors currently sell GFH. GFH is produced from a ferric chloride solution by neutralization and precipitation with sodium hydroxide. Following precipitation, the ferric hydroxide precipitate is centrifuged and then granulated. Because no drying procedure is included in its preparation, all the pores of the GFH are completely filled with water. This saturation leads to a high density of available adsorption sites and a high adsorption capacity. GFH is proven to reduce both As(III) and As(V) to levels less than 5 micrograms per liter (μg/L) in drinking water; however, GFH is less effective on As(III). GFH operates as a fixed bed adsorber, functioning similarly to conventional filters with a downward water flow. GFH media life is affected by:

- Concentration and species of arsenic in the influent. GFH is less effective for removing As(III).
- Concentration of interfering chemical components including silica, phosphorous-based compounds, nitrates, sulfates, and trace metals such as vanadium.
- Water pH. Optimal arsenic adsorption to GFH occurs with a water pH between 6 and 8.

A GFH adsorptive media treatment approach is now being used extensively in water systems across the United States to provide arsenic removal to 10 μg/L in order to meet the new EPA arsenic regulation under the federal Safe Drinking Water Act. The GFH treatment approach has been identified by the EPA (according to the 2003 EPA Arsenic Treatment Technology Evaluation Handbook for Small Systems) as one of the primary iron-based adsorbent media treatment methods to remove arsenic from drinking water supplies. Because of the wide-spread use of the media, its ability to treat both As(III) and As(V) species, and the lack of water pretreatment necessary, the GFH media was chosen over the other media noted earlier that include activated alumina, iron removal processes, and synthetic resins.

Iron Removal Processes

Iron and manganese can be removed from source water by several technologies (EPA 2006). The traditional removal method for both elements involves a two-step process: (1) oxidation of the soluble iron (Fe) and manganese (Mn) forms to the common insoluble forms, and (2) filtration of these formed precipitates. Arsenic in source waters can be removed by taking advantage of the arsenic adsorptive capacity of natural iron particles formed following the oxidation of Fe(II) to Fe(III). Arsenic removal is achieved through two primary mechanisms: adsorption, which involves the attachment of arsenic to the surface of Fe(III) particles; and coprecipitation, which involves the entrapment of arsenic within growing Fe(III) particles by inclusion, occlusion, or adsorption. Iron removal processes also can act as effective arsenic removal processes; however, the capacity of a given iron removal process to remove arsenic depends largely on the amount of arsenic and natural iron in the source water, water chemistry, operating considerations, and the sequence of treatment processes.

Several variations on traditional iron removal oxidation/filtration technology for groundwater exist; the basic process includes oxidation, contact time (optional), and filtration. To achieve arsenic removal by iron removal, the use of a strong chemical oxidant is required. The oxidation step is usually followed by detention (contact time) and filtration. Filtration options consist of sand (only), anthracite and sand (dual media), manganese greensand, manganese dioxide, and various synthetic filtration media. The manganese greensand and manganese dioxide media are special media that remove iron and manganese by a combination of oxidation, adsorption, and filtration all within the media itself.

Synthetic Ion Exchange Resins

Synthetic ion exchange resins are typically more expensive than other adsorption technologies, but can be designed to achieve higher degrees of selectivity and adsorption capacity for certain compounds. Resins are typically regenerated using acids, bases, or organic solvents, instead of thermal methods, so they are better suited for thermally unstable compounds such as explosives, and are resistant to deactivation due to the adsorption of dissolved solids.

4.7 REMEDIAL ALTERNATIVE DEVELOPMENT

Considering the nature and extent of contamination, MTCA requirements for selection of cleanup actions (WAC 173-340-360) and the remediation technologies retained after screening, the following remediation alternatives have been assembled for the soil and groundwater contamination present at the Site:

4.7.1 Alternative 1—No Action

The No Action Alternative is retained throughout the alternative development and analysis process as a baseline for comparison to other alternatives. The No Action Alternative consists of allowing the Site to remain in its present condition, with no measures beyond the planned construction of the SR 522 realignment to reduce or monitor soil and groundwater contamination.

4.7.2 Alternative 2—Chemical Oxidation, Electrokinetic Separation, Low Permeability Cap and Complexation

Alternative 2, involving chemical oxidation, electrokinetic separation, low permeability cap, and complexation, would consist of the following:

- Chemical oxidation would be used within the soil around monitoring well BPMW-3 at a depth of approximately three feet and an area with a radius of approximately 30 feet from the well up to the property line to remediate heavy oil-range TPH. BPMW-3 is located adjacent to the northern property line and additional contamination may be present underneath the existing roadway.

- Chemical oxidation would be used within the soil around historical boring VB-9 at a depth of approximately four feet and an area with a radius of approximately 25 feet from the boring to remediate heavy oil-range TPH.
- Electrokinetic separation would be used within the soil outside the SR 522 realignment footprint to a depth of approximately four feet and an area of approximately 1,200 square feet (sf) to remediate arsenic, cadmium, and lead.
- A low permeability cap (i.e., realignment of SR 522) with institutional controls would limit exposure to the majority of the metals-contaminated soil.
- Complexation would be used from a depth of five feet to 15 feet bgs to remediate arsenic in groundwater. A grid would be placed downgradient of each well that contains groundwater above cleanup levels.

RegenOx™ by Regenesis is the product used as the basis for Alternative 2 for the remediation of the organic soil contamination. RegenOx™ uses a solid alkaline oxidant built around a sodium percarbonate complex, which is activated using a multi-part catalytic formula to maximize performance. The product is delivered as two parts that are combined and mixed into the subsurface using specialized mixing equipment. Once in contact with the soil, the combined product produces an effective oxidation reaction comparable to that of Fenton’s Reagent yet without a violent exothermic hazard.

Electrokinetic separation for the metals soil contamination would consist of installing specialized monitoring wells on a grid with a spacing of approximately five feet. The monitoring wells would include either an anode or cathode and liquid removal assembly to extract the concentrated metals from the subsurface for ex situ treatment and disposal. The fluid within the liquid removal assembly would be recirculated through an ion exchange media for the removal of the metals.

MRC™, also by Regenesis, is the product used as the basis for Alternative 2 for the remediation of the metals groundwater contamination. The product is also delivered as two parts that are combined and injected into the subsurface via injection wells organized in a grid pattern. The grids would be placed downgradient of any wells with groundwater contamination above cleanup levels and would be spaced approximately 10 feet apart.

Bench-scale treatability and pilot tests would be conducted to help refine the full-scale treatment approach for Alternative 2. Results of the treatability and pilot tests would be used to refine the full-scale treatment approach for both contaminated soil and groundwater.

Full-scale implementation of Alternative 2 would consist of a specialized soil mixer attached to an excavator to mix the RegenOx™ with the contaminated soil to a depth of three to four feet. The areas to be treated with RegenOx™ (see Figure 4-1) total approximately 3,400 sf. The areas would be mixed or tilled with the soil mixer while spraying the RegenOx™ in a liquid form at a rate of approximately 11 pounds per cubic yard. Full-scale implementation of the groundwater technology would consist of a grid of injection wells installed with a direct-push probe rig to a depth of approximately 15 feet for injection of the MRC™. A total of 22 injection wells would be installed downgradient of six wells that show arsenic groundwater concentrations above cleanup levels. MRC™ would be injected at a rate of approximately 80 pounds per well. It is assumed a total of two treatments would be necessary to reduce soil organic and groundwater metals concentrations below regulatory levels. A total of 87 specialized monitoring wells would be installed to a depth of approximately four feet with a direct-push probe rig for implementation of the electrokinetic separation in the southeast portion of the Site. Anodes, cathodes, and associated liquid removal assemblies would be installed in the wells. The liquid removal assemblies would be connected to a small treatment plant with a footprint of approximately 600 sf. The treatment plant would contain three ion exchange media vessels in series with associated piping, monitoring instrumentation (differential pressure gauges, flow meters), and manually operated valves. The ion exchange media was chosen because it is the only single media that can remove arsenic, cadmium, and lead from a waste stream. The treated liquid would be recirculated back into the liquid removal assemblies to allow the removal of additional metals from the subsurface.

Confirmation soil sampling would take place on the sidewalls and bottom of the excavations. An estimated twelve confirmation soil samples would be collected.

The planned realignment of SR 522 would be maintained directly over the untreated soil contamination in order to eliminate exposure pathways associated with surface and subsurface soil (see Figure 4-1). The planned roadway construction consists of a minimum of four inches of asphaltic concrete paving on top of a minimum of 12 inches of engineered subbase. Institutional controls would be put in place to provide protection from exposure through the use of legal controls that limit access and exposure to the contaminated soil in the case of excavation in the area. The necessity for specific institutional controls would be evaluated during remedial design.

Groundwater monitoring would be conducted for four quarters after realignment of the roadway is complete to verify the contaminated groundwater in the area has been remediated. In order to adequately monitor the area, five downgradient wells would be installed and seven wells would be monitored for four successive quarters.

4.7.3 Alternative 3—Excavation, Off-Site Disposal, and Adsorption

Alternative 3, involving excavation, off-site disposal, and adsorption, would consist of the following:

- Excavation of the soil around monitoring well BPMW-3 at a depth of approximately three feet and an area with a radius of approximately 30 feet from the well up to the property line to remove heavy oil-range TPH. BPMW-3 is located adjacent to the northern property line and additional contamination may be present underneath the existing roadway.
- Excavation of the soil to a depth of approximately four feet and an area of approximately 10,800 sf to remove heavy oil-range TPH, arsenic, cadmium, and lead in the southeastern portion of the Site.
- Installation of a pump and treat system to remove contaminated groundwater and also remove the arsenic from the groundwater ex situ via filter vessels containing GFH.

Approximately 1,900 cubic yards or 3,000 tons of contaminated soil would be excavated with heavy equipment (see Figure 4-2). The contaminated soil would be trucked to the Allied Waste Third and Lander Recycling and Transfer Station. The contaminated soil would then be transported to the Roosevelt Regional Landfill in Klickitat County for final disposal. Confirmation soil sampling would take place on the sidewalls and bottom of the excavations. An estimated 23 confirmation soil samples would be collected. The excavated areas would then be backfilled with clean material.

A bench-scale treatability test would be conducted to help refine the full-scale groundwater treatment approach for Alternative 3. Results of the treatability test would also be used to determine if a pilot test is required before full-scale treatment is completed.

A total of four extraction wells would be installed at the Site (see Figure 4-2). The extraction wells would be constructed of four-inch-diameter PVC and would be installed to a depth of approximately 15 feet. Submersible pumps would be installed to extract the groundwater at a rate of approximately 12 gallons per minute. A radius of influence for each well is assumed to be approximately 50 feet. The extraction wells would be piped to a building containing the GFH treatment system.

The GFH treatment system would be set up in a simple configuration in which arsenic-contaminated water passes through a GFH-packed media bed. Typically, a GFH-based treatment system consists of a lead/lag pressure filter configuration. Contaminated water is pumped under pressure into the lead column and then through a lag-positioned column. The lag-positioned media column provides further polishing treatment for arsenic while protecting from breakthrough conditions that will gradually start to occur as the media adsorption sites are occupied. A backwash system is also typically necessary to periodically remove accumulated solids from the filter beds.

Sizing for GFH was based on removing a maximum influent arsenic concentration of 50 μg/L to less than 4 μg/L at a flow rate of 50 gallons per minute (gpm). Based on Table 6 of the King County Groundwater Protection Program, Ambient Groundwater Monitoring 2001 – 2004 Results report dated March 2005, the average background concentration of arsenic within the Redmond-Bear Creek Valley Sites is 3.9 μg/L. The main GFH media equipment consists of two steel pressure tanks holding GFH media with associated piping, monitoring instrumentation (differential pressure gauges, flow meters), and manually operated valves. The skid approximate area footprint is 8 feet by 12 feet. Each media tank with associated piping is approximately 8.5 feet high. The total footprint area required for GFH treatment is approximately 1,000 sf. Two full skid units are assumed to be necessary to provide backup capacity during servicing, repairs, and maintenance of the system.

The effluent of the treatment system would discharge to a storm drain located to the south of the Site that would discharge to the Sammamish River. The discharge would be authorized under the existing City of Bothell Phase II Western Washington Municipal Stormwater Permit. The backwash water would be discharged to the sanitary sewer under a wastewater discharge permit.

Spent granular ferric oxide media has been determined to pass the federal Toxicity Characteristic Leaching Procedure (TCLP) requirements. Spent media from the Site would need to be tested for arsenic leachability and potentially other toxicity characteristics before a waste designation could be made; however, it has been assumed that depleted GFH media would be designated as “non-hazardous waste.”

After excavation, backfill, and installation of the groundwater pump and treat system, the planned realignment of SR 522 would be constructed over the excavated area. The roadway construction would consist of a minimum of four inches of asphaltic concrete paving on top of a minimum of 12 inches of engineered subbase. Institutional controls would be put in place to provide protection from exposure through the use of legal controls that limit access and exposure to the contaminated groundwater in the case of exposure in the area. The necessity for specific institutional controls would be evaluated during remedial design. Groundwater monitoring would be conducted for the life of the groundwater pump and treat system (i.e., 10 years) to verify the groundwater in the area has been remediated. In order to adequately monitor the area, five downgradient wells would be installed and a total of seven wells would be monitored annually for an assumed 10 years. A remediation time frame of 10 years was assumed as a way to compare each of the applicable alternatives; however, the remediation time frame could vary greatly based on various parameters including groundwater extraction rate, actual arsenic concentrations and speciation, subsurface lithology, groundwater flow, and background arsenic concentration.

4.7.4 Alternative 4—Excavation, Off-Site Disposal, Low Permeability Cap, and Groundwater Extraction

Alternative 4, involving excavation, off-site disposal, groundwater extraction, and low permeability cap, would consist of the following:

- Excavation of the soil around monitoring well BPMW-3 at a depth of approximately three feet and an area with a radius of approximately 30 feet from the well up to the property line to remove heavy oil-range TPH. BPMW-3 is located adjacent to the northern property line and additional contamination may be present underneath the existing roadway.

- Excavation of the soil to a depth of approximately four feet and an area of approximately 2,200 sf to remove arsenic, cadmium, and lead in the southeastern portion of the site. A low permeability cap (i.e., realignment of SR 522) with institutional controls would limit exposure to the majority of the contaminated soil.
- Installation of a pump and treat system to remove contaminated groundwater and discharge the untreated groundwater to the sanitary sewer.

Approximately 330 cubic yards or 530 tons of contaminated soil would be excavated with heavy equipment (see Figure 4-3). The contaminated soil would be trucked to the Allied Waste Third and Lander Recycling and Transfer Station. The contaminated soil would then be transported to the Roosevelt Regional Landfill in Klickitat County for final disposal. Confirmation soil sampling would take place on the sidewalls and bottom of the excavations. An estimated eight confirmation soil samples would be collected. The excavated areas would then be backfilled with clean material.

A total of four extraction wells would be installed at the Site (see Figure 4-3). The extraction wells would be constructed of four-inch-diameter PVC and would be installed to a depth of approximately 15 feet. Submersible pumps would be installed to extract the groundwater at a rate of approximately 12 gallons per minute. A radius of influence for each well is assumed to be approximately 50 feet. The extraction wells would discharge to the sanitary sewer located to the south of the Site that would discharge to the King County wastewater treatment plant. Discussions with the King County wastewater treatment plant operator have determined the discharge can contain up to 1,000 µg/L of arsenic.

After excavation, backfill, and installation of the groundwater extraction system, the planned realignment of SR 522 would be constructed over the excavated area. The roadway construction would consist of a minimum of four inches of asphaltic concrete paving on top of a minimum of 12 inches of engineered subbase. Institutional controls would be put in place to provide protection from exposure through the use of legal controls that limit access and exposure to the contaminated groundwater in the case of exposure in the area. The necessity for specific institutional controls would be evaluated during remedial design. Groundwater monitoring would be conducted for the life of the groundwater extraction system to verify the groundwater in the area has been remediated. In order to adequately monitor the area, five downgradient wells would be installed and a total of seven wells would be monitored annually for an assumed 10 years. A remediation time frame of 10 years was assumed as a way to compare each of the applicable alternatives; however, the remediation time frame could vary greatly based on a variety of parameters including groundwater extraction rate, actual arsenic concentrations and speciation, subsurface lithology, groundwater flow, and background arsenic concentration.

4.7.5 Alternative 5—Excavation, Off-Site Disposal, Low Permeability Cap, and Monitored Natural Attenuation

Alternative 5, involving excavation, off-site disposal, low permeability cap, and monitored natural attenuation, would consist of the following:

- Excavation of the soil around monitoring well BPMW-3 at a depth of approximately three feet and an area with a radius of approximately 30 feet from the well up to the property line to remove heavy oil-range TPH. BPMW-3 is located adjacent to the northern property line and additional contamination may be present underneath the existing roadway.
- Excavation of the soil to a depth of approximately four feet and an area of approximately 2,200 sf to remove arsenic, cadmium, and lead in the southeastern portion of the Site. A low permeability cap (i.e., realignment of SR 522) with institutional controls would limit exposure to the majority of the contaminated soil.

- Active groundwater remediation is not considered for Alternative 5. Natural attenuation via physical dilution and dispersion would be the primary mechanism for achieving the RAOs at the point of compliance.

Approximately 330 cubic yards or 530 tons of contaminated soil would be excavated with heavy equipment (see Figure 4-4). The contaminated soil would be trucked to the Allied Waste Third and Lander Recycling and Transfer Station. The contaminated soil would then be transported to the Roosevelt Regional Landfill in Klickitat County for final disposal. Confirmation soil sampling would take place on the sidewalls and bottom of the excavations. An estimated eight confirmation soil samples would be collected. The excavated areas would then be backfilled with clean material.

After excavation and backfill, the planned realignment of SR 522 would be constructed over the excavated area. The roadway construction would consist of a minimum of four inches of asphaltic concrete paving on top of a minimum of 12 inches of engineered subbase. Institutional controls would be put in place to provide protection from exposure through the use of legal controls that limit access and exposure to the contaminated groundwater in the case of exposure in the area. The necessity for specific institutional controls would be evaluated during remedial design. Groundwater monitoring would be conducted for approximately 10 years to ensure arsenic levels in groundwater do not exceed cleanup standards at the point of compliance. In order to adequately monitor the area, five downgradient wells would be installed and a total of seven wells would be monitored annually for an assumed 10 years. A remediation time frame of 10 years was assumed as a way to compare each of the applicable alternatives; however, the remediation time frame could vary greatly based on various parameters including actual arsenic concentrations and speciation, subsurface lithology, groundwater flow, and background arsenic concentration.

4.8 THRESHOLD REQUIREMENTS

MTCA established minimum requirements and procedures for selecting cleanup actions in WAC 173-340-360. MTCA requires that all cleanup actions meet the threshold requirements that are part of the minimum requirements. Any alternatives that do not meet the threshold requirements are dropped from further consideration. This section uses the threshold requirement to further screen the initial list of four alternatives developed. Under MTCA, remediation alternatives must meet the following threshold requirements as defined in WAC 173-340-360(2)(a):

- Protection of human health and the environment
- Compliance with cleanup standards
- Compliance with ARARs
- Provision for compliance monitoring

Each alternative is evaluated individually against the threshold criteria in the following sections. Alternatives that do not meet the threshold requirements are not carried forward to the evaluation of other requirements as stated in WAC 173-340-360(2)(b).

4.8.1 Protection of Human Health and the Environment

As a threshold criterion, protection of human health and the environment addresses whether a remediation alternative would result in sufficiently low residual risk to human and ecological receptors after completion of the alternative.

Alternative 1 would not be protective of human health and the environment because the contaminated soil and groundwater would not be remediated. Alternative 1 would slightly reduce the exposures to human health and the environment because the planned realignment of SR 522 would be maintained over a majority of the soil contamination.

Alternative 2 would be protective of human health and the environment by treating the COCs within the soil and groundwater by either removing mass or altering the COCs to less toxic compounds. Alternative 2 would be slightly less protective because electrokinetic separation and complexation are unproven technologies for the COCs in full-scale operations and residual concentrations of COCs may remain in place after treatment. Residual concentrations of the COCs beneath the planned realignment of SR 522 would remain above regulatory levels; however, exposure and associated risk would be limited or negated because of the low permeability cap and implementation of institutional controls should future excavation in the area of residual contamination be completed.

Alternative 3 would provide the highest level of protection to human health and the environment by removing all the soil contamination above regulatory standards via excavation and removing the arsenic from groundwater via the pump and treat system. The contamination would be removed from the Site and remaining concentrations would be below regulatory limits with minimal chance of residual concentrations of COCs remaining.

Alternative 4 would be protective of human health and the environment by removing some soil contamination via excavation and limiting access to the remaining soil contamination by a low permeability cap. The contaminated groundwater would be removed from the site; however, treatment would occur off-site at the King County wastewater treatment plant. Alternative 4 would be slightly less protective because residual concentrations of the COCs beneath the planned realignment of SR 522 would remain above regulatory levels; however, exposure and associated risk would be limited or negated because of the low permeability cap and implementation of institutional controls should future excavation in the area of residual contamination be completed.

Alternative 5 would be protective of human health and the environment by removing some soil contamination via excavation and limiting access to the remaining soil contamination by a low permeability cap. The contaminated groundwater would be left untreated; however, dilution and dispersion would occur such that arsenic concentrations in groundwater at the point of compliance would be below cleanup standards. Alternative 4 would be slightly less protective because residual soil and groundwater concentrations of the COCs beneath the planned realignment of SR 522 would remain above regulatory levels; however, exposure and associated risk would be limited or negated because of the low permeability cap and implementation of institutional controls should future excavation in the area of residual contamination be completed.

4.8.2 Compliance with Cleanup Standards

Compliance with cleanup standards is defined by meeting the requirements of WAC 173-340-700 through WAC 173-340-760. A conditional point of compliance for groundwater is proposed approximately 50 feet from the south and west property lines in accordance WAC 173-340-720(8)(d)(ii) based on the discussion in Section 4.9.

Alternatives 2, 4, and 5 comply with cleanup standards by attaining cleanup levels at the point(s) of compliance within a reasonable period of time and in accordance with WAC 173-340-740(6)(f). Alternative 3 is also in compliance with cleanup standards due to treatment/removal of the contaminated soil and groundwater.

4.8.3 Compliance with ARARs

Compliance with ARARs for all alternatives requires, in addition to meeting cleanup standards, that the actions also meet location-specific and action-specific state and federal requirements. Alternatives 2, 3, 4, and 5 meet this threshold criterion for both soil and groundwater; however, the discharges of either treated or contaminated groundwater via the extraction well system for Alternatives 3 and 4 may be limited by National Pollutant Discharge Elimination System (NPDES) contaminant discharge levels.

4.8.4 Provide for Compliance Monitoring

Compliance monitoring requirements are defined in WAC 173-340-410. Compliance monitoring includes: 1) "protection monitoring" to confirm that human health and the environment are adequately protected during implementation of an alternative; 2) "performance monitoring" to confirm that cleanup standards or other performance standards have been attained; and 3) "conformation monitoring" to monitor the long-term effectiveness of the remedy after completion of the alternative.

Alternatives 2, 3, 4, and 5 would include performance monitoring during remedial action to evaluate the effectiveness of the treatment and determine that the RAOs had been met. Performance monitoring would be provided during operation and maintenance activities for Alternatives 3 and 4 to determine the effluent quality of the discharged groundwater. Compliance monitoring would be a component of any alternative selected as the final remedy for the Site and would include the following:

- Installation of five downgradient wells (see Figure 4-1) to adequately characterize the on-Site contamination and allow for appropriate triangulation of the Site to determine groundwater flow direction.
- Annual monitoring of groundwater for 10 years through sampling of seven monitoring wells to confirm groundwater is being remediated in the area and is not affected by any residual on-Site soil contamination.

4.8.5 Summary of Preliminary Alternative Screening

Alternatives 2, 3, 4, and 5 meet all of the MTCA threshold requirements and are carried forward for detailed evaluation. Alternative 1 is also carried forward as a baseline for comparison to other alternatives; however, Alternative 1 does not meet any of the MTCA threshold requirements.

4.9 OTHER REQUIREMENTS

In addition to the threshold requirements, WAC 173-340-360(2)(b) requires cleanup actions to meet "other requirements" or "additional requirements" that are part of the minimum requirements for the alternatives. These other requirements include the following:

- Use permanent solutions to the maximum extent practicable including consideration for public concerns.
- Provide for a reasonable restoration time frame.
- Consider additional performance criteria.

4.9.1 Permanent Solutions

This section describes the permanent solutions criteria and compares each of the alternatives regarding the criteria.

4.9.1.1 Permanent Solutions Criteria

WAC 173-340-360(2)(b)(i) requires, to the maximum extent practicable, the use of permanent solutions. Permanence criteria are further defined in WAC 173-340-360(3).

The determination of "maximum extent practicable" is based on a "disproportionate cost analysis," which evaluates the costs and benefits of the alternatives. Seven criteria are cited in WAC 173-340-360(3)(f) as appropriate to evaluate alternatives for the disproportionate cost analysis determination.

The specified criteria below will be used to evaluate the remedial alternatives:

- **Protectiveness—**addresses overall protectiveness of human health and the environment, including the degree to which existing risks are reduced, the time required to reduce the risk and attain cleanup standards, the on-Site and off-Site risks resulting from implementation, and improvement of the overall environmental quality. This criterion is derived from the evaluation of the other criteria.
- **Permanence—**addresses the degree to which a remediation alternative reduces the inherent toxicity, the ability of contaminants to migrate in the environment, or the quantity of contaminated material.
- **Cost—**used to consider the costs of performing the alternative, including capital, long-term operation and maintenance, monitoring, and institutional costs. Alternative costs are compared on a net present value basis. Known implementation difficulties with quantifiable cost impacts are included in the cost estimates. Table 4-3 includes a summary of the construction (capital) and yearly operations and maintenance costs for the four remedial alternatives. Detailed cost estimates are located in Tables 4-5 through 4-8. Costs are available from four sources: the professional opinion of Parametrix's remedial design engineers, quotes requested from remediation firms, published literature, and similar projects. All costs are order-of-magnitude preliminary estimates that will be used to evaluate and compare the alternatives.
- **Effectiveness Over the Long Term—**based on the degree of certainty that the alternative will be a success, the long-term reliability, the magnitude of residual risk, and the effectiveness of controls required to manage treatment of residual or remaining waste.
- **Management of Short-Term Risks—**addresses short-term effects on human health and the environment while the alternative is being implemented. The evaluation includes consideration of the following factors:
  - Risk to Site workers
  - Risk to the community
  - Risk to the environment (short-term ecological risk)
- **Technical and Administrative Implementability—**addresses the degree of difficulty in implementing the alternative. Implementability issues are important because they address the potential for delays, cost overruns, and failure. Implementability is evaluated by considering the following:
  - Technical Feasibility: Technical feasibility addresses the potential for problems during implementation of the alternative and related uncertainties. The evaluation includes the likelihood of delays due to technical problems and the ease of modifying the alternative, if required.
  - Availability of Services and Materials: The availability of experienced contractors and personnel, equipment, and materials needed to implement the alternative.
  - Administrative Feasibility: The degree of difficulty anticipated due to regulatory constraints and the degree of coordination required among various agencies.

  - Scheduling: The time required until remedial action would be complete, and any difficulties associated with scheduling.
  - Complexity and Size: The more complex or larger a remedial action, the more difficult it is to construct or implement. Sufficient space must be available at the Site to enable efficient implementation of the alternative in a manner that achieves the specific time constraints.
  - Other Considerations: Monitoring requirements, access for construction, operation and maintenance, integration with existing operations, current or potential remedial action, and other factors were considered in accordance with WAC 173-340-410.
- **Consideration of Public Concerns—**public participation is an integral part of MTCA. Ecology's goal is to provide the public with timely information and meaningful opportunities for participation. This goal is met through a public participation program that includes:
  - The early planning and development of a site-specific public participation plan
  - The provision of public notices
  - Public meetings or hearings
  - The participation of regional citizen's advisory committees

4.9.1.2 Permanent Solutions Evaluation

In this subsection, each of the four remedial alternatives is evaluated against the criteria presented in Section 4.9.1.1.

Protectiveness

Alternatives 2, 3, 4, and 5 meet the goal of protectiveness because they all provide a permanent method of containment and reduce or eliminate exposure pathways. Alternative 3 is the most protective of the alternatives because of the complete removal of the contaminated soil and groundwater. Alternatives 2, 4, and 5 are also protective; however, the alternatives leave contaminated soil and/or groundwater in place and the alternatives depend on institutional controls to limit exposures. Alternative 2 would provide the fastest remediation of both soil and groundwater.

Permanent Reduction in Toxicity, Mobility, and Volume

Alternatives 2, 3, 4, and 5 provide permanent reduction in the toxicity, mobility, and volume of contaminants in the environment. Alternative 3 provides the largest permanent reduction in toxicity, mobility, and volume due to the complete removal of the soil and groundwater contamination. Alternatives 2, 4, and 5 reduce the toxicity, mobility, and volume of the soil and groundwater contamination; however, the alternatives provide a slightly lesser permanent reduction because the low permeability cap only eliminates water infiltration into the subsurface and has no effect on toxicity or volume of the soil contamination left in place. However, the mobility of metals remaining in soil and the potential for contamination leaching to groundwater is greatly reduced or eliminated with the presence of the cap.

Cost

Alternatives 2, 4, and 5 include the construction of the realignment of SR 522 as an integral portion of the alternative; however, the roadway siting and construction will take place regardless of which alternative is chosen. The costs for the realignment of SR 522 are not included in the alternative costs.

Alternative 2 consists of bench-scale treatability and pilot tests to determine if the alternative is appropriate for the Site. The alternative also includes soil remediation including mixing of Site soils with the RegenOx™ product for two treatments, installation of 87 four-feet deep specialized monitoring wells for installation of the electrokinetic separation liquid removal assemblies, a 600-sf building for the ion exchange vessels, operation and maintenance costs for three months, confirmation sampling to verify the soil contamination is below regulatory standards, institutional controls, and four quarters of groundwater monitoring costs. Groundwater remediation costs include bench-scale treatability and pilot tests to determine if the alternative is appropriate for the Site, installation of 22 injection wells to a depth of 15 feet, and injection of MRC™ into each well over the course of two events. The net present value of Alternative 2 is approximately $3,200,000 (see Table 4-5).

Alternative 3 consists of a bench-scale treatability test to determine if the groundwater remediation technology is appropriate for the Site; excavation, stockpiling, hauling, and disposing of the contaminated soil; confirmation sampling to verify the soil contamination is below regulatory standards; importing, placing, and compacting granular common borrow; and groundwater monitoring. Groundwater remediation costs include installation of four extraction wells to a depth of approximately 15 feet, a 1,000-sf building for the GFH filter vessels, two GFH filter vessel skids, a backwash system, and permit acquisition and maintenance fees. The alternative also includes operation and maintenance costs including power, media replacement, media disposal, analytical testing, general operations and maintenance, and wastewater discharge fees for the backwash water for a period of 10 years. The net present value of Alternative 3 is approximately $3,800,000 (see Table 4-6).

Alternative 4 consists of excavation, stockpiling, hauling, and disposing of the contaminated soil; confirmation sampling to verify the soil contamination is below regulatory standards; importing, placing, and compacting granular common borrow; providing institutional controls; and conducting groundwater monitoring. The alternative also includes the installation of four groundwater extraction wells and associated pumps as well as operations and maintenance costs including power, analytical testing, general operations and maintenance, permit acquisition and maintenance fees, and wastewater discharge fees. The net present value of Alternative 4 is approximately $2,200,000 (see Table 4-7).

Alternative 5 consists of excavation, stockpiling, hauling, and disposing of the contaminated soil; confirmation sampling to verify the soil contamination is below regulatory standards; importing, placing, and compacting granular common borrow; providing institutional controls; and conducting groundwater monitoring. The net present value of Alternative 5 is approximately $340,000 (see Table 4-8). The cost of Alternative 5 is approximately six to 10 times less than the other alternatives.

Long-Term Effectiveness

All four alternatives are effective for soil contamination because either removal or containment would effectively reduce or minimize the risks to human health and the environment associated with the contaminants left in place. Institutional controls would be in place to ensure effectiveness of the remedy and to minimize exposure scenarios.

Alternative 5 would be less effective over the long term compared to the other three alternatives because the residual risk is greater due to contaminated soil and groundwater being left in place with contaminant levels greater than regulatory standards. Alternative 5 would require institutional controls in perpetuity. However, residual risk compared to the other alternatives would be minimal regarding exposure to contaminated soil and groundwater because the exposure pathways for direct contact, ingestion, and inhalation would be minimized or eliminated. Exposure and associated risk would be limited or negated because of the low permeability cap and implementation of institutional controls should future excavation in the area of residual contamination be completed.

Alternative 2 would be less effective than Alternative 4 over the long term because the residual risk is greater due to contaminated soil and groundwater being left in place with contaminant levels greater than regulatory standards. Alternative 2 would require institutional controls in perpetuity. The reliability of Alternative 2 is also slightly limited because there are many more factors determining the contaminant reduction quantity due to mixing, application rate, contaminant concentrations, and soil type. Also, remedial technologies used for Alternative 2 have not been used for many full-scale remediations regarding arsenic; therefore, long-term effectiveness is unknown and rebound of the contaminant concentrations is a possibility in both soil and groundwater. Also, complexation of arsenic may not be effective based on the current reducing conditions of the Site.

Alternative 3 would be the most effective over the long term because the risk associated with the contaminated soil is eliminated with excavation; moreover, the long-term risk associated with the contaminated groundwater is eliminated by removing the arsenic. Also, the magnitude of residual risk is small and institutional controls will not be required to manage the exposure to residual or remaining contaminated soil.

Alternative 4 would be less effective than Alternative 3 over the long term because the residual risk is greater due to contaminated soil being left in place with contaminant levels greater than regulatory standards. Alternative 4 would require institutional controls in perpetuity.

Management of Short-Term Risks

Short-term risks for implementation of the four alternatives are relatively low. Standard construction safety and traffic controls will be needed to provide safe operations. The primary risk to Site workers would be construction accidents during construction activities. Direct exposure to contaminated soil and groundwater would be limited because the quantity of soil and method of excavation or treatment do not typically require direct worker contact. Any contaminated soil and groundwater generated during construction activities would be managed in accordance with applicable laws for disposal.

The increased risk to the community for the four alternatives would primarily result from the increased traffic and construction resulting from the remedial actions. This risk can be controlled through increased traffic control and site security during remedial activities.

Short-term risks to the environment would be minimized by acquiring and maintaining compliance with required construction permits. Also, Site security and prior use of the Site as a commercial retail and parking area help to minimize exposures to the environment.

Implementability (Technical and Administrative)

Alternative 2 is the least technically implementable of the alternatives because full-scale implementation of both electrokinetic separation and in situ complexation of arsenic has not been accomplished and the technologies have only been shown effective in bench-scale treatability testing. Administratively, Alternative 2 is readily implementable. Alternative 2 would require the shortest time to complete remediation; however, the technologies used could cause a rebound in COC concentrations, which would substantially increase the completion time of the alternative.

Alternative 3 is technically implementable and GFH treatment of arsenic has been used in full-scale operations at multiple facilities; however, due to the limited groundwater chemistry data available for the Site (i.e., silica and phosphorus), the level of 4 µg/L arsenic (background) within the effluent may not be attainable. Also, acquiring an NPDES permit for the discharge of treated water through the storm drain into the Sammamish River may not be feasible. Alternatives 3 and 4 are equal in the completion time to remediate the Site.

Alternative 4 is technically implementable and the technologies have been used in full-scale operations at multiple facilities. The alternative depends on the acceptance of the arsenic-laden groundwater by the King County wastewater treatment plant without pretreatment. Depending on the effluent metals concentrations from the Site, acquiring a wastewater discharge permit may not be feasible. Alternatives 3 and 4 are equal in the completion time to remediate the Site.

Alternative 5 is technically implementable and the technologies have been used in full-scale operations at multiple facilities. Alternative 5 would be less administratively implementable because groundwater contamination exceeding cleanup standards would remain; however, based on limited groundwater sampling conducted during the RI, the arsenic levels in groundwater may be below cleanup standards at the point of compliance.

Consideration of Public Concerns

Ecology prepared a public participation program in accordance with WAC 173-340-410 for the Site. The City and Ecology will take into consideration reasonable public comments with respect to the final remedy for the soil contamination at the Site.

A summary comparison of the four selected alternatives based on the criteria listed in Section 4.9.1.2 is provided in Table 4-4.

4.9.2 Reasonable Restoration Time Frame

This section describes each reasonable restoration time frame criterion and compares each of the alternatives regarding the criteria.

4.9.2.1 Reasonable Restoration Time Frame Criteria and Evaluation

Specific requirements and procedures for determining whether a cleanup action provides for a reasonable restoration time frame, as required under WAC 173-340-360(2)(b)(i), are provided in WAC 173-340-360(4). Factors to be considered when determining whether a cleanup action provides for a reasonable restoration time frame and a discussion regarding the alternatives follow:

- Potential risk posed by the Site to human health and the environment—Currently, the only risks posed by the Site are from direct exposure to the contaminated soil, the potable use of groundwater, or to the occasional worker who may encounter contaminated soil and groundwater during trenching activities. The majority of the facility is paved thereby reducing the chance of direct exposure to contaminated soil. Risk due to the potable use of groundwater is mitigated because the affected groundwater is perched and is not used for potable water. Procedures can be taken to protect the worker's health during trenching activities. These facts are unaffected by any alternative; therefore, a fast restoration time frame is not required by the risk posed by the Site.

- Practicability of achieving a shorter restoration time frame—The cleanup time frame is less than six months for Alternative 2 for both soil and groundwater. The cleanup time frame for Alternatives 3, 4, and 5 is approximately 30 days for soil and up to approximately 10 years for groundwater. The groundwater cleanup time frame for Alternatives 3 and 4 depends on the ability of the pump and treat system to contain and extract the arsenic from the subsurface. The extraction rate of arsenic cannot be increased unless substantial deleterious changes are made to the perched aquifer including acidification.

- Current and future use of the Site, surrounding area, and associated resources that are or may be affected by releases from the Site—The current use of the Site, surrounding area, and associated resources are not anticipated to change until the realignment of SR 522. New receptors will not be introduced and further impacts to groundwater resources are not anticipated.

- Availability of alternative water supply—An alternative water supply is not necessary for the Site because any water used by current Site occupants comes from the municipal water supply. The perched groundwater that is affected is not used as a water supply.

- Likely effectiveness and reliability of institutional controls—Institutional controls, including excavation limitations and notifications, will be effective and reliable in preventing contact with the contaminated soil and groundwater under Alternatives 2, 4, and 5.
- Ability to control and monitor migration of hazardous substances—The migration of contaminants within the soil will be controlled by each of the alternatives. Groundwater monitoring will be performed to verify migration of the contaminants is not taking place.
- Toxicity of hazardous substances at the site—The toxicity of the contamination at the Site does not warrant a fast restoration time frame. Direct exposure to the contaminated soil is unlikely due to the current and future use of the Site. Groundwater exposure is also unlikely because the water is not used by the occupants of the Site or any off-Site receptors.
- Natural processes and reduced concentrations of hazardous substances—The natural degradation of petroleum hydrocarbons has been document at numerous other sites. The natural degradation of metals would occur through dilution and dispersion.

Based on consideration of all the subcriteria associated with the evaluation of the reasonable restoration time frame, as well as the various scenarios associated with the Site, Alternatives 2, 3, 4, and 5 provide restoration within a reasonable time frame.

4.9.3 Additional Performance Criteria

In addition to meeting the minimum requirements, MTCA provides direction regarding the requirements of alternatives on a number of other performance criteria. These criteria and the performance of the alternatives based on the criteria are described below.

4.9.3.1 Institutional Controls and Financial Assurances

WAC 173-340-360(2)(e) requires cleanup actions to use institutional controls and financial assurances where required under WAC 173-340-440. Institutional controls are actions taken to limit or prohibit activities that may interfere with the integrity of an interim or cleanup action or that may result in exposure of hazardous substances at a site. They are required to ensure the continued protection of human health and the environment and the integrity of an interim action. Institutional controls may include:

- Physical measures
- Restriction on the use of the property or affected resource
- Maintenance requirements for engineering controls
- Education programs
- Financial assurance

Alternatives 2, 4, and 5 will require institutional controls to notify workers prior to excavation in the area that contaminated soil and groundwater exist at levels above regulatory levels.

4.9.3.2 Release and Migration

Cleanup actions under MTCA (WAC 173-340-360(2)(f)) are required to prevent or minimize present and future releases and migration of hazardous substances in the environment. Alternatives 2, 3, and 4 prevent the migration of hazardous substances through the use of caps, destruction, and containment. Alternative 5 also prevents the migration of hazardous substances from the soil through the use of caps and containment; however, groundwater contamination is allowed to migrate to allow dilution and dispersion to reduce arsenic groundwater concentrations to below cleanup standards.

4.9.3.3 Dilution and Dispersion

Cleanup actions under MTCA (WAC 173-340-360(2)(g)) cannot rely primarily on dilution and dispersion unless the incremental costs of any active remedial measure grossly exceed the incremental degree of benefits of active remedial measures over the benefits of dilution and dispersion. Alternatives 2, 3, and 4 do not rely on the use of dilution or dispersion to achieve cleanup levels or eliminate exposure pathways. Alternative 5 does rely on the use of in situ groundwater dilution and dispersion to achieve arsenic cleanup levels at the point of compliance. Alternative 5 is approximately six to 10 times less costly than the other alternatives. The incremental degree of benefits of the active groundwater remediation for Alternatives 2, 3, and 4 is minimal versus the use of dilution and dispersion under Alternative 5. Also, the incremental residual risks and exposure scenarios associated with Alternative 5 are minimal as compared to the other alternatives.

4.9.3.4 Remediation Levels

Cleanup actions under MTCA (WAC 173-340-360(2)(h) that use remediation levels shall meet each of the minimum requirements specified above. Cleanup actions that use a remediation level are required, in part, to conduct a determination that a more permanent cleanup action is not practicable, based on a disproportionate cost analysis and a demonstration that the action is protective of human health and the environment. Remediation levels are not included as part of the implementation of the remedial alternatives.

4.10 PREFERRED ALTERNATIVE

Based on the analysis discussed above, Alternative 5, involving excavation, off-site disposal, low permeability cap, and monitored natural attenuation, is the recommended preferred alternative. Alternatives 2, 3, 4 and 5 meet the RAOs for the Site; however, Alternative 2 meets the RAOs on the shortest schedule. Also, Alternatives 2, 3, 4, and 5 meet the threshold criteria for the Site; although, Alternatives 2, 4, and 5 require the use of institutional controls to meet the cleanup standards for the Site at the point of compliance. However, the exposure potential and risks associated with the contaminated material left in place are minimal compared to Alternative 3. Alternatives 2, 3, 4, and 5 meet the permanent solutions criteria; however, Alternative 3 more fully matches the criteria for protectiveness, reduction of toxicity, mobility, volume, long-term effectiveness, and public concerns. Alternatives 2, 3, 4, and 5 meet the reasonable restoration time frame criteria; however, Alternatives 3, 4, and 5 require a longer time frame to achieve cleanup standards at the Site due to the groundwater remediation technologies employed. Finally, Alternatives 2, 3, 4, and 5 meet the additional performance criteria; however, Alternative 3 more fully matches the performance criteria because it does not use institutional controls, better prevents the migration of hazardous substances, does not use dilution or dispersion to meet the cleanup levels, and does not use remediation levels.

Alternative 3 more closely matches the evaluation criteria set forth by MTCA; however, based on a disproportional cost analysis, Alternative 5 is the recommended preferred alternative. The incremental degree of benefits of the active groundwater remediation alternatives is minimal compared to Alternative 5 because the restoration time frame is not substantially decreased, the treatment technologies associated with active groundwater treatment may not be able to treat arsenic to cleanup levels, and current off-Site groundwater arsenic levels downgradient from the Site are less than cleanup standards. The risks and potential exposure scenarios for human health and the environment associated with Alternative 5 compared to Alternative 3 are minimal and do not justify a 10-fold cost differential.

5. REFERENCES

CDM. 2009. Phase II Environmental Site Assessment, City of Bothell Crossroads Redevelopment Project, Bothell, Washington. Prepared for King County Solid Waste Division. June 26, 2009.

Ecology (Washington State Department of Ecology). 1994. Natural Background Soil Metals Concentrations in Washington State. Publication #94-115. October 1994.

Ecology. 2007. Model Toxics Control Act Cleanup Regulations. Washington Administrative Code (WAC) 173-340. November 2007.

EPA (U.S. Environmental Protection Agency). 1989. Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A), Interim Final. Office of Emergency and Remedial Response, Washington, D.C. EPA/540/1-89/002. July 1989.

EPA. 2001. EPA Technology Screening Matrix and Reference Guide, Version 4.0. Available at: http://www.frtr.gov/scrntools.htm.

EPA. 2006. Design Manual, Removal of Arsenic from Drinking Water Supplies by Iron Removal Process. U.S. Environmental Protection Agency. Office of Research and Development. National Risk Management Research Laboratory. EPA/600/R-06/030. April 2006.

HWA (HWA GeoSciences Inc). 2007. Phase II Environmental Site Assessment, Beta Bothell Landing Property, Parcels No. 9457200015 & 9457200020, Bothell, Washington. Prepared for the City of Bothell. November 1, 2007.

HWA. 2008a. Phase I Environmental Site Assessment, Victory Development Property, 18004 Bothell Way NE, Bothell, Washington. Prepared for City of Bothell. April 24, 2008.

HWA. 2008b. Phase I Environmental Site Assessment, Giannola Parcel / Parcel No. 9457200072, 18004 Bothell Way NE, Bothell, Washington. Prepared for City of Bothell. April 25, 2008.

HWA. 2008c. Phase II Environmental Site Assessment, Giannola Parcel / Parcel No. 9457200072, Bothell, Washington. Prepared for City of Bothell. April 30, 2008.

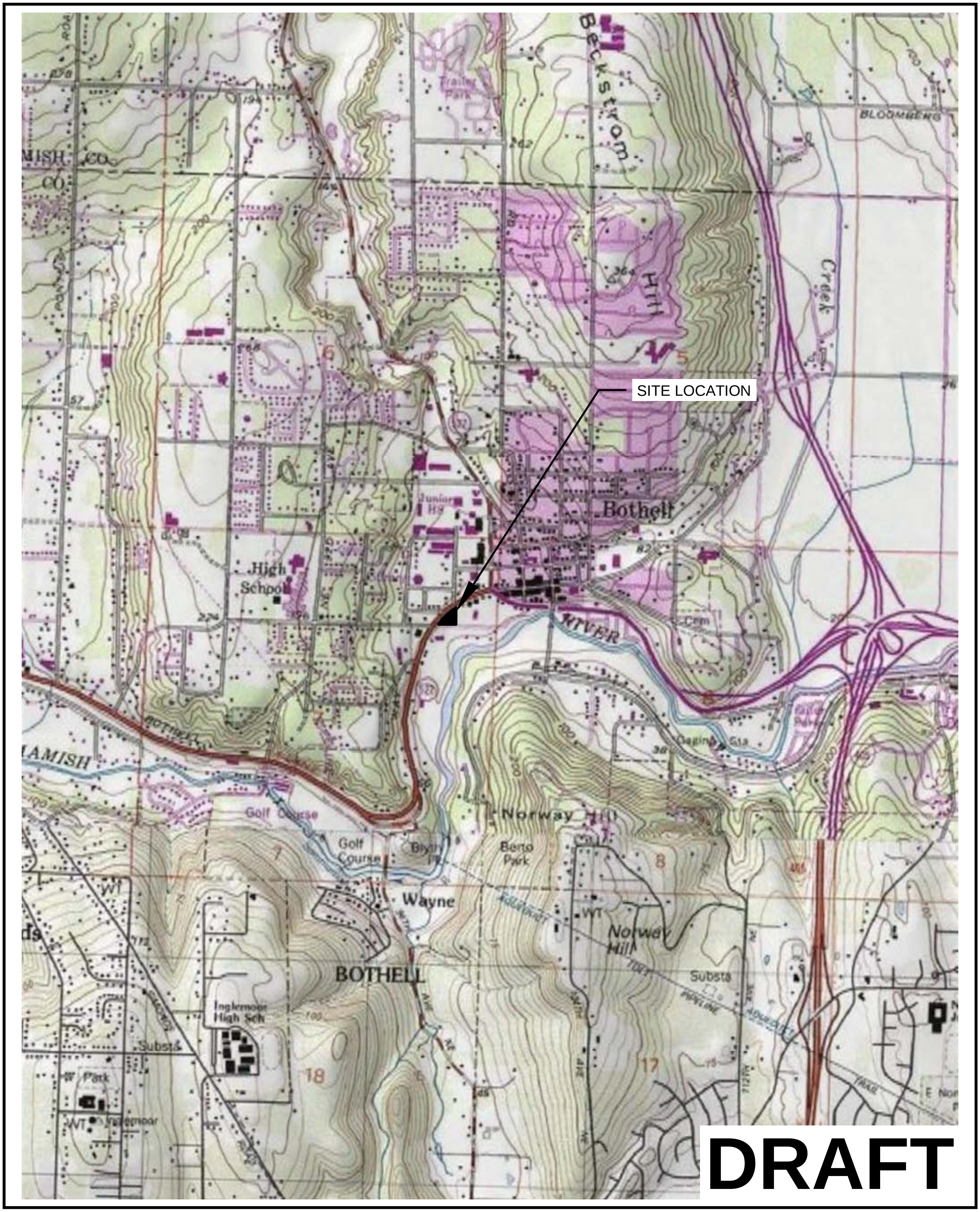
HWA. 2008d. Phase II Environmental Site Assessment, Victory Development Property Parcel No. 9457200081, Bothell, Washington. Prepared for City of Bothell. April 30, 2008.

HWA. 2009a. Remedial Investigation and Feasibility Study Work Plan, Bothell Paint and Decorating Facility, Bothell, Washington. Prepared for City of Bothell. Compiled by Parametrix. August 26, 2009.

HWA. 2009b. Aquifer Testing and Permeability Estimates, Bothell Crosroads RI/FS, Bothell, Washington. Prepared for City of Bothell. Compiled by Parametrix. October 6, 2009.

USGS (U.S. Geological Survey). 1981. Bothell Quadrangle. Washington State. 7.5 Minute Series Topographic. 1:24,000 Denver Colorado. 1951. Photo revised 1981.

FIGURES



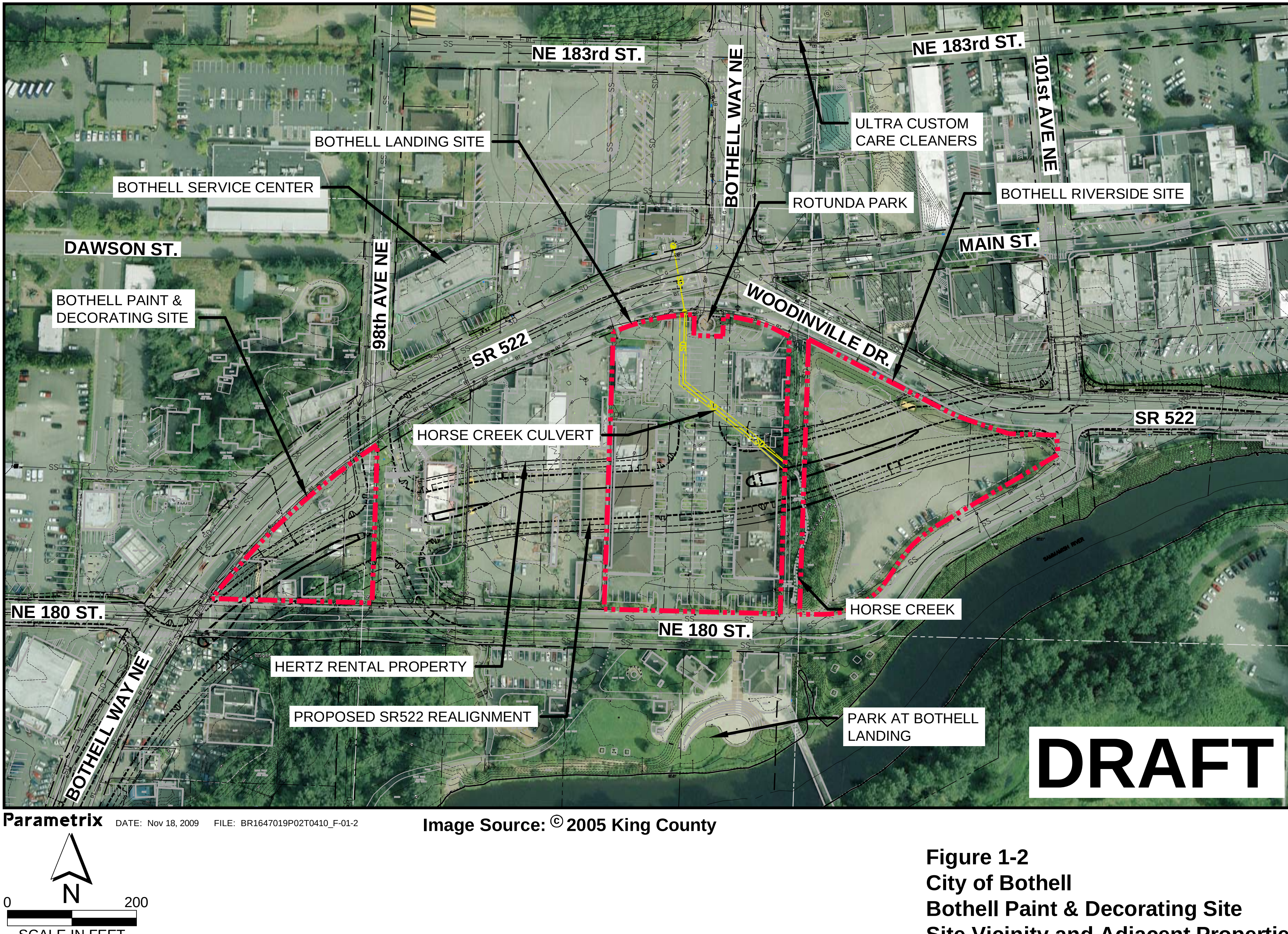
Parametrix DATE: Dec 03, 2009 FILE: BR1647019P02T0410_F-01-1 **Image Source: USGS Bothell Quadrangle 1981**

N

0 2,000

SCALE IN FEET

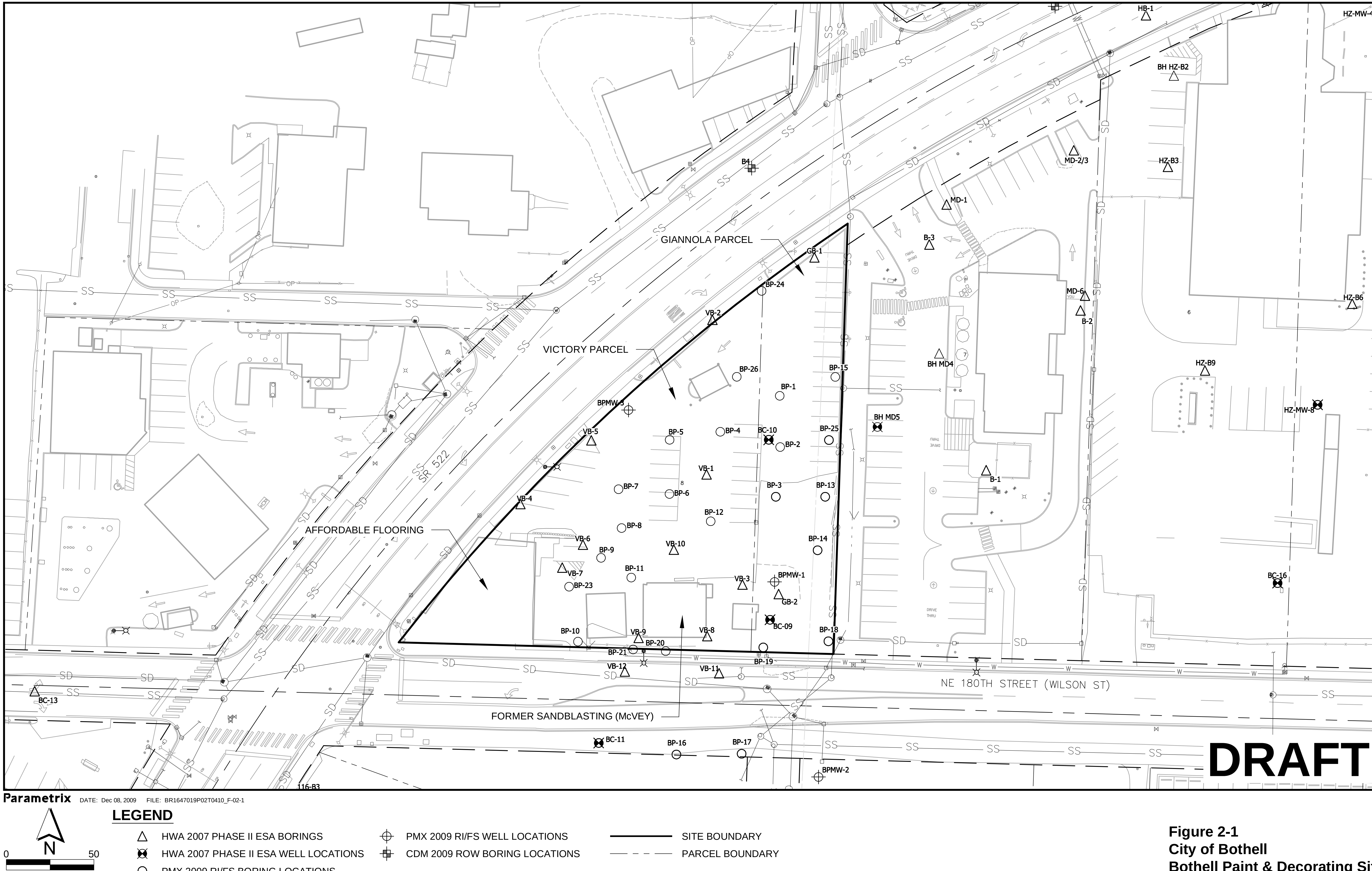
Figure 1-1
City of Bothell
Bothell Paint & Decorating Site
Site Vicinity



Parametrix DATE: Nov 18, 2009 FILE: BR1647019P02T0410_F-01-2

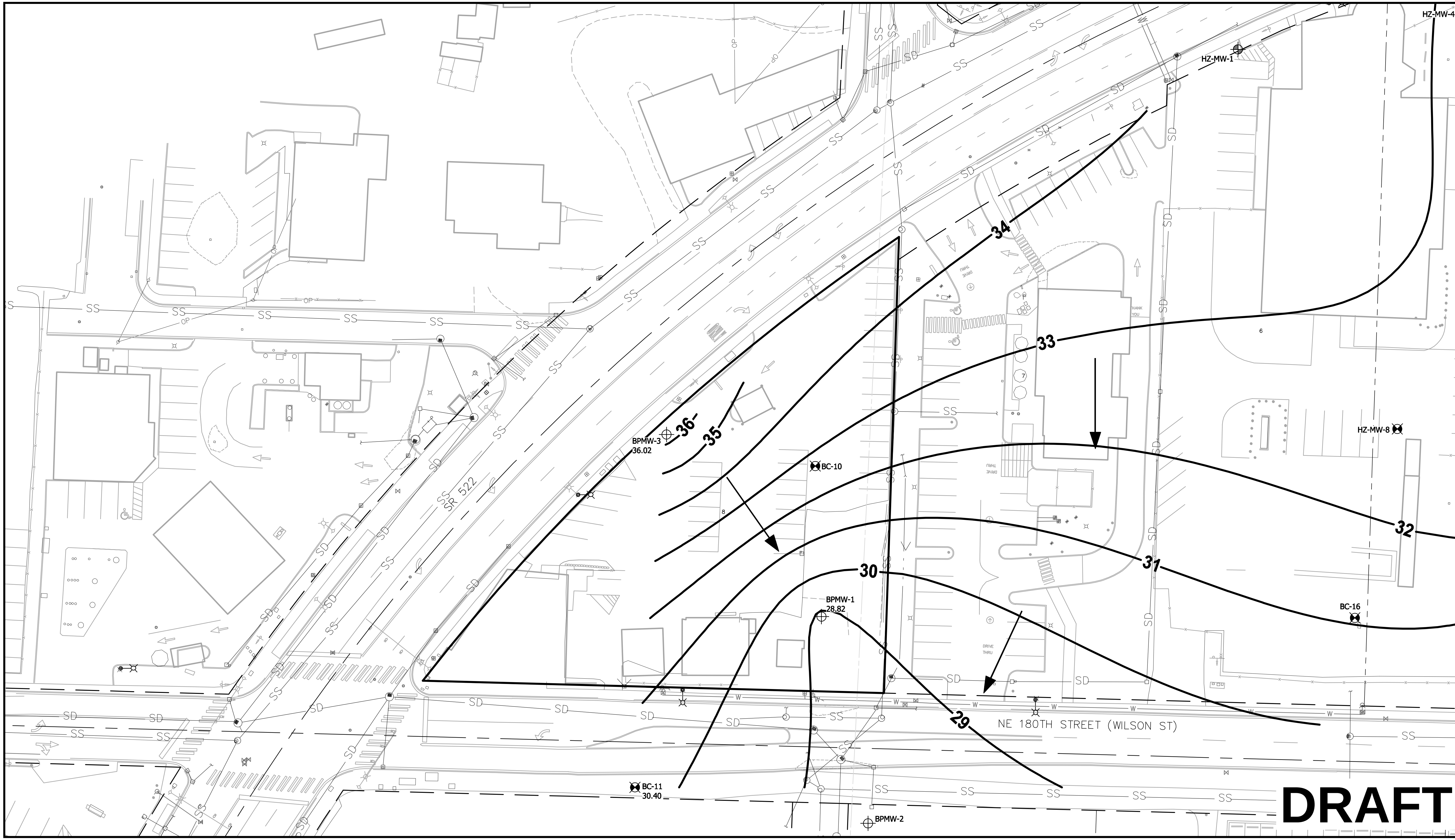
Image Source: © 2005 King County

Figure 1-2
City of Bothell
Bothell Paint & Decorating Site
Site Vicinity and Adjacent Properties



Parametrix DATE: Dec 08, 2009 FILE: BR1647019P02T0410_F-02-1

Figure 2-1
City of Bothell
Bothell Paint & Decorating Site
Site Plan



Parametrix DATE: Dec 08, 2009 FILE: BR1647019P02T0410_F-02-2

N

0 50

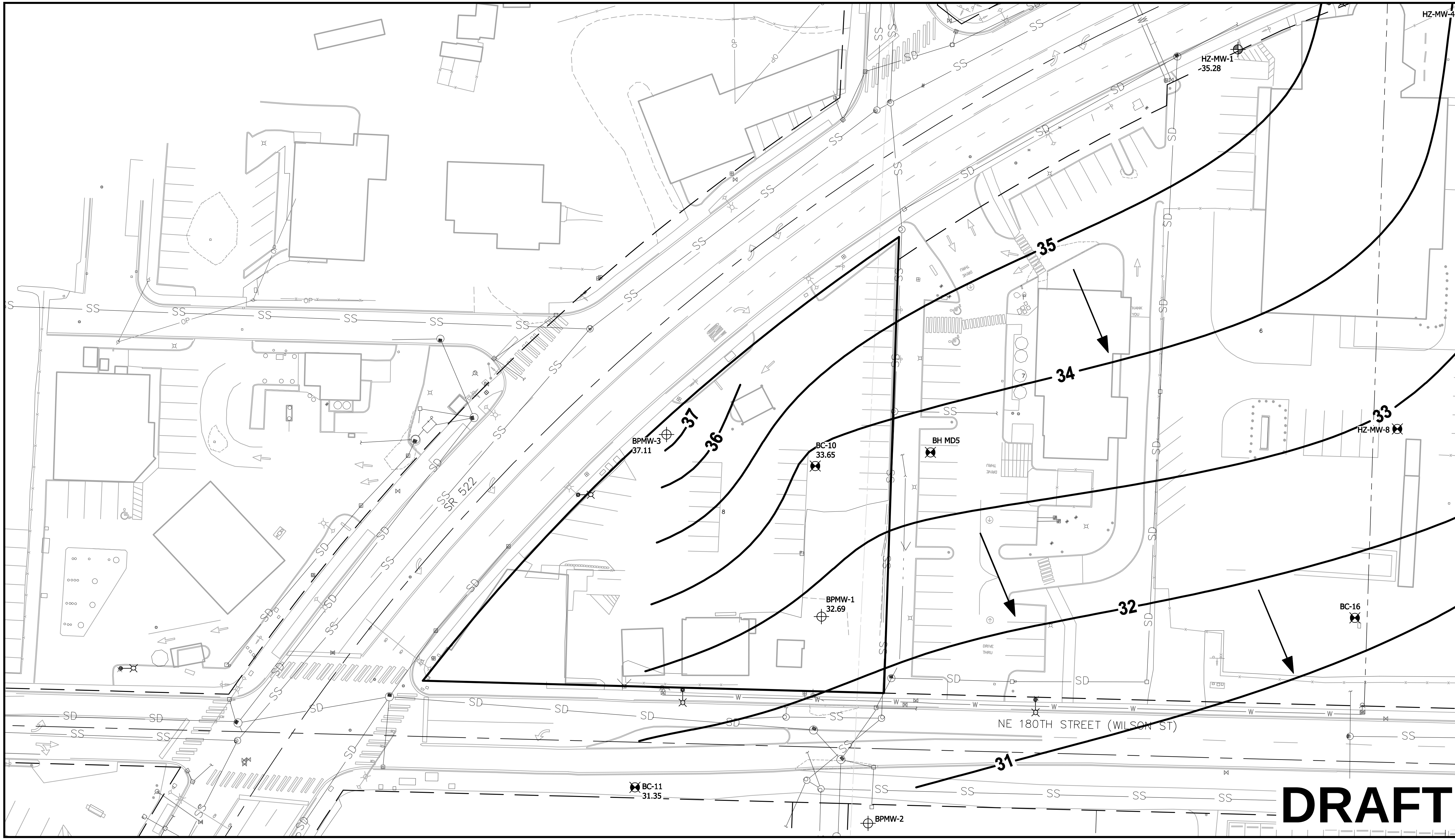
SCALE IN FEET

LEGEND

- HWA 2007 PHASE II ESA WELL LOCATIONS
- PMX 2009 RI/FS WELL LOCATIONS
- SITE BOUNDARY
- 27.06 GROUNDWATER TABLE ELEVATION MEASURED AT WELL ON 09/24/09
- 29 INFERRED POTENTIOMETRIC SURFACE ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

NOTE:
CONTOUR DATUM: NAVD 88

Figure 2-2
City of Bothell
Bothell Paint & Decorating Site
September 2009 Potentiometric Surface



Parametrix DATE: Dec 08, 2009 FILE: BR1647019P02T0410_F-02-3

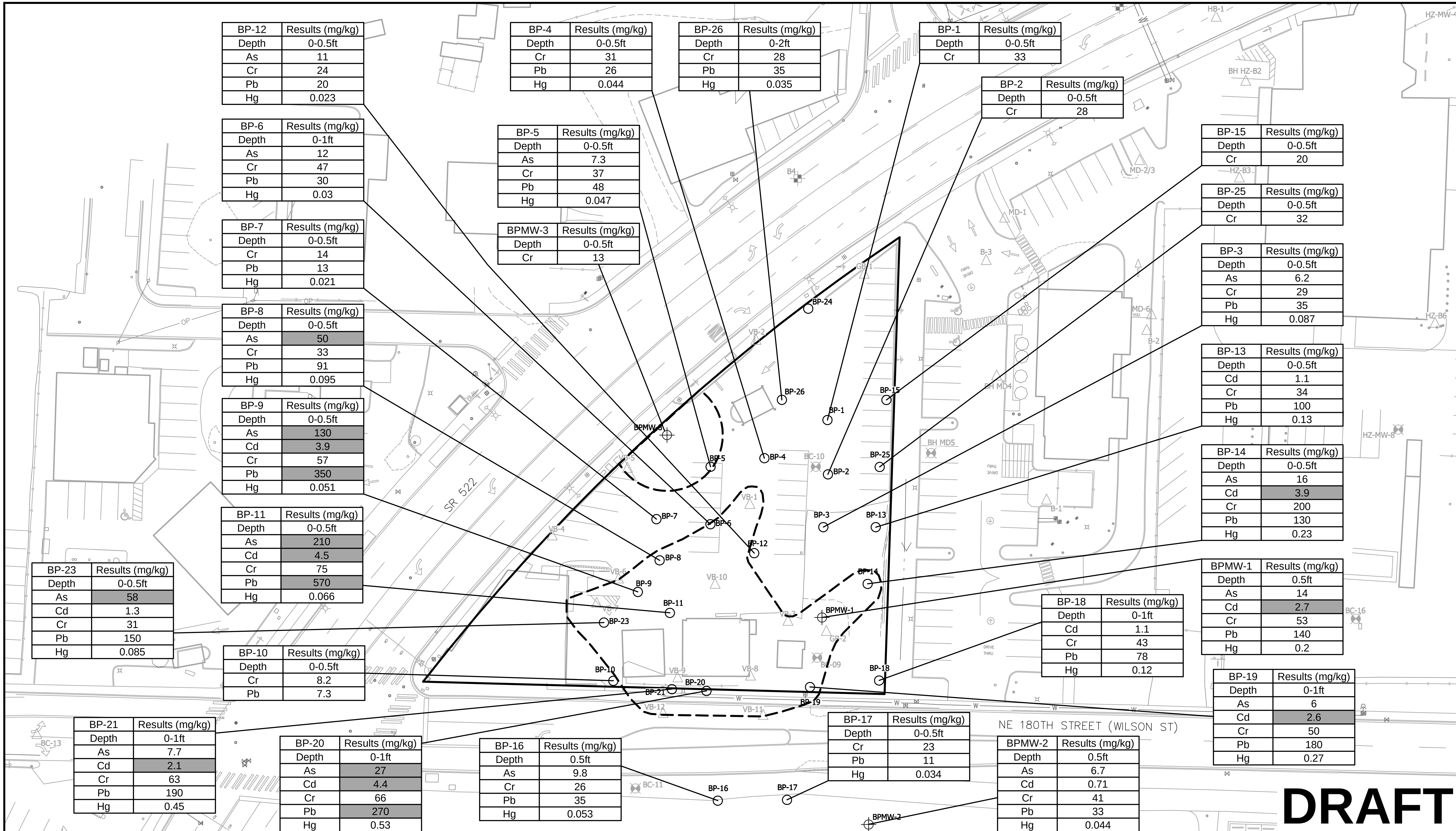
0 50
SCALE IN FEET

LEGEND

- HWA 2007 PHASE II ESA WELL LOCATIONS
- PMX 2009 RI/FS WELL LOCATIONS
- SITE BOUNDARY
- 27.06 GROUNDWATER TABLE ELEVATION MEASURED AT WELL ON 11/06/09
- 29 INFERRED POTENTIOMETRIC SURFACE ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

NOTE:
CONTOUR DATUM: NAVD 88

Figure 2-3
City of Bothell
Bothell Paint & Decorating Site
November 2009 Potentiometric Surface



BP-12	Results (mg/kg)
Depth	0-0.5ft
As	11
Cr	24
Pb	20
Hg	0.023

BP-4	Results (mg/kg)
Depth	0-0.5ft
Cr	31
Pb	26
Hg	0.044

BP-26	Results (mg/kg)
Depth	0-2ft
Cr	28
Pb	35
Hg	0.035

BP-1	Results (mg/kg)
Depth	0-0.5ft
Cr	33

BP-2	Results (mg/kg)
Depth	0-0.5ft
Cr	28

BP-6	Results (mg/kg)
Depth	0-1ft
As	12
Cr	47
Pb	30
Hg	0.03

BP-5	Results (mg/kg)
Depth	0-0.5ft
As	7.3
Cr	37
Pb	48
Hg	0.047

BP-15	Results (mg/kg)
Depth	0-0.5ft
Cr	20

BP-25	Results (mg/kg)
Depth	0-0.5ft
Cr	32

BP-7	Results (mg/kg)
Depth	0-0.5ft
Cr	14
Pb	13
Hg	0.021

BPMW-3	Results (mg/kg)
Depth	0-0.5ft
Cr	13

BP-3	Results (mg/kg)
Depth	0-0.5ft
As	6.2
Cr	29
Pb	35
Hg	0.087

BP-8	Results (mg/kg)
Depth	0-0.5ft
As	50
Cr	33
Pb	91
Hg	0.095

BP-13	Results (mg/kg)
Depth	0-0.5ft
Cd	1.1
Cr	34
Pb	100
Hg	0.13

BP-9	Results (mg/kg)
Depth	0-0.5ft
As	130
Cd	3.9
Cr	57
Pb	350
Hg	0.051

BP-14	Results (mg/kg)
Depth	0-0.5ft
As	16
Cd	3.9
Cr	200
Pb	130
Hg	0.23

BP-11	Results (mg/kg)
Depth	0-0.5ft
As	210
Cd	4.5
Cr	75
Pb	570
Hg	0.066

BP-23	Results (mg/kg)
Depth	0-0.5ft
As	58
Cd	1.3
Cr	31
Pb	150
Hg	0.085

BPMW-1	Results (mg/kg)
Depth	0.5ft
As	14
Cd	2.7
Cr	53
Pb	140
Hg	0.2

BP-18	Results (mg/kg)
Depth	0-1ft
Cd	1.1
Cr	43
Pb	78
Hg	0.12

BP-10	Results (mg/kg)
Depth	0-0.5ft
Cr	8.2
Pb	7.3

BP-19	Results (mg/kg)
Depth	0-1ft
As	6
Cd	2.6
Cr	50
Pb	180
Hg	0.27

BP-21	Results (mg/kg)
Depth	0-1ft
As	7.7
Cd	2.1
Cr	63
Pb	190
Hg	0.45

BP-20	Results (mg/kg)
Depth	0-1ft
As	27
Cd	4.4
Cr	66
Pb	270
Hg	0.53

BP-16	Results (mg/kg)
Depth	0.5ft
As	9.8
Cr	26
Pb	35
Hg	0.053

BP-17	Results (mg/kg)
Depth	0-0.5ft
Cr	23
Pb	11
Hg	0.034

BPMW-2	Results (mg/kg)
Depth	0.5ft
As	6.7
Cd	0.71
Cr	41
Pb	33
Hg	0.044

Parametrix DATE: Dec 08, 2009 FILE: BR1647019P02T0410_F-03-1

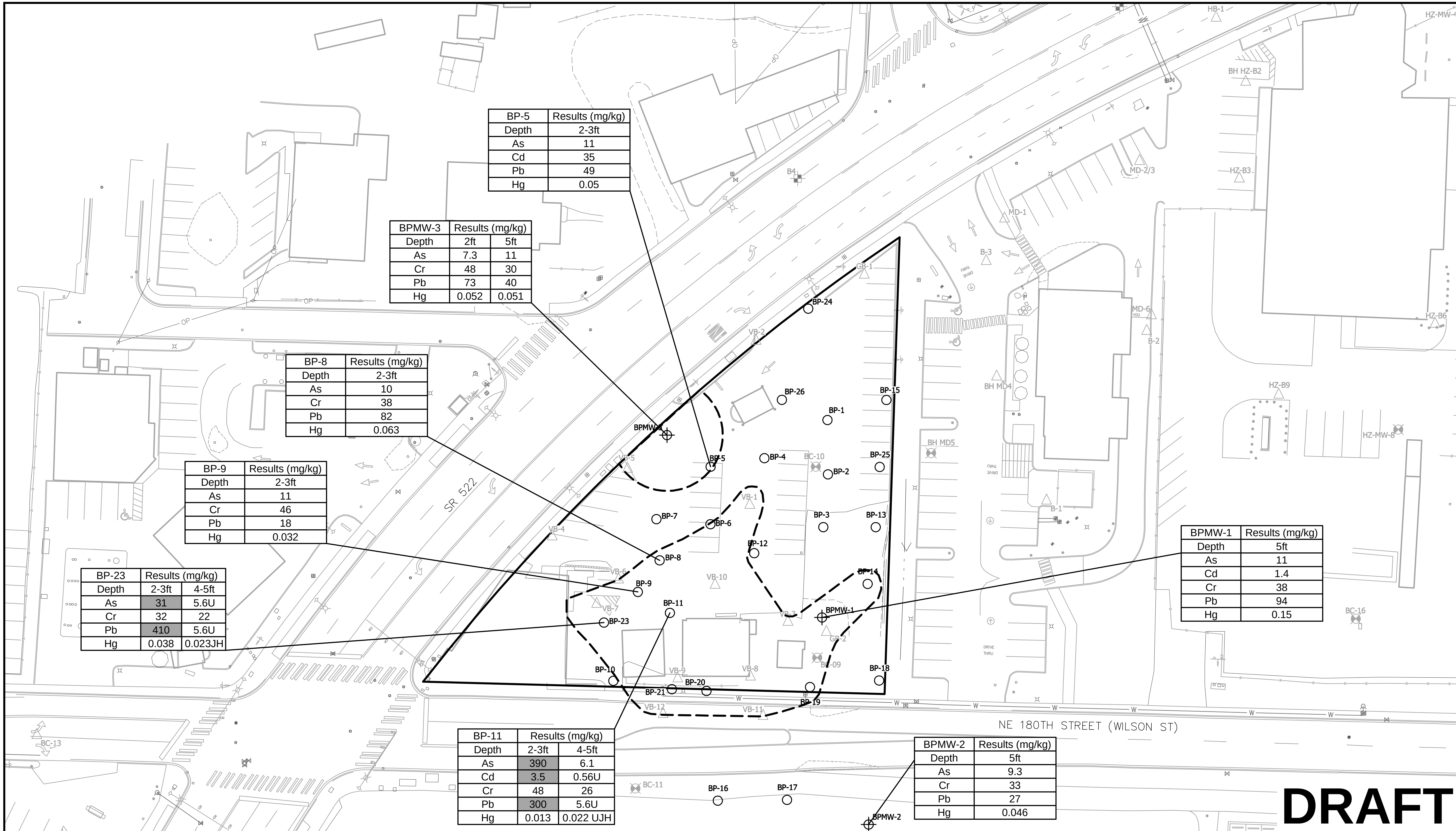
N

0 50
SCALE IN FEET

LEGEND

- HWA 2007 PHASE II ESA BORINGS
- HWA 2007 PHASE II ESA WELL LOCATIONS
- PMX 2009 RI/FS BORING LOCATIONS
- PMX 2009 RI/FS WELL LOCATIONS
- CDM 2009 ROW BORING LOCATIONS
- EXCEEDS MTCA METHOD A CLEAN UP LEVEL
- SITE BOUNDARY
- ESTIMATED EXTENT OF SOIL CONTAMINATED WITH METALS AND PETROLEUM ABOVE MTCA METHOD A CLEANUP LEVELS

Figure 3-1
City of Bothell
Bothell Paint & Decorating Site
RI/FS Soil Results for Metals in Surface Soil



BP-5	Results (mg/kg)
Depth	2-3ft
As	11
Cd	35
Pb	49
Hg	0.05

BPMW-3	Results (mg/kg)	
Depth	2ft	5ft
As	7.3	11
Cr	48	30
Pb	73	40
Hg	0.052	0.051

BP-8	Results (mg/kg)
Depth	2-3ft
As	10
Cr	38
Pb	82
Hg	0.063

BP-9	Results (mg/kg)
Depth	2-3ft
As	11
Cr	46
Pb	18
Hg	0.032

BP-23	Results (mg/kg)	
Depth	2-3ft	4-5ft
As	31	5.6U
Cr	32	22
Pb	410	5.6U
Hg	0.038	0.023JH

BPMW-1	Results (mg/kg)
Depth	5ft
As	11
Cd	1.4
Cr	38
Pb	94
Hg	0.15

BP-11	Results (mg/kg)	
Depth	2-3ft	4-5ft
As	390	6.1
Cd	3.5	0.56U
Cr	48	26
Pb	300	5.6U
Hg	0.013	0.022 UJH

BPMW-2	Results (mg/kg)
Depth	5ft
As	9.3
Cr	33
Pb	27
Hg	0.046

Parametrix DATE: Dec 08, 2009 FILE: BR1647019P02T0410_F-03-2

N

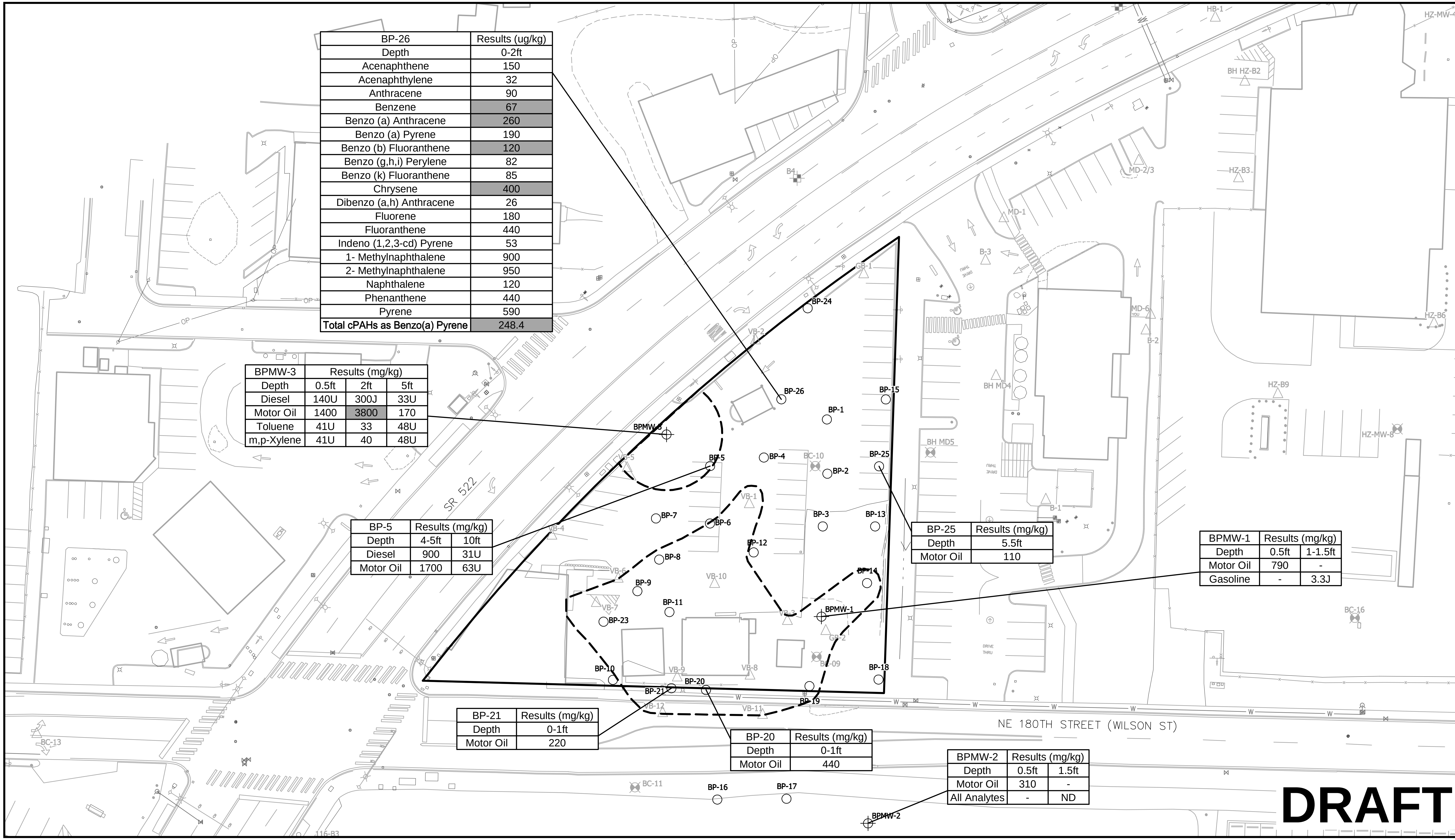
0 50

SCALE IN FEET

LEGEND

- HWA 2007 PHASE II ESA BORINGS
- HWA 2007 PHASE II ESA WELL LOCATIONS
- PMX 2009 RI/FS BORING LOCATIONS
- PMX 2009 RI/FS WELL LOCATIONS
- CDM 2009 ROW BORING LOCATIONS
- SITE BOUNDARY
- U ANALYTE NOT DETECTED AT GIVEN PRACTICAL QUANTITATION LIMIT
- ND NOT DETECTED
- UJH ESTIMATED CONCENTRATION HOLDING TIME EXCEEDED
- EXCEEDS MTCA METHOD A CLEAN UP LEVEL
- ESTIMATED EXTENT OF SOIL CONTAMINATED WITH METALS AND PETROLEUM ABOVE MTCA METHOD A CLEANUP LEVELS

Figure 3-2
City of Bothell
Bothell Paint & Decorating Site
RI/FS Soil Results for Metals in Subsurface Soil



BP-26	Results (ug/kg)
Depth	0-2ft
Acenaphthene	150
Acenaphthylene	32
Anthracene	90
Benzene	67
Benzo (a) Anthracene	260
Benzo (a) Pyrene	190
Benzo (b) Fluoranthene	120
Benzo (g,h,i) Perylene	82
Benzo (k) Fluoranthene	85
Chrysene	400
Dibenzo (a,h) Anthracene	26
Fluorene	180
Fluoranthene	440
Indeno (1,2,3-cd) Pyrene	53
1- Methylnaphthalene	900
2- Methylnaphthalene	950
Naphthalene	120
Phenanthene	440
Pyrene	590
Total cPAHs as Benzo(a) Pyrene	248.4

BPMW-3	Results (mg/kg)		
Depth	0.5ft	2ft	5ft
Diesel	140U	300J	33U
Motor Oil	1400	3800	170
Toluene	41U	33	48U
m,p-Xylene	41U	40	48U

BP-5	Results (mg/kg)	
Depth	4-5ft	10ft
Diesel	900	31U
Motor Oil	1700	63U

BP-25	Results (mg/kg)
Depth	5.5ft
Motor Oil	110

BPMW-1	Results (mg/kg)	
Depth	0.5ft	1-1.5ft
Motor Oil	790	-
Gasoline	-	3.3J

BP-21	Results (mg/kg)
Depth	0-1ft
Motor Oil	220

BP-20	Results (mg/kg)
Depth	0-1ft
Motor Oil	440

BPMW-2	Results (mg/kg)	
Depth	0.5ft	1.5ft
Motor Oil	310	-
All Analytes	-	ND

Parametrix DATE: Dec 08, 2009 FILE: BR1647019P02T0410_F-03-3

N

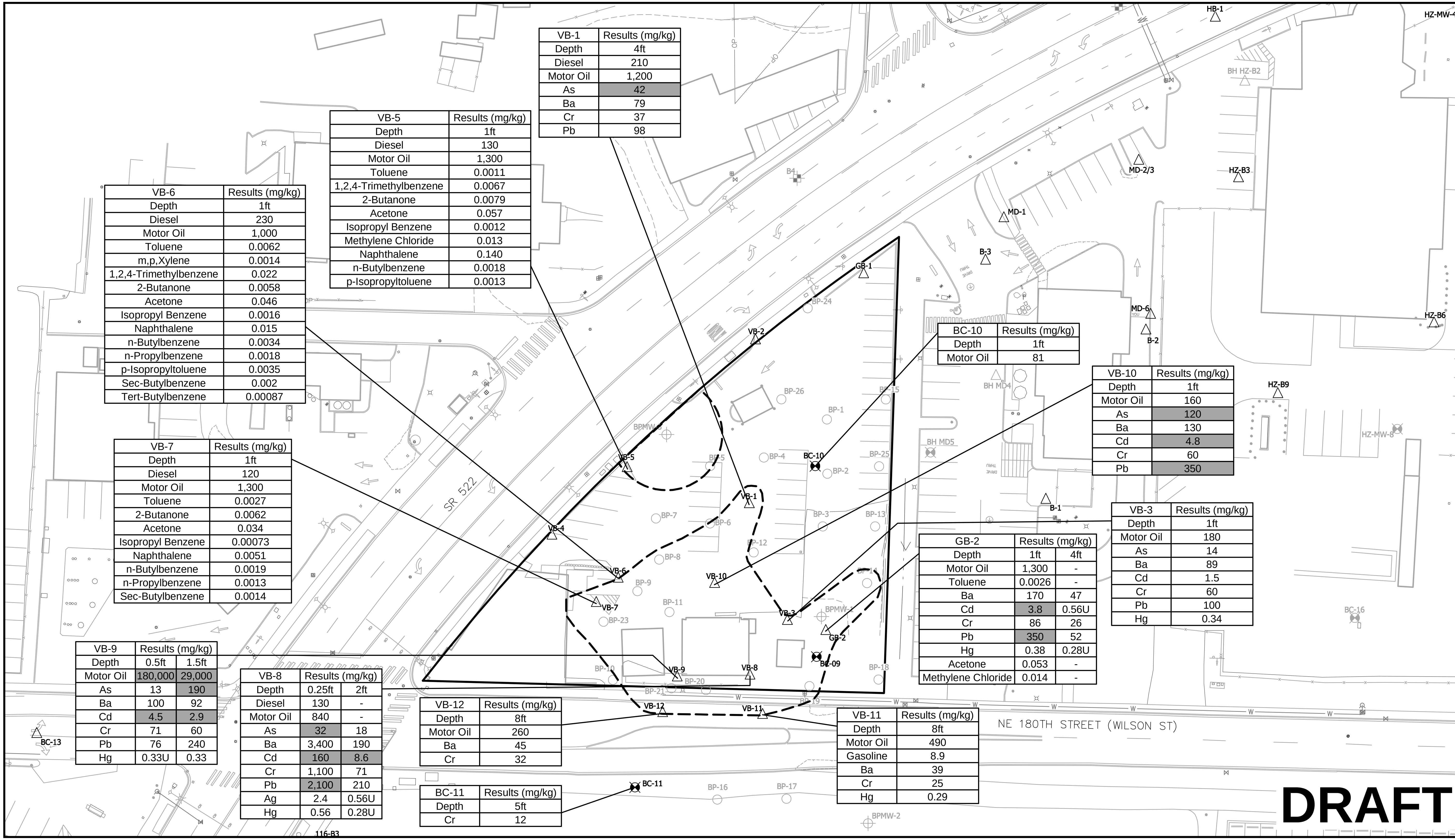
0 50

SCALE IN FEET

LEGEND

- HWA 2007 PHASE II ESA BORINGS
- HWA 2007 PHSE II ESA WELL LOCATIONS
- PMX 2009 RI/FS BORING LOCATIONS
- PMX 2009 RI/FS WELL LOCATIONS
- CDM 2009 ROW BORING LOCATIONS
- ESTIMATED EXTENT OF SOIL CONTAMINATED WITH METALS AND PETROLEUM ABOVE MTCA METHOD A CLEANUP LEVELS
- J ESTIMATED CONCENTRATION
- U ANALYTE NOT DETECTED AT GIVEN PRACTICAL QUANTITATION LIMIT
- EXCEEDS MTCA METHOD A CLEAN UP LEVEL
- SITE BOUNDARY

Figure 3-3
City of Bothell
Bothell Paint & Decorating Site
RI/FS Soil Results for TPH, cPAHs, SVOCs, & BTEX Compounds



VB-1	Results (mg/kg)
Depth	4ft
Diesel	210
Motor Oil	1,200
As	42
Ba	79
Cr	37
Pb	98

VB-5	Results (mg/kg)
Depth	1ft
Diesel	130
Motor Oil	1,300
Toluene	0.0011
1,2,4-Trimethylbenzene	0.0067
2-Butanone	0.0079
Acetone	0.057
Isopropyl Benzene	0.0012
Methylene Chloride	0.013
Naphthalene	0.140
n-Butylbenzene	0.0018
p-Isopropyltoluene	0.0013

VB-6	Results (mg/kg)
Depth	1ft
Diesel	230
Motor Oil	1,000
Toluene	0.0062
m,p,Xylene	0.0014
1,2,4-Trimethylbenzene	0.022
2-Butanone	0.0058
Acetone	0.046
Isopropyl Benzene	0.0016
Naphthalene	0.015
n-Butylbenzene	0.0034
n-Propylbenzene	0.0018
p-Isopropyltoluene	0.0035
Sec-Butylbenzene	0.002
Tert-Butylbenzene	0.00087

VB-7	Results (mg/kg)
Depth	1ft
Diesel	120
Motor Oil	1,300
Toluene	0.0027
2-Butanone	0.0062
Acetone	0.034
Isopropyl Benzene	0.00073
Naphthalene	0.0051
n-Butylbenzene	0.0019
n-Propylbenzene	0.0013
Sec-Butylbenzene	0.0014

BC-10	Results (mg/kg)
Depth	1ft
Motor Oil	81

VB-10	Results (mg/kg)
Depth	1ft
Motor Oil	160
As	120
Ba	130
Cd	4.8
Cr	60
Pb	350

VB-3	Results (mg/kg)
Depth	1ft
Motor Oil	180
As	14
Ba	89
Cd	1.5
Cr	60
Pb	100
Hg	0.34

GB-2	Results (mg/kg)	
Depth	1ft	4ft
Motor Oil	1,300	-
Toluene	0.0026	-
Ba	170	47
Cd	3.8	0.56U
Cr	86	26
Pb	350	52
Hg	0.38	0.28U
Acetone	0.053	-
Methylene Chloride	0.014	-

VB-9	Results (mg/kg)	
Depth	0.5ft	1.5ft
Motor Oil	180,000	29,000
As	13	190
Ba	100	92
Cd	4.5	2.9
Cr	71	60
Pb	76	240
Hg	0.33U	0.33

VB-8	Results (mg/kg)	
Depth	0.25ft	2ft
Diesel	130	-
Motor Oil	840	-
As	32	18
Ba	3,400	190
Cd	160	8.6
Cr	1,100	71
Pb	2,100	210
Ag	2.4	0.56U
Hg	0.56	0.28U

VB-12	Results (mg/kg)
Depth	8ft
Motor Oil	260
Ba	45
Cr	32

BC-11	Results (mg/kg)
Depth	5ft
Cr	12

VB-11	Results (mg/kg)
Depth	8ft
Motor Oil	490
Gasoline	8.9
Ba	39
Cr	25
Hg	0.29

Parametrix DATE: Dec 08, 2009 FILE: BR1647019P02T0410_F-03-4

LEGEND

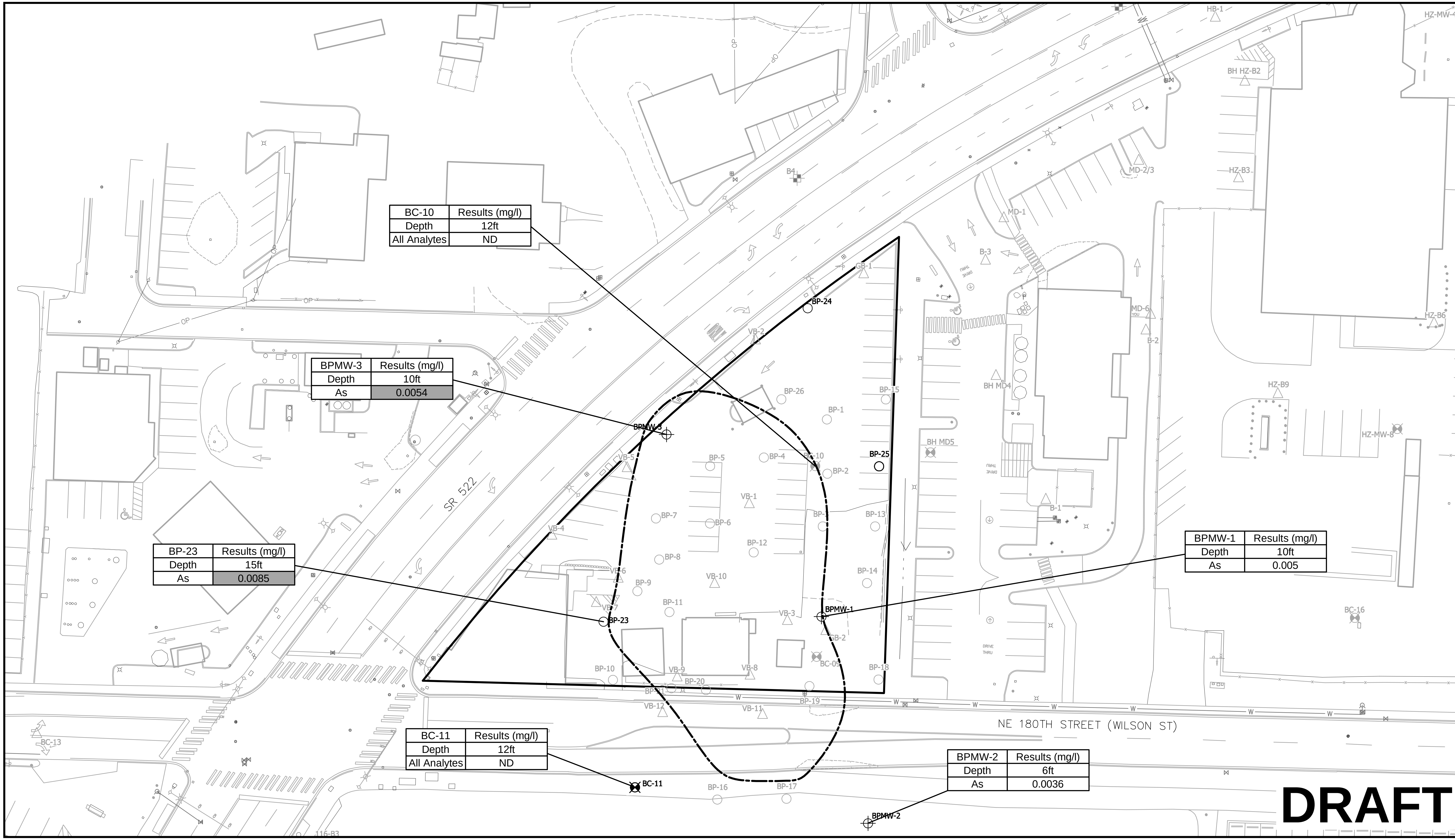
- HWA 2007 PHASE II ESA BORINGS
- HWA 2007 PHSE II ESA WELL LOCATIONS
- PMX 2009 RI/FS BORING LOCATIONS
- PMX 2009 RI/FS WELL LOCATIONS
- PMX 2009 RI/FS SURFACE SOIL LOCATIONS
- CDM 2009 ROW BORING LOCATIONS
- J ESTIMATED CONCENTRATION
- U ANALYTE NOT DETECTED AT GIVEN PRACTICAL QUANTITATION LIMIT
- SITE BOUNDARY
- EXCEEDS MTCA METHOD A CLEAN UP LEVEL
- ESTIMATED EXTENT OF SOIL CONTAMINATED WITH METALS AND PETROLEUM ABOVE MTCA METHOD A CLEANUP LEVELS

N

0 50

SCALE IN FEET

Figure 3-4
City of Bothell
Bothell Paint & Decorating Site
Historical Soil Results



Parametrix DATE: Dec 08, 2009 FILE: BR1647019P02T0410_F-03-5

LEGEND

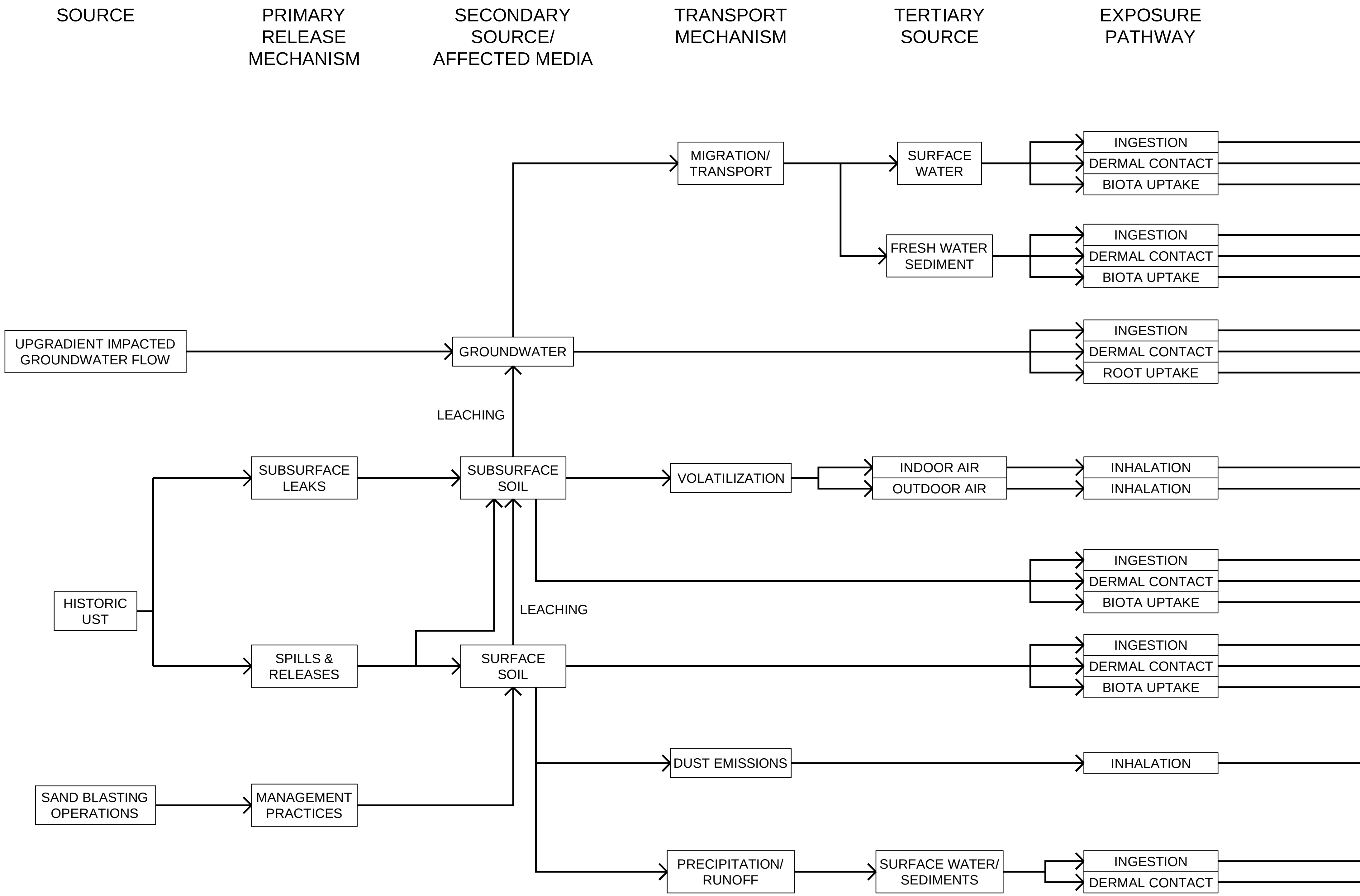
- HWA 2007 PHASE II ESA BORINGS
- HWA 2007 PHASE II ESA WELL LOCATIONS
- PMX 2009 RI/FS BORING LOCATIONS
- PMX 2009 RI/FS WELL LOCATIONS
- CDM 2009 ROW BORING LOCATIONS
- ND NOT DETECTED
- EXCEEDS MTCA METHOD A CLEAN UP LEVEL
- SITE BOUNDARY
- ESTIMATED AREA OF GROUNDWATER CONTAMINATED ABOVE MTCA METHOD A CLEAN UP LEVELS

N

0 50

SCALE IN FEET

Figure 3-5
City of Bothell
Bothell Paint & Decorating Site
Groundwater Results for Dissolved Metals



Tertiary Source / Affected Media	Exposure Pathway	NON-INTRUSIVE CURRENT WORKER/VISITOR	NON-INTRUSIVE FUTURE WORKER/VISITOR	INTRUSIVE WORKER	OFF-SITE RECREATIONAL USER	ON-SITE ECOLOGICAL	OFF-SITE ECOLOGICAL
SURFACE WATER	INGESTION	O	O	O	X	O	X
SURFACE WATER	DERMAL CONTACT	O	O	O	X	O	X
SURFACE WATER	BIOTA UPTAKE	O	O	O	X	O	X
FRESH WATER SEDIMENT	INGESTION	O	O	O	O	O	X
FRESH WATER SEDIMENT	DERMAL CONTACT	O	O	O	X	O	X
FRESH WATER SEDIMENT	BIOTA UPTAKE	O	O	O	X	O	X
GROUNDWATER	INGESTION	O	O	X	O	O	O
GROUNDWATER	DERMAL CONTACT	O	O	X	O	O	O
GROUNDWATER	ROOT UPTAKE	O	O	O	O	X	O
INDOOR AIR	INHALATION	X	X	O	O	O	O
OUTDOOR AIR	INHALATION	X	X	X	O	O	O
SUBSURFACE SOIL	INGESTION	O	O	X	O	O	O
SUBSURFACE SOIL	DERMAL CONTACT	O	O	X	O	O	O
SUBSURFACE SOIL	BIOTA UPTAKE	O	O	O	O	X	O
SURFACE SOIL	INGESTION	O	X	X	O	X	O
SURFACE SOIL	DERMAL CONTACT	O	X	X	O	X	O
SURFACE SOIL	BIOTA UPTAKE	O	O	O	O	X	O
DUST EMISSIONS	INHALATION	O	X	X	O	X	O
SURFACE WATER/ SEDIMENTS	INGESTION	O	O	O	X	O	X
SURFACE WATER/ SEDIMENTS	DERMAL CONTACT	O	O	O	X	O	X

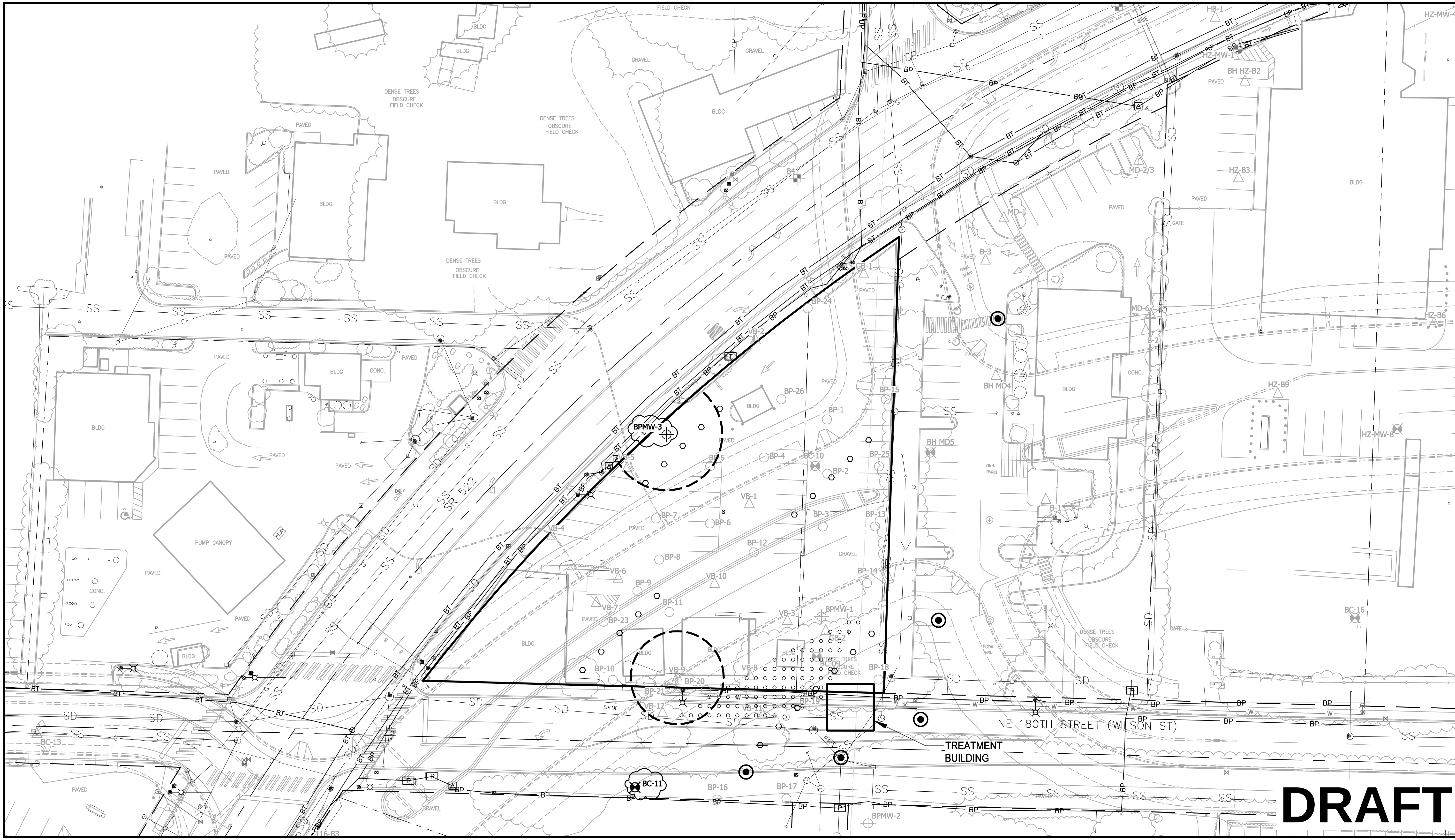
Parametrix DATE: Nov 16, 2009 FILE: BR1647019P02T0410_F-03-6

LEGEND

X COMPLETE
O INCOMPLETE

DRAFT

Figure 3-6
City of Bothell
Bothell Paint & Decorating Site
Conceptual Site Model



Parametrix DATE: Dec 08, 2009 FILE: BR1647019P02T0410_F-04-1

N

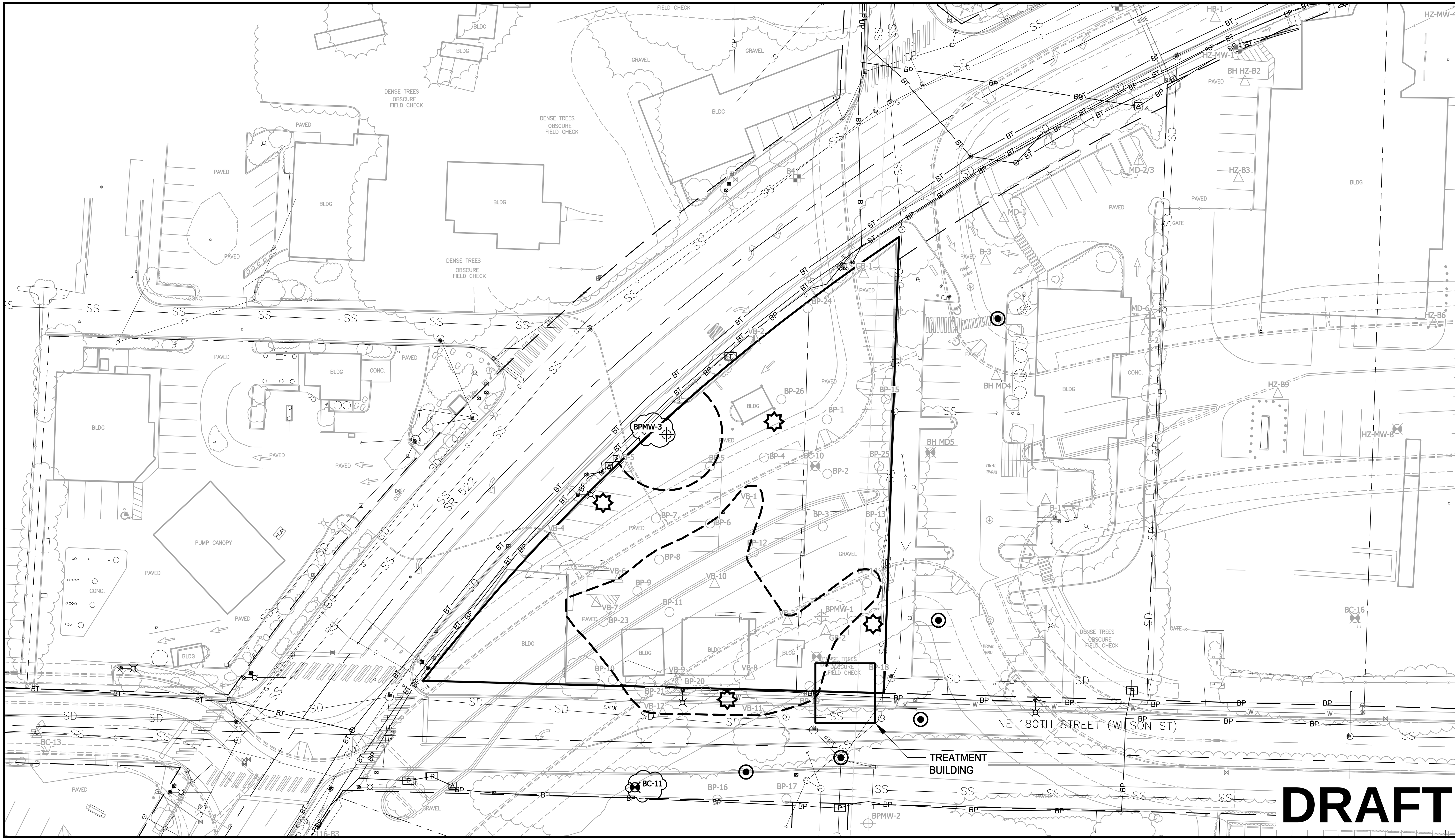
0 50

SCALE IN FEET

LEGEND

- PROPOSED MRC INJECTION WELLS
- PROPOSED ELECTROKINETIC SEPARATION WELLS
- PROPOSED NEW MONITORING WELLS
- AREAS OF SOIL REMEDIATION VIA CHEMICAL OXIDATION
- EXISTING MONITORING WELL TO BE USED FOR LONG TERM MONITORING
- SITE BOUNDARY

Figure 4-1
City of Bothell
Bothell Paint & Decorating Site
Remedial Alternative 2



Parametrix DATE: Dec 08, 2009 FILE: BR1647019P02T0410_F-04-2

N

0 50

SCALE IN FEET

LEGEND

PROPOSED NEW EXTRACTION WELLS

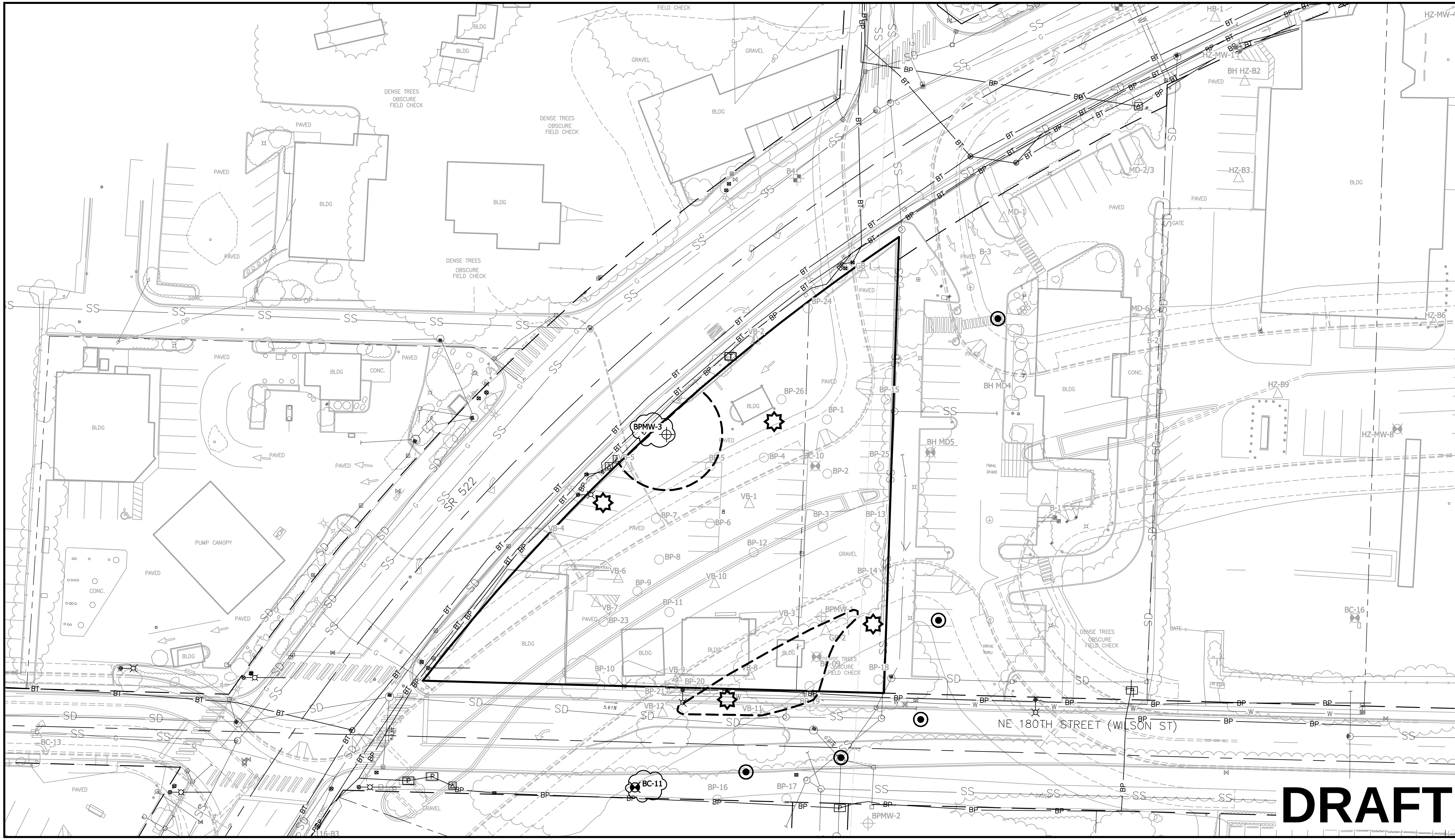
PROPOSED NEW MONITORING WELLS

AREAS OF SOIL REMEDIATION VIA EXCAVATION

EXISTING MONITORING WELL TO BE USED FOR LONG TERM MONITORING

SITE BOUNDARY

Figure 4-2
City of Bothell
Bothell Paint & Decorating Site
Remedial Alternative 3



Parametrix DATE: Dec 08, 2009 FILE: BR1647019P02T0410_F-04-3

N

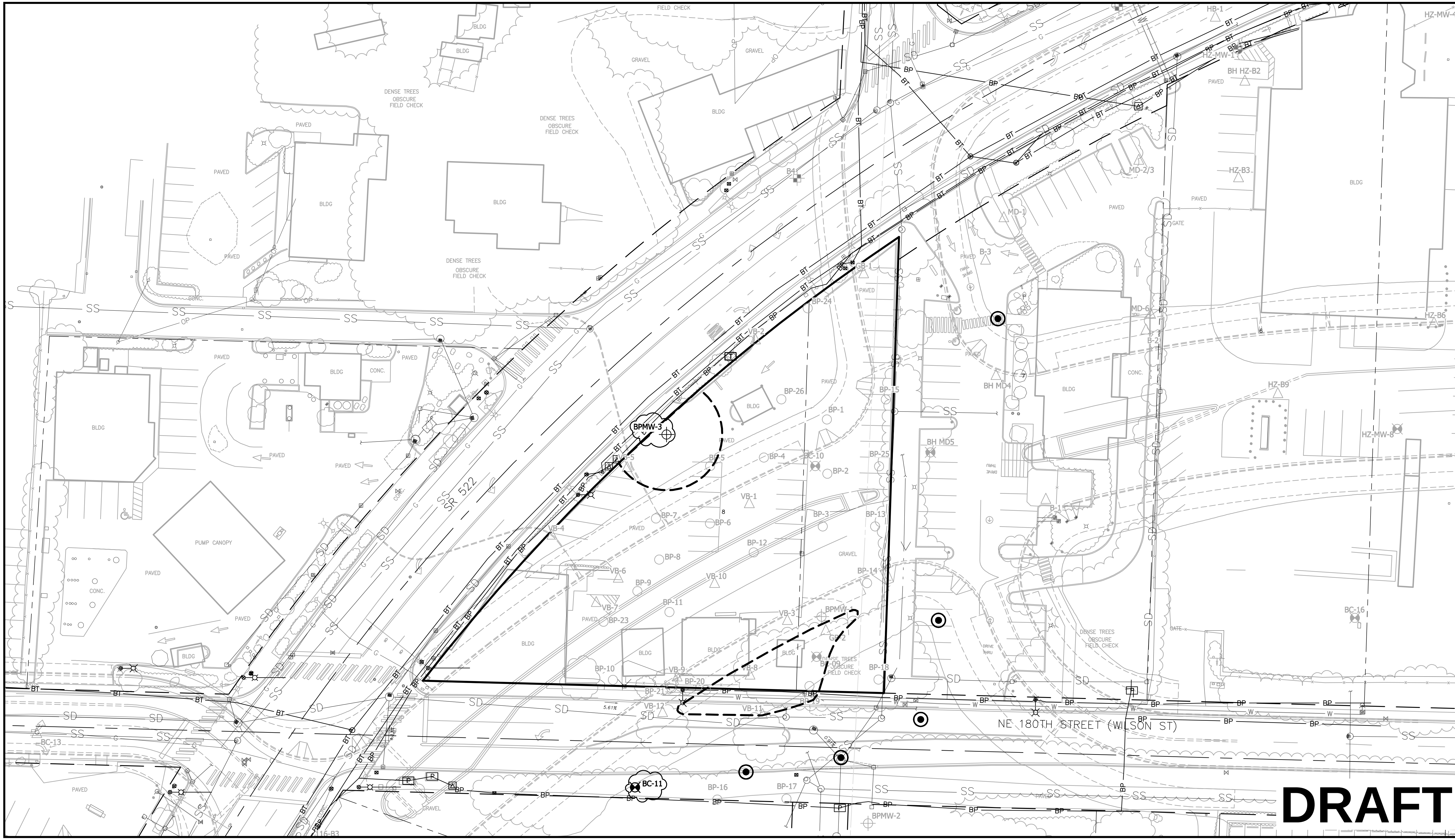
0 50

SCALE IN FEET

LEGEND

- PROPOSED NEW EXTRACTION WELLS
- PROPOSED NEW MONITORING WELLS
- AREAS OF SOIL REMEDIATION VIA EXCAVATION
- EXISTING MONITORING WELL TO BE USED FOR LONG TERM MONITORING
- SITE BOUNDARY

Figure 4-3
City of Bothell
Bothell Paint & Decorating Site
Remedial Alternative 4



Parametrix DATE: Dec 08, 2009 FILE: BR1647019P02T0410_F-04-4

N

0 50

SCALE IN FEET

LEGEND

- PROPOSED NEW MONITORING WELLS
- SITE BOUNDARY
- AREAS OF SOIL REMEDIATION VIA EXCAVATION
- EXISTING MONITORING WELL TO BE USED FOR LONG TERM MONITORING

Figure 4-4
City of Bothell
Bothell Paint & Decorating Site
Remedial Alternative 5

TABLES

Table 3-1. Summary of Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: / Depth (ft): / Background	BP-1 0'-0.5' / 0-0.5 / 9/2/2009	BP-2 0-0.5 / 0-0.5 / 9/2/2009	BP-3 0-0.5 / 0-0.5 / 9/2/2009	BP-4 0-0.5 / 0-0.5 / 9/2/2009	BP-5 0-0.5 / 10 / 9/2/2009	BP-5 2-3 / 2-3 / 9/2/2009	BP-5 4-5 / 4-5 / 9/2/2009	BP-5 10 / 10 / 9/2/2009	BP-6 0-1 / 0-1 / 9/2/2009	BP-7 0-0.5 / 0-0.5 / 9/2/2009
PETROLEUM HYDROCARBONS																
Diesel	mg/kg	NWTPH-Dx	2,000		200		- -	- -	- -	- -	- -	- -	**900**	31 U	- -	- -
Motor Oil	mg/kg	NWTPH-Dx	2,000				- -	- -	- -	- -	- -	- -	1,700	63 U	- -	- -
Gasoline	mg/kg	NWTPH-Gx	30/100*G		100		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzene	µg/kg	SW8021B	30	4.483			- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Toluene	µg/kg	SW8021B	7,000				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
m,p-Xylene	µg/kg	SW8021B	9,000*XY				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
METALS																
Arsenic	mg/kg	SW6010B-Total	20	2.803	7	7.30	5.3 U	5.3 U	6.2	5.4 U	**7.3**	**11**	- -	- -	**12**	5.2 U
Cadmium	mg/kg	SW6010B-Total	2	0.69	4	0.77	0.53 U	0.53 U	0.54 U	0.54 U	0.54 U	0.57 U	- -	- -	0.53 U	0.52 U
Chromium	mg/kg	SW6010B-Total	2,000*CR		42	48.15	33	28	29	31	37	35	- -	- -	**47**	14
Lead	mg/kg	SW6010B-Total	250	250	50	16.83	5.3 U	5.3 U	35	26	48	49	- -	- -	30	13
Mercury	mg/kg	SW7471A-Total	2	2.088	0.1	0.07	0.021 U	0.021 U	0.087	0.044	0.047	0.05	- -	- -	0.03	0.021
METALS (TCLP Extract-wet)																
Arsenic	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Cadmium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chromium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Lead	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
VOLATILE ORGANICS																
All Analytes	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
SEMIVOLATILE ORGANICS																
1-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthene	µg/kg	SW8270D SIM			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)pyrene	µg/kg	SW8270D SIM			12,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(b)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)perylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(k)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chrysene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibenz(a,h)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Fluorene	µg/kg	SW8270D SIM			30,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Naphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Phenanthrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total cPAHs Using Tox. Equiv.	µg/kg	Calculated	100				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

(Table Continues)

Table 3-1. Summary of Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.:	BP-8 0-0.5	BP-8 2-3	BP-9 0-0.5	BP-9 2-3	BP-10 0-0.5	BP-11 0-0.5	BP-11 2-3	BP-11 4-5	BP-12 0-0.5
						Depth (ft):	0-0.5	2-3	0-0.5	2-3	0-0.5	0-0.5	2-3	4-5	0-0.5
						Background	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009
PETROLEUM HYDROCARBONS															
Diesel	mg/kg	NWTPH-Dx	2,000		200		- -	- -	- -	- -	- -	- -	- -	28 U	- -
Motor Oil	mg/kg	NWTPH-Dx	2,000				- -	- -	- -	- -	- -	- -	- -	56 U	- -
Gasoline	mg/kg	NWTPH-Gx	30/100*G		100		- -	- -	- -	- -	- -	- -	- -	1.4 U	- -
Benzene	µg/kg	SW8021B	30	4.483			- -	- -	- -	- -	- -	- -	- -	20 U	- -
Toluene	µg/kg	SW8021B	7,000				- -	- -	- -	- -	- -	- -	- -	28 U	- -
m,p-Xylene	µg/kg	SW8021B	9,000*XY				- -	- -	- -	- -	- -	- -	- -	28 U	- -
METALS															
Arsenic	mg/kg	SW6010B-Total	20	2.803	7	7.30	**50**	**10**	**130**	**11**	5.1 U	**210**	**390**	6.1	**11**
Cadmium	mg/kg	SW6010B-Total	2	0.69	4	0.77	0.54 U	0.6 U	3.9	0.54 U	0.51 U	**4.5**	3.5	0.56 U	0.53 U
Chromium	mg/kg	SW6010B-Total	2,000*CR		42	48.15	33	38	**57**	**46**	8.2	**75**	**48**	26	24
Lead	mg/kg	SW6010B-Total	250	250	50	16.83	**91**	**82**	**350**	18	7.3	**570**	**300**	5.6 U	20
Mercury	mg/kg	SW7471A-Total	2	2.088	0.1	0.07	0.095	0.063	0.051	0.032	0.02 U	0.066	0.073	0.022 UJH	0.023
METALS (TCLP Extract-wet)															
Arsenic	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	0.40 U	0.96	- -	- -
Cadmium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	0.045	0.13	- -	- -
Chromium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	0.022	0.020 U	- -	- -
Lead	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	0.70	0.32	- -	- -
VOLATILE ORGANICS															
All Analytes	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
SEMIVOLATILE ORGANICS															
1-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthene	µg/kg	SW8270D SIM			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)pyrene	µg/kg	SW8270D SIM			12,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(b)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)perylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(k)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Chrysene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibenz(a,h)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Fluorene	µg/kg	SW8270D SIM			30,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Naphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -
Phenanthrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Total cPAHs Using Tox. Equiv.	µg/kg	Calculated	100				- -	- -	- -	- -	- -	- -	- -	- -	- -

(Table Continues)

Table 3-1. Summary of Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: / Depth (ft): / Background	BP-13 0-0.5 / 0-0.5 / 9/2/2009	BP-14 0-0.5 / 0-0.5 / 9/2/2009	BP-15-0-0.5 / 0-0.5 / 9/3/2009	BP-16-0-0.5 / 0-0.5 / 9/4/2009	BP-17-0-0.5 / 0-0.5 / 9/4/2009	BP-18-0-1 / 0-1 / 9/4/2009	BP-19-0-1 / 0-1 / 9/4/2009	BP-20-0-1 / 0-1 / 9/4/2009	DUP-0904 / (BP-20-0-1) / 9/4/2009
PETROLEUM HYDROCARBONS															
Diesel	mg/kg	NWTPH-Dx	2,000		200		- -	- -	- -	- -	- -	- -	- -	140 U	37 UJH
Motor Oil	mg/kg	NWTPH-Dx	2,000				- -	- -	- -	- -	- -	- -	- -	440	570 JH
Gasoline	mg/kg	NWTPH-Gx	30/100*G		100		- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzene	µg/kg	SW8021B	30	4.483			- -	- -	- -	- -	- -	- -	- -	- -	- -
Toluene	µg/kg	SW8021B	7,000				- -	- -	- -	- -	- -	- -	- -	- -	- -
m,p-Xylene	µg/kg	SW8021B	9,000*XY				- -	- -	- -	- -	- -	- -	- -	- -	- -
METALS															
Arsenic	mg/kg	SW6010B-Total	20	2.803	7	7.30	5.5 U	**16**	5.5 U	**9.8**	5.4 U	5.4 U	6	**27**	**37**
Cadmium	mg/kg	SW6010B-Total	2	0.69	4	0.77	1.1	3.9	0.55 U	0.54 U	0.54 U	1.1	2.6	**4.4**	**6.1**
Chromium	mg/kg	SW6010B-Total	2,000*CR		42	48.15	34	**200**	20	26	23	**43**	**50**	**66**	**91**
Lead	mg/kg	SW6010B-Total	250	250	50	16.83	**100**	**130**	5.5 U	35	11	**78**	**180**	**270**	**410**
Mercury	mg/kg	SW7471A-Total	2	2.088	0.1	0.07	**0.13**	**0.23**	0.022 U	0.053	0.034	**0.12**	**0.27**	**0.53**	**0.49**
METALS (TCLP Extract-wet)															
Arsenic	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Cadmium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Chromium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Lead	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
VOLATILE ORGANICS															
All Analytes	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
SEMIVOLATILE ORGANICS															
1-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthene	µg/kg	SW8270D SIM			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)pyrene	µg/kg	SW8270D SIM			12,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(b)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)perylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(k)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Chrysene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibenz(a,h)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Fluorene	µg/kg	SW8270D SIM			30,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Naphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -
Phenanthrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Total cPAHs Using Tox. Equiv.	µg/kg	Calculated	100				- -	- -	- -	- -	- -	- -	- -	- -	- -

(Table Continues)

Table 3-1. Summary of Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: / Depth (ft): / Background	BP-21-0-1	BP-23 0-5	BP-23 2-3	BP-23 4-5	BP-24-8	BP-25-0-0.5	BP-25-5.5	BP-26	BPMW-1-0.5
						Depth (ft):	0-1	0-5	2-3	4-5	8	0-0.5	5.5	1-2	0.5
						Background	9/4/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/3/2009	9/3/2009	9/2/2009	9/2/2009
PETROLEUM HYDROCARBONS															
Diesel	mg/kg	NWTPH-Dx	2,000		200		27 U	- -	- -	28 U	33 U	- -	29 U	- -	140 U
Motor Oil	mg/kg	NWTPH-Dx	2,000				220	- -	- -	56 U	67 U	- -	110	- -	790
Gasoline	mg/kg	NWTPH-Gx	30/100*G		100		- -	- -	- -	1.3 U	- -	- -	- -	1.8 U	- -
Benzene	µg/kg	SW8021B	30	4.483			- -	- -	- -	20 U	- -	- -	- -	67	- -
Toluene	µg/kg	SW8021B	7,000				- -	- -	- -	27 U	- -	- -	- -	36 U	- -
m,p-Xylene	µg/kg	SW8021B	9,000*XY				- -	- -	- -	27 U	- -	- -	- -	36 U	- -
METALS															
Arsenic	mg/kg	SW6010B-Total	20	2.803	7	7.30	**7.7**	**58**	**31**	5.6 U	- -	5.4 U	- -	5.5 U	**14**
Cadmium	mg/kg	SW6010B-Total	2	0.69	4	0.77	2.1	1.3	0.55 U	0.56 U	- -	0.54 U	- -	0.55 U	2.7
Chromium	mg/kg	SW6010B-Total	2,000*CR		42	48.15	**63**	31	32	22	- -	32	- -	28	**53**
Lead	mg/kg	SW6010B-Total	250	250	50	16.83	**190**	**150**	**410**	5.6 U	- -	5.4 U	- -	35	**140**
Mercury	mg/kg	SW7471A-Total	2	2.088	0.1	0.07	**0.45**	0.085	0.038	0.023 JH	- -	0.022 U	- -	0.035	**0.2**
METALS (TCLP Extract-wet)															
Arsenic	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Cadmium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Chromium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Lead	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
VOLATILE ORGANICS															
All Analytes	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	ND	- -
SEMIVOLATILE ORGANICS															
1-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	900	- -
2-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	950	- -
Acenaphthene	µg/kg	SW8270D SIM			20,000		- -	- -	- -	- -	- -	- -	- -	150	- -
Acenaphthylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	32	- -
Anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	90	- -
Benzo(a)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	260	- -
Benzo(a)pyrene	µg/kg	SW8270D SIM			12,000		- -	- -	- -	- -	- -	- -	- -	190	- -
Benzo(b)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	120	- -
Benzo(g,h,i)perylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	82	- -
Benzo(k)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	85	- -
Chrysene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	400	- -
Dibenz(a,h)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	26	- -
Fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	440	- -
Fluorene	µg/kg	SW8270D SIM			30,000		- -	- -	- -	- -	- -	- -	- -	180	- -
Indeno(1,2,3-cd)pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	53	- -
Naphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	120	- -
Phenanthrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	440	- -
Pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	590	- -
Total cPAHs Using Tox. Equiv.	µg/kg	Calculated	100				- -	- -	- -	- -	- -	- -	- -	248	- -

(Table Continues)

Table 3-1. Summary of Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: / Depth (ft): / Background	BPMW-1-1.5 / 1.5 / 9/2/2009	BPMW-1-5 / 5 / 9/2/2009	BPMW-2-0.5 / 0.5 / 9/2/2009	BPMW-2-1.5 / 1.5 / 9/2/2009	BPMW-2-5 / 5 / 9/2/2009	BPMW-3 0.5' / 0.5 / 9/8/2009	BPMW-3 2' / 2 / 9/8/2009	BPMW-3 5' / 5 / 9/8/2009
PETROLEUM HYDROCARBONS														
Diesel	mg/kg	NWTPH-Dx	2,000		200		- -	- -	29 U	- -	- -	140 U	**300 J**	33 U
Motor Oil	mg/kg	NWTPH-Dx	2,000				- -	- -	310	- -	- -	1,400	3,800	170
Gasoline	mg/kg	NWTPH-Gx	30/100*G		100		3.3 J	- -	- -	1.5 U	- -	2 U	1.6 U	2.4 U
Benzene	µg/kg	SW8021B	30	4.483			20 U	- -	- -	20 U	- -	20 U	20 U	20 U
Toluene	µg/kg	SW8021B	7,000				33 U	- -	- -	30 U	- -	41 U	33	48 U
m,p-Xylene	µg/kg	SW8021B	9,000*XY				33 U	- -	- -	30 U	- -	41 U	40	48 U
METALS														
Arsenic	mg/kg	SW6010B-Total	20	2.803	7	7.30	- -	**11**	6.7	- -	**9.3**	5.7 U	**7.3**	**11**
Cadmium	mg/kg	SW6010B-Total	2	0.69	4	0.77	- -	1.4	0.71	- -	0.81 U	0.57 U	0.57 U	0.66 U
Chromium	mg/kg	SW6010B-Total	2,000*CR		42	48.15	- -	38	41	- -	33	13	**48**	30
Lead	mg/kg	SW6010B-Total	250	250	50	16.83	- -	**94**	33	- -	27	5.7 U	**73**	40
Mercury	mg/kg	SW7471A-Total	2	2.088	0.1	0.07	- -	**0.15**	0.044	- -	0.046	0.023 U	0.052	0.051
METALS (TCLP Extract-wet)														
Arsenic	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -
Cadmium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -
Chromium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -
Lead	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -
VOLATILE ORGANICS														
All Analytes	µg/kg	SW8260B					- -	- -	- -	- -	- -	ND	ND	ND
SEMIVOLATILE ORGANICS														
1-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthene	µg/kg	SW8270D SIM			20,000		- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)pyrene	µg/kg	SW8270D SIM			12,000		- -	- -	- -	- -	- -	- -	- -	- -
Benzo(b)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)perylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Benzo(k)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Chrysene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Dibenz(a,h)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Fluorene	µg/kg	SW8270D SIM			30,000		- -	- -	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Naphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -
Phenanthrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Total cPAHs Using Tox. Equiv.	µg/kg	Calculated	100				- -	- -	- -	- -	- -	- -	- -	- -

NOTES:

- - = Not analyzed or not collected
*CR = Chromium Standards based on Chromium III
*G = 100 if no benzene and TEX < 1% gas; 30 for other mixtures
*NA = Includes Naphthalene, 1-Methylnaphthalene, and 2-Methylnaphthalene
*XY = Applies to the sum of all xylenes
ND = Non-detect

J/JH = Estimated value
UJ/UJH= Estimated non-detect
Shaded values exceed MTCA

Bold values exceed Ecological Indicator Concentration

UNITS:
ft = feet
mg/kg = milligram/kilogram
mg/L = milligram/liter
µg/kg = microgram/kilogram

SOURCES: Background: 90th percentile Puget Sound (Ecology's Publication #94-115; 10/1994)
Model Toxics Control Act (MTCA) from WA Administrative Code 173-340-900
MTCA Method A Soil Cleanup Levels for Unrestricted Land Use: Table 740-1
MTCA Method B soil to groundwater: site-specific calculated
Ecological Indicator Concentrations: Table 749-3

Table 3-2. Summary of Groundwater Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	Sample No. / Depth (ft): / Date:	BC-10-12 / 12 / 9/18/2009	BC-10-12-2 / 12 / 9/18/2009	BC-11-12 / 12 / 9/18/2009	BP-23-15 / 15 / 9/2/2009	BP-25-10 / 10 / 9/3/2009	BPMW-1-10 / 10 / 9/18/2009	BPMW-2-6 / 6 / 9/18/2009	BPMW-3-10 / 10 / 9/18/2009
FIELD DATA												
Conductivity	mmhos/cm				0.332	- -	0.221	- -	- -	0.443	0.379	0.380
pH	std units				7.36	- -	7.05	- -	- -	7.57	7.91	6.70
Temperature	Celsius				16.6	- -	78.8	- -	- -	13.8	13.7	22.5
Dissolved Oxygen	mg/L				2.63	- -	2.91	- -	- -	2.97	2.96	3.91
PETROLEUM HYDROCARBONS												
Gasoline Range Hydrocarbons	mg/L	NWTPH-Gx	0.8/1*G		0.100 U	0.100 U	0.100 U	0.100 U	- -	0.100 U	0.320	0.100 U
TOTAL METALS												
Arsenic	mg/L	200.8/6020-Total	0.005		0.0051	0.0067	0.0033 U	- -	- -	0.0051	0.0039	0.01
Chromium	mg/L	200.8/6020-Total			0.027	0.034	0.0067 U	- -	- -	0.0067 U	0.0091	0.061
Lead	mg/L	200.8/6020-Total	0.015		0.0079	0.0093	0.0011 U	- -	- -	0.0011 U	0.0017	0.0074
DISSOLVED METALS												
Arsenic	mg/L	200.8/6020-Diss	0.005		0.003 U	0.003 U	0.003 U	0.0085	- -	0.005	0.0036	0.0054
VOLATILE ORGANICS												
All Analytes	µg/L	SW8260			ND	ND	- -	ND	ND	ND	- -	ND

NOTES:
- - = Not analyzed or not collected
ND = Non-detect
U = Not detected above the given practical quantitation limit
*G = 1 if no benzene ; 0.8 if benzene
Shaded values exceed MTCA

SOURCES:
Model Toxics Control Act (MTCA) from WA Administrative Code 173-340-900
MTCA Method A Soil Cleanup Levels for Ground Water: Table 720-1

UNITS:
ft = foot
mmhos/cm = millimhos/centimeter
mg/L = milligrams/liter
µg/L = micrograms/liter

Table 3-3. Summary of Historical Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.:	BC-10-1	BC-11-5	GB-2-1	GB-2-4	VB-1-4	VB-3-1	VB-5-1	VB-6-1	VB-7-1
						Depth (ft):	1	5	1	4	4	1	1	1	1
						Background	10/28/2008	06/25/2008	2/13/2008	2/13/2008	2/13/2008	2/13/2008	2/14/2008	2/14/2008	2/14/2008
PETROLEUM HYDROCARBONS															
Diesel	mg/kg	NWTPH-Dx	2,000		200		27 U	28 U	28 U	- -	**210**	28 U	130	**230**	120
Motor Oil	mg/kg	NWTPH-Dx	2,000				81	55 U	1,300	- -	1,200	180	1,300	1,000	1,300
Gasoline	mg/kg	NWTPH-Gx	30/100*G		100		4.8 U	- -	3.9 U	- -	- -	- -	6.6 U	3.2 U	3.2 U
Toluene	µg/kg	SW8021B	7,000				48 U	- -	- -	- -	- -	- -	- -	- -	- -
Toluene	µg/kg	SW8260B	7,000				- -	- -	2.6	- -	- -	- -	1.1	6.2	2.7
m,p-Xylene	µg/kg	SW8021B	9,000*XY				48 U	- -	- -	- -	- -	- -	- -	- -	- -
m,p-Xylene	µg/kg	SW8260B	9,000*XY				- -	- -	2.3 U	- -	- -	- -	2.3 U	1.4	1.2 U
METALS															
Arsenic	mg/kg	SW6010B-Total	20	2.803	7	7.30	- -	11 U	11 U	11 U	**42**	**14**	- -	- -	- -
Barium	mg/kg	SW6010B			102		- -	- -	170	47	79	89	- -	- -	- -
Cadmium	mg/kg	SW6010B-Total	2	0.69	4	0.77	- -	0.55 U	3.8	0.56 U	0.59 U	1.5	- -	- -	- -
Chromium	mg/kg	SW6010B-Total	2,000*CR		42	48.15	- -	12	**86**	26	37	**60**	- -	- -	- -
Lead	mg/kg	SW6010B-Total	250	250	50	16.83	- -	5.5 U	**350**	**52**	**98**	**100**	- -	- -	- -
Silver	mg/kg	SW6010B			2		- -	- -	0.57 U	0.56 U	0.59 U	0.56 U	- -	- -	- -
Mercury	mg/kg	SW7471A-Total	2	2.088	0.1	0.07	- -	- -	**0.38**	0.28 U	0.29 U	**0.34**	- -	- -	- -
METALS (TCLP Extract-wet)															
Arsenic	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Barium	mg/L	SW6010B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Cadmium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
VOLATILE ORGANICS															
1,2,4-Trimethylbenzene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	6.7	22	0.6 U
2-Butanone	µg/kg	SW8260B					- -	- -	5.7 U	- -	- -	- -	7.9	5.8	6.2
Acetone	µg/kg	SW8260B					- -	- -	53	- -	- -	- -	57	46	34
cis-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Isopropylbenzene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.2	1.6	0.73
Methylene Chloride	µg/kg	SW8260B	20				- -	- -	14	- -	- -	- -	13	3 U	3 U
Naphthalene	µg/kg	SW8260	500				- -	- -	1.1 U	- -	- -	- -	140	15	5.1
n-Butylbenzene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.8	3.4	1.9
n-Propylbenzene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.1 U	1.8	1.3
p-Isopropyltoluene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.3	3.5	0.6 U
sec-Butylbenzene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.1 U	2	1.4
tert-Butylbenzene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.87	0.6 U
Tetrachloroethene	µg/kg	SW8260B	50				- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Trichloroethene	µg/kg	SW8260B	30				- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U

(Table continues)

Table 3-3. Summary of Historical Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: / Depth (ft): / Background	VB-8-0.25 / 0.25 / 2/14/2008	VB-8-2 / 2 / 2/14/2008	VB-9-0.5 / 0.5 / 2/14/2008	VB-9-1.5 / 1.5 / 2/14/2008	VB-10-1 / 1 / 2/14/2008	VB-11-8 / 8 / 4/3/2008	VB-12-8 / 8 / 4/3/2008
PETROLEUM HYDROCARBONS													
Diesel	mg/kg	NWTPH-Dx	2,000		200		130	- -	4,900 U	1,800 U	28 U	28 U	28 U
Motor Oil	mg/kg	NWTPH-Dx	2,000				840	- -	180,000	29,000	160	490	260
Gasoline	mg/kg	NWTPH-Gx	30/100*G		100		- -	- -	- -	- -		8.9	5.4 U
Toluene	µg/kg	SW8021B	7,000				- -	- -	- -	- -	- -	- -	- -
Toluene	µg/kg	SW8260B	7,000				- -	- -	- -	- -	- -	- -	- -
m,p-Xylene	µg/kg	SW8021B	9,000*XY				- -	- -	- -	- -	- -	- -	- -
m,p-Xylene	µg/kg	SW8260B	9,000*XY				- -	- -	- -	- -	- -	- -	- -
METALS													
Arsenic	mg/kg	SW6010B-Total	20	2.803	7	7.30	**32**	**18**	**13**	**190**	**120**	11 U	11 U
Barium	mg/kg	SW6010B			102		**3,400**	**190**	100	92	**130**	39	45
Cadmium	mg/kg	SW6010B-Total	2	0.69	4	0.77	**160**	**8.6**	**4.5**	2.9	**4.8**	0.56 U	0.56 U
Chromium	mg/kg	SW6010B-Total	2,000*CR		42	48.15	**1,100**	**71**	**71**	**60**	**60**	25	32
Lead	mg/kg	SW6010B-Total	250	250	50	16.83	**2,100**	**210**	**76**	**240**	**350**	5.6 U	5.6 U
Silver	mg/kg	SW6010B			2		**2.4**	0.56 U	0.66 U	0.58 U	0.55 U	0.56 U	0.56 U
Mercury	mg/kg	SW7471A-Total	2	2.088	0.1	0.07	**0.56**	0.28 U	0.33 U	**0.33**	0.27 U	**0.29**	0.28 U
METALS (TCLP Extract-wet)													
Arsenic	mg/L	SW6010B-Total					- -	- -	- -	0.46	- -	- -	- -
Barium	mg/L	SW6010B					3.8	- -	- -	- -	- -	- -	- -
Cadmium	mg/L	SW6010B-Total					3.3	- -	- -	- -	- -	- -	- -
VOLATILE ORGANICS													
1,2,4-Trimethylbenzene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
2-Butanone	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Acetone	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Isopropylbenzene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
Methylene Chloride	µg/kg	SW8260B	20				- -	- -	- -	- -	- -	- -	- -
Naphthalene	µg/kg	SW8260	500				- -	- -	- -	- -	- -	- -	- -
n-Butylbenzene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
n-Propylbenzene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
p-Isopropyltoluene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
sec-Butylbenzene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
Tetrachloroethene	µg/kg	SW8260B	50				- -	- -	- -	- -	- -	- -	- -
Trichloroethene	µg/kg	SW8260B	30				- -	- -	- -	- -	- -	- -	- -

NOTES:
- - - = Not analyzed or not collected
- *CR = Chromium Standards based on Chromium III
- *G = 100 if no benzene and TEX < 1% gas; 30 for other mixtures
- *XY = Applies to the sum of all xylenes
- U = Not detected above the given practical quantitation limit
- (shaded) Shaded values exceed MTCA
- **Bold** Bold values exceed Ecological Indicator Concentration

UNITS:
- ft = feet
- mg/kg = milligram/kilogram
- mg/L = milligram/liter
- µg/kg = microgram/kilogram

SOURCES: Background: 90th percentile Puget Sound (Ecology's Publication #94-115; 10/1994)
Model Toxics Control Act (MTCA) from WA Administrative Code 173-340-900
MTCA Method A Soil Cleanup Levels for Unrestricted Land Use: Table 740-1
MTCA Method B soil to groundwater: site-specific calculated
Ecological Indicator Concentrations: Table 749-3

Table 3-4. Summary of Historical Groundwater Analytical Results

PARAMETERS	Units	Analytical Method	Sample No.: MTCA A	B4-W 4/2/2009	BC-10 2/4/2009	BC-11 12/30/2008	BC-12 2/4/2009	GB-1-W 2/13/2008	GB-2-W 2/13/2008	VB-2-W 2/13/2008	VB-3-W 2/14/2008	VB-4-W 2/14/2008	VB-5-W 2/14/2008	VB-6-W 2/14/2008
PETROLEUM HYDROCARBONS														
Motor Oil	mg/L	NWTPH-Dx	0.5	- -	1.4	0.40 U	0.41 U	- -	0.46 U	0.43 U	- -	0.45 U	0.41 U	0.42 U
Gasoline Range Hydrocarbons	mg/L	NWTPH-Gx	0.8/1*G	- -	0.10 U	0.10 U	0.10 U	0.100 U	0.110	0.100 U	- -	0.100 U	0.400 U	0.100 U
Benzene	µg/L	SW8260	5	- -	0.20 U	0.20 U	0.20 U	0.2 U	1.4	0.2 U	- -	0.2 U	0.2 U	0.2 U
Toluene	µg/L	SW8260	1,000	- -	1.0 U	1.0 U	1.0 U	0.86	9.9	0.63	- -	0.58	0.41	0.43
Ethylbenzene	µg/L	SW8260	700	- -	0.20 U	0.20 U	0.20 U	0.2 U	1.7	0.2 U	- -	0.2 U	0.2 U	0.2 U
m,p-Xylene	µg/L	SW8260	1,000*XY	- -	- -	- -	- -	0.93	7.5	0.52	- -	0.45	0.4 U	0.4 U
o-Xylene	µg/L	SW8260	1,000*XY	- -	- -	- -	- -	0.46	3.9	0.28	- -	0.21	0.2 U	0.2 U
Total Xylenes	µg/L	SW8260	1,000*XY	- -	0.40 U	0.40 U	0.40 U	- -	- -	- -	- -	- -	- -	- -
TOTAL METALS														
Arsenic	mg/L	SW7060	0.005	- -	0.037	0.0033	0.011	- -	- -	- -	- -	- -	- -	- -
Barium	mg/L	SW6010		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chromium	mg/L	SW6010		- -	0.230	0.011 U	0.036	- -	- -	- -	- -	- -	- -	- -
Lead	mg/L	SW7421	0.015	- -	0.078	0.0011 U	0.160	- -	- -	- -	- -	- -	- -	- -
Selenium	mg/L	SW6010		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Silver	mg/L	SW6010		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
DISSOLVED METALS														
Arsenic	mg/L	SW7060	0.005	- -	- -	- -	- -	- -	0.005	- -	0.35	- -	- -	- -
Barium	mg/L	SW6010		- -	- -	- -	- -	- -	0.044	- -	0.13	- -	- -	- -
VOLATILE ORGANICS														
1,2,4-Trimethylbenzene	µg/L	SW8260		- -	- -	- -	- -	0.47	2.4	0.41	- -	0.22	0.2 U	0.2 U
1,3,5-Trimethylbenzene	µg/L	SW8260		- -	- -	- -	- -	0.2 U	0.61	0.2 U	- -	0.2 U	0.2 U	0.2 U
Acetone	µg/L	SW8260		- -	- -	- -	- -	5 U	5.3	5 U	- -	5 U	5 U	5 U
Chloroethane	µg/L	SW8260		1.0 U	- -	- -	- -	1 U	1 U	1 U	- -	1 U	1 U	1 U
Chloromethane	µg/L	SW8260		1.0 U	- -	- -	- -	1 U	1 U	1 U	- -	1 U	1 U	1 U
cis-1,2-Dichloroethene	µg/L	SW8260		0.20 U	0.20 U	0.20 U	0.20 U	0.2 U	0.2 U	0.53	- -	0.2 U	0.2 U	0.2 U
Naphthalene	µg/L	SW8260	160	- -	- -	- -	- -	1 U	1 U	1 U	- -	1 U	5	1.1
p-Isopropyltoluene	µg/L	SW8260		- -	- -	- -	- -	0.2 U	0.2 U	0.4	- -	0.2 U	0.2 U	0.2 U
tert-Butylbenzene	µg/L	SW8260		- -	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Vinyl Chloride	µg/L	SW8260	0.2	0.20 U	0.20 U	0.20 U	0.20 U	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U

(Table continues)

Table 3-4. Summary of Historical Groundwater Analytical Results

PARAMETERS	Units	Analytical Method	Sample No.: MTCA A	VB-7-W 2/14/2008	VB-7-W2 2/14/2008	VB-WD 2/14/2008	VB-10-W 2/14/2008	VB-11-W 4/3/2008	VB-12-W 4/3/2008
PETROLEUM HYDROCARBONS									
Motor Oil	mg/L	NWTPH-Dx	0.5	0.41 U	- -	0.4 U	- -	0.4 U	0.35 U
Gasoline Range Hydrocarbons	mg/L	NWTPH-Gx	0.8/1*G	0.100 U	- -	0.100 U	- -	0.100 U	0.100 U
Benzene	µg/L	SW8260	5	0.2 U	0.2 U	0.2 U	- -	- -	- -
Toluene	µg/L	SW8260	1,000	0.2 U	0.2 U	0.2 U	- -	- -	- -
Ethylbenzene	µg/L	SW8260	700	0.2 U	0.2 U	0.2 U	- -	- -	- -
m,p-Xylene	µg/L	SW8260	1,000*XY	0.4 U	0.4 U	0.4 U	- -	- -	- -
o-Xylene	µg/L	SW8260	1,000*XY	0.2 U	0.2 U	0.2 U	- -	- -	- -
Total Xylenes	µg/L	SW8260	1,000*XY	- -	- -	- -	- -	- -	- -
TOTAL METALS									
Arsenic	mg/L	SW7060	0.005	- -	- -	- -	- -	0.023	0.0046
Barium	mg/L	SW6010		- -	- -	- -	- -	0.044	0.028 U
Chromium	mg/L	SW6010		- -	- -	- -	- -	0.011 U	0.011 U
Lead	mg/L	SW7421	0.015	- -	- -	- -	- -	0.0011 U	0.0011 U
Selenium	mg/L	SW6010		- -	- -	- -	- -	0.0056 U	0.0056 U
Silver	mg/L	SW6010		- -	- -	- -	- -	0.011 U	0.011 U
DISSOLVED METALS									
Arsenic	mg/L	SW7060	0.005	- -	- -	- -	0.003 U	0.02	0.0041
Barium	mg/L	SW6010		- -	- -	- -	0.05	0.039	0.025 U
VOLATILE ORGANICS									
1,2,4-Trimethylbenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,3,5-Trimethylbenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Acetone	µg/L	SW8260		5 U	5 U	5 U	- -	- -	- -
Chloroethane	µg/L	SW8260		1 U	1 U	1 U	- -	- -	- -
Chloromethane	µg/L	SW8260		1 U	1 U	1 U	- -	- -	- -
cis-1,2-Dichloroethene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Naphthalene	µg/L	SW8260	160	1 U	1 U	1 U	- -	- -	- -
p-Isopropyltoluene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
tert-Butylbenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
trans-1,3-Dichloropropene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Vinyl Chloride	µg/L	SW8260	0.2	0.2 U	0.2 U	0.2 U	- -	- -	- -

NOTES:
- - = Not analyzed or not collected
*G = 1 if no benzene ; 0.8 if benzene
*XY = Applies to the sum of all xylenes
U = Not detected above the given practical quantitation limit
Shaded values exceed MTCA A

UNITS:
mg/L = milligrams/liter
µg/L = micrograms/liter

SOURCES:
Model Toxics Control Act (MTCA) from WA Administrative Code 173-340-900
MTCA Method A Soil Cleanup Levels for Ground Water: Table 720-1

Table 3-5. Potential Applicable or Relevant and Appropriate Requirements (ARARs)

ARAR	Description	Applicability
Soil		
Model Toxics Control Act (WAC 173-340-740, -747)	MTCA regulates the investigation and cleanup of releases to the environment that may pose a threat to human health or the environment. Establishes cleanup levels for soil, including derivation of soil concentrations protective of groundwater.	MTCA cleanup levels are applicable to Site soil.
Groundwater		
Safe Drinking Water Act, Primary Drinking Water Regulations (40 Code of Federal Regulations [CFR] 141.50 and 141.61(a))	These regulations protect the quality of public drinking water supplies through regulation of chemical parameters and constituent concentrations as maximum concentration limits (MCLs).	MCLs are potentially relevant and appropriate where groundwater is a potential source of drinking water.
Model Toxics Control Act (WAC 173-340-720)	MTCA regulates the investigation and cleanup of releases to the environment that may pose a threat to human health or the environment. Establishes cleanup levels for groundwater.	MTCA cleanup levels are applicable to Site groundwater.
Surface Water		
Clean Water Act, Section 304, National Recommended Water Quality Criteria, EPA Office of Science and Technology (4304T, 2004).	There are no ambient water quality criteria for PCE for protection of freshwater organisms.	Surface water quality criteria are potentially relevant and appropriate to ambient surface water quality for point-source discharges to Horse Creek.
Clean Water Act, National Pollutant Discharge Elimination System (40 CFR Part 122) and Washington State National Pollutant Discharge Elimination System Permit Program (WAC 173-220).	The National Pollutant Discharge Elimination System (NPDES) program requires that permits be obtained for point-source discharges of pollutants to surface water. Under this regulation, a point-source discharge to a surface water body cannot cause an exceedance of water quality standards in the receiving water body outside the mixing zone.	Substantive regulatory requirements of the NPDES permit program are potentially applicable to the direct discharge of treated groundwater to a surface water body such as Horse Creek or Sammamish River.
Clean Water Act's National Toxics Rule (NTR) (40 CFR 131.36)	Provides values that have to be met for point-source discharges to surface water.	Potentially applicable to point-source discharges to Horse Creek should remedial activities cause release to surface water. If applicable, these values would have to be met at the mixing zone boundary established for the discharge.
Clean Water Act, General Pretreatment Regulations (40 CFR Part 403).	The regulations limit pollutants in wastewater discharges to sanitary sewer systems to protect publicly owned treatment works (POTWs) from accepting wastewater that would damage their system or cause them to exceed their NPDES permit discharge limits.	These regulations are potentially applicable to the discharge of treated groundwater to City of Bothell POTWs.
Washington State Water Quality Standards for Surface Waters (WAC 173-201A)	Washington State water quality standards protect freshwater aquatic life by specifying protection criteria by stretch of surface waters. WAC 173-201A provides limitations on other parameters such as turbidity, temperature, dissolved oxygen, and pH for protection of organisms. Tributaries of waters whose uses are designated salmon and trout spawning, core rearing and migration, or extraordinary primary contact recreation are protected at the same level as the waters themselves.	The substantive requirements of this regulation are potentially applicable for remedial actions affecting Horse Creek.
Washington Surface Water Quality Standards, Short-Term Modifications (WAC 173-201A-410)	Washington State provides for short-term modifications of standards for specific water bodies on a short-term basis when necessary to accommodate essential activities, respond to emergencies, or to otherwise protect the public interest.	These would be potentially applicable to remedial actions affecting Horse Creek.
Model Toxics Control Act (WAC 173-340-730)	MTCA regulates the investigation and cleanup of releases to the environment that may pose a threat to human health or the environment. Establishes cleanup levels for surface water.	MTCA cleanup levels may be applicable to the Site if remedial activities cause a release to surface water.
Air		
National Emission Standards for Hazardous Air Pollutants (NESHAPs) (40 CFR Part 261)	Establishes specific emissions levels allowed for toxic air pollutants.	Applicable to treatment alternatives that may emit toxic pollutants to the air.
Washington Clean Air Act and Implementing Regulations (WAC 173-400; WAC 173-460; WAC 173-490)	WAC 173-400 requires air emissions at the Site boundary to fall below the acceptable source impact limit (ASIL). WAC 173-400 also requires control of fugitive dust emissions during construction and defines general emission discharge treatment requirements. WAC 173-460 requires systemic control of new sources emitting air pollutants. WAC 173-490 sets emission standards and source control for volatile organic compounds.	Applicable for air stripping/sparging remedial technology.
Model Toxics Control Act (WAC 173-340-750)	MTCA regulates the investigation and cleanup of releases to the environment that may pose a threat to human health or the environment. Establishes cleanup levels for air.	MTCA cleanup levels may be applicable to the Site if remedial activities cause a release to air.

Table 3-5. Potential Applicable or Relevant and Appropriate Requirements (ARARs)

ARAR	Description	Applicability
Miscellaneous		
Protection of Wetlands, Executive Order 11990 (40 CFR Part 6, Appendix A)	This executive order mandates that response actions taken by federal agencies must be designed to avoid long- and short-term impacts to wetlands. If remediation activities are located near/in wetlands, the activities must be designed to avoid adverse impact to the wetlands wherever possible, including minimizing wetlands destruction and preserving wetland values.	This Act would be potentially applicable to remedial activities at the Site.
Endangered Species Act (50 CFR Parts 17, 402)	Section 7 of the Endangered Species Act (ESA) and 40 CFR Part 402 require that federal agencies consider the effects of their proposed actions on federal listed species. It requires consultation between the agency proposing the action and the U.S. Fish and Wildlife Service (USFWS) or National Oceanic and Atmospheric Administration (NOAA) Fisheries, as appropriate. Preparation of a biological assessment is conducted, addressing the potential effects to listed species in the area and methods to minimize those effects.	The ESA is potentially applicable to remedial actions at the Site because the USFWS has determined that federal threatened species (bald eagle and bull trout) may use the project area. Therefore, they could potentially be affected by these actions.
Native American Graves Protection and Repatriation Act (43 CFR Part 10)	Native American Graves Protection and Repatriation Act regulations protect Native American burials from desecration through the removal and trafficking of human remains and “cultural items,” including funerary and sacred objects.	This Act is potentially applicable to remedial actions at the Site because it is possible that the disturbance of Native American materials could occur as a result of work in the stream bed or subsurface excavations elsewhere at the Site. Such materials are not known to be present at the Site, but could be inadvertently uncovered during soil or sediment removal.
National Historic Preservation Act (36 CFR Parts 60, 63, and 800)	National Historic Preservation Act (NHPA) regulations require federal agencies to consider the possible effects on historic sites or structures of actions proposed for federal funding or approval. Historic sites or structures as defined in the regulations are those on or eligible for the National Register of Historic Places, generally at least 50 years old.	This Act is potentially applicable to stream bed or other subsurface work at the Site. No such sites are known to be present in the area.
Washington Hazardous Waste Management Act (WAC 173-303)	Establishes standards for the generation, transport, treatment, storage, or disposal of designated dangerous waste in the state.	This regulation is potentially applicable to alternatives that would involve handling of contaminated media at the Site. The area of contamination policy allows contaminated media to be consolidated within the same area of a site without triggering Resource Conservation and Recovery Act or Washington dangerous waste regulations.
Department of Transportation of Hazardous Wastes (49 CFR 105 – 180)	Establishes specific U.S. Department of Transportation rules and technical guidelines for the off-site transport of hazardous materials.	Applicable to remedial activities that involve the off-site transportation of hazardous waste.
Washington Solid Waste Handling Standards (WAC 173-350)	Establishes standards for handling and disposal of solid non-hazardous waste in Washington.	These regulations are potentially applicable to solid nonhazardous wastes and are potentially relevant and appropriate to on-site remedial actions governing contaminated media management.
Washington Water Well Construction Act Regulations (WAC 173-160)	Provides requirements for water well construction.	These regulations are potentially applicable to the installation, operation, or closure of monitoring and treatment wells at the Site.

Table 4-1. Applicability Screening of Technologies for Soil

Technology	Applicability	Screening Comments
In Situ Biological Treatment		
~~Enhanced biodegradation~~	Not applicable	Not applicable as access to provide and maintain enhancements limited.
~~Natural attenuation~~	Not applicable	Not applicable to COCs, specifically metals.
~~Bioventing~~	Not applicable	Not applicable to COCs, specifically metals and minimally effective on oils.
~~Phytoremediation~~	Not applicable	Not applicable due to site usage.
In Situ Physical/ Chemical Treatment		
Chemical Oxidation	Applicable	Not applicable to metals COCs ; however, can be used for other site COCs.
Electrokinetic Separation	Applicable	Not applicable to TPH COCs ; however, can be used for metals COCs.
~~Fracturing~~	Not applicable	Not applicable due to depth of contaminants.
~~Soil Flushing~~	Not applicable	Creates additional waste streams for treatment.
~~Soil Vapor Extraction~~	Not applicable	Not applicable to COCs.
~~Solidification/Stabilization~~	Not applicable	Not applicable due to site usage.
In Situ Thermal Treatment		
~~Thermal Treatment~~	Not applicable	Not applicable to COCs, specifically metals. Creates additional waste streams for treatment.
Ex Situ Biological Treatment		
~~Biopiles~~	Not applicable	Replacement back into excavation not feasible due to time constraints.
~~Composting~~	Not applicable	Replacement back into excavation not feasible due to time constraints.
~~Landfarming~~	Not applicable	Replacement back into excavation not feasible due to time constraints.
~~Slurry Phase Biological Treatment~~	Not applicable	Creates additional waste streams for treatment.
Ex Situ Physical/Chemical Treatment		
~~Chemical Extraction~~	Not applicable	Creates additional waste streams for treatment.
~~Chemical Reduction/Oxidation~~	Not applicable	Not applicable to COCs, specifically metals.
~~Separation~~	Not applicable	Creates additional waste streams for treatment.
~~Soil Washing~~	Not applicable	Creates additional waste streams for treatment.
~~Solidification/Stabilization~~	Not applicable	Not applicable due to COC levels (i.e., hazardous waste disposal not required).
Ex Situ Thermal Treatment		
~~Hot Gas Decontamination~~	Not applicable	Not applicable to COCs.
~~Incineration~~	Not applicable	Not applicable to COCs, specifically metals.
~~Open Burn/Open Detonation~~	Not applicable	Not applicable to COCs.
~~Pyrolysis~~	Not applicable	Creates additional waste streams for treatment.
~~Thermal Desorption~~	Not applicable	Not applicable to COCs, specifically metals. Creates additional waste streams for treatment.
Containment		
Excavation and Offsite Disposal	Applicable	
Low Permeability Cap	Applicable	
~~Cap Enhancements/Alternatives~~	Not applicable	Not applicable due to site usage.

Note: Technologies in bold are retained, those that are lined out are dropped

Table 4-2. Applicability Screening of Technologies for Groundwater

Technology	Applicability	Screening Comments
In Situ Biological Treatment		
~~Enhanced bioremediation~~	Not applicable	Not applicable as access to provide and maintain enhancements limited.
Monitored Natural attenuation	Applicable	
~~Phytoremediation~~	Not applicable	Not applicable due to site usage.
In Situ Physical/ Chemical Treatment		
~~Air Sparging~~	Not applicable	Not applicable to COCs.
~~Bioslurping~~	Not applicable	Not applicable to COCs.
Complexation	Applicable	
~~Directional Wells~~	Not applicable	Not applicable due to site usage.
~~Dual Phase Extraction~~	Not applicable	Not applicable to COCs.
~~Thermal Treatment~~	Not applicable	Not applicable to COCs.
~~Hydrofracturing Enhancements~~	Not applicable	Not applicable to subsurface conditions.
~~In-Well Air Stripping~~	Not applicable	Not applicable to COCs.
~~Passive/Reactive Treatment Walls~~	Not applicable	Not applicable to COCs and subsurface conditions.
Ex Situ Biological Treatment (Pump and Treat)		
~~Bioreactors~~	Not applicable	Not applicable to COCs.
~~Constructed Wetlands~~	Not applicable	Not applicable due to site usage.
Ex Situ Physical/Chemical Treatment (Pump and Treat)		
Adsorption/Absorption	Applicable	
~~Advanced Oxidation Processes~~	Not applicable	Not applicable to COCs.
~~Air Stripping~~	Not applicable	Not applicable to COCs.
~~Granular Activated Carbon~~	Not applicable	Not applicable to COCs.
~~Ion Exchange~~	Not applicable	Not applicable due to groundwater chemistry and creates additional waste streams for treatment.
~~Precipitation/Coagulation/Flocculation~~	Not applicable	Creates additional waste streams for treatment.
~~Separation~~	Not applicable	Not applicable to COCs.
~~Sprinkler Irrigation~~	Not applicable	Not applicable to COCs.
Containment		
~~Physical Barriers~~	Not applicable	Not applicable due to regional groundwater quality.
~~Deep Well Injection~~	Not applicable	Not applicable to COCs.

Note: Technologies in bold are retained, those that are lined out are dropped

Table 4-3. Remedial Alternatives Estimated Costs

Criteria	Remedial Alternatives				
	1. No Action	2. Chemical Oxidation, Electrokinetic Separation, Low Permeability Cap, and Complexation	3. Excavation, Off-site Disposal, and Adsorption	4. Excavation, Off-site Disposal, Low Permeability Cap, and Groundwater Extraction	5. Excavation, Off-site Disposal, and Low Permeability Cap
Construction Costs	$0	$3,013,100	$2,040,290	$346,768	$217,689
Operation and Maintenance Costs	$0	$190,854	$1,760,559	$1,847,789	$118,854
Total Costs	$0	$3,203,954	$3,800,849	$2,194,557	$336,542

Table 4-4. Remedial Alternative Permanent Solutions Criteria Summary

Criteria	Remedial Alternatives				
	1. No Action	2. Chemical Oxidation, Electrokinetic Separation, Low Permeability Cap, and Complexation	3. Excavation, Off-site Disposal, and Adsorption	4. Excavation, Off-site Disposal, Low Permeability Cap, and Groundwater Extraction	5. Excavation, Off-site Disposal, and Low Permeability Cap
Protectiveness	Low	Medium	High	Medium	Medium
Permanence	Low	Medium	High	Medium	Medium
Cost	$0	$3,200,000	$3,800,000	$2,200,000	$340,000
Long-Term Effectiveness	Low	Low to Medium	High	Medium	Medium
Short-Term Risks	High	Low	Low	Low	Low
Implementability	High	Low	Medium	Medium	Medium
Public Concern	High	Medium	Low	Low	Medium

Table 4-5. Cost Estimate for Alternative 2
Chemical Oxidation, Electokinetic Separation, Low Permeability Cap, and Complexation

Item	Quantity	Units	Unit Cost	Capital Cost	O&M Cost Annual	O&M Cost Present Worth[2]	Source
Bench-Scale Treatability Test	1	LS	$15,000	$15,000			Similar Project
Pilot Test	1	LS	$150,000	$150,000			Similar Project
Mobilization	1	LS	$235,000	$235,000			Similar Project; 8% of Capital Costs
Chemical Oxidation Implementation							
Mix Site Soils	1,007	CY	$40	$40,296			Similar Project
RegenOx™	11,081	LB	$2.50	$27,704			Similar Project
Portland Cement for Soil Stabilization	30	Ton	$130	$3,900			Engineers Est.
Electrokinetic Separation Implementation							
Monitoring Well Installation	87	ea	$2,000	$174,000			Similar Project
Liquid Removal Assemblies	87	ea	$5,000	$435,000			EPA frtr website
Building (metal frame)							
Metal Structure	625	sf	$50	$31,250			Similar Project
Floor and Foundations	25	CY	$600	$15,000			Similar Project
General utilities, plumbing, lighting, power	1	LS	$25,000	$25,000			Similar Project
Treatment System Equipment							
Base Media Vessel Skid	2	LS	$100,000	$200,000			Similar Project
Influent pumps	2	ea	$2,500	$5,000			Similar Project
Electrical and I&C	20% of Implementation Cost			$177,050			Engineer's Estimate
Equipment Installation & Piping	20% of Implementation Cost			$177,050			Engineer's Estimate
Operation and Maintenance							Three months O&M
Power	193,778	kWh	$0.06		$11,627	$10,866	EPA frtr website (500 kWh/m3)
Media Replacement	1	LS	$10,000		$10,000	$9,346	Engineer's Estimate
Media Disposal	1	LS	$5,000		$5,000	$4,673	Engineer's Estimate
Analytical Testing	1	LS	$2,000		$2,000	$1,869	Engineer's Estimate
General Maintenance	1	LS	$5,000		$5,000	$4,673	Engineer's Estimate
Operations Labor	720	hrs	$100		$72,000	$67,290	Engineer's Estimate
Complexation Implementation							
Injection Well Installation	22	ea	$4,000	$88,000			Similar Project
MRC™	3,520	LB	$9.50	$33,440			Similar Project
Dosing Event (two events)	2	LS	$5,000.00	$10,000			Similar Project

Table 4-5. Cost Estimate for Alternative 2
Chemical Oxidation, Electokinetic Separation, Low Permeability Cap, and Complexation

Item	Quantity	Units	Unit Cost	Capital Cost	O&M Cost Annual	O&M Cost Present Worth[2]	Source
Subtotal				$1,842,690			
Contingency	25% of Capital Cost			$460,673			
Construction/Project Management	10% of Capital Cost			$184,269			
Engineering (PS&E)	10% of Capital Cost			$184,269			
Construction Cost Subtotal				**$2,671,901**			
Sales Tax			**8.9%**	**$237,799**			
Environmental Oversight							
Institutional Controls							
Land Use Restrictions[1]	1	LS	$12,000	$12,000	$500	$7,143	Engineer's Estimate
Cleanup Action Plan	1	LS	$9,000	$9,000			
Oversight and Sample Collection	1	LS	$50,000	$50,000			Engineer's Estimate
Sample Analysis	12	ea	$200	$2,400			Engineer's Estimate
Reporting	1	LS	$10,000	$10,000			Engineer's Estimate
Monitoring Well Installation	5	ea	$4,000	$20,000			Similar Project
Groundwater Monitoring							
Sample Collection (Quarterly)	4	ea	$4,000		$16,000	$14,953	Engineer's Estimate
Sample Analysis (Quarterly)	4	ea	$3,000		$12,000	$11,215	Engineer's Estimate
Reporting (3 memos + 1 sum. report)	1	LS	$10,000		$10,000	$9,346	Engineer's Estimate
Subtotal				**$103,400**			
Operation and Maintenance Subtotal						$141,373	
O&M Project Management and Support	10% of O&M Present Worth					$14,137	
O&M Contingency	25% of O&M Present Worth					$35,343	
Operation and Maintenance Total						**$190,854**	
NET PRESENT WORTH						**$3,203,954**	

Notes:
[1] - Annual institutional controls costs occur each year in perpetuity.
[2] - Discount rate of seven percent used for all present worth calculations.

Table 4-6. Cost Estimate for Alternative 3 Excavation, Offsite Disposal, and Adsorption

Item	Quantity	Units	Unit Cost	Capital Cost	O&M Cost Annual	O&M Cost Present Worth[2]	Source
Bench-Scale Treatability Test	1	LS	$15,000	$15,000			Similar Project
Pilot Test	1	LS	$100,000	$100,000			Similar Project
Mobilization	1	LS	$275,000	$275,000			Similar Project; 8% of Capital Costs
Excavation and Offsite Disposal Implementation							
Excavate, Stockpile, Haul, and Dispose Contaminated Soil	3,000	Ton	$70	$210,000			Similar Project
Import, Place, and Compact Granular Common Borrow	3,000	Ton	$15.00	$45,000			Similar Project
Adsorption Implementation							
Extraction Well Installation	4	ea	$4,000	$16,000			Similar Project
Building (metal frame)							
Metal Structure	1,000	sf	$50	$50,000			Similar Project
Floor and Foundations	40	CY	$600	$24,000			Similar Project
General utilities, plumbing, lighting, power	1	LS	$25,000	$25,000			Similar Project
Treatment System Equipment							
Base GFH Filter Vessel Skid	2	LS	$100,000	$200,000			Similar Project
GFH Backwash Tank	1	LS	$25,000	$25,000			Similar Project
Influent Pumps	4	ea	$2,500	$10,000			Similar Project
GFH Backwash Pump	1	ea	$1,500	$1,500			Similar Project
Electrical and I&C	20% of Implementation Cost			$70,000			Engineer's Estimate
Equipment Installation & Piping	20% of Implementation Cost			$70,000			Engineer's Estimate
Operation and Maintenance							Three months O&M
Power	300,000	kWh/yr	$0.06		$18,000	$126,424	EPA frtr website (500 kWh/m3)
Media Replacement	4	LS/yr	$4,100		$16,400	$115,187	Engineer's Estimate
Media Disposal	188	cf/yr	$20		$3,760	$26,409	Engineer's Estimate
Analytical Testing	1	LS/yr	$2,000		$2,000	$14,047	Engineer's Estimate
General Maintenance	1	LS/yr	$20,000		$20,000	$140,472	Engineer's Estimate
Operations Labor	1,460	hrs/yr	$75		$109,500	$769,082	Engineer's Estimate
Wastewater Discharge Fees	1,000	100 gal/yr	$0.50		$500	$3,512	Engineer's Estimate

Table 4-6. Cost Estimate for Alternative 3 Excavation, Offsite Disposal, and Adsorption

Item	Quantity	Units	Unit Cost	Capital Cost	O&M Cost Annual	O&M Cost Present Worth[2]	Source
Subtotal				$1,136,500			
Contingency	25% of Capital Cost			$284,125			
Construction/Project Management	10% of Capital Cost			$113,650			
Engineering (PS&E)	10% of Capital Cost			$113,650			
Stormwater Discharge Permit	10% of Capital Cost			$113,650			
Wastewater Discharge Permit	1	LS	$15,000	$15,000			
Construction Cost Total				**$1,776,575**			
Sales Tax			**8.9%**	**$158,115**			
Environmental Oversight							
Institutional Controls							
Land Use Restrictions[1]	1	LS	$12,000	$12,000	$500	$7,143	Engineer's Estimate
Cleanup Action Plan	1	LS	$9,000	$9,000			Engineer's Estimate
Oversight and Sample Collection	1	LS	$50,000	$50,000			Engineer's Estimate
Sample Analysis	23	ea	$200	$4,600			Engineer's Estimate
Reporting	1	LS	$10,000	$10,000			Engineer's Estimate
Monitoring Well Installation	5	ea	$4,000	$20,000			Similar Project
Groundwater Monitoring							
Sample Collection (Annually)	10	ea	$4,000		$4,000	$28,094	Engineer's Estimate
Sample Analysis (Annually)	10	ea	$3,000		$3,000	$21,071	Engineer's Estimate
Reporting	10	LS	$7,500		$7,500	$52,677	Engineer's Estimate
Subtotal				**$105,600**			
Operation and Maintenance Subtotal						$1,304,117	
O&M Project Management and Support	10% of O&M Present Worth					$130,412	
O&M Contingency	25% of O&M Present Worth					$326,029	
Operation and Maintenance Total						**$1,760,559**	
NET PRESENT WORTH						**$3,800,849**	

Notes:
[1] - Annual institutional controls costs occur each year in perpetuity.
[2] - Discount rate of seven percent used for all present worth calculations.

Table 4-7. Cost Estimate for Alternative 4
Excavation, Offsite Disposal, Low Permeability Cap, and Groundwater Extraction

Item	Quantity	Units	Unit Cost	Capital Cost	O&M Cost Annual	O&M Cost Present Worth[2]	Source
Mobilization	1	LS	$85,000	$85,000			Similar Project; 8% of Capital Costs
Excavation and Offsite Disposal Implementation							
Excavate, Stockpile, Haul, and Dispose Contaminated Soil	530	Ton	$70	$37,100			Similar Project
Import, Place, and Compact Granular Common Borrow	530	Ton	$15.00	$7,950			Similar Project
Groundwater Extraction Implementation							
Extraction Well Installation	4	ea	$4,000	$16,000			Similar Project
Extraction System Equipment							
Influent Pumps	4	ea	$2,500	$10,000			Similar Project
Electrical and I&C	20% of Implementation Cost			$5,200			Engineer's Estimate
Equipment Installation & Piping	20% of Implementation Cost			$5,200			Engineer's Estimate
Operation and Maintenance							Three months O&M
Power	5,000	kWh/yr	$0.06		$300	$2,107	EPA frtr website (500 kWh/m3)
Analytical Testing	1	LS/yr	$2,000		$2,000	$14,047	Engineer's Estimate
General Maintenance	1	LS/yr	$2,000		$2,000	$14,047	Engineer's Estimate
Operations Labor	365	hrs/yr	$75		$27,375	$192,271	Engineer's Estimate
Wastewater Discharge Fees	262,800	100 gal/yr	$0.60		$157,680	$1,107,478	Engineer's Estimate
Subtotal				$166,450			
Contingency	25% of Capital Cost			$41,613			
Construction/Project Management	10% of Capital Cost			$16,645			
Engineering	10% of Capital Cost			$16,645			
Wastewater Discharge Permit	1	LS	$15,000	$15,000			
Construction Cost Total				**$256,353**			
Sales Tax			**8.9%**	**$22,815**			
Environmental Oversight							
Institutional Controls							
Land Use Restrictions[1]	1	LS	$12,000	$12,000	$500	$7,143	Engineer's Estimate
Cleanup Action Plan	1	LS	$9,000	$9,000			Engineer's Estimate

Table 4-7. Cost Estimate for Alternative 4
Excavation, Offsite Disposal, Low Permeability Cap, and Groundwater Extraction

Item	Quantity	Units	Unit Cost	Capital Cost	O&M Cost Annual	O&M Cost Present Worth[2]	Source
Oversight and Sample Collection	1	LS	$20,000	$20,000			Engineer's Estimate
Sample Analysis	8	ea	$200	$1,600			Engineer's Estimate
Reporting	1	LS	$5,000	$5,000			Engineer's Estimate
Monitoring Well Installation	5	ea	$4,000	$20,000			Similar Project
Groundwater Monitoring							
Sample Collection (Annually)	10	ea	$4,000		$4,000	$28,094	Engineer's Estimate
Sample Analysis (Annually)	10	ea	$3,000		$3,000	$21,071	Engineer's Estimate
Reporting	10	LS	$5,000		$5,000	$35,118	Engineer's Estimate
Subtotal				**$67,600**			
Operation and Maintenance Subtotal						$1,421,376	
O&M Project Management and Support	5% of O&M Present Worth					$71,069	
O&M Contingency	25% of O&M Present Worth					$355,344	
Operation and Maintenance Total						**$1,847,789**	
NET PRESENT WORTH						**$2,194,557**	

Notes:
[1] - Annual institutional controls costs occur each year in perpetuity.
[2] - Discount rate of seven percent used for all present worth calculations.

Table 4-8. Cost Estimate for Alternative 5
Excavation, Offsite Disposal, Low Permeability Cap, and Monitored Natural Attenuation

Item	Quantity	Units	Unit Cost	Capital Cost	O&M Cost Annual	O&M Cost Present Worth[2]	Source
Mobilization	1	LS	$50,000	$50,000			Similar Project; 8% of Capital Costs
Excavation and Offsite Disposal Implementation							
Excavate, Stockpile, Haul, and Dispose Contaminated Soil	530	Ton	$70	$37,100			Similar Project
Import, Place, and Compact Granular Common Borrow	530	Ton	$15.00	$7,950			Similar Project
Subtotal				$95,050			
Contingency	25% of Capital Cost			$23,763			
Construction/Project Management	10% of Capital Cost			$9,505			
Engineering	10% of Capital Cost			$9,505			
Construction Cost Total				**$137,823**			
Sales Tax			**8.9%**	**$12,266**			
Environmental Oversight							
Institutional Controls							
Land Use Restrictions[1]	1	LS	$12,000	$12,000	$500	$7,143	Engineer's Estimate
Cleanup Action Plan	1	LS	$9,000	$9,000			Engineer's Estimate
Oversight and Sample Collection	1	LS	$20,000	$20,000			Engineer's Estimate
Sample Analysis	8	ea	$200	$1,600			Engineer's Estimate
Reporting	1	LS	$5,000	$5,000			Engineer's Estimate
Monitoring Well Installation	5	ea	$4,000	$20,000			Similar Project
Groundwater Monitoring							
Sample Collection (Annually)	10	ea	$4,000		$4,000	$28,094	Engineer's Estimate
Sample Analysis (Annually)	10	ea	$3,000		$3,000	$21,071	Engineer's Estimate
Reporting	10	LS	$5,000		$5,000	$35,118	Engineer's Estimate
Subtotal				**$67,600**			
Operation and Maintenance Subtotal						$91,426	
O&M Project Management and Support	5% of O&M Present Worth					$4,571	
O&M Contingency	25% of O&M Present Worth					$22,856	
Operation and Maintenance Total						**$118,854**	
NET PRESENT WORTH						**$336,542**	

Notes:
[1] - Annual institutional controls costs occur each year in perpetuity.
[2] - Discount rate of seven percent used for all present worth calculations.

APPENDIX A

Bothell Downtown Subarea Plan (Figure 1.1)

C. The Envisioned Future Downtown

This section provides an overview of the desired physical outcomes intended to result from implementing the combined regulations and planned public actions contained in this Plan.

The Downtown Subarea is composed of a multitude of privately held properties and miles of public rights-of-way under public ownership. The overarching purpose of the Downtown Plan is to orchestrate investment in changes made to this multiplicity of properties to produce greater value than any separate development could achieve, by providing a common purpose that all investors can rely upon, contribute to, and derive value from. This section describes the common purpose to which all investments shall be directed: a vision of the future that is sufficiently specific to provide a common purpose, yet broad enough to respond to opportunities and to the changes in the marketplace that will inevitably arise.

Note: The specific outcomes described and illustrated in this section are not part of the formal regulating code, and new development proposals will not be required to mimic the specific designs presented in the illustrations.

Fig. 1.1 A vision of potential future development in Downtown Bothell showing one scenario focusing on redevelopment in the core area

APPENDIX B

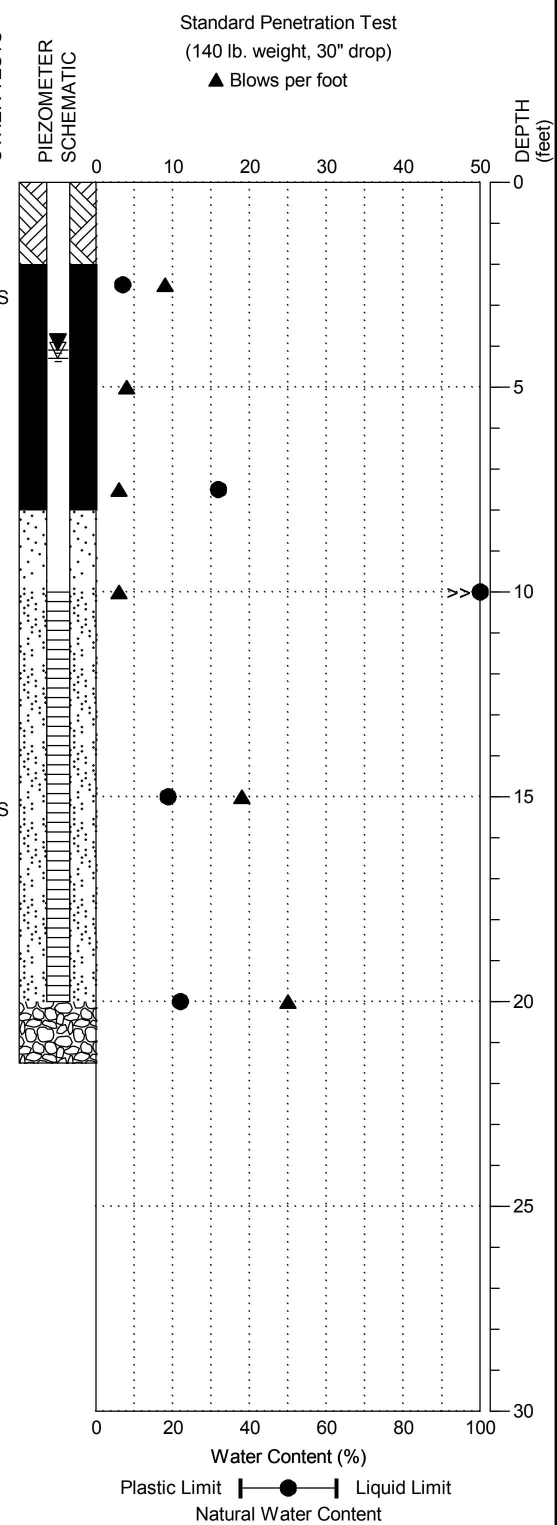
Boring Logs

DRILLING COMPANY: Gregory Drilling Inc. SURFACE ELEVATION: 38.00 ± feet DATE STARTED: 10/28/2008
DRILLING METHOD: Hollow-Stem Auger, Truck mounted CME 85 DATE COMPLETED: 10/28/2008
SAMPLING METHOD: SPT with Autohammer LOGGED BY: J. Speck
LOCATION: See Figure 2

DEPTH (feet)	USCS SOIL CLASS	DESCRIPTION	SAMPLE NUMBER	PEN. RESISTANCE (blows/6 inches)	OTHER TESTS
0		7 inches of asphalt over asphalt treated base gravel.			
	SM	Loose, gray, silty, very gravelly, fine to medium SAND, moist. Observed hydrocarbon odor throughout layer.	S-0		
			S-1	4-6-3	GS
		Observe two inch lense of black slag material at 3.75 feet below ground surface.			
5		No recovery in S-2 at 5 feet.	S-2	1-3-1	
			S-3	0-1-2	
	PT	Brown, PEAT, moist to wet. Observed hydrocarbon odor. Trace medium to coars sands.			
10			S-4	0-0-3	
15			S-5	1-13-6	GS
	SM	Medium dense, gray, silty, fine to medium SAND, moist.			
		First ground water observed at 17 feet below ground surface.			
20			S-6	6-13-12	

Exploration completed at 21.5 feet below ground surface (bgs).
Ground water noted at 17.0 feet bgs during exploration.
Ground water measured at 4.30 feet bgs on 10/28/2008.

Washington State Department of Ecology Unique Well ID: BAA867



NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

HWA GEOSCIENCES INC.

SR 522 PRELOAD RECOMMENDATIONS
BOTHELL CROSSROADS PROJECT
BOTHELL, WASHINGTON

BORING:
BC-10

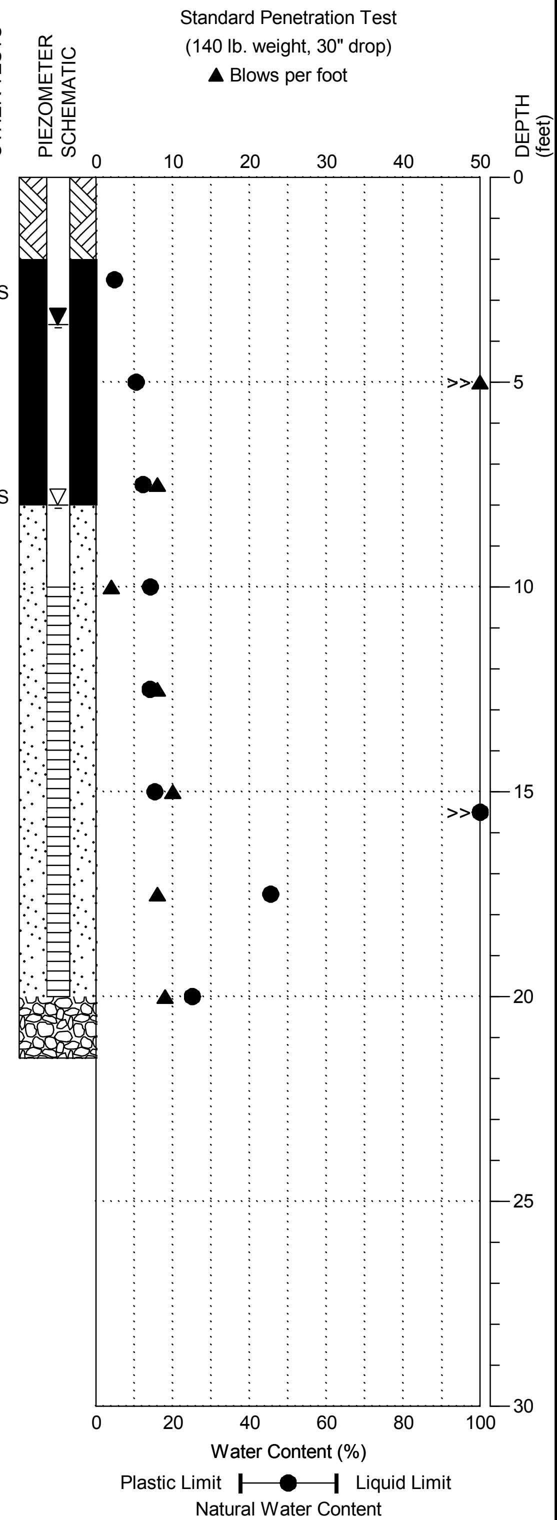
PROJECT NO.: 2007-098 FIGURE: 11

PZO 2007098.GPJ 9/28/09

DRILLING COMPANY: Cascade Drilling, Inc.
SURFACE ELEVATION: 35.00 ± feet
DATE STARTED: 6/25/2008
DRILLING METHOD: Hollow Stem Auger, track-mounted, Modified CME-55
DATE COMPLETED: 6/25/2008
SAMPLING METHOD: SPT w/rods and down-hole hammer
LOGGED BY: J. Speck/B. Blanchette
LOCATION: See Figure 2

DEPTH (feet)	USCS SOIL CLASS	DESCRIPTION	SAMPLE NUMBER	PEN. RESISTANCE (blows/6 inches)	OTHER TESTS
0		ASPHALT - HMA 4 inches thick in 2 inch lifts.			
	SM	Loose, yellow brown, silty, gravelly, fine to medium SAND, moist. Some construction debris (asphalt, concrete pipe fragments).			
	SP SM	Hand dug exploration to depth of 5 feet. Sample S-1 at 2.5 feet taken from cuttings. Loose, olive brown, gravelly, slightly silty poorly graded SAND, moist.	S-1		GS
5	ML	Hard, gray, gravelly, sandy SILT, moist.	S-2	23-18-50	
	SM	Loose, light gray to gray, slightly gravelly to gravelly, silty SAND, wet	S-3	8-5-3	GS
10			S-4	1-1-1	
			S-5	3-3-5	
15		Some organic material, wood, noted from 15.0 to 15.5 feet.	S-6B	4-5-5	
	PT	Stiff, dark brown, PEAT, moist to wet, with wood fragments.	S-6A		
	SP SM	Loose, gray, medium to coarse SAND, with interbeds of peat, moist. Loose, gray, silty medium SAND, wet.	S-7	3-3-5	
20	SM	Loose, brown, gravelly, silty SAND, wet.	S-8	7-5-4	
	PT	Stiff, dark brown, sandy, PEAT, moist.			

Exploration completed at 21.5 feet below ground surface (bgs).
Ground water noted at 8 feet bgs during exploration.
Ground water measured at 3.6 feet bgs on 6/27/2008.



NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

HWA GEOSCIENCES INC.

SR 522 PRELOAD RECOMMENDATIONS
BOTHELL CROSSROADS PROJECT
BOTHELL, WASHINGTON

BORING:
BC-11

PAGE: 1 of 1

PROJECT NO.: 2007-098 FIGURE: 12

DRILLING COMPANY: Cascade Drilling, Inc.
SURFACE ELEVATION: ± feet
DATE STARTED: 9/2/2009
DRILLING METHOD: CME 55 Limited-access 8-inch HSA
DATE COMPLETED: 9/2/2009
SAMPLING METHOD: D&M Split Spoon with 140 lb hammer
LOGGED BY: V. Atkins
LOCATION: Bothell Paint property, southeast corner

DEPTH (feet)	USCS SOIL CLASS	DESCRIPTION	PEN. RESISTANCE (blows/6 inches)	PID (ppm)	NOTES
0	SM	Dark brown silty SAND with gravel, trace debris (FILL), dry to moist.		0	Cement surface seal and flush mount monument; 2-inch Sch. 40 PVC casing
		Grading yellow-brown silty fine SAND.		0	Hydrated bentonite seal
5		Medium dense brown to red-brown silty SAND, trace gravel and debris, moist.	7/9/9	0	
	SM	Grading gray medium silty SAND (ALLUVIUM), moist.			#2/12 filter sand
10		Loose gray-brown SILT and SAND, moist to wet.	1/3/4	0	2-inch Sch. 40 PVC 10-slot screen
	PT	Soft dark red-brown fibrous PEAT, moist.			
15		Medium stiff dark red-brown fibrous PEAT with gray medium sand seams, moist to wet.	3/3/3	0.5	
20		Medium stiff dark red-brown fibrous PEAT, moist to wet.	4/5/5	0.3	
25			3/3/4	-	
	CL	Soft olive silty CLAY, moist.			

Boring completed to 26.5 feet bgs.
Ground water encountered at 15 feet bgs.
Boring completed as monitoring well.

NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

HWA GEOSCIENCES INC.

Bothell Crossroads RI/FS
Bothell, Washington

MONITORING WELL:
BPMW-1

PAGE: 1 of 1

PROJECT NO.: 2007-098-800 FIGURE:

MWELL 2007-098-800.GPJ 9/23/09

DRILLING COMPANY: Cascade Drilling, Inc.
DRILLING METHOD: CME 55 Limited-access 8-inch HSA
SAMPLING METHOD: D&M Split Spoon with 140 lb hammer
LOCATION: Bothell Paint property, south of NE 180th Street

SURFACE ELEVATION: ± feet

DATE STARTED: 9/2/2009
DATE COMPLETED: 9/2/2009
LOGGED BY: V. Atkins

DEPTH (feet)	USCS SOIL CLASS	DESCRIPTION	PEN. RESISTANCE (blows/6 inches)	PID (ppm)	NOTES
0		Brown silty TOPSOIL with roots and organic matter, dry.		-	Cement surface seal and flush mount monument 2-inch Sch. 40 PVC casing
	SM	Loose red-brown silty SAND with roots (FILL), dry grading moist.		-	Hydrated bentonite seal
5	SM	Gray medium coarse silty SAND, moist.	3/4/5	0.5	
	PT	Medium stiff dark red-brown organic SILT, moist			
		Medium stiff dark red-brown organic SILT and PEAT with wood fragments and sandy seams, moist.	7/10/12	0.2	
10		Dark red-brown fibrous PEAT. Slight organic odor.	14/15/17	0	
	SM	Medium dense dark brown silty SAND, trace gravel, moist.			
	PT	Medium stiff dark red-brown sandy SILT grading fibrous PEAT, moist. Slight organic odor.	9/9/17	0.2	
15		Medium stiff dark red-brown fibrous PEAT with silty sand layer, moist to wet.	12/12/15	0	
			7/7/9	0	
20			5/5/6	0	
	OL	Soft olive brown organic SILT and CLAY with peat fragments, moist, low to medium placticity.			
			3/4/4	0	
25			4/4/5	0	
			5/5/5	0	
30		As above, decreasing organics.	5/5/6	0	#2/12 filter sand
					2-inch Sch. 40 PVC 10-slot screen
	CL	Soft olive brown grading gray silty CLAY, moist to wet.	3/4/4	0	
35			3/3/3	0	
	SM	Dense gray SILT and silty SAND, wet, heaving.	17/50-6"	-	
40					

NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

HWA GEOSCIENCES INC.

Bothell Crossroads RI/FS
Bothell, Washington

MONITORING WELL:
BPMW-2

PROJECT NO.: 2007-098-800 FIGURE:

MWELL 2007-098-800.GPJ 9/23/09

DRILLING COMPANY: Cascade Drilling, Inc.
DRILLING METHOD: CME 55 Limited-access 8-inch HSA
SAMPLING METHOD: D&M Split Spoon with 140 lb hammer
LOCATION: Bothell Paint property, south of NE 180th Street

SURFACE ELEVATION: ± feet

DATE STARTED: 9/2/2009
DATE COMPLETED: 9/2/2009
LOGGED BY: V. Atkins

DEPTH (feet)	SYMBOL	USCS SOIL CLASS	DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	PEN. RESISTANCE (blows/6 inches)	OTHER TESTS	PID (ppm)	WELL COMPLETION SCHEMATIC	NOTES	DEPTH (feet)
40											40
			Boring completed to 42 feet bgs. Ground water encountered at 37 feet bgs. Boring completed as monitoring well.								
45											45
50											50
55											55
60											60
65											65
70											70
75											75
80											80

NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

HWA GEOSCIENCES INC.

Bothell Crossroads RI/FS
Bothell, Washington

MONITORING WELL:
BPMW-2

PROJECT NO.: 2007-098-800 FIGURE:

MWELL 2007-098-800.GPJ 9/23/09

DRILLING COMPANY: Cascade Drilling, Inc.
DRILLING METHOD: CME 75 Truck-mounted 8-inch HSA
SAMPLING METHOD: D&M Split Spoon with 300 lb hammer
LOCATION: Bothell Paint property, north boundary

SURFACE ELEVATION: ± feet

DATE STARTED: 9/8/2009
DATE COMPLETED: 9/8/2009
LOGGED BY: V. Atkins

DEPTH (feet)	USCS SOIL CLASS	DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	PEN. RESISTANCE (blows/6 inches)	OTHER TESTS	PID (ppm)	NOTES
0		ASPHALT						Cement surface seal and flush mount monument
	GM	Red-brown silty SAND and angular GRAVEL (FILL), dry.					0	2-inch Sch. 40 PVC casing
	SM	Dark gray SAND and SILT with gravel (FILL), dry grading moist.					4	#2/12 filter sand
5		Loose red-brown grading dark brown silty SAND with gravel, trace construction debris (brick, wood), moist grading wet.	■		2/2/2		1.5	2-inch Sch. 40 PVC 10-slot screen
	SM	No recovery, wet.						
10			■		10/11/10		-	
15		Medium dense red-brown silty SAND and GRAVEL, wet.	■		10/12/12		-	Hydrated bentonite backfill
		Medium stiff gray fine silty SAND with silt interbeds, wet to moist.						
20			■		5/6/7		-	
	SP	Medium dense gray medium SAND, trace silt, moist to wet.						

Boring completed to 21.5 feet bgs.
Ground water encountered at 5 feet bgs.
Boring completed as monitoring well.

NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

HWA GEOSCIENCES INC.

Bothell Crossroads RI/FS
Bothell, Washington

MONITORING WELL:
BPMW-3

PAGE: 1 of 1

PROJECT NO.: 2007-098-800 FIGURE:

APPENDIX C

Analytical Data Validation and Laboratory Results

APPENDIX C1

Data Validation Memorandum

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

411 108th AVENUE NE, SUITE 1800
BELLEVUE, WA 98004-5571
T. 425.458.6200 F. 425.458.6363
www.parametrix.com

TECHNICAL MEMORANDUM

Date:	October 23, 2009
To:	Project File
From:	Annika Deutsch
Subject:	City of Bothell Paint and Decorating Facility September 2009 Data Validation
cc:	Sandra Matthews
Project Number:	555-1647-019-02-0404
Project Name:	Bothell Hazardous Materials On-Call

INTRODUCTION

This technical memorandum summarizes the results of an internal quality assurance/quality control (QA/QC) review of analytical results for soil and groundwater samples collected on September 2-4, 8, and 18, 2009. Forty soil samples (including a field duplicate), nine groundwater samples, and three trip blanks were submitted to OnSite Environmental, Inc. (OnSite; Redmond, WA) for analysis. Twenty-eight additional soil samples were submitted to OnSite to be held for potential future analysis.

Soil samples were analyzed for a combination of diesel extended (Dx); gasoline extended (Gx); benzene, toluene, ethylbenzene, and xylenes (BTEX); halogenated organic compounds (HVOCs); semivolatile organic compounds (SVOCs); and total Model Toxics Control Act (MTCA) metals. All soil samples were analyzed for percent moisture. Groundwater samples were analyzed for a combination of Dx, Gx, HVOCs, and total and dissolved MTCA metals. The trip blanks were analyzed only for HVOCs and, in one case, Gx.

Final laboratory data were submitted to Parametrix via a Tier II-type data report (OnSite Laboratory Reference Number 09-029, 09-034, 09-035, 09-043, 09-057, 09-057B, 09-068, 09-180). All data and analytical QC elements were reviewed against laboratory and method QC criteria, and qualifiers were applied where judged appropriate.

DATA REVIEW SUMMARY

All samples collected were prepared and analyzed using standard methods. All method holding times were met, with the following exceptions:

- Dx for sample Dup-0904, which was analyzed three days over the 14-day method holding time.
- Mercury for samples BP-23 4-5, BP-11 4-5, BP-11 0-0.5, and BP-11 2-3 which were analyzed outside of the 28-day method holding time.

All analyses requested on the COC were conducted.

No trip blank or laboratory method blank contamination was observed, with the exception of Methylene Chloride (1.2 µg/L) in the 09-180 trip blank. No associated samples had detections of Methylene Chloride; therefore, no samples were qualified as a result of this blank contamination.

All other analytical QC results were in control, indicating acceptable analytical accuracy and precision, with the exception of the following:

- According to the OnSite's case narratives, Internal Standard 1,4-Dichlorobenzene-d4 did not meet acceptance criteria for sample BP-26 (09-029) due to sample matrix interference. Therefore, HVOCs from Bromobenzene through 1,2,3-Trichlorobenzene for BP-26 (none detected at PQL) were qualified "UJ" for estimated non-detect.
- BPMW-3 2' (09-068) was qualified by the lab for hydrocarbons in the lube oil range impacting the diesel range results. Therefore, the diesel value for this sample was qualified "J" for estimated.
- BPMW-1-1.5 (09-034) was qualified by the lab for hydrocarbons indicative of heavier fuels present in the sample impacting the gasoline result. Therefore, the gasoline value for this sample was qualified "J" for estimated.

One soil field duplicate was collected and analyzed: original sample BP-20-01 and duplicate Dup-0904. The original sample was analyzed for Dx, total MTCA metals, and percent moisture. The duplicate was analyzed for only total MTCA metals and percent moisture. The results of these analyses were acceptable. Dx analysis was added to the chain-of-custody past holding time for comparison to the original sample. Due to the holding time exceedance, the diesel was qualified "UJH" for estimated non-detect and lube oil results were qualified "JH" for estimated. One groundwater field duplicate was collected and analyzed: original sample BC-10-12 and duplicate BC-10-12-2. These samples were analyzed for Gx/BTEX, Dx, HVOCs, and dissolved and total metals. The results of these analyses were acceptable. Table 1 summarizes all data qualified based on this review (i.e., does not include laboratory qualified data).

Table 1. Qualified Paint and Decorating Facility Soil Data

Sample ID	Matrix	Analyte	Result	Qualifier	Reason
BP-26	Soil	Bromobenzene	<0.00069	UJ	OnSite internal standard not met.
BP-26	Soil	1,1,2,2-Tetrachloroethane	<0.00069	UJ	OnSite internal standard not met.
BP-26	Soil	1,2,3-Trichloropropane	<0.00069	UJ	OnSite internal standard not met.
BP-26	Soil	2-Chlorotoluene	<0.00069	UJ	OnSite internal standard not met.
BP-26	Soil	4-Chlorotoluene	<0.00069	UJ	OnSite internal standard not met.
BP-26	Soil	1,3-Dichlorobenzene	<0.00069	UJ	OnSite internal standard not met.
BP-26	Soil	1,4-Dichlorobenzene	<0.00069	UJ	OnSite internal standard not met.
BP-26	Soil	1,2-Dichlorobenzene	<0.00069	UJ	OnSite internal standard not met.
BP-26	Soil	1,2-Dibromo-3-chloropropane	<0.003	UJ	OnSite internal standard not met.
BP-26	Soil	1,2,4-Trichlorobenzene	<0.00069	UJ	OnSite internal standard not met.
BP-26	Soil	Hexachlorobutadiene	<0.0034	UJ	OnSite internal standard not met.
BP-26	Soil	1,2,3-Trichlorobenzene	<0.00069	UJ	OnSite internal standard not met.
BPMW-1-1.5	Soil	Gasoline	3.3	J	Heavier fuel range interference.
BPMW-3 2'	Soil	Diesel	300	J	Lube oil range interference.
BP-23 4-5	Soil	Mercury	0.023	JH	Holding time exceeded.
BP-11 4-5	Soil	Mercury	<0.022	UJH	Holding time exceeded.
BP-11 0-0.5	Soil	Mercury	<0.0050 mg/L	UJH	Holding time exceeded.
BP-11 2-3	Soil	Mercury	<0.0050 mg/L	UJH	Holding time exceeded.
Dup-0904	Soil	Diesel	<37	UJH	Holding time exceeded.

Sample ID	Matrix	Analyte	Result	Qualifier	Reason
Dup-0904	Soil	Lube Oil	570	JH	Holding time exceeded.

J	Analyte was detected; the reported concentration should be considered an estimate due to lube oil range interference.
UJ	Analyte was not detected at the PQL. Concentration reported should be considered an estimate due to internal standards not met.
JH	Analyte was detected; the reported concentration should be considered an estimate due to holding time exceedance.
UJH	Analyte was not detected at the PQL. Concentration reported should be considered an estimate due to holding time exceedance.
Units	mg/kg, except where noted.

CONCLUSION

All samples were analyzed within holding times, with the exception of Dx for Dup0904 and the mercury analyses noted above, and appropriate standard methods were used. No trip blank or laboratory method blank contamination was observed, with the exception noted above. Analytical accuracy and precision were determined to be generally acceptable based on this review. Field duplicate results were acceptable. All data reported should be considered valid as qualified and acceptable for further use.

Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: / Depth (ft): / Background	BP-1 0'-0.5' / 0-0.5 / 9/2/2009	BP-2 0-0.5 / 0-0.5 / 9/2/2009	BP-3 0-0.5 / 0-0.5 / 9/2/2009	BP-4 0-0.5 / 0-0.5 / 9/2/2009	BP-5 0-0.5 / 10 / 9/2/2009	BP-5 2-3 / 2-3 / 9/2/2009	BP-5 4-5 / 4-5 / 9/2/2009	BP-5 10 / 10 / 9/2/2009	BP-6 0-1 / 0-1 / 9/2/2009	BP-7 0-0.5 / 0-0.5 / 9/2/2009
PETROLEUM HYDROCARBONS																
Diesel	mg/kg	NWTPH-Dx	2,000		200		- -	- -	- -	- -	- -	- -	**900**	31 U	- -	- -
Motor Oil	mg/kg	NWTPH-Dx	2,000				- -	- -	- -	- -	- -	- -	1,700	63 U	- -	- -
Gasoline	mg/kg	NWTPH-Gx	30/100*G		100		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzene	µg/kg	SW8021B	30	4.483			- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Toluene	µg/kg	SW8021B	7,000				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Ethylbenzene	µg/kg	SW8021B	6,000				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
m,p-Xylene	µg/kg	SW8021B	9,000*XY				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
o-Xylene	µg/kg	SW8021B	9,000*XY				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
METALS																
Arsenic	mg/kg	SW6010B-Total	20	2.803	7	7.30	5.3 U	5.3 U	6.2	5.4 U	**7.3**	**11**	- -	- -	**12**	5.2 U
Cadmium	mg/kg	SW6010B-Total	2	0.69	4	0.77	0.53 U	0.53 U	0.54 U	0.54 U	0.54 U	0.57 U	- -	- -	0.53 U	0.52 U
Chromium	mg/kg	SW6010B-Total	2,000*CR		42	48.15	33	28	29	31	37	35	- -	- -	**47**	14
Lead	mg/kg	SW6010B-Total	250	250	50	16.83	5.3 U	5.3 U	35	26	48	49	- -	- -	30	13
Mercury	mg/kg	SW7471A-Total	2	2.088	0.1	0.07	0.021 U	0.021 U	0.087	0.044	0.047	0.05	- -	- -	0.03	0.021
METALS (TCLP Extract-wet)																
Arsenic	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Cadmium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chromium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Lead	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Mercury	mg/L	SW7471A-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
VOLATILE ORGANICS																
1,1,1,2-Tetrachloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-chloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	µg/kg	SW8260B			700,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dichlorobenzene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromobenzene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromochloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromodichloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromoform	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

Soil Analytical Results

						Sample No.:	BP-1 0'-0.5'	BP-2 0-0.5	BP-3 0-0.5	BP-4 0-0.5	BP-5 0-0.5	BP-5 2-3	BP-5 4-5	BP-5 10	BP-6 0-1	BP-7 0-0.5
						Depth (ft):	0-0.5	0-0.5	0-0.5	0-0.5	10	2-3	4-5	10	0-1	0-0.5
PARAMETERS	**Units**	**Analytical Method**	**MTCA A**	**MTCA B soil to gw**	**Ecological Indicator Conc.**	**Background**	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009
VOLATILE ORGANICS (continued)																
Bromomethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chlorobenzene	µg/kg	SW8260B			40,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chloroform	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibromochloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibromomethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dichlorodifluoromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorobutadiene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Methyl Iodide	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Methylene Chloride	µg/kg	SW8260B	20				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Tetrachloroethene	µg/kg	SW8260B	50				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
trans-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
trans-1,3-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Trichloroethene	µg/kg	SW8260B	30				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Trichlorofluoromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Vinyl Chloride	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
SEMIVOLATILE ORGANICS																
1,2,4-Trichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dinitrobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Diphenylhydrazine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dinitrobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1,4-Dinitrobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,3,4,6-Tetrachlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,3,5,6-Tetrachlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,3-Dichloroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	µg/kg	SW8270D			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Nitroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Nitrophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3,3'-Dichlorobenzidine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

Soil Analytical Results

						Sample No.:	BP-1 0'-0.5'	BP-2 0-0.5	BP-3 0-0.5	BP-4 0-0.5	BP-5 0-0.5	BP-5 2-3	BP-5 4-5	BP-5 10	BP-6 0-1	BP-7 0-0.5
		Analytical		MTCA B	Ecological Indicator	Depth (ft):	0-0.5	0-0.5	0-0.5	0-0.5	10	2-3	4-5	10	0-1	0-0.5
PARAMETERS	**Units**	**Method**	**MTCA A**	**soil to gw**	**Conc.**	**Background**	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009
SEMIVOLATILE ORGANICS (continued)																
3+4-Methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3-Nitroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Bromophenyl-phenylether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chloro-3-methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chloroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chlorophenyl-phenylether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Nitroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Nitrophenol	µg/kg	SW8270D			7,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthene	µg/kg	SW8270D SIM			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Aniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzidine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)pyrene	µg/kg	SW8270D SIM			12,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(b)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)perylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(k)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Chloroethoxy) Methane	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
bis-(2-Chloroethyl) Ether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Chloroisopropyl)ether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Ethylhexyl)phthalate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
bis-2-Ethylhexyladipate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Butylbenzylphthalate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Carbazole	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chrysene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibenz(a,h)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibenzofuran	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Diethylphthalate	µg/kg	SW8270D			100,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dimethylphthalate	µg/kg	SW8270D			200,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Di-n-Butylphthalate	µg/kg	SW8270D			200,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Di-n-Octyl phthalate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Fluorene	µg/kg	SW8270D SIM			30,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorobutadiene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachloroethane	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Isophorone	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Naphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Nitrobenzene	µg/kg	SW8270D			40,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodimethylamine	µg/kg	SW8270D			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitroso-Di-N-Propylamine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodiphenylamine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: Depth (ft): Background	BP-1 0'-0.5' 0-0.5 9/2/2009	BP-2 0-0.5 0-0.5 9/2/2009	BP-3 0-0.5 0-0.5 9/2/2009	BP-4 0-0.5 0-0.5 9/2/2009	BP-5 0-0.5 10 9/2/2009	BP-5 2-3 2-3 9/2/2009	BP-5 4-5 4-5 9/2/2009	BP-5 10 10 9/2/2009	BP-6 0-1 0-1 9/2/2009	BP-7 0-0.5 0-0.5 9/2/2009
SEMIVOLATILE ORGANICS (continued)																
Pentachlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Phenanthrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Phenol	µg/kg	SW8270D			30,000		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pyridine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total cPAHs Using Tox. Equiv.	µg/kg	Calculated	100				- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

(Table Continues)

Soil Analytical Results

						Sample No.:	BP-8 0-0.5	BP-8 2-3	BP-9 0-0.5	BP-9 2-3	BP-10 0-0.5	BP-11 0-0.5	BP-11 2-3	BP-11 4-5	BP-12 0-0.5
		Analytical		MTCA B	Ecological Indicator	Depth (ft):	0-0.5	2-3	0-0.5	2-3	0-0.5	0-0.5	2-3	4-5	0-0.5
PARAMETERS	Units	Method	MTCA A	soil to gw	Conc.	Background	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009
PETROLEUM HYDROCARBONS															
Diesel	mg/kg	NWTPH-Dx	2,000		200		- -	- -	- -	- -	- -	- -	- -	28 U	- -
Motor Oil	mg/kg	NWTPH-Dx	2,000				- -	- -	- -	- -	- -	- -	- -	56 U	- -
Gasoline	mg/kg	NWTPH-Gx	30/100*G		100		- -	- -	- -	- -	- -	- -	- -	1.4 U	- -
Benzene	µg/kg	SW8021B	30	4.483			- -	- -	- -	- -	- -	- -	- -	20 U	- -
Toluene	µg/kg	SW8021B	7,000				- -	- -	- -	- -	- -	- -	- -	28 U	- -
Ethylbenzene	µg/kg	SW8021B	6,000				- -	- -	- -	- -	- -	- -	- -	28 U	- -
m,p-Xylene	µg/kg	SW8021B	9,000*XY				- -	- -	- -	- -	- -	- -	- -	28 U	- -
o-Xylene	µg/kg	SW8021B	9,000*XY				- -	- -	- -	- -	- -	- -	- -	28 U	- -
METALS															
Arsenic	mg/kg	SW6010B-Total	20	2.803	7	7.30	**50**	**10**	**130**	**11**	5.1 U	**210**	**390**	6.1	**11**
Cadmium	mg/kg	SW6010B-Total	2	0.69	4	0.77	0.54 U	0.6 U	3.9	0.54 U	0.51 U	**4.5**	3.5	0.56 U	0.53 U
Chromium	mg/kg	SW6010B-Total	2,000*CR		42	48.15	33	38	**57**	**46**	8.2	**75**	**48**	26	24
Lead	mg/kg	SW6010B-Total	250	250	50	16.83	**91**	**82**	**350**	18	7.3	**570**	**300**	5.6 U	20
Mercury	mg/kg	SW7471A-Total	2	2.088	0.1	0.07	0.095	0.063	0.051	0.032	0.02 U	0.066	0.073	0.022 UJH	0.023
METALS (TCLP Extract-wet)															
Arsenic	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	0.40 U	0.96	- -	- -
Cadmium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	0.045	0.13	- -	- -
Chromium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	0.022	0.020 U	- -	- -
Lead	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	0.70	0.32	- -	- -
Mercury	mg/L	SW7471A-Total					- -	- -	- -	- -	- -	0.0050 UJI	0.0050 UJI	- -	- -
VOLATILE ORGANICS															
1,1,1,2-Tetrachloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-chloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	µg/kg	SW8260B			700,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dichlorobenzene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromobenzene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromochloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromodichloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromoform	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -

Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: / Depth (ft): / Background	BP-8 0-0.5 0-0.5 9/2/2009	BP-8 2-3 2-3 9/2/2009	BP-9 0-0.5 0-0.5 9/2/2009	BP-9 2-3 2-3 9/2/2009	BP-10 0-0.5 0-0.5 9/2/2009	BP-11 0-0.5 0-0.5 9/2/2009	BP-11 2-3 2-3 9/2/2009	BP-11 4-5 4-5 9/2/2009	BP-12 0-0.5 0-0.5 9/2/2009
VOLATILE ORGANICS (continued)															
Bromomethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Chlorobenzene	µg/kg	SW8260B			40,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Chloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Chloroform	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Chloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibromochloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibromomethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Dichlorodifluoromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorobutadiene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Methyl Iodide	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Methylene Chloride	µg/kg	SW8260B	20				- -	- -	- -	- -	- -	- -	- -	- -	- -
Tetrachloroethene	µg/kg	SW8260B	50				- -	- -	- -	- -	- -	- -	- -	- -	- -
trans-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
trans-1,3-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Trichloroethene	µg/kg	SW8260B	30				- -	- -	- -	- -	- -	- -	- -	- -	- -
Trichlorofluoromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Vinyl Chloride	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
SEMIVOLATILE ORGANICS															
1,2,4-Trichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dinitrobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Diphenylhydrazine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dinitrobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,4-Dinitrobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -
2,3,4,6-Tetrachlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,3,5,6-Tetrachlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,3-Dichloroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	µg/kg	SW8270D			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Nitroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Nitrophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
3,3'-Dichlorobenzidine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -

Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: / Depth (ft): / Background	BP-8 0-0.5	BP-8 2-3	BP-9 0-0.5	BP-9 2-3	BP-10 0-0.5	BP-11 0-0.5	BP-11 2-3	BP-11 4-5	BP-12 0-0.5
							0-0.5	2-3	0-0.5	2-3	0-0.5	0-0.5	2-3	4-5	0-0.5
							9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009
SEMIVOLATILE ORGANICS (continued)															
3+4-Methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
3-Nitroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Bromophenyl-phenylether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chloro-3-methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chloroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chlorophenyl-phenylether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Nitroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Nitrophenol	µg/kg	SW8270D			7,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthene	µg/kg	SW8270D SIM			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Aniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzidine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)pyrene	µg/kg	SW8270D SIM			12,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(b)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)perylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(k)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Chloroethoxy) Methane	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
bis-(2-Chloroethyl) Ether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Chloroisopropyl)ether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Ethylhexyl)phthalate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
bis-2-Ethylhexyladipate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Butylbenzylphthalate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Carbazole	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Chrysene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibenz(a,h)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibenzofuran	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Diethylphthalate	µg/kg	SW8270D			100,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Dimethylphthalate	µg/kg	SW8270D			200,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Di-n-Butylphthalate	µg/kg	SW8270D			200,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Di-n-Octyl phthalate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Fluorene	µg/kg	SW8270D SIM			30,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorobutadiene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachloroethane	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Isophorone	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Naphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -
Nitrobenzene	µg/kg	SW8270D			40,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodimethylamine	µg/kg	SW8270D			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitroso-Di-N-Propylamine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodiphenylamine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -

Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: Depth (ft): Background	BP-8 0-0.5 0-0.5 9/2/2009	BP-8 2-3 2-3 9/2/2009	BP-9 0-0.5 0-0.5 9/2/2009	BP-9 2-3 2-3 9/2/2009	BP-10 0-0.5 0-0.5 9/2/2009	BP-11 0-0.5 0-0.5 9/2/2009	BP-11 2-3 2-3 9/2/2009	BP-11 4-5 4-5 9/2/2009	BP-12 0-0.5 0-0.5 9/2/2009
SEMIVOLATILE ORGANICS (continued)															
Pentachlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Phenanthrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Phenol	µg/kg	SW8270D			30,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Pyridine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Total cPAHs Using Tox. Equiv.	µg/kg	Calculated	100				- -	- -	- -	- -	- -	- -	- -	- -	- -

(Table Continues)

Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.:	BP-13 0-0.5	BP-14 0-0.5	BP-15-0-0.5	BP-16-0-0.5	BP-17-0-0.5	BP-18-0-1	BP-19-0-1	BP-20-0-1	DUP-0904
						Depth (ft):	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-1	0-1	0-1	(BP-20-0-1)
						Background	9/2/2009	9/2/2009	9/3/2009	9/4/2009	9/4/2009	9/4/2009	9/4/2009	9/4/2009	9/4/2009
PETROLEUM HYDROCARBONS															
Diesel	mg/kg	NWTPH-Dx	2,000		200		- -	- -	- -	- -	- -	- -	- -	140 U	37 UJH
Motor Oil	mg/kg	NWTPH-Dx	2,000				- -	- -	- -	- -	- -	- -	- -	440	570 JH
Gasoline	mg/kg	NWTPH-Gx	30/100*G		100		- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzene	µg/kg	SW8021B	30	4.483			- -	- -	- -	- -	- -	- -	- -	- -	- -
Toluene	µg/kg	SW8021B	7,000				- -	- -	- -	- -	- -	- -	- -	- -	- -
Ethylbenzene	µg/kg	SW8021B	6,000				- -	- -	- -	- -	- -	- -	- -	- -	- -
m,p-Xylene	µg/kg	SW8021B	9,000*XY				- -	- -	- -	- -	- -	- -	- -	- -	- -
o-Xylene	µg/kg	SW8021B	9,000*XY				- -	- -	- -	- -	- -	- -	- -	- -	- -
METALS															
Arsenic	mg/kg	SW6010B-Total	20	2.803	7	7.30	5.5 U	**16**	5.5 U	**9.8**	5.4 U	5.4 U	6	**27**	**37**
Cadmium	mg/kg	SW6010B-Total	2	0.69	4	0.77	1.1	3.9	0.55 U	0.54 U	0.54 U	1.1	2.6	**4.4**	**6.1**
Chromium	mg/kg	SW6010B-Total	2,000*CR		42	48.15	34	**200**	20	26	23	**43**	**50**	**66**	**91**
Lead	mg/kg	SW6010B-Total	250	250	50	16.83	**100**	**130**	5.5 U	35	11	**78**	**180**	**270**	**410**
Mercury	mg/kg	SW7471A-Total	2	2.088	0.1	0.07	**0.13**	**0.23**	0.022 U	0.053	0.034	**0.12**	**0.27**	**0.53**	**0.49**
METALS (TCLP Extract-wet)															
Arsenic	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Cadmium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Chromium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Lead	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Mercury	mg/L	SW7471A-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
VOLATILE ORGANICS															
1,1,1,2-Tetrachloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-chloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	µg/kg	SW8260B			700,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dichlorobenzene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromobenzene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromochloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromodichloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Bromoform	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -

Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: / Depth (ft): / Background	BP-13 0-0.5 / 0-0.5 / 9/2/2009	BP-14 0-0.5 / 0-0.5 / 9/2/2009	BP-15-0-0.5 / 0-0.5 / 9/3/2009	BP-16-0-0.5 / 0-0.5 / 9/4/2009	BP-17-0-0.5 / 0-0.5 / 9/4/2009	BP-18-0-1 / 0-1 / 9/4/2009	BP-19-0-1 / 0-1 / 9/4/2009	BP-20-0-1 / 0-1 / 9/4/2009	DUP-0904 / (BP-20-0-1) / 9/4/2009
VOLATILE ORGANICS (continued)															
Bromomethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Chlorobenzene	µg/kg	SW8260B			40,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Chloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Chloroform	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Chloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibromochloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibromomethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Dichlorodifluoromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorobutadiene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Methyl Iodide	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Methylene Chloride	µg/kg	SW8260B	20				- -	- -	- -	- -	- -	- -	- -	- -	- -
Tetrachloroethene	µg/kg	SW8260B	50				- -	- -	- -	- -	- -	- -	- -	- -	- -
trans-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
trans-1,3-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Trichloroethene	µg/kg	SW8260B	30				- -	- -	- -	- -	- -	- -	- -	- -	- -
Trichlorofluoromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Vinyl Chloride	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	- -	- -
SEMIVOLATILE ORGANICS															
1,2,4-Trichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dinitrobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,2-Diphenylhydrazine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dinitrobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1,4-Dinitrobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -
2,3,4,6-Tetrachlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,3,5,6-Tetrachlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,3-Dichloroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	µg/kg	SW8270D			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Chlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Nitroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
2-Nitrophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
3,3'-Dichlorobenzidine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -

Soil Analytical Results

						Sample No.:	BP-13 0-0.5	BP-14 0-0.5	BP-15-0-0.5	BP-16-0-0.5	BP-17-0-0.5	BP-18-0-1	BP-19-0-1	BP-20-0-1	DUP-0904
		Analytical		MTCA B	Ecological Indicator	Depth (ft):	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-1	0-1	0-1	(BP-20-0-1)
PARAMETERS	Units	Method	MTCA A	soil to gw	Conc.	Background	9/2/2009	9/2/2009	9/3/2009	9/4/2009	9/4/2009	9/4/2009	9/4/2009	9/4/2009	9/4/2009
SEMIVOLATILE ORGANICS (continued)															
3+4-Methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
3-Nitroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Bromophenyl-phenylether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chloro-3-methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chloroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Chlorophenyl-phenylether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Nitroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
4-Nitrophenol	µg/kg	SW8270D			7,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthene	µg/kg	SW8270D SIM			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Aniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzidine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)pyrene	µg/kg	SW8270D SIM			12,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(b)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)perylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzo(k)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Chloroethoxy) Methane	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
bis-(2-Chloroethyl) Ether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Chloroisopropyl)ether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Ethylhexyl)phthalate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
bis-2-Ethylhexyladipate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Butylbenzylphthalate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Carbazole	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Chrysene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibenz(a,h)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Dibenzofuran	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Diethylphthalate	µg/kg	SW8270D			100,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Dimethylphthalate	µg/kg	SW8270D			200,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Di-n-Butylphthalate	µg/kg	SW8270D			200,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Di-n-Octyl phthalate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Fluorene	µg/kg	SW8270D SIM			30,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorobutadiene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Hexachloroethane	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Isophorone	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Naphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -	- -
Nitrobenzene	µg/kg	SW8270D			40,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodimethylamine	µg/kg	SW8270D			20,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitroso-Di-N-Propylamine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodiphenylamine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -

Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: Depth (ft): Background	BP-13 0-0.5 0-0.5 9/2/2009	BP-14 0-0.5 0-0.5 9/2/2009	BP-15-0-0.5 0-0.5 9/3/2009	BP-16-0-0.5 0-0.5 9/4/2009	BP-17-0-0.5 0-0.5 9/4/2009	BP-18-0-1 0-1 9/4/2009	BP-19-0-1 0-1 9/4/2009	BP-20-0-1 0-1 9/4/2009	DUP-0904 (BP-20-0-1) 9/4/2009
SEMIVOLATILE ORGANICS (continued)															
Pentachlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Phenanthrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Phenol	µg/kg	SW8270D			30,000		- -	- -	- -	- -	- -	- -	- -	- -	- -
Pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -	- -
Pyridine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -	- -
Total cPAHs Using Tox. Equiv.	µg/kg	Calculated	100				- -	- -	- -	- -	- -	- -	- -	- -	- -

(Table Continues)

Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: / Depth (ft): / Background	BP-21-0-1	BP-23 0-5	BP-23 2-3	BP-23 4-5	BP-24-8	BP-25-0-0.5	BP-25-5.5	BP-26	BPMW-1-0.5
						Depth (ft):	0-1	0-5	2-3	4-5	8	0-0.5	5.5	1-2	0.5
							9/4/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/3/2009	9/3/2009	9/2/2009	9/2/2009
PETROLEUM HYDROCARBONS															
Diesel	mg/kg	NWTPH-Dx	2,000		200		27 U	- -	- -	28 U	33 U	- -	29 U	- -	140 U
Motor Oil	mg/kg	NWTPH-Dx	2,000				220	- -	- -	56 U	67 U	- -	110	- -	790
Gasoline	mg/kg	NWTPH-Gx	30/100*G		100		- -	- -	- -	1.3 U	- -	- -	- -	1.8 U	- -
Benzene	µg/kg	SW8021B	30	4.483			- -	- -	- -	20 U	- -	- -	- -	67	- -
Toluene	µg/kg	SW8021B	7,000				- -	- -	- -	27 U	- -	- -	- -	36 U	- -
Ethylbenzene	µg/kg	SW8021B	6,000				- -	- -	- -	27 U	- -	- -	- -	36 U	- -
m,p-Xylene	µg/kg	SW8021B	9,000*XY				- -	- -	- -	27 U	- -	- -	- -	36 U	- -
o-Xylene	µg/kg	SW8021B	9,000*XY				- -	- -	- -	27 U	- -	- -	- -	36 U	- -
METALS															
Arsenic	mg/kg	SW6010B-Total	20	2.803	7	7.30	**7.7**	**58**	**31**	5.6 U	- -	5.4 U	- -	5.5 U	**14**
Cadmium	mg/kg	SW6010B-Total	2	0.69	4	0.77	2.1	1.3	0.55 U	0.56 U	- -	0.54 U	- -	0.55 U	2.7
Chromium	mg/kg	SW6010B-Total	2,000*CR		42	48.15	**63**	31	32	22	- -	32	- -	28	**53**
Lead	mg/kg	SW6010B-Total	250	250	50	16.83	**190**	**150**	**410**	5.6 U	- -	5.4 U	- -	35	**140**
Mercury	mg/kg	SW7471A-Total	2	2.088	0.1	0.07	**0.45**	0.085	0.038	0.023 JH	- -	0.022 U	- -	0.035	**0.2**
METALS (TCLP Extract-wet)															
Arsenic	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Cadmium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Chromium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Lead	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Mercury	mg/L	SW7471A-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
VOLATILE ORGANICS															
1,1,1,2-Tetrachloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
1,1,1-Trichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
1,1,2,2-Tetrachloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 UJ	- -
1,1,2-Trichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
1,1-Dichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
1,1-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
1,1-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
1,2,3-Trichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	- -	- -	0.69 UJ	- -
1,2,3-Trichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 UJ	- -
1,2,4-Trichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	- -	- -	0.69 UJ	- -
1,2-Dibromo-3-chloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	3.4 UJ	- -
1,2-Dibromoethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
1,2-Dichlorobenzene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 UJ	- -
1,2-Dichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
1,2-Dichloropropane	µg/kg	SW8260B			700,000		- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
1,3-Dichlorobenzene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 UJ	- -
1,3-Dichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
1,4-Dichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	- -	- -	0.69 UJ	- -
2,2-Dichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
2-Chloroethyl Vinyl Ether	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	3.4 U	- -
2-Chlorotoluene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 UJ	- -
4-Chlorotoluene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 UJ	- -
Bromobenzene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 UJ	- -
Bromochloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
Bromodichloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
Bromoform	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -

Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.:	BP-21-0-1	BP-23 0-5	BP-23 2-3	BP-23 4-5	BP-24-8	BP-25-0-0.5	BP-25-5.5	BP-26	BPMW-1-0.5
						Depth (ft):	0-1	0-5	2-3	4-5	8	0-0.5	5.5	1-2	0.5
						Background	9/4/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/3/2009	9/3/2009	9/2/2009	9/2/2009
VOLATILE ORGANICS (continued)															
Bromomethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
Carbon Tetrachloride	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
Chlorobenzene	µg/kg	SW8260B			40,000		- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
Chloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	3.4 U	- -
Chloroform	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
Chloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	3.4 U	- -
cis-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
cis-1,3-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
Dibromochloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
Dibromomethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
Dichlorodifluoromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
Hexachlorobutadiene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	3.4 UJ	- -
Methyl Iodide	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	3.4 U	- -
Methylene Chloride	µg/kg	SW8260B	20				- -	- -	- -	- -	- -	- -	- -	3.4 U	- -
Tetrachloroethene	µg/kg	SW8260B	50				- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
trans-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
trans-1,3-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
Trichloroethene	µg/kg	SW8260B	30				- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
Trichlorofluoromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
Vinyl Chloride	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -	0.69 U	- -
SEMIVOLATILE ORGANICS															
1,2,4-Trichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
1,2-Dichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
1,2-Dinitrobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
1,2-Diphenylhydrazine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
1,3-Dichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
1,3-Dinitrobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
1,4-Dichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
1,4-Dinitrobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
1-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	900	- -
2,3,4,6-Tetrachlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
2,3,5,6-Tetrachlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
2,3-Dichloroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
2,4,5-Trichlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
2,4,6-Trichlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
2,4-Dichlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
2,4-Dimethylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
2,4-Dinitrophenol	µg/kg	SW8270D			20,000		- -	- -	- -	- -	- -	- -	- -	920 U	- -
2,4-Dinitrotoluene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
2,6-Dinitrotoluene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
2-Chloronaphthalene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
2-Chlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
2-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	950	- -
2-Methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
2-Nitroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
2-Nitrophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
3,3'-Dichlorobenzidine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	1800 U	- -

Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: / Depth (ft): / Background	BP-21-0-1 / 0-1 / 9/4/2009	BP-23 0-5 / 0-5 / 9/2/2009	BP-23 2-3 / 2-3 / 9/2/2009	BP-23 4-5 / 4-5 / 9/2/2009	BP-24-8 / 8 / 9/2/2009	BP-25-0-0.5 / 0-0.5 / 9/3/2009	BP-25-5.5 / 5.5 / 9/3/2009	BP-26 / 1-2 / 9/2/2009	BPMW-1-0.5 / 0.5 / 9/2/2009
SEMIVOLATILE ORGANICS (continued)															
3+4-Methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
3-Nitroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
4,6-Dinitro-2-Methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	920 U	- -
4-Bromophenyl-phenylether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
4-Chloro-3-methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
4-Chloroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
4-Chlorophenyl-phenylether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
4-Nitroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
4-Nitrophenol	µg/kg	SW8270D			7,000		- -	- -	- -	- -	- -	- -	- -	180 U	- -
Acenaphthene	µg/kg	SW8270D SIM			20,000		- -	- -	- -	- -	- -	- -	- -	150	- -
Acenaphthylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	32	- -
Aniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
Anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	90	- -
Benzidine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	1800 U	- -
Benzo(a)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	260	- -
Benzo(a)pyrene	µg/kg	SW8270D SIM			12,000		- -	- -	- -	- -	- -	- -	- -	190	- -
Benzo(b)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	120	- -
Benzo(g,h,i)perylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	82	- -
Benzo(k)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	85	- -
Benzyl Alcohol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
bis(2-Chloroethoxy) Methane	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
bis-(2-Chloroethyl) Ether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
bis(2-Chloroisopropyl)ether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
bis(2-Ethylhexyl)phthalate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
bis-2-Ethylhexyladipate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
Butylbenzylphthalate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
Carbazole	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
Chrysene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	400	- -
Dibenz(a,h)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	26	- -
Dibenzofuran	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
Diethylphthalate	µg/kg	SW8270D			100,000		- -	- -	- -	- -	- -	- -	- -	180 U	- -
Dimethylphthalate	µg/kg	SW8270D			200,000		- -	- -	- -	- -	- -	- -	- -	180 U	- -
Di-n-Butylphthalate	µg/kg	SW8270D			200,000		- -	- -	- -	- -	- -	- -	- -	180 U	- -
Di-n-Octyl phthalate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
Fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	440	- -
Fluorene	µg/kg	SW8270D SIM			30,000		- -	- -	- -	- -	- -	- -	- -	180	- -
Hexachlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
Hexachlorobutadiene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
Hexachlorocyclopentadiene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
Hexachloroethane	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
Indeno(1,2,3-cd)pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	53	- -
Isophorone	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
Naphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	120	- -
Nitrobenzene	µg/kg	SW8270D			40,000		- -	- -	- -	- -	- -	- -	- -	180 U	- -
N-Nitrosodimethylamine	µg/kg	SW8270D			20,000		- -	- -	- -	- -	- -	- -	- -	180 U	- -
N-Nitroso-Di-N-Propylamine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
N-Nitrosodiphenylamine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -

Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: Depth (ft): Background	BP-21-0-1 0-1 9/4/2009	BP-23 0-5 0-5 9/2/2009	BP-23 2-3 2-3 9/2/2009	BP-23 4-5 4-5 9/2/2009	BP-24-8 8 9/2/2009	BP-25-0-0.5 0-0.5 9/3/2009	BP-25-5.5 5.5 9/3/2009	BP-26 1-2 9/2/2009	BPMW-1-0.5 0.5 9/2/2009
SEMIVOLATILE ORGANICS (continued)															
Pentachlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	920 U	- -
Phenanthrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	440	- -
Phenol	µg/kg	SW8270D			30,000		- -	- -	- -	- -	- -	- -	- -	180 U	- -
Pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	590	- -
Pyridine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	180 U	- -
Total cPAHs Using Tox. Equiv.	µg/kg	Calculated	100				- -	- -	- -	- -	- -	- -	- -	248	- -

(Table Continues)

Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.:	BPMW-1-1.5	BPMW-1-5	BPMW-2-0.5	BPMW-2-1.5	BPMW-2-5	BPMW-3 0.5'	BPMW-3 2'	BPMW-3 5'
						Depth (ft):	1.5	5	0.5	1.5	5	0.5	2	5
						Background	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/8/2009	9/8/2009	9/8/2009
PETROLEUM HYDROCARBONS														
Diesel	mg/kg	NWTPH-Dx	2,000		200		- -	- -	29 U	- -	- -	140 U	**300 J**	33 U
Motor Oil	mg/kg	NWTPH-Dx	2,000				- -	- -	310	- -	- -	1,400	3,800	170
Gasoline	mg/kg	NWTPH-Gx	30/100*G		100		3.3 J	- -	- -	1.5 U	- -	2 U	1.6 U	2.4 U
Benzene	µg/kg	SW8021B	30	4.483			20 U	- -	- -	20 U	- -	20 U	20 U	20 U
Toluene	µg/kg	SW8021B	7,000				33 U	- -	- -	30 U	- -	41 U	33	48 U
Ethylbenzene	µg/kg	SW8021B	6,000				33 U	- -	- -	30 U	- -	41 U	32 U	48 U
m,p-Xylene	µg/kg	SW8021B	9,000*XY				33 U	- -	- -	30 U	- -	41 U	40	48 U
o-Xylene	µg/kg	SW8021B	9,000*XY				33 U	- -	- -	30 U	- -	41 U	32 U	48 U
METALS														
Arsenic	mg/kg	SW6010B-Total	20	2.803	7	7.30	- -	**11**	6.7	- -	**9.3**	5.7 U	**7.3**	**11**
Cadmium	mg/kg	SW6010B-Total	2	0.69	4	0.77	- -	1.4	0.71	- -	0.81 U	0.57 U	0.57 U	0.66 U
Chromium	mg/kg	SW6010B-Total	2,000*CR		42	48.15	- -	38	41	- -	33	13	**48**	30
Lead	mg/kg	SW6010B-Total	250	250	50	16.83	- -	**94**	33	- -	27	5.7 U	**73**	40
Mercury	mg/kg	SW7471A-Total	2	2.088	0.1	0.07	- -	**0.15**	0.044	- -	0.046	0.023 U	0.052	0.051
METALS (TCLP Extract-wet)														
Arsenic	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -
Cadmium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -
Chromium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -
Lead	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -
Mercury	mg/L	SW7471A-Total					- -	- -	- -	- -	- -	- -	- -	- -
VOLATILE ORGANICS														
1,1,1,2-Tetrachloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,1,1-Trichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,1,2,2-Tetrachloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,1,2-Trichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,1-Dichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,1-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,1-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,2,3-Trichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,2,3-Trichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,2,4-Trichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,2-Dibromo-3-chloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	3.1 U	2.5 U	3.7 U
1,2-Dibromoethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,2-Dichlorobenzene	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,2-Dichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,2-Dichloropropane	µg/kg	SW8260B			700,000		- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,3-Dichlorobenzene	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,3-Dichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
1,4-Dichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
2,2-Dichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
2-Chloroethyl Vinyl Ether	µg/kg	SW8260B					- -	- -	- -	- -	- -	3.1 U	2.5 U	3.7 U
2-Chlorotoluene	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
4-Chlorotoluene	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
Bromobenzene	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
Bromochloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
Bromodichloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
Bromoform	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U

Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Background	BPMW-1-1.5	BPMW-1-5	BPMW-2-0.5	BPMW-2-1.5	BPMW-2-5	BPMW-3 0.5'	BPMW-3 2'	BPMW-3 5'
						Sample No.:	BPMW-1-1.5	BPMW-1-5	BPMW-2-0.5	BPMW-2-1.5	BPMW-2-5	BPMW-3 0.5'	BPMW-3 2'	BPMW-3 5'
						Depth (ft):	1.5	5	0.5	1.5	5	0.5	2	5
						Background	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/8/2009	9/8/2009	9/8/2009
VOLATILE ORGANICS (continued)														
Bromomethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
Carbon Tetrachloride	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
Chlorobenzene	µg/kg	SW8260B			40,000		- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
Chloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	3.1 U	2.5 U	3.7 U
Chloroform	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
Chloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	3.1 U	2.5 U	3.7 U
cis-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
cis-1,3-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
Dibromochloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
Dibromomethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
Dichlorodifluoromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
Hexachlorobutadiene	µg/kg	SW8260B					- -	- -	- -	- -	- -	3.1 U	2.5 U	3.7 U
Methyl Iodide	µg/kg	SW8260B					- -	- -	- -	- -	- -	3.1 U	2.5 U	3.7 U
Methylene Chloride	µg/kg	SW8260B	20				- -	- -	- -	- -	- -	3.1 U	2.5 U	3.7 U
Tetrachloroethene	µg/kg	SW8260B	50				- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
trans-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
trans-1,3-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
Trichloroethene	µg/kg	SW8260B	30				- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
Trichlorofluoromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
Vinyl Chloride	µg/kg	SW8260B					- -	- -	- -	- -	- -	0.62 U	0.5 U	0.73 U
SEMIVOLATILE ORGANICS														
1,2,4-Trichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
1,2-Dinitrobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
1,2-Diphenylhydrazine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
1,3-Dinitrobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
1,4-Dinitrobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -
2,3,4,6-Tetrachlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
2,3,5,6-Tetrachlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
2,3-Dichloroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	µg/kg	SW8270D			20,000		- -	- -	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
2-Chlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -
2-Methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
2-Nitroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
2-Nitrophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
3,3'-Dichlorobenzidine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -

Soil Analytical Results

						Sample No.:	BPMW-1-1.5	BPMW-1-5	BPMW-2-0.5	BPMW-2-1.5	BPMW-2-5	BPMW-3 0.5'	BPMW-3 2'	BPMW-3 5'
						Depth (ft):	1.5	5	0.5	1.5	5	0.5	2	5
PARAMETERS	**Units**	**Analytical Method**	**MTCA A**	**MTCA B soil to gw**	**Ecological Indicator Conc.**	**Background**	**9/2/2009**	**9/2/2009**	**9/2/2009**	**9/2/2009**	**9/2/2009**	**9/8/2009**	**9/8/2009**	**9/8/2009**
SEMIVOLATILE ORGANICS (continued)														
3+4-Methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
3-Nitroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
4-Bromophenyl-phenylether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
4-Chloro-3-methylphenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
4-Chloroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
4-Chlorophenyl-phenylether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
4-Nitroaniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
4-Nitrophenol	µg/kg	SW8270D			7,000		- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthene	µg/kg	SW8270D SIM			20,000		- -	- -	- -	- -	- -	- -	- -	- -
Acenaphthylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Aniline	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
Anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Benzidine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Benzo(a)pyrene	µg/kg	SW8270D SIM			12,000		- -	- -	- -	- -	- -	- -	- -	- -
Benzo(b)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)perylene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Benzo(k)fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Chloroethoxy) Methane	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
bis-(2-Chloroethyl) Ether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Chloroisopropyl)ether	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
bis(2-Ethylhexyl)phthalate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
bis-2-Ethylhexyladipate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
Butylbenzylphthalate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
Carbazole	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
Chrysene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Dibenz(a,h)anthracene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Dibenzofuran	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
Diethylphthalate	µg/kg	SW8270D			100,000		- -	- -	- -	- -	- -	- -	- -	- -
Dimethylphthalate	µg/kg	SW8270D			200,000		- -	- -	- -	- -	- -	- -	- -	- -
Di-n-Butylphthalate	µg/kg	SW8270D			200,000		- -	- -	- -	- -	- -	- -	- -	- -
Di-n-Octyl phthalate	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
Fluoranthene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Fluorene	µg/kg	SW8270D SIM			30,000		- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorobutadiene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
Hexachloroethane	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Isophorone	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
Naphthalene	µg/kg	SW8270D SIM	5,000*NA				- -	- -	- -	- -	- -	- -	- -	- -
Nitrobenzene	µg/kg	SW8270D			40,000		- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodimethylamine	µg/kg	SW8270D			20,000		- -	- -	- -	- -	- -	- -	- -	- -
N-Nitroso-Di-N-Propylamine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
N-Nitrosodiphenylamine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -

Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: / Depth (ft): / Background	BPMW-1-1.5 / 1.5 / 9/2/2009	BPMW-1-5 / 5 / 9/2/2009	BPMW-2-0.5 / 0.5 / 9/2/2009	BPMW-2-1.5 / 1.5 / 9/2/2009	BPMW-2-5 / 5 / 9/2/2009	BPMW-3 0.5' / 0.5 / 9/8/2009	BPMW-3 2' / 2 / 9/8/2009	BPMW-3 5' / 5 / 9/8/2009
SEMIVOLATILE ORGANICS (continued)														
Pentachlorophenol	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
Phenanthrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Phenol	µg/kg	SW8270D			30,000		- -	- -	- -	- -	- -	- -	- -	- -
Pyrene	µg/kg	SW8270D SIM					- -	- -	- -	- -	- -	- -	- -	- -
Pyridine	µg/kg	SW8270D					- -	- -	- -	- -	- -	- -	- -	- -
Total cPAHs Using Tox. Equiv.	µg/kg	Calculated	100				- -	- -	- -	- -	- -	- -	- -	- -

NOTES:

- - - = Not analyzed or not collected
- *CR = Chromium Standards based on Chromium III
- *G = 100 if no benzene and TEX < 1% gas; 30 for other mixtures
- *NA = Includes Naphthalene, 1-Methylnaphthalene, and 2-Methylnaphthalene
- *XY = Applies to the sum of all xylenes
- ND = Non-detect
- U = Not detected above the given practical quantitation limit

J/JH = Estimated value

UJ/UJH= Estimated non-detect

Shaded values exceed MTCA

UNITS:
ft = feet
mg/kg = milligram/kilogram
mg/L = milligram/liter
µg/kg = microgram/kilogram

Bold values exceed Ecological Indicator Concentration

SOURCES: Background: 90th percentile Puget Sound (Ecology's Publication #94-115; 10/1994)
Model Toxics Control Act (MTCA) from WA Administrative Code 173-340-900
MTCA Method A Soil Cleanup Levels for Unrestricted Land Use: Table 740-1
MTCA Method B soil to groundwater: site-specific calculated
Ecological Indicator Concentrations: Table 749-3

Groundwater Analytical Results

				Sample No.	BC-10-12	BC-10-12-2	BC-11-12	BP-23-15	BP-25-10	BPMW-1-10	BPMW-2-6	BPMW-3-10
		Analytical		Depth (ft):	12	12	12	15	10	10	6	10
PARAMETERS	**Units**	**Method**	**MTCA A**	**Date:**	**9/18/2009**	**9/18/2009**	**9/18/2009**	**9/2/2009**	**9/3/2009**	**9/18/2009**	**9/18/2009**	**9/18/2009**
FIELD DATA												
Conductivity	mmhos/cm				0.332	- -	0.221	- -	- -	0.443	0.379	0.380
pH	std units				7.36	- -	7.05	- -	- -	7.57	7.91	6.70
Temperature	Celsius				16.6	- -	78.8	- -	- -	13.8	13.7	22.5
Dissolved Oxygen	mg/L				2.63	- -	2.91	- -	- -	2.97	2.96	3.91
PETROLEUM HYDROCARBONS												
Diesel Range Hydrocarbons	mg/L	NWTPH-Dx	0.5		0.28 U	0.29 U	0.28 U	0.3 U	0.3 U	0.31 U	0.29 U	0.28 U
Motor Oil	mg/L	NWTPH-Dx	0.5		0.44 U	0.46 U	0.44 U	0.48 U	0.48 U	0.49 U	0.46 U	0.45 U
Gasoline Range Hydrocarbons	mg/L	NWTPH-Gx	0.8/1*G		0.100 U	0.100 U	0.100 U	0.100 U	- -	0.100 U	0.320	0.100 U
Benzene	µg/L	SW8260	5		1 U	1 U	1 U	1 U	- -	1 U	1 U	1 U
Toluene	µg/L	SW8260	1000		1 U	1 U	1 U	1 U	- -	1 U	1 U	1 U
Ethylbenzene	µg/L	SW8260	700		1 U	1 U	1 U	1 U	- -	1 U	1 U	1 U
m,p-Xylene	µg/L	SW8260	1,000*XY		1 U	1 U	1 U	1 U	- -	1 U	1 U	1 U
o-Xylene	µg/L	SW8260	1,000*XY		1 U	1 U	1 U	1 U	- -	1 U	1 U	1 U
TOTAL METALS												
Arsenic	mg/L	200.8/6020-Total	0.005		0.0051	0.0067	0.0033 U	- -	- -	0.0051	0.0039	0.01
Cadmium	mg/L	200.8/6020-Total	0.005		0.0044 U	0.0044 U	0.0044 U	- -	- -	0.0044 U	0.0044 U	0.0044 U
Chromium	mg/L	200.8/6020-Total			0.027	0.034	0.0067 U	- -	- -	0.0067 U	0.0091	0.061
Lead	mg/L	200.8/6020-Total	0.015		0.0079	0.0093	0.0011 U	- -	- -	0.0011 U	0.0017	0.0074
Mercury	mg/L	200.8/6020-Total	0.002		0.0002 U	0.0002 U	0.0002 U	- -	- -	0.0002 U	0.0002 U	0.0002 U
DISSOLVED METALS												
Arsenic	mg/L	200.8/6020-Diss	0.005		0.003 U	0.003 U	0.003 U	0.0085	- -	0.005	0.0036	0.0054
Cadmium	mg/L	200.8/6020-Diss	0.005		0.004 U	0.004 U	0.004 U	0.004 U	- -	0.004 U	0.004 U	0.004 U
Chromium	mg/L	200.8/6020-Diss			0.007 U	0.007 U	0.007 U	0.01 U	- -	0.007 U	0.007 U	0.007 U
Lead	mg/L	200.8/6020-Diss	0.015		0.001 U	0.001 U	0.001 U	0.001 U	- -	0.001 U	0.001 U	0.001 U
Mercury	mg/L	200.8/6020-Diss	0.002		0.0002 U	0.0002 U	0.0002 U	0.0005 U	- -	0.0002 U	0.0002 U	0.0002 U
VOLATILE ORGANICS												
1,1,1,2-Tetrachloroethane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,1,1-Trichloroethane	µg/L	SW8260	200		0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,1,2,2-Tetrachloroethane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,1,2-Trichloroethane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,1-Dichloroethane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,1-Dichloroethene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,1-Dichloropropene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,2,3-Trichlorobenzene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,2,3-Trichloropropane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,2,4-Trichlorobenzene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,2-Dibromo-3-chloropropane	µg/L	SW8260			1 U	1 U	- -	1 U	1 U	1 U	- -	1 U
1,2-Dibromoethane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,2-Dichlorobenzene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,2-Dichloroethane	µg/L	SW8260	5		0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,2-Dichloropropane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,3-Dichlorobenzene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,3-Dichloropropane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
1,4-Dichlorobenzene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
2,2-Dichloropropane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
2-Chloroethyl Vinyl Ether	µg/L	SW8260			1 U	1 U	- -	1 U	1 U	1 U	- -	1 U
2-Chlorotoluene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U

Groundwater Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	Sample No.: Depth (ft): Date:	BC-10-12 12 9/18/2009	BC-10-12-2 12 9/18/2009	BC-11-12 12 9/18/2009	BP-23-15 15 9/2/2009	BP-25-10 10 9/3/2009	BPMW-1-10 10 9/18/2009	BPMW-2-6 6 9/18/2009	BPMW-3-10 10 9/18/2009
VOLATILE ORGANICS (continued)												
4-Chlorotoluene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Bromobenzene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Bromochloromethane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Bromodichloromethane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Bromoform	µg/L	SW8260			1 U	1 U	- -	1 U	1 U	1 U	- -	1 U
Bromomethane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Carbon Tetrachloride	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Chlorobenzene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Chloroethane	µg/L	SW8260			1 U	1 U	- -	1 U	1 U	1 U	- -	1 U
Chloroform	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Chloromethane	µg/L	SW8260			1 U	1 U	- -	1 U	1 U	1 U	- -	1 U
cis-1,2-Dichloroethene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
cis-1,3-Dichloropropene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Dibromochloromethane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Dibromomethane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Dichlorodifluoromethane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Hexachlorobutadiene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Methyl Iodide	µg/L	SW8260			1 U	1 U	- -	1 U	1 U	1 U	- -	1 U
Methylene Chloride	µg/L	SW8260	5		1 U	1 U	- -	1 U	1 U	1 U	- -	1 U
Tetrachloroethene	µg/L	SW8260	5		0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
trans-1,2-Dichloroethene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
trans-1,3-Dichloropropene	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Trichloroethene	µg/L	SW8260	5		0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Trichlorofluoromethane	µg/L	SW8260			0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
Vinyl Chloride	µg/L	SW8260	0.2		0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U
All Analytes	µg/L	SW8260			ND	ND	- -	ND	ND	ND	- -	ND

NOTES:
- - - = Not analyzed or not collected
- ND = Non-detect
- U = Not detected above the given practical quantitation limit
- *G = 1 if no benzene ; 0.8 if benzene
- Shaded values exceed MTCA

SOURCES:
Model Toxics Control Act (MTCA) from WA Administrative Code 173-340-900
MTCA Method A Soil Cleanup Levels for Ground Water: Table 720-1

UNITS:
- ft = foot
- mmhos/cm = millimhos/centimeter
- mg/L = milligrams/liter
- µg/L = micrograms/liter

APPENDIX C2

Analytical Laboratory Reports

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 14, 2009

Sandra Matthews
Parametrix
411 108th Avenue NE, Suite 1800
Bellevue, WA 98004

Re: Analytical Data for Project 555-1647-019 02/0403 / Paint
Laboratory Reference No. 0909-029

Dear Sandra:

Enclosed are the analytical results and associated quality control data for samples submitted on September 2, 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

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

Case Narrative

Samples were collected on September 2, 2009, and received by the laboratory on September 2, 2009. They were maintained at the laboratory at a temperature of $2^{o}C$ to $6^{o}C$ 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 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 $-7^{o}C$ and $-20^{o}C$ 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 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 $-7^{o}C$ and $-20^{o}C$ until extraction or analysis.

Internal Standard 1,4-Dichlorobenzene-d4 does not meet acceptance criteria for sample BP-26 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.

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.

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Gx/BTEX

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

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**BP-26**			**BP-23 4-5**		
Lab ID:	09-029-03			09-029-36		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**0.067**		0.020	**ND**		0.020
Toluene	**ND**		0.036	**ND**		0.027
Ethyl Benzene	**ND**		0.036	**ND**		0.027
m,p-Xylene	**ND**		0.036	**ND**		0.027
o-Xylene	**ND**		0.036	**ND**		0.027
TPH-Gas	**ND**		1.8	**ND**		1.3
Surrogate Recovery:						
Fluorobenzene	100%			99%		

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Gx/BTEX

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

Matrix: Soil
Units: mg/kg (ppm)

Client ID: **BP-11 4-5**
Lab ID: 09-029-42

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.028
Ethyl Benzene	**ND**		0.028
m,p-Xylene	**ND**		0.028
o-Xylene	**ND**		0.028
TPH-Gas	**ND**		1.4

Surrogate Recovery:
Fluorobenzene 102%

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

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

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0904S2

	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	92%		

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Gx/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 9-4-09
Date Analyzed: 9-4&8-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	09-034-02 **Original**	09-034-02 **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	94%	97%		

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Gx/BTEX
SB/SBD QUALITY CONTROL

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

Matrix: Soil
Units: mg/kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB0904S1 **SB**	Percent Recovery	SBD0904S1 **SBD**	Percent Recovery	**RPD**	**Flags**
Benzene	**0.927**	**93**	**0.940**	**94**	1	
Toluene	**0.939**	**94**	**0.952**	**95**	1	
Ethyl Benzene	**0.963**	**96**	**0.975**	**98**	1	
m,p-Xylene	**0.977**	**98**	**0.987**	**99**	1	
o-Xylene	**0.975**	**98**	**0.984**	**98**	1	
Surrogate Recovery:						
Fluorobenzene	91%		91%			

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Gx/BTEX

Date Extracted: 9-3-09
Date Analyzed: 9-3-09

Matrix: Water
Units: ug/L (ppb)

Client ID: **BP-23-15**
Lab ID: 09-029-35

	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 89%

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-3-09
Date Analyzed: 9-3-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0903W1

	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%

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Gx/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 9-3-09
Date Analyzed: 9-3-09

Matrix: Water
Units: ug/L (ppb)

Lab ID:	09-039-02	09-039-02		
	Original	**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	91%	92%		

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Gx/BTEX
SB/SBD QUALITY CONTROL

Date Extracted: 9-3-09
Date Analyzed: 9-3-09

Matrix: Water
Units: ug/L (ppb)

Spike Level: 50.0 ppb

Lab ID:	SB090903 **SB**	Percent Recovery	SBD090903 **SBD**	Percent Recovery	**RPD**	**Flags**
Benzene	**48.1**	**96**	**46.8**	**94**	3	
Toluene	**48.1**	**96**	**46.0**	**92**	4	
Ethyl Benzene	**49.9**	**100**	**46.7**	**93**	7	
m,p-Xylene	**50.2**	**100**	**46.5**	**93**	8	
o-Xylene	**49.9**	**100**	**47.3**	**95**	5	

Surrogate Recovery:						
Fluorobenzene	91%		88%			

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx

Date Extracted: 9-3-09
Date Analyzed: 9-4-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**BP-24-8**	**BP-23 4-5**	**BP-11 4-5**
Lab ID:	09-029-01	09-029-36	09-029-42
Diesel Range:	**ND**	**ND**	**ND**
PQL:	33	28	28
Identification:	---	---	---
Lube Oil Range:	**ND**	**ND**	**ND**
PQL:	67	56	56
Identification:	---	---	---
Surrogate Recovery			
o-Terphenyl:	80%	96%	84%
Flags:	Y	Y	Y

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-3-09
Date Analyzed:	9-3-09
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	MB0903S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	74%
Flags:	Y

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 9-3-09
Date Analyzed: 9-4-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	09-034-01	09-034-01 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	85%	79%
Flags:	Y	Y

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx

Date Extracted: 9-3-09
Date Analyzed: 9-3-09

Matrix: Water
Units: mg/L (ppm)

Client ID:	**BP-24**	**BP-23-15**
Lab ID:	09-029-02	09-029-35
Diesel Range:	**ND**	**ND**
PQL:	0.31	0.3
Identification:	---	---
Lube Oil Range:	**ND**	**ND**
PQL:	0.49	0.48
Identification:	---	---
Surrogate Recovery		
o-Terphenyl:	68%	67%
Flags:	Y	Y

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-3-09
Date Analyzed:	9-3-09
Matrix:	Water
Units:	mg/L (ppm)

Lab ID:	MB0903W1
Diesel Range:	**ND**
PQL:	0.25
Identification:	---
Lube Oil Range:	**ND**
PQL:	0.40
Identification:	---
Surrogate Recovery	
o-Terphenyl:	79%
Flags:	Y

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 9-3-09
Date Analyzed: 9-3-09

Matrix: Water
Units: mg/L (ppm)

Lab ID:	08-219-01	08-219-01 DUP
Diesel Range:	**ND**	**ND**
PQL:	0.25	0.25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	75%	71%
Flags:	Y	Y

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx

Date Extracted: 9-4-09
Date Analyzed: 9-8-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**BP-5 4-5**	**BP-5 10**
Lab ID:	09-029-18	09-029-19
Diesel Range:	**900**	**ND**
PQL:	140	31
Identification:	Diesel Fuel#2	---
Lube Oil Range:	**1700**	**ND**
PQL:	280	63
Identification:	Lube Oil	---
Surrogate Recovery		
o-Terphenyl:	90%	81%
Flags:	Y	Y

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-4-09
Date Analyzed:	9-4-09
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	MB0904S2
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	88%
Flags:	Y

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 9-4-09
Date Analyzed: 9-8-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	09-043-07	09-043-07 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	92%	84%
Flags:	Y	Y

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B

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

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-03
Client ID: BP-26

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.00069
Chloromethane	ND		0.0034
Vinyl Chloride	ND		0.00069
Bromomethane	ND		0.00069
Chloroethane	ND		0.0034
Trichlorofluoromethane	ND		0.00069
1,1-Dichloroethene	ND		0.00069
Iodomethane	ND		0.0034
Methylene Chloride	ND		0.0034
(trans) 1,2-Dichloroethene	ND		0.00069
1,1-Dichloroethane	ND		0.00069
2,2-Dichloropropane	ND		0.00069
(cis) 1,2-Dichloroethene	ND		0.00069
Bromochloromethane	ND		0.00069
Chloroform	ND		0.00069
1,1,1-Trichloroethane	ND		0.00069
Carbon Tetrachloride	ND		0.00069
1,1-Dichloropropene	ND		0.00069
1,2-Dichloroethane	ND		0.00069
Trichloroethene	ND		0.00069
1,2-Dichloropropane	ND		0.00069
Dibromomethane	ND		0.00069
Bromodichloromethane	ND		0.00069
2-Chloroethyl Vinyl Ether	ND		0.0034
(cis) 1,3-Dichloropropene	ND		0.00069
(trans) 1,3-Dichloropropene	ND		0.00069

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B

Lab ID: 09-029-03
Client ID: BP-26

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.00069
Tetrachloroethene	ND		0.00069
1,3-Dichloropropane	ND		0.00069
Dibromochloromethane	ND		0.00069
1,2-Dibromoethane	ND		0.00069
Chlorobenzene	ND		0.00069
1,1,1,2-Tetrachloroethane	ND		0.00069
Bromoform	ND		0.00069
Bromobenzene	ND		0.00069
1,1,2,2-Tetrachloroethane	ND		0.00069
1,2,3-Trichloropropane	ND		0.00069
2-Chlorotoluene	ND		0.00069
4-Chlorotoluene	ND		0.00069
1,3-Dichlorobenzene	ND		0.00069
1,4-Dichlorobenzene	ND		0.00069
1,2-Dichlorobenzene	ND		0.00069
1,2-Dibromo-3-chloropropane	ND		0.0034
1,2,4-Trichlorobenzene	ND		0.00069
Hexachlorobutadiene	ND		0.0034
1,2,3-Trichlorobenzene	ND		0.00069

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	113	55-125
Toluene-d8	90	56-127
4-Bromofluorobenzene	78	54-130

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

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

Date Extracted:	9-4-09
Date Analyzed:	9-4-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0904S1

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

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

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

Lab ID: MB0904S1

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	96	55-125
Toluene-d8	103	56-127
4-Bromofluorobenzene	94	54-130

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

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

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: SB0904S1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	0.0500	0.0435	87	0.0407	81	70-130	
Benzene	0.0500	0.0436	87	0.0413	83	70-128	
Trichloroethene	0.0500	0.0429	86	0.0422	84	70-124	
Toluene	0.0500	0.0445	89	0.0434	87	73-123	
Chlorobenzene	0.0500	0.0446	89	0.0435	87	73-115	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	7	16	
Benzene	5	15	
Trichloroethene	2	14	
Toluene	3	14	
Chlorobenzene	2	13	

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	9-3-09
Date Analyzed:	9-3-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	09-029-35
Client ID:	**BP-23-15**

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

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B

Lab ID: 09-029-35
Client ID: BP-23-15

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	94	76-116
4-Bromofluorobenzene	82	70-123

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

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

Date Extracted: 9-3-09
Date Analyzed: 9-3-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0903W1

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

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

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

Lab ID: MB0903W1

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	93	76-116
4-Bromofluorobenzene	81	70-123

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Date Extracted: 9-3-09
Date Analyzed: 9-3-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: SB0903W1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	10.0	9.94	99	10.2	102	70-130	
Benzene	10.0	9.68	97	10.2	102	70-130	
Trichloroethene	10.0	9.31	93	9.83	98	70-123	
Toluene	10.0	10.0	100	10.6	106	77-120	
Chlorobenzene	10.0	9.44	94	9.63	96	73-115	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	3	21	
Benzene	5	18	
Trichloroethene	5	18	
Toluene	5	17	
Chlorobenzene	2	18	

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	9-4-09
Date Analyzed:	9-4-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	09-029-43
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

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B

Lab ID: 09-029-43
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	89	71-126
Toluene-d8	94	76-116
4-Bromofluorobenzene	90	70-123

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

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

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

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0904W1

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

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

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

Lab ID: MB0904W1

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	87	71-126
Toluene-d8	92	76-116
4-Bromofluorobenzene	91	70-123

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

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

Matrix: Water
Units: ug/L (ppb)

Lab ID: SB0904W1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	10.0	9.60	96	9.43	94	70-130	
Benzene	10.0	9.50	95	9.64	96	70-130	
Trichloroethene	10.0	9.74	97	9.66	97	70-123	
Toluene	10.0	9.58	96	9.57	96	77-120	
Chlorobenzene	10.0	9.61	96	9.80	98	73-115	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	2	21	
Benzene	1	18	
Trichloroethene	1	18	
Toluene	0	17	
Chlorobenzene	2	18	

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

SEMIVOLATILES by EPA 8270D/SIM
page 1 of 2

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**BP-26**					
Laboratory ID:	09-029-03					
N-Nitrosodimethylamine	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Pyridine	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Phenol	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Aniline	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
bis(2-Chloroethyl)ether	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
2-Chlorophenol	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
1,3-Dichlorobenzene	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
1,4-Dichlorobenzene	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Benzyl alcohol	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
1,2-Dichlorobenzene	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
2-Methylphenol (o-Cresol)	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
bis(2-Chloroisopropyl)ether	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
(3+4)-Methylphenol (m,p-Cresol)	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
N-Nitroso-di-n-propylamine	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Hexachloroethane	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Nitrobenzene	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Isophorone	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
2-Nitrophenol	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
2,4-Dimethylphenol	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
bis(2-Chloroethoxy)methane	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
2,4-Dichlorophenol	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
1,2,4-Trichlorobenzene	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Naphthalene	**0.12**	0.015	EPA 8270/SIM	9-4-09	9-4-09	
4-Chloroaniline	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Hexachlorobutadiene	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
4-Chloro-3-methylphenol	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
2-Methylnaphthalene	**0.95**	0.18	EPA 8270	9-4-09	9-4-09	
1-Methylnaphthalene	**0.90**	0.18	EPA 8270	9-4-09	9-4-09	
Hexachlorocyclopentadiene	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
2,4,6-Trichlorophenol	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
2,3-Dichloroaniline	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
2,4,5-Trichlorophenol	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
2-Chloronaphthalene	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
2-Nitroaniline	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
1,4-Dinitrobenzene	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Dimethylphthalate	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
1,3-Dinitrobenzene	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
2,6-Dinitrotoluene	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
1,2-Dinitrobenzene	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Acenaphthylene	**0.032**	0.015	EPA 8270/SIM	9-4-09	9-4-09	
3-Nitroaniline	**ND**	0.18	EPA 8270	9-4-09	9-4-09	

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

SEMIVOLATILES by EPA 8270D/SIM
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**BP-26**					
Laboratory ID:	09-029-03					
2,4-Dinitrophenol	**ND**	0.92	EPA 8270	9-4-09	9-4-09	
Acenaphthene	**0.15**	0.015	EPA 8270/SIM	9-4-09	9-4-09	
4-Nitrophenol	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
2,4-Dinitrotoluene	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Dibenzofuran	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
2,3,5,6-Tetrachlorophenol	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
2,3,4,6-Tetrachlorophenol	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Diethylphthalate	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
4-Chlorophenyl-phenylether	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
4-Nitroaniline	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Fluorene	**0.18**	0.015	EPA 8270/SIM	9-4-09	9-4-09	
4,6-Dinitro-2-methylphenol	**ND**	0.92	EPA 8270	9-4-09	9-4-09	
N-Nitrosodiphenylamine	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
1,2-Diphenylhydrazine	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
4-Bromophenyl-phenylether	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Hexachlorobenzene	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Pentachlorophenol	**ND**	0.92	EPA 8270	9-4-09	9-4-09	
Phenanthrene	**0.44**	0.18	EPA 8270	9-4-09	9-4-09	
Anthracene	**0.090**	0.015	EPA 8270/SIM	9-4-09	9-4-09	
Carbazole	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Di-n-butylphthalate	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Fluoranthene	**0.44**	0.18	EPA 8270	9-4-09	9-4-09	
Benzidine	**ND**	1.8	EPA 8270	9-4-09	9-4-09	
Pyrene	**0.59**	0.18	EPA 8270	9-4-09	9-4-09	
Butylbenzylphthalate	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
bis-2-Ethylhexyladipate	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
3,3'-Dichlorobenzidine	**ND**	1.8	EPA 8270	9-4-09	9-4-09	
Benzo[a]anthracene	**0.26**	0.18	EPA 8270	9-4-09	9-4-09	
Chrysene	**0.40**	0.18	EPA 8270	9-4-09	9-4-09	
bis(2-Ethylhexyl)phthalate	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Di-n-octylphthalate	**ND**	0.18	EPA 8270	9-4-09	9-4-09	
Benzo[b]fluoranthene	**0.12**	0.015	EPA 8270/SIM	9-4-09	9-4-09	
Benzo[k]fluoranthene	**0.085**	0.015	EPA 8270/SIM	9-4-09	9-4-09	
Benzo[a]pyrene	**0.19**	0.18	EPA 8270	9-4-09	9-4-09	
Indeno[1,2,3-cd]pyrene	**0.053**	0.015	EPA 8270/SIM	9-4-09	9-4-09	
Dibenz[a,h]anthracene	**0.026**	0.015	EPA 8270/SIM	9-4-09	9-4-09	
Benzo[g,h,i]perylene	**0.082**	0.015	EPA 8270/SIM	9-4-09	9-4-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*67*	*19 - 97*				
Phenol-d6	*78*	*22 - 108*				
Nitrobenzene-d5	*78*	*21 - 106*				
2-Fluorobiphenyl	*82*	*29 - 107*				
2,4,6-Tribromophenol	*80*	*44 - 121*				
Terphenyl-d14	*87*	*37 - 120*				

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

SEMIVOLATILES by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
page 1 of 2

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0904S1					
N-Nitrosodimethylamine	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Pyridine	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Phenol	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Aniline	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
bis(2-Chloroethyl)ether	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
2-Chlorophenol	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
1,3-Dichlorobenzene	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
1,4-Dichlorobenzene	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Benzyl alcohol	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
1,2-Dichlorobenzene	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
2-Methylphenol (o-Cresol)	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
bis(2-Chloroisopropyl)ether	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
(3+4)-Methylphenol (m,p-Cresol)	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
N-Nitroso-di-n-propylamine	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Hexachloroethane	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Nitrobenzene	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Isophorone	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
2-Nitrophenol	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
2,4-Dimethylphenol	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
bis(2-Chloroethoxy)methane	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
2,4-Dichlorophenol	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
1,2,4-Trichlorobenzene	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Naphthalene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
4-Chloroaniline	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Hexachlorobutadiene	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
4-Chloro-3-methylphenol	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
Hexachlorocyclopentadiene	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
2,4,6-Trichlorophenol	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
2,3-Dichloroaniline	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
2,4,5-Trichlorophenol	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
2-Chloronaphthalene	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
2-Nitroaniline	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
1,4-Dinitrobenzene	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Dimethylphthalate	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
1,3-Dinitrobenzene	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
2,6-Dinitrotoluene	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
1,2-Dinitrobenzene	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Acenaphthylene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
3-Nitroaniline	**ND**	0.033	EPA 8270	9-4-09	9-4-09	

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

SEMIVOLATILES by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0904S1					
2,4-Dinitrophenol	**ND**	0.17	EPA 8270	9-4-09	9-4-09	
Acenaphthene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
4-Nitrophenol	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
2,4-Dinitrotoluene	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Dibenzofuran	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
2,3,5,6-Tetrachlorophenol	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
2,3,4,6-Tetrachlorophenol	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Diethylphthalate	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
4-Chlorophenyl-phenylether	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
4-Nitroaniline	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Fluorene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
4,6-Dinitro-2-methylphenol	**ND**	0.17	EPA 8270	9-4-09	9-4-09	
N-Nitrosodiphenylamine	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
1,2-Diphenylhydrazine	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
4-Bromophenyl-phenylether	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Hexachlorobenzene	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Pentachlorophenol	**ND**	0.17	EPA 8270	9-4-09	9-4-09	
Phenanthrene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
Anthracene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
Carbazole	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Di-n-butylphthalate	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
Benzidine	**ND**	0.33	EPA 8270	9-4-09	9-4-09	
Pyrene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
Butylbenzylphthalate	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
bis-2-Ethylhexyladipate	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
3,3'-Dichlorobenzidine	**ND**	0.33	EPA 8270	9-4-09	9-4-09	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
Chrysene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
bis(2-Ethylhexyl)phthalate	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Di-n-octylphthalate	**ND**	0.033	EPA 8270	9-4-09	9-4-09	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
Indeno[1,2,3-cd]pyrene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270/SIM	9-4-09	9-4-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*55*	*19 - 97*				
Phenol-d6	*60*	*22 - 108*				
Nitrobenzene-d5	*59*	*21 - 106*				
2-Fluorobiphenyl	*65*	*29 - 107*				
2,4,6-Tribromophenol	*87*	*44 - 121*				
Terphenyl-d14	*94*	*37 - 120*				

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

SEMIVOLATILES by EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	09-010-03										
	MS	MSD	MS	MSD		MS	MSD				
Phenol	**1.06**	**1.09**	1.33	1.33	ND	80	82	38 - 97	3	30	
2-Chlorophenol	**1.11**	**1.14**	1.33	1.33	ND	83	86	28 - 102	3	38	
1,4-Dichlorobenzene	**0.501**	**0.520**	0.667	0.667	ND	75	78	14 - 84	4	41	
N-Nitroso-di-n-propylamine	**0.525**	**0.560**	0.667	0.667	ND	79	84	25 - 104	6	39	
1,2,4-Trichlorobenzene	**0.493**	**0.508**	0.667	0.667	ND	74	76	23 - 93	3	37	
4-Chloro-3-methylphenol	**1.10**	**1.16**	1.33	1.33	ND	83	87	49 - 113	5	31	
Acenaphthene	**0.510**	**0.517**	0.667	0.667	ND	76	78	37 - 101	1	40	
4-Nitrophenol	**1.21**	**1.22**	1.33	1.33	ND	91	92	30 - 136	1	31	
2,4-Dinitrotoluene	**0.563**	**0.561**	0.667	0.667	ND	84	84	36 - 122	0	32	
Pentachlorophenol	**1.20**	**1.15**	1.33	1.33	ND	90	86	15 - 143	4	34	
Pyrene	**0.581**	**0.578**	0.667	0.667	ND	87	87	24 - 138	1	39	
Surrogate:											
2-Fluorophenol						*72*	*74*	*19 - 97*			
Phenol-d6						*74*	*76*	*22 - 108*			
Nitrobenzene-d5						*73*	*78*	*21 - 106*			
2-Fluorobiphenyl						*74*	*75*	*29 - 107*			
2,4,6-Tribromophenol						*75*	*74*	*44 - 121*			
Terphenyl-d14						*83*	*81*	*37 - 120*			

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-03
Client ID: **BP-26**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.5
Cadmium	6010B	**ND**	0.55
Chromium	6010B	**28**	0.55
Lead	6010B	**35**	5.5
Mercury	7471A	**0.035**	0.022

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-04
Client ID: **BP-1 0'-0.5'**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.3
Cadmium	6010B	**ND**	0.53
Chromium	6010B	**33**	0.53
Lead	6010B	**ND**	5.3
Mercury	7471A	**ND**	0.021

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-07
Client ID: **BP-2 0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.3
Cadmium	6010B	**ND**	0.53
Chromium	6010B	**28**	0.53
Lead	6010B	**ND**	5.3
Mercury	7471A	**ND**	0.021

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-10
Client ID: **BP-3 0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**6.2**	5.4
Cadmium	6010B	**ND**	0.54
Chromium	6010B	**29**	0.54
Lead	6010B	**35**	5.4
Mercury	7471A	**0.087**	0.022

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-13
Client ID: **BP-4 0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.4
Cadmium	6010B	**ND**	0.54
Chromium	6010B	**31**	0.54
Lead	6010B	**26**	5.4
Mercury	7471A	**0.044**	0.022

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted:	9-8&9-09
Date Analyzed:	9-9-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	09-029-16
Client ID:	**BP-5 0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**7.3**	5.4
Cadmium	6010B	**ND**	0.54
Chromium	6010B	**37**	0.54
Lead	6010B	**48**	5.4
Mercury	7471A	**0.047**	0.022

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-20
Client ID: **BP-6 0-1**

Analyte	Method	Result	PQL
Arsenic	6010B	**12**	5.3
Cadmium	6010B	**ND**	0.53
Chromium	6010B	**47**	0.53
Lead	6010B	**30**	5.3
Mercury	7471A	**0.030**	0.021

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-23
Client ID: **BP-7 0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.2
Cadmium	6010B	**ND**	0.52
Chromium	6010B	**14**	0.52
Lead	6010B	**13**	5.2
Mercury	7471A	**0.021**	0.021

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-26
Client ID: **BP-8 0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**50**	5.4
Cadmium	6010B	**ND**	0.54
Chromium	6010B	**33**	0.54
Lead	6010B	**91**	5.4
Mercury	7471A	**0.095**	0.022

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-29
Client ID: **BP-9 0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**130**	5.4
Cadmium	6010B	**3.9**	0.54
Chromium	6010B	**57**	0.54
Lead	6010B	**350**	5.4
Mercury	7471A	**0.051**	0.022

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-32
Client ID: **BP-23 0-5**

Analyte	Method	Result	PQL
Arsenic	6010B	**58**	5.3
Cadmium	6010B	**1.3**	0.53
Chromium	6010B	**31**	0.53
Lead	6010B	**150**	5.3
Mercury	7471A	**0.085**	0.021

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-37
Client ID: **BP-10 0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.1
Cadmium	6010B	**ND**	0.51
Chromium	6010B	**8.2**	0.51
Lead	6010B	**7.3**	5.1
Mercury	7471A	**ND**	0.020

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted:	9-8&9-09
Date Analyzed:	9-9-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	09-029-40
Client ID:	**BP-11 0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**210**	5.5
Cadmium	6010B	**4.5**	0.55
Chromium	6010B	**75**	0.55
Lead	6010B	**570**	5.5
Mercury	7471A	**0.066**	0.022

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0908S3&MB0909S2

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.0
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0
Mercury	7471A	**ND**	0.020

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-29

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**122**	**127**	4	5.0	
Cadmium	**3.63**	**4.08**	12	0.50	
Chromium	**53.4**	**55.6**	4	0.50	
Lead	**328**	**323**	2	5.0	
Mercury	**0.0475**	**0.0573**	19	0.020	

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-29

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**206**	84	**209**	87	2	
Cadmium	50	**47.6**	88	**47.9**	89	1	
Chromium	100	**148**	95	**147**	94	0	
Lead	250	**533**	82	**536**	83	1	
Mercury	0.50	**0.468**	94	**0.466**	93	0	

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

DISSOLVED METALS
EPA 200.8/7470A

Date Analyzed: 9-9&11-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-029-35
Client ID: BP-23-15

Analyte	Method	Result	PQL
Arsenic	200.8	**8.5**	3.0
Cadmium	200.8	**ND**	4.0
Chromium	200.8	**ND**	10
Lead	200.8	**ND**	1.0
Mercury	7470A	**ND**	0.50

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

DISSOLVED METALS
EPA 200.8/7470A
METHOD BLANK QUALITY CONTROL

Date Analyzed: 9-9&11-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0909D1&MB0911D1

Analyte	Method	Result	PQL
Arsenic	200.8	**ND**	3.0
Cadmium	200.8	**ND**	4.0
Chromium	200.8	**ND**	10
Lead	200.8	**ND**	1.0
Mercury	7470A	**ND**	0.50

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

DISSOLVED METALS
EPA 200.8/7470A
DUPLICATE QUALITY CONTROL

Date Analyzed: 9-9&11-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-029-35

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**8.50**	**8.97**	5	3.0	
Cadmium	**ND**	**ND**	NA	4.0	
Chromium	**ND**	**ND**	NA	10	
Lead	**ND**	**ND**	NA	1.0	
Mercury	**ND**	**ND**	NA	0.50	

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

DISSOLVED METALS
EPA 200.8/7470A
MS/MSD QUALITY CONTROL

Date Analyzed: 9-9&11-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-029-35

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	200	**213**	102	**207**	99	3	
Cadmium	200	**214**	107	**204**	102	5	
Chromium	200	**185**	93	**180**	90	3	
Lead	200	**193**	97	**196**	98	1	
Mercury	12.5	**12.0**	96	**12.1**	97	1	

Date of Report: September 14, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029
Project: 555-1647-019 02/0403 / Paint

% MOISTURE

Date Analyzed: 9-3,4&8-09

Client ID	Lab ID	% Moisture
BP-24-8	09-029-01	25
BP-26	09-029-03	9
BP-1 0'-0.5'	09-029-04	6
BP-2 0-0.5	09-029-07	6
BP-3 0-0.5	09-029-10	7
BP-4 0-0.5	09-029-13	8
BP-5 0-0.5	09-029-16	8
BP-5 4-5	09-029-18	11
BP-5 10	09-029-19	20
BP-6 0-1	09-029-20	5
BP-7 0-0.5	09-029-23	3
BP-8 0-0.5	09-029-26	8
BP-9 0-0.5	09-029-29	7
BP-23 0-5	09-029-32	6
BP-23 4-5	09-029-36	10
BP-10 0-0.5	09-029-37	1
BP-11 0-0.5	09-029-40	9
BP-11 4-5	09-029-42	11

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.

N1 - Hydrocarbons in the diesel range are impacting the lube oil 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

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Chain of Custody

Laboratory Number: 09-029

Company:	PMX
Project Number:	555-1647-019 02/0403
Project Name:	Bothell Crossing, Paint Site
Project Manager:	Sandra Matthews
Sampled by:	L. Vagelatos & S. Matthews

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)

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 HOLD	HEM by 1664	MTCA Metals: As, Cd, Cr, Hg, Pb		Hold				% Moisture
1	BP-24-8	9/2/09	0905	Soil	1			X																	X
2	BP-24	9/2/09	0910	H_2O	2			X																	
3	BP-26		0950	Soil	6		X		~~X~~	X	X						~~X~~		X						
4	BP-1 0'-0.5'		1010		1												X		X						
5	BP-1 1.5'-2'		1012		1												~~X~~				X				
6	BP-1 4.5'-5'		1015		1																X				
7	BP-2 0-0.5		1020		1												X		X						X
8	BP-2 2.5-3		1025		1																X				
9	BP-2 4.5-5		1030		1																X				
10	BP-3 0-0.5		1040		1												X		X						X

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	Parametrix	9/2/09	1510
Received by	[illegible]	Speedy Mess.	9/2/09	1520
Relinquished by		〃	〃	1535
Received by	[illegible]	OnSite Env	9/2/09	1535
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions: Hold all TCLP analyses

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

Laboratory Number: 09-029

Company:	PMX
Project Number:	
Project Name:	Bothell Crossing, Paint Site
Project Manager:	Sandra Matthews
Sampled by:	L. Vagelatos + S. Matthews

Turnaround Request (in working days)

(Check One)

- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ____________ (other)

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 HOLD	HEM by 1664	MTCA Metals: As, Cd, Cr, Hg, Pb	Hold				% Moisture
11	BP-3 2-3	9/2/09	1045	Soil	1															X				
12	BP-3 4.5-5		1048																	X				
13	BP-4 0-0.5		1055														X		X					X
14	BP-4 2-3		1058																	X				
15	BP-4 4.5-5		1100																	X				
16	BP-5 0-0.5		1110														X		X					X
17	BP-5 2-3		1112																	X				
18	BP-5 4-5		1115					X												~~X~~				X
19	BP-5 10		1120					X												~~X~~				X
20	BP-6 0-1		1135														X		X					X

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1510
Received by	[illegible]	Speedy Mess.	9/2/09	1520
Relinquished by	"	"	"	1535
Received by	[illegible]	OnSite Env	9/2/09	1535
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:
Hold TCLP analysis
X Added 9/4/09 ~~[illegible]~~ STA

Chromatograms with final report ☐

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

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Chain of Custody

Laboratory Number: 09-029

Company: Parametrix

Project Number:

Project Name: Bothell Crossing, Paint Site

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos + S. Matthews

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)

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 HOLD	HEM by 1664	MTCA Metals: As, Cd, Cr, Hg, Pb		Hold				% Moisture
21	BP-6 2-3	9/2/09	1138	Soil	1																X				
22	BP-6 4-5	9/2/09	1140	↓	↓																X				
23	BP-~~6~~7 0-0.5	9/2/09	1200	Soil	1												X		X						X
24	BP-7 2-3	↓	1205	↓	↓																X				
25	BP-7 4-5	↓	1208	↓	↓																X				
26	BP-8 0-0.5	9/2/09	1217	Soil	1												X		X						X
27	BP-8 2-3	↓	1220	↓	↓																X				
28	BP-8 4.5-5	↓	1221	↓	↓																X				
29	BP-9 0-0.5	9/2/09	1230	Soil	1												X		X						X
30	BP-9 2-3	↓	1233	↓	↓																X				

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1510
Received by	[illegible]	Speedy Mes.	9/2/09	1520
Relinquished by	〃	〃	〃	1535
Received by	[illegible]	OnSite Env.	9/2/09	1535
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions: HOLD TCLP analysis

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: Parametrix

Project Number: Bothell Crossing, Paint Site

Project Name: X

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos + S. Matthews

Turnaround Request (in working days)

(Check One)

- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ______ (other)

Laboratory Number: 09-029

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	MTCA Metals As, Cd, Cr Hg, Pb	MTCA Metals (diss.)	Hold				% Moisture
31	BP-9 4-5	9/2/09	1235	Soil	1																X				
32	BP-23 6-5	↓	1310	↓	↓														X						X
33	BP-23 2-3	↓	1312	↓	↓																X				
34	BP-23 4-4.5	↓	1315	↓	↓																X				
35	BP-23 - H5	↓	1340 ~~1410~~ 1440	H_2O	8		X	X	~~X~~	X										X					
36	BP-23 4-5	↓	1316	Soil	2		X	X																	X
37	BP-10 0-0.5	↓	1440	↓	1														X						
38	BP-10 2-3	↓	1442	↓	1																X				
39	BP-10 4-5	↓	1445	↓	1																X				
40	BP-11 0-0.5	↓	1500	↓	1														X						X

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1520
Received by	[illegible]	Speedy Mess.	9/2/09	1520
Relinquished by	"	"	"	1535
Received by	[illegible]	OnSite Env	9/2/09	1535
Relinquished by				
Received by				

Comments/Special Instructions:

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

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

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Chain of Custody

Laboratory Number: 09-029

Company: Parametrix

Project Number:

Project Name: Bothell Crossing, Paint Site

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos + S. Matthews

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)

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			Hold				% Moisture
41	BP-11 ~~0-0~~ 2-3	9/2/09	1502	Soil	1																X				
42	BP-11 4-5		1505	↓	3		X	X													~~X~~ DCO				X
43	TRIP BLANK	—	—	W	1					X															

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1520
Received by	[illegible]	Speedy MBS	9/2/09	1520
Relinquished by	"	"	"	1535
Received by	[illegible]	OnSite Env	9/2/09	1535
Relinquished by				
Received by				

Comments/Special Instructions:

(X) Added 9/4/09 ~~[illegible]~~ STA

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

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

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 24, 2009

Sandra Matthews
Parametrix
411 108th Avenue NE, Suite 1800
Bellevue, WA 98004

Re: Analytical Data for Project 555-1647-019 02/0403 / Paint
Laboratory Reference No. 0909-029B

Dear Sandra:

Enclosed are the analytical results and associated quality control data for samples submitted on September 2, 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

Date of Report: September 24, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029B
Project: 555-1647-019 02/0403 / Paint

Case Narrative

Samples were collected on September 2, 2009, and received by the laboratory on September 2, 2009. They were maintained at the laboratory at a temperature of 2^oC to 6^oC 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.

Date of Report: September 24, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029B
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted:	9-21&23-09
Date Analyzed:	9-23-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	09-029-17
Client ID:	**BP-5 2-3**

Analyte	Method	Result	PQL
Arsenic	6010B	**11**	5.7
Cadmium	6010B	**ND**	0.57
Chromium	6010B	**35**	0.57
Lead	6010B	**49**	5.7
Mercury	7471A	**0.050**	0.023

Date of Report: September 24, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029B
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-27
Client ID: **BP-8 2-3**

Analyte	Method	Result	PQL
Arsenic	6010B	**10**	6.0
Cadmium	6010B	**ND**	0.60
Chromium	6010B	**38**	0.60
Lead	6010B	**82**	6.0
Mercury	7471A	**0.063**	0.024

Date of Report: September 24, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029B
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-30
Client ID: **BP-9 2-3**

Analyte	Method	Result	PQL
Arsenic	6010B	**11**	5.4
Cadmium	6010B	**ND**	0.54
Chromium	6010B	**46**	0.54
Lead	6010B	**18**	5.4
Mercury	7471A	**0.032**	0.022

Date of Report: September 24, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029B
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-33
Client ID: **BP-23 2-3**

Analyte	Method	Result	PQL
Arsenic	6010B	**31**	5.5
Cadmium	6010B	**ND**	0.55
Chromium	6010B	**32**	0.55
Lead	6010B	**410**	5.5
Mercury	7471A	**0.038**	0.022

Date of Report: September 24, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029B
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-41
Client ID: **BP-11 2-3**

Analyte	Method	Result	PQL
Arsenic	6010B	**390**	5.6
Cadmium	6010B	**3.5**	0.56
Chromium	6010B	**48**	0.56
Lead	6010B	**300**	5.6
Mercury	7471A	**0.073**	0.022

Date of Report: September 24, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029B
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-21-09
Date Analyzed: 9-21-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0921S2

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.0
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0

Date of Report: September 24, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029B
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 7471A
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-23-09
Date Analyzed: 9-23-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0923S4

Analyte	Method	Result	PQL
Mercury	7471A	**ND**	0.020

Date of Report: September 24, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029B
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-21-09
Date Analyzed: 9-21-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-157-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	5.0	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**16.5**	**18.3**	10	0.50	
Lead	**7.02**	**5.83**	19	5.0	

Date of Report: September 24, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029B
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 9-23-09
Date Analyzed: 9-23-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	**0.0252**	**0.0256**	2	0.020	

Date of Report: September 24, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029B
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 9-21-09
Date Analyzed: 9-21-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-157-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**79.8**	80	**84.2**	84	5	
Cadmium	50	**44.7**	89	**45.4**	91	2	
Chromium	100	**108**	91	**108**	92	0	
Lead	250	**218**	85	**219**	85	0	

Date of Report: September 24, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029B
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 7471A
MS/MSD QUALITY CONTROL

Date Extracted: 9-23-09
Date Analyzed: 9-23-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	0.50	**0.480**	96	**0.495**	99	3	

Date of Report: September 24, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029B
Project: 555-1647-019 02/0403 / Paint

% MOISTURE

Date Analyzed: 9-21-09

Client ID	Lab ID	% Moisture
BP-5 2-3	09-029-17	12
BP-8 2-3	09-029-27	16
BP-9 2-3	09-029-30	8
BP-23 2-3	09-029-33	9
BP-11 2-3	09-029-41	10

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.

N1 - Hydrocarbons in the diesel range are impacting the lube oil 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

Chain of Custody

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

Laboratory Number: 09-029

Company: PMX

Project Number: 555-1647-019 02/0403

Project Name: Bothell Crossing, Paint Site

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos & S. Matthews

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)

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 HOLD	HEM by 1664	MTCA Metals: As, Cd, Cr, Hg, Pb		Hold				% Moisture
1	BP-24-8	9/2/09	0905	Soil	1			X																	X
2	BP-24	9/2/09	0910	H_2O	2			X																	
3	BP-26		0950	Soil	~~4~~6		X		~~X~~	X	X						~~X~~		X						
4	BP-1 0'-0.5'		1010		1												X		X						
5	BP-1 1.5'-2'		1012		1												~~X~~				X				
6	BP-1 4.5'-5'		1015		1																X				
7	BP-2 0-0.5		1020		1												X		X						X
8	BP-2 2.5-3		1025		1																X				
9	BP-2 4.5-5		1030		1																X				
10	BP-3 0-0.5		1040		1												X		X						X

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	Parametrix	9/2/09	1510
Received by	[signature]	Speedy Mess.	9/2/09	1520
Relinquished by	[signature]	11	11	1535
Received by	[signature]	OnSite Env	9/2/09	1535
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

Hold all TCLP analyses

Added 9/15/09. DB

Chromatograms with final report ☐

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

OnSite Environmental Inc.

Chain of Custody

Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: PMX

Project Number:

Project Name: Bothell Crossing, Paint Site

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos + S. Matthews

Turnaround Request (in working days)

(Check One)

- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ______ (other)

Laboratory Number: 09-029

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 HOLD	HEM by 1664	MTCA Metals: As, Cd, Cr, Hg, Pb		Hold				% Moisture
11	BP-3 2-3	9/2/09	1045	Soil	1																X				
12	BP-3 4.5-5		1048																		X				
13	BP-4 0-0.5		1055														X		X						X
14	BP-4 2-3		1058																		X				
15	BP-4 4.5-5		1100																		X				
16	BP-5 0-0.5		1110														X		X						X
17	BP-5 2-3		1112																O		~~X~~ 9/5 DB				O
18	BP-5 4-5		1115					X													~~X~~				X
19	BP-5 10		1120					X													~~X~~				X
20	BP-6 0-1		1135														X		X						X

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1510
Received by	[illegible]	Speedy Mess.	9/2/09	1520
Relinquished by	"	"	"	1535
Received by	[illegible]	OnSite Env	9/2/09	1535
Relinquished by				
Received by				

Comments/Special Instructions:

Hold TCLP analysis

X Added 9/4/09 STA

O Added 9/5/09. DB

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

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

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Chain of Custody

Company: Parametrix

Project Number:

Project Name: Bothell Crossing, Paint Site

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos + S. Matthews

Turnaround Request (in working days)

(Check One)

- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ______ (other)

Laboratory Number: 09-029

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 HOLD	HEM by 1664	MTCA Mets: As, Cd, Cr, Hg, Pb		Hold				% Moisture
21	BP-6 2-3	9/2/09	1138	Soil	1																X				
22	BP-6 4-5	9/2/09	1140	↓	↓																X				
23	BP-~~6~~7 0-0.5	9/2/09	1200	Soil	1												X		X						X
24	BP-7 2-3	↓	1205	↓	↓																X				
25	BP-7 4-5	↓	1208	↓	↓																X				
26	BP-8 0-0.5	9/2/09	1217	Soil	1												X		X						X
27	BP-8 2-3	↓	1220	↓	↓														O		~~X~~				O
28	BP-8 4.5-5	↓	1221	↓	↓																X				
29	BP-9 0-0.5	9/2/09	1230	Soil	1												X		X						X
30	BP-9 2-3	↓	1233	↓	↓														O		~~X~~				O

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1510
Received by	[signature]	Speedy Mes.	9/2/09	1520
Relinquished by	"	"	"	1535
Received by	[signature]	OnSite Env	9/2/09	1535
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

HOLD TCLP analysis

O Added 9/5/09. DB

Chromatograms with final report ☐

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

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Chain of Custody

Laboratory Number: 09-029

Company:	Parametrix
Project Number:	Bothell Crossing, Paint Site
Project Name:	X
Project Manager:	Sandra Matthews
Sampled by:	L. Vagelatos + S. Mathews

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)

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	MTCA Metals As, Cd, Cr, Hg, Pb	MTCA Metals (diss.)	Hold				% Moisture
31	BP-9 4-5	9/2/09	1235	Soil	1																X				
32	BP-23 6-5	↓	1310	↓	↓														X						X
33	BP-23 2-3	↓	1312	↓	↓														O		~~X~~ DB				O
34	BP-23 4-4.5	↓	1315	↓	↓																X				
35	BP-23 -W	↓	1340 ~~1440~~	H_2O	8		X	X	~~X~~	X										X					
36	BP-23 4-5	↓	1316	Soil	2		X	X																	X
37	BP-10 0-0.5	↓	1440	↓	1														X						
38	BP-10 2-3	↓	1442	↓	1																X				
39	BP-10 4-5	↓	1445	↓	1																X				
40	BP-11 0-0.5	↓	1500	↓	1														X						X

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1520
Received by	[illegible]	Speedy Mess.	9/2/09	1520
Relinquished by	"	"	"	1535
Received by	[illegible]	OnSite Env.	9/2/09	1535
Relinquished by				
Received by				

Comments/Special Instructions:

O Added 9/15/09. DB

Reviewed by/Date

Reviewed by/Date

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

Turnaround Request (in working days)

(Check One)

- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ______ (other)

Laboratory Number: 09-029

Company: Parametrix

Project Number:

Project Name: Bothell Crossing, Paint Site

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos + S. Matthews

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	MTCA Metals (As, Cd, Cr, Hg, Pb)	Hold				% Moisture
41	BP-11 ~~0-0~~ 2-3	9/2/09	1502	Soil	1														O	~~X~~ DB				O
42	BP-11 4-5		1505	↓	3		X	X												~~X~~ DB				X
43	TRIP BLANK	—	—	W	1					X														

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1520
Received by	[illegible]	Speedy MBS	9/2/09	1520
Relinquished by	〃	〃	〃	1535
Received by	[illegible]	OnSite Env	9/2/09	1535
Relinquished by				
Received by				

Reviewed by/Date

Reviewed by/Date

Comments/Special Instructions:

X Added 9/4/09 STA

O Added 9/5/09. DB

Chromatograms with final report ☐

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

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

October 8, 2009

Sandra Matthews
Parametrix
411 108th Avenue NE, Suite 1800
Bellevue, WA 98004

Re:	Analytical Data for Project 555-1647-019 02/0403 / Paint
Laboratory Reference No. 0909-029C

Dear Sandra:

Enclosed are the analytical results and associated quality control data for samples submitted on September 2, 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

Date of Report: October 8, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029C
Project: 555-1647-019 02/0403 / Paint

Case Narrative

Samples were collected on September 2, 2009, and received by the laboratory on September 2, 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.

<u>Total Metals EPA 6010B/7471A Analysis</u>

Samples BP-23 4-5 and BP-11 4-5 were analyzed outside the 28 day holding time for mercury.

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.

Date of Report: October 8, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029C
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-30&10-5-09
Date Analyzed: 9-30&10-6-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-36
Client ID: **BP-23 4-5**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.6
Cadmium	6010B	**ND**	0.56
Chromium	6010B	**22**	0.56
Lead	6010B	**ND**	5.6
Mercury	7471A	**0.023**	0.022

Date of Report: October 8, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029C
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-30&10-5-09
Date Analyzed: 9-30&10-6-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-42
Client ID: **BP-11 4-5**

Analyte	Method	Result	PQL
Arsenic	6010B	**6.1**	5.6
Cadmium	6010B	**ND**	0.56
Chromium	6010B	**26**	0.56
Lead	6010B	**ND**	5.6
Mercury	7471A	**ND**	0.022

Date of Report: October 8, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029C
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-5-09
Date Analyzed:	10-5-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1005S1

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.0
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0

Date of Report: October 8, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029C
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 7471A
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-30-09
Date Analyzed: 9-30-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0930S1

Analyte	Method	Result	PQL
Mercury	7471A	**ND**	0.02

Date of Report: October 8, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029C
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 10-5-09
Date Analyzed: 10-5-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-236-06

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	5.0	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**5.50**	**6.55**	17	0.50	
Lead	**ND**	**ND**	NA	5.0	

Date of Report: October 8, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029C
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 9-30-09
Date Analyzed: 9-30-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-42

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	**0.0206**	**ND**	NA	0.020	

Date of Report: October 8, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029C
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 10-5-09
Date Analyzed: 10-5-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-236-06

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**93.8**	94	**95.2**	95	2	
Cadmium	50	**49.4**	99	**49.9**	100	1	
Chromium	100	**103**	97	**102**	96	1	
Lead	250	**234**	94	**236**	94	1	

Date of Report: October 8, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029C
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 7471A
MS/MSD QUALITY CONTROL

Date Extracted: 9-30-09
Date Analyzed: 9-30-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-42

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	0.50	**0.517**	103	**0.511**	102	1	

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.

N1 - Hydrocarbons in the diesel range are impacting the lube oil 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

Chain of Custody

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Laboratory Number: 09-029

Company:	PMX
Project Number:	555-1647-019 02/0403
Project Name:	Bothell Crossing, Paint Site
Project Manager:	Sandra Matthews
Sampled by:	L. Vagelatos & S. Matthews

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)

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 HOLD	HEM by 1664	MTCA Metals: Ag, Cd, Cr, Hg, Pb		Hold				% Moisture
1	BP-24-8	9/2/09	0905	Soil	1			X																	X
2	BP-24	9/2/09	0910	H_2O	2			X																	
3	BP-26		0950	Soil	~~4~~ 6		X		~~X~~	X	X						~~X~~		X						
4	BP-1 0'-0.5'		1010		1												X		X						
5	BP-1 1.5'-2'		1012		1												~~X~~				X				
6	BP-1 4.5'-5'		1015		1																X				
7	BP-2 0-0.5		1020		1												X		X						X
8	BP-2 2.5-3		1025		1																X				
9	BP-2 4.5-5		1030		1																X				
10	BP-3 0-0.5		1040		1												X		X						X

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	Parametrix	9/2/09	1510
Received by	[illegible]	Speedy Mess.	9/2/09	1520
Relinquished by	~~[illegible]~~	11	11	1535
Received by	[illegible]	OnSite Env.	9/2/09	1535
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

Hold all TCLP analyses.

Added 9/15/09. DB

Added 9/30/09. 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

Laboratory Number: 09-029

Company: PMX

Project Number:

Project Name: Bothell Crossing, Paint Site

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos + S. Matthews

Turnaround Request (in working days)

(Check One)

- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [X] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ______ (other)

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 HOLD	HEM by 1664	MTCA Mets: As, Cd, Cr, Hg, Pb		Hold				% Moisture
11	BP-3 2-3	9/2/09	1045	Soil	1																X				
12	BP-3 4.5-5		1048																		X				
13	BP-4 0-0.5		1055														X		X						X
14	BP-4 2-3		1058																		X				
15	BP-4 4.5-5		1100																		X				
16	BP-5 0-0.5		1110														X		X						X
17	BP-5 2-3		1112																O		~~X~~ No DB				O
18	BP-5 4-5		1115					X													~~X~~				X
19	BP-5 10		1120					X													~~X~~				X
20	BP-6 0-1		1135														X		X						X

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1510
Received by	[illegible]	Speedy Mess.	9/2/09	1520
Relinquished by	"	"	"	1535
Received by	[illegible]	OnSite Env	9/2/09	1535
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

Hold TCLP analysis

X Added 9/4/09 ~~BD~~ STA

O Added 9/5/09. DB

Chromatograms with final report ☐

Chain of Custody

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

Company: Parametrix

Project Number:

Project Name: Bothell Crossing, Paint Site

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos + S. Matthews

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: 09-029

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 HOLD	HEM by 1664	MTCA Mets: As, Cd, Cr, Hg, Pb		Hold				% Moisture
21	BP-6 2-3	9/2/09	1138	Soil	1																X				
22	BP-6 4-5	9/2/09	1140	↓	↓																X				
23	BP-~~6~~7 0-0.5	9/2/09	1200	Soil	1												X		X						X
24	BP-7 2-3	↓	1205	↓	↓																X				
25	BP-7 4-5	↓	1208	↓	↓																X				
26	BP-8 0-0.5	9/2/09	1217	Soil	1												X		X						X
27	BP-8 2-3	↓	1220	↓	↓														O		~~X~~ DJ				O
28	BP-8 4.5-5	↓	1221	↓	↓																X				
29	BP-9 0-0.5	9/2/09	1230	Soil	1												X		X						X
30	BP-9 2-3	↓	1233	↓	↓														O		~~X~~ DJ				O

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1510
Received by	[signature]	Speedy Mes.	9/2/09	1520
Relinquished by	〃	〃	〃	1535
Received by	[signature]	OnSite Env.	9/2/09	1535
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

HOLD TCLP analysis

O Added 9/5/09. DJ

Chromatograms with final report ☐

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

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Chain of Custody

Company: Parametrix

Project Number: Bothell Crossing, Paint Site

Project Name: X

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos + S. Mathews

Turnaround Request (in working days)

(Check One)

- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ______ (other)

Laboratory Number: 09-029

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	MTCA Metals As, Cd, Cr, Hg, Pb	MTCA Metals (diss.)	Hold				% Moisture
31	BP-9 4-5	9/2/09	1235	Soil	1																X				
32	BP-23 6-5	↓	1310	↓	↓														X						X
33	BP-23 2-3		1312																O		~~X~~				O
34	BP-23 4-4.5		1315																		X				
35	BP-23 - 45		1340 ~~1440~~	H_2O	8		X	X	~~X~~	X										X					
36	BP-23 4-5		1316	Soil	2		X	X											●						X
37	BP-10 0-0.5		1440	↓	1														X						
38	BP-10 2-3		1442		1																X				
39	BP-10 4-5		1445		1																X				
40	BP-11 0-0.5	↓	1500	↓	1														X						X

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1520
Received by	[illegible]	Speedy Mess.	9/2/09	1520
Relinquished by	"	"	"	1535
Received by	[illegible]	OnSite Env	9/2/09	1535
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

O Added 9/15/09. DB

● Added 9/30/09. DB

Chromatograms with final report ☐

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

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Chain of Custody

Laboratory Number: 09-029

Company: Parametrix

Project Number:

Project Name: Bothell Crossing, Paint Site

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos + S. Matthews

Turnaround Request (in working days)

(Check One)

- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ______ (other)

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	MTCA Metals (As, Cd, Cr, Hg, Pb)		Hold				% Moisture
41	BP-11 ~~0-0~~ 2-3	9/2/09	1502	Soil	1														O		~~X~~ no DB				O
42	BP-11 4-5		1505	↓	3		X	X											●		~~X~~ DB				X
43	TRIP BLANK	—	—	W	1					(X)															

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1520
Received by	[illegible]	Speedy MBS	9/2/09	1520
Relinquished by	"	"	"	1535
Received by	[illegible]	OnSite Env	9/2/09	1535
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

(X) Added 9/4/09 ~~DB~~ STA

O Added 9/15/09 - DB

● Added 9/30/09 - DB

Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

October 20, 2009

Sandra Matthews
Parametrix
411 108th Avenue NE, Suite 1800
Bellevue, WA 98004

Re: Analytical Data for Project 555-1647-019 02/0403 / Paint
Laboratory Reference No. 0909-029D

Dear Sandra:

Enclosed are the analytical results and associated quality control data for samples submitted on September 2, 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

Date of Report: October 20, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029D
Project: 555-1647-019 02/0403 / Paint

Case Narrative

Samples were collected on September 2, 2009, and received by the laboratory on September 2, 2009. They were maintained at the laboratory at a temperature of 2^oC to 6^oC 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.

TCLP Metals EPA 1311/6010B/7470A Analysis

Samples BP-11 0-0.5 and BP-11 2-3 were analyzed outside the 28 day holding time for mercury.

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.

Date of Report: October 20, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029D
Project: 555-1647-019 02/0403 / Paint

TCLP Metals
EPA 1311/6010B/7470A

Date Prepared: 10-13-09
Date Extracted: 10-15&16-09
Date Analyzed: 10-15&16-09

Matrix: TCLP Extract
Units: mg/L (ppm)

Lab ID: 09-029-40
Client ID: **BP-11 0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	0.40
Cadmium	6010B	**0.045**	0.020
Chromium	6010B	**0.022**	0.020
Lead	6010B	**0.70**	0.20
Mercury	7470A	**ND**	0.0050

Date of Report: October 20, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029D
Project: 555-1647-019 02/0403 / Paint

TCLP Metals
EPA 1311/6010B/7470A

Date Prepared:	10-13-09
Date Extracted:	10-15&16-09
Date Analyzed:	10-15&16-09
Matrix:	TCLP Extract
Units:	mg/L (ppm)
Lab ID:	09-029-41
Client ID:	**BP-11 2-3**

Analyte	Method	Result	PQL
Arsenic	6010B	**0.96**	0.40
Cadmium	6010B	**0.13**	0.020
Chromium	6010B	**ND**	0.020
Lead	6010B	**0.32**	0.20
Mercury	7470A	**ND**	0.0050

Date of Report: October 20, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029D
Project: 555-1647-019 02/0403 / Paint

TCLP Metals
EPA 1311/6010B/7470A
METHOD BLANK QUALITY CONTROL

Date Prepared:	10-13-09
Date Extracted:	10-15&16-09
Date Analyzed:	10-15&16-09
Matrix:	TCLP Extract
Units:	mg/L (ppm)
Lab ID:	MB1015T1&MB1016T1

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	0.40
Cadmium	6010B	**ND**	0.020
Chromium	6010B	**ND**	0.020
Lead	6010B	**ND**	0.20
Mercury	7470A	**ND**	0.0050

Date of Report: October 20, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029D
Project: 555-1647-019 02/0403 / Paint

TCLP Metals
EPA 1311/6010B/7470A
DUPLICATE QUALITY CONTROL

Date Prepared: 10-13-09
Date Extracted: 10-15&16-09
Date Analyzed: 10-15&16-09

Matrix: TCLP Extract
Units: mg/L (ppm)

Lab ID: 09-029-40

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	0.40	
Cadmium	**0.0454**	**0.0436**	4	0.020	
Chromium	**0.0216**	**ND**	NA	0.020	
Lead	**0.700**	**0.730**	4	0.20	
Mercury	**ND**	**ND**	NA	0.0050	

Date of Report: October 20, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-029D
Project: 555-1647-019 02/0403 / Paint

TCLP Metals
EPA 1311/6010B/7470A
MS/MSD QUALITY CONTROL

Date Prepared:	10-13-09
Date Extracted:	10-15&16-09
Date Analyzed:	10-15&16-09
Matrix:	TCLP Extract
Units:	mg/L (ppm)
Lab ID:	09-029-40

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD
Arsenic	4.0	**4.03**	101	**3.98**	100	1
Cadmium	2.0	**1.96**	96	**1.93**	94	1
Chromium	4.0	**3.88**	96	**3.85**	96	1
Lead	10	**9.94**	92	**9.88**	92	1
Mercury	0.050	**0.0545**	109	**0.0548**	110	1

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.

N1 - Hydrocarbons in the diesel range are impacting the lube oil 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

Chain of Custody

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

Laboratory Number: 09-029

Company: PMX
Project Number: 555-1647-019 02/0403
Project Name: Bothell Crossing, Paint Site
Project Manager: Sandra Matthews
Sampled by: L. Vagelatos & S. Matthews

Turnaround Request (in working days)
(Check One)
- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ______ (other)

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 HOLD △	HEM by 1664	MTCA Metals: As, Cd, Cr, Hg, Pb		Hold				% Moisture
1	BP-24-8	9/2/09	0905	Soil	1			X																	X
2	BP-24	9/2/09	0910	H_2O	2			X																	↓
3	BP-26		0950	Soil	~~4~~ 6		X		~~X~~	X	X						~~X~~		X						
4	BP-1 0'-0.5'		1010		1												X		X						
5	BP-1 1.5'-2'		1012		1												~~X~~				X				
6	BP-1 4.5'-5'		1015		1																X				
7	BP-2 0-0.5		1020		1												X		X						X
8	BP-2 2.5-3		1025		1																X				
9	BP-2 4.5-5		1030		1																X				
10	BP-3 0-0.5		1040		1												X		X						X

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	Parametrix	9/2/09	1510
Received by	[illegible]	Speedy Mess.	9/2/09	1520
Relinquished by	[illegible]	"	"	1535
Received by	[illegible]	OnSite Env.	9/2/09	1535
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:
Hold all TCLP analyses
○ Added 9/15/09. DB
● Added 9/30/09. DB
△ Added 10/12/09. DB

Chromatograms with final report ☐

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

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

Chain of Custody

Laboratory Number: 09-029

Company: PMX

Project Number:

Project Name: Bothell Crossing, Paint Site

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos + S. Matthews

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)

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 HOLD	HEM by 1664	MTCA Mets: As, Cd, Cr, Hg, Pb		Hold				% Moisture
11	BP-3 2-3	9/2/09	1045	Soil	1																X				
12	BP-3 4.5-5		1048																		X				
13	BP-4 0-0.5		1055														X		X						X
14	BP-4 2-3		1058																		X				
15	BP-4 4.5-5		1100																		X				
16	BP-5 0-0.5		1110														X		X						X
17	BP-5 2-3		1112																O		~~X~~ w/o DB				O
18	BP-5 4-5		1115					X													~~X~~				X
19	BP-5 10		1120					X													~~X~~				X
20	BP-6 0-1		1135														X		X						X

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1510
Received by	[illegible]	Speedy Mess.	9/2/09	1520
Relinquished by	〃	〃	〃	1535
Received by	[illegible]	OnSite Env	9/2/09	1535
Relinquished by				
Received by				

Reviewed by/Date

Reviewed by/Date

Comments/Special Instructions:

Hold TCLP analysis

X Added 9/4/09 ~~BO~~ STA

O Added 9/5/09. DB

Chromatograms with final report ☐

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

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Chain of Custody

Company: Parametrix

Project Number:

Project Name: Bothell Crossing, Paint Site

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos + S. Matthews

Turnaround Request (in working days)

(Check One)

- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ______ (other)

Laboratory Number: 09-029

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 HOLD	HEM by 1664	MTCA Metals: As, Cd, Cr, Hg, Pb		Hold				% Moisture
21	BP-6 2-3	9/2/09	1138	Soil	1																X				
22	BP-6 4-5	9/2/09	1140	↓	↓																X				
23	BP-7 0-0.5	9/2/09	1200	Soil	1												X		X						X
24	BP-7 2-3	↓	1205	↓	↓																X				
25	BP-7 4-5	↓	1208	↓	↓																X				
26	BP-8 0-0.5	9/2/09	1217	Soil	1												X		X						X
27	BP-8 2-3	↓	1220	↓	↓														O		~~X~~ 9/10 DJ				O
28	BP-8 4.5-5	↓	1221	↓	↓																X				
29	BP-9 0-0.5	9/2/09	1230	Soil	1												X		X						X
30	BP-9 2-3	↓	1233	↓	↓														O		~~X~~ 9/10 DJ				O

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1510
Received by	[illegible]	Speedy Mes.	9/2/09	1520
Relinquished by	〃	〃	〃	1535
Received by	[illegible]	OnSite Env.	9/2/09	1535
Relinquished by				
Received by				

Comments/Special Instructions:

HOLD TCLP analysis

O Added 9/15/09. DJ

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Chain of Custody

Company: Parametrix

Project Number: Bothell Crossing, Paint Site

Project Name: X

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos + S. Mathews

Turnaround Request (in working days)

(Check One)

- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ________ (other)

Laboratory Number: 09-029

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~~ MTCA Metals	HEM by 1664	MTCA Metals As, Cd, Cr, Hg, Pb	MTCA Metals (diss.)	Hold				% Moisture
31	BP-9 4-5	9/2/09	1235	Soil	1																X				
32	BP-23 6-7	↓	1310	↓	↓														X						X
33	BP-23 2-3		1312																O		~~X~~ 10-3-?				O
34	BP-23 4-4.5		1315																		X				
35	BP-23 -10		~~1340~~ ~~1440~~	H_2O	8		X	X	~~X~~	X										X					
36	BP-23 4-5		1316	Soil	2		X	X											●						X
37	BP-10 0-0.5		1440		1														X						
38	BP-10 2-3		1442		1																X				
39	BP-10 4-5		1445		1																X				
40	BP-11 0-0.5	↓	1500	↓	1												Δ		X						X

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1520
Received by	[signature]	Speedy Mess.	9/2/09	1520
Relinquished by	"	"	"	1535
Received by	[signature]	OnSite Env	9/2/09	1535
Relinquished by				
Received by				

Reviewed by/Date

Reviewed by/Date

Comments/Special Instructions:

O Added 9/15/09. DB

● Added 9/30/09. DB

Δ Added 10/12/09. DB

Chromatograms with final report ☐

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

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Chain of Custody

Laboratory Number: 09-029

Company: Parametrix

Project Number:

Project Name: Bothell Crossing, Paint Site

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos + S. Matthews

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)

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 MTCA	HEM by 1664	MTCA Metals (As, Cd, Cr, Hg, Pb)		Hold				% Moisture
41	BP-11 ~~0-0~~ 2-3	9/2/09	1502	Soil	1												Δ		O		~~X~~ TO DB				O
42	BP-11 4-5		1505	↓	3		X	X											●		~~X~~ DB				X
43	TRIP BLANK	—	—	W	1					X															

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	PMX	9/2/09	1520
Received by	[signature]	Speedy MES	9/2/09	1520
Relinquished by	"	"	"	1535
Received by	[signature]	OnSite Env	9/2/09	1535
Relinquished by				
Received by				

Reviewed by/Date

Reviewed by/Date

Comments/Special Instructions:

(X) Added 9/4/09 STA

O Added 9/15/09 · DB

● Added 9/30/09 · DB

Δ Added 10/12/09 · DB

Chromatograms with final report ☐

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

OnSite
Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 17, 2009

Sandra Matthews
Parametrix
411 108th Avenue NE, Suite 1800
Bellevue, WA 98004

Re: Analytical Data for Project 555-1647-019 02/0403 / Paint
Laboratory Reference No. 0909-034

Dear Sandra:

Enclosed are the analytical results and associated quality control data for samples submitted on September 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

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

Case Narrative

Samples were collected on September 2, 2009, and received by the laboratory on September 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 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.

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx

Date Extracted: 9-3-09
Date Analyzed: 9-4-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**BPMW-2-0.5**	**BPMW-1-0.5**
Lab ID:	09-034-01	09-034-04
Diesel Range:	**ND**	**ND**
PQL:	29	140
Identification:	---	---
Lube Oil Range:	**310**	**790**
PQL:	58	280
Identification:	Lube Oil	Lube Oil
Surrogate Recovery		
o-Terphenyl:	85%	82%
Flags:	Y	Y

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-3-09
Date Analyzed:	9-3-09
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	MB0903S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	74%
Flags:	Y

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 9-3-09
Date Analyzed: 9-4-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	09-034-01	09-034-01 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	85%	79%
Flags:	Y	Y

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

NWTPH-Gx/BTEX

Date Extracted: 9-4-09
Date Analyzed: 9-4&8-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**BPMW-2-1.5**			**BPMW-1-1.5**		
Lab ID:	09-034-02			09-034-05		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.030	**ND**		0.033
Ethyl Benzene	**ND**		0.030	**ND**		0.033
m,p-Xylene	**ND**		0.030	**ND**		0.033
o-Xylene	**ND**		0.030	**ND**		0.033
TPH-Gas	**ND**		1.5	**3.3**	**O**	1.6
Surrogate Recovery:						
Fluorobenzene	94%			96%		

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

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

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0904S2

	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	92%		

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

NWTPH-Gx/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 9-4-09
Date Analyzed: 9-4&8-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	09-034-02 **Original**	09-034-02 **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	94%	97%		

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

NWTPH-Gx/BTEX
SB/SBD QUALITY CONTROL

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

Matrix: Soil
Units: mg/kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB0904S1 **SB**	Percent Recovery	SBD0904S1 **SBD**	Percent Recovery	**RPD**	**Flags**
Benzene	**0.927**	**93**	**0.940**	**94**	1	
Toluene	**0.939**	**94**	**0.952**	**95**	1	
Ethyl Benzene	**0.963**	**96**	**0.975**	**98**	1	
m,p-Xylene	**0.977**	**98**	**0.987**	**99**	1	
o-Xylene	**0.975**	**98**	**0.984**	**98**	1	
Surrogate Recovery:						
Fluorobenzene	91%		91%			

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-034-03
Client ID: **BPMW-2-5**

Analyte	Method	Result	PQL
Arsenic	6010B	**9.3**	8.1
Cadmium	6010B	**ND**	0.81
Chromium	6010B	**33**	0.81
Lead	6010B	**27**	8.1
Mercury	7471A	**0.046**	0.032

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-034-06
Client ID: **BPMW-1-5**

Analyte	Method	Result	PQL
Arsenic	6010B	**11**	6.0
Cadmium	6010B	**1.4**	0.60
Chromium	6010B	**38**	0.60
Lead	6010B	**94**	6.0
Mercury	7471A	**0.15**	0.024

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0908S3&MB0909S2

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.0
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0
Mercury	7471A	**ND**	0.020

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-29

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**122**	**127**	4	5.0	
Cadmium	**3.63**	**4.08**	12	0.50	
Chromium	**53.4**	**55.6**	4	0.50	
Lead	**328**	**323**	2	5.0	
Mercury	**0.0475**	**0.0573**	19	0.020	

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-29

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**206**	84	**209**	87	2	
Cadmium	50	**47.6**	88	**47.9**	89	1	
Chromium	100	**148**	95	**147**	94	0	
Lead	250	**533**	82	**536**	83	1	
Mercury	0.50	**0.468**	94	**0.466**	93	0	

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-15-09
Date Analyzed: 9-15-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-034-01
Client ID: **BPMW-2-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**6.7**	5.8
Cadmium	6010B	**0.71**	0.58
Chromium	6010B	**41**	0.58
Lead	6010B	**33**	5.8
Mercury	7471A	**0.044**	0.023

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-15-09
Date Analyzed: 9-15-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-034-04
Client ID: **BPMW-1-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**14**	5.6
Cadmium	6010B	**2.7**	0.56
Chromium	6010B	**53**	0.56
Lead	6010B	**140**	5.6
Mercury	7471A	**0.20**	0.022

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-15-09
Date Analyzed: 9-15-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0915S4

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.0
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 7471A
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-15-09
Date Analyzed:	9-15-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0915S1

Analyte	Method	Result	PQL
Mercury	7471A	**ND**	0.020

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-15-09
Date Analyzed: 9-15-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-034-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**5.73**	**ND**	NA	5.0	
Cadmium	**0.614**	**0.521**	16	0.50	
Chromium	**35.3**	**30.4**	15	0.50	
Lead	**28.2**	**24.2**	15	5.0	

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 9-15-09
Date Analyzed: 9-15-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-100-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	**ND**	**ND**	NA	0.020	

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 9-15-09
Date Analyzed: 9-15-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-034-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**95.7**	90	**97.5**	92	2	
Cadmium	50	**49.7**	98	**49.0**	97	1	
Chromium	100	**128**	93	**140**	104	9	
Lead	250	**258**	92	**315**	115	20	

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 7471A
MS/MSD QUALITY CONTROL

Date Extracted: 9-15-09
Date Analyzed: 9-15-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-100-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	0.50	**0.473**	95	**0.473**	95	0	

Date of Report: September 17, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-034
Project: 555-1647-019 02/0403 / Paint

% MOISTURE

Date Analyzed: 9-3&8-09

Client ID	Lab ID	% Moisture
BPMW-2-0.5	09-034-01	14
BPMW-2-1.5	09-034-02	7
BPMW-2-5	09-034-03	38
BPMW-1-0.5	09-034-04	10
BPMW-1-1.5	09-034-05	12
BPMW-1-5	09-034-06	16

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.

N1 - Hydrocarbons in the diesel range are impacting the lube oil 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

HWA GEOSCIENCES INC.
19730 64th Ave. W., Suite 200, Lynnwood, WA 98036 (425) 774-0106

Chain of Custody and Laboratory Analysis Request

DATE: 9/2/09
PAGE: 1 of 1

PROJECT NAME: Bothell R1/F3 #: 09-034
SITE CODE: Bothell Point 555-1647-019 02/0403
SAMPLERS NAME: Atkins PHONE: 206-794-3124
SAMPLERS SIGNATURE: [signature]
~~HWA~~ CONTACT: ~~Scott Eckland~~ PHONE: 425-458-8200
Parametrix Sandra Matthews

ANALYSIS REQUESTED: NWTPH-Dx; NWTPH-Gx/BTEX; MTCA Metals; TCLP MTCA Metals; % Moisture

HWA SAMPLE ID	DATE	TIME	MATRIX	LAB ID	# OF BOTTLE	NWTPH-Dx	NWTPH-Gx/BTEX	MTCA Metals	TCLP MTCA Metals											% Moisture	REMARKS
BPMW-2-0.5	9/2/09	800	Soil	1	1	X		X												X	
BPMW-2-1.5		810		2	2		X														
BPMW-2-5		900		3	1			X													
BPMW-1-0.5		1340		4	1	X		X													
BPMW-1-1.5		1340		5	2		X														
BPMW-1-5		1400		6	1			X													

(X) Added 9/11/09 ~~BG~~ STA

	PRINT NAME	SIGNATURE	COMPANY	DATE	TIME	REMARKS
Relinquished by:	Sandra Matthews	[signature]	Parametrix	9/2/09	1020	
Received by:	M. Voun	[signature]	CCNE	9/3/09	1020	
Relinquished by:						
Received by:						

DISTRIBUTION: WHITE - Return to HWA; YELLOW - Retain by Lab; PINK - Retain by Sampler

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 16, 2009

Sandra Matthews
Parametrix
411 108th Avenue NE, Suite 1800
Bellevue, WA 98004

Re: Analytical Data for Project 555-1647-019 02/0403 / Paint
Laboratory Reference No. 0909-035

Dear Sandra:

Enclosed are the analytical results and associated quality control data for samples submitted on September 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

Date of Report: September 16, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-035
Project: 555-1647-019 02/0403 / Paint

Case Narrative

Samples were collected on September 2, 2009, and received by the laboratory on September 3, 2009. They were maintained at the laboratory at a temperature of 2^oC to 6^oC 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.

Date of Report: September 16, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-035
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8,9&11-09
Date Analyzed: 9-9&11-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-035-01
Client ID: **BP-12 0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**11**	5.3
Cadmium	6010B	**ND**	0.53
Chromium	6010B	**24**	0.53
Lead	6010B	**20**	5.3
Mercury	7471A	**0.023**	0.021

Date of Report: September 16, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-035
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted:	9-8,9&11-09
Date Analyzed:	9-9&11-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	09-035-04
Client ID:	**BP-13 0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.5
Cadmium	6010B	**1.1**	0.55
Chromium	6010B	**34**	0.55
Lead	6010B	**100**	5.5
Mercury	7471A	**0.13**	0.022

Date of Report: September 16, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-035
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8,9&11-09
Date Analyzed: 9-9&11-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-035-07
Client ID: **BP-14 0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**16**	5.4
Cadmium	6010B	**3.9**	0.54
Chromium	6010B	**200**	0.54
Lead	6010B	**130**	5.4
Mercury	7471A	**0.23**	0.022

Date of Report: September 16, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-035
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-8&9-09
Date Analyzed: 9-8&9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0908S3&MB0909S2

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.0
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0
Mercury	7471A	**ND**	0.020

Date of Report: September 16, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-035
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-11-09
Date Analyzed:	9-11-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0911S1

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.0
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0

Date of Report: September 16, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-035
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 9-8&9-09
Date Analyzed: 9-8&9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-29

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**122**	**127**	4	5.0	
Cadmium	**3.63**	**4.08**	12	0.50	
Chromium	**53.4**	**55.6**	4	0.50	
Lead	**328**	**323**	2	5.0	
Mercury	**0.0475**	**0.0573**	19	0.020	

Date of Report: September 16, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-035
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-11-09
Date Analyzed: 9-11-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-057-07

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	5.0	
Cadmium	**1.03**	**0.917**	12	0.50	
Chromium	**39.5**	**35.6**	11	0.50	
Lead	**72.1**	**72.9**	1	5.0	

Date of Report: September 16, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-035
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 9-8&9-09
Date Analyzed: 9-8&9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-29

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**206**	84	**209**	87	2	
Cadmium	50	**47.6**	88	**47.9**	89	1	
Chromium	100	**148**	95	**147**	94	0	
Lead	250	**533**	82	**536**	83	1	
Mercury	0.50	**0.468**	94	**0.466**	93	0	

Date of Report: September 16, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-035
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 9-11-09
Date Analyzed: 9-11-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-057-07

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**95.7**	96	**94.8**	95	1	
Cadmium	50	**47.9**	94	**49.6**	97	4	
Chromium	100	**150**	111	**143**	103	5	
Lead	250	**287**	86	**302**	92	5	

Date of Report: September 16, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-035
Project: 555-1647-019 02/0403 / Paint

% MOISTURE

Date Analyzed: 9-8-09

Client ID	Lab ID	% Moisture
BP-12 0-0.5	09-035-01	6
BP-13 0-0.5	09-035-04	9
BP-14 0-0.5	09-035-07	7

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.

N1 - Hydrocarbons in the diesel range are impacting the lube oil 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

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Chain of Custody

Laboratory Number: 09-035

Company:	Parametrix
Project Number:	555 1647 019 02 0403
Project Name:	Bothell Crossing, Paint Site
Project Manager:	Sandra Matthews
Sampled by:	L. Vugelatos + S. Matthews

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)

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	MTCA Metals: As, Cd, Cr, Hg, Pb		HOLD				% Moisture
1	BP-12 0-0.5	9/2/09	1515	Soil	1														X						X
2	BP-12 2-3	↓	1517	↓	↓																X				
3	BP-12 4-5		1520																		X				
4	BP-13 0-0.5		1533																X						X
5	BP-13 2-3		1535																		X				
6	BP-13 4-5		1538																		X				
7	BP-14 0-0.5		1542																X						X
8	BP-14 2-3		1545																		X				
9	BP-14 4-5	↓	1547	↓	↓																X				

	Signature	Company	Date	Time
Relinquished by	S. Matthews	Parametrix	9/3/09	1020
Received by	[illegible]	OSE	9/3/09	1020
Relinquished by				
Received by				
Relinquished by				
Received by				

Comments/Special Instructions:

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

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

OnSite
Environmental Inc.

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

September 14, 2009

Sandra Matthews
Parametrix
411 108th Avenue NE, Suite 1800
Bellevue, WA 98004

Re: Analytical Data for Project 555-1647-019 02/0403 / Paint
Laboratory Reference No. 0909-043

Dear Sandra:

Enclosed are the analytical results and associated quality control data for samples submitted on September 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

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

Case Narrative

Samples were collected on September 3, 2009, and received by the laboratory on September 3, 2009. They were maintained at the laboratory at a temperature of 2^{o}C to 6^{o}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.

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx

Date Extracted:	9-4-09
Date Analyzed:	9-8-09
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID:	**BP-25-5.5**
Lab ID:	09-043-07
Diesel Range:	**ND**
PQL:	29
Identification:	---
Lube Oil Range:	**110**
PQL:	57
Identification:	Lube Oil
Surrogate Recovery	
o-Terphenyl:	92%
Flags:	Y

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

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

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	MB0904S2
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	88%
Flags:	Y

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 9-4-09
Date Analyzed: 9-8-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	09-043-07	09-043-07 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	92%	84%
Flags:	Y	Y

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx

Date Extracted:	9-4-09
Date Analyzed:	9-4-09
Matrix:	Water
Units:	mg/L (ppm)

Client ID:	**BP-25-10**
Lab ID:	09-043-08
Diesel Range:	**ND**
PQL:	0.30
Identification:	---
Lube Oil Range:	**ND**
PQL:	0.48
Identification:	---
Surrogate Recovery	
o-Terphenyl:	77%
Flags:	Y

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

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

Matrix: Water
Units: mg/L (ppm)

Lab ID:	MB0904W1
Diesel Range:	**ND**
PQL:	0.25
Identification:	---
Lube Oil Range:	**ND**
PQL:	0.4
Identification:	---
Surrogate Recovery	
o-Terphenyl:	68%
Flags:	Y

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
DUPLICATE QUALITY CONTROL

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

Matrix: Water
Units: mg/L (ppm)

Lab ID:	09-032-01	09-032-01 DUP
Diesel Range:	**1.70**	**1.67**
PQL:	0.26	0.25
RPD:	2	
Surrogate Recovery		
o-Terphenyl:	90%	87%
Flags:	Y	Y

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

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

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-043-08
Client ID: BP-25-10

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

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 09-043-08
Client ID: BP-25-10

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	79	71-126
Toluene-d8	87	76-116
4-Bromofluorobenzene	86	70-123

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	9-4-09
Date Analyzed:	9-4-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	09-043-09
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

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 09-043-09
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	87	71-126
Toluene-d8	91	76-116
4-Bromofluorobenzene	89	70-123

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

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

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

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0904W1

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

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

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

Lab ID: MB0904W1

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	87	71-126
Toluene-d8	92	76-116
4-Bromofluorobenzene	91	70-123

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

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

Matrix: Water
Units: ug/L (ppb)

Lab ID: SB0904W1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	10.0	9.60	96	9.43	94	70-130	
Benzene	10.0	9.50	95	9.64	96	70-130	
Trichloroethene	10.0	9.74	97	9.66	97	70-123	
Toluene	10.0	9.58	96	9.57	96	77-120	
Chlorobenzene	10.0	9.61	96	9.80	98	73-115	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	2	21	
Benzene	1	18	
Trichloroethene	1	18	
Toluene	0	17	
Chlorobenzene	2	18	

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-043-01
Client ID: **BP-15-0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.5
Cadmium	6010B	**ND**	0.55
Chromium	6010B	**20**	0.55
Lead	6010B	**ND**	5.5
Mercury	7471A	**ND**	0.022

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-043-04
Client ID: **BP-25-0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.4
Cadmium	6010B	**ND**	0.54
Chromium	6010B	**32**	0.54
Lead	6010B	**ND**	5.4
Mercury	7471A	**ND**	0.022

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-8&9-09
Date Analyzed:	9-9-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0908S3&MB0909S2

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.0
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0
Mercury	7471A	**ND**	0.020

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-29

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**122**	**127**	4	5.0	
Cadmium	**3.63**	**4.08**	12	0.50	
Chromium	**53.4**	**55.6**	4	0.50	
Lead	**328**	**323**	2	5.0	
Mercury	**0.0475**	**0.0573**	19	0.020	

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 9-8&9-09
Date Analyzed: 9-9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-029-29

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**206**	84	**209**	87	2	
Cadmium	50	**47.6**	88	**47.9**	89	1	
Chromium	100	**148**	95	**147**	94	0	
Lead	250	**533**	82	**536**	83	1	
Mercury	0.50	**0.468**	94	**0.466**	93	0	

Date of Report: September 14, 2009
Samples Submitted: September 3, 2009
Laboratory Reference: 0909-043
Project: 555-1647-019 02/0403 / Paint

% MOISTURE

Date Analyzed: 9-4&8-09

Client ID	Lab ID	% Moisture
BP-15-0-0.5	09-043-01	9
BP-25-0-0.5	09-043-04	7
BP-25-5.5	09-043-07	13

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.

N1 - Hydrocarbons in the diesel range are impacting the lube oil 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

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Chain of Custody

Laboratory Number: 09-043

Company: Parametrix

Project Number: 555-1647-019 02/0403

Project Name: Bothell Crossing Paint

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos

Turnaround Request (in working days)

(Check One)

- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ______ (other)

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 HOLD	HEM by 1664	MTCA Metals: As, Cd, Cr, Hg, Pb		HOLD				% Moisture
1	BP-15-0-0.5	9/3/09	0820	Soil	1														X						X
2	BP-16-2-3	↓	0823	↓	↓																X				
3	BP-15-4-5	↓	0825	↓	↓																X				
4	BP-25-0-0.5	↓	0830	↓	↓														X						X
5	BP-25-2.5-3	↓	0833	↓	↓																X				
6	BP-25-4.5-5	↓	0835	↓	↓																X				
7	BP-25-5.5	↓	0850	↓	↓			X																	X
8	BP-25-10	↓	0930	H_2O	4			X		X															↓
9	TRIP BLANK	↓	0000	↓	1					X															↓

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	Parametrix	9/3/09	1515
Received by	Edit K. Bus	Speedy Mess.	9/03/09	15:15
Relinquished by	Edit K. Bus	Speedy M.	9/03/09	15:32
Received by	[illegible]	OSE	9/3/09	1532
Relinquished by				
Received by				

Reviewed by/Date

Reviewed by/Date

Comments/Special Instructions:

Chromatograms with final report ☐

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

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 15, 2009

Sandra Matthews
Parametrix
411 108th Avenue NE, Suite 1800
Bellevue, WA 98004

Re: Analytical Data for Project 555-1647-019 02/0403 / Paint
Laboratory Reference No. 0909-057

Dear Sandra:

Enclosed are the analytical results and associated quality control data for samples submitted on September 4, 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

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

Case Narrative

Samples were collected on September 4, 2009, and received by the laboratory on September 4, 2009. They were maintained at the laboratory at a temperature of 2^oC to 6^oC 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.

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx

Date Extracted: 9-10-09
Date Analyzed: 9-10&11-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**BP-20-0-1**	**BP-21-0-1**
Lab ID:	09-057-09	09-057-10
Diesel Range:	**ND**	**ND**
PQL:	140	27
Identification:	---	---
Lube Oil Range:	**440**	**220**
PQL:	270	53
Identification:	Lube Oil	Lube Oil
Surrogate Recovery		
o-Terphenyl:	76%	79%
Flags:	Y	Y

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-10-09
Date Analyzed:	9-10-09
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	MB0910S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	99%
Flags:	Y

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 9-10-09
Date Analyzed: 9-10-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	09-057-09	09-057-09 DUP
Diesel Range:	**ND**	**ND**
PQL:	130	130
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	76%	73%
Flags:	Y	Y

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-9&11-09
Date Analyzed: 9-9&11-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-057-01
Client ID: **BP-17-0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.4
Cadmium	6010B	**ND**	0.54
Chromium	6010B	**23**	0.54
Lead	6010B	**11**	5.4
Mercury	7471A	**0.034**	0.022

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted:	9-9&11-09
Date Analyzed:	9-9&11-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	09-057-04
Client ID:	**BP-16-0-0.5**

Analyte	Method	Result	PQL
Arsenic	6010B	**9.8**	5.4
Cadmium	6010B	**ND**	0.54
Chromium	6010B	**26**	0.54
Lead	6010B	**35**	5.4
Mercury	7471A	**0.053**	0.022

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-9&11-09
Date Analyzed: 9-9&11-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-057-07
Client ID: **BP-18-0-1**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.4
Cadmium	6010B	**1.1**	0.54
Chromium	6010B	**43**	0.54
Lead	6010B	**78**	5.4
Mercury	7471A	**0.12**	0.022

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-9&11-09
Date Analyzed: 9-9&11-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-057-08
Client ID: **BP-19-0-1**

Analyte	Method	Result	PQL
Arsenic	6010B	**6.0**	5.3
Cadmium	6010B	**2.6**	0.53
Chromium	6010B	**50**	0.53
Lead	6010B	**180**	5.3
Mercury	7471A	**0.27**	0.021

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-9&11-09
Date Analyzed: 9-9&11-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-057-09
Client ID: **BP-20-0-1**

Analyte	Method	Result	PQL
Arsenic	6010B	**27**	5.4
Cadmium	6010B	**4.4**	0.54
Chromium	6010B	**66**	0.54
Lead	6010B	**270**	5.4
Mercury	7471A	**0.53**	0.022

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-9&11-09
Date Analyzed: 9-9&11-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-057-10
Client ID: **BP-21-0-1**

Analyte	Method	Result	PQL
Arsenic	6010B	**7.7**	5.3
Cadmium	6010B	**2.1**	0.53
Chromium	6010B	**63**	0.53
Lead	6010B	**190**	5.3
Mercury	7471A	**0.45**	0.021

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-9&11-09
Date Analyzed: 9-9&11-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-057-11
Client ID: **DUP-0904**

Analyte	Method	Result	PQL
Arsenic	6010B	**37**	5.5
Cadmium	6010B	**6.1**	0.55
Chromium	6010B	**91**	0.55
Lead	6010B	**410**	5.5
Mercury	7471A	**0.49**	0.022

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-11-09
Date Analyzed: 9-11-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0911S1

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.0
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 7471A
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-9-09
Date Analyzed:	9-9-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0909S1

Analyte	Method	Result	PQL
Mercury	7471A	**ND**	0.020

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-11-09
Date Analyzed: 9-11-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-057-07

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	5.0	
Cadmium	**1.03**	**0.917**	12	0.50	
Chromium	**39.5**	**35.6**	11	0.50	
Lead	**72.1**	**72.9**	1	5.0	

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 7471A
DUPLICATE QUALITY CONTROL

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

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-060-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	**ND**	**0.0464**	NA	0.020	

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 9-11-09
Date Analyzed: 9-11-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-057-07

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**95.7**	96	**94.8**	95	1	
Cadmium	50	**47.9**	94	**49.6**	97	4	
Chromium	100	**150**	111	**143**	103	5	
Lead	250	**287**	86	**302**	92	5	

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

TOTAL METALS
EPA 7471A
MS/MSD QUALITY CONTROL

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

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-060-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	0.50	**0.509**	102	**0.533**	107	5	

Date of Report: September 15, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057
Project: 555-1647-019 02/0403 / Paint

% MOISTURE

Date Analyzed: 9-10-09

Client ID	Lab ID	% Moisture
BP-17-0-0.5	09-057-01	8
BP-16-0-0.5	09-057-04	7
BP-18-0-1	09-057-07	8
BP-19-0-1	09-057-08	5
BP-20-0-1	09-057-09	8
BP-21-0-1	09-057-10	6
DUP-0904	09-057-11	9

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.

N1 - Hydrocarbons in the diesel range are impacting the lube oil 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

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Chain of Custody

Company: Parametrix

Project Number: 555-1647-019 02/0403

Project Name: Bothell Crossing Paint

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos

Turnaround Request (in working days)

(Check One)

- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ______ (other)

Laboratory Number: 09-057

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	MTCA Metals, As, Cd, Cr, Hg, Pb		HOLD				% Moisture
1	BP-17-0-0.5	9/4/09	1402	Soil	1														X						X
2	BP-17-2-3	9/4/09	1405	Soil	1																X				
3	BP-17-4-5		1407																		X				
4	BP-16-0-0.5		1355																X						X
5	BP-16-2-3		1358																		X				
6	BP-16-4-5		1400																		X				
7	BP-18-0-1		1414																X						X
8	BP-19-0-1		1430																X						
9	BP-20-0-1		1437					X											X						
10	BP-21-0-1		1440					X											X						

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	Parametrix	9/4/9	1645
Received by	[illegible]	OSE	9/4/09	1645
Relinquished by				
Received by				
Relinquished by				
Received by				

Reviewed by/Date

Reviewed by/Date

Comments/Special Instructions:

X Added 9/8/09. DB

Chromatograms with final report ☐

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

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

Chain of Custody

Company: Parametrix
Project Number: 555 1647 019
Project Name: Bothell Crossing Paint
Project Manager: Sandra Matthews
Sampled by: L. Vagelatos

Turnaround Request (in working days)
(Check One)
- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ______ (other)

Laboratory Number: 09-057

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	MTCA Metals, As, Cd, Cr, Hg, Pb						% Moisture
11	Dup-0904	9/4/09	1442	soil	1														X						X

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	Parametrix	9/4/9	1645
Received by	[illegible]	OSE	9/4/09	1645
Relinquished by				
Received by				
Relinquished by				
Received by				

Reviewed by/Date

Reviewed by/Date

Comments/Special Instructions:

Chromatograms with final report ☐

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

OnSite
Environmental Inc.

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

September 22, 2009

Sandra Matthews
Parametrix
411 108th Avenue NE, Suite 1800
Bellevue, WA 98004

Re: Analytical Data for Project 555-1647-019 02/0403 / Paint
Laboratory Reference No. 0909-057B

Dear Sandra:

Enclosed are the analytical results and associated quality control data for samples submitted on September 4, 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

Date of Report: September 22, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057B
Project: 555-1647-019 02/0403 / Paint

Case Narrative

Samples were collected on September 4, 2009, and received by the laboratory on September 4, 2009. They were maintained at the laboratory at a temperature of $2^{o}C$ to $6^{o}C$ 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-Dx Analysis

The sample Dup-0904 was extracted and analyzed after hold time was exceeded.

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.

Date of Report: September 22, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057B
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx

Date Extracted:	9-21-09
Date Analyzed:	9-21-09
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID:	**Dup-0904**
Lab ID:	09-057-11
Diesel Range:	**ND**
PQL:	37
Identification:	---
Lube Oil Range:	**570**
PQL:	55
Identification:	Lube Oil
Surrogate Recovery	
o-Terphenyl:	105%
Flags:	Y,U1

Date of Report: September 22, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057B
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-21-09
Date Analyzed: 9-21-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	MB0921S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	94%
Flags:	Y

Date of Report: September 22, 2009
Samples Submitted: September 4, 2009
Laboratory Reference: 0909-057B
Project: 555-1647-019 02/0403 / Paint

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 9-21-09
Date Analyzed: 9-21-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	09-153-12	09-153-12 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	105%	106%
Flags:	Y	Y

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.

N1 - Hydrocarbons in the diesel range are impacting the lube oil 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

Chain of Custody

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

Laboratory Number: 09-057

Company: Parametrix
Project Number: 555-1647-019 02/0403
Project Name: Bothell Crossing Paint
Project Manager: Sandra Matthews
Sampled by: L. Vagelatos

Turnaround Request (in working days)
(Check One)
- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ______ (other)

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	MTCA Metals, As, Cd, Cr, Hg, Pb		HOLD				% Moisture
1	BP-17-0-0.5	9/4/09	1402	Soil	1														X						X
2	BP-17-2-3	9/4/09	1405	Soil	1																X				
3	BP-17-4-5	↓	1407	↓	↓																X				
4	BP-16-0-0.5	↓	1355	↓	↓														X						X
5	BP-16-2-3	↓	1358	↓	↓																X				
6	BP-16-4-5	↓	1400	↓	↓																X				
7	BP-18-0-1	↓	1414	↓	↓														X						X
8	BP-19-0-1	↓	1430	↓	↓														X						↓
9	BP-20-0-1	↓	1437	↓	↓			X											X						↓
10	BP-21-0-1	↓	1440	↓	↓			X											X						↓

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	Parametrix	9/4/9	1645
Received by	[signature]	OSE	9/4/09	1645
Relinquished by				
Received by				
Relinquished by				
Received by				

Reviewed by/Date

Reviewed by/Date

Comments/Special Instructions:
X Added 9/8/09. DB

Chromatograms with final report ☐

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

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Chain of Custody

Company: Parametrix

Project Number: 555 1647 019

Project Name: Bothell Crossing Paint

Project Manager: Sandra Matthews

Sampled by: L. Vagelatos

Turnaround Request (in working days)

(Check One)

- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ______ (other)

Laboratory Number: 09-057

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	MTCA Metals, As, Cd, Cr, Hg, Pb						% Moisture
11	Dup-0904	9/4/09	1442	soil	1			⊗											X						X

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	Parametrix	9/4/9	1645
Received by	[illegible]	[illegible]	9/4/09	1645
Relinquished by				
Received by				
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

⊗ Added 9/21/09. DB

Chromatograms with final report ☐

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

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 18, 2009

Sandra Matthews
Parametrix
411 108th Avenue NE, Suite 1800
Bellevue, WA 98004

Re: Analytical Data for Project 555-1647-019 02/0403
Laboratory Reference No. 0909-068

Dear Sandra:

Enclosed are the analytical results and associated quality control data for samples submitted on September 8, 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

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

Case Narrative

Samples were collected on September 8, 2009, and received by the laboratory on September 8, 2009. They were maintained at the laboratory at a temperature of 2^oC to 6^oC 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 and Halogenated Volatiles 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^oC and -20^oC 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.

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

NWTPH-Dx

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

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**BPMW-3 0.5’**	**BPMW-3 2’**	**BPMW-3 5’**
Lab ID:	09-068-01	09-068-02	09-068-03
Diesel Range:	**ND**	**300**	**ND**
PQL:	140	140	33
Identification:	---	Diesel Fuel#2	---
Lube Oil Range:	**1400**	**3800**	**170**
PQL:	280	290	66
Identification:	Lube Oil	Lube Oil	Lube Oil
Surrogate Recovery			
o-Terphenyl:	97%	97%	80%
Flags:	Y	Y,N	Y

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-9-09
Date Analyzed:	9-9-09
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	MB0909S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	97%
Flags:	Y

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

NWTPH-Dx
DUPLICATE QUALITY CONTROL

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

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	09-065-04	09-065-04 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	79%	78%
Flags:	Y	Y

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

NWTPH-Gx/BTEX

Date Extracted: 9-10-09
Date Analyzed: 9-11-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**BPMW-3 0.5'**			**BPMW-3 2'**		
Lab ID:	09-068-01			09-068-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.041	**0.033**		0.032
Ethyl Benzene	**ND**		0.041	**ND**		0.032
m,p-Xylene	**ND**		0.041	**0.040**		0.032
o-Xylene	**ND**		0.041	**ND**		0.032
TPH-Gas	**ND**		2.0	**ND**		1.6
Surrogate Recovery:						
Fluorobenzene	104%			98%		

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

NWTPH-Gx/BTEX

Date Extracted: 9-10-09
Date Analyzed: 9-11-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID: **BPMW-3 5’**
Lab ID: 09-068-03

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.048
Ethyl Benzene	**ND**		0.048
m,p-Xylene	**ND**		0.048
o-Xylene	**ND**		0.048
TPH-Gas	**ND**		2.4

Surrogate Recovery:
Fluorobenzene 105%

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-10-09
Date Analyzed: 9-10-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0910S1

	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	98%		

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

NWTPH-Gx/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 9-10-09
Date Analyzed: 9-11-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	09-067-01 **Original**	09-067-01 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**0.0668**	**0.0493**	30	
o-Xylene	**0.0415**	**0.0336**	21	
TPH-Gas	**7.84**	**7.89**	1	
Surrogate Recovery:				
Fluorobenzene	93%	97%		

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

NWTPH-Gx/BTEX
SB/SBD QUALITY CONTROL

Date Extracted: 9-10-09
Date Analyzed: 9-10-09

Matrix: Soil
Units: mg/kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB0910S1 **SB**	Percent Recovery	SBD0910S1 **SBD**	Percent Recovery	**RPD**	**Flags**
Benzene	**0.968**	**97**	**0.966**	**97**	0	
Toluene	**0.985**	**99**	**0.971**	**97**	1	
Ethyl Benzene	**1.01**	**101**	**0.993**	**99**	2	
m,p-Xylene	**1.02**	**102**	**1.00**	**100**	2	
o-Xylene	**1.02**	**102**	**1.01**	**101**	1	

Surrogate Recovery:		
Fluorobenzene	97%	94%

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

HALOGENATED VOLATILES by EPA 8260B
page 1 of 2

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

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-068-01
Client ID: BPMW-3 0.5'

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.00062
Chloromethane	ND		0.0031
Vinyl Chloride	ND		0.00062
Bromomethane	ND		0.00062
Chloroethane	ND		0.0031
Trichlorofluoromethane	ND		0.00062
1,1-Dichloroethene	ND		0.00062
Iodomethane	ND		0.0031
Methylene Chloride	ND		0.0031
(trans) 1,2-Dichloroethene	ND		0.00062
1,1-Dichloroethane	ND		0.00062
2,2-Dichloropropane	ND		0.00062
(cis) 1,2-Dichloroethene	ND		0.00062
Bromochloromethane	ND		0.00062
Chloroform	ND		0.00062
1,1,1-Trichloroethane	ND		0.00062
Carbon Tetrachloride	ND		0.00062
1,1-Dichloropropene	ND		0.00062
1,2-Dichloroethane	ND		0.00062
Trichloroethene	ND		0.00062
1,2-Dichloropropane	ND		0.00062
Dibromomethane	ND		0.00062
Bromodichloromethane	ND		0.00062
2-Chloroethyl Vinyl Ether	ND		0.0031
(cis) 1,3-Dichloropropene	ND		0.00062
(trans) 1,3-Dichloropropene	ND		0.00062

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

HALOGENATED VOLATILES by EPA 8260B
page 2 of 2

Lab ID: 09-068-01
Client ID: BPMW-3 0.5'

Compound	**Results**	**Flags**	**PQL**
1,1,2-Trichloroethane	ND		0.00062
Tetrachloroethene	ND		0.00062
1,3-Dichloropropane	ND		0.00062
Dibromochloromethane	ND		0.00062
1,2-Dibromoethane	ND		0.00062
Chlorobenzene	ND		0.00062
1,1,1,2-Tetrachloroethane	ND		0.00062
Bromoform	ND		0.00062
Bromobenzene	ND		0.00062
1,1,2,2-Tetrachloroethane	ND		0.00062
1,2,3-Trichloropropane	ND		0.00062
2-Chlorotoluene	ND		0.00062
4-Chlorotoluene	ND		0.00062
1,3-Dichlorobenzene	ND		0.00062
1,4-Dichlorobenzene	ND		0.00062
1,2-Dichlorobenzene	ND		0.00062
1,2-Dibromo-3-chloropropane	ND		0.0031
1,2,4-Trichlorobenzene	ND		0.00062
Hexachlorobutadiene	ND		0.0031
1,2,3-Trichlorobenzene	ND		0.00062

Surrogate	**Percent Recovery**	**Control Limits**
Dibromofluoromethane	97	55-125
Toluene-d8	88	56-127
4-Bromofluorobenzene	81	54-130

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

HALOGENATED VOLATILES by EPA 8260B
page 1 of 2

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

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-068-02
Client ID: BPMW-3 2'

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.00050
Chloromethane	ND		0.0025
Vinyl Chloride	ND		0.00050
Bromomethane	ND		0.00050
Chloroethane	ND		0.0025
Trichlorofluoromethane	ND		0.00050
1,1-Dichloroethene	ND		0.00050
Iodomethane	ND		0.0025
Methylene Chloride	ND		0.0025
(trans) 1,2-Dichloroethene	ND		0.00050
1,1-Dichloroethane	ND		0.00050
2,2-Dichloropropane	ND		0.00050
(cis) 1,2-Dichloroethene	ND		0.00050
Bromochloromethane	ND		0.00050
Chloroform	ND		0.00050
1,1,1-Trichloroethane	ND		0.00050
Carbon Tetrachloride	ND		0.00050
1,1-Dichloropropene	ND		0.00050
1,2-Dichloroethane	ND		0.00050
Trichloroethene	ND		0.00050
1,2-Dichloropropane	ND		0.00050
Dibromomethane	ND		0.00050
Bromodichloromethane	ND		0.00050
2-Chloroethyl Vinyl Ether	ND		0.0025
(cis) 1,3-Dichloropropene	ND		0.00050
(trans) 1,3-Dichloropropene	ND		0.00050

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

HALOGENATED VOLATILES by EPA 8260B
page 2 of 2

Lab ID: 09-068-02
Client ID: BPMW-3 2'

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.00050
Tetrachloroethene	ND		0.00050
1,3-Dichloropropane	ND		0.00050
Dibromochloromethane	ND		0.00050
1,2-Dibromoethane	ND		0.00050
Chlorobenzene	ND		0.00050
1,1,1,2-Tetrachloroethane	ND		0.00050
Bromoform	ND		0.00050
Bromobenzene	ND		0.00050
1,1,2,2-Tetrachloroethane	ND		0.00050
1,2,3-Trichloropropane	ND		0.00050
2-Chlorotoluene	ND		0.00050
4-Chlorotoluene	ND		0.00050
1,3-Dichlorobenzene	ND		0.00050
1,4-Dichlorobenzene	ND		0.00050
1,2-Dichlorobenzene	ND		0.00050
1,2-Dibromo-3-chloropropane	ND		0.0025
1,2,4-Trichlorobenzene	ND		0.00050
Hexachlorobutadiene	ND		0.0025
1,2,3-Trichlorobenzene	ND		0.00050

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	101	55-125
Toluene-d8	102	56-127
4-Bromofluorobenzene	84	54-130

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

HALOGENATED VOLATILES by EPA 8260B
page 1 of 2

Date Extracted: 9-10-09
Date Analyzed: 9-10-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-068-03
Client ID: BPMW-3 5'

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.00073
Chloromethane	ND		0.0037
Vinyl Chloride	ND		0.00073
Bromomethane	ND		0.00073
Chloroethane	ND		0.0037
Trichlorofluoromethane	ND		0.00073
1,1-Dichloroethene	ND		0.00073
Iodomethane	ND		0.0037
Methylene Chloride	ND		0.0037
(trans) 1,2-Dichloroethene	ND		0.00073
1,1-Dichloroethane	ND		0.00073
2,2-Dichloropropane	ND		0.00073
(cis) 1,2-Dichloroethene	ND		0.00073
Bromochloromethane	ND		0.00073
Chloroform	ND		0.00073
1,1,1-Trichloroethane	ND		0.00073
Carbon Tetrachloride	ND		0.00073
1,1-Dichloropropene	ND		0.00073
1,2-Dichloroethane	ND		0.00073
Trichloroethene	ND		0.00073
1,2-Dichloropropane	ND		0.00073
Dibromomethane	ND		0.00073
Bromodichloromethane	ND		0.00073
2-Chloroethyl Vinyl Ether	ND		0.0037
(cis) 1,3-Dichloropropene	ND		0.00073
(trans) 1,3-Dichloropropene	ND		0.00073

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

HALOGENATED VOLATILES by EPA 8260B
page 2 of 2

Lab ID: 09-068-03
Client ID: BPMW-3 5'

Compound	**Results**	**Flags**	**PQL**
1,1,2-Trichloroethane	ND		0.00073
Tetrachloroethene	ND		0.00073
1,3-Dichloropropane	ND		0.00073
Dibromochloromethane	ND		0.00073
1,2-Dibromoethane	ND		0.00073
Chlorobenzene	ND		0.00073
1,1,1,2-Tetrachloroethane	ND		0.00073
Bromoform	ND		0.00073
Bromobenzene	ND		0.00073
1,1,2,2-Tetrachloroethane	ND		0.00073
1,2,3-Trichloropropane	ND		0.00073
2-Chlorotoluene	ND		0.00073
4-Chlorotoluene	ND		0.00073
1,3-Dichlorobenzene	ND		0.00073
1,4-Dichlorobenzene	ND		0.00073
1,2-Dichlorobenzene	ND		0.00073
1,2-Dibromo-3-chloropropane	ND		0.0037
1,2,4-Trichlorobenzene	ND		0.00073
Hexachlorobutadiene	ND		0.0037
1,2,3-Trichlorobenzene	ND		0.00073

Surrogate	**Percent Recovery**	**Control Limits**
Dibromofluoromethane	97	55-125
Toluene-d8	102	56-127
4-Bromofluorobenzene	89	54-130

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

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

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

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0909S1

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

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

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

Lab ID: MB0909S1

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	103	55-125
Toluene-d8	102	56-127
4-Bromofluorobenzene	97	54-130

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

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

Date Extracted: 9-10-09
Date Analyzed: 9-10-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0910S1

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

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

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

Lab ID: MB0910S1

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	101	55-125
Toluene-d8	103	56-127
4-Bromofluorobenzene	95	54-130

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

HALOGENATED VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

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

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: SB0909S1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	0.0500	0.0436	87	0.0453	91	70-130	
Benzene	0.0500	0.0431	86	0.0438	88	70-128	
Trichloroethene	0.0500	0.0415	83	0.0425	85	70-124	
Toluene	0.0500	0.0424	85	0.0436	87	73-123	
Chlorobenzene	0.0500	0.0431	86	0.0430	86	73-115	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	4	16	
Benzene	2	15	
Trichloroethene	2	14	
Toluene	3	14	
Chlorobenzene	0	13	

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

HALOGENATED VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Date Extracted: 9-10-09
Date Analyzed: 9-10-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: SB0910S1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	0.0500	0.0444	89	0.0449	90	70-130	
Benzene	0.0500	0.0444	89	0.0445	89	70-128	
Trichloroethene	0.0500	0.0445	89	0.0454	91	70-124	
Toluene	0.0500	0.0458	92	0.0459	92	73-123	
Chlorobenzene	0.0500	0.0452	90	0.0442	88	73-115	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	1	16	
Benzene	0	15	
Trichloroethene	2	14	
Toluene	0	14	
Chlorobenzene	2	13	

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-15-09
Date Analyzed: 9-15-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-068-01
Client ID: **BPMW-3 0.5'**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.7
Cadmium	6010B	**ND**	0.57
Chromium	6010B	**13**	0.57
Lead	6010B	**ND**	5.7
Mercury	7471A	**ND**	0.023

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-15-09
Date Analyzed: 9-15-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-068-02
Client ID: **BPMW-3 2'**

Analyte	Method	Result	PQL
Arsenic	6010B	**7.3**	5.7
Cadmium	6010B	**ND**	0.57
Chromium	6010B	**48**	0.57
Lead	6010B	**73**	5.7
Mercury	7471A	**0.052**	0.023

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 9-15-09
Date Analyzed: 9-15-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-068-03
Client ID: **BPMW-3 5’**

Analyte	Method	Result	PQL
Arsenic	6010B	**11**	6.6
Cadmium	6010B	**ND**	0.66
Chromium	6010B	**30**	0.66
Lead	6010B	**40**	6.6
Mercury	7471A	**0.051**	0.026

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

TOTAL METALS
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-15-09
Date Analyzed:	9-15-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0915S4

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	5.0
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

TOTAL METALS
EPA 7471A
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-15-09
Date Analyzed: 9-15-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0915S1

Analyte	Method	Result	PQL
Mercury	7471A	**ND**	0.020

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

TOTAL METALS
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-15-09
Date Analyzed: 9-15-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-034-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**5.73**	**ND**	NA	5.0	
Cadmium	**0.614**	**0.521**	16	0.50	
Chromium	**35.3**	**30.4**	15	0.50	
Lead	**28.2**	**24.2**	15	5.0	

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

TOTAL METALS
EPA 7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 9-15-09
Date Analyzed: 9-15-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-100-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	**ND**	**ND**	NA	0.020	

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

TOTAL METALS
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 9-15-09
Date Analyzed: 9-15-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-034-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**95.7**	90	**97.5**	92	2	
Cadmium	50	**49.7**	98	**49.0**	97	1	
Chromium	100	**128**	93	**140**	104	9	
Lead	250	**258**	92	**315**	115	20	

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

TOTAL METALS
EPA 7471A
MS/MSD QUALITY CONTROL

Date Extracted: 9-15-09
Date Analyzed: 9-15-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-100-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	0.50	**0.473**	95	**0.473**	95	0	

Date of Report: September 18, 2009
Samples Submitted: September 8, 2009
Laboratory Reference: 0909-068
Project: 555-1647-019 02/0403

% MOISTURE

Date Analyzed: 9-9-09

Client ID	Lab ID	% Moisture
BPMW-3 0.5’	09-068-01	12
BPMW-3 2’	09-068-02	13
BPMW-3 5’	09-068-03	24

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.

N1 - Hydrocarbons in the diesel range are impacting the lube oil 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

HWA GEOSCIENCES INC.

19730 64th Ave. W., Suite 200, Lynnwood, WA 98036 (425) 774-0106

Chain of Custody and Laboratory Analysis Request

09-068

DATE: 9/8/09

PAGE: 1 of 1

PROJECT NAME: Bothell RIFS Paint #: 0403

SITE CODE: Bothell Paint

SAMPLERS NAME: V. Atkins PHONE: 206 7943124

SAMPLERS SIGNATURE:

~~HWA CONTACT~~: Paramatrix Sandra Matthews PHONE: 425-458-6323

ANALYSIS REQUESTED

HWA SAMPLE ID	DATE	TIME	MATRIX	LAB ID	# OF BOTTLE	TPH Dx	TPH Gx + BTEX	HVOC	MTCA Metals As Cd Cr Hg Pb											% MOISTURE	REMARKS
BPMW-3 0.5'	9/8/09	1240	Soil	1	4	X	X	X	X											X	
BPMW-3 2'	↓	1245	↓	2	↓	X	X	X	X											↓	
BPMW-3 5'	↓	1250	↓	3	↓	X	X	X	X											↓	

	PRINT NAME	SIGNATURE	COMPANY	DATE	TIME	REMARKS
Relinquished by:	Vance Atkins	[signature]	HWA	9/8/09	1505	
Received by:	Van	Van	Speedy	9/8/09	1505	
Relinquished by:	Van	Van	Speedy	9/8/09	1525	
Received by:	Blair Goodrow	[signature]	OnSite Env	9/8/09	1525	

DISTRIBUTION: WHITE - Return to HWA; YELLOW - Retain by Lab; PINK - Retain by Sampler

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 30, 2009

Sandra Matthews
Parametrix
411 108th Avenue NE, Suite 1800
Bellevue, WA 98004

Re: Analytical Data for Project 555-1647-019-02/0403 / Paint
Laboratory Reference No. 0909-180

Dear Sandra:

Enclosed are the analytical results and associated quality control data for samples submitted on September 18, 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

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

Case Narrative

Samples were collected on September 18, 2009, and received by the laboratory on September 18, 2009. They were maintained at the laboratory at a temperature of $2^{o}C$ to $6^{o}C$ 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.

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

NWTPH-Gx/BTEX

Date Extracted: 9-22-09
Date Analyzed: 9-22-09

Matrix: Water
Units: ug/L (ppb)

Client ID:	**BC-10-12**			**BC-11-12**		
Lab ID:	09-180-01			09-180-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		1.0	**ND**		1.0
Toluene	**ND**		1.0	**ND**		1.0
Ethyl Benzene	**ND**		1.0	**ND**		1.0
m,p-Xylene	**ND**		1.0	**ND**		1.0
o-Xylene	**ND**		1.0	**ND**		1.0
TPH-Gas	**ND**		100	**ND**		100
Surrogate Recovery:						
Fluorobenzene	95%			95%		

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

NWTPH-Gx/BTEX

Date Extracted: 9-22-09
Date Analyzed: 9-22-09

Matrix: Water
Units: ug/L (ppb)

Client ID:	**TRIP BLANK**			**BC-10-12-2**		
Lab ID:	09-180-03			09-180-04		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		1.0	**ND**		1.0
Toluene	**ND**		1.0	**ND**		1.0
Ethyl Benzene	**ND**		1.0	**ND**		1.0
m,p-Xylene	**ND**		1.0	**ND**		1.0
o-Xylene	**ND**		1.0	**ND**		1.0
TPH-Gas	**ND**		100	**ND**		100
Surrogate Recovery:						
Fluorobenzene	95%			94%		

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

NWTPH-Gx/BTEX

Date Extracted: 9-22-09
Date Analyzed: 9-22-09

Matrix: Water
Units: ug/L (ppb)

Client ID:	**BPMW-3-10**			**BPMW-1-10**		
Lab ID:	09-180-05			09-180-06		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		1.0	**ND**		1.0
Toluene	**ND**		1.0	**ND**		1.0
Ethyl Benzene	**ND**		1.0	**ND**		1.0
m,p-Xylene	**ND**		1.0	**ND**		1.0
o-Xylene	**ND**		1.0	**ND**		1.0
TPH-Gas	**ND**		100	**ND**		100
Surrogate Recovery:						
Fluorobenzene	95%			95%		

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

NWTPH-Gx/BTEX

Date Extracted: 9-22-09
Date Analyzed: 9-22-09

Matrix: Water
Units: ug/L (ppb)

Client ID: **BPMW-2-6**
Lab ID: 09-180-07

	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	**320**	T	100
Surrogate Recovery:			
Fluorobenzene	94%		

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-22-09
Date Analyzed: 9-22-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0922W1

	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 96%

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

NWTPH-Gx/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 9-22-09
Date Analyzed: 9-22-09

Matrix: Water
Units: ug/L (ppb)

Lab ID:	09-180-01 **Original**	09-180-01 **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	95%	94%		

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

NWTPH-Gx/BTEX
SB/SBD QUALITY CONTROL

Date Extracted: 9-22-09
Date Analyzed: 9-22-09

Matrix: Water
Units: ug/L (ppb)

Spike Level: 50.0 ppb

Lab ID:	SB0922W1 **SB**	Percent Recovery	SBD0922W1 **SBD**	Percent Recovery	**RPD**	**Flags**
Benzene	**49.6**	**99**	**51.6**	**103**	4	
Toluene	**53.2**	**106**	**55.8**	**112**	5	
Ethyl Benzene	**55.8**	**112**	**59.0**	**118**	6	
m,p-Xylene	**56.8**	**114**	**59.7**	**119**	5	
o-Xylene	**55.9**	**112**	**59.0**	**118**	5	

Surrogate Recovery:

	SB	SBD
Fluorobenzene	98%	98%

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

NWTPH-Dx

Date Extracted: 9-24-09
Date Analyzed: 9-24-09

Matrix: Water
Units: mg/L (ppm)

Client ID:	**BC-10-12**	**BC-11-12**	**BC-10-12-2**
Lab ID:	09-180-01	09-180-02	09-180-04
Diesel Range:	**ND**	**ND**	**ND**
PQL:	0.28	0.28	0.29
Identification:	---	---	---
Lube Oil Range:	**ND**	**ND**	**ND**
PQL:	0.44	0.44	0.46
Identification:	---	---	---
Surrogate Recovery			
o-Terphenyl:	83%	78%	85%
Flags:	Y	Y	Y

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

NWTPH-Dx

Date Extracted: 9-24-09
Date Analyzed: 9-24-09

Matrix: Water
Units: mg/L (ppm)

Client ID:	**BPMW-3-10**	**BPMW-1-10**	**BPMW-2-6**
Lab ID:	09-180-05	09-180-06	09-180-07
Diesel Range:	**ND**	**ND**	**ND**
PQL:	0.28	0.31	0.29
Identification:	---	---	---
Lube Oil Range:	**ND**	**ND**	**ND**
PQL:	0.45	0.49	0.46
Identification:	---	---	---
Surrogate Recovery			
o-Terphenyl:	86%	89%	74%
Flags:	Y	Y	Y

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-24-09
Date Analyzed:	9-24-09
Matrix:	Water
Units:	mg/L (ppm)

Lab ID:	MB0924W1
Diesel Range:	**ND**
PQL:	0.25
Identification:	---
Lube Oil Range:	**ND**
PQL:	0.40
Identification:	---
Surrogate Recovery	
o-Terphenyl:	80%
Flags:	Y

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 9-24-09
Date Analyzed: 9-24-09

Matrix: Water
Units: mg/L (ppm)

Lab ID:	09-181-01	09-181-01 DUP
Diesel Range:	**ND**	**ND**
PQL:	0.31	0.29
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	97%	83%
Flags:	Y	Y

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted: 9-23-09
Date Analyzed: 9-23-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-01
Client ID: BC-10-12

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

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 09-180-01
Client ID: BC-10-12

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	101	71-126
Toluene-d8	94	76-116
4-Bromofluorobenzene	81	70-123

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted: 9-23-09
Date Analyzed: 9-23-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-03
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	1.2	H	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

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 09-180-03
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	100	71-126
Toluene-d8	91	76-116
4-Bromofluorobenzene	80	70-123

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	9-23-09
Date Analyzed:	9-23-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	09-180-04
Client ID:	**BC-10-12-2**

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

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 09-180-04
Client ID: BC-10-12-2

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	100	71-126
Toluene-d8	92	76-116
4-Bromofluorobenzene	81	70-123

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted: 9-23-09
Date Analyzed: 9-23-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-05
Client ID: **BPMW-3-10**

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

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 09-180-05
Client ID: BPMW-3-10

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	100	71-126
Toluene-d8	93	76-116
4-Bromofluorobenzene	82	70-123

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	9-23-09
Date Analyzed:	9-23-09
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	09-180-06
Client ID:	**BPMW-1-10**

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

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 09-180-06
Client ID: BPMW-1-10

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	99	71-126
Toluene-d8	93	76-116
4-Bromofluorobenzene	81	70-123

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

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

Date Extracted: 9-23-09
Date Analyzed: 9-23-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0923W1

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

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

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

Lab ID: MB0923W1

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	97	71-126
Toluene-d8	92	76-116
4-Bromofluorobenzene	81	70-123

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

HALOGENATED VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Date Extracted: 9-23-09
Date Analyzed: 9-23-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: SB0923W1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	10.0	8.59	86	9.00	90	70-130	
Benzene	10.0	9.55	96	10.2	102	70-130	
Trichloroethene	10.0	9.97	100	10.5	105	70-123	
Toluene	10.0	10.1	101	10.5	105	77-120	
Chlorobenzene	10.0	9.34	93	9.66	97	73-115	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	5	21	
Benzene	7	18	
Trichloroethene	5	18	
Toluene	4	17	
Chlorobenzene	3	18	

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

DISSOLVED METALS
EPA 200.8/7470A

Date Analyzed: 9-25&29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-01
Client ID: BC-10-12

Analyte	Method	Result	PQL
Arsenic	200.8	**ND**	3.0
Cadmium	200.8	**ND**	4.0
Chromium	200.8	**ND**	7.0
Lead	200.8	**ND**	1.0
Mercury	7470A	**ND**	0.20

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

DISSOLVED METALS
EPA 200.8/7470A

Date Analyzed: 9-25&29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-02
Client ID: BC-11-12

Analyte	Method	Result	PQL
Arsenic	200.8	**ND**	3.0
Cadmium	200.8	**ND**	4.0
Chromium	200.8	**ND**	7.0
Lead	200.8	**ND**	1.0
Mercury	7470A	**ND**	0.20

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

DISSOLVED METALS
EPA 200.8/7470A

Date Analyzed: 9-25&29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-04
Client ID: BC-10-12-12

Analyte	Method	Result	PQL
Arsenic	200.8	**ND**	3.0
Cadmium	200.8	**ND**	4.0
Chromium	200.8	**ND**	7.0
Lead	200.8	**ND**	1.0
Mercury	7470A	**ND**	0.20

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

DISSOLVED METALS
EPA 200.8/7470A

Date Analyzed: 9-25&29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-05
Client ID: BPMW-3-10

Analyte	Method	Result	PQL
Arsenic	200.8	**5.4**	3.0
Cadmium	200.8	**ND**	4.0
Chromium	200.8	**ND**	7.0
Lead	200.8	**ND**	1.0
Mercury	7470A	**ND**	0.20

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

DISSOLVED METALS
EPA 200.8/7470A

Date Analyzed: 9-25&29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-06
Client ID: BPMW-1-10

Analyte	Method	Result	PQL
Arsenic	200.8	**5.0**	3.0
Cadmium	200.8	**ND**	4.0
Chromium	200.8	**ND**	7.0
Lead	200.8	**ND**	1.0
Mercury	7470A	**ND**	0.20

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

DISSOLVED METALS
EPA 200.8/7470A

Date Analyzed: 9-25&29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-07
Client ID: BPMW-2-6

Analyte	Method	Result	PQL
Arsenic	200.8	**3.6**	3.0
Cadmium	200.8	**ND**	4.0
Chromium	200.8	**ND**	7.0
Lead	200.8	**ND**	1.0
Mercury	7470A	**ND**	0.20

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

DISSOLVED METALS
EPA 200.8/7470A
METHOD BLANK QUALITY CONTROL

Date Analyzed: 9-25&29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0923D1&MB0929D1

Analyte	Method	Result	PQL
Arsenic	200.8	**ND**	3.0
Cadmium	200.8	**ND**	4.0
Chromium	200.8	**ND**	7.0
Lead	200.8	**ND**	1.0
Mercury	7470A	**ND**	0.20

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

DISSOLVED METALS
EPA 200.8/7470A
DUPLICATE QUALITY CONTROL

Date Analyzed: 9-25&29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-130-02

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**5.02**	**4.65**	8	3.0	
Cadmium	**ND**	**ND**	NA	4.0	
Chromium	**8.49**	**7.42**	14	7.0	
Lead	**ND**	**ND**	NA	1.0	
Mercury	**ND**	**ND**	NA	0.20	

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

DISSOLVED METALS
EPA 200.8/7470A
MS/MSD QUALITY CONTROL

Date Analyzed: 9-25&29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-130-02

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	200	**220**	108	**217**	106	1	
Cadmium	200	**218**	109	**214**	107	2	
Chromium	200	**199**	95	**203**	97	2	
Lead	200	**206**	103	**210**	105	2	
Mercury	12.5	**11.8**	94	**11.8**	94	0	

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

TOTAL METALS
EPA 200.8/7470A

Date Extracted: 9-28&29-09
Date Analyzed: 9-29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-01
Client ID: BC-10-12

Analyte	Method	Result	PQL
Arsenic	200.8	**5.1**	3.3
Cadmium	200.8	**ND**	4.4
Chromium	200.8	**27**	6.7
Lead	200.8	**7.9**	1.1
Mercury	7470A	**ND**	0.20

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

TOTAL METALS
EPA 200.8/7470A

Date Extracted: 9-28&29-09
Date Analyzed: 9-29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-02
Client ID: BC-11-12

Analyte	Method	Result	PQL
Arsenic	200.8	**ND**	3.3
Cadmium	200.8	**ND**	4.4
Chromium	200.8	**ND**	6.7
Lead	200.8	**ND**	1.1
Mercury	7470A	**ND**	0.20

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

TOTAL METALS
EPA 200.8/7470A

Date Extracted: 9-28&29-09
Date Analyzed: 9-29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-04
Client ID: BC-10-12-12

Analyte	Method	Result	PQL
Arsenic	200.8	**6.7**	3.3
Cadmium	200.8	**ND**	4.4
Chromium	200.8	**34**	6.7
Lead	200.8	**9.3**	1.1
Mercury	7470A	**ND**	0.20

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

TOTAL METALS
EPA 200.8/7470A

Date Extracted: 9-28&29-09
Date Analyzed: 9-29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-05
Client ID: BPMW-3-10

Analyte	Method	Result	PQL
Arsenic	200.8	**10**	3.3
Cadmium	200.8	**ND**	4.4
Chromium	200.8	**61**	6.7
Lead	200.8	**7.4**	1.1
Mercury	7470A	**ND**	0.20

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

TOTAL METALS
EPA 200.8/7470A

Date Extracted: 9-28&29-09
Date Analyzed: 9-29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-06
Client ID: BPMW-1-10

Analyte	Method	Result	PQL
Arsenic	200.8	**5.1**	3.3
Cadmium	200.8	**ND**	4.4
Chromium	200.8	**ND**	6.7
Lead	200.8	**ND**	1.1
Mercury	7470A	**ND**	0.20

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

TOTAL METALS
EPA 200.8/7470A

Date Extracted: 9-28&29-09
Date Analyzed: 9-29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-07
Client ID: BPMW-2-6

Analyte	Method	Result	PQL
Arsenic	200.8	**3.9**	3.3
Cadmium	200.8	**ND**	4.4
Chromium	200.8	**9.1**	6.7
Lead	200.8	**1.7**	1.1
Mercury	7470A	**ND**	0.20

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

TOTAL METALS
EPA 200.8/7470A
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-28&29-09
Date Analyzed: 9-29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0928W2&MB0929W2

Analyte	Method	Result	PQL
Arsenic	200.8	**ND**	3.3
Cadmium	200.8	**ND**	4.4
Chromium	200.8	**ND**	6.7
Lead	200.8	**ND**	1.1
Mercury	7470A	**ND**	0.20

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

TOTAL METALS
EPA 200.8/7470A
DUPLICATE QUALITY CONTROL

Date Extracted: 9-28&29-09
Date Analyzed: 9-29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-02

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	3.3	
Cadmium	**ND**	**ND**	NA	4.4	
Chromium	**ND**	**ND**	NA	6.7	
Lead	**ND**	**ND**	NA	1.1	
Mercury	**ND**	**ND**	NA	0.20	

Date of Report: September 30, 2009
Samples Submitted: September 18, 2009
Laboratory Reference: 0909-180
Project: 555-1647-019-02/0403 / Paint

TOTAL METALS
EPA 200.8/7470A
MS/MSD QUALITY CONTROL

Date Extracted: 9-28&29-09
Date Analyzed: 9-29-09

Matrix: Water
Units: ug/L (ppb)

Lab ID: 09-180-02

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	110	**111**	101	**109**	99	2	
Cadmium	110	**115**	104	**112**	102	2	
Chromium	110	**109**	99	**106**	96	3	
Lead	110	**114**	104	**112**	102	1	
Mercury	12.5	**11.8**	94	**11.8**	94	0	

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.

N1 - Hydrocarbons in the diesel range are impacting the lube oil 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 gas.

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

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

Chain of Custody

Laboratory Number: 09-180

Company: PMX
Project Number:
Project Name: Bothell Crossing, Paint
Project Manager: Sandra Matthews
Sampled by: L. Vagelatos

Turnaround Request (in working days)
(Check One)
- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (7 working days) (TPH analysis 5 working days)
- [ ] ______ (other)

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	MTCA Metals: As, Cr, Cd, Hg, Pb Diss	MTCA Metals Total					% Moisture
1	BC-10-12	9/18/09	1415	H_2O	9		X	X		X									X	X					
2	BC-11-12	9/18/09	1510	H_2O	6		X	X											X	X					
3	TRIP BLANK	9/18/09	0000	H_2O	3		X			X															
4	BC-10-12-2	9/18/09	1420	H_2O	9		X	X		X									X	X					
5	BPMW-3-10	↓	1215	H_2O	9		X	X		X									X	X					
6	BPMW-1-10	↓	1005	↓	↓		⊗	⊗		⊗									⊗	⊗					
7	BPMW-2-6	↓	1100	↓	6		X	X											X	X					

	Signature	Company	Date	Time
Relinquished by	Lily Vagelatos	Parametrix	9/18/09	1650
Received by	[signature]	OnSite Env.	9/18/09	1650
Relinquished by				
Received by				
Relinquished by				
Received by				

Reviewed by/Date

Reviewed by/Date

Comments/Special Instructions:
⊗ Added 9/21/09. DB

Chromatograms with final report ☐

APPENDIX C3

Physical Laboratory Reports

OnSite
Environmental Inc.

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

October 21, 2009

Sandra Matthews
Parametrix
411 108th Avenue NE, Suite 1800
Bellevue, WA 98004

Re: Analytical Data for Project 555-1647-019 02/0403, Paint
Laboratory Reference No. 0910-072

Dear Sandra:

Enclosed are the analytical results and associated quality control data for samples submitted on September 8, 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

HWA GEOSCIENCES INC.

Geotechnical & Pavement Engineering • Hydrogeology • Geoenvironmental • Inspection & Testing

October 15, 2009
HWA Project No. 2007-098-23 Task 801

On-Site Environmental, Inc.
14648 NE 95th Street
Redmond, Washington 98052

Attention: Mr. David Baumeister

Subject: **SOIL LABORATORY TESTING REPORT**
Physical Properties and Hydraulic Conductivity
Bothell Paint, Bothell WA

Dear Mr. Baumeister;

As requested, HWA GeoSciences Inc. (HWA) performed laboratory testing for the subject project. Herein we present the results of our laboratory analyses, which are summarized on the attached reports. The laboratory testing program was performed in general accordance with your instructions and appropriate ASTM Standards as outlined below.

SAMPLE DESCRIPTION: The subject project soil sample was delivered to our laboratory on September 8, 2009 by OSE personnel. The sample was enclosed in brass sample rings, and additional material was provided in a plastic bag.

PARTICLE SIZE ANALYSIS OF SOILS: The selected sample was tested to determine the particle size distribution in general accordance with **ASTM D422 (wet sieve method)**. The results are summarized on the attached Grain Size Distribution reports, Figure 1, which also details information regarding the classification of the sample and the moisture content at the time of testing.

MOISTURE CONTENT OF SOIL: The moisture content of the sample was determined in general accordance with **ASTM D 2216**. The indicated moisture content is based on the dry weight of soil, and is presented on Figure 1.

UNIT WEIGHT OF SOILS: The selected sample was tested in general accordance with **ASTM D2937**. The volume of the sample was calculated from three individual measurements of its length and diameter. The unit weight was calculated from the sample volume and mass. The unit weight is detailed in Table 1 below.

19730 - 64th Avenue W.
Suite 200
Lynnwood, WA 98036.5957

Tel: 425.774.0106
Fax: 425.774.2714
www.hwageo.com

Table 1 – Unit Weight of Soils

Sample	Moisture Content (%)	Wet Density (pcf)	Dry Density (pcf)
BPMW-3 @ 15 ft	13.0	138.1	122.2

MOISTURE CONTENT, ASH, AND ORGANIC MATTER: The selected sample was tested in general accordance with method **ASTM D 2974**, using moisture content method 'A' (oven dried at 105° C) and ash content method 'C' (burned at 440° C). The test results are summarized in Table 2 below. The results are percent by weight of dry soil.

Table 2 – Organic Material Content of Soils

Sample	Ash Content (%)	Organic Content (%)
BPMW-3 @ 15 ft	98.78	1.22

HYDRAULIC CONDUCTIVITY OF SOIL (FLEXI-WALL TRIAXIAL CHAMBER METHOD): The hydraulic conductivity (also commonly referred to as coefficient of permeability) of the selected sample was measured in general accordance with method ASTM D 5084. The sample was extruded from the rings, trimmed, and weighed prior to placement within a flexible membrane within a triaxial pressure chamber. An effective confining pressure of 1.5 psi was applied to simulate near-surface ground conditions. Saturation was induced by subjecting the test specimen to a flow gradient of about 5, generated by a back-pressure differential of 2 psi and testing was conducted until inflow was approximately equal to outflow and the hydraulic conductivity was essentially steady. The test results are presented in detail on Figure 2.

CLOSURE: Experience has shown that test values on soil and other natural materials vary with each representative sample. As such, HWA has no knowledge as to the extent and quantity of material the tested samples may represent. HWA also makes no warranty as to how representative either the samples tested or the test results obtained are to actual field conditions. It is a well established fact that sampling methods present varying degrees of disturbance that affect sample representativeness.

No copy should be made of this report except in its entirety.

We appreciate the opportunity to provide laboratory testing services on this project. Should you have any questions or comments, or if we may be of further service, please call.

Sincerely,

HWA GEOSCIENCES INC.

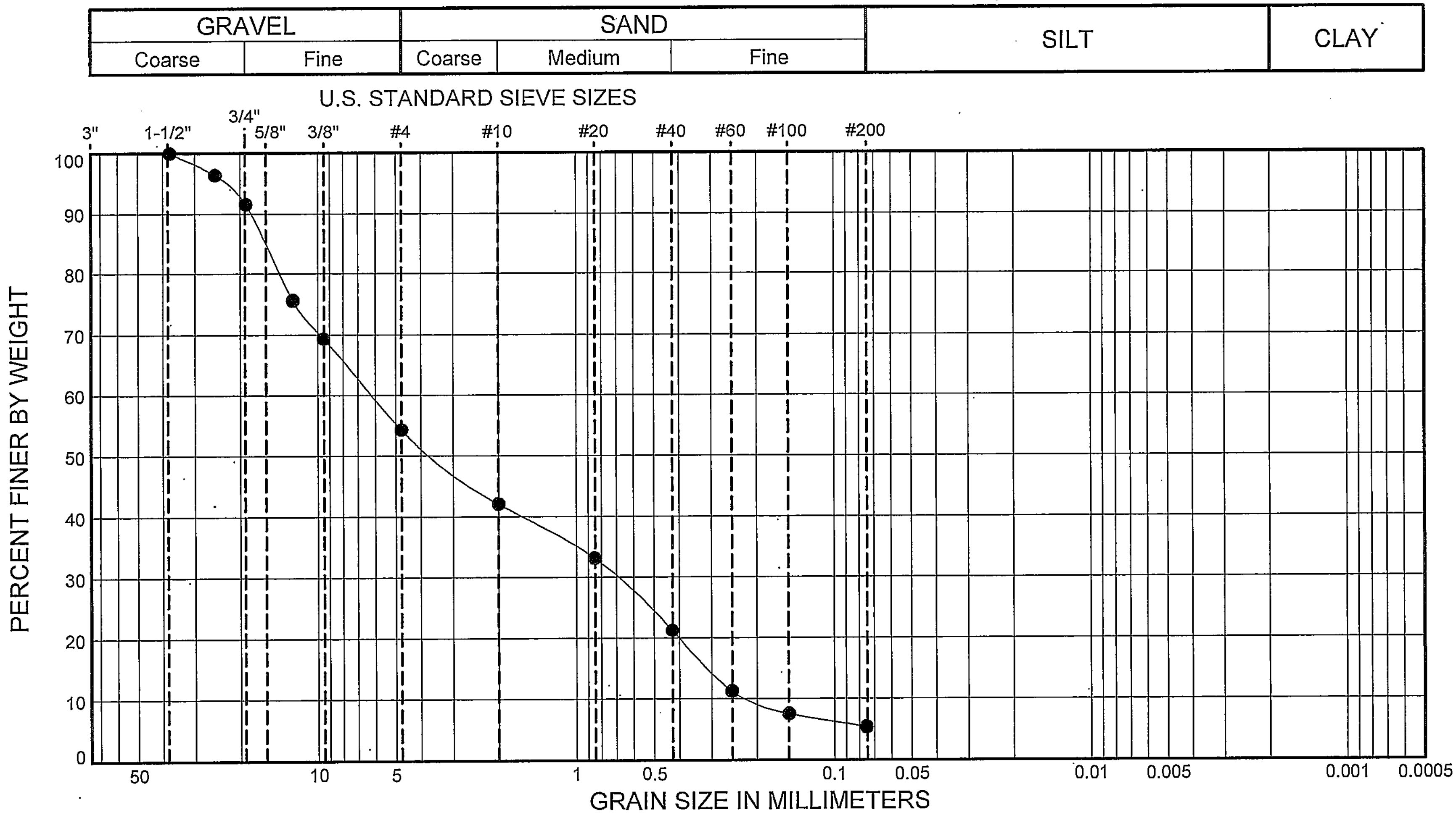
FOR

Harold Benny
Materials Laboratory Manager

Steven E. Greene, L.G., L.E.G.
Vice President

Attachments

Figure 1 Particle-Size Analysis of Soils
Figure 2 Hydraulic Conductivity Test Report
HWA Chain of Custody & Laboratory Analysis Request



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION OF SOIL- ASTM D2487 Group Symbol and Name	% MC	LL	PL	PI	Gravel %	Sand %	Fines %
●	BPMW3	15.0 - 16.0	(GP-GM) Brown, poorly graded SAND with silt and gravel (1.22% organics)	10				45.7	48.8	5.5

HWA GEOSCIENCES INC.

Bothell Paint
On-Site Environmental

PARTICLE-SIZE ANALYSIS OF SOILS METHOD ASTM D422

PROJECT NO.: 2007-098 T801 FIGURE: 1

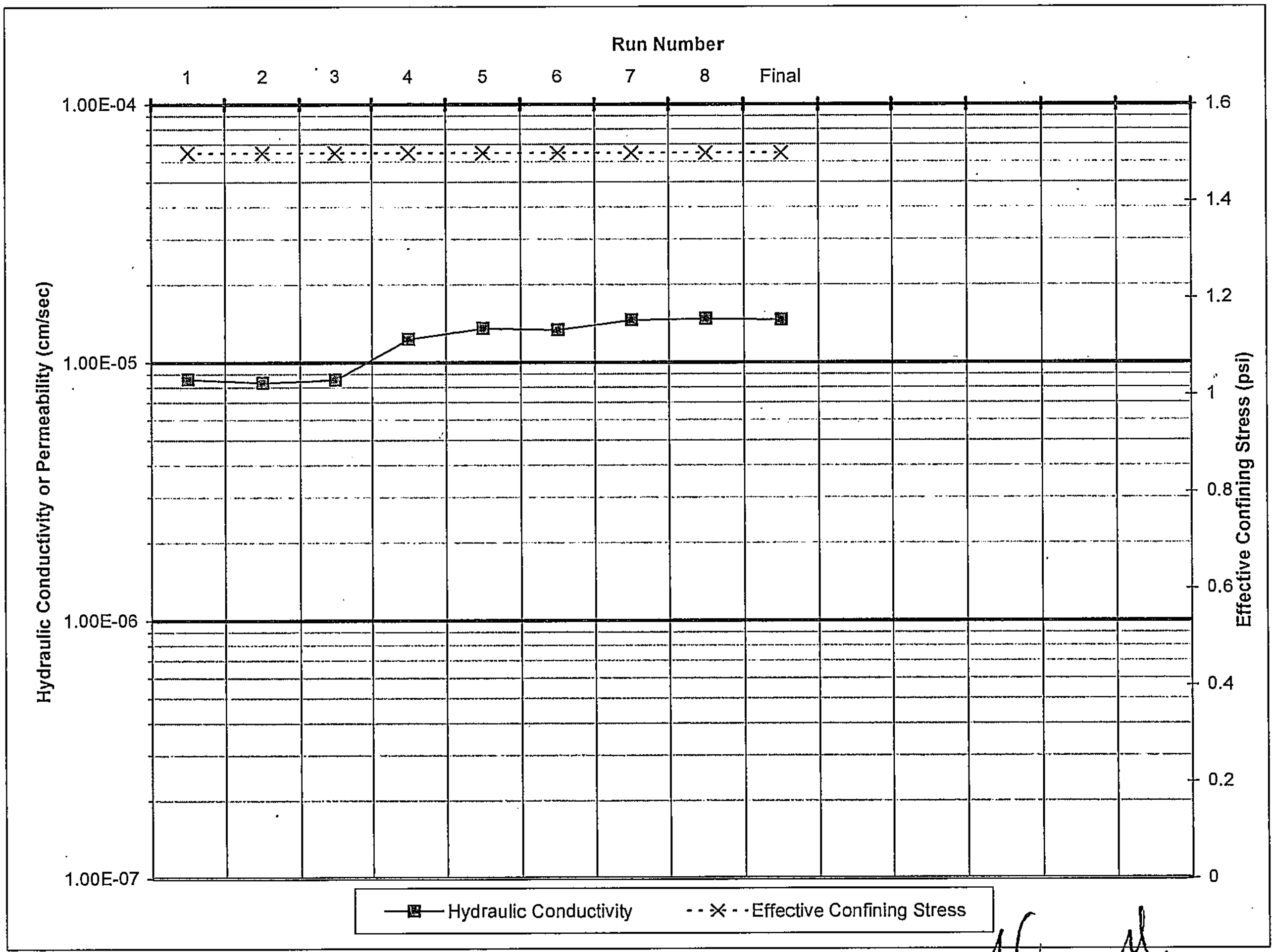
Hydraulic Conductivity (a.k.a. Permeability) Test Report

Method ASTM D 5084

HWA GEOSCIENCES INC.

Project	Bothell RI/FS	Assumed Specific Gravity	2.65		
Client	City of Bothell	Initial Sample Area (cm2)	29.28	Final Sample Area (cm2)	28.68
Project number	2007-098	Initial Sample Length (cm)	12.37	Final Sample Length (cm)	12.37
Date	09/16/2009	Initial Sample Volume (cc)	362.2	Final Sample Volume (cc)	354.7
Technician	HB	Initial moisture (%)	13.0	Final moisture (%)	10.2
Sample point	BPMW-3	Initial wet unit wt. (pcf)	138.1	Final wet unit weight (pcf)	144.0
Sample number	0	Initial dry unit wt. (pcf)	122.2	Final dry unit weight (pcf)	130.7
Sample depth	15-16.5	Initial void ratio	0.353	Final void ratio	0.265
Sample description	Poorly graded SAND with silt and gravel.	Initial porosity	0.261	Final porosity	0.210
		Initial saturation (%)	97.6	Final saturation (%)	101.9

Run No.	Hydraulic Conductivity (cm/s)	Running Average of 4 Readings (cm/s)	Maximum % Deviation from Average (should be less than 25%)	Flow Ratio (0.75 to 1.25 required)	Effective Confining Stress (psi)	Other Information
1	8.6E-06	n.a.		1.01	1.5	Maximum Gradient
2	8.4E-06	n.a.		1.00	1.5	7.6
3	8.6E-06	n.a.		1.00	1.5	Minimum Gradient
4	1.2E-05	9.5E-06	30.0%	0.98	1.5	1.2
5	1.4E-05	1.1E-05	26.6%	0.88	1.5	Max. Back Pressure (psi)
6	1.3E-05	1.2E-05	28.3%	1.00	1.5	18.0
7	1.5E-05	1.3E-05	8.5%	1.00	1.5	Min. Back Pressure (psi)
8	1.5E-05	1.4E-05	4.9%	1.00	1.5	18.0
Final	1.5E-05	1.4E-05	6.6%	1.00	1.5	



Checked by: [signature]

FIGURE: 2

HWA GEOSCIENCES INC.
19730 64th Ave. W., Suite 200, Lynnwood, WA 98036 (425) 774-0106

Chain of Custody and Laboratory Analysis Request

DATE:
PAGE: 1 of 1

PROJECT NAME: #:
SITE CODE:
SAMPLERS NAME: VDA PHONE:
SAMPLERS SIGNATURE:
HWA CONTACT: H. Benny PHONE: 206-437-4460

ANALYSIS REQUESTED

HWA SAMPLE ID	DATE	TIME	MATRIX	LAB ID	# OF BOTTLE	Sieve Analysis	Permeability	Unit Wt	Organic Content	REMARKS
BP MW-3 @ 15-16.5			Soil			X	X	X	X	

	PRINT NAME	SIGNATURE	COMPANY	DATE	TIME	REMARKS
Relinquished by:						
Received by:	H. Benny	H Benny	HWA	9/8/09		
Relinquished by:						
Received by:						

DISTRIBUTION: WHITE - Return to HWA; YELLOW - Retain by Lab; PINK - Retain by Sampler

APPENDIX C4

Historical Data Tables

Historical Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.:	BC-10-1	BC-11-5	GB-2-1	GB-2-4	VB-1-4	VB-3-1	VB-5-1	VB-6-1	VB-7-1
						Depth (ft):	1	5	1	4	4	1	1	1	1
						Background	10/28/2008	06/25/2008	2/13/2008	2/13/2008	2/13/2008	2/13/2008	2/14/2008	2/14/2008	2/14/2008
PETROLEUM HYDROCARBONS															
Diesel	mg/kg	NWTPH-Dx	2,000		200		27 U	28 U	28 U	- -	**210**	28 U	130	**230**	120
Motor Oil	mg/kg	NWTPH-Dx	2,000				81	55 U	1,300	- -	1,200	180	1,300	1,000	1,300
Gasoline	mg/kg	NWTPH-Gx	30/100*G		100		4.8 U	- -	3.9 U	- -	- -	- -	6.6 U	3.2 U	3.2 U
Benzene	µg/kg	SW8021B	30	4.483			20 U	- -	- -	- -	- -	- -	- -	- -	- -
Benzene	µg/kg	SW8260B	30	4.483			- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Toluene	µg/kg	SW8021B	7,000				48 U	- -	- -	- -	- -	- -	- -	- -	- -
Toluene	µg/kg	SW8260B	7,000				- -	- -	2.6	- -	- -	- -	1.1	6.2	2.7
Ethylbenzene	µg/kg	SW8021B	6,000				48 U	- -	- -	- -	- -	- -	- -	- -	- -
Ethylbenzene	µg/kg	SW8260B	6,000				- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
m,p-Xylene	µg/kg	SW8021B	9,000*XY				48 U	- -	- -	- -	- -	- -	- -	- -	- -
m,p-Xylene	µg/kg	SW8260B	9,000*XY				- -	- -	2.3 U	- -	- -	- -	2.3 U	1.4	1.2 U
o-Xylene	µg/kg	SW8021B	9,000*XY				48 U	- -	- -	- -	- -	- -	- -	- -	- -
o-Xylene	µg/kg	SW8260B	9,000*XY				- -	- -	1.1 U	- -	- -	- -	1.1 U	1.2	0.6 U
METALS															
Arsenic	mg/kg	SW6010B-Total	20	2.803	7	7.30	- -	11 U	11 U	11 U	**42**	**14**	- -	- -	- -
Barium	mg/kg	SW6010B			102		- -	- -	170	47	79	89	- -	- -	- -
Cadmium	mg/kg	SW6010B-Total	2	0.69	4	0.77	- -	0.55 U	3.8	0.56 U	0.59 U	1.5	- -	- -	- -
Chromium	mg/kg	SW6010B-Total	2,000*CR		42	48.15	- -	12	**86**	26	37	**60**	- -	- -	- -
Lead	mg/kg	SW6010B-Total	250	250	50	16.83	- -	5.5 U	**350**	**52**	**98**	**100**	- -	- -	- -
Selenium	mg/kg	SW6010B			0.3		- -	- -	11 U	11 U	12 U	11 U	- -	- -	- -
Silver	mg/kg	SW6010B			2		- -	- -	0.57 U	0.56 U	0.59 U	0.56 U	- -	- -	- -
Mercury	mg/kg	SW7471A-Total	2	2.088	0.1	0.07	- -	- -	**0.38**	0.28 U	0.29 U	**0.34**	- -	- -	- -
METALS (TCLP Extract-wet)															
Arsenic	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Barium	mg/L	SW6010B					- -	- -	- -	- -	- -	- -	- -	- -	- -
Cadmium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Chromium	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
Lead	mg/L	SW6010B-Total					- -	- -	- -	- -	- -	- -	- -	- -	- -
VOLATILE ORGANICS															
1,1,1,2-Tetrachloroethane	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
1,1,1-Trichloroethane	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
1,1,2,2-Tetrachloroethane	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
1,1,2-Trichloroethane	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
1,1-Dichloroethane	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
1,1-Dichloroethene	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
1,1-Dichloropropene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
1,2,3-Trichlorobenzene	µg/kg	SW8260			20,000		- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
1,2,3-Trichloropropane	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
1,2,4-Trichlorobenzene	µg/kg	SW8260			20,000		- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
1,2,4-Trimethylbenzene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	6.7	22	0.6 U
1,2-Dibromo-3-chloropropane	µg/kg	SW8260B					- -	- -	5.7 U	- -	- -	- -	5.7 U	3 U	3 U
1,2-Dibromoethane	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
1,2-Dichlorobenzene	µg/kg	SW8260B			700,000		- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
1,2-Dichloroethane	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
1,2-Dichloropropane	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
1,3,5-Trimethylbenzene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.2	3.5	0.6 U
1,3-Dichlorobenzene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U

Historical Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: Depth (ft): Background	BC-10-1 1 10/28/2008	BC-11-5 5 06/25/2008	GB-2-1 1 2/13/2008	GB-2-4 4 2/13/2008	VB-1-4 4 2/13/2008	VB-3-1 1 2/13/2008	VB-5-1 1 2/14/2008	VB-6-1 1 2/14/2008	VB-7-1 1 2/14/2008
VOLATILE ORGANICS (continued)															
1,3-Dichloropropane	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
1,4-Dichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
2,2-Dichloropropane	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
2-Butanone	µg/kg	SW8260B					- -	- -	5.7 U	- -	- -	- -	7.9	5.8	6.2
2-Chloroethyl Vinyl Ether	µg/kg	SW8260					- -	- -	11 U	- -	- -	- -	11 U	6 U	6 U
2-Chlorotoluene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
2-Hexanone	µg/kg	SW8260B					- -	- -	5.7 U	- -	- -	- -	5.7 U	3 U	3 U
4-Chlorotoluene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Acetone	µg/kg	SW8260B					- -	- -	53	- -	- -	- -	57	46	34
Bromobenzene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Bromochloromethane	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Bromodichloromethane	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Bromoform	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Bromomethane	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Carbon Disulfide	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Carbon Tetrachloride	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Chlorobenzene	µg/kg	SW8260B			40,000		- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Chloroethane	µg/kg	SW8260B					- -	- -	5.7 U	- -	- -	- -	5.7 U	3 U	3 U
Chloroform	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Chloromethane	µg/kg	SW8260B					- -	- -	5.7 U	- -	- -	- -	5.7 U	3 U	3 U
cis-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
cis-1,3-Dichloropropene	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Dibromochloromethane	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Dibromomethane	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Dichlorodifluoromethane	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Hexachlorobutadiene	µg/kg	SW8260					- -	- -	5.7 U	- -	- -	- -	5.7 U	3 U	3 U
Isopropylbenzene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.2	1.6	0.73
Methyl Iodide	µg/kg	SW8260B					- -	- -	5.7 U	- -	- -	- -	5.7 U	3 U	3 U
Methyl Isobutyl Ketone	µg/kg	SW8260					- -	- -	5.7 U	- -	- -	- -	5.7 U	3 U	3 U
Methyl t-Butyl Ether	µg/kg	SW8260	100				- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Methylene Chloride	µg/kg	SW8260B	20				- -	- -	14	- -	- -	- -	13	3 U	3 U
Naphthalene	µg/kg	SW8260	500				- -	- -	1.1 U	- -	- -	- -	140	15	5.1
n-Butylbenzene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.8	3.4	1.9
n-Propylbenzene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.1 U	1.8	1.3
p-Isopropyltoluene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.3	3.5	0.6 U
sec-Butylbenzene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.1 U	2	1.4
Styrene	µg/kg	SW8260B			300,000		- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
VOLATILE ORGANICS (continued)															
tert-Butylbenzene	µg/kg	SW8260					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.87	0.6 U
Tetrachloroethene	µg/kg	SW8260B	50				- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
trans-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
trans-1,3-Dichloropropene	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Trichloroethene	µg/kg	SW8260B	30				- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Trichlorofluoromethane	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U
Vinyl Acetate	µg/kg	SW8260B					- -	- -	5.7 U	- -	- -	- -	5.7 U	3 U	3 U
Vinyl Chloride	µg/kg	SW8260B					- -	- -	1.1 U	- -	- -	- -	1.1 U	0.6 U	0.6 U

(Table continues)

Historical Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: Depth (ft): Background	VB-8-0.25 0.25 2/14/2008	VB-8-2 2 2/14/2008	VB-9-0.5 0.5 2/14/2008	VB-9-1.5 1.5 2/14/2008	VB-10-1 1 2/14/2008	VB-11-8 8 4/3/2008	VB-12-8 8 4/3/2008
PETROLEUM HYDROCARBONS													
Diesel	mg/kg	NWTPH-Dx	2,000		200		130	- -	4,900 U	1,800 U	28 U	28 U	28 U
Motor Oil	mg/kg	NWTPH-Dx	2,000				840	- -	180,000	29,000	160	490	260
Gasoline	mg/kg	NWTPH-Gx	30/100*G		100		- -	- -	- -	- -		8.9	5.4 U
Benzene	µg/kg	SW8021B	30	4.483			- -	- -	- -	- -	- -	- -	- -
Benzene	µg/kg	SW8260B	30	4.483			- -	- -	- -	- -	- -	- -	- -
Toluene	µg/kg	SW8021B	7,000				- -	- -	- -	- -	- -	- -	- -
Toluene	µg/kg	SW8260B	7,000				- -	- -	- -	- -	- -	- -	- -
Ethylbenzene	µg/kg	SW8021B	6,000				- -	- -	- -	- -	- -	- -	- -
Ethylbenzene	µg/kg	SW8260B	6,000				- -	- -	- -	- -	- -	- -	- -
m,p-Xylene	µg/kg	SW8021B	9,000*XY				- -	- -	- -	- -	- -	- -	- -
m,p-Xylene	µg/kg	SW8260B	9,000*XY				- -	- -	- -	- -	- -	- -	- -
o-Xylene	µg/kg	SW8021B	9,000*XY				- -	- -	- -	- -	- -	- -	- -
o-Xylene	µg/kg	SW8260B	9,000*XY				- -	- -	- -	- -	- -	- -	- -
METALS													
Arsenic	mg/kg	SW6010B-Total	20	2.803	7	7.30	**32**	**18**	**13**	**190**	**120**	11 U	11 U
Barium	mg/kg	SW6010B			102		**3,400**	**190**	100	92	**130**	39	45
Cadmium	mg/kg	SW6010B-Total	2	0.69	4	0.77	**160**	**8.6**	**4.5**	2.9	**4.8**	0.56 U	0.56 U
Chromium	mg/kg	SW6010B-Total	2,000*CR		42	48.15	**1,100**	**71**	**71**	**60**	**60**	25	32
Lead	mg/kg	SW6010B-Total	250	250	50	16.83	**2,100**	**210**	**76**	**240**	**350**	5.6 U	5.6 U
Selenium	mg/kg	SW6010B			0.3		14 U	11 U	13 U	12 U	11 U	11 U	11 U
Silver	mg/kg	SW6010B			2		**2.4**	0.56 U	0.66 U	0.58 U	0.55 U	0.56 U	0.56 U
Mercury	mg/kg	SW7471A-Total	2	2.088	0.1	0.07	**0.56**	0.28 U	0.33 U	**0.33**	0.27 U	**0.29**	0.28 U
METALS (TCLP Extract-wet)													
Arsenic	mg/L	SW6010B-Total					- -	- -	- -	0.46	- -	- -	- -
Barium	mg/L	SW6010B					3.8	- -	- -	- -	- -	- -	- -
Cadmium	mg/L	SW6010B-Total					3.3	- -	- -	- -	- -	- -	- -
Chromium	mg/L	SW6010B-Total					0.02 U	- -	- -	- -	- -	- -	- -
Lead	mg/L	SW6010B-Total					0.2 U	- -	- -	- -	- -	- -	- -
VOLATILE ORGANICS													
1,1,1,2-Tetrachloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
1,1-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	µg/kg	SW8260			20,000		- -	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	µg/kg	SW8260			20,000		- -	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-chloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	µg/kg	SW8260B			700,000		- -	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
1,3-Dichlorobenzene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -

Historical Soil Analytical Results

PARAMETERS	Units	Analytical Method	MTCA A	MTCA B soil to gw	Ecological Indicator Conc.	Sample No.: Depth (ft): Background	VB-8-0.25 0.25 2/14/2008	VB-8-2 2 2/14/2008	VB-9-0.5 0.5 2/14/2008	VB-9-1.5 1.5 2/14/2008	VB-10-1 1 2/14/2008	VB-11-8 8 4/3/2008	VB-12-8 8 4/3/2008
VOLATILE ORGANICS (continued)													
1,3-Dichloropropane	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	µg/kg	SW8260B			20,000		- -	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
2-Butanone	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
2-Hexanone	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
Acetone	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Bromobenzene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
Bromochloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Bromodichloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Bromoform	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Bromomethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Carbon Disulfide	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Chlorobenzene	µg/kg	SW8260B			40,000		- -	- -	- -	- -	- -	- -	- -
Chloroethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Chloroform	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Chloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Dibromochloromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Dibromomethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Dichlorodifluoromethane	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
Hexachlorobutadiene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
Isopropylbenzene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
Methyl Iodide	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Methyl Isobutyl Ketone	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
Methyl t-Butyl Ether	µg/kg	SW8260	100				- -	- -	- -	- -	- -	- -	- -
Methylene Chloride	µg/kg	SW8260B	20				- -	- -	- -	- -	- -	- -	- -
Naphthalene	µg/kg	SW8260	500				- -	- -	- -	- -	- -	- -	- -
n-Butylbenzene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
n-Propylbenzene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
p-Isopropyltoluene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
sec-Butylbenzene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
Styrene	µg/kg	SW8260B			300,000		- -	- -	- -	- -	- -	- -	- -
VOLATILE ORGANICS (continued)													
tert-Butylbenzene	µg/kg	SW8260					- -	- -	- -	- -	- -	- -	- -
Tetrachloroethene	µg/kg	SW8260B	50				- -	- -	- -	- -	- -	- -	- -
trans-1,2-Dichloroethene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
trans-1,3-Dichloropropene	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Trichloroethene	µg/kg	SW8260B	30				- -	- -	- -	- -	- -	- -	- -
Trichlorofluoromethane	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Vinyl Acetate	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -
Vinyl Chloride	µg/kg	SW8260B					- -	- -	- -	- -	- -	- -	- -

Historical Soil Analytical Results

NOTES:		
	- - =	Not analyzed or not collected
	*CR =	Chromium Standards based on Chromium III
	*G =	100 if no benzene and TEX < 1% gas; 30 for other mixtures
	*NA =	Includes Naphthelene, 1-Methylnaphthalene, and 2-Methylnaphthalene
	*XY =	Applies to the sum of all xylenes
	U =	Not detected above the given practical quantitation limit
	(shaded)	Shaded values exceed MTCA
	Bold	Bold values exceed Ecological Indicator Concentration

UNITS:		
	ft =	feet
	mg/kg =	milligram/kilogram
	mg/L =	milligram/liter
	µg/kg =	microgram/kilogram

SOURCES: Background: 90th percentile Puget Sound (Ecology's Publication #94-115; 10/1994)
Model Toxics Control Act (MTCA) from WA Administrative Code 173-340-900
MTCA Method A Soil Cleanup Levels for Unrestricted Land Use: Table 740-1
MTCA Method B soil to groundwater: site-specific calculated
Ecological Indicator Concentrations: Table 749-3

Historical Groundwater Analytical Results

PARAMETERS	Units	Analytical Method	Sample No.: MTCA A	B4-W 4/2/2009	BC-10 2/4/2009	BC-11 12/30/2008	BC-12 2/4/2009	GB-1-W 2/13/2008	GB-2-W 2/13/2008	VB-2-W 2/13/2008	VB-3-W 2/14/2008	VB-4-W 2/14/2008	VB-5-W 2/14/2008	VB-6-W 2/14/2008
PETROLEUM HYDROCARBONS														
Diesel Range Hydrocarbons	mg/L	NWTPH-Dx	0.5	- -	0.31	0.25 U	0.26 U	- -	0.29 U	0.27 U	- -	0.28 U	0.26 U	0.27 U
Motor Oil	mg/L	NWTPH-Dx	0.5	- -	1.4	0.40 U	0.41 U	- -	0.46 U	0.43 U	- -	0.45 U	0.41 U	0.42 U
Gasoline Range Hydrocarbons	mg/L	NWTPH-Gx	0.8/1*G	- -	0.10 U	0.10 U	0.10 U	0.100 U	0.110	0.100 U	- -	0.100 U	0.400 U	0.100 U
Benzene	µg/L	SW8260	5	- -	0.20 U	0.20 U	0.20 U	0.2 U	1.4	0.2 U	- -	0.2 U	0.2 U	0.2 U
Toluene	µg/L	SW8260	1,000	- -	1.0 U	1.0 U	1.0 U	0.86	9.9	0.63	- -	0.58	0.41	0.43
Ethylbenzene	µg/L	SW8260	700	- -	0.20 U	0.20 U	0.20 U	0.2 U	1.7	0.2 U	- -	0.2 U	0.2 U	0.2 U
m,p-Xylene	µg/L	SW8260	1,000*XY	- -	- -	- -	- -	0.93	7.5	0.52	- -	0.45	0.4 U	0.4 U
o-Xylene	µg/L	SW8260	1,000*XY	- -	- -	- -	- -	0.46	3.9	0.28	- -	0.21	0.2 U	0.2 U
Total Xylenes	µg/L	SW8260	1,000*XY	- -	0.40 U	0.40 U	0.40 U	- -	- -	- -	- -	- -	- -	- -
TOTAL METALS														
Arsenic	mg/L	SW7060	0.005	- -	0.037	0.0033	0.011	- -	- -	- -	- -	- -	- -	- -
Barium	mg/L	SW6010		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Cadmium	mg/L	SW6010	0.005	- -	0.0044 U	0.0044 U	0.0044 U	- -	- -	- -	- -	- -	- -	- -
Chromium	mg/L	SW6010		- -	0.230	0.011 U	0.036	- -	- -	- -	- -	- -	- -	- -
Lead	mg/L	SW7421	0.015	- -	0.078	0.0011 U	0.160	- -	- -	- -	- -	- -	- -	- -
Mercury	mg/L	SW7471	0.002	- -	0.0005 U	0.0005 U	0.0005 U	- -	- -	- -	- -	- -	- -	- -
Selenium	mg/L	SW6010		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Silver	mg/L	SW6010		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
DISSOLVED METALS														
Arsenic	mg/L	SW7060	0.005	- -	- -	- -	- -	- -	0.005	- -	0.35	- -	- -	- -
Barium	mg/L	SW6010		- -	- -	- -	- -	- -	0.044	- -	0.13	- -	- -	- -
Cadmium	mg/L	SW6010	0.005	- -	- -	- -	- -	- -	0.004 U	- -	0.004 U	- -	- -	- -
Chromium	mg/L	SW6010		- -	- -	- -	- -	- -	0.01 U	- -	0.01 U	- -	- -	- -
Lead	mg/L	SW7421	0.015	- -	- -	- -	- -	- -	0.001 U	- -	0.001 U	- -	- -	- -
Mercury	mg/L	SW7471	0.002	- -	- -	- -	- -	- -	0.005 U	- -	0.005 U	- -	- -	- -
Selenium	mg/L	SW6010		- -	- -	- -	- -	- -	0.01 U	- -	0.01 U	- -	- -	- -
Silver	mg/L	SW6010		- -	- -	- -	- -	- -	0.0005 U	- -	0.0005 U	- -	- -	- -
VOLATILE ORGANICS														
1,1,1,2-Tetrachloroethane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,1,1-Trichloroethane	µg/L	SW8260	200	0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,1-Dichloropropene	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,2,3-Trichlorobenzene	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,2,3-Trichloropropane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,2,4-Trichlorobenzene	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,2,4-Trimethylbenzene	µg/L	SW8260		- -	- -	- -	- -	0.47	2.4	0.41	- -	0.22	0.2 U	0.2 U
1,2-Dibromo-3-chloropropane	µg/L	SW8260		1.0 U	- -	- -	- -	1 U	1 U	1 U	- -	1 U	1 U	1 U
1,2-Dibromoethane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	µg/L	SW8260	5	0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	µg/L	SW8260		- -	- -	- -	- -	0.2 U	0.61	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,3-Dichlorobenzene	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,3-Dichloropropane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U

Historical Groundwater Analytical Results

PARAMETERS	Units	Analytical Method	Sample No.: MTCA A	B4-W 4/2/2009	BC-10 2/4/2009	BC-11 12/30/2008	BC-12 2/4/2009	GB-1-W 2/13/2008	GB-2-W 2/13/2008	VB-2-W 2/13/2008	VB-3-W 2/14/2008	VB-4-W 2/14/2008	VB-5-W 2/14/2008	VB-6-W 2/14/2008
VOLATILE ORGANICS (continued)														
2,2-Dichloropropane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
2-Butanone	µg/L	SW8260		- -	- -	- -	- -	5 U	5 U	5 U	- -	5 U	5 U	5 U
2-Chloroethylvinylether	µg/L	SW8260		1.0 U	- -	- -	- -	1 U	1 U	1 U	- -	1 U	1 U	1 U
2-Chlorotoluene	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
2-Hexanone	µg/L	SW8260		- -	- -	- -	- -	2 U	2 U	2 U	- -	2 U	2 U	2 U
4-Chlorotoluene	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Acetone	µg/L	SW8260		- -	- -	- -	- -	5 U	5.3	5 U	- -	5 U	5 U	5 U
Bromobenzene	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Bromochloromethane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Bromodichloromethane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Bromoform	µg/L	SW8260		1.0 U	- -	- -	- -	1 U	1 U	1 U	- -	1 U	1 U	1 U
Bromomethane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Carbon Disulfide	µg/L	SW8260		- -	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Carbon Tetrachloride	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Chlorobenzene	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Chloroethane	µg/L	SW8260		1.0 U	- -	- -	- -	1 U	1 U	1 U	- -	1 U	1 U	1 U
Chloroform	µg/L	SW8260		0.20 U	0.20 U	0.20 U	0.20 U	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Chloromethane	µg/L	SW8260		1.0 U	- -	- -	- -	1 U	1 U	1 U	- -	1 U	1 U	1 U
cis-1,2-Dichloroethene	µg/L	SW8260		0.20 U	0.20 U	0.20 U	0.20 U	0.2 U	0.2 U	0.53	- -	0.2 U	0.2 U	0.2 U
cis-1,3-Dichloropropene	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Dibromochloromethane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Dibromomethane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Dichlorodifluoromethane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Hexachlorobutadiene	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Isopropylbenzene (Cumene)	µg/L	SW8260		- -	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Methyl Iodide	µg/L	SW8260		1.0 U	- -	- -	- -	1 U	1 U	1 U	- -	1 U	1 U	1 U
Methyl Isobutyl Ketone	µg/L	SW8260		- -	- -	- -	- -	2 U	2 U	2 U	- -	2 U	2 U	2 U
Methyl t-Butyl Ether	µg/L	SW8260	20	- -	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Methylene Chloride	µg/L	SW8260	5	2.0 U	- -	- -	- -	1 U	1 U	1 U	- -	1 U	1 U	1 U
Naphthalene	µg/L	SW8260	160	- -	- -	- -	- -	1 U	1 U	1 U	- -	1 U	5	1.1
n-Butylbenzene	µg/L	SW8260		- -	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
n-Propylbenzene	µg/L	SW8260		- -	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
p-Isopropyltoluene	µg/L	SW8260		- -	- -	- -	- -	0.2 U	0.2 U	0.4	- -	0.2 U	0.2 U	0.2 U
sec-Butylbenzene	µg/L	SW8260		- -	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Styrene	µg/L	SW8260		- -	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
tert-Butylbenzene	µg/L	SW8260		- -	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Tetrachloroethene	µg/L	SW8260	5	0.20 U	0.20 U	0.20 U	0.20 U	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	µg/L	SW8260		0.20 U	0.20 U	0.20 U	0.20 U	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Trichloroethene	µg/L	SW8260	5	0.20 U	0.20 U	0.20 U	0.20 U	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Trichlorofluoromethane	µg/L	SW8260		0.20 U	- -	- -	- -	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U
Vinyl Acetate	µg/L	SW8260		- -	- -	- -	- -	1 U	1 U	1 U	- -	1 U	1 U	1 U
Vinyl Chloride	µg/L	SW8260	0.2	0.20 U	0.20 U	0.20 U	0.20 U	0.2 U	0.2 U	0.2 U	- -	0.2 U	0.2 U	0.2 U

(Table continues)

Historical Groundwater Analytical Results

PARAMETERS	Units	Analytical Method	Sample No.: MTCA A	VB-7-W 2/14/2008	VB-7-W2 2/14/2008	VB-WD 2/14/2008	VB-10-W 2/14/2008	VB-11-W 4/3/2008	VB-12-W 4/3/2008
PETROLEUM HYDROCARBONS									
Diesel Range Hydrocarbons	mg/L	NWTPH-Dx	0.5	0.26 U	- -	0.25 U	- -	0.25 U	0.22 U
Motor Oil	mg/L	NWTPH-Dx	0.5	0.41 U	- -	0.4 U	- -	0.4 U	0.35 U
Gasoline Range Hydrocarbons	mg/L	NWTPH-Gx	0.8/1*G	0.100 U	- -	0.100 U	- -	0.100 U	0.100 U
Benzene	µg/L	SW8260	5	0.2 U	0.2 U	0.2 U	- -	- -	- -
Toluene	µg/L	SW8260	1,000	0.2 U	0.2 U	0.2 U	- -	- -	- -
Ethylbenzene	µg/L	SW8260	700	0.2 U	0.2 U	0.2 U	- -	- -	- -
m,p-Xylene	µg/L	SW8260	1,000*XY	0.4 U	0.4 U	0.4 U	- -	- -	- -
o-Xylene	µg/L	SW8260	1,000*XY	0.2 U	0.2 U	0.2 U	- -	- -	- -
Total Xylenes	µg/L	SW8260	1,000*XY	- -	- -	- -	- -	- -	- -
TOTAL METALS									
Arsenic	mg/L	SW7060	0.005	- -	- -	- -	- -	0.023	0.0046
Barium	mg/L	SW6010		- -	- -	- -	- -	0.044	0.028 U
Cadmium	mg/L	SW6010	0.005	- -	- -	- -	- -	0.0044 U	0.0044 U
Chromium	mg/L	SW6010		- -	- -	- -	- -	0.011 U	0.011 U
Lead	mg/L	SW7421	0.015	- -	- -	- -	- -	0.0011 U	0.0011 U
Mercury	mg/L	SW7471	0.002	- -	- -	- -	- -	0.0005 U	0.0005 U
Selenium	mg/L	SW6010		- -	- -	- -	- -	0.0056 U	0.0056 U
Silver	mg/L	SW6010		- -	- -	- -	- -	0.011 U	0.011 U
DISSOLVED METALS									
Arsenic	mg/L	SW7060	0.005	- -	- -	- -	0.003 U	0.02	0.0041
Barium	mg/L	SW6010		- -	- -	- -	0.05	0.039	0.025 U
Cadmium	mg/L	SW6010	0.005	- -	- -	- -	0.004 U	0.004 U	0.004 U
Chromium	mg/L	SW6010		- -	- -	- -	0.01 U	0.01 U	0.01 U
Lead	mg/L	SW7421	0.015	- -	- -	- -	0.001 U	0.001 U	0.001 U
Mercury	mg/L	SW7471	0.002	- -	- -	- -	0.005 U	0.0005 U	0.0005 U
Selenium	mg/L	SW6010		- -	- -	- -	0.01 U	0.005 U	0.005 U
Silver	mg/L	SW6010		- -	- -	- -	0.0005 U	0.01 U	0.01 U
VOLATILE ORGANICS									
1,1,1,2-Tetrachloroethane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,1,1-Trichloroethane	µg/L	SW8260	200	0.2 U	0.2 U	0.2 U	- -	- -	- -
1,1,2,2-Tetrachloroethane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,1,2-Trichloroethane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,1-Dichloroethane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,1-Dichloroethene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,1-Dichloropropene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,2,3-Trichlorobenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,2,3-Trichloropropane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,2,4-Trichlorobenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,2,4-Trimethylbenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,2-Dibromo-3-chloropropane	µg/L	SW8260		1 U	1 U	1 U	- -	- -	- -
1,2-Dibromoethane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,2-Dichlorobenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,2-Dichloroethane	µg/L	SW8260	5	0.2 U	0.2 U	0.2 U	- -	- -	- -
1,2-Dichloropropane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,3,5-Trimethylbenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,3-Dichlorobenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,3-Dichloropropane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
1,4-Dichlorobenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -

Historical Groundwater Analytical Results

PARAMETERS	Units	Analytical Method	Sample No.: MTCA A	VB-7-W 2/14/2008	VB-7-W2 2/14/2008	VB-WD 2/14/2008	VB-10-W 2/14/2008	VB-11-W 4/3/2008	VB-12-W 4/3/2008
VOLATILE ORGANICS (continued)									
2,2-Dichloropropane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
2-Butanone	µg/L	SW8260		5 U	5 U	5 U	- -	- -	- -
2-Chloroethylvinylether	µg/L	SW8260		1 U	1 U	1 U	- -	- -	- -
2-Chlorotoluene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
2-Hexanone	µg/L	SW8260		2 U	2 U	2 U	- -	- -	- -
4-Chlorotoluene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Acetone	µg/L	SW8260		5 U	5 U	5 U	- -	- -	- -
Bromobenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Bromochloromethane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Bromodichloromethane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Bromoform	µg/L	SW8260		1 U	1 U	1 U	- -	- -	- -
Bromomethane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Carbon Disulfide	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Carbon Tetrachloride	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Chlorobenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Chloroethane	µg/L	SW8260		1 U	1 U	1 U	- -	- -	- -
Chloroform	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Chloromethane	µg/L	SW8260		1 U	1 U	1 U	- -	- -	- -
cis-1,2-Dichloroethene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
cis-1,3-Dichloropropene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Dibromochloromethane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Dibromomethane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Dichlorodifluoromethane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Hexachlorobutadiene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Isopropylbenzene (Cumene)	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Methyl Iodide	µg/L	SW8260		1 U	1 U	1 U	- -	- -	- -
Methyl Isobutyl Ketone	µg/L	SW8260		2 U	2 U	2 U	- -	- -	- -
Methyl t-Butyl Ether	µg/L	SW8260	20	0.2 U	0.2 U	0.2 U	- -	- -	- -
Methylene Chloride	µg/L	SW8260	5	1 U	1 U	1 U	- -	- -	- -
Naphthalene	µg/L	SW8260	160	1 U	1 U	1 U	- -	- -	- -
n-Butylbenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
n-Propylbenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
p-Isopropyltoluene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
sec-Butylbenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Styrene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
tert-Butylbenzene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Tetrachloroethene	µg/L	SW8260	5	0.2 U	0.2 U	0.2 U	- -	- -	- -
trans-1,2-Dichloroethene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
trans-1,3-Dichloropropene	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Trichloroethene	µg/L	SW8260	5	0.2 U	0.2 U	0.2 U	- -	- -	- -
Trichlorofluoromethane	µg/L	SW8260		0.2 U	0.2 U	0.2 U	- -	- -	- -
Vinyl Acetate	µg/L	SW8260		1 U	1 U	1 U	- -	- -	- -
Vinyl Chloride	µg/L	SW8260	0.2	0.2 U	0.2 U	0.2 U	- -	- -	- -

Historical Groundwater Analytical Results

NOTES:
- - = Not analyzed or not collected
*G = 1 if no benzene ; 0.8 if benzene
*XY = Applies to the sum of all xylenes
U = Not detected above the given practical quantitation limit
Shaded values exceed MTCA A

SOURCES:
Model Toxics Control Act (MTCA) from WA Administrative Code 173-340-900
MTCA Method A Soil Cleanup Levels for Ground Water: Table 720-1

UNITS:
mg/L = milligrams/liter
µg/L = micrograms/liter